

ADDENDUM NO. 1

DUPLIN COUNTY DETENTION CENTER

DUPLIN COUNTY
KENANSVILLE, NORTH CAROLINA

Architect's Project Number: 621373

Prepared by

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DATE OF ISSUE – JANUARY 05, 2024

**DUPLIN COUNTY DETENTION CENTER
KENANSVILLE, NC**

GENERAL:

Planholders are requested to insert this Addendum in the front of their Project Manual. Inform all concerned that the Bidding Documents are modified by this Addendum.

The following modifications and clarifications are hereby made a part of the Bidding Documents and supersede or otherwise modify the provisions of the published *Project Manual* and *Drawings*, dated December 12, 2023.

Refer to the Drawings, Specification Sections, or other Documents, if any, attached to this Addendum, which are hereby made a part of this Addendum.

MODIFICATIONS TO THE PROJECT MANUAL:

SECTION 001100 – INVITATION TO BID

REPLACE this entire section

SECTION 042000 – UNIT MASONRY

REPLACE this entire section

SECTION 105626 – MOBILE STORAGE SHELVING

REPLACE this entire section.

SECTION 122400 – WINDOW SHADES

REPLACE this entire section.

SECTION 271100 – COMMUNICATIONS EQUIPMENT ROOM FITTINGS

REPLACE this entire section.

MODIFICATIONS TO THE DRAWINGS:

SHEET C2.01

REPLACE with attached

SHEET C3.00

REPLACE with attached

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SHEET C4.01

REPLACE with attached

SHEET C5.00

REPLACE with attached

SHEET A3.0.1

REPLACE with attached

SHEET M0.1

REPLACE with attached.

SHEET E0.1

REPLACE with attached.

SHEET E2.1.1.3

REPLACE with attached.

SHEET E2.1.2.3

REPLACE with attached.

SHEET E2.1.3.3

REPLACE with attached.

SHEET E5.1

REPLACE with attached.

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ATTACHMENTS:

SPECIFICATIONS:

001100

042000

105626

122400

271100

DRAWINGS:

C2.01

C3.00

C4.01

C5.00

A3.0.1

M0.1

E0.1

E2.1.1.3

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E5.1

END OF ADDENDUM NO. 01

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INVITATION TO BID

Sealed Bids for construction of the **DUPLIN COUNTY DETENTION CENTER in Kenansville, North Carolina** from pre-qualified contractors will be received at the offices of Duplin County, Attn: Chelsey Lanier, 224 Seminary Street, Kenansville, NC 28349 (UPS & FedEx and hand delivery); until ~~2:00 p.m.~~ **3:00 p.m.**, local prevailing time, **January 16, 2024**, and then publicly opened and read immediately thereafter. The envelope should be clearly marked as 'BID DOCUMENTS'. **(*AD 03)**

Bids received after the announced time and date for submittal, whether by mail or otherwise, will be rejected. Bidders are responsible for ensuring their Bid is received before the deadline indicated. Bids submitted by telephone, email, text message, or facsimile shall not be accepted.

The project generally consists of a new detention center totaling approximately 57,700 SF. The project is Type II-B construction, Group I-3 and Group B occupancy. Construction includes concrete and brick veneer masonry construction with steel framing, interior CMU partitions, TPO roofing, architectural casework, food service equipment, detention equipment, security electronics, and finishes typically associated with a new detention center. The Project includes a kitchen, laundry, open-air vehicle sally port, intake/ booking, Medical Suite, and a Magistrate Suite. Each housing unit will have access to an open-air rec yard surrounded by concrete block. All cells within the housing units will be steel detention cells. All housing units to be monitored by indirect supervision from a central elevated control room. Sitework includes stormwater management, sidewalks, parking lots, grading, and fencing/ gates. Mechanical work includes ductwork, plumbing, sprinkler system, smoke control system, controls, and roof top units. Electrical work includes panelboards, lighting fixtures, fire alarm, emergency generator, power, technology wiring and infrastructure; and security systems (cameras, intercoms, duress, door controls, and touchscreens).

Responses to any questions/ clarification will be in the form of addenda if required. The last day for questions/ clarifications shall be placed by the end of the day at **5:00 p.m. on January 09, 2024**.

A **mandatory pre-bid conference** will be held at **10:30 a.m., on December 21, 2023, at Location: 224 Seminary Street, Kenansville, NC; Board of Commissioners Conference Room**. Submit questions in writing, at this time on the required "Pre-Bid Question Form." The "Pre-Bid Question Form" may be accessed within the Project Manual, or you may submit online via www.moseleyarchitects.com. Responses will be in the form of addenda if required.

Beginning on **December 13, 2023**, all Bidders may obtain, and/or examine electronic Bidding Documents by visiting moseleyarchitects.com.

1. Visit moseleyarchitects.com, click the "Bidding" tab at the top of the page, scroll to **Duplin County Detention Center** click on "Bid Documents", and follow the instructions to "Request a key." Once complete, access to the electronic Bidding Document files can be obtained, saved, and or examined as needed. Addenda for the Project will be posted to the above listed website.

Refer to the Instructions to Bidders for bidding procedures and requirements. Any questions relating to the Bidding Documents shall be directed to the architect, Moseley Architects at www.moseleyarchitects.com.

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The following General Contractors have been pre-qualified to bid the Work (Sub-Contractors are not required to be pre-qualified):

Bordeaux Construction Company, Inc., Raleigh, North Carolina

Daniels & Daniels Construction Company, Inc., Goldsboro, North Carolina

H.G. Reynolds Company, Inc., Aiken, South Carolina

T.A. Loving Company, Goldsboro, North Carolina

Duplin County reserves the right to reject all bids, to waive informalities and technicalities, and to cancel the Bid Process at any time.

END OF INVITATION TO BID

**SECTION 042000
UNIT MASONRY**

PART 1 GENERAL

1.01 REFERENCE STANDARDS

- A. ACI SP-66 - ACI Detailing Manual 2004.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
- C. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications 2023a.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.
- E. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2022.
- F. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus 2019.
- G. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2023.
- H. ASTM C55 - Standard Specification for Concrete Building Brick 2022.
- I. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made from Clay or Shale) 2023.
- J. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile 2023.
- K. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2022.
- L. ASTM C91/C91M - Standard Specification for Masonry Cement 2023.
- M. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units 2023.
- N. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- O. ASTM C151 - Standard Test Method for Autoclave Expansion of Hydraulic Cement 2005.
- P. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale) 2023.
- Q. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.
- R. ASTM C331/C331M - Standard Specification for Lightweight Aggregates for Concrete Masonry Units 2023.
- S. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- T. ASTM C476 - Standard Specification for Grout for Masonry 2023.
- U. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019, with Editorial Revision (2022).
- V. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete 2023, with Editorial Revision.
- W. ASTM C641 - Standard Test Method for Iron Staining Materials in Lightweight Concrete Aggregates 2017.

- X. ASTM C780 - Standard Test Methods for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry 2023.
- Y. ASTM C887 - Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar 2020.
- Z. ASTM C1019 - Standard Test Method for Sampling and Testing Grout for Masonry 2020.
- AA. ASTM C1072 - Standard Test Methods for Measurement of Masonry Flexural Bond Strength 2022.
- BB. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms 2023a.
- CC. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing 2017 (Reapproved 2023).
- DD. ASTM D1227/D1227M - Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing 2013, with Editorial Revision (2019).
- EE. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.
- FF. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry 2020.
- GG. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- HH. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls 2017.
- II. BIA Technical Notes No. 20 - Cleaning Brickwork 2018.
- JJ. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- KK. BIA Technical Notes No. 46 - Maintenance of Brick Masonry 2017.
- LL. NCMA TEK 08-04A - Cleaning Concrete Masonry 2005.
- MM. NCMA TEK 12-01B - Anchors and Ties for Masonry 2011.
- NN. NCMA TEK 12-02B - Joint Reinforcement for Concrete Masonry 2005.
- OO. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting at the Project site one week before starting work of this section; require attendance by all relevant installers.

1.03 SUBMITTALS

- A. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- B. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories, for each type of masonry.
 - 1. Provide elevations indicating steel reinforcing bar locations; provide details of reinforcing including bends and cross-sections, in accordance with ACI SP-66.
 - 2. Indicate control and expansion joint locations.
 - 3. Provide flashing details indicating corners, end dams, and other special conditions.
- C. Samples: Face brick and mortar selections will be verified in mock-up panel. Provide samples of exposed accessories and trim requiring color selection.

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- D. Material Certificates and Test Reports: Provide manufacturer's certificates and test reports for the following:
1. Masonry Units:
 - a. Brick: Size data including fabrication tolerances.
 - b. Brick: Efflorescence test, per ASTM C67/C67M.
 - c. Masonry Units: Compressive strength test data.
 - d. Concrete Masonry: Data indicating aggregates comply with ASTM C33/C33M (normal weight), ASTM C331/C331M (lightweight), and ASTM C618 (fly ash).
 2. Mortar and Grout Mixes: Provide description and proportion of materials for each type of mortar and grout.
 3. Provide material certificates for each type of metal accessory, including reinforcing bars, joint reinforcement, veneer ties and anchors, and other indicated accessories, indicating compliance with requirements.
- E. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

- A. Comply with provisions of ACI 530.1/ASCE 6/TMS 402/602, except where exceeded by requirements of Contract Documents.
- B. Fire Rated Assemblies: Provide products that comply with fire-resistance ratings indicated as determined by testing according to ASTM E119, by equivalent testing thickness, or by means acceptable to authorities having jurisdiction.
- C. Masonry Subcontractor Qualifications: The work of this section shall be bid and performed by a firm certified as a "North Carolina Masonry Contractors Association Certified Masonry Contractor" as described in the most current version of the NCMCA's "Guide to Masonry Contractor Certification." (North Carolina Masonry Contractors Association, PO Box 3463, Hickory, NC 28603-3463, 828-324-1564, information@ncmca.com).
1. The masonry subcontractor shall at all times when work is in progress, provide an individual from its own staff designated by the North Carolina Masonry Contractors Association Masonry Contractor Certification Program as a "CMP-Certified Masonry Professional" or "CME-Certified Masonry Executive" (as described in the most current version of the NCMCA's "Guide to Masonry Contractor Certification") on-site to supervise work in progress.
- D. Source Limitations for Masonry: Provide each type of masonry unit from a single manufacturer's plant, sourced through a single supplier. Each type of masonry unit shall maintain consistency of color and texture for all product required on the entire project. The approved mockup/sample panel shall be used to determine acceptable color and texture range.
1. Source Limitations for Decorative Concrete Masonry: Provide decorative concrete veneers from a manufacturer with a quality control agreement with water repellant manufacturer, certifying that units have been manufactured with integral water repellant to conform to performance requirements indicated. Provide current certificate from water repellant manufacturer confirming conformance.
- E. Source Limitations for Mortar: Provide each mortar mix from a single manufacturer, sourced through a single supplier. Each required mortar mix shall maintain consistency of each component, including cementitious materials and aggregate, to provide consistent color and texture for all product required on the entire project. The approved mockup/sample panel shall be used to determine acceptable color and texture range.
- F. Aggregate for Concrete Masonry Units: If bottom ash is used as aggregate in the CMU, the Source for the bottom ash shall be a power station that has a minimum of ten (10) years

continuous experience as a supplier of quality material as verified by independent certified laboratory testing and no defects in the marketplace.

- G. Pre-Construction Testing: Owner shall engage an independent testing agency to perform field quality control tests, in accordance with Section 014000 - Quality Requirements.
 - 1. Clay Masonry Unit Tests: Testing agency shall test each variety of clay masonry in accordance with ASTM C67/C67M compressive strength requirements.
 - 2. Concrete Masonry Unit Tests: Testing agency shall test each variety of concrete unit masonry in accordance with ASTM C140/C140M compressive strength requirements.

1.05 MOCK-UPS

- A. See Section 014000 - Quality Requirements for additional requirements.
- B. Integrated Exterior Mockups: Attend preinstallation conference and provide masonry work for integrated exterior mockup as indicated on Drawings and as specified in Division 1 Section "Quality Requirements."

1.06 FIELD CONDITIONS

- A. Wall Cavity Protection: Provide temporary waterproof sheet coverings over masonry walls at top of walls, sills, parapets, and other horizontal projections. Install coverings at end of each workday, when rain or precipitation is expected, and after masonry work is completed.
 - 1. Extend coverings down vertically at least 24 inches on each side of masonry wall. At multi-wythe walls where one wythe is more than 24 inches taller than other wythe(s), extend covering as required to fully cover all wythes and cavities.
 - a. At roof parapets, extend covering on rear side of parapet full height down to roof deck/membrane, until vertical protection/roof membrane is installed.
 - 2. Secure all coverings in place with tape or adhesive that does not leave residue, or other securement method that does not penetrate or damage permanent construction.
 - 3. Provide protective coverings at sills and horizontal projections that can also serve as protection from mortar droppings.
 - 4. Provide protective coverings over tops of foundation walls containing insulation to protect from exposure to sun and from construction traffic damage.
 - 5. Do not remove or allow removal of temporary covers until permanent top of wall protection elements (coping, sill, roof surface, waterproof membrane, etc) are underway.
- B. Cold- and Hot-Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
 - 2. Special Shapes: Provide nonstandard blocks configured for corners, lintels, headers, other detailed conditions, and as indicated below.
 - a. Provide bullnose units for outside corners.

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- b. Provide solid block with bullnosed top edges at free-standing CMU walls and where top of block is exposed at window sills and similar applications.
- 3. Concrete Masonry Units: ASTM C90, lightweight.
 - a. Exposed Faces: Manufacturer's standard color and texture.
 - b. Aggregates:
 - 1) Lightweight Aggregates: Lightweight aggregate shall strictly comply with ASTM C331/C331M, ASTM C151, and ASTM C641. Drying shrinkage of aggregate shall not exceed 0.10% at 100 days.
 - 2) Waste concrete, scoria, and aglite shall not be permitted.
- 4. Decorative Concrete Block: ASTM C90, normal weight.
 - a. Pattern: Manufacturer's standard ground-face pattern and split-face pattern, in locations as indicated on drawings.
 - b. Size: Match standard nominal dimensions per "Concrete Block" paragraph above.
 - c. Color: To be selected by Architect from manufacturer's full range.
 - d. Provide integral water repellent and companion mortar additive at all exterior decorative CMU.
 - e. Topcoat: Where recommended by manufacturer of ground-face units, provide clear acrylic top-coat, minimum 20 percent solids content.
- 5. Units with Integral Water Repellent: Concrete block units as specified in this section with polymeric liquid admixture added to concrete masonry units at the time of manufacture.
 - a. Performance of Units with Integral Water Repellent:
 - 1) Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours.
 - (a) No water visible on back of wall above flashing at the end of 24 hours.
 - (b) No flow of water from flashing equal to or greater than 0.032 gallons per hour at the end of 24 hours.
 - (c) No more than 25 percent of wall area above flashing visibly damp at end of test.
 - 2) Flexural Bond Strength: ASTM C1072; minimum 10 percent increase.
 - 3) Compressive Strength: ASTM C1314; maximum 5 percent decrease.
 - b. Use only in combination with mortar that also has integral water repellent admixture.
 - 1) Provide manufacturer's companion product for field-applied spray treatment. Provide all three (integral repellent, mortar additive, field-applied) for all exterior decorative CMU. Refer to Division 7 Section "Water Repellants" for secondary field-applied treatment.
 - c. Use water repellent admixtures for masonry units and mortar by a single manufacturer.
 - d. Available Products:
 - 1) ACM Chemistries; RainBloc.
 - 2) BASF Aktiengesellschaft; Rheopel Plus.
 - 3) Grace Construction Products (W.R. Grace & Co.); Dry-Block.
- B. Concrete Brick:
 - 1. Actual Size: 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long.
 - 2. Concrete Building Brick: ASTM C55; lightweight, solid, for interior or concealed use.

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2.02 BRICK UNITS (*AD 01)

- A. Unit Cost Allowance: Face brick shall be furnished via unit cost allowance. Unit cost shall cover purchase of brick and transport to the project site.
1. Utility Brick Unit Cost: One Thousand One Hundred Dollars (\$1,100) per thousand. (*AD 01)
 2. Modular Brick Unit Cost: Five Hundred Dollars (\$500) per thousand (*AD 01)
 3. Bidders and material suppliers are responsible for determining cost to produce special shape units, such as "lipped" brick units. The unit cost shall not cover installation, overhead or profit.
 4. The Contract Sum will be adjusted to reflect the actual cost of selected brick in accordance with the General Conditions. The Contractor shall submit receipts and initiate Change Order process.
 5. The Contractor is reminded that unit cost includes all required taxes, less applicable trade discounts, in accordance with the General Conditions.
- B. Facing Brick: ASTM C216, Type FBS or FBX, Grade SW.
1. Color and Texture: Provide one of the following:
 - a. Face Brick 1: Red blend; selected from manufacturer's full range of textures. Face brick color 1 shall be required in both utility and modular size..
 - b. Face Brick 2: Accent color; selected from manufacturer's full range, texture matching face brick 1. Face brick color 2 shall be required in modular size only (soldier course).
 2. Actual Size: 3-5/8 inches wide by 2-1/4 inches high by 7-5/8 inches long (modular). Provide modular size brick for all soldier course.
 3. Actual Size: 3-5/8 inches wide by 3-5/8 inches high by 11-5/8 inches long (utility). Provide utility size brick for all face brick.
 4. Special Shapes: Molded units (plant-fabricated) as required by conditions indicated, unless standard units can be sawn to produce equivalent effect. Cut or sawn edges shall not be exposed in the finished work.
 5. Efflorescence: Provide brick that has been tested per ASTM C67/C67M and received a rating of "not effloresced."
- C. Building (Common) Brick: ASTM C62, Grade SW, except MW may be used in locations indicated acceptable in reference standard; solid units.
1. Actual size: Match face brick.
 2. Compressive strength: As indicated on drawings, measured in accordance with ASTM C67/C67M.
 3. Locations: May be used in concealed locations in lieu of face brick.

2.03 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91/C91M.
1. Colored Mortar: Premixed cement as required to match Architect's color sample.
 2. Available Products:
 - a. Argos USA; Magnolia Masonry Cement.
 - b. Holcim (US) Inc.; Rainbow Mortamix Custom Color Masonry Cement.
 - c. Lehigh Hanson; flamingo Colored Cement.
 - d. Roanoke Cement; a division of Titan America; Colored Masonry Cement.
 - e. York Building Products, a Stewart Company; Workrite Colored Masonry Cement.

