



DEVELOPMENT VARIANCE PERMIT DVP #24-04

1. This Development Variance Permit (DVP) #24-04 (the "Permit"), issued pursuant to s. 498 of the *Local Government Act*, applies only to the following property:

Civic address: 2751 Production Way

Legal Description: PID: 000-593-915, Lot 313 District Lot 56 Group 1 NWP66423

(the "**Lands**")

2. This Permit varies the following sections of the *Burnaby Zoning Bylaw, 1965*, (the "**Zoning Bylaw**"), but only to the extent necessary to allow for the construction of an over height retaining wall substantially in accordance with what is outlined in bold clouding, and of varying heights along its length as shown, on the plans attached as Schedule A to this Permit:
 - Section 6.14.1 by increasing the permitted retaining wall height from 1.2 m to up to 9.5 m.
3. This Permit shall lapse if the owner does not substantially start any construction with respect to which this Permit is issued, within two (2) years of issuance of this Permit.
4. This Permit is not a building permit, sign permit, preliminary plan approval, or a subdivision approval.

AUTHORIZING RESOLUTION PASSED BY COUNCIL ON DAY OF , 20

THIS PERMIT IS HEREBY ISSUED THIS DAY OF , 20



GREATER VANCOUVER WATER DISTRICT

ISSUED FOR BUILDING PERMIT

TENDER NO. XX-XXXX

**PRODUCTION WAY OPERATIONS CENTER
RETAINING WALL AT 2751 PRODUCTION WAY**

District File: W-XXXX

NOVEMBER 2024

Schedule A - DVP# 24-04

DEVELOPMENT VARIANCE PERMIT
IS NOT A BUILDING PERMIT
BUILDING PERMIT MUST BE APPLIED FOR
SEPARATELY

**CITY OF BURNABY
PLANNING DEPARTMENT**

Schedule A

DVP#: 24-04

Address: 2751 Production Way

Variance:
Vary the permitted retaining wall height
from 1.2m to 9.5m at the highest point.



Stantec

500-4515 Central Blvd.
Burnaby BC Canada V5H 0C6
Tel: (604) 587-8400
www.stantec.com

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1. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS, CORPORATION STANDARDS, APPLICABLE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MCMCD), AND LOCAL, PROVINCIAL, AND FEDERAL REQUIREMENTS.
2. MAINTAIN COPIES OF THE ABOVE DOCUMENTS ON SITE AND ENSURE THAT ALL TRADES ARE THOROUGHLY FAMILIAR WITH THE APPLICABLE SECTIONS OF THESE DOCUMENTS.
3. ENSURE THAT ALL APPROVALS REQUIRED FOR THE PROPOSED WORKS HAVE BEEN OBTAINED FROM ALL AUTHORITIES AND AGENCIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS THAT MAY BE REQUIRED BY THE CITY OF BURNABY OR OTHER AGENCIES AND UTILITY COMPANIES FOR WORK.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY FOR THE PROJECT. SITE SAFETY SHALL AT A MINIMUM BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CORPORATION, WORKSAFE BC, AND THE CITY BURNABY. SITE SAFETY REQUIREMENTS SHALL ALSO BE IN ACCORDANCE WITH THE REQUIREMENTS OF UTILITY COMPANIES FOR WORK LOCATED ADJACENT TO OR NEAR THE UTILITY COMPANIES' WORKS. IN THE EVENT OF A CONFLICT OR DIFFERENCE IN STANDARDS BETWEEN SITE SAFETY REQUIREMENTS, THE MORE STRINGENT REQUIREMENT OR REQUIREMENTS SHALL APPLY.
5. THE LOCATIONS OF EXISTING SERVICES ARE BASED ON TOPOGRAPHIC SURVEY DATA AND RECORD DRAWINGS AND HAVE NOT BEEN VERIFIED. VERIFY THE LOCATION OF ALL THE EXISTING SERVICES PRIOR TO ANY CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES, CONFLICTS, OR OMISSIONS.
6. PROTECT, PRESERVE AND USE EXTREME CARE WHEN WORKING NEAR EXISTING SERVICES, UTILITIES, AND ABOVE AND BELOW GROUND FACILITIES, STRUCTURES, AND WORKS. THE CONTRACTOR SHALL REPAIR, REPLACE OR MAKE GOOD TO EXISTING CONDITION OR BETTER ANY DISTURBANCES TO THE SATISFACTION OF THE OWNER OF THE AFFECTED SERVICE OR UTILITY AND THE ENGINEER, AT THE CONTRACTOR'S OWN EXPENSE.
7. NOTIFY ALL APPROPRIATE PARTIES, THE CORPORATION AND ITS REPRESENTATIVE, CITY OF BURNABY, AND WHERE APPLICABLE, BC HYDRO, TELUS, FORTIS BC, AND THE CABLE COMPANY 48 HOURS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
8. PROVIDE WRITTEN NOTICE TO ALL PARTIES, BUSINESSES AND OFFICES, AFFECTED BY CONSTRUCTION OF THIS PROJECT AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. COPIES OF THE NOTICE SHALL BE PROVIDED TO THE CORPORATION, THE ENGINEER AND THE CITY OF BURNABY.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION THAT MAY BE REQUIRED WHEN WORKING ON OR NEAR CITY OF BURNABY WORKS AND FACILITIES AND UTILITY COMPANIES' FACILITIES. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS, IF REQUIRED, FOR THE INSPECTION OF ALL REQUIRED SERVICE AND UTILITY CONNECTIONS.
10. SUMMARY
 - 10.1. THE OWNER OF THE PROJECT IS METRO VANCOUVER.
 - 10.2. THE OWNER'S REPRESENTATIVE IS STANTEC CONSULTING LTD. (STANTEC). TEL.: (604) 436-3014. FAX: (604) 436-3752. #500 - 4515 CENTRAL BLVD, BURNABY, BC V5H 0C6 (604) 436-3014
11. GEOTECHNICAL ENGINEER: ADAM MCINTYRE, PENG
adam.mcintyre@stantec.com

CIVIL ENGINEER: CARTER CHAN, PENG
carter.chan@stantec.com

- 10.3.1. CLEARING AND GRUBBING OF VEGETATION.
- 10.3.2. REMOVAL OF THE EXISTING SURFICIAL FEATURES AND MATERIALS INCLUDING LANDSCAPING, ASPHALT AND CONCRETE, AND SITE INFRASTRUCTURE.
- 10.3.3. EXCAVATION AND REMOVAL OF ANY BURIED ABANDONED OR DECOMMISSIONED INFRASTRUCTURE AND MATERIALS (E.G., FOUNDATIONS, CONCRETE, BURIED UTILITY PIPES, MANHOLES, ETC.), RUBBLE, ORGANIC MATTER, AND ANY ORGANIC, SOFT, OR LOOSE SOILS.
- 10.3.4. BULK EXCAVATION TO DESIGN SUBGRADE.
- 10.3.5. CONSTRUCTION OF PERMANENT RETAINING WALLS:
 - 10.3.5.1. SOIL ANCHOR WALLS WITH TWO-STAGE FACING.
 - 10.3.5.1.1. THE FIRST STAGE IS A TEMPORARY SHOTCRETE WALL WITH STEEL WIRE MESH REINFORCEMENT THROUGHOUT THE WALL AND ADDITIONAL STEEL REINFORCING BARS AT EACH ANCHOR.
 - 10.3.5.1.2. THE SECOND STAGE CONSISTS OF A REINFORCED CAST-IN-PLACE (CIP) CONCRETE FACING, INCORPORATING THE ANCHOR HEAD ASSEMBLY.
 - 10.3.5.1.3. INCLUDES A DRAINAGE SYSTEM ALONG THE FACE OF THE CUT SLOPE, A TOE DRAIN AT THE BASE OF THE CUT SLOPE AND IN FRONT OF THE REINFORCED CIP CONCRETE WALL FACING, AND AN INTERCEPTOR DITCH BEHIND THE TOP OF THE WALL.
 - 10.3.5.2. INTERLOCKING CONCRETE RETAINING (ICR) WALLS. INCLUDES A LEVELLING PAD AT THE BASE OF THE BLOCKS, DRAINAGE ZONE BEHIND THE BLOCKS, DRAINAGE PIPE AT THE BOTTOM OF THE DRAINAGE ZONE, AND AN INTERCEPTOR DITCH BEHIND THE TOP OF THE WALL.
- 10.3.6. FINAL SITE GRADING
- 10.4. THE WORKS SHOWN ON THESE DRAWINGS SHALL BE BASED ON WRITTEN DIMENSIONS, AND NOT SCALED.
- 10.5. THE TERMS "SOIL ANCHORS" AND "ANCHORS" SHALL BE DEEMED TO MEAN PERMANENT GROUND ANCHORS.

1. DESIGN SPECIFICATIONS

- 1.1. METRO VANCOUVER ENGINEERING STANDARDS GEO-107 (2017), -109 (2012), AND -112 (2012).
- 1.2. BRITISH COLUMBIA BUILDING CODE, CBC (2024).
- 1.3. NATIONAL BUILDING CODE OF CANADA, NBCC (2020).
- 1.4. ENGINEERING AND GEOSCIENTISTS BRITISH COLUMBIA, EGC, PROFESSIONAL PRACTICE GUIDELINES – RETAINING WALL DESIGN, VERSION 1.1 (2020).
- 1.5. CITY OF BURNABY ENGINEERING DEPARTMENT DESIGN CRITERIA MANUAL (2019).
- 1.6. MASTER MUNICIPAL CONSTRUCTION DOCUMENT, MMCD (2019).
- 1.7. CANADIAN FOUNDATION ENGINEERING MANUAL, CFEM, 5TH EDITION (CANADIAN GEOTECHNICAL SOCIETY, 2023).
- 1.8. PTI DC–35.1–14: RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS, 5TH EDITION (POST-TENSIONING INSTITUTE, 2014).

