REVIEWED FOR CODE COMPLIANCE

DATE 04/04/18 by: Building Official

PERMIT NO. BLD2017-08812

ADDRESS 7012 MUNICIPAL DR

CONTRACTOR HARBCO GENERAL CONTRACTORS INC

NOTE: Permit issued based on plans and specifications submitted. Any deviations may be in violation of the code(s) adopted by the Orlando City Council. Keep this card on file at the jobsite.

CITY OF ORLANDO
PERMITTING SERVICES DIVISION

CONCRETE PANEL SPECFICATIONS

1) Provide labor, materials and equipment necessary to complete the work of all site cast concrete, including but not limited to the following.
A. Site-cast tilt-up concrete panels.
B. Site-cast tilt-up insulated sandwich concrete panels.

2) Comply with applicable provisions of the following standards and regulations:
1. AWS D1.1 – Structural Welding Code – Steel.
2. AWS D1.4 – Structural Welding Code – Reinforcing Steel.
3. ASTM A123/A123M – Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
4. ASTM A184/A184M – Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement.
5. ASTM A185 – Standard Specification for Welded Steel Wire Fabric for Concrete Reinforcement.
6. ASTM A496 – Standard Specification for Deformed Steel Wire for Concrete Reinforcement.
7. ASTM A497 – Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.
8. ASTM A615/A615M – Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
9. ASTM A706/A706M – Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement
10. ASTM C31/C31M – Standard Practice for Making and Curing Concrete Test Specimens in the Field.
11. ASTM C33 – Standard Specification for Concrete Aggregates.
12. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
13. ASTM C78 – Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).
14. ASTM C94/C94M – Standard Specification for Ready-Mixed Concrete.
15. ASTM C143/C143M – Standard Test Method for Slump of Hydraulic-Cement Concrete.
16. ASTM C150 – Standard Specification for Portland Cement.
17. ASTM C293/C293M – Standard Test Method for Flexural Strength of Concrete (Using Simple Beam With Center-Point Loading).
18. ASTM C309 – Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
19. ASTM C330/C330M – Standard Specification for Lightweight Aggregates for Structural Concrete.
20. ASTM C595/C595M – Standard Specification for Blended Hydraulic Cements.
21. ASTM C989/C989M – Standard Specification for Slag Cement for Use in Concrete and Mortars.
22. ASTM C1157/C1157M – Standard Performance Specification for Hydraulic Cement.
23. ASTM C1697 – Standard Specification for Blended Supplementary Cementitious Materials.
24. ACI 117 – Specifications for Tolerances for Concrete Construction and Materials.
25. ACI 301 – Specifications for Structural Concrete for Buildings.
26. ACI 305 – Specification for Hot Weather Concreting.
27. ACI 306 – Guide to Cold Weather Concreting.
28. ACI 315 – Standard for Details and Detailing Concrete Reinforcement.
29. ACI 318 – Building Code Requirements for Structural Concrete.
30. ACI 551 – Guide to Tilt-Up Concrete Construction.
31. CRSI Manual of Standard Practice and CRSI Specifications for Placing Reinforcement.
32. BSR/ASHRAE/IESNA 90.1.
33. ASHRAE Handbook of Fundamentals.
34. ASCE 37 – Design Loads on Structures During Construction.
35. Tilt-Up Concrete Association Wind Bracing Guidelines (TCA).
36. Tilt-Up Concrete Association Erection Safety Procedures Brochure (TCA).

3) Submit panel shop drawings and erection drawings detailing the Work of this Section including temporary bracing. Reinforcing bars shown on the project drawings do not allow for lifting and erection stresses. Shop drawings shall be stamped by a structural engineer licensed in the State of Florida for the project and responsible for their preparation.

4) Qualifications for Tilt-Up Contractors casting concrete and performing the tilt-up operations shall demonstrate the experience and expertise required to manage and execute the specified work.

5) Qualifications for welding processes and welding operators shall be done in accordance with ANSI/AWS D1.4.

6) A. Job Conditions: Comply with the following:
A. Do not construct formwork, place steel reinforcement or concrete, or erect panels during adverse weather unless approved measures are taken to prevent damage. During period of dry winds, low humidity and other conditions causing rapid drying, protect fresh concrete with an evaporation retardant (monomolecular film) or fine fog spray of water applied immediately after screeding and bull floating. Maintain protection until final finishing and curing compounds are applied.
B. For hot weather conditions proper attention shall be given to concrete materials, production methods, handling, placing, protection and curing to prevent excessive concrete temperatures or water evaporation that may increase shrinkage and impair required strength or serviceability of the member or structure.

