Van Dolah
ENTERPRISES INC.
FORESTRY CONSULTANTS

# UNNAMED CREEK
# CHELASIE M/L
# km 1+500 – AS BUILT

| no. | date | by | eng. | subject |
|---|---|---|---|---|

ALLNORTH
CONSULTANTS
LIMITED

301-1777 THIRD AVE.
PRINCE GEORGE
B.C. 562-7291

reproduction scale
0 10 20 30

| | |
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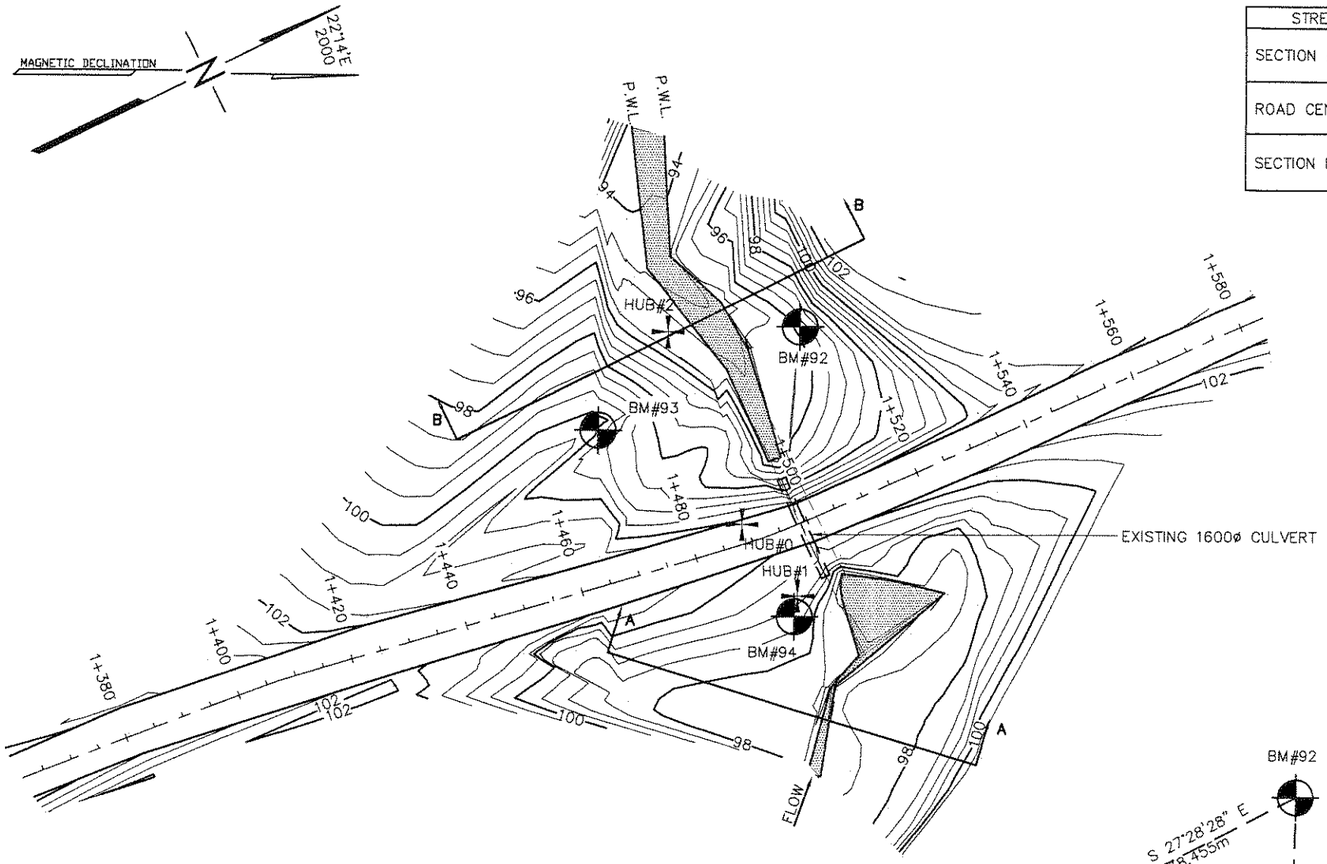
| plot date | 2001/01/16 |
| scale | |
| drawn | |
| design | |
| checked | |
| map ref. | |
| revision | sheet no. of |

drawing no.
00-C-211
filename: 00C211-T.DWG

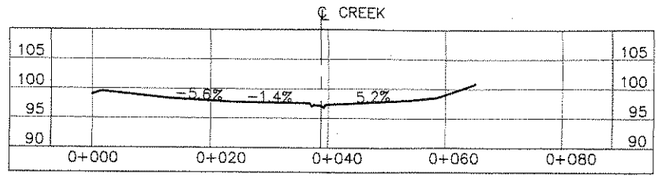



SITE PLAN

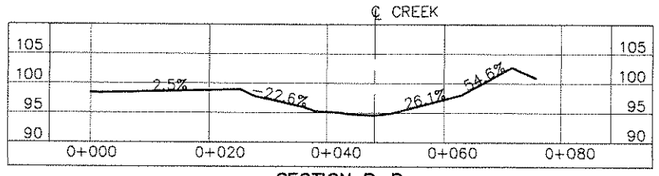
| STREAMBED COMPOSITION | |
|---|---|
| SECTION A–A | 30% 0–5mmø<br>30% 5–50mmø<br>10% 50–250mmø<br>30% > 250mmø |
| ROAD CENTER | |
| SECTION B–B | |

**SURVEY INFORMATION:**

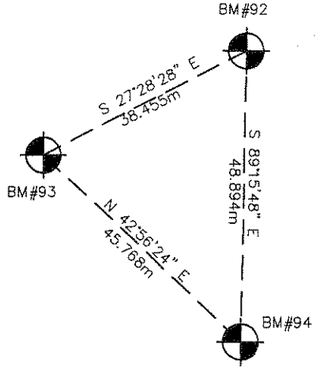
| | ELEVATION | NORTHING | EASTING |
|---|---|---|---|
| BM#92 | 96.652 | 5009.604 | 4966.618 |
| BM#93 | 100.173 | 4975.470 | 4984.329 |
| BM#94 | 99.015 | 5008.976 | 5015.508 |
| HUB#0 | 100.000 | 5000.000 | 5000.000 |
| HUB#1 | 99.270 | 5009.551 | 5012.015 |
| HUB#2 | 95.130 | 4987.137 | 4967.664 |