2. DESIGN PARAMETERS

- 2.1. SUBSURFACE CONDITIONS ARE ASSUMED TO BE AS SHOWN IN THE GEOTECHNICAL REPORT BY STANTEC CONSULTING LTD. (STANTEC) TITLED "RETAINING WALL AT 2751 PRODUCTION WAY, BURNABY, BC". REVISIONS TO THE DESIGN MIGHT BE REQUIRED WHERE DIFFERENT OR UNANTICIPATED CONDITIONS ARE ENCOUNTERED.
- 2.2. I = 1.0 SITE CLASS C
PGA = 0.444 Sa(0.05)=0.625 Sa(0.1)=0.898 Sa(0.2)=1.020 Sa(0.3)=1.020 Sa(0.5)=0.815 Sa(1.0)=0.474 Sa(2.0)=0.287 Sa(5.0)=0.083
- 2.3. THE RETAINING WALLS SHOWN IN THESE DRAWINGS:
 - 2.3.1. ARE NOT DESIGNED FOR HYDROSTATIC LOADING.
 - 2.3.2. ACCOUNT FOR A TEMPORARY 50 KPA LIVE LOAD SURCHARGE ON THE GROUND SURFACE BEHIND THE "NORTH WALL" (L=100), WITHIN THE BC HYDRO RIGHT-OF-WAY.

TO ACCOUNT FOR FUTURE DUCT BANK CONSTRUCTION BY BC HYDRO.

2.4. GROUNDWATER CONTROL DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR. IT IS ASSUMED THAT A DRAINAGE SYSTEM WILL BE INSTALLED TO REDUCE HYDROSTATIC PRESSURE ON THE WALLS.

3. GENERAL RESPONSIBILITIES OF THE CONTRACTOR

3.1. FURNISH ALL LABOUR, MATERIAL, SERVICES, AND EQUIPMENT NECESSARY FOR COMPLETION OF THE EXCAVATION SHORING, AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO:

3.1.1. BULK EXCAVATION OF THE SITE.

3.1.2. REMOVAL OF EXCAVATED MATERIALS AND DEBRIS FROM THE SITE.

3.1.3. PROVIDING AND MAINTAINING TEMPORARY ROADS AND ACCESS RAMP(S) WITHIN THE EXCAVATION AND REMOVAL OF TEMPORARY ACCESS RAMP(S) AS NECESSARY TO COMPLETE THE WORK SPECIFIED HEREIN.

3.2. FURNISHING OF MATERIAL, LABOUR, EQUIPMENT, AND ANY OTHER NECESSARY ITEMS FOR INSTALLATION, AND LOAD TESTING OF SOIL ANCHORS IN TENSION.

3.3. PERFORMANCE AND PROOF TESTS OF SOIL ANCHORS.

3.4. VISIT AND EXAMINE THE SITE AND NOTE ALL VISIBLE CHARACTERISTICS AND FEATURES AFFECTING THE WORK OF THIS SECTION. REPORT ANY UNSATISFACTORY CONDITIONS TO THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCING THE WORK.

3.5. CONTROL ALL DRILLING FLUIDS, WATER AND CUTTINGS DURING SOIL ANCHOR INSTALLATION. CLEAN UP, AND OFF-SITE DISPOSAL OF ALL EXCESS FLUIDS, CUTTINGS AND REMOVAL OF ALL OTHER FOREIGN MATERIAL BROUGHT TO THE SITE DURING ANCHOR INSTALLATION AND TESTING.

3.6. THE CONTRACTOR IS RESPONSIBLE FOR METHODS AND SEQUENCING OF CONSTRUCTION APPROPRIATE TO MAINTAIN EXCAVATION STABILITY DURING SHORING WORKS. EXCAVATION DIMENSIONS, ELEVATIONS, SETBACKS, AND CLEARANCES NOTED ON THESE DRAWINGS INDICATE GENERAL INTENT ONLY.

3.7. THE CONTRACTOR IS RESPONSIBLE FOR ALL SETTING OUT, INCLUDING LINES FOR CUTS, EXCAVATION GRADES, LOCATION OF ANCHORS, ETC. NO SLOPE SHALL BE CUT STEEPER THAN SHOWN ON THE DRAWINGS.

3.8. NOTIFY THE OWNER'S REPRESENTATIVE AT LEAST FIVE WORKING DAYS BEFORE EXCAVATION IS TO START. THE OWNER'S REPRESENTATIVE SHALL HAVE ACCESS TO THE SITE WHENEVER REQUIRED. THE OWNER'S REPRESENTATIVE SHALL BE THE SOLE JUDGE OF THE EXTENT OF THE SITE REVIEW NECESSARY AND THE QUALIFICATIONS OF THE SITE REVIEWER.

3.9. THE CONTRACTOR SHALL NOT PROCEED WITH ANY STAGE OF EXCAVATION OR SHORING UNTIL IT HAS BEEN DISCUSSED AND CONFIRMED THAT THE CONTRACTOR'S PROPOSED METHODS AND SEQUENCING ARE IN GENERAL AGREEMENT WITH THE INTENT OF THE DESIGN.

3.10. PROTECT THE EXISTING INFRASTRUCTURE ADJACENT TO THE WORK AREA FROM DAMAGE BY CONTRACTOR'S WORK METHOD. ANY DAMAGE DONE OR SETTLEMENT CAUSED BY INADEQUATE MEASURES BEING TAKEN BY THE CONTRACTOR TO PREVENT SAME, SHALL BE MADE GOOD IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER.

3.11. THE CONTRACTOR'S WORK SHALL COMPLY WITH ALL HEALTH, SAFETY, NOISE, AND SECURITY REQUIREMENTS OF WORKSAFE B.C., METRO VANCOUVER, THE CITY OF BURNABY, AND OTHER AUTHORITIES HAVING JURISDICTION.

- 4.1. SOIL ANCHOR WALLS
 - 4.1.1. THE CONTRACTOR SHALL SUBMIT TO THE OWNER'S REPRESENTATIVE FOR REVIEW AT LEAST SEVEN DAYS PRIOR TO THE START OF WORK, A DETAILED DESCRIPTION OF THE PROPOSED EXCAVATION SEQUENCING, ANCHOR CORROSION PROTECTION DETAILS, ANCHOR INSTALLATION AND TESTING PROCEDURE, INCLUDING DRILLING METHOD, GROUTING PROCEDURE, AND TESTING PROCEDURE.
 - 4.1.2. THE CONTRACTOR SHALL SUBMIT A DETAILED DESCRIPTION OF THE EQUIPMENT TO BE USED FOR INSTALLING AND TESTING THE ANCHORS.
 - 4.1.3. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A QUALITY CONTROL PROGRAM TO ENSURE COMPLIANCE WITH THE CONTRACT REQUIREMENTS, INCLUDING MAINTENANCE OF TEST RECORDS FOR ALL QUALITY CONTROL OPERATIONS. SUCH RECORDS SHALL BE PROVIDED TO THE OWNER'S ENGINEER FOR REVIEW ON REQUEST.
 - 4.1.4. PRIOR TO THE START OF THE WORK THE CONTRACTOR MUST SUBMIT THE FOLLOWING ITEMS TO THE OWNER'S REPRESENTATIVE:
 - 4.1.4.1. MILL TEST REPORTS FOR THE STEEL INCLUDING ANCHOR BARS, COUPLINGS, AND NUTS AND REINFORCEMENT.
 - 4.1.4.2. SHOP DRAWINGS OF THE ANCHOR ASSEMBLY.
 - 4.1.4.3. CALIBRATION RECORDS OF ALL JACKS, LOAD CELLS AND GAUGES TO BE USED FOR LOAD TESTING THE ANCHORS.
- 4.2. INTERLOCKING CONCRETE BLOCK (ICB) RETAINING WALLS
 - 4.2.1. PREPARE AND SUBMIT AN ICB RETAINING WALL REPORT CONSISTING OF ALL INFORMATION NECESSARY FOR THE FABRICATION, TRANSPORTATION, QUALITY CONTROL, QUALITY ASSURANCE AND INSTALLATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - 4.2.1.1. COMPLETE MATERIAL AND CONSTRUCTION SPECIFICATIONS.
 - 4.2.1.2. DELIVERY DETAILS AND SCHEDULE.
 - 4.2.1.3. DETAILED BACKFILL PROCEDURES INCLUDING PROCEDURES FOR MONITORING DEFLECTIONS, ERECTION SAFETY, AND STRUCTURAL INTEGRITY DURING CONSTRUCTION.
 - 4.2.1.4. DETAILS FOR TEMPORARY CONSTRUCTION BRACINGS IF REQUIRED.
 - 4.2.1.5. QUALITY CONTROL AND QUALITY ASSURANCE PROCEDURES.
- 4.3. DAILY RECORDS
 - 4.3.1. FOR EACH INSTALLED ANCHOR THE CONTRACTOR SHALL KEEP DAILY RECORDS OF THE FOLLOWING:
 - 4.3.1.1. IDENTIFICATION NUMBER AND LOCATION OF THE ANCHOR.
 - 4.3.1.2. SEQUENCE OF INSTALLATION.
 - 4.3.1.3. DATE OF INSTALLATION AND START AND FINISH TIME OF THE ANCHOR.
 - 4.3.1.4. DEPTH OF DRILLING AND APPROXIMATE SOIL TYPES ENCOUNTERED (FOR ANCHORS).
 - 4.3.1.5. GROUT PRESSURES ACHIEVED AND GROUT TAKE AT EACH INCREMENT OF GROUTING FOR ANCHORS.

