

## ADDENDUM

**Project Name:** Town of Hillsborough, Utilities Department  
**Adron F. Thompson Addition and Renovation**  
**Project No.:** 2231.01

### ADDENDUM No. 2

Issued January 16, 2026

GENERAL NOTE: The Contract Documents include all Drawings and Specifications, plus all Addenda. The Drawings and the Specifications are complementary and are to be taken together for a complete interpretation of the Work. Contractors shall review a complete set of Contract Documents prior to bidding the work.

Modifications to the original contract documents dated 12/19/2025 for this project shall be made as follows:

The attached documents are either clouded with a revisions date including ADDENDUM No. 2 01.16.2026 or if Specifications are edited, the section or text added is in red to clarify the revision. If full specification sections are added these are not in all red, but the header lists the Addendum number and date that the specification section was issued.

### PROJECT MANUAL SPECIFICATIONS:

1. Replace Specification **SECTION 012100 - ALLOWANCES** with the attached of the same number. *The Specification was edited to include Allowance 6 for locating and site remediation services and permits required to dispose of the buried dynamite as discussed in the pre-bid meeting.*
2. Replace Specification **SECTION 013300 - SUBMITTAL PROCEDURES** with the attached of the same number. Section was edited to include the full submittal requirements and indicate submittals shall be electronically delivered, no paper submittals.
3. Replace Specification **SECTION 107500 - FLAGPOLES** with the attached of the same number. Section was edited to revise the material to aluminum for the new flagpole.
4. Replace Specification **SECTION 133419 METAL BUILDING SYSTEMS** with the attached of the same number. Section was edited to align with the provided responses to the Bidder Questions below. Revised Items include; clarifying the design intent for the wall panel attachment, changing the wall and roof panels to 24 gauge, revising the acceptable translucent roof panel length, specifying primer color, and clarifying the spandrel beam intent.

## DRAWINGS:

5. Replace plan sheets numbered **A101 DEMOLITION PLAN – LOWER LEVEL** and **A102 DEMOLITION PLAN – MAIN LEVEL** with the attached sheets of the same number. Demolition Keynote 8 in the Demolition Plans & Keynote Schedule has been revised to as follows; **8 - OWNER TO ABATE / REMOVE EXISTING EXTERIOR WINDOW AS THE WINDOW CAULKING IS KNOWN TO CONTAIN ASBESTOS - SEE HAZARDOUS MATERIAL NOTES FOR MORE INFORMATION.**
  
6. Replace plan sheet number **A505 INTERIOR ELEVATIONS & CASEWORK - MAIN LEVEL** with the attached of the same number. The scope related to the existing Wood Paneled wall and Doors has been clarified to replace the windows with frosted glass and add wood base at both sides of the paneled walls to cover the wood damage at the base of the wood paneled walls. Door 104 is not currently installed, the owner has this door and will deliver it to the project site. Hardware for door 104 shall be as scheduled, but before installation, owner contractor and designer shall meet to review the original hardware to determine if it can be reinstalled to function as desired for an office.

## ADDITIONAL INFORMATION:

7. Substitution request - Specification SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING is replaced with attached version to add TegoBloc SA by GMX, Inc. as an approved below grade waterproofing product for this project.
  
8. Substitution request - Specification SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING replaced with attached version to add Mapethene HT60 by Polyglass as an approved below grade waterproofing product for this project.
  
9. Substitution request - Specification SECTION 074113 - METAL ROOF PANELS replaced with attached version that adds MRS 2500 from Metal Roofing Systems 7687 Mikron Dr Stanley , NC, 28164 as an approved manufacturer / product to provide product for this project.
  
10. Substitution request - Specification SECTION 102113 - TOILET COMPARTMENTS replaced with attached version that adds Hiney Hiders by Scranton Products is an approved Toilet Compartment product for this project.
  
11. See attached NC DOT Driveway Permit Package date January 14, 2026 (20 page .PDF file). Contractor will be responsible for meeting all requirements listed in this approval for the work shown on the drawings. Package include Civil Drawings submitted to the NC DOT for review / Approval that are the same sheets as included with the Contract Documents, Contractor shall use all Civil Drawings included with the Contract Documents and any issued

in Addenda process for the scope of the work, using the NC DOT Package to augment the requirements for the work shown on the Civil Drawings.

12. See attached Hazardous Materials Report dated August 19, 2019 that describes the known items in the building that will be abated prior to Contractor taking over the site for the work
13. The existing Door into Storage 07 on the Lower Level also has an interior wood framed second door with two hollow metal door leaves that open inwards to the room. These doors shall remain also. **Revised Sheets not issued since this information does not have a cost impact.**

#### **DESIGN TEAM RESPONSES TO CONTRACTOR QUESTIONS:**

14. Question: *The project manual calls for 4" cove, but the interior finish material legend calls for 6" cove. Can you please confirm the cove height for EPX1.*  
**Response: EPX1 shall be 6" per finish material legend.**
15. Question: *We see SECTION 071113 - BITUMINOUS DAMPPROOFING and SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING in the specifications. Can you clarify where each are required to be used?*  
**Response: Damproofing is required at all below grade foundation walls. Waterproofing is only required where exterior grade is higher than the interior finished floor slab.**
16. Question: *PEMB - Alternate 1: The alternate notes: "Provide a price to erect the Vehicle Storage Building as shown on the drawings." Since the Vehicle Storage Building is a PEMB, can you please clarify the intended scope of this alternate? Specifically, does this alternate include only the PEMB erection, or does it include furnishing and supplying the PEMB, site work and building pad, structural slab, and full building erection and associated finishes?*  
**Response: The intent for Alternate No. 1 scope is to include all work required for the Vehicle Storage Building, it is not intended to just be the metal building package as the Alternate. Alternate No. 1 includes but may not be limited to the site work to grade the building pad, the building pad, the structural slab, the building erection, electrical, security, and mechanical services, wood framing, overhead and personnel doors, windows, and all interior finishes. The base bid shall include all other site work including the new security fencing, new sliding and swinging gates, asphalt paving, installation of new gravel in drive areas and landscaped buffers.**
17. Question: *PEMB - Please confirm 15psf snow load.*  
**Response: Confirmed - 15psf is the applicable snow load for the current NC Code. All design work should conform to ASCE 7-10 and the 2018 edition of the NCSBC**
18. Question: *PEMB - What value should we use for collateral load?*  
**Response: Use 3.0 psf for primary/secondary collateral.**

19. Question: PEMB - Addendum 1 included the PEMB specs. Section 2.5 A. 4. calls for the roof panel to be .5 inches. I think this may be a typo and should be 1.5" same as the wall panel which would be our standard R panel. Please confirm. Please confirm roof panel to be 22ga.

**Response: Spec Section 2.5 A. 4. should be 1.5 inches. Correct, We are revising the roof panels to be 24 Ga. See attached revised Specification Section 133419 METAL BUILDING SYSTEMS.**

20. Question: PEMB spec section 2.6 A. 1. does not specify what gauge the wall panel should be; please advise.

**Response: We are revising the wall panels to be 24 Ga. See attached revised Specification Section 133419 METAL BUILDING SYSTEMS.**

21. Question: PEMB spec section 2.3 L. 1.b. calls for roof insulation to be R-19; please verify if this is correct.

**Response: This building is not fully conditioned and as such we are not required to meet the same roof insulation requirements listed in Table C402.1.3 for Metal Buildings in Climate Zone 4. Provide 6" thick R-19 (post lamination) Roof insulation. Basis of Design is Certainteed Universal Blanket Insulation and Silvercote WMP-VR-R-Plus facing product or a comparable product that meets the requirements of the specifications.**

22. Question: Will the roof insulation be single layer batt over purlins? Will there be anything in the purlin cavity?

**Response: Single layer batts over purlins is the design intent. This building is not fully conditioned and as such we will not have additional insulation in the purlin cavity.**

23. Question: PEMB spec section 2.7 A. calls for concealed fasteners for soffit panel; however part B. states metal soffit panels should match profile and material of roof panels which is not a concealed fastener panel. Please confirm soffit panel profile, gauge and finish.

**Response: Soffit panels are not intended to be required in the design. We have no eave or rake (gable end) overhangs that require soffit panels, the covered storage area where we have a roof over the exterior slab will not require soffit panels, exposed roof framing is expected at this location. Section 2.7 SOFFIT PANELS was deleted from the specification. See attached revised Specification Section 133419 METAL BUILDING SYSTEMS.**

24. Question: PEMB exterior wall construction Please clarify/confirm At walls where there is full height masonry, there will be stud walls up to 16'-0" AFF (for attachment of plywood on the interior side) with girts above 16'-0" and a spandrel for lateral support of stud walls at 16'-0" AFF.

**Response: Correct, it is the design intent.**

25. Question: PEMB exterior wall construction Please clarify/confirm. At walls where the brick is only up to 10'-0" AFF, the stud wall continues up to 16'-0" AFF (for attachment of plywood on the interior side) with girts above. Details on A405 and A407 show the spandrel at 10'-0" AFF; however, if the stud wall continues up to 16'-0" AFF, we will need to place the spandrel at 16'-0" AFF.

**Response: Design Intent is wood framing to 16'-0" if the spandrel can be continuous above the wood framing this is preferred, the details showing it lower were assuming it may have to be lower in some areas. We are not requiring it to be at 10'-0". If the spandrel beam can be installed uniform throughout the building above the wood framing based on the pre-engineered design calculations, this is acceptable.**

26. Question: PEMB exterior wall construction Please clarify/confirm. Just to be clear, from 10'-0" up to 16'-0", the exterior metal wall panel will attach to wood blocking as shown in detail 3/A407. Is this correct?

**Response: Correct, it is the design intent that the metal wall panels will attach to blocking in the wood wall framing through the wall sheathing from 10'-0" a.f.f. roughly (top of brick veneer) to the roof on both the gable and eave walls.**

27. Question: PEMB - Should we use red or gray primer?

**Response: Grey primer is desired.**

28. Question: PEMB Our translucent panels are 3'-0" x 10'-4", RFI question #20 in addendum #1 calls for 3'-0" x 12'-0" translucent panels. Is our standard size acceptable?

**Response: A translucent roof panel length of min. 10'-0" is Acceptable.**

29. Question: PEMB Liner panels are briefly mentioned in the PEMB spec section 2.2 H.1. And I.1. however, I do not see liner panels called out on the plans. Are liner panels required anywhere in the PEMB building?

**Response: Liner panels are not required for the interior of this building. References deleted in the attached revised Specification Section 133419 METAL BUILDING SYSTEMS.**

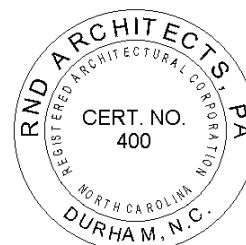
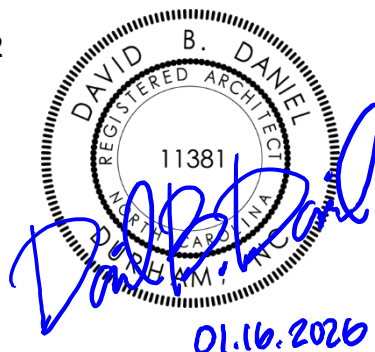
30. Question: For Division 107500 - Flagpoles - Specs call for Stainless Steel but drawing calls for Aluminum - can we price either Stainless Steel or Aluminum ?

**Response: Provide Stainless Steel Flag Pole as indicated in Specifications.**

31. Question: What is the scope for the Interior stair railing on the existing internal stair?

**Response: Existing railing (although this is not current code compliant) is to remain as it is original to the building. Hazardous Materials report lists the railing as positive for Lead Paint. Owner will abate this and contractor will refinish the railing with new paint.**

END OF ADDENDUM No. 2



## SECTION 012100 - ALLOWANCES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

- B. Types of allowances include the following:

- 1. Lump-sum allowances.
- 2. Quantity allowances.
- 3. Testing and inspecting allowances.

- C. Related Requirements:

- 1. Section 012200 "Unit Prices" for procedures for using unit prices.
- 2. Section 014000 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

#### 1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

#### 1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

- 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.8 QUANTITY ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include taxes, freight, and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

- 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

#### 1.9 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.
- C. Costs of testing and inspection services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

#### 1.10 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
  - 1. Include installation costs in purchase amount only where indicated as part of the allowance.
  - 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
  - 3. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
  - 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.
  - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Quantity Allowance: Include 450 cu. yd. of unsatisfactory soil excavation and disposal off-site and replacement with satisfactory soil material from off-site, as specified in Section 312000 "Earth Moving."
  - 1. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
- B. Allowance No. 2: Quantity Allowance: Include 50 cu. yd. of rock removal and replacement with satisfactory soil material, as specified in Section 312000 "Earth Moving."
  - 1. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
- C. Allowance No. 3: Quantity Allowance: Include providing 100 Tons of #57 trench bedding stone as specified in Section 312000 "Earth Moving."
  - 1. Coordinate quantity allowance adjustment with unit-price requirements in Section 012200 "Unit Prices."
- D. Allowance No. 4: Monetary Lump Sum Allowance: Include a lump sum of \$15,000 (fifteen thousand dollars) to cover the permitting cost through Orange County. Permitting shall be paid by the contactor and receipt and documentation from Orange County shall be retained and submitted to reconcile the amount of permitting and inspections to determine a credit or additional cost amount above and beyond the allowance in a change order.

- E. Allowance No. 5: Testing and Inspecting Allowance: Include a \$35,000 (thirty-five thousand dollars) allowance for the cost of normal and typical Materials Testing and Inspections required by the contract documents in the separate specification sections. The Contractor will propose and hire the testing firm, arrange for and schedule all tests and inspections, the owner will review and approve or reject the GC's proposed firm.
1. This allowance includes testing and inspection cost, logistics, scheduling, attendance, equipment rental, actual testing, inspection or investigation labor, written report and Contractor overhead and profit.
  2. All tests and inspections will be paid from this allowance through the contract. Allowance will be reconciled at end of project with credit due via change order if unused or if additional testing costs are required, the owner will issue a change order to cover the cost of the additional testing that is not the fault of the contractor.
  3. Costs of failed tests, or rescheduling tests due to contractor availability or the item tested or inspected is not ready will be the responsibility of the contractor and will not be paid using this allowance.
- F. Allowance No. 6: Monetary Lump Sum Allowance: Include a \$20,000 (twenty thousand dollars) Allowance to cover the cost of a location and removal of the dynamite that has been reported to be buried on site by the owner. The GC will hire a Geo-Technical Firm to locate the buried dynamite using geophysical services including a detailed electromagnetic (EM) evaluation and GPR evaluation to map the location of the buried dynamite. Once located, the GC will hire an Unexploded Ordnance (UXO) Site Remediation Firm to excavate and dispose of the dynamite. The UXO firms that we have talked to indicate that the safest method of disposal will be to excavate and dousing it with diesel fuel before burning the dynamite. GC or its UXO firm must secure a burn permit through the Town of Hillsborough Fire Marshal and must notify the fire department when this activity is scheduled to allow them to monitor the burn and take any safety precautions necessary. The awarded bidder can propose their own GeoPhysical Locating and UXO Site Remediation firms for this work or the Town and design team can share the contacts of the firms we have been in contact with that can perform these services.
1. This allowance includes service cost, logistics, equipment rental, actual investigations, and on site excavation, burn permit and written report of the and Contractor overhead and profit.
  2. All tests and inspections will be paid from this allowance through the contract. Allowance will be reconciled at end of project with credit due via change order if unused or if additional testing costs are required, the owner will issue a change order to cover the cost of the additional testing that is not the fault of the contractor.

END OF SECTION 012100

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## SECTION 013300 - SUBMITTAL PROCEDURES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
  - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
  - 2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
  - 3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
  - 5. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

#### 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

#### 1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time

required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following information in a tabular format:
  - a. Scheduled date for first submittal.
  - b. Specification Section number and title.
  - c. Submittal category: Action; informational.
  - d. Name of subcontractor.
  - e. Description of the Work covered.
  - f. Scheduled date for Architect's final release or approval.
  - g. Scheduled date of fabrication.
  - h. Scheduled dates for purchasing.
  - i. Scheduled dates for installation.
  - j. Activity or event number.

#### 1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
  1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.
    - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    - b. Digital Drawing Software Program: The Contract Drawings are available in .DWG or .RVT with releases signed to absolve the design team of potential errors or discrepancies in the model or drawings.
    - c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.
    - d. The following digital data files will be furnished for each appropriate discipline:
      - 1) Floor plans.
      - 2) Reflected ceiling plans.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 15 days for review of each resubmittal.
  4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
  5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- D. Submittals: Place a permanent label or title block on each submittal item for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  3. Include the following information for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name of Architect.
    - d. Name of Contractor.
    - e. Name of subcontractor.
    - f. Name of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A), or a revision indicator in the title to note the submittal as a revision.
  - i. Number and title of appropriate Specification Section.
  - j. Drawing number and detail references, as appropriate.
  - k. Location(s) where product is to be installed, as appropriate.

- I. Other necessary identification.
- E. Electronic Submittals: Provide a Project Management software service similar to Procore that distributes and tracks submittals. Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
  2. Name file with submittal number or other unique identifier, including revision identifier.
    - a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
  3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
  4. Transmittal Form for Electronic Submittals: Use software-generated form from electronic project management software acceptable to Owner, containing the following information:
  5. Metadata: Include the following information as keywords in the electronic submittal file metadata:
    - a. Project name.
    - b. Number and title of appropriate Specification Section.
    - c. Manufacturer name.
    - d. Product name.
    - e. Insert required information.
- F. Options: Identify options requiring selection by Architect.
- G. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
  2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

## PART 2 - PRODUCTS

### 2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Post electronic submittals as PDF electronic files directly to Project Web site specifically established for Project.
    - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  2. Electronic submittals as .PDF electronic files via email are acceptable however the contractor shall maintain a log on the project website that indicates the submittal dates.
    - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
  3. Action Submittals: Submit one electronic PDF copy of each submittal unless otherwise indicated. Architect will return one electronic copy for official record of submittal action.
  4. Informational Submittals: Submit one electronic PDF copy of each submittal unless otherwise indicated. Architect / Designer will not return copies.
  5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
    - b. Provide a notarized statement on original electronic PDF copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
  2. Mark each copy of each submittal to show which products and options are applicable.
  3. Include the following information, as applicable:
    - a. Manufacturer's catalog cuts.
    - b. Manufacturer's product specifications.
    - c. Standard color charts.
    - d. Statement of compliance with specified referenced standards.
    - e. Testing by recognized testing agency.
    - f. Application of testing agency labels and seals.
    - g. Notation of coordination requirements.
    - h. Availability and delivery time information.
  4. For equipment, include the following in addition to the above, as applicable:

- a. Wiring diagrams showing factory-installed wiring.
    - b. Printed performance curves.
    - c. Operational range diagrams.
    - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
  5. Submit Product Data before or concurrent with Samples.
  6. Submit Product Data in the following format:
    - a. PDF electronic file.
    - b. Architect will return one electronic copy annotated as needed and stamped with action indicated.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
  1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
  3. Submit Shop Drawings in the following format:
    - a. PDF electronic file.
    - b. Opaque (bond) copies of each submittal. Architect will return copy(ies).
  4. BIM File Incorporation: Shop Drawing files into Building Information Model established for Project.
    - a. Prepare Shop Drawings in the following format: Same digital data software program, version, and operating system as the original Drawings. Latest version of Revit.
    - b. Refer to Section 013100 "Project Management and Coordination" for requirements for coordination drawings.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
  1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.

- c. Sample source.
    - d. Number and title of applicable Specification Section.
    - e. Specification paragraph number and generic name of each item.
  3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
  4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
    - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
  5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
  6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - a. Number of Samples: Submit sets of Samples. Architect will retain two Sample sets; remainder will be returned.
      - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least four sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
  2. Manufacturer and product name, and model number if applicable.
  3. Number and name of room or space.
  4. Location within room or space.
  5. Submit product schedule in the following format:
    - a. PDF electronic file.
    - b. One electronic copy of product schedule or list unless otherwise indicated. Architect will return one marked up copy.

- F. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
- L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
  2. Date of evaluation.
  3. Time period when report is in effect.
  4. Product and manufacturers' names.
  5. Description of product.
  6. Test procedures and results.
  7. Limitations of use.
- U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- W. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

## 2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, Coordination Drawings and other required submittals, submit digitally signed PDF electronic file signed and sealed by the responsible design professional licensed in the state of North Carolina, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Contractor shall review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect. Submittals that are not reviewed by contractor will be returned as rejected without action until resubmitted with contractor's review comments and approval.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will not be reviewed without prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and submittal may not be returned for resubmittal. Architect will notify the General Contractor of the status of the submittal however is not obligated to return the submittal.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action or retained and treated as an Information Submittal.

END OF SECTION 013300

## SECTION 107500 - FLAGPOLES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes ground-mounted flagpoles made from **aluminum**.
- B. Owner-Furnished Material: Flags.
- C. Related Sections:
  - 1. Section 076200 "Sheet Metal Flashing and Trim" for counterflashing flashing at roof-mounted flagpoles.
  - 2. Section 264113 "Lightning Protection for Structures" for connecting wall- and roof-mounted metal flagpoles to lightning protection system.
  - 3. Section 265600 "Exterior Lighting" for site lighting fixtures.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Flagpole assemblies, including anchorages and supports, shall withstand the effects of gravity loads, and the following loads and stresses within limits and under conditions indicated according to the following design criteria:
  - 1. Wind Loads: 90 mph according to NAAMM FP 1001, "Guide Specifications for Design of Metal Flagpoles."
  - 2. Base flagpole design on polyester flags of maximum standard size suitable for use with flagpole or flag size indicated, whichever is more stringent.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, operating characteristics, fittings, accessories, and finishes for flagpoles.
- B. Shop Drawings: For flagpoles. Include plans, elevations, details, and attachments to other work. Show general arrangement, jointing, fittings, accessories, grounding, anchoring, and support.
  - 1. Include section, and details of foundation / footing system for ground-mounted flagpoles.
  - 2. Shop Drawings must be sealed by a Licensed Professional Engineer in the state of North Carolina indicating poles, attachment and footing withstands the wind loads listed in

Performance Requirements.

- C. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified professional engineer.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For flagpoles to include in operation and maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of flagpole as complete unit, including fittings, accessories, bases, and anchorage devices, from single source from single manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. General: Spiral wrap flagpoles with heavy paper and enclose in a hard fiber tube or other protective container.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- 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. American Flagpole; a Kearney-National Inc. company.
  2. Concord Industries, Inc.
  3. U.S. Flag & Flagpole Supply, LP.

2.2 FLAGPOLES **FLP-1**

- A. Flagpole Construction, General: Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:
  1. Fabricate shop and field joints without using fasteners, screw collars, or lead calking.
  2. Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.
  3. Provide self-aligning, snug-fitting joints.
- B. Exposed Height: 30 feet (9 m). Retain mounting types in remaining paragraphs below to suit flagpole installation.

- C. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, 0.060-inch wall thickness with 3/16-inch steel bottom plate and support plate; 3/4-inch- diameter, steel ground spike; and steel centering wedges welded together. Galvanize foundation tube after assembly. Furnish loose hardwood wedges at top of foundation tube for plumbing pole.
  - 1. Flashing Collar: Same material and finish as flagpole.
- D. Sleeve for Aluminum Flagpole: Fiberglass foundation sleeve, made to fit flagpole, for casting into concrete foundation.
  - 1. Flashing Collar: Same material and finish as flagpole.
- E. Cast-Metal Shoe Base: For anchor-bolt mounting; provide with anchor bolts.
  - 1. Provide ground spike at grade-mounted flagpoles.

### 2.3 FITTINGS

- A. Finial Ball: Manufacturer's standard flush-seam ball, sized as indicated or, if not indicated, to match flagpole-butt diameter.
  - 1. Spun stainless steel, finished to match flagpole.
- B. Internal Halyard, Cam Cleat System: 5/16-inch- diameter, braided polypropylene halyard; cam cleat; and concealed revolving truck assembly with plastic-coated counterweight and sling. Provide flush access door secured with cylinder lock. Finish truck assembly to match flagpole.
  - 1. Halyard Flag Snaps: Provide two stainless-steel swivel snap hooks per halyard.
    - a. Provide with neoprene or vinyl covers.
  - 2. Plastic Halyard Flag Clips: Made from injection-molded, UV-stabilized, acetal resin (Delrin). Clips attach to flag and have two eyes for inserting both runs of halyards. Provide two flag clips per halyard.
    - a. Product: Subject to compliance with requirements, provide "Quiet Halyard" flag clasp by Lingo.

### 2.4 MISCELLANEOUS MATERIALS

- A. Drainage Material: Crushed stone, or crushed or uncrushed gravel; coarse aggregate.
- B. Sand: ASTM C 33, fine aggregate.
- C. Elastomeric Joint Sealant: joint sealant complying with requirements in Section 079200 "Joint Sealants" for Use NT (nontraffic) and for Use M, G, A, and, as applicable to joint substrates indicated, for Use O.

## 2.5 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.6 ALUMINUM FINISHES

- A. Natural Satin Finish: AA-M32, fine, directional, medium satin polish; buff complying with AA-M20; seal aluminum surfaces with clear, hard-coat wax.
- B. Clear Anodic Finish: AAMA 611, AA-M12C22A41.
  - 1. Color: As selected by Architect from full range of clear anodic finishes available.
  - 2. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, including foundation; accurate placement, pattern, orientation of anchor bolts, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Prepare uncoated metal flagpoles that are set in foundation tubes by painting below-grade portions with a heavy coat of bituminous paint.
- B. Foundation Excavation: Excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete. Place and compact drainage material at excavation bottom.
- C. Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure and brace forms to prevent displacement during concreting.
- D. Place concrete, as specified in Section 033000 "Cast-in-Place Concrete." Compact concrete in place by using vibrators. Moist-cure exposed concrete for not less than seven days or use nonstaining curing compound.

- E. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.

### 3.3 FLAGPOLE INSTALLATION

- A. General: Install flagpoles where shown and according to Shop Drawings and manufacturer's written instructions.
- B. Ground Set: Place foundation tube, center, and brace to prevent displacement during concreting. Place concrete. Plumb and level foundation tube and allow concrete to cure. Install flagpole, plumb, in foundation tube.
  - 1. Foundation Tube: Place tube seated on bottom plate between steel centering wedges and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 2-inch layer of elastomeric joint sealant and cover with flashing collar.
- C. Baseplate: Cast anchor bolts in concrete foundation. Install baseplate on washers placed over leveling nuts on anchor bolts and adjust until flagpole is plumb. After flagpole is plumb, tighten retaining nuts and fill space under baseplate solidly with nonshrink, nonmetallic grout. Finish exposed grout surfaces smooth and slope 45 degrees away from edges of baseplate.
- D. Mounting Brackets and Bases: Anchor brackets and bases securely through to structural support with fasteners as indicated on Shop Drawings.

END OF SECTION 107500

Town of Hillsborough  
Adron F. Thompson Addition and Renovation  
Hillsborough, NC  
RND 2231.01

CONSTRUCTION DOCUMENTS  
12.19.2025  
Addendum No. 2 01.16.2026

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## SECTION 133419 - METAL BUILDING SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes items below that are to be erected to create the Vehicle Storage Building as identified on the drawings:

1. Structural-steel framing.
2. Metal roof panels.
3. Metal wall panels.
4. Metal Soffit panels
5. Thermal insulation.
6. Personnel doors and frames.
7. Windows.
8. Translucent panels.
9. Accessories.

- B. Related Requirements:

1. Section 042113 – “Brick Masonry” for exterior building materials for the pre-engineered metal building
2. Section 083600 "Sectional Overhead Doors" for sectional vehicular doors in metal building systems.
3. Section 084113 – “Aluminum-Framed Entrances and Storefronts” for windows in Vehicle Storage Building

#### 1.3 DEFINITIONS

- A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in standards referenced by this Section.

#### 1.4 COORDINATION

- A. Coordinate sizes and locations of concrete foundations and casting of anchor-rod inserts into foundation walls and footings. Anchor rod installation, concrete, reinforcement, and formwork requirements are specified in Section 033000 "Cast-in-Place Concrete."
- B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

#### 1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at **Project site**.
  - 1. Review methods and procedures related to metal building systems including, but not limited to, the following:
    - a. Condition of foundations and other preparatory work performed by other trades.
    - b. Structural load limitations.
    - c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
    - d. Required tests, inspections, and certifications.
    - e. Unfavorable weather and forecasted weather conditions and impact on construction schedule.
  - 2. Review methods and procedures related to metal roof panel assemblies including, but not limited to, the following:
    - a. Compliance with requirements for purlin and rafter conditions, including flatness and attachment to structural members.
    - b. Structural limitations of purlins and rafters during and after roofing.
    - c. Flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
    - d. Temporary protection requirements for metal roof panel assembly during and after installation.
    - e. Roof observation and repair after metal roof panel installation.
  - 3. Review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:
    - a. Compliance with requirements for support conditions, including alignment between and attachment to structural members.
    - b. Structural limitations of girts and columns during and after wall panel installation.

- c. Flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
- d. Temporary protection requirements for metal wall panel assembly during and after installation.
- e. Wall observation and repair after metal wall panel installation.

## 1.6 ACTION SUBMITTALS

### A. Product Data: For each type of metal building system component.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
  - a. Metal roof panels.
  - b. Metal wall panels.
  - c. Thermal insulation and vapor-retarder facings.
  - d. Personnel doors and frames.
  - e. Windows.
  - f. Translucent roof panels.
  - g. Louvers.

### B. Shop Drawings: Indicate components by others. Include full building plan, elevations, sections, details and the following:

- 1. Anchor-Rod Plans: Submit anchor-rod plans and templates before foundation work begins. Include location, diameter, and minimum required projection of anchor rods required to attach metal building to foundation. Indicate column reactions at each location.
- 2. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.
- 3. Metal Roof and Wall Panel Layout Drawings: Show layouts of panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, clip spacing, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.
  - a. Show roof-mounted items including roof hatches, equipment supports, pipe supports and penetrations, lighting fixtures, and items mounted on roof curbs.
  - b. Show wall-mounted items including personnel doors, vehicular doors, windows, louvers, and lighting fixtures.
  - c. Show translucent panels.

4. Accessory Drawings: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches (1:8)
    - a. Flashing and trim.
    - b. Gutters.
    - c. Downspouts.
  - C. Samples for Initial Selection: For units with factory-applied finishes.
  - D. Samples for Verification: For the following products:
    1. Panels: Nominal 12 inches (300 mm) long by actual panel width. Include fasteners, closures, and other exposed panel accessories.
    2. Flashing and Trim: Nominal 12 inches (300 mm) long. Include fasteners and other exposed accessories.
    3. Vapor-Retarder Facings: Nominal 6-inch- (150-mm-) square Samples.
    4. Windows: Storefront windows specified elsewhere,
    5. Accessories: Nominal 12-inch- (300-mm-) long Samples for each type of accessory.
  - E. Door Schedule: For doors and frames. Use same designations indicated on Drawings. Include details of reinforcement.
    1. Door Hardware Schedule: See Door hardware Section
    2. Keying Schedule: See Door Hardware Section.
  - F. Delegated-Design Submittal: For metal building systems.
    1. Include analysis data indicating compliance with performance requirements and design data signed and sealed by the qualified professional engineer responsible for their preparation.
- 1.7 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For erector and manufacturer.
  - B. Welding certificates.
  - C. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:
    1. Name and location of Project.
    2. Order number.
    3. Name of manufacturer.
    4. Name of Contractor.
    5. Building dimensions including width, length, height, and roof slope.
    6. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.

7. Governing building code and year of edition.
  8. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and auxiliary loads (cranes).
  9. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, according to governing building code.
  10. Building-Use Category: Indicate category of building use and its effect on load importance factors.
- D. Erector Certificates: For qualified erector, from manufacturer.
- E. Material Test Reports: For each of the following products:
1. Structural steel including chemical and physical properties.
  2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
  3. Tension-control, high-strength, bolt-nut-washer assemblies.
  4. Shop primers.
  5. Nonshrink grout.
- F. Source quality-control reports.
- G. Field quality-control reports.
- H. Surveys: Show final elevations and locations of major members. Indicate discrepancies between actual installation and the Contract Documents. Have surveyor who performed surveys certify their accuracy.
- I. Sample Warranties: For special warranties.
- 1.8 CLOSEOUT SUBMITTALS
- A. Maintenance Data: For metal panel finishes to include in maintenance manuals.
- 1.9 QUALITY ASSURANCE
- A. Manufacturer Qualifications: A qualified manufacturer.
1. Accreditation: Manufacturer's facility accredited according to the International Accreditation Service's AC472, "Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems."
  2. Engineering Responsibility: Preparation of comprehensive engineering analysis and Shop Drawings by a professional engineer who is legally qualified to practice in jurisdiction where Project is located.

- B. Erector Qualifications: An experienced erector who specializes in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.
- C. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 2. AWS D1.3, "Structural Welding Code - Sheet Steel."

#### 1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Protect foam-plastic insulation as follows:
  - 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
  - 2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to Project site before installation time.
  - 3. Complete installation and concealment of foam-plastic materials as rapidly as possible in each area of construction.

#### 1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with panel installation only when weather conditions permit metal panels to be installed according to manufacturers' written instructions and warranty requirements.

#### 1.12 WARRANTY

- A. Special Warranty on Metal Panel Finishes: Manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
  - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

- a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
  - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
  - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.
- B. Special Weathertightness Warranty for Standing-Seam Metal Roof Panels: Manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that leak or otherwise fail to remain weathertight within specified warranty period.
1. Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Subject to the performance and other requirements listed in this specification and the contract documents, provide the pre-engineered metal building as shown on the drawings as the Vehicle Storage Building from one of the manufacturers listed below;
1. American Metal Buildings
  2. Butler Manufacturing, a division of BlueScope Buildings North America, Inc.
  3. Ceco Building Systems
  4. Cornerstone Building Brands
  5. Kirby Building Systems
  6. Metallic Building Systems
  7. Nucor Building Systems
  8. Star Building Systems
  9. Varco Pruden Buildings
- B. Source Limitations: Obtain metal building system components, including primary and secondary framing and metal panel assemblies, from single source from single manufacturer.

### 2.2 SYSTEM DESCRIPTION

- A. Provide a complete, integrated set of mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.

- B. Primary-Frame Type:
  - 1. Rigid Clear Span: Solid-member, structural-framing system without interior columns.
- C. End-Wall Framing: Manufacturer's standard, for buildings not required to be expandable, consisting of load-bearing end-wall and corner columns and rafters.
- D. Secondary-Frame Type: Manufacturer's standard purlins and joists and exterior-framed (bypass) girts.
- E. Eave Height: As indicated by nominal height on Drawings.
- F. Bay Spacing: As indicated on Drawings.
- G. Roof Slope: 3 inch per 12 inches (1:4) as shown on drawings.
- H. Roof System: Manufacturer's standard lap-seam, tapered-rib metal roof panels.
- I. Exterior Wall System: Manufacturer's standard exposed-fastener, tapered-rib, metal wall panels.

## 2.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design metal building system.
- B. Structural Performance: Metal building systems shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to procedures in MBMA's "Metal Building Systems Manual."
  - 1. Design Loads: As indicated on Drawings.
  - 2. Deflection and Drift Limits: Design metal building system assemblies to withstand serviceability design loads without exceeding deflections and drift limits recommended in AISC Steel Design Guide No. 3 "Serviceability Design Considerations for Steel Buildings."
  - 3. Deflection and Drift Limits: No greater than the following:
    - a. Purlins and Rafters: Vertical deflection of 1/240 of the span.
    - b. Girts: Horizontal deflection of 1/240 of the span.
    - c. Metal Roof Panels: Vertical deflection of 1/240 of the span.
    - d. Metal Wall Panels: Horizontal deflection of 1/240 of the span.
    - e. Design secondary-framing system to accommodate deflection of primary framing and construction tolerances, and to maintain clearances at openings.
    - f. Lateral Drift: Maximum of 1/400 of the building height.

- C. Seismic Performance: Metal building system shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- E. Fire-Resistance Ratings: Where assemblies are indicated to have a fire-resistance rating, provide metal panel assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 or ASTM E 108 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Indicate design designations from UL's "Fire Resistance Directory," FM Global's "Approval Guide," or from the listings of another qualified testing agency.
- F. Structural Performance for Metal Roof and Wall Panels: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:
  - 1. Wind Loads: As indicated on Drawings.
- G. Air Infiltration for Metal Roof Panels: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 1680 or ASTM E 283 at the following test-pressure difference:
  - 1. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).
- H. Air Infiltration for Metal Wall Panels: Air leakage of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) when tested according to ASTM E 283 at the following test-pressure difference:
  - 1. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).
- I. Water Penetration for Metal Roof Panels: No water penetration when tested according to ASTM E 1646 or ASTM E 331 at the following test-pressure difference:
  - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).
- J. Water Penetration for Metal Wall Panels: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:
  - 1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).

