

## DOCUMENT 00 91 13.02 - ADDENDA

### 1.1 PROJECT INFORMATION

- A. Project Name: ABC Store 104, 7000 Wrightsville Avenue, Wilmington, NC 28403
- B. Owner: New Hanover County ABC Board, 6909 Market Street, Wilmington, NC 28405
- C. Architect: Smith 2 Architecture + Design, PO Box 717 Wrightsville Beach, NC 28480
- D. Date of Addendum: January 24, 2019

### 1.2 NOTICE TO BIDDERS

- A. This Addendum is issued to all registered plan holders pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.
- B. The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

### 1.3 SPECIFICATIONS

- A. The Owner shall be responsible for permit, tap and/or impact fees.
- B. The Table of Contents has been revised, see attached.
- C. Specification Section 07 41 31, Corrugated Metal Roofing, has been clarified and attached.
- D. Specification Section 07 54 23, Thermoplastic Polyolefin (TPO) Roofing, has been clarified and attached.
- E. Specification Section 22 00 00, Plumbing, 220023 Fixtures, F., P-2, Countertop Lavatory, shall be revised per the following:
  - a. A. "Nominal 17" by 14" vitreous china undermount bowl with front overflow and unglazed rim with mounting hardware and 4" center set punching shall be American Standard No. 0495.221 or approved equal by Kohler, Crane or Commercial Enameling." Shall be removed and replaced with "14" x 18" x 4-3/8" deep bowl single compartment (16-1/2" x 20-1/2" overall), 18-gauge, type 304 (18-8) nickel bearing stainless steel undermount sink with sound deadening applied to under side shall be Elkay ELUHAD141845PD customized with front overflow or approved equal by Just or Advance Tabco."
  - b. B. "Nominal 17" by 14" vitreous china undermount bowl with front overflow and unglazed rim with mounting hardware and 4" center set punching shall be American Standard No. 0495.221 or approved equal by Kohler, Crane or Commercial Enameling." Shall be removed and replaced with "14" x 18" x 4-3/8" deep bowl single compartment (16-

1/2" x 20-1/2" overall), 18-gauge, type 304 (18-8) nickel bearing stainless steel under-mount sink with sound deadening applied to under side shall be Elkay ELUHAD141845PD customized with front overflow or approved equal by Just or Advance Tabco."

- F. Clarification: Data and telephone cabling is to be provided by Owner, GC is to provide all conduit and raceways.

#### 1.4 REVISIONS TO DRAWING SHEETS

- A. Civil:
1. Sheet C2.0, Site & Utility Plan, sheet reissued. Note added for abandon sewer.
  2. Sheet C6.0, Sewer Details, sheet added to construction documents. Added sewer details.
- B. Landscaping: Delete/Coordinate: L1.1, Landscaping Plan, Plant Schedule, "Quercus virginiana/ Southern Live Oak, spaded, 4.5" cal, 14-16' ht, quantity = 3" to be removed from the contract. Owner to deliver and install, GC shall coordinate scheduling and tree protection.
- C. Architectural:
1. Sheet G1.2, Accessibility Details: Detail B/G1.2, Vanity Detail. See Bulletin Drawing SK1 – A012519. Change in Vanity detail construction.
  2. Sheet G1.2, Accessibility Details: Detail E/G1.2, Toilet Elevation. See Bulletin Drawing SK2 – A012519. Clarification of mirror size and frame material.
  3. Sheet A1.3, Roof Plan. Note clarification. Detail A/A1.3, Pipe penetration detail and B/A1.3, Vent stack detail, should both read "Roof assembly 5". Detail C/A1.3 Roof Hatch detail, should read "Roof assembly 3".
  4. Sheet A1.3, Roof Plan. Roof Type Legend: See updated bulletin drawing, SK3 – A012519, for roof assembly clarification. These changes are to supersede all other assemblies shown. Clarification: the self-adhered/high temp weather & ice shield shall be installed on the on entire roof assembly 1, 2, and 4.
  5. Sheet A3.2, Wall Sections. Detail A/A3.2, Eave Detail, Bulletin Drawing SK4 – A012519 has been attached to clarify roof assembly.
- D. Electrical:
1. Sheet E1.3, Electrical Auxiliary Plans, Add: one pull station at door 102.
  2. Clarification: Fire Alarm System Equipment, there is no printer required. A printed copy of the System Status and Programming Report to be provided for final inspection.

**END OF DOCUMENT**

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## **SECTION 07 41 13 – CORRUGATED METAL ROOFING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes exposed-fastener, lap-seam, metal roof panels.

#### **1.2 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
- B. Shop Drawings: Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
- C. Samples: For each type of metal panel indicated.

#### **1.4 QUALITY ASSURANCE**

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

#### **1.5 WARRANTY**

- A. Special Warranty - Installer: Standard form in which Installer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Warranty - Manufacturer: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: 20 years from date of Substantial Completion.

### **PART 2 - PRODUCTS**

#### **2.1 PERFORMANCE REQUIREMENTS**

- A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:
  - 1. Wind Loads: As indicated on Drawings.
  - 2. Other Design Loads: As indicated on Drawings.
  - 3. Deflection Limits: For wind loads, no greater than 1/180 of the span.

- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces

## 2.2 EXPOSED-FASTENER, LAP-SEAM, METAL ROOF PANELS

- A. General: Provide factory-formed metal roof panels designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps. Include accessories required for weathertight installation.
- B. Corrugated-Profile, Exposed-Fastener Metal Roof Panels: Formed with alternating curved ribs spaced at minimum 2.5 inches o.c. across width of panel.
  - 1. Basis of Design: 2-1/2 Corrugated by American Building Components or comparable product by one of the following:
    - a. AEP Span; A BlueScope Steel Company.
    - b. MBCI.
    - c. McElroy Metal, Inc.
    - d. Metal Sales Manufacturing Corporation.
  - 2. Galvalume:
    - a. Nominal Thickness: minimum 26 gauge
    - b. Exterior Finish: Match BARE GALVALUME by American Building Components
  - 3. Panel Coverage: 24 inches.
  - 4. Panel Height: 0.5 inch.

## 2.3 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Underlayment (*Ice and Water Shield*): Provide self-adhering, cold-applied, sheet underlayment, a minimum of 30 mils thick, specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer when recommended by underlayment manufacturer.
  - 1. Thermal Stability: Stable after testing at 220 deg F; ASTM D 1970.
  - 2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F; ASTM D 1970.
  - 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Carlisle Residential; a division of Carlisle Construction Materials.
    - b. CertainTeed Corporation.
    - c. Drexel Metals.
    - d. GCP Applied Technologies Inc.
    - e. Henry Company.
    - f. Owens Corning.

## 2.4 ROOF INSULATION

- A. Nailbase insulation consisting of one of the following:
  - 1. ASTM C578 Type I molded polystyrene foam insulation laminated to 5/8 inch minimum OSB identified with APA performance mark, Exposure I, and span rating of 24/16 or greater in accordance with DOC PS-2.
    - a. Foam-Control Nailbase by ACH Foam Technologies, Inc.



- b. ThermalStar by Atlas EPS
- c. TechBase Pro by Kurt Building Materials

B. Thermal Resistance of insulation: R-25, minimum.

## **2.42.5 MISCELLANEOUS MATERIALS**

- A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
  - 1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal panels.
  - 2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
  - 3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch-thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.
- C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
- D. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.
  - 1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing; 1/2 inch wide and 1/8 inch thick.
  - 2. Joint Sealant: ASTM C 920; as recommended in writing by metal panel manufacturer.
  - 3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C 1311.