- 5.1. SOIL ANCHOR WALLS
 - 5.1.1. ANCHORS SHALL BE 517/690 MPA THREADBARS, MEETING ASTM A615.
 - 5.1.2. ANCHORS SHALL BE DOUBLE CORROSION-PROTECTED (DCP) ANCHORS (CLASS I PROTECTED ANCHORS) IN ACCORDANCE WITH PTI DC 35.1-14.
 - 5.1.3. ANCHOR INCLINATION, LENGTH, AND YIELD AND ULTIMATE STRENGTHS SHALL BE AS SHOWN IN THE DRAWINGS. NO DEVIATION IS PERMITTED WITHOUT WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE.
 - 5.1.4. PER CB HYDRO'S REQUIREMENTS, CASING SHALL BE USED WHEN DRILLING FOR ALL ANCHORS IN THE TOP ROW ALONG THE 'NORTH WALL' (L100). THE CASING SHALL NOT HAVE AN INSIDE DIAMETER LESS THAN 150 MM.
 - 5.1.5. ANCHORS OTHER THAN THOSE IN THE TOP ROW ALONG THE 'NORTH WALL' (L100) AND ALL ANCHORS FOR THE 'SOUTH WALL' (L200) SHALL BE INSTALLED IN MINIMUM 150 MM DIAMETER HOLES, MINIMUM 300 MM LONGER THAN ANCHOR LENGTH.
 - 5.1.5.1. ANCHOR CAPACITY IS DEPENDENT UPON THE INSTALLATION TECHNIQUES AND EQUIPMENT, AND THE CONTRACTOR SHALL DETERMINE THE SUITABLE TECHNIQUE AND EQUIPMENT TO ENSURE THE REQUIRED ANCHOR CAPACITY IS ACHIEVED.
 - 5.1.5.2. IF CASING IS USED, THE CASING SHALL NOT HAVE AN INSIDE DIAMETER LESS THAN 150 MM.
 - 5.1.6. THOROUGHLY FLUSH AND CLEAN-OUT THE HOLES USING COMPRESSED AIR OR AIR/WATER MIXTURE.

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT

Design: MY	RETAINING WALL AT 2751 PRODUCTION WAY BURNABY, BC	SCALE: NTS
Drawn: JT		DISTRICT FILE W-XXXX
Checked: AM		SHEET 1 OF 8
VS		DRAWING NUMBER RW-100
Approved SG		GENERAL NOTES, KEY PLAN & LOCATION PLAN
Manager		
SUPERSEDES PRINTS OF THIS DRAWING NUMBER WITH LETTERS PREVIOUS TO ➡ P3		



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GEOTECHNICAL
Professional Seal

P3	30OCT24	GH	JT	AM	VS	ISSUED FOR PERMIT
P2	24MAY24	GH	JT	AM	VS	100% DETAILED DESIGN SUBMISSION
P1	19MAR24	GH	JT	AM	VS	90% DETAILED DESIGN SUBMISSION; DISTANCE FROM RETAINING WALL TO BUILDING REDUCED FROM 9m TO 7.5m; ADDED PROPOSED BC HYDRO DUCT BANK BEHIND RETAINING W.
Issue	Date	Des'n	Dr'n	Chkd	App'd	Description
0	20					Bor is 20mm on Original Drawing. If Not On This Sheet, Adjust Scales Accordingly.

Consultant

CIVIC ADDRESS	LEGAL DISCRIPTION	SITE AREA	ZONING
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2751 PRODUCTION WAY, BURNABY BC, V5A 3G7
LOT: 313, BLOCK: DISTRICT LOT 56, PLAN: NWP66423
20,763.35m2
M3 - HEAVY INDUSTRIAL

FRONT YARD SET BACK
SIDE YARD SET BACK
REAR YARD SET BACK

ALLOWED	EXISTING
6m	19.01m
3m	6.52m, 22.50m
3m	17.98m

F-2

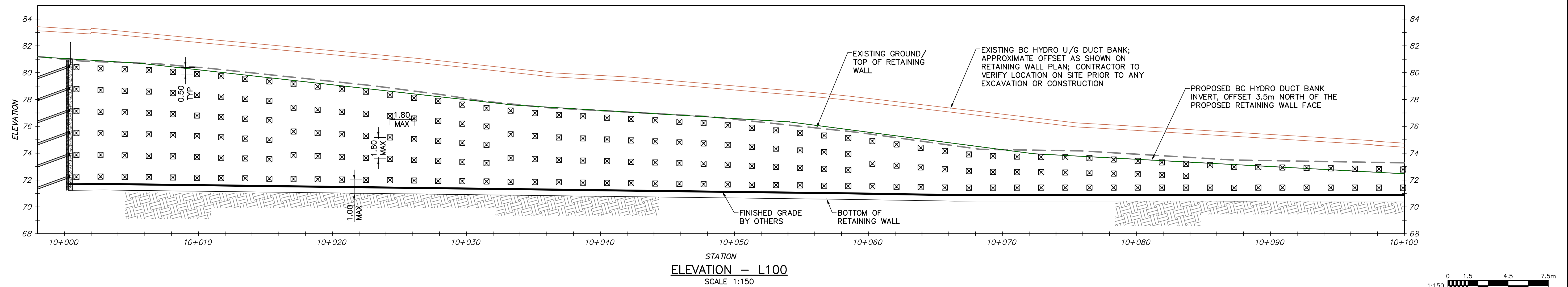
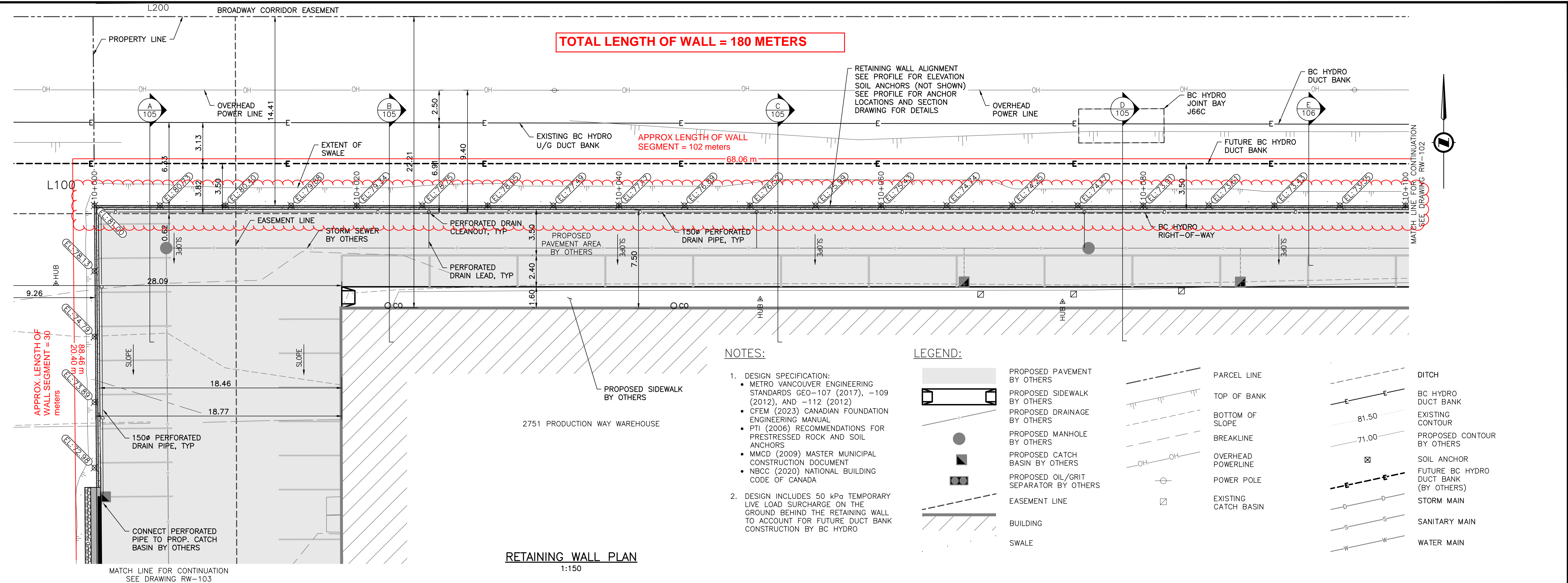
15 REGULAR STALLS (5.5m X 2.6m)
55 LARGE FLEET STALLS (7m X 3m)

70 TOTAL PARKING STALLS



SITE PLAN - RETAINING WALL





500 - 4515 Central Blvd
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Tel: (604) 587-8400
www.stantec.com

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STRUCTURAL
Professional Seal

