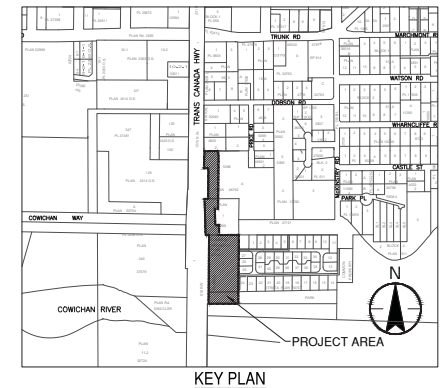
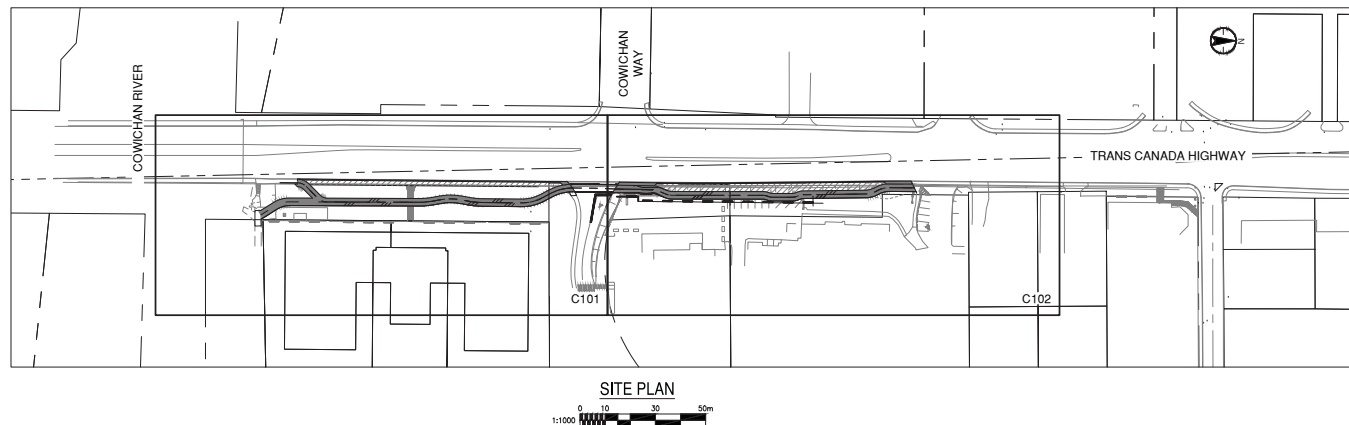




CITY OF DUNCAN

# TRANS-CANADA HIGHWAY MULTI-USE PATH COWICHAN RIVER TO 140 TCH



| DRAWING INDEX |  |
|---------------|--|
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| C102          | MUP PLAN / PROFILE<br>STATION 0+140 TO 0+270             |
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| S101          | STRUCTURAL - SITE PLAN, RETAINING WALL PLAN AND SECTIONS |





SEE SHEET L100 FOR ADDITIONAL SURFACE LEGEND DETAILS

- ALL WORKS AND MATERIALS TO BE PERFORMED IN ACCORDANCE WITH MMCP STANDARD EDITION DOCUMENTS, MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE 2020 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (MOTI SSC), AND PROJECT DOCUMENTS.
2. DRAWING CO-ORDINATES BASED ON MONUMENTS
  - ① 4340981 N 5402497.251m E 448930.289m ELEVATION 10.938m
  - ② 430984 N 540275.076m E 448787.072m ELEVATION 11.838m
  - ③ 7734338 N 5402881.318m E 448789.655m ELEVATION 11.151m
3. ALL PAVEMENT MARKINGS TO BE THERMOPLASTIC WITH THE EXCEPTION OF THE FOLLOWING:
  - 3.1. MULTI USE TRAIL CENTRE LINE TO BE ALKYD PAINT REFLECTORIZED. PARKING STRAIL LINES TO BE ALKYD PAINT.
4. CONTRACTOR TO PROVIDE NOTIFICATION TO CITY OF DUNCAN A MINIMUM OF 2 WEEK PRIOR TO COMMENCING WORK.
5. CONTRACTOR TO DISTRIBUTE A PRE-CONSTRUCTION NOTIFICATION LETTER TO ALL AFFECTED RESIDENTS PRIOR TO MOBILIZATION AND COMMENCING WORK. CONTRACTOR TO PROVIDE A COPY OF THE NOTIFICATION LETTER TO THE ENGINEER AND THE CITY OF DUNCAN FOR REVIEW AND APPROVAL PRIOR TO DISTRIBUTION
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING: BC ONE CALL 1-800-474-6886, (6886) PRIOR TO ANY EXCAVATION.
7. ALL PAVEMENT CUTS TO BE SQUARE-CUT.
8. ALL NECESSARY PERMITS TO BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.

LOCATIONS OF ALL EXISTING SERVICES, FEATURES AND APPURTENANCES SHOWN ON THE DRAWINGS ARE TO BE CONSIDERED APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE CONSULTANT.

10. ALL EXISTING SERVICES TO BE EXPOSED PRIOR TO CONSTRUCTION.
11. ANY DAMAGE OR REPAIR TO EXISTING UTILITIES SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO IMMEDIATELY REPORT ANY DAMAGE OR REPAIR TO THE CONTRACT ADMINISTRATOR AND CITY OF DUNCAN.
12. REMOVAL OF EXISTING CURB, GUTTER AND SIDEWALK TO BE AT EXISTING CONSTRUCTION JOINTS OR SAW CUT AT LOCATIONS APPROVED BY THE CITY ENGINEER.
13. CONTRACTOR SHALL COORDINATE WITH BC HYDRO A MINIMUM OF TWO (2) WEEKS PRIOR TO WORK AROUND HYDRO POLES AS IDENTIFIED ON THE DRAWINGS.
14. ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE GUIDELINES AND REGULATIONS, AT THE CONTRACTORS EXPENSE.
15. TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE- TRAFFIC MANAGEMENT MANUAL FOR WORK ON ROADWAYS (TMM); WORKSAFEBC REGULATIONS - PART 16 TRAFFIC CONTROL, AND PROJECT SPECIFICATIONS.
16. ALL EXISTING AMENITIES SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AND TO THE SATISFACTION OF THE OWNER, AT THE CONTRACTORS EXPENSE.

17. ALL WATER SERVICE PIPES ARE TO BE POLYETHYLENE POTABLE WATER TUBING, 200 MST. CERTIFICATION AS PER MAMD SECTION 33 11 01 CLAUSE 2.5.
18. MINIMUM SERVICE PIPE DIAMETER TO BE 19mm.
19. 14 GAUGE BLUE TRACER WIRE SHALL BE INSTALLED @ 50mm ABOVE THE PIPE WITHIN THE BEDDING SAND.
20. MINIMUM DEPTH OF COVER TO BE 0.7m
21. HORIZONTAL AND VERTICAL SEPARATION TO BE IN ACCORDANCE WITH VHA REQUIREMENTS.
22. FLUSHING TO BE COMPLETED IN ACCORDANCE WITH MAMD SECTION 33 11 01 AND AWWA REQUIREMENTS.
23. CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVE (GATE OR OTHER) ON ANY MINIMUM 150mm WATER MAIN SYSTEM. CONTRACTOR SHALL PROVIDE THE CITY OF DUNCAN AN MINIMUM 2 WEEK NOTICE ASSOCIATED WITH ANY LIVE SYSTEM APPURTENANCES.

24. ALL STORM MAIN SHALL BE PVC SDR35 CERTIFIED TO CSA B182.2 AND INCLUDE INTEGRAL BELL AND SPIGOT ENDS, FORMED GROOVE, AND ELECTROMETRIC GASKET. STORM SERVICES TO BE PVC SDR28, CATCHBASIN AND LAWNBASIN LEADS TO BE MINIMUM 150mmØ PVC SDR35 UNLESS OTHERWISE NOTED. SERVICES TO BE MANUFACTURED TO ASTM D3034 AND CERTIFIED TO CAS B182.2. UNLESS OTHERWISE NOTED.

25. ALL BENDS TO BE LONG RADIUS SWEEPS UNLESS APPROVED OTHERWISE BY CITY OF DUNCAN.

26. CONTRACTOR IS RESPONSIBLE TO PROVIDE EROSION AND SEDIMENT CONTROL (ESC) MEASURES AND SEQUENCE THE WORK AS REQUIRED TO PROVIDE CONSTRUCTION POLLUTION PREVENTION FOR THE WORK AND ADDRESS THE NEEDS OF THE PROJECT AND THE ENVIRONMENT OF THE PROJECT TO THE SITE. ESC WORKS AND PRACTICES TO BE IN ACCORDANCE WITH ALL APPLICABLE MUNICIPAL, FEDERAL, AND PROVINCIAL AND DEPARTMENT OF FISHERIES AND OCEANS REQUIREMENTS. ESC MEASURES ARE MOSTLY REQUIRED TO PREVENT EROSION AND SEDIMENTATION. ESC PRACTICES SUCH AS BUT NOT LIMITED TO: STABILIZED CONSTRUCTION CHECK DAMS, SILT FENCING, TEMPORARY STOCKPILE STABILIZATION, SEDIMENT TRAPS, STRAW AND FABRIC CHECK DAMS, CATCH BASIN DRAIN TRAPS, SEDIMENT SINKS, ETC. CONTRACTOR TO MAINTAIN AND MONITOR ESC MEASURES ON A WEEKLY BASIS AT A MINIMUM AND AFTER ALL RAINFALL EVENTS, AND PROVIDE WEEKLY ESC MAINTENANCE REPORTS AND PHOTOS TO THE SATISFACTION OF THE ENGINEER.