7) Coordinate site cast tilt-up operations with Work of other trades in order that Work may be expedited and omissions and delays avoided.

8) Comply with ACI 301.

9) Forms shall contain blockouts required to provide openings detailed on Drawings. Coordinate openings with other trades.

10) Panel boundary forms shall be rigidly constructed and well braced steel or wood forms, straight and with precise corners. Design to withstand stresses resulting from the casting process. Consideration should be given to exposed formed surfaces. Forming surfaces shall be smooth and clean prior to pouring of concrete.

11) Forms shall be attached to the finished building slab using non-intrusive glues and/or adhesives wherever possible in lieu of nails and bolts to eliminate penetrations and blemishes.

12) Panels may be stacked for ease of casting, in forms as specified above. When panels are stack cast, maintain a continuous sound and smooth casting to match the finish of the original casting surface.

13) Bondbreaker shall be compatible with curing compound and other finishes, including paint, and floor finish or be completely removed according to the manufacturer's cleaning instructions.

14) Reveal Materials used for creating reveals or relief in the exterior face of the panel shall be of adequate strength to withstand construction traffic/loads without damage.

15) Concrete/Cementitious materials used shall conform to ASTM C150, C595, C1157 or C1697. Fine and coarse aggregates used in the mix shall consist of clean, hard strong, and durable inert material, free of injurious amounts of deleterious substances, conforming to ASTM C33 for normal weight concrete and ASTM C330 for lightweight aggregate concrete. Concrete shall be a design mix approved by Project structural Engineer. Mixing water shall be free of any acid, alkali, oil or organic material that may interfere with the setting of the cement. Concrete shall not contain air-entrainment admixtures unless approved by Project Structural Engineer. Concrete shall be produced and delivered in accordance with ASTM C94. Concrete shall have a minimum compressive strength at 28 days as indicated on the structural drawings and as required for panel erection, and tested according to ASTM C39.

16) Steel Reinforcement bars shall conform to ASTM A615/A615M, Grade 60, or ASTM A706/A706M. Welded wire reinforcement shall conform to ASTM A185 or A497 based on type and location and shall be of the style shown on the project drawings. Welded wire reinforcement shall be supplied in flat sheets. Bar mats for concrete reinforcement shall conform to ASTM A184.

17) Lifting hardware, inserts, braces, and related embedded and attached items shall be manufactured specifically for site cast tilt-up construction.

18) Randomly-Mixed Reinforcing Elements (Fibers): The use of materials mixed with the concrete for reinforcement are commonly applicable for reduction of plastic shrinkage and thermal expansion/contraction. They shall not be used as flexural reinforcement in structural panels unless approved by project structural engineer.

19) Provide inserts, dowels, and other items to be cast in panels, including items required for erection and bracing. Steel that will be exposed to the exterior or damp environments in finished panels shall be plastic-tipped, hot-dipped galvanized or protected by other means to prevent corrosion or oxidation of the metal after fabrication in accordance with ASTM A123. Ensure that the plastic will not create stress concentrations within the thin sections of concrete when located near a surface from differential thermal expansion and contraction ultimately resulting in local shear failure of the concrete surface producing surface blemishes.

20) Supports for steel reinforcement shall be designed to prevent spalling of concrete surfaces or streaking of panel face from corrosion. Metal supports shall be either galvanized after fabrication or with tips protected with plastic. No galvanized or plastic tip metal support shall be used on panels to receive exposed or sandblasted finish. All-plastic supports should be of such design as to adequately support reinforcement, provide minimal surface contact and be of such coloring as to not be distinguishable on any surfaces. Minimal surface contact is defined as having a total contact surface area not to exceed 0.10 square inches (64.5 mm?) per contact point. Refer to CRSI Manual of Standard Practice. Concrete supports may only be used in situations where surface contact is not visible.

21) Liquid-type membrane-forming curing compound complying with ASTM C309, Type I and I D, Class B. It is preferred that the curing compound/bondbreaker be the same product or compatible, and that only one manufacturer's product is used. Concrete Curing of Casting Beds: Concrete in and around those areas to be used for casting shall be cured after finishing and as soon as the free water on the surface has disappeared and no water sheen is visible, but not so late that the liquid curing compound will be absorbed into the concrete. The cure and/or bondbreaking compound should be applied at the manufacturer's recommended coverage to achieve minimum moisture loss. Curing compound must be compatible with the bond breaker and other finishes, including paint, and floor finish.

