WAKELY ASSOCIATES, INC.
ARCHITECTS
30500 Van Dyke Avenue Suite 209
Warren, MI 48093

May 27, 2025

ADDENDUM NO. 01 to the plans and specifications for MACOMB COUNTY – TALMER BUILDING, 120 N. MAIN ST., MT. CLEMENS, MI 48047, Architect's Project No. 242043, dated MAY 12, 2025

Specification Sections: 03001-Concrete is being issued with this Addendum.

Pre-bid Meeting Sign-In sheet and Q & A is being issued with this Addendum

GENERAL ITEMS

ITEM NO. G1: Pre-bid meeting sign-in sheet issued for reference

END OF ADDENDUM NO. 1

Cc: Mary Schultz, Macomb County
Ben Treppa, Macomb County Facilities & Operations
Anthony Torelli, Macomb County
Dan Waters, Wakely Associates
Ron Syme, Wakely Associates

MACOMB COUNTY
TALMER BUILDING
HVAC EQUIPMENT RENOVATIONS
WAKELY PROJECT #242043

PRE-BID MEETING
SIGN-IN SHEET
May 20, 2025
11:00 a.m.

NAME	FIRM	PHONE NO.	FAX NO.	EMAIL
Wade Williams	Wade Electric	586-634-3709		wadeelectricco@aol.com
John Scull	Scott Mech.	313-909956		JS@scm CONTRACTORS.com
Clint Harris	Quality Air Systems	313-433-1500		Clint.H@QualityAirSystems.com
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Anthony Zellner	Fry Hanley, Cooley, Rimby	419-280-1087		anthony.zellner@rclyanfry.com
Becker DL Multi	A-C Building Systems	248 941-4253		A-CBS@att.net

NAME	FIRM	PHONE NO.	FAX NO.	EMAIL
Dylan Ballard	Ballard Contracting	586-438-6304		DylanD Ballard Cs. Net
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DAN WATERS	WAKELY			DWATERS@WAKELYAIA.COM

Macomb County Finance Department

Purchasing Division

May 27, 2025

TO: ALL BIDDERS

FROM: MARY SCHULTZ, SENIOR BUYER
PURCHASING DIVISION

SUBJECT: RFB 21-25
QUESTIONS AND ANSWERS
MACOMB COUNTY TALMER BUILDING HVAC EQUIPMENT RENOVATIONS

1. Confirm if this project is prevailing wage?
   This is not a prevailing wage project.

2. Confirm who the controls contractor is for this building?
   Metro Controls, is the only approved contractor per M8.00.

3. Confirm who the fire alarm contractor is for this building?
   Cintas services the counties' fire alarm systems.

4. Room 201 and 202 call out ETR/SC can you have the architect confirm if we are sealing the concrete for rooms 201 and 202 and if so, can you provide a spec?
   See attached specification.

5. Per Drawing A2.0, please provide a specification for the corner guards.
   See specification section 09250, 2.4B.

6. Per Drawing A2.0, per the finish schedule, it indicates to seal the concrete in rooms 201 & 202. Please provide specifications for the concrete sealer.
   See attached specification.

7. Per Drawing A2.0, one note indicates to relocate the existing fire extinguisher cabinets while another note indicates new. Please identify which note is correct.
   Provide a new fire extinguisher cabinet per specification section 10522.

8. Per Drawing A3.0, regarding existing base to remain note referencing page S3.02, drawing is not included please provide.
   Provide new base as indicated.

9. Drawing E3.10 New Work Keyed Notes #1 indicates to reinstall the Fire Alarm Devices removed during demolition work. Is it required to recertify these devices?
   Yes, include re-certifying the fire alarm system in bid.

10. Depending on material lead times confirm what the plan should be for temp heat/ cooling?
    Existing rooftop will need to stay operational until the new unit arrives. The switch will need to be as quick as possible hoping the unit arrives late summer so no temp. heat is required. If we need to revisit after award and unit is ordered, we will.

SECTION 03001 – CONCRETE

PART 1. GENERAL

1.01 RELATED DOCUMENTS

A. Attention is directed to Division 0, Bidding and Contract Requirements, and to Division 1, General Requirements, which are hereby made a part of this specification.

