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NOTES:

FOUNDATION DESIGN BASED ON INFORMATION SUPPLIED BY ALL FOR CUSTOM SUPER-CR DUAL RADIUS AREA CSP CULVERT (17.022 m WIDE x 5.285 m HIGH x 25000 m LONG) AND MAY VARY FROM OTHER MANUFACTURER.

CONCRETE FOOTING HAS BEEN DESIGNED FOR THE FOLLOWING LOADS APPLIED TO THE TOP OF THE FOUNDATION WALL AT EL. 6.050 m.

| LOAD | COVER | DEAD | LIVE | SEISMIC |
|------------|-------|----------------|----------------|----------------|
| AN/M | m | F ₁ | F ₂ | F ₃ |
| UNFACTORED | 128 | 450.0 | 40.0 | 56.0 |
| FACTORED | 128 | 50.0 | 50.0 | 78.4 |
| UNFACTORED | 178 | 75.0 | 48.0 | 53.0 |
| FACTORED | 178 | 88.8 | 60.0 | 74.2 |

SOIL PRESSURE ON FOUNDATION STRUCTURE WAS BASED ON AN EQUIVALENT FLUID PRESSURE OF 7.0 kPa.

THE FOOTING DESIGN WAS BASED ON ULS MINIMUM SOIL BEARING CAPACITY OF 100 kPa. A COEFFICIENT OF FRICTION OF 0.50 WAS USED TO ENSURE RESISTANCE OF FOUNDATION STRUCTURE FROM SLIDING UNDER HORIZONTAL LOADS.

ANY DEVIATION FROM THE ABOVE LOADING ON THE CULVERT FOUNDATION WILL REQUIRE VERIFICATION BY A QUALIFIED ENGINEER REGISTERED OR LICENSED IN THE PROVINCE OF NEW SCOTIA. ADDITIONAL COST FOR ENGINEERING AND MODIFICATIONS TO FOUNDATION STRUCTURE WILL BE ASSUMED BY CONTRACTOR.

CONTRACTOR IS TO CONFIRM IN WRITING THAT THE SOIL BELOW FOUNDATION WAS CHECKED FOR SETTLEMENT IN ACCORDANCE WITH ARCH SUPPLIER PRIOR TO INSTALLATION OF ARCH.

BACKFILLING AROUND INSTALLATIONS:
DO NOT BACKFILL AROUND OR OVER CAST-IN-PLACE CONCRETE WITHIN 24 HOURS AFTER PLACING OF CONCRETE.

PLACE LAYERS SIMULTANEOUSLY ON BOTH SIDES OF INSTALLED WORK TO EQUALIZE LOADING. DIFFERENCE NOT TO EXCEED 60mm.

FOUNDATION CONSTRUCTION IS NOT TO PROCEED UNTIL CONTRACTOR HAS SUBMITTED CSP CULVERT ENGINEER-STAMPED DRAWINGS COMPLETE WITH REACTIONS.

GEOTECHNICAL INFORMATION:
THE DESIGN OF THE FOUNDATION SYSTEM HAS BEEN BASED ON ASSUMED SUITABLE SOIL CONDITIONS AS PER INFORMATION PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT, PROJECT NUMBER 131818417, DATED JULY 31, 2015, PREPARED BY STANTEC CONSULTING LTD. ACTUAL SOIL CONDITIONS TO BE FIELD VERIFIED AT TIME OF CONSTRUCTION.

