

BRITANNIA BEACH SOUTH
SITE DEVELOPMENT AND SERVICING
VOL 4 OF 5 - DRAWINGS

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Client – pdf

Britannia Beach South

Site Development and Servicing

Vol 4 of 5 - Drawings

Submitted to Client:

Tiger Bay Development Corporation

Physical address:

27154 Sea-To-Sky Highway 99, Britannia Beach, BC, V0N 1J0

office: 604-896-2339, fax: 604-896-2336

Mailing and delivery address:

General Delivery, Box Number 195 27154 Sea-to-sky Highway 99 Britannia Beach, BC, V0N 1J0

Attn: Long Cheng, Cell: 604-354-5908, long@southbritannia.com

Attn: Tony Petricevic, vcel: 778-708-9111, office@southbritannia.com

Prepared by Consultant:

P.S.Turje & Associates Ltd.

1333 Inglewood Avenue, West Vancouver, BC, V7T 1Y8

Attn: Paul Turje, P.Eng., paul@turje.ca, 604-619-1407

Submitted by:

Paul Turje, P.Eng.

Submission Date:

2020-05-31



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Dwg 1 - Orthophoto

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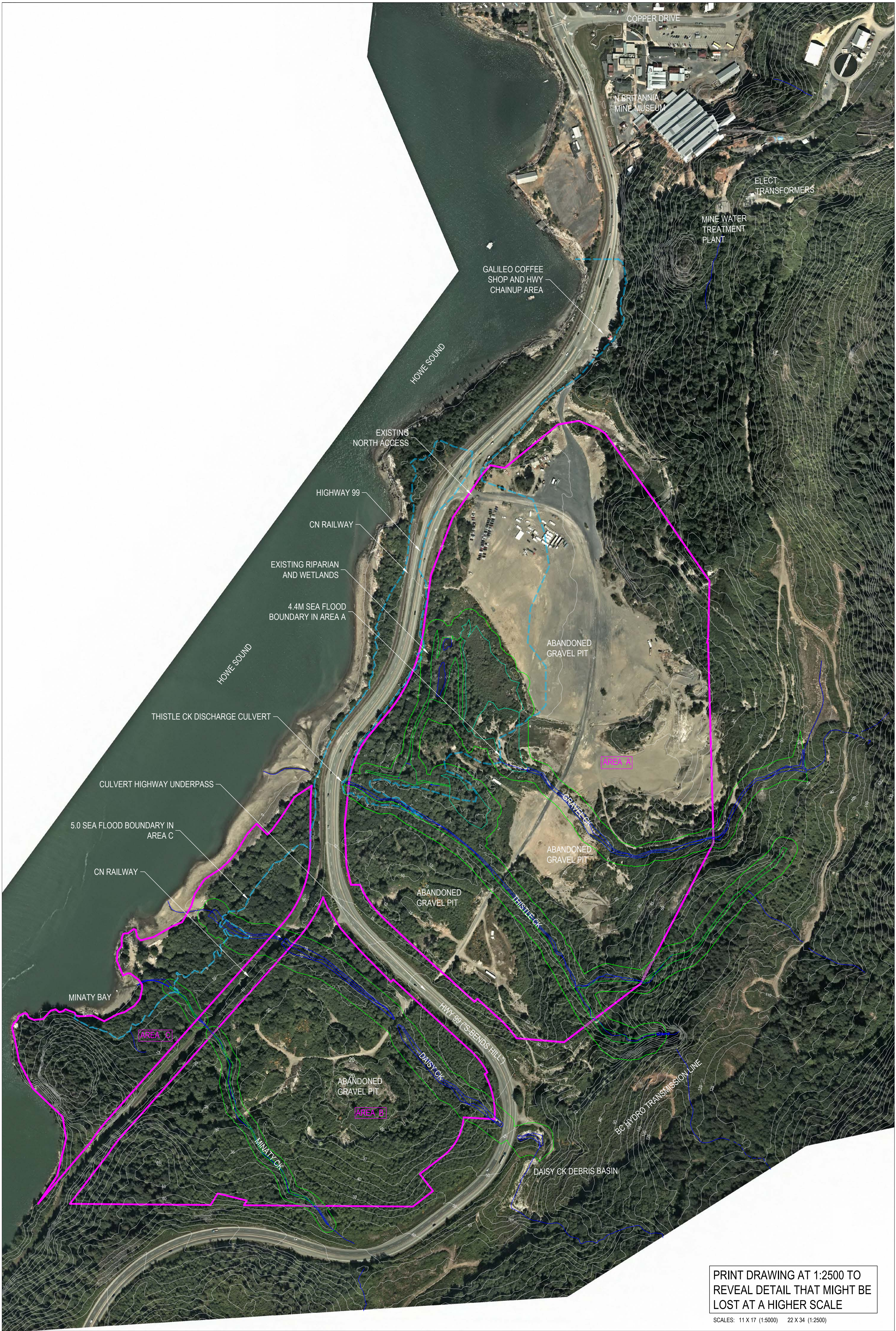
Dwg 3 - Site Plan, Interim

Dwg 4 - Site Plan, Final

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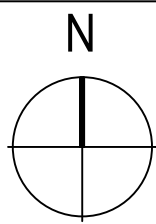
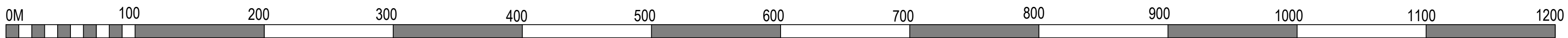
Dwg 7 - Easements, Rights of Way and Setbacks Plan