27. CONTRACTOR IS RESPONSIBLE FOR AND SHALL COMPLY WITH ALL APPLICABLE MINISTRY OF WATER, LAND AND AIR PROTECTION AND DEPARTMENT OF FISHERIES & OCEANS CANADA REQUIREMENTS AT ALL TIMES DURING CONSTRUCTION.

28. TO PROTECT THE SOIL, WATER AND VEGETATIVE RESOURCES OF THE AREA, ONLY THOSE AREAS NECESSARY TO CONSTRUCT THE WORKS CONTAINED IN THE ENGINEERING DRAWINGS ARE TO BE DISTURBED.

29. THE CONTRACTOR SHALL ENSURE THAT ALL WORKS BE UNDERTAKEN AND COMPLETED BY THE CONTRACTOR IN SUCH A MANNER AS TO PREVENT THE RELEASE OF SEDIMENT LADEN WATER INTO ANY BODY OF WATER, WATERCOURSE OR STORM SEWER.
30. WHILE SITE CONSTRUCTION IS ONGOING, THE CONTRACTOR IS TO BE RESPONSIBLE FOR ENSURING PROPER CONTROL. FACILITIES ARE MAINTAINED AND WORKING ADEQUATELY TO CONTROL ALL DISCHARGES FROM THE SITE. ALL FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR ON A DAILY BASIS TO ENSURE PROPER OPERATION UNTIL REMOVAL.
31. OFFSITE CONTROLS
  - 31.1. FILTER FABRIC TO BE INSTALLED ON ROADWAY CATCHBASINS ADJACENT TO WORK SITE.
  - 31.2. ADJACENT ROADWAYS AFFECTED BY CONSTRUCTION PRACTICES ARE TO BE SWEEP DAILY TO REMOVE DIRT/DOD. DO NOT SWEEP OR WASH DIRT/MUD INTO CATCHBASINS OR WATER SOURCES.
  - 31.3. REFER TO ADDITIONAL REQUIREMENTS IN SECTION 165 THE 2016 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION BY THE MINISTRY OF TRANSPORTATION AND INFRASTRUCTURE.
32. THE CITY OF DUNCAN AND STANTEC ASSUME NO RESPONSIBILITY FOR DAMAGES RESULTING FROM IMPROPER EROSION OR SEDIMENT TRANSFER FROM THE CONSTRUCTION SITE.

ORIGINAL SHEET - 50 A1

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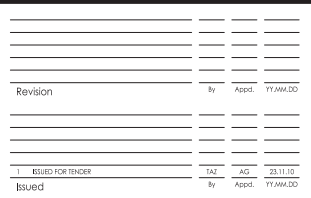
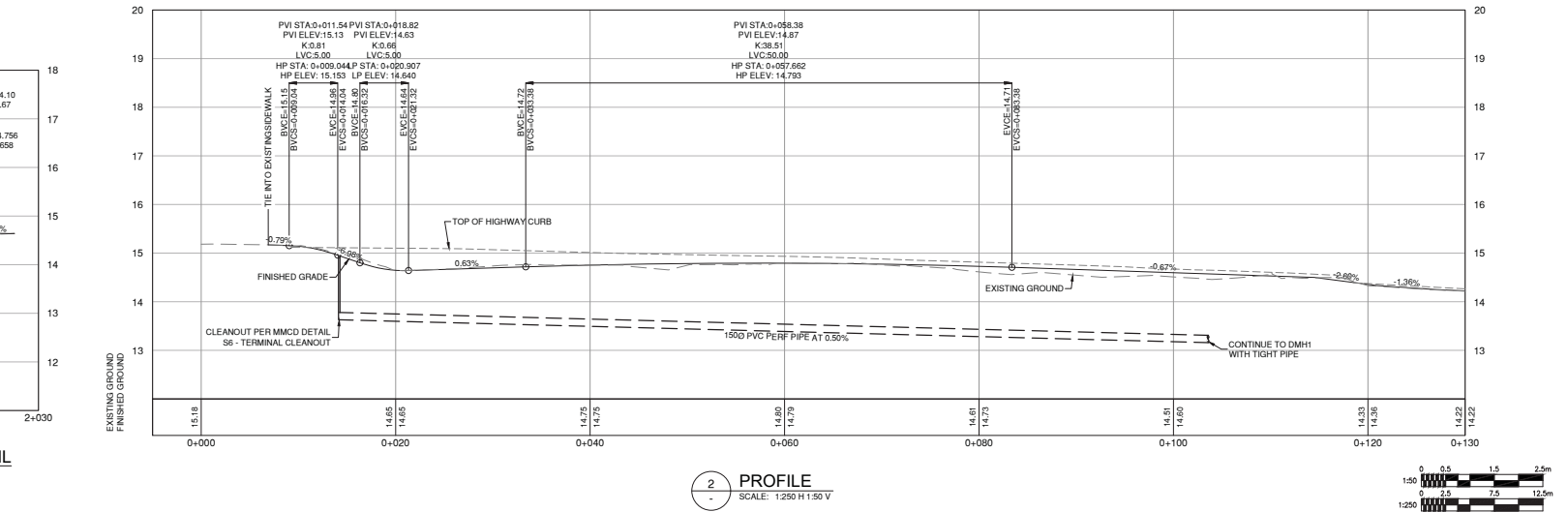
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| CONSTRUCTION NOTES: |   |
|---------------------|---|
| 1                   | EXISTING LUMINAIRE TO REMAIN. PROTECT AND MAINTAIN DURING CONSTRUCTION.   |
| 2                   | ADJUST ALL LIDS, VALVE BOXES, VAULTS, COVERS TO MATCH FINISHED GRADE ELEVATIONS.  |
| 3                   | RELOCATE EXISTING SIGNAGE. COORDINATE LOCATION WITH CONTRACT ADMINISTRATOR PRIOR TO INSTALLATION.   |
| 4                   | TREE TO BE REMOVED, CLEAR AND GRUB. REFER TO LANDSCAPING PLAN.  |
| 5                   | EXISTING TREE TO BE REPLANTED. CONTRACTOR TO PROVIDE TRANSPLANT PROCEDURE TO CITY ARBORIST FOR APPROVAL. TRANSPLANTING TO BE COMPLETED UNDER CITY ARBORIST SUPERVISION. DELIVER TREE TO LOCATION AS DIRECTED BY CITY. |
| 6                   | EXISTING TREE TO BE PROTECTED DURING CONSTRUCTION AND TO REMAIN. APPLY FERTILIZER IN ACCORDANCE WITH MMCD SECTION 31.11.41 SECTION 3.1.5. AND AS DIRECTED BY CITY ARBORIST.   |
| 7                   | EXISTING IRRIGATION SYSTEM TO REMAIN. CITY OF DUNCAN TO RELOCATE SYSTEM. CONTRACTOR TO COORDINATE.  |
| 8                   | EXPLORE EXISTING UTILITIES AND REPORT DEPTH OF COVER AND ALIGMENT TO ENGINEER PRIOR TO CONNECTOR TRAIL CONSTRUCTION. CONNECTOR TRAIL PROFILE PER DETAIL 3.0 ON THIS SHEET.  |