- B. Surface Bonding Mortar (Parge Coat): ASTM C887.
- C. Mortar Aggregate: ASTM C144.
- D. Grout Aggregate: ASTM C404.
- E. Water: Clean and potable.
- F. Accelerating Admixture: ASTM C494/C494M, Type C; nonchloride, noncorrosive type for use in cold weather; approved by manufacturer for use in masonry mortar.
- G. Integral Water Repellent Admixture for Mortar: Polymeric liquid admixture added to mortar at the time of manufacture.
 - 1. Use only in combination with masonry units manufactured with integral water repellent admixture.
 - 2. Use only water repellent admixture for mortar from the same manufacturer as water repellent admixture in masonry units.
 - 3. Meet or exceed performance specified for water repellent admixture used in masonry units.

2.04 DAMPPROOFING

- A. General: Dampproofing may be provided as a Contractor option to parge coat, applied to exterior face of below grade CMU back up wall (prior to insulation or grouting).
- B. Bituminous Dampproofing: Cold-applied water-based emulsion; asphalt with mineral colloid or chemical emulsifying agent; with or without fiber reinforcement; asbestos-free; suitable for application on vertical and horizontal surfaces.
 - 1. Emulsified Asphalt Coating (Brush or Spray Applied): ASTM D1227/D1227M, Type II, Class 1 - Mineral colloid emulsifying agents with non-asbestos fibers or Type III, Class 1 - Mineral colloid emulsifying agents without fibrous reinforcement.
 - 2. Accessory Materials: Provide asphaltic primer, glass fiber reinforcement, and compatible patching compounds as required and as recommended by manufacturer.
 - 3. Manufacturers:
 - a. Henry Company.
 - b. Karnak Corporation.
 - c. Mar-Flex Systems, Inc.
 - d. W. R. Meadows, Inc.
 - e. Substitutions: See Section 016000 - Product Requirements.

2.05 REINFORCEMENT AND ANCHORAGE

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; uncoated.
- B. Joint Reinforcement, Anchorage, and Ties, General: Comply with NCMA TEK 12-02B, NCMA TEK 12-01B, and requirements below.
 - 1. Use ladder type joint reinforcement, unless otherwise indicated. Truss type reinforcement may be used only when approved by Architect, at walls indicated not to have vertical reinforcing steel and not to be grouted.
 - 2. Provide prefabricated joint reinforcement sections for corners and for T-intersections.
 - 3. Provide joint reinforcement in minimum 10 foot lengths.
 - 4. At multi-wythe/cavity wall applications, size all anchors, ties, and reinforcement for depths of cavities indicated, including indicated insulation thickness as applicable. Ties shall maintain full adjustability at veneer wythe without affecting insulation.

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5. At cavities with air space wider than 4-1/2 inches, provide high strength ties engineered for cavity depths indicated.
- C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
 1. Material: Mill-galvanized steel for interior walls, hot-dip galvanized steel for exterior walls.
 2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
- D. Multiple Wythe Joint Reinforcement: ASTM A951/A951M. Provide at composite walls and subgrade walls where all wythes are of the same material.
 1. Material: Mill-galvanized steel for interior walls, hot-dip galvanized steel for exterior walls.
 2. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
 - a. Provide two side rods for each wythe that is nominal 6-inch depth or greater, and one side rod for each wythe that is nominal 4-inch depth.
- E. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M. Provide at cavity walls/masonry veneer walls.
 1. Type: Ladder, with adjustable ties or tabs spaced at 16 in on center.
 2. Material: Hot-dip galvanized steel.
 3. Size: 0.1483 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inch wire, width of components as required to extend at least halfway through veneer wythe, but provide not less than 5/8 inch of mortar coverage from each masonry face.
 4. Vertical adjustment: Not more than 1 1/4 inches.
- F. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.
- G. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
 1. For Anchorage to Structural Steel Framing: Crimped wire anchors for welding to frame, 0.25 inch thick, with triangular/trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- H. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B. Provide at masonry veneer walls with metal framing backup. At cavity walls with CMU backup and masonry veneer, masonry veneer anchors may be used in conjunction with standard horizontal joint reinforcing, at Contractor's option, in lieu of adjustable multiple wythe joint reinforcement.
 1. Anchor Plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
 2. Wire Ties: Manufacturer's standard shape, 0.1875 inch thick.
 - a. Size wire ties to extend at least halfway through veneer wythe, but provide not less than 5/8 inch of mortar coverage from masonry face.
 3. Vertical Adjustment: Not less than 3-1/2 inches.
- I. Metal-to-Metal Fasteners (for Steel Studs): Self-drilling, self-tapping #10 hex screws; fabricated of either 304 stainless steel or of steel with corrosion resistant polymer coating tested to ASTM B117. Fasteners shall include integral neoprene or EPDM washer.
 1. Manufacturers:
 - a. ELCO Construction Products; Dril-Flex with Stalgard Finish.

- b. Heckmann Building Products; #668 TEK Self-Drilling Steel Stud Screw.
- c. ITW Commercial Construction North America; Teks Maxiseal with Climaseal Finish, or Scots Long Life Tekes (stainless steel).

2.06 FLASHINGS

- A. Combination Non-Asphaltic Flashing Materials - Stainless Steel:
 - 1. Stainless Steel/Polymer Fabric Flashing: ASTM A240/A240M; 2 mil type 304 stainless steel sheet bonded on one side to one sheet of polymer fabric.
 - a. Manufacturers:
 - 1) Hohmann & Barnard, Inc; Mighty-Flash Stainless Flashing.
 - 2) Prosoco; R-Guard SS ThruWall.
 - 3) STS Coatings; Wall Guardian Stainless Steel TWF.
 - 4) York Manufacturing, Inc; Multi-Flash SS.
- B. Factory-Fabricated Flashing Corners and End Dams: Stainless steel.
- C. Termination Bars: One-inch wide, fabricated of 0.125-inch PVC, 0.090-inch extruded aluminum, or 0.075-inch stainless steel; compatible with membrane and adhesives.
- D. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.
- E. Flashing Sealant/Adhesive/Liquid Seam Tape: Polyether-based, 100% solids, moisture-curing elastomeric products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates; and that are compatible with asphalt-free flashing materials and air barrier materials. Traditional mastic is not acceptable.
 - 1. Available Products:
 - a. Master Builders Solutions; MasterSeal NP150.
 - b. STS Coatings; GreatSeal LT-100 Liquid Tape.
 - c. York; UniverSeal US-100 Liquid Tape.

2.07 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
 - 1. Provide nominal 2.5-inch "standard" and "tee" configurations to suit application unless indicated otherwise.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
 - 1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations. Provide in depth matching cavity depth without gap at front or back of mesh. Fabricate approximately 10 inches high with minimum 6 inch high dovetail shape projections.
 - a. Available Products:
 - 1) Advanced Building Products, Inc; Mortar Break DT.
 - 2) Heckmann Building Products; WallDefender.
 - 3) Hohmann & Barnard, Inc.; Mortar Trap.
 - 4) Mortar Net Solutions; MortarNet.
 - 5) Wire-Bond; Cavity Net DT (3611D).

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- b. At cavities with depth greater than 2 inches, provide companion drainage product by one of the manufacturers above; nominal 1/2-inch thickness by 20 inches wide, to be field inserted into cavity in a "U" configuration. Basis-of-Design is "Mortar Catch 352" by Advanced Building Products, Inc.
- D. Bond Break: ASTM D226/D226M, Type I ("No.15") asphalt felt or polyethylene tape.
- E. Weeps/Cavity Vents:
 - 1. Cellular Type: Extruded propylene with honeycomb design.
 - a. Color(s): To be selected by Architect from manufacturer's full range.
 - b. Available Products:
 - 1) Advanced Building Products, Inc.; Mortar Break weep mesh.
 - 2) Blok-Lok Limited; Cell-Vent.
 - 3) CavClear/Archovations, Inc.; CavClear Weep Vent.
 - 4) Heckmann Building Products Inc.; No. 85 Cell Vent.
 - 5) Hohmann & Barnard, Inc.; Quadro-Vent.
 - 6) Mortar Net Solutions; WeepVent.
 - 7) Wire-Bond; Cell Vent.
 - 2. Bed Joint Weep System: Corrugated plastic drainage system incorporating continuous drainage strip within cavity portion of wall with integral weephole extensions at 9-1/2 inches on center located above flashing in the bed joint of the veneer masonry. Provide at masonry units over 32 inches long, and as indicated.
 - a. Available Products:
 - 1) Heckmann Building Products; Core/Cavity Vent Weep System #367.
 - 2) Masonry Technology Incorporated (MTI); Cavity Weep CV 5010.
- F. Reinforcing Positioners: Provide wire positioners in bed joints to keep steel reinforcing bars centered in cells, fabricated of 0.1483-inch hot-dip galvanized steel wire.
 - 1. Available Products:
 - a. Heckmann Building Products, Inc.; No. 376 Rebar Positioner.
 - b. Hohmann & Barnard, Inc.; #RB or #RB-Twin Rebar Positioner.
 - c. Wire-Bond; O-Ring or Double O-Ring Rebar Positioner.
- G. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.08 LINTELS

- A. Masonry Lintels: Fabricated of bond beam CMUs, with texture matching adjacent standard CMU. Provide reinforcing bars and grout in accordance with structural requirements. Provide temporary supports until cured.
- B. Precast Concrete Lintels: Comply with structural requirements for concrete strength and reinforcing. Precast U-lintels fabricated in accordance with performance standards of PCI MNL-116 with 3500 psi concrete for standard lintels and 6000 psi concrete for prestressed lintels as manufactured by Cast-Crete are acceptable in lieu of rectangular section lintels.
- C. Steel Lintels: Refer to Section 055000 - Metal Fabrications.

2.09 MORTAR AND GROUT MIXING

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 - 1. Masonry below grade and in contact with earth: Type S.
 - 2. Reinforced masonry: Type S.

- 3. Mortar parge coats: Type S.
- 4. Exterior, loadbearing and non-loadbearing, and interior, loadbearing and non-loadbearing: Type N, except as indicated above.
 - a. Interior, non-loadbearing masonry may use Type O at Contractor's option.
- B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
 - 1. Use colored mortar for all veneer masonry. Separate colors shall be required for each type and color of veneer.
- C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.
- D. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.
- E. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. For installation in cold or hot weather, comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
 - 1. CMU Coursing: One unit and one mortar joint equal 8 inches.
 - 2. Brick Coursing: Either two or three units with accompanying mortar joints shall equal 8 inches, based on basis-of-design brick size(s) indicated above.
- C. Provide running bond for all masonry units unless otherwise indicated.
- D. Tool all mortar joints slightly concave where they will be exposed, unless otherwise indicated.
 - 1. Provide flush joints where they will be concealed by surface-applied treatments or finishes other than paint; including but not limited to tile, wall coverings, fluid-applied or SPF air barriers, or membranes.

3.05 PLACING AND BONDING

- A. Remove broken, cracked, chipped, or otherwise damaged masonry units from pallets and set aside. Do not use unless they may be field cut to remove damaged section, for installation where special shape is required to fit construction.
- B. Create a consistent blend for each type of veneer masonry by mixing units from a minimum of three pallets.
- C. Provide asphalt felt or polyethylene tape bond-breaker between clay masonry and concrete or other masonry types. Rake back joints for sealant.
- D. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- E. Lay hollow masonry units with face shell bedding on head and bed joints.
- F. Remove excess mortar and mortar smears as work progresses.
- G. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.
- H. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- I. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
 - 1. Do not cut masonry unless it is required for certain shapes, such as rowlock sills, or unless it is unavoidable due to fitting around other construction, such as wall penetrations.
 - 2. Cut masonry edges shall not be visible in the final work. Where special shapes are required that would expose cut edges, they shall be plant-fabricated.

3.06 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.07 CAVITY MORTAR CONTROL

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.
- C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

3.08 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHER MASONRY, AND CAVITY WALL MASONRY

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. At parapets and below-grade/foundations, provide joint reinforcement at 8 inches o.c. vertically.
- E. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- F. Lap joint reinforcement ends minimum 6 inches.

- G. Do not extend reinforcement across control, expansion, and other building movement joints.
- H. Reinforce corners and intersections with prefabricated T- or L-shaped reinforcing.
- I. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.
- J. Embed ties and anchors in mortar joint and extend at least halfway through masonry veneer unit; with at least 5/8 inch mortar cover to the outside face of the anchor.

3.09 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

- A. Masonry and/or Metal Framing Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.10 REINFORCEMENT AND ANCHORAGES - COMPOSITE UNIT MASONRY

- A. Install continuous horizontal joint reinforcement at 16 inches o.c. vertically, except at below grade foundation walls install at 8 inches o.c. vertically.
- B. Where concrete foundations are indicated, tie below-grade masonry to concrete with rigid anchors spaced at maximum 8 inches o.c. vertically.
- C. Coordinate with parging/dampproofing and with installation of insulation, where indicated.

3.11 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
 - 1. Remove or cover protrusions or sharp edges that could puncture flashings.
 - 2. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Terminate flashing up 16 inches minimum on vertical surface of backing:
 - 1. Anchor vertical leg of flashing into backing with a termination bar and sealant.
- C. Extend metal flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
 - 1. Notch and hem exterior corners of drip edges to eliminate sharp, exposed cut metal edges at locations below 6' - 0" above grade.
- D. Support flexible flashings across gaps and openings.
- E. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.12 LINTELS

- A. Comply with requirements on Structural Drawings for type of lintel at each opening, additional lintel sizing, reinforcement, and installation requirements.
- B. Install loose steel or precast lintels over openings, where indicated.
- C. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.
 - 1. Allow masonry lintels to attain specified strength before removing temporary supports.
- D. Maintain minimum 8 inch bearing on each side of opening, unless otherwise indicated.

3.13 GROUTED COMPONENTS

- A. Comply with requirements on Structural Drawings for locations of structural grouted components and accessories, including but not limited to, grouted bond beams, reinforced unit masonry walls, (including locations and sizing of vertical steel bar reinforcing), grouted solid CMU, and composite wall collar joints.
- B. Lap splices minimum 24 bar diameters.
- C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- D. Place and consolidate grout fill without displacing reinforcing.

3.14 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Provide control and expansion joints at locations indicated on Drawings, and as follows:
 - 1. At changes in wall height.
 - 2. At changes in wall thickness
 - 3. At change in support (eg: transition from foundation support to floor slab support).
 - 4. Adjacent to corners of walls within a distance equal to no more than half the maximum control joint spacing.
 - 5. Wall intersections.
 - 6. Do not place control joints closer than 16 inches to edge of wall openings (doors, windows, louvers, ducts).
 - 7. Distance between joints shall not exceed a length to height ratio of 1.5:1.
 - 8. Distance between joints shall not exceed 25 feet where no openings occur between joints.
 - 9. Distance between joints shall not exceed 20 feet where openings occur between joints.

3.15 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames, anchor bolts, and plates and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Mix mortar (or grout) to a 4-inch maximum slump consistency and hand trowel into place in accordance with Steel Door Institute (SDI-100).
 - 2. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.16 TOLERANCES

- A. Install masonry within the site tolerances found in TMS 402/602.
- B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

- F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.17 CUTTING AND FITTING

- A. Cut and fit for chases, pipes, conduit, and other penetrations. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.18 PARGING

- A. Dampen masonry walls prior to parging.
- B. Parge cavity side of CMU below grade back-up wythe with a single coat of surface-bonding mortar to a total thickness of 1/4 inch.
 - 1. In lieu of parging, Contractor may at its option apply bituminous dampproofing, at a minimum rate of 1.25 gal per 100 sq. ft. Apply primer if required by manufacturer and comply with manufacturer's installation requirements.
- C. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.
- D. Strike top edge of parging at 45 degrees.

3.19 FIELD QUALITY CONTROL

- A. Field Inspection: The Owner shall engage an independent inspection agency to perform field quality control inspections and prepare field reports.
 - 1. The Contractor shall permit full access to inspectors in order to perform inspections, including use of temporary facilities and equipment such as scaffolding or lifts.
 - 2. Do not enclose cavities or spaces to be grouted solid until inspections have approved grout and reinforcement for material properties, size, and installation locations.
- B. Field Testing: The Owner shall engage an independent testing agency to perform field quality control tests, as specified in Section 014000 - Quality Requirements. For each type of masonry unit, 5 randomly chosen units shall be sampled for each 5,000 square feet of wall.
 - 1. Clay Masonry Unit Tests: Testing agency shall test each variety of clay masonry in accordance with ASTM C67/C67M requirements.
 - 2. Concrete Masonry Unit Tests: Testing agency shall test each variety of concrete unit masonry, of each load-bearing size indicated, in accordance with ASTM C140/C140M requirements.
 - 3. Mortar Tests: Testing agency shall test each type of mortar in accordance with ASTM C780. Mortar shall be tested on each of the first 3 days. Alert testing agency if mortar mix is altered during construction to allow for retesting.
 - 4. Grout Test: Testing agency shall test each type of grout in accordance with ASTM C1019. Grout shall be tested on each of the first 3 days. Alert testing agency if grout mix is altered during construction to allow for retesting.

3.20 REPAIR AND CLEANING

- A. Remove masonry units that have become damaged or stained, or that do not display acceptable blend of color and texture matching mockup/sample panel. Remove as whole units, do not cut. Replace with new units with fresh mortar joints.
- B. Remove excess mortar and mortar droppings.

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- C. Replace defective mortar and repoint. Enlarge holes or voids at defective mortar, and remove enough adjacent mortar to allow for repointing. Install fresh mortar joint and match to adjacent work.
- D. Where expansion/control joints and sealant joints are indicated, clean joints and leave them clear and ready for installation of joint or sealant materials.
- E. Clean concrete masonry in accordance with NCMA TEK 08-04A and clean clay masonry in accordance with BIA Technical Notes No. 20. Use hand cleaning/bucket-and-brush methods.
- F. To prevent freezing of cleaners and rinse water, do not clean when masonry surface temperature will drop below 40 degrees F.
- G. Test cleaning methods and materials on one half of mockup/sample panel; leave the other half uncleaned. Obtain approval of Architect before cleaning the finished work.
- H. Protect adjacent non-masonry surfaces from cleaning materials and processes with temporary sheeting or masking.
- I. Provide "in-progress" cleaning; clean masonry in each area as soon as possible after mortar has fully cured (approximately 7 to 28 days; coordinate with manufacturer's recommendations for each mortar type specified). Field test a small area to ensure mortar curing is complete prior to large-scale cleaning.
- J. Pre-wet masonry surfaces and clean with specified cleaning solution. Rinse surfaces immediately after cleaning; do not allow cleaning solution to dry or set into the masonry.
- K. Use non-metallic tools in cleaning operations.
- L. Final Cleaning: As part of Project Closeout (prior to Substantial Completion), provide Final Cleaning of masonry veneer. Remove construction dust with a very low pressure rinse. Perform a visual inspection and spot clean to remove efflorescence, staining, or organic growth, in accordance with recommendations of BIA and NCMA technical notes.

