CONSTRUCTION NOTES

Drains shall not be scaled.
Hair steel reinforcement shall be embedded 3" clear unless shown or noted otherwise.
The first digit of a three digit bar no. and the first two digits of a four digit bar no. signifies the bar size.
The reinforcing bars marked with an "X" in the bill of reinforcement shall be epoxy coated.
The contractor shall make field measurements as necessary to fabricate all components to assure proper fit in the final construction. Any construction for each abutment shall not be started until the field inspector has signed that the abutment has been constructed to the full height and cross section and allowed to settle for 3 days. Approached fill and adjacent grading provided under bridge approach portion of contract. Forelop shall be placed and compacted in substantial compliance with its final shape before abutment is backfilled.
At abutments, all spaces not occupied by the new structure shall be backfilled with granular backfill unless otherwise noted.
Reinforcement bar hooks shall conform to the as-constructed details. All components required unless noted otherwise.
The pile loads shown in the plans and the corresponding modulus pile bearing resistance (p) were computed using LRFD methodology. Pile bearing resistance determined in the field shall incorporate the methods and/or formulas described in the special provisions.
Slab flashings shall be supported on piles unless otherwise approved by the engineer.
The existing groundwater shall be the upper limit for structure excavation item.

DESIGN DATA

2007 and current internal AASHTO LRFD Bridge Design Specifications
Load and resistance factor design method
Wk, L live load
Dead load includes 20 pounds per square foot allowance for future wearing course modifications

MATERIAL DESIGN PROPERTIES:

Reinforced concrete:

PC = 4 (C33) - 6.6
n = 8
F_y = 60ksi for reinforcement

Deck area = 14,552 sq.ft.

LIST OF SHEETS

01. GENERAL PLAN A ELEVATION
02. TRANSVERSE SECTION AND STATEMENT OF ESTIMATED QUANTITIES
03. BRIDGE LAYOUT
04. RETAINING WALL
05. RETAINING WALL PILE LAYOUT AND BILL OF REINFORCEMENT
06. RETAINING WALL WING 1
07. RETAINING WALL WING 2
08. RETAINING WALL WING 3
09. EAST ABUTMENT PILE LAYOUT AND BILL OF REINFORCEMENT
10. EAST ABUTMENT WING 1
11. EAST ABUTMENT WING 2
12. EAST ABUTMENT WING 3
13. EAST ABUTMENT WING 4
14. SUPERSTRUCTURE DETAILS
15. CONCRETE COVER FOR BRIDGE SUPERSTRUCTURE
16. CONCRETE COVER LAYING UNDER BRIDGES
17. NAME PLATE AND PILE SPACER DETAILS
18. DRAINAGE SYSTEM
19. SOIL BORINGS

MINNESOTA DEPARTMENT OF TRANSPORTATION
B1 OF B19
RIVERSIDE COMMUNITY IMPROVEMENTS #29389
SPRING STREET BRIDGE #69597
CITY OF DULUTH, MINNESOTA
GENERAL PLAN AND ELEVATION

AVES ASSOCIATES
B1.002  6/14/11
STATEMENT OF ESTIMATED QUANTITIES FOR ENTIRE BRIDGE

ITEM
2401.001 STRUCTURAL CONCRETE (15451)
2401.026 BRICK SMALL CONCRETE (15455)
2401.033 T-6-1.5-12 ROLLING CONCRETE (15456)
2401.035 SIDELINE CONCRETE (1546)
2401.041 REINFORCING BARS (BAR ADJACENCY)
2401.051 STRUCTURAL EXCAVATION
2402.001 METAL RAILING FOR RAILWAYS (DESIGN NO. 1)
2402.010 ARCHITECTURAL SURFACE FINISH (MULTI-COLORS)
2402.015 ARCHITECTURAL CONCRETE MOLDING (35000)
2402.020 SPANLITE BACKFILL
2402.030 C-3-P CONCRETE FILLING (B3-12)
2402.039 C-3-P CONCRETE REPAIR (5 FT LONG 2")
2402.040 SPANLITE SYSTEM TYPE W133
2504.001 CONCRETE SLAB PAVING
2504.010 BAR ADJACENCY

UNIT
CU. YD.
CU. FT.
CU. FT.
POUND
BU.
CU. YD.
CU. FT.
CU. FT.
POUND
CU. YD.

QTY.
72
60
2728
1182
45
32
261
116
680
560
1

TOTAL
103
173
366
366
3
3
1

NOTE:
1. VOLUME IS APPROXIMATELY 31 C.Y.
2. VOLUME IS APPROXIMATELY 29 C.Y.
3. VOLUME IS APPROXIMATELY 30 C.Y.
4. 1/2" WALL THICKNESS
5. INCIDENTAL TO "STRUCTURAL CONCRETE (15451)"

TRANSVERSE SECTION & STATEMENT
OF ESTIMATED QUANTITIES

RIVERSIDE COMMUNITY IMPROVEMENTS PEDESTRIAN SPRING STREET BRIDGE # 68607
CITY OF DULUTH, MINNESOTA

SHEET NO. 82 OF 818
ELEVATION

SECTION A

SECTION B

SECTION H

WEST ABUTMENT

RIVERSIDE COMMUNITY IMPROVEMENTS PROJECT

SPRING STREET BRIDGE @ US 89

CITY OF DULUTH, MINNESOTA

AVRES CONSULTANTS

THEFOT CONSULTANTS

RIVERBEND ROAD PROJECT

SHEET NO.

04 OF 11
SUMMARY OF QUANTITIES FOR DRAINAGE SYSTEM

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot; OAL PERFORATED PIPE</td>
<td>10 LIN. FT.</td>
</tr>
<tr>
<td>6&quot; OAL NON-PERFORATED PIPE</td>
<td>50 LIN. FT.</td>
</tr>
<tr>
<td>45° ELBOW</td>
<td>2 EACH</td>
</tr>
<tr>
<td>8&quot; OAL END CAP</td>
<td>2 EACH</td>
</tr>
<tr>
<td>4&quot; OAL COUPLING</td>
<td>2 EACH</td>
</tr>
<tr>
<td>PIPE SLEEVE</td>
<td>2 EACH</td>
</tr>
<tr>
<td>PRECAST CONCRETE MENDWALL</td>
<td>2 EACH</td>
</tr>
</tbody>
</table>

The summary of quantities for drainage system is as shown above. Any additional minor items or slight changes of quantities required shall be furnished by the contractor with no additional compensation.

Payment will be included in the single lump sum price for item 2030-088 drainage system type option.

NOTES:

- All pipe shall comply with Mn/DOT Spec. 3120-9.
- Wrap perforated pipe with geotextile as per Mn/DOT Spec. 3730. Type I attach to pipe as per Mn/DOT Spec. 2582.
- Precast concrete mendwall with rigid screen. See standard plate 285 for details.
- 1/8" per ft. minimum slope.
- Material shall comply with Mn/DOT Spec. 3149-2.
- Select gravel or borrow, modified so that no more than 15% passes a No. 200 sieve.
- Under driving portion of contract.

SECTION B-B

SECTION THROUGH INTEGRAL ABUTMENT

COUPLING
PIPE SLEEVE
90° ELBOW
4" OAL PERFORATED PIPE
CAP END

DAYLIGHT END OF PIPE IN SLOPE

FRONT FACE ABUTMENT