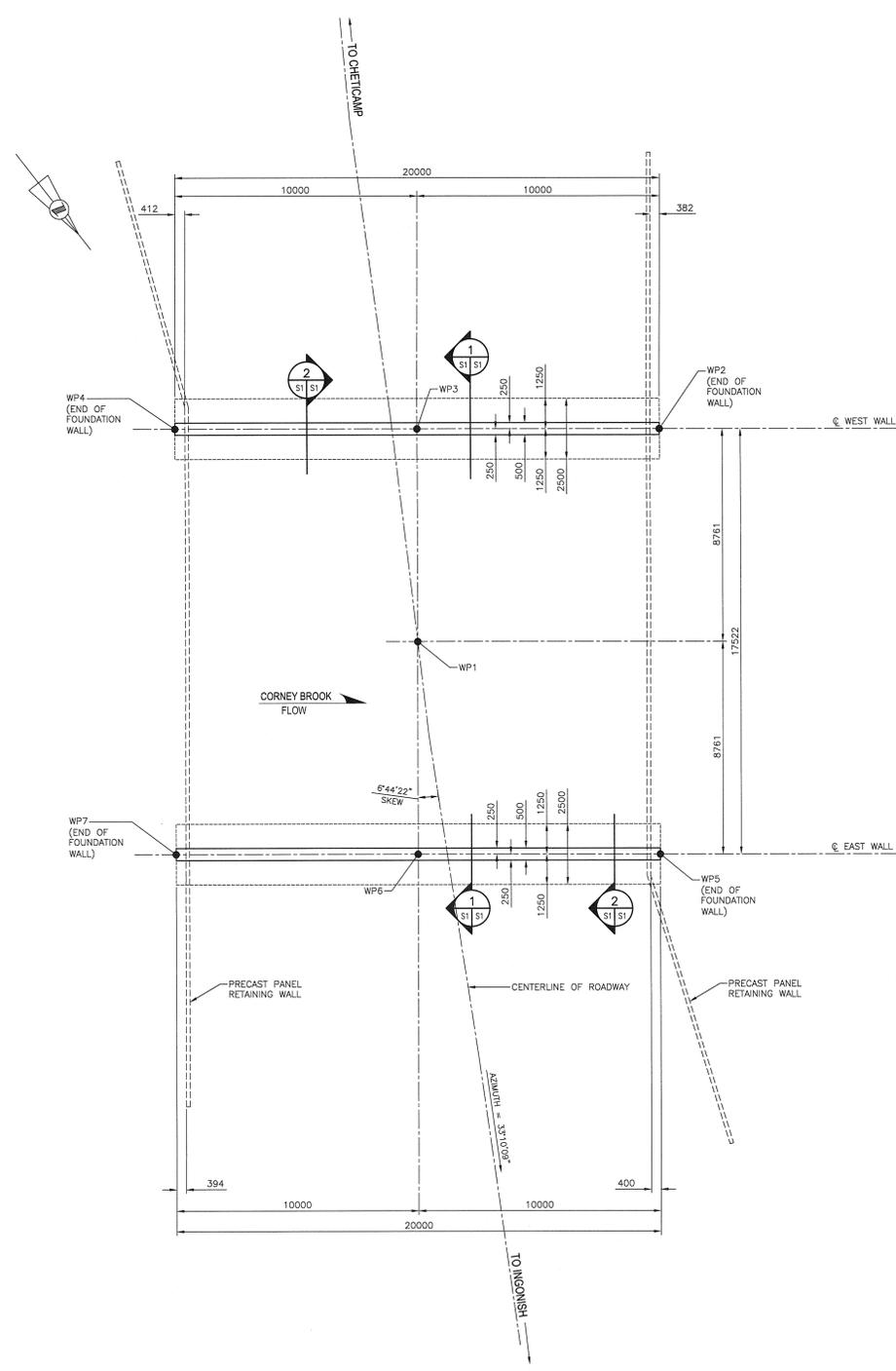
UNLESS OTHERWISE DIRECTED BY ENGINEER, RECOMMENDATIONS IN THE GEOTECHNICAL REPORT ARE TO BE REGARDED AS MINIMUM REQUIREMENTS.



CONSULTANTS: VALRON
INGENIEURS CONSULTANTS

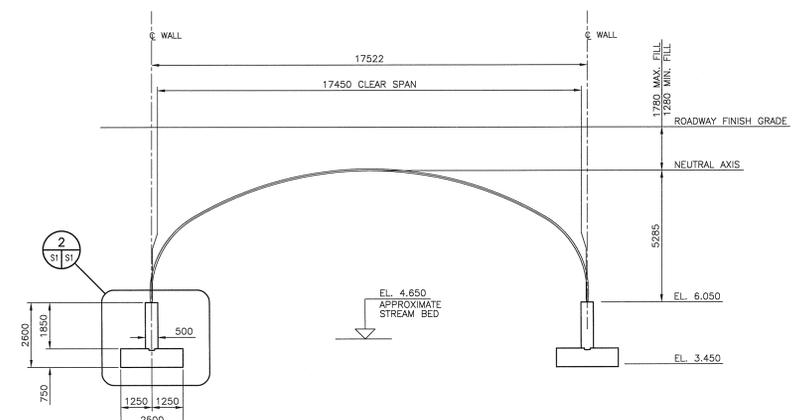
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Moncton, NB E1C 6Y6
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www.valron.ca
Email: info@valron.ca
Job No. 15275

