



MCH Finished Concrete Phase Specifications

A. Purpose of this Document

This document defines both MCH's and contractor's responsibilities as they relate to the finished concrete phase of construction. For the purposes of this document, "finished concrete" refers to interior and exterior slabs, porches and stoops, and concrete driveways and walk ways. It is intended as a checklist that will define MCH's standard of quality and professionalism. The finished concrete contractor's work will not be considered complete until all specifications contained herein are fully met.

B. Relationship to other Documents

Additional information and/or requirements regarding finished concrete may be defined in:

1. Architectural & Structural Plans
2. Proposed Site / Grading Plan showing all house options
3. Proposed Elevation Certificate
4. Elevator Specifications and Cut Sheet
5. MCH Concrete Foundation Phase Specification
6. MCH Master Subcontractor Agreement

C. Safety Requirements, General

1. Each contractor is required to have a competent person that is able to verbally communicate with MCH Project Manager on site at all times. A competent person is one that can identify safety hazards and has the authority to stop work until known hazards have been eliminated before proceeding.
2. Contractor's employees and contractors must adhere to all Federal and State Occupational Safety & Health (OSHA) Regulations.
3. All accidents and injuries must be immediately reported to the MCH Director of Construction.
4. Any and all penalties assessed against MCH due to safety violations of Contractor shall be the liability of the Contractor and subject to reimbursement and possible additional fines from MCH. MCH may issue verbal and/or written warnings, with fines, for safety violations that MCH employees identify on its job sites on which Contractor provides Work, Materials and/or Supplies. In addition, Contractor shall comply with all MCH procedures and policies relative to safety violation enforcement and fines, a copy of which procedures and policies Contractor acknowledges receipt.
5. If a safety device must be removed, the contractor must take remedial measures to protect all workers from the hazard. The devices must be immediately replaced as soon as the work is completed or a permanent safety device has replaced it.

D. Safety Requirements, Specific

1. Personal Protective Equipment (PPE) must be worn as applicable and required at all times while on MCH job sites.

- A. Safety glasses/goggles are to be worn when drilling, cutting, hammering, soldering or gluing.
 - B. Proper work boots are to be worn at all times
 - C. Hearing protection is to be worn when cutting or drilling.
 - D. Gloves are to be worn when working with sharp objects
 - E. Respirator is to be worn when working with solvents or soldering.
2. Rebar Protection: rebar must be guarded to eliminate the hazard of impalement. OSHA permits the steel to be bent over (like a candy cane), provided that no sharp edges are exposed, or protected with OSHA approved rebar safety caps.

E. Warranty in Labor and Materials:

The contractor shall guarantee all finished concrete to be free of any structural defects and imperfections for one year minimum. If any part of the work is found to be incomplete, incorrect, deficient, or cause damage to other work, the contractor will be responsible for all material and labor costs and damage incurred. Specifically:

- Concrete slabs that crack in excess of 1/4" width or vertical displacement will be considered deficient and will be replaced or repaired at the expense of the finished concrete contractor.
- Concrete slabs that allow puddling due to improper pitch or grading will be considered deficient and will be replaced or repaired at the expense of the finished concrete contractor.

The determination of the necessity for repair or replacement will be at the sole discretion of the MCH Director of Construction.

F. Specifications, General:

The finished concrete contractor must supply all labor, tools, and equipment to pour and finish concrete for all interior and exterior concrete slabs. This construction must be done in conformance with all specifications contained herein. Contractor to provide concrete pump when conditions dictate. It is the responsibility of the contractor to proactively protect their work, the project property, and adjacent properties.

G. Specifications, Detailed:

1. Confirm you are working with and referencing the most current and complete set of plans.
2. All concrete work shall comply with the requirements of the latest editions of the following codes and standards:
 - a. ACI Building Code (ACI 318)
 - b. The ACI Detailing Manual (SP-66)
 - c. Specifications for Structural Concrete for Buildings (ACI 301).
3. All concrete exposed to exterior conditions will have characteristics in accordance with ACI Building Code (ACI 318) and the local jurisdiction's applicable building code.
4. MCH will provide an elevation benchmark prior to starting foundation work. Finished concrete contractor to confirm and cross reference elevation of top of wall, top of pier(s), flood vents, garage slab, and design flood elevation with MCH Project Manager and reference / confirm with the elevation stake on site. All garage slabs will be prepared and poured at an elevation that will allow for positive drainage to the street.