3.21 PROTECTION

- A. Provide temporary protective waterproof sheet coverings over tops of walls, parapets, sills, and other horizontal projections as the work progresses, in accordance with FIELD CONDITIONS article in Part 1 above.
- B. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.
- C. Provide protective vertical boards and horizontal sheeting at grade level base of walls to prevent staining or splashing from rain, mud, or mortar droppings.

3.22 MASONRY WASTE

- A. Fill Material: Clean masonry waste may be used as fill material. Break up masonry waste into small pieces no greater than 4 inches any direction. Mix with Division 31 engineered fill material so that masonry waste is no more than 33% of the fill (1 part masonry waste, 2 parts engineered fill). Fill containing masonry waste shall be at least 18 inches below grade level.
 - 1. Excess waste shall be removed and disposed of or recycled in accordance with Division 1 waste disposal requirements.

END OF SECTION 042000

**SECTION 105626
MOBILE STORAGE SHELVING**

PART 1 GENERAL

1.01 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.
- B. ISO 9001 - Quality Management Systems — Requirements 2015.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's data sheets on each product to be used, including:
 - 1. System components.
 - 2. Accessories.
 - 3. Substrate preparation instructions and recommendations.
 - 4. Storage and handling requirements and recommendations.
- B. Shop Drawings: Indicate location, type, and layout of mobile storage shelving system, including lengths, heights, and aisle layout, and relationship to adjacent construction.
 - 1. Indicate location and configuration of rails.
 - 2. Indicate method of installation and configuration for shelving mounted on carriages.
 - 3. Provide location and details of anchorage devices to be embedded in or fastened to the structure.
- C. Selection Samples: For each finish product specified, provide color chips representing manufacturer's full range of available colors and finishes.
- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.
- F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, ISO 9001 certified for quality control standards for design, production, and installation of complete high density storage system assemblies.
- B. Installer Qualifications: Company specializing in performing the work of this section; certified or authorized by manufacturer for installation of specified products.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Inspect for dents, scratches, or other damage. Replace damaged components.
- B. Store in manufacturer's unopened packaging until ready for installation.
- C. Store under cover and elevated above grade, in an enclosed, weatherproof location.

1.05 FIELD CONDITIONS

- A. Field Measurements: Verify field measurements for locations of mobile storage shelving before preparation of shop drawings and before fabrication to ensure proper dimensions, clearances, and installation.

1.06 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty covering defects of manufacturing and workmanship and rust and corrosion.

PART 2 PRODUCTS

2.01 MOBILE STORAGE SHELVING SYSTEMS - GENERAL

- A. System Description: High-density movable shelving system consisting of shelving units mounted on rail-guided wheeled carriages.
 - 1. Carriage Operation: Mechanically assisted.
 - 2. Carriage Capacity: 1000 pounds per lineal foot.
 - 3. Rail Mounting: Surface mounted directly on floor without grout, plywood, or shims.
 - 4. System Layout: Refer to Drawings, and to Shelving Size Schedule below. Size carriages and system to manufacturer's standards to accommodate shelving units required.
 - 5. Overall System Height: Nominal 84 inches.
- B. Accessibility Requirements: Comply with ADA Standards.
- C. Components:
 - 1. Carriages: Rectangular steel frames of type and size required for selected system.
 - a. Provide fixed end carriage at each wall and the remainder movable carriages at each system. Fixed end carriage shall be anchored to rails. Exposed back panel of fixed carriage shall match construction and finish of other exposed panels.
 - b. Carriage frames shall be steel and shall be welded or bolted. Galvanized components and riveted construction are unacceptable.
 - c. Finish: Powder coat paint; color to match shelving.
 - 2. Wheels: Cold rolled steel; dual flanged.
 - 3. Rails: Cold rolled steel; type and size to carry loads imposed by system.
 - 4. Anti-Tip Device: Provide manufacturer's standard rail device to prevent tipping of system.
 - 5. Shelving Units in Property Storage: Provide manufacturer's standard four-post steel shelving that integrally interlocks into carriage. Provide shelving with 2 levels (bottom shelf and 1 intermediate shelf) and accessories for hanging bag storage.
 - a. Shelving Size Schedule:
 - 1) Shelving at Fixed Carriage:
 - (a) 48 inch wide by 24 inch deep (single-sided) shelving.
 - 2) Shelving at Movable Carriages:
 - (a) 48 inch wide by 24 inch deep (two-sided) shelving.
 - 6. Shelving Units in Records/Office: Provide manufacturer's standard four-post steel shelving that integrally interlocks into carriage. Provide 4 file drawers and 2 intermediate shelves with dividers every 6 inches.
 - a. Shelving Size Schedule:
 - 1) Shelving at Fixed Carriage:
 - (a) 42 inch wide by 15 inch deep (single-sided) shelving.
 - (b) 36 inch wide by 15 inch deep (single-sided) shelving.
 - 2) Shelving at Movable Carriages:
 - (a) 42 inch wide by 15 inch deep (single-sided) shelving.

- (b) 36 inch wide by 15 inch deep (single-sided) shelving.
- 7. Floor Panels: Underlayment grade plywood, 3/4 inch thick.
- 8. Ramps: Steel; 4.76 degrees maximum slope (do not exceed 1:12 for accessibility compliance).
 - a. Do not exceed 1/8 inch vertical lip where ramps transition to adjacent finish floor.
- 9. Floor Covering: Coordinate with flooring installer to provide vinyl tile. Coordinate to ensure flooring installation does not affect operation of system.
- 10. Face Panels: High pressure laminate; full height and width of shelving.
 - a. Color: To be selected from shelving manufacturer's full range of available options
- D. Accessories:
 - 1. Anchors and Leveling Screws: Types and sizes recommended by manufacturer for specified rail mounting and floor system.
 - 2. Bumpers: Manufacturer's standard rubber stops.
 - 3. Label Holders: Manufacturer's standard type, attached to face panel at end of each shelving unit.

2.02 MECHANICALLY ASSISTED MOBILE STORAGE SHELVING SYSTEMS (*AD 01)

- A. Basis of Design: Spacesaver; Mechanical Assist High Density Mobile Storage System.
- B. Other Acceptable Manufacturers:
 - 1. Borroughs Corporation; Aisle-Saver; Synergy Series.
 - 2. Montel; Mobilex Mechanical Assist Storage.
 - 3. Space File International, Inc.; SDS Mechanical Assist. (*AD 01)
 - 4. Substitutions: See Section 016000 - Product Requirements.
- C. Drive System: Provide uniform movement of the carriage without drifting or jerking.
 - 1. Chain and sprocket system with full length torque resistant steel shaft.
 - 2. Provide two wheels per rail for each carriage, direct-driven on one side.
- D. Control: Three-spoke operating handle with manual locking latch.
 - 1. Minimum Gear Ratio: 1 lbf to move a load of 6000 lbs.
- E. Safety System: Mechanical safety brake at toe level the full length of the carriage. Light pressure of 1.5 lbf on aluminum bar activates safety mechanism to stop carriage movement.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated on shop drawings.
- B. Verify that substrate is in proper condition to install rails and flooring system per manufacturer's requirements.
 - 1. Do not begin installation until concrete floor slabs are fully cured and prepared, finishes in the space are complete, and the space is conditioned at occupancy levels.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. General: Install system components and accessories in accordance with manufacturer's printed instructions.

- B. Position system components level and plumb within manufacturer's specified tolerances.
- C. Anchor rails directly to concrete subfloor.
- D. Extend rails under stationary shelving units.
- E. Position carriages ensuring wheels align properly on rails. Fasten multiple carriages together forming a single movable base.
- F. Install shelving with shelf surfaces level and vertical supports plumb; fasten to carriage supports with vibration-proof fasteners.

3.03 ADJUSTING

- A. Adjust mobile storage shelving components and accessories to provide for smooth operation of system.

3.04 CLEANING

- A. Clean shelving and surrounding area after installation.

3.05 CLOSEOUT ACTIVITIES

- A. Demonstration: Demonstrate proper operation of system to Owner, and correct deficiencies or make adjustments as directed.
- B. Training: Train Owner's personnel on operation, adjustment, and maintenance of system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Location: At project site.

3.06 PROTECTION

- A. Protect installed system from subsequent construction operations.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 105626

**SECTION 122400
WINDOW SHADES**

PART 1 GENERAL

1.01 REFERENCE STANDARDS

- A. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015, with Editorial Revision (2021).
- B. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films 2023, with Errata.

1.02 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week prior to commencing work related to products of this section; require attendance of affected installers.
- B. Sequencing:
 - 1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
 - 2. Do not install shades until final surface finishes and painting are complete.

1.03 SUBMITTALS

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.
- B. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.
- C. Source Quality Control Submittals: Provide test reports indicating compliance with specified fabric properties.
- D. Selection Samples: Include fabric samples in full range of available colors and patterns.
- E. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.
- F. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Authorized installation representative of fabricator/manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.
- B. Handle and store shades in accordance with manufacturer's recommendations.

1.06 FIELD CONDITIONS

- A. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.07 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following minimum terms:
 - 1. Manual Operating Mechanism / Clutch: 10 years, minimum (excludes bead chain).
 - 2. Fabric: 10 years, minimum.
 - 3. Balance of Shade Hardware and Non-Operating Materials and Components: 25 years, minimum.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Interior Manually Operated Roller Shades:
 - 1. Draper, Inc; Clutch Operated FlexShade.
 - 2. Hunter Douglas Architectural; RB500 Manual Roller Shades.
 - 3. Lutron Electronics Co., Inc; Contract Roller Manual Roller Shades.
 - 4. MechoShade Systems LLC; Mecho/5 System.
 - 5. WT Shade; HeliaRise.
- B. ~~Interior Motorized Roller Shades, Motors and Motor Controls:~~ **(*AD01)**
 - 1. ~~Draper, Inc; Motorized FlexShade.~~
 - 2. ~~Hunter Douglas Architectural; RB500 Motorized Roller Shades.~~
 - 3. ~~Lutron Electronics Co., Inc; Contract Roller Motorized Roller Shades.~~
 - 4. ~~MechoShade Systems LLC; Electroshade.~~
 - 5. ~~WT Shade; MotoRise.~~
- C. Source Limitations: Provide products produced by a single manufacturer and obtained from a single supplier.

2.02 ROLLER SHADES

- A. General:
 - 1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
 - 2. Provide shade system that operates smoothly when shades are raised or lowered.
- B. Roller Shades:
 - 1. Description - Interior Roller Shades: Single roller, manually operated fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and accessories.
 - a. Drop Position: Regular roll.
 - b. Roll Direction: Roll down, closed position is at window sill.
 - c. Mounting: Window jamb mounted - inside, between jambs.
 - d. Size: As indicated on drawings for rough opening sizes; field verify rough openings prior to fabrication.
 - 2. Brackets and Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
 - 3. Roller Tubes: As required for type of shade operation.

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- a. Material: Extruded aluminum, clear anodized finish or electrogalvanized/epoxy primed steel, as standard with manufacturer.
 - b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
 - c. Fabric Attachment: Utilize manufacturer's standard method for attaching shade fabric material to rollers.
- 4. Hembars: Designed to maintain bottom of shade straight and flat.
 - a. Style: Full wrap fabric covered bottom bar, flat profile with heat sealed closed ends.
- 5. Manual Operation for Interior Shades:
 - a. Clutch Operator: Manufacturer's standard material and design, permanently lubricated.
 - b. Drive Chain: Continuous loop beaded ball chain, 95 pounds minimum breaking strength. Provide upper and lower limit stops.
- 6. Accessories:
 - a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to brackets without exposed fasteners; clear anodized finish.
 - b. End Caps: Provide manufacturer's standard end caps to cover exposed ends of brackets.
 - c. Fasteners: Noncorrosive, and as recommended by shade manufacturer.

2.03 SHADE FABRIC

- A. Fabric: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
 - 1. Manufacturers:
 - a. Lutron Electronics Co., Inc; Basketweave 27 - 3% .
 - b. Mermet Corporation; E-Screen - 3%.
 - c. Phifer, Inc; Style 2410 3%.
 - 2. Material: Vinyl coated fiberglass.
 - 3. Performance Requirements:
 - a. Flammability: Pass NFPA 701 large and small tests.
 - b. Fungal Resistance: No growth when tested according to ASTM G21.
 - 4. Color: To be selected by Architect from manufacturer's full range.
 - 5. Fabrication:
 - a. Fabric Orientation: Railroaded, fabric is turned 90 degrees off the roll.
 - b. If height of opening requires multiple panels of railroaded fabric, use manufacturer's standard sewn seams.

2.04 ROLLER SHADE FABRICATION

- A. Field measure finished openings prior to ordering or fabrication.
- B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.
 - 1. Vertical Dimensions: Fill openings from head to sill with 1/4 inch maximum space between bottom bar and window stool.
 - 2. Horizontal Dimensions - Inside Mounting: Fill openings from jamb to jamb, with maximum 1/4 inch gap at each edge of jamb.
- C. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine finished openings for deficiencies that may preclude satisfactory installation.
- B. Start of installation shall be considered acceptance of substrates.

3.02 PREPARATION

- A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- B. Coordinate with window installation and placement of concealed blocking to support shades.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.
- B. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

3.04 CLEANING

- A. Clean soiled shades and exposed components as recommended by manufacturer.
- B. Replace shades that cannot be cleaned to "like new" condition.

3.05 PROTECTION

- A. Protect installed products from subsequent construction operations.
- B. Touch-up, repair, or replace damaged products before Substantial Completion.

END OF SECTION 122400

SECTION 271100 - COMMUNICATIONS EQUIPMENT ROOM FITTINGS (*AD 01)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Telecommunications mounting elements.
2. Backboards.
3. Telecommunications equipment racks and cabinets.
4. Telecommunications service entrance pathways.
5. Grounding.

- B. Related Sections:

1. Division 26 Section "Underground Ducts and Raceways for Electrical Systems" for conduits that serve communication cabling.
2. Division 26 Section "Raceways and Boxes for Electrical Systems" for conduits that serve communication cabling.
3. Division 28 Section "Conductors and Cables for Electronic Safety and Security" for voice and data cabling associated with system panels and devices.

1.3 DEFINITIONS

- A. BICSI: Building Industry Consulting Service International.
- B. LAN: Local area network.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for equipment racks and cabinets. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings:
1. For each data room, security electronics room, telephone room or similar communications equipment room. provide plans detailing the layout of the room utilizing the dimensions of the actual equipment to be supplied. Provide elevations, sections, details, and

attachments to supplement the plans as required to ensure the installation is coordinated with the work of other trades.

2. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Equipment Racks and Cabinets: Include workspace requirements and access for cable connections.
4. Grounding: Indicate location of grounding bus bar and its mounting detail showing standoff insulators and wall mounting brackets.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Telecommunications Pathways and Spaces: Comply with TIA/EIA-569-A. Requirements of this standard include but are not limited to minimum 1/8" per foot slope for drainage of underground communication ductbank conduits; coordinate with Division 26 conduit installation.
- C. Grounding: Comply with ANSI-J-STD-607-A.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install equipment frames and cable trays until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and work above ceilings is complete.

1.7 COORDINATION

- A. Coordinate layout and installation of communications equipment with Owner's telecommunications and LAN equipment and service suppliers. Coordinate service entrance arrangement with local exchange carrier.
 1. Meet jointly with telecommunications and LAN equipment suppliers, local exchange carrier representatives, and Owner to exchange information and agree on details of equipment arrangements and installation interfaces.
 2. Record agreements reached in meetings and distribute them to other participants.
 3. Adjust arrangements and locations of distribution frames, cross-connects, and patch panels in equipment rooms to accommodate and optimize arrangement and space requirements of telephone switch and LAN equipment.
 4. Adjust arrangements and locations of equipment with distribution frames, cross-connects, and patch panels of cabling systems of other communications, electronic safety and security, and related systems that share space in the equipment room.
- B. Coordinate location of power raceways and receptacles with locations of communications equipment requiring electrical power to operate.

PART 2 - PRODUCTS

2.1 PATHWAYS

- A. General Requirements: Comply with TIA/EIA-569-A.
- B. Cable Support: NRTL labeled. Cable support brackets shall be designed to prevent degradation of cable performance and pinch points that could damage cable. Cable tie slots fasten cable ties to brackets.
 - 1. Comply with NFPA 70 and UL 2043 for fire-resistant and low-smoke-producing characteristics.
 - 2. Support brackets with cable tie slots for fastening cable ties to brackets.
 - 3. Lacing bars, spools, J-hooks, and D-rings.
 - 4. Straps and other devices.
- C. Cable Trays:
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cable Management Solutions, Inc.
 - b. Cablofil Inc.
 - c. Cooper B-Line, Inc.
 - d. Cope - Tyco/Allied Tube & Conduit.
 - e. GS Metals Corp.
 - 2. Cable Tray Materials: Basket type metal, suitable for indoors and protected against corrosion by electroplated zinc galvanizing, complying with ASTM B 633, Type 1, not less than 0.000472 inch (0.012 mm) thick or hot-dip galvanizing, complying with ASTM A 123/A 123M, Grade 0.55, not less than 0.002165 inch (0.055 mm) thick.
- D. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceway and Boxes for Electrical Systems." Flexible metal conduit shall not be used.
 - 1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.

2.2 BACKBOARDS

- A. Backboards: Plywood, fire-retardant treated, 3/4 by 48 by 96 inches (19 by 1220 by 2440 mm). Comply with requirements for plywood backing panels specified in Division 06 Section "Rough Carpentry."

2.3 EQUIPMENT FRAMES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. ADC.
 2. Aim Electronics; a brand of Emerson Electric Co.
 3. AMP; a Tyco International Ltd. company.
 4. Cooper B-Line, Inc.
 5. Hubbell Premise Wiring.
 6. KRONE Incorporated.
 7. Leviton Voice & Data Division.
 8. Middle Atlantic Products, Inc.
 9. Nordex/CDT; a subsidiary of Cable Design Technologies.
 10. Ortronics, Inc.
 11. Panduit Corp.
 12. Siemon Co. (The).
- B. General Frame Requirements:
1. Distribution Frames: Freestanding ~~four-post~~, [AD1] modular-steel units designed for telecommunications terminal support and coordinated with dimensions of units to be supported.
 2. Module Dimension: Width compatible with EIA 310 standard, 19-inch (480-mm) panel mounting.
 3. Finish: Manufacturer's standard, baked-polyester powder coat.
- C. Floor-Mounted Racks: Modular-type, aluminum construction.
1. Vertical and horizontal cable management channels, top and bottom cable troughs, grounding lug, and a power strip.
 2. Baked-polyester powder coat finish.
- D. Cable Management for Equipment Frames:
1. Metal, with integral wire retaining fingers.
 2. Baked-polyester powder coat finish.
 3. Vertical cable management panels shall have front and rear channels, with covers.
 4. Provide horizontal crossover cable manager at the top of each relay rack, with a minimum height of two rack units each.
- E. Patch Panel: Modular panels housing multiple-numbered jack units with IDC-type connectors at each jack for permanent termination of pair groups of installed cables.
1. Number of Jacks per Field: One for each four-pair UTP cable installed plus 20% spares and blank positions.