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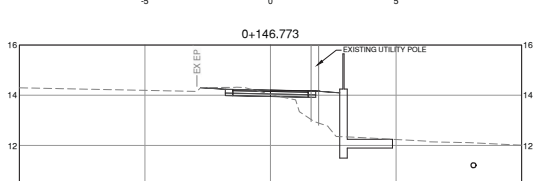
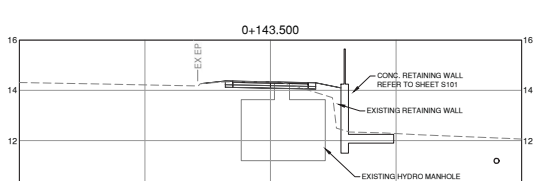
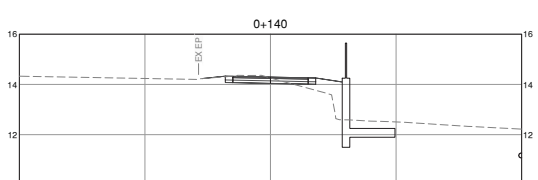
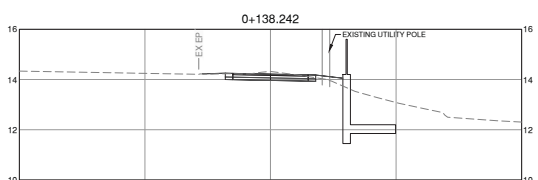
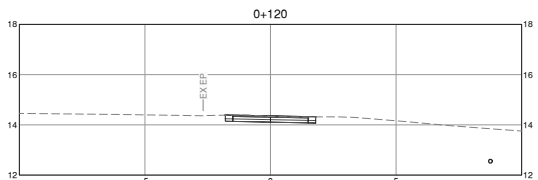
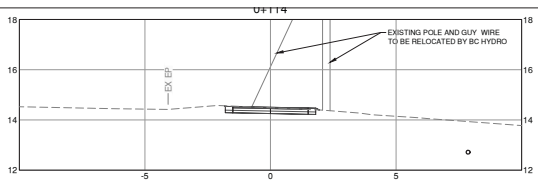
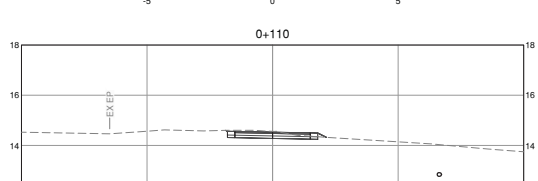
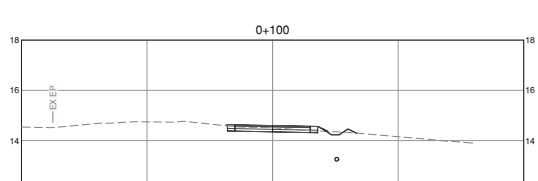
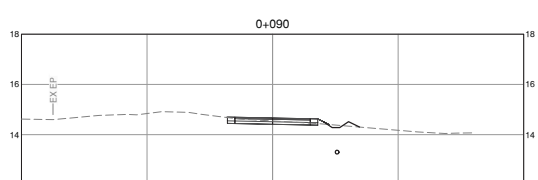
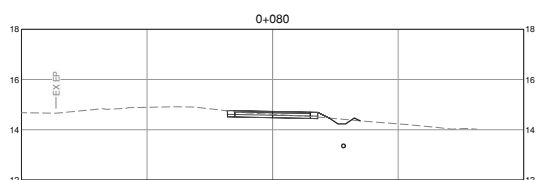
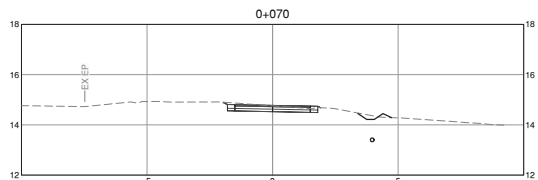
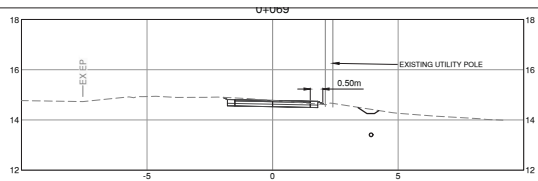
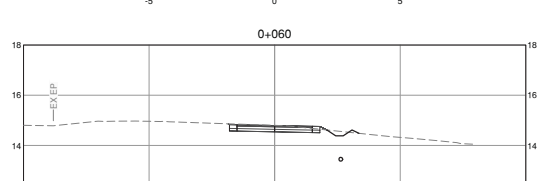
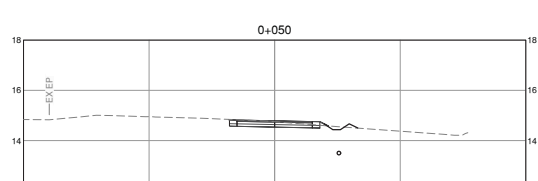
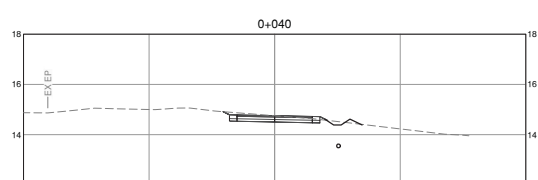
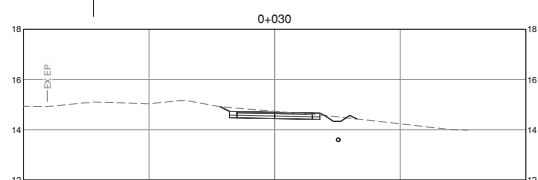
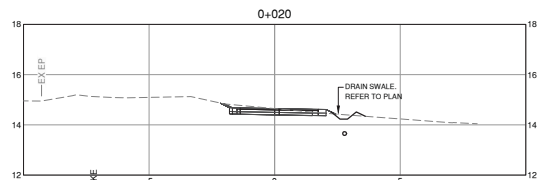
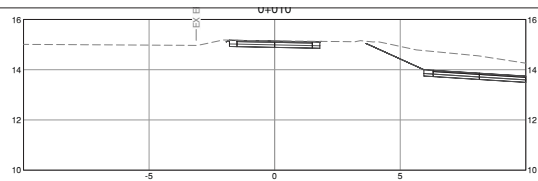








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| Revision | By                | Appd. | YY/MM/DD    |
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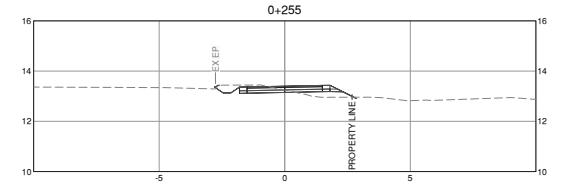
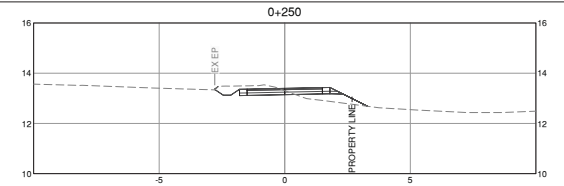
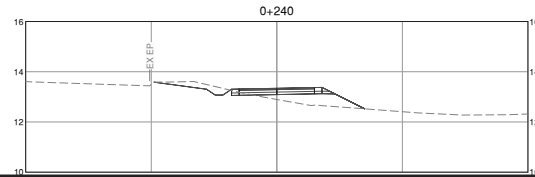
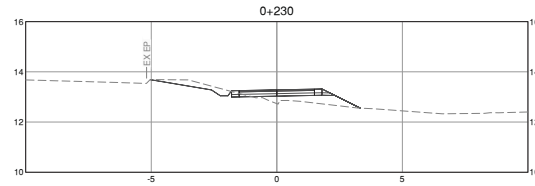
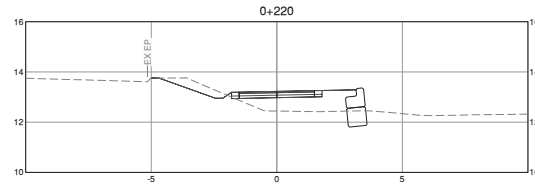
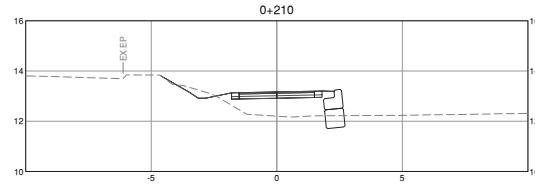
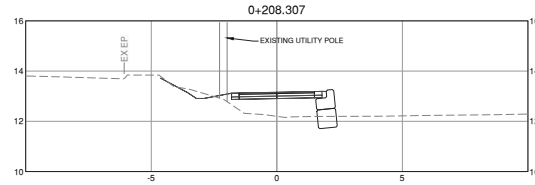
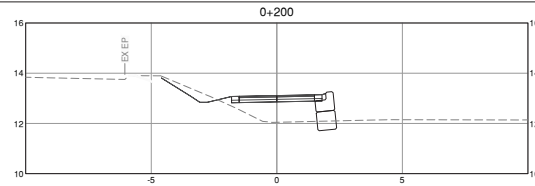
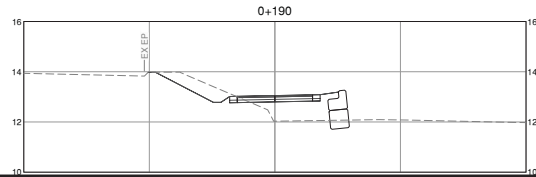
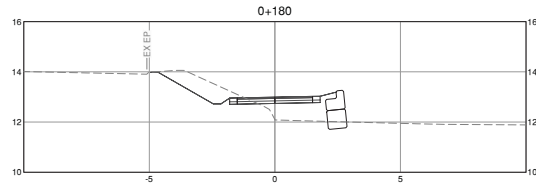
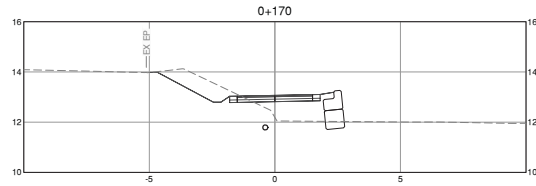
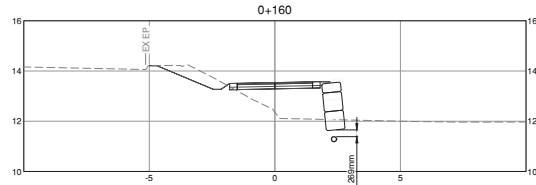
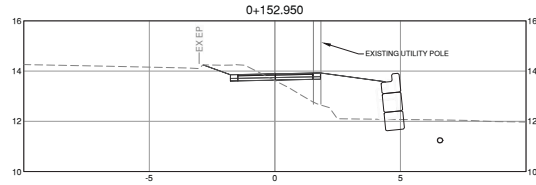
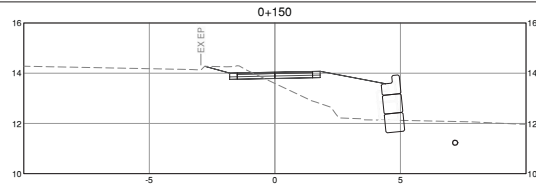
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CITY OF DUNCAN  
  
