RESORT MUNICIPALITY OF WHISTLER

4325 BLACKCOMB WAY, WHISTLER, BC V8B0X3

S115 - BLUEBERRY PUMP STATION
CONT. #: 5330-02-1035

RE-ISSUED FOR TENDER

DRAWING INDEX			
SHEET No.	DESCRIPTION	DWG No.	REV.
0	COVER		
1	SITE GRADING PLAN	23-0937-SG	4
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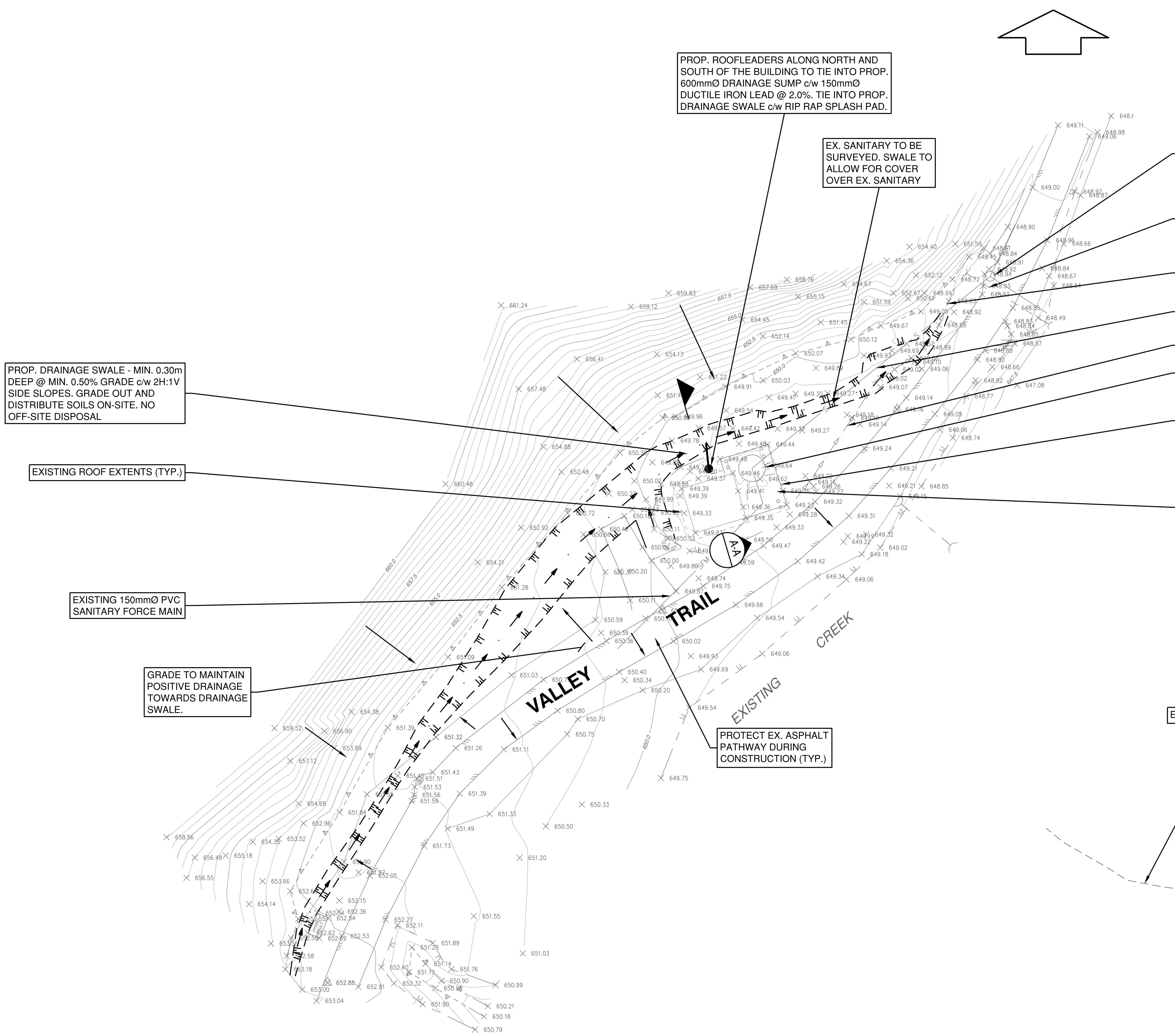
EGBC Permit To Practice #1001128