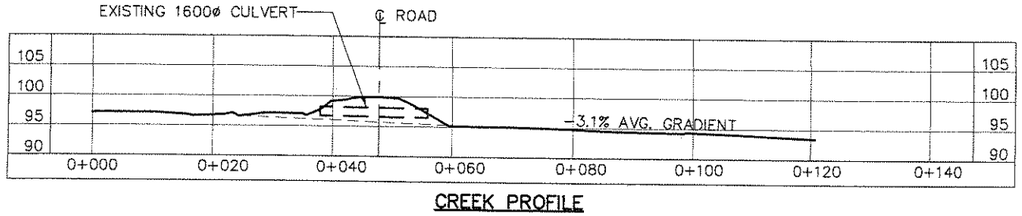

SECTION A–A



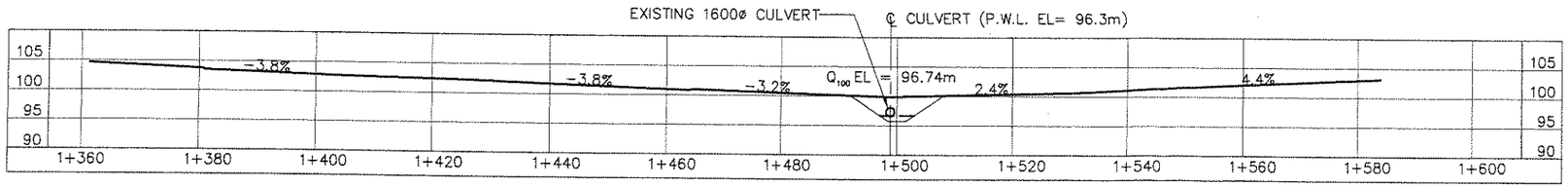

SECTION B–B




BENCHMARK LAYOUT




CREEK PROFILE




ROAD PROFILE

**SITE NOTES:**

1. SITE PLAN WAS COMPLETED ON 2000/06/21.
2. SURVEY DATA WAS ESTABLISHED USING NO DECLINATION.
3. SITE SURVEYOR: D. NORMAN
   SITE RODMAN: G. TATLOCK
4. STREAM RIPARIAN CLASSIFICATION: S3.
5. DOMINANT RIPARIAN DESCRIPTION: SPRUCE.
6. HYDROLOGY:
   –DRAINAGE AREA=35km²
   –Q100i FLOW IS ESTIMATED @ 13.8m³/s
   –VELOCITY IS ESTIMATED @ 2.3m/s
7. SUGGESTED BRIDGE SPAN IS 12.192m
   UNDERSIDE SUPERSTRUCTURE ELEVATION=99.4m
8. NO GEOTECHNICAL REPORT HAS BEEN COMPLETED TO DATE.

| no. | date | by | eng. | subject |
|---|---|---|---|---|
| 1 | 01/16 | DA | DK | AS BUILT |
| P2 | 10/30 | SG | DK | REVISED BRIDGE SIZE |
| P1 | 08/04 | DD | DK | REVISED BRIDGE SIZE & U/S ELEV |
| P0 | 08/03 | SG | DK | ISSUED FOR REVIEW |

Van Dolah ENTERPRISES INC
FORESTRY CONSULTANTS

UNNAMED CREEK
CHELASLIE M/L
km 1+500
AS BUILT

SITE PLAN
PROFILES &
HYDROLOGY

ALLNORTH CONSULTANTS LIMITED
301–1777 THIRD AVE.
PRINCE GEORGE
B.C. 562–7291

reproduction scale
0 10 20 30

| | |
|---|---|
| plot date | 2001/01/16 |
| scale | 1 : 1000 |
| drawn | DLD |
| design | CIS |
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| revision | 1 |
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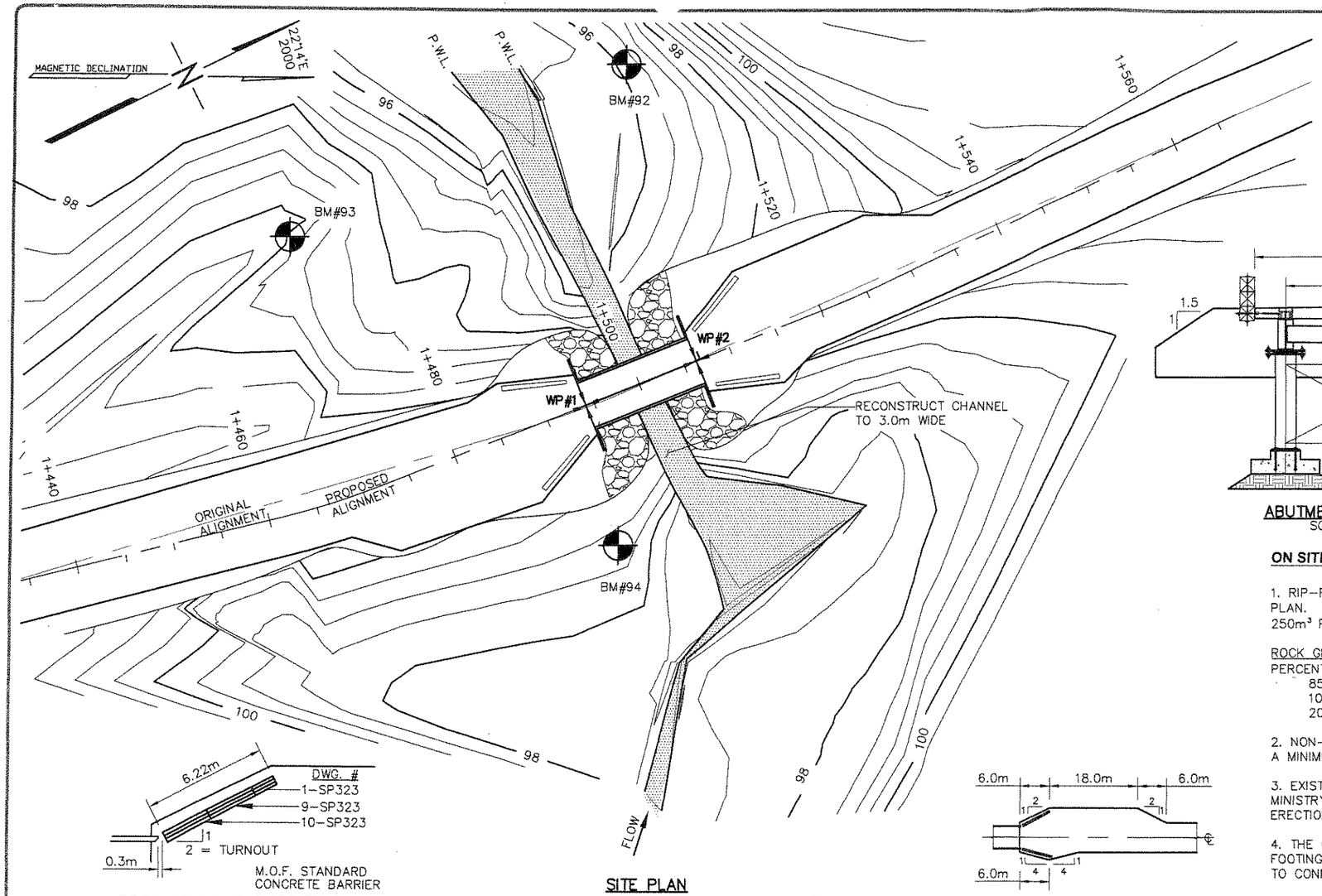
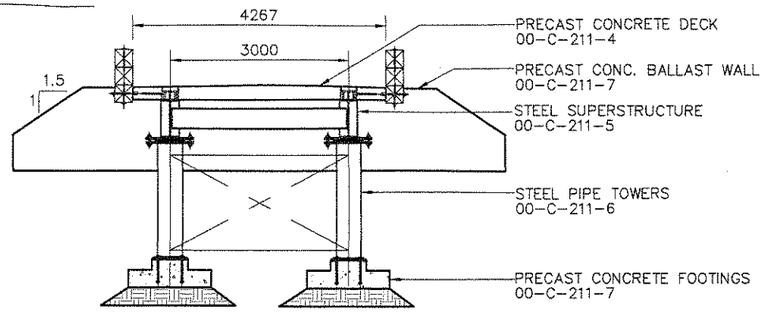