5. All formwork material must be supplied by the contractor and must be stripped and removed from the lot within 24 hours of pouring (weather & concrete curing permitting).
6. Contractor must reference and comply with concrete specifications and details on the structural plan typically found on pages labeled:
 - a. TYPICAL DETAILS & SECTIONS
 - b. FOUNDATION SECTIONS
 - c. SCHEDULES & GENERAL NOTES
7. Particular attention should be paid to provide thickened slabs, frangible slabs, and structural slabs only where indicated on the building plans.
8. All WWF shall be manufactured from High Strength Steel conforming to ASTM A185 and shall be lapped a minimum of 6”.
9. Where required, the contractor is responsible for setting the floor drain flange left by the plumber and feathering the surrounding concrete to allow for positive drainage.
10. Where specified, contractor is to supply and install 2” rigid XPS insulation a minimum of 24” from the perimeter under the slab.
11. Contractor is to install 15 MIL Stego Wrap underlayment (or alternate approved by MCH Director of Construction) for interior slabs. The underlayment shall be lapped a minimum of 6” and be sealed at all laps, penetrations, and perimeter wall with the manufacturer’s tape and mastic.
12. Contractor shall install, or accommodate installation from others, conduit(s) in the slab for electrical, low volt, water, geothermal wells, etc. as determined by the MCH Project Manager. Contractor to take precautions not to disturb sub slab mechanical work.
13. All plumbing stacks should be boxed out so the concrete will not be poured tight to the pipes. The finished concrete contractor is to return and fill these in after the flanges and drains are set at the appropriate height by the plumbing contractor and when the recesses around the steel columns are poured.
14. Contractor to place treated 2x4 wood forms to accommodate recessed shower pans, recessed large format doors, etc. per MCH specifications and details. Confirm expectations if applicable.
15. Elevator pits should include a recess large enough to accommodate a submersible pump crotch.
16. Garage slabs should be pitched from rear to front preferably ¼” per foot but no less than a minimum of 1/8” per foot.
17. Crawl space slabs (if applicable) should be a level slurry coat a minimum of 2” thick with a bull float finish and a minimum of 4” of compacted sub slab stone base.
18. Contractor must acquire all necessary inspections prior to pouring slabs AND driveways. This may include municipality inspections and /or third-party private inspections for the slab itself as well as the mechanical sub slab work. The Town of Bethany and South Bethany both require driveway inspections prior to pouring. Private communities may also require HOA approval of the driveway and grading plan prior to pouring. It is the contractor’s responsibility to confirm all inspections have been successfully completed prior to confirming concrete delivery.
19. Forms must be reinforced to maintain specified dimensions when concrete is poured.
20. Weather and sun exposure will impact the curing time of concrete and must be considered before the pour starts. Once the pouring of concrete begins, it must continue until the entire pour is completed. Special consideration should be given to driveway pour

and finishing times to ensure that the entire job can be completed in one day. Concrete should be placed at the same rate that it can be spread and leveled.

21. Concrete driveways and walkways should have a minimum of two 3" capped conduits placed under the concrete. Consideration should be given to installing 4" solid corrugated piping for future down spouts under walk ways. Locations and quantities to be determined by the MCH Project Manager.
22. Contractor must pour concrete so that the concrete does not segregate during placement.
23. Discharge of concrete from chute to placement must not exceed 40" at any time.
24. At the completion of the pour, the contractor will direct concrete truck(s) to designated washout area on jobsite. At no time will concrete truck washout in any other location.
25. Use of chemical admixtures to retard or accelerate setting time must meet the requirements of ASTC C-494 and be approved by the MCH Director of Construction. Maintain concrete temperature between 40 degrees and 90 degrees for 3 days.
26. DO NOT ADD WATER ON JOB SITE TO MAKE CONCRETE WORKABLE.
27. Interior slab finish must be steel troweled until the surface is smooth, polished, and free of trowel rings.
28. Control Joints must be installed with spacing as defined by the structural plans, architectural plans, or MCH Project Manager. Concrete slabs shall not exceed 10' in any direction without a control joint. All control joints must be saw cut relief.
29. The grade of the finished interior slab will not vary in excess of 1/4" in 10' in any direction. Any slab exceeding this tolerance will be replaced at the contractor's expense.
30. When work is complete and Project Manager is available, the finished concrete foreman and Project Manager will inspect the work together to check off and sign the attached checklist. Any problems noted must be corrected before payment.