ALL DETAILS AND NOTES FOR STRUCTURAL REQUIREMENTS AS SHOWN ON THIS DRAWING ARE PRODUCED SPECIFICALLY FOR THIS PROJECT AND ARE THE SOLE PROPERTY OF VALRON ENGINEERS INC. THEY MAY NOT BE REPRODUCED, COPIED OR OTHERWISE USED WITHOUT EXPRESS WRITTEN PERMISSION FROM THE MANUFACTURER. COPYRIGHT © 2015 VALRON ENGINEERS INC.
TOUTES LES INFORMATIONS INCLUSES SUR CE DÉSIN SONT SPÉCIFIQUES À CE PROJET ET SONT LA PROPRIÉTÉ DE VALRON ENGINEERS INC. IL EST STRICTEMENT INTERDIT DE RÉPRODUIRE ET/OU UTILISER CES DÉSINS SANS PERMISSION ÉCRITE DE LA SUBSTITUTION. DROIT D'AUTEUR © 2015, VALRON ENGINEERS INC.

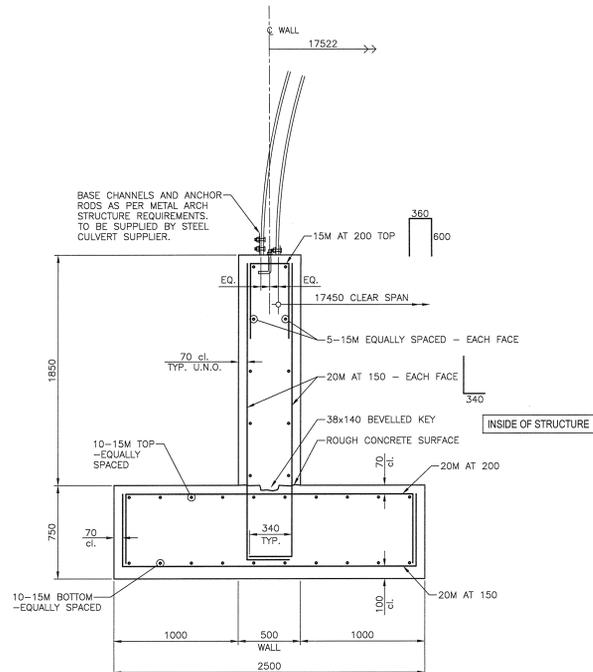


FOUNDATION PLAN
SCALE: 1:100

| WORKING POINT TABLE | | |
|---------------------|-------------|--------------|
| No. | EASTING | NORTHING |
| WP1 | 658528.7733 | 5176689.3438 |
| WP2 | 658515.4822 | 5176689.0395 |
| WP3 | 658523.1529 | 5176682.6239 |
| WP4 | 658530.8236 | 5176676.2082 |
| WP5 | 658526.7230 | 5176702.4793 |
| WP6 | 658534.3937 | 5176696.0637 |
| WP7 | 658542.0644 | 5176689.6451 |



CENTRELINE CROSS-SECTION
SCALE: 1:100



DETAIL
SCALE: 1:20



| | | |
|-----------|-------------------|------------|
| 0 | ISSUED FOR TENDER | 30/10/2015 |
| revisions | | date |

PROJECT: ROAD REALIGNMENT AND CULVERT REPLACEMENT CORNEY BROOK
CAPE BRETON HIGHLANDS NATIONAL PARK
INVERNESS COUNTY, NS

DRAWING: CORNEY BROOK CULVERT FOUNDATION PLAN SECTIONS AND DETAILS

DESIGNED: J.M. CHEVARIS
DATE: 16/10/15
DRAWN: J. MITTON
DATE: 16/10/15
APPROVED: R. VALE
DATE: 16/10/15
RENDER: K. McCARTHY
PROJECT NUMBER: R.077166.001

DRAWING NO.: S-01