PRINT DRAWING AT 1:2500 TO
REVEAL DETAIL THAT MIGHT BE
LOST AT A HIGHER SCALE

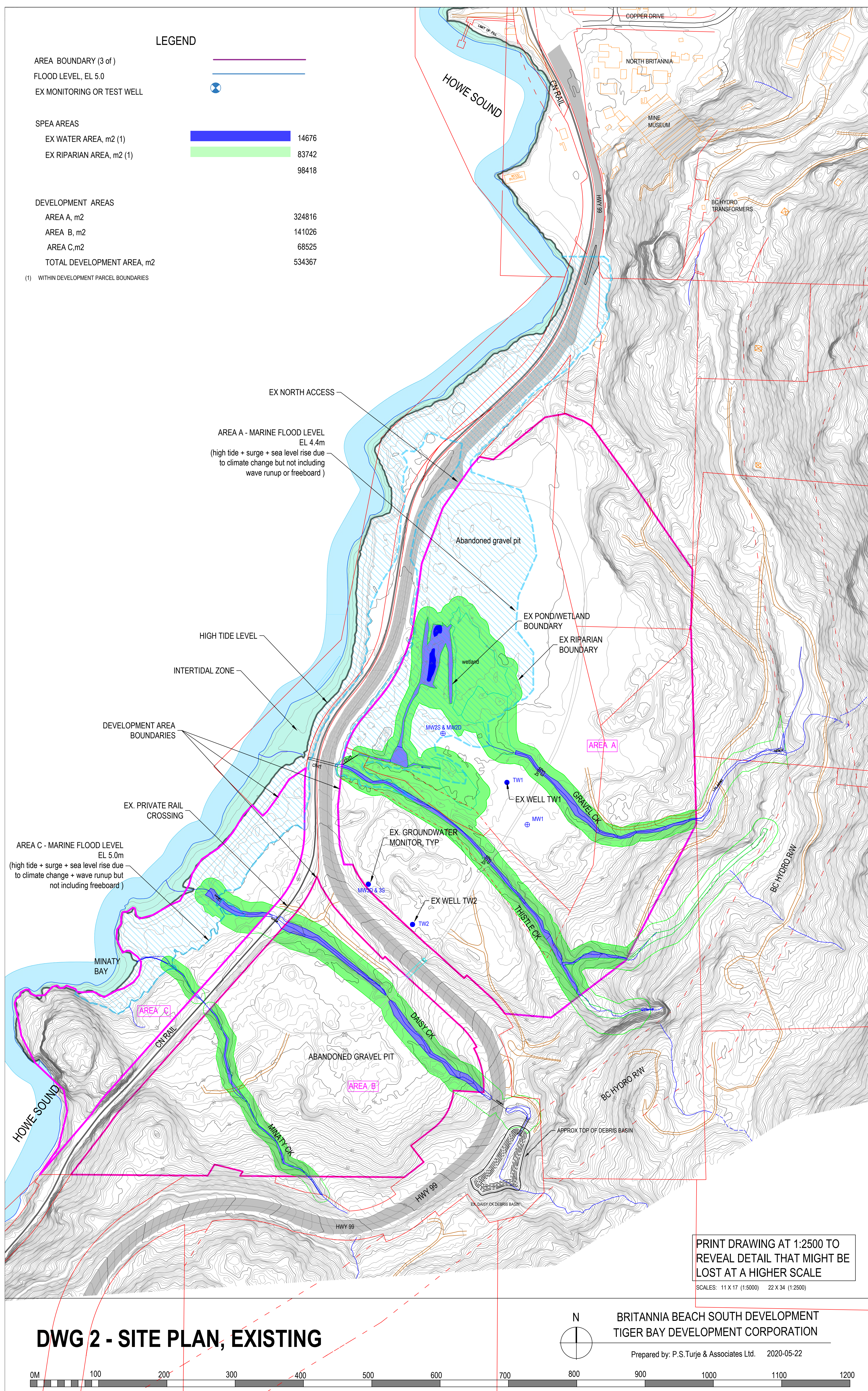
SCALES: 11 X 17 (1:5000) 22 X 34 (1:2500)

