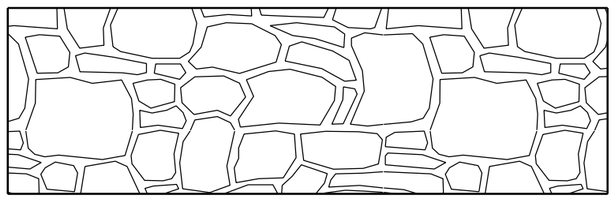
ITEM SPECIAL - 530 - STRUCTURE, MISC.: AESTHETIC TREATMENT (CONCRETE FORMWORK/FORMLINER)

REFERENCE WILL BE MADE TO ANOTHER NEARBY BRIDGE NO. GUE-22-0751: SFN 3000249. ALL AESTHETIC CONCRETE WORK ON THIS PROJECT SHALL BEST MATCH THE REFERENCED BRIDGE PARAPET AESTHETICS.

THE SURFACE FINISH AESTHETICS ON THE REFERENCED PROJECT WAS CONSTRUCTED UTILIZING ONE OF THE PATTERNS DESCRIBED BELOW IN THE ARCHITECTURAL SURFACE ELEVATION AND TABLE FROM AN APPROVED COMPANY MEETING THE DETAILS SHOWN ON THIS PAGE. FOR THIS PROJECT, THE CONTRACTOR WILL RESEARCH WHICH PATTERN/COMPANY WAS USED AND, AGAIN, MATCH IT TO CONSTRUCT THIS PROJECT AS DESCRIBED BELOW.

THE SURFACE TREATMENTS REFERENCED BELOW ARE INTENDED FOR PROCEDURE, TEXTURE, AND APPEARANCE REFERENCE.

ONE FULL SCALE PATTERNED PRECONSTRUCTION TEST PANEL SHALL BE PROVIDED FOR APPROVAL BY THE DISTRICT 5 BRIDGE SECTION. IF THE TEST PANEL DOES NOT MEET THE APPROVAL OF THE DISTRICT 5 BRIDGE SECTION, THE RESULT WILL BE GROUNDS TO REJECT THE PROPOSED PANEL SURFACE CHOSEN. THE TEST PANEL WILL BE PROVIDED REPEATEDLY, AS NECCESSARY, UNTIL APPROVAL IS GRANTED. THE CONTRACTOR SHALL PROVIDE AN END SECTION OF THE PARAPET, AS SHOWN IN THE PLAN, SHOWING THAT THEY CAN ACHEIVE THE FORMLINING APPLICATION AS DETAILED. THE MOCK-UP SHALL HAVE THE SAME ARCHITECTURAL RELIEF, THICKNESS, PATTERN INTENDED TO BE USED ON THE PROJECT. THE PANEL SHALL BE OF THE SAME CEMENT AND AGGREGATE SOURCE THAT WILL BE USED TO CONSTRUCT THE PROJECT. AFTER APPROVAL THE CONCRETE TEST PANEL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.



ARCHITECTURAL SURFACE - ELEVATION

THE FOLLOWING SHALL BE USED:

COMPANY NAME:	PANEL SURFACE TREATMENT:	SPECIFICATIONS:
SPEC FORMLINERS, INC.	WASHINGTON DRYSTACK # 1581	MAX RELIEF 1½" LINER THICKNESS 2⅝" STONE SIZE 4" TO 24"
CUSTOM ROCK INTERNATIONAL	NEW ENGLAND DRYSTACK # 12003	MAX RELIEF 1⅜" LINER THICKNESS 2¼" STONE SIZE 3" TO 24"
APPROVED EQUAL	APPROVED EQUAL	APPROVED EQUAL

ITEM 511 - CLASS OC3 CONCRETE WITH QC/QA, PARAPET, AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETIC INTO THE BRIDGE PARAPET CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:

PORTLAND CEMENT CONCRETE499.03, CLASS OC 3 MEETING A DESIGN STRENGTH OF 4,500 PSI, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02 FIBERS FOR CONCRETEASTM C 1116, TYPE III

THE CLASS OC3 CONCRETE FOR THE PARAPETS SHALL MEET THE FOLLOWING CRITERIA: WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.5 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETIC FIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.5 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED. THE TRANSIT MIXER CHARGE SHALL BE LIMITED TO 3/4 OF ITS RATED CAPACITY OR 6 CUBIC YARDS, WHICHEVER IS SMALLER. THE FIRST THREE TRANSIT MIXER LOADS ARE REQUIRED TO BE AT THE MINIMUM YARDAGE LISTED ABOVE TO SHOW PROOF OF THE SUCCESSFUL BATCHING OPERATION. AFTER CONSISTENCY IN THE DELIVERED MATERIAL HAS BEEN ESTABLISHED, THE CONCRETE SUPPLIER MAY INCREASE THE BATCH DELIVERED QUANTITIES AS LONG AS THE QUALITY REMAINS ACCEPTABLE TO THE ENGINEER. THE ENGINEER CAN REDUCE THE BATCH LOAD SIZE AT ANY TIME AS NEEDED TO CORRECT/IMPROVE CONCRETE QUALITY.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

DESIGN AGENCY
OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5

DESIGNED . DRAWN . REVIEWED . DATE .
CHECKED . REVISED . STRUCTURE FILE NUMBER .

BRIDGE PARAPET NOTES
BRIDGE NO.: TYPICAL
OVER

TYPICAL
PID No. TYPICAL

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