Request for Proposal
18MCO0536 CONCRETE FOR VETERANS MEMORIAL
Date Required: Thursday August 23, 2018
Time Required: 9:30am Local Time

INTRODUCTION:
Midland County, hereafter called County, invites sealed proposals from interested qualified Vendors, hereinafter called Vendors, to provide concrete for a Veterans Memorial Site. The following pages provide general information about the requirements and specifications for the package.

This request for proposal ("RFP") is part of a competitive procurement process which provides qualified vendors with a fair opportunity for their commodities and services to be considered, and to provide information concerning their expertise and experience in providing similar services to other customers. The RFP process provides a competitive negotiation platform, wherein price or cost is not the sole determinative factor. This process, designed to best serve the interests of the County, allows the County the flexibility to negotiate with interested, qualified Vendors (following designation by the Commissioners Court, one at a time) to arrive at a mutually agreeable relationship.

QUESTIONS:
If further information is required, please contact the Midland County Purchasing Department. All requests for information must be submitted in writing. Responses to all questions received will be sent to each Firm known to have copies of the Request for Qualifications. Requests for information may be faxed to 432-688-4914 or e-mailed to pur103@co.midland.tx.us. All questions should be submitted on or before 5:00pm on Wednesday August 15, 2018. Questions received after said date and time will not receive a response. Answers and clarifications which are considered to materially change the solicitation will be issued as written addenda to the original RFP and will be posted to the Midland County website at www.co.midland.tx.us. Solution providers are responsible for ensuring all answers to questions are reviewed prior to bid submittal and that all issued added are properly acknowledged with their submitted proposal response. Midland County will not be responsible for any verbal exchange between the vendor and an employee of Midland County.
COPIES AND RECEIPT:
Please submit one (1) original, three (3) copies, and an electronic copy on USB drive of the proposal. **An executed copy of the Proposal Affidavit SIGNED AND NOTARIZED (Page 7) must be included in each submission.** Please note that if no Proposal Affidavit is included, the response will be rejected. Midland County is exempt from all state and federal taxes. Tax exempt certificates are available upon request. Midland County is exempt from all state and federal taxes. Tax exempt certificates are available upon request.

All statements should be submitted in a sealed envelope, marked on the outside,

**18MCO536 CONCRETE FOR VETERANS MEMORIAL**

________________________
Company Name

Responses must be received by **9:30am Local Time on Thursday August 23, 2018.** Late proposals will be rejected and returned without being opened. The clock in the Purchasing Agent’s office is the official time piece for this submission. If interested, Vendors may use mail or express systems to deliver their proposal to the Purchasing Department; they should insure that they are tendered to the carrier in plenty of time to reach the Purchasing Department by the time and date required. Facsimile transmitted proposals shall not be accepted.

SUBMISSION LOCATION: All bids which are mailed, shipped, delivered, etc. should be addressed as follows:

**Midland County Purchasing Department**
Midland County Courthouse
Attention: Kristy Engeldahl, Purchasing Agent
500 N. Loraine Street, Suite 1101
Midland, Texas 79701

DOCUMENTATION SUBMISSION:
The respondent must submit all required documentation. Failure to provide requested information may result in rejection of the statement.

ALTERATION OF PROPOSAL:
A proposal may be altered, modified or amended by a Vendor at any time, prior to the time and date set forth above as the submission deadline. Alterations, modifications or amendments to a proposal must be made in the offices of the Purchasing Department. Any interlineations, alteration or erasure made on a proposal before the submission deadline must be initialed by the signer of the proposal, guaranteeing authenticity. A proposal may not be altered, modified or amended after the submission deadline.

WITHDRAWAL:
A proposal may not be withdrawn or canceled by the respondent for a period of sixty (60) days following the date designated for the receipt of proposals, and respondent so agrees upon submittal of their proposal.
CONFLICT OF INTEREST:
No public official shall have interest in this contract, in accordance with Vernon's Texas Codes annotated Local Government Code Title 5, Subtitle C, Chapter 171. Firm is required to sign affidavit form included in proposal documents.