DWG 1 - ORTHOPHOTO



BRITANNIA BEACH SOUTH DEVELOPMENT
TIGER BAY DEVELOPMENT CORPORATION

Prepared by: P.S.Turje & Associates Ltd. 2020-05-22



1. **SCOPE OF DRAWING:** THIS DRAWING ILLUSTRATES THE PHASE 1 DEVELOPMENT, REPORT TO ENGINEERING REPORT FOR DESCRIPTION, FACILITIES INCLUDE WAVEGARDEN, BREW PUB, 20 CABINS AND SERVICE BUILDINGS, THE ENTIRE DEVELOPMENT IS ON PRIVATE PROPERTY. ALL ROADS AND UTILITIES ARE PRIVATE.
2. **SEWERAGE:** GRAVITY SEWERS DISCHARGE TO FUTURE PERMANENT SEWAGE LIFT STATION (L/S) THAT USES A 3000 MM WET WELL, ELECTRICAL KIOSK, STANDBY GENERATOR, WATER BACK-FLOW PREVENTER KIOSK & SEWER FLOW METER KIOSK. SEWER FORCE MAIN FROM L/S IS ROUTED ALONG PROPERTY BOUNDARY TO BRITANNIA NORTH AND THEN ALONG HWY 99 RIGHT-OF-WAY, ATTACHED TO BRITANNIA CK HIGHWAY BRIDGE, THEN TO WASTEWATER TREATMENT PLANT (WWTP) UPGRADED BY TIGER BAY DEV CORP. USE MINIMUM PIPE SIZE FOR FORCE MAIN TO REDUCE SEPTICITY/ODOUR OF DISCHARGE AT WWTP. SEWER FORCE MAIN ROUTED IN COMMON TRENCH WITH GRAVITY SEWER WHERE POSSIBLE.
3. **WATER:** WATER SUPPLY IS PROVIDED BY EXISTING TEST/PRODUCTION WELLS. EACH WELL OUTFITTED WITH 25 LPS PUMP WITH STANDBY GENERATOR & ELECTRICAL PANEL. UNTREATED RAW WATER IS PUMPED THROUGH RAW WATER MAIN TO WAVEGARDEN AND CANTINERIZED WATER TREATMENT PLANT. TREATED WATER IS STORED IN A GROUND LEVEL BOLTED STEEL RESERVOIR WITH STORAGE FOR TWO DAYS CONSUMPTION LOCATED IN PUBLIC WORKS YARD FIRE PROTECTION IS PROVIDED BY THE WELL PUMPS PUMPING INTO THE PH2 TREATED WATER MAIN, DOMESTIC FLOW FIRE FOR PH1. 1 IS DISCHARGED THROUGH THE TREATMENT PLANT INTO A COMMON TRENCH WITH SEWER MAINS.
4. **DRAINAGE:** SITE LOW POINT IS THE SMALL DETENTION POND BESIDE THE WORKS YARD AND THE WETLAND POND SYSTEM AT ELEVATION AT NOMINAL 4.0 M ELEVATION. ACCESS ROAD AROUND WAVEGARDEN IS NOMINAL 6.0 M ELEVATION. ROADSIDE DITCHES DRAIN TO DETENTION POND.
5. **ROAD:** THE NORTH ACCESS HIGHWAY INTERSECTION USES THE EXISTING INTERSECTION CONFIGURATION WITH LARGER RADIUS RIGHT IN AND RIGHT OUT MERGE LANES THAT WILL BE ABANDONED WHEN THE PHASE 2 INTERSECTION IS CONSTRUCTED. THE MAIN PRIVATE ROAD ON SITE USES TWO PAVED 3.0M TRAVELLED LANES, 0.6M GRAVEL SHOULDERS WITH DITCHES, PAVEMENT IS SEALCOAT RATHER THAN HOT MIX ASPHALT. PRIVATE SERVICE ROAD TO WORKS YARD IS 5.0 M GRAVEL SURFACE WITH 0.6M GRAVEL SHOULDERS AND DITCHES BOTH SIDES. PRIVATE ACCESS ROAD FROM ROUNDABOUT TO THISTLE CK BRIDGE IS 5M WIDE GRADED EARTH ROAD USING NATIVE MATERIAL. NO SHOULDERS, ELEVATED 0.5M ABOVE EXISTING GROUND SURFACE, NO DITCHES.
6. **POWER:** POWER AND COMMUNICATIONS OVERHEAD.
7. **FLOOD HAZARD:** SEA FLOOD IS MITIGATED BY BUILDING ALL OCCUPIED STRUCTURES ABOVE THE FLOOD CONSTRUCTION LEVEL OF 5.0 M ELEVATION. ROAD SURFACES WILL BE BUILT ABOVE THE FLOOD LEVEL OF 4.4 M. STREAM FLOOD HAZARD OF GRAVEL CREEK IS MITIGATED BY BUILDING THE STREAM BED SUFFICIENTLY BELOW THE SURROUNDING LAND TO CONTAIN THE 1:200 YEAR FLOOD. SETBACK CONTAINMENT DYKES ARE USED IN AREAS THAT MIGHT BE SUBJECT TO STREAM AVULSION. THISTLE AND DAISY CREEKS DO NOT IMPACT THE PROPOSED PHASE 1 DEVELOPMENT AREA.
8. **DEBRIS FLOOD HAZARD** OF GRAVEL CK IS MITIGATED BY CONSTRUCTION OF A SMALL DEBRIS BASIN IMMEDIATELY ABOVE THE STEEP SLOPE LEADING TO THE DEVELOPMENT AREA. THE DEBRIS BASIN WILL CONTAIN THE ESTIMATED 1:2500 YEAR FLOOD LOW FLOW VOLUME. IT WILL CONSIST OF A DAM WITH OVER 1.0M CULVERTS, OR A STEEP CUT AND A CHANNEL WITH DEBRIS NETS ANCHORED INTO THE CHANNEL WALL. THE TAIL END OF A DEBRIS FLOWS ON DAISY CK AND THISTLE CK MIGHT EXCEED AS FAR AS THE WAVEGARDEN SITE BUT WILL BE MITIGATED BY RAISED CONSTRUCTION OF THE WAVEGARDEN AND THE SERVICE ROAD TO THE PUBLIC WORKS YARD.
9. **STREAM EROSION HAZARD** FOR GRAVEL CREEK IS MITIGATED BY AN ARMORED CHANNEL DOWN THE STEEP SLOPE AND ARMORED SETBACK DYKES WHERE THERE IS A POTENTIAL OF STREAM AVULSION.
10. **WETLAND AND RIPARIAN AREAS** ARE RECONSTRUCTED AS SHOWN. PHASE 1 RECONSTRUCTION WILL REQUIRE A NET LOSS OF RIPARIAN AREA THAT WILL BE COMPENSATED BY EXPANSION OF OTHER RIPARIAN AREAS AND CONSTRUCTION OF IMPROVED RIPARIAN AREAS AT THE WETLANDS WITH A 4 TO 5M DEEP WETLAND POOL.