1.02 SECTION INCLUDES

A. Work included in this section includes furnishing all labor, materials, equipment and incidentals required for complete installation of formwork, reinforcement, accessories, cast-in-place concrete, finishing and curing. This section pertains to building concrete work.

B. Related work specified elsewhere:

1. Section 03300 – Bonding Agents for Concrete
2. Section 03750 – Concrete Rehabilitation
3. Section 05500 - Metal Fabrications

1.03 SUBMITTALS

A. Comply with ACI 315 "Details and Detailing of Concrete Reinforcement”. Indicate reinforcement sizes, spacings, locations, and quantities, bending and cutting schedules, supporting and spacing devices.

B. See Structural and/or Architectural drawings for General Notes and Special Conditions.

C. Provide data on joint devices, attachment accessories, mix design for each type concrete, proportions of all ingredients, admixtures, slump range, expected strength and water cement ratio. Provide historical test data with each proposed mix design.

1.04 QUALITY ASSURANCES

A. Building Code Requirements for Structural Concrete (ACI 318) and latest supplements thereto.

B. Standard Practice for Selecting Proportions for Normal, Heavy Weight, and Mass Concrete (ACI 211.1).

C. Hot Weather Concreting (ACI-305R).

D. Cold Weather Concreting (ACI-306R).

E. Guide for Measuring, Mixing, Transporting and Placing Concrete (ACI 304R).

F. Guide to Curing Concrete (ACI 308R).

G. Specifications for Structural Concrete (ACI 301).

H. Guide for Concrete Floor and Slab Construction (ACI 302.1R).

I. Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete (ASTM C618).

J. Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type) - (ASTM D994).

K. Guide to Formwork for Concrete (ACI 347).

L. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice.

M. Design and workmanship of all concrete shall be in accordance with referenced specifications and code listed above. Quality, tolerances, and level of performance of work shall be as specified therein. Contractor shall keep on file, in project office, current copies of all references listed above.

PART 2. PRODUCTS

2.01 FORM MATERIALS

A. Form Material for Exposed Concrete: Plywood; 5/8" APA B-B plyform Class 1, exterior. Use plywood thickness sufficient to support concrete at temperature and rate of pour. Use only sound, undamaged sheets with clean, true edges. Furnish in largest sizes to minimize joints.

B. Form Material for Unexposed Concrete: Plywood; 5/8" APA B-B-G-2, exposure 1, exterior, plywood graded per PS-1 standards for construction and industrial plywood. Use plywood thickness sufficient to support concrete at temperature and rate of pour. Use only sound, undamaged sheets with clean, true edges. Lumber shall be standard grade or better.

C. In lieu of "A" above, the material specified under "B" may be used for exposed concrete if a 3/16" smooth one side, treated, pressed fiberboard liner is utilized.

D. Lumber for light framing (less than 6" wide): standard grade and species. Framing (6" wider and from 2" to 4" thick): provide No. 1 grade in one of the following species:
   1. Douglas Fir (WWPA).
   2. Southern Pine (SPIB).
   3. Redwood (RIS).

E. Form Ties: Bolt and rod type so designed that upon removal of the form no metal shall be within 1-1/2" of the concrete surface and no holes larger than 1" in diameter. Concrete exposed to the exterior shall utilize galvanized ties.

F. Form Release Agent: Colorless mineral oil which will not stain the concrete or impair natural bonding characteristics of coating intended for use on concrete.

G. Formed Construction Joints for Slab-on-Grade: Galvanized steel, tongue and groove type profile with knockout holes to receive doweling, min. 26 gage unless noted otherwise. Size and profile as indicated on drawings or as required to fit field conditions.

H. Slab Edge Joint Filler: ASTM D994, premolded asphaltic board, thickness as indicated or (if not indicated, 1/2" thick minimum).

I. Vapor Barrier: Conforming to ASTM E1745 Class A, non-woven, .01 permeance, not less than 15 mils thick.

1. Acceptable Manufacturers:
   a. Stego wrap 15 mil vapor barrier by Stego Industries.
   b. WR Meadows Perminator 15 mil.
   c. Zero-perm by Alumiseal.
   d. Vaporblock VB15 by Raven Industries.
   e. Husky yellow guard 15 mil vapor barrier-by Poly-America L:P
   f. Viper Vaporcheck II by Insulation Solutions.