SILENCE OF SPECIFICATIONS:
The apparent silence of these specifications as to any detail of the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

CONFIDENTIALITY:
Contents of the proposals will remain confidential until the contract is awarded. At that time the contents will be made public under the Texas Public Information Act; except for any portion of a proposal which has been clearly marked as a trade secret or proprietary data (the entire proposal may not be so marked). Proposals will be opened, and the name of the firm submitting the proposal read aloud, acknowledged, at 9:35am on Thursday August 23, 2018, in the Purchasing Department Conference Room located in the Midland County Courthouse, Suite 1101. All respondents or other interested parties are invited to attend the opening.

Vendors are hereby notified that the Owner strictly adheres to all statutes, court decisions, and opinions of the Texas Attorney General with respect to disclosure of public information.

ADDITIONAL INFORMATION AND DEMONSTRATION, NEGOTIATIONS:
Prior to award, selected Vendors may be asked to provide further information concerning their proposal, up to and including presentations/demonstrations. The Midland County Commissioners Court reserves the right to reject any and all proposals or waive formalities as deemed in the best interests of Midland County. The County may also enter into discussions and revisions of proposals after submission and before award for the purpose of obtaining the best and final offer, and to accept the proposal deemed most advantageous to Midland County.

This request for proposal (RFP) is part of a competitive procurement process which is designed to best serve the interests of the County in obtaining complicated commodities and/or services. It also provides interested Vendors with a fair opportunity for their goods and services to be considered. The RFP process is designed to be a competitive negotiation platform, where price is not required to be the sole determinative factor. Also, the County has the flexibility to negotiate with interested vendors (one at a time) to arrive at a mutually agreeable relationship. Negotiations will be arranged with vendors in a hierarchal order, starting with the vendor selected as the primary. If a contract cannot be negotiated, negotiations will, formally and in writing, end with that Vendor and proceed to move to the second vendor, and so forth until a contract is negotiated.
RIGHTS OF THE CONTRACTING AUTHORITY:
Midland County reserves the right to withdraw this RFP at any time and for any reason. Midland County also has the right to terminate its selection process at any time and to reject all responses, or all proposals. Receipt of the proposal materials by Midland County or submission of a proposal to Midland County confers no rights upon the vendor nor obligates Midland County in any manner.

All costs associated with the preparation or submittal of proposals shall be borne by the vendor, and no cost shall be sustained by Midland County.

ORAL COMMITMENT:
Vendors should clearly understand that any verbal representations made or assumed to be made during any discussions held between representatives of a vendor and any Midland County personnel or official are not binding on Midland County.

WAIVER OF CLAIMS:
Submission of a proposal indicates Vendor’s acceptance of the evaluation technique and Vendor’s recognition that some subjective judgments must be made by the County during the determination of qualification.

SELECTION CRITERIA:
Price is a primary consideration, however, it is not the only consideration to be used in the selection. The product and/or service to be provided is also of major importance. Midland County will require that the successful vendor provide a representative for all County related business, service, billing, installation, activation and termination of said service.

ORDINANCES AND PERMITS:
The Vendor agrees, during the performance of the work, to comply with all applicable Federal, State, or local code and ordinances.

INVOICES:
Invoices are to be mailed to P.O. Box 421, Midland, Texas 79702 and should cite the applicable Purchase Order Number. Any and all notices or other communications required or permitted by any contract awarded as a result of this RFP shall be served on or given to Midland County, in writing, by personal delivery to the Purchasing Agent of Midland County, Texas, or by deposit with the United States Mail, postage prepaid, registered or certified mail, return receipt requested, addressed to the Midland County Purchasing Agent 500 N. Loraine Suite 1101 Midland, TX 79701, or at such other address as may have been specified by written notice to Vendor.