SITE PLAN

## SURVEY INFORMATION:

| | ELEVATION | NORTHING | EASTING |
|---|---|---|---|
| BM#92 | 96.652 | 5009.604 | 4966.618 |
| BM#93 | 100.173 | 4975.470 | 4984.329 |
| BM#94 | 99.015 | 5008.976 | 5015.508 |
| WP#1 | 100.000 | 5001.262 | 5005.600 |
| WP#2 | 100.000 | 4996.705 | 5016.909 |




ABUTMENT ELEVATION
SCALE 1:100

## ON SITE SPECIFICATIONS:

1. RIP-RAP SHALL EXTEND AROUND ABUTMENTS AS SHOWN ON THE PLAN. IT SHALL BE CLASS 100 AND HAVE A MINIMUM DEPTH OF 700mm, 250m³ REQUIRED, CONSISTING OF THE FOLLOWING:

ROCK GRADATION:
PERCENTAGE LARGER THAN GIVEN ROCK MASS (kg)

| 85% | 50% | 15% |
|---|---|---|
| 10kg | 100kg | 300kg |
| 200ø | 450ø | 750ø |

2. NON-WOVEN FILTER FABRIC TO BE PLACED OVER EXCAVATION TO HAVE A MINIMUM MULLEN BURST STRENGTH OF 2500kPa.

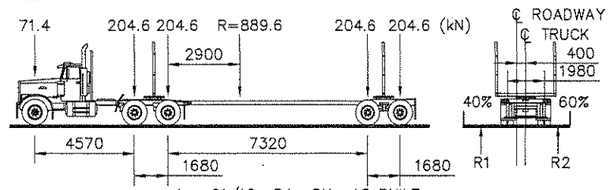
3. EXISTING STRUCTURE TO BE REMOVED AND DISPOSED OF MEETING MINISTRY APPROVAL. ALL DEBRIS SHALL BE REMOVED PRIOR TO ERECTION OF NEW STRUCTURE.

4. THE CONTRACTOR IS TO CONTACT THE ENGINEER PRIOR TO PLACING FOOTINGS. FOOTING PLACEMENT SHALL BE SUPERVISED BY THE ENGINEER TO CONFIRM BEARING REQUIREMENTS.

5. BACKFILL OF APPROACHES SHALL GENERALLY CONFORM TO THE LINES SHOWN ON THE DRAWINGS AND SHALL BE PLACED IN LIFTS NOT EXCEEDING 305mm THICK, COMPACTED TO 95% STANDARD PROCTOR DENSITY. MATERIAL SHALL BE CLEAN, FREE DRAINING, WELL GRADED GRANULAR FILL OF 75mm MAXIMUM SIZE. LIFTS SHALL ALTERNATE BOTH WAYS @ EACH END OF THE BRIDGE TO ENSURE MINIMAL MOVEMENT. USE LIGHT MECHANICAL TAMPERS ONLY.

## LOADING DIAGRAM L-100 OFF HIGHWAY G.V.W. = 90 680kg:

DESIGN IN ACCORDANCE WITH CAN3-S6-M88 WITH MODIFIED LOADING AS FOLLOWS:



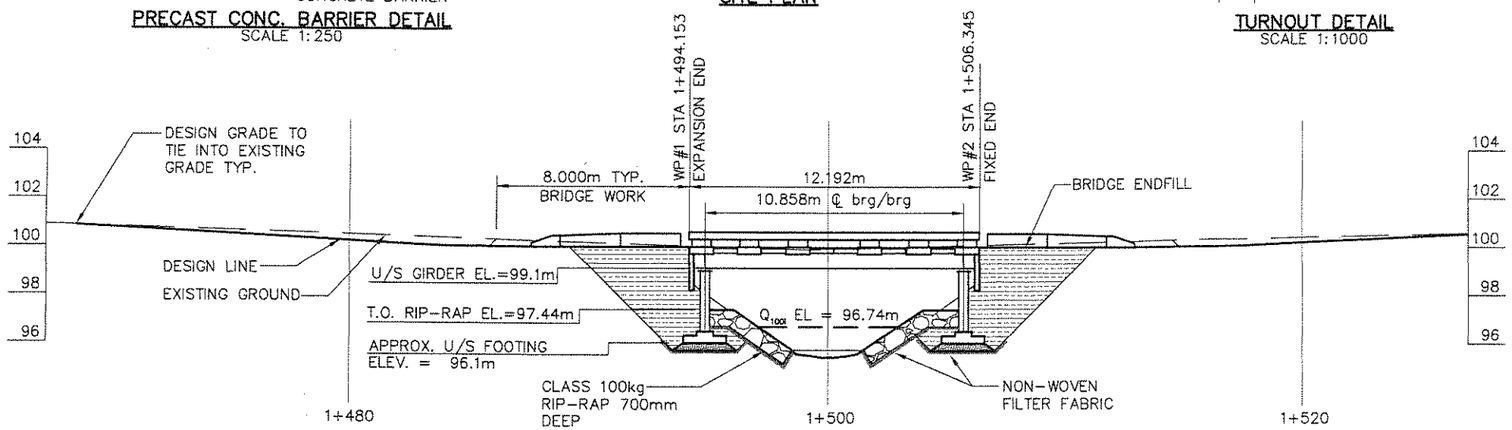




PRECAST CONC. BARRIER DETAIL
SCALE 1:250




TURNOUT DETAIL
SCALE 1:1000




BRIDGE PROFILE
SCALE 1:250

Van Dolah Enterprises Inc.
Surveying Consultants

UNNAMED CREEK
CHELASLIE M/L
km 1+500
AS BUILT

BRIDGE LAYOUT
PLAN, PROFILE
& ABUTMENT
ELEVATION

ALLNORTH
CONSULTANTS
LIMITED

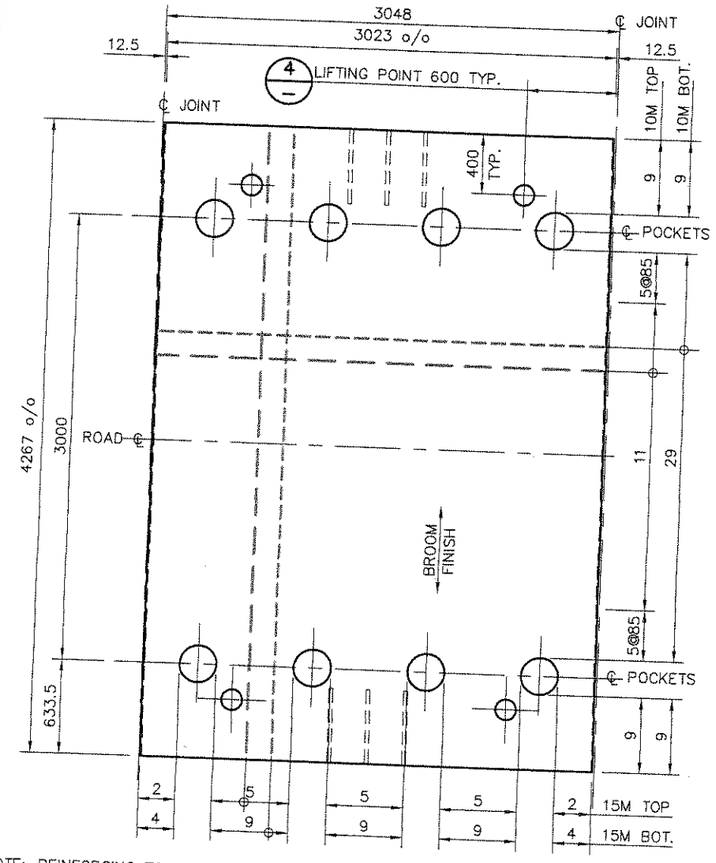
301-1777 THIRD AVE.
PRINCE GEORGE
B.C. 562-7291

reproduction scale
0 10 20 30

| | |
|---|---|
| plot date | 2001/01/16 |
| scale | 1 : 500 |
| drawn | SAG |
| design | CIS |
| checked | DDK |
| map ref. | 93 F/12 |
| revision | 1 |
| sheet no. | 3 of 7 |

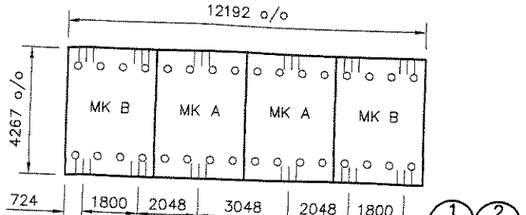
drawing no.
00-C-211-3
filename: 00C211-3.DWG

| no. | date | by | eng. | subject |
|---|---|---|---|---|
| 1 | 01/16 | DA | DK | AS BUILT |
| P1 | 10/30 | SG | DK | ISSUED FOR REVIEW |
| P0 | 08/28 | DD | DK | ISSUED FOR REVIEW |