- K. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
  - 1. Uplift Rating: UL 30.
- L. Thermal Performance for Opaque Elements: Provide the following maximum U-factors and minimum R-values when tested according to ASTM C 1363 or ASTM C 518:
  - 1. Roof:
    - a. U-Factor: 0.053
    - b. R-Value: 19
  - 2. Walls:
    - a. U-Factor: 0.048
    - b. R-Value: 21

#### 2.4 STRUCTURAL-STEEL FRAMING

- A. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings."
- B. Bolted Connections: Comply with RCSC's "Specification for Structural Joints Using High-Strength Bolts."
- C. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.
- D. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafters, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing.
  - 1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated.
    - a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Architect.
  - 2. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
  - 3. Frame Configuration: Single gable.
  - 4. Exterior Column: Tapered.
  - 5. Rafter: Tapered.

- E. End-Wall Framing: Manufacturer's standard primary end-wall framing fabricated for field-bolted assembly to comply with the following:
1. End-Wall and Corner Columns: I-shaped sections fabricated from structural-steel shapes; shop-welded, built-up steel plates; or C-shaped, cold-formed, structural-steel sheet.
  2. End-Wall Rafters: C-shaped, cold-formed, structural-steel sheet; or I-shaped sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.
- F. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating, to comply with the following:
1. Purlins: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; minimum 2-1/2-inch- (64-mm-) wide flanges.
    - a. Depth: 8" As indicated on Drawings.
  2. Purlins: Steel joists of depths indicated on Drawings.
  3. Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- (64-mm-) wide flanges.
    - a. Depth: 8" As indicated on drawings, and required to comply with system performance requirements.
  4. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; to provide adequate backup for metal panels.
  5. Flange Bracing: Minimum 2-by-2-by-1/8-inch (51-by-51-by-3-mm) structural-steel angles or 1-inch- (25-mm-) diameter, cold-formed structural tubing to stiffen primary-frame flanges.
  6. Sag Bracing: Minimum 1-by-1-by-1/8-inch (25-by-25-by-3-mm) structural-steel angles.
  7. Base or Sill Angles: Manufacturer's standard base angle, minimum 3-by-2-inch (76-by-51-mm), fabricated from zinc-coated (galvanized) steel sheet.
  8. Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.
  9. Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings.
  10. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.

- G. Bracing: Provide adjustable wind bracing using any method as follows except where portal frames are shown indicated in drawings to accommodate lateral resistance for facades with large door openings:
1. Rods: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 (345); or ASTM A 529/A 529M, Grade 50 (345); minimum 1/2-inch- (13-mm-) diameter steel; threaded full length or threaded a minimum of 6 inches (152 mm) at each end.
  2. Cable: ASTM A 475, minimum 1/4-inch- (6-mm-) diameter, extra-high-strength grade, Class B, zinc-coated, seven-strand steel; with threaded end anchors.
  3. Angles: Fabricated from structural-steel shapes to match primary framing, of size required to withstand design loads.
  4. Rigid Portal Frames: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
  5. Fixed-Base Columns: Fabricated from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
  6. Diaphragm Action of Metal Panels: Design metal building to resist wind forces through diaphragm action of metal panels.
- H. Anchor Rods: Headed anchor rods as indicated in Anchor Rod Plan for attachment of metal building to foundation.
- I. Materials:
1. W-Shapes: ASTM A 992/A 992M; ASTM A 572/A 572M, Grade 50 or 55 (345 or 380); or ASTM A 529/A 529M, Grade 50 or 55 (345 or 380).
  2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55 (345 or 380); or ASTM A 529/A 529M, Grade 50 or 55 (345 or 380).
  3. Plate and Bar: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55 (345 or 380); or ASTM A 529/A 529M, Grade 50 or 55 (345 or 380).
  4. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
  5. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B or C, structural tubing.
  6. Structural-Steel Sheet: Hot-rolled, ASTM A 1011/A 1011M, Structural Steel (SS), Grades 30 through 55 (205 through 380), or High-Strength Low-Alloy Steel (HSLAS) or High-Strength Low-Alloy Steel with Improved Formability (HSLAS-F), Grades 45 through 70 (310 through 480); or cold-rolled, ASTM A 1008/A 1008M, Structural Steel (SS), Grades 25 through 80 (170 through 550), or HSLAS, Grades 45 through 70 (310 through 480).
  7. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G60 (Z180) coating designation; mill phosphatized.
  8. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

- a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, SS, Grades 33 through 80 (230 through 550), or HSLAS or HSLAS-F, Grades 50 through 80 (340 through 550); with G90 (Z275) coating designation.
  - b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, SS, Grade 50 or 80 (340 or 550); with Class AZ50 (AZM150) coating.
9. Joist Girders: Manufactured according to "Standard Specifications for Joist Girders," in SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders"; with steel-angle, top- and bottom-chord members, and end- and top-chord arrangements as indicated on Drawings and required for primary framing.
10. Steel Joists: Manufactured according to "Standard Specifications for Open Web Steel Joists, K-Series," in SJI's "Standard Specifications and Load Tables for Steel Joists and Joist Girders"; with steel-angle, top- and bottom-chord members, and end- and top-chord arrangements as indicated on Drawings and required for secondary framing.
11. Non-High-Strength Bolts, Nuts, and Washers: ASTM A 307, Grade A, carbon-steel, hex-head bolts; ASTM A 563 (ASTM A 563M) carbon-steel hex nuts; and ASTM F 844 plain (flat) steel washers.
- a. Finish: Hot-dip zinc coating, ASTM F 2329, Class C.
12. Structural Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563 (ASTM A 563M) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M) hardened carbon-steel washers.
- a. Finish: Plain.
13. High-Strength Bolts, Nuts, and Washers: ASTM A 490 (ASTM A 490M), Type 1, heavy-hex steel structural bolts or tension-control, bolt-nut-washer assemblies with spline ends; ASTM A 563 (ASTM A 563M) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M) hardened carbon-steel washers, plain.
14. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, heavy-hex-head steel structural bolts with spline ends.
- a. Finish: Plain.
15. Anchor Rods: ASTM A 307, Grade A.
- a. Configuration: Straight.
  - b. Nuts: ASTM A 563 (ASTM A 563M) heavy-hex carbon steel.
  - c. Plate Washers: ASTM A 36/A 36M carbon steel.
  - d. Washers: ASTM F 436 (ASTM F 436M) hardened carbon steel.
  - e. Finish: Hot-dip zinc coating, ASTM F 2329, Class C.
16. Threaded Rods: ASTM A 307, Grade A.

- a. Nuts: ASTM A 563 (ASTM A 563M) heavy-hex carbon steel.
  - b. Washers: ASTM F 436 (ASTM F 436M) hardened.
  - c. Finish: Plain.
- J. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.
1. Clean and prepare in accordance with SSPC-SP2.
  2. Coat with manufacturer's standard primer. Apply primer to primary and secondary framing to a minimum dry film thickness of 1 mil (0.025 mm).
    - a. Prime secondary framing formed from uncoated steel sheet to a minimum dry film thickness of 0.5 mil (0.013 mm) on each side.

## 2.5 METAL ROOF PANELS

- A. Exposed Fastener, Tapered-Rib, Metal Roof Panels MRP as indicated on drawings Formed with raised, trapezoidal major ribs and pan between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.
1. Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, **0.0239-inch (0.61-mm) equating to 24 gauge** nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
    - a. Exterior Finish: Three-coat fluoropolymer.
    - b. Color: As selected by Architect from manufacturer's full range.
  2. Major-Rib Spacing: 12 inches (305 mm) o.c.
  3. Panel Coverage: 36 inches (914 mm).
  4. **Panel Height: 1.5 inches (38 mm).**
- B. Finishes:
1. Exposed Coil-Coated Finish:
    - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

## 2.6 METAL WALL PANELS

- A. Exposed-Fastener, Tapered-Rib, Metal Wall Panels MWP as indicated on Drawings: Formed with raised, trapezoidal major ribs and flat pan between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.
1. **Material: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, [0.0239-inch (0.61-mm) equating to 24 gauge nominal uncoated steel thickness. Prepainted by the coil-coating process to comply with ASTM A 755/A 755M.**
    - a. Exterior Finish: Three-coat fluoropolymer.
    - b. Color: As selected by Architect from manufacturer's full range.
  2. Major-Rib Spacing: 12 inches (305 mm) o.c.
  3. Panel Coverage: 36 inches (914 mm).
  4. Panel Height: 1.5 inches (38 mm).
- B. Finishes:
1. Exposed Coil-Coated Finish:
    - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
  2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

## 2.7 THERMAL INSULATION

- A. Faced Metal Building Insulation: ASTM C 991, Type II, glass-fiber-blanket insulation; 0.5-lb/cu. ft. (8-kg/cu. m) density; 2-inch- (51-mm-) wide, continuous, vapor-tight edge tabs; with a flame-spread index of 25 or less.
- B. Retainer Strips: For securing insulation between supports, 0.025-inch (0.64-mm) nominal-thickness, formed, metallic-coated steel or PVC retainer clips colored to match insulation facing.
- C. Vapor-Retarder Facing: ASTM C 1136, with permeance not greater than 0.02 perm (1.15 ng/Pa x s x sq. m) when tested according to ASTM E 96/E 96M, Desiccant Method.
1. Composition: White polypropylene film facing and fiberglass-polyester-blend fabric backing.

- D. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

## 2.8 PERSONNEL DOORS AND FRAMES

- A. Swinging Personnel Doors and Frames: Metal building system manufacturer's standard doors and frames; prepared and reinforced at strike and at hinges to receive factory- and field-applied hardware according to BHMA A156 Series.
  - 1. Steel Doors: 1-3/4 inches (44.5 mm) thick; fabricated from metallic-coated steel face sheets, 0.036-inch (0.91-mm) nominal uncoated steel thickness, of seamless, hollow-metal construction; with 0.060-inch (1.52-mm) nominal uncoated steel thickness, inverted metallic-coated steel channels welded to face sheets at top and bottom of door.
    - a. Design: Flush As indicated on Drawings.
    - b. Core: Polystyrene foam with U-factor rating of at least 0.16 Btu/sq. ft. x h x deg F (0.91 W/sq. m x K).
    - c. Glazing Frames: Aluminum frames specified elsewhere.
    - d. Glazing: As specified in Section 088000 "Glazing."
  - 2. Steel Frames: Fabricate 2-inch- (51-mm-) wide face frames from zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.060-inch (1.52-mm) nominal uncoated steel thickness.
    - a. Type: Factory welded.
  - 3. Fabricate concealed stiffeners, reinforcement, edge channels, and moldings from either cold- or hot-rolled steel sheet.
  - 4. Hardware:
    - a. Provide hardware for each door leaf, as follows:
      - 1) Hinges: BHMA A156.1. Three antifriction-bearing, standard-weight, full-mortise, stainless-steel or bronze, template-type hinges; 4-1/2 by 4-1/2 inches (114 by 114 mm), with nonremovable pin.
      - 2) Lockset: BHMA A156.2. Key-in-lever cylindrical type – coordinate with Door Hardware Schedule as exterior doors are access controlled requiring electrified hardware.
      - 3) Threshold: BHMA A156.21. Extruded aluminum.
      - 4) Silencers: Pneumatic rubber; three silencers on strike jambs of single door frames and two silencers on heads of double door frames.
      - 5) Closer: BHMA A156.4. Surface-applied, standard-duty hydraulic type.
      - 6) Weather Stripping: Vinyl applied to head and jambs, with vinyl sweep at sill.

5. Anchors and Accessories: Manufacturer's standard units, galvanized according to ASTM A 123/A 123M.
6. Fabrication: Fabricate doors and frames to be rigid; neat in appearance; and free from defects, warp, or buckle. Provide continuous welds on exposed joints; grind, dress, and make welds smooth, flush, and invisible.

B. Materials:

1. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B, suitable for exposed applications.
2. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, CS, Type B; free of scale, pitting, or surface defects; pickled and oiled.
3. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, CS, Type B; with G60 (Z180) zinc (galvanized) or A60 (ZF180) zinc-iron-alloy (galvannealed) coating designation.

C. Finishes for Personnel Doors and Frames:

1. Prime Finish: Factory-apply manufacturer's standard primer immediately after cleaning and pretreating.
  - a. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.
2. Factory-Applied Paint Finish: Manufacturer's standard, complying with SDI A250.3 for performance and acceptance criteria.
  - a. Color and Gloss: As selected by Architect from manufacturer's full range

## 2.9 WINDOWS

A. Aluminum Windows: As specified in Section 084113 "Aluminum-Framed Entrances and Storefronts Windows."

1. Fasteners, Anchors, and Clips: Nonmagnetic stainless steel, aluminum, or other noncorrosive material, compatible with aluminum window members, trim, hardware, anchors, and other components of window units. Fasteners shall not be exposed, except for attaching hardware.
  - a. Reinforcement: Where fasteners screw-anchor into aluminum less than 0.128 inch (3.26 mm) thick, reinforce interior with aluminum or nonmagnetic stainless steel to receive screw threads, or provide standard, noncorrosive, pressed-in, spline grommet nuts.

2. Sliding-Type Weather Stripping: Woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric; complying with AAMA 701/702.

- B. Glazing: Comply with requirements specified in Section 088000 "Glazing."

## 2.10 TRANSLUCENT PANELS

- A. Insulated Translucent Panels TRP as indicated on drawings: Fabricate insulating units of two sheets of glass-fiber-reinforced polyester, translucent plastic separated by an air space; complying with ASTM D 3841, Type CC1 (limited flammability), Grade 1 (weather resistant); smooth finish on both sides. Match profile of adjacent metal panels.

1. Exterior Panel Weight: Not less than 6 oz./sq. ft. (1831 g/sq. m).
2. Interior Panel Weight: Not less than 6 oz./sq. ft. (1831 g/sq. m).
3. Light Transmittance: Not less than 42 percent according to ASTM D 1494.
4. Metal Edge: Fabricate full length of each side of panel with metal edge for seaming into standing-seam roof panel joint.
5. Color: White.

- B. Mastic for Translucent Panels: Nonstaining, saturated vinyl polymer as recommended by translucent panel manufacturer for sealing laps.

- C. Performance:

1. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - a. Flame-Spread Index: 25 or less.
  - b. Smoke-Developed Index: 450 or less.

## 2.11 ACCESSORIES

- A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.

1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

- B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fasciae, corner units, ridge closures, clips, sealants,

gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.
  2. Clips: Manufacturer's standard, formed from steel sheet, designed to withstand negative-load requirements.
  3. Cleats: Manufacturer's standard, mechanically seamed cleats formed from steel sheet.
  4. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
  5. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
  6. Thermal Spacer Blocks: Where metal panels attach directly to purlins, provide thermal spacer blocks of thickness required to provide 1-inch (25-mm) standoff; fabricated from extruded polystyrene.
- C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including copings, fasciae, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal wall panels unless otherwise indicated.
1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.
  2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
  3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
- D. Flashing and Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match adjacent metal panels.
1. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
  2. Opening Trim: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.030-inch (0.76-mm) nominal uncoated steel thickness, prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.
- E. Gutters: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match roof fascia and rake trim. Match profile of gable trim, complete with end

pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- (2438-mm-) long sections, sized according to SMACNA's "Architectural Sheet Metal Manual."

1. Gutter Supports: Fabricated from same material and finish as gutters.
  2. Strainers: Bronze, copper, or aluminum wire ball type at outlets.
- F. Downspouts: Zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.018-inch (0.46-mm) nominal uncoated steel thickness, prepainted with coil coating; finished to match metal wall panels. Fabricate in minimum 10-foot- (3-m-) long sections, complete with formed elbows and offsets.
1. Mounting Straps: Fabricated from same material and finish as gutters.
- G. Louvers: Size and design indicated on Mechanical Drawings; self-framing and self-flashing. Fabricate welded frames from zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.048-inch (1.21-mm) nominal uncoated steel thickness; finished to match metal wall panels. Form blades from zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet, 0.036-inch (0.91-mm) nominal uncoated steel thickness; folded or beaded at edges, set at an angle that excludes driving rains, and secured to frames by riveting or welding. Fabricate louvers with equal blade spacing to produce uniform appearance.
1. Blades: Fixed and Adjustable type, with weather-stripped edges.
  2. Free Area: As required on Mechanical Drawings.
  3. Bird Screening: Galvanized steel, 1/2-inch- (13-mm-) square mesh, 0.041-inch (1.04-mm) wire; with rewirable frames, removable and secured with clips; fabricated of same kind and form of metal and with same finish as louvers.
    - a. Mounting: Interior face of louvers.
  4. Vertical Mullions: Provide mullions at spacings recommended by manufacturer, or 72 inches (1830 mm) o.c., whichever is less.
- H. Materials:
1. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.
    - a. Fasteners for Metal Roof Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless-steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
    - b. Fasteners for Metal Wall Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with EPDM sealing washers bearing on weather side of metal panels.

- c. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
  - d. Blind Fasteners: High-strength aluminum or stainless-steel rivets.
2. Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for 15-mil (0.4-mm) dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
  3. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.
  4. Metal Panel Sealants:
    - a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene-compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape of manufacturer's standard size.
    - b. Joint Sealant: ASTM C 920; one part elastomeric polyurethane or polysulfide; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended by metal building system manufacturer.

## 2.12 FABRICATION

- A. General: Design components and field connections required for erection to permit easy assembly.
  1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
  2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.
- B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.
- C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.
  1. Make shop connections by welding or by using high-strength bolts.
  2. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
  3. Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any combination of loadings.

4. Weld clips to frames for attaching secondary framing if applicable, or punch for bolts.
  5. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.
- D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll forming or break forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.
1. Make shop connections by welding or by using non-high-strength bolts.
  2. Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication.
- E. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
1. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.

## 2.13 SOURCE QUALITY CONTROL

- A. Special Inspection: Owner will engage a qualified special inspector to perform source quality control inspections and to submit reports.
1. Accredited Manufacturers: Special inspections will not be required if fabrication is performed by an IAS AC472-accredited manufacturer approved by authorities having jurisdiction to perform such Work without special inspection.
    - a. After fabrication, submit copy of certificate of compliance to authorities having jurisdiction, certifying that Work was performed according to Contract requirements.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments

to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.

1. Engage land surveyor to perform surveying.
- C. Proceed with erection only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.
- B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

### 3.3 ERECTION OF STRUCTURAL FRAMING

- A. Erect metal building system according to manufacturer's written instructions and drawings.
- B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.
- C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.
- D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
1. Set plates for structural members on wedges, shims, or setting nuts as required.
  2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
  3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
  2. Make allowances for difference between temperature at time of erection and mean temperature when structure will be completed and in service.
- F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.
1. Make field connections using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt type and joint type specified.
    - a. Joint Type: Snug tightened or pretensioned as required by manufacturer.
- G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.
1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
  2. Locate and space wall girts to suit openings such as doors and windows.
  3. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.
- H. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.
1. Tighten rod and cable bracing to avoid sag.
  2. Locate interior end-bay bracing only where indicated.
- I. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.
- J. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

### 3.4 METAL PANEL INSTALLATION, GENERAL

- A. Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.
- B. On-Site Fabrication: Subject to compliance with requirements of this Section, metal panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate according to equipment manufacturer's written instructions and to comply with details shown.

- C. Examination: Examine primary and secondary framing to verify that structural-panel support members and anchorages have been installed within alignment tolerances required by manufacturer.
  - 1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation.
- D. General: Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.
  - 1. Field cut metal panels as required for doors, windows, and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes.
    - a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer.
  - 2. Install metal panels perpendicular to structural supports unless otherwise indicated.
  - 3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws.
  - 4. Locate and space fastenings in uniform vertical and horizontal alignment.
  - 5. Locate metal panel splices over structural supports with end laps in alignment.
  - 6. Lap metal flashing over metal panels to allow moisture to run over and off the material.
- E. Lap-Seam Metal Panels: Install screw fasteners using power tools with controlled torque adjusted to compress EPDM washers tightly without damage to washers, screw threads, or metal panels. Install screws in predrilled holes.
  - 1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply metal panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
- F. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.
- G. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not indicated, provide types recommended by metal panel manufacturer.
  - 1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer.

2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

### 3.5 METAL ROOF PANEL INSTALLATION

- A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.
  1. Install ridge caps as metal roof panel work proceeds.
  2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping screws.
- B. Lap-Seam Metal Roof Panels: Fasten metal roof panels to supports with exposed fasteners at each lapped joint, at location and spacing recommended by manufacturer.
  1. Provide metal-backed sealing washers under heads of exposed fasteners bearing on weather side of metal roof panels.
  2. Provide sealant tape at lapped joints of metal roof panels and between panels and protruding equipment, vents, and accessories.
  3. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps and on side laps of nesting-type metal panels, on side laps of ribbed or fluted metal panels, and elsewhere as needed to make metal panels weatherproof to driving rains.
  4. At metal panel splices, nest panels with minimum 6-inch (152-mm) end lap, sealed with butyl-rubber sealant and fastened together by interlocking clamping plates.
- C. Metal Fascia Panels: Align bottom of metal panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws. Flash and seal metal panels with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.
- D. Metal Roof Panel Installation Tolerances: Shim and align metal roof panels within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

### 3.6 METAL WALL PANEL INSTALLATION

- A. General: Install metal wall panels in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to girts, extending full height of building, unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement.
  1. Unless otherwise indicated, begin metal panel installation at corners with center of rib lined up with line of framing.
  2. Shim or otherwise plumb substrates receiving metal wall panels.

3. When two rows of metal panels are required, lap panels 4 inches (102 mm) minimum.
  4. When building height requires two rows of metal panels at gable ends, align lap of gable panels over metal wall panels at eave height.
  5. Rigidly fasten base end of metal wall panels and allow eave end free movement for thermal expansion and contraction. Predrill panels.
  6. Flash and seal metal wall panels with weather closures at eaves and rakes, and at perimeter of all openings. Fasten with self-tapping screws.
  7. Install screw fasteners in predrilled holes.
  8. Install flashing and trim as metal wall panel work proceeds.
  9. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and elsewhere as indicated on Drawings; if not indicated, as necessary for waterproofing.
  10. Align bottom of metal wall panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws.
  11. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.
- B. Metal Wall Panels: Install metal wall panels on exterior side of girts. Attach metal wall panels to supports with fasteners as recommended by manufacturer.
- C. Installation Tolerances: Shim and align metal wall panels within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m), noncumulative; level, plumb, and on location lines; and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

### 3.7 TRANSLUCENT PANEL INSTALLATION

- A. Translucent Panels: Attach translucent panels to structural framing with fasteners according to manufacturer's written instructions. Install panels perpendicular to supports unless otherwise indicated. Anchor translucent panels securely in place, with provisions for thermal and structural movement.
1. Provide end laps of not less than 6 inches (152 mm) and side laps of not less than 1-1/2-inch (38-mm) corrugations for metal roof panels.
  2. Align horizontal laps with adjacent metal panels.
  3. Seal intermediate end laps and side laps of translucent panels with translucent mastic.

### 3.8 METAL SOFFIT PANEL INSTALLATION

- A. Provide metal soffit panels the full width of soffits. Install panels perpendicular to support framing.
- B. Flash and seal metal soffit panels with weather closures where panels meet walls and at perimeter of all openings.

### 3.9 THERMAL INSULATION INSTALLATION

- A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, according to manufacturer's written instructions.
1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping.
  2. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.
  3. Install factory-laminated, vapor-retarder-faced blankets straight and true in one-piece lengths, with both sets of facing tabs sealed, to provide a complete vapor retarder.
  4. Install blankets straight and true in one-piece lengths. Install vapor retarder over insulation, with both sets of facing tabs sealed, to provide a complete vapor retarder.
- B. Blanket Roof Insulation: Comply with the following installation method:
1. Over-Framing Installation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Hold in place by metal roof panels fastened to secondary framing.
  2. Between-Purlin Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Hold in place with bands and crossbands below insulation.
  3. Over-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Install layer of filler insulation over first layer to fill space formed by metal roof panel standoffs. Hold in place by panels fastened to standoffs.
    - a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.
  4. Two-Layers-between-Purlin-with-Spacer-Block Installation: Extend insulation and vapor retarder between purlins. Carry vapor-retarder-facing tabs up and over purlin, overlapping adjoining facing of next insulation course and maintaining continuity of retarder. Install layer of filler insulation over first layer to fill space between purlins formed by thermal spacer blocks. Hold in place with bands and crossbands below insulation.
    - a. Thermal Spacer Blocks: Where metal roof panels attach directly to purlins, install thermal spacer blocks.
  5. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

- C. Blanket Wall Insulation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Hold in place by metal wall panels fastened to secondary framing.
  - 1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.
  
- D. Board Wall Insulation: Extend board insulation in thickness indicated to cover entire wall. Hold in place by metal wall panels fastened to secondary framing. Comply with manufacturers' written instructions.
  - 1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

### 3.10 DOOR AND FRAME INSTALLATION

- A. General: Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturers' written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each door frame with elastomeric sealant used for metal wall panels.
  
- B. Personnel Doors and Frames: Install doors and frames according to NAAMM-HMMA 840. Fit non-fire-rated doors accurately in their respective frames, with the following clearances:
  - 1. Between Doors and Frames at Jambs and Head: 1/8 inch (3 mm).
  - 2. Between Edges of Pairs of Doors: 1/8 inch (3 mm).
  - 3. At Door Sills with Threshold: 3/8 inch (9.5 mm).
  - 4. At Door Sills without Threshold: 3/4 inch (19.1 mm).
  - 5. At fire-rated openings, install frames according to, and doors with clearances specified in, NFPA 80.
  
- C. Field Glazing: Comply with installation requirements in Section 088000 "Glazing."
  
- D. Door Hardware:
  - 1. Install surface-mounted items after finishes have been completed at heights indicated in DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
  - 2. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  - 3. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
  - 4. Set thresholds for exterior doors in full bed of sealant complying with requirements for concealed mastics specified in Section 079200 "Joint Sealants."

### 3.11 WINDOW INSTALLATION

- A. General: Install windows plumb, rigid, properly aligned, without warp or rack of frames or sash, and securely fasten in place according to manufacturer's written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each window frame with elastomeric sealant used for metal wall panels.
  - 1. Separate dissimilar materials from sources of corrosion or electrolytic action at points of contact with other materials by complying with requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440.
- B. Set sill members in bed of sealant or with gaskets, for weathertight construction.
- C. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- D. Mount screens directly to frames with tapped screw clips.

### 3.12 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
  - 1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
  - 2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
  - 3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
  - 1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
  - 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-

type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

- C. Gutters: Join sections with riveted-and-soldered or lapped-and-sealed joints. Attach gutters to eave with gutter hangers spaced as required for gutter size, but not more than 36 inches (914 mm) o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.
- D. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inches (1524 mm) o.c. in between.
  - 1. Provide elbows at base of downspouts to direct water away from building.
  - 2. Tie downspouts to underground drainage system indicated.
- E. Louvers: Locate and place louver units level, plumb, and at indicated alignment with adjacent work.
  - 1. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
  - 2. Provide perimeter reveals and openings of uniform width for sealants and joint fillers.
  - 3. Protect galvanized- and nonferrous-metal surfaces from corrosion or galvanic action by applying a heavy coating of corrosion-resistant paint on surfaces that will be in contact with concrete, masonry, or dissimilar metals.
  - 4. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

### 3.13 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform field quality control special inspections and to submit reports.
- B. Product will be considered defective if it does not pass tests and inspections.
- C. Prepare test and inspection reports.

### 3.14 ADJUSTING

- A. Doors: After completing installation, test and adjust doors to operate easily, free of warp, twist, or distortion.

- B. Door Hardware: Adjust and check each operating item of door hardware and each door to ensure proper operation and function of every unit. Replace units that cannot be adjusted to operate as intended.
- C. Windows: Adjust operating sashes and ventilators, screens, hardware, and accessories for a tight fit at contact points and at weather stripping to ensure smooth operation and weathertight closure. Lubricate hardware and moving parts.
- D. Adjustable Louvers: After completing installation, including work by other trades, lubricate, test, and adjust units to operate easily, free of warp, twist, or distortion as needed to provide fully functioning units.
  - 1. Adjust louver blades to be weathertight when in closed position.

### 3.15 CLEANING AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780/A 780M and manufacturer's written instructions.
- B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- C. Touchup Painting: After erection, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted structural framing, bearing plates, and accessories.
  - 1. Clean and prepare surfaces by SSPC-SP 2, "Hand Tool Cleaning," or by SSPC-SP 3, "Power Tool Cleaning."
  - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- D. Touchup Painting: Cleaning and touchup painting are specified in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."
- E. Metal Panels: Remove temporary protective coverings and strippable films, if any, as metal panels are installed. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
  - 1. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
- F. Doors and Frames: Immediately after installation, sand rusted or damaged areas of prime coat until smooth and apply touchup of compatible air-drying primer.
  - 1. Immediately before final inspection, remove protective wrappings from doors and frames.

- G. Windows: Clean metal surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances. Clean factory-glazed glass immediately after installing windows.
- H. Louvers: Clean exposed surfaces that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate until final cleaning.
  - 1. Restore louvers damaged during installation and construction period so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.
    - a. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 133419

IN ASSOCIATION WITH:

PROFESSIONAL SEALS:



PROJECT INFORMATION:



**Town of Hillsborough**  
Adron F. Thompson  
Addition & Renovation

715 Dimmocks Mill Road, Hillsborough, NC

KEY PLAN:

KEYED DEMOLITION NOTES	
No.	Note
1	DEMOLISH CONCRETE PAD
2	DEMOLISH FENCING AND GATE
3	DEMOLISH EXISTING EXTERIOR CONCRETE STAIRS
4	DEMOLISH EXTERIOR CMU WALLS, FOUNDATION/FOOTING, AND WOOD FRAMED METAL ROOF
5	DEMOLISH VINYL SIDING AND WOOD FRAMED EXTERIOR WALLS
6	DEMOLISH EXISTING LEAN-TO SHED ROOF RAFTERS & METAL ROOFING MATERIAL
7	DEMOLISH EXISTING DOORS, LEAVE FRAME
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32	EXISTING STONE/MASONRY WINDOW SILL TO REMAIN. PROTECT STONE SILLS DURING ALL WORK - TYPICAL
33	DEMOLISH PLUMBING FIXTURES - SEE PLUMBING DWGS.
34	DEMOLISH EXISTING ENTRY CANOPY
35	DEMOLISH EXISTING METAL STAIR RAILING
36	EXISTING STORAGE AREA HAS GRAVEL FLOOR - IT IS ASSUMED THAT THERE IS A CONCRETE SLAB BELOW THE GRAVEL. OWNER TO SCOPE, INSTALL A NEW CONCRETE FLOOR SLAB IN THIS AREA
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48	DEMOLISH SHOWER - SEE PLUMBING PLANS
49	DEMOLISH TOILET - SEE PLUMBING PLANS
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GENERAL DEMOLITION NOTE: ITEMS SHOWN TO BE DEMOLISHED THAT HAVE PIPING, DRAINS, CONDUIT, WATER BOXES OR OTHER ASSOCIATED ITEMS SHALL HAVE ALL ASSOCIATED UTILITIES REMOVED UNLESS NOTED TO SAVE IN PLUMBING, MECHANICAL, OR ELECTRICAL PLANS - TYPICAL

### HAZARDOUS MATERIALS NOTES

- GENERAL CONTRACTOR TO REVIEW THE HAZARDOUS MATERIALS SURVEY REPORT INCLUDED WITH PROJECT MANUAL.
- OWNER WILL ABATE THE KNOWN HAZARDOUS MATERIALS.
- LEAD PAINT ITEMS & SCOPE

Plan North

Not to Scale

REVISIONS

No.	Date	Description
1	01.16.2026	ADDENDUM No. 2

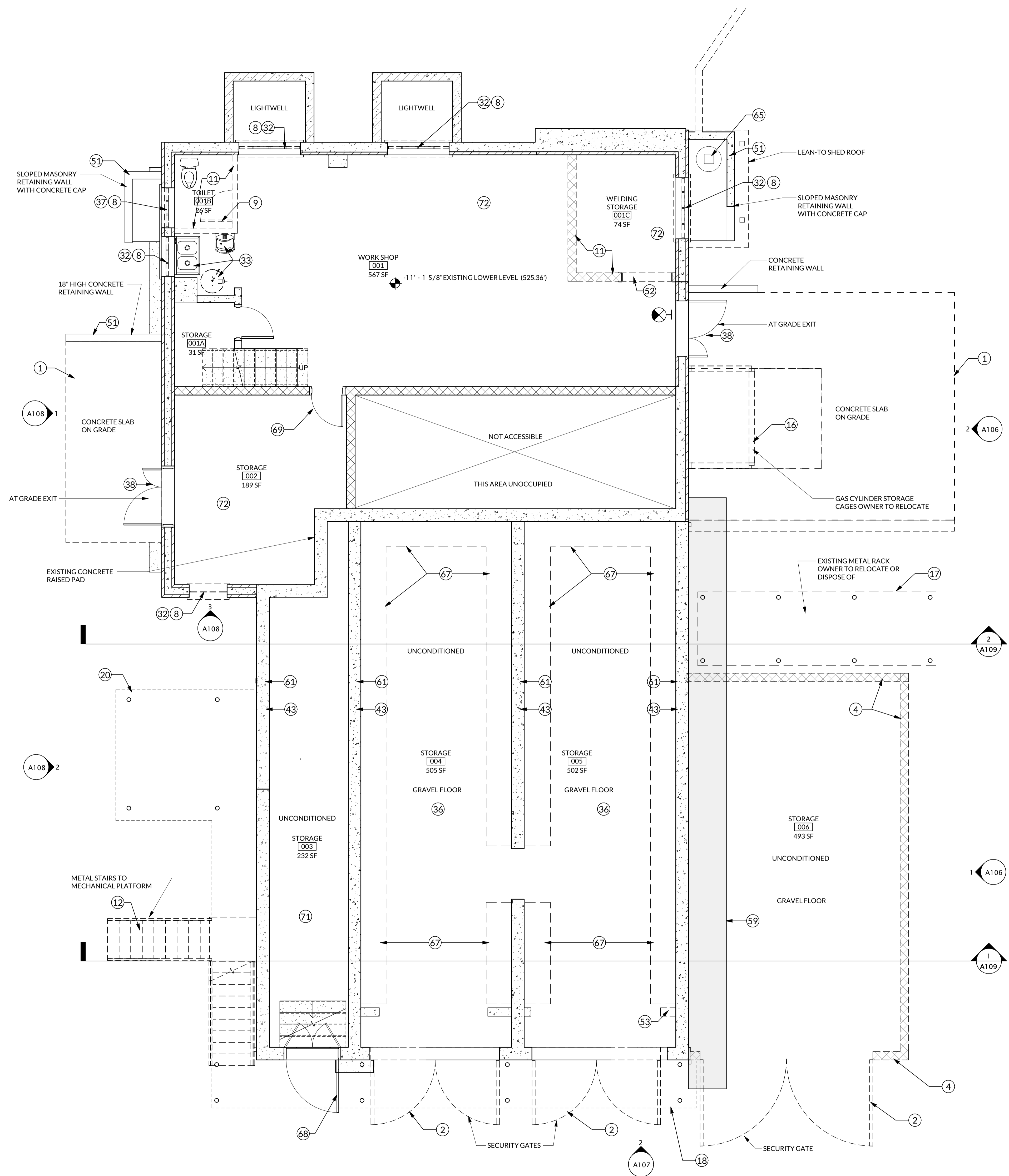
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Original drawing is 30"x42". Do not scale contents.