22) Reusable Wet Cure Covers such as, Impregnated fiber mat with a white or light colored backing having low permeability with high moisture retention to maintain the proper moisture content during the concrete curing process. Comply with ASTM C171 for reflection and moisture retention.

23) Insulated concrete sandwich panels shall be constructed to provide a continuous layer of insulation throughout the entire panel surface where indicated on the plans and sections. the panel shall not contain less than the specified minimum R-value unless compliance is proven through performance-based analysis and reviewed by the Project MEP engineer.

24) Liquid Dissipating Membrane-Forming Curing Compound "BONDBREAKER" shall conform to the following:
A. The bond breaking material shall be a dissipating membrane forming material complying with ASTM C 309-98a, Type I and I D, Class B.
B. The bond breaking compound shall be applied with adequate time to dry prior to placement of reinforcing steel.

C. The bond breaking compound shall dry in 30-minutes or less at 100°F to reduce panel clean up.
D. Material shall be compatible with curing material.
E. The bond breaker used shall be fully removed from the slab surface or shall be compatible with any curing compound or coating specified for interior or exterior concrete panels and slab.

25) Comply with Bondbreaker manufacturer's instructions for the proper cleaning procedures and finished surface preparation for the building slab, for proper procedures for post applying a liquid floor hardener or sealant to areas where bond breaker is present, and for proper cleaning procedures for preparation of painted surface and sealer applications.

26) Casting Slab Preparation:
A. Casting slab shall be cured. Saw cuts, cracks, joints or defects in the casting bed shall be filled so as to minimize transfer of the joint line to the panel face.
B. Waste slabs, if used, shall be of sufficient thickness and strength so as not to crack with the weight of the panels.
C. Contractor shall be responsible for compatibility of curing agents, sealants, and releasing agents utilized in the Work. If panels are to be stacked, the troweled surface shall be considered the casting bed and shall be treated as the same.
D. Isolation pockets shall be formed in such a manner as to minimize the transfer of the pocket to the finished appearance of the panel.

27) Locate and install all inserts and anchorages required for the panels prior to casting of any concrete. Wet-setting of any insert is not permitted and wet-setting of any anchorage is not permitted unless approved by Project Structural Engineer. After placing steel reinforcement for panels, check casting slab surfaces for continuity of bondbreaker. If touch-up or recoating of worn, damaged or missing areas is required, the Contractor shall remove the steel reinforcement entirely prior to re-application of the bondbreaker unless approved by Project Structural Engineer.

28) Panel Layout and forming for casting shall be done in a manner that minimizes the locations of floor joints, column isolation joints and other construction joints in the panel faces. Prevent the layout of the panels over temporarily poured casting surfaces such as pre-formed columns and pits unless deemed absolutely necessary. Forms shall be designed to maintain the perimeter of the panel as shown on the project drawings within 1/4-inch maximum deflection during pouring. Formed blockouts for openings in the panels shall be designed to limit the deflection during pouring to a maximum of 1/8 inch. Where reveals are specified in panels, assure that forming strips are straight and securely fastened to prevent movement or floating during placing operations and that alignment between adjacent panels is correct. Reveal tolerances shall comply with requirements specified in this Section.

29) Placement of concrete shall be done in accordance with recommendations in ACI 309 and the following:
A. Concrete shall be thoroughly worked around reinforcement, around the embedded items, and into corners of the forms.
B. Cold joints shall not be permitted in an individual site cast tilt-up panel.

30) Curing and protection shall comply with recommendations in ACI 308 and the following:
A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures, and maintain without drying at a relatively constant temperature for the period of time necessary for hydration of the cement and proper hardening of the concrete.
B. Apply liquid membrane curing compound in accordance with manufacturer's recommendations.
C. Underlying panels in a stack cast arrangement shall be cured in the same manner as casting beds.