J. 6 mil thick, clear polyethylene film (for bond break between walls and floor), type recommended for below grade application.

K. Nails, spikes, lag bolts, through bolts, anchorages: Size as required, of sufficient strength and character to maintain formwork in place while placing concrete.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Bars: ASTM A 615 Grade 60 deformed.

B. Welded Wire Fabric: ASTM A 185, welded steel wire fabric.

C. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar-type supports complying with CRSI specifications.

1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
2. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).

D. Inert fiber reinforcement: Polypropylene fiber meeting ASTM-C1116; Fibermesh, Forta Corporation, or other Architect approved U.L. Listed. Add to plant mixed concrete at a rate of 1.5 lbs. per cubic yard of mix.

2.03 CONCRETE MATERIALS

A. Cement; controlling specification for Portland Cement, ASTM C150, Type I-Normal or Type II.

B. Aggregates shall conform to ASTM C-33. Maximum size of aggregate shall not be larger than 1/5 of narrowest dimension between forms of member for which concrete is to be used, nor larger than 3/4 of minimum clear spacing between reinforcing bars, nor larger than 1/3 of slab depth.

C. Lightweight aggregates shall conform to ASTM C 330.

D. Water: Clean and potable.

E. Air Entrainment Admixture: ASTM C260, as manufactured by Master Builders, Euclid, or W.R. Grace.

F. Chemical Admixtures: ASTM C494; Type 'A' - water reducing; Type 'B' - retarding, Type 'C' - accelerating, Type 'D' - water reducing and regarding, Type 'E' - water reducing and accelerating, Type 'F' - water reducing high range; Type 'G' - water reducing high range and retarding. Calcium chloride or admixtures containing more than .05 percent chloride ions by weight of admixture shall not be used. Each admixture shall not contribute more than 5 ppm by weight, of chloride ions to the total concrete constituent. Use admixtures in strict compliance with manufacturer's directions.

G. Fly Ash: ASTM C618, Type 'C' or 'F'.

H. Bonding Agent: Refer to Spec Section 03300 “Bonding Agents for Concrete”.

I. Non-Shrink Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents. Capable of developing a minimum compressive strength of 7000 psi at 28 days.

J. Adhesive Anchoring: Injectable adhesive or self-contained capsule as manufactured by:

1. 'Hilti' HIT System, or Architect approved/reviewed equal.

2.04 CURING COMPOUNDS & SEALERS

A. Curing Compound/Sealer: Liquid curing compound, water base, concrete curing-sealing compound, VOC (volatile organic content) compliant, containing fugitive dye that does not leave residue (resin, varnish, wax, etc.). Fugitive dye must disappear in 7 days, as manufactured by:

1. Sonneborn Building Products, Kure-N-Seal W.
2. Dayton Superior Corporation, Safe Cure & Seal (J-18).
3. Burke by EDOCO Spartan-Cote WB Cure Seal Hardener.
4. MasterKure 100W, Master Builders, Inc.
5. Vocomp-20, W.R. Meadows.

B. Absorptive Mats: Burlap cloth, commercial quality suitable for purpose. Constructed of jute or kenaf, weighing approximately 9 oz. per square yard, complying with AASHTO M182, Class 2.

C. Moisture retaining cover, complying with ASTM C171; one of the following: waterproof paper, polyethylene film, or polyethylene coated burlap.

D. Crack Repair Material: Floor slabs - 2 part, 100% solid epoxy adhesive in formulation recommended by manufacturer for application, as manufactured by:
1. W.R. Meadows Reziweld 1000 or Architect approved/reviewed equal.