PROJECT#	DRAWN	CHECKED	DATE
2231.01	EMC	DBD	12.19.2025

SHEET NAME:

DEMOLITION PLAN - LOWER LEVEL

**A101**

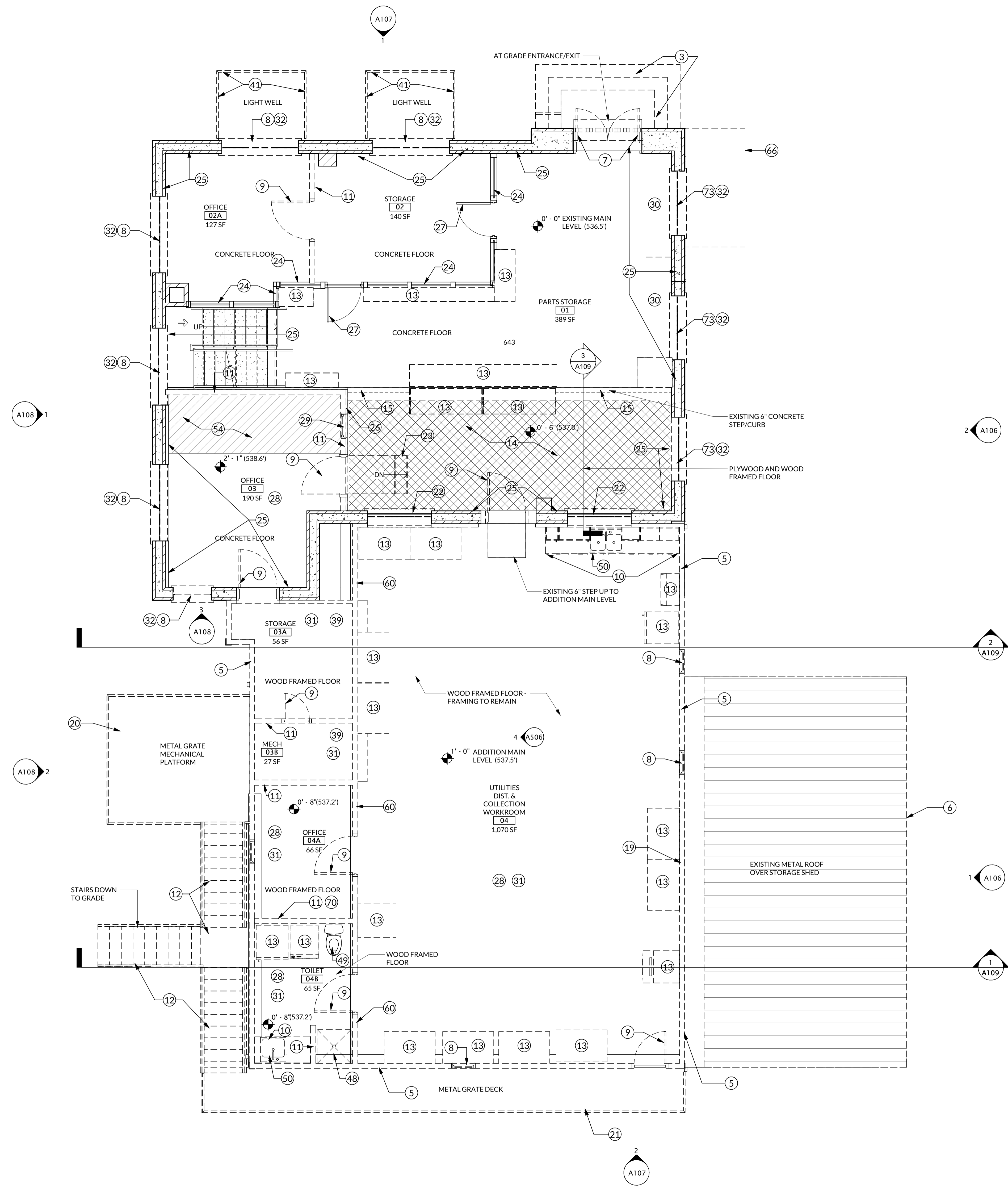


**1** DEMOLITION PLAN - LOWER LEVEL  
A101 1/4" = 1'-0"

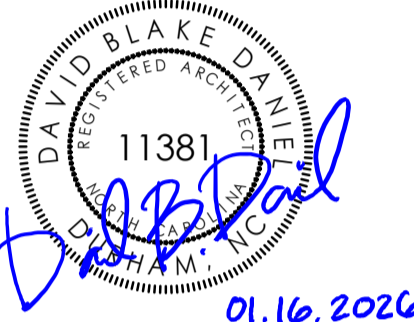
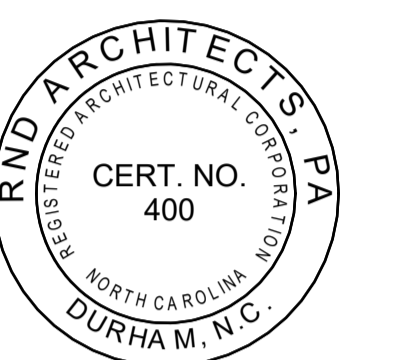
KEYED DEMOLITION NOTES	
No.	Note
TO BE REMOVED, BUT NOT LIMITED TO:	
1	DEMOLISH CONCRETE PAD
2	DEMOLISH FENCING AND GATE
3	DEMOLISH EXISTING EXTERIOR CONCRETE STAIRS
4	DEMOLISH EXTERIOR CMU WALLS, FOUNDATION/FOOTING, AND WOOD FRAMED METAL ROOF
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HAZARDOUS MATERIALS NOTES	
1.	GENERAL CONTRACTOR TO REVIEW THE HAZARDOUS MATERIALS SURVEY REPORT INCLUDED WITH PROJECT MANUAL.
2.	OWNER WILL ABATE THE KNOWN HAZARDOUS MATERIALS.
3.	LEAD PAINT ITEMS & SCOPE



**1** DEMOLITION PLAN - MAIN LEVEL  
A102 1/4" = 1'-0"



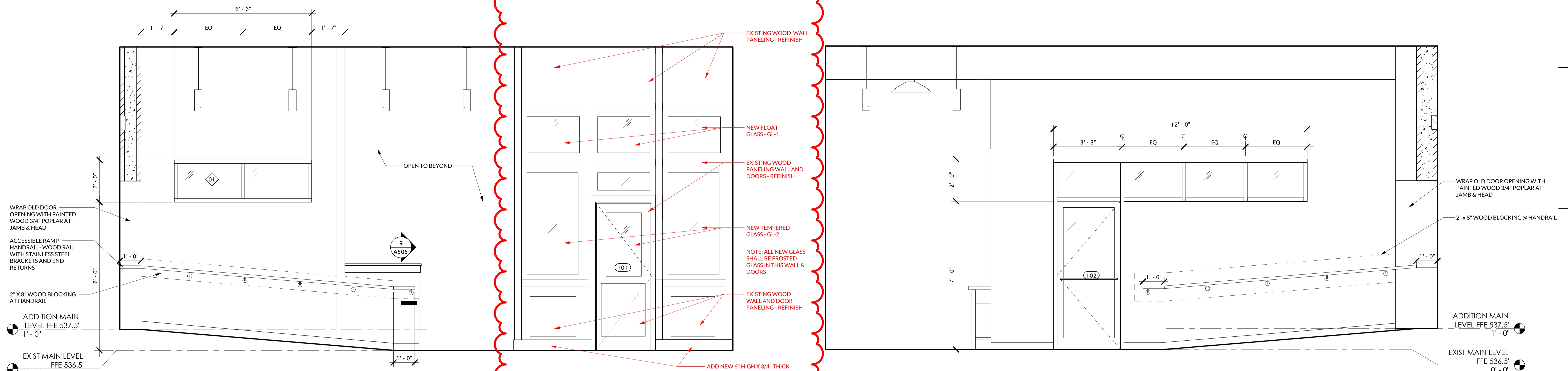
Town of Hillsborough  
Adron F. Thompson  
Addition & Renovation

715 Dimmocks Mill Road, Hillsborough, NC

REVISIONS		
No.	Date	Description
1	01.16.2026	ADDENDUM No. 2

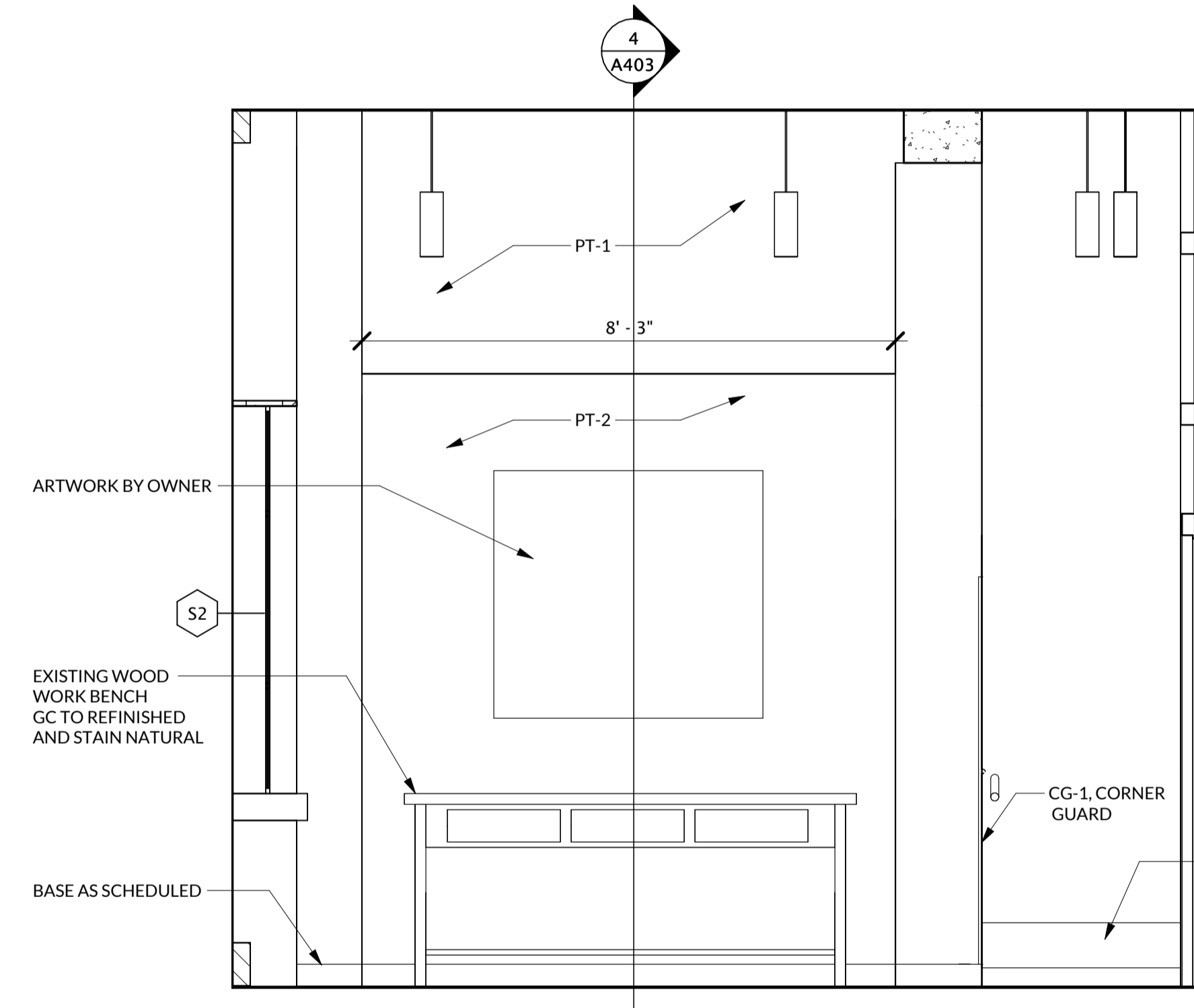
INTERIOR ELEVATIONS &  
CASEWORK - MAIN LEVEL

A505

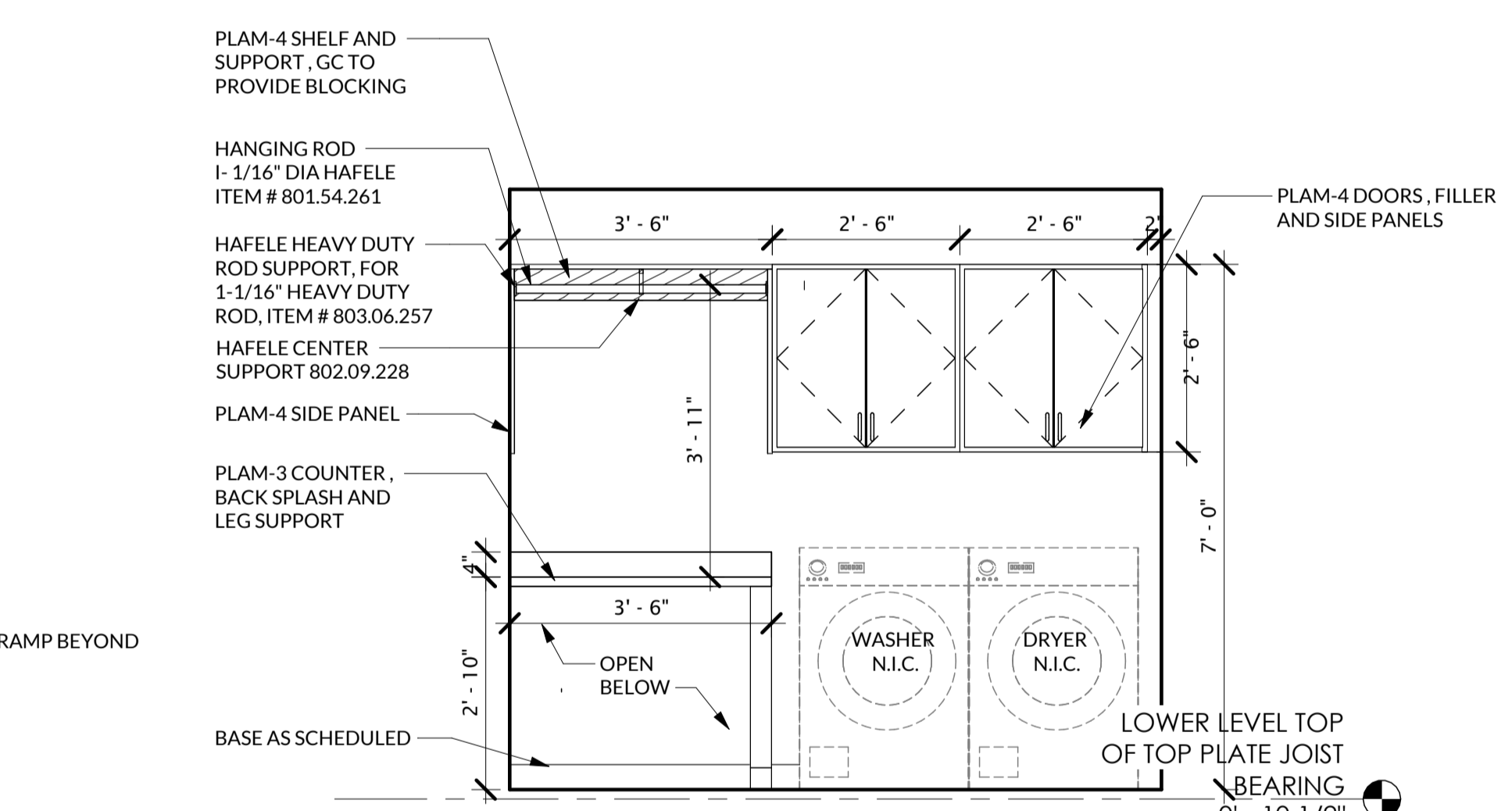


1 INTERIOR ELEVATION - INTERIOR RAMP WEST  
A505 1/2" = 1'-0"

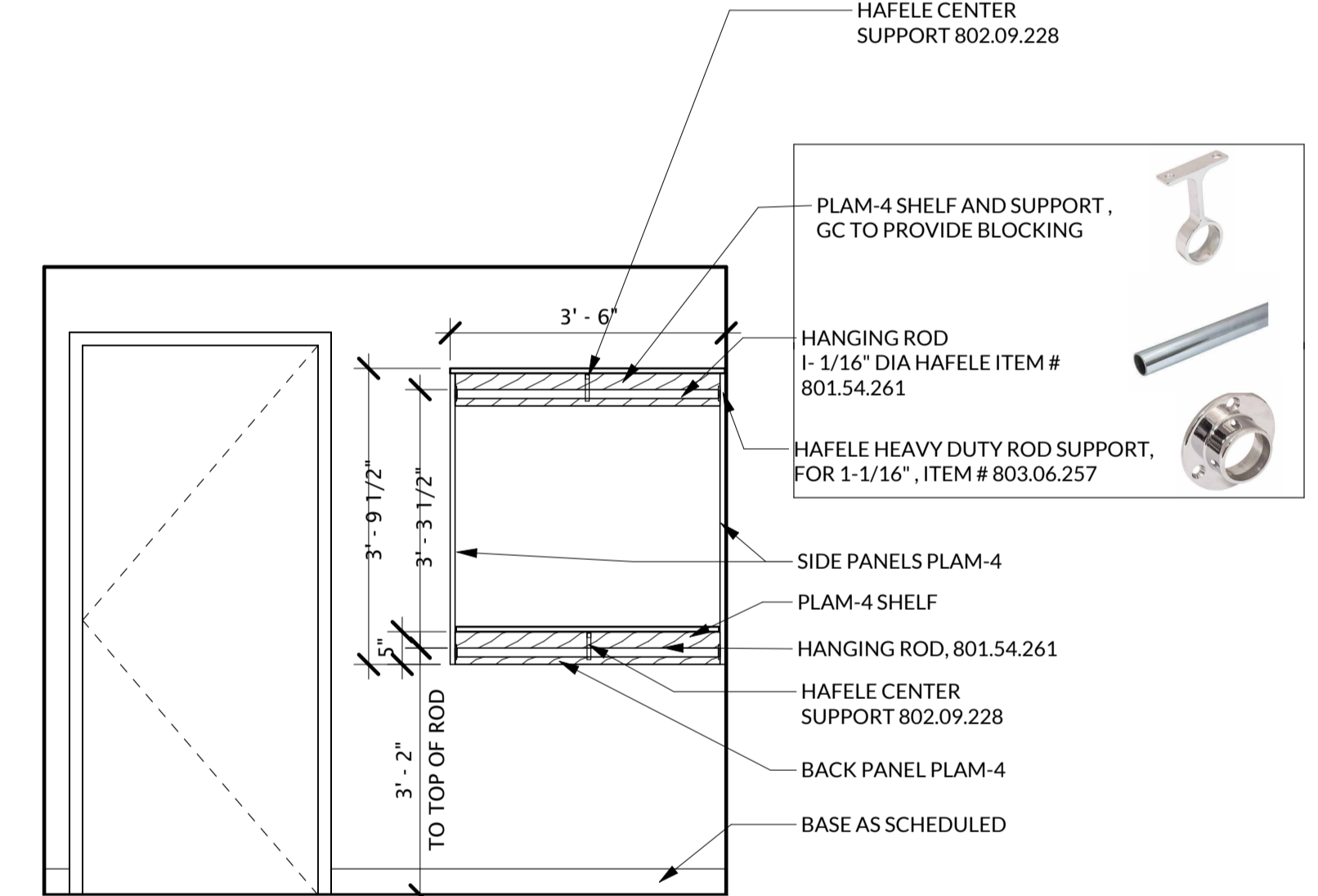
2 INTERIOR ELEVATION - INTERIOR RAMP EAST  
A505 1/2" = 1'-0"



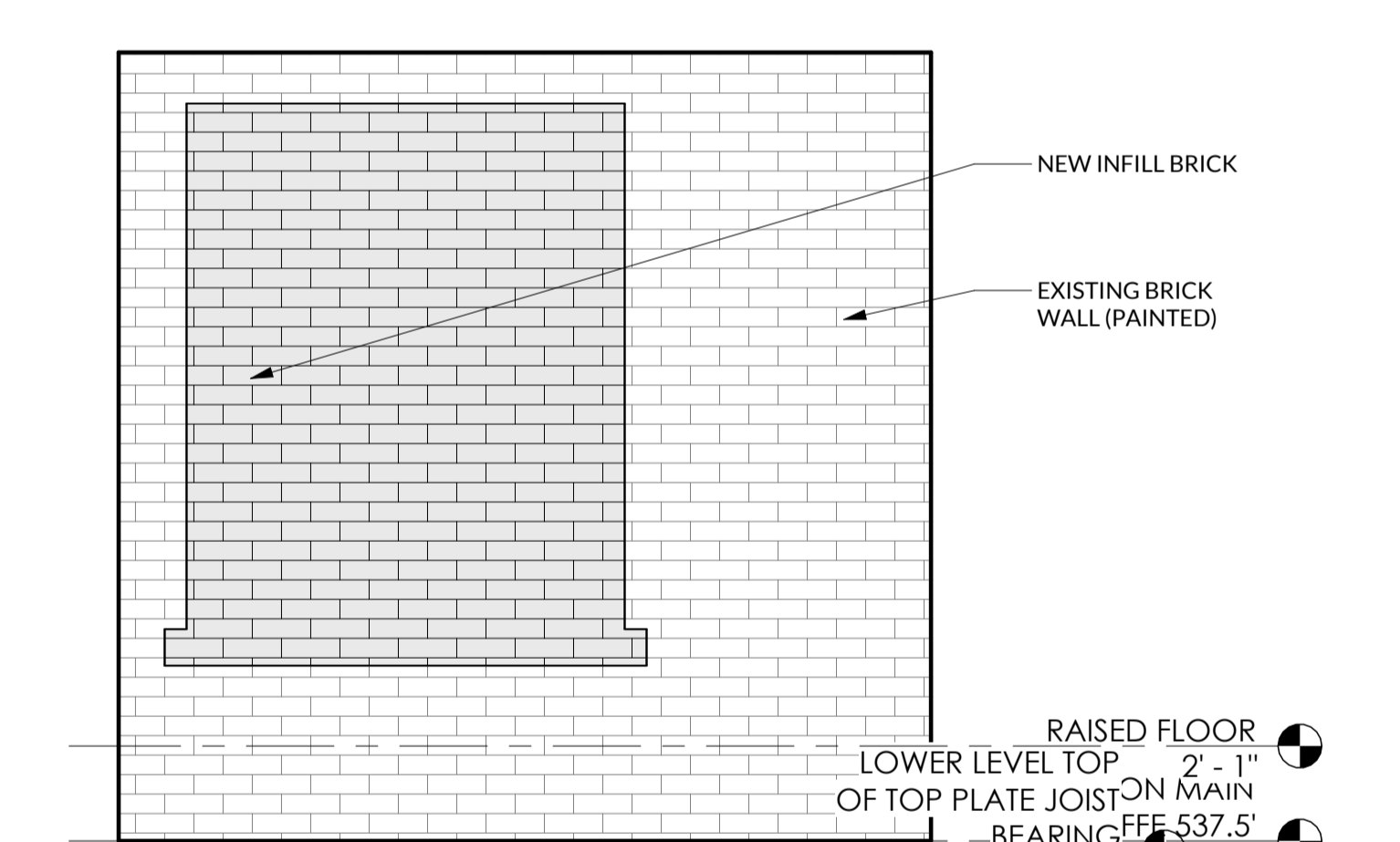
3 INTERIOR ELEVATION - MAIN ENTRY  
A505 1/2" = 1'-0"



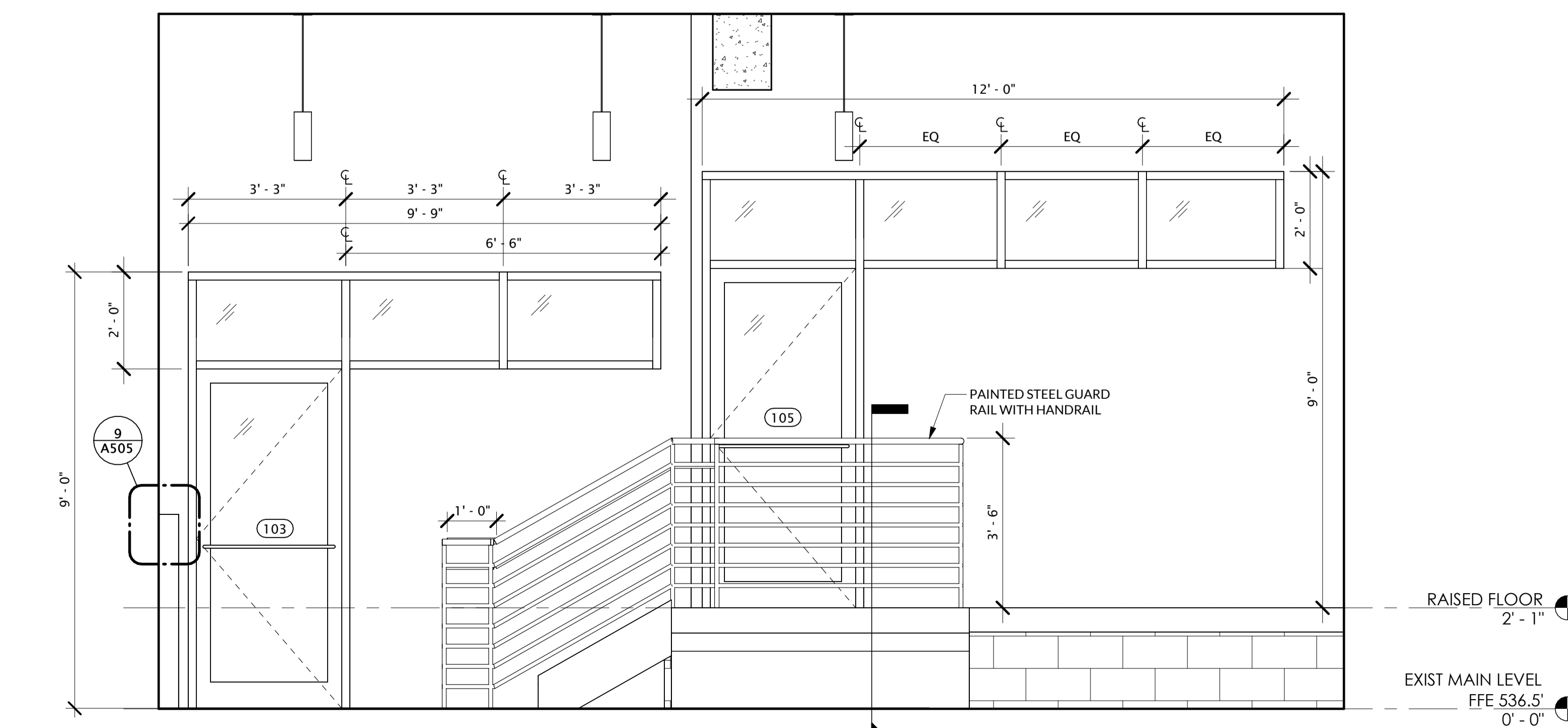
4 INTERIOR ELEVATION - LAUNDRY ROOM WEST  
A505 1/2" = 1'-0"



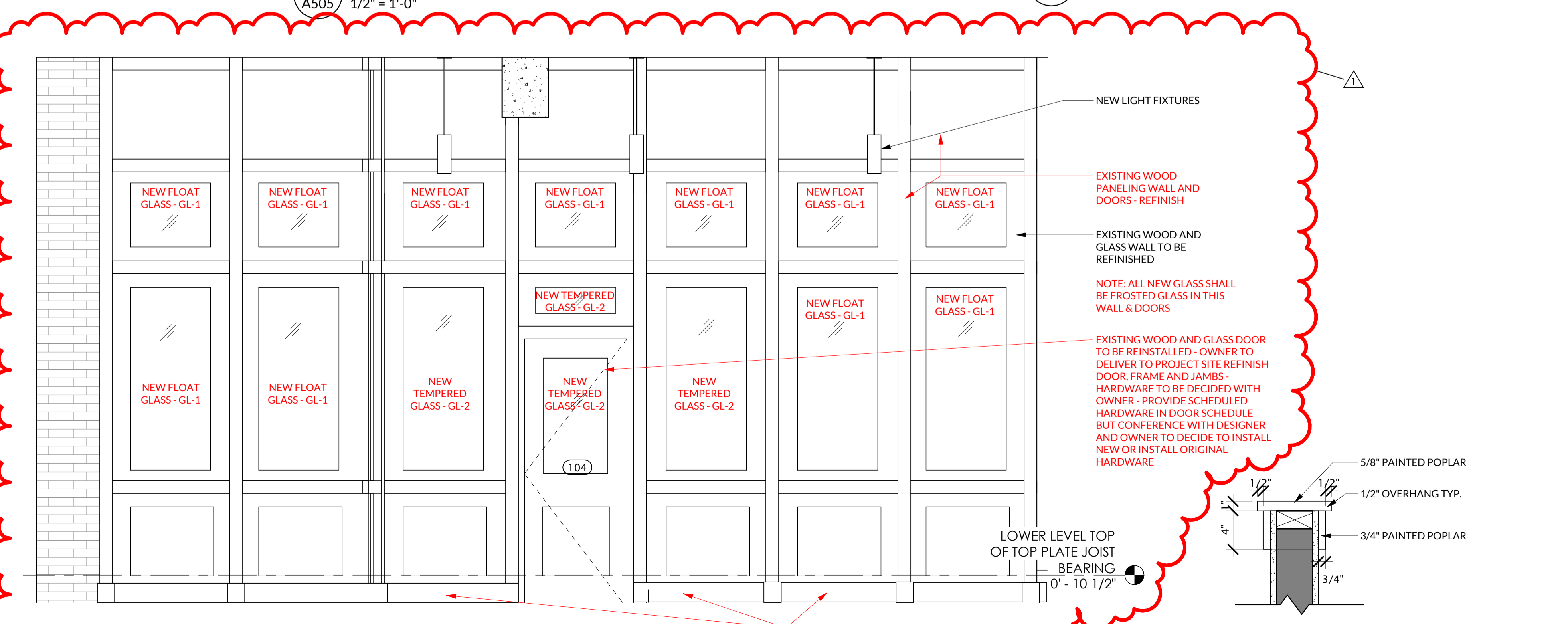
5 INTERIOR ELEVATION - LAUNDRY 111 EAST  
A505 1/2" = 1'-0"



6 INTERIOR ELEVATION - NEW BRICK INFILL  
A505 1/2" = 1'-0"



7 INTERIOR ELEVATION - MAIN LEVEL OFFICE ENTRY  
A505 1/2" = 1'-0"



8 INTERIOR ELEVATION OFFICE 1 & 2 SOUTH  
A505 1/2" = 1'-0"

9 SECTION DETAIL - WOOD TOP CAP @ LOW WALL  
A505 1 1/2" = 1'-0"

REVISIONS		
No.	Date	Description
1	01.16.2026	ADDENDUM No. 2

INTERIOR ELEVATIONS &  
CASEWORK - MAIN LEVEL

A505

## SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:

1. Modified bituminous sheet waterproofing. [SW-1]
2. Below grade rigid insulation [BGI-1]
3. Prefabricated drainage mats [DM-1]

#### 1.3 PREINSTALLATION MEETINGS

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

1. Review waterproofing requirements including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.

- B. Shop Drawings: Show locations and extent of waterproofing and details of substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.

- C. Samples: For each exposed product and for each color and texture specified, including the following products:

1. 8-by-8-inch square of waterproofing and flashing sheet.
2. 8-by-8-inch square of insulation.
3. 4-by-4-inch square of drainage panel.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Field quality-control reports.
- C. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

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

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.
  - 1. Do not apply waterproofing in snow, rain, fog, or mist.
- B. Maintain adequate ventilation during preparation and application of waterproofing materials.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer's standard materials-only warranty in which manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.
  - 1. Warranty Period: Five years from date of Final Acceptance.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Source Limitations for Waterproofing System: Obtain waterproofing materials, protection course, and molded-sheet drainage panels from single source from single manufacturer.

2.2 MODIFIED BITUMINOUS SHEET WATERPROOFING [SW-1]

- A. Modified Bituminous Sheet: Minimum 60-mil nominal thickness, self-adhering sheet consisting of 56 mils of rubberized asphalt laminated on one side to a 4-mil-thick, polyethylene-film reinforcement, and with release liner on adhesive side. Select from following manufacturers:
  - 1. a. PolyGuard 650.
  - b. Carlisle Coatings & Waterproofing Inc; CCW MiraDRI 860/861.
  - c. Grace Construction Products; W.R. Grace & Co. -- Conn; Bituthene 3000.
  - d. GMX, Inc. - TegoBloc SA

e. Polyglass – Mapethene HT60.

2. Physical Properties:

- a. Tensile Strength, Membrane: 250 psi minimum; ASTM D 412, Die C, modified.
- b. Ultimate Elongation: 300 percent minimum; ASTM D 412, Die C, modified.
- c. Low-Temperature Flexibility: Pass at minus 20 deg F; ASTM D 1970.
- d. Crack Cycling: Unaffected after 100 cycles of 1/8-inch movement; ASTM C 836.
- e. Puncture Resistance: 40 lbf minimum; ASTM E 154.
- f. Water Absorption: 0.2 percent weight-gain maximum after 48-hour immersion at 70 deg F; ASTM D 570.
- g. Water Vapor Permeance: 0.05 perms maximum; ASTM E 96/E 96M, Water Method.
- h. Hydrostatic-Head Resistance: 200 feet minimum; ASTM D 5385.

3. Sheet Strips: Self-adhering, rubberized-asphalt strips of same material and thickness as sheet waterproofing.

2.3 AUXILIARY MATERIALS

A. General: Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.

1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.

B. Primer: Liquid solvent-borne primer recommended for substrate by sheet-waterproofing material manufacturer.

C. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by sheet-waterproofing material manufacturer.

D. Liquid Membrane: Elastomeric, two-component liquid, cold fluid applied, of trowel grade or low viscosity.

E. Substrate Patching Membrane: Low-viscosity, two-component, modified asphalt coating.

F. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch thick, predrilled at 9-inch centers.

G. Protection Course: Fan folded, with a core of extruded-polystyrene board insulation faced on one side with plastic film, nominal thickness 1/4 inch, with compressive strength of not less than 8 psi per ASTM D 1621, and maximum water absorption by volume of 0.6 percent per ASTM C 272.

2.4 INSULATION [BGI-1]

A. Insulation, General: Comply with Section 072100 "Thermal Insulation."

B. Board Insulation: Extruded-polystyrene board insulation complying with ASTM C 578, square or shiplap edged. Provide insulation for sheet waterproofing systems where shown on plans.

1. Provide insulation materials from selection of following manufacturers:
    - a. Dow Chemical Company (The)
    - b. Owens Corning.
    - c. Pactiv Corporation.
  2. Type VI, 40-psi minimum compressive strength.
- C. CAVITY DRAINAGE MATTS. [CD-1]
1. See Spec Section 04 21 13 BRICK MASONRY

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Prior to beginning installation, examine all surfaces for deficiencies. Should deficiencies exist, notify Architect. Verify that corrective action has been completed prior to beginning installation.
- B. Condition of Concrete Surfaces:
  1. Concrete surfaces shall be sound have a smooth finish, free of fins, ridges, protrusions, spalled areas, loose aggregate, exposed course aggregate, voids or entrained air holes. Rough surfaces shall be parged prior to installing waterproofing membrane.
  2. Concrete shall be cured by water curing method. Any curing compounds must be of the pure sodium silicate type.
  3. Concrete shall be cured a minimum of 7 days and shall be sloped for proper drainage.
  4. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non-shrink grout or ground to match unrepaired areas.
  5. Surfaces at cold joints shall be on the same plane.

### 3.2 SURFACE PREPARATION

- A. Concrete surface shall be thoroughly clean, dry and free from any surface contaminates or cleaning residue that may restrict or prevent adhesion of the membrane.
- B. Install a 3/4" face, 45 degree cant of polyurethane sealant at all angle changes and inside corners including penetrations through deck, walls, curbs, etc.
- C. All cracks over 1/16" in width and all moving cracks under 1/16" in width shall be routed out to 1/4" minimum in width and depth and filled flush with sealant.
- D. All expansion joints less than 1" wide shall be cleaned, primed, fitted with a backing rod and caulked with polyurethane Sealant.
- E. Allow all sealant to cure at least overnight.

- F. Apply a thin film of primer approximately 10 inches in width, centered over sealed cracks and joints, hairline cracks, and cold joints. Apply primer a minimum of 8 inches in width on each side of all corners. Prime concrete around drain flanges. Allow primer to dry 24 hours or as recommended by the manufacturer.
- G. Install a membrane strip, approximately 8 inches in width, centered over joints and cracks. At corners, install a membrane strip, approximately 12 inches in width, centered over the axis of all corners.
- H. Terminate membrane around drains and under clamping ring. Seal all edges with mastic. Do not interfere with weep holes.

### 3.3 APPLICATION

- A. Apply primer at rates as recommend by the manufacture. Allow to dry prior to installing membrane. Clean surfaces and remove residual dust prior to priming.
- B. At horizontal surfaces, install sheet membrane from low to high point, so that laps will shed water. Overlap side laps 3 inches; end laps 6 inches. Stagger end seams a minimum of 18 inches. Roll in place with an 18 to 24" wide, 100 lb. (min.) resilient roller. Ensure that all laps are firmly adhered and that there are no gaps, voids, holidays, or fishmouths.
- C. At vertical surfaces, apply membrane in lengths of 8 feet maximum starting at the lowest point. Overlap succeeding pieces 6 inches. Overlap side laps 3 inches. Roll in place using firm pressure with a hand roller.
- D. At terminations, roll terminating edges firmly. Apply mastic to all terminations and "T" joints. Apply mastic to laps at angle changes, extending 9 inches in each direction.

### 3.4 INTEGRITY TESTING

- A. Test completed horizontal areas for watertight integrity via flood testing. Flood test with 2 inch minimum water depth for a period of 24 hours.

### 3.5 PROTECTION COURSE

- A. Install protection course of fanfold extruded polystyrene board insulation over completed membrane.
- B. Protection board shall cover the waterproofing membrane in entirety. Overlap board insulation 2 inches. Stop protection board 6 inches below final grade level.

END OF SECTION 071326

Town of Hillsborough  
Adron F. Thompson Addition and Renovation  
Hillsborough, NC  
RND 2231.01

CONSTRUCTION DOCUMENTS  
12.19.2025  
Addendum No. 2 01.16.2026

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## SECTION 074113 METAL ROOF PANELS

### PART 1 GENERAL

#### 2.01 SECTION INCLUDES

- A. Standing Seam Mechanically Seamed Metal roof panel system of preformed steel panels.

#### 2.02 RELATED REQUIREMENTS

- A. Section 051200 - Structural Steel Framing: Roof framing and purlins.
- B. Section 061000 - Rough Carpentry: Roof framing rafters
- C. Section 072100 - Thermal Insulation: Rigid roof insulation.
- D. Section 074213 - Metal Wall Panels: Preformed wall panels.
- E. Section 079200 - Joint Sealants: Sealing joints between metal roof panel system and adjacent construction.

#### 2.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- B. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- C. ASTM A463/A463M - Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process; 2025a.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2025.
- E. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2025.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2024.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
- H. ASTM C1363 - Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus; 2024.
- I. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 2025.
- J. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2025.
- K. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2024a.
- L. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2025.