INSURANCE:
The awarded Vendor will maintain such insurance as will protect the Vendor and the County from claims under the Workers' Compensation Acts, and any amendments thereof, and from any other claims for damages from personal injury, including death, which may arise from operations under this agreement, whether such operations be by themselves or by any sub-
Contractor, or anyone directly or indirectly employed by either of them. Current Certificate of such insurance shall be furnished to Midland County and shall show all applicable coverage(s).

Other insurance requirements are:
- General Liability with a $1,000,000 per occurrence limit and $2,000,000 general aggregate. Coverage will not exclude work performed by subcontractors.
- Commercial Automobile Liability with a limit of no less than $1,000,000. The coverage will also extend liability to hired and non-owned autos.
- Workers' Compensation with limit of $1,000,000 for Employers Liability.
- We also require a minimum umbrella (or follow form excess policy covering over general liability, auto liability and workers compensation) of no less than $2,000,000.

Midland County will require the selected Vendor to name Midland County as an additional for both the general liability and auto liability. A waiver of subrogation in favor of the County is required for the workers compensation. If the additional insured status or waiver of subrogation is not blanket, please send a copy of the actual endorsements prior to commencement of any work.

Midland County will require the selected Vendor to name Midland County as an additional named insured and provide a waiver of subrogation prior to making a contract.

INDEMNIFICATION:
The Vendor shall defend, indemnify and save whole and harmless the County and all its officers, agents and employees from and against any and all demands, claims, suits, or causes of action of any character, name, kind or description brought for, or on account of, arising out of or in connection with the Vendor’s performance or non-performance of any obligation of Vendor or any negligent act, misconduct or omission of the Vendor in the performance of its contractual obligations. The Vendor shall defend, indemnify, save, and hold harmless the County and its officers, agents, representatives and employees from and against any and all demands, claims, suits, or causes of action of any character, name, kind or description brought for, on account of, arising out of or in connection with Vendor's product or service.

STATUS OF INDEPENDENT CONTRACTOR:
Vendor shall be considered an independent contractor, for all purposes. Vendor will not at any time, directly or indirectly, act as an agent, servant, representative or employee of the County. Vendor will not take any action which is intended to create any commitments, duties, liabilities or obligations on behalf of the County, without prior written consent of the County.

PARTIAL INVALIDITY:
In the event any one or more of the provisions contained in this RFP or any contract resulting therefore, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this RFP or any contract resulting therefore and this RFP or the contract resulting therefore shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
CONTRACT TERMINATION:
Non-performance of the Vendor/Contractor in terms of specifications or noncompliance with terms of this contract shall be basis for termination of the contract by the County. Termination in whole or in part, by the County may be made at its option and without prejudice to any other remedy to which it may be entitled at law or in equity, or elsewhere under this contract, by giving (60) sixty days written notice to the Contractor/Vendor with the understanding that all work being performed under this contract shall cease upon the date specified in such notice. The County shall not pay for work, equipment, services or supplies which are unsatisfactory. Contractor/Vendor may be given reasonable opportunity prior to termination to correct any deficiency. This, however, shall in no way be construed as negating the basis for termination for non-performance. The right to terminate the notice thereof is controlled by these proposal specifications and is not subject to being altered by contract.

LAW GOVERNING:
The parties under contract shall be subject to all Federal laws and regulations, and all rules and regulations of the State of Texas. The laws of the State of Texas shall govern the interpretation and application of the contract; regardless of where any disagreement over its terms should arise or any case of action arise.

REMEDIES:
The successful vendor and Midland County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.

VENUE:
It is hereby agreed that the contract will be made in Midland, Midland County, Texas, and any dispute arising as a result of it shall be governed by the laws of the State of Texas for the purpose of any law suit, and the parties agree that such lawsuit shall be brought in Midland County, Texas.

FUNDING CONTINGENCY:
Any contract awarded pursuant to this RFP shall be contingent on sufficient funding and authority being made available in each fiscal period by the appropriate officials of Midland County. If sufficient funding or authority is not made available, the contract shall become null and void.