E. Cure/Sealer Interior Exposed Concrete Floors: Curing compound, non-residual or dissipating resin curing compound. Product of sealer manufacturer and meeting sealer manufacturer's requirements. Manufacturers to include:

1. Dayton Superior Corp "Day-Chem Sil-Cure" (J-13).
2. L & M Cure or Cure R.

F. Concrete Densifier/Harderners:
Liquid applied, lithium silicate based concrete hardener/sealer. Manufacturers to include:

1. Dayton Superior "Pentra-Hard Densifier"
2. WR Meadows "Liqi-Hard Ultra
3. Laticrete (L+M) "L+M Lion Hard"
4. Prosoco "Consolideck LS Premium Concrete Sealer, Hardener and Denisfier.
5. Sika "Sikaflorr-956 LD
6. SureCrete "SureCrete LD 1800 Lithium Densifier and Cement Hardener"

2.05 CONCRETE MIX

A. Mix concrete in accordance with ACI 304 and deliver concrete in accordance with ASTM C94.

B. Quality working stresses for the design of this project shall be based on specific minimum 28-day compressive strength of concrete or on specified minimum compressive strength at earlier age at which concrete may be expected to receive full load. Provide concrete of the following properties:

1. Exterior concrete; 4,000 psi. 28-day compressive strength; water-cement ratio, 0.40 maximum (air entrained).
2. Interior slab on ground - 4000 psi. 28-day compressive strength; water-cement ratio, 0.44 maximum (non-air entrained).

C. Slump Limits: Proportion and design mixes to result in concrete slump at the point of placement as follows:

1. Ramps and Sloping Surfaces: Not more than 3".
2. Reinforced Foundation Systems: Not less than 1" and not more than 4".
3. All Other Concrete: Not less than 1" & not more than 4".
4. Concrete containing high-range water-reducing admixture (superplasticizer). Not more than 8 inches after adding admixture to site-verified 2-3 inch slump concrete.

5. Site added water to increase slump is strictly prohibited.

D. Proportions of aggregate to cement shall be such as to produce a mixture which will work readily into corners, angles of forms, and around reinforcement without permitting materials to segregate. Excess free water shall not collect on concrete surface.

E. Fly ash shall not exceed 25% of cement content by weight. No fly ash shall be used in slabs.

F. Select admixture proportions for normal weight concrete in accordance with ACI 301, Method 1 and in strict accordance with manufacturer's instructions.

G. Air Entraining Agent: Use in all exterior concrete exposed to weather; i.e. concrete ‘deadmen’ ramps, etc. Air entrainment shall be accomplished by use of approved additives used in accordance with manufacturer's instructions. Limit air to 4% minimum to 7% maximum.

H. Adjustment to concrete mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather or other circumstances warrant, as accepted by the Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.

PART 3. EXECUTION

3.01 FORMWORK ERECTION

A. Erect formwork, shoring and bracing to achieve design requirements. Fabricate forms for easy removal without hammering or prying against exposed concrete surfaces.

B. Provide bracing to ensure stability of formwork.

C. Apply form release agent to formwork in accordance with manufacturer's instructions, prior to placing for accessories and reinforcement.

D. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are affected by agent.

E. Clean forms as erection proceeds, to remove foreign matter.

F. Forms shall conform to shape, lines and dimensions of members as called for, substantially and sufficiently tight to prevent leakage of concrete.

G. Forms shall be properly braced, and tied together so as to maintain position and shape. Forms for exposed concrete shall be braced so as to provide dimensions called for, and have taped joints.

H. Construction joints, whether indicated on drawings or not, shall be made or located so as to least impair strength of the structure. Where joint is to be made, the surface of the concrete shall be thoroughly cleaned and all latency removed. In addition, vertical joints shall be keyed.

3.02 INSERTS, EMBEDDED COMPONENTS, AND OPENINGS

A. Provide formed openings where required for work to be embedded in and passing through concrete members.

B. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.

C. Install concrete accessories straight, level, and plumb.

3.03 REINFORCEMENT PLACEMENT

A. Place reinforcement, supported and secured against displacement.

B. Ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings.

C. Provide for continuity of reinforcing around corners in footings and walls. Lap corner bars 30 bar diameters.

D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.04 PLACING CONCRETE

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's instructions.