2.4 POWER STRIPS (*AD 01)

- A. Power Strips: Comply with UL 1363.
 - 1. Rack mounting.
 - 2. Six, 20-A, 120-V ac, NEMA WD 6, Configuration 5-20R receptacles.
 - 3. LED indicator lights for power and protection status.
 - 4. LED indicator lights for reverse polarity and open outlet ground.
 - 5. Circuit Breaker and Thermal Fusing: Unit continues to supply power if protection is lost.
 - 6. Cord connected with 15-foot (4.5-m) line cord.
 - 7. Rocker-type on-off switch, illuminated when in on position.
 - 8. Peak Single-Impulse Surge Current Rating: 33 kA per phase.
 - 9. Protection modes shall be line to neutral, line to ground, and neutral to ground. UL 1449 clamping voltage for all 3 modes shall be not more than 330 V.
- B. Provide two power strips per rack [AD1]

2.5 GROUNDING

- A. Comply with requirements in Division 26 Section "Grounding and Bonding for Electrical Systems." for grounding conductors and connectors.
- B. Telecommunications Main Grounding Busbar (TMGB and TMG):
 - 1. Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.
 - 2. Ground Bus Bar: Copper, minimum 1/4 inch thick as detailed on drawing E4.1.
 - 3. Stand-Off Insulators: Comply with UL 891 for use in switchboards, 600 V. Lexan or PVC, impulse tested at 5000 V.
- C. Comply with ANSI-J-STD-607-A.

2.6 LABELING

- A. Comply with TIA/EIA-606-A and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 ENTRANCE FACILITIES

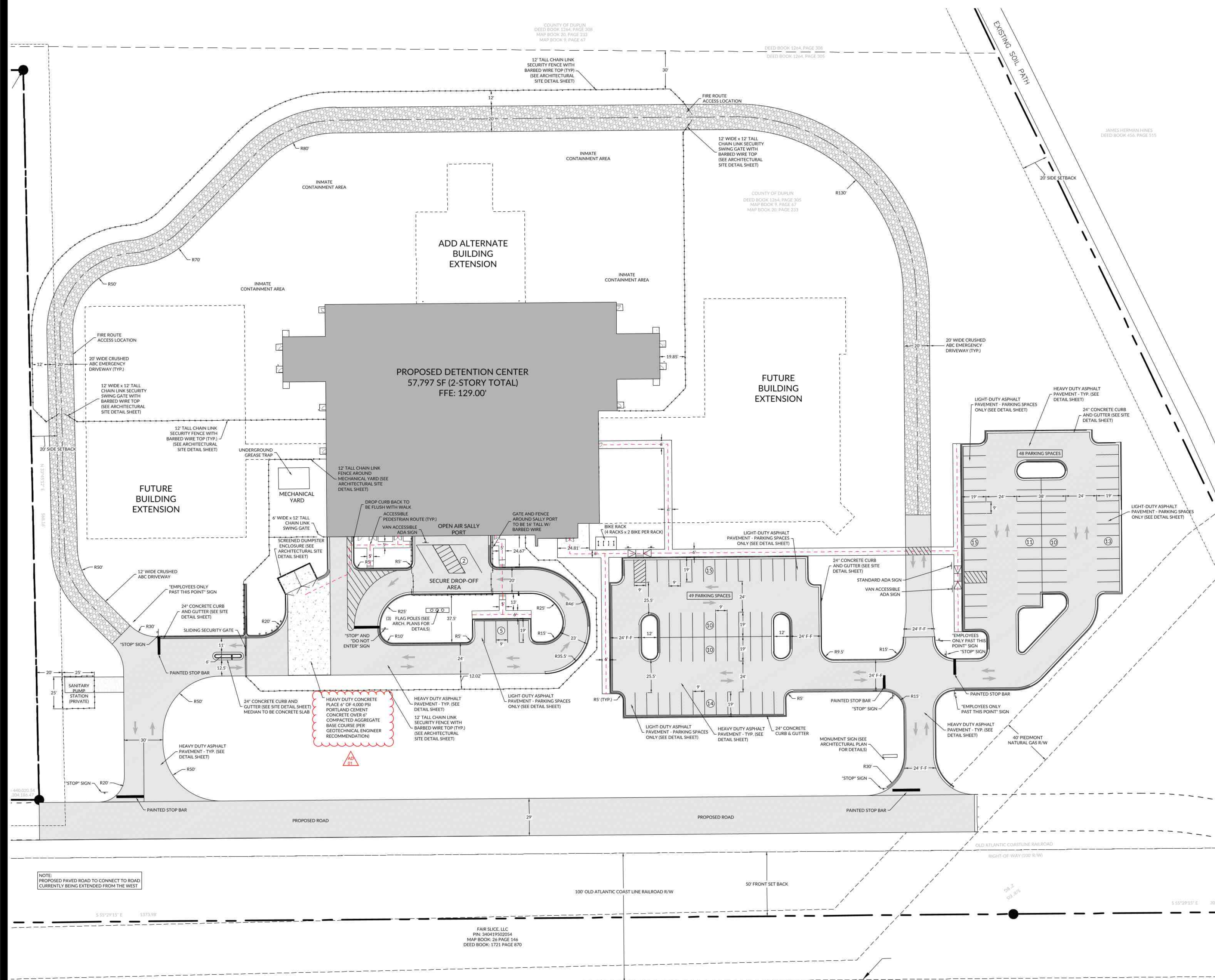
- A. Contact telecommunications service provider and arrange for installation of demarcation point, protected entrance terminals, and a housing when so directed by service provider.
- B. Install underground pathways complying with recommendations in TIA/EIA-569-A, "Entrance Facilities" Article.

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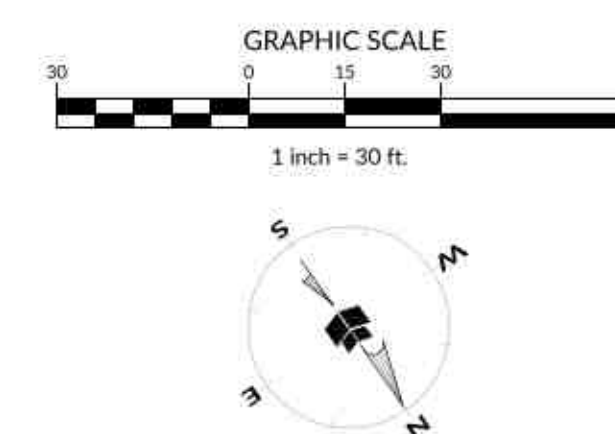
- 3.2 Install underground entrance pathway complying with Division 26 Section "Raceway and Boxes for Electrical Systems." INSTALLATION
- A. Comply with NECA 1.
 - B. Comply with BICSI TDMM for layout and installation of communications equipment rooms.
 - C. Bundle, lace, and train conductors and cables to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- 3.3 FIRESTOPPING
- A. Comply with requirements in Division 07 Section "Penetration Firestopping. "Comply with TIA/EIA-569-A, Annex A, "Firestopping."
 - B. Comply with BICSI TDMM, "Firestopping Systems" Article.
- 3.4 GROUNDING
- A. Install grounding according to BICSI TDMM, "Grounding, Bonding, and Electrical Protection" Chapter.
 - B. Comply with ANSI-J-STD-607-A.
 - C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall allowing at least 2-inch (50-mm) clearance behind the grounding bus bar. Connect grounding bus bar with a minimum No. 4 AWG grounding electrode conductor from grounding bus bar to suitable electrical building ground.
 - D. Bond metallic equipment to the grounding bus bar, using not smaller than No. 6 AWG equipment grounding conductor.
 - 1. Bond the shield of shielded cable to the grounding bus bar in communications rooms and spaces.
- 3.5 IDENTIFICATION
- A. Identify system components, wiring, and cabling complying with TIA/EIA-606-A. Comply with requirements in Division 26 Section "Identification for Electrical Systems. "Comply with requirements in Division 09 Section "Interior Painting" for painting backboards. For fire-resistant plywood, do not paint over manufacturer's label.
 - B. Labels shall be preprinted or computer-printed type.

END OF SECTION 271100

1. NOTE
2. NOTE



SITE LEGEND	
SYMBOL	DESCRIPTION
	BOUNDARY
	BUFFER
	CENTER LINE
	CURB & GUTTER
	EASEMENT
	LIMIT OF DISTURBANCE
	LOT LINE
	PHASE LINE
	RIGHT OF WAY
	SETBACK
	BUILDING
	CONCRETE PAVING
	HEAVY DUTY ASPHALT PAVING
	LIGHT DUTY ASPHALT PAVING
	GRAVEL EMERGENCY ACCESS



STORMWATER MANAGEMENT NOTES:

THE PROJECT IS LOCATED IN THE LIMESTONE CREEK-NORTHEAST CAPE FEAR RIVER BASIN. THIS IS NOT A NUTRIENT SENSITIVE BASIN. THERE IS NO STORMWATER PROGRAM IN THIS AREA THAT REQUIRES POST CONSTRUCTION STORMWATER CONTROL MEASURES. THEREFORE NO USM FUND/OUTLET IS PROPOSED.

STORM DRAINAGE NOTES:

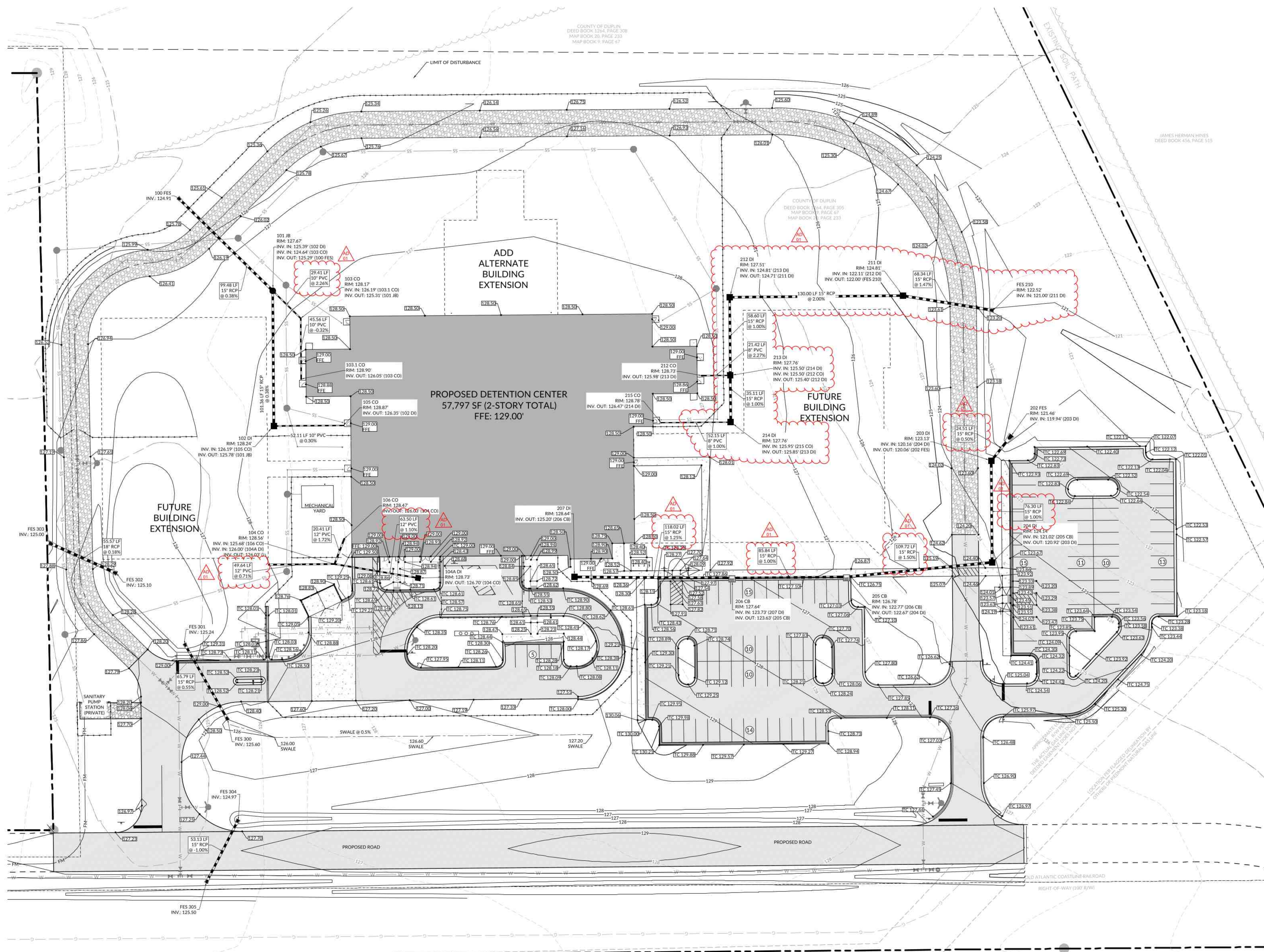
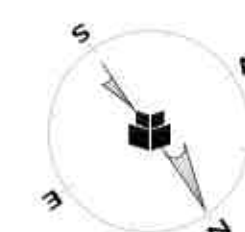
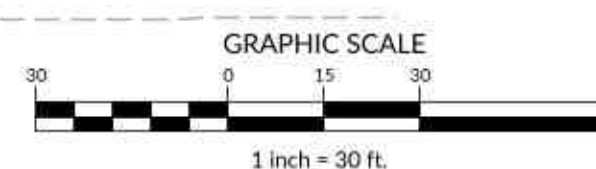
-CB IS CATCH BASIN WITH CURB INLET. RM = TOP OF CURB
-JB IS JUNCTION BOX. RM = TOP OF COVER
-GB IS CATCH BASIN WITH GRATE INLET. RM = TOP OF GRATE
-RCP IS REINFORCED CONCRETE PIPE
-RGP/RP IS RUBBER GASKETED REINFORCED CONCRETE PIPE
-ALL RCP PIPE IS CLASS III UNLESS OTHERWISE NOTED.
-HDPPE IS HIGH DENSITY POLYETHYLENE PIPE WITH SMOOTH INTERIOR/CORRUGATED EXTERIOR
-ALL CB, GB, AI AND JB WILL RECEIVE WIRE MESH AND GRAVEL INLET PROTECTION.

PROPOSED GRADING LEGEND

SYMBOL	DESCRIPTION
---	EXISTING MAJOR CONTOUR
---	EXISTING MINOR CONTOUR
---	PROPOSED MAJOR CONTOUR
---	PROPOSED MINOR CONTOUR

PROPOSED STORM DRAINAGE LEGEND

SYMBOL	DESCRIPTION
---	STORM PIPE
---	CATCH BASIN (CB)
---	FLARED END SECTION (FES)
---	JUNCTION BOX (JB)
---	RIP RAP DISSIPATOR
---	YARD INLET (YI)/DROP INLET (DI)





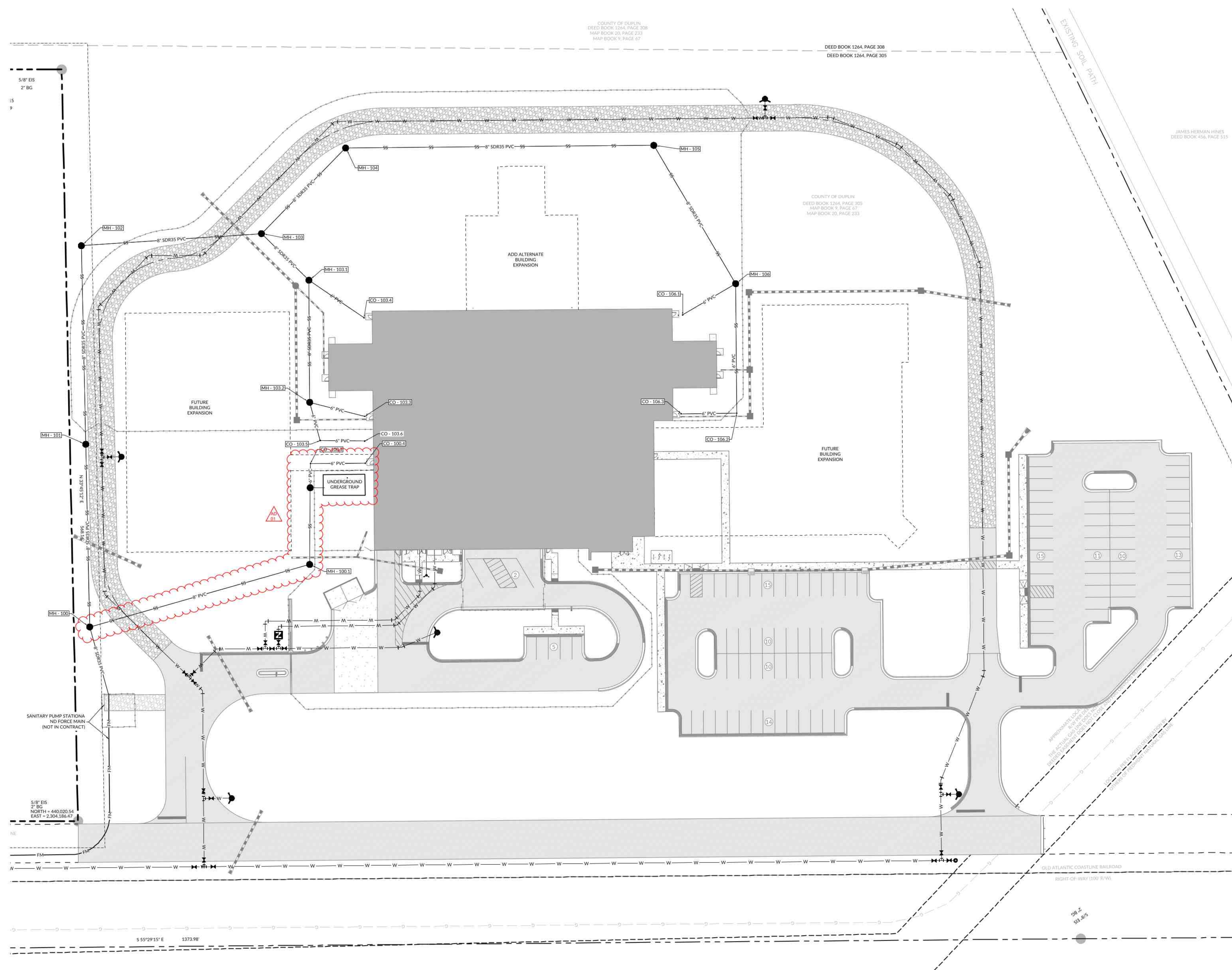
**DUPLIN COUNTY NC
KENANSVILLE, NORTH CAROLINA**