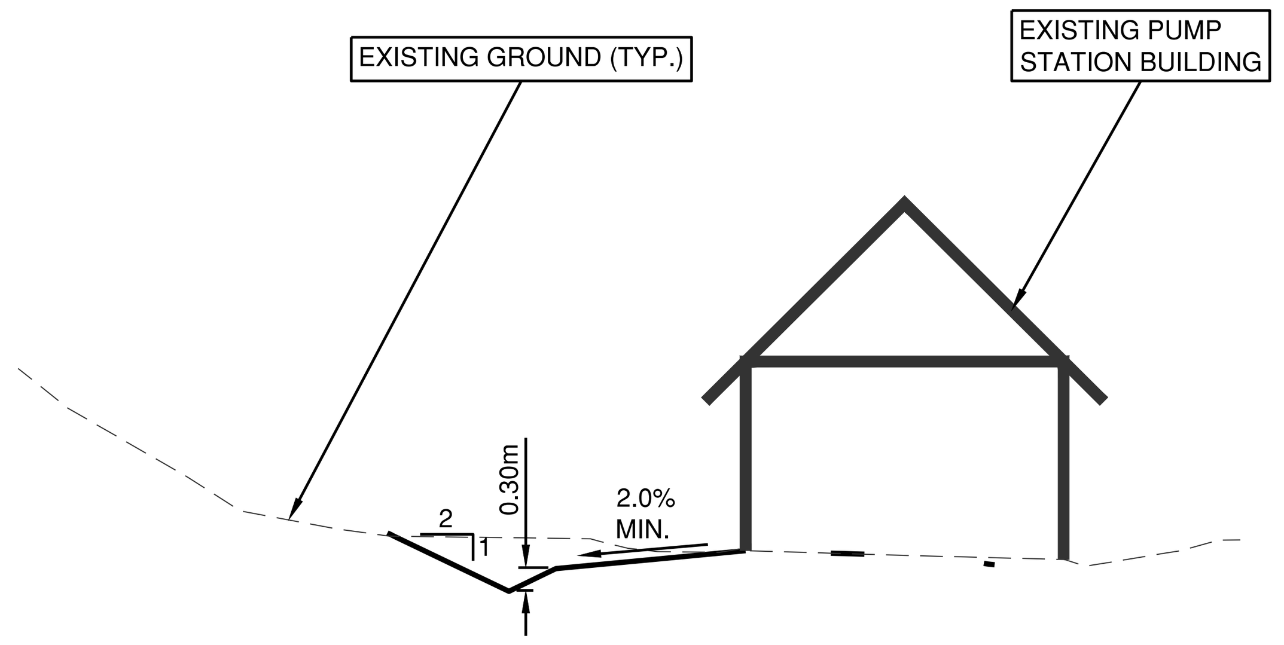
PROFESSIONAL ENGINEER
C. MADER
54586
BRITISH COLUMBIA

2025-02-26

WHISTLER

23-0937 - S115 - BLUEBERRY PUMP STATION CONT. #: 5330-02-1035 - RE-ISSUED FOR TENDER





SECTION A-A
Scale: 1:100

FOR GENERAL CONSTRUCTION NOTES AND DETAILS REFER TO DWGS. 23-0937-D1.

RE-ISSUED FOR TENDER

No.	DATE	REVISION	BY
4	2025-02-26	RE-ISSUED FOR TENDER	KK
3	2025-01-29	ISSUED FOR TENDER	BM
2	2024-12-11	REISSUED FOR CLIENT REVIEW	JM
1	2024-10-02	ISSUED FOR CLIENT REVIEW	KK

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CLIENT
RESORT MUNICIPALITY OF WHISTLER
4325 BLACKCOMB WAY, WHISTLER, BC V8B0X3

DRAWING DESCRIPTION
S115 - BLUEBERRY PUMP STATION
BLUEBERRY DRIVE, WHISTLER, BC
SITE GRADING PLAN - CONT. #: 5330-02-1035

SURVEYED BY BINNIE
DRAWN BY JM
DESIGNED BY JM
CHECKED BY CM

SCALES
0 1:250 10m

EGBC Permit To Practice #1001128
PROFESSIONAL ENGINEER C. MADER # 54586 BRITISH COLUMBIA
2025-02-26
EGBC PERMIT No. 1001128

DATE 2024-08-09
DRAWING No.
23-0937-SG
SHEET 1 OF 2
REV. 4
DESTROY ALL PRINTS BEARING PREVIOUS No.

01 GENERAL REQUIREMENTS

01.1 DOCUMENTS

01.1.1 REFERENCE SPECIFICATIONS

1. ALL WORKS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   - 1.1. RESORT MUNICIPALITY SUBDIVISION AND DEVELOPMENT CONTROL BYLAW.
   - 1.2. WORKSAFE B.C
   - 1.3. LATEST EDITION OF THE MASTER MUNICIPAL CONTRACT DOCUMENTS (MMCD 2009 PLATINUM EDITION)
   - 1.4. LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (MUTCDC)
   - 1.5. ISSUED FOR CONSTRUCTION PLANS APPROVED BY THE RESORT MUNICIPALITY
2. ON-SITE BUILDING SEWERS AND WATER SERVICE PIPES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE B.C. PLUMBING CODE (2018 EDITION).

01.1.2 PROJECT RECORD DOCUMENTS

1. MAINTAIN ON SITE COPIES OF THE ABOVE DOCUMENTS AND ENSURE THAT ALL SUB CONTRACTORS ARE THOROUGHLY FAMILIAR WITH THE APPLICABLE SECTIONS OF THE DOCUMENTS.
2. MAINTAIN A COMPLETE SET OF CIVIL DRAWINGS MARKED UP IN RED TO RECORD THE CONSTRUCTION OF ALL SITE SERVICES ON THIS PROJECT. THE REDLINES SET IS TO BE AVAILABLE FOR THE CIVIL ENGINEER TO REVIEW AT ALL TIMES. AT THE COMPLETION OF THE CIVIL WORKS, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER ONE (1) SET OF PROJECT RECORD DOCUMENTS AS PER MMCD:
   - 2.1 MEASURED HORIZONTAL AND VERTICAL LOCATIONS OF UNDERGROUND UTILITIES AND APPURTENANCES, REFERENCED TO PERMANENT SURFACE IMPROVEMENTS.
   - 2.2 FIELD CHANGES OF DIMENSION AND DETAIL.
   - 2.3 CHANGES MADE BY ADDENDA AND CHANGE ORDERS.
   - 2.4 DETAILS NOT ON ORIGINAL CONTRACT DRAWINGS.
   - 2.5 REFERENCES TO RELATED SHOP DRAWINGS AND MODIFICATIONS.
   - 2.6 PRODUCT SPECIFICATIONS INCLUDING MANUFACTURER, TRADE NAME, AND CATALOGUE NUMBER.
   - 2.7 CERTIFICATIONS, INSPECTION CERTIFICATIONS AND FIELD TEST RECORDS REQUIRED BY INDIVIDUAL SPECIFICATIONS SECTIONS.

