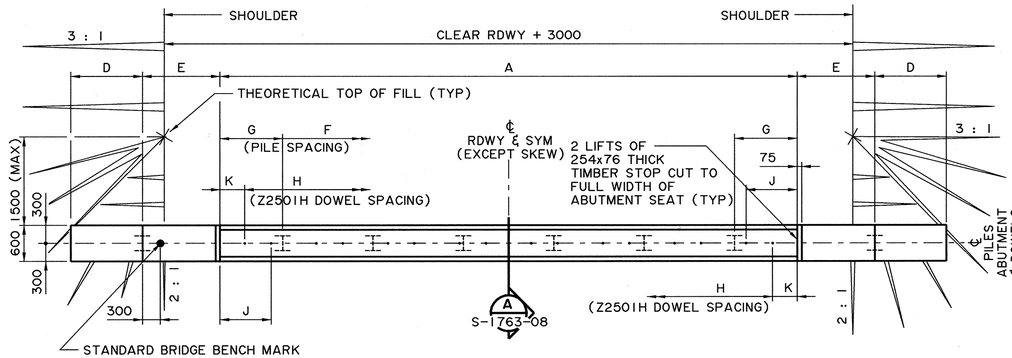
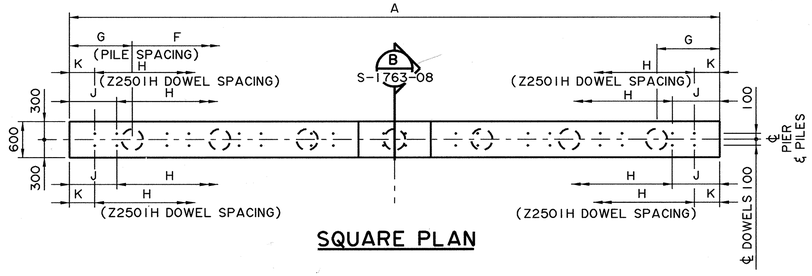
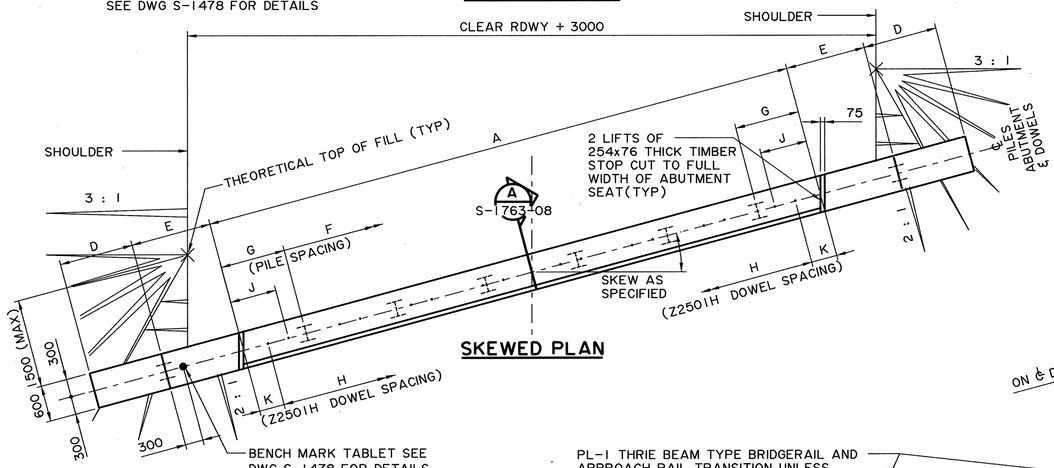