## **2.52.6 FABRICATION**

- A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

## PART 3 - EXECUTION

### 3.1 UNDERLAYMENT INSTALLATION

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply at locations indicated on Drawings, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.
- ~~B. Felt Underlayment: Apply at locations indicated on Drawings, in shingle fashion to shed water, and with lapped joints of not less than 2 inches.~~
- ~~C.B.~~ Flashings: Install flashings to cover underlayment to comply with requirements specified in Section 07 62 00 "Sheet Metal Flashing and Trim."

### 3.2 INSULATION INSTALLATION

- A. Install insulation in accordance with manufacturer recommendations. Attach insulation so that ends of fasteners do not penetrate through exposed face of tongue and groove wood deck. Utilize number and spacing of fasteners to resist wind uplift.

### 3.23.3 METAL PANEL INSTALLATION

- A. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
  - 1. Lap ribbed or fluted sheets one full rib. Apply panels and associated items true to line for neat and weathertight enclosure.
  - 2. Provide metal-backed washers under heads of exposed fasteners bearing on weather side of metal panels.
  - 3. Locate and space exposed fasteners in uniform vertical and horizontal alignment. Use proper tools to obtain controlled uniform compression for positive seal without rupture of washer.
  - 4. Install screw fasteners with power tools having controlled torque adjusted to compress washer tightly without damage to washer, screw threads, or panels. Install screws in predrilled holes.
  - 5. Flash and seal panels with weather closures at perimeter of all openings.
  - 6. Watertight Installation:
    - a. Apply a continuous ribbon of sealant or tape to seal lapped joints of metal panels, using sealant or tape as recommend by manufacturer on side laps of nesting-type panels and elsewhere as needed to make panels watertight.
    - b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.
    - c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.
- B. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

- C. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." et units true to line and level. Install work with laps, joints, and seams that are permanently watertight.

**END OF SECTION**

**SECTION 07 54 23 - THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
1. Adhered thermoplastic polyolefin (TPO) roofing system.
  - ~~2. Substrate board.~~
  - ~~3.2. Roof insulation.~~
  - ~~4.3. Cover board.~~
  - ~~5.4. Walkways.~~

**1.2 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at Project site.

**1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.
- B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
1. Layout and thickness of insulation.
  2. Base flashings and membrane termination details.
  3. Flashing details at penetrations.
  4. Tapered insulation layout, thickness, and slopes.
  5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
  6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
  7. Tie-in with adjoining air barrier.
- C. Samples: For the following products:
1. Roof membrane and flashings, of color required.
  2. Aggregate ballast in gradation and color required.
  3. Walkway pads or rolls, of color required.
- D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

**1.4 INFORMATIONAL SUBMITTALS**

- A. Manufacturer Certificates:
1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
    - a. Submit evidence of compliance with performance requirements.
  2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

- B. Product Test Reports: For roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.
- C. Research reports.
- D. Field Test Reports:
  - 1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
- E. Field quality-control reports.
- F. Sample warranties.

### **1.5 CLOSEOUT SUBMITTALS**

- A. Maintenance data.
- B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

### **1.6 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: A qualified manufacturer that is listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

### **1.7 WARRANTY**

- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
  - 1. Warranty Period: 30 years from date of Substantial Completion.

## **PART 2 - PRODUCTS**

### **2.1 PERFORMANCE REQUIREMENTS**

- A. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
- B. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D 3746, ASTM D 4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
  - 1. Fire/Windstorm Classification: Class 1A-90.
  - 2. Hail-Resistance Rating: MH.

## 2.2 THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

- A. TPO Sheet: ASTM D 6878/D 6878M, internally fabric- or scrim-reinforced, TPO sheet.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Carlisle SynTec Incorporated.
    - b. Firestone Building Products.
    - c. GAF.
    - d. Johns Manville; a Berkshire Hathaway company.
    - e. Versico Roofing Systems.
  - 2. Thickness: 60 mils, nominal.
  - 3. Exposed Face Color: White

## 2.3 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
  - 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils thick, minimum, of same color as TPO sheet.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Bonding Adhesive: Manufacturer's standard, water based.
- E. Slip Sheet: Manufacturer's standard, of thickness required for application.
- F. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

## 2.4 ROOF INSULATION

- A. Extruded-Polystyrene Board Insulation: ASTM C 578, Type IV, 1.45-lb/cu. ft. minimum density, 25-psi minimum compressive strength, square edged.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. DiversiFoam Products.
    - b. Dow Chemical Company (The).
    - c. Kingspan Insulation Limited.
    - d. Owens Corning.
  - 2. Thermal Resistance: R-value of 5.0 per inch.

- B. Tapered Insulation: Provide factory-tapered insulation boards.

## 2.5 INSULATION ACCESSORIES

- A. Fasteners: Factory-coated steel fasteners with metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.
- B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
  - 1. Modified asphaltic, asbestos-free, cold-applied adhesive.
  - 2. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
  - 3. Full-spread, spray-applied, low-rise, two-component urethane adhesive.
- C. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum board or ASTM C 1278/C 1278M fiber-reinforced gypsum board.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Georgia-Pacific Gypsum LLC.
    - b. National Gypsum Company.
    - c. USG Corporation.
  - 2. Thickness: 1/2 inch.
  - 3. Surface Finish: Unprimed.

## 2.6 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
  - 1. Size: Approximately 36 by 60 inches.
  - 2. Color: Contrasting with roof membrane.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

### 3.2 PREPARATION

- A. Perform fastener-pullout tests according to roof system manufacturer's written instructions.
  - 1. Submit test result within 24 hours after performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

### 3.3 ROOFING INSTALLATION, GENERAL

- A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

- B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning Work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.
- D. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier system.

### 3.4 INSULATION INSTALLATION

- A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and roof insulation manufacturer's written instructions for installing roof insulation.
- C. Installation:
  - 1. Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows.
    - a. Locate end joints over crests of decking.
    - b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    - c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
    - d. Fill gaps exceeding 1/4 inch with insulation.
    - e. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    - f. Mechanically attach base layer of insulation and substrate board using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.
      - 1) Fasten insulation according to requirements in FM Approvals' RoofNav for specified Windstorm Resistance Classification.
  - 2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
    - a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
    - b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
    - c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    - d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
    - e. Fill gaps exceeding 1/4 inch with insulation.
    - f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    - g. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
      - 1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.



### 3.5 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.
  - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 2. Cut and fit cover board tight to nailers, projections, and penetrations.
  - 3. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:
    - a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
- B. Install slip sheet over cover board and beneath roof membrane.

