ADDENDUM NO. TWO
to
Contract Documents for

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS (WBHS FIELDHOUSE)

Project No.: 1716 File: B-8.2

6131 Falls of Neuse, Suite 204
Raleigh, North Carolina 27609

Date: **March 06, 2020**

Boomerang Design

NOTICE TO BIDDERS:

This addendum is issued pursuant to the General Conditions of the Contract for Construction, and is hereby made a part of the Contract Documents.

The addendum serves to clarify, revise, and supersede information in the Project Manual, the Drawings and Addenda (if any), which have previously been issued. It should be bound in the Project Manual for the project.

Bidders shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

GENERAL:

Bid Date Change – Bid Date is now March 31, 2020 @ 2:00 pm

Pre-Bid Meeting Minutes

See attached Pre-Bid Meeting Minutes attached to this Addendum #2.

Clarifications:

Bidder is responsible for permit and inspection fees, Owner is responsible for Impact Fees

Specification section 02 41 00 is for any demolition required to install new conduits into and through existing building.

Hydraulic Cement Underlayment is meant to be used where required under floor finishes such as LVT and Carpet.

Landscaping: There is no landscape plan and thus no trees and shrubs. All disturbed areas are to be stabilized using the seeding schedule provided on sheet CS-503.

Projectors are identified in Specification section 11 23 00. Projector screens are Owner provided.

There is only an allowance for face brick.

Requirement that Masonry contractor provide all materials, labor, and equipment will not be relaxed.

No pads are required for laundry equipment, slab is shown as 6” slab.

Gypsum board ceilings are supported by suspended framing system identified in specification section 09 21 16.

The cabling contract falls under the electrical contract. EC is responsible for all cabling whether self-performed or by utilizing a sub that specializes in this type of wiring-see plans and specs.

ProPress fittings are acceptable for the copper piping

Spec section 26 05 33.13 does not use the word "masonry", it states concrete wall. Note D8 is addressing feeder conduits that are entering a building from below grade, they are to transition to GRC 3 feet horizontally before turning up into and through the slab. Do not use PVC conduit in the walls.

In hard ceilings without access panels, you may use FMC as long as it is strapped, secured, and installed per NEC article 348 unless prohibited elsewhere in the NEC. The NEC requires JB's to be accessible. You may also run conduit between fixtures instead of FMC. MC Cable is not allowed.

ITEMS PERTAINING TO THE PROJECT MANUAL:

SECTION 00 21 13 – Instructions to Bidders

MODIFICATION AND WITHDRAWL OF BIDS – Amend bid withdraw statement as follows:

No Bidder may withdraw a bid within 90 days following the opening of bids

SECTION 00 73 00 – Supplementary Conditions

Add the following Articles:

4.8.1 The Owner shall be responsible for utility impact fees, stormwater permit, and driveway permit.

4.8.2 The Contractor is responsible for all fees associated with building permit, inspections, and other costs associated with temporary utilities, including but not limited to installation, use, disconnection, removal and /or relocation.

Revise Article 8.1 to read:

8.1 Add the following: Work shall be substantially complete within 268 calendar days following Notice to Proceed. Final completion shall be 30 calendar days following Substantial Completion.

SECTION 04 20 00 – UNIT MASONRY

2.1.D – Revise line 4 to read:

4. Finish: Color to be selected from manufacturer's full range of colors including white-based cement colors.

2.1.D.5.a – Revise line 1 to read:

1) Decorative Concrete Masonry Unit: DCMU: 4 x 8 x 16 inch split face, Adams Group 3 colors

2.2.C.4 – Revise line a. to read:

a. Palmetto

SECTION 05 40 00 – COLD-FORMED METAL FRAMING

Replace section 05 40 00 with revised specification section 05 40 00 attached with this Addendum #2

SECTION 06 41 00 – ARCHITECTURAL CASEWORK

1.4.B – Remove requirement for AWI certified firm

SECTION 07 24 23 – DIRECT APPLIED FINISH SYSTEM

Delete specification section 07 24 23 in its entirety.

SECTION 08 80 00 – GLAZING

1.3.A – Remove requirement for impact loads. Impact resistant glazing is not required on this project.

SECTION 09 75 01 – EPOXY/BLUESTONE WINDOW SILLS

2.1 – Delete paragraph B

2.1.C – Revise to read:

C. Colors: Provide selections from manufacturer's standard color selections.

Delete line 2.1.C.1

SECTION 10 14 00 – SIGNAGE

2.7.A.4 – Revise to read:

4. Size:
   a. WBHS Trojans: Single panel sign (1 required)
      1) "Trojan Graphic" 72" x 48"

SECTION 31 30 00 – TERMITE CONTROL

Add specification section 31 30 00 included with this Addendum #2

ITEMS PERTAINING TO THE DRAWINGS:

SHEET CD-101

Replace sheet CD-101 with revised sheet CD-101 included with this Addendum #2

SHEET CS-101

Replace sheet CS-101 with revised sheet CS-101 included with this Addendum #2

SHEET CG-101

Replace sheet CG-101 with revised sheet CG-101 included with this Addendum #2

SHEET CU-101

Replace sheet CU-101 with revised sheet CU-101 included with this Addendum #2

SHEET A001

See ABD-02 for quantity and copy of post and panel signs.

SHEET A104

See ABD-04 for wall hung canopy sizes

SHEET A501

Replace sheet A501 with revised sheet A501 included with this Addendum #2

SHEET A503

See ABD-01 for revised detail 8/A503.

SHEET A601

See ABD-03 for revised Room Finish Schedule.

SHEET M101

Replace sheet M101 with revised Sheet M101 included with this Addendum #2

SHEET E001

Replace sheet E001 with revised Sheet E001 included with this Addendum #2

SHEET E002

Disregard detail reference to Sonitrol this should have been edited out of the detail. Cameras are to be included in bid.

SHEET E004

Replace sheet E004 with revised Sheet E004 included with this Addendum #2

SHEET E301

Replace sheet E301 with revised Sheet E301 included with this Addendum #2

SHEET E501

Replace sheet E501 with revised Sheet E501 included with this Addendum #2

END OF ADDENDUM 02

MEETING MINUTES

PRE-BID CONFERENCE

BCS Athletic Improvements

Brunswick County Schools

March 04, 2020

boomerang DESIGN No.: 1716 File No.: B-8.0

- This project consists of a new athletic fieldhouse and related sitework. There is work that is required to be completed prior to start of 2020-2021 school year. The temporary roadway and all utilities that cross the temporary roadway must be installed prior to August 14, 2020.
- Meeting was commenced at 10:00 am
- Sign-in sheet was circulated and is attached to these meeting minutes

******NOTE***** Following the Pre-Bid Meeting and prior to issuance of the meeting minutes, the bid date has been revised. These meeting minutes will indicate the corrected dates due to the change of the bid opening date.**

Schedule

- Substitution Deadline: ~~**Monday March 9th by 5:00 p.m.**~~ **Friday March 20th by 5:00 p.m.**
  - All substitutions must be submitted by a prime contractor.
  - Complete the substitution form in its entirety so we can effectively evaluate the request for substitution of product or manufacturer.
  - All accepted requests will be included in Addendum
- Addendum: The final addendum will be issued by ~~**Tuesday, March 10, 2020**~~. **Tuesday March 24, 2020**
  - All addenda will be issued electronically
  - Addendum and meeting minutes from this conference will be issued together. These will become part of the project documents.
- Bid Date: ~~**Tuesday, March 17, 2020 at 2:00 p.m.**~~ **Tuesday March 31, 2020 at 2:00 p.m. (local time)**

  Single Prime Bids in the BCS conference room, 199 Sessions Drive, Bolivia, NC.
  - Do not be late. Bids will not be accepted after the 2:00 p.m. deadline.
  - The bid clock will be determined by a Verizon Cellular phone.
  - Notify Owner or Architect if you are sending your bid by mail or courier. We do not want your bid to be missed
- Construction Duration: 298 calendar days.

Bidding Procedures

- Section 00 21 13 – "Instruction to Bidders"
  - Refer to this section for further information on the Bid Proposal and Bonding information.
- Section 00 42 13 – "Bid Form"
  - Refer to Section 00 43 93 "Bidder's Checklist" for how to complete your bid form and attachments.
  - You must complete the Bid Form in its entirety.

- Attachments to Bid Form
    - "Form of Bid Bond" – Section 00 43 13
        - Your Bid Bond must be attached to the bid form in order for your bid to be read at the bid opening.
    - "Minority Business Participation Guidelines" – section 00 43 39
        - You must include your minority participation you will utilize on this project. Refer to the following forms located in the project manual.
            - "Identification of Minority Business Participation" form
            - "State of North Carolina Affidavit A – Listing of the Good Faith Effort"
            - "State of North Carolina Affidavit B – Intent to Perform Contract with Own Workforce"
    - Alternates: Owner's preferred brand alternates
        - Per GS 133-3, Owner would like to bid preferred brand items in keeping with the county standards. Items include:
            - Preferred locksets with Schlage Everest large format interchangeable core
            - Preferred mechanical controls by Allerton
            - Preferred Video Surveillance System by Panasonic
        - Comments/Input
            - The Owner will consider all comments
                - Oral comments from Open Meeting
                - Written comments only after this meeting and up to March 9th, 2020.

Standard Documents

- "General Conditions of the Contract" – Section 00 72 00 and 00 73 00 "Supplementary Conditions"
    - Contractor responsible for paying for permits and inspections
    - Identifies liquidated damages and other conditions of the contract

Project Overview

- There is work that is required to be completed prior to start of 2020-2021 school year. The temporary roadway and all utilities that cross the temporary roadway must be installed prior to August 14, 2020.
- The roadway loop around the stadium will be in operation during construction after August 14, 2020, as it is a parent drop off/pickup stacking lane.
- Base Scope of Work – Section 01 00 00 "Summary
- This project will require all documentation be handled electronically, except for those items requiring color selection for finishes.
    - All construction documentation, including submittals, RFI's, ASI's, Close-Out Documentation, O&M Manuals, etc. will be handled electronically.

Additional Documents

- Complete plans and specifications for this project can be obtained from Boomerang Design at raleighbids@thinkboomerang.com Once received, a reply email with a link to download the project drawings and specifications will be sent.
- Direct all bidding questions by email to raleighbids@thinkboomerang.com

ATTENDANCE SIGN-UP SHEET

boomerang DESIGN
rethink, repurpose, results

PROJECT NUMBER: 1716 MEETING: PRE-BID MEETING

PROJECT NAME: BCS ATHLETIC IMPROVEMENTS(WBHS) DATE: 3/04/2020 TIME: 10:00 AM PLACE: WEST BRUNSWICK HIGH SCHOOL

Please Print

Name	Company/ Department	E-Mail Address	Phone
Renee Duncan	Paragon Building	rduncan@paragonwilmington.com	910-397-0933
David Olson Jr.	Banks Channel Plumbing + Mech.	dojr@bankschannelpm.com	910-821-1885
AL Fulford	Fulford Heating & Cooling Inc	AL@FulfordHVAC.com	910-279-1937
Jason Walker	Carolina Creations	jwalker@carolinacreations.biz	910-755-6411
SHANNON HAMILTON	GRAKA BUILDERS	shamilton@grakabuilders.com	910-642-8342
Ashley Work	FBi Construction	ashley.work@fbiconstruction.com	843-734-4324
Seth Speight	WM. Jordan Co	SSpeight@wmjordan.com	9106794551
Conell Jenkins	Group III Mgt Inc	conell.jenkins@yahoo.com	910-512-3594

SECTION 05 40 00 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Soffit framing.

B. Related Sections include the following:
   1. Division 05, Section "Metal Fabrications" for masonry shelf angles and connections.
   2. Division 09, Section "Gypsum Board Assemblies" for interior non-load-bearing metal-stud framing and ceiling-suspension assemblies.

1.2 DEFINITIONS

A. Minimum Uncoated Steel Thickness: Minimum uncoated thickness of cold-formed framing delivered to the Project site shall be not less than 95 percent of the thickness used in the cold-formed framing design. Lesser thicknesses shall be permitted at bends due to cold forming.

B. Producer: Entity that produces steel sheet coil fabricated into cold-formed members.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads within limits and under conditions indicated.
   1. [Design Loads: As indicated.]
   2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:
      a. Exterior Non-Load-Bearing Curtain-Wall Framing: Horizontal deflection of 1/600 of the wall height.
   3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
   4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
      a. Upward and downward movement of 1 inch.

B. Design exterior non-load-bearing curtain-wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.

1.4 SUBMITTALS

A. Shop Drawings: Provide shop drawings prepared by cold-formed metal framing manufacturer. Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining Work.
   1. For cold-formed metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

B. Mill certificates indicating steel sheet complies with requirements.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed cold-formed metal framing similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Engineering Responsibility: Engage a qualified professional engineer registered in the state of the project, to prepare design calculations, Shop Drawings, and other structural data.

C. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.

D. Mill certificates indicating steel sheet complies with requirements, including uncoated steel thickness, yield strength, tensile strength, total elongation, chemical requirements, ductility, and galvanized-coating thickness.

E. AISI Specifications: Comply with AISI's NASPEC-2001 "North American Specification for the Design of Cold-Formed Steel Structural Members" for calculating structural characteristics of cold-formed metal framing:
   1. CCFSS Technical Bulletin: "AISI Specification Provisions for Screw Connections."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling in accordance with AISI's "Code of Standard Practice".

B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation in accordance with AISI's "Code of Standard Practice".

PART 2 - PRODUCTS

2.1 MATERIALS

A. Steel Sheet: ASTM A 1003/A 1003M and A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
   1. Grade: 33, unless otherwise required by structural performance.
   2. Coating: G90.

2.2 SOFFIT FRAMING

A. Steel Studs: Manufacturer's standard C-shaped and hat-shaped sections, of web depths indicated, punched, with stiffened flanges and as follows:
   1. Minimum Uncoated-Steel Thickness: 16 gauge minimum.
   2. Flange Width: 1-5/8 inches minimum.

2.3 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories of the same material and finish used for framing members, with a minimum yield strength of 33,000 psi for 18 gauge and lighter members; 50,000 psi for 16 gauge and heavier members.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
   1. Supplementary framing.
   2. Bracing, bridging, and solid blocking.
   3. Web stiffeners.
   4. End clips.

2.4 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123.

B. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

C. Mechanical Fasteners: Corrosion-resistant-coated, with fluoropolymer coating, self-drilling, self-threading steel drill screws.
   1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

D. Welding Electrodes: Comply with AWS standards.

2.5 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: ASTM A 780.

2.6 FABRICATION

A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.
   1. Fabricate framing assemblies using jigs or templates.
   2. Cut framing members by sawing or shearing; do not torch cut.
   3. Fasten cold-formed metal framing members by welding or screw fastening. Wire tying of framing members is not permitted. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
   4. Fasten cold-formed metal framing members by welding.
      a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
   5. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
   1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
   2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed metal framing according to ASTM C 1007, unless more stringent requirements are indicated.