H. Winter Construction

1. It is the responsibility of the contractor to proactively protect their work and this includes but is not limited to following appropriate cold weather procedures. When weather conditions dictate, contractor is expected to take precautionary measures to protect concrete work against damage (from freezing temperatures, hail, sleet, rain, etc.) by using blankets, poly, straw, calcium, or other appropriate protective measures.
2. If necessary, contractor will protect ground prior to placing of concrete to prevent ground from freezing. Contractor will supply labor and materials at additional expense (i.e. straw, etc.) Black poly will be used when covering concrete. At no point should contractor pour concrete over frozen ground. Contractor will strip straw and poly and dispose of them in the nearest dumpster
3. If requested, forms are to be left on walls for sufficient time as to allow wall to cure.
4. Concrete in locations that may be subject to freezing & thawing during construction shall be air-entrained concrete. Total air content (percent by volume of concrete) shall not be less than 5% or more than 7%.
5. Any concrete weakened by weather conditions will be removed and re-poured by the contractor at his expense. The necessity to repair or replace potentially compromised concrete will be determined at the sole discretion of the MCH Director of Construction.

6. When weather conditions dictate, Calcium should be used. Calcium additive shall never exceed 2% by volume. Calcium should be ordered with mix for proper percentage mix and never added on jobsite.
7. When steel is used in concrete, the contractor will use a non-chloride accelerator in concrete.
8. Concrete should not be poured unless the temperature is **28° and rising** or if mix is designed for cold weather *and* approved by MCH Director of Construction.

I. Clean-Up & Damage

1. Contractor must remove dirt or mud left on streets adjacent to the site as a result of his work on a daily basis. Any disturbed silt fence (removed, knocked down, ran over) is the contractor's responsibility to replace /repair at their expense.
2. At the completion of the pour, the contractor will direct concrete truck(s) to the designated washout area on jobsite. At no time will any concrete truck washout in any other location.
3. Contractor must remove any excess concrete pours and/or any incidental trash resulting from his work.
4. Contractor must clean up mud/debris as a result of his work. The street is expected to be broom swept and the lot should be rough graded to +/- 1" of expected final grade.
5. The contractor shall be responsible for all damages to street, curbs, site, and adjacent properties incurred as a result of contractor negligence during concrete finishing and/or concrete delivery or placement. The contractor shall be responsible for any future charges resulting from the repair/replacement of those items.

J. Responsibilities

MCH Responsibilities

1. To supply the most timely and accurate information possible.
2. To provide regular supervision and direction from the MCH Project Manager.
3. To provide the following plans / drawings / information:
 - a. Selection Sheet / Change Orders
 - b. Architectural Plans / Details
 - c. Foundation Specifications
 - d. Site Plan
 - e. Hold Down Plans
4. Provide an adequate construction access and curb protection.
5. Notify contractor immediately of any dimensional or tolerance discrepancies discovered.

Finished Concrete Contractor's Responsibilities

1. To act in every way possible in an effort to protect and preserve their own work, work that has already been completed, the property and adjacent properties.
2. To comply with all OSHA regulations and requirements.
3. To check accuracy of plans, selections, and redlines with MCH Project Manager before proceeding and to conform completely to all labor and materials specifications.

4. Contractor is expected to meet MCH's construction schedule as provided.
5. To complete and sign the Finished Concrete Checklist upon job completion, and submit attached to invoice with MCH Project Manager's signature
6. Winter construction - provide calcium, polyethylene, and labor to straw for freeze protection.
7. To confirm locations of hold downs needed per hold down plans. To provide a generator for electricity if necessary and not available on site. Using electric from adjacent properties is never an acceptable option.
8. To provide water source as necessary. Using water from adjacent properties is never an acceptable option.
9. Contractor will respond and attempt to resolve customer service work, including Punch List items, within 24 hours from date of request and if necessary will attend to customer work before attending to new production work. Notice with explanation must be provided to MCH immediately if contractor cannot resolve service issues within 24 hours due to mobilization, weather, equipment failure, or other extenuating circumstances.

Company: _____
Signature: _____
Print Name: _____
Review Date: _____

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