### 3.6 ADHERED ROOFING INSTALLATION

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. Start installation of roofing in presence of roofing system manufacturer's technical personnel and Owner's testing and inspection agency.
- D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- G. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- H. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings, to ensure a watertight seam installation.
  - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
  - 2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
  - 3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.
- I. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.8 WALKWAY INSTALLATION

- A. Flexible Walkways:
  - 1. Install flexible walkways at the following locations:
    - a. Retain one or more subparagraphs below. Revise to suit Project.
    - b. Perimeter of each rooftop unit.
    - c. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.
    - d. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
    - e. Top and bottom of each roof access ladder.
    - f. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
    - g. Locations indicated on Drawings.
    - h. As required by roof membrane manufacturer's warranty requirements.
  - 2. Provide 6-inch clearance between adjoining pads.
  - 3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.9 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

### END OF SECTION

SOLID SURFACE COUNTERTOP,  
AND BACKSPLASH

UNDERMOUNT SINK

SOLID SURFACE FRONT &  
SIDE APRON

1X AT CORNER AND  
EDGE

3/4 PLYWOOD

VANITY SUPPORT (2 REQ'D)  
(FEDERAL BRACE: TITUS)

2X BLOCKING  
SECURE BETWEEN METAL STUDS

2'-0"

1'-7" MAX.  
BACK RIM

6"

4"

34"

## VANITY DETAIL

SCALE 3/4" = 1'-0"

B

G1.2

**Smith**<sup>2</sup>

ARCHITECTURE + DESIGN  
PO BOX 717 WRIGHTSVILLE BEACH  
NORTH CAROLINA 28480 PHN 910.256.0065

REF: ABC STORE 104

PROJ NO: 17-107

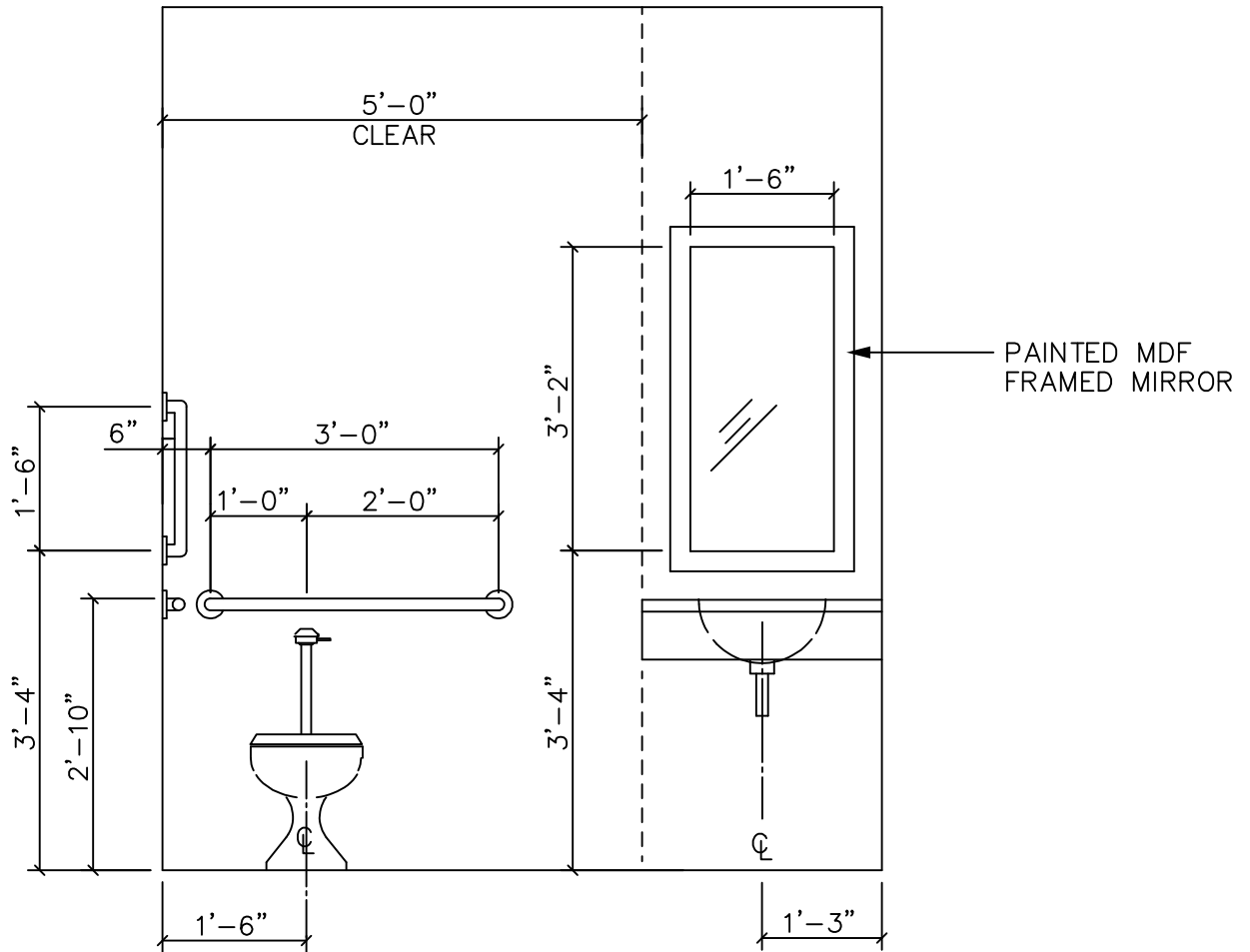
DATE: 1-25-18

## ACCESSIBLE DETAILS

**ABC STORE 104**  
7000 WRIGHTSVILLE BEACH  
WILMINGTON, NC 28403

BULLETIN DRAWING

**SK1-A012519**



# TOILET ELEVATION

SCALE 1/2" = 1'-0"

E  
G1.2

**Smith**2

ARCHITECTURE + DESIGN  
PO BOX 717 WRIGHTSVILLE BEACH  
NORTH CAROLINA 28480 PHN: 910.256.0065

REF: ABC STORE 104

PROJ NO: 17-107

DATE: 1-25-18

## ACCESSIBLE DETAILS

**ABC STORE 104**

7000 WRIGHTSVILLE BEACH  
WILMINGTON, NC 28403

BULLETIN DRAWING

**SK2-A012519**

#### ROOF TYPE LEGEND

##### (TYP) ROOF ASSEMBLY 1:

- 24 GA. CORRUGATED GALVALUME ROOFING
- SELF ADHERED/HIGH TEMP WEATHER & ICE SHIELD
- 5/8" OSB NAIL BASE (PER STRUCTUAL) & FASTENERS
- RIGID INSULATION (MIN R-25)
- 3/8" PLYWOOD SHEATHING
- 2X6 T&G WOOD DECK, FINISHED SIDE DOWN
- 2X8 DECK PLATE @ EACH TRUSS
- P.T. LUMBER WHEN OUTSIDE BUILDING ENVELOPE

##### (TYP) ROOF ASSEMBLY 2:

- 24 GA. CORRUGATED GALVALUME ROOFING
- SELF ADHERED/HIGH TEMP WEATHER & ICE SHIELD
- 5/8" OSB NAIL BASE (PER STRUCTUAL) & FASTENERS
- RIGID INSULATION (MIN R-25)
- METAL ROOF DECK

##### (TYP) ROOF ASSEMBLY 3

- TPO ROOF MEMBRANE
- 1/2" PROTECTION BOARD
- RIGID INSULATION (MIN R-25) SLOPE 1/4" PER FT MIN
- METAL ROOF DECK

##### (TYP) ROOF ASSEMBLY 4:

- 24 GA. CORRUGATED GALVALUME ROOFING
- SELF ADHERED/HIGH TEMP WEATHER & ICE SHIELD
- 2X6 T&G WOOD DECK, FINISHED SIDE DOWN
- 2X6 P.T. DECK PLATE @ EACH RAFTER