31) Moist Curing in lieu of Liquid Membranes for Curing shall comply with the following:
A. Cover panels completely with burlap strips immediately after finishing. Lay as many lines of soaker hose as needed. Quickly and completely wet the entire exposed surface.
B. Cover panels completely with 4-mil polyethylene, transguard or burlene to prevent evaporation. The panels shall be kept wet for seven days. Do not allow alternate wetting and drying. The polyethylene shall be turned over and down the edge of the forms and securely fastened.
C. In panels or areas to be cured, weight the polyethylene, transguard or burlene with enough and type of weight to prevent normal winds for the area from blowing it off the panels. Keep panels wet until erection begins or approved by Project Structural Engineer.

32) Dimensions of the finished panels, prior to erection in the structure, shall conform to the casting tolerances stated below unless otherwise specified or approved by Project Structural Engineer.
A. Deviation from Specified Height or Width of Structural Panel:
1. Up to 20 feet — Plus or minus 1/4 inch
2. 20 feet to 30 feet — Plus or minus 3/8 inch
3. Each additional 10-foot increment in excess of 30 feet — Plus or minus 1/8 inch
4. Maximum overall tolerance — Plus or minus 5/8 inch
B. Deviation from Specified Panel Thickness: Note the tolerance listed is for the average variation of panel thickness through any cross-section of the panel.
1. Variation — Plus or minus 3/8 inch
C. Deviation in Length of Diagonals for a Rectangular Member or Opening, where Length of Diagonal is as follows. Note the tolerance listed is the measured difference in length of the two diagonals across any rectangle.
1. 6 ft. or less — Plus or minus 1/8 inch
2. Each additional 6 ft. or part thereof — Plus or minus 1/8 inch
3. Not to exceed — Plus or minus 1/2 inch
D. Deviations from Specified Size:
1. Rough opening — Plus or minus 1 inch
2. Finished opening — Plus or minus 1/2 inch
3. Rustication or architectural feature — Plus or minus 1/8 inch
E. Deviation from Specified Location (any direction):
1. Blockout or opening — Plus or minus 1 inch
2. Bolts, pipes or sleeves — Plus or minus 1/2 inch
3. Lifting and bracing inserts per manufac's specs,don't exceed — Plus or minus 1 inch
4. Embeds — Plus or minus 1 inch
5. Reglets for flashing or bricks — Plus or minus 1/4 inch
6. Rustication or architectural feature — Plus or minus 1/8 inch
7. Electrical box or accessory of another trade — Plus or minus 1 inch
F. Deviation from Plane:
1. Embeds (Tipping & Flushness) — Plus or minus 1/4 inch
2. Surface of concrete between embeds — Plus or minus 1/4 inch
3. Depth of recess — Plus or minus 1/4 inch
G. Deviation from Specified Position of Reinforcement:
1. Cover, in accordance with ACI 318 and in no case less than — Plus or minus 1/4 inch
2. Individual member (location) — Plus or minus 1/4 inch
3. Perpendicular to plane of span — Plus or minus 1/4 inch
4. Parallel to plane of span — Plus or minus 1 inch

33) Panel finishes of exposed surfaces are indicated on the elevation drawings, including both the front and back of the panels as well as any exposed edges as defined bel Visible surfaces of the panels, when in place shall be free from surface defects as defined below.

A. Grade A – Architectural: Projects designed for the circulation of people within a distance of 10 feet to 25 feet.
1. Panel surfaces shall be free of voids, holes, pockets and other surface deformations greater than 1/8 inch.
2. Surfaces of panels shall not project reinforcing patterns, floor joints or other projections or voids from the casting surface.
3. Cracks are not permissible in excess of 1/32 inch.
4. Surface repairs shall be performed in such a way as to prevent the projection of repair strokes through the intended finish.
5. Holes shall be filled with patching material to present a smooth surface ready for painting unless the designed finish is to result in exposed aggregates whereby the patching material shall match the intended color and texture.
B. Grade B – Standard: Projects designed for the circulation of people within a distance greater than 25 feet while retaining an emphasis on quality finishes and aesthetic detail.
1. Panel surfaces shall be free of all voids, holes, pockets and other surface deformations greater than 1/4 inch.
2. Surfaces of panels may be repaired sufficiently to prevent excessive projection of blemishes through intended finish.
3. Cracks are permissible as naturally resulting from curing. Cracks are not permissible as caused by erection forces.
4. Surface repairs shall improve the appearance of the panels within the descriptions above provided they do not result in additional blemishes that are visible within the distance set.
5. Holes shall be filled with patching material to present a smooth surface ready for painting unless the designed finish is to result in exposed aggregates whereby the patching material shall match the intended color and texture.
C. Grade C – Utility: Projects designed for remote areas with little or no public interaction and/or projects designed specifically for interior use with little or no emphasis towards the exterior design.
1. Consult with the Architect and the Owner prior to initiating the project to determine the expectations for the project appearance.
2. Panel surfaces showing voids, holes, pockets and other surface deformations are permissible provided they do not weaken the structural integrity of the panel or the finish of the panel/
3. Cracked surfaces are permissible provided the cracks are not resulting from structural weakness or failure and provided they do not present the potential for failure of the finish over the life of the building.