TRANS-CANADA HIGHWAY  
MULTI-USE PATH  
Duncan, BC  
  
File Name: C105\_C105\_SECTIONS  
AF TI 2018.06.04  
Dwn. Chgs. Dgns. YY/MM/DD

Title  
SECTIONS  
  
Project No.  
111720122  
Drawing No.  
C105  
Scale  
1:100  
Sheet  
6 of 16  
Revision  
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CITY OF DUNCAN

TRANS-CANADA HIGHWAY  
MULTI-USE PATH  
Duncan, BC

File Name: C106\_C106\_SECTIONS  
AF TI 2018.06.04  
Dwnl. Chgs. Dgns. YY/MM/DD

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SECTIONS

Project No.  
111720122

Drawing No.

C106

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Sheet  
Revision

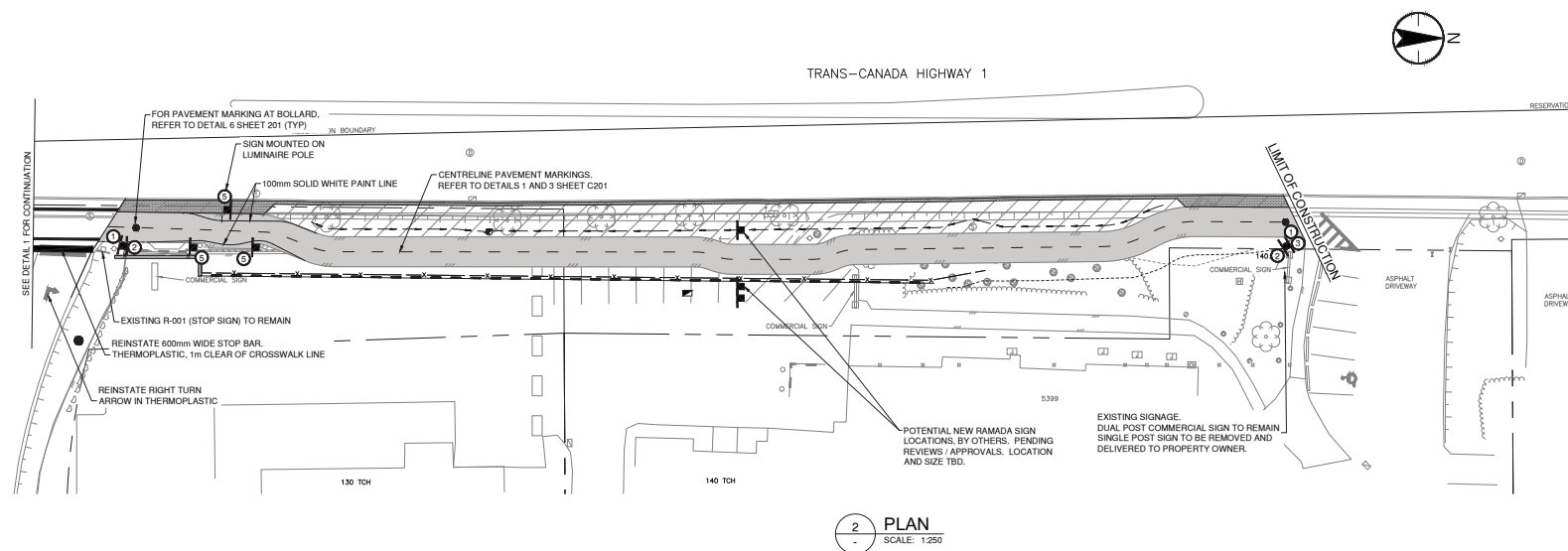
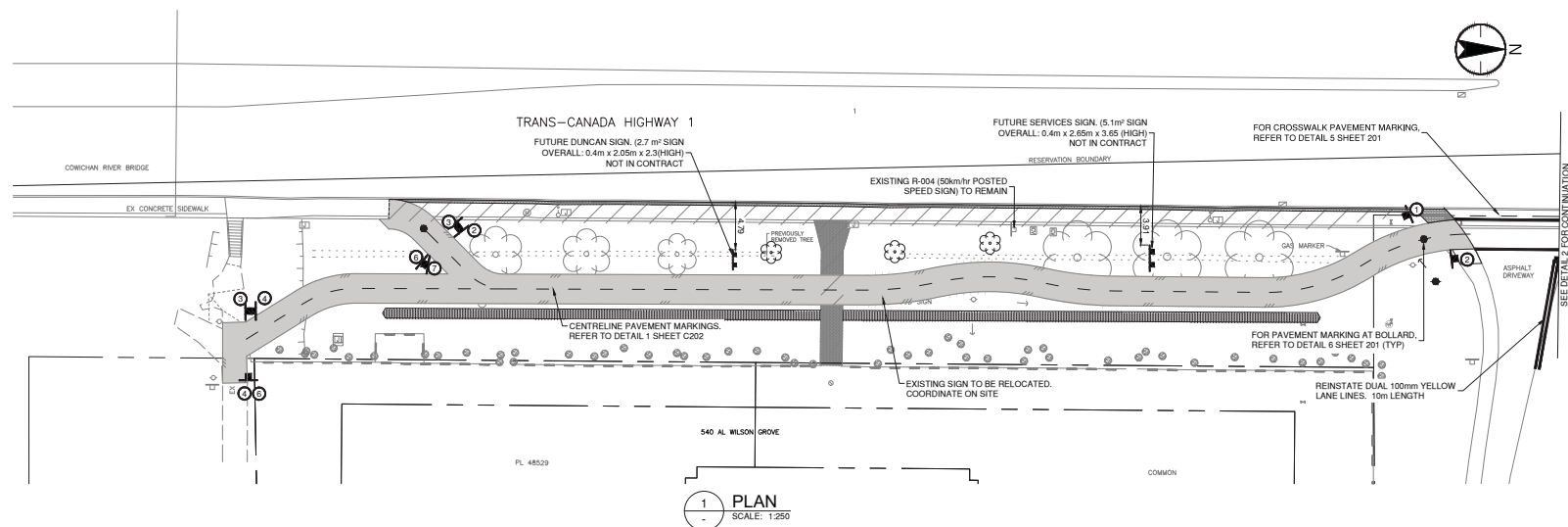
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- 1 RB-89
- 2 RB-79
- 3 RB-93
- 4 W-6
- 5 W-54 (L OR R AS APPROPRIATE)
- 6 R-002
- 7 B-W-32 (8%)

NOTE:  
1. PROVIDE MIN 2.5m CLEARANCE BETWEEN GROUND AND BOTTOM OF SIGN(S)



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TRANS-CANADA HIGHWAY  
MULTI-USE PATH  
Duncan, BC

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Title

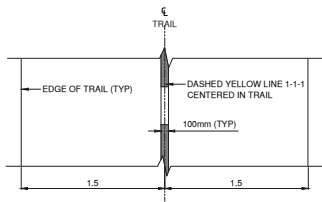
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STATION 0+000 TO STATION 0+270  
SIGNS / PAVEMENT MARKINGS

Project No.  
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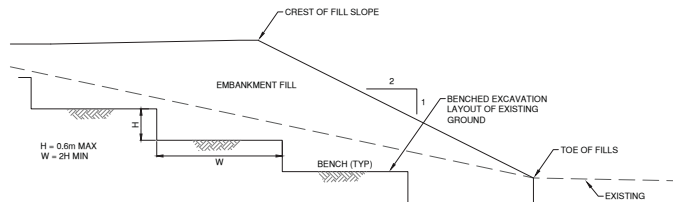
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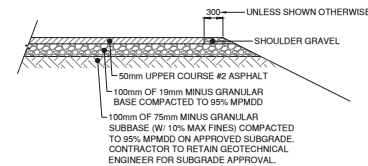


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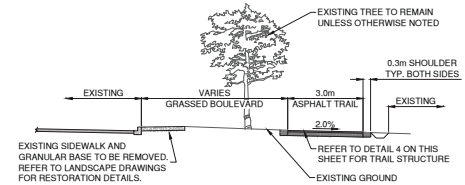


EMBANKMENT FILL TO BE CONSTRUCTED OF WELL-GRADED GRANULAR FILL WITH LESS THAN 10% FINES CONTENT AND MAXIMUM PARTICLE SIZE OF 0.1m. EMBANKMENT TO BE CONSTRUCTED WITH MAXIMUM 0.3m LIFTS AND COMPACTED TO 95% MPMD.