##### (TYP) ROOF ASSEMBLY 5

- TPO ROOF MEMBRANE
- 1/2" PROTECTION BOARD
- RIGID INSULATION (MIN R-25)
- 2X6 T&G WOOD DECK, FINISHED SIDE DOWN
- 2X8 DECK PLATE @ EACH TRUSS

DO NOT PENETRATE T & G ON FINISH SIDE OF T & G

**Smith2**

ARCHITECTURE + DESIGN  
PO BOX 717 WRIGHTSVILLE BEACH  
NORTH CAROLINA 28480 PHN 910.256.0065

REF: ABC STORE 104  
PROJ NO: 17-107  
DATE: 1-25-18

## ROOF PLAN

**ABC STORE 104**  
7000 WRIGHTSVILLE BEACH  
WILMINGTON, NC 28403

BULLETIN DRAWING

**SK3-A012519**

CORRUGATED ROOFING

RIGID INSULATION W/ 5/8" NAIL BASE & FASTENERS

ICE & WATER SHIELD (CONTINUOUS)

CORRUGATED  
CLOSURE STRIP  
(BLACK)

METAL DRIP FLASHING

PT EDGE BLOCKING

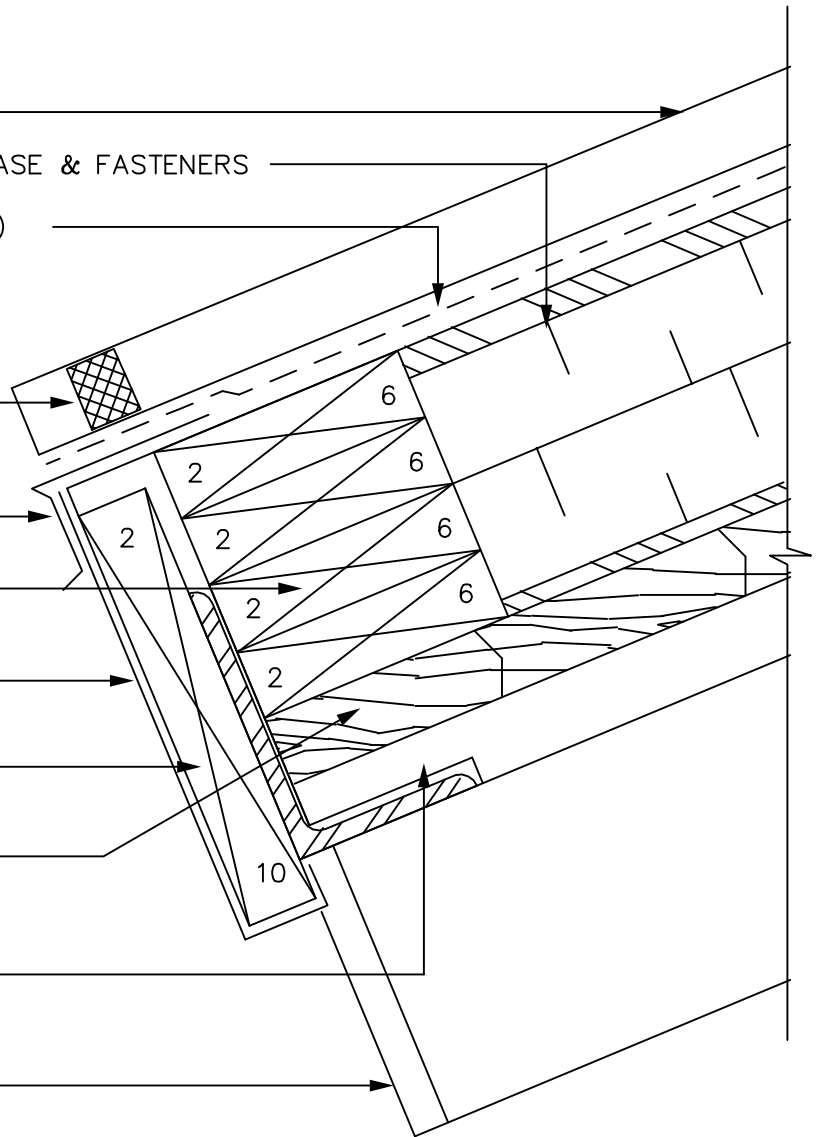
WRAP SUB FASCIA  
W/ METAL

PT 2X10 SUB FASCIA  
ANCHOR TO EDGE ANGLE

T & G ROOF DECK

PT 2X8 NAILER ON TRUSS  
RABBET EDGE

SEE DETAIL D/A3.2  
TRUSS TAIL WRAP INFO



## EAVE DETAIL

SCALE 3" = 1'-0"