DATE: 08/25/2023










REVISIONS	
DATE	DESCRIPTION
12-12-2023	BID SET
01-05-2024	AD 01

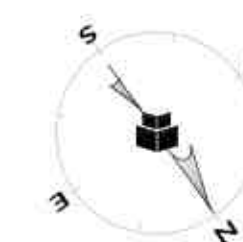
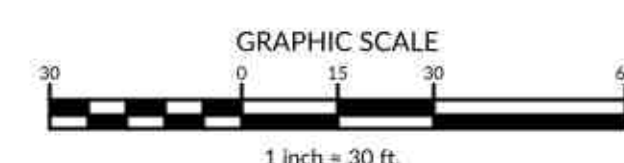


Know what's below
Call before you dig



PROPOSED UTILITIES LEGEND

SYMBOL	DESCRIPTION
— W —	FIRE LINE
— FM —	FORCEMAIN
— SS —	SANITARY SEWER PIPE
— W —	WATER MAIN
— W —	RECLAIMED WATER LINE
	FIRE LANE
	BACKFLOW PREVENTER
	BLOW OFF
	FIRE DEPARTMENT CONNECTION (FDC)
	FIRE HYDRANT ASSEMBLY
	SEWER CLEANOUT
	SEWER MANHOLE
	WATER METER
	WATER VALVE



FINISH SCHEDULE - BASE BID												
NUMBER	NAME	FLOOR	BASE	WALLS				WAINSCOT	CEILING	NOTES		
				NORTH	EAST	SOUTH	WEST					
LEVEL 1												
100	VESTIBULE	TERR-E	TERR-E	PT	PT	PT	PT	--	EXPC PT			
101	PUBLIC LOBBY	TERR-E	TERR-E	PT	PT	PT	PT	--	EXPC PT/ACP-A/GB-PT	1		
103	VIDEO VISITATION	VT	RB	PT	PT	PT	PT	--	ACP-A	12		
104	UNISEX TLT	P-TILE-1	P-TILE-1	P-TILE-2/GWT	P-TILE-2/GWT	P-TILE-2/GWT	P-TILE-2/GWT	--	ACP-B	8,10		
106	RECEPT	TCF	RB	PT	PT	PT	PT	--	ACP-A	11		
107	ADMIN. WORK AREA	TCF	RB	PT	PT	PT	PT	--	ACP-A	11		
108	OFFICE	TCF	RB	PT	PT	PT	PT	--	ACP-A	11		
109	CORR.	VT	RB	PT	PT	PT	PT	--	ACP-A			
110	CONF.	TCF	RB	PT	PT	PT	PT	--	ACP-A			
111	OFFICE	TCF	RB	PT	PT	PT	PT	--	ACP-A	11		
112	OFFICE	TCF	RB	PT	PT	PT	PT	--	ACP-A	11		
113	STAFF BREAK ROOM	VT	RB	PT	PT	PT	PT	--	ACP-A	11		
114	MENS TLT	RES-A	RES-A	P-TILE-2/GWT	P-TILE-2/GWT	P-TILE-2/GWT	P-TILE-2/GWT	--	GB-PT	8,10		
115	M. LOCKER	RES-A	RES-A	P-TILE-2	P-TILE-2	P-TILE-2	P-TILE-2	--	ACP-B/GB-PT	8		
116	WOMENS TLT	RES-A	RES-A	P-TILE-2/GWT	P-TILE-2/GWT	P-TILE-2/GWT	P-TILE-2/GWT	--	GB-PT	8, 10		
117	W. LOCKER	RES-A	RES-A	P-TILE-2	P-TILE-2	P-TILE-2	P-TILE-2	--	ACP-B/GB-PT	8		
118	DATA	CONC-SLR	EXPC PT	PT	PT	PT	PT	--	EXPC PT			
119	MAG. CONSULT	TERR-E	TERR-E	PT	PT	PT	PT	--	ACP-A			
120	MAGISTRATE WORK AREA	TCF	RB	PT	PT	PT	PT	--	ACP-A	11		
121	INTERVIEW	TCF	RB	PT/AWP-C	PT/AWP-C	PT/AWP-C	PT/AWP-C	--	ACP-A - HDC	9		
122	MAG TLT	RES-A	EXPC PT	EXPC PT	EXPC PT	P-TILE	P-TILE	--	GB-PT	8		
123	MAGISTRATE INMATE	TCF	PT	PT	PT	PT	PT	--	ACP-A			
124	MAG. BREAK ROOM	VT	RB	PT	PT	PT	PT	--	ACP-A	11		
125	M. SHOWER	RES-A	RES-A	P-TILE-2	P-TILE-2	P-TILE-2	P-TILE-2	--	ACP-B/GB-PT	8		
126	W. SHOWER	RES-A	RES-A	P-TILE-2	P-TILE-2	P-TILE-2	P-TILE-2	--	ACP-B/GB-PT	8		
B1	SINGLE CELL ADA	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
B2	SINGLE CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
B3	SINGLE CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
B4	SINGLE CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
B9	SEGREGATION UNIT - 8 BED	CONC-POL	EXPC PT	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	ACP-A-HDC/SGB-PT	6, 14		
B11	SEG SHOWER	RES-A	RES-A	RES-B	RES-B	RES-B	RES-B	--	ACP-A-HDC	3, 4, 5		
B25	OUTDOOR RECREATION	CONC-SLR	--	--	--	--	--	--	SWM			
B30	CHASE	CONC-SLR	--	--	--	--	--	--	EXPC			
C1	SINGLE CELL ADA	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C2	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C3	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C4	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C5	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C6	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C7	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C8	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C9	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C10	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
C21	GENERAL POPULATION 39 BED MALE	CONC-POL	EXPC PT	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	ACP-A-HDC/SGB-PT	6, 14		
C22	SHOWERS	RES-A	RES-B	RES-B	RES-B	RES-B	RES-B	--	ACP-A-HDC	3, 4, 5		
C23	JAN	RES-A	RES-A	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	GB-PT	3		
C25	OUTDOOR RECREATION	CONC-SLR	--	--	--	--	--	--	SWM			
C30	CHASE	CONC-SLR	--	--	--	--	--	--	EXPC			
D1	SINGLE CELL ADA	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D2	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D3	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D4	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D5	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D6	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D7	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D8	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D9	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D10	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
D21	GENERAL POPULATION 39 BED FEMALE	CONC-POL	EXPC PT	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	ACP-A-HDC/SGB-PT	6, 14		
D22	SHOWERS	RES-A	RES-A	RES-B	RES-B	RES-B	RES-B	--	ACP-A-HDC	3, 4, 5		
D23	JAN	RES-A	RES-A	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	GB-PT	3		
D25	OUTDOOR RECREATION	CONC-SLR	--	--	--	--	--	--	SWM			
D30	CHASE	CONC-SLR	--	--	--	--	--	--	EXPC			
E1	ADA CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E2	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E3	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E4	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E5	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E6	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E7	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E8	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E9	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E10	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
E21	GENERAL POPULATION 39 BED MALE	CONC-POL	EXPC PT	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	ACP-A-HDC/SGB-PT	6, 14		
E22	SHOWERS	RES-A	RES-A	RES-B	RES-B	RES-B	RES-B	--	ACP-A-HDC	3, 4, 5		
E23	JAN	RES-A	RES-A	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	GB-PT	3		
E25	OUTDOOR REC	CONC-SLR	--	--	--	--	--	--	SWM			
E30	CHASE	CONC-SLR	--	--	--	--	--	--	EXPC			
EA001	STORAGE	CONC-SLR	--	--	--	--	--	--	EXPC			
F1	ADA CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F2	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F3	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F4	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F5	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F6	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F7	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F8	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F9	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F10	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
F21	GENERAL POPULATION 39 BED MALE	CONC-POL	EXPC PT	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	ACP-A-HDC/SGB-PT	6, 14		
F22	SHOWERS	RES-A	RES-A	RES-B	RES-B	RES-B	RES-B	--	ACP-A-HDC	3, 4, 5		
F23	JAN	RES-A	RES-A	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	GB-PT	3		
F25	OUTDOOR REC	CONC-SLR	--	--	--	--	--	--	SWM			
F30	CHASE	CONC-SLR	--	--	--	--	--	--	EXPC			
FA001	STORAGE	CONC-SLR	--	--	--	--	--	--	EXPC			
G1	SINGLE CELL ADA	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G2	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G3	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G4	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G5	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G6	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G7	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G8	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G9	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G10	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
G21	GENERAL POPULATION 39 BED MALE	CONC-POL	EXPC PT	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	ACP-A-HDC/SGB-PT	6, 14		
G22	SHOWERS	RES-A	RES-B	RES-B	RES-B	RES-B	RES-B	--	ACP-A-HDC	3, 4, 5		
G23	JAN	RES-A	RES-A	EXPC PT	EXPC PT	EXPC PT	EXPC PT	--	GB-PT	3		
G25	OUTDOOR RECREATION	CONC-SLR	--	--	--	--	--	--	SWM			
G30	CHASE	CONC-SLR	--	--	--	--	--	--	EXPC			
H1	SINGLE CELL ADA	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
H2	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
H3	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
H4	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
H5	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
H6	DBL CELL	CONC-POL	--	PER MFR	PER MFR	PER MFR	PER MFR	--	PER MFR			
H7												

EQUIPMENT ABBREVIATION	
AHU	AIR-HANDLING UNIT
AS	AIR SEPARATOR
B	BOILER
BCU	BLUOWER COIL UNIT
CCC	CLOSED-CIRCUIT COOLING TOWER
CH	CHILLED
CHW	CHILLED WATER
CRAC	COMPUTER ROOM AIR CONDITIONER
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CWP	CONDENSER WATER PUMP
ECH	ELECTRIC CEILING HEATER
ERU	ENERGY RECOVERY UNIT
ERV	ENERGY RECOVERY VENTILATOR
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
FCU	FAN COIL UNIT
HP	HEAT PUMP
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
MAU	MAKEUP AIR UNIT
OAU	OUTDOOR AIR UNIT
P	PUMP
PTAC	PACKAGED TERMINAL AIR CONDITIONER
PTHP	PACKAGED TERMINAL HEAT PUMP
RTU	ROOF UNIT
SSI	SPLIT-SYSTEM INDOOR UNIT
SSO	SPLIT-SYSTEM OUTDOOR UNIT
TU	TERMINAL UNIT
UH	UNIT HEATER
WSHP	WATER-SOURCE HEAT PUMP

CONTROLS ABBREVIATIONS	
AF	AIRFLOW
AI	ANALOG INPUT TO CONTROLLER
ALM	ALARM
AMS	AIRFLOW MEASURING STATION
AO	ANALOG OUTPUT FROM CONTROLLER
ATS	AVERAGING TEMPERATURE SENSOR
BAS	BUILDING AUTOMATION SYSTEM
BI	BINARY INPUT TO CONTROLLER
BO	BINARY OUTPUT FROM CONTROLLER
CO2	CARBON DIOXIDE SENSOR
CSR	CURRENT-SENSING RELAY
DM	DAMPER MOTOR
DP	DIFFERENTIAL PRESSURE
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
FM	FLOW METER
FZ	FREEZE/STAT
HS	HUMIDITY SENSOR
POS	POSITION
R	RELAY
SD	SMOKE DETECTOR
SPD	SPEED
SS	START/STOP
TS	TEMPERATURE SENSOR
VFD	VARIABLE-FREQUENCY DRIVE

ABBREVIATIONS	
A	AMPERE(S)
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
APD	AIR PRESSURE DROP
BHP	BRAKE-HORSEPOWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	COOLING
COM	COMMON
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DRAIN
DB	DRY BULB TEMPERATURE
dBA	A-WEIGHTED DECIBELS
DCW	DOMESTIC COLD WATER
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EQ	EQUAL
ESP	EXTERNAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
F	DEGREES FAHRENHEIT
FC	FAIL CLOSED
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FO	FAIL OPEN
FPM	FEET PER MINUTE
FT	FOOT, FEET
GA	GAUGE
GAL	GALLON(S)
GPH	GALLONS PER HOUR
GRM	GALLONS PER MINUTE
HP	HORSEPOWER
HPWR	HEAT PUMP WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HTG	HEATING
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
HZ	HERTZ
IN	INCH
IFLV	INTERVATED PART-LOAD VALUE
KW	KILOWATT(S)
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	ONE THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPACITY
MFR	MANUFACTURER
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOD	MODER-OPERATED DAMPER
NC	NORMALLY CLOSED (FOR PLANS, DETAILS)
NC	NOISE CRITERIA (FOR SCHEDULES)
NC	NOT IN CONTRACT
NO	NORMALLY OPEN
OA	OUTSIDE AIR
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAUGE
R	RETURN AIR
RD	REFRIGERANT DISCHARGE
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
TD	TRANSFER DUCT
TYP	TYPICAL
UNO	UNLESS NOTED (INDICATED) OTHERWISE
V	VOLTAGE, VOLTS
VD	VOLUME DAMPER
VFD	VARIABLE-FREQUENCY DRIVE
W	WATT(S)
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WPD	WATER PRESSURE DROP
WWM	WELDED WIRE MESH

GENERAL NOTES

- A. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IS REQUIRED BY ALL. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE BETTER QUALITY. IN THE CASE OF A CONFLICT, DISAGREEMENT, OR AMBIGUITY, PROVIDE THE GREATER QUANTITY OF WORK.
- B. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. DO NOT SCALE DRAWINGS. LOCATIONS OF ALL ITEMS INDICATED ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE. COORDINATE CONTRACT DOCUMENTS PROJECT REQUIREMENTS, WORK OF OTHERS, AND EQUIPMENT AND MATERIALS PURCHASED WITH FIELD DIMENSIONS, MANUFACTURERS REQUIREMENTS FOR INSTALLATION, OPERATION, AND MAINTENANCE. CONTRACTORS INTENDED MEANS AND METHODS OF INSTALLATION AND CONNECTIONS FABRICATED TIED TO ENSURE A PROPER FIT AND INSTALLATION.
- C. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS WHERE HEADROOM AND SPACE CONDITIONS APPEAR INDICATED. NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH INSTALLATION. MAINTAIN A MINIMUM OF 7'-0" CLEARANCE ABOVE FINISHED FLOOR TO UNDERSIDE OF PIPES, DUCTS, CONDUTS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROADS IN MECHANICAL ROOMS.
- D. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION. MAKE MODIFICATIONS IN THE LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.
- E. INSTALL ALL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- F. COORDINATE LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS WITH ALL OTHER TRADES. COORDINATE ALL PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURE WITH GENERAL CONSTRUCTION WORK.
- G. PROVIDE TRAPPED DRAIN PIPING FROM DRAIN PANS OF ALL COOLING COILS, FANS AND OTHER ACTIVE DRAINS EXPOSED TO SYSTEM. PROVIDE AN INVERTED TRAP AT CONNECTION WITH WATER SEAL DEPTH ONE INCH GREATER THAN UNIT OPERATING PRESSURE. DIRECT DRAINS TO NEAREST FLOOR DRAIN, SINK, SINK, OR OTHER LOCATION APPROVED BY THE ARCHITECT.
- H. INSTALL PIPING, DUCTWORK, AND CONDUIT CONCEALED IN AREAS HAVING CEILINGS AND/OR FURRED SPACES UNLESS OTHERWISE INDICATED.
- I. ALL EQUIPMENT, VALVES, DAMPERS, DAMPER AND VALVE OPERATORS SHALL BE PROVIDED WITH ADEQUATE ACCESS FOR SERVICING, MAINTENANCE, AND REPLACEMENT.
- J. SIZE ALL SPLIT-SYSTEM REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- K. DUCT DIMENSIONS MAY BE MODIFIED ONLY WITH PRIOR APPROVAL FROM ARCHITECT. DUCT DIMENSIONS ARE N INCHES AND INSIDE CLEAR.
- L. FOR LOCATION OF REGISTERS, GRILLES, AND DIFFUSERS WITHIN CEILING GRID, REFER TO ARCHITECTURAL REFLECTED CEILING PLANS.
- M. ELEVATION INDICATED FOR RECTANGULAR DUCT, GRILLE AND LOUVER OPENINGS IS TO THE TOP OF ROUGH OPENING UNLESS OTHERWISE INDICATED. ELEVATION INDICATED FOR ROUND DUCTWORK AND PIPING IS TO CENTERLINE.
- N. BRANCH PIPING RUNOUTS TO TERMINAL UNITS SHALL BE 3/4" DIAMETER UNLESS UNICATED OTHERWISE.
- O. REFER TO STRUCTURAL DRAWINGS FOR DETAILS AND MAXIMUM SPACING REQUIREMENTS REGARDING HANGER ATTACHMENTS TO STEEL BEAM JOISTS.
- P. PROVIDE DUCT ACCESS DOORS/PANES FOR ALL FIRE, SMOKE AND COMBINATION FIRE/SMOKE DAMPERS TO ALLOW FOR SERVICE AND INSPECTION ACCESS. PROVIDE PERMANENT ACCESS IDENTIFICATION IN ACCORDANCE WITH 2018 NCSMC SECTION 607.4.
- Q. ALL DUCTWORK WHICH PASSES THROUGH ANY 1-HOUR FIRE PARTITION (AND IS NOT PROVIDED WITH A FIRE DAMPER) MUST BE CONSTRUCTED OF SHEET STEEL, NOT LESS THAN 16 GAUGE THICKNESS AND BE CONTINUOUS FROM THE AIR HANDLING APPLIANCE OR EQUIPMENT TO THE AIR OUTLET AND INLET TERMINALS PER 2018 NCSMC SECTION 717.5.4 (4).

