CITY OF HENDERSONVILLE

101 MAPLE DRIVE NORTH
HENDERSONVILLE, TN 37075

REQUEST FOR BIDS

PROJECT NAME:
Drakes Creek Park Maintenance Complex

ISSUE DATE: **February 9, 2026**
MANDATORY PRE-BID MEETING: **February 24, 2026 AT 1:00 PM (CST)**
QUESTIONS DUE: **March 3, 2026 AT 4:00 PM (CST)**
ADDENDUM POSTED (IF NEEDED): **March 5, 2026**
SUBMITTALS DUE: **March 12, 2026 AT 10:00 AM (CST)**

BID NO. 26-0004

JAMIE CLARY, MAYOR
CITY OF HENDERSONVILLE
PUBLIC WORKS DEPARTMENT

City of Hendersonville
Public Works Department

PROJECT NAME:
Drakes Creek Park Maintenance Complex

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INVITATION TO BID

The City of Hendersonville is accepting bids for the **Drakes Creek Park Maintenance Complex**. Bidders may submit bids for any individual base bid, additive alternate, or any combination thereof. The City reserves the right to award one or more components of this project separately, in whole or in part, as determined to be in the best interest of the City.

Sealed bids must be received no later than March 12, 2026 at 10:00 AM and will be publicly opened in Conference Room 1 at the Hendersonville City Hall, located at 101 Maple Drive North, Hendersonville, TN 37075.

The City reserves the right to refuse any and all bids.

BIDDING INSTRUCTIONS

Sealed bids will be received by the City of Hendersonville for the furnishing of all materials and supplying of all labor necessary to construct the Drakes Creek Park Maintenance Complex within the City of Hendersonville City Limits.

Bid specifications and contract documents may be obtained by emailing Todd Baun, Project Manager with the Public Works Department, at tbaun@hvilletn.org or by requesting a paper copy from the Public Works Department at Hendersonville City Hall, 101 Maple Drive North, Hendersonville, TN 37075.

For further information, please contact Todd Baun, Project Manager, tbaun@hvilletn.org or (615) 822-1016.

BIDDING REQUIREMENTS

1) **Sealed bid proposals must be received at the City of Hendersonville Finance Department located at Hendersonville City Hall, 101 Maple North Drive, Hendersonville, Tennessee 37075, no later than 10:00 AM on March 12, 2026** at which time they shall be publicly opened and read aloud at the time and location stated in the Invitation to Bid.

   Bids must be submitted in the format required by this Invitation to Bid. Bids received after this time and/or bids improperly submitted shall be returned to the bidder unopened. Telegraphic bids will not be accepted.

2) **Mandatory Pre Bid Meeting:** There will be a mandatory pre bid meeting on **Tuesday, February 24, 2026 at 1:00 p.m. at the project site located at 131 Conway Twitty Lane, Hendersonville, TN 37075, behind Field 13.**

   At least one representative of the bidding firm submitting a bid for any base or bid portion must attend this meeting to be considered a responsive bidder for that portion of work.

   Attendance by subcontractors is permitted but not required for bid responsiveness. This meeting is required to verify physical site conditions, existing subsurface data, and logistical requirements related to the portions of work being bid.

3) The following information must be clearly noted on the outside of the bid package:

1.)	Project Name:	Drakes Creek Park Maintenance Complex
2.)	Bidder's Name:	
3.)	Business Address:	
4.)	Business Telephone:	
5.)	Bidder's Email:	
6.)	Prime Contractor's License Number:	
7.)	Prime Contractor's License Classification:	
8.)	Prime Contractor's License Expiration Date:	
9.)	**Subcontractor List:** Identify all subcontractors proposed to perform work **required to be licensed under Tennessee law**, including the portion of work each will perform and their license number, classification, and license expiration date. See Bidding Requirements, Section 5. Contractor and Subcontractor Licensing Requirements.	

4) Bidder must be a business properly licensed by the State of Tennessee.

5) **Contractor and Subcontractor Licensing Requirements:** Subject to the provisions of Chapter 6 of Title 62 of the Tennessee Code Annotated, each bidder shall be properly licensed at the time of bid.

   For each bid part submitted, the bidder shall provide evidence of compliance with T.C.A. § 62-6-119. Subcontractor license information is required only for those portions of work included in the bidder's submitted bid and only where the subcontracted work meets the applicable statutory thresholds.

   Failure to comply with these requirements shall render the bid nonresponsive.

6) The contractor shall supply proof of insurance prior to commencing with work.

7) All bidders must submit their qualifications and list of relevant equipment with their bid. Failure to submit this information may result in rejection of the bid as non-responsive.

8) Bidders must submit at minimum of three (3) references based on similar projects completed within the past two (2) years.

9) By submitting a bid, the bidder agrees that, if awarded the contract, they shall:
   a. Commence work within ten (10) days of the issuance of a Notice to Proceed.
   b. Complete the work within the agreed upon number of contract days.
   c. Accept the conditions for liquidated damages in the amount of two hundred fifty dollars ($250.00) per day.
   d. Maintain a consistent workforce for the duration of the project.

10) Contract/Project Administration: The Public Works Director, or their designated representative(s), shall serve as the City's representative. All requests, correspondence and submittals pertaining to this contract shall be addressed, in writing, to the attention of:

    Todd Baun, Project Manager
    Public Works Department
    101 Maple Drive North
    Hendersonville TN 37075

11) Bidders must include preliminary Pre-Engineered Metal Building (PEMB) design packages with their formal bid submission. These submittals must include, at a minimum, frame geometry, structural reactions, and exterior elevations that strictly adhere to the provided architectural plans and specifications.

12) The contract award is contingent upon the City's review and written approval of the submitted PEMB designs. The City reserves the right to reject any bid where the proposed building design fails to meet architectural standards or site-specific requirements. No contract shall be executed until the City's Building Department and Planning Division have verified compliance with local codes and aesthetic guidelines.

13) A condition of this solicitation is the City's right to select and remove any individual line item or scope of work from the contractor's responsibility. The bid must explicitly acknowledge that if a line item is removed, the total contract sum will be reduced by the full value of that line item as

submitted in the bid. These deductions will be made without any added penalties, administrative fees, or claims for lost profit by the contractor.

14) The City reserves the following rights: To waive any informalities, to reject any or all bids, and/or to award this contract to the bidder that best meets the needs of the City of Hendersonville.

15) NOTE: The cost of required insurance is not a separate bid item and as such must be included within the bid at an appropriate rate applied to all items.

16) **City Annual Contract Vendors (Reference Only):** The City encourages bidders to consider coordination with existing City infrastructure and service agreements where practicable, but does not require the use of any specific vendor. For line items involving work such as concrete, fencing, HVAC, dirt or gravel, and similar trades, bidders may, at their discretion, reference the City's current annual contract vendors as a pricing and coordination resource.

    A list of the City's current annual contract vendors is **attached for reference only**. Use of these vendors is **not required**, and bidders may propose alternate qualified vendors, provided all materials and workmanship meet the specifications and standards set forth in the Bid Documents.

17) The City reserves the right to make multiple awards of this contract, including separate awards for individual base bids or additive alternates, if it is deemed to be in the best interest of the City.

18) The successful bidder shall be responsible for obtaining all required drawings, engineering and permits necessary for completion of work. A building codes permit issued by the City must be obtained prior to site work commencing.

19) **Performance Bond:** The performance bond shall be **not less than one hundred percent (100%) of the contract amount, in accordance with Tennessee Code Annotated § 12-4-201**. Only bonds issued by companies licensed to do business in the State of Tennessee will be accepted. Failure to submit an acceptable performance bond as required shall result in rejection of the bid. The bond must guarantee faithful performance of the contract and compliance with all contract terms and must be submitted and approved by the City prior to commencement of work.

20) **Addenda and Questions:** All addenda issued prior to the bid deadline shall become part of the contract documents. Bids must include all work described in the addenda.

    All questions must be submitted in writing no later than **4:00 p.m. on March 3, 2026**. Questions received after this deadline may not be addressed. Interpretations, supplemental instructions, and responses to questions submitted by the deadline will be issued only through written addenda.

    Addenda will be posted under "Related Documents" in the City's bid portal at the link provided in the bid listing. It is the bidder's responsibility to check the website for any addenda issued. Bidders must read and acknowledge all addenda with their bid submission. Failure to acknowledge addenda may result in the bid being deemed non-responsive.

21) Bidder agrees that prices will remain valid for one hundred twenty (120) days for purposes of bid evaluation and award and, upon execution of a contract, for the duration of the project as provided in the contract documents..

GENERAL CONDITIONS

A. CONTRACTOR'S DUTIES

All work performed under this contract shall be performed in accordance with all provisions of the specifications. Any deviations from the specifications must be approved in writing by the owner or his representative, prior to performance. The contractor in writing shall, immediately upon discovery, bring to the attention of the owner any conflicts which May occur among the various provisions of the specifications. The owner shall resolve such conflicts as soon as possible. Failure of the contractor to bring conflicts or exceptions to the attention of the owner shall allow the owner to require any changes deemed necessary, before acceptance by the owner.

B. MATERIALS

All materials supplied by the Contractor under the provisions of these specifications shall be new materials of the kind and character called for by the specifications. Materials not matching the specifications shall be replaced, in a manner satisfactory to the owner, at the Contractor's sole cost. All materials to be furnished under these specifications shall be the standard product of a manufacturer regularly engaged in the production of such material and shall be the manufacturer's current standard product and shall be delivered to the site with appropriate tickets given to the owner.

C. CONTRACT DURATION

Prices shall remain in effect for the duration of the project and until the project is accepted by the City of Hendersonville.

Contractor shall complete the work within the contract time established by the City in the Notice to Proceed or contract documents.

D. DISPUTES

For the purpose of this contract, all disputes arising from this contract, or its interpretation shall be in writing addressed to the Public Works Director. The Public Works Director's decision shall be final. All contract documents are subject to final review and amendment by the City Attorney.

E. UNIT PRICES

The unit price for each of the several items in the proposal of each bidder shall include its pro-rata share of overhead and incidental costs; so that the sum of the products obtained by multiplying the quantity shown for each item by the unit price bid represents the total bid. Any bid not conforming to this requirement may be rejected as incomplete. Special attention of all bidders is called to this provision, should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities; no extra compensation allowed.

F. INSURANCE REQUIREMENTS

Contractors must possess the following insurance to be considered as a responsive bidder:

Worker's Compensation:	$1,000,000
Employer's Liability:	
Each accident:	$1,000,000
Disease, policy limit	$1,000,000
Disease, each employee	$1,000,000
General Liability:	
Each occurrence:	$1,000,000
Aggregate:	$2,000,000
Automobile Liability:	$1,000,000
Professional Liability:	
Each claim:	$1,000,000
Aggregate:	$2,000,000

G. PAYMENT TO THE CONTRACTOR

Contractor shall as soon as practical, after final acceptance by the City, submit an invoice for the amount of work done and the value thereof. The invoice shall contain the following information: Purchase order number, location of work, quantities of each item in place, cost of each unit of work, and total amount due, on the Contractor's invoice form. Final quantities for each individual work assignment shall be checked, approved, and signed by the Director of Parks and Recreation and/or an official representative of the City of Hendersonville. After such approval, the City of Hendersonville shall pay, or cause to be paid the contractor, in the manner provided by law, the entire sum so found to be due hereunder.

Retainage: For any contract award with a total value exceeding five hundred thousand dollars ($500,000), the City shall withhold retainage in the amount of five percent (5%) from each progress payment, in accordance with applicable Tennessee law.

Retainage shall be released upon final acceptance of the work by the City, subject to receipt of all required closeout documentation and compliance with the contract documents.

H. GENERAL

Successful bidder shall obtain a valid City of Hendersonville business license, prior to beginning any work. It is the responsibility of the successful bidder to obtain any and all necessary permits for the completion of the work and must follow all rules and procedures as dictated by the State of Tennessee and all other applicable local and federal laws.

Time for Completion: The Contractor shall perform its services in a timely manner and as

outlined in the BID PROPOSAL. The Contractor once started will complete each assignment in a timely manner and will maintain a work force consistent to accomplish the project from start to finish.

The City reserves the right to reject all or portions of any project which contains defective materials and/or workmanship. Final inspection of the materials and workmanship shall be made as promptly as practicable, but failure to inspect and accept or reject materials or workmanship shall not impose liability on the City of Hendersonville for such materials or workmanship which are not in accordance with specifications. Prior approval must be obtained in the event necessity requires the use of materials or supplies not conforming to the specifications. Payment may be made at a proper adjustment in price.

Protection of Persons and Property: The Contractor shall be responsible for any/ all injuries or damages to persons or property that may occur in connection with the performance of work under this contract. He shall take all necessary precautions and exercise adequate diligence to prevent injuries or damages of any nature to persons or to property of others during the prosecution of this contract. The Contractor shall defend the City of Hendersonville against any and all claims which may arise from the performance of this contract.

EPSC: All work performed under this contract shall be performed in such a way to prevent stormwater pollution.

Construction: The Contractor shall begin work as soon as reasonably practicable after issuance of the Notice to Proceed but not later than ten (10) days after the Notice to Proceed. It is understood start of construction will not take place until material delivery.

A. All utility connections are the responsibility of the Contractor.

B. The Contractor shall take all necessary precautions to secure the work site in a manner to prevent access by the general public.

C. There shall be no onsite fuel storage for the equipment, but temporary, mobile storage located on or in a vehicle is permitted.

D. The Contractor shall, to the best of their ability, clean the work site daily. All pieces, parts, scraps, debris, rubbish, wood or other materials generated by construction crew shall be cleaned up and placed in truck bed, dumpster, trailer, etc.

E. Existing vegetation, adjacent ground, parking lot(s), and buildings shall be protected by the Contractor. Care should be taken to avoid ruts when driving equipment on the property.

F. It shall be the responsibility of the Contractor to communicate open area needed to access and construct the structure with the Bid Proposal.

G. It is the intention of the City that Drakes Creek Park remain in operation to the maximum extent possible through the duration of the project. Ideally, there would be no closure except for the project area. All anticipated closures or impacts to business operations must be communicated to the City of Hendersonville with the Bid Proposal.

H. Any unusual measures should be communicated to Todd Baun, Project Manager, tbaun@hvilletn.org, as early as possible.

I. By submitting this bid, the Contractor represents, acknowledges, and warrants that it is familiar with all laws relating to the construction of this project and that it will comply with all federal, state and local rules, laws, requirements and ordinances pertaining to the construction of the project.

J. The Contractor shall be solely responsible for the removal, transportation, and disposal of all debris and other materials generated or arising from the project.

K. There shall be no burning of trash or debris onsite.

L. The Contractor shall provide a plan for project site access and containment specific to this project for approval by the City of Hendersonville within three (3) days from the issuance of Notice of Award.

SPECIFICATIONS

GENERAL

RELATED SPECIFICATIONS

A. Building Description and Scope of Work

B. Current International Building Code and all other applicable building and fire codes

QUALITY ASSURANCE:

A. All procedures shall be performed in accordance with the manufacturer's product specifications and requirements:

B. Contractor shall be responsible for ensuring compatibility of all products:

BID SUBMITTALS:

1) Completed Bid Proposal Form provided with this bid document.
2) Signed acknowledgement of all addenda issued by the City on the City's bid portal website.
3) Copy of the bidder's business license issued by the State of Tennessee.
4) Proof of insurance meeting the requirements outlined in this bid.
5) Bidder qualifications and a list of relevant equipment available for this project.
6) A minimum of three (3) references for similar projects completed within the past two (2) years
7) Documentation of any anticipated closures or impact to the City's operations that may occur during construction.
8) Preliminary Pre-Engineered Building (PEMB) design packages, including at a minimum: frame geometry, structural reactions, and exterior elevations, in compliance with the architectural plans and specifications.
9) Subcontractor List: Identify all subcontractors proposed to perform any portion of the work bid, including the portion of work each will perform and applicable license information. This information shall be provided on the Bid Proposal Submittal Form or as an attachment, which shall satisfy all subcontractor listing requirements of this bid.

BID PROPOSAL SUBMITTAL FORM

PROJECT NAME:	Drakes Creek Maintenance Complex
FULL LEGAL COMPANY NAME:	
COMPANY ADDRESS:	
TELEPHONE NUMBER:	( ) -
BIDDER'S NAME:	
BIDDER'S EMAIL:	
CONTRACTOR'S LICENSE NUMBER:	
CLASSIFICATION:	

BID SCOPE: (Check all portions bidder is submitting for):

☐ Base Bid #1 – General Site and Utilities
☐ Base Bid #2 – Operations Building
☐ Additive Alternate 1 – Maintenance Building
☐ Additive Alternate 2 – Equipment Building
☐ Additive Alternate 3 – 100' x 30' Storage
☐ Additive Alternate 4 – 60' x 30' Storage

SUBCONTRACTORS (if applicable):
Please list subcontractors proposed to perform any portion of the work, including the portion of work each will perform and license information (if applicable). Attach additional pages if necessary.

Subcontractor Name	Portion of Work	License Number	Classification	License Expiration

Bidder agrees: To perform all work described in these Bid Documents. To furnish all necessary materials, labor, tools, and equipment, as specified, to complete the work in accordance with the Standards as set forth by Hendersonville Public Works Department; for the sum listed on the bid form.

ATTACHMENTS:

1. Geotechnical Report
2. Full Set of Plans
3. Project Notes and Specifications
4. City Annual Contract Vendors (Reference Only)

BID PROPOSAL SUBMITTAL FORM - PAGE 2

PROJECT NAME: General Site and Utilities Items C01.01-C5.42- Base Bid #1				
Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)
Mobilization	LS	1		
Permits, Fees & Inspections	LS	1		
Temporary Facilities & Controls	LS	1		
Closeout, As-Builts & O&M Manuals	LS	1		
High-Visibility Construction Fence	L.F.	750		
Construction Stakes, Lines And Grades	LS	1		
Clearing & Grubbing	LS	1		
Removal Of Asphalt Pavement	SY	1870		
Disposal & Recycling Fees	LS	1		
2-4" PVC Schedule 40 (Primary Ditch Detail)	L.F.	190		
4" PVC Schedule 80 Elbow (48" Radius)	EA	4		
Riser Assembly 2-4" Galv Metal Pipe at Pole	EA	1		
Single Phase Transformer Pad	EA	1		
Encased Conduit 3.5"- 3 conduits - Ops Bldg.	L.F.	321		
Meter Base - Operations Building	EA	1		
600A Disconnect - Operations Building	EA	1		
Distribution Panel DP - Operations Building	EA	1		

Branch Panel A - Operations Building	EA	1		
Encased Conduit 3.5"- 3 conduits – Maint. Bldg.	L.F.	675		
Meter Base - Maintenance Building	EA	1		
600A Disconnect - Maintenance Building	EA	1		
Switchboard Panel DP2 - Maintenance Building	EA	1		
Branch Panel B - Maintenance Building	EA	1		
Branch Panel C - Equipment Building	EA	1		
Conduit 2" - to Football Concessions	L.F.	1500		
Install Pull Box (Fiber Optic-Type B)	EA	7		
Direct Burial Conduit (2" PVC) - Communications	L.F.	427		
Electrical Connection for motorized gate	EA	1		
Road & Drainage Excavation (Unclassified) Entrance/Main area	CY	320		
Road & Drainage Excavation (Unclassified) Parking Area	CY	106		
Road & Drainage Excavation (Unclassified) Dry Pond	CY	435		
Furnishing And Spreading Topsoil	C.Y.	250		
10' Weir in Dry Pond	LS	1		
Mineral Aggregate, Type A Base, Grading D - Main Area	TON	1275		
Mineral Aggregate, Type A Base, Grading D - Parking Area	TON	94.5		
Compaction of areas to be covered with asphalt/concrete	LS	1		
Rough Grading within 1 foot of final grade	LS	1		
Sediment Removal from Sediment Trap	CY	7		

Temporary Silt Fence (With Backing)	L.F.	1400		
Catch Basin Protection (Type B)	EA	4		
SCM-Grass Swale	S.Y.	310		
Temporary Sediment Trap	CY	139		
Construction Exit Excavation	CY	89		
Construction Exit Machined Riprap (Class A-3)	TON	147		
Construction Exit Geotextile (Type III)	SY	267		
Removal Of Rock Pad Construction Exit	CY	89		
Concrete Washout Area	EA	1		
Erosion Control Blanket (Type III)	SY	3160		
Undercutting	CY	1		
Rock Excavation	CY	1		
Asphalt Concrete Mix (Pg70-22) (BPMB-HM) Grading B-M2	TON	318		
Bituminous Material For Prime Coat (Pc)	TON	0.63		
Bituminous Material For Tack Coat (Tc)	TON	0.04		
Saw Cutting Asphalt Pavement	LF	12		
ACS Mix(Pg70-22) Grading D	TON	532		
Pavement Markings and Signage	LS	1		
Wheel Stops	EA	2		
Fencing chain link	LF	850		
Fence Gate (12')	EA	1		

Double Fence gate (12'x 2)	EA	1		
4 In PVC Gravity Sewer 0Ft-6Ft Depth	L.F.	135		
6 In PVC Gravity Sewer 0Ft-6Ft Depth	L.F.	818		
PVC Fittings	LS	1		
6In Clean Out Assembly	EACH	13		
4In Clean Out Assembly	EACH	1		
Connect 6In Lateral To Sewer Line	EACH	1		
Stream Crossing (Sanitary Sewer)	LS	1		
Oil Water Separator-Striem OS-50 W. Riser (Maint. & Equip. Bldg.	EACH	2		
Mineral Aggregate (Size 57)	TON	636		
6In DIP Slip Joint Water Line	L.F.	380		
3In PVC Water Line SDR-21	L.F.	160		
2.5 In PVC Water Line DR-21	L.F.	125		
2 In Water Service Meter Assembly	EACH	1		
Connect To 16In Water Line	EACH	1		
16In X 6In Tapping Sleeve And Valve	EACH	1		
3/4" PEXa Service Pipe (Incl. Locating Wire)	L.F.	70		
2 In PRV Assembly	EACH	1		
Fire Hydrant Assembly (Incl. DIP and Valve)	EACH	1		
DI Fittings	LS	1		
PVC Fittings (Water)	LS	1		

Thrust Blocking	EACH	6		
Stream Crossing (Water)	LS	1		
Mineral Aggregate (Size 57) (Water)	TON	150		
12" Concrete Pipe Culvert (Class III)	L.F.	32		
18" Concrete Pipe Culvert (Class III)	L.F.	232		
18 In. Winged Wall Outlet	EA	1		
12 In. Pond Outlet with Metal Plate	EA	2		
Catch Basins, Type 12, 0' - 4' Depth	EA	4		
Mineral Aggregate (Size 57) (Storm)	TON	233		

Estimated Materials Delivery (Number of Months/Days)

_____

Construction Duration (Number of Months/Days)

_____

Total Base Bid #1= _____

PROJECT NAME: Operations Building- Base Bid #2				
Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)
Excavation 5'w x 3'D below column and wall footing, 1 ft below concrete slab	CY	328		
Structural Fill- 57 Stone- for beneath column and wall footing. Includes compaction	Ton	250		
Backfill & Compaction- Type A base, Grading D. 1 foot depth	Ton	209		
Installation of utility stub-up assemblies, including elbows, protective sleeving, and temporary sealing, placed on compacted fill prior to concrete pour	LS	1		
Undercutting- If needed	CY	1		
Rock Excavation- If needed	CY	1		
Pole column footing	EA	1		
Slab on Grade w/ Thickened Edge	SF	4800		
Reinforcing Steel	LBS	1758		
15 Mil Poly Vapor Barrier	SF	4800		
Rough Carpentry (Wall Framing, Sheathing, Girts, Purlins, etc.)	LS	1		
Cabinets - Kitchen	LS	1		
Restroom Partitions	LS	1		
Lockers	LS	1		
Locker Bench (20" x 60")	EA	1		
Locker Bench (12" x 48")	EA	1		
ADA Grab bars plus install	LS	1		
Finish Carpentry Restroom (Casework, Millwork, Countertop, etc.)	LS	1		

Finish Carpentry Kitchen (Casework, Millwork, Countertop, etc.)	LS	1		
Treated Wood Poles	EA	36		
Interior Wood framing 2x6	LF	320		
Interior Wood framing 2x4	LF	398		
Exterior Door Framing	EA	4		
Interior Door Framing	EA	15		
Exterior Window Framing	EA	14		
Roofing System - Engineered Trusses	LS	1		
Insulation- Batt R-19- Exterior Walls	SF	3840		
Insulation- Batt. R-38- Ceiling	SF	4800		
Insulation Board- 1/4" foil faced behind metal panels	SF	9634		
Insulation Acoustical-Interior walls	SF	4776		
Trim, Flashing & Sealants	LS	1		
Metal Roof Panels	SF	5584		
Metal Wall Panels	SF	4050		
Ridge Vent and Cap	LF	113		
6"x 6" Gutters	LF	243		
4"x 4" Downspouts	LF	144		
Metal Overhead Canopy	EA	4		
Exterior Doors, Frames & Hardware	EA	4		
Windows	EA	14		

Interior Doors, Frames & Hardware	EA	15		
Gypsum Board 1/2" Draft Stopping	SF	128		
Gypsum Board 5/8"- Impact Resistant	SF	4140		
Gypsum Board 5/8"- Walls	SF	829		
Gypsum Board 5/8"-Ceiling	SF	4641		
Ceilings- Acoustical Ceiling Tile	SF	2940		
Ceilings- Vinyl Acoustical Ceiling Tile	SF	850		
Flooring-Resinous Flooring	SF	3168		
Flooring- Luxury Vinyl Tile	SF	997		
Flooring- Sealed Concrete	SF	229		
Flooring-Rubber Base	LF	710.5		
Flooring-Integral Base	LF	348		
Wall Painting & Coatings	SF	7901		
Epoxy Painting & Coatings	SF	2980		
Ceiling Painting & Exposed Ceiling Items	LS	1		
Rough-In Plumbing- Post concrete slab pour	LS	1		
Sanitary Sewer 4" Pipe	LF	119		
Sanitary Sewer 4" Clean Out	EA	4		
Sanitary Sewer 4" Vent to roof	EA	1		
Sanitary Sewer 4" plumbing fittings	LS	1		
Sanitary Sewer 3" Pipe	LF	104		

Sanitary Sewer 3" Clean Out	EA	5		
Sanitary Sewer 3" Vent to roof	EA	2		
Sanitary Sewer 3" plumbing fittings	LS	1		
Sanitary Sewer 2" Pipe	LF	53		
Sanitary Sewer 2" Clean Out	EA	3		
Sanitary Sewer 2" plumbing fittings	LS	1		
1/2" Cold Water	LF	105.5		
3/4" Cold Water	LF	36		
1" Cold Water	LF	8		
1.25" Cold Water	LF	114		
1.5" Cold Water	LF	56		
2" Cold Water	LF	42		
2.5" Cold Water	LF	26		
1/2" Hot Water	LF	53		
3/4" Hot Water	LF	305		
1" Hot Water	LF	152		
Water Closet- P-1	EA	2		
ADA Water Closet- P-2	EA	3		
Urinal- P-3	EA	1		
Lavatory- P-4/P-5	EA	5		
Sink- P-6	EA	0		

Service Sink- P-7	EA	1		
Floor Drain-P-8- Connected to 3" Waste	EA	5		
Shower- P-9	EA	2		
ADA Shower - P-10	EA	3		
Wall Hydrant - P-13	EA	2		
Sink Double Compartment- P-14	EA	1		
Water Connection Box- P-15	EA	3		
Floor Sink- P-16	EA	1		
Drinking Fountain P-17	EA	1		
Water Heater- 80 Gallon	EA	1		
Hot water Circulation Pump	EA	1		
Thermostatic Mixing Valve	EA	1		
HVAC Equipment- 3 Ton- HP-1	EA	1		
HVAC Equipment- 7.5 Ton- HP-1	EA	1		
HVAC Equipment- Outdoor Air Unit DOAS-1	EA	1		
HVAC Equipment- Condensing Unit- CU-2	EA	1		
HVAC Equipment- 2-ton wall mount- AC-3	EA	1		
Fire Damper	EA	4		
Duct Smoke Detector	EA	2		
Ductwork- 12"x12"	LF	46.5		
Ductwork- 18"x12"	LF	77.5		

Ductwork- 18"x14"	LF	32.5		
Ductwork- 20"x14"	LF	18.5		
Ductwork- 28"x14"	LF	104		
Ductwork- 8"x5"/6"	LF	25.5		
Ductwork- 10"x7"/8"	LF	50.5		
Ductwork- 12"x8"/10"	LF	77.5		
Ductwork- 14"x9"/12"	LF	68.5		
Ductwork- 24"x12"/18"	LF	20		
Ductwork- 20"x10"/16"	LF	6		
Exterior Alum. Wall cap with backdraft damper	EA	2		
Gooseneck termination at roof	EA	1		
Supply Diffuser- SA/SB/SC/SD	EA	15		
Ceiling Grille & Register- RA/EA/RB/EB/RC/EC/RF/EF/RH/EH	EA	19		
Residential Range Hood	EA	1		
Thermostats & Controls	LS	1		
Testing & Balancing	LS	1		
Electrical Service & Panels	LS	1		
Branch Circuit Wiring	LS	1		
Lighting Fixtures- 2 x 4 in Ceiling Grid	EA	29		
Lighting Fixtures- 2 x 4 in Ceiling Grid w/ Em. Battery Backup	EA	13		
Lighting Fixtures- 5' Strip light fixture	EA	4		

Lighting Fixtures-Shower Recessed Can, Wet Location	EA	4		
Lighting Fixtures-Exterior Wallpack	EA	3		
Lighting Fixtures-Exit Light	EA	4		
Fire Alarm System	LS	1		
Low Voltage/Data	LS	1		
Access Control	LS	1		
CCTV System	LS	1		
Concrete Sidewalks & Curbs	SF	1555		
Pavement Markings and Signage	LS	1		
Roof Drain Connection to Storm system	LF	405		

Estimated Materials Delivery (Number of Months/Days)

_____

Construction Duration (Number of Months/Days)

_____

Total Base Bid #2= _____

PROJECT NAME: Maintenance Building- Additive Alternate #1				
Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)
Excavation 5'w x 3'D below column and wall footing, 1 ft below concrete slab	CY	328		
Structural Fill- 57 Stone- for beneath column and wall footing.	Ton	250		
Backfill & Compaction- Type A base, Grading D1 foot depth to bottom of concrete slab	Ton	209		
Installation of utility stub-up assemblies, including elbows, protective sleeving, and temporary sealing, placed on compacted fill prior to concrete pour	LS	1		
Undercutting- If needed	CY	1		
Rock Excavation- If needed	CY	1		
Pole column footing	EA	1		
Slab on Grade w/ Thickened Edge	SF	4800		
Reinforcing Steel	LBS	1758		
15 Mil Poly Vapor Barrier	SF	4800		
Rough Carpentry-To include Exterior Wall Framing & Sheathing, Girts & Purlins, Blocking and Bracing	LS	1		
Treated Wood Poles	EA	1		
Interior Wood framing 2x6	LF	417		

Exterior Door Framing	EA	5		
Interior Door Framing	EA	4		
Exterior Window Framing	EA	1		
Roofing System- Engineered Trusses	LS	1		
Insulation- Batt. R-18	SF	7628		
Insulation- Blown in R-37	SF	4799		
Insulation Board- 1/4" foil faced	SF	10844		
Insulation Acoustical	SF	60		
Trim, Flashing & Sealants	LS	1		
Metal Roof Panels	SF	5584		
Metal Wall Panels	SF	5260		
Ridge Vent and Cap	LF	113		
6"x 6" Gutters	LF	243		
4"x 4" Downspouts	LF	216		
Metal Overhead Canopy	EA	5		
Exterior Overhead Coiling Garage Doors, Frames and Hardware	EA	5		
Exterior Doors, Frames & Hardware	EA	5		
Windows	EA	1		
Interior Doors, Frames & Hardware	EA	3		
Interior Overhead Coiling Garage Doors, Frames and Hardware	EA	1		

22"x30" Attic Access	EA	3		
Gypsum Board 1/2"	SF	32		
Gypsum Board 5/8"-Walls	SF	4926		
Gypsum Board 5/8"-Ceiling	SF	4641		
Ceilings- Acoustical Ceiling Tile	SF	190		
Flooring-Resinous Flooring	SF	70		
Flooring- Sealed Concrete	SF	4374		
Flooring-Rubber Base	LF	342		
Flooring-Integral Base	LF	34		
Painting & Coatings	SF	1		
Rough-In Plumbing- Pre concrete slab pour	LS	1		
Rough-In Plumbing- Post concrete slab pour	LS	1		
Sanitary Sewer 4" GW Pipe	LF	115		
Sanitary Sewer 4" SS Pipe	LF	73		
Sanitary Sewer 4" Clean Out	EA	5		
Sanitary Sewer 4" Vent to roof	EA	1		
Sanitary Sewer 4" plumbing fittings	LS	1		
Sanitary Sewer 3" Pipe	LF	30		
Sanitary Sewer 3" Vent to roof	EA	1		
Sanitary Sewer 3" plumbing fittings	LS	1		
Sanitary Sewer 2" Pipe	LF	25		

Sanitary Sewer 2" Vent to roof	EA	1		
Sanitary Sewer2" plumbing fittings	LS	1		
Oil-Water separator	EA	1		
1/2" Cold Water	LF	22		
3/4" Cold Water	LF	8		
1" Cold Water	LF	3		
1.25" Cold Water	LF	114		
1.5" Cold Water	LF	4		
2" Cold Water	LF	36		
1/2" Hot Water	LF	8		
ADA Water Closet- P-1	EA	1		
Lavatory- P-4/P-4	EA	1		
Sink- P-5	EA	1		
Service Sink- P-6	EA	1		
Floor Drain-P-8- Connected to 3" Waste	EA	1		
Trench Drain- P-10	EA	4		
Emergency Eyewash P-11	EA	1		
Wall Hydrant - P-12	EA	1		
Water Connection Box- P-14	EA	1		
Floor Sink- P-15	EA	1		
Drinking Fountain P-16	EA	1		