ASSIGNMENT:
The Contractor shall not sell, assign transfer or convey this contract in whole or in part, without the prior written consent of the County.

BUSINESS CHANGE DISCLOSURE:
The vendor shall immediately disclose any knowledge of a business change (i.e., name change, change in ownership, etc.) that will take place during the duration of this contract.
REQUIRED FORM
COMPANY AFFIDAVIT

The affiant, ___________________________ states with respect to this submission to County:

I (we) hereby certify that if the contract is awarded to our firm that no member or members of the governing body, elected official or officials, employee or employees of said County, or any person representing or purporting to represent the County, or any family member including spouse, parents, or children of said group, has received or has been promised, directly or indirectly, any financial benefit, by way of fee, commission, finder's fee or any other financial benefit on account of the act of awarding and/or executing a contract.

I hereby certify that I have full authority to bind the company and that I have personally reviewed the information contained in the RFP and this submission, and all attachments and appendices, and do hereby attest to the accuracy of all information contained in this submission, including all attachments and exhibits.

I acknowledge that any misrepresentation will result in immediate disqualification from any consideration in the submission process.

I further recognize that County reserves the right to make its award for any reason considered advantageous to the County. The company selected may be without respect to price or other factors.

Signature ______________________ Date ______________________

Name ______________________ Phone ______________________

Title ______________________

Firm Name ______________________

Type of business organization (corporation, LLC, partnership, proprietorship)

Address ______________________

County, State, Zip ______________________

Notary Seal Below
SPECIFICATION

PURPOSE:
It is Midland County’s intent to purchase concrete from a vendor. The vendor will provide the concrete to our contractor, MW Builders, as required for work formed and ready for concrete installation.

SUBCONTRACTOR AND/OR SUPPLIER IDENTIFICATION:
Should the Bidder subcontract any work, the Bidder shall indicate below the name of each subcontractor and/or supplier the bidder will use in the performance of the contract. The Bidder shall specify the work to be performed by the subcontractor or the materials to be provided by the supplier. Any changes in subcontractor and/or supplier listed below shall require prior approval by the Purchasing Office.

SCOPE OF PROJECT:
Vendor will provide concrete as follows as outline by our architect in ATTACHMENT A and according to the drawings in ATTACHMENT B. Vendor will need to propose the proper amount of concrete based on the drawings in ATTACHMENT B.

REFERENCES:
Please provide at least 2 references, preferably any local/state government clients that the company has provided granite needs.

EVALUATION PROCESS:
The County will award to the bidder that submits a bid which represents the “best value” to the County. The best value shall not be based solely upon price but the bid which receives the highest cumulative score for each of the evaluation factors delineated herein.
CRITERIA:

Introduction (Executive Summary): 1 page maximum

Tab 1 Previous Related Experience: (25 points, maximum)
- Indicate experience with concrete projects of same approximate size and type as the anticipated project.
- Indicate whether Vendor has had contracts terminated prior to completion.

Tab 2 Identity and Location of Vendor: (5 points, maximum)
- Indicate the exact legal name of Vendor, its type of legal organization, its State of organization, its mailing address, the office/business location of the Vendor from which the Project will be managed; and, address Vendor’s availability to the Project and the County.

Tab 3 Time: (20 points, maximum)
- Indicate how far in advance vendor will need to know to begin this project and how long it will take to complete the project.

Tab 4 References: Include name, address, and phone number of contact (10 points, maximum)
- Indicate (2 minimum) general references who can attest to the Vendor’s ability, and performance.