34) Engineer panels for erection stresses and selection of lifting system and hardware. Minimum strength of panels at time of erection shall be in accordance with the lifting design. Before starting erection operations, Contractor shall check relevant job site conditions insofar as they are ready for the erection of panels. Each element shall be properly marked to correspond with the designation indicated on the approved Shop Drawings. Use erection equipment that will prevent damage to existing construction, permanent floor slabs and panels. Damage to Work shall be repaired or replaced at the Contractor's expense and in a manner acceptable to the Architect prior to painting or coating. Temporary panel bracing shall not be removed until roof diaphragm is completely welded and installed. Set panels in the position assigned. Place panels evenly on prepared setting pads or proper-capacity shims. Grout space under panels for full bearing or provide additional support until grouting takes place. Provide suf ficient number of shims to adequately distribute the load on the footing or grout as soon as practical to prevent damage of the footing. Panels not attached to the building frame at the time of erection shall be braced in position using a bracing system designed to resist wind and other loads that may reasonably be determined until structural connections have been made. There shall be a minimum of two braces per panel. Engineering of bracing shall be the responsibility of the Contractor. Panel bracing connection shall be maintained daily to assure tightness. Dry-pack grout installation and preparation for weld pockets and other panel block outs not cast in during pouring shall be performed as follows:
1. Remove laitance down to sound concrete
2. Surface to receive grout shall be rough and reasonably level
3. Surface shall have been properly wet cured
4. Do not use curing compounds
5. Clean surface of oil, grease, dirt and loose particles.
6. Remove free water from concrete and bolt holes immediately before grouting.
After Panels are Erected:
1. Check connecting bolts at the floor and panels daily to ensure tightness.
2. Protect elements to prevent staining, warping or cracking. After panels are erected, dismantle panel erection devices and patch panels as required for a uniform appearance.
3. After panels are erected, patch holes or other blemishes in casting slab that were caused by the panel casting and erection processes in a manner acceptable to the Architect.

35) Erection Tolerances: Dimensions of the finished panel in the erected position in the structure shall conform to the erection tolerances stated below unless otherwise specified or approved by Project Structural Engineer.
A. Deviation from Specified Dimension Between Controlling Surface or Line and Building Reference Line:
1. Horizontal dimension to vertical surface — Plus 1/2 inch, minus 1/4 inch.
2. Vertical dimension to horizontal surface — Plus 1/4 inch, minus 1/2 inch.
3. From top elevation — Plus or minus 1/2 inch.
B. Deviation from Plumb of the Controlling Surface or Line:
1. Any 10 feet of member height — Plus or minus 1/4 inch
2. Each additional 10 feet of height — Plus or minus 1/4 inch
3. Not to exceed — Plus or minus 1 inch
C. Deviation from Specified Relationship of Adjacent Members:
1. Matching edges at horizontal and vertical joints — Plus or minus 1/2 inch
2. Matching faces exposed to view — Plus or minus 3/8 inch
3. Matching faces not exposed to view — Plus or minus 3/4 inch
4. Bowing between adjacent members — 1/2 inch
5. Alignment of brick mortar joints across joints, jog in alignment. — 1/8 inch
6. Alignment of brick mortar joints across joints, alignment with panel centerline — Plus or minus 1/8 inch
D. Deviation from Specified Joint Width:
1. Vertical joint (governs over joint taper), total — Plus or minus 3/8 inch.
2. Horizontal joint (governs over joint taper), total — Plus or minus 3/8 inch
3. Visually noncritical joint — Plus or minus 1/2 inch
4. Joint taper @ any 10' lgt measured between pnls @ the ext face of the pnls @ joint. 3/8 inch
5. Joint taper @ entire lgt measured between pnls @ the ext face of the pnls @ joint Plus or minus 1/2 inch

36) Prior to sealing joints clean of contaminants, including form release agents and concrete laitance. Dust and loose particles shall be blown out or otherwise cleaned to provide proper bond. Apply sealants in accordance with manufacturer's recommendations. Install fire-resistive blanket where indicated. Install joint insulation where indicated to consist of a limited expansion polyurethane insulation or an approved equal. Install back-up rod, primer, paint and sealant in accordance with Manufactures requirements.