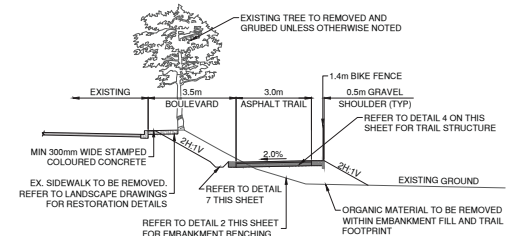
**2 - BENCHED INTERFACE FOR EMBANKMENT SLOPE**  
SCALE: NTS



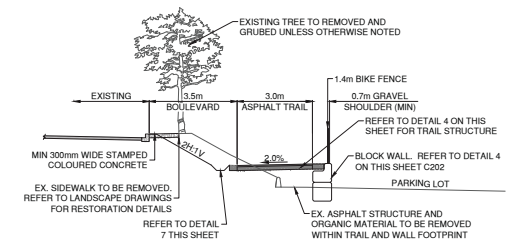
**4 - TRAIL STRUCTURE**  
SCALE: NTS



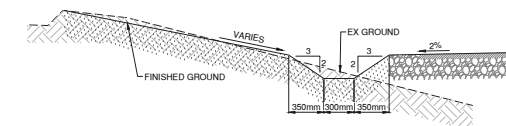
**A SECTION (TYPICAL)**  
SCALE: NTS  
APPROX. STA 0+000 to 0+120



**B SECTION (TYPICAL) WITH EMBANKMENT FILL**  
SCALE: NTS  
APPROX. STA 0+220 to 0+260

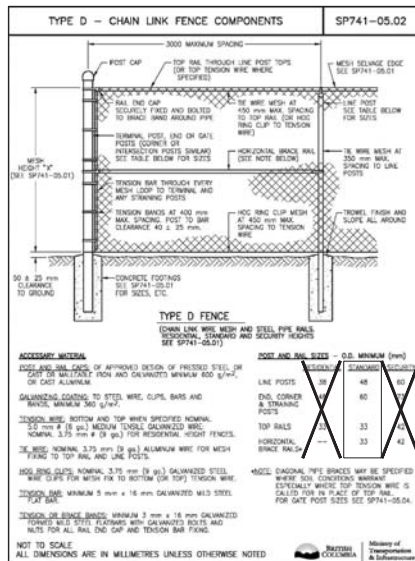


**C SECTION (TYPICAL) WITH RETAINING WALL**  
SCALE: NTS  
APPROX. STA 0+140 to 0+220



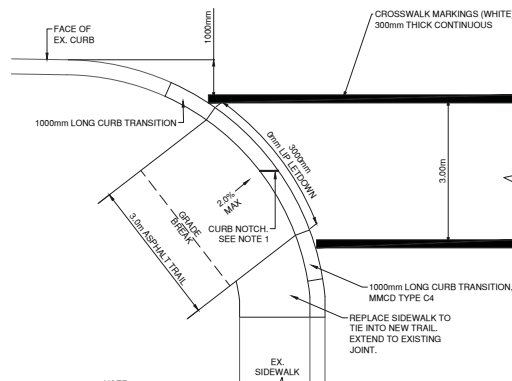
**7 - DITCH DETAIL**  
SCALE: NTS

**SECTION 741 FENCE CONSTRUCTION**



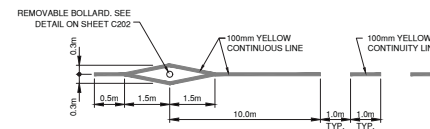
**3 - CHAINLINK FENCE DETAIL**  
SCALE: NTS

- CHAIN LINK FENCE DETAILS PER MOTI SSSHC SP741-05.02 AND AS FOLLOWS:
- FENCE TO BE 'STANDARD' TYPE
  - FENCE HEIGHT 'X' SHALL BE 1.4m
  - FENCING ON RETAINING WALL SHALL HAVE POSTS SPACED AT 1.5m O/C
  - CONCRETE FOOTING PER MOTI SSSHC SP741-05.01 FOR 150mm HIGH FENCE.
  - FOR FENCE MOUNTING ON RETAINING WALL, USE POSTS AND MOUNTING PLATE AS PER MOTI SSSHC SP741-07.02. FENCE POSTS TO BE VERTICAL, CUT BOTTOM OF POST AT ANGLE TO COUNTER ACT WALL BATTER AND WELD TO BASE PLATE. REVISE BASE PLATE TO 155 X 185 X 15 C/W ANCHOR BOLT AT EACH CORNER (4 PER PLATE)
  - ALL FENCING MESH SHALL BE BLACK VINYL COATED TO ACHIEVE A 0.045mm DRY FILM THICKNESS, MINIMUM. POSTS, POST CAPS, RAILS, FITTINGS, AND ALL ACCESSORIES TO BE BLACK POWDER COATED TO A THICKNESS OF 0.075 - 0.150 mm AND MEET MANUFACTURERS SPECIFICATIONS / REQUIREMENTS.



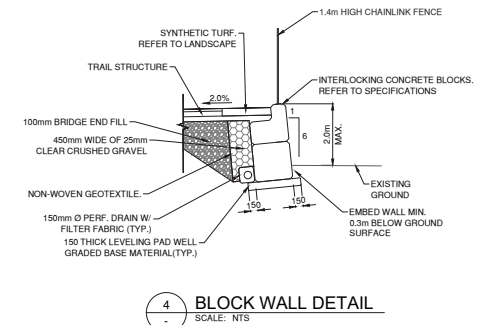
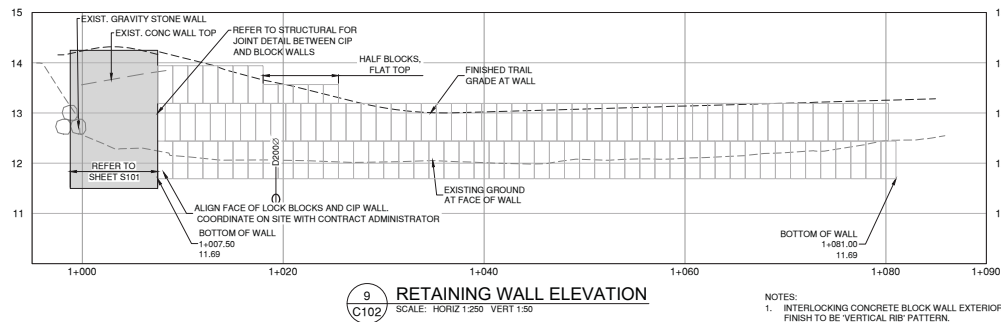
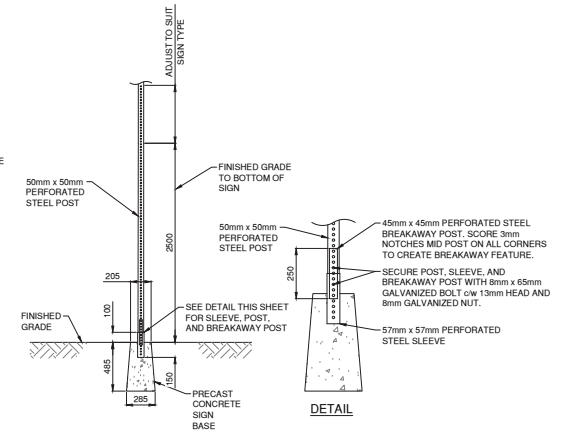
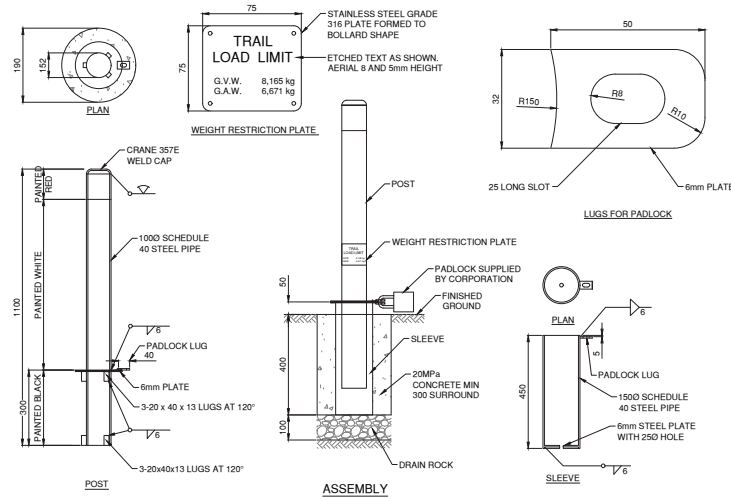
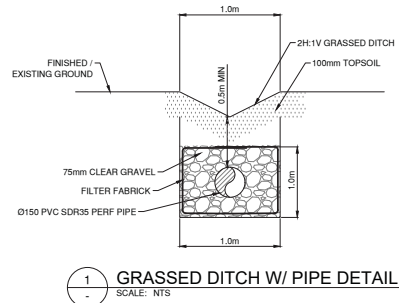
- NOTE:
- 10mm DEEP x 10mm WIDE CURB NOTCH FOR FULL WIDTH OF CURB. CURB NOTCH TO BE PARALLEL WITH PEDESTRIAN CROSSING.
  - ALL PAVEMENT MARKINGS TO BE THERMOPLASTIC UNLESS NOTED OTHERWISE