Electric instantaneous Water Heater	EA	2		
1.5" Air Line	LF	50		
1" Air Line	LF	110		
1" Air Drops to reels	EA	2		
Air Reels	EA	2		
Disconnect Socket	EA	2		
HVAC – Equipment- Condensing Unit- CU-0	EA	1		
HVAC – Equipment- Single Zone, Split system, .75-ton wall mount- AC-0	EA	1		
Exhaust Fan- VF-1	EA	1		
Exhaust Fan- EF-2	EA	1		
Exhaust Fan- VF-4, VF-4	EA	2		
Electric Heater EH-1, Ceiling 1.5 KW	EA	1		
Electric Heater EH-5, 15 KW	EA	1		
Electric Heater EH-6,7,8, 12.5 KW	EA	3		
Motorized Intake Louver- 32x31	EA	3		
Exterior Alum. Wall cap with backdraft damper	EA	1		
Thermostats & Controls	LS	1		
Testing & Balancing	LS	1		
Electrical Service & Panels	LS	1		
Branch Circuit Wiring	LS	1		

Lighting Fixtures- 2 x 4 in Ceiling Grid	EA	2		
Lighting Fixtures- 2 x 4 in Ceiling Grid w/ Em. Battery Backup	EA	13		
Lighting Fixtures- 5' Strip light fixture	EA	28		
Lighting Fixtures-Shower Recessed Can, Wet Location	EA	4		
Lighting Fixtures-Exterior Wallpack	EA	3		
Lighting Fixtures-Exit Light	EA	4		
Fire Alarm System	LS	1		
Low Voltage/Data	LS	1		
Access Control	LS	1		
CCTV System-Cameras	LS	1		
Concrete Sidewalks & Curbs	SF	1555		
6" Pipe Bollard	EA	10		
Roof Drain Connection to Storm system	LF	280		

Estimated Materials Delivery (Number of Months/Days)

_____

Construction Duration (Number of Months/Days)

_____

Total Additive Alternate #1= _____

PROJECT NAME: Equipment Building- Additive Alternate #2				
Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)
Excavation 5'w x 3'D below column and wall footing, 1 ft below concrete slab	CY	195		
Structural Fill- 57 Stone- for beneath column and wall footing.	Ton	273		
Backfill & Compaction- Type A base, Grading D1 foot depth to bottom of concrete slab	Ton	294		
Installation of utility stub-up assemblies, including elbows, protective sleeving, and temporary sealing, placed on compacted fill prior to concrete pour	LS	1		
Undercutting- If needed	CY	1		
Rock Excavation- If needed	CY	1		
Pole column footing	EA	1		
Slab on Grade w/ Thickened Edge	SF	4943		
Reinforcing Steel	LBS	1494		
15 Mil Poly Vapor Barrier	SF	4943		
Rough Carpentry-To include Exterior Wall Framing & Sheathing, Girts & Purlins, Blocking and Bracing	LS	1		
Treated Wood Poles	EA	1		
Interior Wood wall framing 2x5	LF	270		
Interior Wood Wainscot	SF	1080		

Roofing System- Engineered Trusses	LS	1		
Insulation Board- 1/4" foil faced	SF	9759		
Trim, Flashing & Sealants	LS	0		
Metal Roof Panels	SF	5144		
Metal Wall Panels	SF	4615		
6"x 6" Gutters	LF	259		
4"x 4" Downspouts	LF	238		
Metal Overhead Canopy	EA	2		
Exterior Overhead Sectional Garage Door Framing	EA	7		
Exterior Overhead Sectional Garage Doors, Frames and Hardware	EA	7		
Exterior Door Framing	EA	4		
Exterior Doors, Frames & Hardware	EA	4		
Interior Door Framing	EA	1		
Interior Doors, Frames & Hardware	EA	1		
Interior Overhead Coiling Garage Door Framing	EA	1		
Interior Overhead Coiling Garage Doors, Frames and Hardware	EA	1		
Flooring- Sealed Concrete	SF	4374		

Rough-In Plumbing- Post concrete slab pour	LS	1		
Sanitary Sewer 4" SS Pipe	LF	55		
Sanitary Sewer 4" Clean Out	EA	1		
Sanitary Sewer 4" plumbing fittings	LS	1		
Sanitary Sewer 3" Pipe	LF	55		
Sanitary Sewer 3" Vent to roof	EA	1		
Sanitary Sewer 3" Clean Out	EA	1		
Sanitary Sewer 3" plumbing fittings	LS	1		
Oil-Water separator- C4.00	EA	1		
Wash Bay Drain- C4.00	EA	1		
3/4" Cold Water	LF	60		
1" Cold Water	LF	50		
Wall Hydrant - P-12	EA	1		
Drinking Fountain P-16	EA	1		
Exhaust Fan- VF-1, VF-1	EA	2		
Electric Heater EH-1,2,3,4- 10 KW	EA	4		
Motorized Intake Louver- 32x31	EA	2		

Thermostats & Controls	LS	1		
Testing & Balancing	LS	1		
Electrical Service & Panels	LS	1		
Branch Circuit Wiring	LS	1		
Lighting Fixtures- 5' Strip light fixture	EA	28		
Lighting Fixtures-Exterior Wallpack	EA	5		
Lighting Fixtures-Exit Light	EA	4		
Occupancy Sensor	EA	3		
Fire Alarm System	LS	1		
Low Voltage/Data	LS	1		
Access Control	LS	1		
CCTV System-Cameras	LS	1		
Concrete Sidewalks & Curbs	SF	1135		
6" Pipe Bollard	EA	18		
Roof Drain Connection to Storm system	LF	302		

Estimated Materials Delivery (Number of Months/Days)

_____

Construction Duration (Number of Months/Days)

_____

Total Additive Alternate #2= _____

PROJECT NAME: 100' x 30' Storage- Additive Alternate #3				
Description	Unit	Estimated Quantity	Unit Price ($)	Extended Price ($)
Excavation for footing/slab	CY	256		
Structural Fill- 57 Stone	TON	203		
Backfill & Compaction- Type A base	TON	156		
Rough Grading	LS	1		
Undercutting-if needed	CY	1		
Rock Excavation- if needed	CY	1		
Pole column footing	EA	1		
Slab on Grade w/ Thickened Edge	SF	3000		
Reinforcing Steel	LBS	979		
15 Mil Poly Vapor Barrier	SF	3000		
Rough Carpentry- To include Exterior Wall Framing & Sheathing, Girts & Purlins, Blocking and Bracing.	LS	1		
Treated Wood Poles	EA	1		
Roofing System - Engineered Trusses	LS	1		
Insulation Board- 1/4" foil faced behind metal panels	SF	5452		
Trim, Flashing & Sealants	LS	1		
Metal Roof Panels	SF	3093		
Metal Wall Panels	SF	2359		
Ridge Vent and Cap	LF	98		

6"x 6" Gutters	LF	203		
4"x 4" Downspouts	LF	112		
Branch Circuit Wiring	LS	1		
Lighting Fixtures- 5' Strip light fixture	EA	10		
Concrete Sidewalks & Curbs	SF	500		
6" Pipe Bollard	EA	15		
Roof Drain Connection to Storm system	LF	267		

Estimated Materials Delivery (Number of Months/Days)

_____

Construction Duration (Number of Months/Days)

_____

Total Additive Alternate #3= _____

PROJECT NAME: 60' x 30' Storage- Additive Alternate #4				
Description	**Unit**	**Estimated Quantity**	**Unit Price ($)**	**Extended Price ($)**
Excavation for footing/slab	CY	167		
Structural Fill- 57 Stone	Ton	140		
Backfill & Compaction- Type A base	Ton	94		
Rough Grading	LS	1		
Undercutting- If needed	CY	1		
Rock Excavation- If needed	CY	1		
Pole column footing	EA	1		
Slab on Grade w/ Thickened Edge	SF	1800		
Reinforcing Steel	LBS	1		
15 Mil Poly Vapor Barrier	SF	1		
Rough Carpentry- Rough Carpentry- To include Exterior Wall Framing & Sheathing, Girts & Purlins, Blocking and Bracing.	LS	1		
Treated Wood Poles	EA	1		
Roofing System - Engineered Trusses	LS	1		
Insulation Board- 1/4" foil faced behind metal panels	SF	3654		
Trim, Flashing & Sealants	LS	1		
Metal Roof Panels	SF	1856		
Metal Wall Panels	SF	1798		
Ridge Vent and Cap	LF	58		

6"x 6" Gutters	LF	123		
4"x 4" Downspouts	LF	56		
Branch Circuit Wiring	LS	1		
Lighting Fixtures- 5' Strip light fixture	EA	6		
Concrete Sidewalks & Curbs	SF	300		
6" Pipe Bollard	EA	9		
Roof Drain Connection to Storm system	LF	240		

Estimated Materials Delivery (Number of Months/Days)

_____

Construction Duration (Number of Months/Days)

_____

Total Additive Alternate #4= _____

- **Total Base Bid #1** = $_____
- **Total Base Bid #2** = $_____
- **Total Additive Alternate #1** = $_____
- **Total Additive Alternate #2** = $_____
- **Total Additive Alternate #3** = $_____
- **Total Additive Alternate #4** = $_____

Total Bid (Sum of all Base Bids and Additive Alternates Submitted) =$_____

Total Bid Amount (Written in words):
_____**Dollars and** _____ **Cents**

Description: Unit Bids are installed (complete) and should include all improvements.

BIDDER ACKNOWLEDGMENTS

Requirement	**Initial**
Mandatory On-Site Pre-Bid Meeting Attended	
All Addenda Issued by the City Have Been Reviewed and Acknowledged	
Additive Alternates Priced Separately	
Geotechnical Report Received	
Project Full Set of Plans Received	
Notes and Specifications Received	
Subcontractor Information Provided (if applicable)	

Failure to initial may render bid non responsive.

Print Bidders Name:_____

Title of Above: _____

Bidders Signature: _____

Corporate Seal - If bid is by a corporation

Date:_____
Attest:_____

TITLE VI COMPLIANCE

It is the policy of the City of Hendersonville to ensure compliance with Title VI of the Civil Rights Act of 1963; 49 CFR, Part 21; related statutes and regulations to that end that no person shall be excluded from participation in or be denied benefits of or be subjected to discrimination under any program or activity receiving federal financial assistance or any other funding source on the grounds of race, color, sex, national origin, or ancestry. By virtue of submitting a response to this solicitation, bidders agree to comply with the same non-discrimination policy.

For Title VI compliance, we ask for voluntary disclosure of the following information:

GENDER:	Male	
	Female	

RACE:	Black/African American	
	American Indian and Alaskan Native	
	Asian	
	Caucasian	
	Native Hawaiian/other Pacific Islander	
	Other (please specify)	

This information, if provided, must be given to the City Recorder who shall maintain records of those ethnic and gender groups who are awarded bids on projects.

DESCRIPTION AND SCOPE OF WORK

Base Bid: Site Improvements, Stormwater, and Operations Building:

The base scope involves the comprehensive preparation of the site to support the new complex. This includes all necessary demolition of existing surfaces, clearing, and earthwork required to reach subgrade. A critical component of the base site work is the installation of comprehensive stormwater improvements. The contractor is responsible for the implementation of drainage systems, including catch basins, pond outlet structures, and associated piping as detailed in the civil drawings to ensure proper site management. Additionally, the contractor must install the primary utility infrastructure, including water service, sanitary sewer systems, and electrical distribution. The base building construction consists of a pre-engineered structure with finished interior spaces, comprehensive mechanical and electrical systems, and all associated architectural finishes.

Additive Alternates: Maintenance and Storage Facilities:

Bidders must provide individual pricing for four additional pre-engineered structures. These buildings vary in function and complexity, ranging from specialized maintenance facilities equipped with heavy-duty drainage and vehicle service systems to large-scale storage structures. Each alternate must include the necessary foundation work, structural framing, exterior cladding, and building-specific MEP systems. These alternates are to be priced such that the City can award them individually or in combination depending on budget availability.

Engineering and Quality Standards:

The contractor is responsible for providing all necessary engineering for the pre-engineered structures, including foundation designs and structural framing plans sealed by a Professional Engineer. All work must conform to the technical specifications provided in the bid packet, covering everything from specialized flooring and wall assemblies to high-efficiency thermal protection. Electrical installations must adhere strictly to grounding and bonding standards, and all mechanical systems require professional testing and balancing.

Site Controls and Project Closeout:

Throughout the duration of the project, the contractor must maintain rigorous site controls, including safety fencing and erosion control measures. Project completion is defined by the successful integration of all systems and the delivery of a comprehensive closeout package. This package must include finalized as-built drawings and detailed operation and maintenance manuals for all equipment and building systems installed. Final payment is contingent upon the City's approval of these deliverables and a successful final inspection of the work.

Report of Geotechnical Exploration

Drakes Creek Maintenance Complex

Hendersonville, Sumner County, Tennessee

Prepared for

Prepared by:

TTL, Inc.
Nashville, Tennessee

Project No. 25-08-02096

August 29, 2025



624 Grassmere Park, Ste. 14
Nashville, TN 37211
615.331.7770
www.TTLUSA.com

August 29, 2025

The Honorable Jamie Clary
City of Hendersonville
101 Maple Drive North
Hendersonville, Tennessee 37075

P: 615.762.5988
E: tbaun@hvilletn.org

RE: Report of Geotechnical Exploration
Drakes Creek Maintenance Complex
Hendersonville, Tennessee
TTL Project No. 25-08-02096

Dear Mayor Clary:

We have completed a geotechnical exploration for the planned maintenance complex at Drakes Creek Park in Hendersonville, Tennessee. Our services were provided in accordance with our Proposal No. 25-08-02096, dated July 29, 2025, which was authorized on July 31, 2025.

The purposes of the exploration were to obtain subsurface data at the property and develop geotechnical recommendations for the project. This report summarizes our understanding of the planned construction, the site and subsurface conditions encountered, and our geotechnical recommendations. The scope of this geotechnical exploration did not include environmental assessment of the site.

We appreciate the opportunity to be of service to you during this stage of the project and look forward to assisting you with the construction phase of this project. Please contact us if you have questions regarding the information or recommendations contained in the report.

Sincerely,
TTL, Inc.

ETHAN P. LAIRD
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 128060
STATE OF TENNESSEE

8/29/2025

Ethan P. Laird, PE
Project Engineer
elaird@ttlusa.com

Leanna S. Whitwell, PE
Principal Engineer
lwhitwell@ttlusa.com

Attachments

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Laboratory Procedures

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1.0 PROJECT INFORMATION

1.1 Project Description

Project information was provided by Mr. Todd Baun (Hendersonville) in email transmissions and telephone conversations since July 14, 2025. We were provided a set of drawings (91 sheets) titled "Drakes Creek Maintenance Complex," prepared by Wold Architect and Engineers, dated June 27, 2025. This document shows existing site grades, the planned development and provides details about the planned civil, architectural, structural and mechanical design. Mr. Baun also provided an aerial image of the site from Nearmap, dated February 3, 2025, that shows existing site conditions.

Our understanding of the project is summarized below.

Item	Description
Site Location and Size	The study area is located along the west margin of Drakes Creek Park North in Hendersonville, Tennessee. A Site Location Map is provided in Appendix A.
Proposed Construction	Plans are to construct five single-story, pre-engineered steel frame buildings with concrete slab-on-grade floors. The structures will include the following: • Operations Center located in the north corner of the study area with a footprint of 4,800 square feet (sf) • Maintenance Shop located along the west margin of the study area with a footprint of 4,800 sf • Equipment Building located in the southeast corner of the study area with a footprint of 4,943 sf • Storage Shed 1 located along the northeast margin of the study area with a footprint of 1,800 sf • Storage Shed 2 located along the south margin of the study area with a footprint of 3,000 sf The remaining site areas will generally be pavement. No below grade structures were indicated.
Maximum Loads and Allowable Settlement	The provided information shows column and wall foundations for the buildings are designed using a presumed allowable bearing capacity of 1,800 pounds per square foot (psf). Therefore, we assume that foundation loads will not exceed 50 kips per column and 3 kips per linear foot. We assume foundations should not settle more than 1 inch total and differential settlement between foundations should not be more than ½ inch. We have also assumed the maximum floor slab live load will be less than 200 psf.
Grading	Topographic information provided suggests existing grades range between elevations of about 459 feet (north) and 452 feet (west and south). The finished floor elevations of the buildings will range between 456 and 457-½ feet. Therefore, we expect maximum cut depths and fill thicknesses of less than 5 feet each will be required to achieve final grades.
Pavements	We understand flexible (asphalt) pavements will be used for car and truck parking and driveways, and concrete pavements will be used in heavy duty areas (dumpster pads). Specific traffic loading information has not been provided. We have assumed light-duty pavements will be used by passenger cars, SUV's, and occasional box delivery and garbage trucks. We assume heavy duty pavements will receive only a few large trucks per week in addition to the car, SUV, and box truck traffic.

Please contact us if the above information is not correct. Modifications to our recommendations may be required in consideration of new information provided.

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1.2 Scope of Services

The purposes of our services were to explore the subsurface conditions and develop geotechnical recommendations for the project. Our scope of work included 17 test pits, laboratory testing of selected samples, and preparing this report. Assessment of environmental conditions was beyond the scope of this exploration.

2.0 EXPLORATION FINDINGS

2.1 Site Conditions

Item	Description
Existing Conditions	The study area is part of Drakes Creek Park North in Hendersonville, Tennessee and is mostly developed with a gravel parking lot. Surface cover in non-gravel areas consisted of grass. Light poles for the adjacent baseball field were present on the east side. An overhead electrical line and railroad tracks are present along the northwest margin. An asphalt drive connects to the southeast corner.
Existing Topography	The ground surface across most of the site sloped downward from northeast to southwest, with about 5 feet of relief across the site.
Drainage	Surface water at the site appeared to drain via sheet flow towards an unnamed tributary of Drakes Creek, which is located along the south margin of the study area. The tributary appeared to have a rock bottom and contained a few inches of water at the time of our field activities.

Photographs of site conditions at the time of our field activities are provided below:



View looking northwest across the site



View looking northeast across the site

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View looking southwest across the site



View looking southeast across the site

2.2 Site Geology

The Geologic Map of the Hendersonville Quadrangle (Tennessee Division of Geology, 1991) shows the site is underlain by the Ordovician-aged Leipers and Catheys formation. This formation is typically a fine-grained, thinly bedded, gray, fossiliferous limestone with clay and shale partings. The limestone weathers to produce a thin layer (typically less than 5 feet thick) of residual soil which is typically a brown silty clay.

Limestone is susceptible to solution weathering and development of karst features, such as sinkholes. We did not observe indications of karst features or sinkholes at the site during our field activities, although existing improvements could have masked such indicators. Review of the geologic map did not indicate mapped depressions at the site. The scales of the maps often preclude the mapping of smaller features. Recommendations are provided later in the report to treat and reduce the potential of future sinkhole formation as a result of site development.

The borings encountered existing fill below the surface materials of the site. Fill material is typically soil, but may include rock particles, placed by the actions of man. Fill can be problematic for site development when it has not been compacted in thin lifts. Uncompacted or poorly compacted fill can be a source of unpredictable and excessive settlements or other measures of poor structural performance. Fill that has been placed without engineering observation or documentation can sometimes contain objectionable inclusions or constituents, such as fibrous organic pieces (tree trunks or brush piles), junk and debris, trash, excessively wet or high plasticity soils, or large rock boulders. When such undesirable inclusions are present, the consistency or density of the fill cannot necessarily be correlated with conventional indicators, such as drive-sample blow counts or estimates of unconfined compressive strength of cohesive soils. For this reason, consistency descriptions of fill layers are typically not included on exploration logs.

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2.3 Subsurface Stratigraphy

The subsurface conditions at the property were explored by excavating 17 test pits, at the approximate locations shown on the Exploration Location Plan in Appendix A. The exploration methods referenced below are described in Appendix B. Soil descriptions follow the Unified Soil Classification System (USCS), which is described in ASTM D2487 and D2488.

Information about the subsurface stratigraphy encountered at the test locations is provided on the exploration logs and the cross-section reports in Appendix A. The logs represent our interpretation of the subsurface conditions at the test locations based on tests and observations performed during the excavation and visual classification of the soil samples by a geoprofessional. The lines designating the interfaces between various strata on the boring logs represent the approximate strata boundaries. The transition between strata may be more gradual than shown, especially where indicated by a broken line. Conditions may vary at locations away from or between the test locations. The following table summarizes the materials encountered in the test pits.

Stratum	Approximate Depth to Bottom of Stratum[1]	Material Description	Index Properties[2]
Surface Cover	2 to 4 inches	Topsoil	Not Applicable
	1 to 12 inches	Gravel	
Fill	1-½ to 7 feet	Lean Clay (USCS – CL), brown and dark brown, with variable amounts of tree limbs, chert gravel, limestone gravel, rebar, brick fragments, concrete fragments, and asphalt fragments, moist OR Clayey Sand (USCS – SC), red, with some rebar, moist	PPV: 1.5 tsf to 3.0 tsf, with most near 2.0 tsf MC: 11% to 31%, with most values between 15% and 24% LL: 27 to 43 PI: 7 to 21
Residuum *(Absent in TP-02, TP-03, TP-05, TP-06, and TP-08)*	3 to 11 feet	Lean Clay (USCS – CL), very stiff, brown and light brown, with some black mineral staining, moist OR Fat Clay (USCS – CH), very stiff, brown with gray mottling, with some black mineral staining, moist	PPV: 2.0 tsf to 3.0 tsf MC: 18% to 29%, with most values between 20% and 25% LL: 40 PL: 16
Refusal: Encountered between 3 and 7-½ feet below existing grades except at TP-14. **Termination:** Test pit TP-14 was terminated at 11 feet below existing grades without encountering refusal.			

[1] Depths rounded to the nearest inch for surface materials and half-foot for the overburden
[2] PPV = pocket penetrometer value, tsf = tons per square foot, MC = Moisture Content, LL = Liquid Limit, and PI = Plasticity Index of tested soil samples only.

2.4 Groundwater Conditions

Groundwater was not encountered during excavation or upon reaching refusal or termination depths. Observing test pits for groundwater the day after drilling or at later times was not in our scope of services.

The groundwater surface can fluctuate throughout the year due to seasonal changes in climate, precipitation, vegetation, surface runoff, water levels in nearby water bodies, and other factors. The

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groundwater level below the site may be at different levels than indicated on the exploration logs at times after the exploration.

3.0 GEOTECHNICAL CONSIDERATIONS

The following geotechnical considerations are based on the data collected or developed during this project, our experience with similar projects, and our knowledge of sites with similar surface and subsurface conditions.

3.1 Existing Fill

Existing fill was encountered in each of the test pits to depths ranging between 1-½ (TP-02) and 7 feet (TP-06) below ground surface (bgs). Direct observations made during fill construction in conjunction with performing in-place density tests (soil fills) is the industry standard for evaluating whether or not the fill material and compaction procedures meet the project specifications and are appropriate for the type of construction planned. Documentation of the fill placement is not available. We observed abundant concrete, brick, asphalt, and rebar within the fill. We also observed some tree limbs and tree roots in a few test pits.

In our opinion, there are risks associated with supporting new construction on existing fill because of the potential for undetected weak zones and the unsuitable inclusions observed within the fill. Poor foundation performance can include unpredictable and excessive total and differential settlements, which may occur immediately or after many years. Poor floor slab or pavement performance may include faulting of joints (concrete), localized depressions (birdbaths), and cracking.

As discussed with Mr. Todd Baun during our meeting at the site on August 5, 2025, to eliminate risks of poor foundation and grade slab performance, the existing fill should be completely removed from the building area plus 5 feet beyond. The undercut should be backfilled with new compacted fill. We recognize costs associated with completely removing and replacing existing fill may be excessive. As an option to reduce, but not eliminate the risks, column and wall footings should be extended through the existing fill to bear on residual soil or the existing fill undercut to allow placing at least 3 feet of compacted rock fill below column and wall footing. Where existing grades are near final grades the grade slab areas should be undercut to allow placing at least 1 foot of compacted rock fill beneath the grade slab. Please be aware, additional undercutting may still be required if weak zones, large debris, or organic materials are encountered at the time of construction, particularly in the Operations Center and Maintenance Shop areas where these conditions were observed in the test pits. The fill should be evaluated during construction and if the fill is determined to contain more unsuitable materials in a given building area than the Owner is willing to accept, the fill should be completely undercut and replaced with new compacted fill.

We understand complete undercutting and removal of fill in pavement areas may also not be cost effective. Similar to the building area, if the Owner is willing to assume risks of future poor pavement performance associated with supporting pavements on existing fill, the fill can be left in place beneath pavements, given it is stable at the time of construction. To reduce but not eliminate the risks the

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existing fill in pavement areas can be undercut to allow placing at least two feet of compacted rock fill beneath the pavements. Please be aware, dependent on the degree of instability present in existing fill at this level, additional undercutting may be required. If the Owner is not willing to accept the risks of supporting pavements on existing fill, the existing fill should be completely removed from the pavement areas. The undercut should be backfilled with new compacted fill.

Any unstable, weak zones, or zones with objectionable inclusions identified should be repaired under the direction of our geoprofessional. Some of the existing fill may be suitable for reuse (particularly on the east margin of the study area) as new compacted fill provided it meets the criteria outlined later in Section 4.3, but most of the fill encountered will likely not be suitable for reuse as compacted fill and should be disposed of offsite. Additional recommendations for subgrade stabilization are discussed later in Section 4.1.3. We have prepared our recommendations assuming the owner is willing to accept the risks as previously described and utilize partial undercuts in building and pavement areas. We recommend that the construction budget include a contingency for some additional subgrade repairs.

3.2 Shallow Bedrock

The test pits encountered refusal at depths between 1-½ and 7-½ feet bgs. If excavations below refusal depths are required, hoe-ramming or blasting may be necessary to effectively remove the bedrock. Shallow bedrock (4 feet or less below final grades) can retard infiltration of surface water and cause it to build up (or "perch") above the bedrock after heavy rain or extended periods of rain. The contractor should be prepared to provide temporary groundwater control during construction to remove temporary perched water that may enter shallow excavations. Recommendations for groundwater control are provided in Section 4.4, below.

4.0 EARTHWORK RECOMMENDATIONS

4.1 Subgrade Preparation and Stabilization

Subgrade preparation should begin with stripping to remove organic material from the site. Existing improvements should be removed from the site. Debris resulting from the demolition should be properly disposed at an off-site location. Underground utilities that will not be incorporated into the planned construction should be completely removed, including bedding and backfill, and backfilled with compacted fill. The sides of excavations resulting from removal of utilities should be sloped and the backfill "benched" into the sides of the excavation as it is placed.

Subsequent preparation activities will depend on the Owner's decision regarding removing and replacing existing fill as previously discussed. If the Owner elects to remove and replace existing fill from the planned building areas, then existing fill should be undercut to residual soil or bedrock from below the building footprint plus 5 feet beyond and the resulting excavation backfilled with new compacted fill. Test pit data suggests such excavations could range between about 1-½ and 7 feet bgs.

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If the Owner intends to accept the risks and leave some of the fill in place to support the planned buildings as a cost-saving measure, then select undercuts should be performed as previously discussed for planned foundations, grade slabs, and pavements. These subgrades should be evaluated for stability after cuts made to planned grade and prior to fill placement as discussed in Section 4.1.3, below. Unstable conditions identified should be stabilized using one of the methods discussed in Section 4.1.4, below.

4.1.2 Stripping

Once existing improvements are removed subgrade preparation should commence with clearing and stripping to remove surface vegetation and organic-laden topsoil from planned construction area.

- Clearing and stripping should extend 5 feet beyond construction limits.
- Organic-laden strippings should be removed from the site or disposed of at designated on-site areas located outside limits of current or future development.
- Strippings may be stockpiled for re-use as topsoil during landscaping if they are suitable for that purpose.
- Strippings should not be used to build permanent slopes.
- Utilities (including bedding and backfill materials) present and not incorporated into the planned development, should be removed and disposed of off-site.
- Basestone in existing pavement areas can remail in place and used as a working surface, if stable, but it should not be incorporated into new grade slabs or pavements.

4.1.3 Proofrolling

After stripping, the stability of exposed subgrades in areas to receive fill and the stability of subgrades exposed by cutting to final grades should be evaluated by proofrolling.

- Perform proofrolling with a rubber-tired vehicle having a gross vehicle weight of at least 20 tons (such as a loaded, tandem-axle dump truck).
- Proofrolling equipment should make multiple closely-spaced overlapping passes in perpendicular directions over the subgrade at a walking pace.
- The subgrade should be relatively smooth and free of wheel ruts, sheepsfoot roller dimples, loose clods of soil, or loose gravel, and the subgrade should not be desiccated, cracked, wet, or frozen at the time of proofrolling.
- A representative of the geotechnical engineer should observe the proofrolling to identify, document, and mark areas of unstable subgrade response, such as pumping, rutting, or shoving, if any.

4.1.4 Subgrade Stabilization

Depending on time of year construction takes place, some areas of weak or unstable materials could be encountered. The following methods are options for producing stable subgrade conditions depending on the nature of the unstable condition, the location and size of the unstable area, and the time available to address the unstable condition. In general, weak materials identified by our

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geoprofessional during the proofrolling should be undercut to stable materials in the building area and replaced with compacted fill. Other subgrade repair considerations may be possible based on actual conditions encountered at the time of construction.

- Undercutting
  - This means simply excavating to remove the unstable soil conditions.
  - It is usually the most expedient and cost-effective means of dealing with unstable conditions when less than 3 feet of undercutting is needed.
  - It requires disposing of the excavated unstable soils and replacing the undercut excavation with new compacted fill.
  - It may be possible to improve the condition of the unstable materials that were undercut (usually by drying) so they can be reused as compacted fill in another part of the site, if they meet compacted fill requirements.
- Scarifying and Recompacting
  - This means scarifying the subgrade to a depth of 8 inches to dry the soil, and then recompacting the scarified layer to recommendations given for compacted fill in Section 4.3 below.
  - This method is usually only used when the proofrolled subgrade shoves without significant pumping.

Subgrades damaged by construction equipment should be promptly repaired. Our geoprofessional should provide recommendations for treatment if the subgrade materials become wet, dry, or frozen. Degradation of the near surface soils should be expected if they are subjected to freeze/thaw.

4.2 Excavation Considerations

The test pits encountered refusal at depths between 1-½ and 7-½ feet. Overburden soil encountered at the site can be excavated using conventional construction equipment. Based on the provided grading information we do not expect widespread excavations into bedrock will be required. However, if excavations extending into limestone bedrock are necessary blasting may be required.

4.2.1 Blasting and Hoe-Ramming

After the overburden is removed, portions of the upper intervals of weathered bedrock (typically less than 2 feet to 3 feet) can possibly be removed by heavy-tracked equipment with or without the use of ripping tools; however, the removal of more competent bedrock will likely require jackhammering, hoe-ramming, or blasting.

We recommend the vibrations induced by blasting or hoe-ramming be limited to prevent damage to the surrounding structures. Pre-excavation and post-excavation surveys should be performed on existing structures within the area surrounding the site where vibrations from blasting and hoe-ramming are likely to be felt. Blasting should be monitored by vibration instruments and knowledgeable personnel to document the level of blast vibrations. The contractor will need to comply with Tennessee blasting laws and other appropriate regulations. It will also be important for the blasting to be controlled to avoid damaging the bedrock subgrade beneath foundation bearing levels.

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If the blasting activities are not properly controlled, the bedrock below planned foundation elevations can be fractured and weakened, requiring over-excavation during foundation installation. As an additional service, we can assist you with blast monitoring and development of specifications to control blasting, if required.

In the event rock excavation occurs coincidentally with building construction, such that blasting will be in progress near new construction, it will be important for vibrations from rock excavation to be held within safe limits for the "young" concrete. We recommend not allowing blasting or hoe-ramming near concrete that is less than 48 hours old.

4.2.2 Temporary Excavation Slopes

Temporary construction excavations less than 20 feet deep should be sloped or shored by the contractor in accordance with OSHA requirements. The on-site soils appear to be OSHA Type C soils. OSHA requires temporary excavation slopes no steeper than 1.5-horizontal to 1-vertical (1.5H:1V) through Type C soils. Bedrock may classify as Type A or Stable Rock, depending on condition and degree of fracturing from blasting. OSHA allows slopes as steep as 3H:4V for Type A materials and near-vertical for Stable Rock. The contractor's "competent person" should evaluate temporary excavations daily and determine the specific soil types and temporary slope or shoring measures necessary according to OSHA requirements. Temporary excavations taller/deeper than 20 feet must be designed specifically by a registered engineer and cannot be made based on OSHA soil types. Design of temporary excavations was not part of our scope of services. TTL assumes no responsibility for excavations, shoring, or job site safety, which are the sole responsibility of the general contractor.

4.3 Compacted Fill

Criteria for fill characteristics, compaction procedures, and compaction control are listed in the table below. Fill placement and compaction should be observed by our representative on a full-time basis. Most of the existing fill should not be reused as compacted fill without extensive culling of unsuitable inclusions. However, the existing fill along the east margin of the study area did not appear to contain unsuitable inclusions and may be suitable for reuse as compacted fill given it meets the requirements in the table below. On-site residual lean clay soils encountered by the test pits appear to meet the requirements for compacted fill, but moisture conditioning (wetting or drying) may be needed to achieve adequate compaction. On-site fat clays should not be reused as compacted fill.

Mixed shot-rock/soil fills, if generated during mass grading, can be adversely affected by wet weather and heavy rains that can wash out the soil particles between the shot-rock creating voids and ground subsidence. Shot-rock/soil fills can also trap large volumes of water, thereby saturating and softening the clays which can result in unstable subgrades, foundation bearing surfaces, or utility bottoms. Therefore, we recommend that only clean shot-rock or clean soil fill be utilized for the planned construction.

Fill operations should not begin until representative soil samples are collected from proposed borrow areas and tested for plasticity and moisture/density relationship (allow 3 to 4 days for sampling and testing soil). The test results will be used to determine whether the proposed borrow material meets

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project specifications. Off-site borrow materials, if required, should meet the criteria outlined below. Mixed soil and rock materials should not be imported to the site for use as compacted fill.