01.2 CONTRACTOR

01.2.1 CONTROL OF THE WORK

1. THE CONTRACTOR SHALL HAVE COMPLETE CONTROL OF THE WORK AND SHALL EFFECTIVELY DIRECT AND SUPERVISE THE WORK SO AS TO ENSURE CONFORMANCE WITH THE CONTRACT DOCUMENTS, SUBJECT TO THE OWNER'S RIGHTS AS SPECIFICALLY SET OUT IN THE CONTRACT DOCUMENTS TO GIVE DIRECTIONS REGARDING WORK, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING THE VARIOUS PARTS OF THE WORK UNDER THE CONTRACT.
2. MAINTAIN THE WORK IN A TIDY CONDITION AND FREE FROM THE ACCUMULATION OF WASTE, DEBRIS, AND WASTE PRODUCTS, OTHER THAN THAT CAUSED BY THE OWNER, OTHER CONTRACTORS, OR ITS EMPLOYEES.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING THE NECESSARY FIELD SURVEYS TO PERMIT THE LAYOUT, CONSTRUCTION AND MEASUREMENT OF QUANTITIES OF THE WORK FOR PAYMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS FIELD SURVEY.

01.2.2 SAFETY

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION SAFETY AT THE PLACE OF WORK AS AND TO THE EXTENT REQUIRED BY APPLICABLE CONSTRUCTION SAFETY LEGISLATION, REGULATIONS AND CODES, INCLUDING THE WORKERS COMPENSATION ACT AND APPLICABLE REGULATIONS, AND BY GOOD CONSTRUCTION PRACTICE.

01.2.3 PROTECTION OF WORK, PROPERTY AND THE PUBLIC

1. THE LOCATIONS OF THE EXISTING UTILITIES, AS SHOWN ON THE DESIGN DRAWINGS, ARE APPROXIMATE ONLY AND THIS INFORMATION MAY NOT BE FULLY ACCURATE OR COMPLETE. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL LOCATE AND EXPOSE ALL EXISTING UTILITIES AT ALL TIE-IN POINTS, AT ALL POINTS WHERE A CONFLICT MAY ARISE DURING THE CONSTRUCTION OF THE PROPOSED WORKS, AND TO CONFIRM DESIGN ELEVATIONS. IN THE EVENT OF A CONFLICT, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER FOR DIRECTIONS. THE CONTRACTOR SHALL ASSUME ALL COSTS AND EXPENSES THAT MAY OCCUR FOR DAMAGES, SUPPORT OF AND REPAIR TO SUCH PLANT BY REASON OF THE NEGLIGENCE OF HIS OPERATIONS. (EXISTING UTILITIES SHOWN ARE DERIVED FROM AS-BUILT INFORMATION AND ALL UTILITIES MAY NOT BE NECESSARILY SHOWN.)
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO EXISTING STREET OR SERVICES BY CONSTRUCTION EQUIPMENT AND/OR TRUCKS HAULING MATERIAL TO THE SITE. THIS MAY INCLUDE DAILY CLEANING OR SWEEPING EXISTING ROADS OF DIRT AND DEBRIS CAUSED BY CONSTRUCTION ACTIVITIES.
3. EXISTING UNDERGROUND UTILITY TRENCHES ADJACENT TO THE PROPOSED UNDERGROUND UTILITY INSTALLATION SHALL BE ADEQUATELY PROTECTED FROM SLOUGHING IN ORDER TO PREVENT OVER-WIDTH EXCAVATION.
4. USE EXTREME CAUTION WHEN WORKING NEAR EXISTING SERVICES AND ANY SERVICES DISTURBED ARE TO BE REPLACED TO THE SATISFACTION OF THE MUNICIPALITY OR OTHER APPROVING AGENCIES.
5. PROTECT ALL SURVEY MONUMENTS, BENCHMARKS, AND LEGAL PINS. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
6. EXISTING AREAS THAT ARE DISTURBED ARE TO BE RESTORED TO THE SATISFACTION OF THE MUNICIPALITY. IN SPECIAL CASES, THE MUNICIPLAITY MAY REQUIRE WRITTEN ACCEPTANCE BY THE AFFECTED PROPERTY OWNERS FOR RESTORATION WORKS PERFORMED BY THE CONTRACTOR.

01.2.4 PERMITS

1. THE CONTRACTOR SHALL ENSURE THAT ALL APPROVALS AND/OR PERMITS REQUIRED FOR THE PROPOSED WORKS HAVE BEEN OBTAINED FROM ALL AUTHORITIES AND AGENCIES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
2. ALL CONSTRUCTION IN AND ABOUT A WATERCOURSE MUST RECEIVE PRIOR APPROVAL FROM THE PROVINCIAL MINISTRY OF ENVIRONMENT AND/OR THE FEDERAL DEPARTMENT OF FISHERIES AND OCEANS CANADA WHERE APPLICABLE.
3. PRIOR TO THE START OF CONSTRUCTION, OBTAIN WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNERS FOR A TEMPORARY ENCROACHMENT ON PRIVATE PROPERTY AND A REGISTERED DOCUMENT FOR A PERMANENT ENCROACHMENT.

01.2.5 CONSTRUCTION SCHEDULE

1. NOTIFY THE ENGINEER AT THE FOLLOWING STAGES OF THE CONSTRUCTION SCHEDULE:
   - 1.1. 48 HOURS PRIOR TO CONSTRUCTION
   - 1.2. DELIVERY OF STORM SEWER MATERIAL TO SITE.
   - 1.3. DELIVERY OF SANITARY SEWER MATERIALS TO SITE.
   - 1.4. DELIVERY OF WATER WORKS MATERIALS TO SITE.
   - 1.5. INITIAL INSTALLATION OF STORM SEWER, SANITARY SEWER, AND WATER WORKS CONSTRUCTION PRIOR TO BACKFILLING.
   - 1.6. GRADING OF ROAD SURFACES PRIOR TO PAVING.
   - 1.7. COMMISSIONING OF A PUMP SYSTEM.
2. NOTIFY THE MUNICIPAL ENGINEERING DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WITHIN THE ROAD ALLOWANCES AND RIGHTS-OF-WAYS. TIE-INS SHALL BE WITNESSED BY THE MUNICIPAL INSPECTOR.
3. WORKSAFE B.C. IS TO BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION.