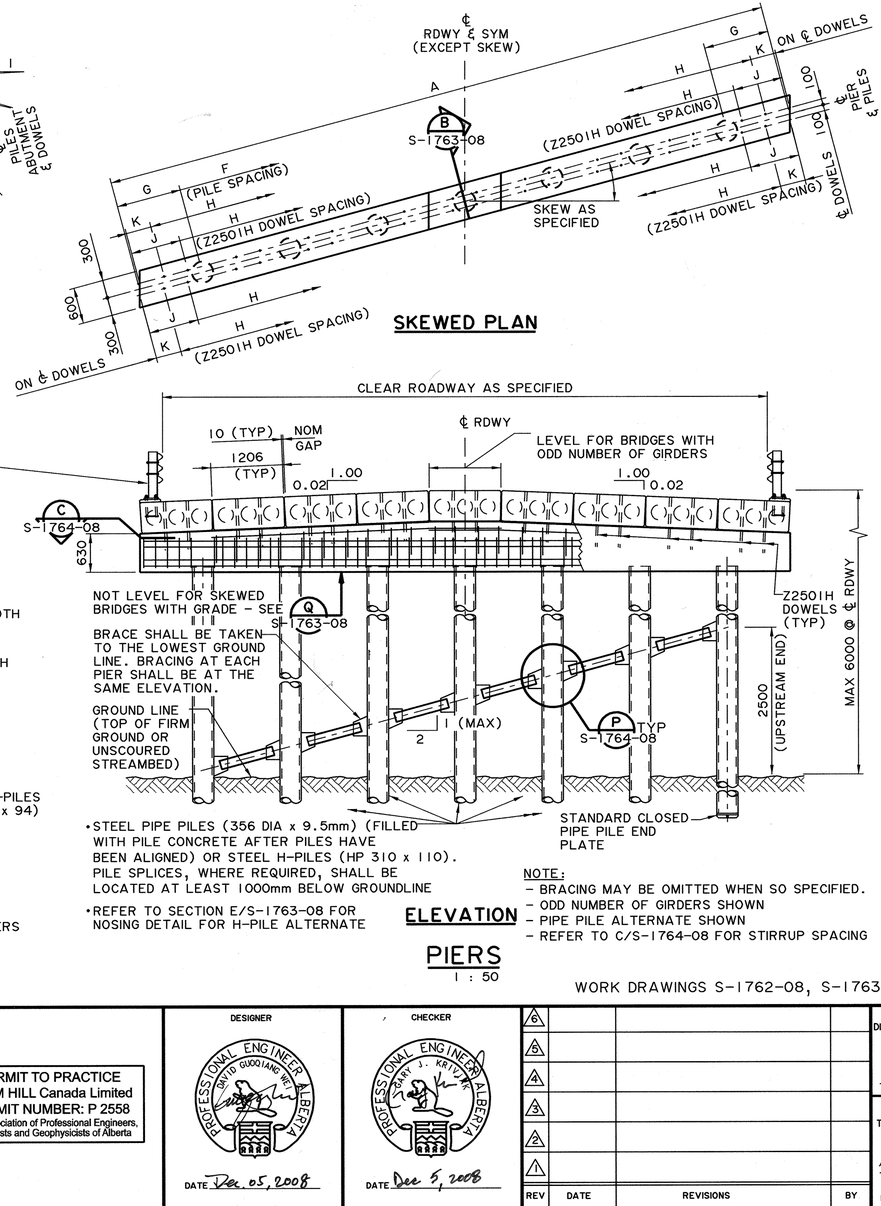
SQUARE PLAN

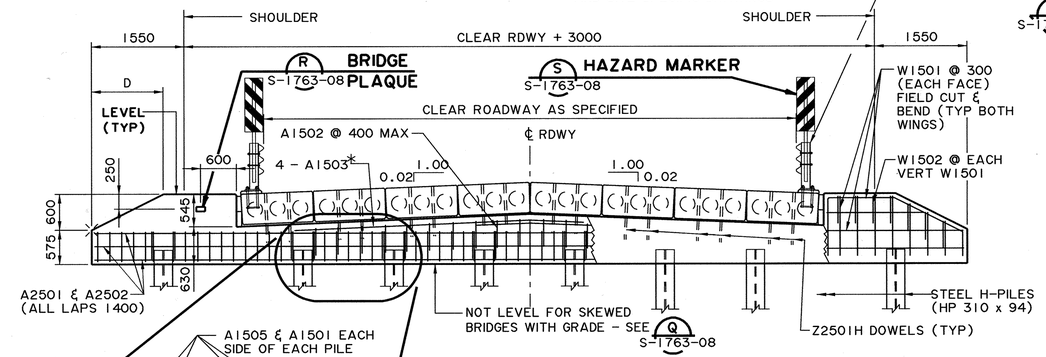


SQUARE PLAN



SKEWED PLAN





ELEVATION

ABUTMENTS

1 : 50

NOTE:
-EVEN NUMBER OF GIRDERS SHOWN
*-SUBSTITUTE 4-A1504 FOR ODD NUMBER OF GIRDERS

- STEEL PIPE PILES (356 DIA x 9.5mm) (FILLED WITH PILE CONCRETE AFTER PILES HAVE BEEN ALIGNED) OR STEEL H-PILES (HP 310 x 110). PILE SPLICES, WHERE REQUIRED, SHALL BE LOCATED AT LEAST 1000mm BELOW GROUNDLINE
- REFER TO SECTION E/S-1763-08 FOR NOSING DETAIL FOR H-PILE ALTERNATE

ELEVATION

PIERS

1 : 50

NOTE:
- BRACING MAY BE OMITTED WHEN SO SPECIFIED.
- ODD NUMBER OF GIRDERS SHOWN
- PIPE PILE ALTERNATE SHOWN
- REFER TO C/S-1764-08 FOR STIRRUP SPACING

GENERAL NOTES

- SCALES, WHERE INDICATED, ARE APPLICABLE FOR FULL-SIZE 22" x 34" DRAWING FORMAT
- ALL DRAWING REFERENCES REFER TO CURRENT DRAWINGS.
- ALL DIMENSIONS ARE GIVEN IN mm UNLESS NOTED OTHERWISE.
- ROADWAY ELEVATIONS SPECIFIED ELSEWHERE ARE GIVEN TO TOP OF THEORETICAL CROWN ON CENTRELINE ROADWAY.