Tab 5 Cost: (40 points, maximum)
- Cost of the overall project of providing concrete to Midland County. Vendor will need to determine the amount of concrete needed based on the scope in ATTACHMENT A drawings in ATTACHMENT B.
SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.01 RELATED REQUIREMENTS

A. Applicable provisions of Division 01 shall govern work of this Section.

1.02 WORK INCLUDED

A. Include materials, labor, services, and incidentals necessary for supplying material of this section of Work.

B. Concrete material for foundation walls and walks.

C. Supply concrete to contractor as required for work formed and ready for concrete installation.

1.03 QUALITY ASSURANCES

A. Industry Standards, Specifications and Codes:
   1. General:
      a. Comply with provisions of the following codes and standards except as modified herein.
      b. Referenced codes and standards including revisions and commentaries shall be the most currently adopted as of the date of these Contract Documents.
   2. American Concrete Institute (ACI):
      a. ACI 117 Standard Specifications for Tolerances for Concrete Construction and Materials
      b. ACI 301 Specifications for Structural Concrete
      c. Additional ACI sections are noted in later text.
      a. Specific ASTM standards are noted in later text.

1.04 SUBMITTALS

A. Submit in accordance with Division 01 requirements.

B. Mix Designs:
   1. Prepare design mixtures for each class of concrete on the basis of laboratory trial mixtures or field test data, or both in accordance with ACI 301. Design mixtures shall meet the requirements listed in Table 33000-1. Submit material content per cubic yard of each class of concrete furnished including:
      2. Weight of cementitious materials.
      3. Saturated surface-dried weights of fine and coarse aggregates.
      4. Quantities, type and name of admixtures.
      5. Weight of mixing water.
C. Submit to Engineer mix designs, certification that materials used in concrete mixtures meet ASTM and other applicable specifications, and documentation indicating proposed concrete proportions will produce an average compressive strength equal to or greater than the required compressive strength as specified in ACI 301. Obtain approval prior to placing concrete.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Hydraulic Cement:
   1. For normal concrete, hydraulic cement shall meet requirements of ASTM C 150, ASTM C 595, or ASTM C 1157, Type I/II Portland Cement with a pozzolan additive consisting of Class F fly ash.
   2. For air-entrained concrete, cement shall meet requirements of ASTM C 150, Type I/II Portland Cement specified for normal concrete with an air-entraining admixture conforming to ASTM C 260.

B. Slag Cement:
   1. Slag cement shall meet requirements of ASTM C 989.

C. Silica Fume Cement:
   1. Silica fume shall meet the requirements of ASTM C 1240.

D. Fly ash:
   1. Fly ash shall meet the requirements of ASTM C 618.

E. Aggregates:
   1. Normal weight aggregate shall comply with requirements of ASTM C 33. Lightweight aggregates shall comply with requirements of ASTM C 330.

F. Water:
   1. Water used for batching concrete shall meet the requirements of ASTM C 1602.

2.02 ADMIXTURES

A. No other admixtures will be allowed except those listed without Engineer's approval.

B. Air-Entraining:
   1. Shall Conform to ASTM C 260, certified by the manufacturer to be compatible with other required admixtures. The Entrained air content shall be controlled at 6½ percent for ¾" aggregate concrete and 5½ percent for 1½" aggregate concrete within limits of plus or minus 1½ percent each.
   2. Products: Subject to compliance with requirements, provide one of the following:
      a. "Darex II" – W.R. Grace
      b. "AEA 92S" - Euclid
      c. "Catexol AE 260" – Axim Concrete Technologies
      d. "Micro-Air" – BASF Admixtures, Inc.
      e. "MB AE 90" – BASF Admixtures, Inc.
C. Water Reducing:
1. Shall conform to ASTM C 494, Type A
2. Products: Subject to compliance with requirements, provide one of the following:
   a. "WRDA 82" – W.R. Grace
   b. "Eucon WR-91" – Euclid
   c. "Catexol 1000N“ – Axim Concrete Technologies

D. Mid-Range Water Reducing:
1. Shall conform to ASTM C 494, Type A or Type F
2. Products: Subject to compliance with requirements, provide one of the following:
   b. "Eucon MR” – Euclid
   c. "Catexol 3500N“ – Axim Concrete Technologies

E. High-Range Water Reducing (Super Plasticizer):
1. Shall conform to ASTM C 494, Type F or Type G.
2. Products: Subject to compliance with requirements, provide one of the following:
   c. "Eucon 37“ - Euclid
   d. "Catexol 1000SP-MN“ – Axim Concrete Technologies
   e. "Rheobuild 1000“ - BASF Admixtures, Inc.