01.2.6 TESTS AND INSPECTIONS

1. MATERIAL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE MMCD. TESTING SHALL BE CARRIED OUT BY QUALIFIED MATERIAL TESTING FIRM AND PAID FOR BY THE CONTRACTOR. PROVIDE COPIES OF ALL TEST RESULTS TO THE ENGINEER.
2. OFF-SITE WORK SHALL PASS INSPECTION BY THE RESORT MUNICIPALITY INSPECTOR AND THE SIGNING ENGINEER.
3. TESTING AND INSPECTION REQUIREMENTS ARE AS FOLLOWS:

Work	Testing and Inspection Requirement
TRENCH BACKFILLING AND COMPACTION	COMPACTION TEST EVERY 25 LINEAL METRE AND 0.5 M LIFT
	SIEVE TEST EVERY MATERIAL SOURCE AND 1,000 M3
GRANULAR BASE	COMPACTION TEST EVERY 200 M2
	SIEVE TEST EVERY MATERIAL SOURCE AND 1,000 M3
GRANULAR SUBBASE	COMPACTION TEST EVERY 500 M2 AND 0.15 M LIFT
	SIEVE TEST EVERY 1,000 M3
EMBANKMENT (SUBGRADE)	COMPACTION TEST EVERY 1000 M2 AND 0.3 M LIFT
	SIEVE TEST EVERY MATERIAL SOURCE AND 2,000 M3
CONCRETE	AIR, SLUMP AND 1 SET CYLINDER EVERY 50 M3
	MINIMUM 1 SET AND TEST PER DAY OF CONCRETE POUR
ASPHALT	MARSHALL AND SIEVE TEST EVERY 500 TONNES
	COMPACTION TEST EVERY 200 M2
LIFT STATION	AS PER COMMISSIONING PLAN
TRACER WIRE	AS PER MANUFACTURER
SEWER SYSTEMS	CCTV INSPECTION REPORT AND VIDEO OF ALL SEWERS LINES IN PDF AND MPEG VIDEO FILE FORMAT
	FLUSH ALL SEWER PIPING PRIOR TO CCTV INSPECTION
	FLUSH AND PRESSURE TEST FORCEMAINS. CONFIRM THE SANITARY FORCEMAIN WORKING PRESSURE WITH THE ENGINEER PRIOR TO PRESSURE TESTING.
	ALL TESTING TO BE WITNESSED BY THE ENGINEER AND THE RMOW INSPECTOR.
WATER SYSTEMS	PRESSURE TESTING, CHLORINATION, FLUSHING, AND BACTERIOLOGICAL TESTING SHALL BE PERFORMED TO THE MINISTRY OF HEALTH AND AWWA STANDARDS AND COMPLETED BY A THIRD PARTY. SUBMIT WRITTEN PROCEDURES TO THE ENGINEER AND THE RMOW ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL. ALL TESTING TO BE WITNESSED BY THE ENGINEER AND THE RMOW INSPECTOR. THE FOLLOWING NOTIFICATIONS ARE REQUIRED:
	TIE-IN PLAN SUBMITTED IN ADVANCE OF WORK (ALLOW 2 WEEKS FOR REVIEW)
	ONE WEEK NOTICE OF CONSTRUCTION SCHEDULE
	48 HOUR NOTICE TO CONFIRM DATE/TIMING OF TESTING
	CONFIRM THE WATERMAIN WORKING PRESSURE WITH THE ENGINEER PRIOR TO PRESSURE TESTING.

01.2.7 CHANGES

1. OBTAIN WRITTEN PERMISSION FROM THE ENGINEER FOR ANY MATERIAL SUBSTITUTION OR DESIGN CHANGE. THE MUNICIPLAITY SHALL BE NOTIFIED OF ANY SUBSTITUTION OR CHANGE IN DESIGN. ANY CHANGE IN DESIGN WILL REQUIRE A DRAWING REVISION.

01.2.8 ENVIRONMENTAL PROTECTION

1. TREES DESIGNATED TO BE SAVED ARE TO BE PROTECTED BY SNOW FENCING.

01.2.9 COORDINATION AND CONNECTION

1. CONFIRM WITH THE MECHANICAL CONSULTANT THE LOCATIONS, ELEVATIONS, AND SIZE OF THE SERVICE CONNECTIONS TO THE PROPOSED BUILDINGS PRIOR TO THE START OF CONSTRUCTION.
2. REVIEW THE ELECTRICAL DESIGN DRAWINGS FOR COORDINATION WITH CIVIL WORKS AND INSTALLATION OF ELECTRICAL DUCT WORK AND FACILITIES.

01.3 SHOP DRAWINGS

1. SUBMIT SHOP DRAWINGS FOR REVIEW AS PER MMCD REQUIREMENTS. ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO FABRICATION.