- M. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2024).
- N. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems; 2016 (Reapproved 2022).

#### 2.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Summary of test results, indicating compliance with specified requirements.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
  - 4. Specimen warranty.
- C. Shop Drawings: Shop Drawings must be provided by the manufacturer of the roofing panels. Include layouts of roof panels, details of all edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
  - 1. Show work to be field-fabricated or field-assembled.
  - 2. Include structural analysis signed and sealed by qualified structural engineer, indicating compliance of roofing system to specified loading conditions.
- D. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
- E. Manufacturer's qualification statement.
- F. Installer's qualification statement.
- G. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- H. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

#### 2.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section and with at least three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

#### 2.06 DELIVERY, STORAGE, AND HANDLING

- A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.
- B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

## 2.07 FIELD CONDITIONS

- A. Do not install metal roof panels, eave protection membrane, underlayment, or ice and water shield membrane when surface, ambient air, or wind chill temperatures are below 55 degrees F ( 13 degrees C).

## 2.08 WARRANTY

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.
- C. Special Warranty: Provide 20 year warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with warrantor.

## PART 2 PRODUCTS

### 3.01 MANUFACTURERS

- A. Architectural Metal Roof Panel Products and Manufacturers, subject to the requirements set forth in this specification, provide the Basis of Design CMP 2500 Standing Seam Metal Roof as manufactured by Construction Metal Products, Inc; or a comparable product that meets the performance requirements of the Basis of Design product from one of the manufacturer below:
  - 1. ATAS International, Inc; 2" Field-Lok: [www.atas.com](http://www.atas.com)
  - 2. Fabral; Powerseam: [www.fabral.com](http://www.fabral.com).
  - 3. Elevate; UNA-CLAD UC-6 Metal Roof Panel: [www.holcimelevate.com](http://www.holcimelevate.com)
  - 4. **Metal Roofing Systems, MRS 2500** [www.metalroofingsystems.com](http://www.metalroofingsystems.com)
- B. Metal Soffit Panels Manufacturers: Products and Manufacturers, subject to the requirements set forth in this specification, provide the Basis of Design CMP Flush Commercial Soffit Panel as manufactured by Construction Metal Products, Inc; or a comparable product that meets the performance requirements of the Basis of Design product from one of the manufacturer below:
  - 1. ATAS International, Inc; Opaline OPF: [www.atas.com](http://www.atas.com)
  - 2. Elevate; UNA-CLAD UC-750 V-Groove Soffit Panel: [www.holcimelevate.com](http://www.holcimelevate.com)

### 3.02 PERFORMANCE REQUIREMENTS

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:

1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed  $L/180$  of span length(L) when tested in accordance with ASTM E1592.
  - a. Dead Loads: Weight of roofing system.
  - b. Live Loads: As required by ASCE 7.
2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
3. Air Infiltration: Maximum 0.06 cfm/sq ft (1.1 cu m/hr/sq m) at air pressure differential of 6.24 lbf/sq ft (300 Pa), when tested according to ASTM E1680.
4. Water Penetration: No water penetration when tested in accordance with procedures and recommended test pressures of ASTM E1646; perform test immediately following air infiltration test.
5. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F (56 degrees C).
6. Thermal Resistance: Provide throughout system, R-value (RSI-value) of 15 (2.6) at 2 inch (51 mm) thick, minimum, when tested in accordance with ASTM C1363.
7. Seam Sealing: Factory Applied Sealant in all roof seams.
8. Bearing Plates: Provide Bearing Plates that spread the load of the roof and provide the required uplift resistance in the mechanical attachment for installation over and through 5-1/2" of rigid insulation as shown on the drawings.

### 3.03 METAL ROOF PANELS

- A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Metal Panels: Factory-formed panels with factory-applied finish.
  1. Steel Panels:
    - a. Aluminum-zinc alloy-coated steel complying with ASTM A792/A792M; minimum AZ50 (AZM150) coating.
    - b. Steel Thickness: Minimum 22 gauge.
  2. Profile: Standing seam, with minimum 2-inch (51 mm) seam height; concealed fastener system for field seaming with special tool.
  3. Texture: Smooth, with intermediate plank style ribs for added stiffness.
  4. Length: Full length of roof slope, without lapped horizontal joints.
  5. Width: Maximum panel coverage of 16 inches (406 mm).
- C. Metal Soffit Panels:
  1. Profile: Flat Style, Assembled Flush.

2. Material: Precoated steel sheet, 24 gauge, minimum thickness.
3. Color: As selected by Architect from manufacturer's standard line.
4. Panel Width: 8 inches (203 mm)
5. Seam Height: 1inch (25.4 mm)

### 3.04 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard expansion type concealed anchor clips with appropriately sized bearing plates designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

### 3.05 FABRICATION

- A. Panels: Provide factory or field fabricated panels with applied finish and accessory items, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.
- B. Joints: Provide captive gaskets, sealants, or separator strips at panel joints to ensure weathertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.

### 3.06 FINISHES

- A. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, and at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch (0.023 mm); color and gloss as selected by Architect from manufacturer's standard line.
  1. Products:
    - a. Basis of Design Coating : Sherwin-Williams Company;  
Fluropon: [www.coil.sherwin.com/#sle](http://www.coil.sherwin.com/#sle).
    - b. Substitutions: See Section 016000 - Product Requirements.

### 3.07 ACCESSORIES

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:
  1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
  2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
  3. Seam Sealant: Factory-applied, non-skinning, non-drying type.
- D. Underlayment for Wood Substrate: ASTM D226/D226M roofing felt, perforated type; covered by water-resistant rosin-sized building paper.

- E. Underlayment: Self-adhering polymer modified asphalt sheet complying with ASTM D1970/D1970M, with strippable release film and top surface of woven polypropylene sheet.
1. Sheet Thickness: 40 mils, 0.040 inch (1.02 mm), minimum.
  2. Self Sealability: Nail sealability in accordance with ASTM D1970/D1970M.
  3. Low Temperature Flexibility: Comply with ASTM D1970/D1970M.
  4. Water Vapor Permeance: 0.1 perm (5.72 ng/Pa s sq m), maximum, when tested in accordance with ASTM E96/E96M using Desiccant Method (Method A).
  5. Functional Temperature Range: Minus 45 degrees F (Minus 42.8 degrees C) to 250 degrees F (121 degrees C).
  6. Available Products and manufacturers include but are not limited to:
    - a. VB Synthetics, ; VB Extreme High Temp [www.vbsynthetics.com](http://www.vbsynthetics.com)
    - b. Polyglass USA, Inc; Polystick MTS Self-Adhered High Temperature Roof Underlayment: [www.polyglass.us](http://www.polyglass.us)
    - c. Protecto Wrap Company; Protecto Seal 45: [www.protectowrap.com](http://www.protectowrap.com)
    - d. Substitutions: See Section 016000 - Product Requirements.

### PART 3 EXECUTION

#### 4.01 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### 4.02 PREPARATION

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.
- C. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.
- D. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.
- E. Protect surrounding areas and adjacent surfaces from damage during execution of this work.
- F. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

#### 4.03 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project

conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.

1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
  2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.
- B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
- C. Install underlayment on roof sheathing before installing preformed metal roof panels; secure by methods acceptable to roof panel manufacturer, minimizing use of metal fasteners; apply from eaves to ridge in shingle fashion, overlapping horizontal joints at least 2 inches (50 mm) and side and end laps at least 3 inches (75 mm); offset seams in underlayment.
- D. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
1. Form weathertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by panel manufacturer.

#### 4.04 CLEANING

- A. See Section 017000 - Execution and Closeout Requirements for additional requirements.
- B. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

#### 4.05 PROTECTION

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

Town of Hillsborough  
Adron F. Thompson Addition and Renovation  
Hillsborough, NC  
RND 2231.01

CONSTRUCTION DOCUMENTS  
12.19.2025  
Addendum No. 2 01.16.2026

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## SECTION 102113 - TOILET COMPARTMENTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Stainless-steel toilet compartments configured as toilet enclosures.
- B. Related Sections:
  - 1. Section 055000 "Metal Fabrications" for supports that attach to overhead structural system.
  - 2. Section 061000 "Rough Carpentry" for blocking overhead support of floor-and-ceiling-anchored compartments overhead support of post-to-ceiling screens.
  - 3. Section 102800 "Toilet, Bath, and Laundry Accessories" for toilet tissue dispensers, grab bars, purse shelves, and similar accessories.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For toilet compartments. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Show locations of cutouts for compartment-mounted toilet accessories.
  - 2. Show locations of reinforcements for compartment-mounted grab bars.
  - 3. Show locations of centerlines of toilet fixtures.
  - 4. Show ceiling grid and overhead support or bracing locations.
- C. Samples for Initial Selection: For each type of unit indicated. Include Samples of hardware and accessories involving material and color selection.
- D. Samples for Verification: For the following products, in manufacturer's standard sizes unless otherwise indicated:
  - 1. Each type of material, color, and finish required for units, prepared on 6-inch- square Samples of same thickness and material indicated for Work.
  - 2. Each type of hardware and accessory.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of toilet compartment, from manufacturer.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For toilet compartments to include in maintenance manuals.

#### 1.6 QUALITY ASSURANCE

- A. Comply with requirements in GSA's CID-A-A-60003, "Partitions, Toilets, Complete."
- B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84, or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: 25 or less.
  - 2. Smoke-Developed Index: 450 or less.
- C. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities" and ICC/ANSI A117.1 for toilet compartments designated as accessible.

#### 1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of toilet fixtures, walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Aluminum Castings: ASTM B 26/B 26M.
- B. Aluminum Extrusions: ASTM B 221.
- C. Brass Castings: ASTM B 584.
- D. Brass Extrusions: ASTM B 455.
- E. Steel Sheet: Commercial steel sheet for exposed applications; mill phosphatized and selected for smoothness.
  - 1. Electrolytically Zinc Coated: ASTM A 879/A 879M, 01Z.
  - 2. Hot-Dip Galvanized: ASTM A 653/A 653M, either hot-dip galvanized or galvanized.

- F. Stainless-Steel Sheet: ASTM A 666, Type 304, stretcher-leveled standard of flatness.
- G. Stainless-Steel Castings: ASTM A 743/A 743M.
- H. Zamac: ASTM B 86, commercial zinc-alloy die castings.

## 2.2 STAINLESS-STEEL UNITS **TP-1**

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - 1. Accurate Partitions Corporation.
  - 2. General Partitions Mfg. Corp.
  - 3. Global Steel Products Corp.
  - 4. **Scranton Products, Hiney Hiders**
- B. Toilet-Enclosure Style: Overhead braced. Maximum Privacy Model.
- C. Door, Panel, and Pilaster Construction: Seamless, metal facing sheets pressure laminated to core material; with continuous, interlocking molding strip or lapped-and-formed edge closures; corners secured by welding or clips and exposed welds ground smooth. Provide with no-sightline system. Exposed surfaces shall be free of pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections.
  - 1. Core Material: Manufacturer's standard sound-deadening honeycomb of resin-impregnated kraft paper in thickness required to provide finished thickness of 1 inch for doors and panels and 1-1/4 inches for pilasters.
  - 2. Grab-Bar Reinforcement: Provide concealed internal reinforcement for grab bars mounted on units.
  - 3. Tapping Reinforcement: Provide concealed reinforcement for tapping (threading) at locations where machine screws are used for attaching items to units.
- D. Facing Sheets and Closures: Stainless-steel sheet of nominal thicknesses as follows:
  - 1. Pilasters, Braced at Both Ends: Manufacturer's standard thickness, but not less than 0.038 inch.
  - 2. Pilasters, Unbraced at One End: Manufacturer's standard thickness, but not less than 0.050 inch.
  - 3. Panels: Manufacturer's standard thickness, but not less than 0.031 inch.
  - 4. Doors: Manufacturer's standard thickness, but not less than 0.031 inch.
- E. Pilaster Shoes and Sleeves (Caps): Stainless-steel sheet, not less than 0.031-inch nominal thickness and 3 inches high, finished to match hardware.
- F. Brackets (Fittings):
  - 1. Full-Height (Continuous) Type: Manufacturer's standard design; stainless steel.
- G. Stainless-Steel Finish: No. 4 bright, directional polish on exposed faces. Protect exposed surfaces from damage by application of strippable, temporary protective covering before shipment.

- H. Structural Performance: Where grab bars are mounted on toilet compartments, design panels to comply with the following requirements:
1. Panels are able to withstand a concentrated load on grab bar of at least 250 lbf applied at any direction and at any point, without deformation of panel.

## 2.3 ACCESSORIES

- A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.
1. Material: Stainless steel.
  2. Hinges: Manufacturer's standard continuous, cam type that swings to a closed or partially open position.
  3. Latch and Keeper: Manufacturer's standard surface-mounted latch unit designed for emergency access and with combination rubber-faced door strike and keeper. Provide units that comply with regulatory requirements for accessibility at compartments designated as accessible.
  4. Coat Hook: Manufacturer's standard combination hook and rubber-tipped bumper, sized to prevent in-swinging door from hitting compartment-mounted accessories.
  5. Door Bumper: Manufacturer's standard rubber-tipped bumper at out-swinging doors.
  6. Door Pull: Manufacturer's standard unit at out-swinging doors that complies with regulatory requirements for accessibility. Provide units on both sides of doors at compartments designated as accessible.
- B. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match the items they are securing, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use stainless steel, hot-dip galvanized steel, or other rust-resistant, protective-coated steel.

## 2.4 FABRICATION

- A. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism.
- B. Door Size and Swings: Unless otherwise indicated, provide 24-inch- wide, in-swinging doors for standard toilet compartments and 36-inch- wide, out-swinging doors with a minimum 32-inch- wide, clear opening for compartments designated as accessible.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install units rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
  - 1. Maximum Clearances:
    - a. Pilasters and Panels: 1/2 inch.
    - b. Panels and Walls: 1 inch.
- B. Ceiling-Hung Units: Secure pilasters to supporting structure and level, plumb, and tighten. Hang doors and adjust so bottoms of doors are level with bottoms of pilasters when doors are in closed position.
- C. Urinal Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb, rigid, and secured to resist lateral impact.

3.2 ADJUSTING

- A. Hardware Adjustment: Adjust and lubricate hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors and doors in entrance screens to return doors to fully closed position.

END OF SECTION 102113

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

DANIEL H. JOHNSON  
SECRETARY

January 14, 2026

**ORANGE COUNTY**

The Town of Hillsborough  
101 East Orange Street  
P.O. Box 429  
Hillsborough, NC 27278

SUBJECT: Driveway Permit for the Adron Thompson Site Improvements on SR 1144 (Dimmocks Mill Road)

To whom it may concern,

Attached for your files is a copy of the Driveway Permit properly executed. The approval of this permit is also subject to ***adhering to the attached special provisions***. This permit is valid for one year from the date of approval. A written request is needed for an extension. You will need to submit a request by January 14, 2026.

When the work has been completed, notify David Genwright by letter at P. O. Box 766, Graham, NC 27253-0766 so that a final inspection can be made. If you have any questions, please contact Mr. Genwright at (336) 570-6833.

Sincerely,

C. N. Edwards, P.E.  
DISTRICT ENGINEER  
Attachments  
CNE/dig

cc: Wright Archer, III, PE, NCDOT Division Engineer  
Thomas and Hutton  
Orange County

D071-068-25-00078 Adron Thompson Site Improvements on SR 1144 (Dimmocks Mill Road)

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
DIVISION 7, DISTRICT 1  
PO BOX 766  
GRAHAM, NC 27253-0766

Telephone: (336) 290-0250  
Fax: (336) 570-6876  
Customer Service: 1-877-368-4968

Location:  
115 EAST CRESCENT SQUARE DRIVE  
GRAHAM, NC 27253

Website: [www.ncdot.gov](http://www.ncdot.gov)

**DRIVEWAY PERMIT SPECIAL PROVISIONS**  
(Adron Thompson Site Improvements)

In addition to the requirement listed in the permit, the special provisions below are required for the subject driveway permit:

1. A copy of the permit and the approved plans stamped by NCDOT will be on the site and available for inspection by NCDOT personnel while in construction is on progress. If safety or traffic conditions warrant such an action, NCDOT reserves the right to stop all work unless evidence of approval can be shown.
2. It will be necessary for you or your contractor to notify Mr. Brad Andrews, NCDOT Inspector, upon receipt of this letter to schedule a mandatory Preconstruction Conference, to provide your anticipated date of starting or to review any plan revisions made by the District Office prior to construction beginning on this permit. Mr. Andrews can be reached at (336) 570-6833 between the hours of 8:00 a.m. and 5:00 p.m. Monday through Friday.
3. The District Office must be consulted if there are any changes in the plans as they were submitted.
4. When working within NCDOT right of way, District Personnel, Brad Andrews, shall be notified twenty- four (24) hours in advance at telephone number (336) 570-6833 for inspection at each of the following phases: (A) Drainage, (B) Grading, (C) Placement of base, (D) Paving, (E) Seeding.
5. The District Office shall be notified 48 hours prior to placement of pavement markings and markers so that NCDOT can review and inspect pre-marks prior to installation. All pavement markings, markers and signs shall be the responsibility of the applicant of the driveway permit and be installed in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and North Carolina Department of Transportation standards and specifications. Unless other indicated on approved plans all pavement markings shall be thermoplastic.
6. When the work has been completed, please notify Mr. Genwright by letter at P.O. Box 766, Graham, North Carolina 27253-0766 in order that a final inspection can be made.
7. **WORK ZONE TRAFFIC CONTROL QUALIFICATIONS AND TRAINING PROGRAM-** Effective July 1, 2010, all flagging operations within NCDOT Right of Way required qualified and trained Work Zone Flaggers. Effective July 1, 2011, qualified and trained Work Zone Traffic Control Supervisors will be required on Significant Projects. Training for this certification will be provided by NCDOT approved training sources and/or private entities that have been pre-approved to train themselves.
8. That the party of the second part agrees to provide traffic control devices, lane closures, road closures, positive protection and/or any other warning or positive protection devices necessary for the safety of road users during construction and any subsequent maintenance. This shall be performed in conformance with the latest NCDOT Roadway Standard Drawings and Standard Specifications for Road and Structures and Amendments or Supplements thereto. When there is no guidance provided in Roadway Standard Drawings or Specifications, comply with the Manual on Uniform Traffic Control Devices for Streets and Highways and Amendment or Supplement thereto. Information as to the above rules and regulations may be obtained from the Division Engineer of the party of the first part.
9. **Work requiring lane closure or restrictions will not be allowed between 7:00 am – 9:00 am and 4:00 p.m. – 7:00 p.m. Monday through Friday unless otherwise directed by the District Engineer or as shown on the approved plans.**

10. Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The contractor shall schedule his work so that lane closures will not be required during these periods, unless otherwise directed by the District Engineer.
11. **At least one lane of traffic shall remain open at all times.**
12. Any work requiring equipment or personnel within 5' of the edge of any travel lane shall require a lane closure with appropriate tapers.
13. Any damage to roadway, structures, or associated appurtenances shall be restored to its original condition as directed by the District Engineer.
14. Excavation material shall not be placed on the pavement. Drainage structures shall not be blocked with excavation material.
15. The applicant shall comply with all applicable federal, state and local environmental regulations, and shall obtain all necessary federal, state and local environmental permits, including but not limited to, those related to sediment control, storm water, wetland, streams, endangered species, and historical sites.
16. All excavation in the roadway shall be backfilled and paved or covered with temporary steel plating. When steel plating is used the excavation shall be backfilled and/or shored to accommodate anticipated traffic loads. A reflectorized bump warning sign (WB-1) must be installed in advance of the plate. All steel plating shall be pinned in at each corner with a smooth headed pin that does not protrude above the plate more than 0.5 inches and must extend into the paved surface at least 3 inches. The plate must be extended at least 12 inches beyond the edge of the excavation in all directions and ramped with asphalt at least 6 inches wide.
17. Trenching, bore pits, and other excavations with the safe recovery area shall not be left open so as to expose motor vehicle or pedestrian traffic to unsafe conditions. The contractor shall comply with all OSHA requirements and provide a competent person on site to supervise excavations at all times.
18. All suitable backfill material shall be compacted to 95% density in the shoulder areas, 100% density under pavement areas and in accordance with AASHTO T99 as modified by the North Carolina Department of Transportation. Note if contractor starts before weather conditions improve, then the existing material removed shall be replaced with suitable material as approved by the District Engineer so that proper compaction can be obtained. Certified compaction test results are to be submitted to the District Engineer upon request.
19. Deep excavation adjacent to open travel lanes which exceeds a one to one (1:1) influence slope shall be supported by a protective support system designed by a professional engineer to adequately carry all dead and live loads or backfilled prior to returning traffic to normal patterns.
20. Before planting any landscape within the right of way, the encroaching party shall submit an application for a planting permit to this office. The permit must be approved prior to the installation of any plans.
21. All disturbed areas shall be repaired with the following rate of seed, fertilizer and limestone in pounds per acre, and the areas properly mulched and tacked:

25# Reliant Hard Fescue  
100# Alta or Kentucky 31 Tall Fescue

25# Kenblue Kentucky Bluegrass  
1000# 5-10-10 Fertilizer  
4000# Limestone

22. For your general information:

- The \$50.00 inspection fee for the driveway connection was waived

<b>APPLICATION IDENTIFICATION</b>		<b>N.C. DEPARTMENT OF TRANSPORTATION</b>	
Driveway Permit No. D071-068-25-00078	Date of Application 1/7/2026	<b>STREET AND DRIVEWAY ACCESS</b>	
County: Orange		<b>PERMIT APPLICATION</b>	
Development Name: Adron Thompson Site Improvements			

**LOCATION OF PROPERTY:**

Route/Road: SR-1144 (Dimmocks Mill Road)

Exact Distance 790       Miles      N   S   E   W  
 Feet     

From the Intersection of Route No. SR-1144 and Route No. SR-1147 Toward SR-1161

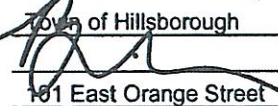
Property Will Be Used For:    Residential /Subdivision    Commercial    Educational Facilities    TND    Emergency Services    Other

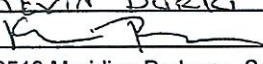
Property:                                     is                                     is not                                    within Hillsborough                                    City Zoning Area.

**AGREEMENT**

- I, the undersigned property owner, request access and permission to construct driveway(s) or street(s) on public right-of-way at the above location.
- I agree to construct and maintain driveway(s) or street entrance(s) in absolute conformance with the current "Policy on Street and Driveway Access to North Carolina Highways" as adopted by the North Carolina Department of Transportation.
- I agree that no signs or objects will be placed on or over the public right-of-way other than those approved by NCDOT.
- I agree that the driveway(s) or street(s) will be constructed as shown on the attached plans.
- I agree that that driveway(s) or street(s) as used in this agreement include any approach tapers, storage lanes or speed change lanes as deemed necessary.
- I agree that if any future improvements to the roadway become necessary, the portion of driveway(s) or street(s) located on public right-of-way will be considered the property of the North Carolina Department of Transportation, and I will not be entitled to reimbursement or have any claim for present expenditures for driveway or street construction.
- I agree that this permit becomes void if construction of driveway(s) or street(s) is not completed within the time specified by the "Policy on Street and Driveway Access to North Carolina Highways".
- I agree to pay a \$50 construction inspection fee. Make checks payable to NCDOT. This fee will be reimbursed if application is denied.
- I agree to construct and maintain the driveway(s) or street(s) in a safe manner so as not to interfere with or endanger the public travel.
- I agree to provide during and following construction proper signs, signal lights, flaggers and other warning devices for the protection of traffic in conformance with the current "Manual on Uniform Traffic Control Devices for Streets and Highways" and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the District Engineer.
- I agree to indemnify and save harmless the North Carolina Department of Transportation from all damages and claims for damage that may arise by reason of this construction.
- I agree that the North Carolina Department of Transportation will assume no responsibility for any damages that may be caused to such facilities, within the highway right-of-way limits, in carrying out its construction.
- I agree to provide a Performance and Indemnity Bond in the amount specified by the Division of Highways for any construction proposed on the State Highway system.
- The granting of this permit is subject to the regulatory powers of the NC Department of Transportation as provided by law and as set forth in the N.C. Policy on Driveways and shall not be construed as a contract access point.
- I agree that the entire cost of constructing and maintaining an approved private street or driveway access connection and conditions of this permit will be borne by the property owner, the applicant, and their grantees, successors, and assignees.
- **I AGREE TO NOTIFY THE DISTRICT ENGINEER WHEN THE PROPOSED WORK BEGINS AND WHEN IT IS COMPLETED.**

**SIGNATURES OF APPLICANT**

<b>PROPERTY OWNER (APPLICANT)</b>		<b>WITNESS</b>	
COMPANY	<u>Town of Hillsborough</u>	NAME	<u>Lucas Cates</u>
SIGNATURE		SIGNATURE	<u>Lucas Cates</u> <small>Lucas Cates (Jan 12, 2025 10:29:20 EST)</small>
ADDRESS	<u>101 East Orange Street</u> <u>Hillsborough, NC 27278</u> Phone No. <u>919-732-1270</u>	ADDRESS	<u>105 East Corbin Street</u> <u>Hillsborough, NC 27278</u>

<b>AUTHORIZED AGENT</b>		<b>WITNESS</b>	
COMPANY	<u>Thomas and Hutton - Preston Royster</u>	NAME	<u>Kevin Burkitt</u>
SIGNATURE		SIGNATURE	
ADDRESS	<u>2510 Meridian Parkway, Suite 100</u> <u>Durham, NC 27713</u> Phone No. <u>919-682-0368</u>	ADDRESS	<u>2510 Meridian Parkway, Suite 100</u> <u>Durham, NC 27713</u>

**APPROVALS**

APPLICATION RECEIVED BY DISTRICT ENGINEER

\_\_\_\_\_  
SIGNATURE DATE

APPLICATION APPROVED BY LOCAL GOVERNMENTAL AUTHORITY (when required)

 Senior Planner 1/8/2026  
SIGNATURE TITLE DATE

APPLICATION APPROVED BY NCDOT

 District Engineer 1-14-26  
SIGNATURE TITLE DATE

INSPECTION BY NCDOT

\_\_\_\_\_  
SIGNATURE TITLE DATE

COMMENTS:

# SPECIAL USE PERMIT MODIFICATION SUBMITTAL CASE BA - 04 - 2025

## ADRON THOMPSON SITE IMPROVEMENTS 2025

HILLSBOROUGH, NORTH CAROLINA

### GENERAL INFORMATION

COUNTY: ORANGE  
TOWN: HILLSBOROUGH  
PIN: 984237369  
ADDRESS: 719 DIMMOCKS MILL ROAD  
ZONING: OI

OWNER:  
TOWN OF HILLSBOROUGH  
101 EAST ORANGE STREET, PO BOX 429,  
HILLSBOROUGH, NC 27278  
TEL: 919-732-1270

AFFILIANT:  
TOWN OF HILLSBOROUGH-UTILITY DEPARTMENT  
c/o BRYANT GREEN  
105 EAST CORBIN STREET, HILLSBOROUGH, NC 27278  
919-296-9630

ENGINEER:  
THOMAS & HUTTON  
2510 MERIDIAN PARKWAY, SUITE 100  
DURHAM, NC 27713  
919-682-0368

SURVEYOR:  
THOMAS & HUTTON  
2510 MERIDIAN PARKWAY, SUITE 100  
DURHAM, NC 27713  
919-682-0368

UTILITY:  
TOWN OF HILLSBOROUGH-UTILITY DEPARTMENT  
c/o BRYANT GREEN  
105 EAST CORBIN STREET, HILLSBOROUGH, NC 27278  
919-296-9630

**APPROVED**

JAN 14 2026

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS-7TH DIV.  
DISTRICT 1 - GRAHAM

DRIVEWAY PERMIT

PREPARED FOR:  
**TOWN OF HILLSBOROUGH**  
NORTH CAROLINA

FEBRUARY 26, 2025

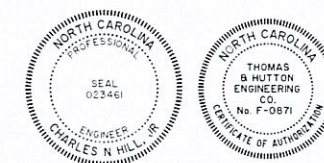
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PREPARED BY:

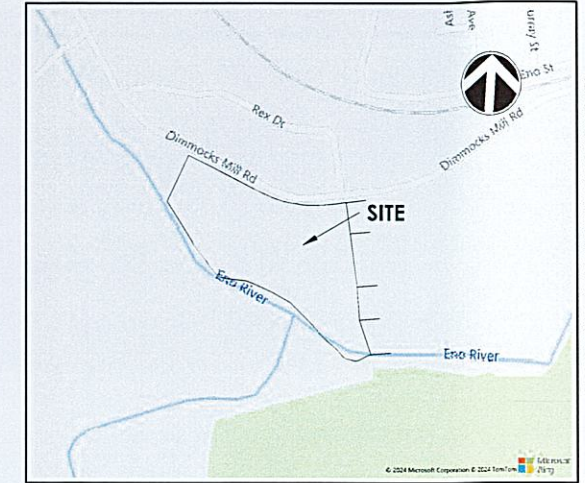
**THOMAS & HUTTON**

A-A1	ARCHITECTURAL ELEVATIONS EXHIBIT A & E - BLDG HEIGHT & ROOF PITCH
A-A2	ARCHITECTURAL ELEVATIONS EXHIBIT A & E - BLDG HEIGHT & ROOF PITCH
A-B1	ARCHITECTURAL ELEVATIONS EXHIBIT B - BUILDING MATERIALS
A-B2	ARCHITECTURAL ELEVATIONS EXHIBIT B - BUILDING MATERIALS
A-C1	ARCHITECTURAL ELEVATIONS EXHIBITS C&D - OPENING & GLAZING INFO
A-C2	ARCHITECTURAL ELEVATIONS EXHIBITS C&D - OPENING & GLAZING INFO
A-D1	VEHICLE STORAGE BUILDING EXTERIOR ELEVATIONS - NORTH & SOUTH
A-D2	VEHICLE STORAGE BUILDING EXTERIOR ELEVATIONS - EAST & WEST
ES-101	SITE ELECTRICAL PLAN - OVERVIEW
ES-102	SITE ELECTRICAL PLAN - PROJECT AREA
ES-201	SITE ELECTRICAL - FIXTURE DETAILS
ES-202	SITE ELECTRICAL - FIXTURE DETAILS
ES-301	SITE LIGHTING CALCULATIONS - OVERVIEW
ES-302	SITE LIGHTING CALCULATIONS - PROJECT AREA
ES-303	SITE LIGHTING CALCULATIONS - PROJECT AREA

A VESTED RIGHT PURSUANT TO NCGS 160D-108 AND SECTION 1.8 OF THE UNIFIED DEVELOPMENT ORDINANCE IS ESTABLISHED AS OF THE DATE HEREOF. UNLESS TERMINATED AT AN EARLIER DATE, THE VESTED RIGHT OF THE APPROVAL SHALL BE VALID UNTIL \_\_\_\_\_.



SHEET NO.: C-0.0



VICINITY MAP  
SCALE: 1" = 500'

Sheet Number	Sheet Title
C-0.0	COVER
C-0.1	NOTES
C-0.2	AREA MAP
C-1.0	EX CONDITIONS-DEMO
C-2.0	SITE LAYOUT
C-2.1	LANDSCAPE PLAN
C-2.2	LANDSCAPE TREE COVERAGE
C-2.3	LANDSCAPE DETAILS
C-5.0	GRADING-UTILITY
C-5.1	Force Main Profile
C-6.0	DETAILS
C-6.1	DETAILS
C-6.2	DETAILS
C-6.3	DETAILS

REV. NO.	REVISION	BY	DATE
5	FLOOD PROTECTION REVISIONS	CH	11/21/2025
4	ADD ROOF LEADERS	T&H	7/24/2025
3	RESPONSE TO COMMENTS	T&H	6/3/2025
2	RESPONSE TO COMMENTS	T&H	5/14/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025

SUBMITTAL	SUBMITTED TO	DATE



Know what's below.  
Call before you dig.