————— EDGE OF ROAD

_____ EDGE OF ROAD

TRAU

— FIRE SUPPLY USING FUTURE DISTRIBUTION MAIN (UNTREATED)

----- WATER SUPPLY / FIRE SUPPLY FROM WELLS TO
SURF POOL FACILITIES AND BREW PUB(UNTREATED)

--- 100 MM DIA. PH.1 WATER DISTRIBUTION (TREATED) & FUTURE IRRIGATION.

 SEWER GRAVITY

----- SEWER FORCE MAIN

--- TRAINING BERM

- PRODUCTION WATER WELL

MW • MONITORING WELL

CABIN OR GLAMPING SITE

 PROPOSED BUILDING

FINAL - RECONSTRUCTED AND ENHANCED WETLAND AND 4M DEEP POOL REPLACES EXISTING WETLAND AND SHALLOW POOLS

INTERIM: RETAIN EXISTING

FINAL - REBUILT RIPARIAN
TO FUTURE BOUNDARIES

FINAL - INSTALL PERMANENT LEVEL LOGGERS
IN THREE EXISTING MONITORING WELLS

INTERIM - EX.WELL USED AS
PHASE 1 PRODUCTION WELL

FUTURE LODGE

FUTURE PARK

FUTURE RESORT AREA

AREA D

N

BRITANNIA BEACH SOUTH DEVELOPMENT
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PRINT DRAWING AT 1:2500 TO
REVEAL DETAIL THAT MIGHT BE
LOST AT A HIGHER SCALE

SCALES: 11 X 17 (1:5000) 22 X 34 (1:2500)

DWG 3 - SITE PLAN, INTERIM

A horizontal timeline diagram representing a 1200-minute period. The timeline is marked with numbers from 0 to 1200 in increments of 100. The area from 0 to 100 is shaded with a grey and white checkered pattern. The area from 1000 to 1200 is shaded solid grey. A red dashed line is drawn at the 400-minute mark. The text '0M' is at the start, and '100' is at the end of the first shaded segment.

NOTES:

- SCOPE OF DRAWING:** THIS DRAWING ILLUSTRATES THE FULL BUILT-OUT DEVELOPMENT. REFER TO ENGINEERING REPORT FOR DESCRIPTION. THE SITE PROVIDES ACCESS AND UTILITIES TO LARGE DEVELOPMENT PARCELS WHICH ARE IN TURN SERVICED BY DEVELOPERS. ROAD AND UTILITY CONNECTION LOCATIONS TO DEVELOPMENT PARCELS WILL BE PLANNED AND PROVIDED BY DEVELOPERS. ALL FEATURES ARE CONCEPTUAL AND SUBJECT TO DETAILED DESIGN AND REVISION.
- SEWERAGE:** GRAVITY SEWERS DISCHARGE TO SEWAGE LIFT STATION (LS) THAT USES A 3000 MM WET WELL, ELECTRICAL KIOSK, STANDBY GENERATOR, WATER BACK-FLOW PREVENTER KIOSK, SEWER FLOW METER KIOSK. SEWER FORCE MAIN FROM LS IS ROUTED ALONG PROPERTY BOUNDARY TO BRITANNIA NORTH AND THEN ALONG HWY 99 RIGHT-OF-WAY, ATTACHED TO BRITANNIA CK HIGHWAY BRIDGE, THEN TO UPGRADED WASTEWATER TREATMENT PLANT (WWTP). USE MINIMUM PIPE SIZE FOR FORCE MAIN TO REDUCE SEPTICITY/ODOUR OF DISCHARGE AT WWTP. SEWER FORCE MAIN ROUTED IN COMMON TRENCH WITH GRAVITY SEWER WHERE POSSIBLE.
- WATER:** WATER SUPPLY IS PROVIDED BY EXISTING TEST/PRODUCTION, ONE NEW WELL AND ONE REPLACEMENT WELL. EACH WELL IS OUTFITTED WITH A 25 US PUMP WITH STANDBY GENERATOR ELECTRICAL PANEL. MAXIMUM PUMPING CAPACITY IS LIMITED TO 75 US TO NOT EXCEED STATUTORY LIMIT FOR ENVIRONMENTAL ASSESSMENT. UNTREATED RAW WATER FROM WELLS IS PUMPED THROUGH RAW WATER MAIN TO WAVEGARDEN AND WATER TREATMENT PLANT. TREATED WATER IS PUMPED TO TWO HILL SIDE RESERVOIRS.
- DRAINAGE:** SITE LOW POINT IS THE WETLAND AND STREAM COMPLEX BESIDE HWY 99. DRAINAGE WORKS ARE GRADED TO THESE LOW AREAS. ALL DEVELOPMENT PARCELS WILL LIMIT POST DEVELOPMENT DISCHARGE TO PREDEVELOPMENT DISCHARGE. DRAWING INDICATES POSSIBLE DRAINAGE PATHWAYS AND ARE SUBJECT TO DETAILED DESIGN.
- ROAD:** MAIN COLLECTOR ROAD USES 22M WIDE R/W WITH 40 KM/HR SPEED LIMIT FOR IMPROVED SAFETY AND LIVEABILITY. COLLECTOR ROAD INCLUDES MULTI-USE PATH ON EAST SIDE AND TREED BOULEVARDS BOTH SIDES.
- POWER:** POWER AND COMMUNICATIONS WILL BE UNDERGROUND.
- STEEP SLOPES:** STEEP SLOPES AT THE EASTERN EDGES OF THE DEVELOPMENT AREAS WILL BE REGRADED TO A MINIMUM 2:1 SLOPE AND REVEGETATED.
- FLOOD MITIGATION:** SEA FLOOD IS MITIGATED BY LOCATING ALL STRUCTURES ABOVE THE FLOOD CONSTRUCTION LEVEL OF 5.6M AND ALL ROADS ABOVE THE FLOOD LEVEL OF 5.0M ELEVATION. STREAM FLOOD IS MITIGATED BY CONTAINING THE 1200 YEAR FLOOD IN THE STREAM CHANNEL, OR BETWEEN THE SETBACK DYKES. STREAM BED EROSION OF GRAVEL CREEK ON THE STEEP SLOPE IS MITIGATED BY CONSTRUCTING AN ARMORED CHANNEL DOWN THE STEEP SLOPE.
- DEBRIS FLOW HAZARD MITIGATION:** DEBRIS FLOW HAZARDS FOR GRAVEL AND THISTLE CREEKS ARE MITIGATED BY CONSTRUCTION OF SMALL DEBRIS CATCHMENT BASINS LOCATED IMMEDIATELY UPSTREAM OF THE STEEP SLOPES LEADING TO THE DEVELOPMENT SITE AND BY USE OF ARMORED DEFLECTION BERMS IN AREAS OF POTENTIAL CHANNEL AVULSION. DEBRIS FLOW HAZARD FOR DAISY CREEK IS MITIGATED BY THE EXISTING MINISTRY OF TRANSPORTATION AND HIGHWAYS DEBRIS BASIN WHICH CAN CONTAIN THE 12,500 YEAR RETURN PERIOD DEBRIS VOLUME. CLEAR WATER OVERFLOWS OR DEBRIS FLOW VOLUMES IN EXCESS OF THE 12,500 YEAR EVENT WILL BE DEFLECTED AWAY FROM THE DEVELOPMENT USING A DEFLECTION BERM THAT RETAINS THE OVERFLOW WITHIN THE HIGHWAY RIGHT OF WAY. IN THE UNLIKELY EVENT THAT AN OVERFLOW IS NOT RETAINED WITHIN THE HIGHWAY, THE DEVELOPMENT HAS LOCATED A SPORTS FIELD, FIELD HOUSE AND COMMUNITY BUILDING IN THE POTENTIAL OVERFLOW AREA THAT WILL ACT AS A SECONDARY DEBRIS BASIN RETAINED BY THE ROAD EMBANKMENT LEADING TO THE HIGHWAY UNDERPASS TUNNEL.
- ENVIRONMENTAL MITIGATION AND COMPENSATION:** CONSISTS OF WIDENED AND ENHANCED RIPARIAN (SPEA) BORDERS AROUND CREEKS AND AN IMPROVED WETLAND POND BESIDE THE HIGHWAY. POST DEVELOPMENT SPEA IS 102% OF NATURAL SPEA.
- SPOT ELEVATIONS** ARE CONCEPTUAL TO PROVIDE AN INDICATION OF GRADING CONCEPT.

LINE LEGEND:

- EDGE OF ROAD
- LEGAL BOUNDARY (EXISTING AND PROPOSED)
- PATH
- TRAIL
- WATER DISTRIBUTION (TREATED)
- WATER SUPPLY (UNTREATED)
- SEWER GRAVITY
- SEWER FORCE MAIN
- STORM SEWER / DRAIN
- TRAINING BERM
- STREAM BED ARMOURING

SYMBOL LEGEND

- PRODUCTION WATER WELL
- MONITORING WELL
- CABIN OR GLAMPING SITE
- PROPOSED BUILDING
- DETENTION POND
- DRAINAGE FLOW PATH
- DITCH
- ROAD SLOPE / MAJOR DRAINAGE FLOW PATH

LAND USE

- STREAM / WETLAND (15,840 m2)
- ENVIRONMENTALLY SENSITIVE (RIPARIAN) (84,559 m2)
- NATURAL (36,546 m2)
- PARK (58,597 m2)