F. Water Reducing, Non-Chloride Accelerator:
1. Shall conform to ASTM C 494, Type C or Type E.
2. Products: Subject to compliance with requirements, provide one of the following:
   c. "Catexol 2000RHE“ – Axim Concrete Technologies
   d. "Pozzutech 20“ - BASF Admixtures, Inc.

G. Water Reducing, Retarding:
1. Shall conform to ASTM C 494, Type D.
2. Products: Subject to compliance with requirements, provide one of the following:
   b. "Eucon Retarder 100“ - Euclid Chemical Co.
   c. "Catexol 1000R“ – Axim Concrete Technologies
   d. "Pozzolith 100XR“ - BASF Admixtures, Inc.

2.02 BONDING AGENT

A. Shall be a poly-vinyl acetate emulsion.

B. Products: Subject to compliance with requirements, provide one of the following:
   1. "Southcrete 45“ – SGM
   2. "Euco Weld“ – Euclid Chemical Company

2.03 RELATED MATERIALS
A. Evaporation Retardant and Finishing Aid: Shall be "Confilm" by BASF Admixtures, Inc.

B. Vapor Retarder: Provide vapor retarder over prepared base course. Provide manufacturer's recommended pipe boots, mastics and gusset tape. Use only materials resistant to decay when tested in accordance with ASTM E154, as follows:
   1. Vapor Retarder membrane must have the following qualities;
      a. Water Vapor Transmission Rate ASTM E 96 less than 0.008
      b. Water Vapor Retarder ASTM E 1745 Class A
      c. Provide one of the following:
         1) Stego Wrap (15 mil) Vapor Barrier by Stego Industries LLC
         2) W.R. Meadows Perminator 15 mil
         3) Zero-Perm by Alumiseal

   1. Products: Subject to compliance with requirements, provide one of the following:
      a. "Set Grout" - ChemRex
      b. "Sonogroup" - Sonneborn
      c. "Euco-NS" - Euclid Chemical Co.
      d. "Sealtight 588" - W.R. Meadows
      e. "Crystex" - L&M Cons. Chemical Co.
      f. "Sure-Grip Grout" - Dayton Superior Corp.
      g. "Horngrout" - A.C. Horn
      h. "Five Star Grout" - US Grout Corp.

D. Absorptive Cover: Burlap cloth made from jute or Kenaf, weighing approximately 9 ounces per square yard, complying with AASHTO M182, Class 2.

E. Moisture-Retaining Cover: One of the following, complying with ASTM C 171, Type 1 or 2:
   1. Polyethylene Film
   2. Polyethylene Coated Burlap

F. Liquid Curing Compound
   1. Conform to ASTM C309, Types 1 and 1D, Class B, water based.
   2. Meet federal and state VOC/AIM regulations.
   3. Shall be dissipating resin type, which chemically breaks down after approximately eight (8) weeks.
   4. Shall not inhibit bonding of flooring adhesives
   5. Shall not inhibit bond breaker, where applicable
   6. Sodium silicates prohibited.
   7. Use on all interior slabs to receive subsequent floor coverings and parking structures

G. Curing and Sealing Compounds:
   1. Conform to ASTM C1315, Type 1, Class B.
   3. Moisture loss shall be not more than 0.30 Kg/M2 when applied at 300 square feet per gallon.
   4. Meet federal and state VOC/AIM regulations.

H. Epoxy Adhesive: ASTM C 881, 2 component material suitable for use on dry or damp
surfaces. Provide material "Type", "Grade", and "Class" to suit project requirements.
1. Products: Subject to compliance with requirements, provide one of the following:
   a. "Concrese LPL Liquid" - ChemRex
   b. "Epoxitite" - A.C. Horn
   d. "Sikadur Hi-Mod" - Sika Chemical
   e. "Euco Epoxy 452" - Euclid Chemical Co.
   f. "Patch and Bond Epoxy" - The Burke Co.
   g. "Sure-Poxy" - Kaufman Products, Inc.