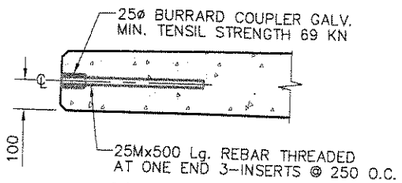



NOTE: REINFORCING TO BE EVENLY DISTRIBUTED BETWEEN SHEAR STUD POCKET LOCATIONS

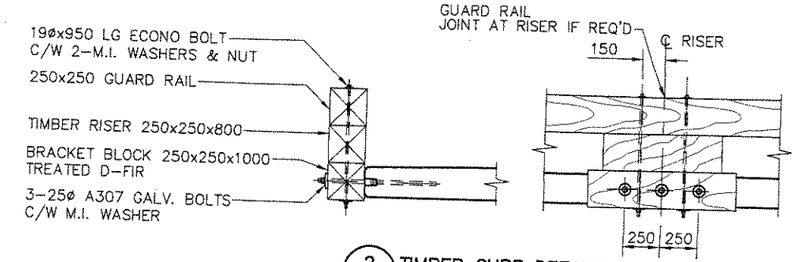
PLAN – MKA



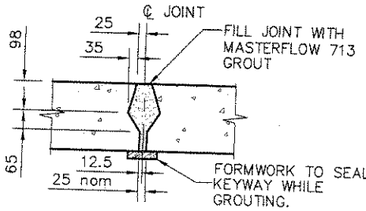

DECK PLAN & BURRARD COUPLER LAYOUT
SCALE 1:200



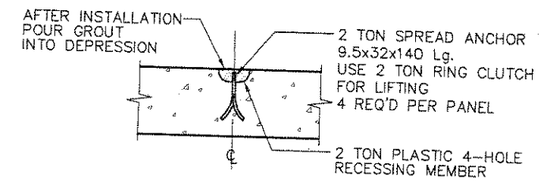

1 COUPLER DETAIL
SCALE 1:20



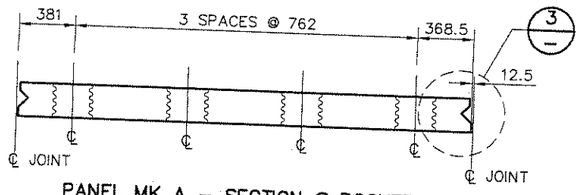

2 TIMBER CURB DETAILS



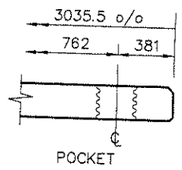

3 TYPICAL GROUT JOINT
SCALE 1:20



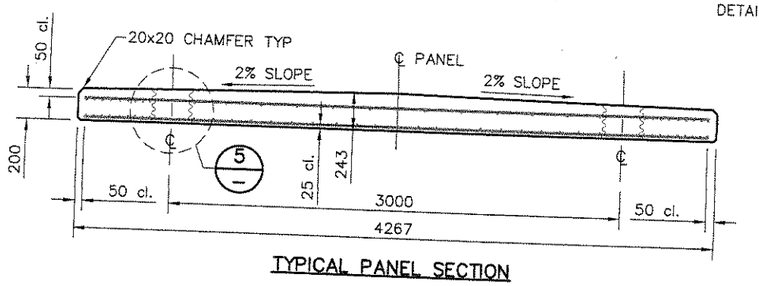

4 BURKE LIFTING INSERT



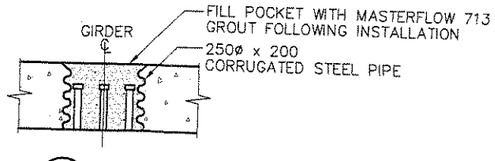

PANEL MK A – SECTION @ POCKET ℄




PANEL MK B – END DETAIL
SAME AS MK A, EXCEPT THIS DETAIL ONE END ONLY.




TYPICAL PANEL SECTION




5 SHEAR POCKET DETAIL
SCALE 1:20

**CONCRETE NOTES:**

1. CONCRETE FOR BALLAST WALL AND FOOTINGS SHALL CONFORM TO CSA CAN3–A23.1 AND CAN3–23.4–M78 WITH THE FOLLOWING SPECIFICATIONS:
   - 35MPa STRENGTH @ 28 DAYS
   - MAX. AGGREGATE 25mmø
   - MIN. ENTRAINED AIR 5% ± 1%
   - MAX. SLUMP 30mm ± 20mm
   - FINISH – ROUGH TRANSVERSE BROOM FINISH
   - MAX. W/C RATIO BY MASS 0.38
   - DECK PANELS TO BE MADE IN A C.S.A. APPROVED SHOP.
2. GROUT TO BE EXPANDING WITH A MINIMUM 50MPa 28 DAY STRENGTH & SHALL BE APPLIED ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
3. ALL REINFORCING STEEL TO BE DEFORMED BARS CONFORMING TO CSA G30.12–M, GRADE 400.
4. CONCRETE TEST CERTIFICATES TO BE FORWARDED TO THE ENGINEER.

**TIMBER NOTES:**

1. TIMBER RAILS AND RISERS SHALL BE UNTREATED S.P.F. CONSTRUCTION GRADE OR BETTER.
2. RISER AND BRACKET TIMBERS SHALL BE D–FIR OR PINE #1 C.C.A. TREATMENT. MOUNT BRACKETS TO CONCRETE PANELS AT THE SHOP.

| no. | date | by | eng. | subject |
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| 1 | 01/16 | DA | DW | AS BUILT |
| P0 | 10/30 | SG | DW | ISSUED FOR REVIEW |

Van Dolah Enterprises Inc. Forestry Consultants

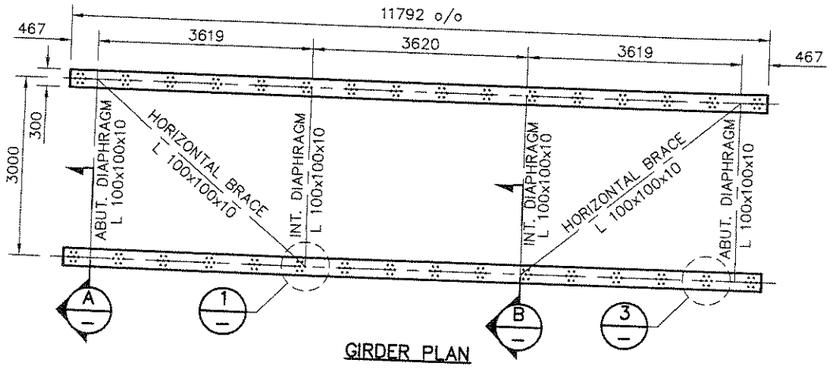
UNNAMED CREEK
CHELASIE M/L
km 1+500
AS BUILT

PRECAST.
CONCRETE DECK
PANEL DETAILS
& LAYOUT

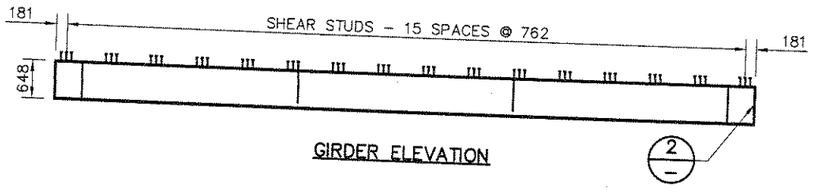
ALLNORTH CONSULTANTS LIMITED
301–1777 THIRD AVE.
PRINCE GEORGE
B.C. 562–7291

reproduction scale
0 10 20 30

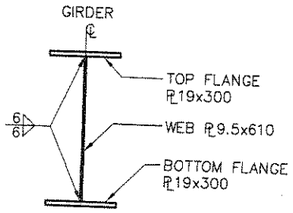
| | |
|---|---|
| plot date | 2001/01/16 |
| scale | 1 : 40 |
| drawn | SAG |
| design | DDW |
| checked | DDK / DDW |
| map ref. | |
| revision | 1 |
| sheet no. | 4 of 7 |
| drawing no. | 00–C–211–4 |
| filename: | 00C211–4.DWG |