C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.

1. Bolt or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.

D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.

1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed metal framing members by welding or screw fastening. Wire tying of framing members is not permitted.
    a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.

E. Install framing members in one-piece lengths, unless splice connections are indicated for track or tension members.

F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.

H. Install insulation in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.

J. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:

1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.3 FIELD QUALITY CONTROL

A. Testing: Owner will engage a qualified independent testing agency to perform field quality-control testing.

B. Field and shop welds will be subject to inspection and testing.

C. Testing agency will report test results promptly and in writing to Contractor and Architect.

D. Remove and replace Work that does not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

3.4 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Provide protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure cold-formed metal framing, sheathing, and air infiltration barrier is without damage or deterioration at time of installation of subsequent materials and at Substantial Completion.

END OF SECTION 05 40 00

SECTION 31 30 00 – TERMITE CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following for termite control:
   1. Soil treatment.

1.2 DEFINITIONS

A. EPA: Environmental Protection Agency.

B. PCO: Pest control operator.

1.3 SUBMITTALS

A. Product Data: Treatments and application instructions, including EPA-Registered Label.

B. Product Certificates: Signed by manufacturers of termite control products certifying that treatments furnished comply with requirements.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following as applicable:
   1. Date and time of application.
   2. Moisture content of soil before application.
   3. Brand name and manufacturer of termiticide.
   4. Quantity of undiluted termiticide used.
   5. Dilutions, methods, volumes, and rates of application used.
   6. Areas of application.
   7. Water source for application.

E. Warranties: Special warranties specified in this Section.

1.4 QUALITY ASSURANCE

A. Applicator Qualifications: A PCO who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment in jurisdiction where Project is located and who is experienced and has completed termite control treatment similar to that indicated for this Project and whose work has a record of successful in-service performance.

B. Regulatory Requirements: Formulate and apply termiticides, and label with a Federal registration number, to comply with EPA regulations and North Carolina Department of Agriculture, Structural Pest Control Division.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with EPA-Registered Label requirements and requirements of authorities having jurisdiction.

1.6 COORDINATION

A. Coordinate soil treatment application with excavating, filling, and grading and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs, before construction.

1.7 WARRANTY

A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Special Warranty: Written warranty, signed by applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

C. Warranty Period: Three years from date of Substantial Completion.

1.8 MAINTENANCE SERVICE

A. Continuing Service: Provide a proposal for continuing service, including monitoring, inspection, and retreatment for occurrences of termite activity, from applicator to Owner, in the form of a standard yearly (or other period) continuing service agreement, starting on the date of Substantial Completion. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in a soluble or emulsible, concentrated formulation that dilutes with water or foaming agent, and formulated to prevent termite infestation. Use only soil treatment solutions that are not harmful to plants. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to the product's EPA-Registered Label.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of the soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparing substrate. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended by termiticide manufacturer.

C. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute the treatment evenly.

1. Slabs-on-Grade, Footings, and Basement Slabs: Underground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil including soil along entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers, piers, and chimney bases; and along entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Masonry: Treat voids.
4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

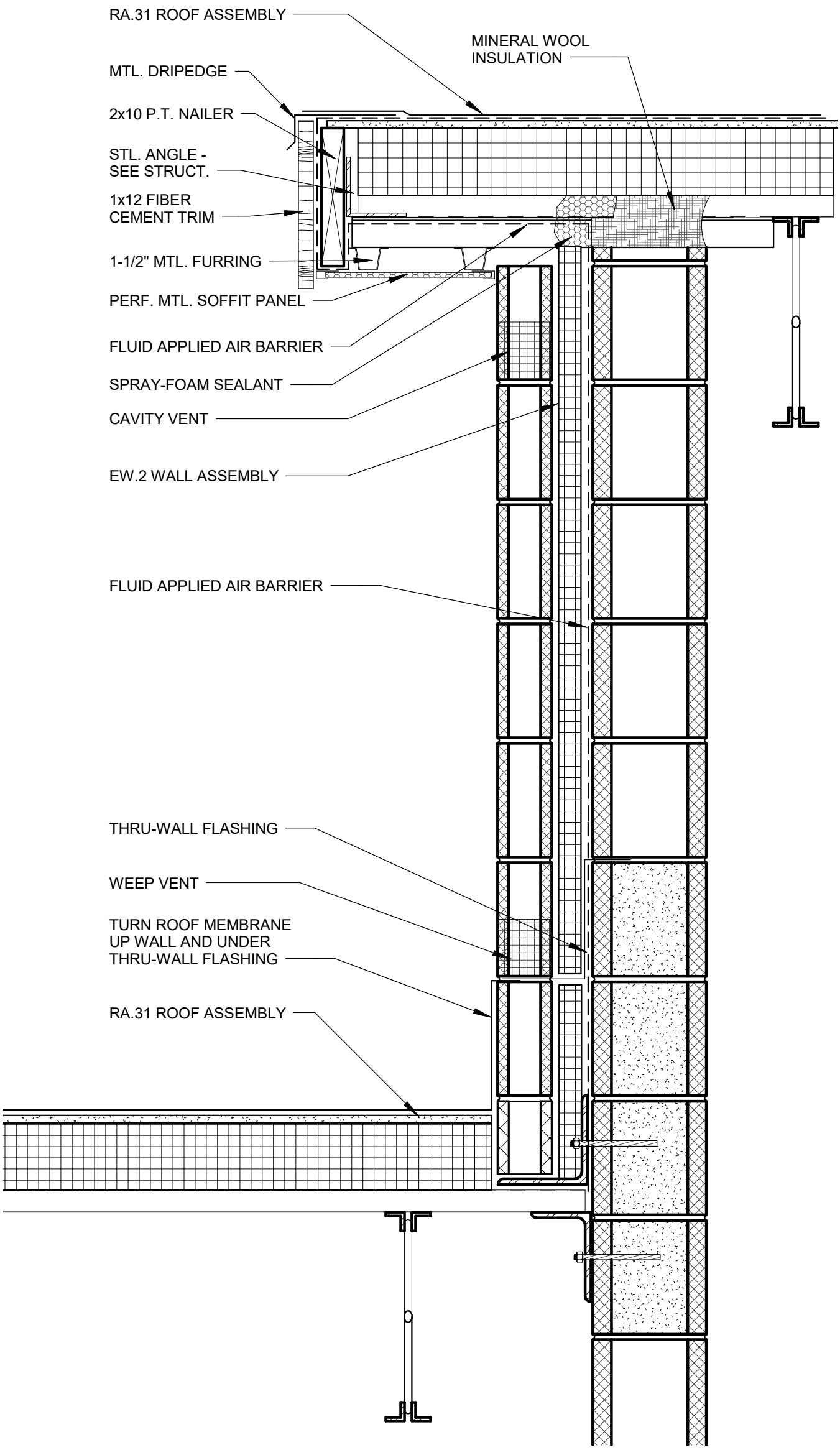
B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION 31 30 00



8 **ROOF DETAIL**

1 1/2" = 1'-0"

boomerang DESIGN
rethink, repurpose, results
6131 Falls of Neuse Rd. | Suite 204 | Raleigh, NC 27609

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS
PROJECT TITLE:

1716
BOOMERANG DESIGN PROJECT NO.:

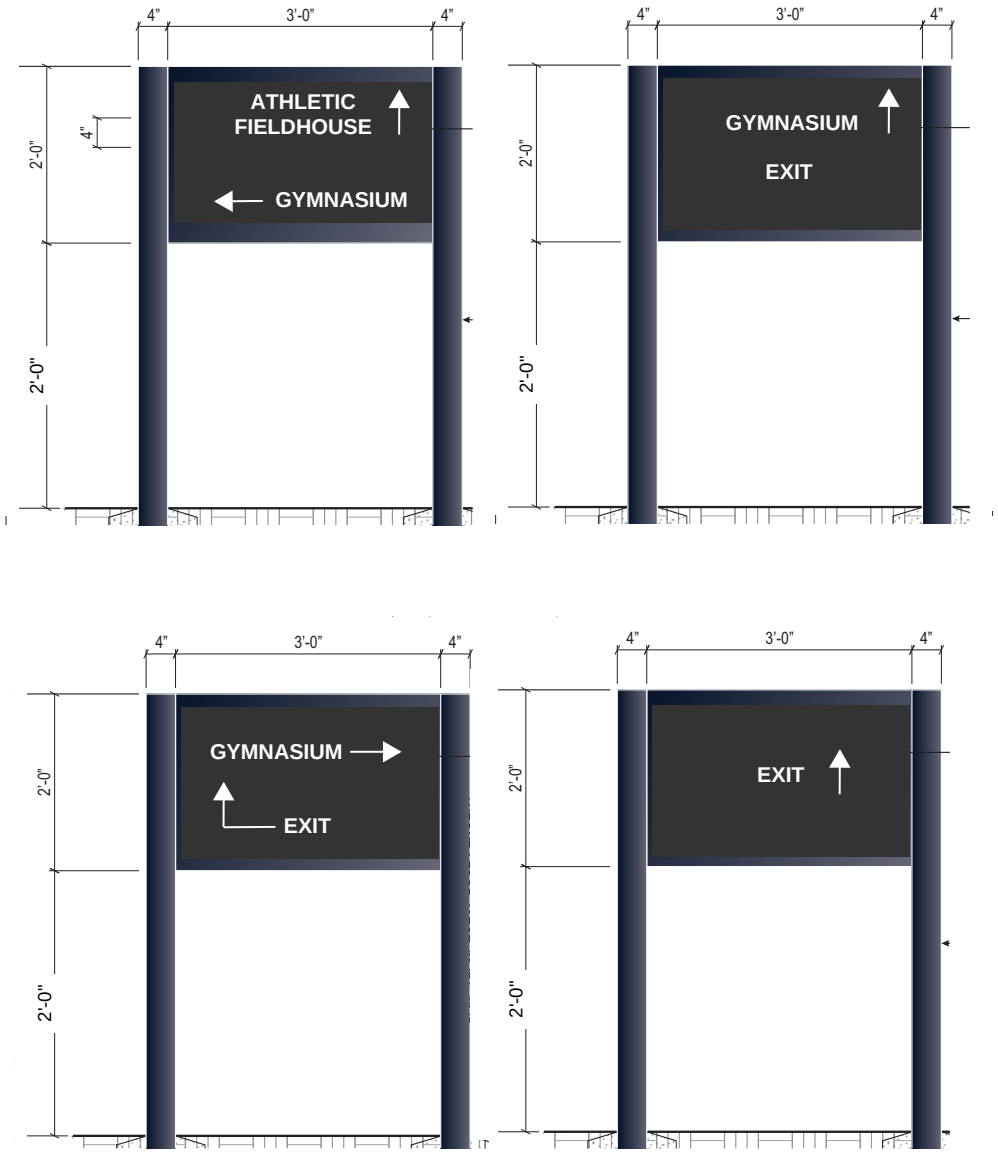
03/03/20
DRAWING RELEASE DATE:

ADDENDUM

2
ISSUE NO.:

ABD-01
BULLETIN NO.:

A503
DRAWING REFERENCE:



POST AND PANEL SIGN COPY

SIGNS TO BE FIELD LOCATED BY ARCHITECT/OWNER

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE:

1716
BOOMERANG DESIGN PROJECT NO.:

ADDENDUM

2
ISSUE NO.:

ABD-02
BULLETIN NO.:

A001
DRAWING REFERENCE:

03/06/20
DRAWING RELEASE DATE:

boomerang DESIGN
rethink, repurpose, results
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ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR FINISH	BASE MAT'L	WALL FINISH	CEILING MAT'L	NOTES
001	ELEC	SEALED CONC	RUBBER	PAINT	EXP. STRUCT.	
002	OUTDOOR STORAGE	SEALED CONC	RUBBER	PAINT	EXP. STRUCT. - PAINT	SEE ALTERNATE #3
003	WOMEN	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	SEE ALTERNATE #3
004	MEN	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	SEE ALTERNATE #3
100	CORRIDOR	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
100A	VESTIBULE	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
100B	VESTIBULE	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	
100C	CORRIDOR	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
101	LOCKER ROOM	SEALED CONC	RUBBER	PAINT	EXP. STRUCT. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
102	COACH	LVT	RUBBER	PAINT	ACP-1	
102A	COACH'S TOILET	CERAMIC	CERAMIC	PAINT	GYP. - PAINT	
103	JAN./MECH	SEALED CONC	RUBBER	PAINT	ACP-1	ALTERNATE FLOOR FINISH - ALT. #3
104A	TEAM MEETING	CARPET	RUBBER	PAINT	ACP-1	
104B	TEAM MEETING	CARPET	RUBBER	PAINT	ACP-1	
105	LAUNDRY	SEALED CONC	RUBBER	PAINT	GYP.	ALTERNATE FLOOR FINISH - ALT. #3
106	TLT	CERAMIC	CERAMIC	PAINT	GYP. - PAINT	
106A	SHOWER	CERAMIC	CERAMIC	PAINT	GYP.	
107	CORRIDOR	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
108	FOOTBALL STORAGE	SEALED CONC	RUBBER	PAINT	ACP-1	ALTERNATE FLOOR FINISH - ALT. #3
109	CORRIDOR	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
109A	VESTIBULE	SEALED CONC	RUBBER	PAINT	GYP.	
109B	CORRIDOR	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
110	LOCKER ROOM	SEALED CONC	RUBBER	PAINT	EXP. STRUCT. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
110A	STORAGE	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3
111	TRAINING ROOM	SEALED CONC	RUBBER	PAINT	ACP-1	ALTERNATE FLOOR FINISH - ALT. #3
112	TLT	CERAMIC	CERAMIC	PAINT	GYP. - PAINT	
112A	SHOWER	CERAMIC	CERAMIC	PAINT	GYP. - PAINT	
114	CONCESSIONS	SEALED CONC	RUBBER	EPOXY PAINT	GYP. - PAINT	STRIKE JOINTS FLUSH / ALTERNATE FLOOR FINISH - ALT. #3
114A	STOR	SEALED CONC	RUBBER	PAINT	GYP. - PAINT	ALTERNATE FLOOR FINISH - ALT. #3

ROOM FINISH SCHEDULE NOTES:

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE:

ADDENDUM

2

ISSUE NO.:

ABD-03

BULLETIN NO.:

A601

DRAWING REFERENCE:

1716

BOOMERANG DESIGN PROJECT NO.:

03/06/20

DRAWING RELEASE DATE:

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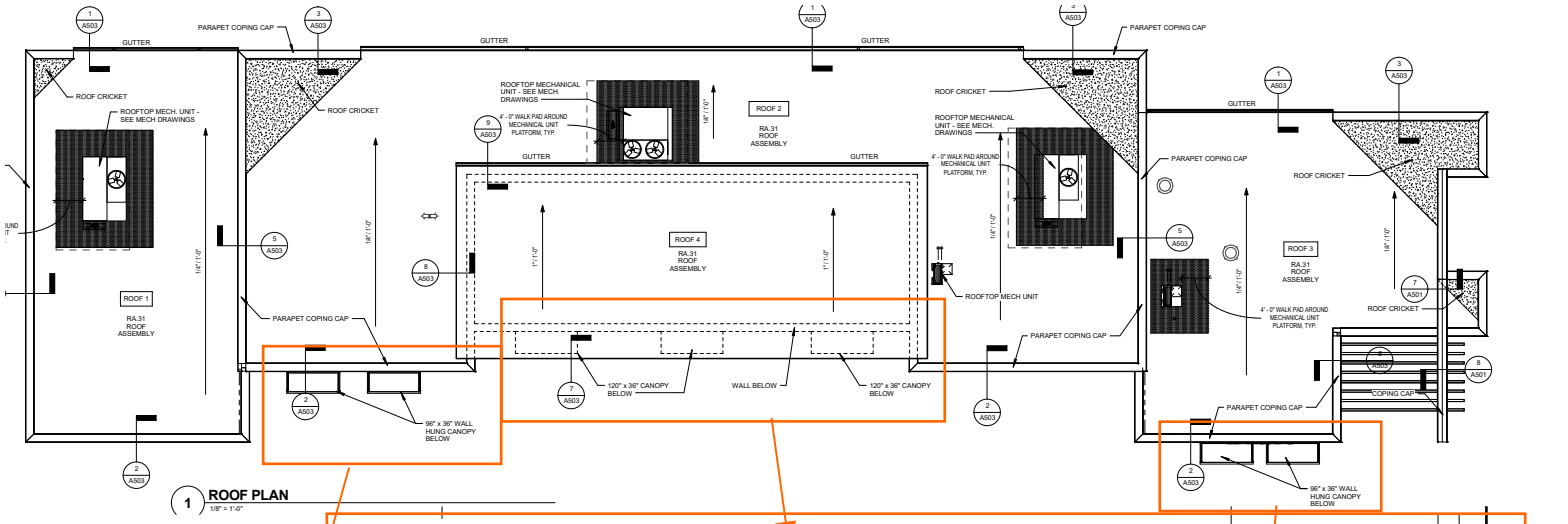
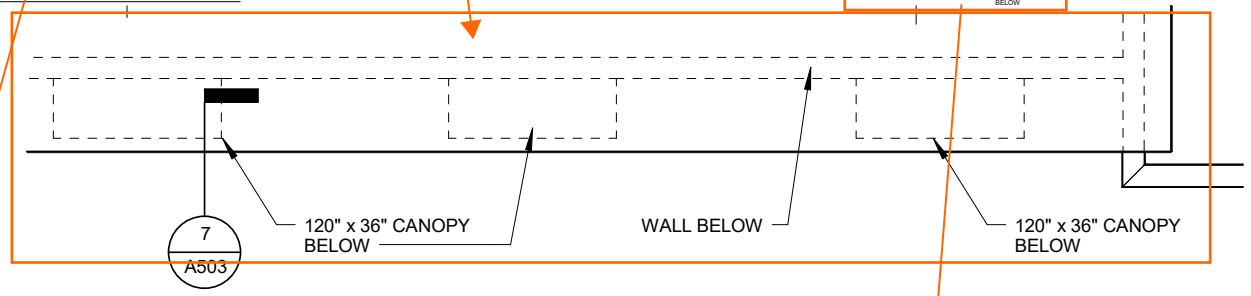
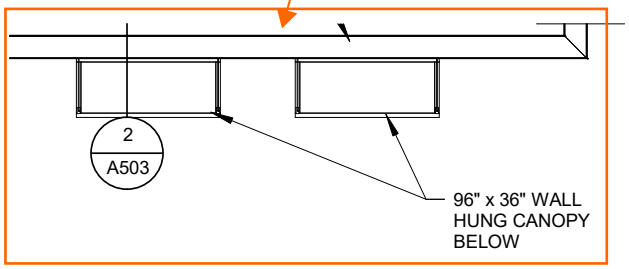
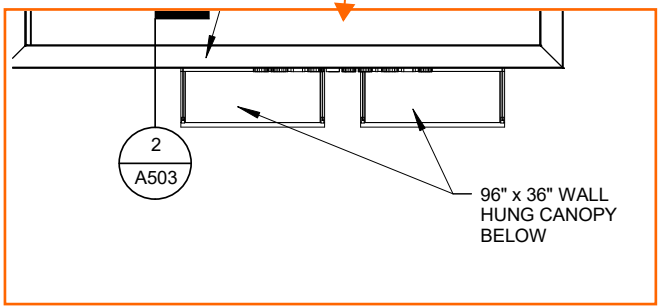


1 ROOF PLAN
1/8" = 1'-0"







ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE:

1716
BOOMERANG DESIGN PROJECT NO.:

03/06/20
DRAWING RELEASE DATE:

ADDENDUM 2
ISSUE NO.:

ABD-04
BULLETIN NO.:

A104
DRAWING REFERENCE:

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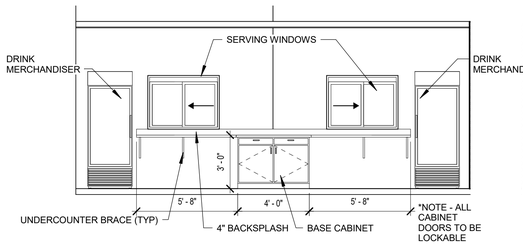
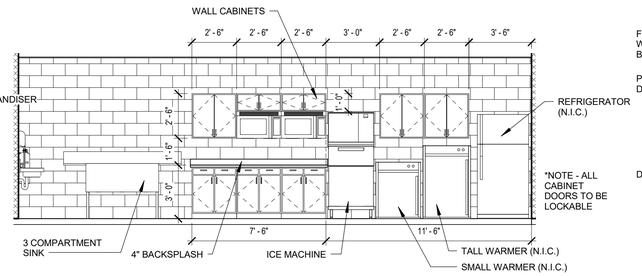
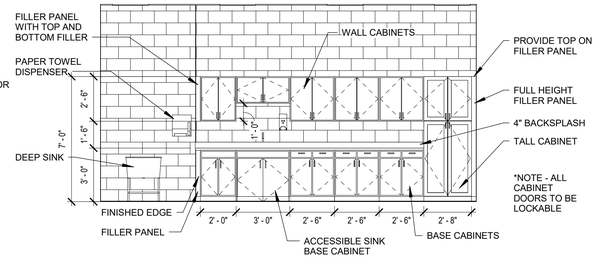


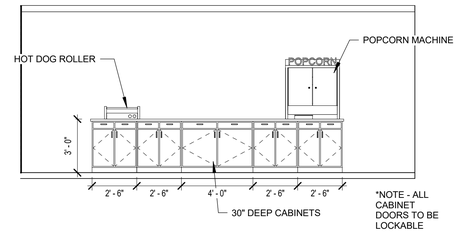
1 CONCESSION SERVING
1/4" = 1'-0"



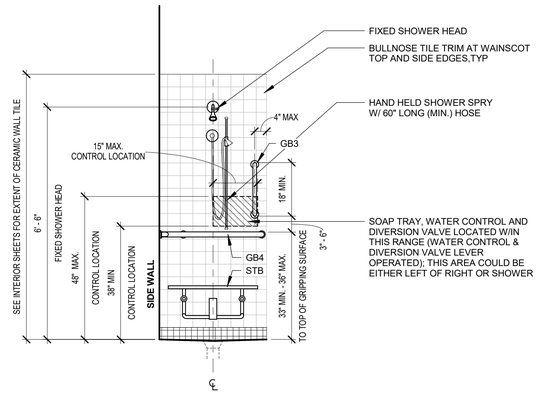
2 INTERIOR ELEVATION - CONCESSIONS
1/4" = 1'-0"



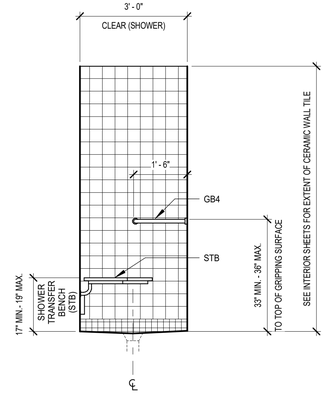
3 INTERIOR ELEVATION - TRAINING ROOM
1/4" = 1'-0"



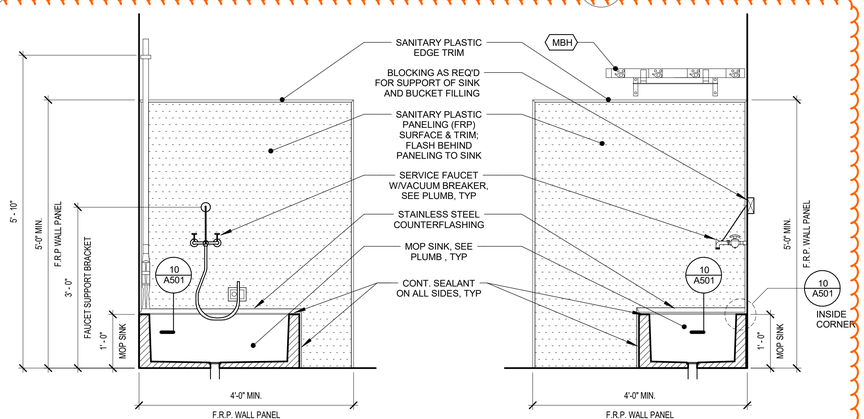
4 CONCESSION ISLAND
1/4" = 1'-0"



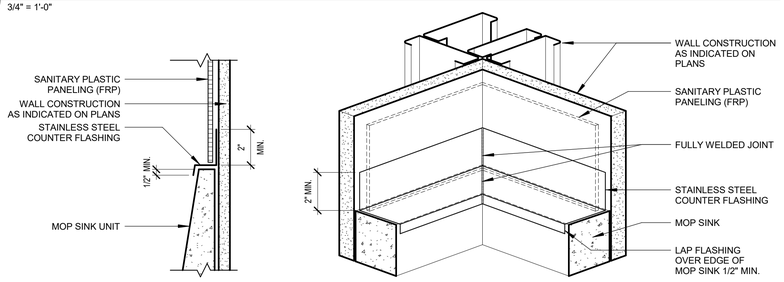
5 ELEVATION - TRANSFER SHOWER - CONTROL WALL
1/2" = 1'-0"



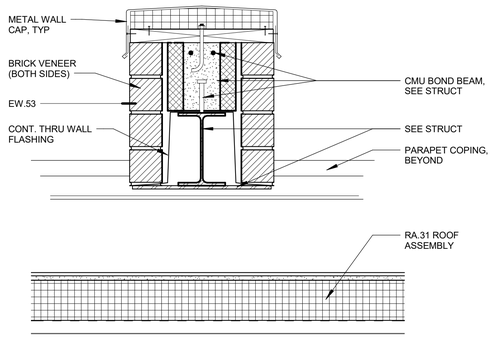
6 ELEVATION - TRANSFER SHOWER - REAR WALL
1/2" = 1'-0"



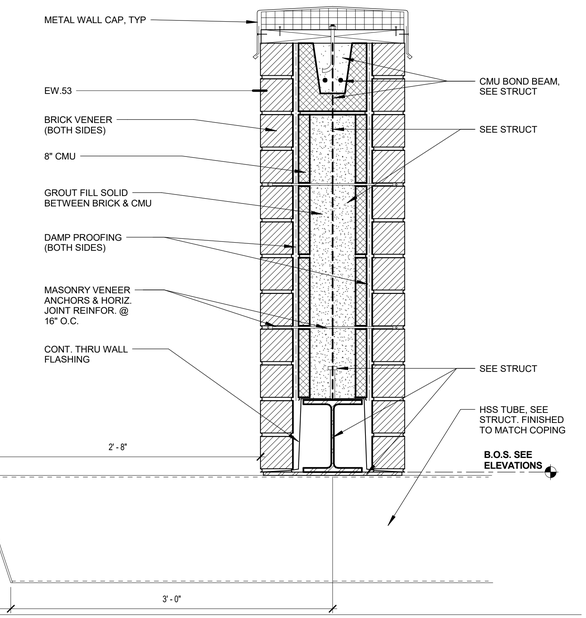
9 MOP SINK DETAILS
3/4" = 1'-0"



10 MOP SINK FLASHING DETAILS
3" = 1'-0"



7 ROOF DETAIL
1 1/2" = 1'-0"



8 ROOF DETAIL
1 1/2" = 1'-0"

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BRUNSWICK COUNTY SCHOOLS
A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

REVISIONS

NO.	DATE	DESCRIPTION
01	3/6/20	ADDEDNUM 02

BID
PROJECT PHASE

1716
BOOMERANG DESIGN PROJECT NUMBER

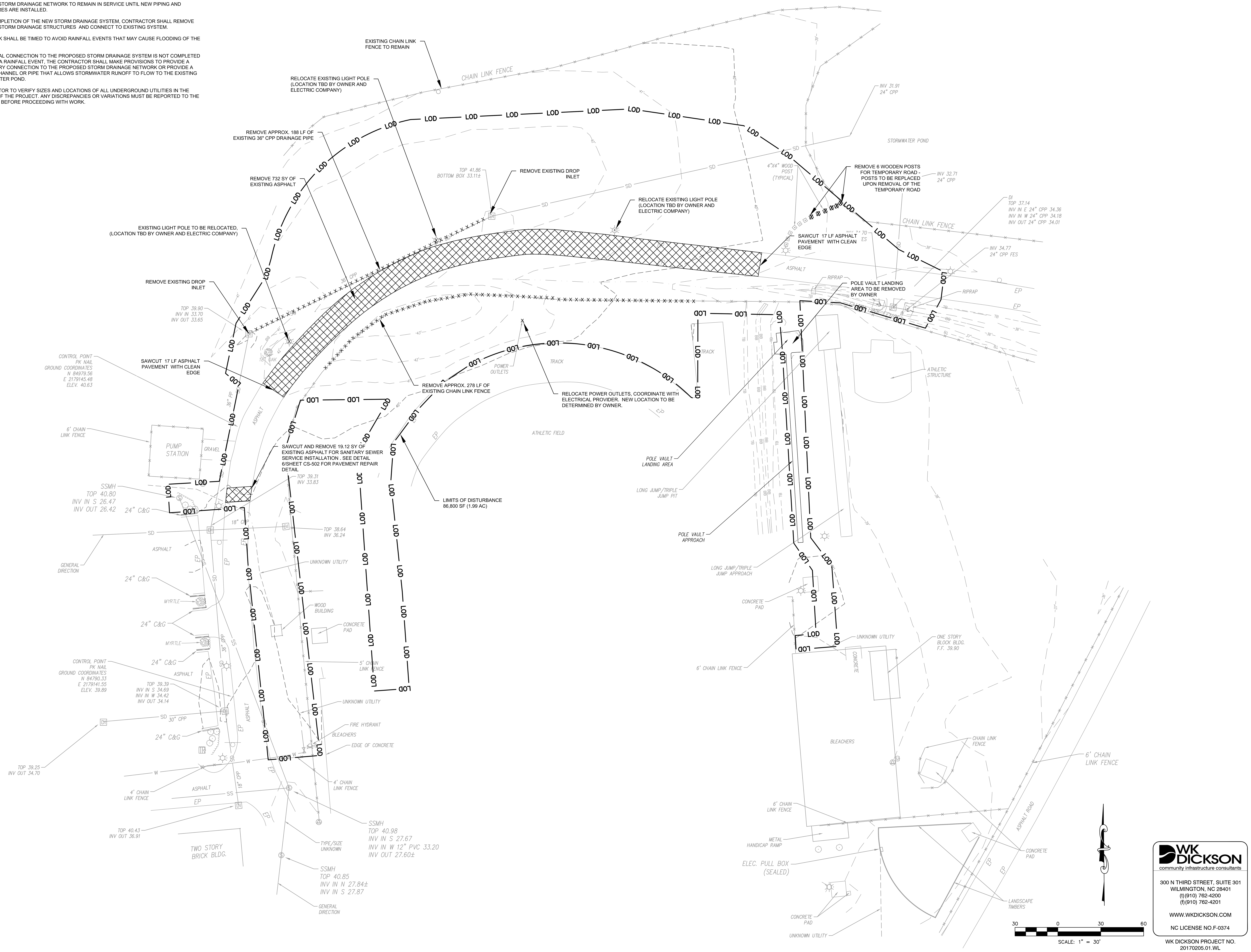
2-24-2020
DRAWING RELEASE DATE

CASEWORK ELEVATIONS & ROOF DETAILS
SHEET TITLE

A501
SHEET

DEMOLITION NOTES:

1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND.
2. EXISTING STORM DRAINAGE NETWORK TO REMAIN IN SERVICE UNTIL NEW PIPING AND STRUCTURES ARE INSTALLED.
3. UPON COMPLETION OF THE NEW STORM DRAINAGE SYSTEM, CONTRACTOR SHALL REMOVE EXISTING STORM DRAINAGE STRUCTURES AND CONNECT TO EXISTING SYSTEM.
4. THIS WORK SHALL BE TIMED TO AVOID RAINFALL EVENTS THAT MAY CAUSE FLOODING OF THE JOBSITE.
5. IF THE FINAL CONNECTION TO THE PROPOSED STORM DRAINAGE SYSTEM IS NOT COMPLETED PRIOR TO A RAINFALL EVENT, THE CONTRACTOR SHALL MAKE PROVISIONS TO PROVIDE A TEMPORARY CONNECTION TO THE PROPOSED STORM DRAINAGE NETWORK OR PROVIDE A BYPASS CHANNEL OR PIPE THAT ALLOWS STORMWATER RUNOFF TO FLOW TO THE EXISTING STORMWATER POND.
6. CONTRACTOR TO VERIFY SIZES AND LOCATIONS OF ALL UNDERGROUND UTILITIES IN THE VICINITY OF THE PROJECT. ANY DISCREPANCIES OR VARIATIONS MUST BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH WORK.



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BRUNSWICK COUNTY SCHOOLS
A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

NORTH CAROLINA PROFESSIONAL ENGINEER CIVIL 047051 KRISTEN L. MORRIS

1. THIS DRAWING IS THE PROPERTY AND ©BOOMERANG DESIGN P.A. AND IS NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART. IT IS NOT TO BE USED ON ANY OTHER PROJECT AND IS TO BE RETURNED ON REQUEST.
2. MATERIALS, DIMENSIONS AND ALL OTHER CONDITIONS WHICH ARE NOT OTHERWISE DEFINED ON THIS DRAWING SHALL BE CONSTRUED AS HAVING THE SAME MEANING AS SIMILARLY INDICATED CONDITIONS WHICH ARE MORE FULLY DEFINED ELSEWHERE ON THIS PROJECT OR OTHER DRAWINGS OF THIS PROJECT.
3. DO NOT SCALE OFF DIMENSIONS.

REVISIONS

NO.	DATE	DESCRIPTION
REVISION 1	03/03/2020	UPDATED LOD

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PROJECT PHASE

1716

BOOMERANG DESIGN PROJECT NUMBER

2-24-2020

DRAWING RELEASE DATE

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(f)(910) 762-4201
WWW.WKDICKSON.COM
NC LICENSE NO.F-0374

WK DICKSON PROJECT NO. 20170205.01.WL

EXISTING CONDITIONS AND DEMOLITION PLAN - WB FIELD HOUSE

SHEET TITLE

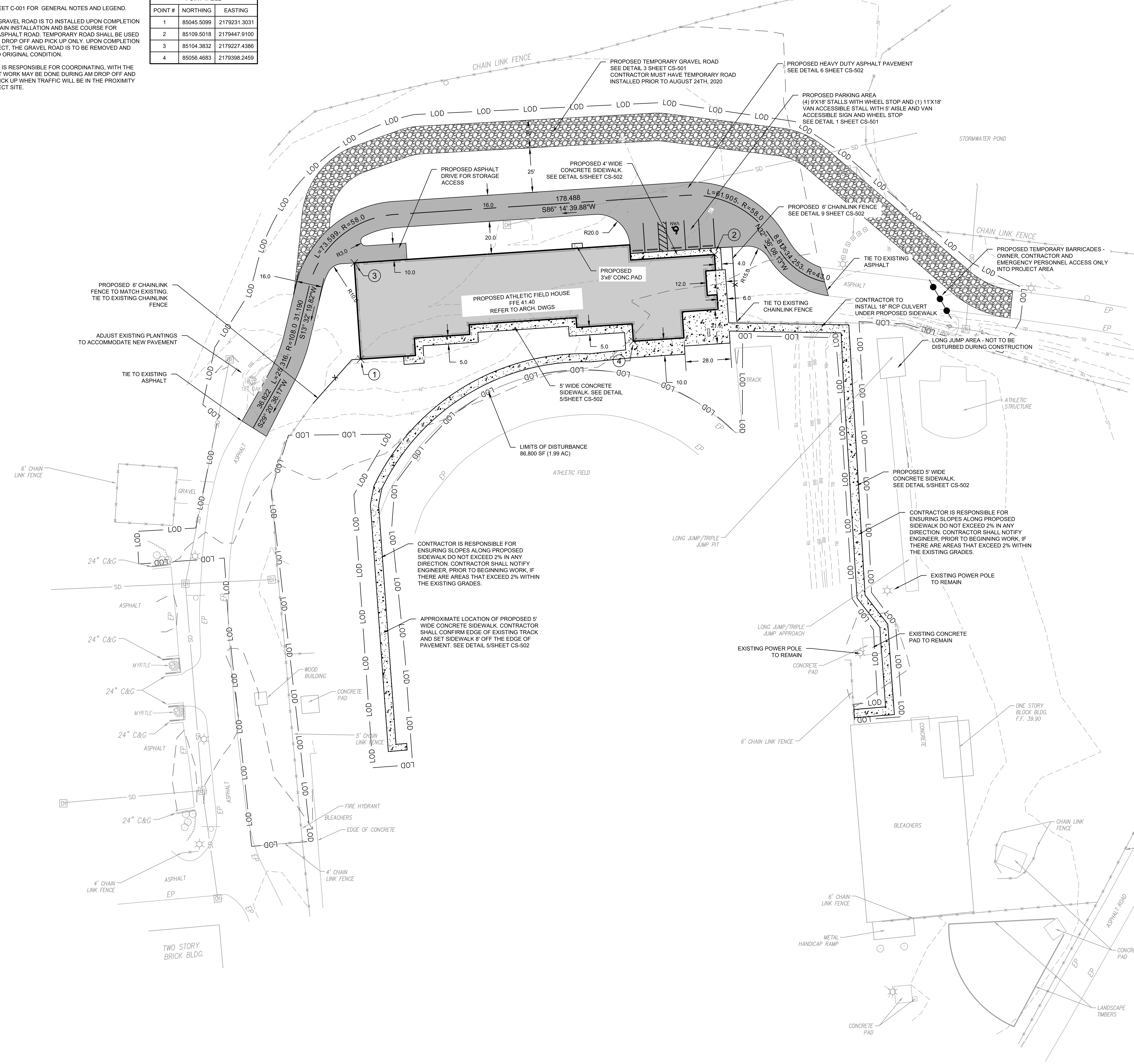
CD-101

SHEET

SHEET NOTES:

1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND.
2. TEMPORARY GRAVEL ROAD IS TO INSTALLED UPON COMPLETION OF STORM DRAIN INSTALLATION AND BASE COURSE FOR PERMANENT ASPHALT ROAD. TEMPORARY ROAD SHALL BE USED FOR STUDENT DROP OFF AND PICK UP ONLY. UPON COMPLETION OF THE PROJECT, THE GRAVEL ROAD IS TO BE REMOVED AND RESTORED TO ORIGINAL CONDITION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING, WITH THE OWNER, WHAT WORK MAY BE DONE DURING AM DROP OFF AND PM SCHOOL PICK UP WHEN TRAFFIC WILL BE IN THE PROXIMITY OF THE PROJECT SITE.

POINT TABLE		
POINT #	NORTHING	EASTING
1	85045.5099	2179231.3031
2	85109.5018	2179447.9100
3	85104.3832	2179227.4386
4	85056.4683	2179398.2459



30 0 30 60

SCALE: 1" = 30'

SITE DATA TABLE	
PROJECT NAME	WEST BRUNSWICK ATHLETIC IMPROVEMENTS
OWNER INFORMATION	BRUNSWICK COUNTY
	35 REFERENDUM DRIVE
	BOLIVIA, NC 28422
PARCEL ID	18100019
PARCEL PIN	107816849878
PROPERTY ADDRESS	550 WHITEVILLE ROAD
	SHALLOTTE, NC
EXITING USE	EDUCATIONAL FACILITY
ADJACENT USES	RESIDENTIAL (MF6), COMMERCIAL (HB, B2)

SITE PLAN NOTES:

THE WEST BRUNSWICK HIGH SCHOOL TRACT IS NOT LOCATED WITHIN FEMA DESIGNATED 100-YEAR FLOOD ZONE ACCORDING TO FEMA FLOOD INSURANCE RATE MAP NUMBER 3720107800J, MAP REVISED 06/02/06.

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BRUNSWICK COUNTY SCHOOLS
A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

NORTH CAROLINA PROFESSIONAL CIVIL 047051 ENGINEER KRISTEN L. MORRIS

REVISIONS

NO.	DATE	DESCRIPTION
REVISION 1	03/03/2020	UPDATED TEMPORARY ROAD TIE IN LOCATION

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PROJECT PHASE

1716

BOOMERANG DESIGN PROJECT NUMBER

2-24-2020

DRAWING RELEASE DATE

SITE LAYOUT PLAN - WB FIELD HOUSE

SHEET TITLE

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(f)(910) 762-4201

WWW.WKDICKSON.COM

NC LICENSE NO.F-0374

WK DICKSON PROJECT NO. 20170205.01.WL

CS-101

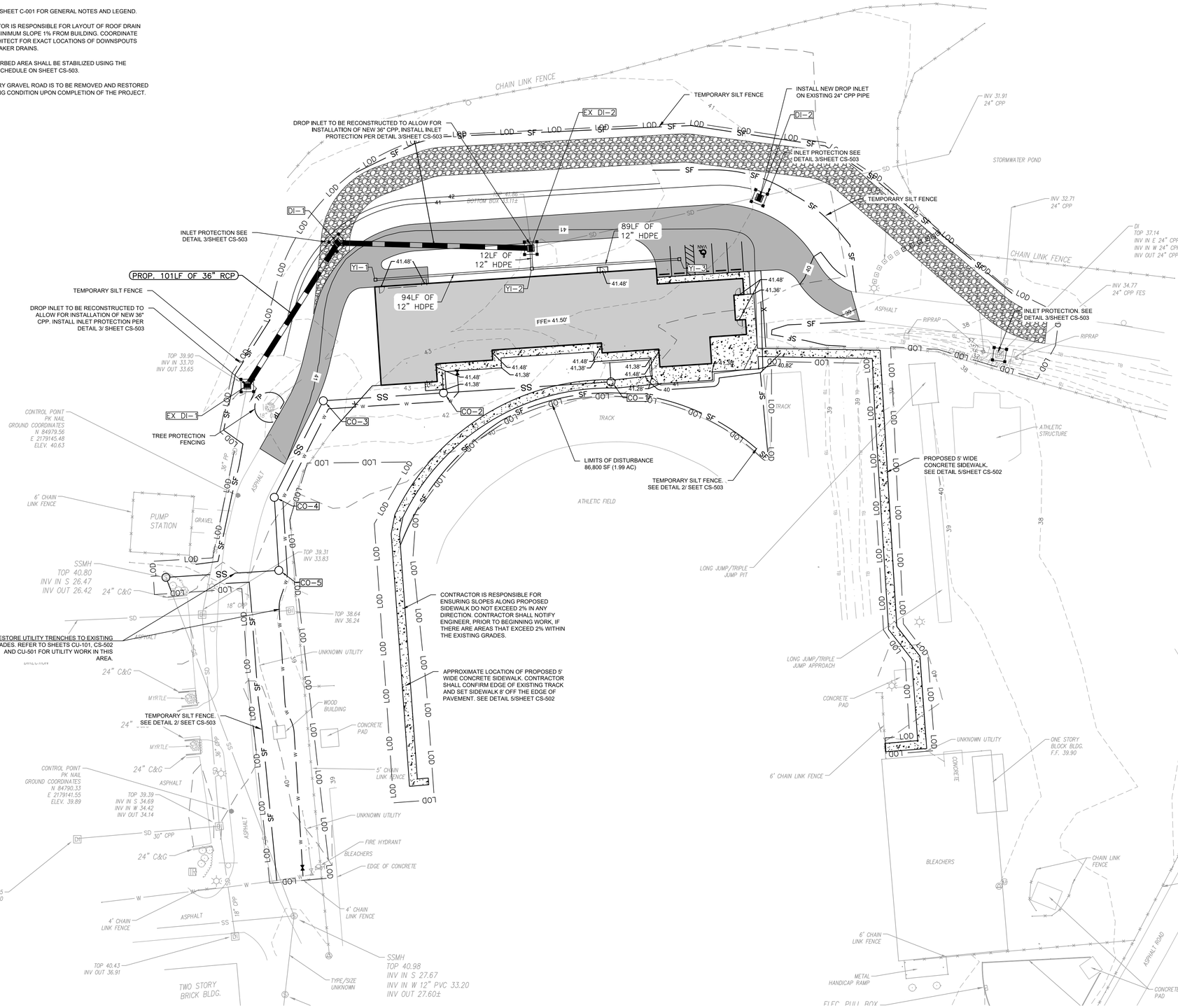
SHEET

SHEET NOTES:

1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND.
2. CONTRACTOR IS RESPONSIBLE FOR LAYOUT OF ROOF DRAIN SYSTEM. MINIMUM SLOPE 1% FROM BUILDING. COORDINATE WITH ARCHITECT FOR EXACT LOCATIONS OF DOWNSPOUTS AND ICE MAKER DRAINS.
3. ANY DISTURBED AREA SHALL BE STABILIZED USING THE SEEDING SCHEDULE ON SHEET CS-503.
4. TEMPORARY GRAVEL ROAD IS TO BE REMOVED AND RESTORED TO EXISTING CONDITION UPON COMPLETION OF THE PROJECT.