37) For attachment of Panels to building frame, perform welding in accordance with ANSI/AWS D1.4. Wait a minimum of 28 days from panel casting before making panel-to-panel welds.

CONCRETE PANEL PAINTING SPECFICATIONS

General: Perform preparation and cleaning procedures in accordance with coating system manufacturer's instructions and as herein specified, for each particular substrate and coating condition.
1. Remove hardware accessories, machined surfaces, plates, lighting fixtures and similar items in place and not to be finish-coated or provide surface applied protection prior to surface preparation and coating operations. Remove, of necessary, for complete coatings of items and adjacent surfaces. Following completion of coating of each area, reinstall removed items.
2. All surfaces shall be sound and clean prior to application of primer and coatings. Such surface contaminants as dust, dirt, mildew, form oils,loose substrate, etc., shall be removed by waterblasting. Excessive form oils, release agents and curing compounds may require light sandblasting.
3. Mask all glass, shubbery and asphalt surfaces.
4. Over a clean and sound surface apply XL-70 "W" Primer per manufacturer's printed instructions.
a. Application Rate (smooth concrete): Two hundred seventy-five (275) to three hundred (300) square feet per gallon.
b. Curing Time: Twenty-four (24) hours minimum

MATERIALS PREPARATION
A. Mix and prepare coating materials in accordance with manufacturer's directions.
B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing and application of coatings in a clean condition, free of foreign materials and residue.
C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film, and if necessary, strain material before using.

APPLICATION
A. Apply coating in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
B. Concrete System:
1. Over primed, clean and sound surface, apply TEX COTE 300 or approved equale at standard coverage rate in desired texture and color with recommended spray equipment.
2. Application of TEX COTE 300 or approved equale shall be a uniform film thickness over entire surface being covered. Minimum dry film thickness 15 mils
3. A wet edge shall be maintained to prevent lapmarks.
C. Avoid starting and stopping midway on wall. Continue to a natural break such as a panel edge or corner.

CLEANING AND PROTECTION
A. General:
1. Clean-up: During progress of work, remove from site discarded coating materials, rubbish, cans and rags at end of each work day.
2. Upon completion of coating work, clean window glass and other coating-splattered surfaces. Protect work of other trades, whether to be coated or not, against damage by coating and finishing work. Correct any damage by cleaning, repairing or replacing, and recoating, as acceptable to Architect.
3. Provide "wet paint" signs as required to protect newly-coated finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of coating operations.
4. At the completion of work of other trades, touch-up and restore all damaged or defaced surfaces.

PNM ARCHITECTURE

PAUL N MEDLEY Architect
AIA NCARB

756 Cove Way Altamonte Springs
Florida 32712-7273
PHONE NUMBER 407-701-6440
WWW.PNM-ARCHITECTURE.COM

©2017 PNM ARCHITECTURE. THIS DESIGN AND DRAWING IS THE EXCLUSIVE PROPERTY OF PNM ARCHITECTURE. ANY USE OR REPRODUCTION WITHOUT THE EXPRESSED WRITTEN CONSENT OF PNM ARCHITECTURE IS STRICTLY PROHIBITED.

SEAL AR # 96512

STATE OF FLORIDA · PAUL N MEDLEY · AR96512 · REGISTERED ARCHITECT

This item has been electronically signend and sealed by Paul N Medley using a Digital Signature & date. Printed copies of this document are not considered signed and sealed.

Paul N Medley
2017.09.05 19:19:58 -04'00'

HARBCO GENERAL CONTRACTORS, INC
3700 34th St.
Suite 300
Orlando, FL 32805
407.422.4272

PROJECT

NEW WAREHOUSE AND OFFICES FOR
OCEAN AIR ENTERPRISES INC
7012 MUNICIPAL DR ORLANDO FLORIDA

REVISION DATES

DATE
9-5-17

SHEET TITLE
CONC. PANEL SPEC

SHEET NUMBER
A12

PROJECT NO.
012-17