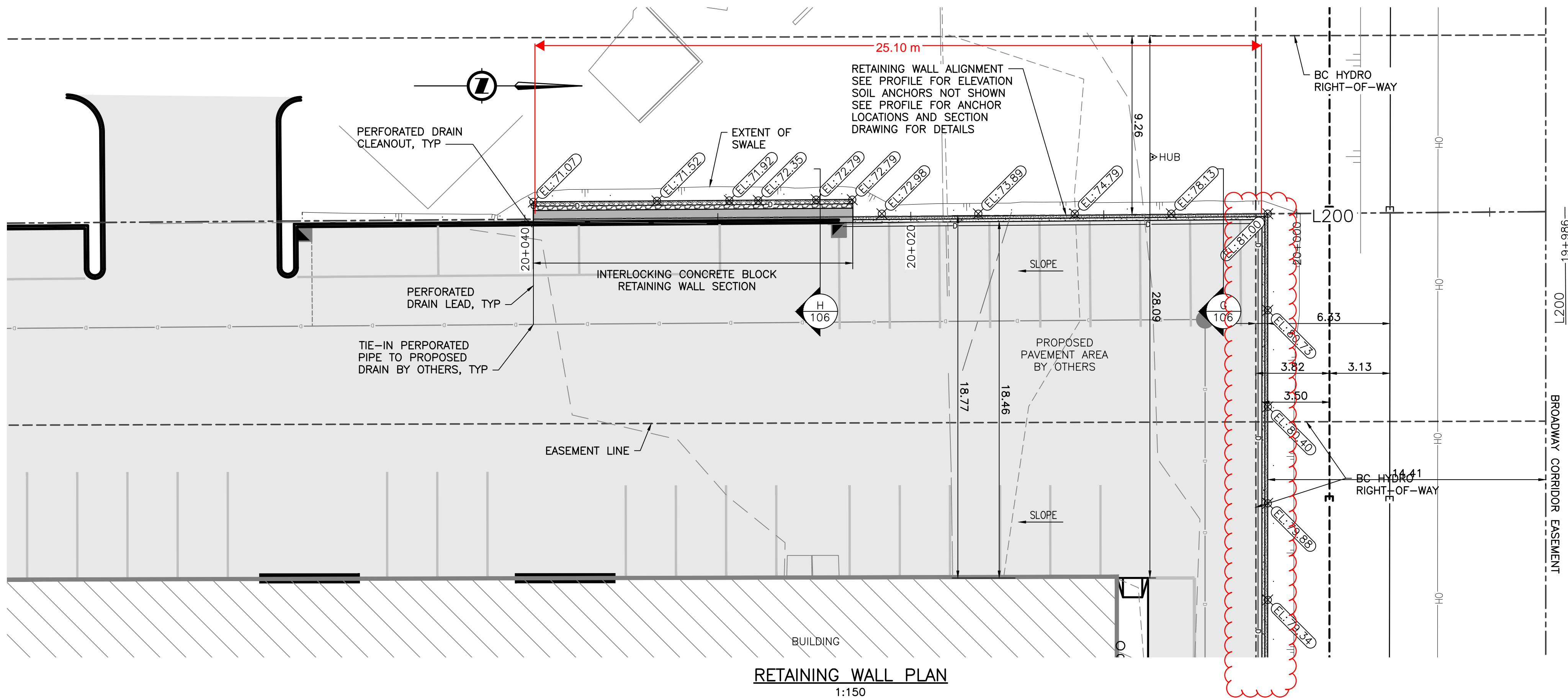
CIVIL
Professional Seal

GEOTECHNICAL
Professional Seal

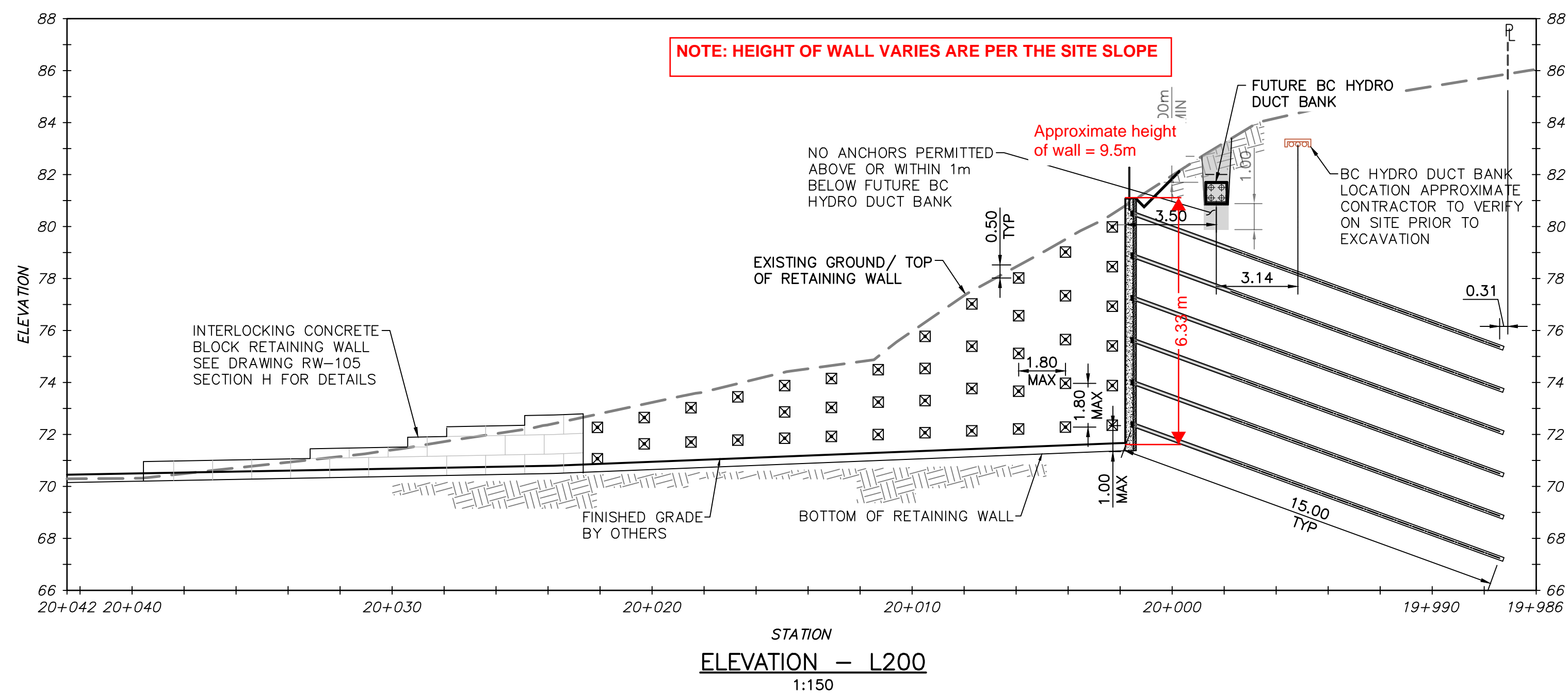
Issue	Date	Des'n	Dr'n	Chkd	App'd	Description
P4	30OCT24	GH	JT	AM	VS	ISSUED FOR PERMIT
P3	24MAY24	GH	JT	AM	VS	100% DETAILED DESIGN SUBMISSION
P2	19MAR24	GH	JT	AM	VS	90% DETAILED DESIGN SUBMISSION; DISTANCE FROM RETAINING WALL TO BUILDING REDUCED FROM 9m TO 7.5m; ADDED PROPOSED BC HYDRO DUCT BANK BEHIND RETAINING WALL
P1	03DEC21	MY	JT	AM	VS	75% DETAILED DESIGN SUBMISSION

0 20 Bar is 20mm On Original Drawing. If Not On This Sheet, Adjust Scales Accordingly.

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT			
RETAINING WALL AT 2751 PRODUCTION WAY BURNABY, BC			
Design: MY	Drawn: JT	Checked: AM	VS Approved SG Manager
PLAN & ELEVATION L100 STA 10+000 TO 10+100			SCALE: 1:150
			DISTRICT FILE W-XXXX
			SHEET 3 OF 8
			DRAWING NUMBER RW-102
SUPERSEDES PRINTS OF THIS DRAWING NUMBER WITH LETTERS PREVIOUS TO P4			



RETAINING WALL PLAN
1:150



ELEVATION - L200
1:150

LEGEND:

- PROPOSED PAVEMENT BY OTHERS
- PROPOSED SIDEWALK BY OTHERS
- PROPOSED DRAINAGE BY OTHERS
- PROPOSED MANHOLE BY OTHERS
- PROPOSED CATCH BASIN BY OTHERS
- PROPOSED OIL/GRIT SEPARATOR BY OTHERS
- EASEMENT LINE
- BUILDING
- SWALE
- PARCEL LINE
- TOP OF BANK
- BOTTOM OF SLOPE
- BREAKLINE
- OVERHEAD POWERLINE
- POWER POLE
- EXISTING CATCH BASIN
- DITCH
- BC HYDRO DUCT BANK
- EXISTING CONTOUR
- PROPOSED CONTOUR BY OTHERS
- SOIL ANCHOR
- FUTURE BC HYDRO DUCT BANK (BY OTHERS)
- STORM MAIN
- SANITARY MAIN
- WATER MAIN

NOTES:

- DESIGN SPECIFICATION:
 - METRO VANCOUVER ENGINEERING STANDARDS GEO-107 (2017), -109 (2012), AND -112 (2012)
 - CFEM (2023) CANADIAN FOUNDATION ENGINEERING MANUAL
 - PTI (2006) RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS
 - MMCD (2009) MASTER MUNICIPAL CONSTRUCTION DOCUMENT
 - NBCC (2020) NATIONAL BUILDING CODE OF CANADA
- DESIGN INCLUDES 50 kPa TEMPORARY LIVE LOAD SURCHARGE ON THE GROUND BEHIND THE RETAINING WALL TO ACCOUNT FOR FUTURE DUCT BANK CONSTRUCTION BY BC HYDRO



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Burnaby, BC V5H 0C6
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STRUCTURAL
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CIVIL
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GEOTECHNICAL
Professional Seal

P4	30OCT24	GH	JT	AM	VS	ISSUED FOR PERMIT
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P2	19MAR24	GH	JT	AM	VS	90% DETAILED DESIGN SUBMISSION; DISTANCE FROM RETAINING WALL TO BUILDING REDUCED FROM 9m to 7.5m; ADDED PROPOSED BC HYDRO DUCT BANK BEHIND RETAINING WALL
P1	03DEC21	MY	JT	AM	VS	75% DETAILED DESIGN SUBMISSION
Issue	Date	Des'n	Dr'n	Chkd	App'd	Description
0 20 Bar is 20mm On Original Drawing. If Not On This Sheet, Adjust Scales Accordingly.						