2.04 READY MIXED CONCRETE
A. Ready mixed concrete shall be measured, mixed and delivered according to ASTM C94, except as modified herein.

B. Prepare design mixtures for each class of concrete on the basis of laboratory trial mixtures or field test data, or both in accordance with ACI 301. Design mixtures shall meet the requirements listed in Table 33000-1

C. Addition of water is permitted for batches of material with insufficient slump at the job site but is limited to the lesser of; 1 gallon per cubic yard or the quantity of water indicated on the delivery ticket such that the mixing water content on approved mix design is not exceeded.

D. Ready Mixed Concrete Delivery Tickets:
   1. Furnish 2 delivery tickets with each batch of concrete before unloading at site; 1 for Contractor and 1 for Engineer on which is printed, stamped or written the following information:
      a. Name of ready-mix batch plant
      b. Serial number of ticket
      c. Date and truck number
      d. Name of Contractor
      e. Job name and location
      f. Specific class or designation of concrete
      g. Amount of concrete (cubic yards)
      h. Time loaded or of first mixing of cement and aggregates
      i. Type, name and amount of admixture
      j. Type, brand and amount of cement
      k. Total water content by producer (or W/C ratio)
      l. Maximum size of aggregate
      m. Weights of fine and course aggregates

E. Mix Proportioning:
   1. Minimum amount of cementitious material identified in the following mix proportions shall apply for mixes for which field experience or trial mixture information required is not provided.
### Table 33000-1

<table>
<thead>
<tr>
<th>CLASS</th>
<th>28-DAY STRENGTH (PSI)</th>
<th>SLUMP RANGE (IN)</th>
<th>AGGREGATE SIZE (IN)</th>
<th>W/C RATIO (BY WT.)</th>
<th>AIR ENTRAINMENT %</th>
<th>USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4,000</td>
<td>3-5</td>
<td>3/4</td>
<td>0.45 Max.</td>
<td>None</td>
<td>interior slab on grade</td>
</tr>
<tr>
<td>B</td>
<td>4,500</td>
<td>3-5</td>
<td>3/4</td>
<td>0.45 Max.</td>
<td>None</td>
<td>All footings, foundation walls and grade beams</td>
</tr>
<tr>
<td>C</td>
<td>4,000</td>
<td>3-5</td>
<td>3/4</td>
<td>0.50 Max.</td>
<td>4.5</td>
<td>Exterior slab on grade (1)</td>
</tr>
</tbody>
</table>

Notes:
(1) Air entrained concrete: Use for exterior walls, exterior slabs, walks, platforms, ramps, steps and other concrete exposed to freezing and thawing.

### PART 3 – EXECUTION

#### 3.01 GENERAL

A. Clean all mixing and transportation equipment.

#### 3.02 PLACEMENT OF CONCRETE

B. Placing Concrete In Forms:
   1. Deposit concrete in forms in horizontal layers not deeper than 18 inches and in a manner to avoid inclined construction joints.
   2. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or flowing.

C. Placing Concrete Slabs:
   1. Deposit and consolidate concrete slabs in a continuous operation until placing of a panel or section is completed.

E. Hot Weather Placing:
   1. Surfaces for 48 hours. Vent heaters outside of enclosure. Temperature of concrete delivered at job site shall not exceed 95 degrees F. Add ice to mixing water as required to control temperature of mixture.
   2. Conform to ACI 305.
   3. Use evaporation retarders, and finishing aids when necessary to achieve sound, durable surfaces.
   4. Wet forms thoroughly before placing concrete.
   5. Do not use retarding admixtures without the written permission of the Engineer.

#### 3.03 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. General:
   1. Sample fresh concrete to conform to ASTM C 172.
2. Owner will provide third party testing at owners expense.