MATERIAL TYPE	CHARACTERISTICS	COMPACTION PROCEDURES	COMPACTION CONTROL [1, 2]
SOIL	Maximum particle size: 3 inches. Maximum gravel and oversize particle content: 15 percent retained on a ¾-inch sieve. Maximum allowable organic content: 3 percent by weight, but large roots are not allowed. Plasticity Index: Not more than 25 (off-site materials) and not more than 30 (on-site materials).	Maximum loose lift thickness: 8 inches for full-sized compaction equipment. It may be necessary to reduce lift thickness when using smaller or hand-held equipment. Compaction requirement: Compaction should be to at least 95 percent of the standard Proctor (ASTM D 698) maximum dry density. Moisture content at time of compaction: within plus 3 percent to minus 3 percent of the material's optimum moisture content.	General Fill Area: One field density test every 2,500 square feet per lift, with a minimum of two tests per lift. Small Fill Areas: One field density test per 50 cubic yards, with a minimum of two tests per lift. Field density tests should be done using either the nuclear method (ASTM D6938), the sand cone method (ASTM D1556), or the drive-cylinder method (ASTM D2937), as appropriate for the fill materials. Proofrolling lifts of fill should not be permitted as a means of evaluating compaction of fill for compliance with these recommendations.
MINERAL AGGREGATE BASE	Type A, Class A or B, and Grading C or D in accordance with Section 903.05 of the Tennessee Department of Transportation (TDOT) specifications.		
LIMESTONE SHOT-ROCK	Shot-rock size: Not more than 12 inches (occasional pieces up to 18 inches can be tolerated). Percentage of soil: Not more than 10 percent by volume. Gradation: Adequate fines and smaller rock pieces to effectively "choke" the larger rock pieces by filling voids or open spaces between rock pieces.	Spreading: The larger rock pieces should lie flat and not overlap each other. Maximum lift thickness: Not more than 18 inches and not more than 6 inches thicker than largest shot-rock particle. Compaction Requirements: The fill should be compacted by making multiple passes with a bulldozer. The bulldozer size should be dependent on the rock sizes and the lift thickness. Our geotechnical engineer should provide additional recommendations based on actual conditions. The number of passes should be sufficient to demonstrate the material is densified and stable	A technician working under the direction of our geotechnical engineer should observe shot-rock fill placement and compaction techniques. The technician should document fill constituents, lift thickness, and compaction techniques.

[1] For planning only. Our technician/engineer should determine the actual test frequency.

[2] In addition, the fill must be stable under the influence of compaction equipment. Heavy construction traffic should not be allowed to travel on compacted fill areas, except on designated haul roads, to reduce the potential for damaging a previously compacted fill subgrade.

If grading occurs during wet, cool weather, when drying soils is more difficult and time-consuming, the grading contractor may have difficulty achieving suitable moisture conditions for proper compaction of soil fill. As an alternative, mineral aggregate base (MAB) stone may be considered for use as fill. The MAB will not be as moisture sensitive as soil, but some weather delays may still be experienced if MAB is utilized as fill. Refer to the soil fill compaction procedures and compaction control listed in the table above for placing MAB.

Shot-rock fill materials can be used to backfill undercut excavations or as new fill the building footprint, at least up to the shallow foundation bearing levels, and pavement areas. Clean shot-rock fill materials can be placed without moisture-conditioning and can typically be placed and compacted during wet, cool weather. These materials are also typically able to accommodate construction traffic with only

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limited subgrade degradation. Therefore, if grading occurs during wet, cool weather, consideration should be given to importing these materials for compacted fill.

Excavations made within shot-rock fill may be larger than similar excavations in soil due to the particle size of the rocks within the shot-rock fill. The contractor should account for increased trench backfill resulting from excavations through shot-rock. If lifts of shot-rock thinner than the maximum lift thickness are required based on site grades, the maximum particle size of the shot-rock should be reduced to be at least 6 inches less than the lift thickness.

4.4 Drainage Considerations

4.4.1 Surface Water

The clayey soils at the site can be sensitive to elevated moisture contents. When dry, they may be relatively stable under moving rubber-tired equipment. However, when they are moist as a result of local precipitation and climatic conditions or exposure with depth of cut or near the soil/bedrock interface, they can become unstable, particularly under repeated loading from heavy construction equipment. This can occur even for soil that has been moisture conditioned and properly compacted. Protection of the prepared subgrades will be important with regard to the construction schedule and grading costs for this project. Drying the soil may not be practical during wet seasons of the year.

Site development and excavations should not be performed during or immediately following periods of heavy precipitation. Positive surface drainage should be maintained during grading operations and construction to prevent water from ponding on the surface. Surface water run-off from off-site areas should be diverted around the site using berms or ditches. The soil surface can be rolled smooth to enhance drainage if precipitation is expected, but should then be scarified and moisture conditioned, as needed, prior to resuming fill placement. These considerations generally do not apply to aggregate base or clean limestone shot-rock fill.

4.4.2 Construction Groundwater Control

Groundwater was not encountered in the test pits, so we do not anticipate encountering shallow groundwater during construction. However, localized zones of “trapped” or “perched” water can sometimes develop in the soil overburden, at discontinuous zones within the overburden, or at the soil/bedrock interface, especially after extended wet weather. We recommend the contractor be prepared to provide groundwater control during construction. Normally, groundwater inflow can be removed from construction excavations by pumping from a sump near the point of seepage. Our geotechnical engineer should be contacted for guidance if heavy seepage occurs or there is evidence of soil particle migration. Detailed design of the temporary groundwater control measures for construction is the responsibility of the contractor.

4.4.3 Permanent Groundwater Control

We do not anticipate permanent ground water control will be required for the development.

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4.5 Karst Considerations

The site is located in a region that is historically susceptible to the development of sinkholes and other karst features. It has been our experience that new sinkholes are more likely to occur during site grading than afterward because incipient sinkholes not visible at the surface may appear in response to the natural drainage mechanisms being disrupted by altering of grades. Because sinkholes typically result from movement of water through the subsurface regime, it is important to reduce the quantity of surface water that is allowed to infiltrate the planned building and pavement areas. The recommendations below are provided to reduce the potential for sinkhole development as a result of construction activities:

- Control storm water drainage by properly grading the site to promote complete and rapid runoff of surface water away from construction areas and avoid the ponding of water in open excavations.
- Locate stormwater detention and bioinfiltration areas as far as practical from buildings, roads, or utilities.
- Construct underground plumbing systems in a leak-proof manner.
- Provide ditches or pipes for discharge of stormwater, to the extent practical.
- Evaluate areas of suspected sinkhole development, such as abnormally thick topsoil deposits, depressions, and locations of soil collapse or voids within the overburden.
- Where sinkholes or incipient sinkholes are detected, perform remedial treatment as recommended by our geotechnical engineer, based on the actual conditions encountered.

5.0 PAVEMENT RECOMMENDATIONS

Pavement loading information was not provided. Provided information shows that flexible and rigid pavements will be incorporated into the development. We have not been provided specific pavement loading information. We have assumed light-duty pavements will be used by passenger cars, SUV's, and occasional box delivery and garbage trucks. We assume heavy duty pavements will receive only a few large trucks per week in addition to the car, SUV, and box truck traffic. We have developed our recommendations based on the assumed traffic loads and following assumptions:

- Assumed design CBR values of 3, which corresponds to a design k-value of about 100 pounds per cubic inch (pci). Laboratory testing to measure CBR was not part of our scope.
- Concrete for rigid pavements has a 28-day compressive strength of 4,000 psi.
- Design life 20 years | Terminal Serviceability Index (P_t) is 2.0.
- Reliability = 85 percent | Standard Deviation 0.35 (rigid) and 0.45 (flexible.
- Pavement materials should conform to applicable sections of the Tennessee Department of Transportation (TDOT) Standard Specifications for Road and Bridge Construction, latest edition.

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Pavement recommendations in this report do not account for construction traffic. We recommend construction traffic not be allowed on asphalt pavement layers. If desired, construction traffic can use MAB layers as long as the MAB is re-evaluated and repaired prior to placement of asphalt. Repair may require removal of some, or all, of the MAB if it has become contaminated with soil. The soil subgrade may also require repair consisting of undercutting and replacing with compacted fill or additional MAB. Subgrade repairs needed as a result of construction traffic on the MAB should not result in extra charges to the owner as the use of pavement subgrades for construction traffic falls under the contractor's means and methods of construction.

5.1 Rigid Pavements

Recommended rigid pavement section thicknesses are provided in the table below. We suggest considering using heavy-duty rigid pavements in areas where turning movements occur or stopping or starting movements occur on slopes because these areas can experience shoving failures. Rigid pavement sections should be used for dumpster pads (8 inches) and should be long enough to support both the dumpster and truck during transfer. The designer should also consider incorporating a thickened edge into the design. If traffic loadings or pavement criteria vary from the assumptions stated above, we should be notified so that we can re-evaluate the recommended rigid pavement section thicknesses. We recommend using the following rigid pavement section thicknesses:

RECOMMENDED RIGID PAVEMENT SECTIONS

Material	Pavement Loading (inches)	
	Light Duty[2] (no trucks allowed)	Heavy Duty
PCC Slab	5	8
Mineral Aggregate Base[1]	4	4

[1] Aggregate base should be compacted to 100 percent of the maximum dry density as determined by the standard Proctor (ASTM D698) at a moisture content within 2 percent of optimum moisture content.
[2] Minimum recommended section.

The thickness for MAB outlined in the table above is the minimum thickness recommended by AASHTO. We recommend a sufficient number of thickness checks be performed prior to placing concrete to check the actual thickness is in accordance with the recommended thickness. Otherwise, the specified thickness should be increased by at least 1 inch.

The pavements should be designed and constructed in accordance with applicable ACI guidelines, including joint spacing, dowel placement, and reinforcement. The designer should consider the recommendations provided below if they are not currently included in the design.

Additional consideration for pavement design and construction are provided below:

- Contraction joints should be sawed as soon as the concrete will allow. The joints should be subsequently sealed to reduce surface water infiltration into the prepared subbase.

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- Construction joints (excludes saw joints) should be underlain by a non-woven geotextile (about 2 feet wide) to reduce the potential for the upward movement of soil fines through the joints.
- Loading (traffic) should not be allowed until the concrete has achieved at least 85 percent of its design strength.
- Landscape beds or islands should not be used because they may provide a means for water to enter into the pavement section and underlying soil subgrade. If landscape is desired, above grade planter boxes, with drainage discharge onto the top of the pavement or directed into sewers, should be used in the construction.
- Curbs should extend through the base and at least 3 inches below the base course. This will help reduce migration of subsurface water into the pavement base from adjacent areas.
- The concrete should contain entrained air to improve durability. The air content should be compatible with the maximum aggregate size and the project location.
- The pavements should be designed and constructed in accordance with applicable ACI guidelines, including joint spacing. The pavement surface should have a minimum slope of 1 percent to promote surface drainage.

5.2 Flexible Pavements

The recommended flexible pavement section thicknesses are provided in the table below. If traffic loadings or pavement criteria vary from the assumptions stated above, we should be notified so that we can re-evaluate the recommended flexible pavement section thicknesses.

RECOMMENDED FLEXIBLE PAVEMENT SECTIONS

Material	State Highway Reference	Pavement Loading (inches)	
		Light-Duty (no trucks allowed)	Heavy-Duty
Asphalt Surface Course	TDOT Section 411 Grading D or E	1-½	1-½
Asphalt Binder Course	TDOT Section 307 Grading B	2	2-½
Mineral Aggregate Base[1]	TDOT Section 903 Class A, Grading D	6	8
[1]Aggregate base should be compacted to 100 percent of the maximum dry density as determined by the standard Proctor (ASTM D698) at a moisture content within 2 percent of optimum moisture content.			

5.3 General Pavement Considerations

Experience has shown that most pavement failures are caused by localized soft spots in the subgrade or by inadequate drainage. Proofrolling observed by our geotechnical engineer can help identify weak spots in the subgrade, which should be repaired as discussed earlier. The civil design should include proper drainage to reduce the potential for softening of the subgrade, soil migration, and pumping failures. The pavement surface and subgrade should be sloped to promote drainage. Concrete pads should be constructed around catch basins to accommodate the problems associated with the

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frequent saturation of asphalt pavements in low areas. Good perimeter drainage around the pavements is also recommended. Any isolated areas that experience premature failure should be promptly repaired to reduce water infiltration into the stone base and soil subgrade layers, which could otherwise cause failure of adjacent pavement areas.

Site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, or rainfall. As a result, sections of the pavement subgrade may not be suitable for pavement construction and could require corrective action. The subgrade should be evaluated at the time of pavement construction by proofrolling. Particular attention should be given to high traffic areas that were rutted and disturbed and to areas where backfilled trenches are located. Unstable areas should be repaired in the manner described earlier. Also, we recommend the moisture content of the exposed soils be checked immediately prior to pavement construction. If the soil is not within the specified range, the upper 8 inches to 12 inches should be scarified, moisture conditioned to the recommended moisture content, and recompacted.

We recommend that the basestone be "day-lighted" at the edge of the pavement if possible (not practical if curb and gutter is included). During construction of the aggregate base, in-place density tests and thickness checks should be performed to evaluate compliance with project specifications. If a significant delay occurs between installation of the aggregate base and installation of the pavement surface, the aggregate base should again be proofrolled prior to paving to check for a loss in stability. Any base materials “contaminated” with soil materials should be completely removed and replaced before paving.

Regular maintenance is essential to good, long-term pavement performance. Distressed areas that develop should be promptly repaired to inhibit the failure from spreading due to loading and water infiltration. Cracks should be sealed to reduce surface water infiltration below pavements.

6.0 STRUCTURAL RECOMMENDATIONS

6.1 Seismic Site Classification

Based on the 2021 edition of the International Building Code (IBC) and field exploration, we recommend Seismic Site Class D be used for seismic design of the structure. If seismic design parameters based on the recommended site class produces excessive forces or an unfavorable Seismic Design Category, it may be possible to reduce the seismic design parameters by performing shear wave velocity testing or a site-specific seismic study. We can assist you with these services, if requested.

6.2 Shallow Foundations

6.2.1 Design Recommendations

The provided information shows that shallow spread and turn-down slab wall footings are planned to be used in the construction. These footings have been preliminarily designed using an assumed bearing capacity of 1,800 pounds per square foot. Based on site conditions encountered, our

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understanding of planned grades, and the assumed foundation loads, we believe shallow spread foundations are capable of supporting the planned construction, as long as the site is prepared using the recommendations discussed in Section 3.0 above. General design recommendations are provided in the following table.

Design Considerations	Value
Suitable bearing materials	Stiff residual clays, new compacted fill, or bedrock
Minimum bearing depth below exterior grade for footings	1.5 feet
Allowable net bearing pressure for sustained loads	1,800 psf
Bearing pressure for transient loads (wind or seismic)	Increase by 33 percent
Minimum isolated spread footing width	2 feet
Minimum continuous wall footing width	1.5 feet
Expected total and differential foundation settlements	Less than 1 inch total and ½ inch differential
Ultimate coefficient of friction between concrete and bearing material for lateral load resistance	0.35 for soil bearing materials
Minimum factor of safety for lateral resistance from friction	1.5
Ultimate passive pressure from soil against vertical face of footing for lateral load resistance **(Do Not Use if footing is formed)**	250 psf per vertical foot Neglect resistance in top 1 foot unless ground surface is protected by floor slab or pavement
Minimum factor of safety for lateral resistance from passive soil pressure	2.0
Total unit weight for backfill over footings for computing ultimate uplift resistance	100 pcf
Minimum factor of safety for uplift resistance from soil backfill weight	2.0

Plans are to incorporate a combined slab/footing system (turn-down slab) in the buildings. This type of design can be used. Experience indicates cracks in the grade slab commonly occur if the steel reinforcement does not extend a sufficient distance into the slab. The designer should take this into consideration.

6.2.2 Construction Recommendations

- Foundation bearing surfaces should be level and free of existing fill, loose or soft soil, unsuitable material (such as debris, trash, etc.), ponded water, or desiccation cracks.
- Foundation excavations should be backfilled with concrete the same day the footing excavations are opened. This is required for high plasticity bearing soils.
- If footing excavations in low plasticity soils are left open for more than a day, the contractor should protect the bearing materials against degradation from exposure. One method commonly used is placing a “mud-mat” of lean concrete, but other similar methods may also be appropriate. Protective layers should not be placed until after the bearing surfaces have been evaluated to confirm they are suitable for the design bearing pressure.

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- Surface water should not be allowed to flow into footing excavations. Water that enters the excavation, either from surface flow, precipitation, or other sources, should be promptly removed, even if the bearing level is covered by a protective layer, like a mud-mat.
- Footings should be poured directly against the sides of the excavation. If the footings are formed, the excavated space around the finished footing should be cleaned of soft or loose soil and then backfilled as soon as practical using soil compacted to the requirements for compacted fill given in Section 4.3 above. Also, the structural engineer should be notified to verify design assumptions as discussed above.

Our geoprofessional should observe the materials exposed at the footing support level to check whether the exposed soils or bedrock are consistent with the materials encountered at the boring locations. Soft or unsuitable materials present at or below the footing support level should be undercut to suitable materials. The undercuts should be backfilled with compacted fill, lean concrete, or flowable fill. Open-graded stone should not be used to backfill foundation undercut excavations.

6.3 Floor Slabs (Not Pavement)

A concrete slab-on-grade floor is expected to perform satisfactorily, provided the subgrade is prepared in accordance with the recommendations presented in this report. A minimum 4-inch-thick layer of compacted dense-graded crushed stone, such as MAB stone, should be included in the slab design. We recommend against using clean crushed stone (such as TDOT No. 57 stone) below the grade slab because it restrains the concrete from drying shrinkage which can cause the slab to crack away from saw-cut control joints. The slab should be structurally separated from walls and columns and an appropriate number of control joints should be incorporated into the slab to allow for differential movements.

Foundation and utility line installation, weather, and other construction activities can disturb the floor slab subgrade between completion of grading and slab construction. Our geotechnical engineer or authorized representative should evaluate the subgrade immediately prior to placing the base material and slab concrete. During this evaluation, the subgrade should be proofrolled according to Section 4.1.2 of this report or evaluated by other methods, such as Dynamic Cone Penetrometer testing. Unstable or soft areas should be undercut and replaced as recommended by our geotechnical engineer.

7.0 LIMITATIONS

This geotechnical engineering report has been prepared for the exclusive use of our Client for specific application to this project. The report has been prepared in accordance with generally accepted geotechnical engineering practices using that level of care and skill ordinarily exercised by licensed members of the engineering profession currently practicing under similar conditions in the same locale. No warranties, expressed or implied, are intended or made.

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TTL understands this geotechnical engineering report will be used by the Client and various designers and contractors involved with the project. Third-parties receiving a copy of this report shall understand it is for information only and not for legal reliance. TTL should be invited and authorized to attend project meetings or to address applicable issues relating to the geotechnical engineering aspects of the project. TTL should also be retained to review the final construction plans and specifications to evaluate if the information and recommendations in this geotechnical engineering report have been properly interpreted and implemented in the design and specifications. This report has not been prepared as, and should not be used as, a design or specification document to be directly implemented by the contractor. The contractor and applicable subcontractors should familiarize themselves with this report prior to the start of their construction activities, contact TTL for any interpretation or clarification of the report, retain the services of their own consultants to interpret this report, or perform additional geotechnical testing prior to bidding and construction.

This geotechnical engineering report is based on information provided to us by the Client and various other individuals and entities associated with the project, exploratory test pits within the project limits, laboratory testing of selected soil samples recovered from the test locations, and our engineering analyses and evaluation. The Client and readers of this geotechnical engineering report should realize that subsurface variations and anomalies can and may exist across the site and between the exploratory boring locations. Site conditions can change due to the modifying effects of seasonal and climatic conditions, such that conditions at times after the exploration may be different than reported herein. The nature and extent of such site or subsurface variations may not become evident until construction commences or is in progress. If site and subsurface anomalies or variations are encountered, TTL should be contacted immediately and authorized to evaluate such conditions and, if necessary, provide applicable recommendations.

Unless stated otherwise in this report or in the contract documents between TTL and Client, our scope of services for this project did not include, either specifically or by implication, any environmental or biological assessment of the site, or any identification or prevention of pollutants, hazardous materials or conditions at the site. If the Client is concerned about the potential for such contamination or pollution, TTL should be contacted to provide a scope of additional services to address the environmental concerns. Also, permitting, site safety, excavation support, and dewatering requirements are the responsibility of others.

Should the nature, design, or location of the project be modified, the geotechnical engineering recommendations and guidelines provided in this document will not be considered valid unless TTL is authorized to review the changes and either verifies or modifies the applicable recommendations in writing.

Additional information about the use and limitations of a geotechnical report is provided within the Geoprofessional Business Association (GBA) document included at the end of this report.

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Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

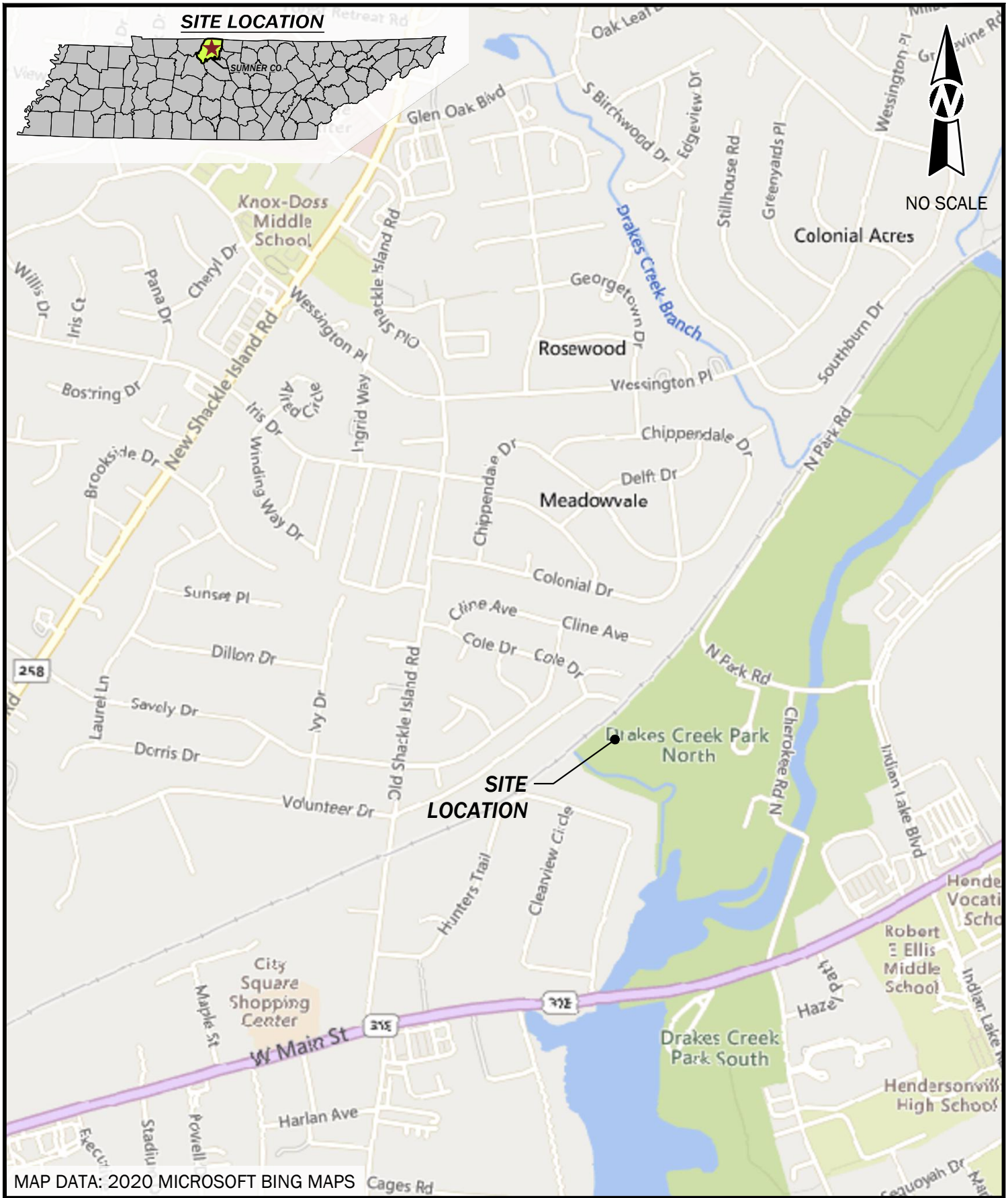
While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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APPENDIX A
ILLUSTRATIONS



MAP DATA: 2020 MICROSOFT BING MAPS

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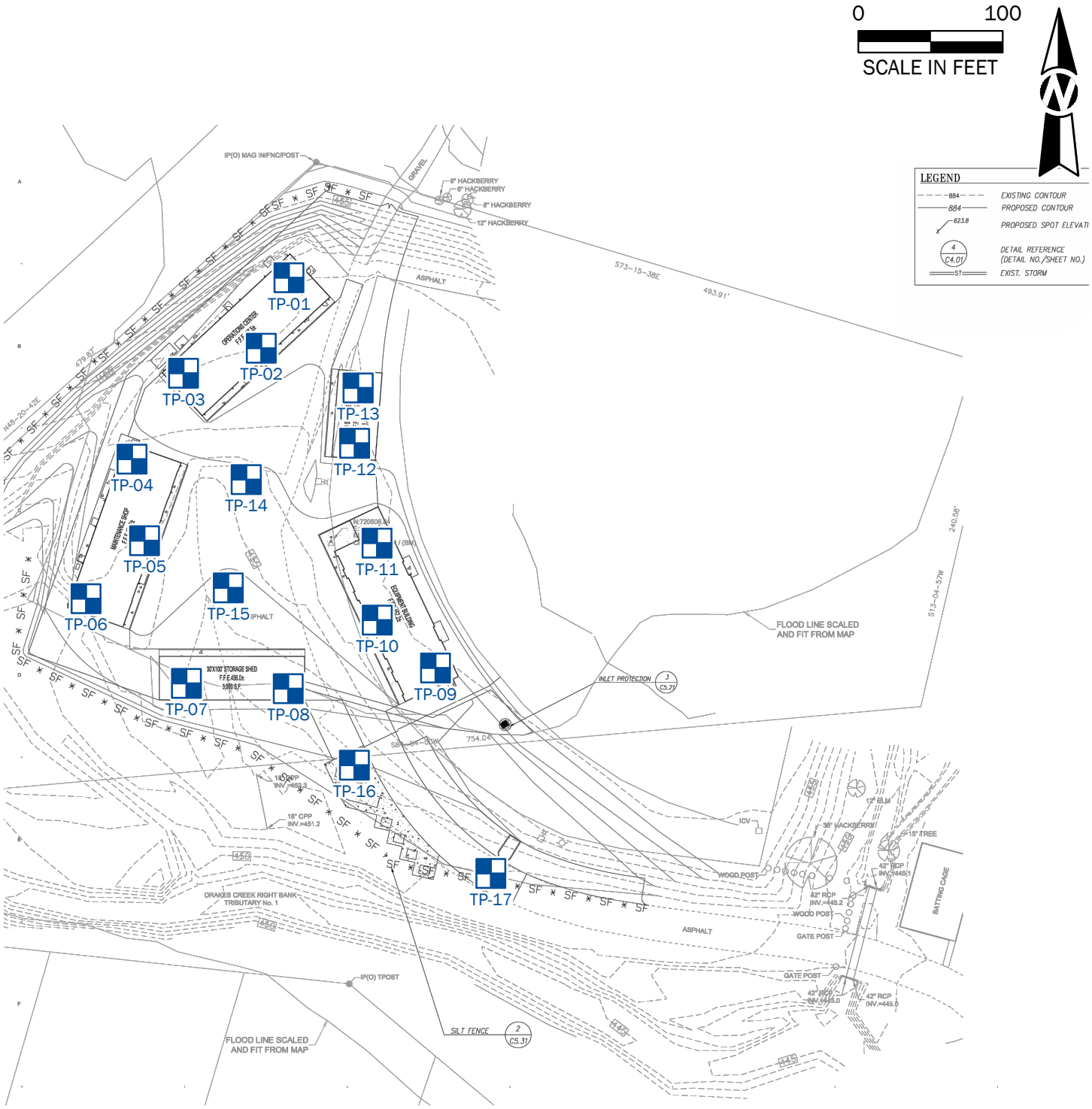
DRAKES CREEK MAINTENANCE COMPLEX

CITY OF HENDERSONVILLE

DRAKES CREEK PARK NORTH
HENDERSONVILLE, SUMNER COUNTY, **TENNESSEE**

Drawn By:	M H M
Checked By:	E P L
Date:	08/21/2025
Proj. No.:	25-08-02096
File Name:	25-08-02096 SLM.dwg

Sheet Title
SITE LOCATION MAP



NOTES:

1. TEST PIT LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE.

LEGEND

TP-01 — TEST PIT LOCATION AND IDENTIFIER

DRAWING SOURCE: "DRAKES CREEK MAINTENANCE COMPLEX, SHEET C3.02" DATED 04/08/2025, PREPARED BY WOLD ARCHITECTS AND ENGINEERS.

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DRAKES CREEK MAINTENANCE COMPLEX

CITY OF HENDERSONVILLE

DRAKES CREEK PARK NORTH
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Drawn By:	M H M
Checked By:	E P L
Date:	08/21/2025
Proj. No.:	25-08-02096
File Name:	25-08-02096 ELP.dwg

Sheet Title
EXPLORATION LOCATION PLAN

SOIL LEGEND

FINE- AND COARSE-GRAINED SOIL INFORMATION

FINE-GRAINED SOILS (SILTS AND CLAYS)

SPT N-Value	Consistency	Estimated Q_u (TSF)
0 - 1	Very Soft	0 - 0.25
2 - 4	Soft	0.25 - 0.5
5 - 8	Firm	0.5 - 1.0
9 - 15	Stiff	1.0 - 2.0
16 - 30	Very Stiff	2.0 - 4.0
31+	Hard	4.0+

Q_u = Unconfined Compression Strength

COARSE-GRAINED SOILS (SANDS AND GRAVELS)

SPT N-Value	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
51+	Very Dense

PARTICLE SIZE

Name	Size (US Std. Sieve)
Boulders	>300 mm (>12 in.)
Cobbles	75 mm to 300 mm (3 - 12 in.)
Coarse Gravel	19 mm to 75 mm (3/4 - 3 in.)
Fine Gravel	4.75 mm to 19 mm (#4 - 3/4 in.)
Coarse Sand	2 mm to 4.75 mm (#10 - #4)
Medium Sand	0.425 mm to 2 mm (#40 - #10)
Fine Sand	0.075 mm to 0.425 mm (#200 - #40)
Silts and Clays	< 0.075 mm (< #200)

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Terms	Percent of Dry Weight
"Trace"	< 15
"With"	15 - 30
Modifier	> 30

RELATIVE PROPORTIONS OF CLAYS AND SILTS

Descriptive Terms	Percent of Dry Weight
"Trace"	< 5
"With"	5 - 12
Modifier	> 12

CRITERIA FOR DESCRIBING MOISTURE CONDITION

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp, but no visible water
Wet	Visible free water, usually soil is below water table

CRITERIA FOR DESCRIBING CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

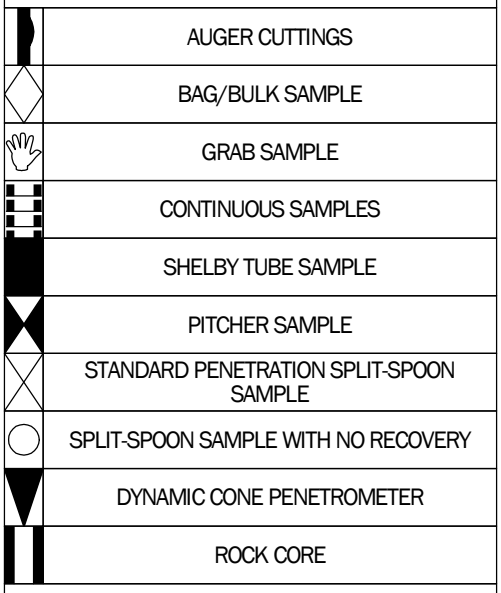
CRITERIA FOR DESCRIBING STRUCTURE

Description	Criteria
Stratified	Alternating layers of varying material or color with layers at least 6 mm thick; note the thickness
Laminated	Alternating layers of varying material or color with the layers less than 6 mm thick; note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

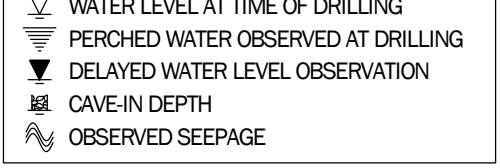
ABBREVIATIONS AND ACRONYMS

WOH	Weight of Hammer	N-Value	Sum of the blows for last two 6-in increments of SPT
WOR	Weight of Rod		
Ref.	Refusal	NA	Not Applicable or Not Available
ATD	At Time of Drilling	OD	Outside Diameter
DCP	Dynamic Cone Penetrometer	PPV	Pocket Penetrometer Value
Elev.	Elevation	SFA	Solid Flight Auger
ft.	feet	SH	Shelby Tube Sampler
HSA	Hollow Stem Auger	SS	Split-Spoon Sampler
ID	Inside Diameter	SPT	Standard Penetration Test
in.	inches	USCS	Unified Soil Classification System
lbs	pounds		

SAMPLERS AND DRILLING METHODS



WATER LEVEL SYMBOLS



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UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

COARSE GRAINED SOILS (>50% of the material is larger than the #200 sieve)	GRAVELS (>50% of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu > 4 Cc = 1-3	GW	Well-graded gravels, gravel-sand mixtures with trace or no fines
			Cu < 4 and/or Cc < 1 Cc > 3	GP	Poorly-graded gravels, gravel-sand mixtures with trace or no fines
		GRAVEL WITH 5% TO 12% FINES	Cu > 4 Cc = 1-3	GW-GM	Well-graded gravels, gravel-sand mixtures with silt fines
				GW-GC	Well-graded gravels, gravel-sand mixtures with clay fines
			Cu < 4 and/or Cc < 1 Cc > 3	GP-GM	Poorly-graded gravels, gravel-sand mixtures with silt fines
				GP-GC	Poorly-graded gravels, gravel-sand mixtures with clay fines
		GRAVEL WITH MORE THAN 12% FINES		GM	Silty gravels, gravel-silt-sand mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
				GC-GM	Clayey gravels, gravel-sand-clay-silt mixtures
	SANDS (>50% of coarse fraction is smaller than the #4 sieve)	CLEAN SAND WITH <5% FINES	Cu > 6 Cc = 1-3	SW	Well-graded sands, sand-gravel mixtures with trace or no fines
			Cu < 6 and/or Cc < 1 Cc > 3	SP	Poorly-graded sands, sand-gravel mixtures with trace or no fines
		SAND WITH 5% TO 12% FINES	Cu > 6 Cc = 1-3	SW-SM	Well-graded sands, sand-gravel mixtures with silt fines
				SW-SC	Well-graded sands, sand-gravel mixtures with clay fines
			Cu < 6 and/or Cc < 1 Cc > 3	SP-SM	Poorly-graded sands, sand-gravel mixtures with silt fines
				SP-SC	Poorly-graded sands, sand-gravel mixtures with clay fines
		SAND WITH MORE THAN 12% FINES		SM	Silty sands, sand-gravel-silt mixtures
				SC	Clayey sands, sand-gravel-clay mixtures
				SC-SM	Clayey sands, sand-gravel-clay-silt mixtures
FINE GRAINED SOILS (>50% of material is smaller than the #200 sieve)		SILTS & CLAYS (Liquid Limit less than 50)		ML	Inorganic silts with low plasticity
				CL	Inorganic clays of low plasticity, gravelly or sandy clays, silty clays, lean clays
				CL-ML	Inorganic clay-silts of low plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
		SILTS & CLAYS (Liquid Limit more than 50)		MH	Inorganic silts of high plasticity, elastic silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays and organic silts of high plasticity

USCS - HIGHLY ORGANIC SOILS

Primarily organic matter, dark in color, organic odor

PT	Peat, humus, swamp soils with high organic contents

OTHER MATERIALS

- BITUMINOUS CONCRETE (ASPHALT)
- CONCRETE
- CRUSHED STONE/AGGREGATE BASE
- TOPSOIL
- FILL
- UNDIFFERENTIATED ALLUVIUM
- UNDIFFERENTIATED OVERBURDEN
- BOULDERS AND COBBLES

UNIFORMITY COEFFICIENT

$$C_u = D_{60}/D_{10}$$

COEFFICIENT OF CURVATURE

$$C_C = (D_{30})^2/(D_{60} \times D_{10})$$

Where:

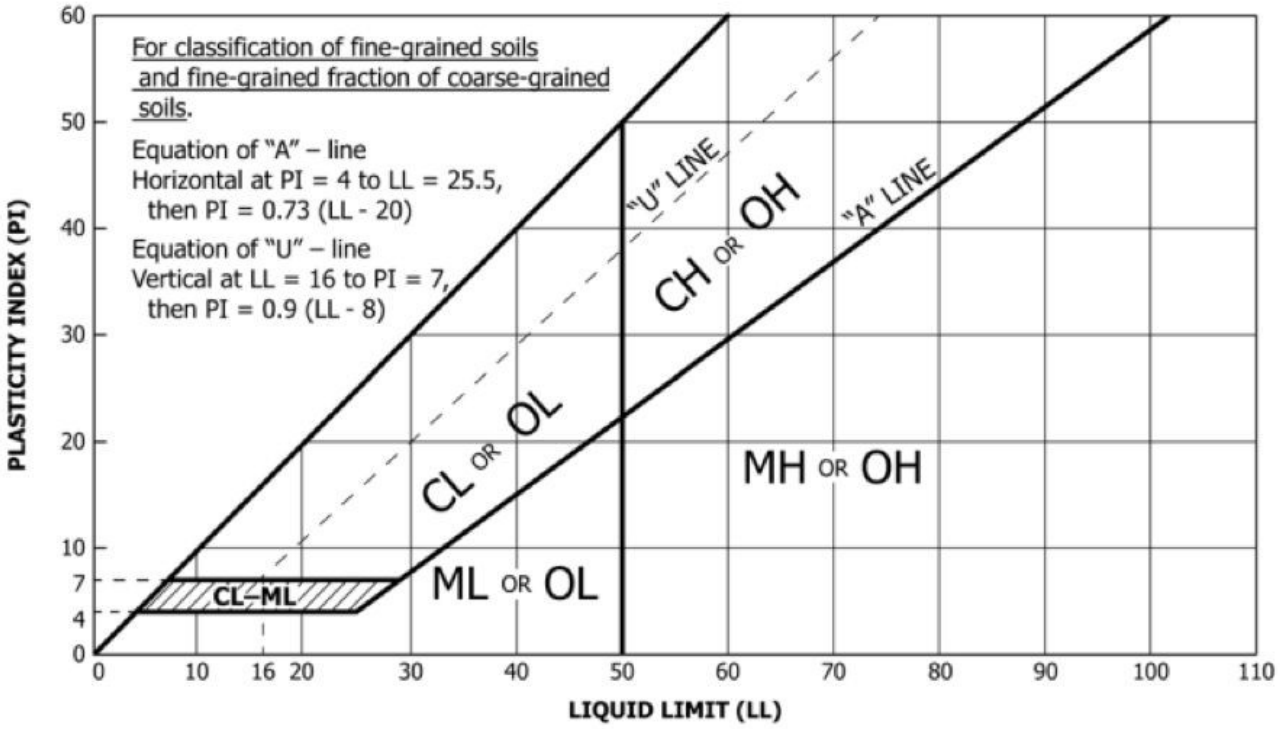
D_{60} = grain diameter at 60% passing

D_{30} = grain diameter at 30% passing

D_{10} = grain diameter at 10% passing

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PLASTICITY CHART FOR USCS CLASSIFICATION OF FINE-GRAINED SOILS



IMPORTANT NOTES ON TEST BORING RECORDS

1) The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.

2) Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown. Solid lines are used to indicate a change in the material type, particularly a change in the USCS classification. Dashed lines are used to separate two materials that have the same material type, but that differ with respect to two or more other characteristics (e.g. color, consistency).

3) No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.

4) Logs represent general soil and rock conditions observed at the point of exploration on the date indicated.

5) In general, Unified Soil Classification System (USCS) designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.

6) Fine-grained soils that plot within the hatched area on the Plasticity Chart, and coarse-grained soils with between 5% and 12% passing the #200 sieve require dual USCS symbols as presented on the previous page.

7) If the sampler is not able to be driven at least 6 inches, then 50/X" indicates that the sampler advanced X inches when struck 50 times with a 140-pound hammer falling 30 inches.

8) If the sampler is driven at least 6 inches, but cannot be driven either of the subsequent two 6-inch increments, then either 50/X" or the sum of the second 6-inch increment plus 50/X" for the third 6-inch increment will be indicated.
Example 1: Recorded SPT blow counts are 16 - 50/4", the SPT N-value will be shown as N = 50/4"
Example 2: Recorded SPT blow counts are 18 - 25 - 50/2", the SPT N-value will be shown as N = 75/8"

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-01

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	3.2 feet
Coordinates:	N/A	Ground Elev.:	458 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			GRAVEL, 2 inches 0.2						
			FILL: LEAN CLAY, brown to dark brown, with abundant limestone gravel (fine to coarse) and some roots, moist (CL)	14.8			2.5		
			2.5						
455			**RESIDUUM** FAT CLAY, very stiff, brown with gray mottling, moist (CH)	21.9			2.0		
			3.2						
			Excavator refusal at 3.2 feet						
	5								
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this test pit log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-02

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	1.5 feet
Coordinates:	N/A	Ground Elev.:	458 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			GRAVEL, 3 inches (0.3)						
			FILL: LEAN CLAY, brown and dark brown, with some roots and abundant limestone gravel (fine to coarse), moist (CL) (1.5)	11.2			2.0		
			Excavator refusal at 1.5 feet						
455									
	5								
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this test pit log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-03

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	4.8 feet
Coordinates:	N/A	Ground Elev.:	458 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			GRAVEL, 3 inches 0.3						
			FILL: LEAN CLAY, brown, with abundant limestone gravel (fine to coarse), some roots, and some pieces of rebar, moist (CL)						
			- a piece of concrete (4.5 x 3.5 x 0.5 feet) at 2 feet						
			- tree limbs about 3 inches diameter at 3 feet	25.9			2.0		
455									
				18.9	35-24-11		2.0		
			4.8						
	5		Excavator refusal at 4.8 feet						
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-04

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	4.8 feet
Coordinates:	N/A	Ground Elev.:	457 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
455	0		GRAVEL, 3 inches (0.3) **FILL:** LEAN CLAY, brown, with abundant limestone gravel (fine to coarse), trace of fine roots, and concrete pieces (up to 18 inches in diameter), moist (CL)	12.4			1.5		
			(3.7) **RESIDUUM** LEAN CLAY, very stiff, brown and light brown with some black mineral staining, moist (CL)	24.7			2.5		
	5		(4.8) Excavator refusal at 4.8 feet						
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this test pit log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-05

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	3.7 feet
Coordinates:	N/A	Ground Elev.:	456 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
455	0		GRAVEL, 3 inches (0.3)						
			FILL: LEAN CLAY, brown, with abundant asphalt fragments, moist (CL)	17.5			1.5		
				16.8	27-20-7		2.0		
			(3.7) Excavator refusal at 3.7 feet						
	5								
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-06

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	7 feet
Coordinates:	N/A	Ground Elev.:	455 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			GRAVEL, 3 inches (0.3)						
			FILL: LEAN CLAY, brown, with abundant limestone gravel (fine to coarse) and cobbles, some roots, some pieces of rebar, and some plastic debris, moist (CL)	15.7			2.0		
			(4.5)	31.2			2.0		
450	5		**FILL:** CLAYEY SAND, coarse grained, red, with some pieces of rebar, moist (SC)						
			(7.0) Excavator refusal at 7 feet						
445	10								
440	15								

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-07

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	6 feet
Coordinates:	N/A	Ground Elev.:	454 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			GRAVEL, 2 inches (0.2)						
			FILL: LEAN CLAY, brown, with some limestone gravel (fine to coarse), wood pieces (up to 3 inches in diameter), concrete pieces (up to 12 inches), and asphalt fragments, moist (CL)	22.1			1.5		
450									
			(4.5)	23.7			2.0		
	5		**RESIDUUM** LEAN CLAY, very stiff, light brown, moist (CL)	21.6			2.5		
			(6.0) Excavator refusal at 6 feet						
445									
	10								
440									
	15								

BoreDM Template: Standard Test Pit Log (January 2024)

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this test pit log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-08

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	4.5 feet
Coordinates:	N/A	Ground Elev.:	454 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
	0		GRAVEL, 1 inch (<0.1)						
			FILL: LEAN CLAY, brown, with abundant limestone gravel (fine to coarse), bricks, and asphalt fragments, moist (CL)	20.4		78			
450									
			4.5	15.0					
	5		Excavator refusal at 4.5 feet						
445									
	10								
440									
	15								

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-09

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	6.3 feet
Coordinates:	N/A	Ground Elev.:	457 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			TOPSOIL, 4 inches (0.3)						
455			**FILL**: LEAN CLAY, brown, with trace of chert gravel (fine) and fine roots, moist (CL)	20.3			2.5		
			(2.5) **RESIDUUM** LEAN CLAY, very stiff, brown, with trace of black mineral staining, moist (CL)	19.6	40-24-16		2.0		
	5								
			(6.3) Excavator refusal at 6.3 feet	19.1			2.5		
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-10

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	5.2 feet
Coordinates:	N/A	Ground Elev.:	457 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
455	0		TOPSOIL, 3 inches 0.3 **FILL:** LEAN CLAY, brown, with some chert gravel (coarse) and fine roots, moist (CL)	16.4	43-22-21		2.5		
			2.5 **RESIDUUM** LEAN CLAY, very stiff, brown, with some black mineral staining, moist (CL)	17.9			2.5		
450	5		5.2 Excavator refusal at 5.2 feet						
445	10								
440	15								

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-11

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	6.5 feet
Coordinates:	N/A	Ground Elev.:	457 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
455	0		TOPSOIL, 3 inches (0.3)						
			FILL: LEAN CLAY, brown, with some chert gravel (coarse), moist (CL) (1.5)	18.1			2.5		
			RESIDUUM LEAN CLAY, very stiff, brown, with some black mineral staining, moist (CL)	23.5			2.5		
	5		(5.0)						
			FAT CLAY, very stiff, brown, with some black mineral staining, moist (CH)	29.0			2.25		
450			(6.5) Excavator refusal at 6.5 feet						
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-12

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	5.7 feet
Coordinates:	N/A	Ground Elev.:	457 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			TOPSOIL, 2 inches (0.2)						
			FILL: LEAN CLAY, brown, with trace of chert gravel (fine), moist (CL) (1.5)						
455			**RESIDUUM** LEAN CLAY, very stiff, with some black mineral staining, moist (CL)	17.8			2.5		
				24.9			2.0		
	5		(5.7)						
			Excavator refusal at 5.7 feet						
450									
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-13

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	5 feet
Coordinates:	N/A	Ground Elev.:	457 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
455	0		TOPSOIL, 4 inches 0.3						
			FILL: LEAN CLAY, brown, with trace of chert gravel (fine to coarse), moist (CL)	21.8			2.5		
			1.5 **RESIDUUM** LEAN CLAY, very stiff, brown, with black mineral staining, moist (CL)						
				25.6			2.0		
450	5		5.0 Excavator refusal at 5 feet						
	10								
445									
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-14

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	11 feet
Coordinates:	N/A	Ground Elev.:	456 ft

Comments:
Groundwater was not encountered upon completion.- Backfilled with excavated materials upon completion. Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
455	0		GRAVEL, 12 inches						
			1.0						
			FILL: LEAN CLAY, dark brown, with abundant limestone gravel (fine to coarse) and some asphalt fragments, moist (CL)						
			2.3						
			RESIDUUM LEAN CLAY, very stiff, brown, with some black mineral staining, moist (CL)	19.4			2.5		
				17.5			2.5		
	5								
450				22.7			2.5		
				23.4			3.0		
	10			24.1			2.0		
445			11.0						
			Test pit terminated at 11 feet						
	15								
440									

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-15

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	5.5 feet
Coordinates:	N/A	Ground Elev.:	454 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			GRAVEL, 4 inches 0.3						
			FILL: LEAN CLAY, brown, with abundant limestone gravel (fine to coarse) and asphalt fragments, moist (CL)				3.0		
			2.7						
450			**RESIDUUM** LEAN CLAY, very stiff, brown, with some black mineral staining, moist (CL)	28.7			2.5		
	5		5.5						
			Excavator refusal at 5.5 feet						
445									
	10								
440									
	15								

BoreDM Template: Standard Test Pit Log (January 2024)

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Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-16

Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	7.3 feet
Coordinates:	N/A	Ground Elev.:	453 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
			TOPSOIL, 2 inches (0.2)						
			FILL: LEAN CLAY, red-brown, with some limestone gravel (fine to coarse), moist (CL) (1.0)						
			RESIDUUM LEAN CLAY, very stiff, brown, with trace of fine roots, moist (CL)						
				18.6			2.5		
450									
				22.3			2.0		
	5								
				23.5			2.0		
			(7.3)						
445			Excavator refusal at 7.3 feet						
	10								
440									
	15								
435									

BoreDM Template: Standard Test Pit Log (January 2024)

This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this test pit log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, Sumner County, Tennessee

Log of Test Pit TP-17

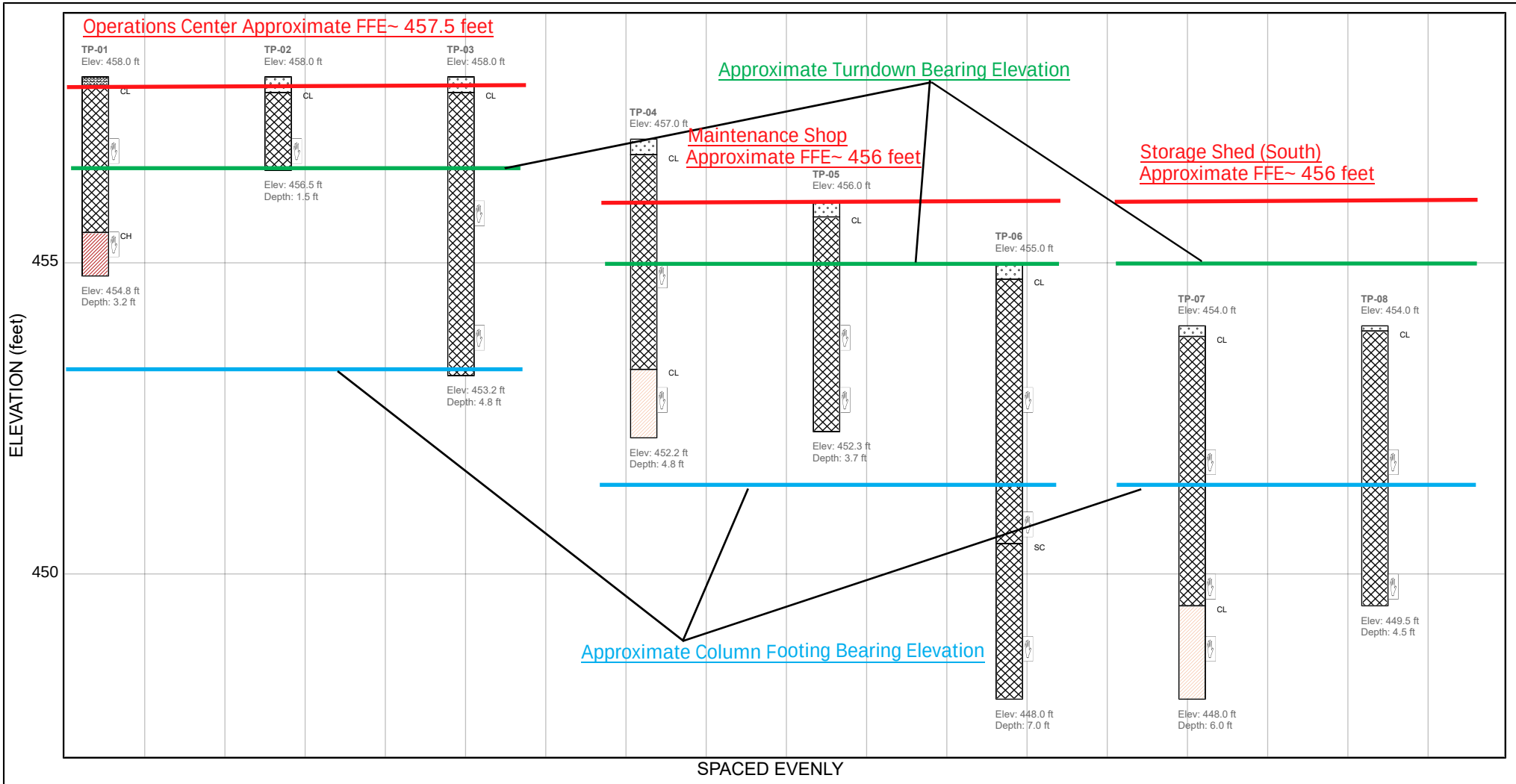
Contractor:	Rollins Grading Company	Project No.:	25-08-02096
Logged By:	E. Laird	Date Excavated:	08/05/25
Equipment:	Kubota KX161-3	Test Pit Depth:	6.9 feet
Coordinates:	N/A	Ground Elev.:	452 ft

Comments:
Groundwater was not encountered upon completion.
Backfilled with excavated materials upon completion.
Elevation interpolated from provided drawings and should be considered approximate.

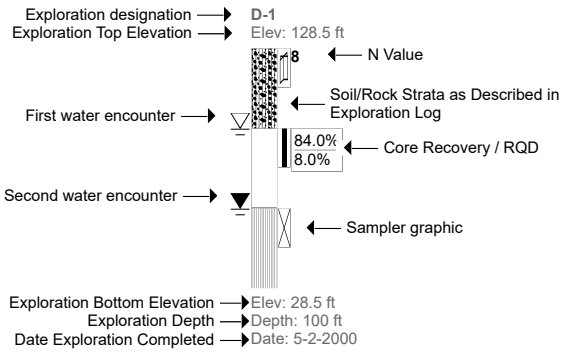
Elevation (feet)	Depth (feet)	Graphic Log	Materials Description	Moisture Content (%)	Atterberg Limits (LL-PL-PI)	% Fines	PPV (tsf)	Sample Type	Remarks
450	0		**FILL**: LEAN CLAY, red-brown, with some sand (coarse) and limestone gravel (coarse), moist (CL)				2.5		
			2.0						
			RESIDUUM LEAN CLAY, very stiff, brown, moist (CL)						
				23.1			2.0		
	5								
				19.6			2.0		
445			6.9						
			Excavator refusal at 6.9 feet						
	10								
440									
	15								
435									

BoreDM Template: Standard Test Pit Log (January 2024)

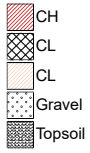
This record shall not be separated from the corresponding Instrument of Service; no third party may rely upon this test pit log or the corresponding Instrument of Service absent a written TTL Secondary Client Agreement.



EXPLORATION LOG LEGEND



LEGEND KEY



SCALE:

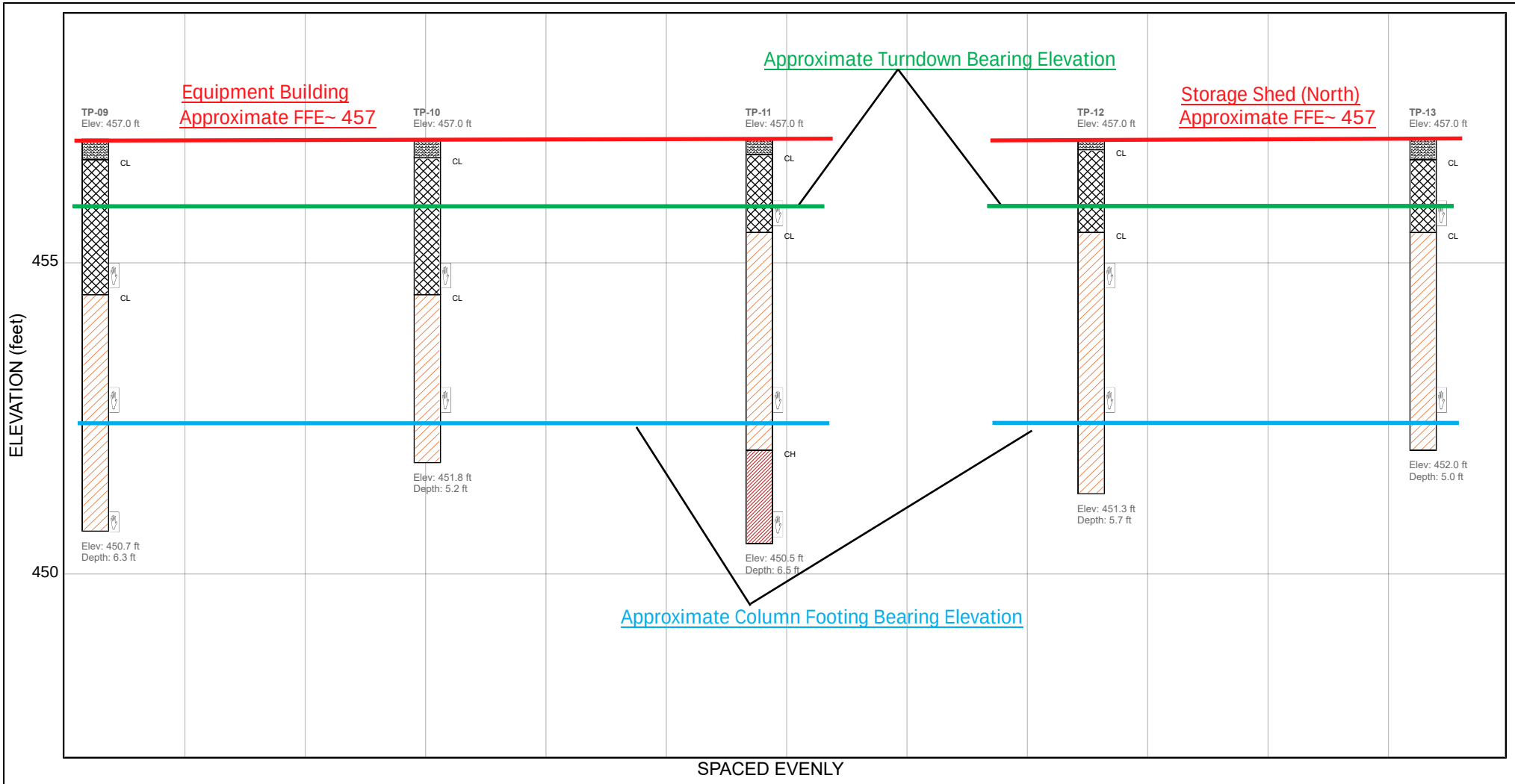
Vertical = As Shown
Horizontal = None

Drakes Creek Maintenance Complex
Hendersonville, Sumner County, Tennessee

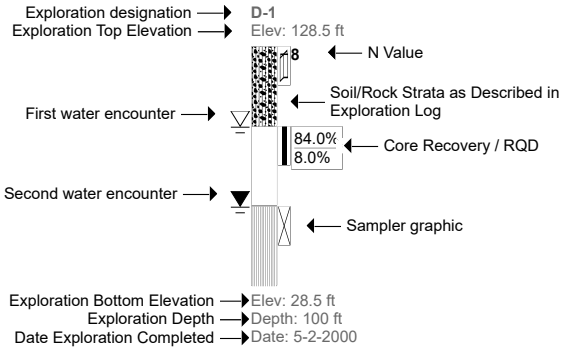
CROSS SECTIONS REPORT

TTL

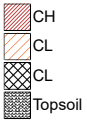
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EXPLORATION LOG LEGEND



LEGEND KEY



SCALE:
Vertical = As Shown
Horizontal = None

Drakes Creek Maintenance Complex
Hendersonville, Sumner County, Tennessee

CROSS SECTIONS REPORT

TTL

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TTL

Laboratory Results Summary

PROJECT Drakes Creek Maintenance Complex
CLIENT City of Hendersonville
PROJECT NO. 25-08-02096
LOCATION Hendersonville, Sumner County, Tennessee

Sample ID	Depth (ft)	Moisture Content (%)	LL	PL	PI	%Gravel	% Sand	% Fines	Dry Density (PCF)	USCS
TP-01	2	14.8								
TP-01	4	21.9								
TP-02	1	11.2								
TP-03	2	25.9								
TP-03	4	18.9	35	24	11					CL
TP-04	2	12.4								
TP-04	4	24.7								
TP-05	2	17.5								
TP-05	3	16.8	27	20	7					CL
TP-06	2	15.7								
TP-06	4	31.2								
TP-07	2	22.1								
TP-07	4	23.7								
TP-07	5	21.6								
TP-08	2	20.4						78		
TP-08	4	15.0								
TP-09	2	20.3								
TP-09	4	19.6	40	24	16					CL
TP-09	6	19.1								
TP-10	2	16.4	43	22	21					CL
TP-10	4	17.9								
TP-11	1	18.1								
TP-11	4	23.5								
TP-11	6	29.0								
TP-12	2	17.8								
TP-12	4	24.9								
TP-13	1	21.8								
TP-13	4	25.6								
TP-14	2	19.4								
TP-14	4	17.5								
TP-14	6	22.7								
TP-14	8	23.4								
TP-14	10	24.1								
TP-15	4	28.7								
TP-16	2	18.6								
TP-16	4	22.3								
TP-16	6	23.5								
TP-17	4	23.1								
TP-17	6	19.6								

APPENDIX B
REFERENCE MATERIALS

EXPLORATION PROCEDURES

Field Locating of Explorations

Exploratory test pits were located in the field using a recreational grade hand-held GPS unit (Garmin Montana 680t) and should be considered approximate. Elevations of the ground surface shown on the respective logs or profiles were interpolated from topographic contours shown on the provided drawings and should be considered approximate. Surveying the test locations for vertical and horizontal control was beyond the scope of this exploration.

Test Pit Excavations

The test pit excavations were made by a track-mounted backhoe (Kubota KX161-3). A TTL geoprofessional documented the conditions exposed by the excavations, visually classified the soil using the Unified Soil Classification System (USCS) defined by ASTM D2487 and D2488, and collected representative grab samples of the soil. At regular depth intervals or at apparent changes in stratigraphy, the consistency of the exposed soils was measured using Pocket Penetrometer (PP) testing.

PP testing consisted of forcing a flat-tipped steel rod with a ¼-inch-diameter circular cross-section into the soil a distance of ¼ inch. The steel rod is connected to a calibrated spring which measures the force required to push the rod into the soil and correlates the force with the unconfined compressive strength of the soil in tons per square foot (tsf). The unconfined compressive strength of cohesive soil in tsf is equivalent to the undrained shear strength in kips per square foot (ksf).

Groundwater Measurements

Each test pit excavation was checked for the presence of groundwater upon termination by lowering a measuring tape down into the open excavation. The depth to groundwater was recorded.

Backfilling Test Pits

Each test pit excavation was backfilled to the ground surface with excavated soils after making final groundwater measurements. Backfill was placed in lifts and tamped with the bucket of the backhoe, but we caution the backfill should not be considered as “compacted” fill suitable to support additional fill, foundations, slabs, or pavements. Backfill may settle over time. Return trips to the site to top-off backfill that has settled were not part of our scope of services.

LABORATORY TESTING PROCEDURES

Selected samples were tested for the following properties in general accordance with the applicable ASTM standards:

- Moisture content (ASTM D2216)
- Atterberg limits (ASTM D4318)
- Percent material passing the No. 200 sieve (ASTM D1140)

Results of tests for moisture content, Atterberg limits, and percent material passing the No. 200 sieve are presented on individual boring logs in Appendix A. The results are also tabulated on the Laboratory Results Summary sheet in Appendix A.

Drakes Creek Maintenance Complex

City of Hendersonville

Hendersonville, TN

GENERAL

A0.000	COVER SHEET
A0.101	CODE PLAN - COLOR
A0.102	ARCHITECTURAL NOTES

CIVIL

C0.01	CIVIL NOTES
C0.02	EXISTING CONDITIONS
C0.03	DEMOLITION PLAN
C1.01	SITE PLAN
C1.02	FIRE TRUCK MANEUVER PLAN
C2.01	GRADING AND DRAINAGE PLAN
C3.01	INITIAL PHASE EROSION CONTROL PLAN
C3.03	EROSION CONTROL FINAL PLAN
C4.01	UTILITY PLAN
C5.11	SITE DETAILS
C5.12	SITE DETAILS
C5.21	GRADING & DRAINAGE DETAILS
C5.31	EROSION CONTROL DETAILS
C5.41	UTILITY DETAILS
C5.42	UTILITY DETAILS

ARCHITECTURAL

A2.101	FLOOR & ROOF PLAN - OPERATIONS
A2.102	FLOOR & ROOF PLAN - MAINTENANCE
A2.103	FLOOR & ROOF PLAN - EQUIPMENT
A2.104	FLOOR & ROOF PLAN - STORAGE 100'X30'
A2.105	FLOOR & ROOF PLAN - STORAGE 60'X30'
A2.901	OPENING TYPES
A3.01	REFLECTED CEILING PLANS
A4.101	DETAILS - GENERAL - SYMBOLS, ABBREVIATIONS, MATERIALS
A4.102	DETAILS - MOUNTING HEIGHTS
A4.105	ENLARGED PLANS & FLOOR DETAILS
A4.711	DETAILS - CASEWORK
A4.712	DETAILS - CASEWORK
A5.101	EXTERIOR ELEVATIONS - OPERATIONS
A5.102	EXTERIOR ELEVATIONS - MAINTENANCE
A5.103	EXTERIOR ELEVATIONS - EQUIPMENT BUILDING
A5.104	EXTERIOR ELEVATIONS - STORAGE 100'X30'
A5.105	EXTERIOR ELEVATIONS - STORAGE 60'X30'
A5.201	BUILDING SECTION & DETAILS
A5.202	BUILDING SECTION & DETAILS
A5.203	BUILDING SECTION & DETAILS
A5.204	BUILDING SECTION & DETAILS

STRUCTURAL

S00.01	GENERAL NOTES AND FOUNDATION SECTIONS
S01.01	FOUNDATION PLAN OPERATIONS BUILDING
S01.02	FOUNDATION PLAN - MAINTENANCE & SUPPLY BUILDING
S01.03	FOUNDATION PLAN EQUIPMENT BUILDING
S01.04	FOUNDATION PLAN STORAGE SHEDS

MECHANICAL

M0.00A	HVAC - GENERAL NOTES & LEGENDS
M0.00B	HVAC - ON SHEET SPECIFICATIONS
M0.001	HVAC - SCHEDULES
M0.002	HVAC - SCHEDULES
M01.01	HVAC - FLOOR PLAN - OPERATIONS CENTER
M01.02	HVAC - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
M01.03	HVAC - FLOOR PLAN - EQUIPMENT BUILDING
M02.01	PIPING - FLOOR PLAN - OPERATIONS CENTER
M02.02	PIPING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
M02.03	PIPING - FLOOR PLAN - EQUIPMENT BUILDING
M04.00	HVAC - DETAILS
M04.01	HVAC - DETAILS
M05.00	HVAC - CONTROLS
M05.01	HVAC - CONTROLS

PLUMBING

P00.00	PLUMBING - GENERAL NOTES & LEGENDS
P00.01	PLUMBING - DETAILS
P00.02	PLUMBING - SPECIFICATIONS
P00.03	PLUMBING - SPECIFICATIONS
P00.04	PLUMBING - SPECIFICATIONS
P00.05	PLUMBING - SPECIFICATIONS
P00.06	PLUMBING - SPECIFICATIONS
P01.01	UNDERGROUND - FLOOR PLAN - OPERATIONS CENTER
P01.02	UNDERGROUND - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
P01.03	UNDERGROUND - FLOOR PLAN - EQUIPMENT BUILDING
P02.01	PLUMBING - FLOOR PLAN - OPERATIONS CENTER
P02.02	PLUMBING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
P02.03	PLUMBING - FLOOR PLAN - EQUIPMENT BUILDING
P03.01	SANITARY - FLOOR PLANS - OPERATIONS CENTER
P03.02	SANITARY - FLOOR PLANS - MAINTENANCE / SUPPLY BUILDING
P03.03	SANITARY - FLOOR PLANS - EQUIPMENT BUILDING

ELECTRICAL

E00.01	ELECTRICAL LEGENDS AND SCHEDULES
E00.02	ELECTRICAL - SITE PLAN
E01.01	LIGHTING - FLOOR PLAN - OPERATIONS CENTER
E01.02	LIGHTING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
E01.03	LIGHTING - FLOOR PLAN - EQUIPMENT BUILDING
E01.04	LIGHTING - FLOOR PLAN - STORAGE SHED
E02.01	POWER - FLOOR PLAN - OPERATIONS CENTER
E02.02	POWER - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
E02.03	POWER - FLOOR PLAN - EQUIPMENT BUILDING
E02.04	POWER - FLOOR PLAN - STORAGE SHED
E03.01	SYSTEMS - FLOOR PLAN - OPERATIONS CENTER
E03.02	SYSTEMS - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
E04.01	ELECTRICAL RISER DIAGRAM
E04.02	ELECTRICAL PANEL SCHEDULES
E04.03	ELECTRICAL PANEL SCHEDULES
E05.01	ELECTRICAL SPECIFICATIONS