01.4 TEMPORARY CONTROLS

01.4.1 EROSION AND SEDIMENT CONTROL

1. CONDUCT ALL SILTATION CONTROL WORK TO THE REQUIREMENTS OF THE PROVINCIAL MINISTRY OF ENVIRONMENT AND THE FEDERAL DEPARTMENT OF FISHERIES AND OCEANS CANADA AND OTHER AGENCIES.
2. STOCKPILE ON-SITE AT VARIOUS STRATEGIC LOCATIONS, ADEQUATE SUPPLIES OF ALL MATERIALS REQUIRED TO PROTECT DOWNSTREAM WATERCOURSES FROM SILTATION.
3. REPAIR MACHINE TRACKS OR OTHER SURFACE DEFORMATIONS WHICH TEND TO ALTER DRAINAGE PATHS OR CONCENTRATE DRAINAGE IN SUCH A WAY AS TO INCREASE EROSION.
4. ASSESS AND REVIEW THE EFFECTIVENESS OF TEMPORARY SEDIMENT CONTROL MEASURES AND DETERMINE THE NEED FOR ADDITIONAL MEASURES ON A CONTINUING BASIS.
5. INSPECT AND MAINTAIN SILTATION CONTROL ON A DAILY BASIS.
6. CORRECT DEFICIENCIES IN EROSION AND SEDIMENTATION CONTROL IMMEDIATELY. IF THE CONTRACTOR FAILS TO CORRECT THE DEFICIENCIES IN EROSION AND SEDIMENT CONTROL, THIS DEFAULT MAY BE CORRECTED BY THE OWNER AT THE CONTRACTOR'S EXPENSE.
7. CONTROL ALL RUNOFF FROM SOIL STOCKPILES AND EXPOSED EARTH SLOPES.
8. ALL WORK SHALL BE UNDERTAKEN AND COMPLETED IN SUCH A MANNER AS TO PREVENT THE RELEASE OF SEDIMENT LADEN WATER INTO ANY DOWNSTREAM WATERCOURSE OR STORM SEWER.
9. ANY IRREGULARITIES SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

01.4.2 TRAFFIC CONTROL

1. PROVIDE TRAFFIC CONTROL, SIGNAGE, DELINEATORS, BARRICADES, AND WARNING DEVICES AS REQUIRED TO MAINTAIN VEHICLE AND PEDESTRIAN FLOW AND FOR EMERGENCY VEHICLE ACCESS. SUBMIT A TRAFFIC MANAGEMENT PLAN IN ADVANCE OF CONSTRUCTION FOR THE RMOW'S REVIEW AND APPROVAL.

03 CONCRETE

03.1 CONCRETE WALKS, DRIVEWAYS, CURBS AND GUTTERS

03.1.1 PRODUCTS

PRODUCT	PROJECT SPECIFICATIONS	STANDARD DRAWINGS	ADDITIONAL INFORMATION
DRIVEWAY CROSSINGS	150 mm CONCRETE (RESIDENTIAL)	C7 – DRIVEWAY CROSSING FOR BARRIER CURBS (MMCD)	
	200 mm CONCRETE (COMMERCIAL AND INDUSTRIAL)		

03.1.2 EXECUTION

1. LOCATIONS OF DRIVEWAYS, WHEELCHAIR RAMPS, ETC. SHALL BE CONFIRMED IN THE FIELD PRIOR TO CONSTRUCTION OF THE PROPOSED CONCRETE CURB AND GUTTER.

32 ROADS AND SITE IMPROVEMENTS

32.1 ROADWORKS

32.1.1 PRODUCTS

PRODUCT	PROJECT SPECIFICATIONS	STANDARD DRAWINGS	ADDITIONAL INFORMATION
LIGHT DUTY PAVEMENT STRUCTURE (PARKING)	65 mm THICK – ASPHALT SURFACE LAYER (UPPER COURSE 2)		ON APPROVED FILL AND SUBGRADE
	150 mm THICK – 19 mm MINUS CRUSHED GRANULAR BASE COURSE		
	300 mm THICK – 75 mm MINUS CRUSHED GRANULAR SUBBASE COURSE		
HEAVY DUTY PAVEMENT STRUCTURE (ACCESS ROADS)	40 mm THICK – ASPHALT SURFACE LAYER (UPPER COURSE 2)		ON APPROVED FILL AND SUBGRADE
	45 mm THICK – ASPHALT BASE LAYER (LOWER COURSE 2)		
	150 mm THICK – 19 mm MINUS CRUSHED GRANULAR BASE COURSE		
	300 mm THICK – 75 mm MINUS CRUSHED GRANULAR SUBBASE COURSE		

32.1.2 EXECUTION

1. FOR RECOMMENDATIONS REGARDING THE SUBSURFACE CONDITIONS, SITE PREPARATION, AND THE PROPOSED ROAD STRUCTURE, REFER TO THE GEOTECHNICAL REPORT PRIOR TO THE START OF CONSTRUCTION.
2. SUBGRADE, GRANULAR SUBBASE, AND GRANULAR BASE MATERIALS SHALL BE COMPACTED TO AT LEAST 95.0% OF THEIR MODIFIED PROCTOR DRY DENSITY UNLESS NOTED OTHERWISE.
3. ALL LOOSE AND ORGANIC MATERIAL SHALL BE EXCAVATED AND REMOVED FROM THE ROADWAY.
4. THE ROAD BASE SHALL EXTEND A MINIMUM OF 0.3 m BEYOND THE SIDEWALK AND/OR CURB AND GUTTER, WHICHEVER IS GREATER AND FILLED TO THE LEVEL OF THE SIDEWALK OR CURB FOR SUPPORT.
5. ALL VALVES BOXES, MANHOLES, JUNCTION BOXES, ETC. WITHIN THE ROAD RIGHT OF WAY SHALL BE ADJUSTED TO FINISHED GRADE UNLESS OTHERWISE NOTED.
6. CHANGES IN GRADE SHALL BE FORMED WITH SMOOTH CURVES.
7. CATCHBASIN RIM ELEVATIONS SHALL BE SET 25 mm BELOW THE FINISHED GUTTER LINE GRADES. THE GUTTER AND ROAD SURFACE AREA TO BE SHAPED TO FORM A DISH AROUND THE INLET.
8. TIE-INS TO EXISTING PAVEMENT AND PAVEMENT RESTORATIONS SHALL BE MADE BY CUTTING BACK THE EXISTING PAVEMENT TO SOUND MATERIAL AS NECESSARY TO PRODUCE A NEAT VERTICAL FACE WITH STRAIGHT EDGE PRIOR TO PLACING HOT MIX ASPHALTIC CONCRETE. EXPOSED PAVEMENT SURFACES SHALL BE PAINTED WITH LIQUID ASPHALT AND HEATED TO 65 DEGREES CELSIUS. THE FINISHED PAVEMENT SURFACE SHALL BLEND IN SMOOTHLY WITH THE EXISTING PAVEMENT. THE EDGE OF PAVEMENT SHALL BE SAWCUT AND KEYED TO FORM A MINIMUM 200 mm WIDE BY 40 mm DEEP LAP JOINT WITH THE PROPOSED PAVEMENT UNLESS NOTED OTHERWISE OR AS DIRECTED BY THE ENGINEER.
9. PAVEMENT MARKINGS, LINE PAINTING, DIRECTIONAL LINES/ARROWS ETC. SHALL BE PLACED IN ACCORDANCE WITH THE ARCHITECTURAL SITE PLAN.