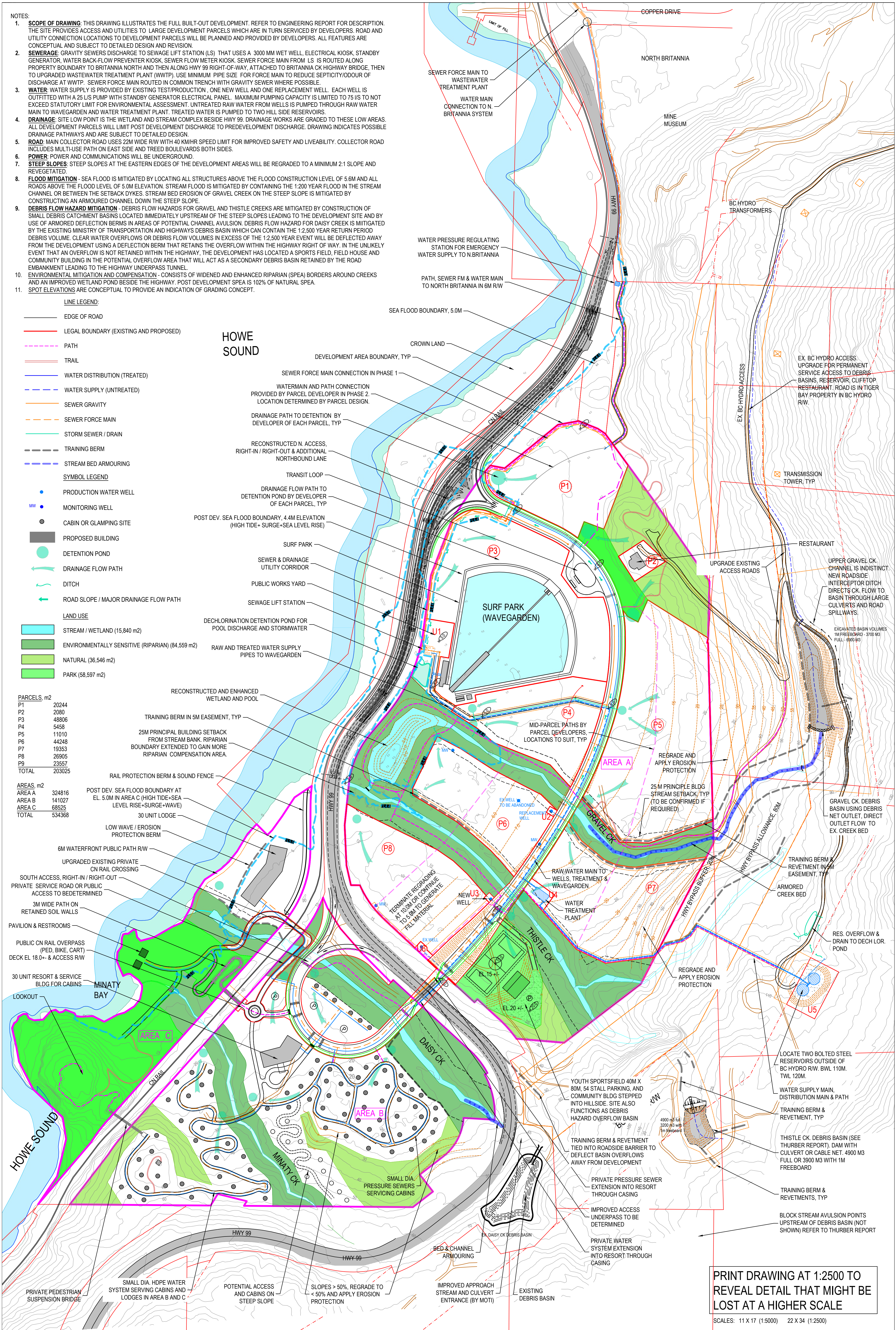
PARCELS, m2

P1	20244
P2	2080
P3	48806
P4	5458
P5	11010
P6	44248
P7	19353
P8	28905
P9	23557
TOTAL	203025

AREAS, m2

AREA A	324816
AREA B	141027
AREA C	68525
TOTAL	534368

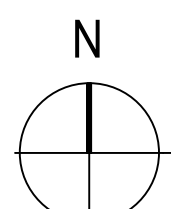
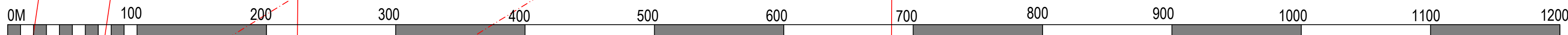
HOWE SOUND