ADDENDUM

ADDENDUM NO. 1 - ISSUED 08-01-2025

ADDENDUM NO. 2 - ISSUED 09-17-2025

ADDENDUM NO. 3 - ISSUED 09-26-2025

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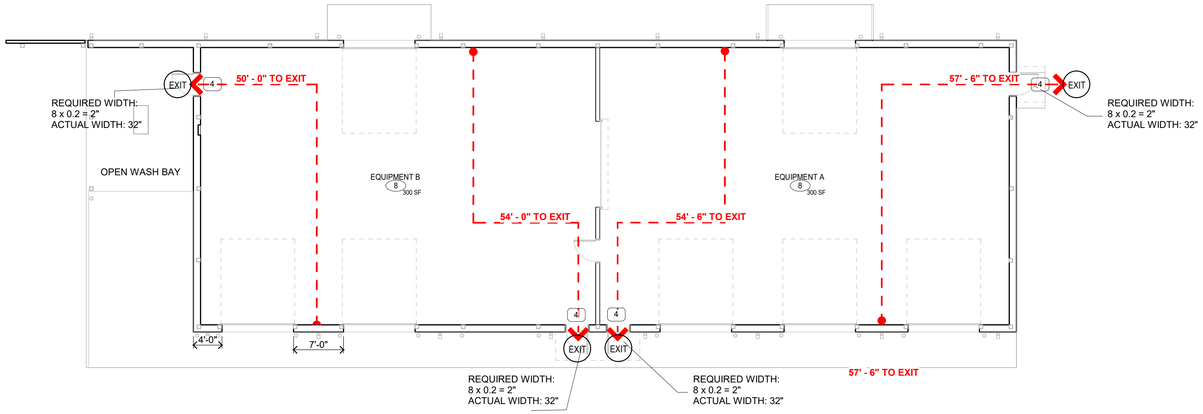
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Drakes Creek Park Parks Maintenance Complex
131 Conway Twitty Ln,
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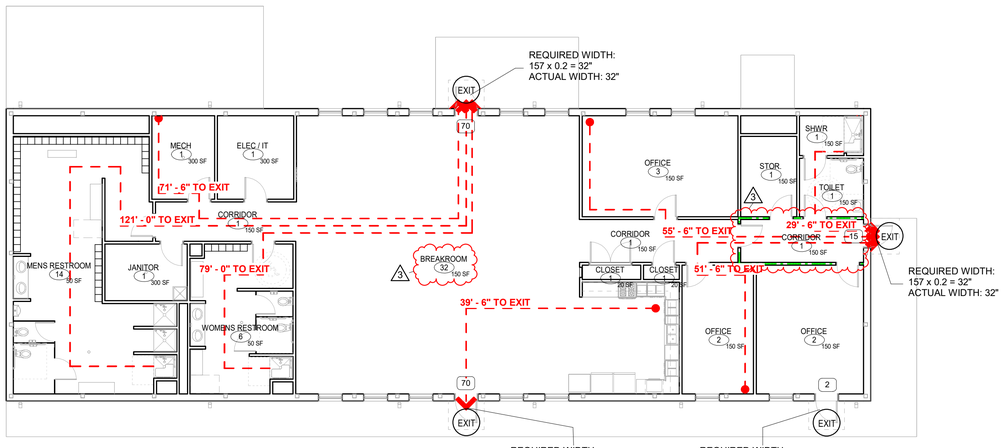
City of Hendersonville
Hendersonville, TN

Wold

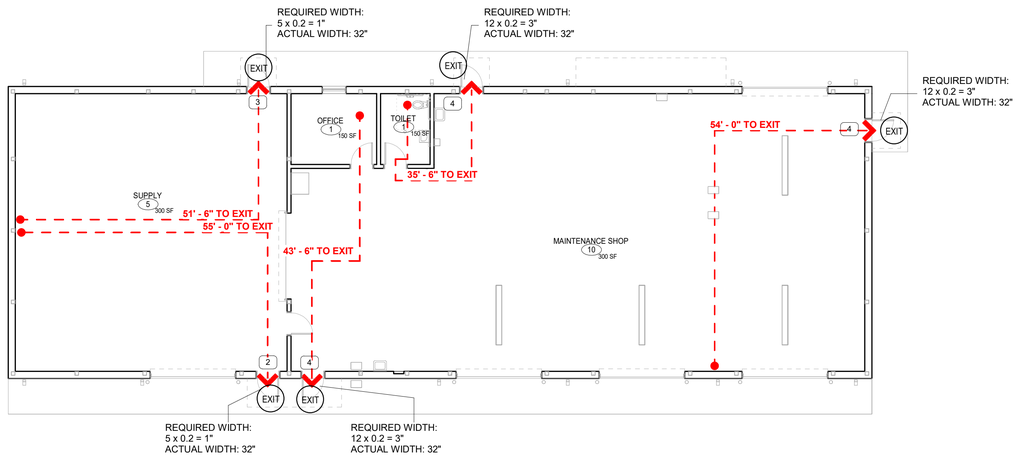
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C1 **CODE PLAN - EQUIPMENT**
1" = 10'-0"
0 7'-6" 15'



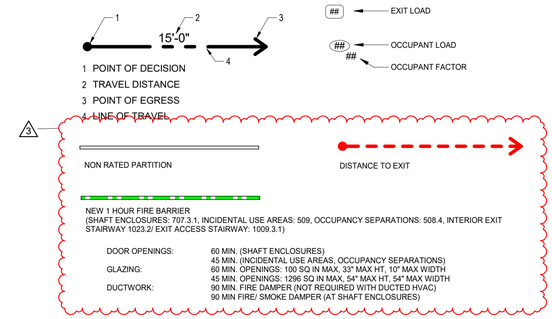
E1 **CODE PLAN - OPERATIONS**
1" = 10'-0"
0 7'-6" 15'



F1 **CODE PLAN - MAINTENANCE**
1" = 10'-0"
0 7'-6" 15'

NOTE: THIS DRAWING MUST BE PRINTED IN COLOR TO REPRODUCE ALL FIRE RATED WALL SYMBOLS.

CODE PLAN LEGEND



APPLICABLE CODES (EFFECTIVE JULY 1, 2025)

INTERNATIONAL RESIDENTIAL CODE - 2021 EDITION AND AMENDMENTS

INTERNATIONAL BUILDING CODE - 2021 EDITION AND AMENDMENTS

INTERNATION FUEL GAS CODE - 2021 EDITION AND AMENDMENTS

INTERNATIONAL PLUMBING CODE - 2021 EDITION AND EMENDMENTS

INTERNATIONAL PROPERTY MAINTENANCE CODE - 2021 EDITION AND AMENDMENTS

INTERNATIONAL EXISITNG BUILDING CODE - 2021 EDITION AND AMENDMENTS

INTERNATIONAL ENERGY CONSERVATION CODE - 2021 IECC AND AMENDMENTS

INTERNATIONAL SWIMMING POOL AND SPA CODE - 2021 EDITION AND EMENDMENTS

INTERNATIONAL MECHANICAL CODE - 2021 EDITION AND AMENDMENTS

NATIONAL ELECTRIC CODE - 2020 EDITION AND AMENDMENTS

ICC ANSI AMERICAN NATIONAL STANDARD A1171.1-2017

3 2021 INTERNATIONAL FIRE CODE AND ADMENDMENTS

2021 NFPA LIFE SAFETY CODE

OCCUPANCY CLASSIFICATIONS — SECTION 302

A.	SECTION 304, BUSINESS:	GROUP B
B.	SECTION 311, STORAGE:	GROUPS S-1, S-2
C.	SECTION 312, UTILITY AND MISCELLANEOUS	GROUP U

ENERGY CODE CLIMATE REQUIREMENTS

A.	SUMNER COUNTY CLIMATE ZONE	4A
B.	CATEGORY	WOOD FRAMED AND OTHER
C.	ROOF R-VALUE	R-19 + R-11 LS (LINEAR SYSTEM)
D.	WALLS ABOVE GRADE R-VALUE	R-13 + R-7.5 CI
E.	WALLS BELOW GRADE R-VALUE	R-7.5 CI
F.	UNHEATED SLABS FOR 24" BELOW GRADE	R-15 + R-5 (FULL SLAB)

OCCUPANT LOADS

A.	BUISNESS	150 GSF/ PERSON
B.	LOCKER ROOM	50 GSF/ PERSON
C.	STORAGE (S-1)	300 GSF/ PERSON
D.	ACCESSORY STORAGE	300 GSF/ PERSON

BUILDING DATA

OPERATIONS BUILDING

CONSTRUCTION OF A 4,800 SF FACILITIES BUISNESS OPERATIONS CENTER WITH OFFICES, BREAKROOM, AND LOCKER ROOM ACCOMMODATIONS FOR PARKS AND REC STAFF.

OCCUPANCY TYPE	B - BUISNESS
ONE STORY	
CONSTRUCTION TYPE	V-B

MAINTENANCE BUILDING

CONSTRUCTION OF A 4,800 SF VEHICLE MAINTENANCE AND GENERAL STORAGE BUILDING.

OCCUPANCY TYPE	S-1 - STORAGE
ONE STORY	
CONSTRUCTION TYPE	V-B

EQUIPMENT BUILDING

CONSTRUCTION OF A 4,800 SF VEHICLE STORAGE BUILDING FOR GOLF CARTS, UTILITY TERRAIN VEHICLES, AND MAINTENANCE VEHICLES.

OCCUPANCY TYPE	S-1 - STORAGE
ONE STORY	
CONSTRUCTION TYPE	V-B

STORAGE BUILDINGS

CONSTRUCTION OF A ONE 3,000 SF, AND ONE 1,800 SF 3 SIDED SHED FOR VEHICLE AND EQUIPMENT STORAGE.

OCCUPANCY TYPE	U - UTILITY
ONE STORY	
CONSTRUCTION TYPE	V-B

ALL BUILDINGS

ALLOWABLE AREA (TABLE 506.2)	9,000 SF
ACTUAL AREA	4,800 SF
ALLOWABLE HEIGHT (TABLE 504.3)	40 FT
ACTUAL HEIGHT	24 FT
ALLOWABLE NUMBER OF STORIES (TABLE 504.4)	2
ACTUAL NUMBER OF STORIES	1
MEANS OF EGRESS (OCCUPANT LOAD FACTOR)	
DOORS / RAMPS	0.2
STAIRS	0.3
MINIMUM NUMBER OF EXITS	2
MAXIMUM EXIT ACCESS TRAVEL DISTANCE (TABLE 1017.2)	
NON SPRINKLERED BUILDINGS	
BUISNESS	300 FT
STORAGE S-1	200 FT
STORAGE S-2	300 FT
COMMON PATH OF TRAVEL	
BUISNESS	75 FT
STORAGE S-1	75 FT
STORAGE S-2	75 FT
CORRIDOR FIRE RESISTANCE RATING (TABLE 1020.2)	
OCCUPANT LOAD OVER 30 (NON-SPRINKLERED)	1 HOUR RATING
DEAD-END CORRIDOR MAXIMUM	20 FT PER IBS 1020.5
STRUCTURAL FIRE RESISTANCE RATING (TABLE 601)	
ALL STRUCTURAL BUILDING ELEMENTS	0 RATING
SEISMEIC CLASSIFICATION	
SITE CLASSIFICATION	D
OCCUPANCY CLASSIFICATION	II
SEISMIC DESIGN CATEGORY	D

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS — REGISTERED ARCHITECT — AGRICULTURE — COMMERCE — No. 104719 — STATE OF TENNESSEE
9-26-2025

Revisions		
Description	Date	Num
Addendum 3	**2025-09-26**	**3**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **Author**
Check: **Checker**

CODE PLAN - COLOR

Scale: **As indicated**

A0.101

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Division 1 – General Requirements
A. Provide special inspections and testing as required by the 2021 International Building Code.
B. Owner to provide contractors and pre-engineered building manufacturer a copy of geo-technical report.
C. Pre-Engineered building manufacturer to provide stamped drawings and calculations for review prior to fabrication. Refer to Division 13 for additional requirements.
D. Comply with all applicable federal, state and local codes.
E. General contractor to coordinate all trades so that work is installed in an orderly and efficient manner.

Division 3 - Concrete
A. Concrete, reference Structural notes.
B. Provide special inspections and testing per Chapter 17 of the 2021 IBC.
C. Provide material and workmanship in accordance with American Concrete Institute "Specifications for Structural Concrete for Buildings" (ACI 301) latest Edition.

Division 5 - Metals
A. Structural steel shall conform to the AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings" 13th Edition.
B. For metal fabrications exposed to view, provide materials with smooth finish without seam marks or blemishes.
C. All steel exposed to exterior elements shall be galvanized.
D. Fabricate bollards from schedule 40 steel pipe.
E. Provide slotted metal framing for support of mechanical and electrical devices.

Division 6 – Wood
A. Coordinate with Division 13 for pre-engineered structure requirements.
B. For interior wall framing, provide Southern Yellow Pine (SYP), No. 2 grade and better, with maximum 19 percent moisture content.
C. Fasteners and anchors.
1. Provide stainless steel for treated wood locations.
2. Plain finish elsewhere; size and type to suit conditions.
3. Provide wood preservative pressure treatment for all components in contact with concrete slab.

Division 7 – Thermal and Moisture Protectiuon
A. Insulation
1. Provide polystyrene rigid board for below grade applications.
2. Batt/blanket insulation to conform to ASTM C-665.
3. Provide Kraft Paper insulation at concealed conditions; Type II, Class C.
4. Provide FSK faced insulation at exposed conditions; Type III, Class A, non-combustible.
5. 3-1/2" = R-13; 6-1/4" = R-19.
6. Provide fiberglass blown in insulation material per ASTM C764 for pneumatic placement; R-value of 30 per 12.5 inches.
7. Refer to Division 9 for acoustical insulation.
B. Sealants
1. Provide sealants validated by the Sealant, Waterproofing, and Restoration Institute; passing tests per ASTM C719 and ASTM C661.
2. Provide 2 year installer warranty and 5 year manufacturer.
3. Sealant Schedule:
a. Use Acrylic Caulk at interior openings/joints in walls and partitions, between casework and walls, around door frames
b. Use Polyurethane Sealant at exterior joints, metal to metal joints, thresholds, and expansion joints.
c. Use Silicone Calk in toilets and kitchens
4. Provide air barrier sealing at all penetrations in exterior walls and interior partitions of exterior walls.

Division 8 – Openings
A. Steel doors and frames.
1. All frames to be fully welded.
2. Exterior frames to be level 4, 14 gage, galvanized.
3. Interior frames to be level 3, 16 gage.
4. All hollow metal doors to be level 3, heavy duty 16 gage face sheets; fully welded seamless edge.
5. Provide doors prepped and reinforced for hardware.
6. Provide doors primed for field painting.
B. Steel Windows.
1. Steel window assemblies provided by pre-engineered building manufacturer.
2. Provide 5/8" insulated, tempered glazing in all windows.
3. Provide Kynar 5000 pre-finished units in color as selected by Owner from manufacturers full, premium color range.
C. Wood Doors.
1. Solid core, 5 ply.
2. Warranty: Extend to life of installation.
3. Provide doors prepped and reinforced for hardware.
4. Provide doors primed for field painting.
5. Veneer facing: Grade A veneer quality.
D. Overhead Doors.
1. Coordinate power requirements with manufacturer and electrical drawings.
2. Provide flush interior and exterior panels formed from galvanized sheet material. Interior panel 24 gage; exterior panel 20 gage.
3. Provide insulated, foam-in-place panels.
4. Finishes, Exterior: Baked on polyester finish; custom color to match exterior wall panels.
5. Finishes, Interior: Door panels to manufacturers standard white.
6. Provide 5-year warranty on door operation, including motor, operator, etc.
7. Provide 10-year warranty on finishes.
8. Provide chain hoist operator for emergency use.
9. Provide remote control systems for all doors with devices capable of operating 3 doors per device.
10. Provide obstruction detection safety system interfaced with door operator controls.

Division 8 – Door Hardware
A. General
1. Provide door hardware schedule prepared by a certified Architectural Hardware Consultant.
2. Arrange and conduct keying meeting with Owner prior to finalizing hardware schedule.
3. Provide warranties as follows:
a. Door closers – 10 years
b. Cylinders – 2 years
c. Locks – 10 years
d. Exit devices – 5 years
e. Hardware not mentioned – 2 years
4. Hardware Finishes: To greatest extent possible provide matching finish at each opening.
a. 710 CU antimicrobial finish on push/pull plates, door pulls
b. 630AM antimicrobial finish on locksets and exit devices
c. 689 finish on closers
d. 628 finish on hinges
5. Provide lock boxes; one per building. Coordinate with local AHJ for type and mounting location.
6. Install hardware per manufacturers instructions and requirements of SDI, AWI, ANSI/NFPA 80, and BHMA.
3 7. At rated openings provide closer, gasketing, and positive latching hardware.

B. Door Hardware Schedule:

Set 01 Openings 100, 100A, 104, 200, 200D, 203E, 301H, 301G, 301F, 301Q
3 hinges
1 exit device
1 closer
1 key lock
1 gasketing and threshold
Description:
Free egress at all times
Exterior entry with key
Exterior lever can be left locked on unlocked with key

Set 02 Openings 301S, 203D, 103A, 107, 108, 111, 113
3 hinges
1 passage set
3 silencers

Set 03 Openings 200F, 203C
3 hinges
1 exit device
1 closer
1 gasketing and threshold
Description:
Free egress at all times
No exterior hardware

Set 04 Openings 202, 103
3 hinges
1 privacy lock
1 closer
3 1 wall stop
3 silencers
DOOR 103 TO BE 3/4 HR FIRE RATED

Set 05 Openings 201, 105, 106, 101
3 hinges
1 office function lock
3 1 wall stop
3 silencers
DOOR 105 TO BE 3/4 HR FIRE RATED

Set 06 Opening 102, 109, 110, 112
3 hinges
1 storeroom function lock
1 wall stop
1 closer
3 silencers
Description:
3 Key required for access
Always free egress
DOOR 102 TO BE 3/4 HR FIRE RATED

Set 07 Openings 100B
3 hinges
1 exit device
1 closure
1 wall stop
3 silencers
3 Description:
Free egress both directions
3/4 HR FIRE RATED

Set 08 Openings 203A, 301M, 200A, 200B, 200C, 200E, 301K, 301J, 301I, 301P, 3010, 301L
1 chain hoist operator w/chain hasp
1 gasketing and weatherstripping
1 pad lock hasp (interior)
Description:
Reference plans for doors with motor operators.

Division 9 – Finishes
A. Finish material and color selections to be made by Owner. Reference drawings for general finishes.
B. Gypsum Board.
1. Provide 5/8" gypsum board full height of all walls, unless noted otherwise.
2. Perform work in accordance with ASTM C840, GA-214, GA-216, and manufacturer's instructions.
3. Provide type "x" at fire rated conditions.
4. Provide glass mat, mold and mildew resistant board at kitchens, toilet rooms, showers and mechanical spaces.
5. Provide impact resistant board where called for on drawings.
6. Provide exterior gypsum soffit/ceiling boards at all horizontal applications.
7. Provide level 4 finish.
8. Provide control joints per gypsum board manufacturer's recommendations.
C. Provide base per finish schedule.
D. Flooring.
1. Refer to finish schedule for material and locations.
2. Follow manufacturer's installation procedures for concrete slab prep, moisture content limits, and floor levelness and flatness.
3. Submit results of field moisture and pH tests prior to beginning installation of flooring.
E. Ceilings – Lay-In.
1. Refer to finish schedule for material and locations.
2. Installed systems to conform to ASTM E119.
3. Maximum deflection of 1/360 including mechanical and electrical components.
4. Provide hold down clips within 10 feet of exterior doors.
5. Provide safety wires:
a. 2 wires for items weighing 50 pounds or less.
b. 4 wires for items over 50 pounds.
c. Do not support fixtures or equipment from ceiling grid.

Division 10 – Specialties
A. Interior signage by Owner.
B. Exterior signage.
1. 12" high cast aluminum letters; 3/8" thick.
2. Clear anodized aluminum finish.
3. Coordinate final verbiage and/or address with Owner.
4. Mount to building with ½" stand-offs.
5. Coordinate required framing and blocking for mounting with pre-engineered building manufacturer.
C. Fire extinguishers by Owner.
D. Metal lockers and benches by Owner.
E. Toilet and bath accessories.
1. Provide grab bars in lengths and configuration as shown on drawings.
2. Grab bars to be stainless steel, 0.05 inch thick, with slip resistant texture in grip area.
3. Provide framed mirror; size and quantities as shown on drawings.
4. Provide mop and broom holder in janitor closet. 36" long with 3 broom holders, cam type and 4 hooks.
5. The following accessories are Owner furnished; Owner installed.
a. Toilet tissue dispensers
b. Paper towel dispensers
c. Soap dispensers
d. Robe hooks
e. Shower curtain rod and curtain

Division 12 – Furnishings
A. All window treatments by Owner.

Division 13 – Pre-Engineered Buildings
A. Informational Submittals
1. Delegated-Design Submittal: Indicate profiles, sizes, spacing and locations of structural members, connections, attachments, trim, openings, fasteners, cambers, loads and accessory items.
2. Indicate framing anchor bolt settings, sizes and locations from datum.
3. Indicate truss framing plans; and grid line; species and grades of lumber used; design loading and allowable stress increase; force analysis of each member; pitch, span and spacing of trusses; gage thickness, nominal sizes and locations of connectors at joints; bearing and anchorage details; framed openings; permanent bracing and bridging.
4. Indicate wall and roof system dimensions, panel layout, general construction details, anchorages and method of anchorage and method of installation.
5. Prepare shop drawings under seal of a professional structural engineer registered in State in which the Project is located.
B. Warranty
1. Provide manufacturer's warranty.
a. Warranty: Cover prefinished color coat against chipping, cracking or crazing, blistering, peeling, chalking and fading for 20-years.
b. Warranty: Cover roof against leaks for five years.
c. Warranty: Cover structure against snow load failure for five years.

C. Lumber Materials
1. Lumber Grading Rules: AFPA and SFPA.
2. Column Framing: Pressure treated SYP species #1 or better grade.
3. Splash Boards: Pressure treated SYP #2 of better grade.
4. Light Framing: Standard and better treated Spruce Pine Fir (SPF) species, free of warping, twisting or splitting beyond workable limits.
D. Truss Framing Materials
1. Stress Group: B
2. Species (Commercial Designation): Hem-Fir, Southern Yellow Pine
3. Wood Chords and Webs: Treated PS 20, graded to AFPA rules, No. 2 Structural grade, stress group B maximum moisture content of 15 percent.
4. Lateral Support: Recommended by truss manufacturer.
E. Wall And Roof System
1. Sheet Steel Stock: ASTM A653 Structural Quality Grade 80 Class 1; zinc-coated (galvanized) to ASTM A653 G90 designation.
2. Sealant: Polyurethane type as specified in Section 079200, non-staining, elastomeric, skinning.
F. Accessories
1. Fasteners: Hot-dipped galvanized steel for exterior, high humidity and treated wood locations; type 316 stainless-steel for below grade locations; size and type to suit condition; to maintain load requirements and weathertight installation.
2. Connectors: Galvanized steel.
3. Anchors: Toggle bolt type for anchorage to hollow masonry; expansion shield type for anchorage to solid masonry or concrete; and bolts or ballistic fasteners for anchorage to steel.
a. Anchor Bolts: ASTM A325 or ASTM F1554, GRADE 36.
b. Bolts, Nuts and Washers: ASTM A325 or ASTM F1554, GRADE 36.
G. Wall And Roof Systems Fabrication
1. Siding, Roofing and Liners: Minimum 24 gage metal, 3/4-inches deep; male/female edges fitted with continuous gaskets; in continuous lengths 40'-0" maximum.
2. Soffit Panels: Minimum 0.019 -inch-thickness aluminum; perforated for ventilation and unperforated.
3. Internal and External Corners: Same material thickness and finish as adjacent material; profile brake formed or shop cut and factory mitered to required angles. Back brace mitered internal corners with minimum 26 gage -inch-thick sheet.
4. Flashings, Closure Pieces, Facia, Infills, Caps and Trim: Same material and finish as adjacent material; profile to suit system.
5. Continuous ridge vent where shown on drawings.
H. Wall And Roof Systems Finish
1. Exterior and Interior Surfaces: Precoated enamel on steel of Polyvinylidene fluoride (PVDF) resin finish, color as noted on drawings.
I. Gutter And Downspout Fabrication
1. Fabricate of same material and finish as roofing metal.
2. Form gutter and downspouts of profile and size as indicated on drawings. Fabricate with connection pieces.
3. Form sections in maximum possible lengths. Hem exposed edges. Allow for expansion at joints.
4. Fabricate support straps of same material and finish as roofing metal, color as selected.
5. Finishes, Gutter: Same finish and color as roof panels.
6. Finishes, Downspouts: Same finish and color as wall panels.

Autodesk Docs://247062 - Drakes Creek Maintenance Facility/Hendersonville Parks Maintenance Buildings.rvt
9/25/2025 11:06:44 AM

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS — REGISTERED ARCHITECT — AGRICULTURE — COMMERCE — No. 104719 — STATE OF TENNESSEE
9-26-2025

Revisions		
Description	Date	Num
Addendum 3	**2025-09-26**	**3**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **Author**
Check: **Checker**

ARCHITECTURAL NOTES

Scale:

A0.102

24X36

TN

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PLOT DATE: 11/4/2025 7:25:16 AM JGILLIAM LOCATION: C:\USERS\JGILLIAM\DOCACCDOCS\WOLD ARCHITECTS\247062 - DRAKES CREEK MAINTENANCE FACILITY\PROJECT FILES\01_CIVIL\CNOTES 247062.DWG
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GENERAL NOTES

1. EXISTING INFORMATION/TOPOGRAPHIC SURVEY WAS PREPARED BY WOLD ARCHITECTS AND ENGINEERS.
2. PROPERTY MAP REFERENCE: MAP 159I "D" PARCEL 12.01
3. PROPERTY IS ZONED SUBURBAN RESIDENTIAL SR-2
4. THE PROPERTY IS LOCATED IN ZONE "AE" AREAS AFFECTED BY THE 100 YEAR FLOOD PLAIN BASED ON F.E.M.A. "FLOOD RATE INSURANCE MAP" NO. 47165C0411G, DATED: APRIL 17, 2012.
5. BIDDER HAS VISITED THE SITE, BECOME FAMILIAR WITH LOCAL CONDITIONS UNDER WHICH WORK IS TO BE DONE, AND HAS CORRELATED THE BIDDER'S PERSONAL OBSERVATIONS WITH REQUIREMENTS OF CONTRACT DOCUMENTS. CONTRACTOR WILL NOT BE GIVEN EXTRA PAYMENT FOR DIFFERENCES BETWEEN SURVEY AND SITE CONDITIONS THAT MAY BE ENCOUNTERED.
6. CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL CODES, OBTAIN, AT ITS OWN EXPENSE, ALL PERMITS AND PAY ALL FEES REQUIRED PRIOR TO BEGINNING WORK.
7. THE CONTRACTOR SHALL CALL 811 OR VISIT call811.com/811-your-state AT LEAST 3 WORKING DAYS PRIOR TO ALL EXCAVATION AND/OR DEMOLITION.
8. THE OWNER DOES NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAYBE DIFFERENT FROM THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATION BE KNOWN OF UNDERGROUND FACILITIES, THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITIVELY ESTABLISH THE POSITIONS OF UNDERGROUND UTILITY LINES.
9. ALL DAMAGE TO EXISTING ASPHALT PAVEMENT TO REMAIN WHICH RESULTS FROM NEW CONSTRUCTION SHALL BE REPLACED WITH LIKE MATERIALS AT CONTRACTOR'S EXPENSE.
10. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL FLAG AND PROTECT ALL TREES TO REMAIN IN ACCORDANCE WITH THE SPECIFICATIONS. DO NOT OPERATE OR STORE HEAVY EQUIPMENT, NOR HANDLE OR STORE MATERIALS, WITHIN THE DRIPLINES OF TREES OR OUTSIDE THE LIMIT OF GRADING.
11. TREE PROTECTION SHALL CONSIST OF THE FOLLOWING STEPS:
    A. CONTRACTOR SHALL HIRE A LICENSED LANDSCAPE CONTRACTOR TO OVERSEE TREE PROTECTION.
    B. PRIOR TO ALL GRADING OPERATIONS, LOCATE TREES TO BE PROTECTED AND NEATLY CUT ROOTS TO A DEPTH OF 30" AT THE DIMENSIONED LIMITS SHOWN USING A UTILITY TRENCHING MACHINE.
    C. TREAT EXPOSED ROOTS WITH A HORTICULTURAL TREE PRUNING PROTECTION PRODUCT.
    D. PRUNE TREE LIMBS BY THE SAME PROPORTIONAL PERCENTAGE AS TREE ROOTS REMOVED (i.e. 25% OF ROOTS REMOVED SHALL RESULT IN 25% OF TREE LIMBS REMOVED).
12. IT IS THE OWNER'S INTENT TO PRESERVE ALL OF THE EXISTING SITE VEGETATION OUTSIDE THE LIMITS OF GRADING.
13. ALL TREES ARE TO BE PROTECTED AND SAVED IF THEY FALL OUTSIDE THE LIMITS OF GRADING, EVEN IF THEY ARE NOT LOCATED OR IDENTIFIED ON THE SURVEY.
14. SELECTIVE CLEARING BEYOND THE LIMIT OF GRADING SHALL CONSIST OF REMOVAL OF HONEYSUCKLE, HERBACEOUS SHRUBS, POISON IVY. AND NOXIOUS WEEDS. GRASS SHALL BE SOWN ON THE WHOLE SITE AFTER PREPARATION, AS NOTED IN THE SPECIFICATIONS.
15. THE CONTRACTOR, AT ITS OWN EXPENSE, REPAIR ALL DAMAGE CAUSED BY CONSTRUCTION OR THE CONSTRUCTION PROCESS. ALL DAMAGE SHALL BE REPAIRED ACCORDING TO CURRENT LOCAL STANDARDS AND SPECIFICATIONS. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE COMPANY.
16. EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PROPERTY AT NO ADDITIONAL COST, IN A LEGAL MANNER.
17. THE CONTRACTOR SHALL CHECK EXISTING GRADES, DIMENSIONS, AND INVERTS IN THE FIELD AND REPORT ALL DISCREPANCIES TO THE ARCHITECT/ENGINEER PRIOR TO BEGINNING WORK.
18. IN THE EVENT OF ANY DISCREPANCIES FOUND IN THE DRAWINGS OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
19. PROVIDE AS-BUILT DRAWINGS AND DOCUMENTS OF ALL UTILITIES INSTALLED FOR THE PROJECT. DRAWINGS SHALL INCLUDE VERTICAL AND HORIZONTAL INFORMATION ON ALL NEW UTILITIES AS WELL AS EXISTING UTILITIES ENCOUNTERED. AS-BUILT DRAWINGS AND DOCUMENTS SHALL MEET REQUIREMENTS OF THE UTILITY OWNER. SUBMIT FILES TO ENGINEER AND AUTHORITIES HAVING JURISDICTION.
19. GUARD REFERENCE POINTS STAKED IN THE FIELD. ALL REFERENCE POINTS THAT ARE DESTROYED OR LOST SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

DEMOLITION NOTES

1. VERIFY THE CLEARING LIMITS AND FIELD CONDITIONS BEFORE BIDDING THIS PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO THE IRREGULAR SURFACE CONDITIONS THAT MAY BE ENCOUNTERED ON THIS SITE.
2. DEMOLITION AND REMOVAL OPERATIONS SHALL COMMENCE ONLY AFTER ALL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND FUNCTIONAL.
3. PROVIDE NEAT AND STRAIGHT SAW CUTS OF EXISTING PAVEMENT ALONG ALL LIMITS OF PAVEMENT DEMOLITION.
4. ALL DEMOLISHED MATERIALS BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED. DISPOSE OF OFF THE OWNER'S PROPERTY IN A LEGAL MANNER.
5. ALL PAVEMENT BASE COURSES, SIDEWALK, CURBS, BUILDINGS, FOUNDATIONS, ETC. IN THE AREA TO BE REMOVED SHALL BE REMOVED TO FULL DEPTH. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT OR BUILDING SUBGRADE PROVIDED THAT THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC. ARE IN ACCORDANCE WITH THE SPECIFICATIONS. BASE COURSE MATERIALS SHALL NOT BE WORKED INTO THE SUBGRADE OF AREAS TO RECEIVE PLANTING.
6. THE CONTRACTOR SHALL USE WATER SPRINKLING AND OTHER SUITABLE METHODS AS NECESSARY TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION WORK.
7. ALL ITEMS OF CONSTRUCTION REMAINING AND SPECIFICALLY MENTIONED THAT INTERFERE WITH THE NEW CONSTRUCTION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER.
8. CAVITIES LEFT BY STRUCTURE REMOVAL SHALL BE BACKFILLED WITH SATISFACTORY MATERIAL AND COMPACTED TO 98% OF MAXIMUM DENSITY PER ASTM D698.
9. PAVEMENT MARKINGS TO BE REMOVED SHALL BE PAINTED OVER TO MATCH PAVEMENT OR REMOVED WITH WIRE BRUSHING.
10. EXCEPT AS SHOWN, NO TREES SHALL BE REMOVED AND/OR VEGETATION DISTURBED WITHOUT APPROVAL OF THE ARCHITECT/ENGINEER.

SITE NOTES

1. THE FOLLOWING IS A MINIMUM CONSTRUCTION SEQUENCE FOR SITE WORK. IF FURTHER MEASURES ARE NEEDED, THE CONTRACTOR SHALL FURNISH AT NO ADDITIONAL COST TO THE PROJECT:
    A. PROVIDE ADEQUATE TREE PROTECTION MEASURES.
    B. INSTALL EROSION/SILTATION CONTROLS AS DESIGNATED ON PLANS.
    C. CONSTRUCT DETENTION BASIN(S) AND STRUCTURE(S), IF REQUIRED.
    D. GRADE THE BUILDING AND PARKING AREAS.
2. CONSTRUCT STORM DRAINS AND DRAINAGE STRUCTURES. INSTALL SILTATION CONTROL MEASURES TO PREVENT SOIL FROM WASHING INTO STORM DRAINAGE STRUCTURES.
3. PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT. FIELD ADJUSTMENT OF FINAL GRADES MAY BE NECESSARY. INSTALL ALL UTILITIES PRIOR TO INSTALLATION OF PAVEMENT.
4. DIMENSIONS AND RADII ARE TO THE FACE OF CURB, EDGE OF CONCRETE, OR TO THE FACE OF BUILDING UNLESS OTHERWISE NOTED.
5. COORDINATES ARE FOR FACE OF BUILDING, CENTER LINES OF DRIVEWAYS, CENTER OF SANITARY SEWER MANHOLES, AND CENTER AT FACE OF CURB ON CURB INLETS, UNLESS OTHERWISE NOTED.
6. VERIFY THE CLEARING LIMITS AND FIELD CONDITIONS BEFORE BIDDING THIS PROJECT. NO EXTRAS WILL BE ALLOWED DUE TO THE IRREGULAR SURFACE CONDITIONS THAT MAY BE ENCOUNTERED ON THIS SITE.