**5 - CROSSING PAVEMENT MARKING AND CURB**  
SCALE: NTS



**6 - BOLLARD PAVEMENT MARKING**  
SCALE: NTS





| Revision | By                | Appd. | YY/MM/DD       |
|----------|-------------------|-------|----------------|
| 1        | ISSUED FOR TENDER | TAZ   | AG 23.11.10    |
| 2        | ISSUED            | By    | Appd. YY/MM/DD |

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Client/Project  
CITY OF DUNCAN

TRANS-CANADA HIGHWAY  
MULTI-USE PATH  
Duncan, BC

File Name: C201\_C202\_C203\_DET.DWG  
Date: 2018.06.04  
Drawn: CHG  
Checked: DGH  
Plotted: YY/MM/DD

Title  
DETAILS

Project No. 111720122  
Scale AS SHOWN

Drawing No. Sheet Revision

C202 10 of 16















STRUCTURAL DESIGN NOTES

GENERAL

1. ALL CODES REFERENCED ARE TO BE THE LATEST VERSION AT THE DATE OF ISSUE.
2. DESIGN IS BASED ON THE BRITISH COLUMBIA BUILDING CODE 2018.
3. READ THESE DESIGN NOTES IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS.
4. OBTAIN ENGINEER'S APPROVAL BEFORE CUTTING, BORING, OR SLEEPING LOAD-BEARING MEMBERS UNLESS NOTED OTHERWISE.
5. THE STRUCTURAL DRAWINGS ARE FOR THE COMPLETED PROJECT. STABILITY OF THE NEW STRUCTURE DURING CONSTRUCTION REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.
6. REFER TO CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SMALL OPENINGS, SLEEVES, RECESSES, DEPRESSIONS, SINKS, TRENCHES, CURBS, HOUSEKEEPING PADS, EQUIPMENT BASES, AND SLOPES NOT INDICATED ON THE STRUCTURAL DRAWINGS.
7. OPENINGS AND SLEEVES INDICATED ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE ALL OPENING LOCATIONS AND DIMENSIONS WITH THE APPROPRIATE CONSULTANT AND THE SUB-CONTRACTOR PRIOR TO CONSTRUCTION.
8. REVIEW ALL DRAWINGS AND CHECK DIMENSIONS PRIOR TO IMPLEMENTING THE WORK. REPORT ANY DISCREPANCIES TO THE CONSULTANT FOR CLARIFICATION BEFORE PROCEEDING.
9. COORDINATE PLACEMENT AND LOCATION OF ITEMS BY SUBSEQUENT TRADES. RELEVANT TRADES SHALL REVIEW PRIOR TO ERECTION AND/OR INSTALLATION.
10. NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY REQUIRED SITE REVIEWS.

EXISTING STRUCTURES

1. NOTIFY ENGINEER OF ANY STRUCTURES OR SERVICES NOT SHOWN ON THE STRUCTURAL DRAWINGS.

DESIGN LOADS

1. DEAD LOAD: STRUCTURAL SELF-WEIGHT
2. SOIL SEISMIC LOADING DESIGNED FOR A PGA = 0.151 FROM THE CITY OF DUNCAN, FROM DIVISION B APPENDIX C OF THE 2018 BRITISH COLUMBIA BUILDING CODE

DELEGATED DESIGN

1. PORTIONS OF THE DETAILED DESIGN ARE DELEGATED TO THE CONTRACTOR. RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA TO COMPLETE THE DESIGN.
2. SUBMIT SHOP DRAWINGS FOR COMPONENTS REQUIRING DELEGATED DESIGN UNDER THE SEAL AND SIGNATURE OF THE ENGINEER RESPONSIBLE FOR DESIGN.
3. THE FOLLOWING COMPONENTS REQUIRE DELEGATED DESIGN:
  - 3.1. CONCRETE MIX DESIGN.
  - 3.2. DESIGN AND ANCHORAGE OF CHAIN LINK FENCE.
4. THE ENGINEER RESPONSIBLE FOR THE DESIGN IS ALSO RESPONSIBLE FOR REVIEW OF FABRICATION AND INSTALLATION OF THE COMPONENTS. UPON COMPLETION OF THE WORK, PROVIDE SCHEDULE S-8'S AND S-5'S TO THE ENGINEER OF RECORD.
5. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.

FOUNDATION AND GEOTECHNICAL NOTES

1. BEAR ALL CONCRETE ON UNDISTURBED SOIL OR COMPACTED ENGINEERED FILL.
2. REMOVE ALL ORGANIC MATERIAL FROM THE EXTERIOR SLAB AREA.
3. REMOVE ALL LOOSE OR SATURATED MATERIAL AND GROUNDWATER FROM THE BASE OF FOOTING. EXCAVATIONS PRIOR TO PLACING FOUNDATIONS.
4. PROTECT EXCAVATIONS FOR FOOTINGS FROM RAIN, SNOW, FREEZING TEMPERATURES, STANDING WATER, LOSS OF MOISTURE AND DEGRADATION BY APPROVED METHODS.
5. THE CONTRACTOR IS RESPONSIBLE TO RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THAT THE NATIVE FILL BELOW THE RETAINING WALL HAS A BEARING CAPACITY OF  $f_{cs} = 75$  kPa AND  $U_{cs} = 150$  kPa. THE CONTRACTOR IS TO NOTIFY THE CONSULTANT IF THIS IS NOT ACHIEVABLE AND A STRUCTURAL FILL OR OTHER GROUND IMPROVEMENTS ARE TO BE INSTALLED TO SUPPORT THE WALL.
6. GEOTECHNICAL TESTING AGENCY TO BE APPROVED BY AND RESPONSIBLE TO THE ENGINEER AND PAID FOR BY THE OWNER.
7. UNLESS OTHERWISE SHOWN ON PLAN, FOUNDATION ELEMENTS ARE TO BE CENTERED UNDER WALLS, GRADE BEAMS, AND COLUMNS.
8. PROVIDE DOWELS FROM FOOTINGS TO MATCH ALL VERTICAL COLUMN AND WALL REINFORCEMENT OR AS NOTED ON THE DRAWINGS.
9. ENGINEERED FILL MATERIAL TO BE APPROVED BY GEOTECHNICAL ENGINEER. COMPACTION AND MAXIMUM THICKNESS OF ENGINEERED FILL AS PER GEOTECHNICAL REPORT.
10. A MINIMUM 150 mm BLANKET OF FREE DRAINING, WELL GRADED, 25 mm MINUS GRANULAR MATERIAL SHALL BE PLACED IMMEDIATELY BELOW THE SLAB AND COMPACTED TO 95% OF STANDARD PROCTOR DRY DENSITY. MATERIAL TO BE APPROVED BY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
11. NO BACKFILL TO BE PLACED BEHIND THE RETAINING WALL UNTIL CONCRETE ACHIEVES 28-DAY COMPRESSIVE STRENGTH.

CAST-IN-PLACE REINFORCED CONCRETE

1. CONCRETE MATERIALS, QUALITY MIXING, PLACING, FORMWORK AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-A23.1.
2. SUPPLY CONTROLLED CONCRETE IN ACCORDANCE WITH CSA-A23.1 WITH PROPERTIES NOTED IN CONTROLLED CONCRETE TABLE.
3. MAXIMUM FLY ASH CONTENT NOT TO EXCEED 25% OF THE TOTAL CEMENTITIOUS MATERIAL.
4. NOTIFY CONSULTANT 48 HOURS PRIOR TO CONCRETE POURS TO ALLOW FOR REVIEW OF REINFORCEMENT.
5. DO NOT USE ADMIXTURES CONTAINING CALCIUM CHLORIDE.
6. FIELD AND LABORATORY TESTING OF CONCRETE TO BE COMPLETED BY A THIRD PARTY TESTING AND INSPECTION AGENCY APPROVED BY AND RESPONSIBLE TO THE ENGINEER. TESTING AGENCY SHALL BE CERTIFIED TO CSA-A203. ONE SET OF 3 CYLINDERS SHALL BE MADE FOR EACH DAY'S POUR. COPIES OF TEST RESULTS SHALL BE SENT TO THE ENGINEER AND CONTRACTOR. CONTRACTOR SHALL PAY FOR TESTS.
7. COLD WEATHER REQUIREMENTS FOR POURING CONCRETE AS DEFINED BY CANCSA-A23.1, CLAUSE 7.4.2.5 MUST BE MET. CONTRACTOR SHALL ENSURE THAT ALL PRECAUTIONS ARE TAKEN TO ADEQUATELY CURE CONCRETE IN COLD WEATHER INCLUDING BUT NOT LIMITED TO: HEATING THE MIXING WATER, ADDING ACCELERATOR TO THE CONCRETE MIX, COVERING THE CONCRETE AND HEATING THE CONCRETE. WHEN THERE IS A PROBABILITY OF THE TEMPERATURE FALLING BELOW 5°C, AN ADDITIONAL CONCRETE CYLINDER (4 TOTAL) SHALL BE MADE. A MINIMUM OF 2 - 28 DAY SAMPLES SHALL BE LEFT ON SITE FOR 28 DAYS MINIMUM AND STORED UNDER SIMILAR TEMPERATURE AND HUMIDITY CONDITIONS AS THE IN-PLACE CONCRETE.
8. HOT WEATHER REQUIREMENTS FOR POURING CONCRETE AS DEFINED BY CANCSA-A23.1, CLAUSE 7.4.1.8.1 MUST BE MET. WHEN THERE IS A PROBABILITY OF THE TEMPERATURE RISING ABOVE 27°C, AN ADDITIONAL CONCRETE CYLINDER (4 TOTAL) SHALL BE MADE. A MINIMUM OF 2 - 28 DAY SAMPLES SHALL BE LEFT ON SITE FOR 28 DAYS MINIMUM AND STORED UNDER SIMILAR TEMPERATURE AND HUMIDITY CONDITIONS AS THE IN-PLACE CONCRETE.