**THOMAS & HUTTON**

2510 Meridian Parkway • Suite 100  
Durham, NC 27713  
p. 919-682-0368  
www.thomasandhutton.com

J-30833  
11/21/2025  
ADRON THOMPSON SITE IMPROVEMENTS  
2025

**DRAINAGE LEGEND**

	EXISTING	PROPOSED
PIPE	---	---
DITCH	---	---
CURB INLET (CI) CATCH BASIN (CB)		
CURB INLET - RIGHT (CI) OR CATCH BASIN - RIGHT (CB)		
CURB INLET - LEFT (CI) OR CATCH BASIN - LEFT (CB)		
CURB INLET - BOTH (CI) OR CATCH BASIN - BOTH (CB)		
CONTROL STRUCTURE (CS)		
DITCH INLET (DI)		
GRATE INLET (GI)		
HOODED INLET (HI)		
JUNCTION BOX (JB)		
MANHOLE (SDMH)		
ROLL CURB INLET (RCI)		
ROOF INLET (RI)		
VALLEY INLET (VI)		
YARD INLET (YI)		
BEVELED END SECTION (BES)		
END SECTION (ES)		
FLARED END SECTION (FES)		
11 1/2" BEND - HORIZONTAL		
22 1/2" BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
90° BEND - HORIZONTAL		
CLEANOUT		
PLUG		
TEE		
WYE		

**OTHER UTILITIES LEGEND**

	EXISTING
NATURAL GAS	--- UGG ---
TELEPHONE	--- OHT ---
UNDERGROUND TELEPHONE	--- UTL ---
ELECTRICITY	--- OHP ---
UNDERGROUND ELECTRICITY	--- UGP ---

**ABBREVIATIONS**

DBL	DOUBLE	FM	FORCE MAIN (SANITARY SEWER)	OC	ON CENTER	SS	SANITARY SEWER
BOT	BOTTOM	FP	FINISH PAD	PC	POINT OF CURVE	TC	TOP OF CURB
CB	CATCH BASIN	FPW	FIRE PROTECTION	PH	POST HYDRANT	TH	THROAT ELEVATION
CI	CURB INLET	FR	FRAME	PT	POINT OF TANGENT	TG	TOP OF GUTTER
CO	CLEAN OUT	GI	GRATE INLET	PVC	POLYVINYL CHLORIDE	TP	TOP OF PAVEMENT
CPP	CORRUGATED PLASTIC PIPE	GV	GATE VALVE	RCP	REINFORCED CONCRETE PIPE	TW	TOP OF WALK
DBL	DOUBLE	HDPE	HIGH DENSITY POLYETHYLENE	RC	ROLL CURB INLET	TYP	TYPICAL
DI	DITCH INLET	HI	HOODED INLET	RCP	REINFORCED CONCRETE PIPE	VI	VALLEY INLET
DIP	DUCTILE IRON PIPE	INV	INVERT ELEVATION	RI	ROOF INLET	W	WATER
EL	ELEVATION	JB	JUNCTION BOX	RJP	RESTRAINED JOINT PIPE	W/	WITH
ES	END SECTION	LF	LINEAR FEET	R/W	RIGHT-OF-WAY	WV	WATER VALVE
FES	FLARED END SECTION	MAX	MAXIMUM	SD	STORM DRAINAGE	YI	YARD INLET
FG	FINISH GRADE	MIN	MINIMUM	SDMH	STORM DRAINAGE MANHOLE		
FH	FIRE HYDRANT	MH	MANHOLE	SF	SQUARE FEET		

**SEWER LEGEND**

	EXISTING	PROPOSED
GRAVITY PIPE	--- SS ---	---
SINGLE SERVICE LATERAL	---	---
DOUBLE SERVICE LATERAL	---	---
DROP MANHOLE (DMH)		
MANHOLE (MH)		
CLEANOUT (CO)		
FORCEMAIN	--- 10" FM ---	--- 10" FM ---
AIR RELEASE VALVE (ARV)		
CHECK VALVE (CV)		
PLUG VALVE AND BOX (PV)		
FLUSH HYDRANT		
PUMP CONNECTION (PC)		
REDUCER		
TRACER WIRE ACCESS BOX (TWAB)		
CROSS		
TEE		
TAPPING SLEEVE (TS)		
90° BEND HORIZONTAL		
45° BEND HORIZONTAL		
22 1/2" BEND HORIZONTAL		
11 1/2" BEND HORIZONTAL		
BEND VERTICAL		
PLUG \ CAP		

**WATER LEGEND**

	EXISTING	PROPOSED
FIRE PROTECTION	--- 10" FPW ---	--- 10" FPW ---
WATER MAIN	--- 10" W ---	--- 10" W ---
SINGLE SERVICE LATERAL	---	---
DOUBLE SERVICE LATERAL	---	---
BUTTERFLY VALVE (BV)		
DOUBLE CHECK DETECTOR ASSEMBLY (DCCA)		
GATE VALVE AND BOX (GV)		
POST INDICATOR VALVE (PIV)		
TAPPING SLEEVE AND VALVE (TSV)		
REDUCED PRESSURE ZONE BACKFLOW (RPZ)		

**WATER LEGEND**

	EXISTING	PROPOSED
WATER METER (WM)		
TRACER WIRE ACCESS BOX (TWAB)		
FIRE HYDRANT W/TEE, VALVE & BOX (PHA)		
POST HYDRANT (PH)		
REDUCER		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22 1/2" BEND - HORIZONTAL		
11 1/2" BEND - HORIZONTAL		
BEND - VERTICAL		
CAP		

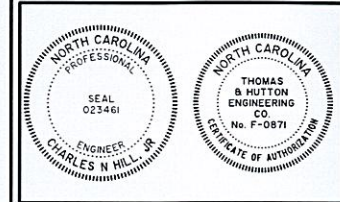
**GENERAL NOTES**

- CONTRACTOR SHALL MAINTAIN MINIMUM COVER OVER THE WATER MAIN PIPE BARREL OF 3'-0" UNLESS OTHERWISE INDICATED. TOP OF PIPE ELEVATIONS ARE SHOWN FOR CASES WHERE FUTURE STORM SEWERS ARE TO BE INSTALLED. IN NO CASE SHALL THE WATER MAIN BE INSTALLED AT A LOWER ELEVATION THAN THAT SHOWN.
- SHOULD PIPE, FITTINGS, AND OTHER MATERIALS BE NEEDED IN ADDITION TO THAT SHOWN ON THE DRAWINGS BECAUSE PIPELINE WAS NOT INSTALLED TO THE ALIGNMENT AND PROFILE SHOWN, THEN THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THOSE NECESSARY MATERIALS AND PROVIDING THE EQUIPMENT AND LABOR TO INSTALL THEM TO MEET THE DESIGN INTENT OF THE WATERMAIN AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER 48 HOURS IN ADVANCE OF ALL REQUIRED TESTS AND INSPECTIONS.
- THE CONTRACTOR WILL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
- ALL WATERMANS SHALL BE POLYVINYL CHLORIDE (PVC C900) UNLESS OTHERWISE INDICATED.
- ALL GRAVITY SEWER MAIN SHALL BE POLYVINYL CHLORIDE (PVC SDR35) UNLESS OTHERWISE INDICATED.
- SURVEYING AND BOUNDARY INFORMATION BY THOMAS AND HUTTON.
- ALL ELEVATIONS SHOWN ARE BASED ON NAVD83.
- TOPOGRAPHIC SURVEY BY THOMAS AND HUTTON.
- CONTRACTOR IS TO VERIFY ACCURACY OF ANY TEMPORARY BENCHMARKS SHOWN PRIOR TO UTILIZING THEM FOR CONSTRUCTION.
- THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.
- IF WORK IS SUSPENDED OR DELAYED FOR 14 DAYS, THE CONTRACTOR SHALL TEMPORARILY STABILIZE THE DISTURBED AREA AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL INSTALL ANY BARRICADES PRIOR TO BEGINNING CONSTRUCTION.
  - MANAGEMENT. THIS IS TO PROVIDE FOR ONE FOOT OF SILT BUILDUP DURING CONSTRUCTION OF ANY AREA OF ANY POND WHICH SILTS MORE THAN ONE FOOT ABOVE DESIGNED BOTTOM ELEVATION SHALL BE RESTORED TO THE MINIMUM ACCEPTABLE DEPTH OF ONE FOOT LESS THAN ORIGINAL CONSTRUCTED DEPTH.
  - ALL ABOVE GROUND UTILITIES ARE TO BE OUTSIDE OF THE R/W AND ALL AT GRADE UTILITIES ARE TO BE OUT OF THE CURB LINE.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
- CONTRACTOR WILL BE REQUIRED TO ADJUST MANHOLE FRAMES TO MATCH FINAL GRADE AT NO ADDITIONAL COST.
- ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH THE DISTURBANCE OF THE LAND AND SHALL REMAIN FUNCTIONAL UNTIL THE CONTRIBUTING DISTURBED AREAS ARE STABILIZED. SILT BARRIERS WILL BE INSTALLED AS NECESSARY TO PREVENT EXCESSIVE SEDIMENTATION OF DOWNSTREAM AREAS. DEVICES SHALL BE IN ACCORDANCE WITH THE MANUAL OF "EROSION AND SEDIMENT CONTROL PRACTICES FOR DEVELOPING AREAS" BY THE S.C. LAND RESOURCES CONSERVATION COMMISSION.
- CONTRACTOR SHALL GRADE AREAS TO DRAIN FOR POSITIVE FLOW PRIOR TO FINAL APPROVAL.
- ALL TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AND "NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BOTH CURRENT EDITIONS.
- ALL AREAS DISTURBED WILL BE GRASSED IMMEDIATELY AFTER THE INSTALLATION. GRASSING SHALL BE IN ACCORDANCE WITH SECTION 810 OF THE NCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION CURRENT EDITION. PAYMENT SHALL BE AS SHOWN IN THE BID FORM AND SHALL BE COMPENSATION FOR ALL NECESSARY WORK AND MATERIALS TO COMPLETE THE SEEDING IN ACCORDANCE WITH THESE SPECIFICATIONS. (SEE SPECIFICATIONS BELOW)
- ALL DRAINAGE WILL BE MADE FUNCTIONAL DAILY AS WORK PROGRESSES.
- NEW PAVEMENT TO BE FLUSH WITH EDGE OF EXISTING PAVEMENT.
- ALL STORM DRAIN PIPE INVERTS IN AND OUT ARE THE SAME AS THE BOX INVERT UNLESS OTHERWISE NOTED ON THE PLAN SHEETS AND/OR PROFILES.

**ORANGE COUNTY SOLID WASTE CONSTRUCTION WASTE REQUIREMENTS**

- ALL EXISTING STRUCTURES 500 SF AND LARGER SHALL BE ASSESSED PRIOR TO THE ISSUANCE OF A DEMOLITION PERMIT TO ENSURE COMPLIANCE WITH THE COUNTY'S REGULATED RECYCLABLE MATERIALS ORDINANCE (RRMO) AND TO ASSESS THE POTENTIAL FOR DECONSTRUCTION AND/OR THE REUSE OF SALVAGEABLE MATERIALS. CONTACT THE ORANGE COUNTY SOLID WASTE ENFORCEMENT OFFICER AT 919-948-2788 TO ARRANGE FOR THE ASSESSMENT.
- PURSUANT TO THE COUNTY'S RRMO, CLEAN WOOD WASTE, SCRAP METAL, AND CORRUGATED CARDBOARD PRESENT IN CONSTRUCTION OR DEMOLITION WASTE MUST BE RECYCLED.
- PURSUANT TO THE COUNTY'S RRMO, ALL HAULERS OF MIXED CONSTRUCTION AND DEMOLITION WASTE WHICH INCLUDES ANY REGULATED RECYCLABLE MATERIALS SHALL BE LICENSED BY ORANGE COUNTY.
- PRIOR TO ANY DEMOLITION OR CONSTRUCTION ACTIVITY ON THE SITE, THE APPLICANT SHALL HOLD A PRE-DEMOLITION/PRE-CONSTRUCTION CONFERENCE WITH SOLID WASTE STAFF. THIS MAY BE THE SAME PRE-CONSTRUCTION MEETING HELD WITH OTHER DEVELOPMENT/ENFORCEMENT OFFICIALS.
- THE PRESENCE OF ANY ASBESTOS CONTAINING MATERIALS (ACM) AND/OR OTHER HAZARDOUS MATERIALS SHALL BE HANDLED IN ACCORDANCE WITH ANY AND ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND GUIDELINES.

NO.	REVISIONS	BY	DATE
3	FLOOD PROTECTION REVISIONS	CH	11/21/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



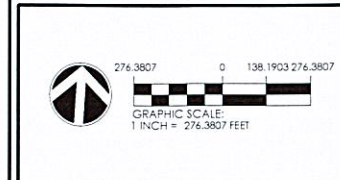
**THOMAS & HUTTON**  
 2510 Meridian Parkway • Suite 100  
 Durham, NC 27713 • 919.682.0368  
 www.thomasandhutton.com

**NOTES**

2025  
**ADRON THOMPSON SITE IMPROVEMENTS**

**PROJECT LOCATION:**  
 HILLSBOROUGH, NORTH CAROLINA

**CLIENT/OWNER:**  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA

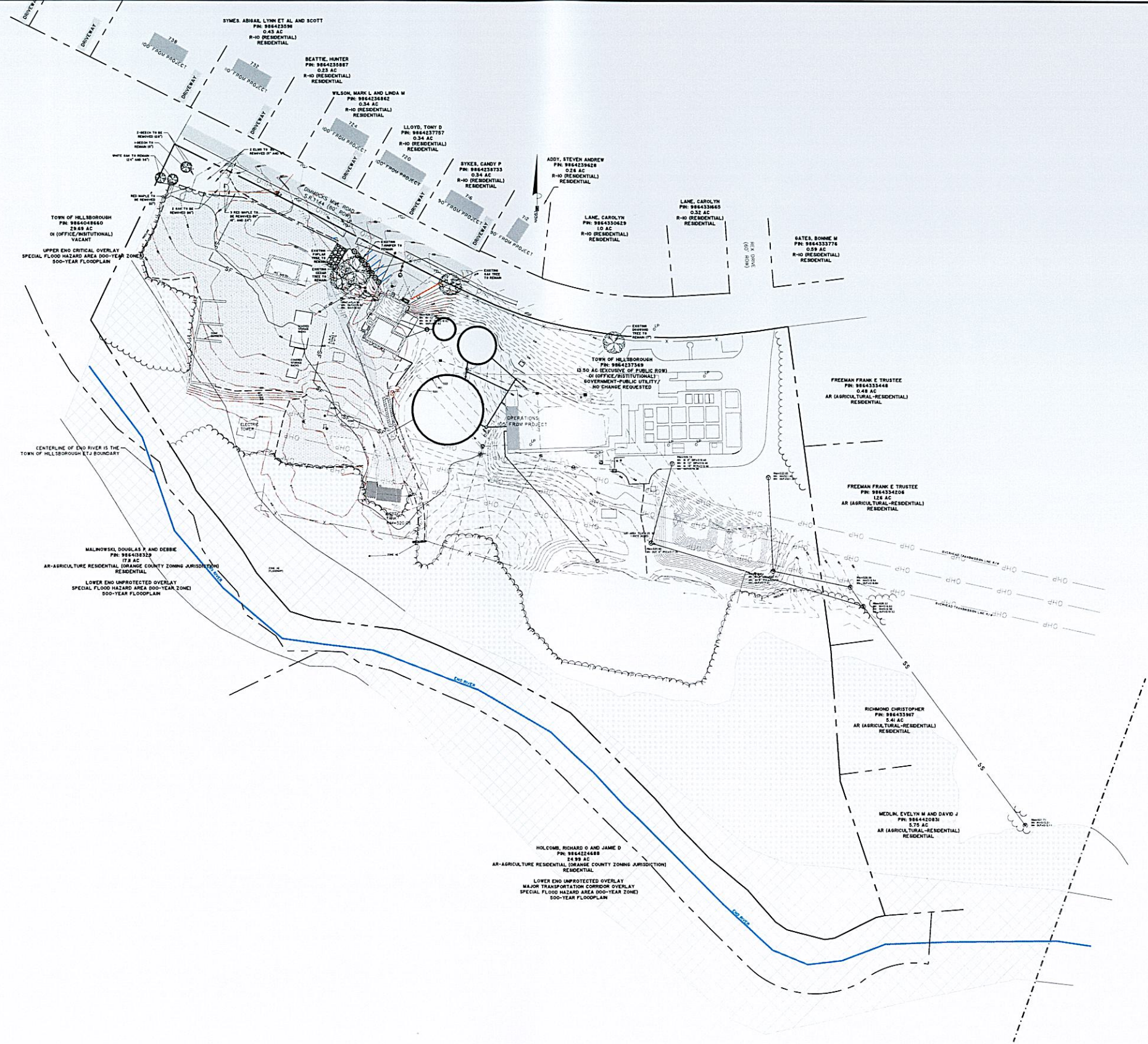


DATUM: HORZ: NAD83 VERT: NAVD88

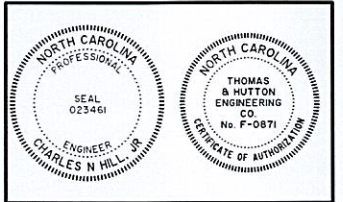
JOB NO: 30833  
 DATE: 02/26/2025  
 DRAWN:  
 DESIGNED:  
 REVIEWED:  
 APPROVED:  
 SCALE:

**C-0.1**

7. TYPICAL LIGHTS GOVERNOR/ENGINEER/PLANNING BOARD OF ARTS AND LETTERS, No. 17, 2021, 17 OF 18




NO.	REVISIONS	BY	DATE
4	FLOOD PROTECTION REVISIONS	CH	8/21/2025
3	RESPONSE TO COMMENTS	T&H	6/3/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025




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**AREA MAP**  


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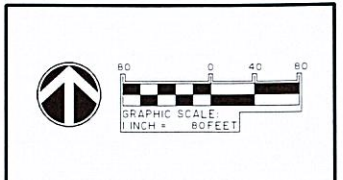
 2025  
**ADRON THOMPSON SITE IMPROVEMENTS**  


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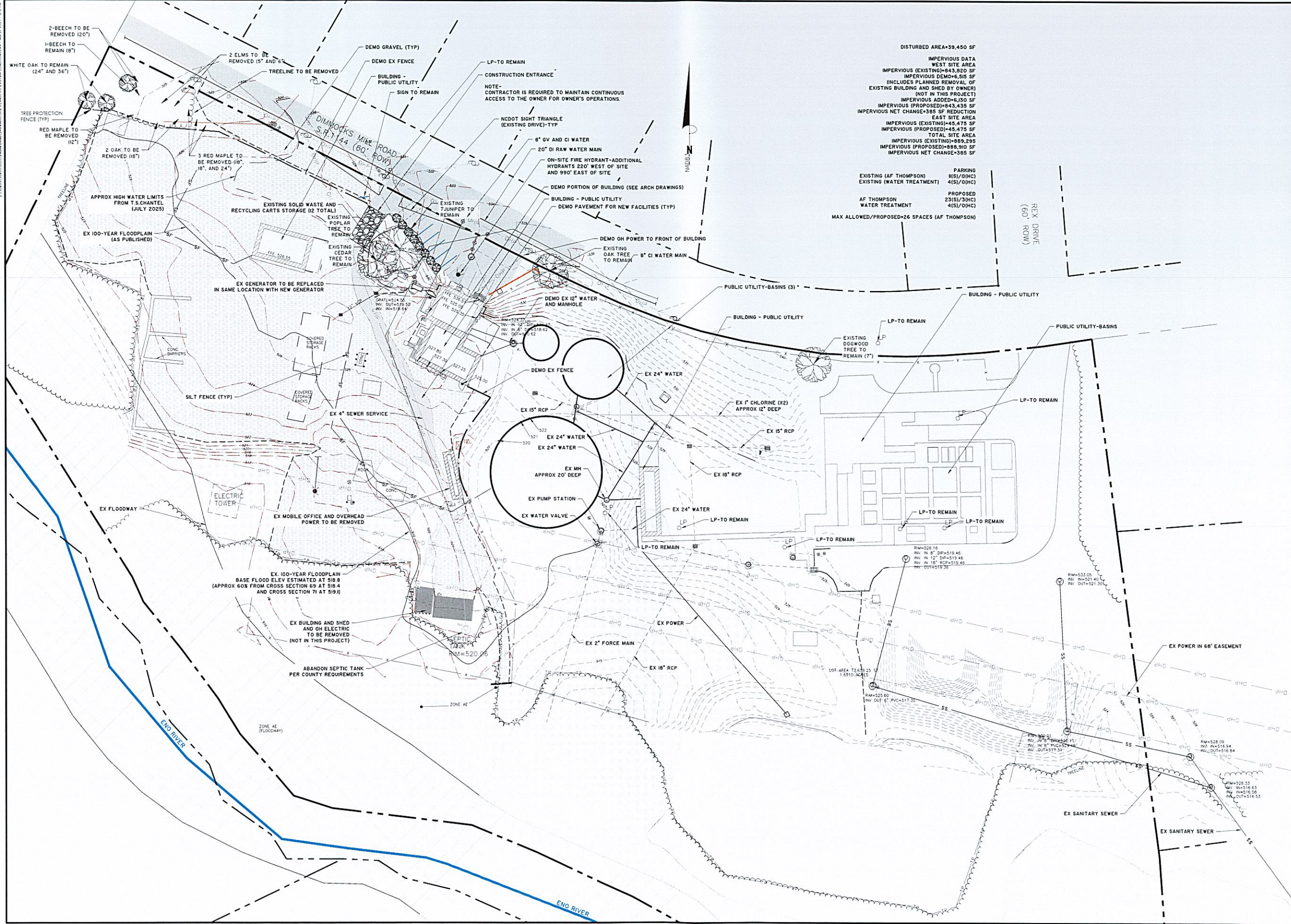
**PROJECT LOCATION:**  
 HILLSBOROUGH, NORTH CAROLINA  


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**CLIENT/OWNER:**  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA



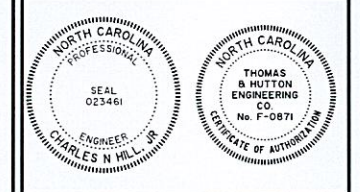
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 JOB NO: 30833  
 DATE: 02/26/2025  
 DRAWN: \_\_\_\_\_  
 DESIGNED: CNH  
 REVIEWED: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 SCALE: 1"=80'  
C-0.2



DISTURBED AREA=39,450 SF  
 IMPERVIOUS DATA  
 WEST SITE AREA  
 IMPERVIOUS (EXISTING)=843,820 SF  
 IMPERVIOUS DEMO=5,505 SF  
 (INCLUDES PLANNED REMOVAL OF  
 EXISTING BUILDING AND SHED BY OWNER)  
 (NOT IN THIS PROJECT)  
 IMPERVIOUS ADDED=6,130 SF  
 IMPERVIOUS (PROPOSED)=843,435 SF  
 IMPERVIOUS NET CHANGE=385 SF REDUCTION  
 EAST SITE AREA  
 IMPERVIOUS (EXISTING)=45,475 SF  
 IMPERVIOUS (PROPOSED)=45,475 SF  
 TOTAL SITE AREA  
 IMPERVIOUS (EXISTING)=889,295 SF  
 IMPERVIOUS (PROPOSED)=888,910 SF  
 IMPERVIOUS NET CHANGE=385 SF

PARKING  
 EXISTING (AF THOMPSON) 8(S)/OHC  
 EXISTING (WATER TREATMENT) 4(S)/OHC  
 PROPOSED  
 AF THOMPSON 23(S)/3HC  
 WATER TREATMENT 4(S)/OHC  
 MAX ALLOWED/PROPOSED=26 SPACES (AF THOMPSON)

NO.	REVISIONS	BY	DATE
4	FLOOD PROTECTION REVISIONS	CH	8/21/2025
3	RESPONSE TO COMMENTS	TGH	6/3/2025
2	RESPONSE TO COMMENTS	TGH	5/15/2025
1	RESPONSE TO COMMENTS	TGH	4/16/2025



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**EX CONDITIONS-DEMO**

2025  
**ADRON THOMPSON SITE IMPROVEMENTS**

**PROJECT LOCATION:**  
 HILLSBOROUGH, NORTH CAROLINA

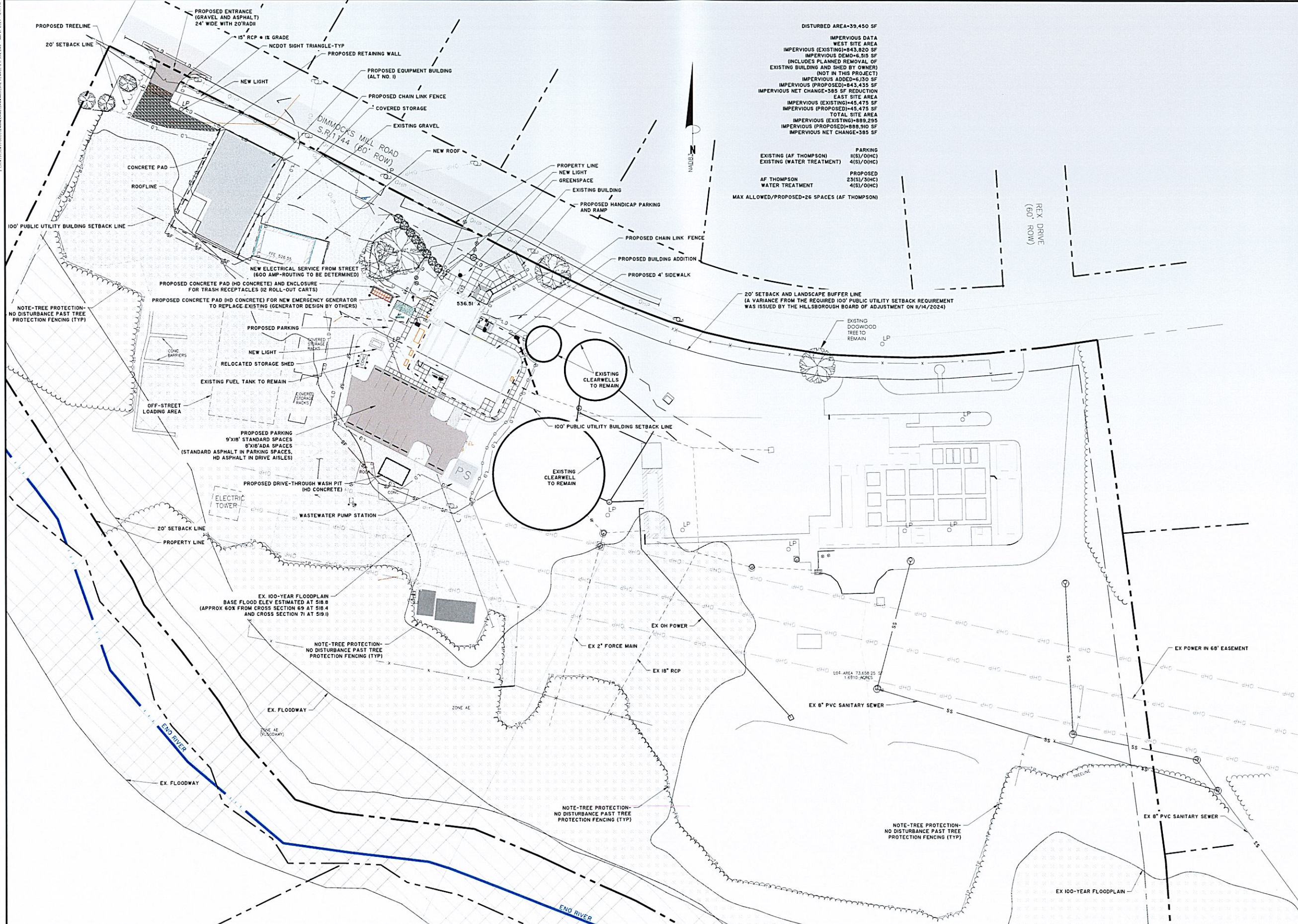
**CLIENT/OWNER:**  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA

**GRAPHIC SCALE**  
 1 INCH = 40 FEET

DATUM: HORIZ: NAD83 VERT: NAVD89

JOB NO: 30833  
 DATE: 02/26/2025  
 DRAWN:  
 DESIGNED:  
 REVIEWED:  
 APPROVED:  
 SCALE: 1" = 40'

**C-1.0**



DISTURBED AREA=39,450 SF

IMPERVIOUS DATA  
 WEST SITE AREA  
 IMPERVIOUS (EXISTING)=843,820 SF  
 IMPERVIOUS DEMO=6,515 SF  
 (INCLUDES PLANNED REMOVAL OF  
 EXISTING BUILDING AND SHED BY OWNER)  
 (NOT IN THIS PROJECT)  
 IMPERVIOUS ADDED=4,130 SF  
 IMPERVIOUS (PROPOSED)=845,435 SF  
 IMPERVIOUS NET CHANGE=385 SF REDUCTION

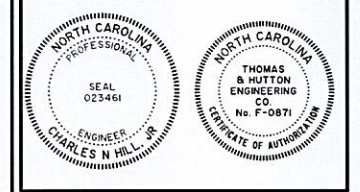
EAST SITE AREA  
 IMPERVIOUS (EXISTING)=889,285 SF  
 IMPERVIOUS (PROPOSED)=45,475 SF  
 TOTAL SITE AREA  
 IMPERVIOUS (EXISTING)=989,285 SF  
 IMPERVIOUS (PROPOSED)=989,910 SF  
 IMPERVIOUS NET CHANGE=385 SF

EXISTING (AF THOMPSON) 11(S)/O(HC)  
 EXISTING (WATER TREATMENT) 4(S)/O(HC)

PROPOSED  
 AF THOMPSON 23(S)/3(HC)  
 WATER TREATMENT 4(S)/O(HC)

MAX ALLOWED/PROPOSED=26 SPACES (AF THOMPSON)

NO.	REVISIONS	BY	DATE
3	FLOOD PROTECTION REVISIONS	CH	8/21/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



**THOMAS & HUTTON**

111 W. MAIN STREET  
 DURHAM, NC 27701  
 919.487.0308  
 www.thomashutton.com

**SITE LAYOUT**

2025  
**ADRON THOMPSON SITE IMPROVEMENTS**

**PROJECT LOCATION:**  
 HILLSBOROUGH, NORTH CAROLINA

**CLIENT/OWNER:**  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA



JOB NO: 30833  
 DATE: 02/26/2025  
 DRAWN:  
 DESIGNED:  
 REVIEWED:  
 APPROVED:  
 SCALE: 1" = 40'

**C-2.0**

**LANDSCAPE NOTES**

1. LANDSCAPING MUST BE IN PLACE PRIOR TO REQUEST FOR A CERTIFICATE OF OCCUPANCY OR CERTIFICATE OF COMPLIANCE.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, DEPTHS, QUANTITIES, DISTANCES, ANGLES AND SLOPES PRIOR TO ORDERING MATERIALS OR INSTALLING PROJECT. TOWN OF HILLSBOROUGH STAFF TO THE INVITEES TO THE PRE-CONSTRUCTION CONFERENCE. TOWN OF HILLSBOROUGH PLANNING STAFF WILL SET UP THE PRE-CONSTRUCTION CONFERENCE MEETING.
3. IN AREAS OF GROUND COVER, MAINTAIN A 12" MINIMUM DISTANCE BETWEEN PLANTS AND HARD IMPROVEMENTS.
4. BED LINES SHALL CONFORM TO CONFIGURATION SHOWN ON THE PLANS. BED LINES SHALL MEET CURBS, WALKS, BUILDINGS, ETC. AT RIGHT ANGLES UNLESS SHOWN OTHERWISE. A TREE PROTECTION FENCE INSPECTION BY TOWN STAFF MUST OCCUR BEFORE LAND DISTURBANCE MAY BEGIN.
5. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ACTUAL CONDITIONS AND VERIFY EXISTING CONDITIONS IN THE FIELD. CONTRACTOR SHALL REPORT ALL DISCREPANCIES TO LANDSCAPE ARCHITECT.
6. CONTRACTOR SHALL ACCEPT ACTUAL CONDITIONS AT SITE AND PERFORM THE WORK SPECIFIED INCLUDING FINE GRADING AND INCORPORATION OF TOP SOIL INTO PLANTING AREAS, WITHOUT ADDITIONAL COMPENSATION FOR POSSIBLE VARIATION FROM GRADES AND CONDITIONS SHOWN, WHETHER SURFACE OR SUBSURFACE, EXCEPT AS PROVIDED FOR IN CONTRACT DOCUMENTS.
7. IN LAWN AREAS, 2" TOPSOIL SHALL BE TILLED INTO THE TOP 5" OF GROUND PRIOR TO SEEDING.
8. CONTRACTOR WILL OBTAIN WRITTEN APPROVAL FROM LANDSCAPE ARCHITECT FOR ANY PLANT SUBSTITUTIONS OF SPECIES, SIZE, OR TYPE OF CONTAINER TOWN OF HILLSBOROUGH PLANNING AS AN APPROVAL PARTY FOR ANY LANDSCAPE PLANTING SUBSTITUTIONS.
9. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF THESE UTILITIES DURING INSTALLATION, AND SHALL PROMPTLY REPAIR AND RESTORE SERVICES AT NO ADDITIONAL COST TO THE OWNER IF DAMAGE OCCURS DURING INSTALLATION. CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE FULL SET OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS FOR COORDINATION WITH UTILITIES, ARCHITECTURAL FEATURES, ETC.
10. CONTRACTOR WILL LEAVE DISTURBED AREAS LEVEL AND RAKED SMOOTH, REMOVING ALL ROCKS AND DEBRIS.
11. MULCH IS TO BE A 3" LAYER OF TRIPLE SHREDDED HARDWOOD MULCH. MULCH IS TO BE KEPT AWAY FROM TREE TRUNKS.
12. ANY DAMAGE TO EXISTING CONDITIONS OUTSIDE THE CONTRACT LIMITS, INCLUDING CURBS, SIDEWALKS, TURF AREAS AND PAVING, SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR WITHOUT EXTRA COST TO THE OWNER.
13. IN CASE OF DISCREPANCY BETWEEN THE QUANTITY OF PLANTS ON THE PLANS COMPARED TO THE PLANT LIST, THE CONTRACTOR SHALL SUPPLY QUANTITIES AS SHOWN ON THE PLANS.
14. ALL UNPAVED SURFACES ARE TO BE COVERED IN PLANTS, MULCH, OR GRASS.
15. ALL UNTREATED PERVIOUS AREAS THE SOIL SHALL BE AMENDED TO PROVIDE SUFFICIENT ORGANIC MATTER FOR LONG-TERM VEGETATION GROWTH AND INFILTRATION. IF SOILS ARE NOT AMENDED, PROVIDE JUSTIFICATION (I.E. SOIL TEST RESULTS) FOR WHY THE AMENDMENT IS NOT NECESSARY. USE ADDITIONAL AMENDMENTS AS NECESSARY TO ENSURE THAT THE PERVIOUS SURFACE IS INFILTRATING STORMWATER AT PRE-DEVELOPMENT RATES.

**PARKING LOT LANDSCAPING CALCULATIONS**

PARKING LOTS SHALL CONTAIN AT LEAST 1 SHADE TREE FOR EVERY SEVEN PARKING SPACES REQUIRED FOR THE SITE.  
 REQUIRED SPACES = 21  
 21 SPACES / 7 = 3 TREES REQUIRED / 4 PROVIDED

**BUFFER PLANTINGS**

NORTH BUFFER = 20' TYPE "B2" BUFFER PER 5.2.40.1 IN UDD (240 LF)  
 PER TABLE 6.5.4.2 IN UDD  
 240LF TOTAL NORTH BUFFER / PLANT MATERIAL REQUIRED PER 100 LF = 2.40 PLANTS  
 2.40 x 2 LARGE TREE = 4.8 PROPOSED LARGE TREE  
 2.40 x 4 SMALL TREE/LARGE SHRUB = 9.6 PROPOSED SMALL TREE OR LARGE SHRUB  
 = 4.8 AGA LARGE TREE  
 = 9.6 MCS/ICN LARGE SHRUBS OR MVS/AGA SMALL TREE  
 = TOTAL 14.4

NO.	REVISIONS	BY	DATE
3	FLOOD PROTECTION REVISIONS	WR	8/21/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



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**LANDSCAPE PLAN**

2025  
**ADRON THOMPSON SITE IMPROVEMENTS**

**PROJECT LOCATION:**  
 715 DIMMOCKS MILL ROAD  
 HILLSBOROUGH, NORTH CAROLINA

**CLIENT/OWNER:**  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA

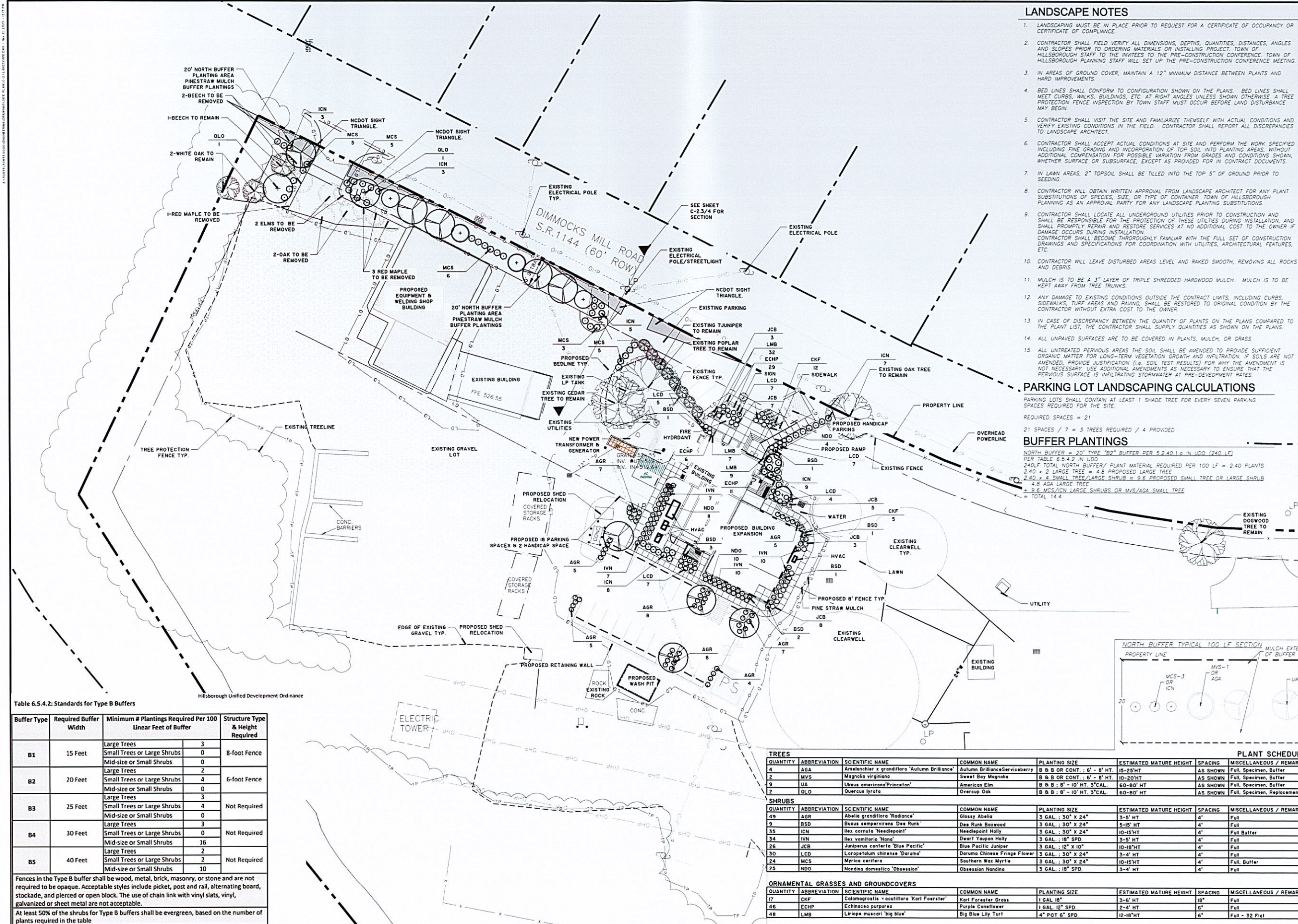


Table 6.5.4.2: Standards for Type B Buffers

Buffer Type	Required Buffer Width	Minimum # Plantings Required Per 100 Linear Feet of Buffer	Structure Type & Height Required
B1	15 Feet	Large Trees	3
		Small Trees or Large Shrubs	0
		Mid-size or Small Shrubs	0
B2	20 Feet	Large Trees	2
		Small Trees or Large Shrubs	4
		Mid-size or Small Shrubs	0
B3	25 Feet	Large Trees	3
		Small Trees or Large Shrubs	4
		Mid-size or Small Shrubs	0
B4	30 Feet	Large Trees	3
		Small Trees or Large Shrubs	0
		Mid-size or Small Shrubs	16
B5	40 Feet	Large Trees	2
		Small Trees or Large Shrubs	2
		Mid-size or Small Shrubs	10

Fences in the Type B buffer shall be wood, metal, brick, masonry, or stone and are not required to be opaque. Acceptable styles include picket, post and rail, alternating board, stockade, and pierced or open block. The use of chain link with vinyl slats, vinyl, galvanized or sheet metal are not acceptable.  
 At least 50% of the shrubs for Type B buffers shall be evergreen, based on the number of plants required in the table

**PLANT SCHEDULE**

QUANTITY	ABBREVIATION	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	ESTIMATED MATURE HEIGHT	SPACING	MISCELLANEOUS / REMARKS
4	AGA	Amelanchier x grandiflora 'Autumn Brilliance'	Azulma Brilliance Serviceberry	8" B & B OR CONT. ; 6' - 8' HT.	15-25' HT	AS SHOWN	Full, Specimen, Buffer
2	MVS	Magnolia virginiana	Sweet Bay Magnolia	8" B & B OR CONT. ; 6' - 8' HT.	10-20' HT	AS SHOWN	Full, Specimen, Buffer
9	UA	Ulmus americana 'Princeton'	American Elm	8" B & B - 10' HT. 3" CAL.	60-80' HT	AS SHOWN	Full, Specimen, Buffer
2	OLO	Quercus lyrata	Overcup Oak	8" B & B - 8' - 10' HT. 3" CAL.	60-80' HT	AS SHOWN	Full, Specimen, Replacement