GRADING AND DRAINAGE NOTES

1. STRIP AVAILABLE TOPSOIL AND STORE ON SITE. INSTALL SILTATION CONTROL (SILT FENCE) AROUND SOIL STOCKPILES, AS NEEDED. CONTRACTOR TO FURNISH ADDITIONAL TOPSOIL OR REMOVE EXCESS TOPSOIL AT NO ADDITIONAL EXPENSE TO THE OWNER.
2. PROVIDED TEMPORARY SEEDING ON STOCKPILES AND ALL OTHER AREAS OF THE SITE THAT WILL REMAIN UNDISTURBED FOR 30 DAYS OR MORE.
3. PLACE TOPSOIL AND APPLY SEED AND MULCH TO ALL DISTURBED AREAS. PLACE AND RAKE TOPSOIL TO A MINIMUM DEPTH OF SIX (6) INCHES IN AREAS TO RECEIVE LANDSCAPING.
4. IT IS THE OWNER'S INTENT TO PRESERVE ALL OF THE EXISTING SITE VEGETATION OUTSIDE THE LIMITS OF GRADING.
5. ALL GRADED AREAS SHALL BE SEEDED AND MULCHED WITHIN 15 DAYS AFTER GRADING IS COMPLETED.
6. ALL DRAINAGE STRUCTURES, PIPES WITHIN THE LIMITS OF CONSTRUCTION, AND DETENTION PONDS SHALL HAVE SEDIMENT REMOVED PRIOR TO FINAL ACCEPTANCE.
7. TOP OF GRATE ELEVATIONS FOR CURB INLETS ARE GIVEN TO THE CENTER OF THE INLETS AT THE FACE OF CURB. THE GRATES SHALL SLOPE LONGITUDINALLY WITH THE PAVEMENT GRADE. ADJUST THE CASTING TO FALL ALONG THE CURB LINE.
8. SPOT ELEVATIONS AND CONTOURS REPRESENT PROPOSED FINISHED GRADE AND TOP OF FINISHED PAVEMENT.
9. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO BEGINNING WORK.
10. CONTOUR LINES AND SPOT ELEVATIONS ARE THE RESULT OF A DETAILED ENGINEERING GRADING DESIGN AND REFLECT A PLANNED INTENT WITH REGARD TO DRAINAGE. SHOULD THE CONTRACTOR HAVE QUESTIONS OF THIS INTENT OR PROBLEMS WITH CONTINUITY OF GRADES, THE ARCHITECT/ENGINEER SHALL BE CONTACTED PRIOR TO BEGINNING WORK.
11. ALL CURBS AND SIDEWALKS SHALL BE BACKFILLED WITH TOPSOIL, SEEDED AND MULCHED, UNLESS OTHERWISE NOTED.
12. MECHANICALLY TILL LAWN AREAS WITH A POWERED SKID STEER, LANDSCAPE RAKE, TO PICK UP ROCKS AND PREPARE A SMOOTH, UNIFORM SURFACE PLANE, FREE OF DIRT CLODS AND ROCKS, WITH LOOSE, UNIFORMLY FINE TEXTURE TOPSOIL. GRADE TO WITHIN PLUS OR MINUS 1/2-INCH OF FINISH ELEVATION. HAND RAKE TO REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISH GRADING TO AREAS THAT CAN BE PLANTED IN THE IMMEDIATE FUTURE.

EROSION PREVENTION AND SEDIMENT CONTROL

1. THE OWNER AND THE CONTRACTOR ARE REQUIRED TO SUBMIT A NOTICE OF INTENT (NOI) APPLICATION TO DISCHARGE CONSTRUCTION-ACTIVITY STORMWATER TO THE LOCAL TENNESSEE ENVIRONMENTAL ASSISTANCE CENTER AT LEAST 30 DAYS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR AND OWNER SHALL PROVIDE (WITH THE NOI FOR THIS PROJECT) EXISTING NPDES PERMIT TRACKING NUMBERS FOR SITES WHERE BORROW MATERIAL MAY BE OBTAINED AND WHERE SPOIL MATERIAL MAY BE PLACED. SHOULD PERMITS NOT EXIST FOR BORROW AND SPOIL SITES, SEPARATE NOI'S SHALL BE PROVIDED BY THE OWNER AND CONTRACTOR.
2. THE NOTICE OF COVERAGE (NOC) OF THE PERMIT TO DISCHARGE CONSTRUCTION-ACTIVITY STORMWATER SHALL BE POSTED NEAR THE CONSTRUCTION ENTRANCE. THE CONTRACTOR SHALL HAVE A SET OF APPROVED EROSION CONTROL PLANS ON SITE DURING ALL CONSTRUCTION.
3. THE RECEIVING WATER IS DRAKES CREEK, HENDERSONVILLE, TENNESSEE. 4
4. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE EXPOSURE TIME OF CLEARED SURFACE AREA. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL PRIOR TO EARTH MOVING OPERATIONS. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY, AT MAXIMUM 14 CALENDAR DAYS IN DRY PERIODS, AND WITHIN 24 HOURS OF ALL RAINFALL EXCEEDING 0.25 INCH PER 24 HOUR PERIOD.
5. THE CONTRACTOR SHALL DESIGNATE IN WRITING THE NAME AND PHONE NUMBER OF THE INDIVIDUAL RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS.
6. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE REMOVED MORE THAN 14 CALENDAR DAYS PRIOR TO GRADING. ALL GRADED AREAS EXPECTED TO REMAIN UNFINISHED AND UNWORKED FOR MORE THAN 7 CALENDAR DAYS SHALL BE COVERED WITH TEMPORARY GRASS, SOD, STRAW, MULCH OR FABRIC MATERIAL. PERMANENT SOIL STABILIZATION SHALL BE INSTALLED WITHIN 14 CALENDAR DAYS OF FINAL GRADING. 4
7. THE CONTRACTOR SHALL MAINTAIN RECORDS OF EROSION CONTROL INSPECTIONS AND REPAIRS FOR A MINIMUM OF 3 YEARS AFTER COMPLETION OF CONSTRUCTION.
8. TEMPORARY SEEDING FOR TENNESSEE PROJECTS INCLUDE THE FOLLOWING OPTIONS;
    A. JAN 1-MAY 1 ITALIAN RYE/KOREAN LESPEDEZA/SUMMER OATS
    B. MAY 1-JULY 15 SUDAN OR STARR MILLET
    C. JULY 15-JAN 1 BALBOA RYE/ITALIAN RYE
11. SILT BARRIERS AND SEDIMENT TRAPS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN APPROXIMATELY 50% FILLED.
12. STOCKPILES SHALL BE STABILIZED AND PROTECTED FROM EROSION.
13. UPON COMPLETION OF SITE STABILIZATION, THE OWNER AND CONTRACTOR SHALL PROVIDE A NOTICE OF TERMINATION (NOT) FOR THE PROJECT TO THE LOCAL ENVIRONMENTAL ASSISTANCE CENTER. A COPY OF THE NOTICE OF TERMINATION SHALL BE PROVIDED TO THE ENGINEER.
14. COMPLY WITH ALL LOCAL AND STATE SOIL EROSION AND SEDIMENT CONTROL REQUIREMENTS. PREVENT ALL SOIL EROSION ONTO PUBLIC ROADS OR INTO EXISTING DRAINAGE DITCHES OR WATERWAYS AS PER INSTRUCTIONS IN THE APPROVED STATE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). ALL SOIL EROSION AND SEDIMENT CONTROL COSTS, AS WELL AS REGULAR INSPECTIONS BY A STATE CERTIFIED INSPECTOR, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE INCLUDED IN THE PROJECT BID.
15. MAINTAIN CRUSHED STONE AT THE SITE ACCESS. CONSTRUCTION VEHICLES SHALL NOT TRACK SOIL ONTO PUBLIC STREETS.
16. INSTALL AND MAINTAIN EROSION/SILTATION CONTROL DEVICES, AS DESIGNATED ON THE PLAN, UNTIL ADEQUATE VEGETATION IS PRESENT TO PREVENT EROSION.
17. ALL LOCATIONS OF TEMPORARY EROSION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT.
18. WHEN THE TEMPORARY EROSION CONTROL DEVICES ARE NO LONGER REQUIRED THEY SHALL BE REMOVED.
19. REPLACE DAMAGED AND WORN OUT SILT BARRIERS.
20. THIS PROJECT IS PLANNED TO DISTURB MORE THAN ONE ACRE. IT THEREFORE FALLS UNDER THE TENNESSEE DIVISION OF WATER POLLUTION CONTROL'S GENERAL NPDES PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY. 4

UTILITY NOTES

1. WATER AND SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL CODES AND SPECIFICATIONS.
2. MAINTAIN HORIZONTAL AND VERTICAL SEPARATION BETWEEN SANITARY SEWER AND WATER SUPPLY LINES ACCORDING TO LOCAL CODES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE SEQUENCING OF CONSTRUCTION FOR ALL UTILITY LINES SO THAT WATER LINES AND UNDERGROUND ELECTRIC DO NOT CONFLICT WITH SANITARY SEWERS OR STORM SEWERS. INSTALL UTILITIES PRIOR TO FINAL PAVEMENT CONSTRUCTION.
4. ALL WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL AND STATE SPECIFICATIONS, AND THE PROJECT SPECIFICATIONS. CONTRACTOR TO VERIFY WITH LOCAL UTILITY PROVIDER(S) FOR COMPLIANCE PRIOR TO PURCHASE OF MATERIAL.
5. COORDINATE WITH LOCAL UTILITY AND/OR FIRE DEPARTMENT ON APPROVED FIRE HYDRANT, REDUCED PRESSURE BACK FLOW PREVENTOR, DOUBLE DETECTOR CHECK VALVE ASSEMBLY AND VAULT MANUFACTURERS.
6. ALL PIPING FROM THE "POINT OF SERVICE", INCLUDING UNDERGROUND, USED FOR SPRINKLER OR STANDPIPE SYSTEM SHALL BE INSTALLED BY A LICENSED SPRINKLER CONTRACTOR.
7. ADJUST ALL EXISTING CASTINGS TO PROPOSED FINISH GRADE.
8. ALL WATER CONNECTIONS SHALL BE MADE BY THE CONTRACTOR. 4

Hendersonville Parks Maintenance Buildings

101 N Maple Dr
Hendersonville, TN
37075

Hendersonville Tennessee

WOLD ARCHITECTS AND ENGINEERS
214 Centerview Drive Suite 300
Brentwood, TN 37027
woldae.com | 615.370.8500

JAMES H. GILLIAM 10/28/25 — LICENSED TO PRACTICE ARCHITECTURE — No. 102700 — STATE OF TENNESSEE

Revisions		
Description	Date	Num
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
Date: 06.27.2025
Drawn: ALR
Check: JG

CIVIL NOTES

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24X36

TN

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PLOT DATE: 8/12/2025 7:20:56 AM | USER: JGILLIAM | LOCATION: C:\USERS\JGILLIAM\DOCS\DOCS\WOLD ARCHITECTS\247062 - DRAKES CREEK MAINTENANCE FACILITY\PROJECT FILES\01_CIVIL\C-BASE 247062.DWG
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NOTE:

REVISED STREAM BUFFER TO TOP OF BANK AND PROVIDED STREAM BUFFER AVERAGING AT DUMPSTER LOCATION.

FEMA FLOOD ZONE LEGEND

- FEMA FLOOD WAY
- FEMA ZONE AE
- FEMA ZONE X
- FLOOD LINE

LEGEND

- IRON PIN (NEW)
- IRON PIN (OLD) IP(O)
- CONCRETE MONUMENT OLD CM(O)
- UTILITY POLE
- LIGHT POLE
- SIGN POST
- PROPERTY LINE
- STORM SEWER PIPE ST
- 90" STORM SEWER PIPE 90"
- 6" WATER MAIN 6"W
- 16" WATER MAIN 16"W
- 10" SANITARY SEWER MAIN 10"S
- 18" SANITARY SEWER MAIN 18"S
- FORCED SANITARY SEWER MAIN FM
- MINIMUM BUILDING SETBACK LINE M.B.S.L.

IP(O) MAG IN/FNC/POST

CITY OF HENDERSONVILLE
MAP 159I "D" PARCEL 13
BOOK 434 PG. 590

GRAVEL

6" HACKBERRY

12" HACKBERRY

6" W

6' M.B.S.L.

S73-15-38E 493.91'

ASPHALT

CITY OF HENDERSONVILLE
MAP 159I "D" PARCEL 12.01
BOOK 1396 PG. 312

N:720506.84
E:1787736.03
EL:456.8
CP3 IRON PIN / (BM)

20' M.B.S.L.

S13-04-57W 440.58'

FLOOD LINE SCALED AND FIT FROM MAP

S84-54-03W 754.04'

6' M.B.S.L.

90' STREAM BUFFER

60' STREAM BUFFER

30' STREAM BUFFER

18" CPP
INV.=451.2

18" CPP
INV.=451.2

5,233 SF AREA
ADDED TO BUFFER

5,233 SF AREA
DELETED FROM
BUFFER

CORPS OF ENGINEERS

DRAKES CREEK RIGHT BANK
TRIBUTARY No. 1

CORPS OF ENGINEERS
DRAKES CREEK PARK
MAP & PARCEL UNKNOWN

12" E/M

15" TREE

36" HACKBERRY

WOOD POST

GATE POST

42" RCP
INV.=445.1

42" RCP
INV.=444.0

BATTING CAGE

(P/O) TPOST

EDWARD M WILLIAMS
MAP 159I "D" PARCEL 14
BOOK 5865 PG. 684

TIMOTHY WARREN BROWN
MAP 159I "D" PARCEL 15
BOOK 5412 PG. 207

NOTE:
THE OWNER DOES NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAYBE DIFFERENT FROM THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATION BE KNOWN OF UNDERGROUND FACILITIES, THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITIVELY ESTABLISH THE POSITIONS OF UNDERGROUND UTILITY LINES.

S.P.C.S. NAD 83 NAVD 88

30' 15' 0' 30'
SCALE: 1"= 30'

811 Know what's below. Call before you dig.

Hendersonville Parks Maintenance Buildings

101 N Maple Dr
Hendersonville, TN
37075

Hendersonville
Tennessee

Wold

WOLD ARCHITECTS AND ENGINEERS
214 Centerview Drive Suite 300
Brentwood, TN 37027
woldae.com | 615.370.8500

JAMES H. GILLIAM
REGISTERED
LANDSCAPE ARCHITECT
AGRICULTURE
COMMERCE
NO. 103757
STATE OF TENNESSEE
08/01/25

Revisions		
Description	Date	Num
ADDENDUM NO. 1	08/01/2025	1

Proj. #: 247062
Date: 06.27.2025
Drawn: ALR
Check: JG

EXISTING CONDITIONS

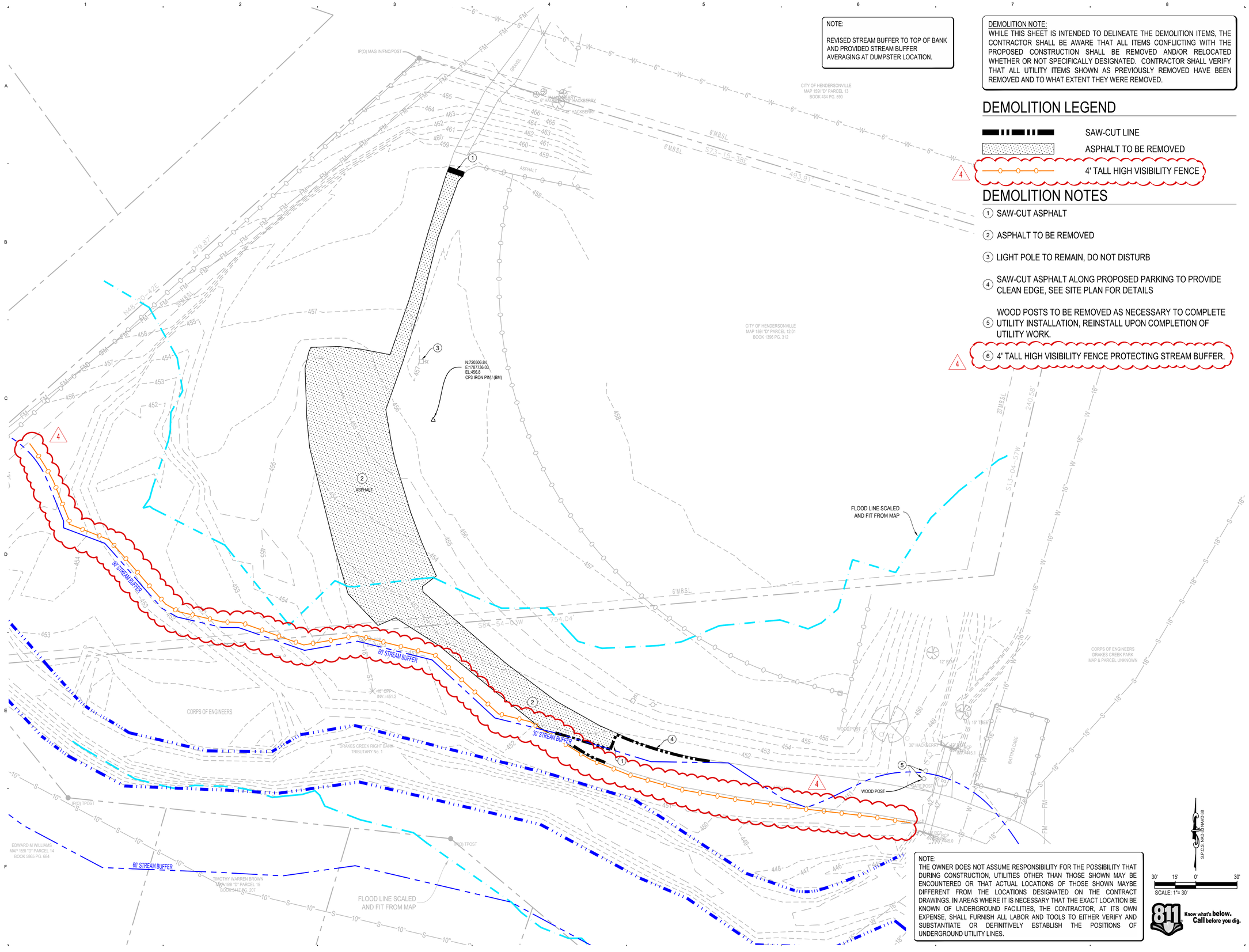
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PLOT DATE: 11/4/2025 7:25:18 AM (JGILLIAM) LOCATION: C:\USERS\JGILLIAM\DOCACDOCS\WOLD ARCHITECTS\247062 - DRAKES CREEK MAINTENANCE FACILITY\PROJECT FILES\01_CIVIL\C-BASE 247062.DWG
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NOTE:

REVISED STREAM BUFFER TO TOP OF BANK AND PROVIDED STREAM BUFFER AVERAGING AT DUMPSTER LOCATION.

DEMOLITION NOTE:
WHILE THIS SHEET IS INTENDED TO DELINEATE THE DEMOLITION ITEMS, THE CONTRACTOR SHALL BE AWARE THAT ALL ITEMS CONFLICTING WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED AND/OR RELOCATED WHETHER OR NOT SPECIFICALLY DESIGNATED. CONTRACTOR SHALL VERIFY THAT ALL UTILITY ITEMS SHOWN AS PREVIOUSLY REMOVED HAVE BEEN REMOVED AND TO WHAT EXTENT THEY WERE REMOVED.

DEMOLITION LEGEND

- SAW-CUT LINE
- ASPHALT TO BE REMOVED
- 4' TALL HIGH VISIBILITY FENCE

DEMOLITION NOTES

1. SAW-CUT ASPHALT
2. ASPHALT TO BE REMOVED
3. LIGHT POLE TO REMAIN, DO NOT DISTURB
4. SAW-CUT ASPHALT ALONG PROPOSED PARKING TO PROVIDE CLEAN EDGE, SEE SITE PLAN FOR DETAILS
5. WOOD POSTS TO BE REMOVED AS NECESSARY TO COMPLETE UTILITY INSTALLATION, REINSTALL UPON COMPLETION OF UTILITY WORK.
6. 4' TALL HIGH VISIBILITY FENCE PROTECTING STREAM BUFFER.

NOTE:
THE OWNER DOES NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAYBE DIFFERENT FROM THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATION BE KNOWN OF UNDERGROUND FACILITIES, THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITIVELY ESTABLISH THE POSITIONS OF UNDERGROUND UTILITY LINES.

S.P.C.S. NAD 83 NAVD 88

30' 15' 0' 30'
SCALE: 1"= 30'

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101 N Maple Dr
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Hendersonville
Tennessee

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JAMES R. GILLIAM
REGISTERED
LANDSCAPE
ARCHITECT
No. 1027750
STATE OF TENNESSEE
10/28/25

Revisions		
Description	Date	Num
ADDENDUM NO. 1	08/01/2025	1
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
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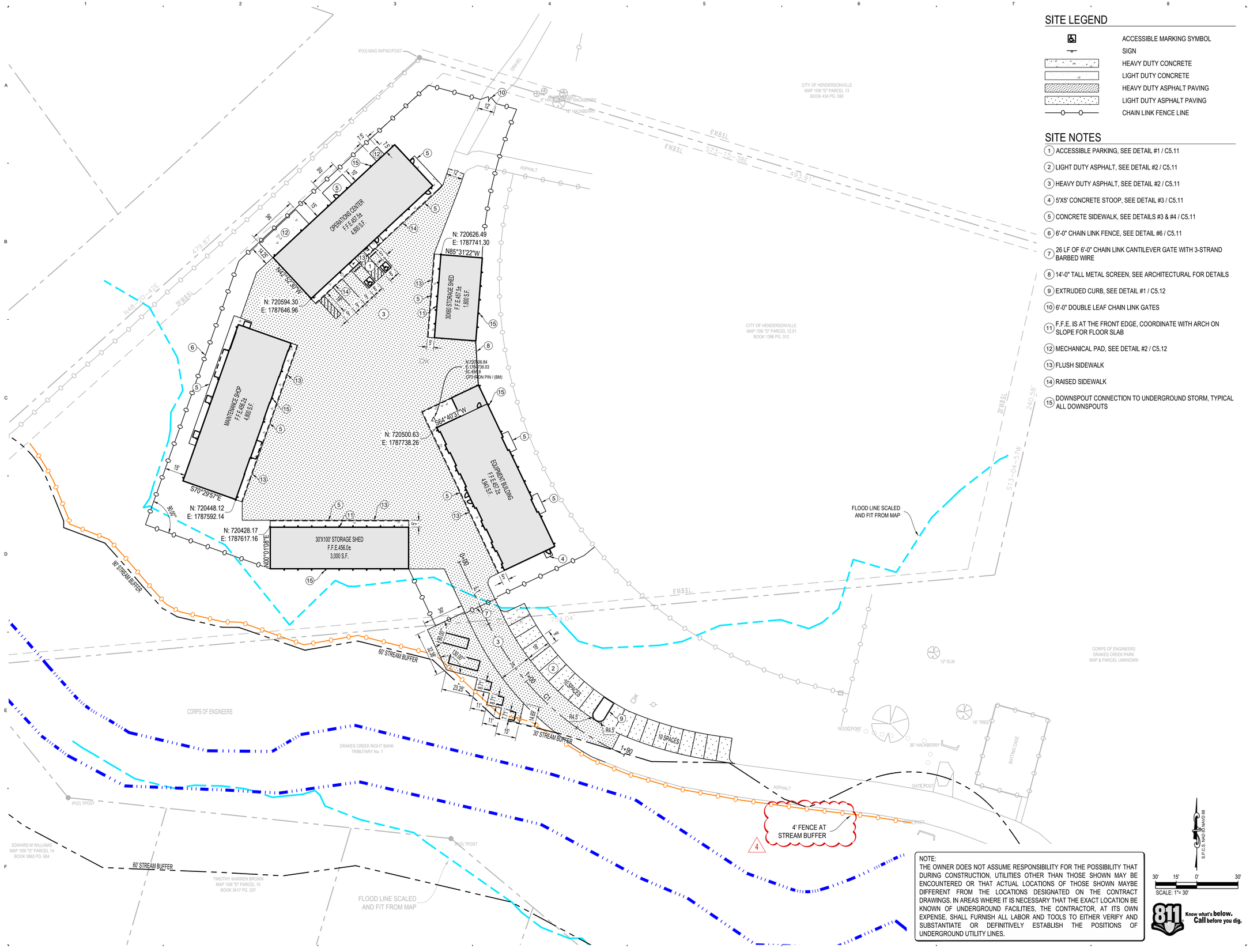
DEMOLITION PLAN

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24X36

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NOTE:
THE OWNER DOES NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAYBE DIFFERENT FROM THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATION BE KNOWN OF UNDERGROUND FACILITIES, THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITIVELY ESTABLISH THE POSITIONS OF UNDERGROUND UTILITY LINES.

Know what's below. Call before you dig.

SITE LEGEND

- ACCESSIBLE MARKING SYMBOL
- SIGN
- HEAVY DUTY CONCRETE
- LIGHT DUTY CONCRETE
- HEAVY DUTY ASPHALT PAVING
- LIGHT DUTY ASPHALT PAVING
- CHAIN LINK FENCE LINE

SITE NOTES

1. ACCESSIBLE PARKING, SEE DETAIL #1 / C5.11
2. LIGHT DUTY ASPHALT, SEE DETAIL #2 / C5.11
3. HEAVY DUTY ASPHALT, SEE DETAIL #2 / C5.11
4. 5'X5' CONCRETE STOOP, SEE DETAIL #3 / C5.11
5. CONCRETE SIDEWALK, SEE DETAILS #3 & #4 / C5.11
6. 6'-0" CHAIN LINK FENCE, SEE DETAIL #6 / C5.11
7. 26 LF OF 6'-0" CHAIN LINK CANTILEVER GATE WITH 3-STRAND BARBED WIRE
8. 14'-0" TALL METAL SCREEN, SEE ARCHITECTURAL FOR DETAILS
9. EXTRUDED CURB, SEE DETAIL #1 / C5.12
10. 6'-0" DOUBLE LEAF CHAIN LINK GATES
11. F.F.E. IS AT THE FRONT EDGE, COORDINATE WITH ARCH ON SLOPE FOR FLOOR SLAB
12. MECHANICAL PAD, SEE DETAIL #2 / C5.12
13. FLUSH SIDEWALK
14. RAISED SIDEWALK
15. DOWNSPOUT CONNECTION TO UNDERGROUND STORM, TYPICAL ALL DOWNSPOUTS

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JAMES H. GILLIAM
REGISTERED
ARCHITECT
No. 103799
STATE OF TENNESSEE
10/28/25

Revisions		
Description	Date	Num
ADDENDUM NO. 1	08/01/2025	1
ADDENDUM NO. 2	09/17/2025	2
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
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SITE PLAN

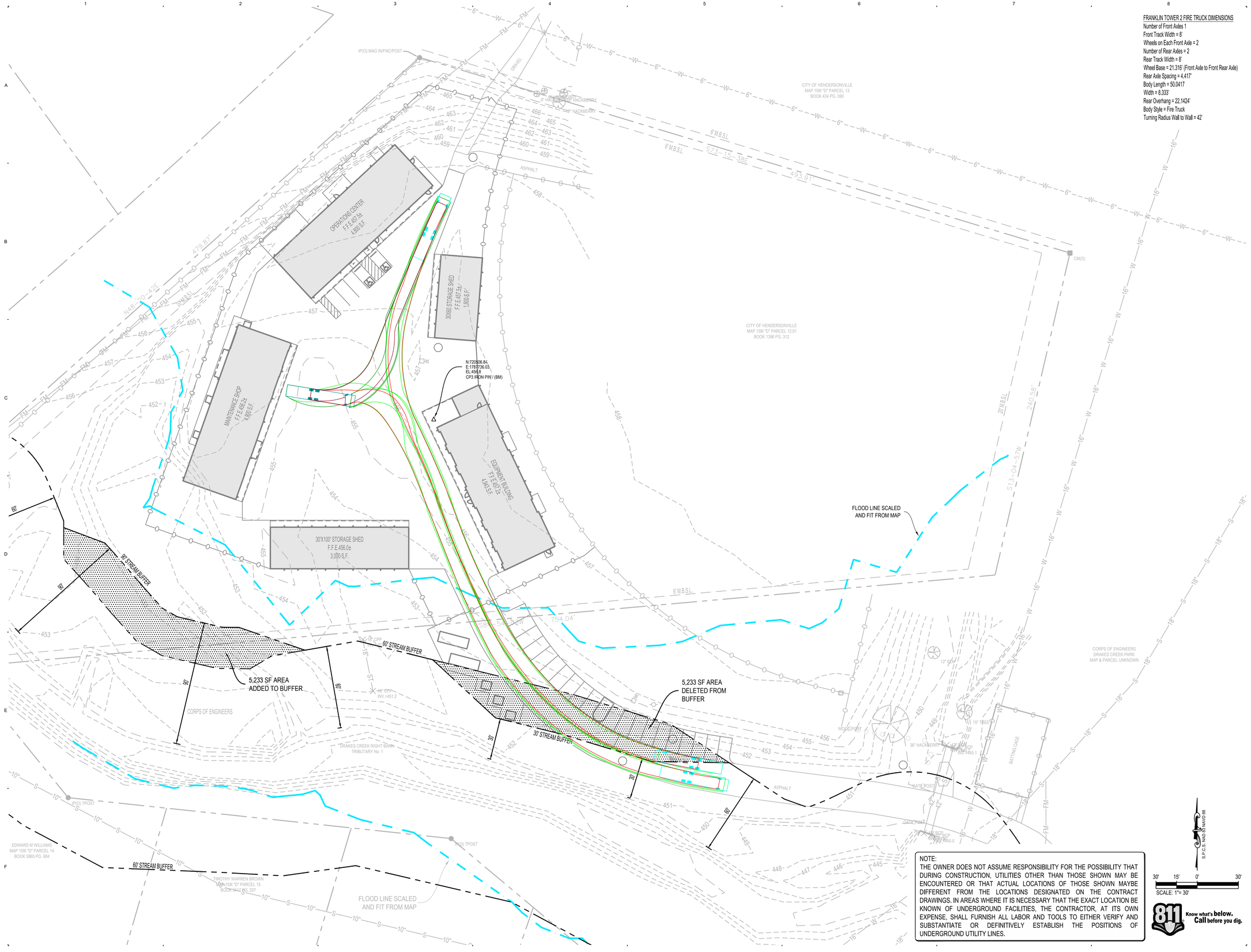
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PLOT DATE: 11/4/2025 7:25:20 AM | USER: JGILLIAM | LOCATION: C:\USERS\JGILLIAM\DOCACCDOCS\WOLD ARCHITECTS\247062 - DRAKES CREEK MAINTENANCE FACILITY\PROJECT FILES\01_CIVIL\C-SITE A1776B2.DWG
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JAMES H. GILLIAM
REGISTERED LANDSCAPE ARCHITECT
NO. 102700
STATE OF TENNESSEE
09/17/25

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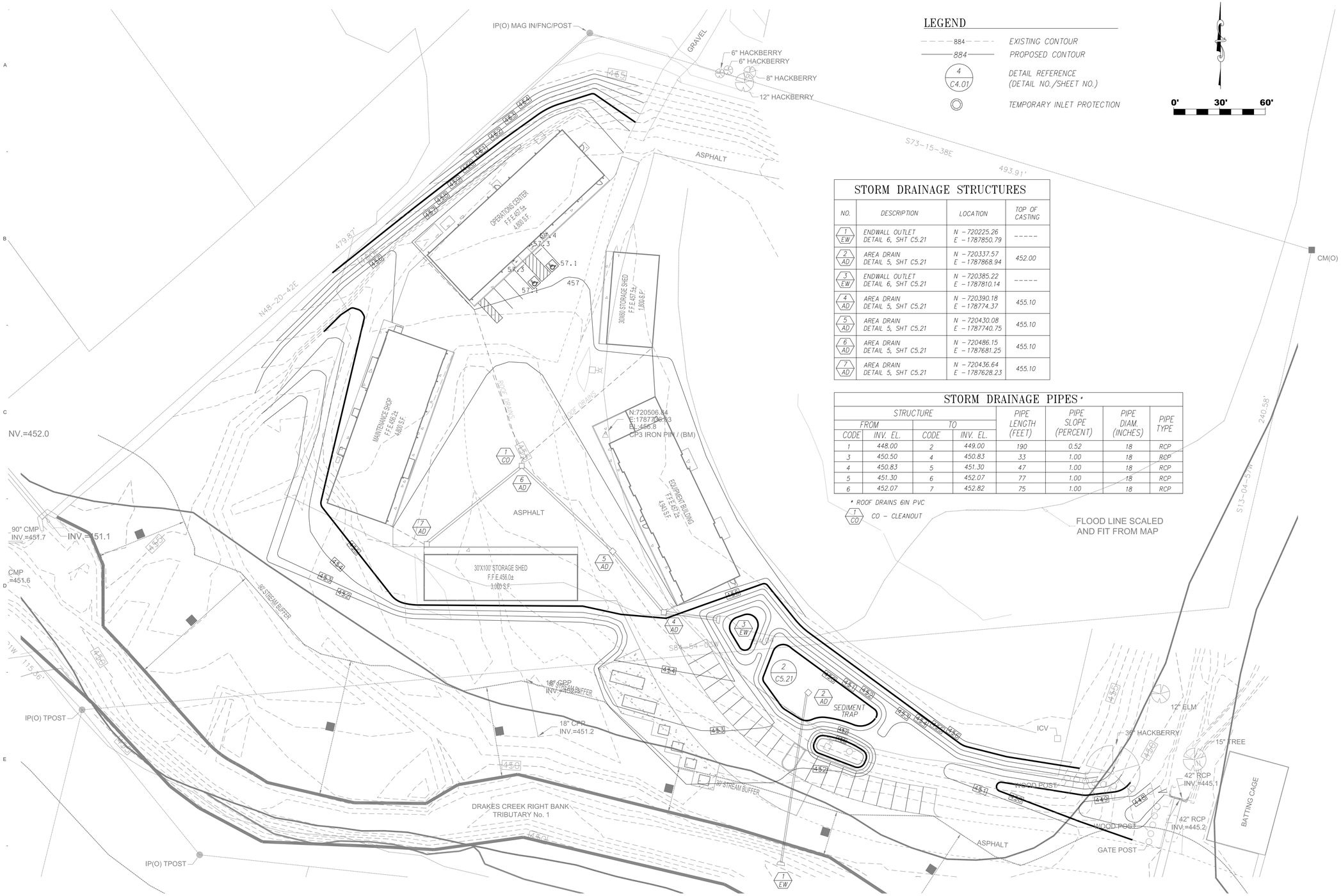
FIRE TRUCK MANUVER PLAN

