

# GENERAL NOTES

## ITEM 511 - CONCRETE, MISC.: CULVERT INVERT RESTORATION (CONTD.)

3. TWELVE ROWS OF STUD ANCHORS SHALL BE WELDED TO THE EXISTING CORRUGATED METAL PIPE, AND A NO. 3 REINFORCING BAR SHALL BE TACK WELDED EVERY THIRD CORRUGATION ALONG THE BOTTOM CENTERLINE OF THE CULVERT AS DETAILED ON SHEET NO. 26. THE WIRE MAT REINFORCEMENT SHALL BE SECURELY FASTENED TO THE STUDS AND REINFORCING BAR BY TYING, CLIPS, TACK WELDS OR OTHER METHOD APPROVED BY THE ENGINEER AT POINTS NOT MORE THAN THREE (3) FEET ALONG THE LENGTH OF THE CULVERT.

4. THE CONCRETE SHALL BE POURED, FORMED AND CAREFULLY CONSOLIDATED AROUND THE MAT AND CORRUGATIONS, AND INTO ANY HOLES PENETRATING THRU THE PIPE. THE CONCRETE PAVING SHALL BE FOUR (4) INCHES THICK MEASURED FROM THE TOP OF THE CORRUGATIONS OF THE CULVERT. AFTER PLACEMENT, THE CONCRETE SHALL BE STRUCK OFF WITH A TEMPLATE TO PRODUCE THE PROPER RADIUS AND FINISHED WITH A FLOAT TO PRODUCE A SMOOTH FINISH COMPARABLE TO CONCRETE PIPE.

### PAYMENT

PAYMENT FOR ITEM 511 - CONCRETE, MISC.: CULVERT INVERT RESTORATION, SHALL BE FOR EACH LINEAL FOOT OF ACCEPTED AND APPROVED REINFORCED CONCRETE INVERT PLACED. INCLUDED IN THE UNIT PRICE BID FOR THIS ITEM SHALL BE THE CONCRETE, REINFORCING STEEL, WELDS, STUD ANCHORS, DEWATERING, FORM WORK, DEBRIS REMOVAL AND DISPOSAL, CLEAN UP, AND ANY OTHER INCIDENTAL MATERIAL, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THE CULVERT INVERT RESTORATION.

### CLASS S CONCRETE, AS PER PLAN

### GENERAL

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY A CONCRETE WHICH MEETS THESE SPECIFICATIONS AND PROVIDES THE NECESSARY WORKABILITY AND PUMPABILITY. THE NEED FOR CHEMICAL ADMIXTURES OR AGGREGATES DIFFERENT FROM THE CONTRACTOR'S NORMAL SOURCES IS A DISTINCT POSSIBILITY, ALL COSTS OF WHICH SHALL BE INCLUDED UNDER THIS ITEM OF WORK. ALL PROVISIONS OF 511 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL REMAIN IN EFFECT, EXCEPT AS CHANGED BY THIS NOTE. PAYMENT FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 511 - CONCRETE, MISC.: CULVERT INVERT RESTORATION.

## CLASS S CONCRETE, AS PER PLAN (CONTD.)

### MATERIAL

THE MAXIMUM LOSS FOR COARSE AGGREGATE FOR THE SODIUM SULFATE SOUNDNESS TEST SHALL BE 10 PERCENT.

### PROPORTIONING

THE CONTRACTOR MAY MODIFY THE MIXES SHOWN BY ADJUSTING THE COARSE AND FINE AGGREGATE UP TO 200 LBS. OR ADDING AN INTERMEDIATE COARSE AGGREGATE INTO THE MIX PROVIDING THAT THE CALCULATED BLENDED COARSE AGGREGATE FALLS WITHIN THE LIMITS OF TABLE 703-1 OF THE CONSTRUCTION AND MATERIAL SPECIFICATION.

THE PROPORTIONS OF COARSE AND FINE AGGREGATE SHALL BE ADJUSTED TO PROVIDE THE MAXIMUM AMOUNT OF COARSE AGGREGATE POSSIBLE AND STILL PROVIDE A WORKABLE AND FINISHABLE MIX.

THE CONTRACTOR SHALL SUBMIT THE MIX MODIFICATION TO THE ENGINEER AND RECEIVE APPROVAL IN WRITING BEFORE ANY CONCRETE IS PLACED.

THE FOLLOWING PROPORTIONS SHALL BE USED AS A STARTING MIX DESIGN SUBJECT TO THE CONTRACTOR MODIFICATIONS AS DISCUSSED ABOVE:

### QUANTITIES PER CUBIC YARD

COARSE AGGREGATE GRADUATION	FINE AGGREGATE (LB)	COARSE AGGREGATE (LB)	TOTAL (LB)	CEMENT CONTENT (LB)	MAXIMUM WATER/CEMENT RATIO
#8 LIMESTONE	1591	1127	2718	715	0.40

AIR CONTENT - 8% PLUS OR MINUS 2%  
SLUMP - 8 INCHES MAXIMUM

A HIGH RANGE WATER REDUCER (SUPERPLASTICIZER OR HIGH RANGE WATER REDUCER SET RETARDER) SHALL BE USED. THE DOSAGE RATE WILL BE DETERMINED BY THE CONTRACTOR BASED ON THE MANUFACTURER'S RECOMMENDATION TO ACHIEVE THE DESIRED WORKABILITY LEVEL.

THE ABOVE ADMIXTURES SHALL CONFORM TO 705.12 ASTM - C494 TYPE F OR TYPE G AND SHALL BE APPROVED PRIOR TO BEING INCORPORATED IN THE WORK.

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