GEOTECHNICAL CONSIDERATIONS

- IT IS THE RESPONSIBILITY OF OTHERS USING THESE SUBSTRUCTURE DRAWINGS TO OBTAIN THE NECESSARY SITE SPECIFIC GEOTECHNICAL INFORMATION. THE GEOTECHNICAL INVESTIGATION COMPLETED BY A QUALIFIED PROFESSIONAL ENGINEER SHOULD BE UNDERTAKEN PRIOR TO THE DESIGN PHASE IN ORDER TO ESTABLISH THE SUITABILITY OF THE DESIGN ASSUMPTIONS LISTED ON THESE PLANS, AND TO PROVIDE SUPPLEMENTARY INFORMATION WHERE REQUIRED INCLUDING CEMENT TYPE FOR CONCRETE MIXES.
- ADDITIONALLY, A GEOTECHNICAL INVESTIGATION IS DEEMED NECESSARY IN ORDER TO ESTABLISH THE SOIL CHARACTERISTICS AT THE SITE - THE PRESENCE AND THE EXTENT OF BOULDERS, HARD OR SOFT FORMATIONS, WATER TABLES, ARTESIAN CONDITIONS AND OTHER VARIABLES - AS THESE COULD SIGNIFICANTLY IMPACT THE CONSTRUCTION OF THE SUBSTRUCTURE AND ITS REQUIRED PERFORMANCE AND STRENGTH IF NOT IDENTIFIED AND ADDRESSED IN A TIMELY MANNER.

HYDROTECHNICAL CONSIDERATIONS

- IT IS THE RESPONSIBILITY OF OTHERS USING THESE SUBSTRUCTURE DRAWINGS TO COMPLETE A SITE SPECIFIC HYDROTECHNICAL ASSESSMENT IN ORDER TO ESTABLISH THE NEED FOR RIP RAP, TO DETERMINE THE SUITABILITY OF THE DESIGN ASSSUMPTIONS LISTED ON THESE PLANS, AND TO SUPPLEMENT THESE WHERE REQUIRED. CONSULTATION WITH A QUALIFIED PROFESSIONAL ENGINEER WITH HYDROTECHNICAL EXPERIENCE PRIOR TO THE DESIGN PHASE IS RECOMMENDED.