A  
A3.2

**Smith**2

ARCHITECTURE + DESIGN  
PO BOX 717 WRIGHTSVILLE BEACH  
NORTH CAROLINA 28480 PHN: 910.256.0065

REF: ABC STORE 104

PROJ NO: 17-107

DATE: 1-25-18

## WALL SECTIONS

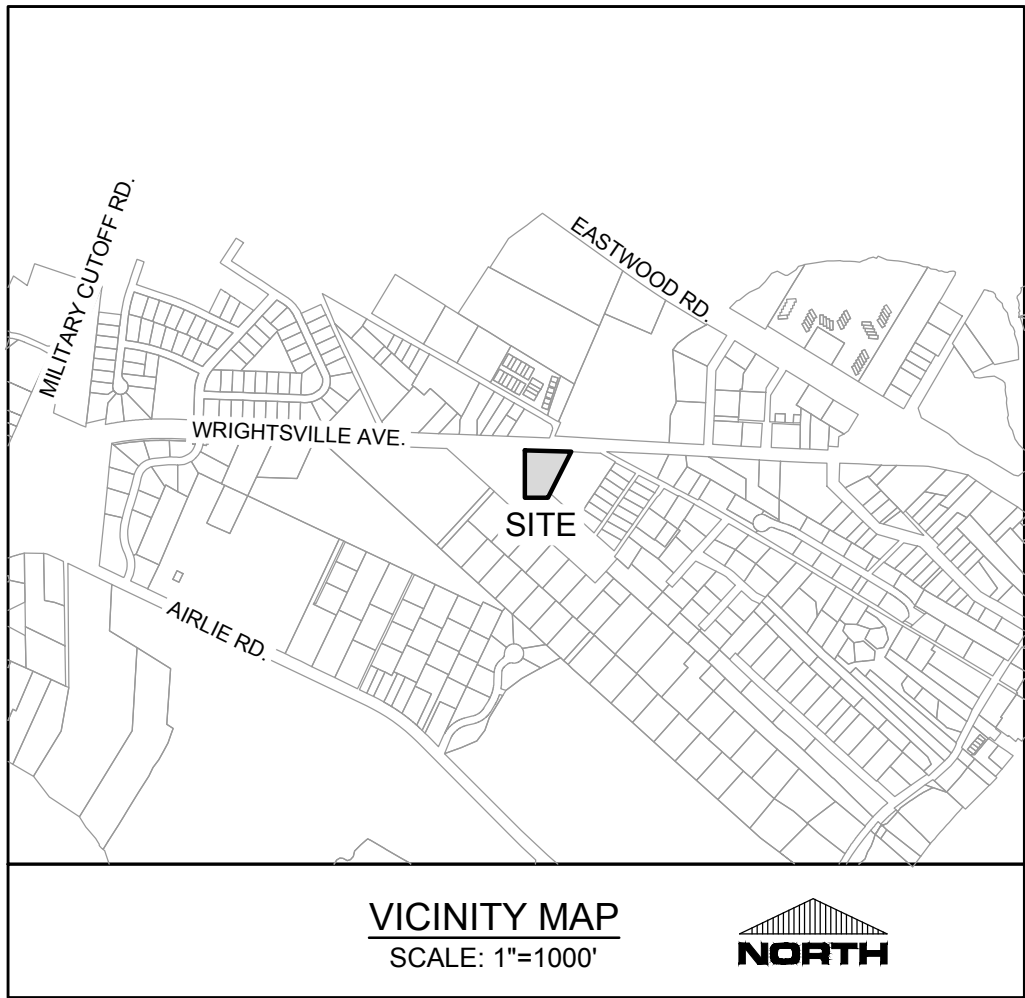
### ABC STORE 104

7000 WRIGHTSVILLE BEACH  
WILMINGTON, NC 28403

BULLETIN DRAWING

SK4-A012519





**SITE INFORMATION**  
PROPOSED USE:  
SITE ADDRESS:  
PIN:  
ZONING:  
TOTAL SITE AREA:  
OWNER INFORMATION:

RETAIL / ABC STORE  
7000 WRIGHTSVILLE AVENUE  
WILMINGTON, NC  
R05713-011-049-000  
\*C-5 (CITY OF WRIGHTSVILLE BEACH)  
\*CONDITIONAL USE PERMIT (CUP)  
\*APPROVED BY TOWN BD. 9/13/18  
31,513 SF +/- (0.72 ACRES +/-)  
NEW HANOVER COUNTY ABC BOARD  
6009 MARKET STREET  
WILMINGTON, NC 28405

DIMENSION REQUIREMENTS	REQUIRED	PROVIDED
FRONT SETBACK	30'	15'
SIDE SETBACK	10'	10'
REAR YARD SETBACK	20'	20'
MAXIMUM HEIGHT	40'	24'
MINIMUM LOT WIDTH	100'	193.81'

**BUILDING INFORMATION**  
RETAIL/STORAGE  
BUILDING HEIGHT

7919 SF±  
24 FT

<u>IMPERVIOUS &amp; STORMWATER MANAGEMENT NOTES</u>	
<u>EXISTING MOBILE HOME PARK:</u>	
GRAVEL	6732 SF
MOBILE HOMES	7200 SF
<u>CONCRETE PADS</u>	<u>160 SF</u>
TOTAL EXISTING =	14,092 SF

<u>PROPOSED ABC SITE:</u>	
PERMEABLE PAVEMENT	4776 SF
BUILDINGS (ROOF)	9008 SF
CONCRETE PAVEMENT	6740 SF
<u>SIDEWALKS/LOADING DOCK</u>	<u>1465 SF</u>
TOTAL PROPOSED =	21,989 SF

NET IMPERVIOUS ==> 21,989 - 14,092 SF = 7,897 SF < 10,000 SF BUA  
THEREFORE, THE DEVELOPMENT IS NOT CONSIDERED SUBJECT TO 15A NCAC 02H.1019(2)(c)  
PER STATE STORMWATER LETTER DATED 11/8/18.  
THIS SITE IS DESIGNED TO CAPTURE AND INFILTRATE THE 100-YR DESIGN VOLUME IN ORDER  
TO SATISFY THE NHC ABC BOARD OBJECTIVES FOR STORMWATER MANAGEMENT, WHICH IS  
ABOVE AND BEYOND THE STORMWATER REGULATIONS FOR THIS PROPERTY UNDER THE STATE OF  
NC OR THE TOWN OF WRIGHTSVILLE BEACH.

<u>PARKING</u>	
OFF-STREET PARKING SUMMARY:	
4541 SF RETAIL PARKED AT 1 SPACE / 250 SF =	18 SPACES REQUIRED
ADA PARKING =	2 SPACES REQUIRED

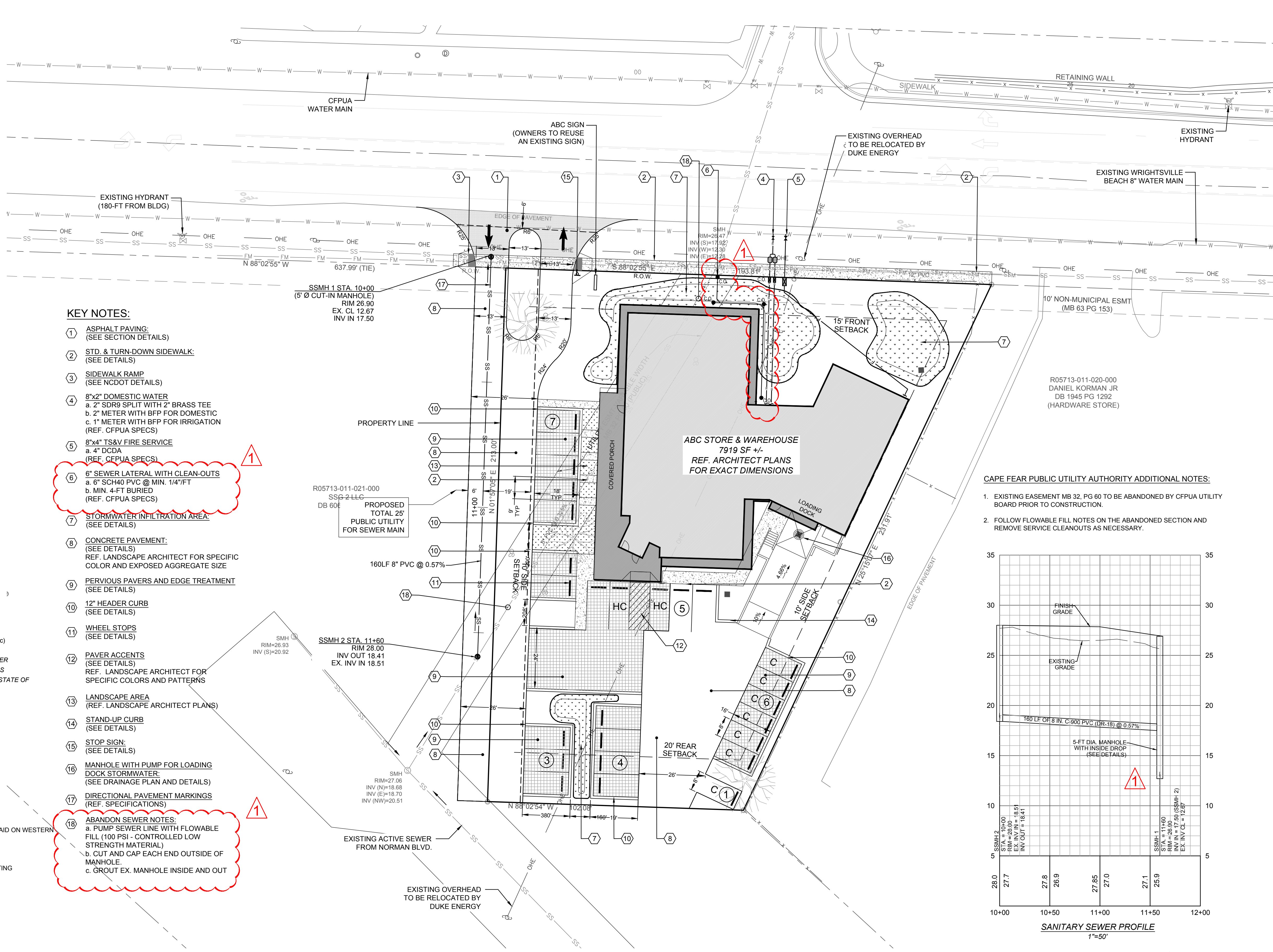
PROPOSED SPACES TOTAL	
COMPACT SPACES (8' X 16'; NOTED WITH A 'C'):	7
STANDARD SPACES (9' X 18'):	17
<u>ACCESSIBLE SPACES:</u>	<u>2</u>
TOTAL PROVIDED:	26

