

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1996, THE 1997 INTERIMS, AND THE ODOT BRIDGE DESIGN MANUAL, JANUARY, 1995.

DESIGN DATA:

DESIGN LOADING: HS20-44 CASE II AND THE ALTERNATE MILITARY LOADING, AND A 60 PSF FUTURE WEARING SURFACE.

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE)

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

CONCRETE CLASS F - COMPRESSIVE STRENGTH 3000 PSI (BACKFILL)

REINFORCING STEEL - ASTM A615, A616, OR A617  
GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

STRUCTURAL STEEL ASTM A588 - YIELD STRENGTH 50,000 PSI (U.N.O.)

REFERENCE SHALL BE MADE TO:

STANDARD DRAWINGS:

AS-1-81	REVISED	9-15-94
BS-1-93	DATED	12-19-94
DBR-2-73	REVISED	9-15-94
DS-1-92	REVISED	12-15-94
ICD-1-82	REVISED	8-1-94

SUPPLEMENTAL SPECIFICATIONS:

NO. 863 DATED 9-9-97

DIRECTOR/ENGINEER

ON THIS PROJECT, ALL REFERENCES TO "DIRECTOR" APPEARING IN THE ODOT CMS MANUAL SHALL BE SUBSTITUTED WITH "ENGINEER".

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL, 2-1/2" CONCRETE COVER, SEALING OF CONCRETE SURFACES, STEEL DRIP STRIPS.

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

INSTREAM WORK

INSTREAM WORK WILL BE LIMITED WHERE PRACTICABLE AND ONLY CLEAN NON-ERODIBLE MATERIAL WILL BE USED FOR FORDS OR COFFERDAMS. THIS TEMPORARY PLACED MATERIAL WILL BE REMOVED AND THE STREAM BOTTOM RESTORED TO NEAR NATURAL CONDITIONS WHEN THE WORK IS COMPLETED.

ITEM 601 - ROCK CHANNEL PROTECTION, GROUTED IN PLACE, AS PER PLAN (TYPE A WITH FILTER)

DESCRIPTION:

THIS ITEM SHALL CONSIST OF PROVIDING ROCK CHANNEL PROTECTION TYPE A WITH FILTER AS PER ODOT ITEM 601 AS SHOWN ON THE SITE PLAN AND DETAILS WITH THE FOLLOWING ADDITIONAL STIPULATIONS:

- A. ANY EMBANKMENT REQUIRED TO SUPPORT THE PROPOSED GROUTED ROCK AT THE ELEVATIONS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED PER ODOT ITEM 203. EMBANKMENT CONSTRUCTED FOR THIS PURPOSE SHALL BE INCIDENTAL TO THE PRICE BID FOR ITEM 601.
- B. THE EXISTING SLOPE/PLACED EMBANKMENT SHALL BE EXCAVATED IN A STEPPED PATTERN, AND THE GROUTED ROCK "TOED IN" PER THE DETAIL SHOWN ON THE SITE PLAN. THIS EXCAVATION, INCLUDING REMOVING ANY SHALE THAT IS ENCOUNTERED, SHALL BE INCIDENTAL TO THE PRICE BID FOR ITEM 601.

THE FOLLOWING SPECIAL PROVISIONS SHALL ALSO BE INCLUDED IN THIS ITEM OF WORK:

- C. GROUTING ROCK CHANNEL PROTECTION - ALL ROCK CHANNEL PROTECTION SHALL BE GROUTED, AS PER ODOT CMS 601.03.
- D. FILTER FABRIC - THE FILTER FABRIC SHALL BE AS PER CMS 712.09, TYPE B AND SHALL BE INSTALLED AS PER THE DETAIL ON THE SITE PLAN. THE CONTRACTOR IS ADVISED TO USE EXTREME CAUTION WHEN PLACING ROCK CHANNEL PROTECTION ON ALL FILTER FABRIC. ANY FILTER FABRIC WHICH IS DAMAGED, TORN, OR PUNCTURED SHALL BE REPLACED IN FULL LENGTH BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.

METHOD OF MEASUREMENT: ROCK CHANNEL PROTECTION, GROUTED IN PLACE, (TYPE A WITH FILTER) SHALL BE MEASURED FOR PAYMENT BY THE ENGINEER IN PLACE AND ACCEPTED. THE CUBIC YARD VOLUME FOR PAYMENT SHALL BE TAKEN FROM CONVERSION OF TRUCK WEIGHTS DELIVERED AND PLACED. CONVERSION OF WEIGHTS TO VOLUME SHALL BE CALCULATED USING 95 POUNDS/CU.FT. (1.3 TONS/CU.YD.)