PIPE TABLE				
UPSTREAM STRUCTURE	DOWNSTREAM STRUCTURE	SIZE	LENGTH	SLOPE
DI-1	EX DI-2	36	116	0.25%
EX DI-1	DI-1	36	101	0.25%

STRUCTURE DATA	
STRUCTURE NAME	STRUCTURE DETAILS
DI-1	RIM = 40.60 INV IN = 33.40 INV OUT = 33.40
DI-2	RIM = 40.60 INV IN = 32.46 INV OUT = 32.46
EX DI-1	RIM = 38.65 INV OUT = 33.65
EX DI-2	RIM = 41.09 INV IN = 33.11 INV IN = 38.71 INV OUT = 33.11



CONSTRUCTION SEQUENCE

BEFORE BEGINNING ANY LAND DISTURBING ACTIVITIES AT THE PROJECT SITE THE CONTRACTOR SHALL INSTALL THE SEDIMENT AND EROSION CONTROL MEASURES AS FOLLOWS:

1. RECEIVE AN APPROVAL FROM NCDEQ
2. NOTIFY NCDEQ WILMINGTON REGIONAL OFFICE 48 HOURS PRIOR TO BEGINNING LAND DISTURBANCE ACTIVITY.
3. INSTALL TEMPORARY FILTER SOCKS AND FILTER SOCK INLET PROTECTION.
4. BEGIN GRADING OPERATIONS AND OTHER ELEMENTS OF THE PROJECT. INSTALL ADDITIONAL SEDIMENT AND EROSION CONTROL MEASURES AS NEEDED.
5. INSTALL BASE AND SURFACE COURSES.
6. AREAS NOT TO BE PAVED SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE.
7. MAINTENANCE OF ALL BMPS THROUGHOUT PROJECT.
8. ONCE THE SITE HAS BEEN STABILIZED, THE CONTRACTOR SHALL REMOVE THE TEMPORARY FILTER SOCKS AND THE ASSOCIATED SEDIMENT ACCUMULATED BEHIND EACH ONE.

30 0 30 60
SCALE: 1" = 30'

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BRUNSWICK COUNTY SCHOOLS
A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

NORTH CAROLINA PROFESSIONAL CIVIL 047051 ENGINEER KRISTEN L. MARTIN

REVISIONS

NO.	DATE	DESCRIPTION
1	03/03/2020	REVISED ROOF DRAIN LAYOUT

FOR BIDDING ONLY
PROJECT PHASE

1716
BOOMERANG DESIGN PROJECT NUMBER

2-24-2020
DRAWING RELEASE DATE

GRADING, DRAINAGE AND EROSION CONTROL PLAN - WB FIELD HOUSE

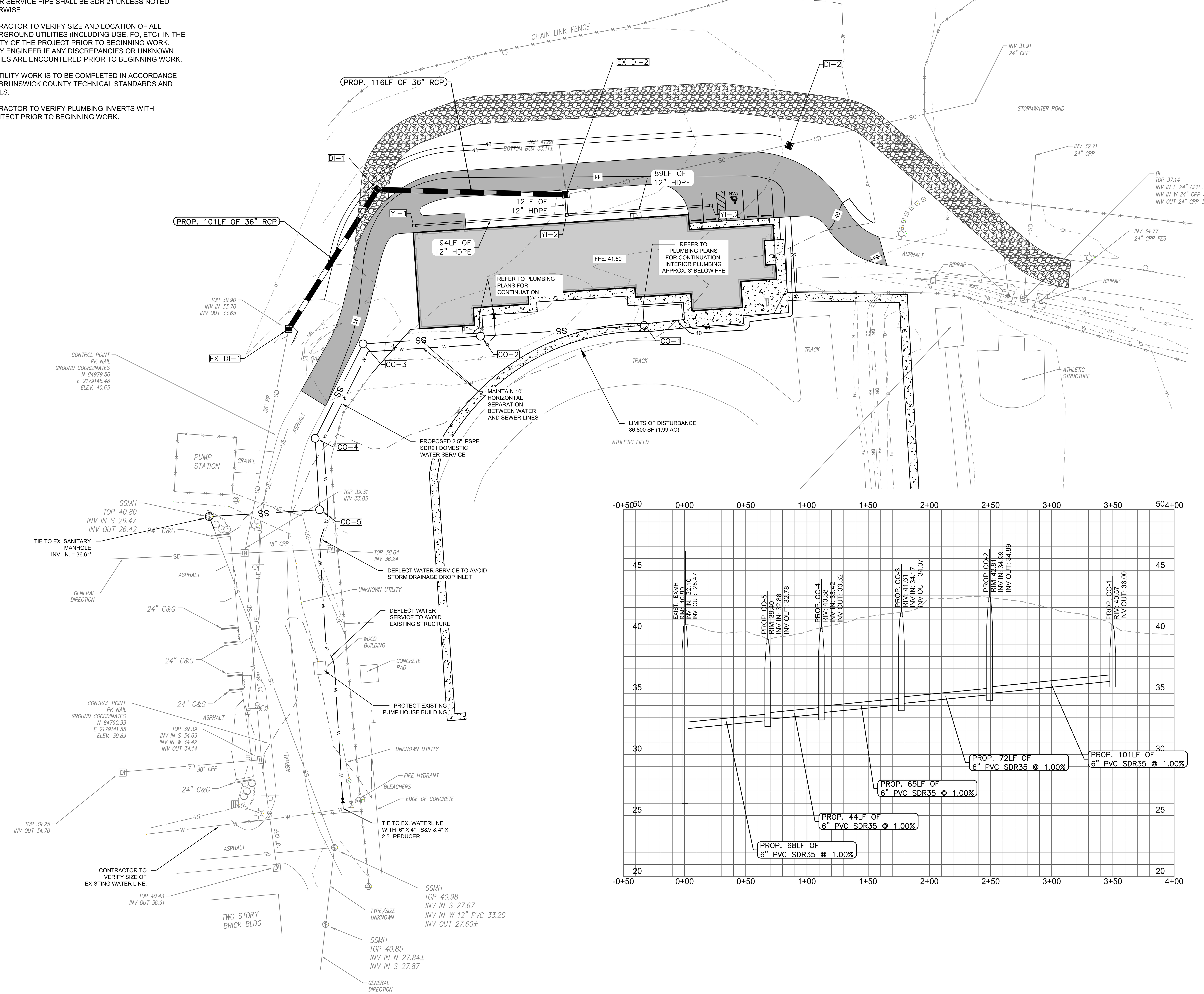
SHEET TITLE

CG-101

SHEET

UTILITY NOTES:

1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND.
2. ALL GRAVITY SEWER PIPE SHALL BE PVC SDR35 UNLESS NOTED OTHERWISE
3. WATER SERVICE PIPE SHALL BE SDR 21 UNLESS NOTED OTHERWISE
4. CONTRACTOR TO VERIFY SIZE AND LOCATION OF ALL UNDERGROUND UTILITIES (INCLUDING UGE, FO, ETC) IN THE VICINITY OF THE PROJECT PRIOR TO BEGINNING WORK. NOTIFY ENGINEER IF ANY DISCREPANCIES OR UNKNOWN UTILITIES ARE ENCOUNTERED PRIOR TO BEGINNING WORK.
5. ALL UTILITY WORK IS TO BE COMPLETED IN ACCORDANCE WITH BRUNSWICK COUNTY TECHNICAL STANDARDS AND DETAILS.
6. CONTRACTOR TO VERIFY PLUMBING INVERTS WITH ARCHITECT PRIOR TO BEGINNING WORK.



30 0 30 60

SCALE: 1" = 30'

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WK DICKSON PROJECT NO. 20170205.01.WL

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BRUNSWICK COUNTY SCHOOLS — A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

NORTH CAROLINA PROFESSIONAL ENGINEER CIVIL 047051

REVISIONS

NO.	DATE	DESCRIPTION
REVISION 1	03/03/2020	UPDATED SEWER LAYOUT

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PROJECT PHASE

1716

BOOMERANG DESIGN PROJECT NUMBER

2-24-2020

DRAWING RELEASE DATE

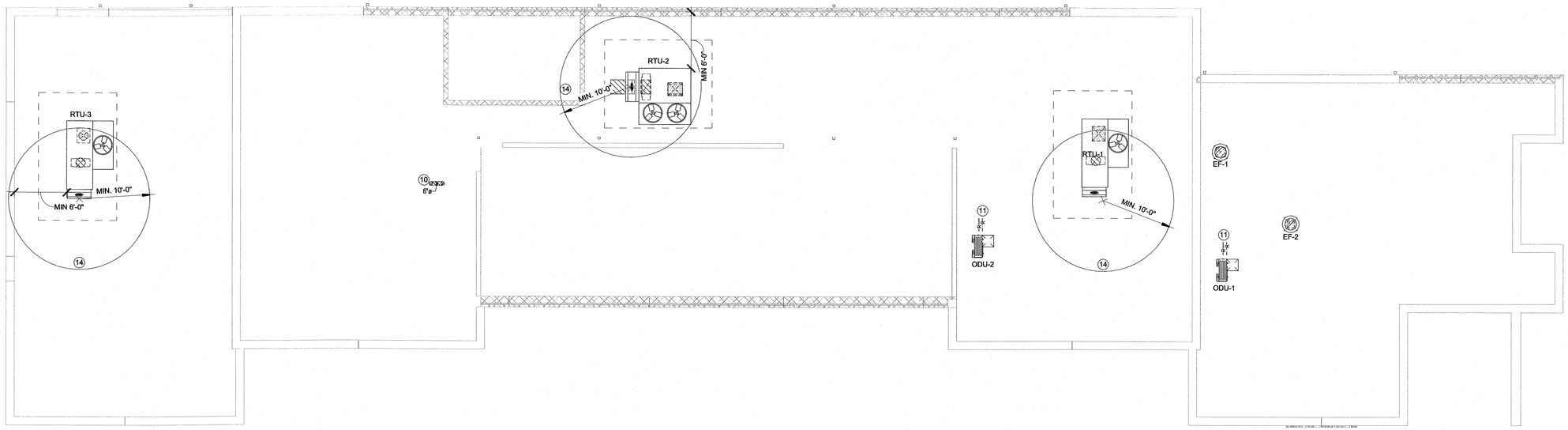
CIVIL UTILITY PLAN - WB FIELD HOUSE

SHEET TITLE

CU-101

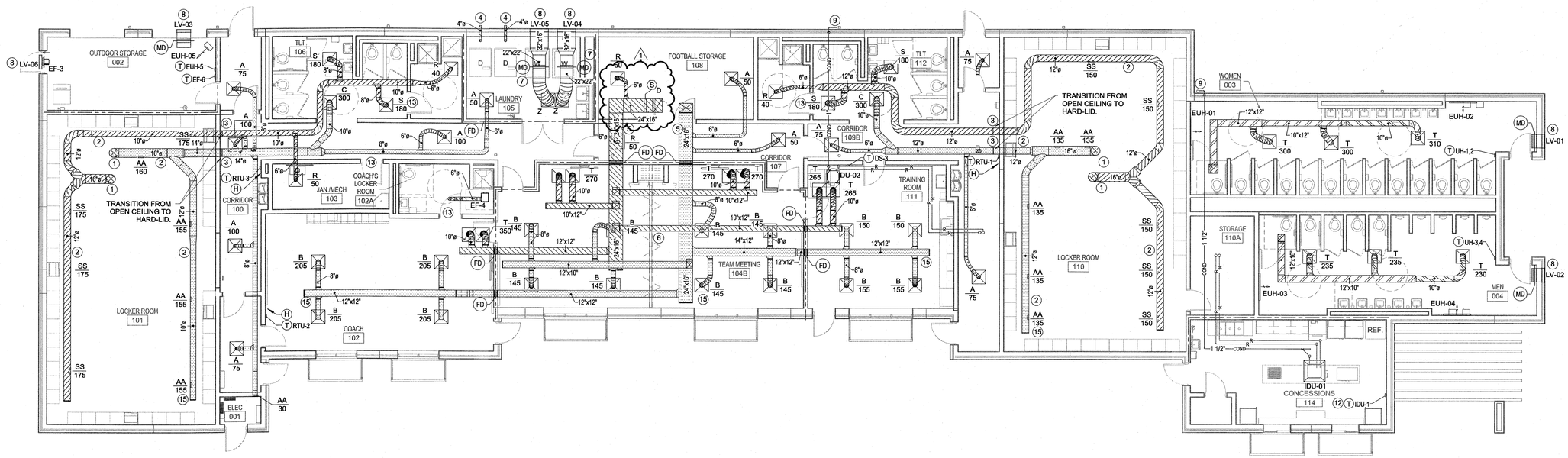
SHEET

LIFE SAFETY SYMBOL LEGEND	
	1-HR RATED
	2-HR RATED



2 WBHS STADIUM FIELDHOUSE - ROOF PLAN

0 8' 16' 32'
1/8" = 1'-0"



1 WBHS - STADIUM FIELDHOUSE FLOOR PLAN

0 4' 8' 16'
1/8" = 1'-0"

N

GENERAL NOTES:

A. ALL THERMOSTATS SHALL HAVE A 2-HR. TIMED OVERRIDE BUTTON.
B. PROVIDE WIRE GUARD COVERS WITH ENAMEL COATING OVER ALL THERMOSTATS AND OTHER SENSORS.
C. PRIOR TO THE START OF WORK COORDINATE FINAL LOCATION OF ALL OPEN CEILING DUCTWORK WITH GC AND EC.
D. REFER TO THE ARCHITECTURAL CEILING PLANS FOR CEILING HEIGHTS AND TYPE.