**UTILITIES**  
PROPOSED UTILITIES WILL BE CONNECTED TO EXISTING  
TOWN WATER MAIN ALONG WRIGHTSVILLE AVENUE, AND A NEW CFPUA SEWER MAIN RE-LAID ON WESTERN  
ADJACENT PROPERTY. SEWER FLOW ESTIMATES: 100 GPD (25 GPD x 4 EMPLOYEES/DAY)

**EXISTING VEGETATION / WETLANDS**  
SEE TREE REMOVAL SCHEDULE ON EROSION CONTROL PLAN FOR INFORMATION ON EXISTING  
TREES TO BE REMOVED. NO WETLANDS OR STREAMS ARE LOCATED ON THE SITE.

**SURVEY NOTES:**  
1. AREA CALCULATED BY COORDINATE METHOD.  
2. ALL ELEVATIONS ARE (NAVD 88).  
3. UTILITIES SHOWN HEREON ARE FROM INFORMATION VISIBLE IN THE FIELD  
AND MAPS PROVIDED BY OTHERS. UTILITIES OTHER THAN WHAT ARE  
SHOWN MAY EXIST. LOCATION OF UNDERGROUND UTILITIES ARE  
APPROXIMATE. THE APPROPRIATE UTILITY COMPANIES SHALL BE  
CONTACTED PRIOR TO LAND DISTURBING ACTIVITIES.  
4. THIS PROPERTY IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD ARE  
AS SHOWN ON THE FEMA FLOOD MAP NO. 3720315700J BEARING AN  
EFFECTIVE DATE OF 4/3/2006.

**LIGHT NOTES:**  
1. ALL LIGHTING WILL COMPLY WITH THE  
TOWN OF WRIGHTSVILLE BEACH  
ORDINANCE.  
2. ALL LIGHTS WILL SHINE DOWNWARD  
INTO THE LIMITS OF THE PROPERTY  
WITH NO LIGHT TRESPASS AND BE  
DARK SKIES COMPLIANT.  
3. REF. LIGHTING PLAN ON LANDSCAPE  
ARCHITECT PLANS.



- KEY NOTES:**
- ASPHALT PAVING:  
(SEE SECTION DETAILS)
  - STD. & TURN-DOWN SIDEWALK:  
(SEE DETAILS)
  - SIDEWALK RAMP  
(SEE NCDOT DETAILS)
  - 8"x2" DOMESTIC WATER  
a. 2" SDR9 SPLIT WITH 2" BRASS TEE  
b. 2" METER WITH BFP FOR DOMESTIC  
c. 1" METER WITH BFP FOR IRRIGATION  
(REF. CFPUA SPECS)
  - 8"x4" TS&V FIRE SERVICE  
a. 4" DCDA  
(REF. CFPUA SPECS)
  - 6" SEWER LATERAL WITH CLEAN-OUTS  
a. 6" SCH40 PVC @ MIN. 1/4"FT  
b. MIN. 4-FT BURIED  
(REF. CFPUA SPECS)
  - STORMWATER INFILTRATION AREA:  
(SEE DETAILS)
  - CONCRETE PAVEMENT:  
(SEE DETAILS)  
REF. LANDSCAPE ARCHITECT FOR SPECIFIC  
COLOR AND EXPOSED AGGREGATE SIZE
  - PERVIOUS PAVERS AND EDGE TREATMENT  
(SEE DETAILS)
  - 12" HEADER CURB  
(SEE DETAILS)
  - WHEEL STOPS  
(SEE DETAILS)
  - PAVER ACCENTS  
(SEE DETAILS)  
REF. LANDSCAPE ARCHITECT FOR  
SPECIFIC COLORS AND PATTERNS
  - LANDSCAPE AREA  
(REF. LANDSCAPE ARCHITECT PLANS)
  - STAND-UP CURB  
(SEE DETAILS)
  - STOP SIGN:  
(SEE DETAILS)
  - MANHOLE WITH PUMP FOR LOADING  
DOCK STORMWATER;  
(SEE DRAINAGE PLAN AND DETAILS)
  - DIRECTIONAL PAVEMENT MARKINGS  
(REF. SPECIFICATIONS)
  - ABANDON SEWER NOTES:  
a. PUMP SEWER LINE WITH FLOWABLE  
FILL (100 PSI - CONTROLLED LOW  
STRENGTH MATERIAL)  
b. CUT AND CAP EACH END OUTSIDE OF  
MANHOLE.  
c. GROUT EX. MANHOLE INSIDE AND OUT