C1.02

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LEGEND

- 884 — EXISTING CONTOUR
- 884 — PROPOSED CONTOUR
- 4 / C4.01 — DETAIL REFERENCE (DETAIL NO./SHEET NO.)
- TEMPORARY INLET PROTECTION

0' 30' 60'

STORM DRAINAGE STRUCTURES

NO.	DESCRIPTION	LOCATION	TOP OF CASTING
1 EW	ENDWALL OUTLET DETAIL 6, SHT C5.21	N – 720225.26 E – 1787850.79	-----
2 AD	AREA DRAIN DETAIL 5, SHT C5.21	N – 720337.57 E – 1787868.94	452.00
3 EW	ENDWALL OUTLET DETAIL 6, SHT C5.21	N – 720385.22 E – 1787810.14	-----
4 AD	AREA DRAIN DETAIL 5, SHT C5.21	N – 720390.18 E – 178774.37	455.10
5 AD	AREA DRAIN DETAIL 5, SHT C5.21	N – 720430.08 E – 1787740.75	455.10
6 AD	AREA DRAIN DETAIL 5, SHT C5.21	N – 720486.15 E – 1787681.25	455.10
7 AD	AREA DRAIN DETAIL 5, SHT C5.21	N – 720436.64 E – 1787628.23	455.10

STORM DRAINAGE PIPES *

STRUCTURE FROM CODE	FROM INV. EL.	TO CODE	TO INV. EL.	PIPE LENGTH (FEET)	PIPE SLOPE (PERCENT)	PIPE DIAM. (INCHES)	PIPE TYPE
1	448.00	2	449.00	190	0.52	18	RCP
3	450.50	4	450.83	33	1.00	18	RCP
4	450.83	5	451.30	47	1.00	18	RCP
5	451.30	6	452.07	77	1.00	18	RCP
6	452.07	7	452.82	75	1.00	18	RCP

* ROOF DRAINS 6IN PVC

1 CO — CO – CLEANOUT

STORM PIPE NOTES:

1. INSTALL STORM SEWER PIPING AND APPURTENANCES TO MEET THE MATERIALS, EQUIPMENT, AND CONSTRUCTION REQUIREMENTS OF THE METRO NASHVILLE WATER SERVICES STANDARD SPECIFICATIONS.
2. TRENCH DESIGN AND SAFETY FOR PIPELINE CONSTRUCTION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM WITH ALL APPLICABLE LOCAL, STATE, AND OSHA REGULATIONS.
3. STORM SEWER PIPE SHALL BE SMOOTH INTERIOR HIGH DENSITY POLYETHYLENE PIPE AS SHOWN IN THE STORM PIPE TABLE IN ACCORDANCE WITH AASHTO M294 OR EQUAL UNLESS NOTED OTHERWISE.
4. PIPE DEFLECTION AND ALIGNMENT SHALL BE CHECKED AFTER BACKFILLING & COMPACTION ARE COMPLETE & PRIOR TO PLACING THE BASE. TEST DEFLECTION WITH A MANDREL OR OTHER APPROVED METHOD.
5. PIPE WITH DEFLECTION 5% OR GREATER OR WITH UNDUE MISALIGNMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

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BRIAN M. HAMILTON — REGISTERED ENGINEER — AGRICULTURE — CIVIL — STATE OF TENNESSEE — 08/14/2025 — NOT FOR CONSTRUCTION

Revisions		
Description	Date	Num
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
Date: 04.08.2025
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Check:

GRADING AND DRAINAGE PLAN

C2.01

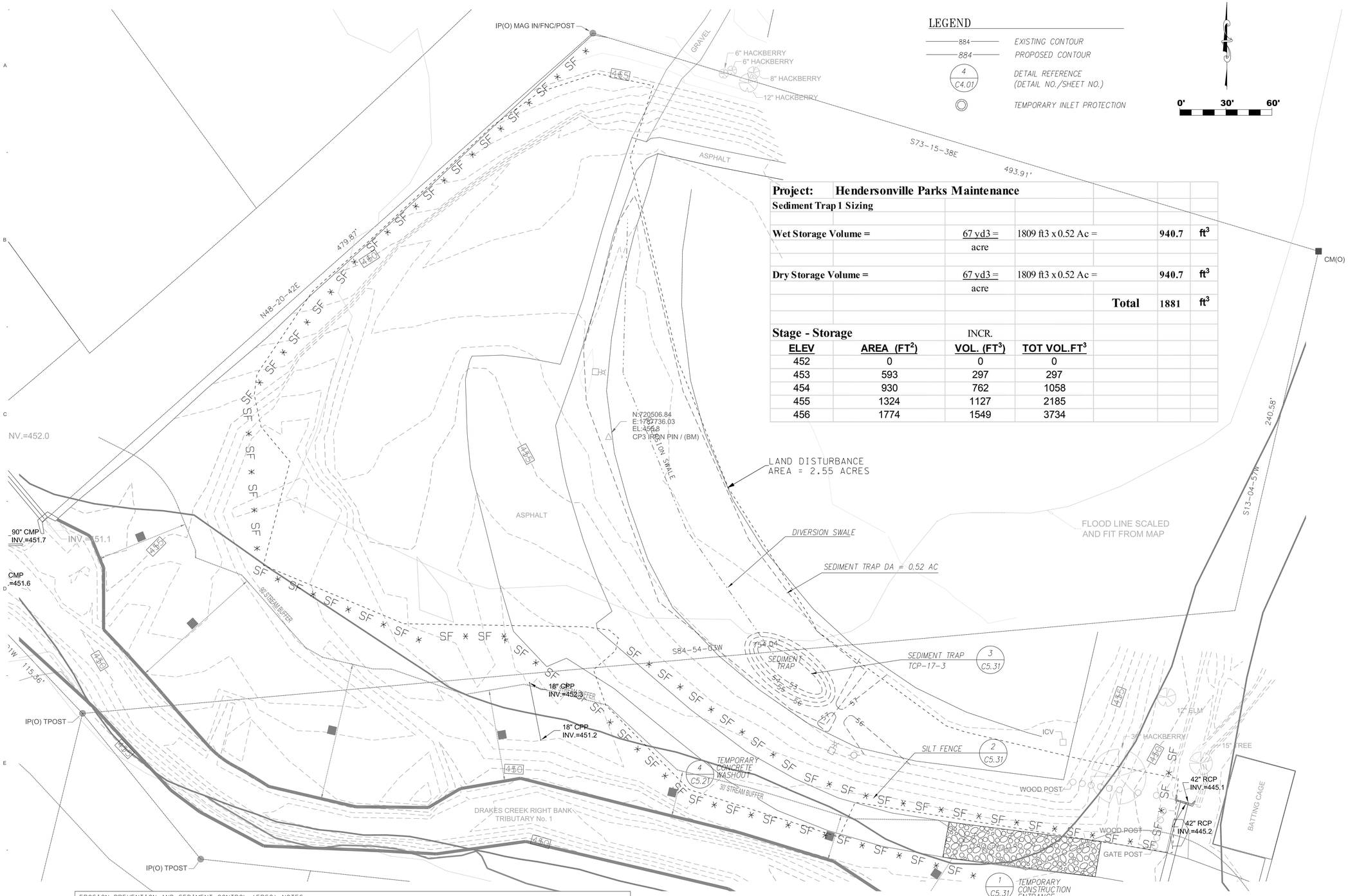
104

PLOT DATE — (KENNEL LOCATION: E:\DESIGN\CONSULTANTS\NOPROJECTS\2025 PROJECTS\2025\12_WOLD HENDERSONVILLE PARKS MAINTENANCE BUILDINGS\PLAN SHEETS\WOLK BORDER.DGN
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LEGEND

884	EXISTING CONTOUR
884	PROPOSED CONTOUR
4 / C4.01	DETAIL REFERENCE (DETAIL NO./SHEET NO.)
	TEMPORARY INLET PROTECTION

0' 30' 60'

Project:	Hendersonville Parks Maintenance				
Sediment Trap 1 Sizing					
Wet Storage Volume =	67 yd3 = acre	1809 ft3 x 0.52 Ac =		940.7	ft3
Dry Storage Volume =	67 yd3 = acre	1809 ft3 x 0.52 Ac =		940.7	ft3
			Total	1881	ft3

Stage - Storage		INCR.	
ELEV	AREA (FT2)	VOL. (FT3)	TOT VOL.FT3
452	0	0	0
453	593	297	297
454	930	762	1058
455	1324	1127	2185
456	1774	1549	3734

EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) NOTES;

1. THIS PLAN MAY NOT COVER ALL SITUATIONS THAT MAY ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS MAY BE MADE TO THE PLAN IN THE FIELD SUBJECT TO THE APPROVAL OF OR AT THE DIRECTION OF A REPRESENTATIVE OF THE HENDERSONVILLE PUBLIC WORKS DEPARTMENT.
2. THE CONTRACTOR MUST ENSURE THAT THE CONSTRUCTION SITE IS PREPARED PRIOR TO THE ONSET OF ANY STORM AND AT THE END OF EACH WORK DAY. ALL EPSC MEASURES SHALL BE CHECKED BEFORE AND AFTER ALL RAIN EVENTS TO ENSURE THESE MEASURES ARE WORKING PROPERLY.
3. ALL EPSC MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED.
4. EPSC MEASURES SHALL BE INSTALLED PRIOR TO EARTH MOVING ACTIVITIES.
5. TEMPORARY SOIL STOCKPILES SHALL BE COVERED ADEQUATELY ANCHORED POLYETHYLENE SHEETING AND COMPLETELY SURROUNDED WITH SILT FENCE.
6. CLEARING AND GRUBBING SHALL BE HELD TO THE MINIMUM AREA NECESSARY TO COMPLETE THE PROJECT.
7. ANY FINES, COST FOR CLEANUP EFFORTS, OR OTHER PENALTIES AS THE RESULT OF A SEDIMENT RELEASE FROM THE PROJECT OR IMPROPER EPSC MEASURES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. EPSC MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THESE PLANS, WATER SERVICES BEST MANAGEMENT PRACTICES, AND ANY ENVIRONMENTAL PERMITS ASSOCIATED WITH THIS PROJECT.
9. BARE EARTH AREAS SHALL BE SEEDED AND MULCHED. ALL BARE EARTH AREAS SHALL BE STABILIZED AT THE END OF EACH WORK DAY AND PRIOR TO ANY RAIN EVENT.
10. STEEP SLOPES ARE TO BE STABILIZED WITHIN SEVEN (7) DAYS OF FINAL GRADING.
11. THE CONTRACTOR IS TO PROVIDE AN AREA FOR CONCRETE WASH DOWN AND EQUIPMENT FUELING IN ACCORDANCE WITH THE CITY OF HENDERSONVILLE AUTHORITIES. THE CONTRACTOR IS TO COORDINATE EXACT LOCATION WITH NPDES DEPARTMENT DURING PRECONSTRUCTION MEETING. CONTROL OF OTHER SITE WASTES SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTES THAT MAY CAUSE ADVERSE IMPACTS TO WATER QUALITY IS ALSO REQUIRED BY THE GRADING PERMITTEE.

EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) NOTES CONT.;

A. THE SITE DESIGNER MUST CERTIFY THAT ALL INITIAL EPSC MEASURES ARE INSTALLED PER THE APPROVED PLAN AND DETAILS PRIOR TO BEGINNING GRADING OPERATIONS. THE SITE DESIGNER MUST ALSO PERFORM A SITE ASSESSMENT AFTER 30 DAYS OF CONSTRUCTION WITHIN WATERSHED(S) FOR OUTFALLS WITH DRAINAGE AREAS GREATER THAN OR EQUAL TO 10 ACRES (OR 5 ACRES IF DRAINING TO WATERS WITH UNAVAILABLE PARAMETERS FOR SILTATION/SEDIMENTATION OR ETWs).
B. THE CONTRACTOR IS REQUIRED TO SWEEP THE STREETS DAILY WHEN CONSTRUCTION IS ACTIVE WHERE THE CONSTRUCTION EXIT(S) ARE LOCATED.
C. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 DAYS OF ANY STOPPAGE IN WORK TO THE AREA.
D. ALL SLOPES 35% OR GREATER SHALL BE STABILIZED WITH EPSC MATTING OR SOD. SLOPES 35% OR GREATER MUST BE STABILIZED WITHIN 7 DAYS OF STOPPAGE IN WORK TO THE AREA.
E. DEWATERING PRACTICES SHALL COMPLY WITH THE TDEC EROSION AND SEDIMENT CONTROL MANUAL'S DEWATERING CRITERIA.
F. CITY OF HENDERSONVILLE PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED 14 DAYS PRIOR TO THE REMOVAL OR CONVERSION OF ANY SEDIMENT TRAP/BASIN FOR APPROVAL
G. ALL WATER QUALITY RIPARIAN BUFFERS SHALL BE FIELD SURVEYED AND STAKED. HIGH VISIBILITY FENCING SHALL BE INSTALLED BASED ON STAKING PRIOR TO LAND DISTURBANCE ACTIVITIES.

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PLOT DATE: — \KENNE\ LOCATION: E:\DESIGN\CONSULTANTS\NCPROJECTS\2025 PROJECTS\2025\12_WOLD HENDERSONVILLE PARKS MAINTENANCE BUILDINGS\PLAN SHEETS\WOLK BORDER.DGN
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Hendersonville Tennessee

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BRIAN M. HAMILTON — REGISTERED ENGINEER — AGRICULTURE — 08/14/2025 — NOT VALID FOR CONSTRUCTION — STATE OF TENNESSEE

Revisions		
Description	Date	Num
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
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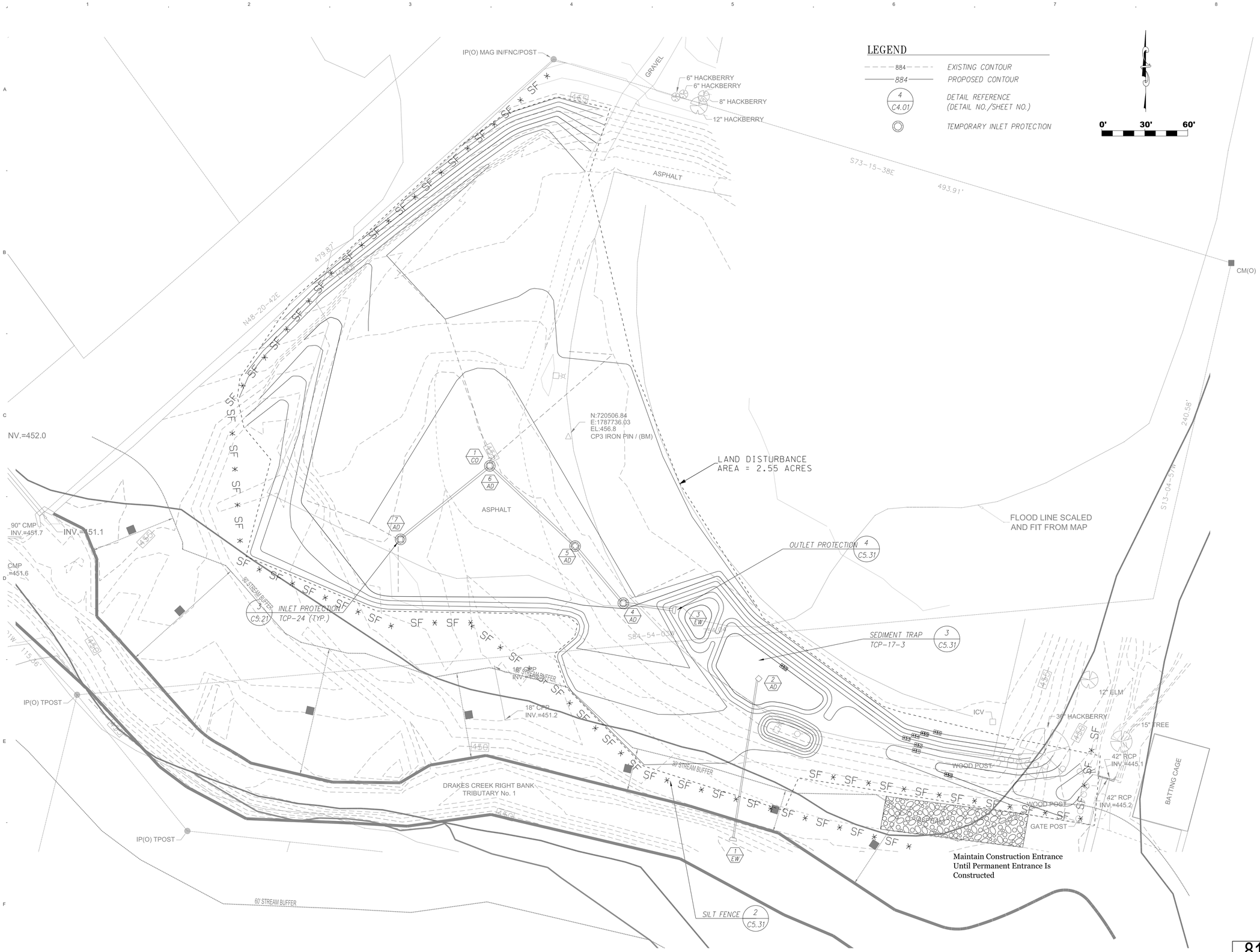
INITIAL PHASE EROSION CONTROL PLAN

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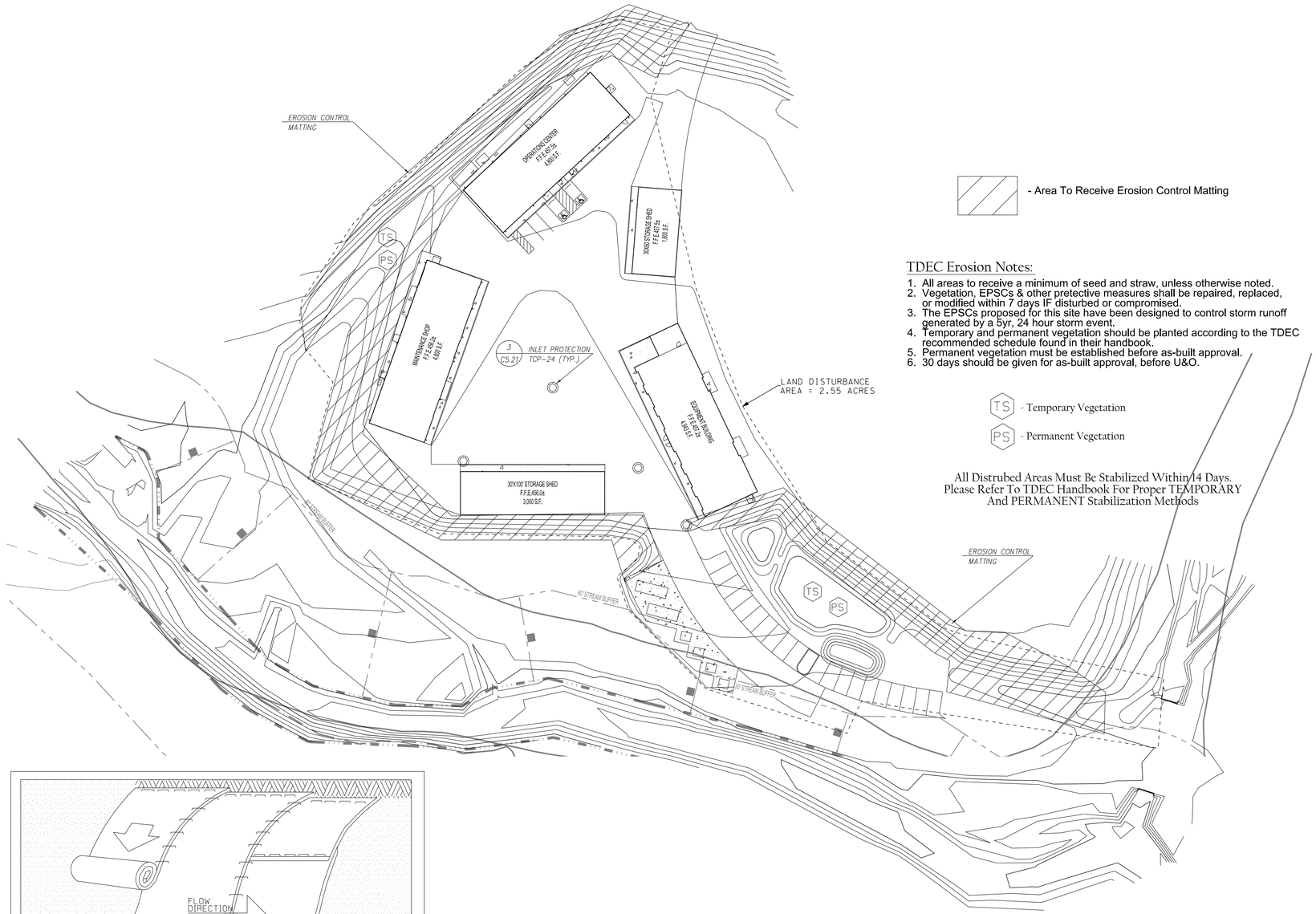
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IP(O) MAG IN/FNC/POST
GRAVEL
6" HACKBERRY
6" HACKBERRY
8" HACKBERRY
12" HACKBERRY
ASPHALT
S73-15-38E
493.91'
CM(O)
479.87'
N48-20-42E
SF * SF * SF *

24X36

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- Area To Receive Erosion Control Matting

0' 40' 80'

(IN FEET)
1 inch = 40 ft.

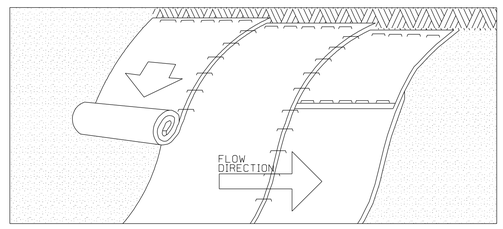
TDEC Erosion Notes:

1. All areas to receive a minimum of seed and straw, unless otherwise noted.
2. Vegetation, EPSCs & other pretective measures shall be repaired, replaced, or modified within 7 days IF disturbed or compromised.
3. The EPSCs proposed for this site have been designed to control storm runoff generated by a 5yr, 24 hour storm event.
4. Temporary and permanent vegetation should be planted according to the TDEC recommended schedule found in their handbook.
5. Permanent vegetation must be established before as-built approval.
6. 30 days should be given for as-built approval, before U&O.

TS - Temporary Vegetation

PS - Permanent Vegetation

All Distrubed Areas Must Be Stabilized Within 14 Days.
Please Refer To TDEC Handbook For Proper TEMPORARY And PERMANENT Stabilization Methods



NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE (OR CHANNEL) BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN (STARTING AT DOWNSTREAM PROCEEDING UPSTREAM) HORIZONTALLY ACROSS THE SLOPE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH AN APPROXIMATE (MIN) 4" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY A (MIN) 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
6. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
7. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

EROSION CONTROL MATTING
not to scale

N.O.C. NOTE

I HEREBY CERTIFY THAT THIS PROJECT DOES REQUIRE COVERAGE UNDER A TENNESSEE CONSTRUCTION GENERAL PERMIT. THE TOTAL DISTURBED AREA IS: 2.55 ACRES.
☐IMPAIRED FOR SILTATION ☐IMPAIRED FOR HABITAT ALTERATION ☐EXCEPTIONAL

SIGNATURE Brian Hamilton, DATE OCT. 27, 2025

Circle One: PROJECT ENGINEER, DEVELOPER, OTHER _____

F.E.M.A. NOTE

ACCORDING TO F.E.M.A. F.I.R.M. MAP
NUMBER 47165C0411G
EFFECTIVE DATE APRIL 12, 2012,
THIS SITE LIES WITHIN ZONE AE.

E.P.S.C. NOTE

I, Brian Hamilton, Certified Erosion Control Specialist, have reviewed this plan for sufficient onsite erosion and sediment control provisions.
Date OCT. 27, 2025

FINAL STABILIZATION

All temporary construction site management practice (TCP's) devices shall be removed during final stabiliation and final cleaning of the proposed facilities. These items include Inlet protection, silt fence, and sediment tubes.

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BRIAN M. HAMILTON
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081402
STATE OF TENNESSEE

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FINAL STABILIZATION PLAN

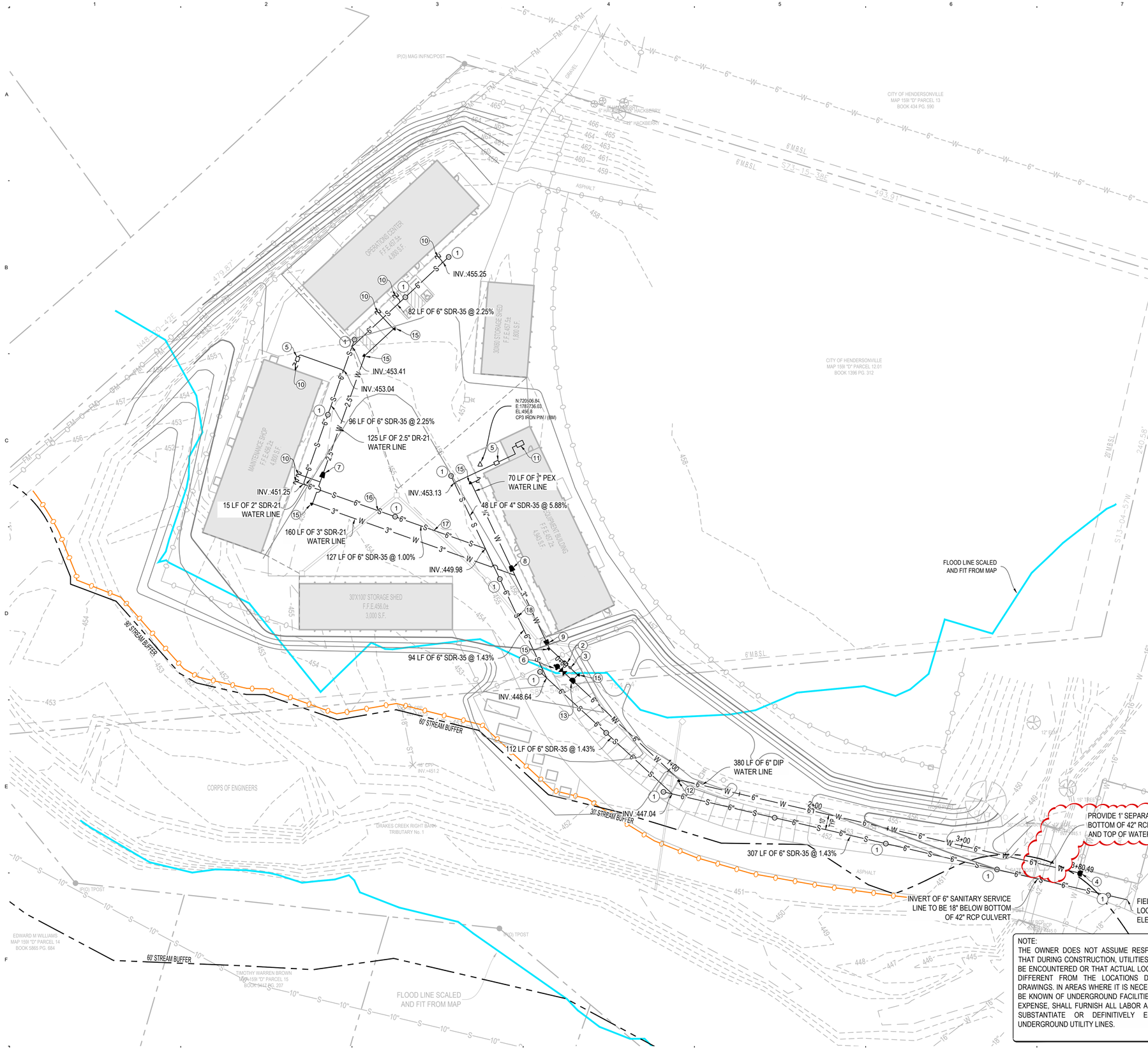
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UTILITY LEGEND

	TEE
	90° BEND
	FIRE HYDRANT
	GATE VALVE
	REDUCER
	THRUST BLOCK
	CLEAN-OUT
— 4" —— W —	WATER LINE WITH SIZE
—6"——S—	SANITARY SEWER LINE WITH SIZE

UTILITY NOTES

1. CLEAN-OUT, SEE DETAIL #1 / C5.41
2. 2" REDUCED PRESSURE BACK FLOW ASSEMBLY, SEE DETAIL #2 / C5.41
3. 2" WATER METER, SEE DETAIL #3 / C5.41
4. STA: 13+80.49± - 16"X6" TAPPING SLEEVE AND VALVE
5. OIL - WATER SEPARATOR, SEE PLUMBING PLANS FOR DETAILS
6. STA: 0+00 - FIRE HYDRANT ASSEMBLY, SEE DETAIL #4 / C5.41
7. 3" X 2 ½" REDUCER
8. 3" X ¾" REDUCER
9. 3" X 2" REDUCER
10. SEE PLUMBING PLANS FOR CONTINUATION
11. WASH BAY DRAIN, SEE DETAIL #5 / C5.41
12. STA: 1+09.50 - 6" HORIZ. BEND WITH THRUST BLOCK, SEE DETAIL #1 / C5.42
13. STA: 0+13.66 - 6" X 6" X2" TEE
14. SANITARY SEWER CONNECTION, SEE DETAIL #5 / C5.42
15. THRUST BLOCK, SEE DETAIL #1 / C5.42
16. STORM SEWER INV.: 452.26
    SANITARY SEWER INV.: 450.73
17. STORM SEWER INV.: 451.86
    SANITARY SEWER INV.: 450.34
18. STORM SEWER INV.: 451.33
    SANITARY SEWER INV.: 449.28

NOTE:
THE OWNER DOES NOT ASSUME RESPONSIBILITY FOR THE POSSIBILITY THAT DURING CONSTRUCTION, UTILITIES OTHER THAN THOSE SHOWN MAY BE ENCOUNTERED OR THAT ACTUAL LOCATIONS OF THOSE SHOWN MAYBE DIFFERENT FROM THE LOCATIONS DESIGNATED ON THE CONTRACT DRAWINGS. IN AREAS WHERE IT IS NECESSARY THAT THE EXACT LOCATION BE KNOWN OF UNDERGROUND FACILITIES, THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL FURNISH ALL LABOR AND TOOLS TO EITHER VERIFY AND SUBSTANTIATE OR DEFINITIVELY ESTABLISH THE POSITIONS OF UNDERGROUND UTILITY LINES.