KEYNOTES:

1. PROVIDE DOUBLE WALL MITERED ELBOW AS INDICATED. ROUTE DUCT UP TO EQUIPMENT ON ROOF.
2. PROVIDE DOUBLE WALL PAINT GRIP SPIRAL DUCTWORK WITH PERFORATED LINER. SEE SPECIFICATIONS FOR DETAILS. MOUNT DIFFUSERS AS SHOWN 30 DEGREES BELOW HORIZONTAL.
3. TRANSITION DUCTWORK FROM DOUBLE WALL TO SINGLE WALL.
4. PROVIDE HOODED WALL CAP WITH BACKDRAFT DAMPER AT DRYER VENT.
5. ROUTE DUCTWORK TIGHT TO STRUCTURE.
6. COORDINATE ALL ROUTING OF DUCTWORK THROUGH MOVABLE PARTITION WALL SUPPORT.
7. MOTORIZED DAMPER CONTROLLED BY CURRENT SENSOR TIED TO INDIVIDUAL DRYER.
8. PROVIDE LOUVER AS INDICATED. REFER TO ARCHITECTURAL ELEVATIONS FOR LOUVER HEIGHTS.
9. ROUTE CONDENSATE PIPING AS INDICATED TURN PIPING OUTSIDE AND MAKE INDIRECT CONNECTION TO DOWNSPOUT.
10. PROVIDE GOOSENECK DOWN FOR EXHAUST DUCTWORK, REFER TO DETAIL.
11. PROVIDE REFRIGERANT DOGHOUSE FOR ROOF PENETRATION, REFER TO DETAIL.
12. THERMOSTAT TO CONTROL BOTH IDU-1 AND IDU-2.
13. DOOR UNDERCUT BY DIVISION 08.
14. CLEARANCE REQUIRED FOR OUTSIDE AIR OPENING TO ALL EXHAUST OPENING AND VTR's ON ROOF TOP UNIT. (TYPICAL)
15. REFER TO CUSHION HEAD DETAIL.

boomerang DESIGN
rethink, repurpose, results

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201 S. Washington St., Suite 200
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BRUNSWICK COUNTY SCHOOLS — A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

NORTH CAROLINA PROFESSIONAL SEAL 027928 ENGINEER SCOTT L. ENNIS
5-5-20

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REVISIONS

NO.	DATE	DESCRIPTION
1	3/3/20	Addendum 02

BID
PROJECT PHASE

1716
BOOMERANG DESIGN PROJECT NUMBER

2-24-2020
DRAWING RELEASE DATE

WBHS - STADIUM FIELDHOUSE MECHANICAL PLAN

SHEET TITLE

M101

SHEET

System No. W-L-1001

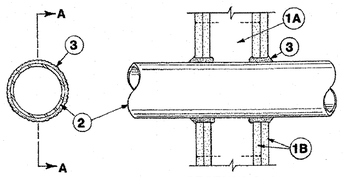
June 15, 2005

F Ratings — 1, 2, 3 and 4 Hr (See Items 2 and 3)

T Ratings — 0, 1, 2, 3, and 4 Hr (See Item 3)

L Rating At Ambient — less than 1 CFM/sq ft

L Rating At 400 F — less than 1 CFM/sq ft



SECTION A-A

1. **Wall Assembly** — The 1, 2, 3 or 4 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:

A. **Studs** — Wall framing may consist of either wood studs (max 2 hr fire rated assemblies) or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC with nom 2 by 4 in. (51 by 102 mm) lumber end plates and cross braces. Steel studs to be min 3-5/8 in. (92 mm) wide by 1-3/8 in. (35 mm) deep channels spaced max 24 in. (610 mm) OC.

B. **Gypsum Board*** — Nom 1/2 or 5/8 in. (13 or 16 mm) thick, 4 ft. (122 cm) wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm).

2. **Through-Penetrant** — One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in./ (0 mm). (point contact) to max 2 in. (51 mm) Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 24 in. (610 mm) diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in (305 mm) diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.

C. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 4 in (102 mm) diam (or smaller) steel electrical metallic tubing

D. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing

E. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

F. **Through Penetrating Product*** — Flexible Metal Piping The following types of steel flexible metal gas piping may be used:

1. Nom 2 in. (51 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

OMEGA FLEX INC

2. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

GASTITE, DIV OF TITEFLEX

3. Nom 1 in. (25 mm) diam (or smaller) steel flexible metal gas piping. Plastic covering on piping may or may not be removed on both sides of floor or wall assembly.

WARD MFG L L C

3. **Fill, Void or Cavity Material* — Caulk or Sealant** — Min 5/8, , 1-1/4,1-7/8 and 2-1/2 in. (16, 32, 48 and 64 mm) thickness of caulk for 1, 2, 3 and 4 hr rated assemblies, respectively, applied within annulus, flush with both surfaces of wall. Min 1/4 in. (6 mm) diam bead of caulk applied to gypsum board/penetrant interface at point contact location on both sides of wall. The hourly F Rating of the firestop system is dependent upon the hourly fire rating of the wall assembly in which it is installed, as shown in the following table. The hourly T Rating of the firestop system is dependent upon the type or size of the pipe or conduit and the hourly fire rating of the wall assembly in which it is installed, as tabulated below:

Max Pipe or Conduit Diam In (mm)	F Rating Hr	T Rating Hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

+When copper pipe is used, T Rating is 0 h.

3M COMPANY — CP 25WB+ or FB-3000 WT.

*Bearing the UL Classification Mark

Last Updated on 2005-06-15

System No. C-AJ-1044

March 15, 2007

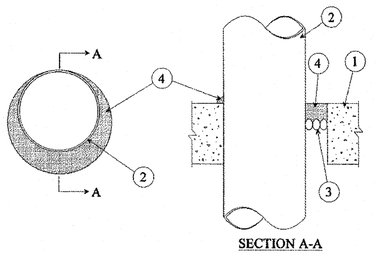
F Ratings — 2, 3, and 4 Hr (See Items 2A and 4)

T Rating — 0 Hr

L Rating At Ambient — 2 CFM/sq ft

L Rating At 400 F — less than 1 CFM/sq ft

W Rating — Class 1 (See Item 4)



SECTION A-A

1. **Floor or Wall Assembly** — Lightweight or normal weight (100-150 pcf or 1600-2400 kg/m^3) concrete. Except as noted in table under Item 4, min thickness of solid concrete floor or wall assembly is 4-1/2 in. (114 mm). Floor may also be constructed of any min 6 in.(152 mm) thick UL Classified hollow core **Precast Concrete Units***. When floor is constructed of hollow core precast concrete units, packing material (Item 3) and caulk fill material (Item 4) to be installed symmetrically on both sides of floor, flush with floor surface. Wall assembly may also be constructed of any UL Classified **Concrete Blocks***. Max diam of opening in solid lightweight or normal weight concrete floor is 32 in. (813 mm). Max diam of opening in floor constructed of hollow-core precast concrete units is 7 in. (178 mm)

See **Concrete Blocks** (CAZT) and **Precast Concrete Units** (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

1A. **Steel Sleeve** — (Optional, Not Shown) - Nom 16 in. (406 mm) diam (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 2 in. (51 mm) above top of floor or beyond either surface of wall. As an alternate, nom 16 in. (406 mm) diam (or smaller) min 0.028 (0.71 mm) thick galvanized sheet steel sleeve cast or grouted into floor or wall assembly flush with floor or wall surfaces.

2. **Through Penetrants** — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Max annular space between pipe, conduit or tubing and edge of through opening or sleeve is dependent on the parameters shown in Item 4. Min annular space between pipe or conduit and edge of through opening is 0 in. (point contact). Max annular space to be as shown in the table in Item 4. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. **Steel Pipe** — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe** — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.

C. **Conduit** — Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.

D. **Conduit** — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.

E. **Copper Tubing** — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tube.

F. **Copper Pipe** — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. **Packing Material** — Polyethylene backer rod or nom 4 in. (25 mm) thickness of tightly-packed mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item 4).

3A. **Forming Material*** — As an alternate to the packing material in Item 3, nom 4 in. (102 mm) wide strips of min 1/2 in (13 mm) thick compressible mat to be stacked to a thickness greater than the width of the annular space and compression-fitted, edge-first, to fill the annular space to a min 4 in. (102 mm) depth. As an option, the strips of min 1/2 in. (13mm) thick compressible mat may be folded in half, lengthwise, and stacked to a thickness greater than the width of the annular space and compression-fitted, edge-first, to fill the annular space to a min 2 in. (51 mm) depth. Top of forming material to be recessed from top surface of floor or from both surfaces of wall as necessary to accommodate the required thickness of caulk fill material.

3M COMPANY — Fire Barrier Packing Material

4. **Fill, Void or Cavity Material* — Caulk, Sealant** — Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetrically on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a min 1/4 in. (6 mm) diam bead of caulk shall be applied at top surface of floor and at both surfaces of wall. The hourly F Ratings and the min required caulk thicknesses are dependent upon a number of parameters, as shown in the following table:

Min Floor or Wall Thkns In.	Nom Pipe Tube or Conduit Diam In.	Max Annular Space In.	Min Caulk Thkns In.	F Rating Hr
2-1/2 (64)	1/2-12 (13-305)	1-3/8 (35)	1/2 (13)	2
2-1/2 (64)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	2
4-1/2 (114)	1/2-6 (13-152)	1-3/8 (35)	1/4 (6) (a)	2
4-1/2 (114)	1/2-12 (13-305)	1-1/4 (32)	1/2 (13)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	3
4-1/2 (114)	22-30 (558-762)	2 (51)	2 (51)	3
5-1/2 (140)	1/2-6 (13-152)	1-3/8 (35)	1 (25) (b)	4

(a)Min 2 in (51 mm) thickness of mineral wool batt insulation or forming material (Item 3A) required in annular space.

(b)Min 1 in. (25 mm) thickness of mineral wool batt insulation required in annular space on both sides of floor or wall assembly. Min 1 in.(25 mm) thickness of caulk to be installed flush with each surface of floor or wall assembly.

3M COMPANY — CP 25WB+ or FB-3000 WT.

(Note - W Rating applies only when FB-3000 WT is used.)

*Bearing the UL Classification Mark

Last Updated on 2007-03-15

GENERAL NOTES

1. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
2. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
3. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM. REFER TO THE SPECIFICATIONS FOR MORE DETAILED INFORMATION.
4. USE OF THE CONDUIT SYSTEM FOR EQUIPMENT GROUNDING SHALL NOT BE ACCEPTABLE. A SEPARATE GREEN GROUND WIRE SHALL RUN WITH THE CIRCUIT CONDUCTORS IN EACH CIRCUIT.
5. IN ALL AREAS WHERE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIAL SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
6. ALL FUSES, DISCONNECT SWITCHES, AND BREAKER SIZES SHOWN FOR MECHANICAL/PLUMBING/FIRE PROTECTION EQUIPMENT SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL/PLUMBING CONTRACTOR.
7. ALL WORK AND MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH STATE, LOCAL AND NATIONAL CODES AND ORDINANCES.
8. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ACCESS PANELS AS REQUIRED FOR ELECTRICAL CODE COMPLIANCE AND TO ACCESS ANY INSTALLATION THAT WILL REQUIRE FUTURE MAINTENANCE. THESE DOORS SHALL BE 24" X 24". EACH ROOM WITH A DRYWALL CEILING SHALL HAVE A MINIMUM OF ONE ACCESS DOOR PROVIDED BY THE ELECTRICAL CONTRACTOR. THE DRYWALL SUBCONTRACTOR WILL PROVIDE THE REQUIRED FRAMED OPENING AND INSTALL THE ACCESS DOORS. ACCESS DOORS SHALL MAINTAIN RATING OF THE CEILING.
9. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
10. EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
11. ALL JUNCTION BOXES AND CONDUIT RUNS (WITH OR WITHOUT WIRES) SHALL BE COLOR CODED WITH PAINT, IN ACCORDANCE WITH ELECTRICAL GENERAL PROVISIONS.
12. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION, FOR USE WITH THE ACTUAL EQUIPMENT, CASEWORK AND MILLWORK TO BE FURNISHED.
13. ALL UNDERGROUND CONDUITS SHALL BE IDENTIFIED ON ASBUILT PLANS WITH DIMENSIONS LOCATING THE CONDUITS AND THEIR RESPECTIVE BURIAL DEPTHS.
14. CONDUCTORS FOR BRANCH CIRCUITS SHALL BE SIZED TO PREVENT VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST OUTLET OF POWER, HEATING AND LIGHTING LOADS, OR ANY COMBINATION OF SUCH LOADS. THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET SHALL NOT EXCEED 5%.
15. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE UTILITY POWER COMPANY THE WORK REQUIRED FOR CONNECTION TO THE UTILITY'S NEW TRANSFORMER METERING, ETC. THE ELECTRICAL CONTRACTOR SHALL PAY ALL NECESSARY CHARGES FOR THE INSTALLATION OF THE UNDERGROUND ELECTRICAL SERVICE, AS SHOWN ON THE PLANS.
16. WHERE MULTIPLE SWITCHES ARE SHOWN IN THE SAME LOCATION THEY SHALL BE GANGED TOGETHER IN ONE MULTIPLE GANG BOX WITH MATCHING COVER AND PARTITION (IF REQUIRED). THE ELECTRICAL CONTRACTOR SHALL LOOK AT BOTH POWER AND LIGHTING PLAN TO DETERMINE WHICH SWITCH IS APPLICABLE.
17. OUTLET BOXES ON OPPOSITE SIDES OF THE FIRE RESISTANT WALL OR SHAFT ENCLOSURE RATED TWO HOURS OR LESS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24" AS REQUIRED BY 2018 NCSBC.
18. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED SEALING METHODS.
19. ALL EXTERIOR BUILDING LIGHTS AND EMERGENCY LIGHTING SHALL BE WIRED WITH #10 AWG.
20. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CHAIN HUNG FIXTURES LOCATED IN MECHANICAL OR OTHER SPACES WITH OTHER TRADES, SO AS NOT TO CONFLICT WITH OTHER EQUIPMENT.
21. ALL EMERGENCY LIGHTING, EXIT SIGNS AND NIGHT LIGHTS SHALL BE WIRED AHEAD OF ANY SWITCH AND/OR BUILDING AUTOMATION SYSTEM.
22. WHERE CONDUIT OR OUTLET BOXES CANNOT BE INSTALLED IN EXISTING WALLS FOR NEW DEVICES, THEN PROVIDE AND INSTALL SURFACE MOUNTED WIREMOLD RACEWAYS. CONFIRM ALL WIREMOLD WITH ARCHITECT PRIOR TO INSTALLATION.

ELECTRICAL ENERGY FORM

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

ENERGY CODE: PRESCRIPTIVE__X__ PERFORMANCE_____
ASHRAE 90.1: PRESCRIPTIVE_____ PERFORMANCE_____

LIGHTING SCHEDULE

Lamp type required in fixture - See Fixture Schedule.
Number of lamps in fixture - See Fixture Schedule.
Ballast type used in the fixture - See Specifications.
Number of ballasts in fixture - See Specifications.
Total wattage per fixture - Varies - See Fixture Schedule
Total interior wattage specified versus allowed: 6,350 watts versus 7,770.84 watts (whole building)
Total exterior wattage specified versus allowed: 610 watts versus 1,380 watts

ADDITIONAL PRESCRIPTIVE COMPLIANCE

___ 406.1 More Efficient HVAC Performance
_X_ 406.2 Reduced Lighting Power Density
___ 406.3 Enhanced Lighting Controls
___ 406.4 On-Site Supply of Renewable Energy
___ 406.5 Provision of Dedicated Outdoor HVAC Air System
___ 406.6 High Efficiency Service Water Heating

DESIGNER STATEMENT:
To the best of my knowledge and belief, the design of this building complies with the electrical system and equipment requirements of the 2018 North Carolina State Building Code, Energy Conservation Code.