33 UTILITIES

33.1 SEWER SYSTEMS

33.1.1 PRODUCTS

PRODUCT	PROJECT SPECIFICATIONS	STANDARD DRAWINGS	ADDITIONAL INFORMATION
SEWERS	ASTM C-14, CLASS III (NON-REINFORCED) OR ASTM C-76, CLASS III (REINFORCED CONCRETE)	G4 – UTILITY TRENCH (MMCD)	PIPE MATERIAL FOR SEWER TO BE INSTALLED AS SHOWN ON THE DESIGN DRAWINGS. THE MINIMUM PIPE SIZE FOR THE STORM SEWER SHALL BE 300mm DIAMETER.
	SDR35 (PVC)		
MANHOLE	1050 mm DIA. UNLESS OTHERWISE NOTED	S1 - STANDARD AND SUMP MANHOLES (MMCD)	COVER MARKED "STORM SEWER" OR "SANITARY SEWER"
	TR18 FRAME AND COVER (STANDARD MANHOLE)		
	DOBNEY C-39 GRATE (CATCH BASIN MANHOLE)		600 mm SUMP IN CATCHBASIN MANHOLES
CATCH BASIN (CURB AND GUTTER - TOP INLET)	750 mm INSIDE DIA. PRECAST CONCRETE		INSTALL LEFT AND RIGHT GRATES ACCORDING TO FLOW DIRECTION
	DOBNEY B-23 GRATE DOBNEY (LEFT AND RIGHT)		
	B-24 TYPE 'D' FRAME		
CATCH BASIN (CURB AND GUTTER - SIDE INLET)	900 mm INSIDE DIA. PRECAST CONCRETE		INSTALL LEFT AND RIGHT GRATES ACCORDING TO FLOW DIRECTION
	DOBNEY B-23 GRATE DOBNEY (LEFT AND RIGHT) FOR CURB AND GUTTER		
	DOBNEY B-24 ADJUSTABLE FRAME AND HOOD (SIDE INLET) FOR CURB AND GUTTER		
CATCH BASIN (ASPHALT SURROUND – ROUND INLET)	600 mm INSIDE DIA. PRECAST CONCRETE	S11 – TOP INLET CATCHBASIN (MMCD)	
	DOBNEY B-26B FRAME AND GRATE		
LAWN DRAINS	300 mm INSIDE DIA. PRECAST CONCRETE (TYPE 1)	S12 - LAWN DRAINS (MMCD)	
	600 mm INSIDE DIA. PRECAST CONCRETE (TYPE 2)		
	DOBNEY D2A GRATE (TYPE 1)		
	DOBNEY B-22A GRATE (TYPE 2)		
CATCH BASIN AND LAWN DRAIN LEADS	PVC (SDR28)		
	200 mm DIA. (CATCH BASIN - SINGLE)		
	250 mm DIA. (CATCH BASIN - DOUBLE)		
	100 mm DIA. (LAWN DRAIN – TYPE 1)		
	150 mm DIA. (LAWN DRAIN – TYPE 2)		
SERVICE CONNECTIONS	PVC (SDR28)	S7 - SANITARY SEWER SERVICE CONNECTION (MMCD)	
	150 mm DIA. MIN. (STORM)		
	100 mm DIA. MIN. (SANITARY)	S8 - STORM SEWER SERVICE CONNECTION (MMCD)	
	STANDARD MANUFACTURED WYE FITTINGS		
INSPECTION CHAMBERS (100 mm TO 200 mm SERVICE)	LE-RON 70A 4x8 WLP-1 INSPECTION CHAMBER C/W 200mm DIA. PVC SDR35 RISER PIPE	S9 - INSPECTION CHAMBER FOR 100 TO 200 SANITARY SEWER CONNECTION (MMCD)	ADD 300 mm X 500 mm CONCRETE PULL BOX C/W CAST IRON LID MARKED "SANITARY" OR "STORM" FOR INSTALLATION IN DRIVEWAY AND ROAD
	GREEN LID (STORM)		
	RED LID (STORM)		
INSPECTION CHAMBERS (250 mm TO 375 mm SERVICE)	600 mm PRECAST CONCRETE RISER (H20 RATED) C/W D26-B FRAME AND SOLID COVER	S10 - INSPECTION CHAMBER FOR 250 TO 375 STORM SEWER CONNECTION (MMCD)	COVER MARKED "STORM" OR "SANITARY"
CLEANOUTS (ON-SITE)	SAME DIAMETER AS CONNECTING PIPE UP TO MAX. 150 mm DIA.	S6 - SEWER CLEANOUT (MMCD)	USE MANHOLE ON SEWERS 200 mm DIA. OR LARGER.
	SPACING AND LOCATION AS PER B.C. PLUMBING CODE		