CONTROL SYMBOL LEGEND			
	CIRCULATOR OR PUMP		NORMALLY OPEN CONTACT
	MOTORIZED 2-WAY VALVE		NORMALLY CLOSED CONTACT
	MOTORIZED 3-WAY VALVE		WIRING OR DEVICE PROVIDED UNDER DIVISION 23
	VARIABLE FREQUENCY DRIVE		WIRING OR DEVICE NOT PROVIDED UNDER DIVISION 23
	DIRECT DIGITAL CONTROLLER		WIRING CONNECTION BY DIVISION 23
	THERMOSTAT		NUMBER OF CONDUCTORS INDICATED BY SLASH MARKS
	FREEZE STAT		MOTORIZED PARALLEL BLADE DAMPER
	CONTACTOR		MOTORIZED OPPOSED BLADE DAMPER
	RELAY		MOTORIZED BUTTERFLY BLADE DAMPER
	SPACE TEMPERATURE SENSOR		SUPPLY, RETURN, OR EXHAUST FAN
	LINE VOLTAGE THERMOSTAT		AIRFLOW DIRECTION
	HAND-OFF-AUTOMATIC SWITCH		<u>CONTROL POINT INDICATOR</u>
	DUCT-MOUNTED SMOKE DETECTOR		INPUT OR OUTPUT (ANALOG INPUT)
	TRANSFORMER		DEVICE TYPE (AIR TEMPERATURE SENSOR)
	FUSE		<u>CONTROL POINT INDICATOR</u>
			INPUT OR OUTPUT (ANALOG INPUT)
			DEVICE TYPE (WATER TEMPERATURE SENSOR WITH BULB TYPE ELEMENT IN PIPING WELL)
			<u>CONTROL POINT INDICATOR</u>
			INPUT OR OUTPUT (ANALOG INPUT)
			DEVICE TYPE (CURRENT SENSING RELAY)

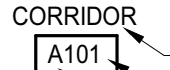
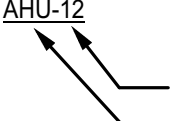
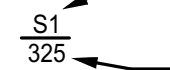
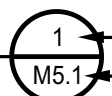


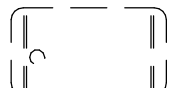
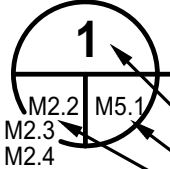
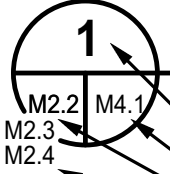
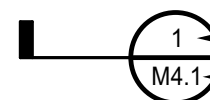
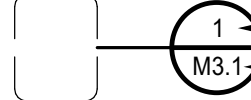
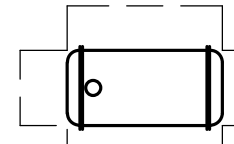
GENERAL NOTES

ROUNDOUT SIZES TO DIFFUSERS TO DIFFUSER AND GRILLES ARE THE SAME AS THE DIFFUSER/GRILLE NECK SIZE UNLESS INDICATED OTHERWISE. PROVIDE RECTANGULAR TO ROUND TRANSITIONS AS REQUIRED.

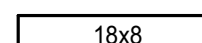
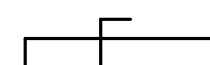
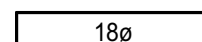
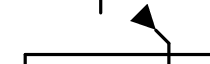
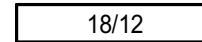
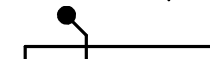
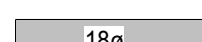
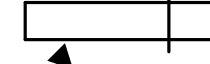
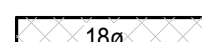
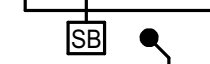



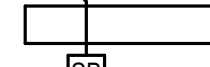
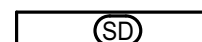
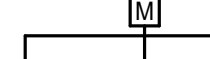
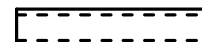
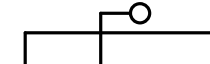

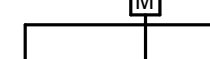

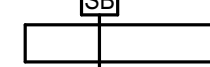

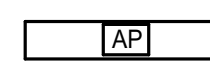
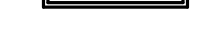

































PROVIDE RECTANGULAR TO ROUND TRANSITION TO CONNECT FLEXIBLE DUCTWORK TO DIFFUSERS OR GRILLES WITH SQUARE OR RECTANGULAR NECK.

WHEN SECURITY BARS AND LIFE SAFETY DAMPERS (FIRE DAMPERS, SMOKE AND FIRE-SMOKE DAMPERS) ARE INSTALLED IN THE SAME WALL PROVIDE THE SECURITY BARS AS AN ACCESSORY OPTION TO BE INCLUDED WITH THE LIFE SAFETY DAMPER. THE LIFE SAFETY DAMPER MANUFACTURER SHALL PROVIDE A COMPLETE ASSEMBLY THAT INCLUDES THE SECURITY BARS WITH THE LIFE SAFETY DAMPER, FACTORY INSTALLED AND UL LISTED. FIELD CONSTRUCTED ASSEMBLIES OF LIFE SAFETY DAMPERS WITH SECURITY BARS, INSTALLED IN THE SAME WALL WILL BE REJECTED.




















GRAPHIC SYMBOL LEGEND

	<u>SPACE TAG</u> SPACE NAME SPACE NUMBER BUILDING "PART" NUMBER IN MULTI-PART BUILDING
	<u>EQUIPMENT TAG</u> EQUIPMENT NUMBER EQUIPMENT ABBREVIATION
	<u>DIFFUSER, GRILLE OR REGISTER TAG</u> TAG REFER TO DIFFUSER, GRILLE AND REGISTER SCHEDULE AIRFLOW (CFM)
	<u>DETAIL TAG</u> DETAIL NUMBER DRAWING WHERE DETAIL IS INDICATED
	KEYNOTE
	STRUCTURAL GRID LINE WITH DESIGNATION
	EXISTING TO BE REMOVED
	<u>DETAIL TITLE</u> DETAIL NUMBER DRAWING WHERE DETAIL IS INDICATED DRAWING WHERE DETAIL IS REFERENCED ADDITIONAL DRAWING REFERENCES
	<u>SECTION TITLE</u> SECTION NUMBER DRAWING WHERE SECTION IS INDICATED DRAWING WHERE SECTION IS REFERENCED ADDITIONAL DRAWING REFERENCES
	<u>SECTION CALLOUT</u> SECTION NUMBER DRAWING WHERE SECTION IS INDICATED
	<u>ENLARGED PLAN CALLOUT</u> ENLARGED PLAN NUMBER DRAWING WHERE ENLARGED PLAN IS INDICATED
	MECHANICAL EQUIPMENT WITH REQUIRED SERVICE CLEARANCE INDICATED

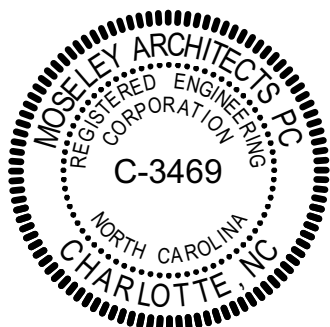
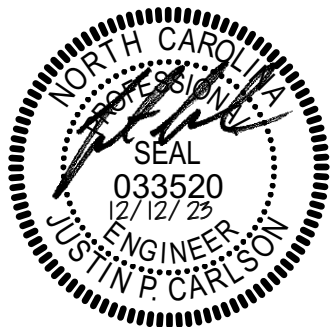
DUCTWORK LEGEND






























	RECTANGULAR DUCT (FIRST DIMENSION REFERS TO SIDE VIEWED)		MANUAL BALANCING DAMPER IN DUCT												
	ROUND DUCT SIZE		FIRE DAMPER IN DUCT												
	FLAT OVAL DUCT SIZE		SMOKE DAMPER IN DUCT												
	DOUBLE WALL, EXPOSED DUCT		COMBINATION FIRE/SMOKE DAMPER IN DUCT												
	FABRIC DUCT		FIRE DAMPER WITH SECURITY BARS IN DUCT												
	FLEXIBLE DUCTWORK		SMOKE DAMPER WITH SECURITY BARS IN DUCT												
	FLEXIBLE CONNECTOR		COMBINATION FIRE/SMOKE DAMPER WITH SECURITY BARS IN DUCT												
	DUCT-MOUNTED SMOKE DETECTOR		MOTORIZED DAMPER IN DUCT												
	DUCT WITH DUCT LINER		SMOKE CONTROL MANUAL BALANCING DAMPER IN DUCT												
	DUCT ACCESS DOOR		SMOKE CONTROL MOTORIZED DAMPER IN DUCT												
	DUCT WITH END CAP		SECURITY BARS IN DUCT												
	LINEAR SLOT DIFFUSER, LENGTH AS INDICATED		DUCT WITH ACCESS PANEL												
	LINEAR BAR GRILLE, LENGTH AS INDICATED	<table><tr><td>TO</td><td>AWAY</td></tr><tr><td></td><td></td></tr><tr><td>TO</td><td>AWAY</td></tr><tr><td></td><td></td></tr><tr><td>TO</td><td>AWAY</td></tr><tr><td></td><td></td></tr></table>	TO	AWAY			TO	AWAY			TO	AWAY			SUPPLY/MAKEUP AIR DUCT SECTIONS
TO	AWAY														
															
TO	AWAY														
															
TO	AWAY														
															
	SUPPLY DIFFUSER		SMOKE DETECTOR												
	RETURN OR EXHAUST GRILLE		HUMIDITY SENSOR												
	SUPPLY DIFFUSER WITH DIRECTIONAL BLOW, SOLID HATCH INDICATES BLANK OFF PANEL		THERMOSTAT, LINE VOLTAGE												
	POINT OF CONNECTION TO EXISTING		THERMOSTAT, LOW VOLTAGE												
	LIMIT OF DEMOLITION		TEMPERATURE SENSOR												
	SUPPLY AIRFLOW ARROW		CARBON DIOXIDE SENSOR												
	RETURN OR EXHAUST AIRFLOW ARROW		CARBON MONOXIDE SENSOR												
	DOOR LOUVER														
	SENSOR WELL														






















PIPING LEGEND











	END OF LINE CLEANOUT PLUG		VALVE
	CLEANOUT PLUG		MANUAL BALANCING VALVE WITH FLOW TAPS
	PRESSURE GAUGE WITH GAUGE COCK		AUTOMATIC BALANCING VALVE WITH FLOW TAPS
	LIQUID FILLED THERMOMETER		SWING CHECK VALVE
	UNION		PRESSURE REDUCING VALVE
	STRAINER WITH BLOWDOWN VALVE AND 3/4" HOSE END CONNECTION		TRIPLE DUTY VALVE
	FLEXIBLE PIPE CONNECTOR		GAS COCK
	MANIFOLD AIR VENT		PRESSURE-RELIEF VALVE
			TWO-WAY CONTROL VALVE
			THREE-WAY CONTROL VALVE
			DIRECTION OF FLOW




























ADD ALTERNATES	
ADD ALTERNATE #1:	THE ADDITION OF AREA-C AND MECHANICAL SYSTEMS.
ADD ALTERNATE #2:	ADD REDUNDANT DOAS UNIT DOAS-A2. THIS UNIT CAN BE A BACK-UP REDUNDANT UNIT FOR DOAS-1 OR DOAS-2. (BASE BID UNITS) NOTE THAT THE ADD ALTERNATE DRAWINGS WILL SHOW DUCTWORK WITH DUCT SIZES ON THE DUCTWORK RELATED TO THE ALTERNATE PORTION OF WORK ONLY. REFER TO THE BASE BID DRAWINGS OF THE RESPECTIVE AREA FOR COMPLETE DUCT SIZING OF THE BASE BID SYSTEMS. REFER TO THE GENERAL NOTES ON THIS SHEET FOR ADDITIONAL DUCT SIZING INFORMATION FOR BRANCH DUCTS.
ADD ALTERNATE #3:	REDUNDANT DOAS UNIT DOAS-A2 IS CONFIGURED TO SERVE AS A BACK-UP UNIT TO ADD ALTERNATE #1'S DOAS-A1. NOTE THAT THE ADD ALTERNATE DRAWINGS WILL SHOW DUCTWORK WITH DUCT SIZES ON THE DUCTWORK RELATED TO THE ALTERNATE PORTION OF WORK ONLY. REFER TO THE BASE BID DRAWINGS OF THE RESPECTIVE AREA FOR COMPLETE DUCT SIZING OF THE BASE BID SYSTEMS. REFER TO THE GENERAL NOTES ON THIS SHEET FOR ADDITIONAL DUCT SIZING INFORMATION FOR BRANCH DUCTS.








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


























POWER DEVICE / EQUIPMENT LEGEND	
SYMBOL	DESCRIPTION
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:	
	OVERHEAD DOOR CONTROLLER.
	DOORBELL PUSH BUTTON.
	EMERGENCY POWER OFF (E.P.O) SWITCH.
	HANDICAP DOOR OPERATOR SWITCH.
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE THREE IN DETAIL:	
	NON-FUSIBLE DISCONNECT SWITCH.
	FUSIBLE DISCONNECT SWITCH.
	ENCLOSED CIRCUIT BREAKER, CHARACTERISTICS AS INDICATED.
	MANUAL MOTOR STARTER, OVERLOAD PROTECTION AS REQUIRED PER NAME PLATE RATINGS, WITH ON INDICATOR PILOT LIGHT.
	MAGNETIC MOTOR STARTER, OVERLOAD RELAYS AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.
	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, OVERLOAD ELEMENTS AND FUSING AS REQUIRED TO SERVE MANUFACTURER REQUIREMENTS OF EQUIPMENT SERVED. PROVIDE WITH HAND-OFF-AUTOMATIC SELECTOR SWITCH AND INDICATOR LIGHTS.
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE FOUR IN DETAIL:	
	DOORBELL CHIME, WALL MOUNTED.
NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:	
	FLUSH WALL TRANSFORMER POWER CONNECTION. PROVIDE A 4"x4" RECESSED JB AND MOUNT POWER SUPPLY PROVIDED BY DIV 22. COORDINATE CONNECTION WITH DIV 22. PROVIDE A 2"x4" JB AT EACH TOILET, SINK AND WATER CLOSET AS RECOMMENDED BY THE MANUFACTURER. PROVIDE 2 #14 IN 1/2"C 'DAISY CHAINED' BETWEEN UP TO EIGHT BOXES AND TERMINATING AT POWER SUPPLY.
	ISOLATION VALVE. REFER TO ISOLATION VALVE CONTROL DETAIL ON DRAWING E4 SERIES DRAWING.
	EQUIPMENT POWER CONNECTION.
	JUNCTION BOX, CONCEALED ABOVE CEILING, UNO.
	JUNCTION BOX, WALL MOUNTED. MOUNTING HEIGHT AS INDICATED ON PLANS.
	MOTOR POWER CONNECTION.
	MOTOR RATED SWITCH WITH OVERLOAD PROTECTION.
	LINE VOLTAGE THERMOSTAT. DIVISION 23 FURNISH. DIVISION 26 INSTALL. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
	POWER FOR DIV 23 MOTORIZED DAMPER. REFER TO DIVISION 23 DRAWINGS FOR LOCATIONS AND QUANTITY.
	NON-METALLIC SURFACE RACEWAY, DEVICES AS INDICATED, MOUNTING HEIGHT INDICATED ON PLANS.
	PANELBOARD OR SWITCHBOARD, PROVIDE 6 INCH CONCRETE HOUSEKEEPING PAD FOR ALL GROUND MOUNTED EQUIPMENT UNLESS NOTED OTHERWISE. DENOTED BY PANELBOARD/SWITCHBOARD TAG PER ONE-LINE DIAGRAM.
	TRANSFORMER, PROVIDE 4 INCH CONCRETE HOUSEKEEPING PAD UNLESS NOTED OTHERWISE. DENOTED BY TRANSFORMER TAG PER ONE-LINE DIAGRAM.
	UTILITY METER. MOUNT PER UTILITY STANDARDS, UNO.
	FEEDER TAG. REFER TO FEEDER SCHEDULE ON DWG E5.1.
	(FOR MULTI-FAMILY HOUSING PROJECTS ONLY) RESIDENTIAL UNIT METERCENTER IDENTIFICATION TAG. IDENTIFIES THE METERCENTER THAT PROVIDES POWER TO THE RESIDENTIAL UNIT LOADCENTER.
	(FOR SENIOR LIVING PROJECTS ONLY) RESIDENTIAL UNIT PANELBOARD DESIGNATION TAG. IDENTIFIES THE PANELBOARD & CIRCUIT THAT PROVIDES POWER TO THE RESIDENTIAL UNIT LOADCENTER.
	BRANCH CIRCUIT RUN CONCEALED, UNO. DASHED INDICATES CIRCUITRY REQUIRED TO BE RUN BELOW SLAB.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD AND CIRCUIT INDICATED.

RECEPTACLE DEVICE LEGEND	
SYMBOL	DESCRIPTION
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE ONE IN DETAIL:	
	APPLIANCE RECEPTACLE. PROVIDE NEMA CONFIGURATION TO MATCH PLUG FOR EQUIPMENT SERVED.
	DUPLEX RECEPTACLE, NEMA 5-20R.
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R.
	GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
	SINGLE RECEPTACLE, NEMA 5-20R.
	SWITCHED DUPLEX RECEPTACLE WITH SPLIT YOKE, THE BOTTOM OUTLET IS SWITCHED & THE TOP OUTLET IS UNSWITCHED, NEMA 5-15R.
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:	
	DUPLEX RECEPTACLE, NEMA 5-20R.
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R.
	GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
	SINGLE RECEPTACLE, NEMA 5-20R.
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE FOUR IN DETAIL:	
	DUPLEX RECEPTACLE, NEMA 5-20R.
	GFCI DUPLEX RECEPTACLE, NEMA 5-20R.
NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:	
	DUPLEX RECEPTACLE, NEMA 5-20R, CEILING MOUNT.
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, CEILING MOUNT.
	DUPLEX RECEPTACLE, NEMA 5-20R, RECESS FLOOR MOUNT.
	DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, RECESS FLOOR MOUNT.
	CORD REEL OUTLET, CEILING MOUNT.
SYMBOL VARIATIONS	DESCRIPTION
	RECEPTACLE CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICE. TYPE OF RECEPTACLE MAY VARY.
	GFCI RECEPTACLE CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICE. TYPE OF RECEPTACLE MAY VARY.
	PROTECTIVE COVER FOR RECEPTACLE. PROVIDE NEMA 3R "WHILE IN USE" ENCLOSURE FOR ALL EXTERIOR LOCATIONS. TYPE OF RECEPTACLE MAY VARY.
	PLUG LOAD CONTROLLED RECEPTACLE. TYPE OF RECEPTACLE MAY VARY.
	RECEPTACLE WITH USB PORTS. TYPE OF RECEPTACLE MAY VARY.

