



± PROFILE
SC 1" = 40'-0"

GENERAL NOTES

DESIGN SPECIFICATIONS

STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES OF 1973 (11TH EDITION) WITH SUBSEQUENT ADDITIONS AND MODIFICATIONS.

DESIGN LOADS: HS 20-44

MATERIALS

- ALL CONCRETE SHALL BE CLASS A EXCEPT AS FOLLOWS:
 - DECK SLAB, PIER CAPS, PIERS & ABUTMENTS $F'c = 4,000$ PSI.
 - RETAINING WALLS - $F'c = 3,000$ PSI
 - PRECAST PRESTRESSED GIRDERS - $F'c = 6,000$ PSI
- CONCRETE CLEAR COVER FOR REINFORCING SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
 - TOP OF SLAB - 1-1/2"
 - BOTTOM OF SLAB - 1"
 - STIRRUPS ON SIDE OF BEAMS & DIAPHRAGMS - 1-1/2"
 - FOOTINGS - 3"
 - WALLS NOT EXPOSED TO GROUND - 1-1/2"
 - WALLS EXPOSED TO GROUND - 2"
 - STIRRUPS OF PIER CAPS - 2"
 - TIES OF PIER - 3"
- REINFORCING STEEL SHALL BE ASTM A-615 GRADE 60. PIER TIES MAY BE GRADE 40.
- STRANDS FOR PRESTRESSED GIRDERS SHALL BE 1/2" DIA. STRESS RELIEVED SEVEN WIRE TENDONS WITH $FS = 270,000$ PSI CONFORMING TO ASTM A-416.
- MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A-36. ALL EXPOSED STEEL SHALL BE GALVANIZED.
- STRUCTURAL TIMBER SHALL BE GRADED IN ACCORDANCE WITH WESTERN WOOD PRODUCTS ASSOCIATION 1970 GRADING STANDARDS.
 - 2 x 6 DECKING DOUGLAS FIR COMMERCIAL
 - BEAMS DOUGLAS FIR No. 1
 - RAILINGS, ETC. DOUGLAS FIR No. 1

CONSTRUCTION METHODS

- REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE HIGHWAY STRUCTURES" UNLESS OTHERWISE NOTED.
- MINIMUM SPACING BETWEEN PARALLEL BARS SHALL BE 2-1/2 TIMES THE DIAMETER OF THE BARS, BUT IN NO CASE SHALL THE CLEAR DISTANCE BETWEEN THE BARS BE LESS THAN 1-1/2 TIMES THE MAXIMUM SIZE OF THE COARSE AGGREGATE.
- ALL DIMENSIONS RELATING TO REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE NOTED.
- REINFORCING BARS SHALL BE SECURELY TIED AT ALL INTERSECTIONS AND BAR SPLICES AND SHALL BE HELD IN PLACE DURING POURING TO MAINTAIN THEIR PROPER LOCATIONS AS SHOWN ON PLANS.
- VERTICAL COLUMN BARS SHALL BE ARRANGED IN SUCH A MANNER AS TO MISS PIER CAP BARS ABOVE AS DIRECTED BY THE OFFICER IN CHARGE.
- EXCEPT AS OTHERWISE NOTED ON DRAWINGS, ALL EXTERIOR CORNERS AND RE-ENTRANT ANGLES IN CONCRETE WORK SHALL BE CHAMFERED 3/4" x 3/4".
- CONCRETE SEATS RECEIVING STEEL PLATE ELASTOMERIC PADS SHALL BE POURED MONOLITHICALLY WITH SUPPORTING STRUCTURES AND TOP OF CONCRETE SEATS SHALL BE FINISHED WITH A STEEL TROWEL TO A SMOOTH LEVEL SURFACE AT THE ELEVATION SHOWN ON THE PLANS.

CONSTRUCTION METHODS (CONTD.)

- ELASTOMERIC PADS: BOTTOM OF BRIDGE BEARING PADS SHALL BE SECURED AGAINST DISPLACEMENT WITH ADHESIVES APPROVED BY THE OFFICER IN CHARGE BUT SHALL BE INCIDENTAL TO CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.
- FORMS FOR ALL EXPOSED SURFACES OF SEPARATION STRUCTURES AND SURFACES OF RETAINING WALL VISIBLE FROM A TRAVELED WAY OR FROM A POPULATED AREA SHALL BE PLYWOOD. METAL FORMS, HOWEVER, MAY BE PERMITTED PROVIDING A SURFACE WILL GIVE A SMOOTH FINISH AND THE DIMENSIONS AS GIVEN IN THE PLANS. FORMS FOR PRESTRESSED CONCRETE MEMBERS SHALL BE EITHER METAL OR PLYWOOD.
- SIDES OF FOOTINGS SHALL BE EXCAVATED AND POURED TO NEAT LINES. FOR EXCAVATION OF BOTTOM OF FOOTINGS, SEE STANDARD SPECIFICATIONS. IN CASE OF OVER-EXCAVATION SPACE BETWEEN FOOTING AND GROUND SHALL BE FILLED WITH CONCRETE AT THE CONTRACTOR'S EXPENSE AND AS DIRECTED BY THE OFFICER-IN-CHARGE. THE FILL SHALL HAVE A MINIMUM QUALITY OF CLASS D CONCRETE.
- GOthic LETTERS AND FIGURES APPROXIMATING DIMENSIONS INDICATED, WILL BE ACCEPTABLE IF APPROVED BY THE OFFICER IN CHARGE.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITY LINES AND NOTIFY THE RESPECTIVE OWNERS BEFORE COMMENCING WORK OF EXCAVATION OR DRIVING OF PILES.
- STANDARD DETAIL DRAWINGS REFER TO ALL STRUCTURES IN GENERAL EXCEPT FOR MODIFICATIONS AS MAY BE REQUIRED FOR SPECIAL CONDITIONS. FOR SUCH MODIFICATIONS REFER TO THE CORRESPONDING DETAILED DRAWING.

PILE FOUNDATION

- FOUNDATION SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPECIAL FOUNDATION INVESTIGATION BY DAMES AND MOORE DATED JUNE 14, 1977. A COPY OF THIS REPORT IS AVAILABLE FOR REVIEW AT THE DEPT. OF PUBLIC WORKS, DIVISION OF ENGINEERING, STRUCTURAL SECTION.
- PRECAST PRESTRESSED PILES SHALL BE 16 1/2" OCTAGONAL WITH A DESIGN CAPACITY OF 40 TONS.
- PILE DRIVING SHALL BE MADE WITH A HAMMER DELIVERING A MINIMUM OF 32,000 FT.-LBS OF ENERGY.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

NO.	DATE	DESCRIPTION	ENGR.	DEPT. OR DIV.
REVISIONS				
APPRO'D				
DEPARTMENT OF PUBLIC WORKS CITY AND COUNTY OF HONOLULU				
DIVISION OF ENGINEERING KAMEHAMEHA HIGHWAY BRIDGE OVER KAHALUU STREAM KAHALUU, OAHU, HAWAII				
GENERAL NOTES 8 & TYPICAL DETAILS				
ENGINEER	DATE	DRAFTSMAN	CHECKED BY	
APPROVED				
CHIEF, DIVISION OF ENGINEERING				
JOB NO. 38-77 DWG. NO. 7-E-23004				