CONCRETE REINFORCEMENT

1. REINFORCEMENT STEEL TO CONFORM TO CSA-G30.18 GRADE 400.
2. DO NOT WELD REINFORCEMENT UNLESS APPROVED IN WRITING BY THE ENGINEER. REINFORCEMENT TO BE WELDED TO CONFORM TO CSA-G30.18, GRADE 400W. WELDING ONLY PERMITTED BY AN ORGANIZATION CERTIFIED TO CSA-W186.
3. NOTIFY THE ENGINEER PRIOR TO CONCRETE PLACEMENT TO ALLOW FOR REVIEW OF REINFORCING.
4. REINFORCEMENT NOTED WITH "H" TO HAVE A STANDARD HOOK AT ONE END. LENGTH OF BAR INDICATED IS EXCLUSIVE OF HOOK LENGTH.
5. CLEAR CONCRETE COVER TO REINFORCEMENT - REFER TO CLEAR CONCRETE COVER TO REINFORCEMENT TABLE.
6. STANDARD END HOOK LENGTHS FOR REINFORCING - REFER TO STANDARD END HOOKS TABLE.
7. REINFORCEMENT SPLICES - REFER TO REINFORCEMENT SPLICES TABLE.
  - 7.1. WHERE SPLICES ARE INDICATED ON THE DRAWINGS, SUCH DIMENSIONS SHALL APPLY.
  - 7.2. WHERE THE DRAWINGS INDICATE TENSION OR COMPRESSION SPLICES, IT SHALL BE AS INDICATED IN REINFORCEMENT SPLICES TABLE.
  - 7.3. WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
8. EMBEDMENT OF DOWELS - REFER TO REINFORCEMENT SPLICES TABLE.
  - 8.1. WHERE EMBEDMENT IS DIMENSIONED ON THE DRAWINGS, SUCH DIMENSIONS SHALL APPLY.
  - 8.2. WHERE THE DRAWINGS INDICATE TENSION OR COMPRESSION EMBEDMENT, IT SHALL BE AS NOTED IN THE REINFORCEMENT SPLICES TABLE.
  - 8.3. WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS INDICATED ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
9. OPENINGS IN WALLS AND SLABS - PROVIDE TWO 15M BARS EACH SIDE, ONE EACH FACE, EXTENDING 600mm PAST THE OPENINGS, PLUS TWO 15M DIAGONAL BARS AT EACH CORNER, EACH FACE 1200mm LONG UNLESS NOTED OTHERWISE.
10. DO NOT CUT REINFORCEMENT AT OPENINGS WHERE IT CAN BE SPREAD CONTINUOUS AROUND OPENING.
11. ALL REINFORCEMENT TO BE SUPPORTED AT 900mm MAXIMUM SPACING.

CONCRETE FORMWORK

1. DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CANCSA-S269.3.

CONCRETE FINISHES

1. VIBRATE AND SCREED ALL CONCRETE SLABS INCLUDING SLABS ON GRADE AND TOPPINGS. FLOAT SURFACE WITH WOOD OR METAL FLOATS. TROWEL CRACK CONTROL JOINTS AS INDICATED ON PLAN OR AT 9M, 4M X 6M GRID. STEEL POWER TROWEL TO SMOOTH EVEN SURFACE WITH A TOLERANCE OF 3MM IN 3M. KEEP MOIST FOR 7 DAYS.
2. ALL CONCRETE WALLS WHICH ARE EXPOSED SHALL BE FORMED WITH MEDIUM DENSITY OVERLAP PLYWOOD FORMS. FORM TIES SHALL BE "SNAP" TIES WITH 20MM DIAMETER BY 20MM DEEP CONES. GRIND OFF ALL HIGH SPOTS FROM THE FINISHED SURFACES. SACK RUB TO A SMOOTH SURFACE READY FOR PAINT FINISH.
3. PROVIDE 20MM CHAMFER TO ALL EXPOSED CONCRETE CORNERS.

STRUCTURAL STEEL

1. DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-S16 AND THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
2. STEEL TO BE FABRICATED AND ERECTED BY A SHOP CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA-W47.1, DIVISION 1 OR 2.1 ONLY.
3. SUBMIT SHOP DRAWINGS SHOWING ALL STRUCTURAL STEEL MEMBERS FOR REVIEW PRIOR TO FABRICATION. WELDING TO CONFORM TO CSA-W59.
4. WELDING TO REINFORCEMENT STEEL ONLY BY A SHOP CERTIFIED TO CSA-W186 WITH REINFORCEMENT CONFORMING TO CSA-G30.18, GRADE 400W.
5. SHOP GALVANIZING TO CONFORM TO CANCSA-G164. ALL STRUCTURAL STEEL (INCLUDING BOLTS AND HARDWARE) TO BE HOT DIPPED GALVANIZED.
6. ALL EXPOSED WELDS TO BE CONTINUOUS. GRIND ALL EXPOSED WELDS SMOOTH, INCLUDING PAINTED STEEL.
7. SUPPLY STEEL WITH PROPERTIES NOTED IN STEEL GRADES TABLE.
8. PROVIDED A MINIMUM OF 2 BOLTS IN BOLTED CONNECTIONS.
9. ALL BOLTED CONNECTIONS TO USE SNUG-TIGHTENED HIGH-STRENGTH BOLTS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
10. DO NOT SPLICE MATERIAL WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. WHERE GRANTED, A COMPLETE NON-DESTRUCTIVE EXAMINATION WILL BE MANDATORY AND PAID FOR BY THE SUB-CONTRACTOR.
11. ALL GROUT UNDER BEARING PLATES AND BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK TYPE WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 50 MPa. INSTALLED IN ACCORDANCE WITH THE SPECIFICATION AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE GROUT WEEP HOLES IN COLUMN BASE PLATES WHERE SHOWN.

| CLEAR CONCRETE COVER TO REINFORCEMENT                              |   |                         |                                     |  |  |
|--|---|-------------------------|-------------------------------------|--|--|
| TO BE READ IN CONJUNCTION WITH CONCRETE REINFORCEMENT DESIGN NOTES |   |                         |                                     |  |  |
| EXPOSURE CONDITION   | N | EXPOSURE CLASS          |                                     |  |  |
|  |   | F-1, F-2, S-1, S-2, S-3 | CX-CL, C-1, C-2, C-3, A-1, A-2, A-3 |  |  |
| CAST AGAINST FORMWORK OR EXPOSED SURFACE OF SLABS                  | - | 40 mm                   | 60 mm                               |  |  |
| CAST AGAINST SOIL  | - | 75 mm                   | 75 mm                               |  |  |

| CONTROLLED CONCRETE   |                   |   |                             |             |                 |               |             |
|---|-------------------|---|-----------------------------|-------------|-----------------|---------------|-------------|
| TO BE READ IN CONJUNCTION WITH CAST-IN-PLACE REINFORCED CONCRETE DESIGN NOTES |                   |   |                             |             |                 |               |             |
| CONCRETE ELEMENT  | CLASS OF EXPOSURE | MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (MPa) | MAXIMUM AGGREGATE SIZE (mm) | TOTAL AIR % | SUMP RANGE (mm) | MAX W/C RATIO | CEMENT TYPE |
| REINFORCED SIDEWALK   | C-2               | 32  | 20                          | 5 - 8       | 75 - 125        | 0.45          | GU          |
| RETAINING WALL  | C-1               | 35  | 20                          | 5 - 8       | 75 - 125        | 0.40          | GU          |

| REINFORCEMENT SPLICES  |                         |  |                                   |
|--|-------------------------|--|-----------------------------------|
| TO BE READ IN CONJUNCTION WITH CONCRETE REINFORCEMENT DESIGN NOTES   |                         |  |                                   |
| NOTES:   |                         |  |                                   |
| 1. THIS TABLE IS BASED ON NORMAL WEIGHT CONCRETE $f_c = 35$ MPa AND ON REINFORCING STEEL $f_y = 400$ MPa.  |                         |  |                                   |
| 2. TOP HORIZONTAL BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 300mm OF CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT. |                         |  |                                   |
| 3. FOR STANDARD EMBEDMENT DEPTH INTO CONCRETE, DIVIDE BASIC TENSION LAP SPLICE NUMBERS BY 1.3.   |                         |  |                                   |
| TENSION SPLICE (mm)  |                         |  |                                   |
| BAR SIZE   | COMPRESSION SPLICE (mm) | VERTICAL OR BOTTOM HORIZONTAL BARS UNCAUGHT BARS | TOP HORIZONTAL BARS UNCAUGHT BARS |
| 10M  | 300                     | 400  | 500                               |
| 15M  | 450                     | 600  | 750                               |
| 20M  | 600                     |  | 1000                              |