33.1.2 EXECUTION

1. FINISHED RIM ELEVATION OF MANHOLES AND CLEANOUTS SHALL MATCH THE FINISHED ROAD GRADES AND ELEVATIONS.
2. MINIMUM COVER OVER MAINS AND SERVICE CONNECTIONS SHALL BE 1.0 m UNLESS NOTED OTHERWISE.
3. MAXIMUM GRADE SHALL BE 15.0% UNLESS PROVISIONS ARE MADE TO ANCHOR THE PIPE TO THE BOTTOM OF THE TRENCH WITH CONCRETE POURED IN PLACE. PIPE ANCHORS ARE TO BE INSTALLED AS PER MMCD STANDARD DRAWING NO. G8.
4. SERVICES SHALL BE INSTALLED FROM THE MAIN TO THE PROPERTY LINE AT A MINIMUM GRADE OF 2.0% UNLESS NOTED OTHERWISE.
5. SERVICES SHALL ENTER THE MAIN AT A POINT JUST ABOVE THE SPRINGLINE. CONNECTIONS TO NEW MAINS SHALL BE MADE USING WYE FITTINGS. CONNECTIONS TO EXISTING MAINS SHALL BE MADE USING SADDLES.
6. STORM SERVICES SHALL BE ABOVE THE HYDRAULIC GRADE LINE OF THE MINOR FLOW AT THE PROPERTY LINE.
7. SERVICES SHALL ALLOW FOR 600 mm COVER UNDER THE MINIMUM BUILDING ELEVATION (MBE) PLUS 2% GRADE FROM THE REAR OF THE HOUSE TO THE SEWER MAIN UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
8. SERVICE CONNECTIONS SHALL TERMINATE 1.0 m MIN. FROM THE BUILDING FACE. CONTINUATION OF THE BUILDING DRAIN BY THE BUILDING PLUMBING CONTRACTOR SHALL INCLUDE ANY STORM SUMPS REQUIRED IMMEDIATELY OUTSIDE THE PROPOSED BUILDINGS.

33.2 WATER SYSTEMS

33.2.1 PRODUCTS

PRODUCT	PROJECT SPECIFICATIONS	STANDARD DRAWINGS	ADDITIONAL INFORMATION
WATERMAINS (DUCTILE IRON)	AWWA C151, CLASS 50 OR PRESSURE CLASS 350 UNLESS OTHERWISE NOTED	G4 -UTILITY TRENCH (MMCD)	ALL FITTINGS AND JOINTS TO BE MECHANICALLY RESTRAINED
	CEMENT-MORTAR LINING (AWWA C104)		
WATERMAINS (PVC)	AWWA C900, DR18 (PRESSURE CLASS 235)	G4 -UTILITY TRENCH (MMCD)	ALL FITTINGS AND JOINTS TO BE MECHANICALLY RESTRAINED C/W TRACER WIRE
	MAX. 300 mm		
WATERMAIN ANCHORS	AS PER STANDARD DRAWING	G8 - PIPE ANCHOR BLOCKS (RMOW)	REQUIRED WHERE SLOPE IS 10% OR GREATER
GATE VALVES	RESILIENT-SEATED (AWWA C509)	W3 - VALVE BOX ASSEMBLY (RMOW)	NOTE TRACER WIRE
FIRE HYDRANTS	CANADA VALVE	W4 - FIRE HYDRANT INSTALLATION (RMOW)	C/W 100 mm PUMPER OUTLET WITH B.C. STANDARD THREAD, COUNTERCLOCKWISE OPENING WITH A STORZ CONNECTION. PAINT HYDRANT RED AND STORZ CONNECTION BLACK.
WATER SERVICES (SINGLE FAMILY)	38 mm POLYETHYLENE (AWWA C901) TO PRESSURE CLASS 160 (CSA B137.1) UNLESS OTHERWISE NOTED	W2a - WATER SERVICE CONNECTION (MMCD)	
WATER METER BOX (38 mm SERVICE)	MUELLER THERMAL-COIL 450 mm DIA.		
	MUELLER FLAT LOCKING LID C/W PENTAGON NUT LOCK		
WATER METER BOX (50 mm SERVICE)	BROOKS NO.66 (425 mm X 750 mm) CONCRETE METER BOX		
	CAST IRON READING LID NON-VEHICULAR AREAS; OR,		
	STEEL TRAFFIC COVER (VEHICULAR AREAS)		