B. Install vapor barrier under interior slab-on-grade.

1. Installation shall be in accordance with manufacturer’s instructions and ASTM E164 3-98.

a. Unroll vapor barrier with the longest dimension parallel with the direction of the pour.
b. Lap vapor barrier over footings and seal to foundation walls.
c. Overlap joints 6 inches and seal with manufacturers tape.
d. Seal all penetrations (including pipes) per manufacturer’s instruction.
e. No penetration of the vapor barrier is allowed except for reinforcing steel and permanent utilities.
f. Repair damaged areas by cutting patches of vapor barrier material overlapping the damaged area 6 inches and taping all four sides with tape.

C. Separate exterior slabs-on-grade from vertical surfaces with ½ inch thick joint filler, extended full thickness of slab. Also, provide filler strips at supported slabs and vertical surfaces. At interior slabs-on-grade locations, provide bond break from vertical surfaces consisting of 6 mil polyethylene film or 15# asphalt building paper and where indicated on plans.

D. Place concrete continuously between predetermined control and construction joints. Do not break or interrupt successive pours such that cold joints occur. Where applicable, construction joints shall occur at control joint locations, unless noted otherwise.

E. Concrete slabs on grade shall be constructed of thickness indicated. If thickness is not indicated, provide a minimum thickness of 6". Minimum thickness at pipes embedded in concrete shall not be less than three times o.d. of the pipe. All buried piping shall have been tested before placement of concrete.

F. Provide interior control joints where called for on drawing as detailed. When interior construction joints occur, they shall also be considered as control joints. Provide sawed groove similar to a control joint at all construction joints.

G. Concrete shall be conveyed from the mixer to place of final deposit by methods which will prevent separation and loss of material.

H. All equipment used for transporting equipment shall be cleaned of all debris. Ice shall be removed from all places to be occupied by concrete forms, and masonry fillers shall be thoroughly wetted except where air temperatures are below 40 degrees F.

I. Equipment for chuting, pumping, pneumatically conveying concrete, shall be such size and design as to insure practically continuous flow of concrete at delivery and without separation of materials.

J. Concrete shall be deposited as soon as practicable in its final position to avoid segregation due to re-handling, flowing. Concreting shall be carried on at such rate that concrete is at all times plastic and flow readily into space between bars. No concrete that has partially hardened or has been contaminated by foreign materials shall be deposited on work, nor shall re-tempered concrete be used.

K. Concreting, once started, shall be carried on as a continuous operation until placing of panel or section is completed. Top surface shall be generally level.

L. All concrete shall be thoroughly compacted by suitable means during operation of placing and shall be thoroughly worked around reinforcement, embedded fixtures, and into corners of forms. Vibrator shall not be used to flow concrete.

M. Where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout or chemical adhesive. Follow manufacturer's recommendations for installation.

N. Screed floors slabs-on-grade and concrete base for toppings level, maintaining surface flatness of maximum 1/8 inch in 10 ft.

O. Construct all concrete site work items to shape, size, thickness and elevations shown. Concrete supported slabs shall be 4" thick on 1” form deck with reinforcing as indicated, unless otherwise shown. Side form all work. Slope surfaces of supported slabs, 1/4" per foot to low side or as directed by Architect/Engineer.

P. Provide 1/2" bituminous expansion joint filler along all joints where supported slabs abut other walks, building walls, etc.

Q. Protecting and sealing: Protect concrete supported slabs, ramps, platforms, slabs, etc., from pedestrian traffic for three days after pouring. Concrete shall be cured using two layers of burlap kept wet for minimum of 5 days; or at Contractor's option, he may use sprayed-on compound according to manufacturer's recommendations as approved by Architect. Curing method used shall not discolor original color of concrete, nor shall white liquid curing compound be used.

R. Provide concrete pads, bases, foundations, etc., as indicated and/or required by mechanical, electrical or other equipment supplier. Set anchor bolts for machine and equipment to templates or measurements provided.

3.05 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Remove formwork progressively and in accordance with code requirements.

3.06 FLOOR FINISHING

A. Finish concrete floor surfaces in accordance with ACI 301 and ACI 302.

B. Uniformly spread, screed, and float concrete.

C. Steel trowel surfaces smooth on floor replacement (refer to Alternates) in Salt Storage shed. Steel trowel corridor slabs (3 passes min.) and finish to ACI 302.1R, Class 5 floor.