NORTH CAROLINA SEAL 047358 ENGINEER TYLER D. AHRENDSEN 2-3-2020

NAME: Tyler D. Ahrendsen, P.E.

SYMBOL LEGEND

SYMBOL	DESCRIPTION	NOTES
OR	LUMINAIRE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	EXTERIOR LIGHT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	BATTERY POWERED EMERGENCY FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	EXIT LIGHT - ARROW INDICATES DIRECTION & SHADING INDICATES ILLUMINATED FACE(S).	SEE FIXTURE SCHEDULE
S	SINGLE POLE TOGGLE SWITCH - 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
S_K	SINGLE POLE KEYED SWITCH - 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
S_{3K}	SINGLE POLE 3-WAY KEYED SWITCH - 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
S_{4K}	SINGLE POLE 4-WAY KEYED SWITCH - 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET, UNLESS OTHERWISE NOTED.	
S_3	3-WAY SWITCH - INSTALL AT 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET. SWITCH COLOR SELECTED BY ARCHITECT.	
S_{3D}	3-WAY DIMMER SWITCH - INSTALL AT 48" ABOVE FINISHED FLOOR TO TOP OF OUTLET. SWITCH COLOR SELECTED BY ARCHITECT. PROVIDE UP, DOWN, AND ON/OFF BUTTONS.	
S_T	TIMER SWITCH MOUNTED AT +48" AFF TO TOP OF OUTLET	LUTRON, LEVITON, P&S OR EQUAL
S_M	120 VOLT MOTOR RATED TOGGLE DISCONNECT SWITCH WITH JUNCTION BOX. IF EXTERIOR PROVIDE NEMA-3R.	
	DUPLEX GROUNDING TYPE RECEPTACLE - AT 16" ABOVE FINISHED FLOOR TO BOTTOM OF OUTLET, UNLESS OTHERWISE NOTED	
	QUADRUPLEX GROUNDING TYPE RECEPTACLES IN A DOUBLE GANG BOX. MOUNT AT 16" AFF TO BOTTOM OF OUTLET UNLESS OTHERWISE NOTED.	
	DATA OUTLET - REFER TO PLANS AND SCHEDULES. PROVIDE A MINIMUM OF TWO DATA DROPS. DATA CABLING , JACKS, FACE PLATES AND TERMINATIONS BY DIVISION 27 CONTRACTOR.	
	120/208 VOLT PANELBOARD WITH NEUTRAL AND GROUND BUS ACCESSORIES.	
TX	UTILITY TRANSFORMER	
SPD	SURGE PROTECTIVE DEVICE	SEE SPECIFICATION
	DISCONNECT SWITCH, HEAVY DUTY	
	WIRING AND CONDUIT INSTALLED CONCEALED IN WALL SPACE OR ABOVE FINISHED CEILING	
	UNSWITCHED WIRING AND CONDUIT LEG ON LIGHTING PLANS. UNDER FLOOR WIRING AND CONDUIT ON POWER PLANS. UNDER GROUND WIRING AND CONDUIT ON SITE PLANS.	
	HOME RUN CIRCUIT TO PANELBOARD - NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS	
J	JUNCTION BOX WITH REMOVABLE COVER - SIZE PER NATIONAL ELECTRICAL CODE	
TV	DOUBLE GANG DEEP BACKBOX FOR TELEVISION CONNECTION AND ASSOCIATED RECEPTACLE - REFER TO E002 FOR TV OUTLET INSTALLATION. PROVIDE (1) CAT-6 DATA WIRED BACK TO NEAREST NETWORK CLOSET.	
LS	WALL MOUNTED LOUD SPEAKER - MOUNT AT +88" AFF	BOGEN QUANTUM COMPATIBLE
LS	CEILING MOUNTED LOUD SPEAKER	BOGEN QUANTUM COMPATIBLE
F	WALL MOUNTED FIRE ALARM PULL STATION - MOUNT AT +4'-0" TO TOP OF OUTLET BOX (WHITE WITH RED LETTERS)	SEE SPECIFICATION
FACP	WALL MOUNTED VOICE EVACUATION FIRE ALARM CONTROL PANEL	SEE SPECIFICATION
FACP	FLUSH MOUNTED FIRE ALARM REMOTE CONTROL PANEL	SEE SPECIFICATION
V #CD	WALL MOUNTED FIRE ALARM COMBINATION SPEAKER/STROBE - #CD INDICATES CANDELA RATING OF STROBE (WHITE WITH RED LETTERS)	SEE SPECIFICATION
V	WALL MOUNTED FIRE ALARM SPEAKER	SEE SPECIFICATION
S #CD	CEILING MOUNTED FIRE ALARM STROBE ONLY - - #CD INDICATES CANDELA RATING OF STROBE (WHITE WITH RED LETTERS)	SEE SPECIFICATION
V #CD	CEILING MOUNTED FIRE ALARM COMBINATION SPEAKER/STROBE - - #CD INDICATES CANDELA RATING OF STROBE (WHITE WITH RED LETTERS)	SEE SPECIFICATION
S #CD	WALL MOUNTED FIRE ALARM STROBE ONLY - #CD INDICATES CANDELA RATING OF STROBE (WHITE WITH RED LETTERS)	SEE SPECIFICATION
1 SD	CEILING MOUNTED FIRE ALARM DUCT SMOKE DETECTOR	SEE SPECIFICATION
SD	CEILING MOUNTED FIRE ALARM SMOKE DETECTOR (WHITE)	SEE SPECIFICATION
D	DATA RACK (WALL MOUNTED) - MINIMUM 36" HIGH. COORDINATE FINAL SIZE WITH OTHER PRIOR TO PURCHASE/INSTALLATION.	SEE SPECIFICATION
TGB	TELECOMMUNICATIONS GROUND BAR	
	4'x8'x3/4" FIRE RETARDANT PLYWOOD BACK BOARD	
	CAMERA - PROIVDE (1) CAT-6 PLENUM RATED CABLE TO NEAREST NETWORK RACK. PROVIDE SMB CONNECTOR ON END OF CABLE AND PROVIDE 3'-0" ON END OF CABLE AND PROVIDE PATCH CORD.	SEE SPECIFICATION
WAP	WIRELESS ACCESS POINT - PROVIDE (1) CAT-6 PLENUM RATED CABLE TO NEAREST NETWORK RACK. PROVIDE SMB CONNECTOR ON END OF CABLE AND PROVIDE 3'-0" PLENUM RATED PATCH CORD.	SEE SPECIFICATION
I	WALL MOUNTED PAGING INTERCOM HANDSET	BOGEN QUANTUM COMPATIBLE
MD	MOTORIZED DAMPER BY MECHANICAL CONTRACTOR - ELECTRICAL CONTRACTOR SHALL PROVIDE MOTOR RATED DISCONNECT SWITCH AND WIRE AS SHOWN ON PLANS.	
	CONDUIT STUB-UPS	
1 RTU	DUCT DETECTOR REMOTE ALARM ANNUNCIATOR (RAIL)	

boomerang DESIGN
rethink, repurpose, results

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BRUNSWICK COUNTY SCHOOLS — A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

NORTH CAROLINA SEAL 047358 ENGINEER TYLER D. AHRENDSEN 2-3-2020

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PDC # 17054

REVISIONS 2

NO.	DATE	DESCRIPTION
1	3/3/20	Addendum 02

BID
PROJECT PHASE

1716
BOOMERANG DESIGN PROJECT NUMBER

2-24-2020
DRAWING RELEASE DATE

ELECTRICAL LEAD SHEET
SHEET TITLE

E001
SHEET

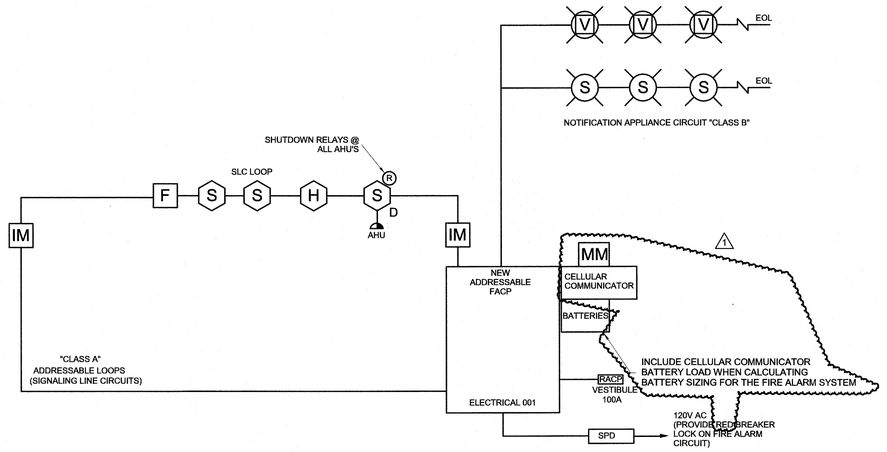
NFPA 72 AND ADA FIRE ALARM DEVICE
INSTALLATION REQUIREMENTS

DETAIL
NOT TO SCALE

FIRE ALARM DEVICE MOUNTING

3

NAC "CLASS B"



SYSTEM OUTPUTS

SYSTEM INPUTS

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
		ACTUATE GENERAL ALARM SPEAKER/STROBES	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL INDICATOR	ACTUATE ALL EVACUATION SIGNALS	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	DISPLAY CHANGE OF STATUS AT FACP	SHUT DOWN HVAC UNITS								
1	MANUAL PULL STATIONS	o	o					o	o			o	o								1
2	SMOKE DETECTORS	o	o					o	o			o	o								2
3	HEAT DETECTORS	o	o					o	o			o	o								3
4	DUCT DETECTORS	o	o						o			o	o								4
5	FIRE ALARM SYSTEM DC POWER FAILURE					o	o					o	o								5
6	FIRE ALARM SYSTEM AC POWER FAILURE					o	o					o	o								6
7	FIRE ALARM SYSTEM LOW BATTERY					o	o					o	o								7
8	NAC PANELS LOW BATTERY					o	o					o	o								8
9	OPEN CIRCUIT					o	o					o	o								9
10	GROUND FAULT					o	o					o	o								10
11	NOTIFICATION APPLIANCE SHORT CIRCUIT					o	o					o	o								11
12	AHU OVERRIDE			o	o					o		o									12
13																					13
14																					14
15																					15
16																					16
17																					17
18																					18
19																					19

FIRE ALARM OPERATIONAL MATRIX

2

GENERAL FIRE ALARM RISER NOTES:

A. ALL WIRING MUST BE IN A MINIMUM OF 3/4" CONDUIT.

B. PERFORM BATTERY CALCULATIONS ON FIRE ALARM SYSTEM AND BATTERY CAPACITY AS REQUIRED WITH 25% SPARE CAPACITY FOR FUTURE GROWTH. PROVIDE AS PART OF SHOP DRAWING SUBMITTAL.

C. REFER TO ELECTRICAL PLANS FOR QUANTITIES AND LOCATIONS OF ALL DEVICES.

D. THE SYSTEM SHALL BE 100% OPERATIONAL AT COMPLETION.

E. OWNER ACCEPTED ROOM NUMBERS SHALL BE USED WHEN PROGRAMMING SYSTEM. OWNER/ARCHITECT SHALL PROVIDE PROGRAMMER WITH APPROVED ROOM NAMES AND NUMBERS 30 DAYS PRIOR TO SCO INSPECTION.

F. PROVIDE SMOKE DETECTOR AT EACH FIRE ALARM SYSTEM CONTROL PANEL OR POWER BOOSTER PANEL LOCATION.

G. THE FIRE ALARM RISER DEPICTS A TYPICAL INSTALLATION ONLY. THE SYSTEM SHALL BE INSTALLED BY THE DRAWINGS AS PROVIDED BY THE FIRE ALARM SYSTEM PROVIDER. THE DRAWINGS/SHOP SUBMITTALS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

H. SMOKE DETECTORS SHALL BE A MINIMUM OF 3 FEET FROM ANY DIFFUSER OR GRILLE.

I. THE CONTRACTOR SHALL PROVIDE INSULATED THROATS ON ALL FITTINGS.

J. PERMANENT FIRE ALARM LABELS FOR DEVICES SHALL BE PROVIDED AND INSTALLED BY FIRE ALARM SYSTEM PROVIDER.

K. PROVIDE AT THE FACP AND RACP LOCATIONS ZONE MAPS (UNDER GLASS) TO REFLECT THE BUILDING LAYOUT WITH DEVICE LOCATIONS. ROOM NUMBERS SHALL BE IDENTIFIED AND REFLECT THE INSTALLED CONDITION.

L. THE FIRE ALARM SUB-CONTRACTOR SHALL BE AT ALL INSPECTIONS, TESTING, ETC. AS REQUESTED BY THE ENGINEER AND/OR OWNER/ARCHITECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING ANY COSTS FOR THIS AS PART OF HIS BID PRICE.

M. ALL FIRE ALARM WIRING SHALL BE SIZED PER MANUFACTURER'S INSTRUCTIONS. WIRE MARKERS SHALL BE PROVIDED AT ALL CONNECTIONS BY ELECTRICAL CONTRACTOR. EACH WIRE INCOMING SHALL BE TAPED TO IDENTIFY PATH.

N. SURGE PROTECTION FOR FIRE ALARM SYSTEM SHALL BE INSTALLED IN A MINIMUM 6"x6"x4" JUNCTION BOX (PAINTED RED) WITH LOCKING COVER AND HINGE. TYPICAL FOR 120 VAC AND 24 VOLT DC CIRCUITS.

O. DUCT DETECTORS PROVIDED BY ELECTRICAL CONTRACTOR AND INSTALLED BY HVAC CONTRACTOR. DUCT DETECTORS SHALL BE PLACED SO AS TO BE ACCESSIBLE BY AN 8'-0" LADDER WITH NO OBSTRUCTIONS. HVAC CONTRACTOR SHALL PROVIDE ACCESS DOOR FOR SAMPLING TUBES. NOTE: PROPER INSTALLATION AND LOCATION OF EACH DUCT DETECTOR AND ACCESS DOOR SHALL BE COORDINATED CLOSELY BETWEEN THE ELECTRICAL, MECHANICAL AND THE FIRE ALARM SUB-CONTRACTORS, AND APPROVED BY THE MECHANICAL AND ELECTRICAL ENGINEERS PRIOR TO EQUIPMENT INSTALLATION.

P. PROVIDE SHUTDOWN DEVICES FOR ALL AHU'S, ETC. AS DEFINED IN THE SPECIFICATIONS.

Q. IF ANY ARCHITECTURAL CHANGES ARE MADE THAT SHALL AFFECT ANY DEVICE PLACEMENT, THIS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO INSTALLATION.