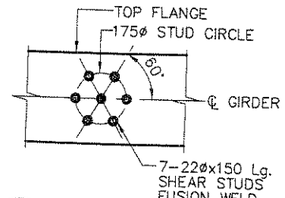

GIRDER PLAN



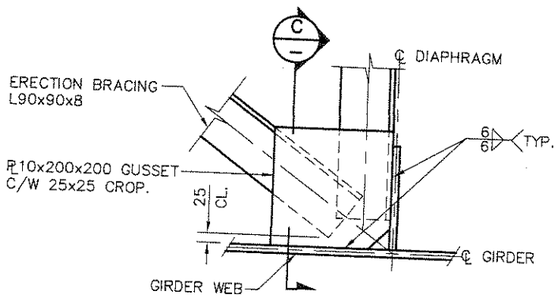

GIRDER ELEVATION



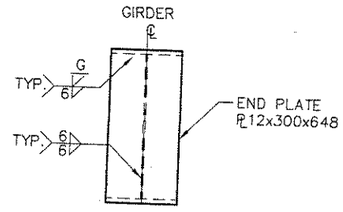

GIRDER SECTION
SCALE 1:25



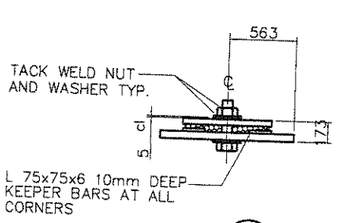

3 SHEAR STUD DETAIL
SCALE 1:20

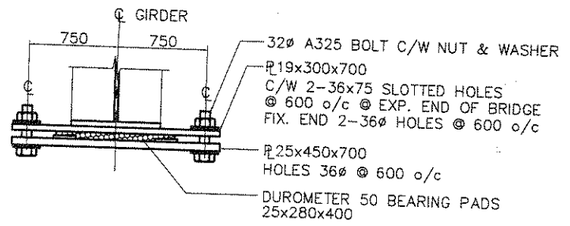



1 HORIZONTAL BRACING CONNECTION DETAIL
SCALE 1:10

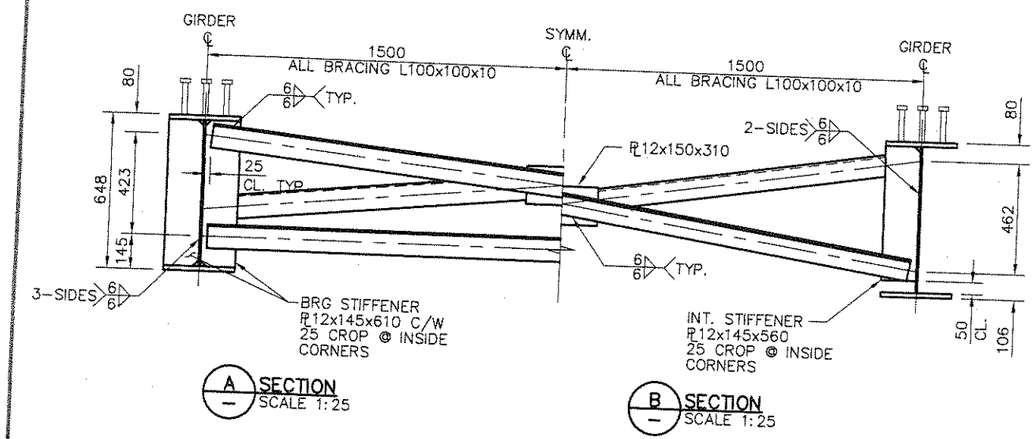



2 END PLATE DETAIL
SCALE 1:25



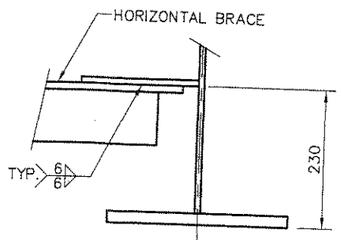




4/6 BEARING ASSEMBLY DETAIL
SCALE 1:20




A SECTION
SCALE 1:25

B SECTION
SCALE 1:25




C SECTION
SCALE 1:10

**STEEL NOTES:**

1. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH CSA STANDARD G40.21-M81, GRADE 350AT, CATEGORY 3. MILL CERTIFICATES TO BE FORWARDED TO THE ENGINEER.

2. ALL OTHER STEEL (INCLUDING ANGLES) SHALL COMPLY TO GRADE 350A.

3. GIRDERS ARE DESIGNED AS FRACTURE CRITICAL MEMBERS.

4. CHARPY V-NOTCH TESTS SHALL BE SPECIFIED ON A PER-HEAT FREQUENCY.

5. WELDING SHALL BE IN ACCORDANCE WITH CSA STANDARD W-59. WELDING ELECTRODES TO BE COMPATIBLE WITH BASE METAL. ALL WELDS TO BE 6mm UNLESS OTHERWISE NOTED ON DRAWINGS.

6. ALL BOLTS TO BE ASTM A325.

7. ALL BEARING PADS TO BE NATURAL RUBBER WITH DUROMETER HARDNESS OF 50 (GRADE 5).

7. CONTACT ENGINEER FOR FABRICATION INSPECTIONS, A MINIMUM 2 WEEKS PRIOR TO SHIPPING.

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| PO | 10/30 | SG | DW | ISSUED FOR REVIEW |