POWER / COMMUNICATION DEVICE LEGEND	
SYMBOL	DESCRIPTION
	POWER/COMMUNICATIONS RECESSED FLOOR BOX. WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
	POWER/COMMUNICATIONS POKE THRU FLOOR BOX. WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
	SYSTEM FURNITURE FLEX POWER CABLE CONNECTION VIA FLOOR BOX WITH COVER SUITABLE FOR SYSTEM FURNITURE CONNECTION. REFER TO DETAIL ON E4 SERIES DRAWINGS. COORDINATE W/ SYSTEM FURNITURE PROVIDER PRIOR TO ROUGH-IN.
	SYSTEM FURNITURE FLEX POWER CABLE CONNECTION VIA FLUSH WALL BOX MOUNTED 4" AFF. REFER TO DETAIL ON E4 SERIES DRAWINGS. COORDINATE W/ FURNITURE PROVIDER PRIOR TO ROUGH-IN.
	RECEPTACLE MOUNTED BESIDE TELECOMMUNICATION OUTLET. PROVIDE RECEPTACLE BASED ON "P" IN LEFT SYMBOL BOX. "P" INSIDE LEFT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM RECEPTACLE DEVICE LEGEND. PROVIDE TELECOMMUNICATION OUTLET BASED ON "T" IN RIGHT SYMBOL BOX. "T" INSIDE RIGHT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM COMMUNICATIONS LEGEND.
	RECEPTACLE AND TELECOMMUNICATION OUTLET MOUNTED INSIDE WALL MOUNTED FLAT DISPLAY BOX. PROVIDE RECEPTACLE BASED ON "P" IN LEFT SYMBOL BOX. "P" INSIDE LEFT SYMBOL BOX SHALL BE ONE OF THE SYMBOLS FROM RECEPTACLE DEVICE LEGEND. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.
SYMBOL VARIATIONS	DESCRIPTION
	POWER/COMMUNICATIONS RECESSED FLOOR BOX OR POKE THRU CONNECTED TO EMERGENCY POWER, PROVIDE RED DEVICES.
	PROTECTIVE COVER FOR RECEPTACLE AND TELECOMMUNICATION OUTLET. PROVIDE NEMA 3R "WHILE IN USE" ENCLOSURE FOR ALL EXTERIOR LOCATIONS. TYPE OF RECEPTACLE AND TELECOMMUNICATION OUTLET MAY VARY.
	PLUG LOAD CONTROLLED RECEPTACLE MOUNTED BESIDE TELECOMMUNICATION OUTLET. TYPE OF RECEPTACLE AND TELECOMMUNICATION OUTLET MAY VARY.
	RECEPTACLE WITH USB PORTS MOUNTED BESIDE TELECOMMUNICATION OUTLET. TYPE OF RECEPTACLE AND TELECOMMUNICATION OUTLET MAY VARY.

FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS.	
	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE. NUMBER INDICATES STROBE CANDELA RATING.
	FIRE ALARM VISUAL NOTIFICATION DEVICE. NUMBER INDICATES STROBE CANDELA RATING.
	FIRE ALARM AUDIO/VISUAL NOTIFICATION DEVICE, CEILING MOUNTED. NUMBER INDICATES STROBE CANDELA RATING.
	FIRE ALARM VISUAL NOTIFICATION DEVICE, CEILING MOUNTED. NUMBER INDICATES STROBE CANDELA RATING.
	FIRE ALARM MANUAL PULL STATION.
	FIRE ALARM KEY OPERATED MANUAL PULL STATION.
	CARBON MONOXIDE DETECTOR, CEILING MOUNT.
	COMBINATION SMOKE DETECTOR / CARBON MONOXIDE, CEILING MOUNT.
	HEAT DETECTOR, CEILING MOUNT.
	SMOKE DETECTOR, CEILING MOUNT.
	FIRE ALARM DUCT SMOKE DETECTOR, FURNISH AND CONNECT UNDER DIVISION 28. INSTALL UNDER DIVISION 23. VERIFY LOCATION WITH DIVISION 23 PRIOR TO ROUGH-IN. PROVIDE ACCESSIBLE KEY OPERATED REMOTE TEST SWITCH FOR EACH DETECTOR.
	FIRE ALARM TAMPER SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
	FIRE ALARM FLOW SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
	POST INDICATOR VALVE SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
	FIRE ALARM PRESSURE SWITCH, PROVIDE UNDER DIVISION 21, FURNISH AND CONNECT MONITOR MODULE TO MONITOR UNDER DIVISION 28.
	FIRE ALARM REMOTE INDICATOR, CEILING MOUNT.
	FIRE ALARM MONITOR MODULE. NOT ALL MONITOR MODULES ARE INDICATED ON DRAWINGS. PROVIDE QUANTITY AND IN LOCATIONS REQUIRED TO ACCOMPLISH SPECIFIED MONITORING FUNCTIONS.
	FIRE ALARM CONTROL MODULE. NOT ALL CONTROL MODULES ARE INDICATED ON DRAWINGS. PROVIDE QUANTITY AND IN LOCATIONS REQUIRED TO ACCOMPLISH SPECIFIED CONTROL FUNCTIONS.
	FIRE ALARM SPRINKLER BELL, MOUNT AT +10'-0" AFF. PROVIDE CONCEALED 120-VOLT POWER CONNECTION.
	FIRE ALARM MAGNETIC DOOR HOLDER, WALL MOUNT. PROVIDE HINGED MAGNETIC CATCH PLATE ON DOOR TO MATE WITH DEVICE. COORDINATE LOCATION AND LENGTH WITH DIVISION 08. PROVIDE CONCEALED 24-VOLT POWER CONNECTION AND FIRE ALARM CONTROL MODULE IF REQUIRED FOR PROPER OPERATION.
	FIRE ALARM MAGNETIC DOOR HOLDER, FLOOR MOUNT. PROVIDE HINGED MAGNETIC CATCH PLATE ON DOOR TO MATE WITH DEVICE. COORDINATE LOCATION AND LENGTH WITH DIVISION 08. PROVIDE CONCEALED 24-VOLT POWER CONNECTION AND FIRE ALARM CONTROL MODULE IF REQUIRED FOR PROPER OPERATION.
	FIRE ALARM POWER CONNECTION TO DIVISION 23 SMOKE OR FIRE/SMOKE DAMPER. COORDINATE WITH DIVISION 23. REFER TO TYPICAL FIRE/SMOKE DAMPER DIAGRAM.
SYMBOL VARIATIONS	DESCRIPTION
	WIRE GUARD FOR FIRE ALARM NOTIFICATION DEVICE. TYPE OF NOTIFICATION DEVICE MAY VARY.
	DEVICE COVER FOR FIRE ALARM NOTIFICATION DEVICE. NUMBER INDICATES STROBE SETTING AND REDUCED EFFECTIVE OUTPUT WHEN DEVICE COVER IS PRESENT. TYPE OF NOTIFICATION DEVICE MAY VARY.
	WIRE GUARD FOR FIRE ALARM INITIATION DEVICE. TYPE OF INITIATION DEVICE MAY VARY.
	SOUNDER BASE FOR FIRE ALARM INITIATION DEVICE. TYPE OF INITIATION DEVICE MAY VARY.
	FIRE ALARM WALL MOUNTED INITIATION DEVICE. TYPE OF INITIATION DEVICE MAY VARY.

ONE LINE DIAGRAM LEGEND	
SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	FUSED SWITCH
	TRANSFORMER
	TRANSFER SWITCH
	FEEDER DESIGNATION
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER

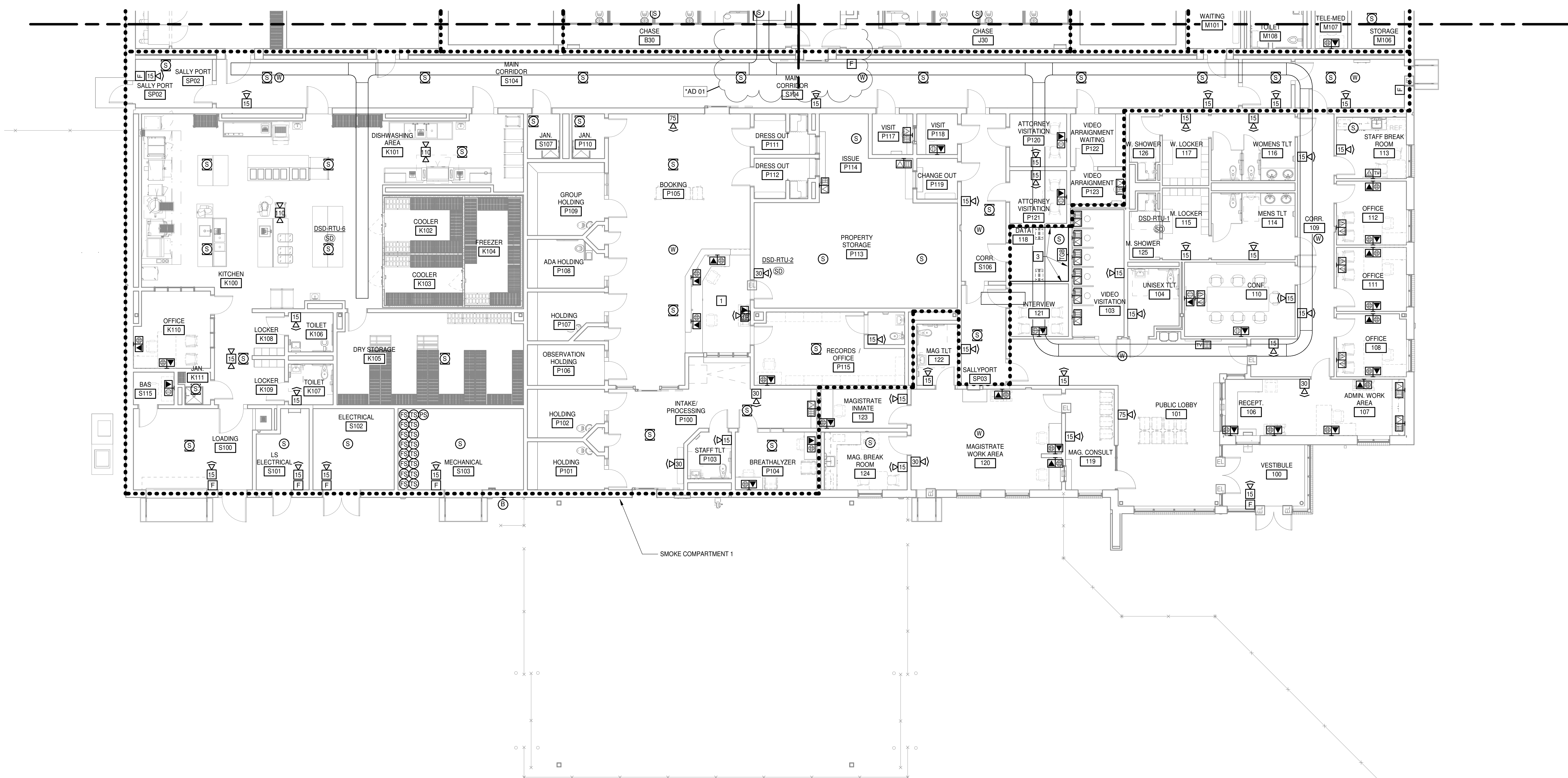
COMMUNICATIONS LEGEND	
SYMBOL	DESCRIPTION
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE ONE IN DETAIL:	
	TELECOMMUNICATIONS OUTLET, WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
	TELECOMMUNICATIONS GROUND BUS BAR.
	TELECOMMUNICATIONS MAIN GROUND BUS BAR.
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE TWO IN DETAIL:	
	TELECOMMUNICATIONS OUTLET, WHERE INDICATED, SUBSCRIPT NUMBER INDICATES OUTLET TYPE. REFER TO DETAIL ON E4 SERIES DRAWINGS.
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS. FOLLOWING DEVICES ARE DENOTED AS KEYNOTE THREE IN DETAIL:	
	INTERCOM STATION WITH PUSHBUTTON.
	MASTER INTERCOM STATION.
	PUSHBUTTON SWITCH.
NOTE: MOUNT THE FOLLOWING DEVICES AS NOTED:	
	MISC COMMUNICATIONS OUTLET. REFER TO DETAIL ON E4 SERIES DRAWINGS.
	RECESSED FLOOR MOUNT DEVICE COMPLETE WITH FITTINGS FOR FLOOR COVERING. REFER TO DETAIL ON E4 SERIES DRAWINGS.
	RECESSED FLOOR MOUNT DEVICE COMPLETE WITH FITTINGS FOR FLOOR COVERING. REFER TO DETAIL ON E4 SERIES DRAWINGS.
	CATV OUTLET. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.
	MISC CATV OUTLET. COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS.
	SOUND SYSTEM SPEAKER, RECESS CEILING MOUNT.
	WIRELESS ACCESS POINT. TERMINATE A CAT 6A DATA CABLE AT THE LOCATION. EQUIPMENT PROVIDED BY THE OWNER.
	2 POST TELECOMMUNICATIONS EQUIPMENT RACK.
	4 POST TELECOMMUNICATIONS EQUIPMENT RACK.
	2" EMT CONDUIT SLEEVE WITH NYLON BUSHING EACH END UNO, THRU WALL AT +6" ABOVE FINISHED CEILING.
	24" WIDE CABLE TRAY.
LIGHTING LEGEND	
SYMBOL	DESCRIPTION
NOTE: REFER TO "TYPICAL DEVICE ELEVATION DETAIL" FOR DEVICE MOUNTING REQUIREMENTS.	
	5 LIGHT SWITCH, RATED 120/277 VOLTS, 20-AMPS.
	55 LIGHT SWITCHES WIRED FOR INBOARD/OUTBOARD SWITCHING, RATED 120/277 VOLTS, 20-AMPS.
SUBSCRIPT/SUPERSCRIPT LETTERS, NUMBERS, AND SYMBOLS INDICATES SWITCH TYPE AS FOLLOWS:	
3	INDICATES 3-WAY LIGHT SWITCH
4	INDICATES 4-WAY LIGHT SWITCH
D	INDICATES DIMMER SWITCH
D3	INDICATES 3-WAY DIMMER LIGHT SWITCH
D4	INDICATES 4-WAY DIMMER LIGHT SWITCH
K	INDICATES KEY OPERATED LIGHT SWITCH
K3	INDICATES KEY OPERATED 3-WAY LIGHT SWITCH
K4	INDICATES KEY OPERATED 4-WAY LIGHT SWITCH
LV	INDICATES LOW VOLTAGE LIGHT SWITCH
OS	INDICATES SWITCH WITH INTEGRAL OCCUPANCY SENSOR
OD	INDICATES DIMMER SWITCH WITH INTEGRAL OCCUPANCY SENSOR
P	INDICATES PILOT LIGHT, ON WHEN SWITCH IS ON
T	INDICATES TIMER LIGHT SWITCH
VS	INDICATES SWITCH WITH INTEGRAL VACANCY SENSOR
VD	INDICATES DIMMER SWITCH WITH INTEGRAL VACANCY SENSOR
LOWER CASE LETTER INDICATES LIGHT FIXTURE CONTROL DESIGNATION	
	OMNI-DIRECTIONAL LIGHTING CONTROL OCCUPANCY DETECTOR, CEILING MOUNT.
	DIRECTIONAL LIGHTING CONTROL OCCUPANCY DETECTOR, WALL MOUNT AT 6" BELOW FINISHED CEILING.
	OMNI-DIRECTIONAL LIGHTING CONTROL VACANCY DETECTOR, CEILING MOUNT.
	DIRECTIONAL LIGHTING CONTROL VACANCY DETECTOR, WALL MOUNT AT 6" BELOW FINISHED CEILING.
	PHOTOCELL SENSOR FOR LIGHTING CONTROL. WALL MOUNT AT +10'-0" AFF. AIM NORTH.
	5 LIGHT FIXTURE, CEILING MOUNT.
	55 LIGHT FIXTURE ON EMERGENCY POWER, CEILING MOUNT.
	5 LIGHT FIXTURE, WALL MOUNT, HEIGHT AS INDICATED.
	55 LIGHT FIXTURE ON EMERGENCY POWER, WALL MOUNT, HEIGHT AS INDICATED.
	55 EXIT SIGN, CEILING MOUNT. DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE(S) OF SIGN.
	55 EXIT SIGN, WALL MOUNT. DIRECTIONAL ARROWS AS INDICATED. SHADING INDICATES FACE(S) OF SIGN.
	5 LIGHT FIXTURE, POLE MOUNT.

LIGHT FIXTURE SCHEDULE										
			FIXTURE				LAMP			
TYPE	DESCRIPTION	MANUFACTURER	SERIES NO.	VOLTAGE	WATTAGE	LUMENS	TYPE	COLOR TEMP.	MOUNTING	OPTIONS
A1	2X4 LED FLAT PANEL	LITHONIA	EPANL	277 V	41	5000 lm	LED	5000 K	RECESSED	
A3	2X4 LED FLAT PANEL - GTR	LITHONIA	EPANL	277 V	41	5000 lm	LED	5000 K	RECESSED	GENERATOR TRANSFER RELAY
A5	2X2 LED FLAT PANEL	LITHONIA	EPANL	277 V	41	5000 lm	LED	5000 K	RECESSED	
B1	2X4 LED VANDAL RESISTANT TROFFER	LITHONIA	2VRTL	277 V	39	5000 lm	LED	5000 K	RECESSED	
B2	2X4 LED VANDAL RESISTANT TROFFER - EM	LITHONIA	2VRTL	277 V	39	5000 lm	LED	5000 K	RECESSED	10W BATTERY
B3	2X4 LED VANDAL RESISTANT TROFFER - GTR	LITHONIA	2VRT	277 V	39	5000 lm	LED	5000 K	RECESSED	GENERATOR TRANSFER RELAY
B5	2X2 LED VANDAL RESISTANT TROFFER	LITHONIA	2VRTL	277 V	61	7000 lm	LED	5000 K	RECESSED	
B6	2X2 LED VANDAL RESISTANT TROFFER - EM	LITHONIA	2VRTL	277 V	61	7000 lm	LED	5000 K	RECESSED	10W BATTERY
C5	6" LED DOWNLIGHT	GOITAM	EW6S 5020 AR	277 V	20	2000 lm	LED	5000 K	RECESSED	
D1	4" MAX SECURITY	KENALL	SDSA 4 0/0 45L50K DCC 2J 1	277 V	46	4500 lm	LED	5000 K	SURFACE	MOUNT WITH TAMPER PROOF HARDWARE
D2	4" MAX SECURITY - EM	KENALL	SDSA 4 0/0 45L50K DCC 2J 1 LEL	277 V	46	4500 lm	LED	5000 K	SURFACE	MOUNT WITH TAMPER PROOF HARDWARE
D4	4" MAX SECURITY W/ CELL LIGHT	KENALL	SDSA 4 0/0 45L50K DCC 2J 1 DLN	277 V	46	4500 lm	LED	5000 K	SURFACE	MOUNT WITH TAMPER PROOF HARDWARE
F1	2X4 LED TROFFER - GASKETED	LITHONIA	EPANL	277 V	48	5000 lm	LED	5000 K	RECESSED	DAMP LOCATION LISTED
F2	2X4 LED TROFFER - GASKETED & EM	LITHONIA	EPANL	277 V	48	5000 lm	LED	5000 K	RECESSED	10W BATTERY
J1	VANDAL RESIST INDUSTRIAL	LITHONIA	VAP	277 V	49	6000 lm	LED	5000 K	SURFACE OR CHAIN 10'-0" AFF UNO	
J2	VANDAL RESIST INDUSTRIAL	LITHONIA	VAP	277 V	49	6000 lm	LED	5000 K	SURFACE OR CHAIN 10'-0" AFF UNO	10W BATTERY
P1	48" DIAMETER PENDANT	PRUDENTIAL	P3820	277 V	54	4100 lm	LED	4000 K	PENDANT	CONVEX LENS, 20% UPLIGHT, AIRCRAFT CABLE MOUNT
R1	EXTERIOR WALL MOUNT	LITHONIA	TWLS	277 V	40	3100 lm	LED	5000 K	WALL 2'-0" AFF UNO	WIRE GUARD
V1	CHASE WALL MOUNT	LITHONIA	LOW 2	277 V	18	2000 lm	LED	5000 K	WALL 7'-0" AFF OR GRATING UNO	
W1	FLAG POLE LIGHT	LITHONIA	DSXF1	277 V	42	5000 lm	LED	5000 K	GROUND REFER TO DETAIL	PE CELL
W2	SIGN LIGHT	LITHONIA	DSXF1	277 V	47	5000 lm	LED	5000 K	GROUND REFER TO DETAIL	PE CELL
X1	SINGLE FACE EXIT SIGN	LITHONIA	LOW 1 R	277 V	5		LED	UNIVERSAL	BATTERY	CHEVRONS AS INDICATED
X2	DOUBLE FACE EXIT SIGN	LITHONIA	LOW 2	277 V	5		LED	UNIVERSAL	BATTERY	CHEVRONS AS INDICATED
X3	SINGLE FACE EXIT SIGN VANDAL PROOF	LITHONIA	LYS W 1 R	277 V	5		LED	UNIVERSAL	BATTERY	CHEVRONS AS INDICATED
X5	SINGLE FACE EXIT SIGN WITH E.L.G.	LITHONIA	LHQM R M6	277 V	5		LED	UNIVERSAL	BATTERY	TWO 110 lm HEADS

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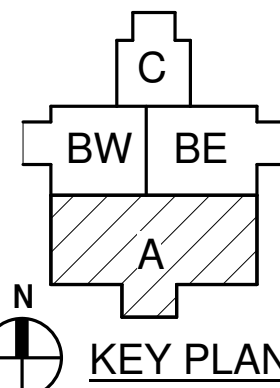
FIRST FLOOR PLAN - PART A - COMMUNICATIONS

1/8" = 1'-0"



0' 2' 4' 8' 16'

1/8" = 1'-0"



KEY PLAN

KEYNOTES

APPLIES TO THIS DRAWING ONLY
REPRESENTED BY [A]

- COORDINATE OUTLET LOCATION WITH COMPUTER STATIONS INDICATED ON THE ARCHITECTURAL PLANS.
- COORDINATE LOCATION OF SMOKE DETECTOR ABOVE CELLS IN CHASE SPACES WITH OTHER TRADES AND RELOCATE AS REQUIRED SUCH THAT DETECTOR WILL BE ACCESSIBLE.
- PROVIDE 4'X8'X3/4" FIRE RESISTANT PLYWOOD ON WALLS INDICATED COVERED WITH TWO COATS OF WHITE PAINT. DO NOT COVER FIRE RESISTANT STAMP. ADHERE TO WALL WITH SCREWS IN THE WALLS STRUCTURE.