R. THE SHOP DRAWINGS SUBMITTALS SHALL CONTAIN ALL DOCUMENTATION AS IDENTIFIED IN THE FIRE CODE SECTION 907 OF THE BUILDING CODE. (I.E.: FLOOR PLAN W/DEVICE LAYOUTS, VOLT DROP CALCS, ANNUNCIATION, INTERCONNECTION DIAGRAMS, BATTERY CALCULATIONS, CONDUCTOR TYPE AND SIZE, MANUFACTURER'S LITERATURE, INTERFACE OF FIRE SAFETY AND CONTROL FUNCTIONS, FIRE ALARM OPERATION MATRIX, POWER CONNECTIONS, ALARM CONTROL AND SIGNALING EQUIPMENT, ETC.).

S. ANY CUTTING AND PATCHING ASSOCIATED WITH ANY ELECTRICAL ITEMS SHALL BE DONE BY THE GENERAL CONTRACTOR.

T. BREAKERS THAT SERVE FIRE ALARM PANEL AND NAC CABINETS SHALL BE PROVIDED WITH BREAKER LOCKS TO PREVENT PERSONNEL FROM ACCIDENTALLY TURNING OFF LIFE SAFETY SYSTEM.

U. IN LOCATIONS WHERE DUCT DETECTORS ARE LOCATED ABOVE CEILING, THE CEILING GRID BELOW THE DETECTOR SHALL BE IDENTIFIED.

V. THE CONTRACTOR SHALL PROVIDE, UPON PRE-FINAL INSPECTION, A COMPLETED NFPA 72 FORM SIGNED AND FILLED OUT COMPLETELY. THIS FORM SHALL BE REVIEWED BY THE ENGINEER FOR CONCURRENCE.

W. FIRE ALARM PANEL SHALL HAVE A PRIMARY TRANSMISSION AS A CELLULAR DIALER WITH THE SECONDARY TRANSMISSION AS VOICE OVER IP (VOIP). THE CONTRACTOR SHALL PROVIDE AND INSTALL AN IP-DACT TO BE COMPLIANT WITH NFPA 72 2013. COORDINATE WITH OWNER'S IT DEPARTMENT FOR PHONE LINE AND NETWORK INTERCONNECTIONS. CONTRACTOR SHALL PROVIDE 24 HOUR UPS BACK-UP FOR VOIP EQUIPMENT.

X. THIS SYSTEM SHALL BE A STAND ALONE SYSTEM AND WILL NOT CONNECT TO THE EXISTING FIRE ALARM SYSTEM IN THE MAIN HIGH SCHOOL BUILDING.

Y. ALL FLOOR PLANS/ZONE MAPS AND ASSIGNED ZONES SHALL BE PROVIDED AND POSTED IN REQUIRED LOCATIONS.

Z. FIRE ALARM MONITORING IS BY OTHERS.

AA. SEE ARCHITECTURAL ALTERNATES FOR PREFERRED CELLULAR COMMUNICATION EQUIPMENT.

AB. FIRE ALARM CONTRACTOR SHALL PROVIDE CELLULAR COMMUNICATOR. PROGRAMMING AND TESTING WILL BE BY OTHERS.

AC. PROVIDE MONITOR MODULE FOR CELLULAR COMMUNICATOR.

FIRE ALARM RISER

1

boomerang DESIGN
rethink, repurpose, results

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BRUNSWICK COUNTY SCHOOLS — A Community of Learners

ATHLETIC IMPROVEMENTS FOR BRUNSWICK COUNTY SCHOOLS

PROJECT TITLE

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REVISIONS

NO.	DATE	DESCRIPTION
1	3/3/20	Addendum 02

BID
PROJECT PHASE

1716
BOOMERANG DESIGN PROJECT NUMBER

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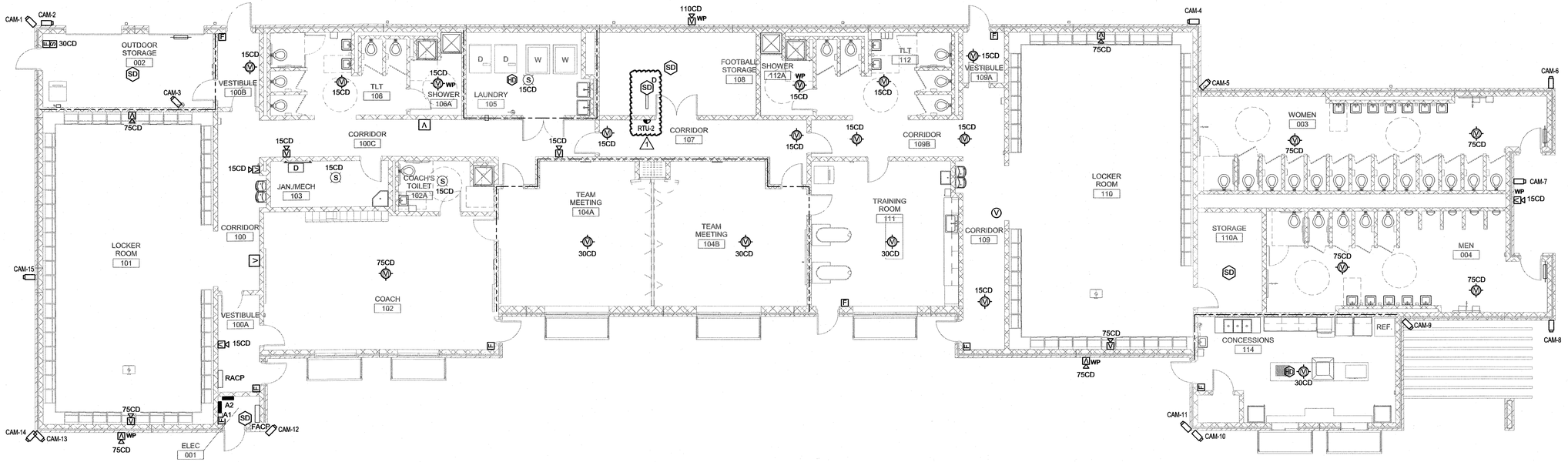
FIRE ALARM RISER/MATRIX

SHEET TITLE

E004

SHEET



LIFE SAFETY SYMBOL LEGEND

— — —	1-HR RATED
— - — - —	2-HR RATED

1 WBHS STADIUM FIELDHOUSE - FIRE ALARM/SECURITY

0 8' 16' 32'

1/8" = 1'-0"

boomerang DESIGN
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PROJECT TITLE

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047358 ENGINEER TIMOTHY D. AHRENDSEN 3-3-2020

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REVISIONS 2

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1716
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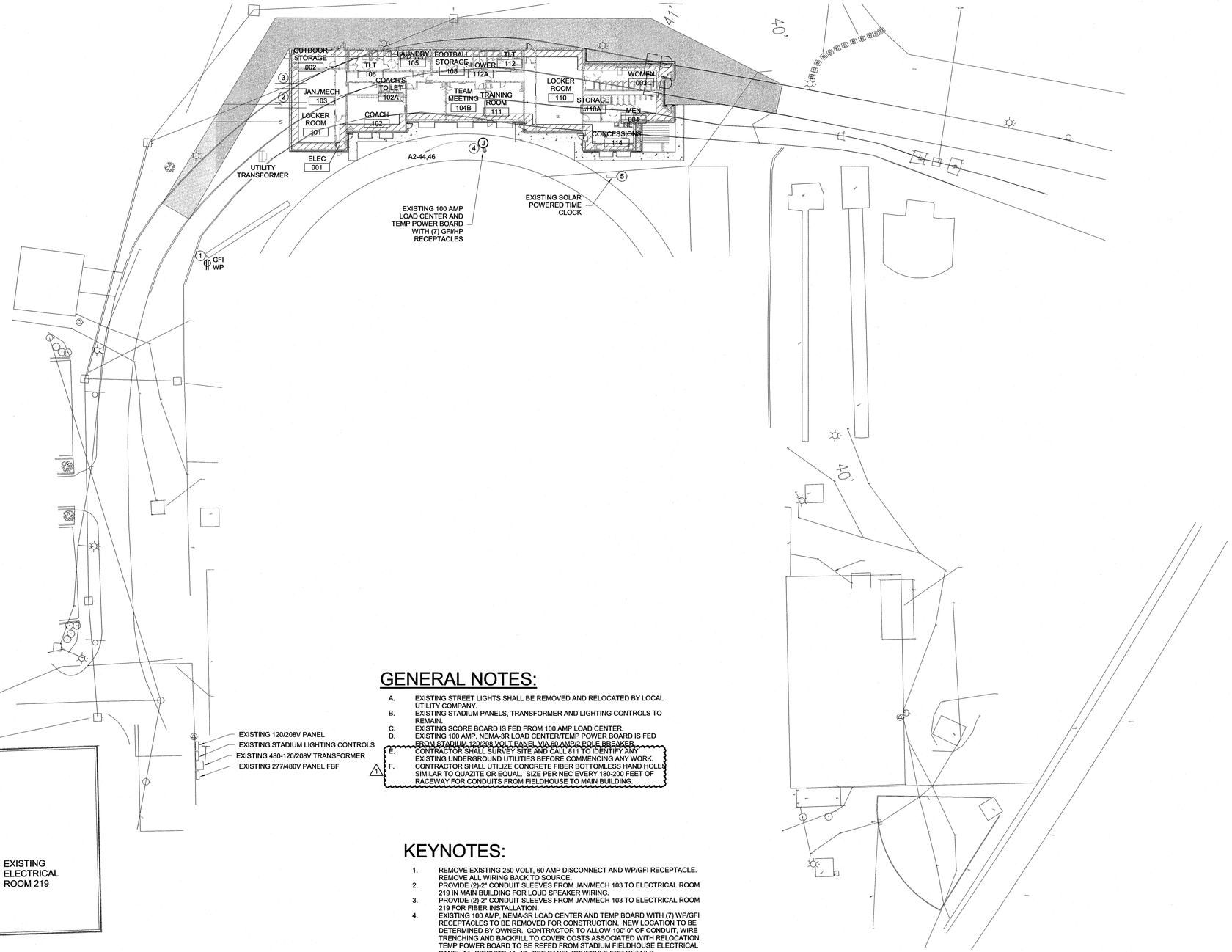
WBHS - STADIUM FIELDHOUSE FIRE ALARM/SECURITY

SHEET TITLE

E301

SHEET

N.C. GRID (NAD 83/2011)



GENERAL NOTES:

A. EXISTING STREET LIGHTS SHALL BE REMOVED AND RELOCATED BY LOCAL UTILITY COMPANY.
B. EXISTING STADIUM PANELS, TRANSFORMER AND LIGHTING CONTROLS TO REMAIN.
C. EXISTING SCORE BOARD IS FED FROM 100 AMP LOAD CENTER.
D. EXISTING 100 AMP, NEMA-3R LOAD CENTER/TEMP POWER BOARD IS FED FROM STADIUM 120/208 VOLT PANEL VIA 60 AMP/2 POLE BREAKER.
E. CONTRACTOR SHALL SURVEY SITE AND CALL 811 TO IDENTIFY ANY EXISTING UNDERGROUND UTILITIES BEFORE COMMENCING ANY WORK.
F. CONTRACTOR SHALL UTILIZE CONCRETE FIBER BOTTOMLESS HAND HOLES SIMILAR TO QUAZITE OR EQUAL. SIZE PER NEC EVERY 180-200 FEET OF RACEWAY FOR CONDUITS FROM FIELDHOUSE TO MAIN BUILDING.

KEYNOTES:

1. REMOVE EXISTING 250 VOLT, 60 AMP DISCONNECT AND WP/GFI RECEPTACLE. REMOVE ALL WIRING BACK TO SOURCE.
2. PROVIDE (2)-2" CONDUIT SLEEVES FROM JAN/MECH 103 TO ELECTRICAL ROOM 219 IN MAIN BUILDING FOR LOUD SPEAKER WIRING.
3. PROVIDE (2)-2" CONDUIT SLEEVES FROM JAN/MECH 103 TO ELECTRICAL ROOM 219 FOR FIBER INSTALLATION.
4. EXISTING 100 AMP, NEMA-3R LOAD CENTER AND TEMP BOARD WITH (7) WP/GFI RECEPTACLES TO BE REMOVED FOR CONSTRUCTION. NEW LOCATION TO BE DETERMINED BY OWNER. CONTRACTOR TO ALLOW 100'-0" OF CONDUIT, WIRE TRENCHING AND BACKFILL TO COVER COSTS ASSOCIATED WITH RELOCATION. TEMP POWER BOARD TO BE REFED FROM STADIUM FIELDHOUSE ELECTRICAL PANEL A1, CIRCUITS 44, 46. SEE PANEL SCHEDULE FOR DETAILS.
5. EXISTING SOLAR POWERED TIME CLOCK. CONTRACTOR SHALL REMOVE FOR CONSTRUCTION OF NEW FIELDHOUSE. CONTRACTOR SHALL REINSTALL AFTER CONSTRUCTION AT OWNER DETERMINED LOCATION.
6. PROVIDE WEATHERPROOF JUNCTION BOX ON THE SIDE OF THE BUILDING IN THIS APPROXIMATE LOCATION FOR (4)-2" CONDUITS FROM JAN/MECH 103 TO ENTER THE MAIN BUILDING. CONTINUE (4)-2" CONDUITS FROM JUNCTION BOX TO ABOVE THE CEILING AND STOP ONCE INSIDE THE BUILDING.
7. APPROXIMATE ROUTING OF OUTDOOR RATED ARMORED FIBER AND 50 PAIR OUTDOOR RATED LOUD SPEAKER PLENUM WIRING TO ELECTRICAL ROOM 219.
8. FIBER TO TERMINATE ON EXISTING SWITCH IN ELECTRICAL ROOM 219. FIBER TERMINATIONS BY OTHERS.
9. LOUD SPEAKER WIRING TO TERMINATE ON CONTRACTOR PROVIDED 66 BLOCK IN ELECTRCIAL ROOM 219. COORDINATE TERMINATION LOCATION WITH OWNER.
10. APPROXIMATE ROUTING FOR LOUD SPEAKER WIRING TO ROOM 418C, LOCATED WITHIN THE MAIN OFFICE CORRIDOR APPROXIMATELY 650'-0" AWAY.
11. CONTRACTOR SHALL BRING 50 PAIR PLENUM RATED CABLE FROM ELECTRICAL ROOM 219 TO ROOM 418C, APPROXIMATELY 650'-0" AWAY. PROVIDE (2)-66 BLOCKS AND INSTALL ON WALL. TERMINATE 50 PAIR CABLE. OWNER TO ADD AUDIO CARD AND CALL-IN CARD TO EXISTING PAGING HEAD END EQUIPMENT SERVER RACK. ALL OTHER TERMINATIONS/CONNECTIONS IN THIS ROOM IS BY OTHERS.

1 WBHS SITE
1" = 30'-0"
0 8' 16' 32'

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WBHS - STADIUM FIELDHOUSE SITE ELECTRICAL SITE PLAN

SHEET TITLE

E501

SHEET