**SHRUBS**

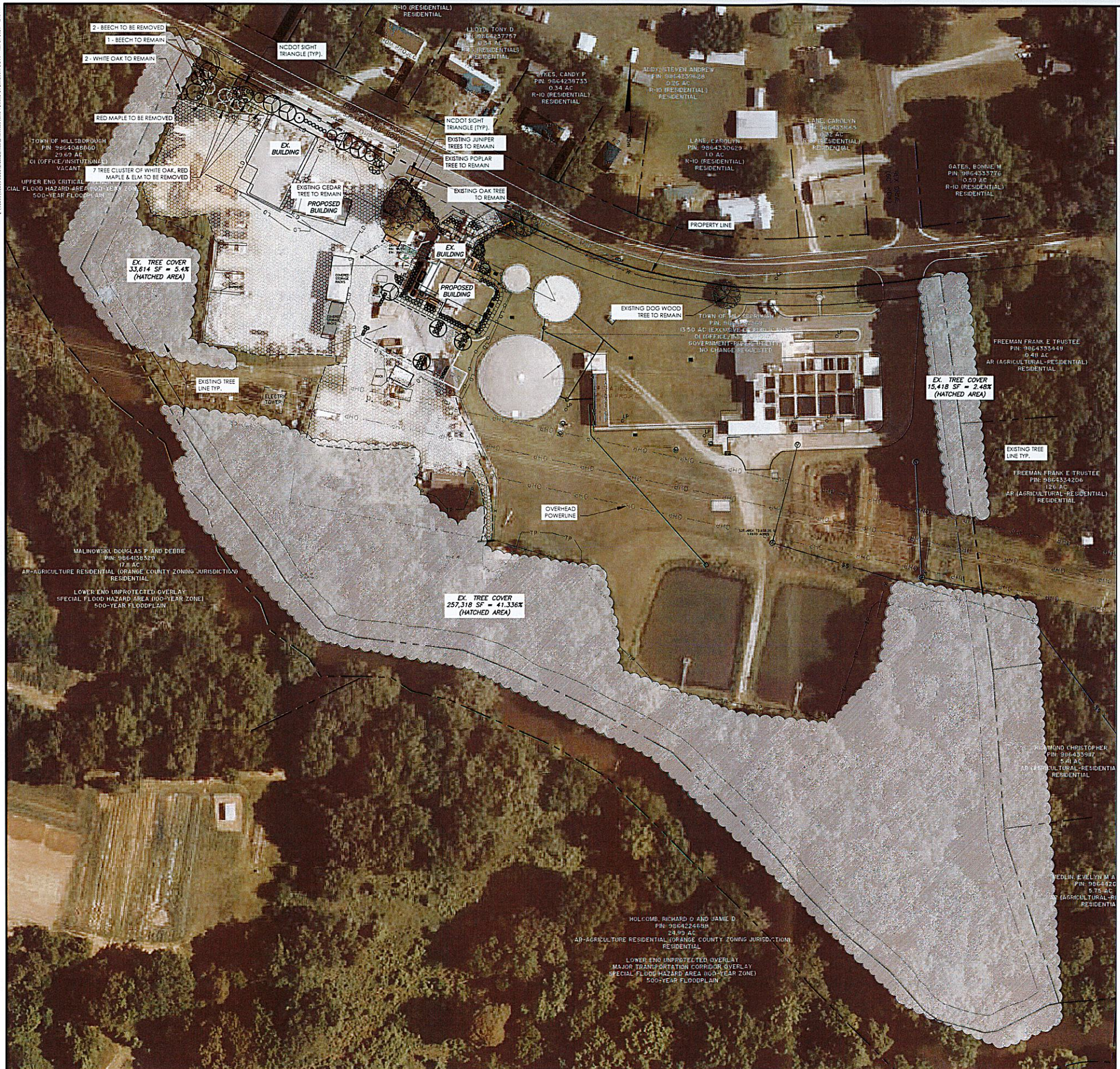
QUANTITY	ABBREVIATION	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	ESTIMATED MATURE HEIGHT	SPACING	MISCELLANEOUS / REMARKS
49	AGR	Abelia grandiflora 'Rediance'	Glossy Abelia	3 GAL. ; 30" X 24"	3-5' HT	4'	Full
9	BSD	Buxus sempervirens 'Dae Runk'	Dae Runk Boxwood	3 GAL. ; 30" X 24"	5-15' HT	4'	Full
35	ICN	Ilex cornuta 'Needlepoint'	Needlepoint Holly	3 GAL. ; 30" X 24"	10-15' HT	4'	Full Buffer
34	IVN	Ilex vomitoria 'Nana'	Dwarf Yaupon Holly	3 GAL. ; 18" SPD	3-5' HT	4'	Full
26	JCB	Juniperus conferta 'Blue Pacific'	Blue Pacific Juniper	3 GAL. ; 12" X 10"	10-18' HT	4'	Full
30	LCD	Loropetalum chinense 'Doruma'	Doruma Chinese Fringe Flower	3 GAL. ; 30" X 24"	3-4' HT	4'	Full
34	MCS	Myrica cerifera	Southern Wax Myrtle	3 GAL. ; 30" X 24"	10-15' HT	4'	Full, Buffer
25	NDD	Nandina domestica 'Obsession'	Obsession Nandina	3 GAL. ; 18" SPD	3-4' HT	4'	Full

**ORNAMENTAL GRASSES AND GROUNDCOVERS**

QUANTITY	ABBREVIATION	SCIENTIFIC NAME	COMMON NAME	PLANTING SIZE	ESTIMATED MATURE HEIGHT	SPACING	MISCELLANEOUS / REMARKS
17	CKF	Colimoglossia x oculiflora 'Karl Forster'	Karl Forster Grass	1 GAL. 18"	3-6' HT	18"	Full
46	ECHP	Echinacea purpurea	Purple Coneflower	1 GAL. 12" SPD	2-4' HT	6"	Full
48	LMB	Liriope muscari 'big blue'	Big Blue Lily Turf	4" POT 6" SPD	12-18" HT	6"	Full - 32 Flat



DATUM: HORIZ. NAD83 VERT.: NAVD86  
 JOB NO.: 30833.0000  
 DATE: 02/26/2025  
 DRAWN: PJS  
 DESIGNED: CMH  
 REVIEWED:  
 APPROVED:  
 SCALE: 1" = 30'



**TREE COVERAGE**

PARCEL = 588,060 SF / 13.5 AC  
 PRE DEVELOPMENT TREE COVERAGE (BASED ON AERIAL PHOTOGRAPH AND TREE SURVEY) = 312,897 SF / 50.26%  
 POST DEVELOPMENT TREE COVERAGE (UNDISTURBED AREA) = 306,350 SF / 49.21%  
 CANOPY TREES REMOVED = 7 CANOPY REMOVED <24" (2 BEECH, 2 OAK, 3 RED MAPLE)  
 1 RED MAPLE >24" = 2 @ 3" TREE REPLACEMENTS PROVIDED (OLO)  
 TOTAL=8 CANOPY REMOVED  
 CANOPY TREES TO REMAIN = 5 (2 WHITE OAK (IN LEFT HAND NW CORNER), 1 POPLAR, 1 CEDAR (IN THE NORTH), 1 OAK)  
 TREES HAVE BEEN SAVED TO THE MOST PRACTICAL EXTENT POSSIBLE BY LIMITING THE AMOUNT OF GRADING BEING PERFORMED WHILE STILL PROVIDING A SITE THAT WILL FUNCTION FOR THE PROPOSED DEVELOPMENT.

NO	REVISIONS	BY	DATE
4	FLOOD PROTECTION REVISIONS	WR	4/21/2025
3	RESPONSE TO COMMENTS	T&H	3/3/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



**LANDSCAPE TREE COVERAGE**

2025  
**ADRON THOMPSON SITE IMPROVEMENTS**

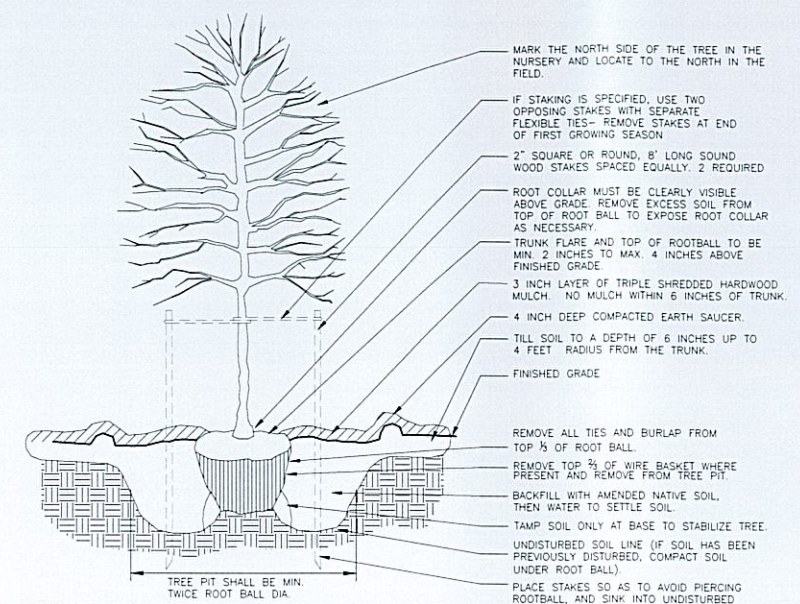
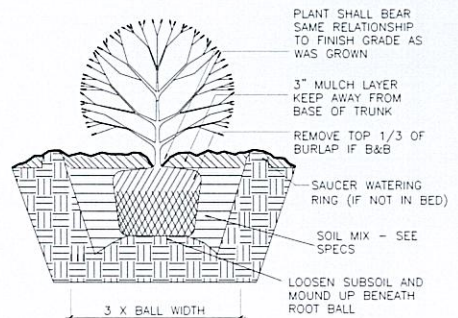
**PROJECT LOCATION:**  
 HILLSBOROUGH, NORTH CAROLINA

**CLIENT/OWNER:**  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA



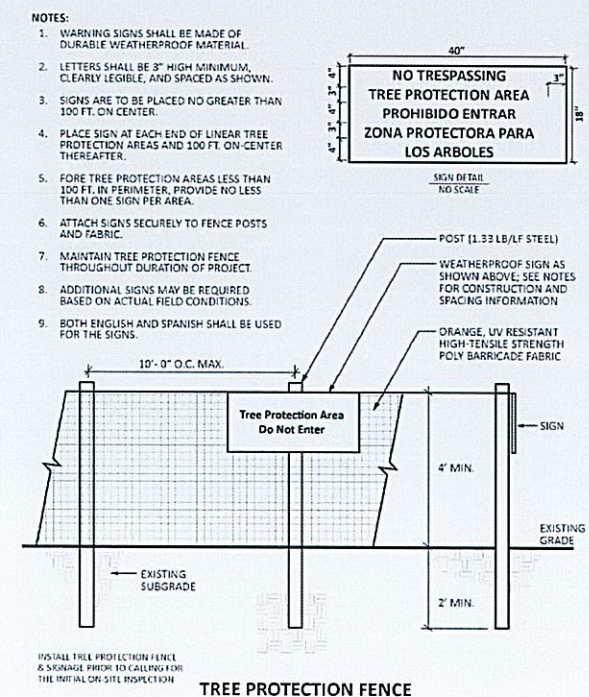
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 JOB NO: 30833  
 DATE: 4/16/2025  
 DRAWN: PJS  
 DESIGNED: CNH  
 REVIEWED:  
 APPROVED:  
 SCALE: 1" = 60'

**C-2.2**



- NOTES:
1. THIS STANDARD APPLIES TO SINGLE AND MULTI-STEM TREES.
  2. NO SYNTHETIC FABRIC IS ALLOWED ON ROOT BALL.
  3. REMOVE ALL BALL TIES OR STRAPPING FROM ROOT BALL.
  4. DO NOT INSTALL TREES DURING PERIODS OF WET OR FROZEN SOIL CONDITIONS.
  5. SOAK ROOT BALL AND PLANT PIT IMMEDIATELY AFTER INSTALLATION.
  6. SET TREE PLUMB IN ALL DIRECTIONS.
  7. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE TREE UPRIGHT AND PLUMB IN ALL DIRECTIONS. DO NOT STAKE TREES EXCEPT WHERE SPECIFIED OR DIRECTED BY LANDSCAPE ARCHITECT. IF STAKED, STAKE ONLY AS SHOWN.
  8. TREES PLANTED ON STEEP SLOPES SHALL BE STAKED.

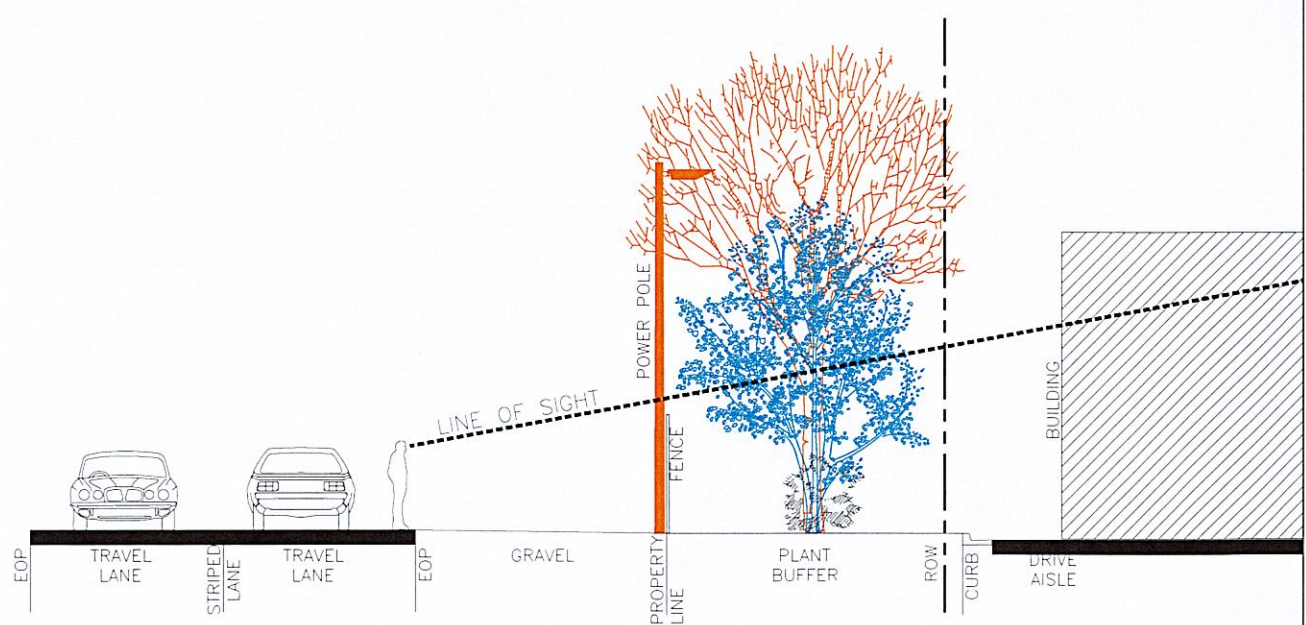
STANDARD PLANTING



1 SHRUB PLANTING  
C-2.3 SCALE: 1/2" = 1'-0"

2 TREE PLANTING  
C-2.3 SCALE: 1/2" = 1'-0"

3 TREE PROTECTION FENCING  
C-2.3 SCALE: N.T.S.



4 PLANT BUFFER CROSS SECTION  
C-2.3 SCALE: NTS

5 XXXX  
C-2.3 SCALE: NTS

NO.	REVISIONS	BY	DATE
3	FLOOD PROTECTION REVISIONS	WR	4/21/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



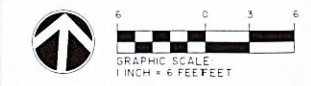
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LANDSCAPE DETAILS

2025  
ADRON THOMPSON SITE  
IMPROVEMENTS

PROJECT LOCATION:  
HILLSBOROUGH, NORTH CAROLINA

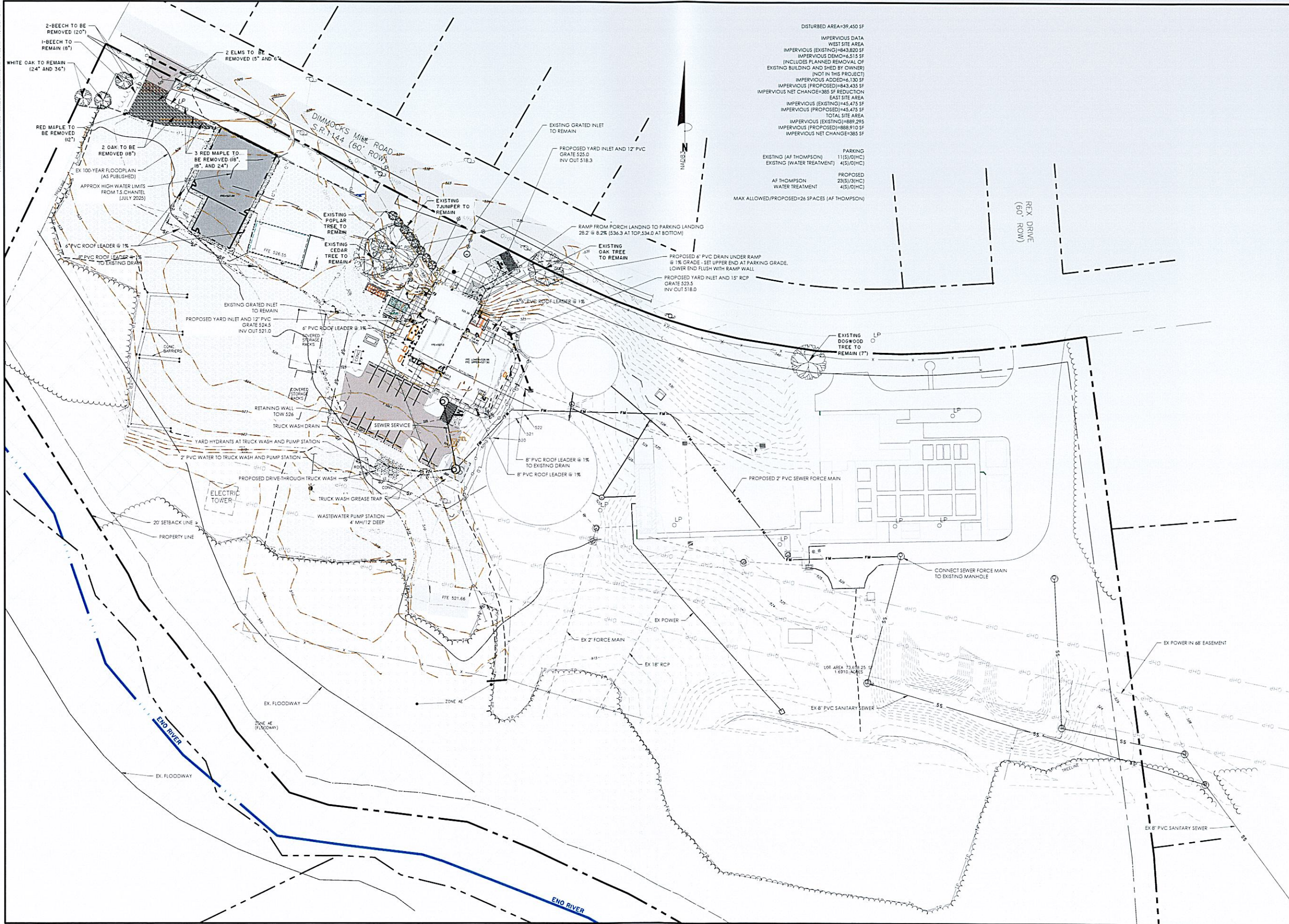
CLIENT/OWNER:  
TOWN OF HILLSBOROUGH  
NORTH CAROLINA



DATUM: HORIZ: NAD83 VERT: NAVD88

JOB NO: 30833  
DATE: 4/16/2025  
DRAWN: PJS  
DESIGNED: CNH  
REVIEWED:  
APPROVED:  
SCALE: 1" = 6'

C-2.3



DISTURBED AREA=39,450 SF

IMPERVIOUS DATA  
 WEST SITE AREA  
 IMPERVIOUS (EXISTING)=843,820 SF  
 IMPERVIOUS (PROPOSED)=4,515 SF  
 (INCLUDES PLANNED REMOVAL OF EXISTING BUILDING AND SHED BY OWNER) (NOT IN THIS PROJECT)  
 IMPERVIOUS (PROPOSED)=843,435 SF  
 IMPERVIOUS NET CHANGE=385 SF REDUCTION

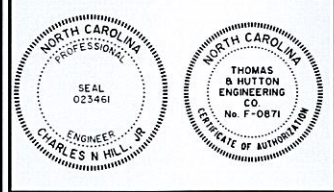
EAST SITE AREA  
 IMPERVIOUS (EXISTING)=45,475 SF  
 IMPERVIOUS (PROPOSED)=45,475 SF  
 TOTAL SITE AREA  
 IMPERVIOUS (EXISTING)=889,295 SF  
 IMPERVIOUS (PROPOSED)=888,910 SF  
 IMPERVIOUS NET CHANGE=385 SF

PARKING  
 EXISTING (AF THOMPSON) 11(S)/0(HC)  
 EXISTING (WATER TREATMENT) 4(S)/0(HC)

PROPOSED  
 23(S)/3(HC)  
 4(S)/0(HC)

MAX ALLOWED/PROPOSED=26 SPACES (AF THOMPSON)

NO.	REVISIONS	BY	DATE
4	FLOOD PROTECTION REVISIONS	CH	11/21/2025
3	ADD ROOF LEADERS	T&H	7/24/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



**THOMAS & HUTTON**

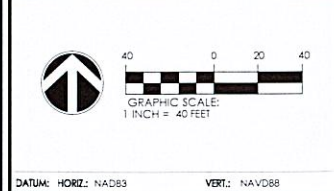
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**GRADING-UTILITY**

2025  
**ADRON THOMPSON SITE IMPROVEMENTS**

PROJECT LOCATION:  
 HILLSBOROUGH, NORTH CAROLINA

CLIENT/OWNER:  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA



DATUM: HORIZ: NAD83 VERT: NAVD88

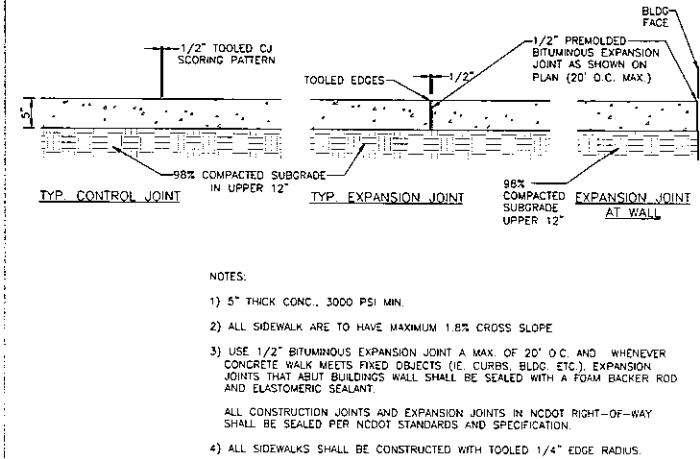
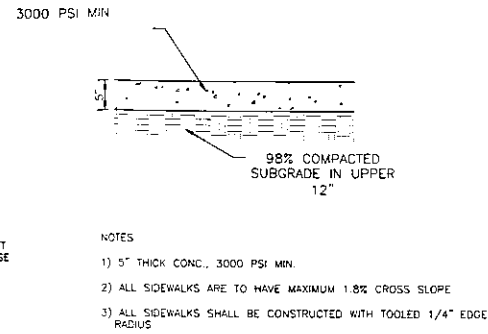
JOB NO: 30833  
 DATE: 02/26/2025  
 DRAWN:  
 DESIGNED:  
 REVIEWED:  
 APPROVED:  
 SCALE: 1" = 40'

**C-5.0**

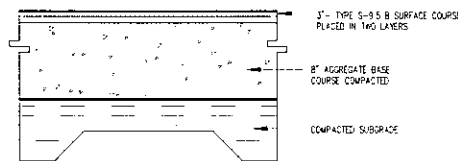


1 NOT USED  
no scale

2 CONCRETE SIDEWALK  
no scale

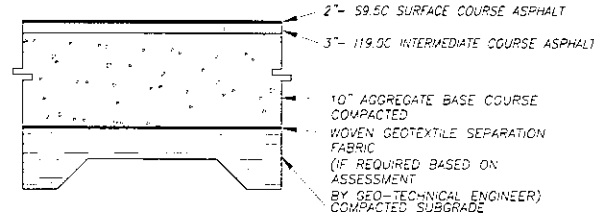


3 CONCRETE SIDEWALK JOINTS  
no scale



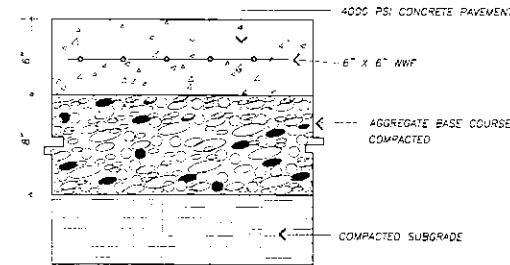
FINAL PAVEMENT SECTION IS PROVIDED BY GEO-TECHNICAL ENGINEER BASED SITE SPECIFIC GEO-TECHNICAL REPORT

4 STANDARD ASPHALT PAVING  
no scale



FINAL PAVEMENT SECTION IS PROVIDED BY GEO-TECHNICAL ENGINEER BASED SITE SPECIFIC GEO-TECHNICAL REPORT

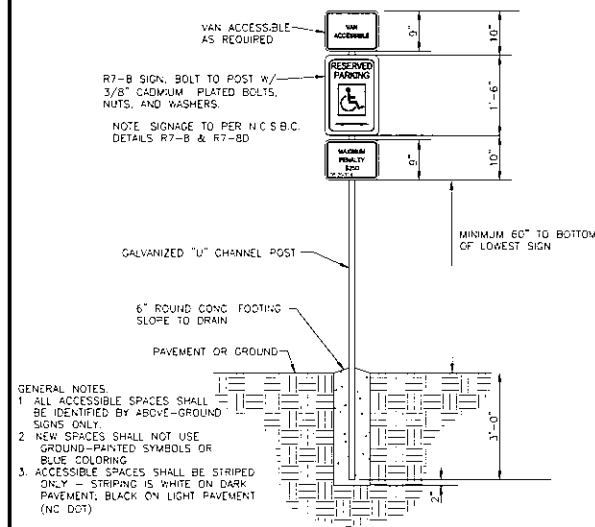
5 HEAVY DUTY ASPHALT PAVING  
no scale



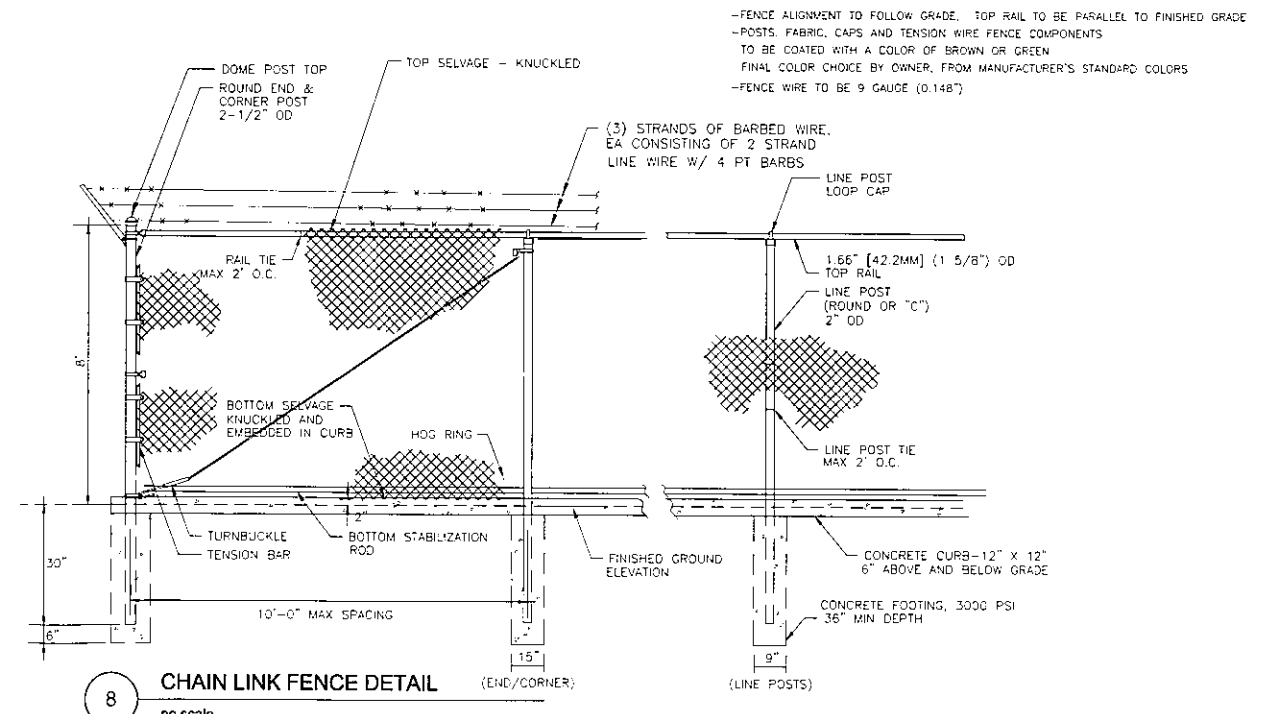
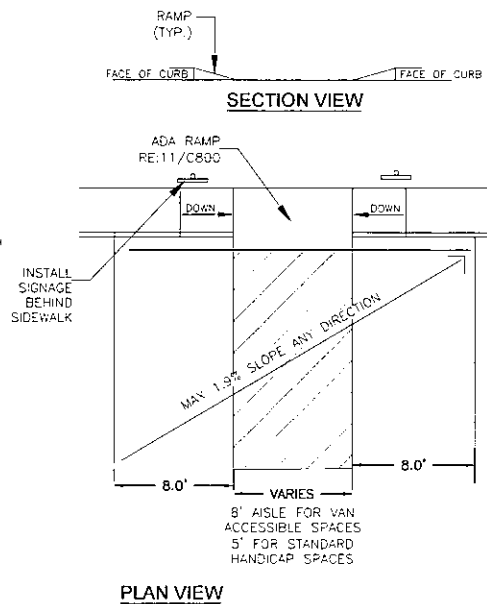
NOTES:

1. ALL CONCRETE TO 4000 PSI, PROPERLY AIR ENTRAINED FOR EXTERIOR GRADE CONCRETE MIXES.
2. C&G BASE AND SOIL SUBGRADE TO BE COMPACTED TO 98% OF THE ASTM D-698 STD. PROCTOR MOD IN ACCORDANCE WITH THE REPORT BY THE GEOTECHNICAL ENGINEER AND PROOFROLLED AND APPROVED BY GEOTECHNICAL PERSONNEL.
3. CONTRACTOR SHALL INSTALL CONTRACTION AND EXPANSION JOINTS AS NECESSARY TO MINIMIZE CRACKING. CONTRACTION JOINTS SHALL BE SPACED AT 10' MAXIMUM EACH WAY WITH ACTUAL PATTERN BASED ON FIELD CONDITIONS. JOINTS SHALL BE TOOLED OR SAW CUT TO A MINIMUM DEPTH OF 2". EXPANSION JOINTS SHALL BE INSTALLED BETWEEN PAVEMENT AND ANY RIGID OBJECTS AND SPACED AS SPECIFIED IN LATEST VERSION OF ACI STANDARDS.
4. ALL PAVEMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST VERSION OF ACI STANDARDS AND THE REPORT BY THE GEOTECHNICAL ENGINEER.