**UTILITY MAIN NOTES (NCAC 15A.02T.0305/T15A.18C.0906:**

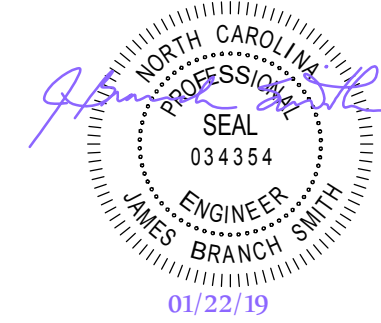
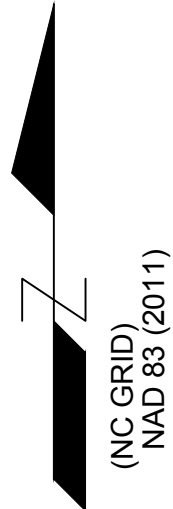
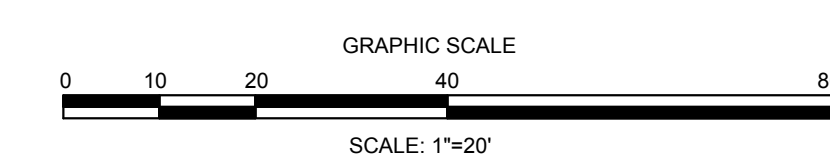
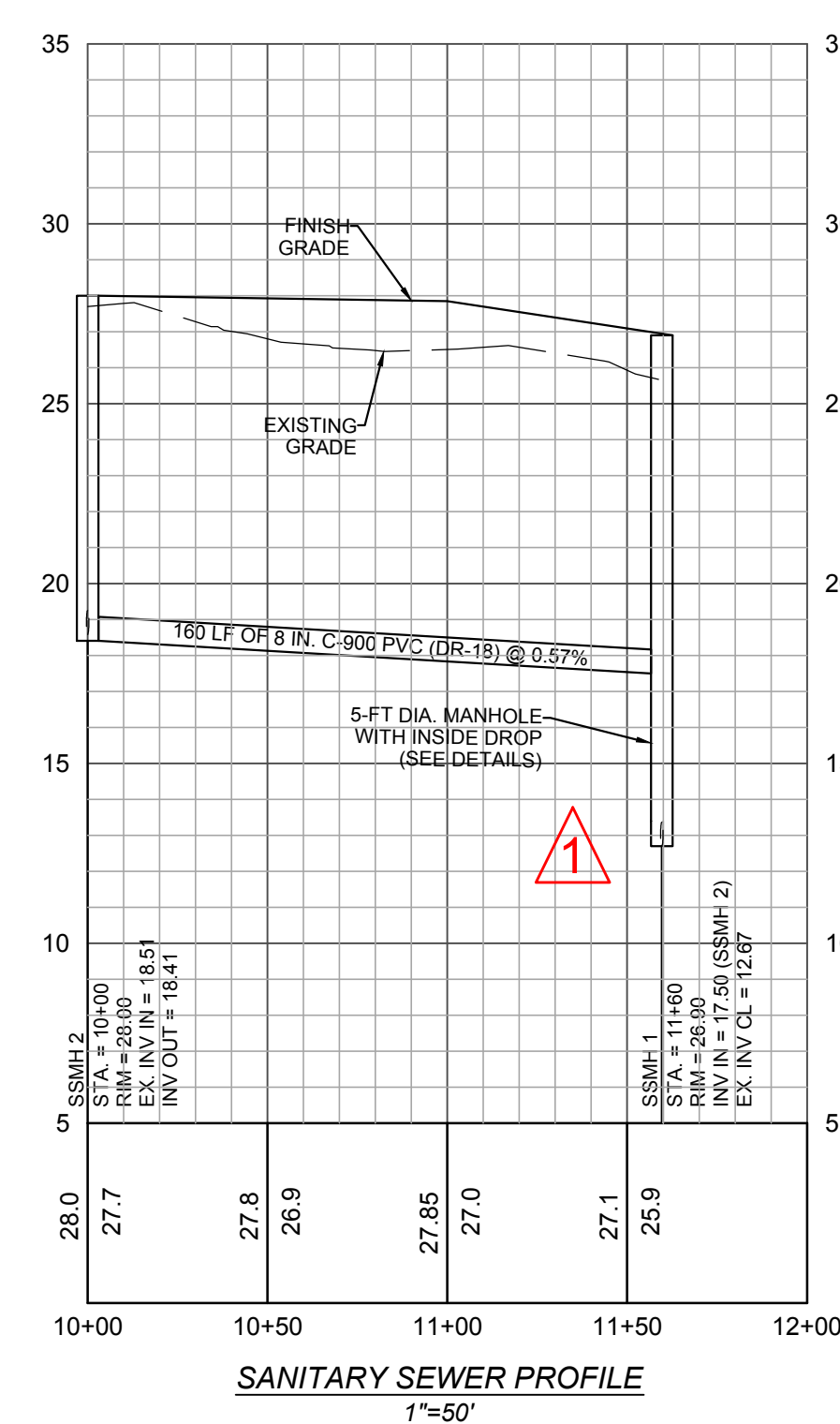
- WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS, IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
- WHEN CROSSING A WATER MAIN OVER A SEWER, THE WATER MAIN SHALL BE LAID AT LEAST 18 INCHES ABOVE THE SEWER. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS THAT MEET WATER MAIN STANDARDS. THE DUCTILE IRON PIPE SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING WITH A SECTION OF WATER MAIN PIPE CENTERED ON THE CROSSING.
- CROSSING A WATER MAIN UNDER A SEWER, WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
- WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE WATERTIGHT REINFORCED CONCRETE PIPE JOINTS.
- WHERE VERTICAL CLEARANCE IS LESS THAN 18" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE WATERTIGHT REINFORCED CONCRETE PIPE JOINTS.

**FIRE AND LIFE SAFETY NOTES**

- NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN ANY DEVELOPMENT.
- HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
- CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
- A MINIMUM OF 4-FT SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
- UNDERGROUND FIRE LINES FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING(S) MUST BE PERMITTED & INSPECTED BY THE BUILDING INSPECTIONS / FIRE MARSHALL'S OFFICE FIRE SERVICES AGENCY.
- CONSTRUCTION TYPE I-B (SPRINKLED).
- FIRE DEPARTMENT CONNECTIONS (FDCs) MUST BE APPROVED BY THE FIRE MARSHALL'S OFFICE AND BE ACCESSIBLE TO A FIRE APPARATUS EQUIPMENT.
- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.

**CAPE FEAR PUBLIC UTILITY AUTHORITY ADDITIONAL NOTES:**

- EXISTING EASEMENT MB 32, PG 60 TO BE ABANDONED BY CFPUA UTILITY BOARD PRIOR TO CONSTRUCTION.
- FOLLOW FLOWABLE FILL NOTES ON THE ABANDONED SECTION AND REMOVE SERVICE CLEANOUTS AS NECESSARY.





CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

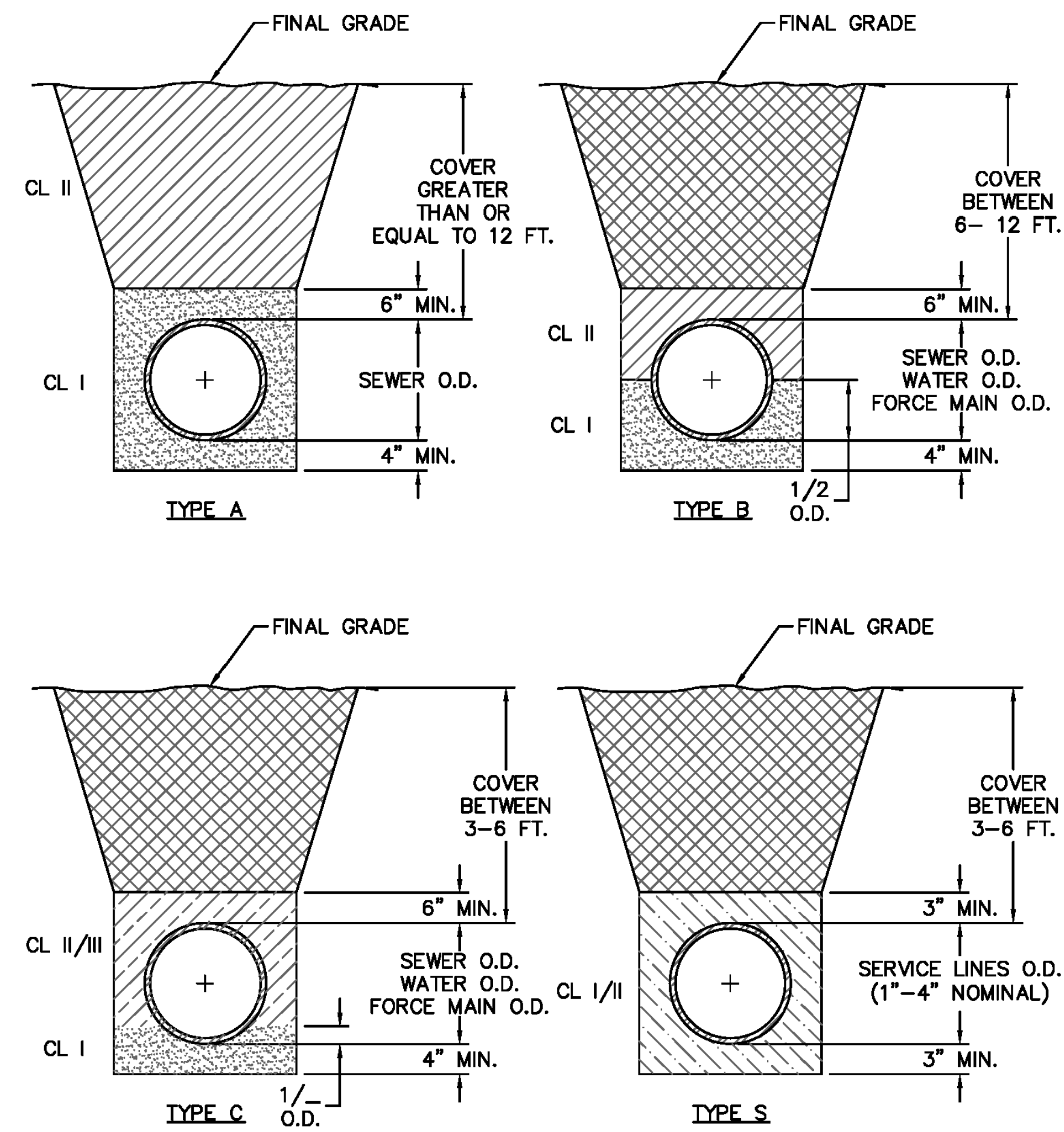
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
- MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS.
- WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
- UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
- A MINIMUM OF 10' OF MAIN LINE SHALL BE REPLACED FOR NEW CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.