Van Dolah Enterprises Inc.
FORESTRY CONTRACTING

UNNAMED CREEK
CHELASLIE M/L
km 1+500
AS BUILT

STEEL SUPERSTRUCTURE PLAN, ELEVATION & DETAILS

ALLNORTH CONSULTANTS LIMITED
301-1777 THIRD AVE.
PRINCE GEORGE
B.C. 562-7291

reproduction scale
0 10 20 30

| | |
|---|---|
| plot date | 2001/01/16 |
| scale | 1 : 100 |
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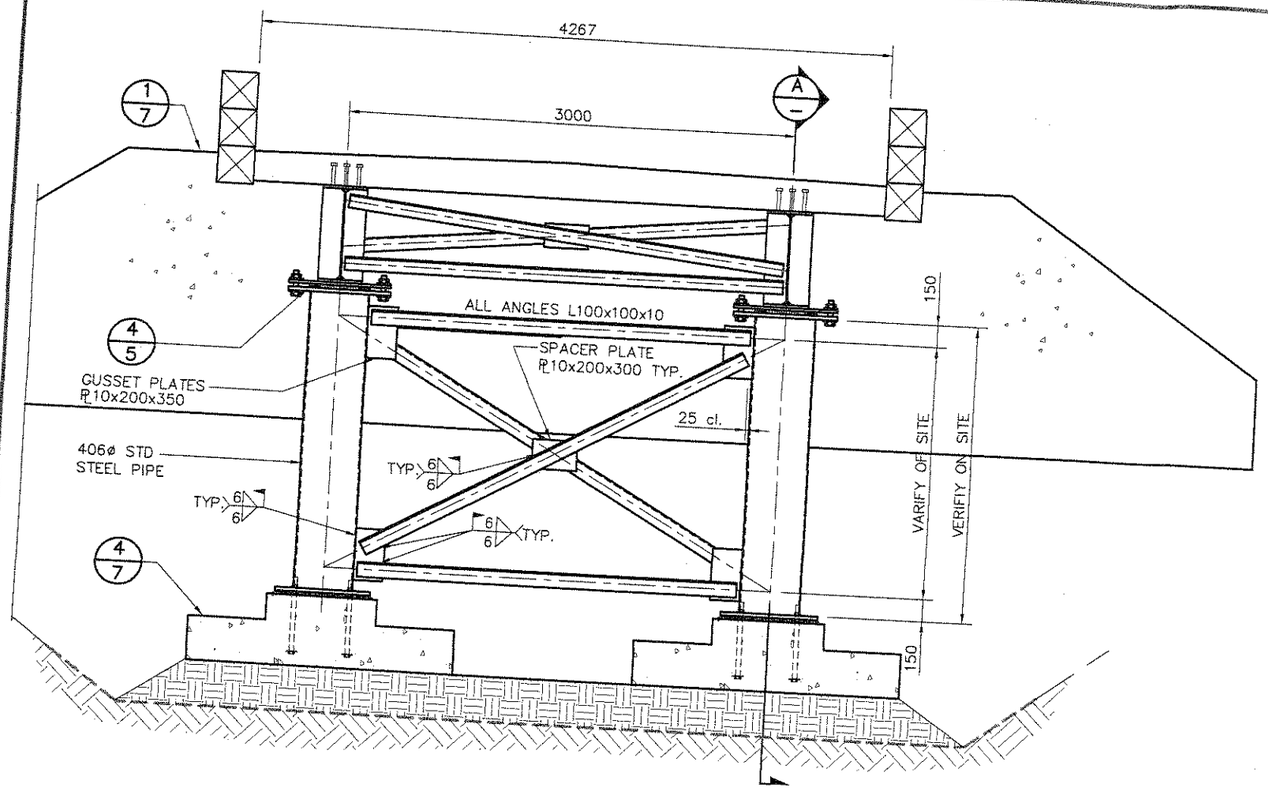
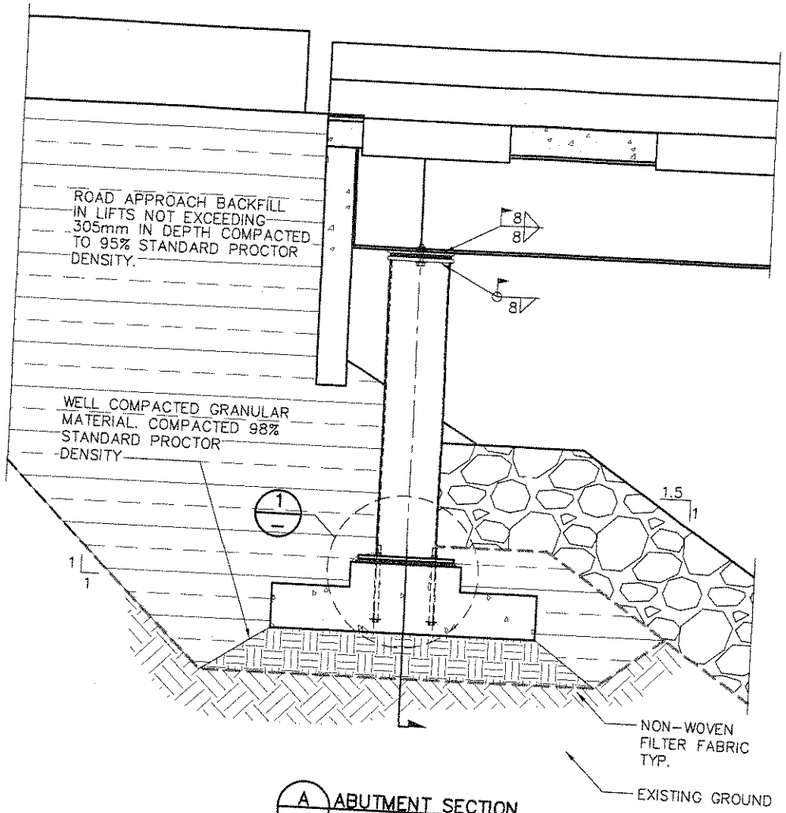
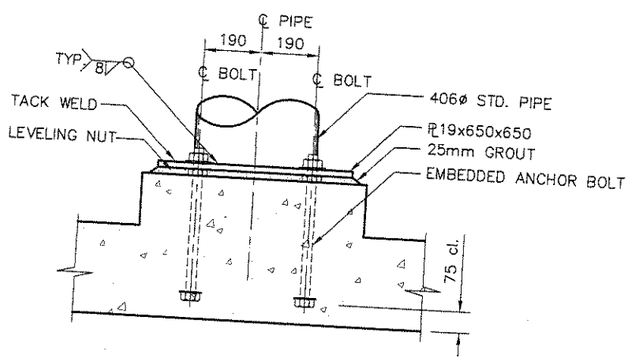



TYPICAL ABUTMENT ELEVATION
SCALE 1:50




A/ ABUTMENT SECTION




1/ DETAIL – TOWER CONNECTION
SCALE 1:20

**ABUTMENT NOTES:**

1. WELDING SHALL BE IN ACCORDANCE WITH CSA STANDARD W-59. WELDING ELECTRODES TO BE COMPATIBLE WITH BASE METAL. ALL WELDS TO BE 6mm UNLESS OTHERWISE NOTED ON DRAWINGS.

2. PIPE SHALL BE IN ACCORDANCE WITH ASTM SPECIFICATION A252 GRADE 2.

3. FOOTINGS HAVE BEEN DESIGNED FOR 200kPa MAXIMUM ALLOWABLE BEARING PRESSURE. A MINIMUM THICKNESS OF 300mm OF GRANULAR MATERIAL SHALL BE COMPACTED TO 98% STANDARD PROCTOR DENSITY BELOW EACH FOOTING. UNDER THE DIRECT SUPERVISION OF THE ENGINEER.

4. BACKFILL OF APPROACHES SHALL GENERALLY CONFORM WITH LINES ON DRAWINGS AND SHALL BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING 305mm THICK. COMPACT TO 95% STANDARD PROCTOR DENSITY. MATERIAL SHALL BE CLEAN, FREE DRAINING, WELL GRADED GRANULAR FILL OF 75mm MAXIMUM SIZE. USE LIGHT MECHANICAL TAMPERS ONLY. LIFTS SHALL ALTERNATE FROM EACH END OF BRIDGE TO ENSURE MINIMAL MOVEMENT.