6 HEAVY DUTY CONCRETE PAVING  
no scale

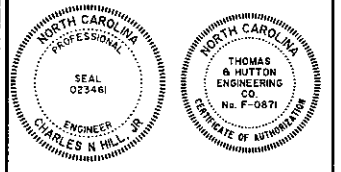


7 ADA PARKING LAYOUT AND SIGNAGE  
no scale



8 CHAIN LINK FENCE DETAIL (END/CORNER) (LINE POSTS)  
no scale

NO.	REVISIONS	BY	DATE
4	FLOOD PROTECTION REVISIONS	CH	11/21/2025
3	FENCE COATING REVISION		6/13/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025



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DETAILS

2025  
ADRON THOMPSON SITE  
IMPROVEMENTS

PROJECT LOCATION:  
HILLSBOROUGH, NORTH CAROLINA

CLIENT/OWNER:  
TOWN OF HILLSBOROUGH  
NORTH CAROLINA

DATE: 02/26/2025

DRAWN: CNH

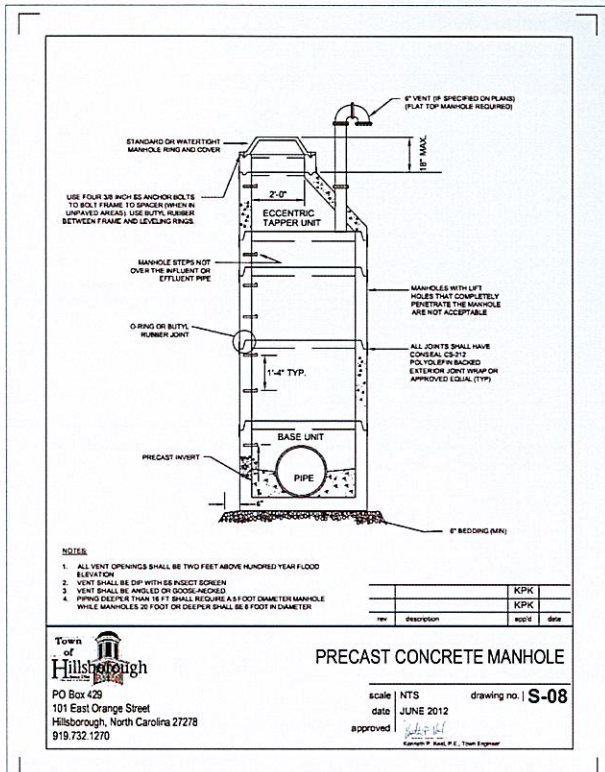
DESIGNED: CNH

REVIEWED: CNH

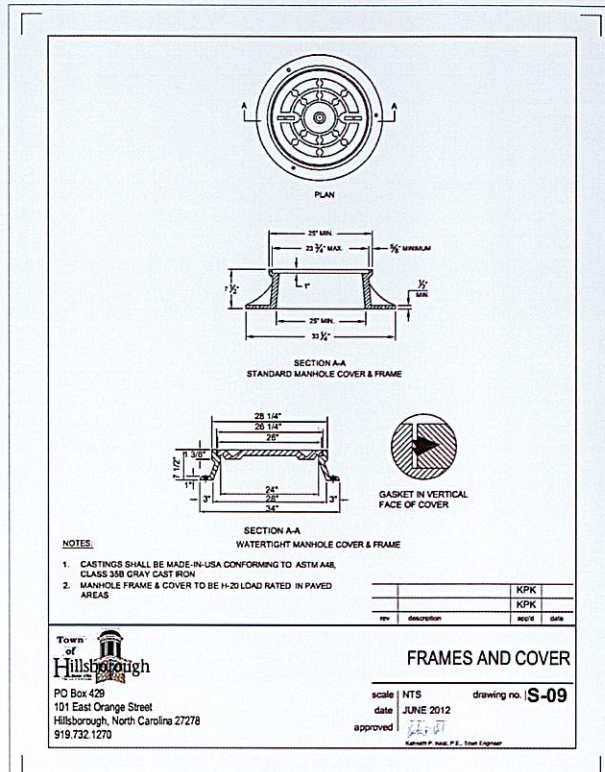
APPROVED: CNH

SCALE: N/A

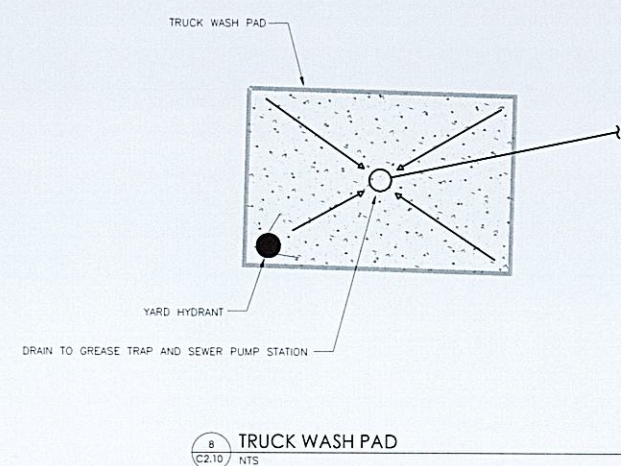
**C-6.0**



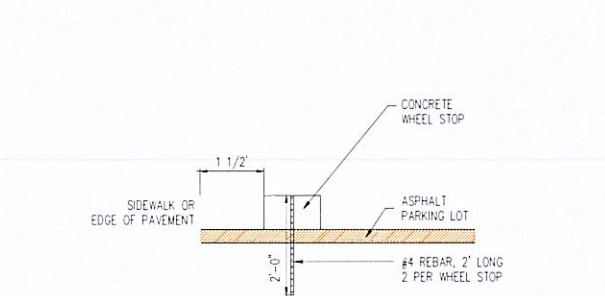
6 SANITARY SEWER MANHOLE  
 C2.10 NTS



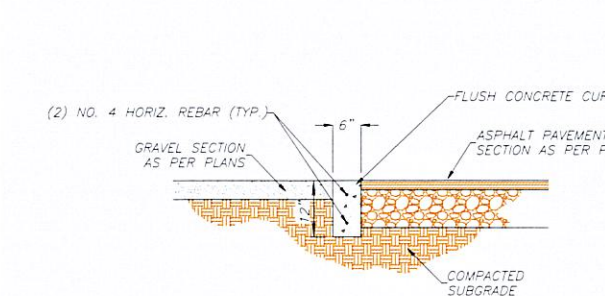
7 SANITARY SEWER FRAME AND COVER  
 C2.10 NTS



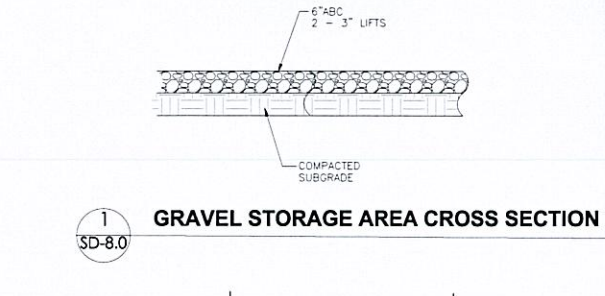
8 TRUCK WASH PAD  
 C2.10 NTS



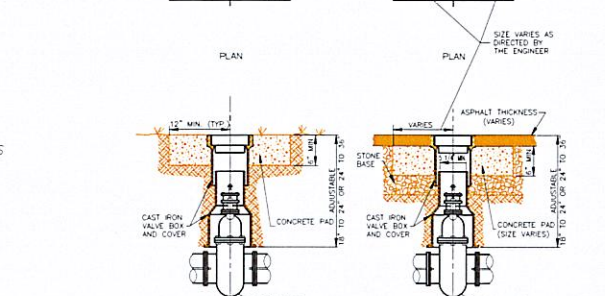
1 WHEEL STOP  
 C800 NTS



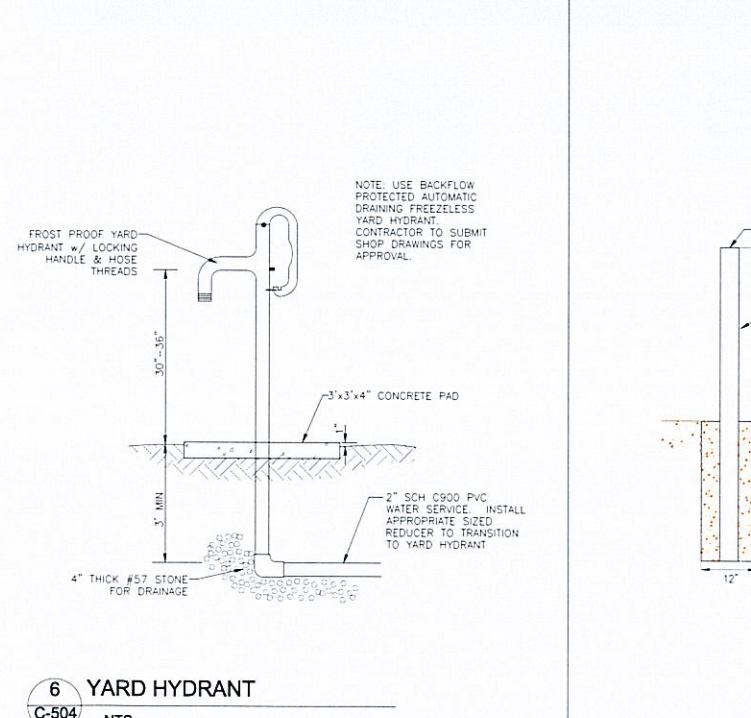
7A ASPHALT TO GRAVEL TRANSITION - FLUSH CURB  
 C800 NTS



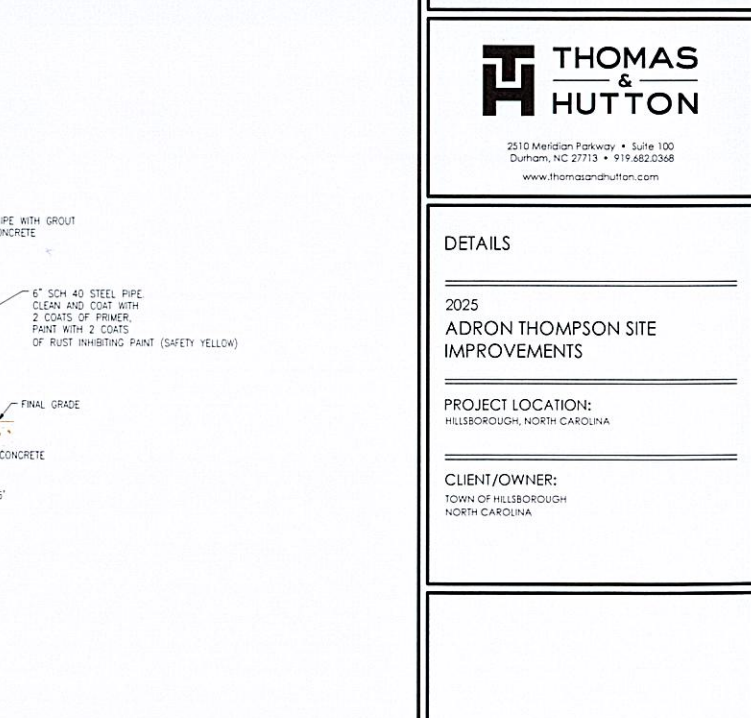
1 GRAVEL STORAGE AREA CROSS SECTION  
 SD-8.0



4 VALVE BOX  
 C-504 NTS



6 YARD HYDRANT  
 C-504 NTS



2 6" BOLLARD  
 C801 NTS

NO.	REVISIONS	BY	DATE
3	FLOOD PROTECTION REVISIONS	CH	11/21/2025
2	RESPONSE TO COMMENTS	T&H	5/15/2025
1	RESPONSE TO COMMENTS	T&H	4/16/2025

NORTH CAROLINA  
PROFESSIONAL  
SEAL  
023461  
ENGINEER  
CHARLES N. HILL, JR.

NORTH CAROLINA  
THOMAS & HUTTON  
ENGINEERING CO.  
No. F-0871  
STATE OF AUTHORIZATION

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**DETAILS**

2025  
 ADRON THOMPSON SITE  
 IMPROVEMENTS

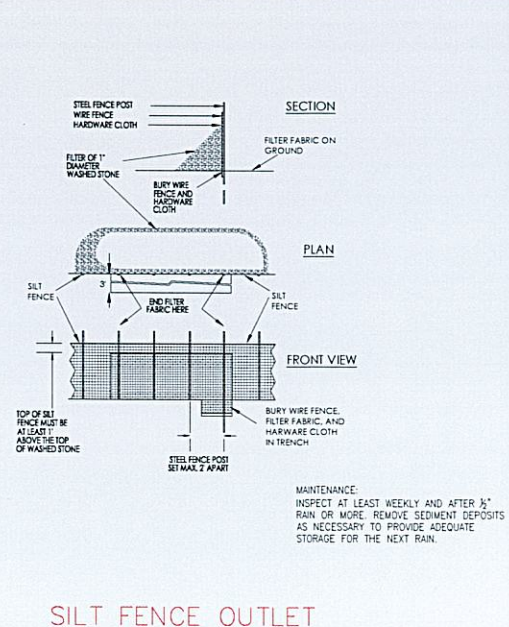
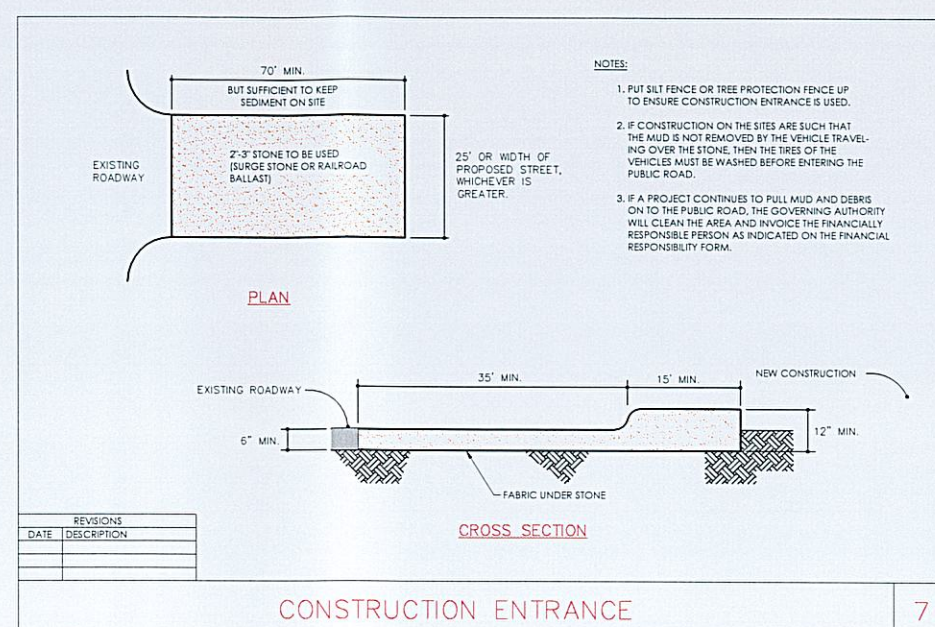
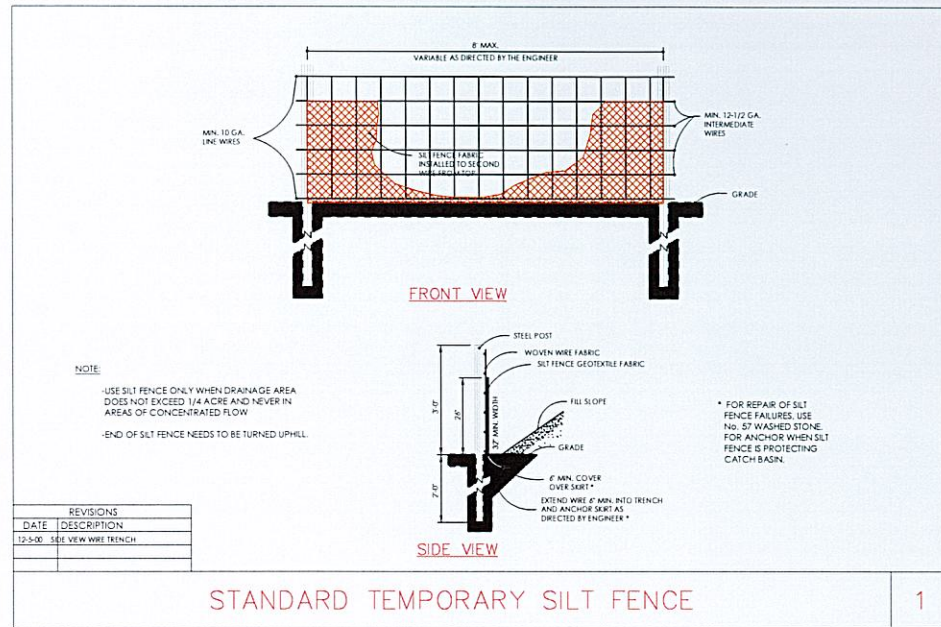
PROJECT LOCATION:  
 HILLSBOROUGH, NORTH CAROLINA

CLIENT/OWNER:  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA

DATUM: HORIZ: NAD83      VERT: NAVD88

JOB NO: 30833  
 DATE: 02/26/2025  
 DRAWN: CNH  
 DESIGNED: CNH  
 REVIEWED:  
 APPROVED:  
 SCALE: N/A

C-6.1



**CONSTRUCTION SEQUENCE**

**Pre Construction**

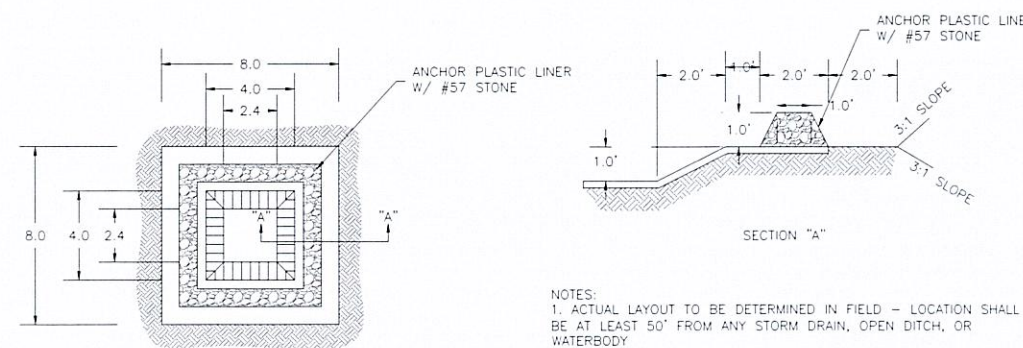
- Verify that all approvals and permits necessary to begin and complete the project are in hand. Approval and permits must be obtained prior to disturbance so that work will not be interrupted or delayed due to the lack of approved plans.
- Schedule and hold a preconstruction conference before starting demolition, clearing or grading with the owner, contractor responsible for grading and erosion control, person responsible for supervising implementation of the erosion control plan, Town of Hillsborough staff, and the NCDEQ Erosion Control Inspector. Town staff will set up this meeting with all required parties if contact information for said parties is made available.
- Install a rural type mailbox on the site to hold a copy of the approved erosion control plan and to provide a place for the inspector(s) to leave inspection reports, compliance notices, etc. Place the mailbox in a convenient location, such as at the entrance to the site or next to the construction trailer. Erosion control personnel will leave correspondence in the box and raise the red flag if personnel responsible for erosion control cannot be located on the site. Site personnel should check the box daily.

**Construction**

- Install silt fence and tree protection fence. Tree protection fence must be inspected and approved by Town staff prior to beginning land disturbance. Clear and demo areas shown inside of the limits of disturbance as necessary to begin construction. Limit disturbance to areas necessary for construction activities at that time. Stabilize disturbed areas as soon as possible.
- Demo existing utilities as shown and construct new storm drainage. Install inlet protection around new inlets immediately after construction. Seal all junction boxes from stormwater intake from surface. Seal any inlets to stormwater structures not protected by inlet projection.
- Minimize the amount of area disturbed at any one time.
- During construction, some temporary measures will be removed to allow construction of permanent facilities.
- If it is determined during the course of construction that significant sediment is leaving the site despite proper implementation and maintenance of the approved erosion control plan, the person responsible for the land disturbing activity is obligated to take additional protective action.
- Inspect and maintain the erosion control devices so they continue to function properly. Refer to the instructions in the erosion control plan for specific instructions for each device. The person responsible for erosion control is also responsible for taking the initiative in inspecting and maintaining these devices. Do not wait for erosion control personnel to point out the need for repairs and maintenance. Keep mud and debris off the public street at all times. If mud or debris is tracked from the site, use a shovel and broom to remove it immediately. IF MUD AND DEBRIS ARE NOT KEPT OFF THE STREET, ENFORCEMENT ACTION (REVOKING THE GRADING PERMIT AND/OR A STOP WORK ORDER) MAY BE TAKEN!
- Permanently stabilize all disturbed areas. Refer to seeding schedule for types of stabilization to be used.
- When construction is completed, remove all temporary erosion control devices after the drainage area above has been sufficiently stabilized to restrain erosion. Remove and properly dispose of accumulated sediment and the debris from the devices, and stabilize the location.
- Arrange a final inspection with the erosion control inspector to confirm that all requirements of the approved erosion control plan have been completed.

**5 CONSTRUCTION SEQUENCE**

8.3 NTS



- NOTES:  
 1. ACTUAL LAYOUT TO BE DETERMINED IN FIELD - LOCATION SHALL BE AT LEAST 50' FROM ANY STORM DRAIN, OPEN DITCH, OR WATERBODY.  
 2. THE "CONCRETE WASHOUT" SIGN SHALL BE INSTALLED WITHIN 30 FEET OF THE TEMPORARY CONCRETE WASHOUT FACILITY.  
 3. PIT CAPACITY IS MINIMUM OF 8 CU FT PER 10 CU YD OF CONCRETE.  
 4. CONCRETE WILL BE REMOVED FROM THE PIT ONCE IT REACHES HALF FULL.  
 5. CONTRACTOR TO COORDINATE WITH USAGE CONTRACTING OFFICER FOR PROPER DISPOSAL OF CONCRETE.

**2 CONCRETE WASHOUT**

8.3 NTS

**FALL/WINTER/SPRING TEMPORARY COVER** AUGUST 15 - MAY 1

Lime	100 lbs/1000 sf
10-10-10 Fertilizer	25 lbs/1000 sf
Oat Seed	2 lbs/1000 sf
Rye Grain Seed	1 lbs/1000 sf
Straw Mulch *	100 lbs/1000 sf

**SUMMER TEMPORARY COVER** MAY 1 - AUGUST 15

Lime	100 lbs/1000 sf
10-10-10 Fertilizer	15 lbs/1000 sf
Browntop Millet Seed	1 lbs/1000 sf
Straw Mulch *	100 lbs/1000 sf

**SPRING/FALL PERMANENT COVER** MARCH 1 - APRIL 30

Lime	100 lbs/1000 sf
10-10-10 Fertilizer	25 lbs/1000 sf
Improved Turf Type Fine Fescue Seed	8 lbs/1000 sf
Straw Mulch *	100 lbs/1000 sf

**SUMMER PERMANENT COVER** APRIL 1 - AUGUST 15

GRASS	PLANTING DATE 1	SEEDS 2	SPRIGS 3	STOLONS
BERMUDAGRASS	APRIL-JULY	1-2	75	3-5
BERMUDAGRASS(HYBRID)	APRIL-JULY	-	75	3-5
CENTPEGRASS	MARCH-JULY	25-50	75	-
ST.AUGUSTINEGRASS	APRIL-JULY	-	1.0	-
TALL FESCUE	SEPT-OCT 15	6	-	-
ZOYSIAGRASS	MAY-JULY	50-1.0	25	3-5

- OPTIMUM DATE OF PLANTING. SEEDING BEYOND THESE DATES INCREASES THE CHANCE OF FAILURE.
- POUNDS PER 1000 SQ.FT.
- BUSHELS PER 1000 SQ.FT.

Seeded Preparation: Remove rocks, stumps, roots, etc. Apply lime and fertilizer then top the soil 4 to 6 inches to mix the nutrients into the soil and to loosen and roughen it to receive seed.

Seed Temporary cover to stabilize temporary sedimentation control measures and other accomplished. If planting season is not suitable for installation of permanent cover. Contractor shall install temporary cover suitable for that season and reseed with permanent grass at earliest possible date.

\* Anchor straw mulch by applying an asphalt binder emulsion at a rate of 10 gallons per 1000 SF, or install jute, paper or twine netting or excelsior mats staked to ground according to the manufacturer's instructions.

**STABILIZATION TIME TABLE**

Ongoing Activity: Land left exposed shall be planted or otherwise provided with temporary ground cover, devices, or structures sufficient to restrain erosion within the applicable time period after completion of any phase of grading or period of inactivity as follows:  
 seven days for a steep slope;  
 ten days for a moderate slope;  
 14 days for land with no slope or inclination.

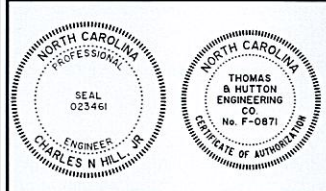
For purposes of this section, a moderate slope means an inclined area, the inclination of which is less than or equal to three units of horizontal distance to one unit of vertical distance; and a steep slope means an inclined area, the inclination of which is greater than three units of horizontal distance to one unit of vertical distance.

Completed Activity: For any area of land-disturbing activity where grading activities have been completed, temporary or permanent ground cover sufficient to restrain erosion shall be provided as soon as practicable, but in no case later than seven days after completion of grading.

- "EXPOSED" AREAS INCLUDE, BUT ARE NOT LIMITED TO:
- AREAS CLEARED FOR ROADWAY CONSTRUCTION.
  - AREAS CLEARED ON RESIDENTIAL BUILDING LOTS.
  - DRAINAGE EASEMENTS AND OPEN DRAINAGE CHANNELS.
  - SEDIMENT AND EROSION CONTROL MEASURES (SEDIMENT TRAPS, DIVERSION DITCHES, ETC.) AND THE AREAS ADJACENT TO SUCH MEASURES.

NOTE: BASE BID TO INCLUDE ANY TEMPORARY SEEDING REQUIRED

NO.	REVISIONS	BY	DATE
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1	RESPONSE TO COMMENTS	T&H	4/16/2025



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**DETAILS**

2025  
 ADRON THOMPSON SITE  
 IMPROVEMENTS

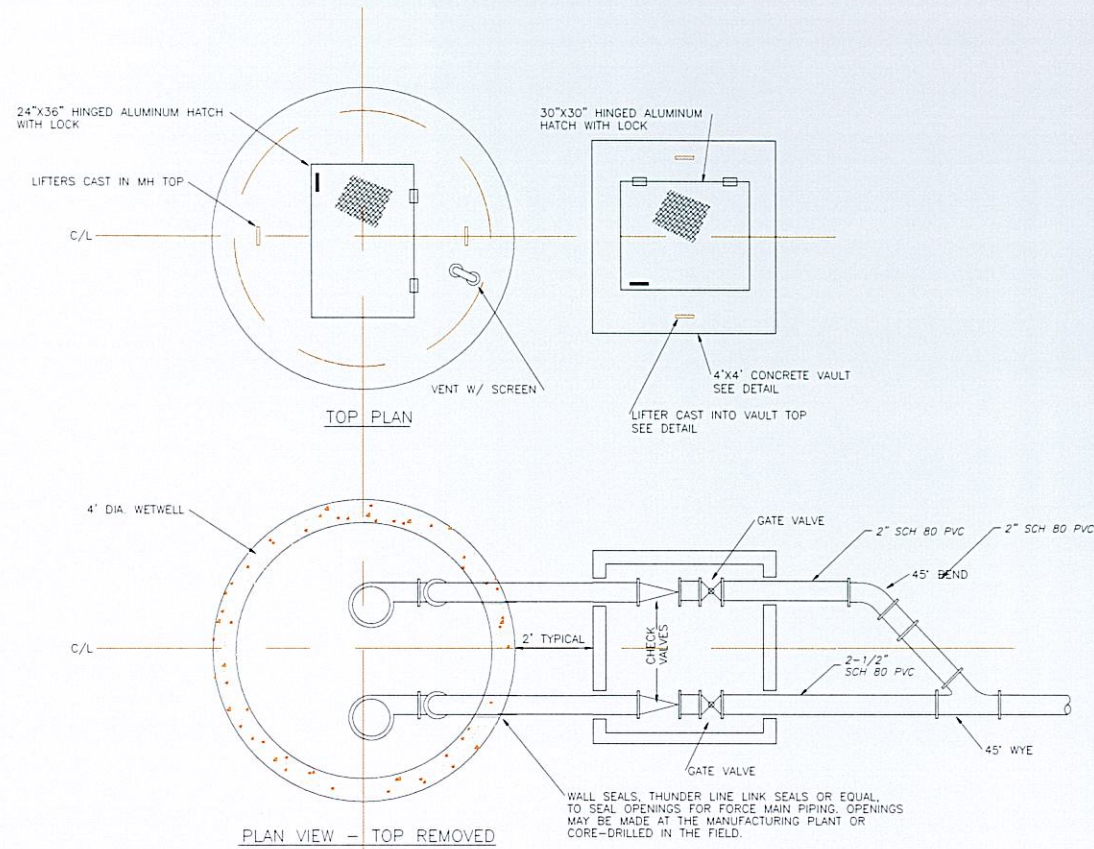
PROJECT LOCATION:  
 HILLSBOROUGH, NORTH CAROLINA

CLIENT/OWNER:  
 TOWN OF HILLSBOROUGH  
 NORTH CAROLINA

DATUM: HORIZ: NAD83 VERT: NAVD88

JOB NO:	30833
DATE:	02/26/2025
DRAWN:	CNH
DESIGNED:	CNH
REVIEWED:	
APPROVED:	
SCALE:	N/A

**C-6.2**



**GRINDER PUMP REQUIREMENTS**

TWO GRINDER PUMPS WILL BE INSTALLED AS A DUPLEX SYSTEM. THE PUMPS WILL BE SINGLE PHASE, 3450 RPM AND RATED AT A MINIMUM OF 2.4 HORSEPOWER. ACCEPTABLE PUMPS ARE LIBERTY 3684 LSG OR APPROVED EQUAL.

CONTRACTOR SHALL SUBMIT PUMP DATA FOR APPROVAL BY ENGINEER PRIOR TO PURCHASE OF PUMPS.

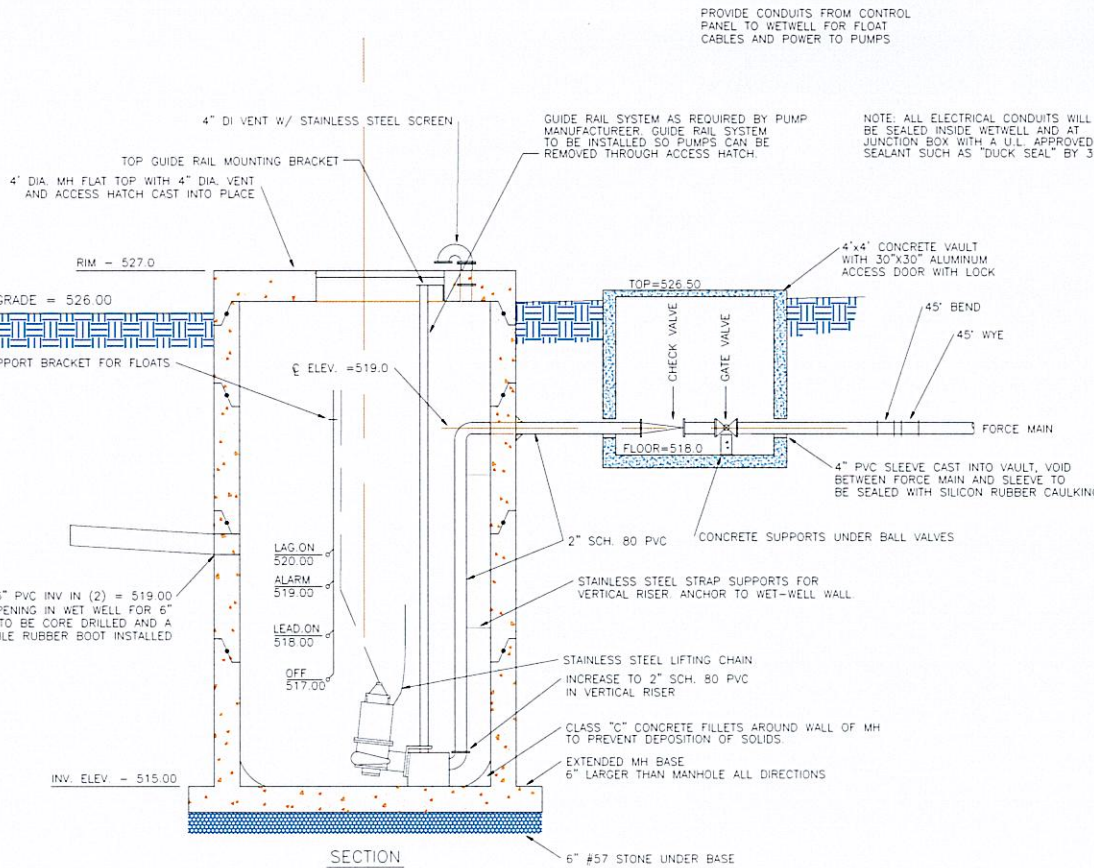
**ACCESS DOOR REQUIREMENTS**

BOTH ACCESS DOORS WILL BE CAST INTO THEIR RESPECTIVE CONCRETE TOP. THE DOORS WILL BE ALUMINUM AND DESIGNED FOR A MINIMUM LIVE LOAD OF 300 POUNDS PER SQUARE FOOT. THE DOORS WILL OPEN 90 DEGREES AND LOCK IN THE OPEN POSITION. THE ACCESS DOOR OVER THE WET WELL WILL BE INSTALLED IN A MANNER TO ALLOW THE PUMPS TO BE REMOVED THROUGH THE DOOR. EACH DOOR WILL HAVE A RETRACTABLE HANDLE AND A LOCKING HASP. THE HINGES AND ATTACHING HARDWARE WILL BE STAINLESS STEEL.

**CONTROL PANEL REQUIREMENTS**

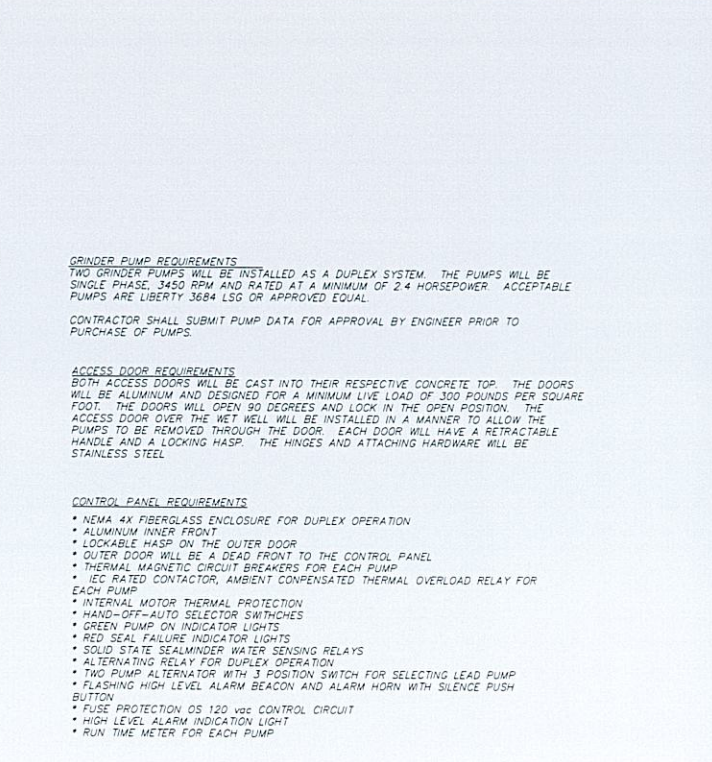
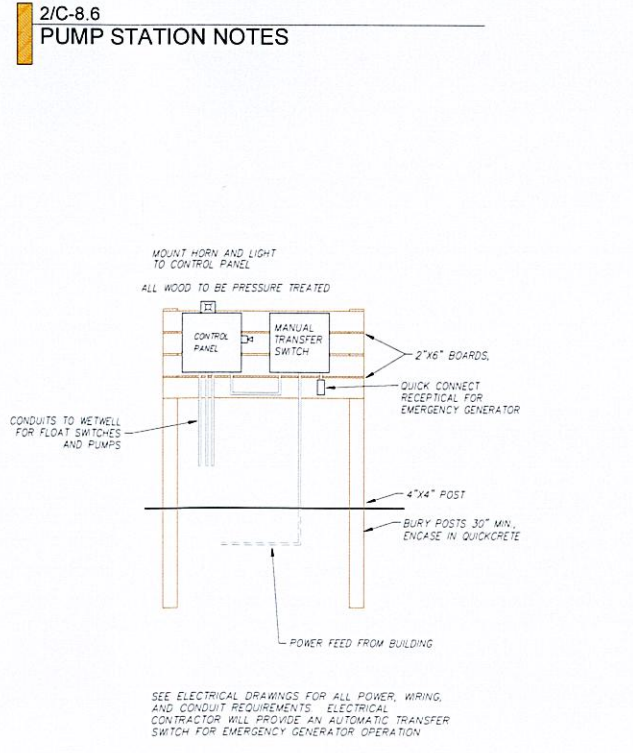
- NEMA 4X FIBERGLASS ENCLOSURE FOR DUPLEX OPERATION
- ALUMINUM INNER FRONT
- LOCKABLE HASP ON THE OUTER DOOR
- OUTER DOOR WILL BE A DEAD FRONT TO THE CONTROL PANEL
- THERMAL MAGNETIC CIRCUIT BREAKERS FOR EACH PUMP
- IEC RATED CONTACTOR, AMBIENT COMPENSATED THERMAL OVERLOAD RELAY FOR EACH PUMP
- INTERNAL MOTOR THERMAL PROTECTION
- HAND-OFF-AUTO SELECTOR SWITCHES
- GREEN PUMP ON INDICATOR LIGHTS
- RED SEAL FAILURE INDICATOR LIGHTS
- SOLID STATE SEALMINDER WATER SENSING RELAYS
- ALTERNATING RELAY FOR DUPLEX OPERATION
- TWO PUMP ALTERNATOR WITH 3 POSITION SWITCH FOR SELECTING LEAD PUMP
- FLASHING HIGH LEVEL ALARM BEACON AND ALARM HORN WITH SILENCE PUSH BUTTON
- FUSE PROTECTION ON 120 VAC CONTROL CIRCUIT
- HIGH LEVEL ALARM INDICATION LIGHT
- RUN TIME METER FOR EACH PUMP

SEE ELECTRICAL DRAWINGS FOR ALL POWER, WIRING, AND CONDUIT REQUIREMENTS. ELECTRICAL CONTRACTOR WILL PROVIDE AN AUTOMATIC TRANSFER SWITCH FOR EMERGENCY GENERATOR OPERATION.



**CONCRETE WASHOUT**

1/C-8.6  
8.3  
NTS  
PUMP STATION



**DETAILS**

2025  
ADRON THOMPSON SITE IMPROVEMENTS

PROJECT LOCATION:  
HILLSBOROUGH, NORTH CAROLINA

CLIENT/OWNER:  
TOWN OF HILLSBOROUGH  
NORTH CAROLINA

NO.	REVISIONS	BY	DATE
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1	RESPONSE TO COMMENTS	T&H	4/16/2025

**THOMAS & HUTTON**  
ENGINEERS  
CARLES N HILL, JR.  
SEAL 023468

**THOMAS & HUTTON**  
ENGINEERING CO.  
No. P-0871  
STATE OF NORTH CAROLINA  
LICENSED PROFESSIONAL ENGINEER

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**C-6.3**



# MATRIX

Health & Safety Consultants, L.L.C.

August 20, 2019

RND Architects PA  
3608 University Drive Suite 204  
Durham, NC 27707

Attention: Karylee Laird

Subject: Limited Survey for the Presence of Asbestos-Containing  
Materials and Lead-Based Paints  
715 Dimmocks Mill Road  
Hillsborough, North Carolina  
Matrix Job Number: 190854

Dear Mrs. Laird:

Matrix Health & Safety Consultants, L.L.C. (Matrix) is pleased to present this report of the limited survey to identify the presence of asbestos-containing materials and lead-based paints at the referenced project. In addition, equipment assumed to contain mercury (thermostats and fluorescent bulbs), PCBs (light ballasts), and batteries (backup emergency lights and alarm systems) were also identified. This report includes a description of the scope of services performed, results of the survey, and recommendations.

## PROJECT INFORMATION

Matrix understands that the subject property is scheduled for renovations in the near future. In order to determine if asbestos or lead-based paint is present at the property, Matrix performed a limited survey to identify these materials. The survey was performed on August 14, 2019 by Matrix inspector John Pearson (NC Asbestos Inspector No. 12246, NC Lead Risk Assessor 120185). Roofing of the original structure was excluded from this survey at owners request.

## ASBESTOS SURVEY PROCEDURES

The survey began with a visual inspection of accessible areas for the presence of suspect asbestos-containing materials that may be disturbed during renovation activities. Both friable and nonfriable suspect asbestos-containing materials were considered during the course of the survey.

Friable materials are those materials that can be pulverized or reduced to powder by hand pressure. A sampling strategy was determined and bulk samples of suspect ACM's were obtained. Suspect ACM's were grouped based on material homogeneity. A homogeneous area is an area which contains materials that seem by texture, color and wear to be uniform and applied during the same general time period.

In order to determine if the suspect materials documented during the survey contained asbestos, the materials were sampled and delivered to Eurofins CEI in Cary, NC for laboratory analysis. Each sample obtained was placed in a sealed container and labeled with a consecutive number, location and date. This information was logged on our Asbestos Bulk Sampling Record sheet and then sent to the laboratory. A signed chain-of-custody form is maintained with the samples until they are returned or disposed of.

## ASBESTOS ANALYSIS PROCEDURES

The collected asbestos samples were analyzed using Polarized Light Microscopy (PLM) in conjunction with dispersion staining techniques using EPA Method 600/R-93/116. The bulk laboratory analysis provided the asbestos content (positive or negative), percentage of asbestos, asbestos type and identification of other non-asbestos fibers. A material is considered by the EPA to be asbestos-containing if asbestos is present in a quantity **greater than one percent (1%)**. The results of the laboratory analysis are presented in the attached laboratory analytical report.