TYPICAL ABBREVIATIONS

|             |                               |        |                          |
|-------------|-------------------------------|--------|--------------------------|
| ADDL        | "ADDITIONAL"                  | L.G.   | "LONG"                   |
| ALT         | "ALTERNATE"                   | MAX    | "MAXIMUM"                |
| ALUM        | "ALUMINUM"                    | MCH    | "MECHANICAL"             |
| APPO        | "APPROVED"                    | MIN    | "MINIMUM"                |
| APPROX or ± | "APPROXIMATELY"               | NTS    | "NOT TO SCALE"           |
| ARCH        | "ARCHITECT"                   | O.C.   | "ON CENTER"              |
| AR or AROD  | "ANCHOR ROD"                  | O.F.   | "OUTSIDE FACE"           |
| B.L.L.      | "BOTTOM LOWER LAYER"          | OPNG   | "OPENING"                |
| B.U.L.      | "BOTTOM UPPER LAYER"          | OPP    | "OPPOSITE"               |
| BM          | "BEAM"                        | PL     | "PLATE"                  |
| BOT         | "BOTTOM"                      | R/W    | "REINFORCE WITH"         |
| BS          | "BOTH SIDES"                  | REIN/  | "REINFORCING"            |
| C/W         | "COMPLETE WITH"               | S.F.   | "STEP FOOTING"           |
| CANT        | "CANTILEVER"                  | S.W.   | "SHORT WAY"              |
| CLR         | "CLEAR"                       | SM     | "SMALL"                  |
| CMB         | "CONCRETE MASONRY UNIT"       | STAGG  | "STAGGERED"              |
| COL         | "COLUMN"                      | STIFF  | "STIFFENER"              |
| CONC        | "CONCRETE"                    | STIRR  | "STIRRUPS"               |
| CONN        | "CONNECTION"                  | SYMM   | "SYMMETRICAL"            |
| CONSTR.     | "CONSTRUCTION"                | TAB    | "TOP & BOTTOM"           |
| CONT        | "CONTINUOUS"                  | T.L.L. | "TOP LOWER LAYER"        |
| CP          | "COMPLETE PENETRATION (WELD)" | T.O.   | "TOP OF"                 |
| DIA         | "DIAMETER"                    | T.O.F. | "TOP OF FOOTING"         |
| DWG         | "DRAWING"                     | T.O.S. | "TOP OF STEEL"           |
| DWL         | "DOWEL"                       | T.O.W. | "TOP OF WALL"            |
| EW          | "EXISTING"                    | T.U.L. | "TOP UPPER LAYER"        |
| E.F.        | "EACH FACE"                   | THK    | "THICK"                  |
| E.S.        | "EACH SIDE"                   | TPP    | "TYPICAL"                |
| E.W.        | "EACH WAY"                    | U.N.O. | "UNLESS NOTED OTHERWISE" |
| EL          | "ELEVATION"                   | UPS    | "UNDERSIDE"              |
| ELEV        | "ELEVATION"                   | VERT   | "VERTICAL"               |
| FTG         | "FOOTING"                     | W/F    | "WEATHER FIELD"          |
| H/E         | "HOOK ONE END"                | W      | "WITH"                   |
| H/E         | "HOOK TWO ENDS"               | W/P    | "WORK POINT"             |
| HORIZ       | "HORIZONTAL"                  | WWW    | "WELDED WIRE MESH"       |
| H.F.        | "INSIDE FACE"                 |        |                          |
| L.W.        | "LONG WAY"                    |        |                          |

|                            |    |        |          |
|----------------------------|----|--------|----------|
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| Revision                   | By | Appd.  | YY/MM/DD |
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|                            |    |        |          |
|                            |    |        |          |
| 2. ISSUED FOR CONSTRUCTION | MF | B.J.G. | 22/07/25 |
| 1. DATE DESIGN SUBMISSION  | TI | B.J.G. | 22/06/16 |
| Issued                     | By | Appd.  | YY/MM/DD |

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Client/Project  
CITY OF DUNCAN

TRANS-CANADA HIGHWAY  
MULTI-USE PATH  
Duncan, BC

File Name: SDO1 REVIEW  
AD Dwg. B.J.G. Chg. B.F. Dgns. 2022/06/02  
YY/MM/DD

Title  
GENERAL NOTES

Project No. 111720122 Scale

Drawing No. Sheet Revision

S001 14 of 16 -





EXIST ELECTRICAL VAULT, SEE CIVIL

A A1 B A1 A

C

FOOTING, SEE SECTIONS

EXISTING SIGN, SEE CIVIL

EXISTING SIGN FOOTING, SITE VERIFY SIZE

FOOTING, SEE SECTIONS

GRAY SIKAFLEX JOINT BETWEEN LOCK BLOCK WALL AND CONC. WALL

END SLOPE OF WALL 1:5 TO MATCH LOCK BLOCK BATTER

CONTRACTOR TO CONFIRM DIMENSIONS ON SITE

0+1

H

UE

0.00

1.74±

1.00

1.00

2.97±

0.15 MIN.

1.80±

0.15 MIN.

3.33±

0.30

Diagram illustrating the cross-section of a retaining wall and foundation system, showing various layers and dimensions.

**Labels and Dimensions:**

- FIN. GRADE, SEE CIVIL
- 0.15 MIN.
- 300 CONC. WALL, SEE PLAN
- 20M VERT H.I.E. INTO FOOTING @ 250 o.c. AT SECTION A
- 25M VERT H.I.E. INTO FOOTING @ 200 o.c. AT SECTION A1
- 15M CONC. HORIZ @ 400 o.c. PROVIDE CORNER BARS AT WALL CORNER TO MATCH HORIZ REINF
- 75 DIA PVC WEEP DRAINS @ 2m o.c.
- 20M H.2.E @ 250 o.c. AT SECTION A
- 25M H.2.E @ 200 o.c. AT SECTION A1
- 15M CONT. @ 250 o.c. FIN. GRADE TO SLOPE AWAY FROM WALL, SEE CIVIL
- FOOTING, SEE PLAN
- 0.30
- 1.80
- 2.00
- 0.35
- 0.45 MIN.

**Notes:**

- FUNCT. DESIGN BY OTHERS
- FIN. GRADE, SEE CIVIL
- COMPACTED GRANULAR BACK FILL PLACED AFTER CONCRETE REACHES 28-DAY COMPRESSIVE STRENGTH
- DRAIN PIPE, SEE CIVIL

2.35

FENCE, DESIGN BY OTHERS

0.15 MIN.

FIN. GRADE, SEE CIVIL

EXIST ELECTRICAL VAULT, SEE CIVIL

300 CONC WALL, SEE PLAN

20M VERT H.1.E. @ 250 o.c.

15M CONT. HORIZ @ 400 o.c.

COMPACTED GRANULAR BACK FILL AS A/S201

75 DIA PVC WEEP DRAINS @ 2m o.c.

DRAIN PIPE, SEE CIVIL

FIN. GRADE, SEE CIVIL

0.45 MIN.

0.30

0.46 +/-

(0.15 MIN.)

BOT. OF WALL EQUALS US OF FOOTING AT A1/S101

EXIST SIGN FOOTING SEE PLAN

Diagram illustrating the cross-section of a retaining wall and drainage system. The wall is 300 CONC WALL AS A/S201. The drainage system includes 75 DIA PVC WEEP DRAINS @ 2m o.c., 15M CONT. H.I.E. @ 250 o.c., and 20M H.Z.E. @ 250 o.c. The wall is topped with a FIN. GRADE, SEE CIVIL, and a FENCE, DESIGN BY OTHERS. The base is a FOOTING, SEE PLAN. The wall is surrounded by COMPACTED GRANULAR BACK FILL A/S201. A DRAIN PIPE, SEE CIVIL, is shown at the base. Dimensions include 2.00m for the wall height, 0.35m for the footing height, 0.6m for the footing width, and 0.30m for the base width. A vertical dimension of 0.15 MIN. is indicated for the wall thickness.

## Consultants

Permit-Seal

Client/Project  
CITY OF DUNCAN

TRANS-CANADA HIGHWAY  
MULTI-USE PATH

Duncan, BC

Title  
SITE PLAN, RETAINING WALL PLAN  
AND SECTIONS

|                          |                   |               |
|--------------------------|-------------------|---------------|
| Project No.<br>111720122 | Scale<br>AS SHOWN |               |
| Drawing No.<br>S101      | Sheet<br>15 of 16 | Revision<br>- |