D. Maintain surface flatness, with maximum variation of 1/8 inch in 10 ft. Corridor slabs to have overall FF=40, local FF=20.

E. In areas with floor drain, maintain floor level at walls and pitch surfaces uniformly to drains.

F. Apply concrete hardener/sealer on all floor surfaces of Salt Storage shed. Apply in accordance with manufacturer's instructions.

G. Floor shall be finished without excessive floating. Delay troweling until concrete is sufficiently hard to prevent water working to surface. Bring finish to smooth level surface with minimum troweling possible.

H. Finishes, other than floors, exposed on exterior or interior shall be formed true, free from marks, irregularities. Remove any loose material, grind all projections, fill any honeycombing or holes, finish smooth. Use carborundum stone to hand rub and provide smooth, even surface where directed.

I. Thoroughly clean and prepare concrete floors scheduled to receive a sealer/hardener. Apply in strict accordance with manufacturer's instructions.

3.07 CURING

A. Place absorptive matting and dampen as required.

B. Immediately after placement, protect concrete from premature drying.

C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

D. Provisions shall be made for maintaining concrete in moist condition for at least (5) five days after placement, except high early concrete which shall be cured for at least (2) two days.

E. Cold Weather Requirements:

1. General: Except as modified herein, all work shall be in accordance with ACI 306R.
2. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near freezing weather. No frozen materials or materials containing ice shall be used.
3. All concrete materials, all reinforcement, forms, fillers, ground with which concrete is to come in contact shall be free from frost. Whenever temperature of surrounding air is below 40° F., all concrete placed in forms shall have a temperature of between 70° F., 80°F. Adequate means shall be provided for maintaining temperature of not less than 70° F. for 3 days, 50° F. for 5 days, except high-early concrete shall have temperature maintained at not less than 70° F. for 2 days, 50° F. for 3 days, or for as much more time as necessary to insure proper curing. Housing, covering, other protection used in connection with curing shall remain in place at least 24 hours after artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for prevention of freezing.

F. Weather Conditions:

1. In hot weather, sprinkle and cover all concrete for at least 24 hours longer than specified for normal curing periods. In hot weather work shall be in accordance with ACI 305R.
2. In weather when temperature falls below freezing, and in any event between December 1 and April 1, no concrete shall be poured without adequate frost protection.

3.08 CONCRETE FINISHING

A. Provide concrete surfaces to be left exposed, concrete walls, columns, etc., with smooth rubbed finish not later than one day after form removal.

1. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

3.09 FIELD QUALITY CONTROL

A. Inspection and testing shall be performed by an independent firm selected by the Owner in accordance with Division 1.

B. The Contractor shall notify the Architect/Engineer and the Testing Lab at least (5) five days prior to the commencement of concrete operations.

C. See Division 1 for inspection and testing allowances.

D. Specimens shall be molded and cured as per ASTM C31. Three specimens per test, not less than one test for each day's pour, each 50 yards concrete poured, each building unit, or each strength concrete. Specimens shall be laboratory cured.

E. Specimens shall be tested in accordance with ASTM C39. One specimen shall be tested at 7 days, two at 28 days.

F. When average strength of laboratory control cylinders fall below required compressive strength, Architect shall have right to order change in proportions and water content for remainder of structure. Architect shall have right to require tests as per ACI Building Code; Chapter 20 where load tests show concrete does not conform with drawings or specifications. Deficiency shall be corrected without additional cost to Owner.

G. A PDF copy of test reports at 7 days, 28 days, shall be sent directly to the Architect by the Testing Laboratory, with all required information shown.

H. Slump tests per ASTM C-172 and C-143, minimum of one test for each set of cylinders, or more as conditions warrant. Deliveries exceeding specified slump shall be rejected.

3.10 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations, as directed by the Architect/Engineer.

B. Failure of concrete topping to bond to substrate (as evidenced by a hollow sound when tapped), or disintegration or other failure of topping to perform as a floor finish, will be considered failure of materials and workmanship. Repair of replace toppings in areas of such failures, as directed.

END OF SECTION 03001