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT

RETAINING WALL AT 2751 PRODUCTION WAY
BURNABY, BC

PLAN & ELEVATION
L200
STA 12+986 TO 20+042

Design: MY
Drawn: JT
Checked: AM
VS Approved
SG Manager

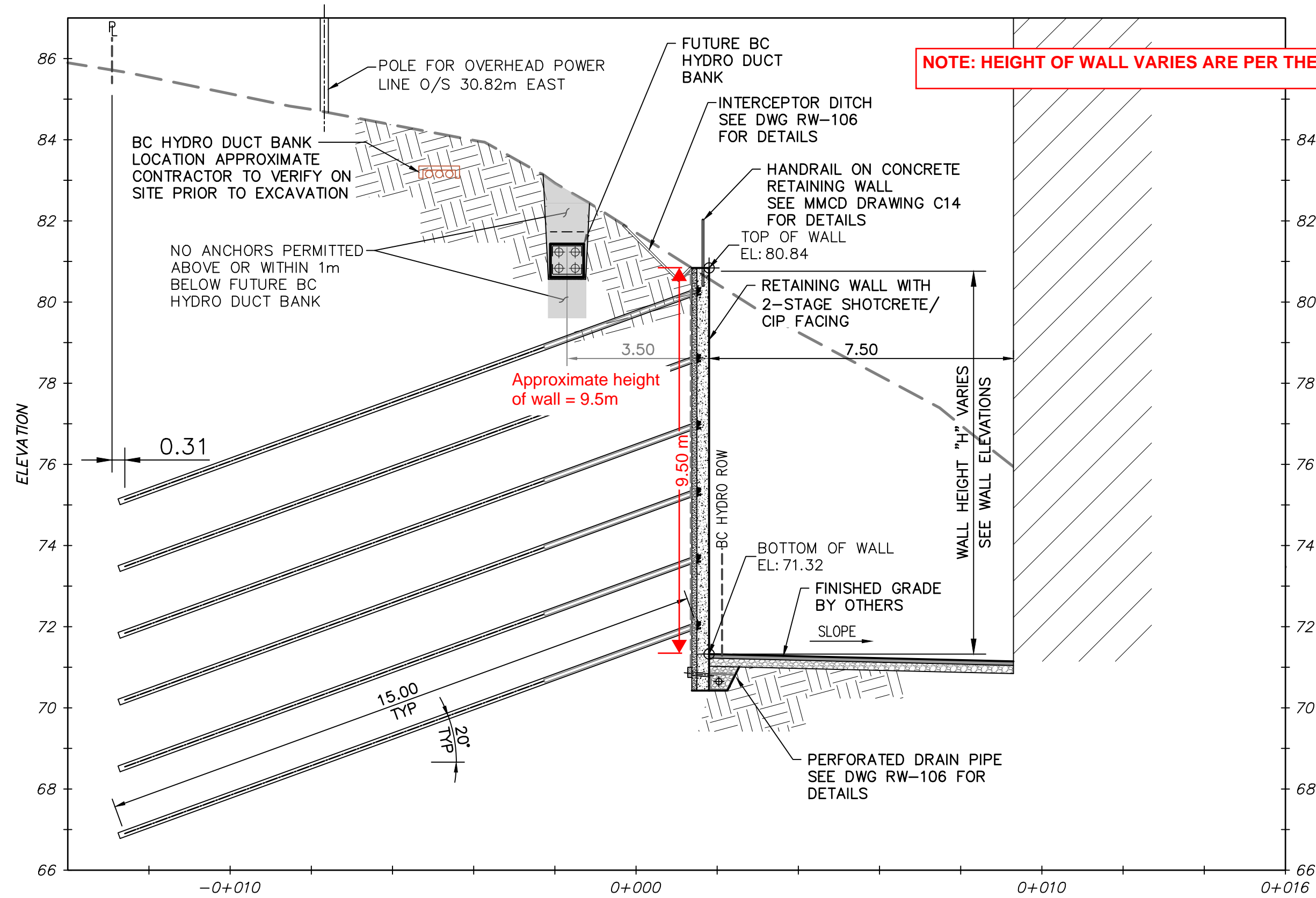
SCALE:

1:150
DISTRICT FILE
W-XXXX

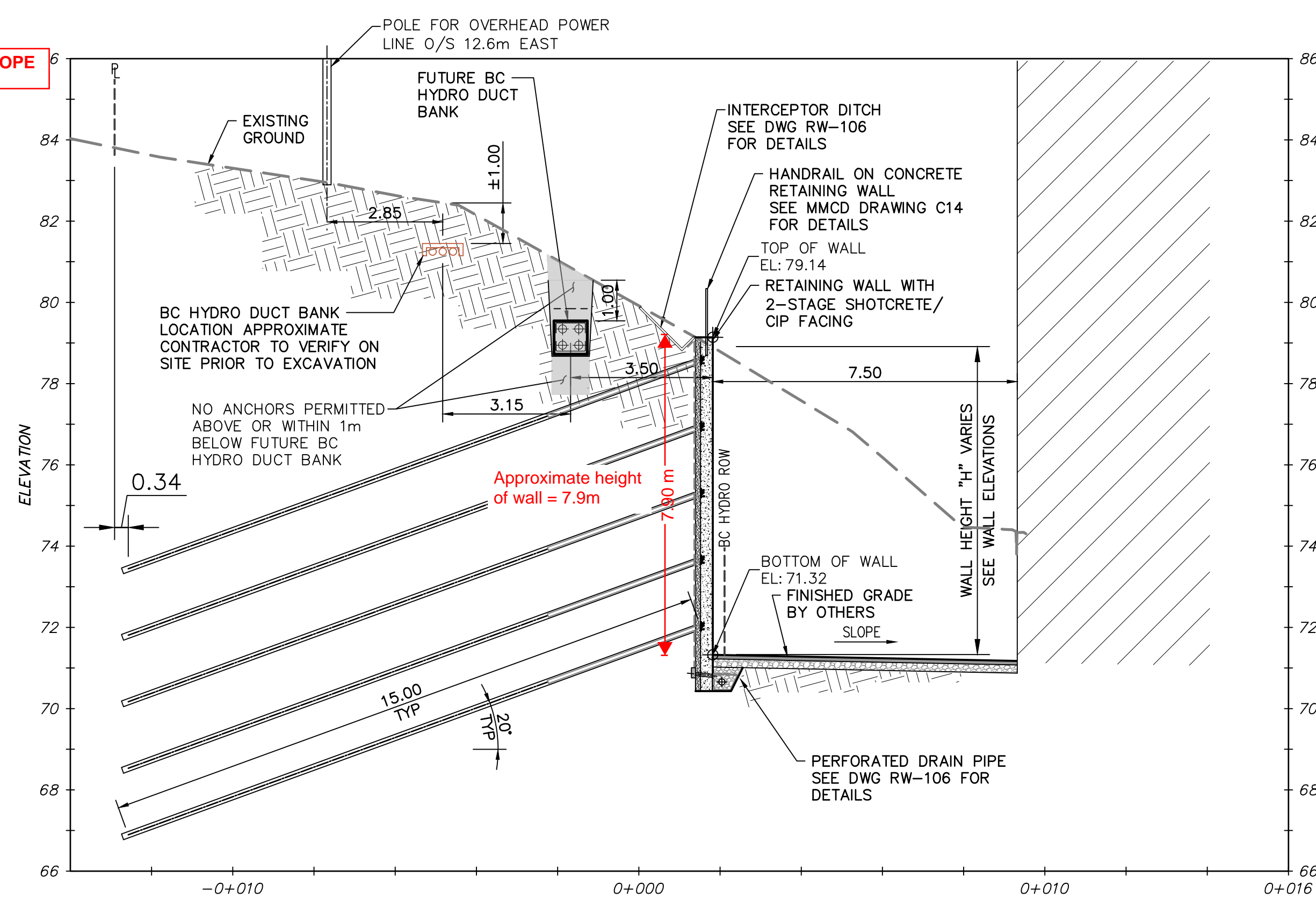
SHEET 5 OF 8

DRAWING NUMBER
RW-104

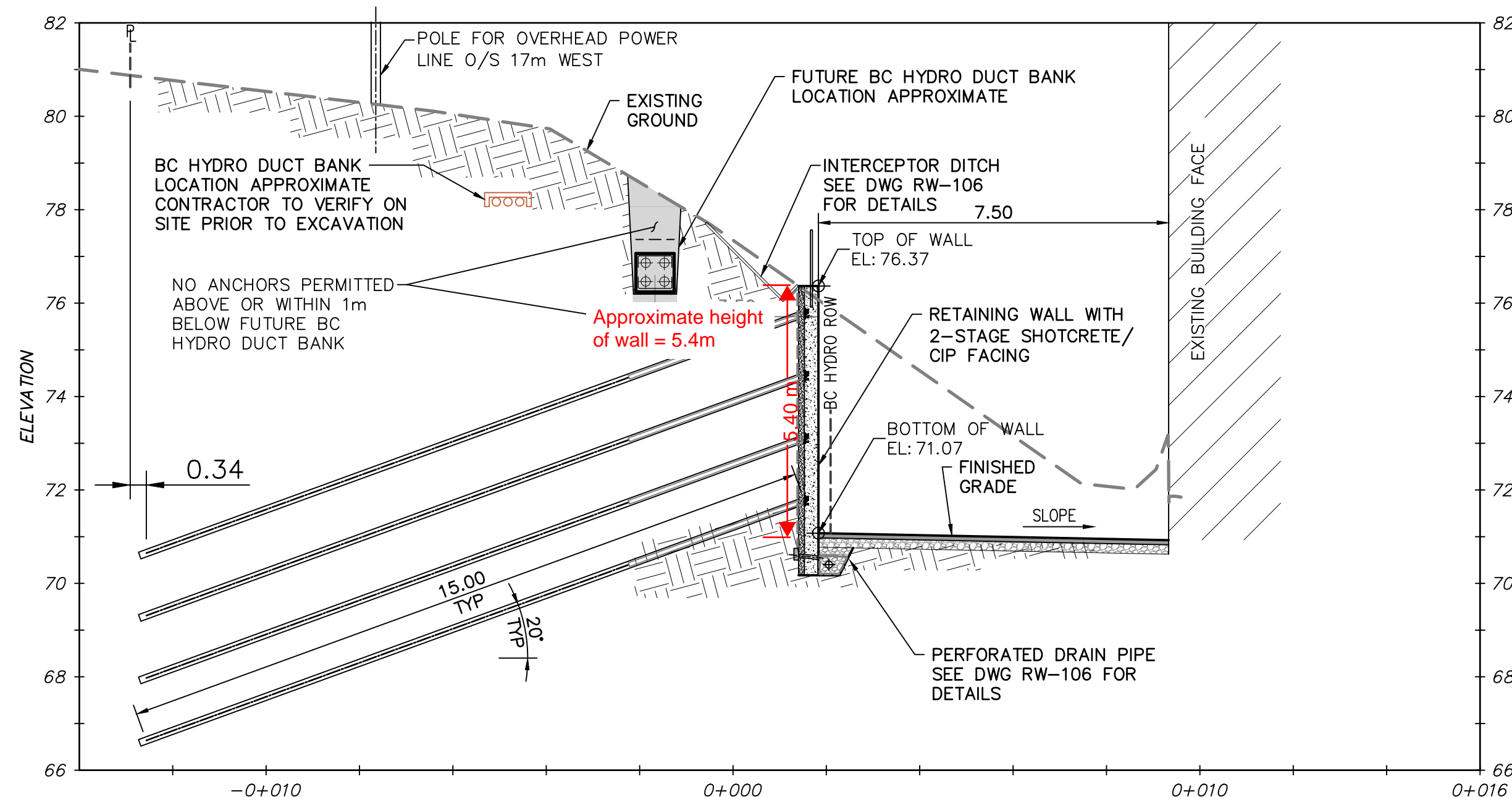
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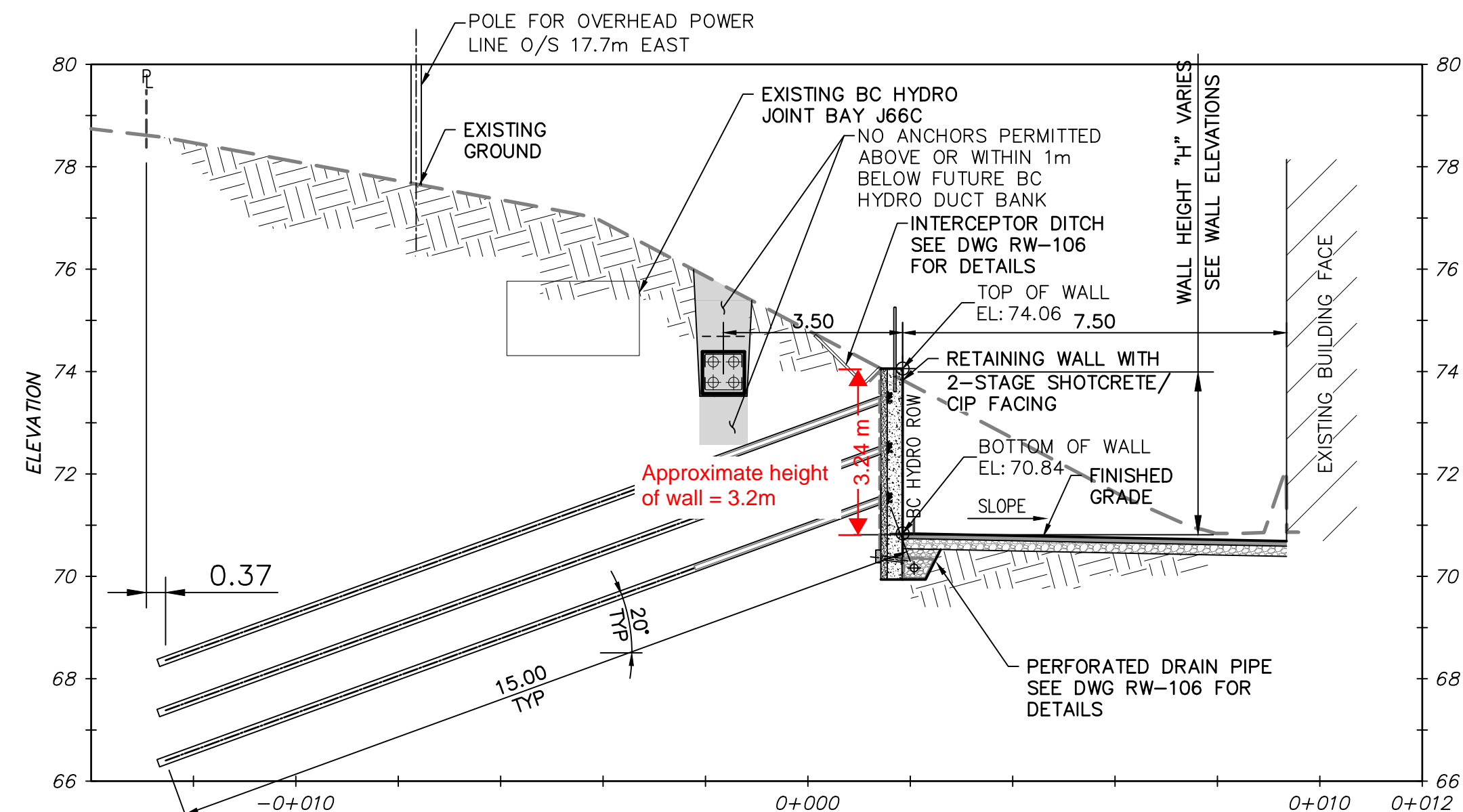
A
102
SECTION
1:100



B
102
SECTION
1:100



C
102
SECTION
1:100



D
102
SECTION
1:100

NOTES:

- FOR GENERAL DESIGN NOTES, SEE DRAWING RW-101.
- LOADS FOR ANCHORS IN SECTIONS A, B, C, D & G:
DESIGN LOAD = 280 kN PER ANCHOR
TEST LOAD = 375 kN PER ANCHOR
- LOADS FOR ANCHORS IN SECTIONS E:
DESIGN LOAD = 170 kN PER ANCHOR
TEST LOAD = 225 kN PER ANCHOR
- FOLLOWING SUCCESSFUL TEST COMPLETION, TENSION EACH ANCHOR TO ITS DESIGN LOAD AS SHOWN ON THIS DRAWING.
- ANCHORS FOR SECTIONS A, B, C, D & G TO HAVE MINIMUM YIELD AND ULTIMATE STRENGTHS OF 424 kN AND 565 kN, RESPECTIVELY.
- ANCHORS FOR SECTION E TO HAVE MINIMUM YIELD AND ULTIMATE STRENGTHS OF 264 kN AND 351 kN, RESPECTIVELY.
- ALL ANCHORS SHALL BE 517/690MPa GRADE THREADBAR ANCHORS CONFORMING TO ASTM A615-18.
- ALL ANCHORS SHALL BE DOUBLE CORROSION PROTECTED (DCP) ANCHORS IN ACCORDANCE WITH PTI DC35.1-14.
- ALL ANCHORS SHALL BE INSTALLED IN MIN. 150mm DIA. HOLES, 300mm MIN. LONGER THAN ANCHOR EMBEDMENT LENGTH.
- ANCHOR LENGTH AND INCLINATION SHALL BE AS SHOWN.
- ALL ANCHORS SHALL BE GROUTED USING MICROFIL ANCHOR GROUT. MIN. 28 DAY COMPRESSIVE STRENGTH = 40 MPa.
- ALL ANCHORS SHALL BE COMPLETE WITH MANUFACTURER'S STANDARD ANCHOR PLATE, NUT AND ASSOCIATED HARDWARE. ANCHOR COMPONENTS INCLUDING COLLAR NUTS, ANCHOR PLATES, COUPLERS, CENTRALIZERS, O-RINGS, PVC SHEATHING, AND END CAPS ARE TO COMPLY WITH MANUFACTURER SPECIFICATIONS FOR DCP ANCHORS.
- CENTRALIZERS SHALL BE PROVIDED FOR ALL ANCHORS AND BE CAPABLE OF POSITIONING THE ANCHOR IN THE DRILL HOLE SUCH THAT THE CONCENTRIC POSITION OF THE THREADBAR IS MAINTAINED ALONG ITS FULL LENGTH. MAX. SPACING OF CENTRALIZERS SHALL BE 3m.



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Issue	Date	Des'n	Dr'n	Chkd	App'd	Description
P4	30OCT24	GH	JT	AM	VS	ISSUED FOR PERMIT
P3	24MAY24	GH	JT	AM	VS	100% DETAILED DESIGN SUBMISSION
P2	19MAR24	GH	JT	AM	VS	90% DETAILED DESIGN SUBMISSION; DISTANCE FROM RETAINING WALL TO BUILDING REDUCED FROM 9m TO 7.5m; ADDED PROPOSED BC HYDRO DUCT BANK BEHIND RETAINING WALL
P1	03DEC21	MY	JT	AM	VS	75% DETAILED DESIGN SUBMISSION

0 20 Bar is 20mm On Original Drawing. If Not On This Sheet, Adjust Scales Accordingly.

GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT

Design: MY
Drawn: JT
Checked: AM
VS Approved
SG Manager

RETAINING WALL AT 2751 PRODUCTION WAY
BURNABY, BC

SECTIONS

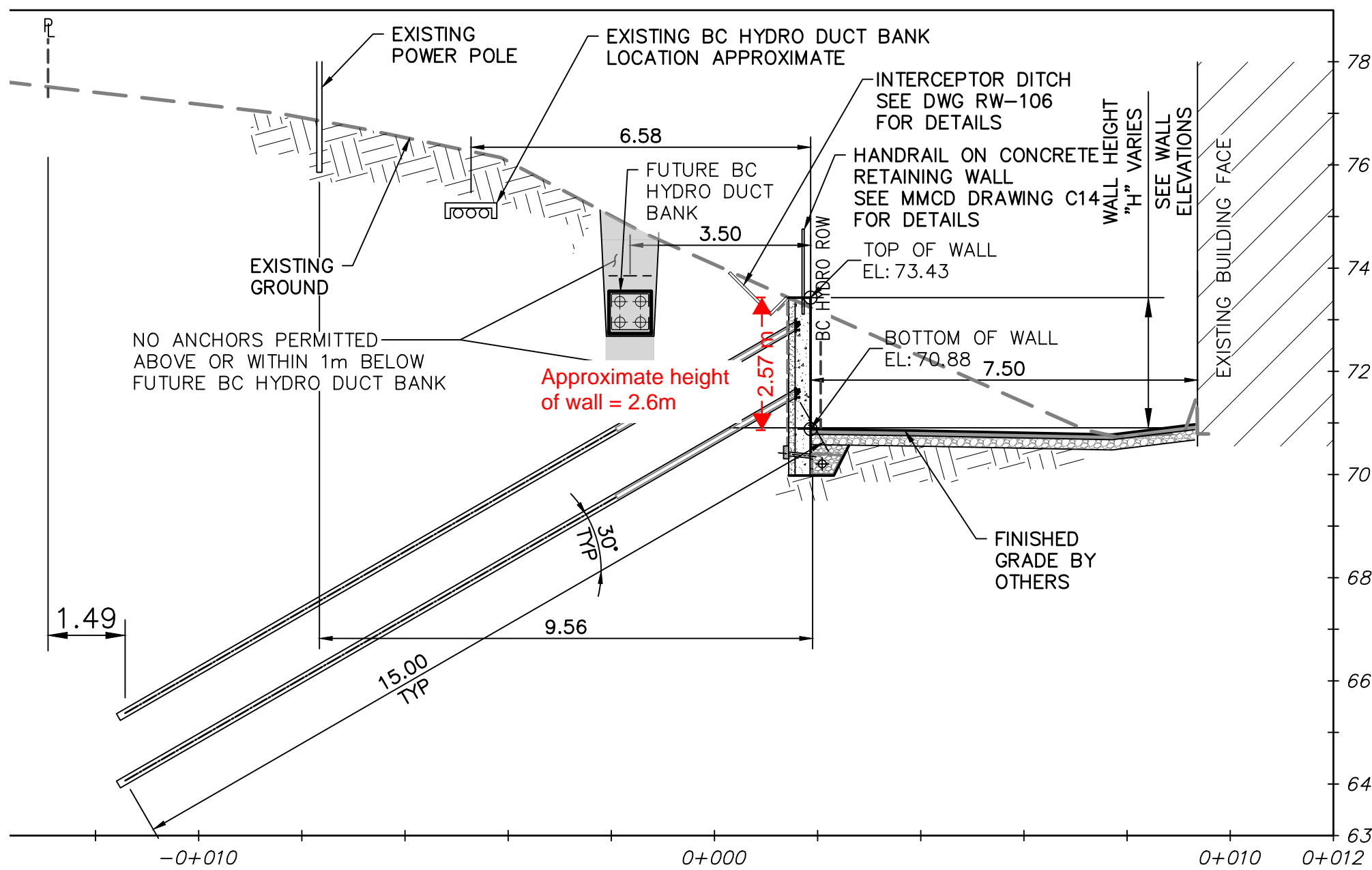
SCALE: 1:100

DISTRICT FILE W-XXXX

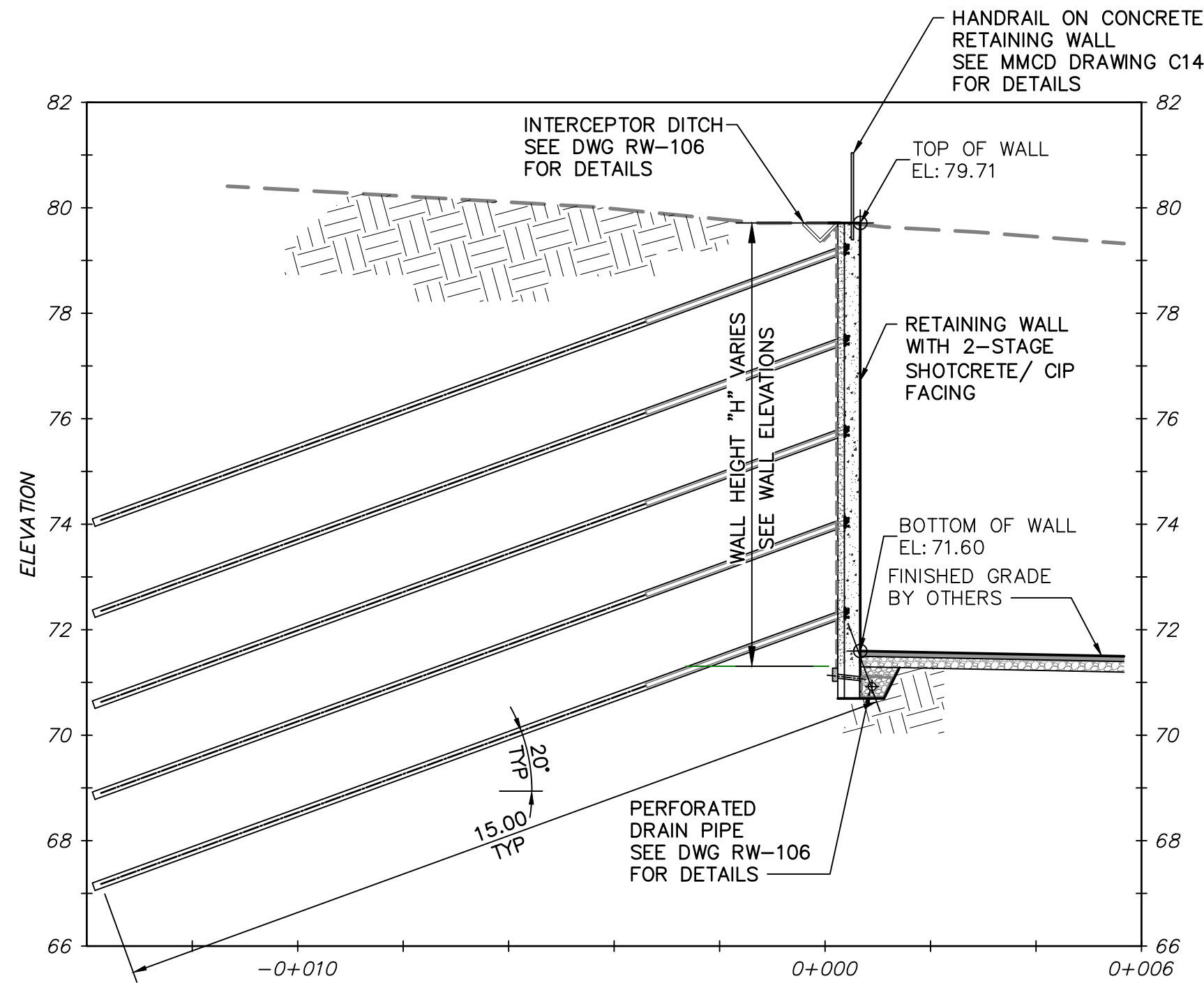
SHEET 6 OF 8

DRAWING NUMBER RW-105

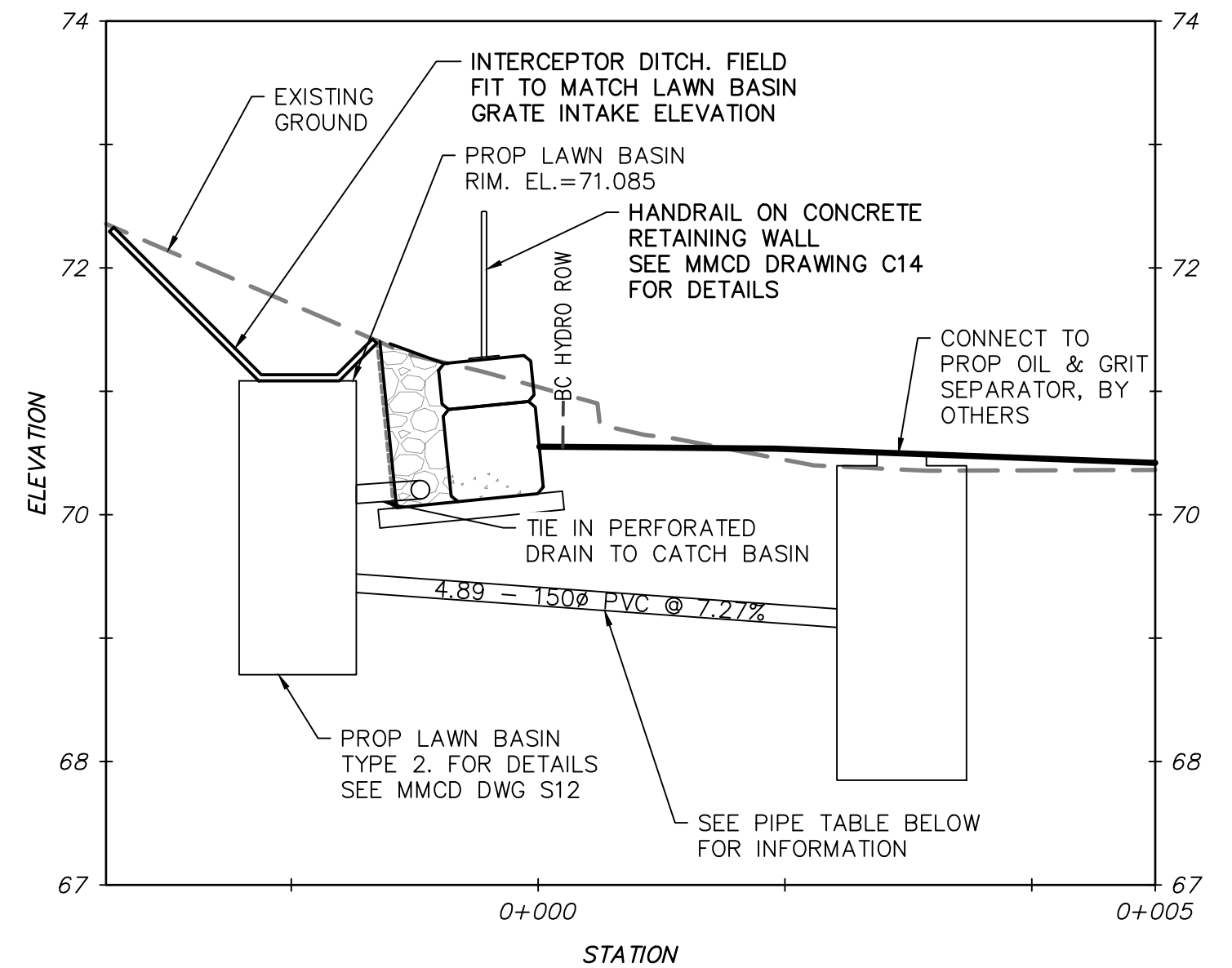
SUPERSEDES PRINTS OF THIS DRAWING NUMBER WITH LETTERS PREVIOUS TO P4



SECTION
E
102
1:100



SECTION
G
104
1:100

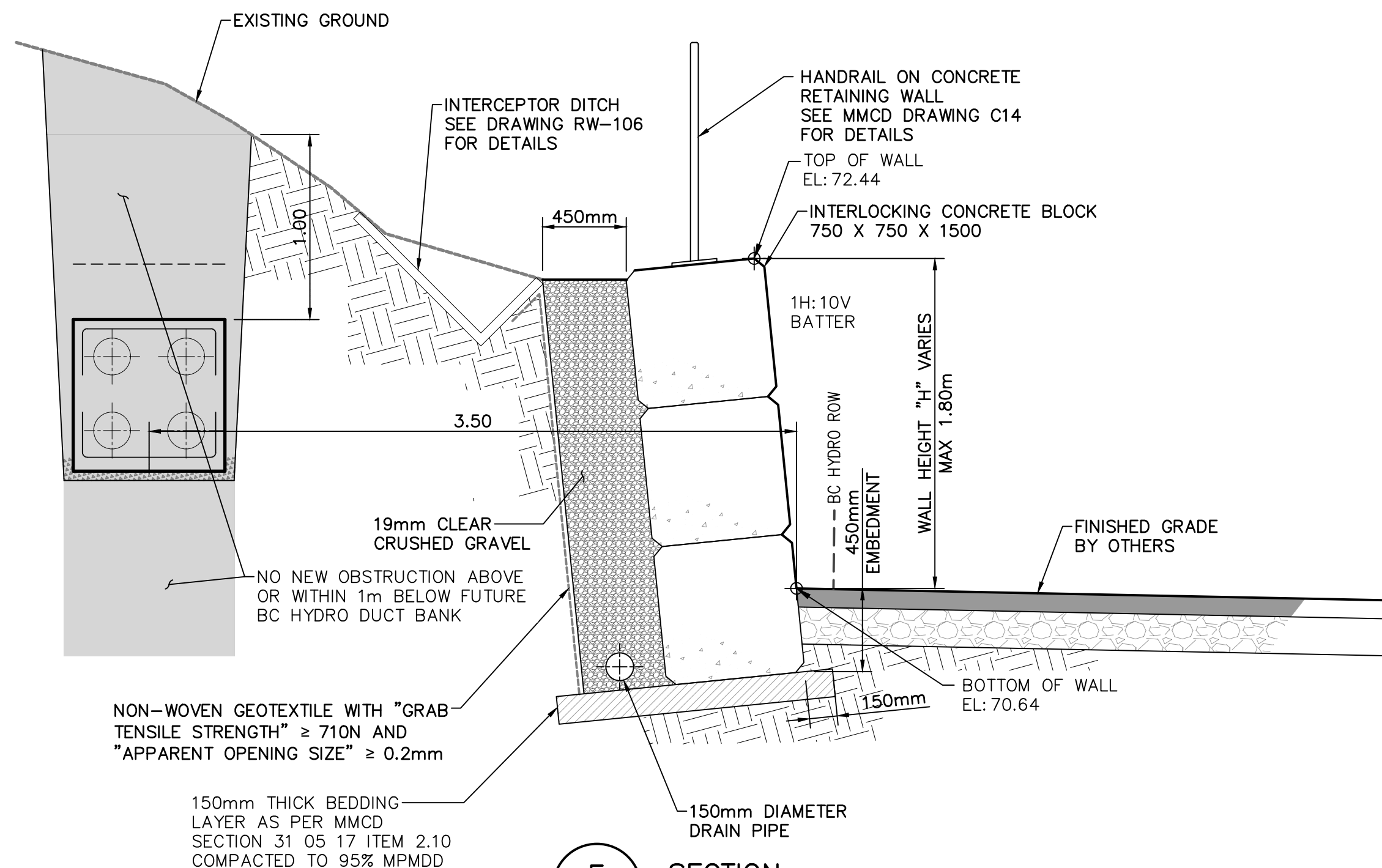


SECTION
J
103
1:100

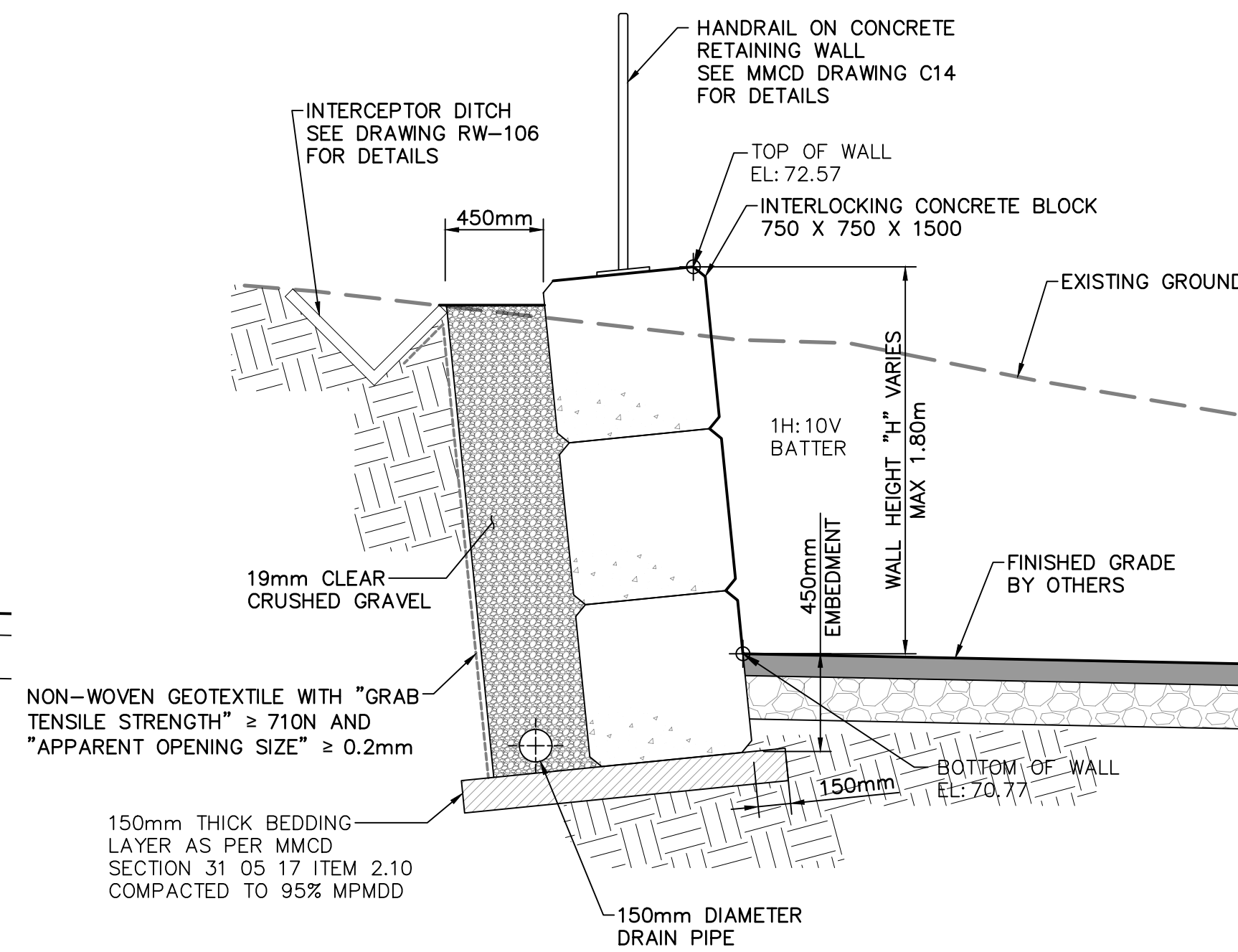
PIPE TABLE						
MATERIAL	LB NORTHING	LB EASTING	START INV. EL.	LENGTH	SLOPE	END INV. EL.
PVC	5458790.04	506324.82	69.404	4.89	7.27%	69.049

NOTES:

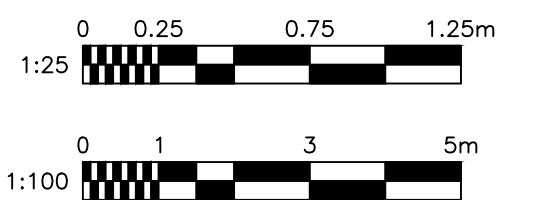
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SECTION
F
103
1:25



SECTION
H
104
1:25



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P1	03DEC21	MY	JT	AM	VS	75% DETAILED DESIGN SUBMISSION

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GREATER VANCOUVER SEWERAGE AND DRAINAGE DISTRICT			
Design: MY	Drawn: JT	Checked: AM	VS Approved SG Manager
RETAINING WALL AT 2751 PRODUCTION WAY BURNABY, BC			
SECTIONS			
SUPERSEDES PRINTS OF THIS DRAWING NUMBER WITH LETTERS PREVIOUS TO P4			