PRINT DRAWING AT 1:2500 TO REVEAL DETAIL THAT MIGHT BE LOST AT A HIGHER SCALE

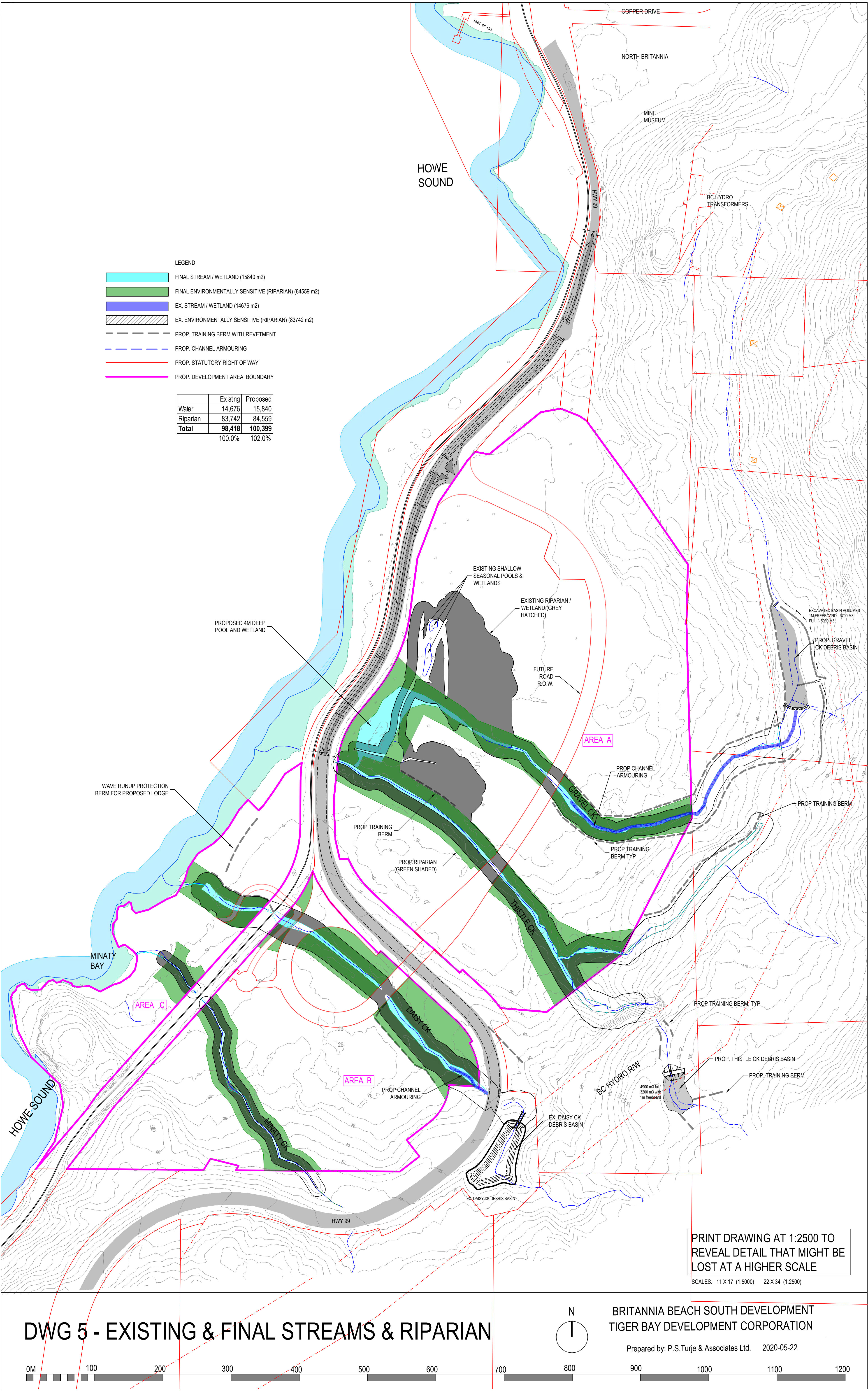
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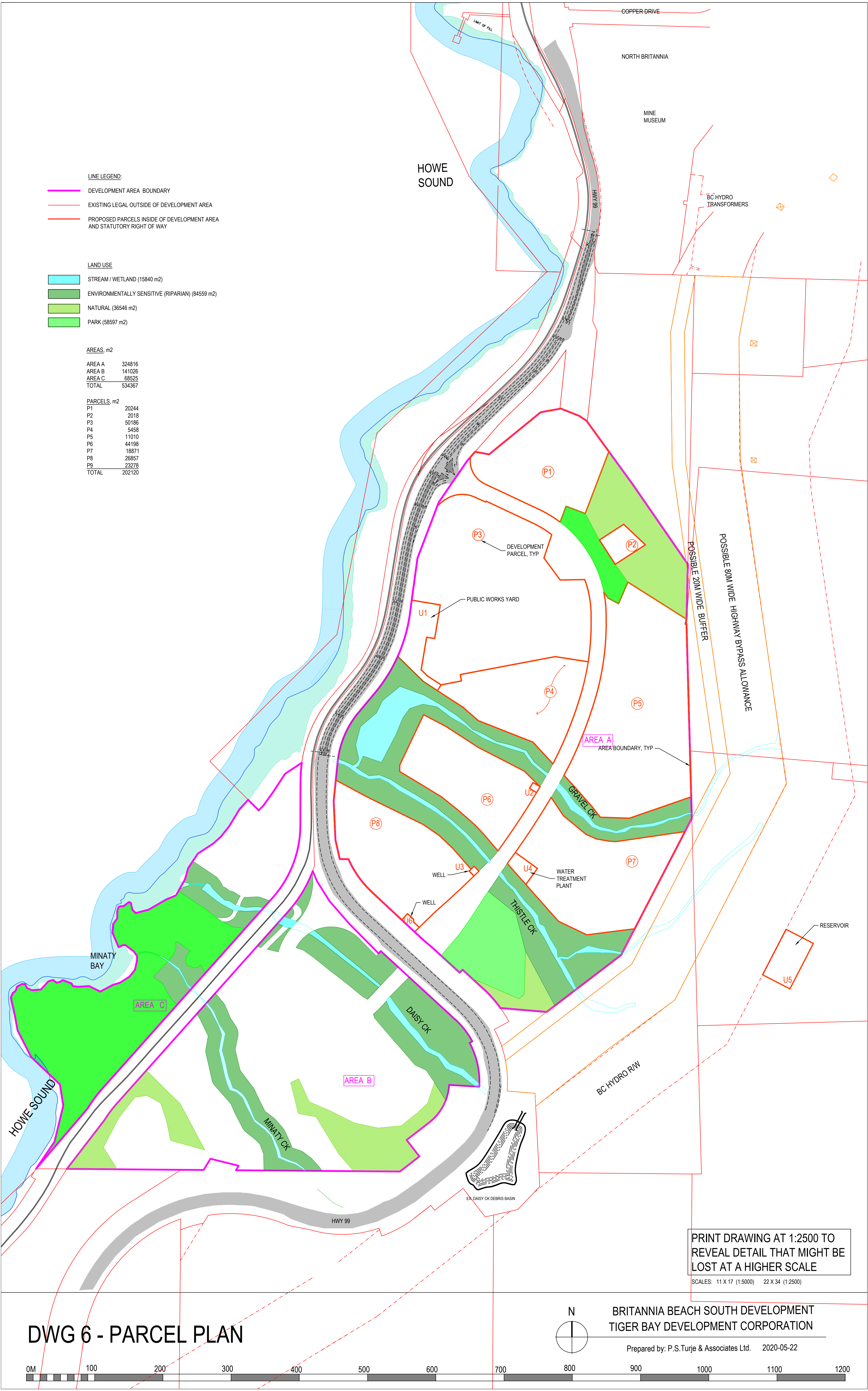
DWG 4 - SITE PLAN, FINAL