5. GROUT TO BE EXPANDING WITH A MINIMUM 50MPa STRENGTH & SHALL BE APPLIED ACCORDING TO MANUFACTURERS INSTRUCTIONS.

| no. | date | by | eng. | subject |
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| 1 | 01/16 | DA | DW | AS BUILT |
| P0 | 10/30 | SG | DW | ISSUED FOR REVIEW |

Van Dolah ENTERPRISES INC.
FORESTRY CONTRACTING

UNNAMED CREEK
CHELASLIE M/L
km 1+500
AS BUILT

ABUTMENT
ELEVATION
SECTION
& DETAILS

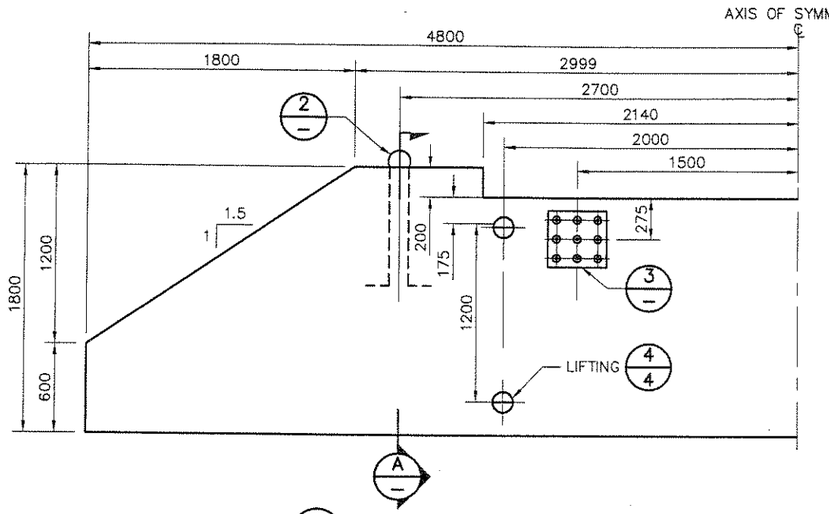
ALLNORTH CONSULTANTS LIMITED
301-1777 THIRD AVE.
PRINCE GEORGE
B.C. 562-7291

reproduction scale
0 10 20 30

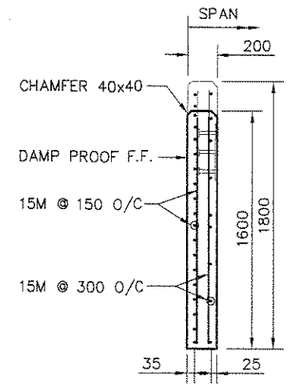
| | |
|---|---|
| plot date | 2001/01/16 |
| scale | 1:40 |
| drawn | SAG |
| design | DDW |
| checked | DDK / DDW |
| map ref. | |

| revision | sheet no. |
|---|---|
| 1 | 6 of 7 |

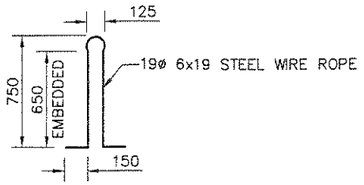
drawing no. 00-C-211-6
filename: 00C211-6.DWG



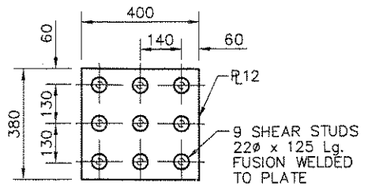

1 DETAIL – PRECAST CONC. BALLAST WALL




A SECTION



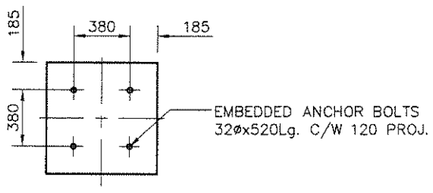

2 DETAIL



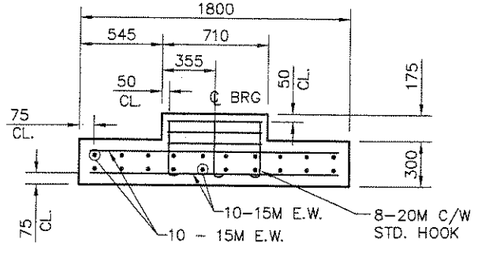

3 SECTION




4 DETAIL – PRECAST CONC. FOOTING




PLAN – EMBEDDED BOLTS




B SECTION

**PRECAST CONCRETE NOTES:**

1. CONCRETE SHALL CONFORM TO CSA CAN3–A23.1 AND CAN3–23.4–M78
WITH THE FOLLOWING SPECIFICATIONS
– 35MPa STRENGTH AT 28 DAYS
– MAX. AGGREGATE 25ømm
– MIN. ENTRAINED AIR 6% ± 1%
– MAX. SLUMP 30mm
– REINFORCING TO CSA G30.21M, GRADE 400 MPa, ALL BARS CONT. LENGTH.
– GROUT MASTERFLOW 713.

2. WELDING SHALL BE IN ACCORDANCE WITH CSA STANDARD W–59

3. BALLAST WALLS TO BE DAMP PROOFED ON REAR FACE WITH BLACK FOUNDATION IN SHOP.

4. CONCRETE TEST CERTIFICATES TO BE FORWARDED TO THE ENGINEER.

5. FOOTINGS HAVE BEEN DESIGNED FOR 200kPa MAXIMUM ALLOWABLE BEARING PRESSURE.

| no. | date | by | eng. | subject |
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| 1 | 01/16 | DA | DW | AS BUILT |
| 0 | 10/30 | SG | DW | ISSUED FOR REVIEW |

Van Dolah Enterprises Inc. Forestry Contractors

UNNAMED CREEK
CHELASLIE M/L
km 1+500
AS BUILT

PRECAST CONC.
BALLAST WALL
& FOOTINGS

ALLNORTH CONSULTANTS LIMITED
301–1777 THIRD AVE.
PRINCE GEORGE
B.C. 562–7291

reproduction scale
0 10 20 30

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|---|---|
| plot date | 2001/01/16 |
| scale | 1:40 |
| drawn | SAG |
| design | DDW |
| checked | DDK / DDW |
| map ref. | |
| revision | 1 |
| sheet no. | 7 of 7 |
| drawing no. | 00–C–211–7 |
| filename: | 00C211–7.DWG |