BASIS OF PAYMENT: THE ACCEPTED VOLUME WILL BE PAID FOR AT THE CONTRACT BID PRICE FOR ITEM 601-ROCK CHANNEL PROTECTION, GROUTED IN PLACE, AS PER PLAN (TYPE A WITH FILTER). THIS PRICE SHALL BE FULL COMPENSATION FOR ALL MATERIALS, EXCAVATION, EMBANKMENT, DISPOSAL OF SURPLUS MATERIALS AND INCIDENTALS NECESSARY FOR COMPLETION OF THIS ITEM.

PILE DRIVING CONSTRAINTS

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 100 FEET BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

PILES DRIVEN TO BEDROCK

PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE ULTIMATE BEARING VALUE IS 72 TONS PER PILE FOR THE ABUTMENT PILES.

ABUTMENT PILES:

- 9 PILES 15 FEET LONG, ESTIMATED LENGTH AND ORDER LENGTH;
- 9 PILES 20 FEET LONG, ESTIMATED LENGTH AND ORDER LENGTH;
- 9 SPLICES

STREAM CHANNEL EXCAVATION

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT ANY INCIDENTAL DISCHARGES ASSOCIATED WITH THE EXCAVATION AND HAULING OF MATERIAL FROM THE STREAM CHANNEL. THIS PERTAINS TO ANY EXCAVATION OPERATIONS SUCH AS, FOUNDATION PIER OR ABUTMENT EXCAVATION, CHANNEL CLEAN OUT, EXCAVATION FOR ROCK CHANNEL PROTECTION AND REMOVAL OF ANY TEMPORARY FILL ASSOCIATED WITH CONSTRUCTION OPERATIONS.

STRUCTURE EXCAVATION: NOT MADE AS PART OF 202, 518, 601 OR 503 - SHALE EXCAVATION, AND ALL NECESSARY BACKFILL, SHALL BE INCLUDED IN THE LUMP SUM BID ITEM "UNCLASSIFIED EXCAVATION, AS PER PLAN" FOR PAYMENT.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL BEHIND THE ABUTMENTS SHALL BE 203 GRANULAR MATERIAL PLACED IN 6 INCH LIFTS AND COMPACTED IN ACCORDANCE WITH 304.04.

FOUNDATION BEARING PRESSURE

THE PIER FOOTING, AS DESIGNED, PRODUCES A MAXIMUM BEARING PRESSURE OF 2.3 TONS PER SQUARE FOOT. THE ALLOWABLE BEARING PRESSURE IS 5.0 TONS PER SQUARE FOOT.

FOOTINGS

FOOTINGS SHALL BE PLACED IN BEDROCK AT THE ELEVATION SHOWN.

REINFORCING STEEL

REINFORCING STEEL PLACING DRAWINGS, INCLUDING BAR SCHEDULES, SHALL BE DEVELOPED BY THE CONTRACTOR OR HIS SUPPLIER. THESE DRAWINGS SHALL REFLECT BAR SIZE, CONFIGURATION, SPACING AND LAPPING AS SHOWN ON THE STRUCTURE PLANS AND ODOT STANDARD DRAWING ICD-1-82 SHEETS 4 AND 5 OF 5. THESE SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL, AND PROVIDING THEM AND THE REINFORCING STEEL ITSELF SHALL BE INCIDENTAL IN THE PRICE BID FOR STRUCTURAL CONCRETE.

ITEM 503 - BACKFILL, AS PER PLAN

DESCRIPTION:

BACKFILL AROUND THE PIER WALLS SHALL MEET THE REQUIREMENTS OF 503.10 WITH THE FOLLOWING CHANGES:

- BACKFILL MATERIAL SHALL BE CLASS F CONCRETE PROPORTIONED ACCORDING TO ODOT CMS 499.03.
- BACKFILL SHALL BE CARRIED TO THE LEVEL OF THE EXISTING RIVER BOTTOM AT THE EXCAVATION LIMITS AROUND THE PIER FOOTING.

CONCRETE PLACEMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 511.10, 511.11 AND 511.12.

METHOD OF MEASUREMENT:

THE VOLUME SHALL BE THE NUMBER OF CUBIC YARDS DETERMINED BY CALCULATIONS FROM PLAN DIMENSIONS, IN PLACE, COMPLETED AND ACCEPTED.

BASIS OF PAYMENT:

PAYMENT WILL BE MADE AT CUBIC YARD CONTRACT PRICE FOR ITEM 503 - BACKFILL, AS PER PLAN.

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