## ASBESTOS SURVEY RESULTS

The following table includes the materials identified as asbestos-containing during our survey. For a list of all materials tested, please refer to the laboratory analytical report.

### Asbestos Survey Results

MATERIAL	GENERAL LOCATION	TYPE AND PERCENTAGE OF ASBESTOS PRESENT
Window Caulking	Interior Original Structure	3% Chrysotile
Flashing Mastic	Exterior Basement Rear Left Original Structure	3% Chrysotile
Door Caulking	Original Structure	2% Chrysotile

Analysis Method: EPA 600/R-93/116 Method using Polarized Light Microscopy

## LEAD-BASED PAINT SURVEY PROCEDURES

The lead-based paint survey began with our inspectors/risk assessors walking the subject property and documenting testing combinations and selecting test locations. The walls/sides of the property are distinguished by Side A, B, C, or D. Wall or side A is typically the side of the main entrance, then moving clockwise would be wall/side B, C, or D. After the testing strategy was determined, Matrix used an LPA-1 Lead Paint Spectrum Analyzer (XRF) to determine the lead content (mg/cm<sup>2</sup>) of painted surfaces at the subject property. For the purpose of this survey, paints with concentrations of 1.0 mg/cm<sup>2</sup> or greater were considered lead-based paint.

Below you will find the lead-based paint results summarizing identified components with concentrations **greater than or equal to 1.0 mg/cm<sup>2</sup>** of lead. However, detectable lead quantities less than 1.0 mg/cm<sup>2</sup> may constitute a lead dust hazard even though it is not a lead-based paint as

defined by Federal Standards. For a list of all surfaces tested and XRF results, refer to the attached XRF Testing Report.

**Lead-Based Paint Survey Results - Exterior**

COMPONENT	SUBSTRATE	COLOR	LOCATION	LEAD CONTENT (mg/cm <sup>2</sup> )	CONDITION
Window Sash	Metal	Black and Green	Original Structure	1.0 - 1.1	Deteriorated
Exterior Railing	Metal	Gray	D Right	1.8	Deteriorated
Door Header	Metal	Green	Original Structure	2.6	Deteriorated

**Lead-Based Paint Survey Results – Basement Workshop - Interior**

COMPONENT	SUBSTRATE	COLOR	LOCATION	LEAD CONTENT (mg/cm <sup>2</sup> )	CONDITION
Stair Tread	Concrete	Gray	C/D Corner	3.5	Deteriorated
Railing	Metal	Black	C/D Corner	1.4	Deteriorated

**Lead-Based Paint Survey Results – Parts Room - Interior**

COMPONENT	SUBSTRATE	COLOR	LOCATION	LEAD CONTENT (mg/cm <sup>2</sup> )	CONDITION
Window Sash	Metal	Green	B Left	1.0	Deteriorated
Railing	Metal	Gray	D Center	10.2	Deteriorated
Stair Tread	Concrete	Gray	D Center	1.7	Deteriorated

**RECOMMENDATIONS**

The National Emissions Standard for Hazardous Air Pollutants (NESHAP) requires the removal of asbestos-containing materials prior to renovation or demolition activities, which would disturb them. Matrix recommends that asbestos-containing materials that will be disturbed during renovation/demolition be removed by a qualified asbestos abatement contractor, using North Carolina accredited personnel, in accordance with applicable federal and state regulations governing the removal of asbestos-containing materials.

Matrix recommends the following options for treatment of identified lead-based hazards or the prevention of future lead-based paint hazards. Any or all of the options listed below will reduce or eliminate the hazard.

Surfaces tested during the course of this inspection were considered to be “intact” to “deteriorated” condition. Surfaces in “deteriorated” condition are considered to be “lead-based paint hazards” as defined in Title X and should be addressed through abatement or interim controls.

Abatement is a measure or measures designed to permanently eliminate lead-based paint hazards.

1. Replacement of LBP Coated Building Components
  - a. Windows
  - b. Railings
  
2. Encapsulation - Stair Treads and Door Headers
  - a. Liquid applied or adhesively bonded covering
  - b. Manufacturer must provide a 20-year warranty
  - c. Property Owner must conduct periodic visual monitoring
  - d. Certified risk assessors must approve the use of encapsulants for a specific surface.

The Occupational Safety and Health Administration (OSHA) Lead in Construction Standard (29 CFR 1926.62) states that “negative” readings (i.e. those below the HUD/EPA definition of what constitutes LBP [1.0 mg/cm<sup>2</sup>]) **does not** relieve contractors from performing exposure assessments (personal air monitoring) on their employees per the OSHA Lead Standard, and should not be interpreted as lead free. Although a reading may indicate “negative”, airborne lead concentrations still may exceed the OSHA Action Level or the OSHA Permissible exposure limit (PEL) depending on the work activity. Additionally, Matrix recommends that activities that cause the disturbance of lead-based paint be performed by North Carolina Certified workers and supervisors.

## MERCURY AND PCB CONTAINING EQUIPMENT

Matrix performed a site survey of the subject facility to document and identify mercury and PCB containing equipment. This survey does not include laboratory analysis for identifying or quantifying PCB’s and mercury in equipment. The following table lists potential sources for these substances.

### MERCURY AND PCB CONTAINING EQUIPMENT RESULTS

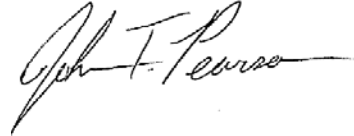
BALLAST	BATTERIES	BULBS	MERCURY
38	0	76	0

These items should be handled and disposed of as Universal Wastes in accordance with EPA regulations.

Matrix appreciates the opportunity to have provided these services. We would be glad to discuss any of the results contained in this report, at your convenience. If there are any questions concerning this report or results, please contact us.

Sincerely,

**MATRIX HEALTH & SAFETY CONSULTANTS, L.L.C.**

A handwritten signature in black ink, appearing to read "John T. Pearson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

John T. Pearson  
Project Manager

Attachments:            Laboratory Analysis Reports  
                                 XRF Testing Data

## **Laboratory Analysis Reports**

August 20, 2019

Matrix Health & Safety Consultants  
2900 Yonkers Road  
Raleigh, NC 27604

**CLIENT PROJECT:** 715 Dimmocks Mill Road  
**CEI LAB CODE:** B194511

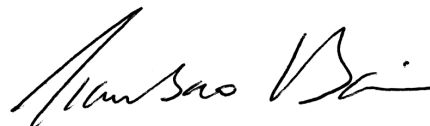
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on August 15, 2019. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH  
Laboratory Director



CEI

**AMENDED**

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**ASBESTOS ANALYTICAL REPORT**  
**By: Polarized Light Microscopy**

Prepared for

**Matrix Health & Safety Consultants**

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CLIENT PROJECT: 715 Dimmocks Mill Road

LAB CODE: B194511

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 08/16/19

TOTAL SAMPLES ANALYZED: 26

# SAMPLES >1% ASBESTOS: 5



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# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: 715 Dimmocks Mill Road

LAB CODE: B194511

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
715-1		B68288	Gray	Brick Mortar	None Detected
715-2		B68289	Gray	Brick Mortar	None Detected
715-3		B68290	Green,Tan	Window Caulking	<b>Chrysotile 3%</b>
715-4		B68291	Green,Tan	Window Caulking	None Detected
715-5		B68292	White,Light Gray	Drywall/Joint Compound	None Detected
715-6		B68293	White,Light Gray	Drywall/Joint Compound	None Detected
715-7		B68294A	Brown,Off-white	Floor Tile	None Detected
		B68294B	Tan	Mastic	None Detected
715-8		B68295A	Brown,Off-white	Floor Tile	None Detected
		B68295B	Tan	Mastic	None Detected
715-9		B68296A	Tan	Vinyl Flooring	None Detected
		B68296B	Yellow	Mastic	None Detected
715-10		B68297A	Tan	Vinyl Flooring	None Detected
		B68297B	Yellow	Mastic	None Detected
715-11		B68298A	Gray	Floor Tile	None Detected
		B68298B	Yellow	Mastic	None Detected
715-12		B68299A	Gray	Floor Tile	None Detected
		B68299B	Yellow	Mastic	None Detected
715-13		B68300A	Beige,Off-white	Sheet Vinyl	None Detected
		B68300B	Yellow	Mastic	None Detected
715-14		B68301A	Beige,Off-white	Sheet Vinyl	None Detected
		B68301B	Yellow	Mastic	None Detected
715-15		B68302A	Brown,Off-white	Sheet Vinyl	None Detected
		B68302B	Yellow	Mastic	None Detected
715-16		B68303A	Brown,Off-white	Sheet Vinyl	None Detected
		B68303B	Yellow	Mastic	None Detected
715-17		B68304	Black,Brown	Roofing Shingle	None Detected
715-18		B68305	Black,Brown	Roofing Shingle	None Detected
715-19		B68306	Black	Roofing Paper	None Detected
715-20		B68307	Black	Roofing Paper	None Detected



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# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: 715 Dimmocks Mill Road

LAB CODE: B194511

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
715-21		B68308	Gray,Tan	Block Mortar	None Detected
715-22		B68309	Gray,Tan	Block Mortar	None Detected
715-23		B68310	Black	Flashing Mastic	<b>Chrysotile 3%</b>
715-24		B68311	Black	Flashing Mastic	<b>Chrysotile 3%</b>
715-25	Layer 1	B68312	White,Tan	Caulking	<b>Chrysotile 3%</b>
	Layer 2	B68312	Off-white,Green	Caulking	None Detected
	Layer 3	B68312	Black,Green	Caulking	None Detected
715-26	Layer 1	B68313	White,Tan	Caulking	<b>Chrysotile 3%</b>
	Layer 2	B68313	Off-white,Green	Caulking	None Detected
	Layer 3	B68313	Black,Green	Caulking	None Detected



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**AMENDED****ASBESTOS BULK ANALYSIS**

By: POLARIZING LIGHT MICROSCOPY

**Client:** Matrix Health & Safety Consultants  
 2900 Yonkers Road  
 Raleigh, NC 27604

**Lab Code:** B194511  
**Date Received:** 08-15-19  
**Date Analyzed:** 08-16-19  
**Date Reported:** 08-16-19

**Project:** 715 Dimmocks Mill Road

**ASBESTOS BULK PLM, EPA 600 METHOD**

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
715-1 B68288	Brick Mortar	Heterogeneous Gray Non-fibrous Bound	35%	Calc Carb	None Detected
			65%	Silicates	
715-2 B68289	Brick Mortar	Heterogeneous Gray Non-fibrous Bound	35%	Calc Carb	None Detected
			65%	Silicates	
715-3 B68290	Window Caulking	Heterogeneous Green,Tan Fibrous Bound	90%	Caulk	<b>3% Chrysotile</b>
			7%	Silicates	
715-4 B68291	Window Caulking	Heterogeneous Green,Tan Fibrous Bound	<1%	Cellulose	None Detected
			95%	Caulk	
715-5 B68292	Drywall/Joint Compound	Heterogeneous White,Light Gray Fibrous Bound	3%	Cellulose	None Detected
			77%	Gypsum	
715-6 B68293	Drywall/Joint Compound	Heterogeneous White,Light Gray Fibrous Bound	3%	Cellulose	None Detected
			77%	Gypsum	
715-7 B68294A	Floor Tile	Homogeneous Brown,Off-white Non-fibrous Bound	100%	Vinyl	None Detected
			10%	Calc Carb	
			10%	Silicates	



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**AMENDED****ASBESTOS BULK ANALYSIS**

By: POLARIZING LIGHT MICROSCOPY

**Client:** Matrix Health & Safety Consultants  
2900 Yonkers Road  
Raleigh, NC 27604

**Lab Code:** B194511  
**Date Received:** 08-15-19  
**Date Analyzed:** 08-16-19  
**Date Reported:** 08-16-19

**Project:** 715 Dimmocks Mill Road

**ASBESTOS BULK PLM, EPA 600 METHOD**

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous	Non-Fibrous			
B68294B	Mastic	Homogeneous Tan Fibrous Bound	<1%	Cellulose	95%	Mastic 5% Silicates	None Detected
<b>715-8</b> B68295A	Floor Tile	Homogeneous Brown,Off-white Non-fibrous Bound			100%	Vinyl	None Detected
B68295B	Mastic	Homogeneous Tan Fibrous Bound	<1%	Cellulose	95%	Mastic 5% Silicates	None Detected
<b>715-9</b> B68296A	Vinyl Flooring	Heterogeneous Tan Fibrous Bound	30% 10%	Cellulose Fiberglass	60%	Vinyl	None Detected
B68296B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	90%	Mastic 10% Silicates	None Detected
<b>715-10</b> B68297A	Vinyl Flooring	Heterogeneous Tan Fibrous Bound	30% 10%	Cellulose Fiberglass	60%	Vinyl	None Detected
B68297B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	90%	Mastic 10% Silicates	None Detected



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**AMENDED****ASBESTOS BULK ANALYSIS**

By: POLARIZING LIGHT MICROSCOPY

**Client:** Matrix Health & Safety Consultants  
 2900 Yonkers Road  
 Raleigh, NC 27604

**Lab Code:** B194511  
**Date Received:** 08-15-19  
**Date Analyzed:** 08-16-19  
**Date Reported:** 08-16-19

**Project:** 715 Dimmocks Mill Road

**ASBESTOS BULK PLM, EPA 600 METHOD**

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous		Non-Fibrous	
<b>715-11</b> B68298A	Floor Tile	Homogeneous Gray Non-fibrous Bound			100% Vinyl	None Detected
B68298B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	90% Mastic 10% Silicates	None Detected
<b>715-12</b> B68299A	Floor Tile	Homogeneous Gray Non-fibrous Bound			100% Vinyl	None Detected
B68299B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	90% Mastic 10% Silicates	None Detected
<b>715-13</b> B68300A	Sheet Vinyl	Heterogeneous Beige, Off-white Fibrous Bound	40% 10%	Cellulose Fiberglass	50% Vinyl	None Detected
B68300B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	95% Mastic 5% Silicates	None Detected
<b>715-14</b> B68301A	Sheet Vinyl	Heterogeneous Beige, Off-white Fibrous Bound	40% 10%	Cellulose Fiberglass	50% Vinyl	None Detected



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**AMENDED****ASBESTOS BULK ANALYSIS**

By: POLARIZING LIGHT MICROSCOPY

**Client:** Matrix Health & Safety Consultants  
2900 Yonkers Road  
Raleigh, NC 27604

**Lab Code:** B194511  
**Date Received:** 08-15-19  
**Date Analyzed:** 08-16-19  
**Date Reported:** 08-16-19

**Project:** 715 Dimmocks Mill Road

**ASBESTOS BULK PLM, EPA 600 METHOD**

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
B68301B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	95%	Mastic 5% Silicates	None Detected
<b>715-15</b> B68302A	Sheet Vinyl	Heterogeneous Brown,Off-white Fibrous Bound	40%	Cellulose	50%	Vinyl	None Detected
B68302B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	95%	Mastic 5% Silicates	None Detected
<b>715-16</b> B68303A	Sheet Vinyl	Heterogeneous Brown,Off-white Fibrous Bound	40%	Cellulose	50%	Vinyl	None Detected
B68303B	Mastic	Homogeneous Yellow Fibrous Bound	<1%	Cellulose	95%	Mastic 5% Silicates	None Detected
<b>715-17</b> B68304	Roofing Shingle	Heterogeneous Black,Brown Fibrous Bound	15%	Fiberglass	45%	Tar 25% Gravel 15% Calc Carb	None Detected
<b>715-18</b> B68305	Roofing Shingle	Heterogeneous Black,Brown Fibrous Bound	15%	Fiberglass	45%	Tar 25% Gravel 15% Calc Carb	None Detected

**Client:** Matrix Health & Safety Consultants  
 2900 Yonkers Road  
 Raleigh, NC 27604

**Lab Code:** B194511  
**Date Received:** 08-15-19  
**Date Analyzed:** 08-16-19  
**Date Reported:** 08-16-19

**Project:** 715 Dimmocks Mill Road

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
<b>715-19</b> B68306	Roofing Paper	Homogeneous Black Fibrous Bound	60%	Cellulose Fiberglass	40%	Tar	None Detected
<b>715-20</b> B68307	Roofing Paper	Homogeneous Black Fibrous Bound	60%	Cellulose Fiberglass	40%	Tar	None Detected
<b>715-21</b> B68308	Block Mortar	Heterogeneous Gray,Tan Fibrous Bound	<1%	Cellulose	40%	Calc Carb Silicates	None Detected
<b>715-22</b> B68309	Block Mortar	Heterogeneous Gray,Tan Fibrous Bound	<1%	Cellulose	40%	Calc Carb Silicates	None Detected
<b>715-23</b> B68310	Flashing Mastic	Heterogeneous Black Fibrous Bound	<1%	Fiberglass	80%	Binder Calc Carb	<b>3% Chrysotile</b>
Lab Notes: Analyst opinion: Contamination from adjacent material							
<b>715-24</b> B68311	Flashing Mastic	Heterogeneous Black Fibrous Bound	<1%	Fiberglass	80%	Binder Calc Carb	<b>3% Chrysotile</b>
Lab Notes: Analyst opinion: Contamination from adjacent material							
<b>715-25</b> Layer 1 B68312	Caulking	Heterogeneous White,Tan Fibrous Bound			57%	Calc Carb	<b>3% Chrysotile</b>
					40%	Binder	



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# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Matrix Health & Safety Consultants  
2900 Yonkers Road  
Raleigh, NC 27604

**Lab Code:** B194511  
**Date Received:** 08-15-19  
**Date Analyzed:** 08-16-19  
**Date Reported:** 08-16-19

**Project:** 715 Dimmocks Mill Road

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS		ASBESTOS %
			Fibrous	Non-Fibrous	
Layer 2 B68312	Caulking	Heterogeneous	90%	Caulk	None Detected
		Off-white,Green	5%	Silicates	
		Non-fibrous	5%	Paint	
		Bound			
Layer 3 B68312	Caulking	Heterogeneous	95%	Caulk	None Detected
		Black,Green	5%	Paint	
		Non-fibrous			
		Bound			
<b>715-26</b> Layer 1 B68313	Caulking	Heterogeneous	57%	Calc Carb	<b>3% Chrysotile</b>
		White,Tan	40%	Binder	
		Fibrous			
		Bound			
Layer 2 B68313	Caulking	Heterogeneous	90%	Caulk	None Detected
		Off-white,Green	5%	Silicates	
		Non-fibrous	5%	Paint	
		Bound			
Layer 3 B68313	Caulking	Heterogeneous	95%	Caulk	None Detected
		Black,Green	5%	Paint	
		Non-fibrous			
		Bound			

---

**LEGEND:** Non-Anth = Non-Asbestiform Anthophyllite  
Non-Trem = Non-Asbestiform Tremolite  
Calc Carb = Calcium Carbonate

---

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

---

**REPORTING LIMIT:** <1% by visual estimation

---

**REPORTING LIMIT FOR POINT COUNTS:** 0.25% by 400 Points or 0.1% by 1,000 Points

---

**REGULATORY LIMIT:** >1% by weight

---

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID, location, volume and area as well as date and time of sampling.

**ANALYST:**

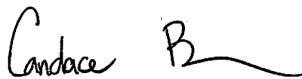


McLane Brown

**APPROVED BY:**



Tianbao Bai, Ph.D., CIH  
Laboratory Director



Candace Burrus

AMENDED due to Login Typographical Error -  
Incorrect Project Name



CEI

# CHAIN OF CUSTODY

26

730 SE Maynard Road, Cary, NC 27511  
 Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:	
CEI Lab Code:	B194511
CEI Lab I.D. Range:	B68288 - B68313

COMPANY INFORMATION	PROJECT INFORMATION
CEI CLIENT #:	Job Contact: John T. Pearson
Company: Matrix Health + Safety	Email / Tel: jtp@matrixhsc.com
Address: 2900 Yonkers Road Raleigh, NC 27604	Project Name: 715 Dimmock Mill Road
Email: jtp@matrixhsc.com	Project ID#:
Tel: 919 2363848 Fax:	PO #:
	STATE SAMPLES COLLECTED IN: NC

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM BULK	CARB 435	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	EPA AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR (PCME)	ISO 10312	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	ASTM 6281-15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05 (2010)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09 (2014)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM SOIL	ASTM D7521-16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM VERMICULITE	CINCINNATI METHOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM QUALITATIVE	IN-HOUSE METHOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS / SPECIAL INSTRUCTIONS:		<input checked="" type="checkbox"/> Accept Samples <input type="checkbox"/> Reject Samples	
Relinquished By:	Date/Time	Received By:	Date/Time
<i>[Signature]</i>	9-15-19 1:38	<i>[Signature]</i>	9/15 140

Samples will be disposed of 30 days after analysis



## **XRF Testing Data**

# 715 Dimmocks Mill Road

Matrix Health & Safety Consultants LLC

2900 Yonkers Road  
Raleigh, NC 27604

INSPECTION DATE: 8/14/2019 - 8/14/2019

INSTRUMENT TYPE: Heuresis Corp.  
Pb200i XRF Lead Paint Analyzer  
2364

ACTION LEVEL: 1.0 mg/cm<sup>2</sup>

STATEMENT:

# 715 Dimmocks Mill Road

Inspection Date: 8/14/2019 - 8/14/2019  
 Action Level: 1.0 mg/cm<sup>2</sup>  
 Total Readings: 83  
 Unit Started: 08/14/2019 12:06:04  
 Unit Ended: 08/14/2019 13:20:17

Inspection Site: 715 Dimmocks Mill Road  
 Hillsborough, NC 27278

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	Color	Floor	ROOM	Lead (mg/cm <sup>2</sup> )	Mode
1	Positive	Off			Calibration					1.1 mg/cm <sup>2</sup>	Action Level
2	Positive	Off			Calibration					1.0 mg/cm <sup>2</sup>	Action Level
3	Positive	Off			Calibration					1.0 mg/cm <sup>2</sup>	Action Level
4	Negative	Off			Calibration					0.0 mg/cm <sup>2</sup>	Action Level
5	Negative	Off			Calibration					0.0 mg/cm <sup>2</sup>	Action Level
6	Negative	Off			Calibration					-0.1 mg/cm <sup>2</sup>	Action Level
7	Negative	Off	Door	Metal	A Left	Intact	Green	First	Exterior	-0.1 mg/cm <sup>2</sup>	Action Level
8	Negative	Off	Door Casing	Wood	A Left	Intact	White	First	Exterior	0.2 mg/cm <sup>2</sup>	Action Level
9	Negative	Off	Railing	Metal	A Center	Deteriorated	Black	First	Exterior	0.2 mg/cm <sup>2</sup>	Action Level
10	Positive	Off	Window Sash	Metal	A Center	Deteriorated	Green	First	Exterior	1.1 mg/cm <sup>2</sup>	Action Level
11	Negative	Off	Railing	Metal	A Left	Intact	Green	First	Exterior	0.1 mg/cm <sup>2</sup>	Action Level
12	Positive	Off	Window Sash	Metal	B Right	Intact	Black	First	Exterior	1.0 mg/cm <sup>2</sup>	Action Level
13	Negative	Off	Door Casing	Metal	B Right	Intact	Gray	Basement	Exterior	0.1 mg/cm <sup>2</sup>	Action Level
14	Negative	Off	Door	Metal	B Right	Intact	Gray	Basement	Exterior	0.1 mg/cm <sup>2</sup>	Action Level
15	Negative	Off	Garage door	Metal	C Right	Intact	Green	Basement	Exterior	0.1 mg/cm <sup>2</sup>	Action Level
16	Negative	Off	Column	Metal	D Center	Intact	Black	Basement	Exterior	0.1 mg/cm <sup>2</sup>	Action Level
17	Negative	Off	Door	Metal	C Left	Intact	Green	Basement	Exterior	0.2 mg/cm <sup>2</sup>	Action Level
18	Negative	Off	Door Casing	Metal	C Left	Intact	Green	Basement	Exterior	0.1 mg/cm <sup>2</sup>	Action Level

# 715 Dimmocks Mill Road

Inspection Date: 8/14/2019 - 8/14/2019  
 Action Level: 1.0 mg/cm<sup>2</sup>  
 Total Readings: 83  
 Unit Started: 08/14/2019 12:06:04  
 Unit Ended: 08/14/2019 13:20:17

Inspection Site: 715 Dimmocks Mill Road  
 Hillsborough, NC 27278

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	Color	Floor	ROOM	Lead (mg/cm <sup>2</sup> )	Mode
19	Negative	Off	Stringer	Metal	D Right	Intact	Black	Basement	Exterior	0.2 mg/cm <sup>2</sup>	Action Level
20	Positive	Off	Railing	Metal	D Right	Deteriorated	Gray	Basement	Exterior	1.8 mg/cm <sup>2</sup>	Action Level
21	Negative	Off	Door Casing	Metal	D Center	Intact	Gray	Basement	Exterior	0.1 mg/cm <sup>2</sup>	Action Level
22	Negative	Off	Door	Metal	D Center	Intact	Gray	Basement	Exterior	0.0 mg/cm <sup>2</sup>	Action Level
23	Positive	Off	Door Header	Metal	D Center	Deteriorated	Green	Basement	Exterior	2.6 mg/cm <sup>2</sup>	Action Level
24	Negative	Off	Window Sash	Metal	D Left	Deteriorated	Black	Basement	Exterior	0.2 mg/cm <sup>2</sup>	Action Level
25	Negative	Off	Wall	Concrete	A-Upper	Deteriorated	Green	Basement	Workshop	0.3 mg/cm <sup>2</sup>	Action Level
26	Negative	Off	Wall	Concrete	B Right	Deteriorated	Green	Basement	Workshop	0.4 mg/cm <sup>2</sup>	Action Level
27	Negative	Off	Wall	Concrete	C Right	Deteriorated	Green	Basement	Workshop	0.2 mg/cm <sup>2</sup>	Action Level
28	Negative	Off	Door Casing	Wood	C Right	Deteriorated	Green	Basement	Workshop	0.1 mg/cm <sup>2</sup>	Action Level
29	Negative	Off	Door	Wood	C Right	Deteriorated	Gray	Basement	Workshop	0.0 mg/cm <sup>2</sup>	Action Level
30	Positive	Off	Tread	Concrete	C Right	Deteriorated	Gray	Basement	Workshop	3.5 mg/cm <sup>2</sup>	Action Level
31	Positive	Off	Railing	Metal	D Left	Deteriorated	Black	Basement	Workshop	1.4 mg/cm <sup>2</sup>	Action Level
32	Negative	Off	Door	Metal	D Left	Intact	Green	Basement	Workshop	0.3 mg/cm <sup>2</sup>	Action Level
33	Negative	Off	Door Casing	Metal	D Left	Intact	Green	Basement	Workshop	0.2 mg/cm <sup>2</sup>	Action Level
34	Negative	Off	Door Casing	Wood	D Right	Deteriorated	Gray	Basement	Workshop	0.1 mg/cm <sup>2</sup>	Action Level
35	Negative	Off	Window Sash	Metal	A Left	Deteriorated	Green	Basement	Workshop	0.6 mg/cm <sup>2</sup>	Action Level
36	Negative	Off	Ceiling	Concrete		Deteriorated	Green	Basement	Workshop	0.4 mg/cm <sup>2</sup>	Action Level

# 715 Dimmocks Mill Road

Inspection Date: 8/14/2019 - 8/14/2019  
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Inspection Site: 715 Dimmocks Mill Road  
 Hillsborough, NC 27278

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	Color	Floor	ROOM	Lead (mg/cm <sup>2</sup> )	Mode
37	Negative	Off	Wall	Concrete	D	Deteriorated	White	Basement	Workshop	0.5 mg/cm <sup>2</sup>	Action Level
38	Negative	Off	Window Sash	Metal	D	Deteriorated	White	Basement	Workshop	0.9 mg/cm <sup>2</sup>	Action Level
39	Negative	Off	Wall	Concrete	A Center	Deteriorated	Green	Basement	Workshop	0.3 mg/cm <sup>2</sup>	Action Level
40	Negative	Off	Wall	Concrete	B Center	Deteriorated	Green	Basement	Workshop	0.4 mg/cm <sup>2</sup>	Action Level
41	Negative	Off	Wall	Concrete	C Center	Deteriorated	Green	Basement	Workshop	0.3 mg/cm <sup>2</sup>	Action Level
42	Negative	Off	Wall	Concrete	D Center	Deteriorated	Green	Basement	Workshop	0.3 mg/cm <sup>2</sup>	Action Level
43	Negative	Off	Ceiling	Concrete	D Center	Deteriorated	Green	Basement	Workshop	0.2 mg/cm <sup>2</sup>	Action Level
44	Negative	Off	Siding	Vinyl	D Right	Intact	Gray	First	Exterior	0.0 mg/cm <sup>2</sup>	Action Level
45	Negative	Off	Facia	Aluminum	C Left	Intact	White	First	Exterior	0.0 mg/cm <sup>2</sup>	Action Level
46	Negative	Off	Window Sash	Vinyl	C Center	Intact	White	First	Exterior	-0.1 mg/cm <sup>2</sup>	Action Level
47	Negative	Off	Door	Aluminum	C Right	Intact	White	First	Exterior	0.0 mg/cm <sup>2</sup>	Action Level
48	Negative	Off	Wall	Brick	A Center	Deteriorated	Green	First	Parts Room	0.4 mg/cm <sup>2</sup>	Action Level
49	Negative	Off	Wall	Brick	B Center	Deteriorated	Green	First	Parts Room	0.6 mg/cm <sup>2</sup>	Action Level
50	Negative	Off	Wall	Brick	C Center	Deteriorated	Green	First	Parts Room	0.4 mg/cm <sup>2</sup>	Action Level
51	Negative	Off	Wall	Brick	D Center	Deteriorated	Green	First	Parts Room	0.5 mg/cm <sup>2</sup>	Action Level
52	Negative	Off	Wall	Wood	A Left	Deteriorated	Green	First	Parts Room	0.1 mg/cm <sup>2</sup>	Action Level
53	Negative	Off	Wall	Wood	A Center	Deteriorated	Dark Stain	First	Parts Room	0.1 mg/cm <sup>2</sup>	Action Level
54	Negative	Off	Floor	Concrete	A Center	Deteriorated	Tan	First	Parts Room	0.4 mg/cm <sup>2</sup>	Action Level

# 715 Dimmocks Mill Road

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Inspection Site: 715 Dimmocks Mill Road  
 Hillsborough, NC 27278

Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	Color	Floor	ROOM	Lead (mg/cm <sup>2</sup> )	Mode
55	Positive	Off	Window Sash	Metal	B Left	Deteriorated	Green	First	Parts Room	1.0 mg/cm <sup>2</sup>	Action Level
56	Positive	Off	Railing	Metal	D Center	Deteriorated	Gray	First	Parts Room	10.2 mg/cm <sup>2</sup>	Action Level
57	Positive	Off	Stair	Concrete	D Center	Deteriorated	Gray	First	Parts Room	1.7 mg/cm <sup>2</sup>	Action Level
58	Negative	Off	Wall	Brick	A Center	Deteriorated	White	First	A Center	0.4 mg/cm <sup>2</sup>	Action Level
59	Negative	Off	Wall	Brick	A Center	Deteriorated	White	First	A Center	0.3 mg/cm <sup>2</sup>	Action Level
60	Negative	Off	Ceiling	Concrete	A Center	Deteriorated	Green	First	A Center	0.2 mg/cm <sup>2</sup>	Action Level
61	Negative	Off	Wall	Brick	A Center	Intact	White	First	A/D	0.1 mg/cm <sup>2</sup>	Action Level
62	Negative	Off	Wall	Wood	C Center	Intact	Dark Stain	First	A/D	0.1 mg/cm <sup>2</sup>	Action Level
63	Negative	Off	Wall	Brick	D Center	Intact	White	First	A/D	0.4 mg/cm <sup>2</sup>	Action Level
64	Negative	Off	Window Sill	Concrete	D Center	Deteriorated	Blue	First	A/D	0.4 mg/cm <sup>2</sup>	Action Level
65	Negative	Off	Window Sash	Metal	D Center	Deteriorated	Blue	First	A/D	0.8 mg/cm <sup>2</sup>	Action Level
66	Negative	Off	Mini-Blind	Vinyl	D Center	Deteriorated	White	First	A/D	-0.1 mg/cm <sup>2</sup>	Action Level
67	Negative	Off	Door Casing	Wood	B Center	Intact	White	First	A/D	-0.2 mg/cm <sup>2</sup>	Action Level
68	Negative	Off	Door	Metal	B Center	Intact	White	First	A/D	0.0 mg/cm <sup>2</sup>	Action Level
69	Negative	Off	Ceiling	Drywall		Intact	Blue	First	A/D	0.0 mg/cm <sup>2</sup>	Action Level
70	Negative	Off	Ceiling	Drywall		Intact	White	First	Collectic	0.0 mg/cm <sup>2</sup>	Action Level
71	Negative	Off	Window Sash	Metal	D	Intact	Black	First	Collectio	0.1 mg/cm <sup>2</sup>	Action Level
72	Negative	Off	Door	Wood	B Center	Intact	Clear Stain	First	Collectic	0.0 mg/cm <sup>2</sup>	Action Level

# 715 Dimmocks Mill Road

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Read #	Result	RTA Present	COMPONENTS	SUBSTRATE	SIDE	CONDITION	Color	Floor	ROOM	Lead (mg/cm <sup>2</sup> )	Mode
73	Negative	Off	Ceiling	Drywall		Intact	White	First	Electrical Supply	0.0 mg/cm <sup>2</sup>	Action Level
74	Negative	Off	Ceiling	Wood		Intact	White	First	Break Room	-0.1 mg/cm <sup>2</sup>	Action Level
75	Negative	Off	Mini-Blind	Vinyl	B	Intact	White	First	Break Room	0.0 mg/cm <sup>2</sup>	Action Level
76	Negative	Off	Ceiling	Drywall		Intact	White	First	Supervisor's Office	0.2 mg/cm <sup>2</sup>	Action Level
77	Negative	Off	Ceiling	Drywall		Intact	White	First	Laundry	0.0 mg/cm <sup>2</sup>	Action Level
78	Positive	Off								1.0 mg/cm <sup>2</sup>	Action Level
79	Positive	Off								1.1 mg/cm <sup>2</sup>	Action Level
80	Positive	Off								1.0 mg/cm <sup>2</sup>	Action Level
81	Negative	Off								0.0 mg/cm <sup>2</sup>	Action Level
82	Negative	Off								0.1 mg/cm <sup>2</sup>	Action Level
83	Negative	Off								0.0 mg/cm <sup>2</sup>	Action Level

----- END OF READINGS -----

## **Photos**



**715 Dimmocks Mill Road Water Plant A Side**



**715 Dimmocks Mill Road Water Plant B Side**



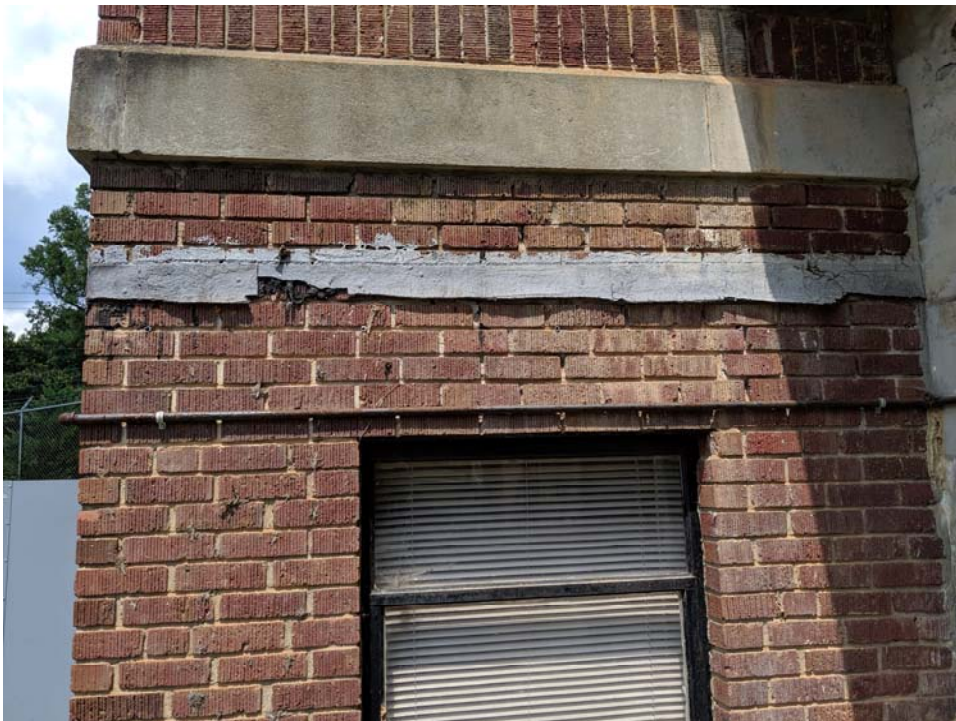
**715 Dimmocks Mill Road Water Plant C Side**



**715 Dimmocks Mill Road Water Plant D Side**



**Asbestos containing window caulk between window sash and brick.**



**Asbestos containing flashing on C Side.**



**Door caulk on original brick structure.**