GENERAL NOTES

- REFER TO MECHANICAL POWER PLANS FOR ADDITIONAL FIRE ALARM CONNECTIONS.
- ROUTE DATA CABLING IN PART A TO SPACE 118 AND IN PART BW, BE AND C TO SPACE S109

DUPLIN COUNTY DETENTION CENTER

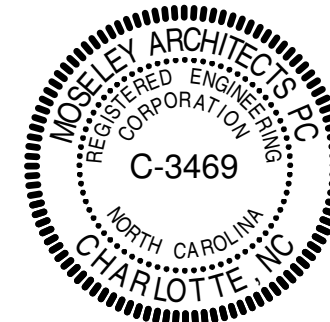
DHSR# - J-378

DUPLIN COUNTY, NORTH CAROLINA
325 FAIRGROUNDS DRIVE, KENANSVILLE NC 28349

NO:	DATE:
821373	DECEMBER 12, 2023
DATE:	REVISIONS
1/5/2024	DESCRIPTION
	AD 01

FIRST FLOOR
PLAN - PART A
COMMUNICATIONS

E2.1.1.3

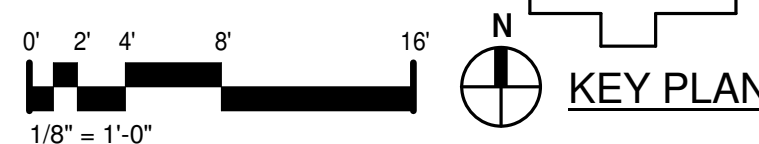
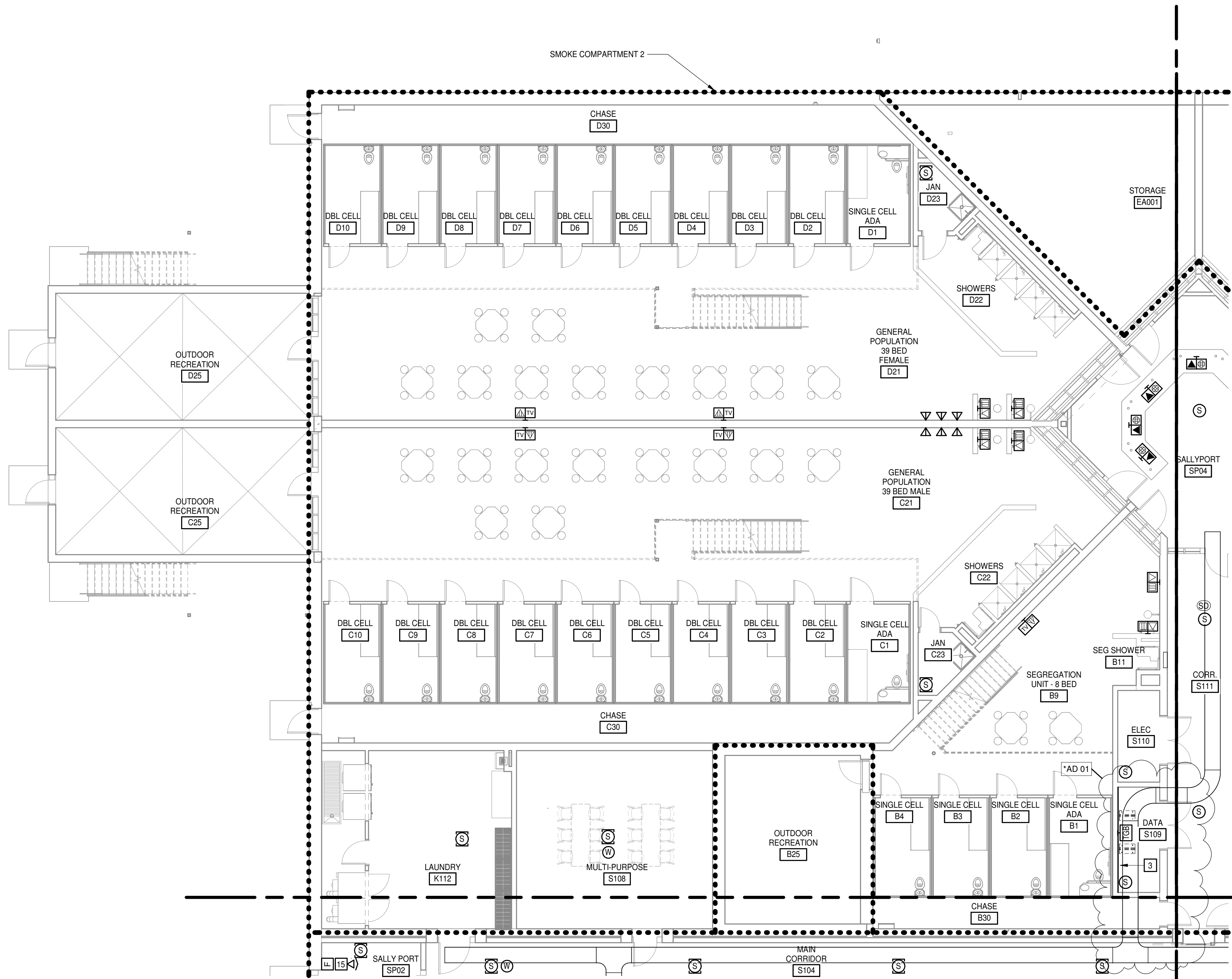


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FIRST FLOOR PLAN - PART BW - COMMUNICATIONS

1/8" = 1'-0"



KEYNOTES

APPLIES TO THIS DRAWING ONLY
REPRESENTED BY [A]

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GENERAL NOTES

- A. REFER TO MECHANICAL POWER PLANS FOR ADDITIONAL FIRE ALARM CONNECTIONS.
- B. ROUTE DATA CABLING IN PART A TO SPACE 118 AND IN PART BW, BE AND C TO SPACE S109

DUPLIN COUNTY DETENTION CENTER

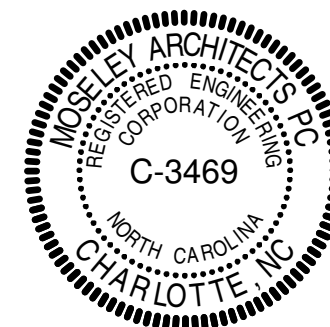
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325 FAIRGROUNDS DRIVE, KENANSVILLE NC 28349

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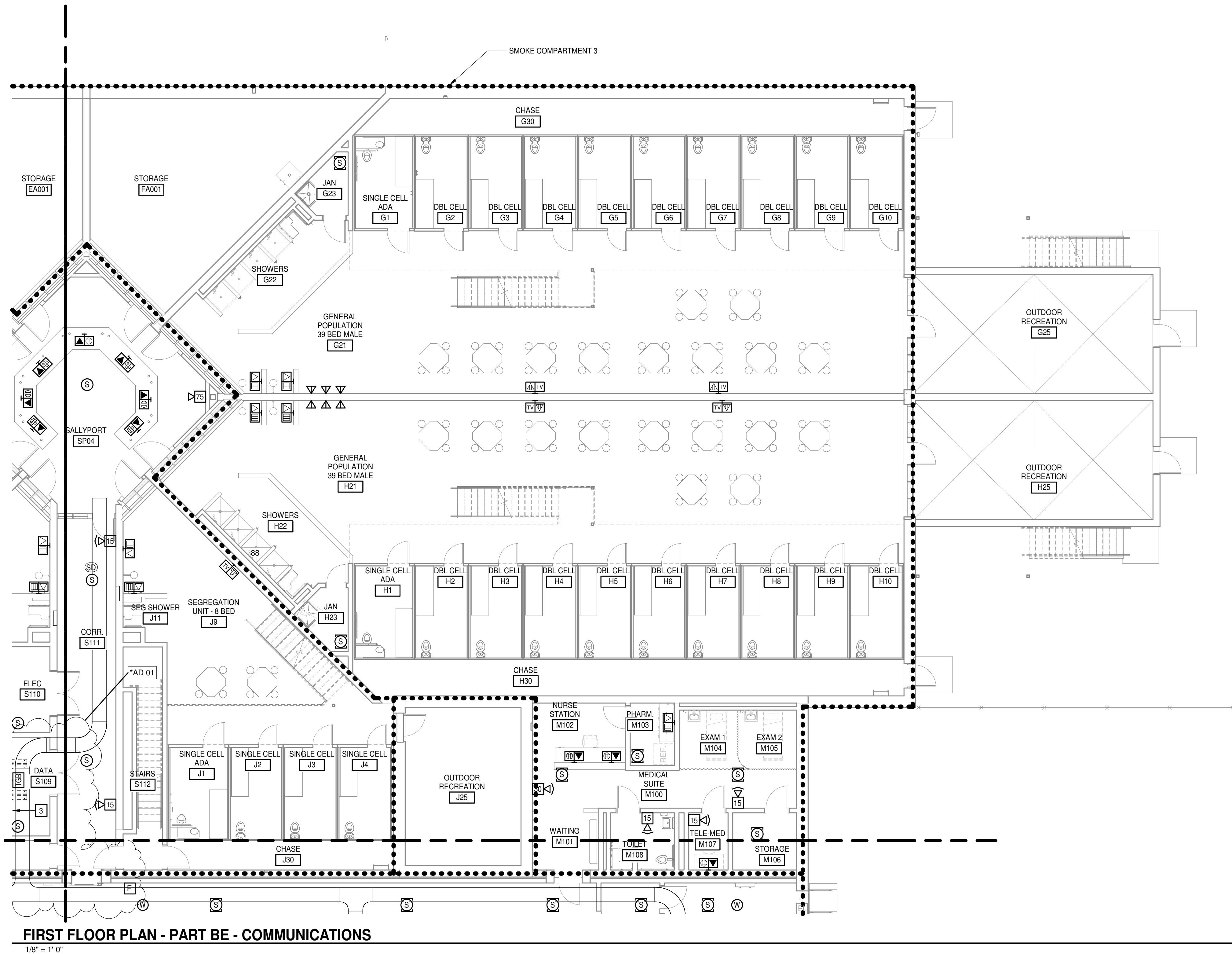
FIRST FLOOR
PLAN - PART BW
COMMUNICATIONS

E2.1.2.3



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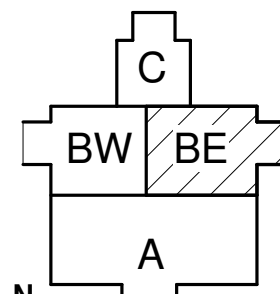
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FIRST FLOOR PLAN - PART BE - COMMUNICATIONS

1/8" = 1'-0"

0' 2' 4' 8' 16'



KEY PLAN

KEYNOTES

APPLIES TO THIS DRAWING ONLY
REPRESENTED BY [Signature]

- COORDINATE OUTLET LOCATION WITH COMPUTER STATIONS INDICATED ON THE ARCHITECTURAL PLANS.
- COORDINATE LOCATION OF SMOKE DETECTOR ABOVE CELLS IN CHASE SPACES WITH OTHER TRADES AND RELOCATE AS REQUIRED SUCH THAT DETECTOR WILL BE ACCESSIBLE.
- PROVIDE 4X8X3/4" FIRE RESISTANT PLYWOOD ON WALLS INDICATED COVERED WITH TWO COATS OF WHITE PAINT. DO NOT COVER FIRE RESISTANT STAMP. ADHERE TO WALL WITH SCREWS IN THE WALLS STRUCTURE.

GENERAL NOTES

- A. REFER TO MECHANICAL POWER PLANS FOR ADDITIONAL FIRE ALARM CONNECTIONS.
- B. ROUTE DATA CABLING IN PART A TO SPACE 118 AND IN PART BW, BE AND C TO SPACE S109

DUPLIN COUNTY DETENTION CENTER

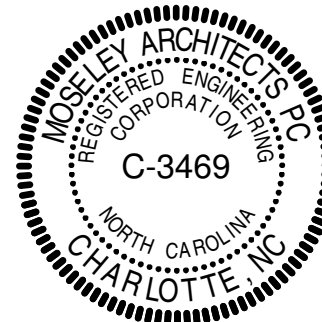
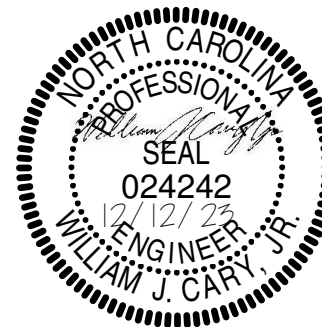
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FIRST FLOOR
PLAN - PART BE
COMMUNICATIONS

E2.1.3.3



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- ## GENERAL NOTES

C. REFER TO PANEL SCHEDULES FOR PANEL CHARACTERISTICS INCLUDING MAIN BREAKER REQUIREMENTS. GROUND PER SERVICE GROUND DETAIL ON THIS DRAWING.

NO SCALE



PROVIDE #2 BARE TINNED COPPER
LOOP DIRECT BURIED AROUND
GENERATOR PAD WITH (2) GROUNDED
RODS EXOTHERMICALLY BONDED TO
CONNECT TO GENERATOR GROUNDING
TERMINAL WITH 2 SEPARATE #2
CONNECTIONS

BUILDING STEEL (IF PROPERLY GROUNDED)

NO SCALE

NOTES:

- A. SWITCHBOARD SHALL BE UL SERVICE ENTRANCE RATED
- B. PROVIDE SPD WITH OVERCURRENT DEVICE, DISCONNECTING MEANS & CONDUCTORS, SIZE PER SPD MFR REQUIREMENTS MOUNTED ON TOP OF EQUIPMENT
- C. PROVIDE DISCONNECTING MEANS LABEL PER 2008 NEC 230.70(B)
- D. PROVIDE GROUND FAULT PROTECTIVE RELAY, DOCUMENT TEST. PROVIDE PHASE LOSS AND UNDERVOLTAGE DRY CONTACT FOR BAS PICKUP.
- E. PROVIDE GROUND INSTALLED DIGITAL MULTIMETER, PLUS MONITORING CABLE IN CONDUIT TO BAS PICKUP MODULE, COORDINATE WITH DIV 25.
- F. FOR NON-SIMULTANEOUS LOADS, ONLY LARGER OF LOADS IS INCLUDED IN TOTAL.

NOTES:
1. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED.

2. FEEDER SIZES BASED ON TABLE 310.15(B)(16), 75°C.
3. SIZES ADJUSTED PER NEC 110.14.

kVA	TYPE	PRIMARY	SECONDARY	COPPER PRIMARY FEEDER	COPPER SECONDARY FEEDER	BONDING CONDUCTOR
15 kVA	LINEAR	480V/3Ø	208Y/120V	3#10, #10 G, 3/4" C.	4#4, #5, 1-1/4" C.	#8
30 kVA	LINEAR	480V/3Ø	208Y/120V	3#6, #10 G, 1" C.	#1, #1, #5, 1-1/2" C.	#6
45 kVA	LINEAR	480V/3Ø	208Y/120V	3#4, #8, 1-1/4" C.	4#10, #6, 2" C.	#6
75 kVA	LINEAR	480V/3Ø	208Y/120V	3#1, #6 G, 1-1/2" C.	4-250CM, #2 G, 2-1/2" C.	#2
112.5 kVA	LINEAR	480V/3Ø	208Y/120V	3#20, #6 G, 2" C.	(2 SETS) 4-3/0, #2 G, 2-1/2" C.	#2
150 kVA	LINEAR	480V/3Ø	208Y/120V	3#40, #4 G, 2-1/2" C.	(2 SETS) 4-250CM, #2/0, 2-1/2" C.	#2/0
225 kVA	LINEAR	480V/3Ø	208Y/120V	(2 SETS) 3#40, #3 G, 2" C.	(3 SETS) 4-350CM, #2/0 G, 3" C.	#2/0
300 kVA	LINEAR	480V/3Ø	208Y/120V	(2 SETS) 3#40, #3 G, 2-1/2" C.	(4 SETS) 4-350CM, #4/0 G, 4" C.	#2
500 kVA	LINEAR	480V/3Ø	208Y/120V	(3 SETS) 3-350CM, #10, 0.4" C.	(6 SETS) 4-350CM, 300CM G, 4" C.	#3/0

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E5.1