U:\MFG\ASSTN HANDES F\W\CFPUA\SHARED\CFPUPA\STANDARD NOTES\STANDARD NOTES.DWG Scale: 1" = 12' DATE: 01/01/19  
U:\MFG\ASSTN HANDES F\W\CFPUA\SHARED\CFPUPA\STANDARD NOTES\STANDARD NOTES.DWG Scale: 1" = 12' DATE: 01/01/19

DETAIL: STANDARD NOTES (REQUIRED ON ALL PLAN AND PROFILE SHEETS)	
SCALE: NOT TO SCALE	CFPUA DETAIL DATE:
CFPUA REV. No. 1	01/01/19

	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910) 332-6560	
	Stewardship. Sustainability. Service.	

DETAIL NO: <b>WS-14</b>
SHEET NO: -



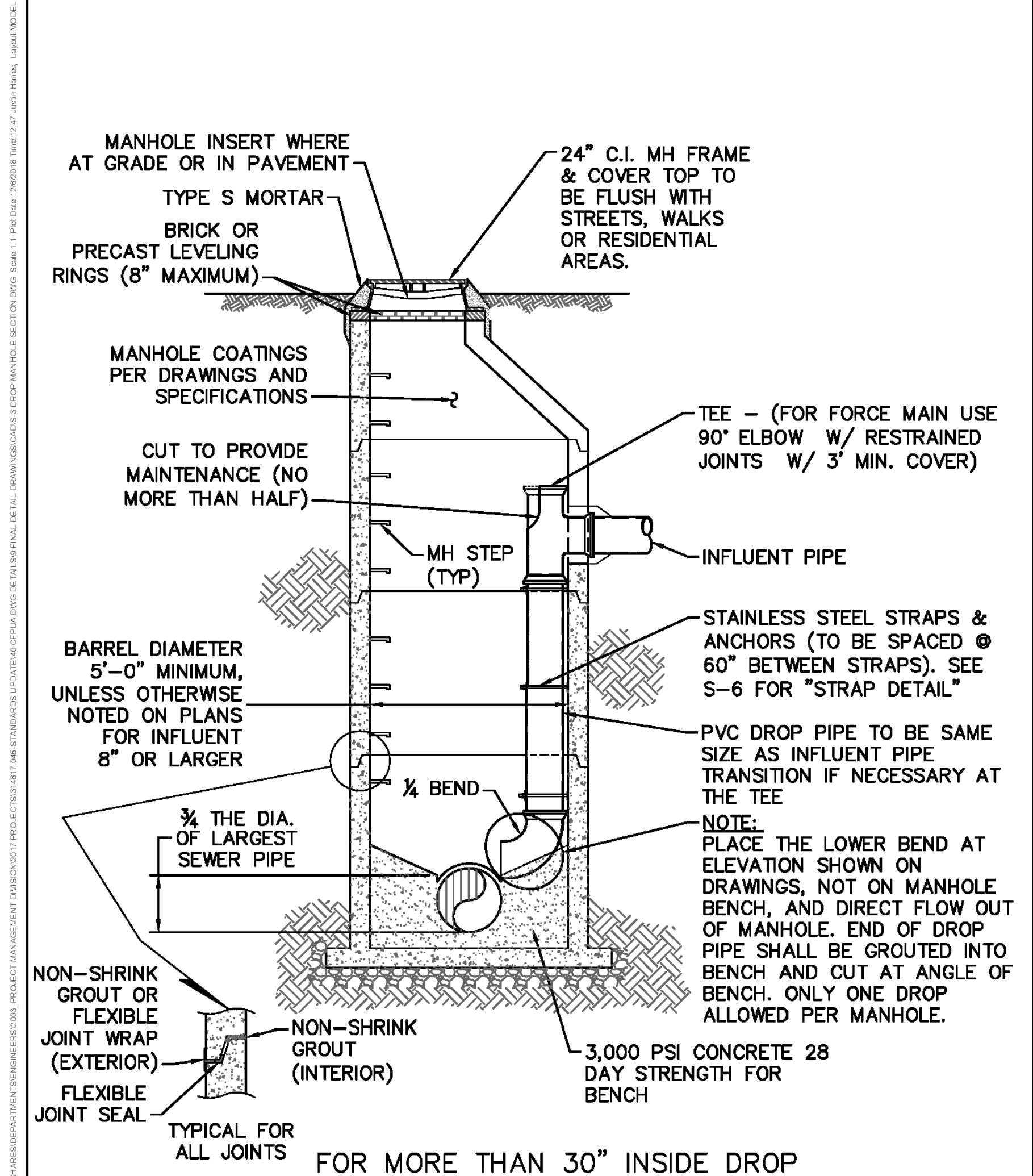
COMPACTION NOTES:

- ALL ZONES: 95% STD EFFORT PER ASTM D698, EXCEPT AS STATED IN COMPACTION NOTE 2.
- 12" SUBGRADE UNDER PAVEMENT: 98% STD EFFORT PER ASTM D698.

DETAIL: PIPE EMBEDMENT TYPES	
SCALE: NOT TO SCALE	CFPUA DETAIL DATE:
CFPUA REV. No. 1	01/01/19

	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910) 332-6560	
	Stewardship. Sustainability. Service.	

DETAIL NO: <b>WS-4</b>
SHEET NO: -



DETAIL: DROP MANHOLE SECTION	
SCALE: NOT TO SCALE	CFPUA DETAIL DATE:
CFPUA REV. No. 1	01/01/19

	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910) 332-6560	
	Stewardship. Sustainability. Service.	

DETAIL NO: <b>S-3</b>
SHEET NO: -

REPLACED CFPUA DETAILS