33.2.2 EXECUTION

1. DEFLECT PIPE JOINTS TO A MAXIMUM ½ OF THE ALLOWABLE MANUFACTURER'S RECOMMENDATIONS.
2. THE MINIMUM COVER OF THE PROPOSED WATERMAIN SHALL BE 1.8 m WITH 0.3 m COVER OVER VALVE STEMS. VALVES LARGER THAN 400 mm DIAMETER MAY BE INSTALLED SIDEWAYS WITH A 90° STEM ADAPTER.
3. THE MINIMUM GRADE OF THE PROPOSED WATERMAIN SHALL BE 0.1%. THE MAXIMUM GRADE SHALL BE 10.0% UNLESS PROVISIONS ARE MADE TO ANCHOR THE PIPE TO THE BOTTOM OF THE TRENCH WITH CONCRETE POURED IN PLACE.
4. FIRE HYDRANT PUMPER PORT SHALL BE A MINIMUM OF 0.45 m ABOVE THE GROUND. ALL HYDRANT FLANGE ELEVATIONS TO BE INSTALLED 0.15 m ABOVE PROPOSED FINISHED GRADE AT HYDRANT.
5. ASSURANCE OF PROTECTION OF THE WATERMAIN:
   - 5.1. PARALLEL LINES: WATERMAIN SHOULD BE LAID AT LEAST 3 m (10 ft) HORIZONTALLY FROM ANY SANITARY OR STORM SEWER. WHERE THIS HORIZONTAL SEPARATION IS NOT POSSIBLE, THE BOTTOM OF THE WATERMAIN SHOULD BE AT LEAST 45 cm (18 in) ABOVE THE TOP OF THE SEWER AND SUFFICIENTLY TO ONE SIDE OF THE SEWER TO ALLOW REPAIRS WITHOUT DISTURBING THE WATERMAIN. IF THIS VERTICAL SEPARATION IS NOT POSSIBLE, THE SEWER SHOULD BE OF THE SAME SERVICE CAPABILITY AS THE WATERMAIN, WITH PRESSURE CLASS JOINTS DESIGNED TO REMAIN WATERTIGHT IF THE GROUNDWATER TABLE PERIODICALLY RISES ABOVE THE SEWER, AND ARE PRESSURE TESTED BEFORE BACKFILLING. OTHER PRECAUTIONS, SUCH AS A WATERMAIN WITH IMPROVED JOINTS AND HIGHER STRENGTH MAY BE NEEDED.
   - 5.2. CROSSINGS: WHERE A WATERMAIN CROSSES A SANITARY OR STORM SEWER, THE LINES SHOULD BE LAID WITH THE WATERMAIN CROSSING OVER THE SEWER AND WITH THE MIDDLE OF PIPE LENGTHS LOCATED AT THE CROSSING POINTS, TO MAXIMIZE THE SEPARATION BETWEEN JOINTS. WHERE A MINIMUM 3 m JOINT SEPARATION AND/OR A MINIMUM 45 cm CLEAR VERTICAL SEPARATION IS NOT POSSIBLE AT THE CROSSING, PRECAUTIONS TO IMPROVE WATER TIGHTNESS OF THE SEWER JOINTS AND STRUCTURAL IMPROVEMENTS SUCH AS HIGHER STRENGTH WATERMAIN AND/OR SEWER AT THE CROSSING AREA MAY BE NEEDED. SLEEVING, PIPE BRIDGING OR OTHER SUITABLE MEASURES MAY BE CONSIDERED. ALL JOINTS WITHIN 3 m OF THE CROSSING SHOULD BE EITHER WRAPPED WITH HEAT SHRINK OR PACKED WITH INERT PETROLEUM COMPOUND AND WRAPPED IN TAPE IN ACCORDANCE WITH ANSI/AWWA STANDARDS C209 AND C217-90.
   - 5.3. SERVICE CONNECTIONS: WHEREVER POSSIBLE, THE ABOVE CONSTRUCTION PRACTICES SHOULD ALSO BE APPLIED TO SERVICE CONNECTIONS.

33.3 TRACER WIRES

33.3.1 PRODUCTS

PRODUCT	PROJECT SPECIFICATIONS	STANDARD DRAWINGS	ADDITIONAL INFORMATION
TRACER WIRE	#12 AWG RWU90 SINGLE COPPER CONDUCTOR, XLPE INSULATION AS SUPLIED BY SOUTHWIRE		INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS

33.3.2 EXECUTION

1. ALL INSTALLATION REQUIREMENTS OF THE MANUFACTURER SHALL BE APPLICABLE TO THE INSTALLATION OF TRACER WIRE, TRACER BOXES, GROUNDING ANODES AND OTHER APPURTENANCES ASSOCIATED WITH THE INSTALLATION OF THIS COMPONENT.
2. TRACER WIRES SHALL BE INTERCONNECTED AT MAINLINE TEES AND CROSSES WITH LOCKABLE CONNECTORS. CONNECTORS SHALL BE FILLED WITH DIELECTRIC SILICON TO SEAL ALL UNINSULATED WIRE EXPOSURE.
3. COMPLETE TRACER WIRE SPLICES AND REPAIRS USING SPLICE KIT.
4. INSTALL TRACER WIRES AT THE 4 O'CLOCK POSITION AND SECURE TO THE PIPE AT 2.0 m INTERVALS.
5. GROUND TRACER WIRES AT ALL DEAD ENDS AND STUBS USING GROUNDING ANODE.

RE-ISSUED FOR TENDER

No.	DATE	REVISION	BY
4	2025-02-26	RE-ISSUED FOR TENDER	KK
3	2025-01-29	ISSUED FOR TENDER	BM
2	2024-12-11	REISSUED FOR CLIENT REVIEW	JM
1	2024-10-02	ISSUED FOR CLIENT REVIEW	KK

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R.F. BINNIE & ASSOCIATES LTD.
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Squamish, BC V8B 0G2
TEL 604 892 8222
BINNIE.com

CLIENT
RESORT MUNICIPALITY OF WHISTLER
4325 BLACKCOMB WAY, WHISTLER, BC V8B0X3

DRAWING DESCRIPTION
S115 - BLUEBERRY PUMP STATION
BLUEBERRY DRIVE, WHISTLER, BC
GENERAL CONSTRUCTION NOTES - CONT. #: 5330-02-1035

SURVEYED BY BINNIE
DRAWN BY JM
DESIGNED BY JM
CHECKED BY CM

SCALES
NOT TO SCALE

EGBC Permit To Practice #1001128
C. MADER
54586
2025-02-26
EGBC PERMIT No. 1001128

DATE 2024-09-04
DRAWING No.
23-0937-D1
SHEET 2 **OF** 2
REV. 4
DESTROY ALL PRINTS BEARING PREVIOUS No.

PLOTTED: 2025-02-26 11:57:46 AM BY: KKOSTUR LAST SAVED BY: BMENDOZA
FILE: \\BC-SQM-FILE002.OFFICE.BINNIE.COM\PROJECTS\2023\23-0937\00 - CAD FILES\DWG\FINAL\23-0937-DET.DWG LAYOUT: D1