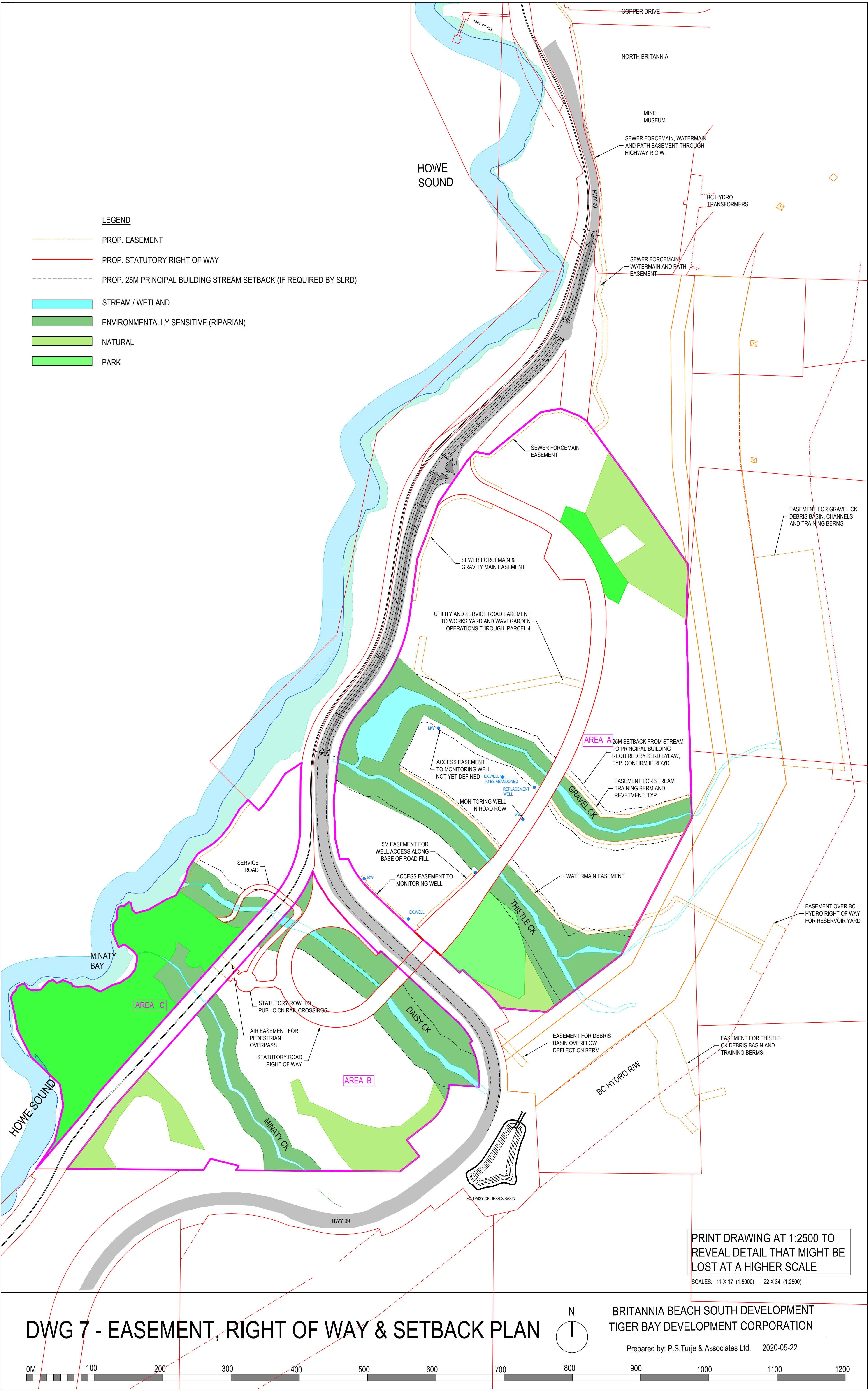


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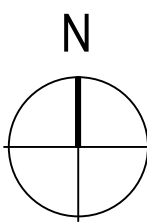
LEGEND

- PROP. EASEMENT
- PROP. STATUTORY RIGHT OF WAY
- PROP. 25M PRINCIPAL BUILDING STREAM SETBACK (IF REQUIRED BY SLRD)
- STREAM / WETLAND
- ENVIRONMENTALLY SENSITIVE (RIPARIAN)
- NATURAL
- PARK

PRINT DRAWING AT 1:2500 TO
REVEAL DETAIL THAT MIGHT BE
LOST AT A HIGHER SCALE

SCALES: 11 X 17 (1:5000) 22 X 34 (1:2500)

DWG 7 - EASEMENT, RIGHT OF WAY & SETBACK PLAN



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