B. Slump:
   1. In accordance with ASTM C 143. One slump test at point of discharge from ready mix truck for each set of test cylinders taken, unless noted otherwise, with additional tests when concrete consistency seems to have changed. If measured slump falls outside limits specified, a check test shall be made immediately on another portion of the same sample. In the event of a second failure, concrete will be considered to have failed to comply with Specifications. Slump tests, when taken, shall be conducted after site addition of superplasticizer, however a visual estimate of slump shall be recorded prior to site addition of superplasticizer to a mix. Visual slump should only be used after correlation has been established with actual slump tests.

C. Air Content:
   1. Only for air entrained concrete, in accordance with ASTM C 231 pressure method for normal weight concrete and ASTM C 173 for lightweight concrete. One air content test for each set of strength test cylinders made unless noted otherwise. If measured air content falls outside limits specified, a check test shall be made immediately on another portion of the same sample. In the event of a second failure, concrete will be considered to have failed to comply with Specifications. In compliance with ASTM C 94, site addition of additional air entrainment admixture is permissible until plant adjustments have been made. For site added superplasticizer, air should only be checked after the addition of superplasticizer.

D. Concrete Temperature:
   1. In accordance with ASTM C 1064 each time a set of compression test specimen is made.

E. Strength Tests:
   1. Strength test for any class of concrete shall consist of 4 standard cylinders made from a composite sample secured from a single load of concrete in accordance with ASTM C 172, except when in the opinion of the Engineer, he may require additional specimens.
2. All Concrete:
   a. Make test cylinders in accordance with ASTM C 31. Each test shall consist of a minimum of 3 cylinders.
   b. After 24 hours, 3 cylinders to be carefully transported to testing laboratory for moist curing.
   c. 1 laboratory cured cylinder to be tested at 7 days and 2 laboratory cured cylinders to be tested at 28 days.
3. Maturity Methods:
   a. Maturity Methods are acceptable as long as they are done in addition to standard cylinder strength tests completed in accordance with ASTM C 172 and are completed in order to facilitate decision making opportunities for construction operations.
   b. Shall be completed in compliance with ASTM C 1074 “Standard Practice for Estimating Concrete Strength by the Maturity Method”.
   c. Any modifications to the mixture design (including but not limited to admixtures) or material sources shall be accompanied by a re-calibration of strength-maturity relationship, datum temperature and activation
4. Test results at 28 days shall be the average strength of specimens determined in accordance with ASTM C 39.

5. Strength test shall be made for: each day's pour exceeding 5 cubic yards; each class of concrete; each change of supplies or sources; and for each 150 cubic yards of concrete or fraction thereof.

6. Strength of each concrete class shall be deemed satisfactory when both of the following criteria are met:
   a. The average of three consecutive compressive-strength tests equals or exceeds specified compressive strength.
   b. Any individual compressive-strength test result does not fall below specified compressive strength by more than 500 psi.

7. Testing shall be performed in compliance with Division 01 provisions by an approved testing laboratory at Owner's expense, which shall submit complete reports of tests to General Contractor, Concrete Supplier, Engineer and Owner's representative. Reports of compressive strength tests shall contain project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, weather at time of placement and compressive breaking strength and type of break. An individual having ACI Level 1 Technician certification shall complete testing, including test cylinder production. Site protection of test cylinders shall be made in compliance with ASTM C 31.

8. If Engineer has reason to believe cylinder strength tests are not representative of strength of concrete in place, he shall require drilled cores to be cut and tested at Contractor's expense. Coring and testing shall be in accordance with ASTM C 42 “Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete”. Acceptance or rejection of concrete shall be based on cylinders made from concrete sampled at point of discharge. Impact hammer, sonoscope or other nondestructive device may be permitted, but shall not be used as the sole basis for acceptance or rejection.

9. Air and slump tests shall be performed at a rate coinciding with strength tests. Individual test reports need not be sent to A/E. A summary of test results shall be sent to A/E at completion of the Project. A/E shall be notified immediately by testing lab of any non-conforming tests.

END OF SECTION 03 30 00