DESIGN

- **DESIGN SPECIFICATION:** CAN/CSA-S6-06
- **DESIGN VEHICLE:** CL-800
- **DEAD LOAD:** ABUTMENT & PIER CAP SELF WEIGHT
  GIRDER SELF WEIGHT & WEARING SURFACE ALLOWANCE AS PER STANDARD SL-510 GIRDER DRAWINGS S-1723-07, S-1725-07, S-1727-07, S-1729-07, S-1731-07 & S-1732-07
- **WATER LOADS:** NOT CONSIDERED FOR PIER DESIGN, ICE LOADS USED
- **ICE LOADS:** THE FOLLOWING LIMITING ASSUMPTIONS WERE USED FOR PIER DESIGN AND THESE PLANS SHOULD NOT BE USED WHEN THESE DESIGN CONDITIONS ARE EXCEEDED:
  - EFFECTIVE CRUSHING STRENGTH p = 400 kPa
  - MAXIMUM ICE THICKNESS = 600 mm
  - SMALL STREAM REDUCTION FACTOR = 0.7
  - FLOW ANGLE BETWEEN AXIS OF PIER AND STREAM, 0 TO 45 DEGREES
  - HEIGHT OF DECK SURFACE ABOVE STREAM BED ≤ 6.0 m
  - HEIGHT OF ICE FORCE ABOVE STREAM BED ≤ 2.5 m
  - DEPTH BELOW STREAM BED TO EFFECTIVE PILE FIXITY = 1.5 m FOR DETERMINATION OF PILE EFFECTIVE LENGTH
- **EARTH PRESSURE:** THE FOLLOWING LIMITING ASSUMPTIONS WERE USED FOR SUBSTRUCTURE DESIGN. THESE PLANS SHOULD NOT BE USED WHEN ACTUAL SITE CONDITIONS RESULT IN MORE SEVERE LOAD EFFECTS OR LESS EFFECTIVE RESISTANCE:
  - UNIT WEIGHT OF SOIL γ = 22 kN/m³
  - HORIZONTAL SPRING STIFFNESS, ks = 20 MN/m FOR 1 m LENGTH OF PILE
  - MAXIMUM HORIZONTAL DISTANCE FROM TOP OF FILL TO BURIED FACE OF ABUTMENT= 1.5 m (SEE ABUTMENT PLAN).
  - MAXIMUM HEAD SLOPE INCLINATION, 2H : 1V
  - ANGLE BETWEEN AXIS OF ABUTMENT AND CENTRE LINE OF ROADWAY, 45 TO 90 DEGREES.
  - DEPTH BELOW UNDERISDE OF ABUTMENT SEAT TO EFFECTIVE PILE FIXITY = 1.5 m FOR DETERMINATION OF PILE EFFECTIVE LENGTH
- **SEISMIC:** Za = 1, A = 0.05 Zv = 1, V = 0.05
- **THERMAL:** MAXIMUM DAILY MEAN TEMPERATURE = 32°C
  MINIMUM DAILY MEAN TEMPERATURE = -42°C
- **WIND:** HOURLY MEAN WIND PRESSURE (50 YR) = 1.02 kPa
- **BRAKING FORCE:** CONSIDERED
- **COLLISION:** NOT CONSIDERED
- **BRIDGE LENGTH:** IT IS THE RESPONSIBILITY OF OTHERS USING THESE PLANS TO DETERMINE THE SUITABILITY OF THE DESIGN WHEN BRIDGE LENGTH EXCEEDS 42.0 m AND TO MAKE DESIGN ADJUSTMENTS IF AND WHERE REQUIRED.
- **GIRDER DOWEL HOLES:** IT IS THE RESPONSIBILITY OF OTHERS USING THESE PLANS TO DETERMINE THE SUITABILITY OF THE GIRDER REINFORCING OF THE 40mm DIAMETER DOWEL HOLES (REFERENCE STANDARD SL GIRDER DRAWINGS FOR DETAILS). THERE MAY BE CERTAIN BRIDGE CONFIGURATIONS FOR WHICH THE SUBSTRUCTURE DOWEL DESIGN LOAD EXCEEDS THE DOWEL HOLE REINFORCEMENT CAPACITY PRESENTED ON THE STANDARD GIRDER DRAWINGS.

GIRDER INSTALLATION

- REFER TO TYPE SL-510 GIRDER DRAWINGS (LATEST REVISION) AS APPLICABLE:

6 m	S-1723 TO S-1724	10 m	S-1727 TO S-1728
8 m	S-1725 TO S-1726	12 m	S-1729 TO S-1730
		14 m	S-1731 TO S-1732

- GIRDERS SHALL BE CONNECTED TOGETHER WITH 19mm DIA A325 BOLT ASSEMBLIES, C/W DROP-IN WASHERS TO FILL GAP BETWEEN GIRDERS, TORQUED TO 400 Nm. GIRDERS SHALL NOT TOUCH EXCEPT THROUGH DROP-IN WASHERS. BOLTS AND WASHERS TO BE HOT-DIPPED GALVANIZED.
- CONNECTOR AND LIFTING HOOK POCKETS SHALL BE FILLED WITH A DEPARTMENT APPROVED CONCRETE PATCHING MATERIAL.

WORK DRAWINGS S-1762-08, S-1763-08, AND S-1764-08 TOGETHER WITH SITE SPECIFIC GENERAL LAYOUT

CH2MHILL

PERMIT TO PRACTICE
CH2M HILL Canada Limited
PERMIT NUMBER: P 2558
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

DESIGNER — PROFESSIONAL ENGINEER ALBERTA — DAVID GUOQIANG WEI
DATE Dec. 05, 2008

CHECKER — PROFESSIONAL ENGINEER ALBERTA — GARY J. KRIVY
DATE Dec 5, 2008

REV	DATE	REVISIONS	BY
6			
5			
4			
3			
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1			

RECOMMENDED
DIRECTOR BRIDGE ENGINEERING
Tom Loo

APPROVED
EXECUTIVE DIRECTOR
TECHNICAL STANDARDS BRANCH
Arnold Lai
DATE DEC. 11/08

Alberta TRANSPORTATION

SL PRECAST GIRDER BRIDGES WITH CAST-IN-PLACE CONCRETE SUBSTRUCTURES - SHT 1

DEPARTMENT BAR CODE	DATE	SHEET	DRAWING
	2008-12-05	1 OF 3	S-1762-08