30' 15' 0' 30'
SCALE: 1"= 30'

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Tennessee

Wold

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JAMES H. GUILLUM — LICENSED PROFESSIONAL ENGINEER — AGRICULTURE — COMMERCE — No. 102700 — 10/28/25 — STATE OF TENNESSEE

Revisions		
Description	Date	Num
ADDENDUM NO. 1	08/01/2025	1
ADDENDUM NO. 2	09/17/2025	2
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
Date: 06.27.2025
Drawn: ALR
Check: JG

UTILITY PLAN

C4.01

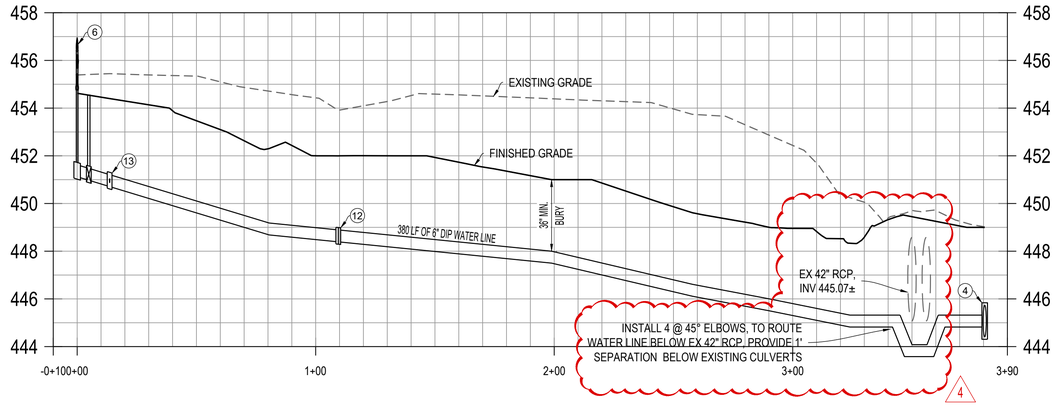
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PROFILE VIEW OF WATER LINE

UTILITY NOTES

1. CLEAN-OUT, SEE DETAIL #1 / C5.41
2. 2" REDUCED PRESSURE BACK FLOW ASSEMBLY, SEE DETAIL #2 / C5.41
3. 2" WATER METER, SEE DETAIL #3 / C5.41
4. STA: 13+80.49± - 16"X6" TAPPING SLEEVE AND VALVE
5. OIL - WATER SEPARATOR, SEE PLUMBING PLANS FOR DETAILS
6. STA: 0+00 - FIRE HYDRANT ASSEMBLY, SEE DETAIL #4 / C5.41
7. 3" X 2 1/2" REDUCER
8. 3" X 3/4" REDUCER
9. 3" X 2" REDUCER
10. SEE PLUMBING PLANS FOR CONTINUATION
11. WASH BAY DRAIN, SEE DETAIL #5 / C5.41
12. STA: 1+09.50 - 6" HORIZ. BEND WITH THRUST BLOCK, SEE DETAIL #1 / C5.42
13. STA: 0+13.66 - 6" X 6" X2" TEE
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30' 15' 0' 30'
HORIZ. SCALE: 1"= 30'
VERT. SCALE: 1"= 3'

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10/28/25
NO. 102700
STATE OF TENNESSEE

Revisions		
Description	Date	Num
ADDENDUM NO. 2	09/17/2025	2
ADDENDUM NO. 4	10/28/2025	4

Proj. #: 247062
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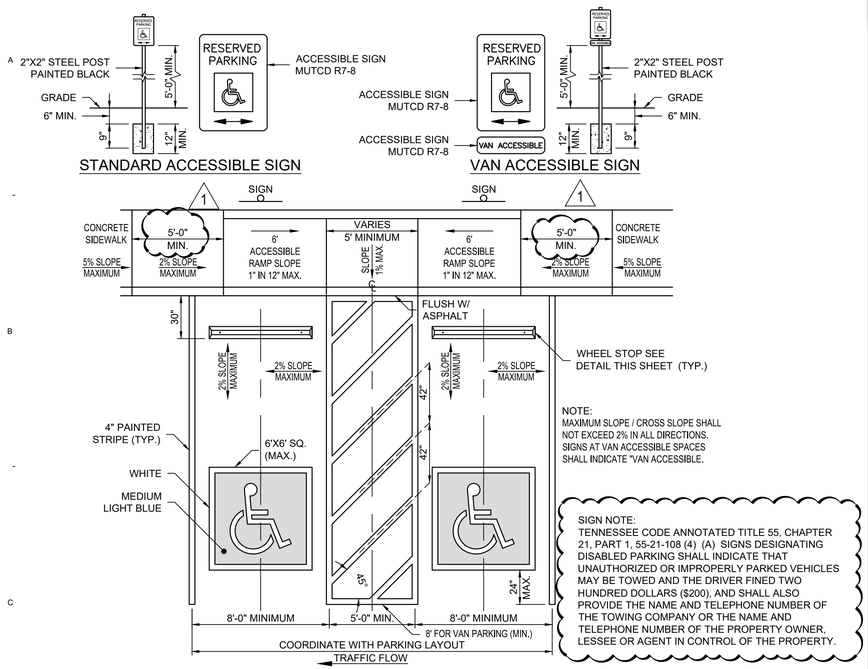
WATER LINE PROFILE

C4.02

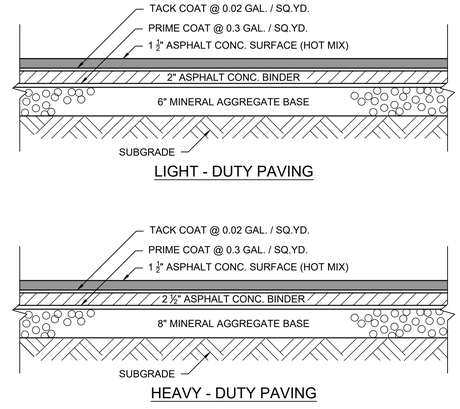
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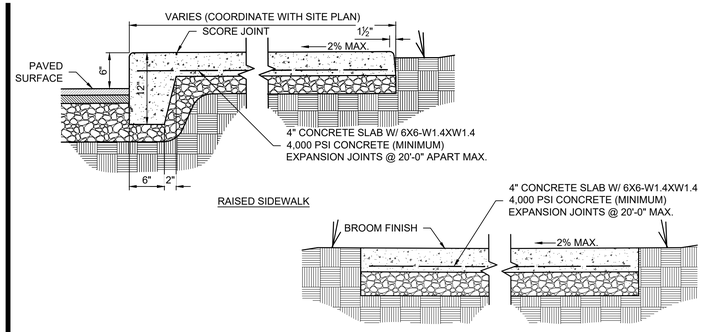
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1 ACCESSIBLE PARKING
NOT TO SCALE

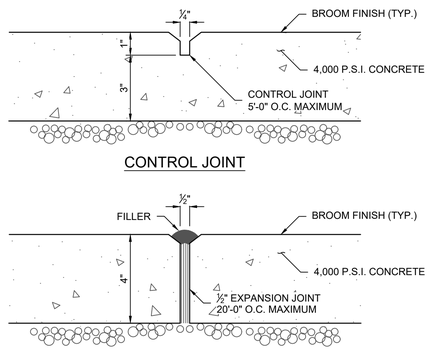


2 ASPHALT PAVING SECTION DETAIL
NOT TO SCALE

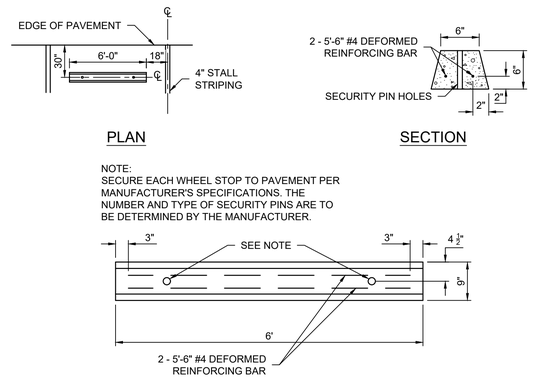


NOTES:
1. SIDEWALKS SHALL BE 4" MINIMUM THICKNESS WITH 4" CRUSHED STONE BASE.
2. WHERE ADJACENT TO A FIXED STRUCTURE, A ½" EXPANSION JOINT W/ FILLER SHALL BE INSTALLED.
3. COORDINATE WITH FINISH DETAIL AND JOINT DETAIL.
4. EXPANSION BOARD SHALL BE PROCESSED BOARD PRODUCT MADE FROM GRANULAR CRUMB RUBBER DERIVED FROM DISCARDED TRUCK TIRES AND VARIOUS LOW DENSITY POLYMER PRODUCTS.

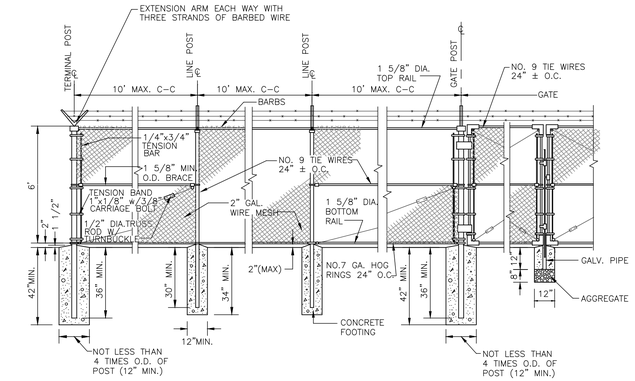
3 SIDEWALK DETAILS
NOT TO SCALE



4 SIDEWALK JOINTS
NOT TO SCALE



5 WHEEL STOP
NOT TO SCALE



6 6'-0 CHAIN LINE FENCE WITH BARBEDWIRE
NOT TO SCALE

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COMMERCE
NO. 103758
STATE OF TENNESSEE
08/01/25

Revisions		
Description	Date	Num
ADDENDUM NO. 1	08/01/2025	1

Proj. #: 247062
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Drawn: ALR
Check: JG

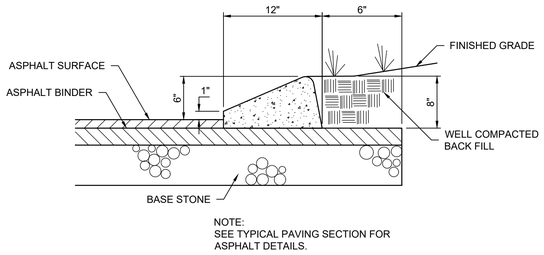
SITE DETAILS

C5.11

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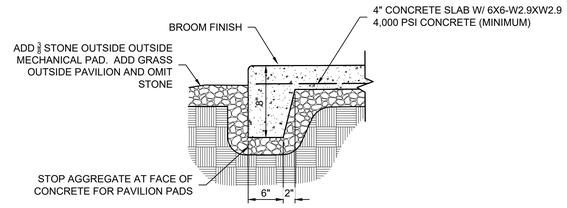
24X36

TN



NOTE:
SEE TYPICAL PAVING SECTION FOR ASPHALT DETAILS.

1 EXTRUDED CURB
NOT TO SCALE



NOTES:
1. THE CONCRETE PAD SHALL EXTEND 6" BEYOND EACH SIDE OF THE MECHANICAL UNIT.
2. REINFORCEMENT STEEL IS TO BE CUT SO THAT NO STEEL COMES WITHIN 3 INCHES OF THE OUTER EDGES AND ENDS OF THE SLAB.
3. 6" COMPACTED AGGREGATE

2 MECHANICAL PAD
NOT TO SCALE

3 DETAIL NOT USED
NOT TO SCALE

2

4 DETAIL NOT USED
NOT TO SCALE

5 DETAIL NOT USED
NOT TO SCALE

6 DETAIL NOT USED
NOT TO SCALE

C

PLOT DATE: 9/17/2025 10:23:51 PM | USER:JGILLIAM | LOCATION: C:\USERS\JGILLIAM\DOCACCDOCS\WOLD ARCHITECTS%247062 - DRAKES CREEK MAINTENANCE FACILITY\PROJECT FILES\01_CIVIL\C-DETAILS 247062.DWG
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JAMES H. GILLIAM
REGISTERED
LICENSED TO PRACTICE
ARCHITECTURE
09/17/25
NO. 102700
STATE OF TENNESSEE

Revisions		
Description	Date	Num
ADDENDUM NO. 1	08/01/2025	1
ADDENDUM NO. 2	09/17/2025	2

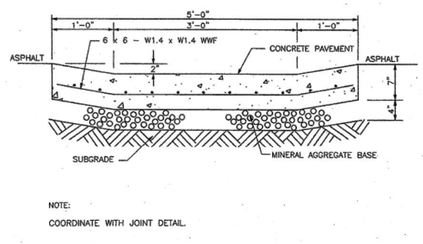
Proj. #: 247062
Date: 06.27.2025
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SITE DETAILS

C5.12

24X36

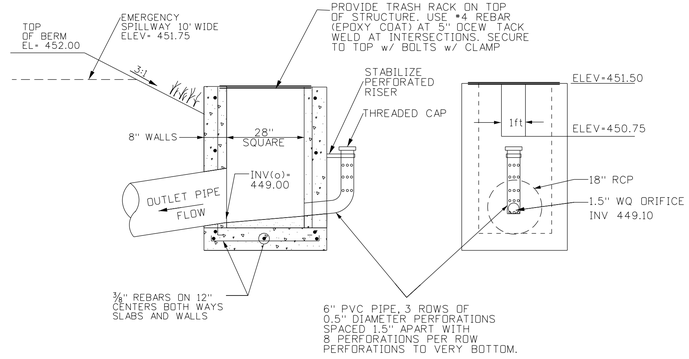
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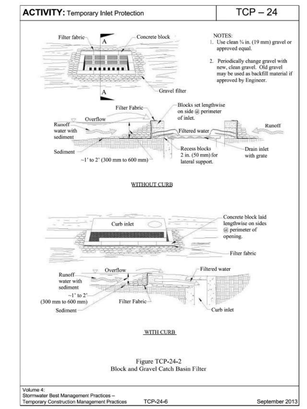
NOTE:

COORDINATE WITH JOINT DETAIL.

1 CONCRETE FLUME
NOT TO SCALE



2 POND OUTLET DETAIL
not to scale



ACTIVITY: Temporary Inlet Protection — TCP – 24

NOTES:
1. Use clean ¾ in. (19 mm) gravel or approved equal.
2. Periodically change gravel with new, clean gravel. Old gravel may be used as backfill material if approved by Engineer.

Filter fabric
Concrete block
Gravel filter
Filter Fabric
Blocks set lengthwise on side @ perimeter of inlet.
Overflow
Runoff water with sediment
Filtered water
Runoff
Sediment
~1' to 2' (300 mm to 600 mm)
Recess blocks 2 in. (50 mm) for lateral support.
Drain inlet with grate

WITHOUT CURB

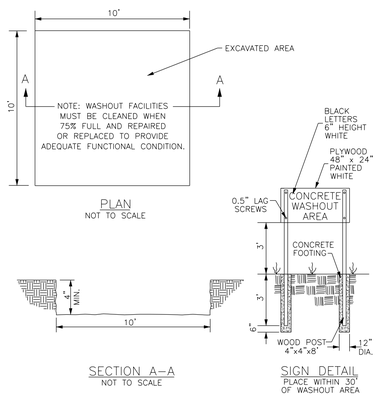
Curb inlet
Concrete block laid lengthwise on sides @ perimeter of opening.
Filter fabric
Overflow
Filtered water
Runoff water with sediment
~1' to 2' (300 mm to 600 mm)
Filter Fabric
Sediment
Curb inlet

WITH CURB

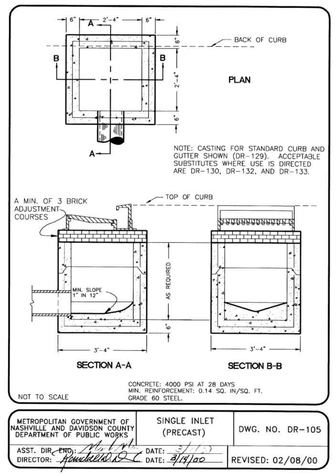
Figure TCP-24-2
Block and Gravel Catch Basin Filter

Volume 4:
Stormwater Best Management Practices – Temporary Construction Management Practices — TCP-24-6 — September 2013

3 TEMPORARY INLET PROTECTION
NOT TO SCALE



4 TEMPORARY CONCRETE WASHOUT
NOT TO SCALE

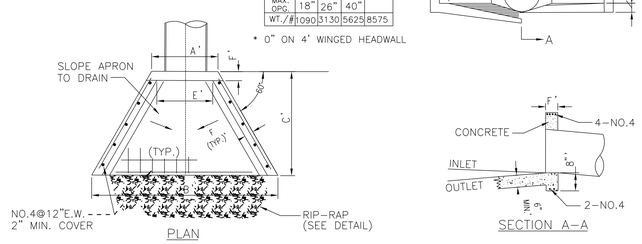


5 SINGLE CATCH BASIN (PRECAST)
NOT TO SCALE

ALL EDGES OF EXPOSED CONCRETE TO BE CHAMFERED ONE INCH.

TABLE OF DIMENSIONS				
SIZE	4'	6'	8'	10'
A	32"	48"	72"	96"
B	48"	72"	96"	120"
C	30"	44"	50"	56"
D	25"	36"	52"	66"
E	24"	36"	59"	83"
F	N/A	8"	8"	8"
MAX. OPG.	18"	26"	40"	
WT./#*	1090	3130	5625	8575

* 0" ON 4' WINGED HEADWALL



6 WINGED ENDWALL OUTLET
NOT TO SCALE

PLOT DATE: --- (KENNE) LOCATION: E:\DESIGN\CONSULTANTS\NCP\PROJECTS\2025 PROJECTS\2025012_WOLD HENDERSONVILLE PARKS MAINTENANCE BUILDING\SPLAN SHEETS\WOLK BORDER.DGN
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BRIAN M. HAM — REGISTERED — AGRICULTURE CONSTRUCTION — PLANNING — SURVEYING — NOT FOR CONSTRUCTION — 08/14/2025 — STATE OF TENNESSEE — PRELIMINARY — FINAL — BID — PERMIT

Revisions		
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Proj. #: 247062
Date: 04.08.2025
Drawn:
Check:

GRADING & DRAINAGE DETAILS

C5.21

24X36

TN

SITE PLAN NOTES

1. The contractor is responsible for making sure that a copy of the SWPPP is retained on-site at or near the construction entrance. If a construction trailer in not available, the contractor shall provide a waterproof enclosure near the construction entrance to place the SWPPP. In addition to the SWPPP, the contractor shall make certain that the following information must also be posted at the construction site (in a construction trailer or in the waterproof enclosure): a.) A copy of the notice of coverage (NOC) with the NPDES permit tracking number for the construction project number, b.) name, company name, email address, telephone number and address of the project site owner or a local contact person; c.) a brief description of the project; d.) the location of the SWPPP if an on-site location for storing the plan is not available.

2. The owner of this project site will provide erosion control measures as shown on this SWPPP. If the owner sells this property, the new property owner will be required to obtain coverage under this permit from the governing federal, state and local agencies and the new property owner shall assume operational control and responsibility for the portion of the site that he/she purchases.

3. Prior to the commencement of any clearing or grubbing, the contractor shall erect "construction fencing", tree protection fencing, caution tape, etc. along the limits of disturbance to protect trees, stream bank buffers, etc. that are not to be disturbed.

4. Prior to any type of construction activity, the contractor shall install the stone based construction exit, the silt fence and the sediment traps/basins when indicated on the SWPPP. Additional erosion control measures such as rock check dams, diversion swales, temporary creek crossings, temporary mulching of disturbed areas, final seed and straw application and general erosion control maintenance shall be provided as construction progresses and these measures become necessary. The contractor shall be responsible for implementing all of the erosion control measures.

5. All erosion control measures shall be installed and maintained in accordance with the manufacture's specifications and recommendations. It is the purpose of all control measures to slow runoff so that rill and gully formation is prevented. The contractor shall inspect the control measures periodically and replace and/or modify the controls for relevant site situations.

6. Where the application of temporary or permanent grass seed is specified as part of the SWPPP, the contractor shall use an appropriate grass seed mixture for the time of year that the seed is sowed. Use fescue during the spring and summer months and a mixture of fescue and winter rye during the fall and winter months. Sow at a rate of 6 lbs. per 1000 s.f. of area. Provide adequate amounts of water to establish a healthy stand of grass.

7. If sediment escapes the construction site, it is the contractor's responsibility to remove the sediment that has escaped the site. The contractor shall obtain the permission of the landowner where the sediment has accumulated before removal can begin. If sediment enters a stream, the contractor must also gain the written permission of the State before remediation/restoration can begin.

8. The contractor shall remove sediment from sediment traps, silt fences, sedimentation ponds, and other sediment controls as necessary and must be removed when capacity has been reduced by 50%.

9. Litter, construction debris and construction chemicals exposed to storm water shall be picked up and removed from the site to prevent them from becoming a pollutant source for storm water discharges. After use, materials used for erosion prevention and sediment control should be removed from the site.

10. There are no other construction activities or industrial activities associated with this project site that are covered under a separate permit.

11. There are no streams or wetlands on or near this project site, therefore no additional permits associated with these features are required.

12. All earth stockpiles, whether on the project site or off-site shall include erosion control measures to prevent the material from be washed from the site by storm water runoff.

13. Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.

14. This project does not disturb more than 50 acres, but areas of the completed phase must be stabilized with in 15 days.

15. For projects that have a disturbed area of greater than 50 acres, the contractor shall provide a phasing plan to only disturb 50 acres or less at one time. Submit the phasing plan to the state and local agencies for their review.

16. Erosion prevention and sediment control measures must be in place and functional before earth moving operations begin and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the workday, but must be replaced at the end of the workday.

17. The contractor shall maintain a rain gauge and daily rainfall records at the site.

18. The contractor shall initiate stabilization measures in portions of the site where construction activities have temporarily or permanently ceased. Temporary or permanent soil stabilization at the construction site must be completed no later than 15 days after the construction activity on that portion of the site has temporarily or permanently ceased.

19. The contractor shall construct temporary diversion swales to divert off-site runoff from crossing the disturbed areas. These diversion swales, when necessary, shall be field located to avoid existing trees wherever possible.

20. No work shall be allowed in or around streams or wetlands without the proper permits. Prior to the commencement of any construction activities in these areas, the contractor shall obtain a copy of the permits from the property owner, which allows this work. He shall not begin work without obtaining a copy of these permits or stiff fines from the federal and state agencies may be levied.

21. Muddy water to be pumped from excavation and work areas must be held in settling basins or filtered prior to its discharge into surface waters. Water must be discharged through a pipe, well-grassed or lined channel or other equivalent means so the discharge does not cause erosion and sedimentation. Discharged water must not cause an objectionable color contrast with the receiving stream.

22. After construction is complete, all disturbed areas, which are not covered with impermeable surface (i.e. asphalt, concrete, buildings, etc.), shall be covered with topsoil (4-inch thick minimum), grass seed and straw. The contractor shall maintain the seed and straw until a solid, healthy stand of permanent grass covers the disturbed areas.

23. Silt fence shall be used along the lower edge of disturbed areas that have sheet flow runoff. Where runoff is concentrated (such as swales and ditches), bumpus fences or rock check dams shall be used to slow the velocity and allow settling of sediment.

24. All construction and waste material shall be collected and removed from the site on a periodic basis. All construction and waste material shall be located outside of any existing or proposed drainage ways and shall be covered and protected from the rain until they are removed from the site. Any liquid materials or chemicals stored on-site shall be located away from any existing or proposed drainage ways and a berm of sufficient height to contain the entire volume of the liquid shall be constructed to completely encompass and impound the stored materials to prevent a spill from flowing off of the site.

25. All soil, plants, trees and other vegetation in protected streams and wetlands and along the banks of same are protected by State law and therefore a prohibited from being removed. The contractor shall ensure that these areas remain undisturbed during construction. He shall erect construction barriers or take other means necessary to insure that the areas remain protected.

26. The contractor shall employee a person to inspect the erosion control measures as required by the State and local agencies. The inspector must have successfully completed the "Fundamentals of Erosion Prevention and Sediment Control" course provided by the State. A copy of the certification or training record for inspector certification should be kept on site.

27. Inspections described in the Tennessee General Permit shall be performed at least twice every calendar week and shall be performed at least 72 hours apart. Inspect all erosion control measures, disturbed areas, storage of material areas, outfall points, construction access points, etc.

28. Inspections shall also be performed before anticipated storm events (or series of storm events such as intermittent showers over one or more days), and within 24 hours after the end of a storm event of 0.5 inches or greater.

29. Any inadequate control measures or control measures in disrepair shall be replaced or modified or repaired as necessary before the next rain event if possible, but in no case more than 7 days after the need is identified. The contractor shall provide additional erosion control measures where necessary to insure adequate control so that no silt exits the project site.

30. Inspections shall be documented and include: the scope of the inspection, name and title of personnel making the inspection, the date of the inspection, major observations relating to the implementation of the storm water pollution prevention plan (including the location of discharges of sediment or other pollutants from the site and of any control device that failed to operate as designed or proved inadequate fro a particular location), and actions taken in accordance with the General Permit. Inspections documentation will be maintained on site and made available upon request. Inspection reports must be submitted to the State (TDEC) within 10 days of the request. Use the inspection report form provided in Appendix C of the General Permit and complete on a weekly basis.

31. Sediment removed from sediment control structures is to be placed at a site that has been permitted by local and state agencies. The contractor is responsible for obtaining the site to "waste" the sediment material. The sediment shall be treated in a manner so that the area around the disposal site will not be contaminated or damaged by the sediment in the storm water run-off. Cost of this treatment is to be included in the price for the earthwork.

32. The contractor shall seed and straw all disturbed areas as soon as possible after final grading\ is completed, unless otherwise indicated. The contractor shall take whatever means necessary to establish permanent soil stabilization. Any areas that do not include construction activity for more than 14 days shall be temporarily covered with straw to help prevent erosion.

33. Remove sediment from all drainage structures, pipes and swales before acceptance by the developer or the local governing agency.

34. Remove the temporary erosion and water pollution control devices only when in the opinion of the owner's representative, they are no longer needed.

35. During the period between the end of the construction and the establishment of the permanent vegetation, erosion control measures shall remain in place and maintained. Once permanent vegetation is established, then the erosion control measures may be removed.

36. This SWPPP is developed in accordance with the Tennessee General NPDES Permit (TNR100000) for storm water discharges associated with construction activity (TNCGP), and is prepared using sound engineering practices. Design Consultants, Inc. personnel involved with the development of this plan have completed the design of vegetative and structural measures for erosion and sediment control course available from the State of Tennessee.

As instructed by Part III.F of the TNCGP, this plan and all attachments are hereby submitted to the local Environmental Assistance Center (EAC), along with the complete, correctly signed Notice of Intent (NOI). Construction will not be initiated prior to 30 days from the date of submittal of this document, or prior to receipt of a Notice of Coverage (NOC) from the Tennessee Department of Environment and Conservation (TDEC). This SWPPP is an evolving document that can change with field adjustments. And changes in the field need to be noted and TDEC provided a copy of the changes.

ACTIVITY: Stabilized Construction Entrance — TCP – 03

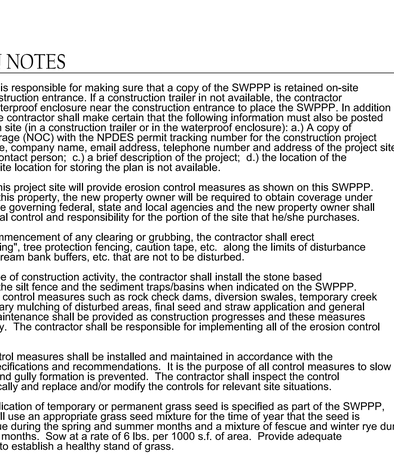


Figure TCP-03-1
Stabilized Construction Entrance

Volume 4:
Stormwater Best Management Practices –
Temp. Construction Site Management Practices TCP-03-5 September 2013

ACTIVITY: Silt Fence — TCP – 13

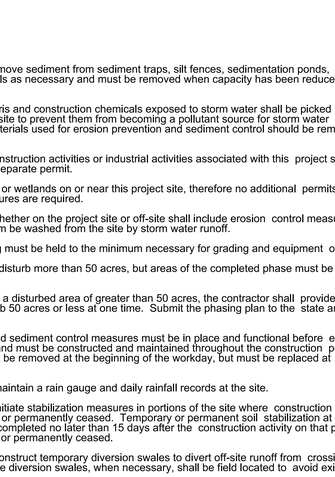


Figure TCP-13-1
Silt Fence Anchoring

Volume 4:
Stormwater Best Management Practices –
Temp. Construction Management Practices TCP-13-7 2021

ACTIVITY: Sediment Traps — TCP – 17

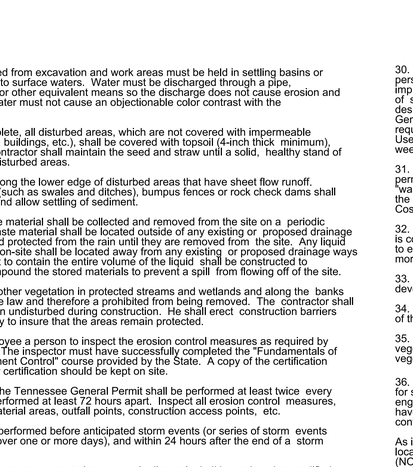
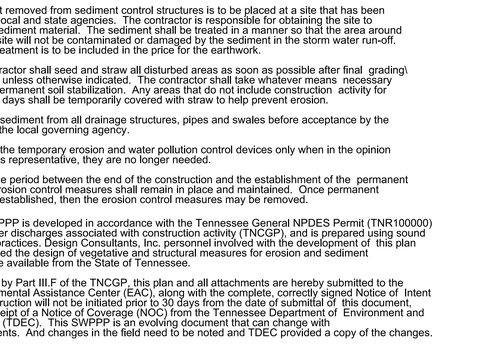


Figure TCP-17-3
Sediment Trap with Stone Outlet

Volume 4:
Stormwater Best Management Practices –
Temp. Construction Management Practices TCP-17-8 2021



1 CONSTRUCTION ENTRANCE
NOT TO SCALE

2 SILT FENCE WITH BACKING
NOT TO SCALE

3 SEDIMENT TRAP
NOT TO SCALE

4 OUTLET PROTECTION
NOT TO SCALE

C

PLOT DATE: — | [KENNE] LOCATION: E:\DESIGN\CONSULTANTS\NC\PROJECTS\2025 PROJECTS\2025012_WOLD HENDERSONVILLE PARKS MAINTENANCE BUILDINGS\PLAN SHEETS\WOLK BORDER.DGN
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BRIAN M. HAMM — REGISTERED — 08/14/2025 — STATE OF TENNESSEE — PLANNING SUBMITTAL — NOT FOR CONSTRUCTION

Revisions		
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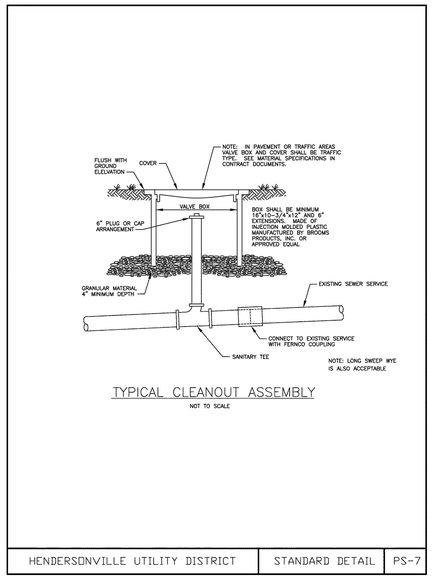
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EROSION CONTROL DETAILS

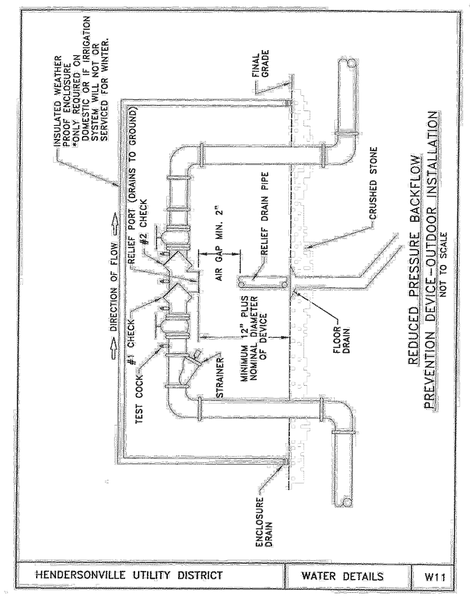
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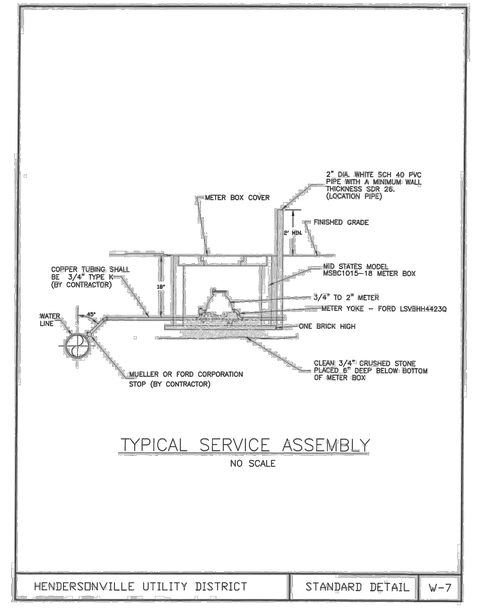
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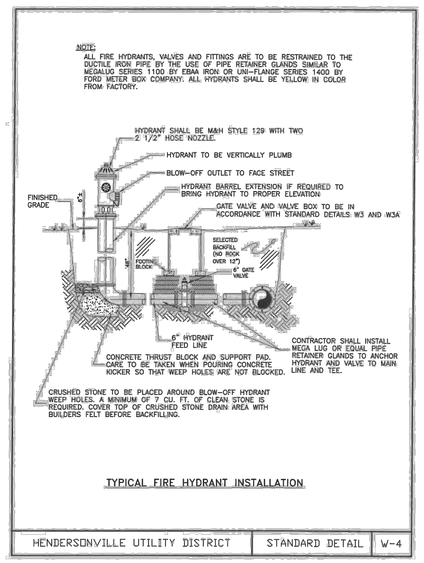
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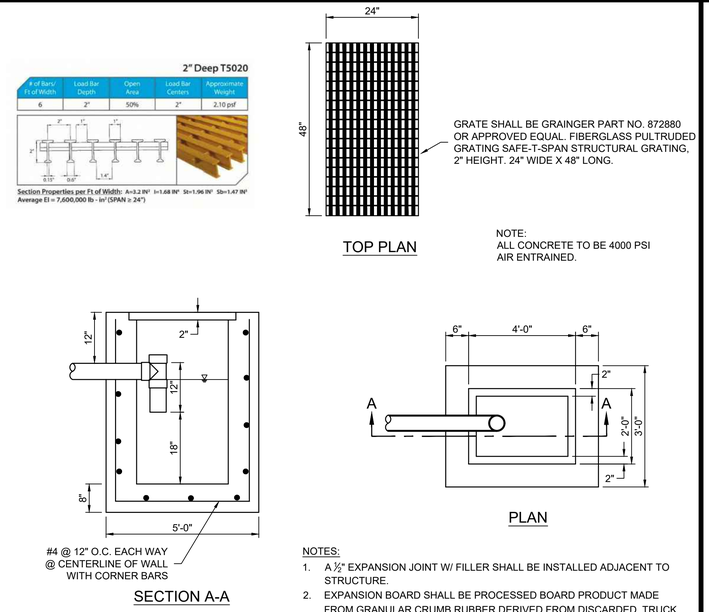
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NOT TO SCALE



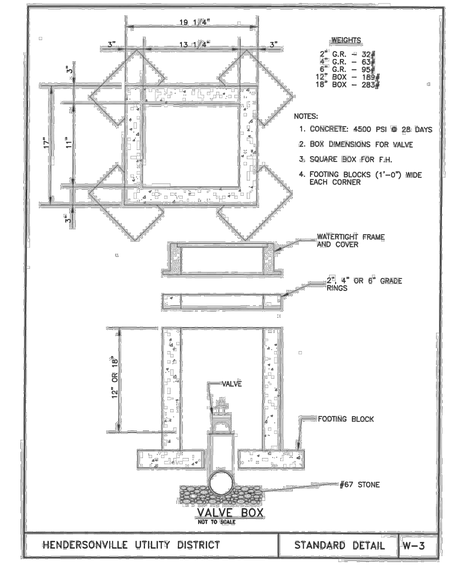
3 DOMESTIC METER
NOT TO SCALE



4 FIRE HYDRANT ASSEMBLY
NOT TO SCALE



5 WASH BAY DRAIN DETAIL
NOT TO SCALE



6 VALVE BOX DETAIL
NOT TO SCALE

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JAMES H. GUILLIAM — LICENSED PROFESSIONAL ENGINEER — AGRICULTURE — COMMERCE — No. 102700 — STATE OF TENNESSEE — 06/27/25

Revisions		
Description	Date	Num

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Date: 06.27.2025
Drawn: ALR
Check: JG

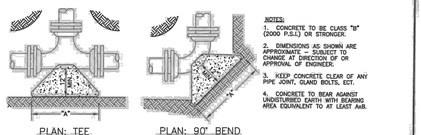
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24X36

TN



SCHEDULE OF MINIMUM BEARING AREA REQUIRED
BASED ON 200 PSI INTERNAL PRESSURE AND 4000 PSF SOIL BEARING CAPACITY*

PIPE SIZE	TEE OR DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4"	1.0	1.5	1.0	1.0	1.0
6"	2.5	3.0	2.0	1.0	1.0
8"	4.0	5.5	3.0	1.5	1.0
10"	6.0	8.5	4.5	2.5	1.5
12"	8.5	12.0	6.5	3.0	2.0
16"	15.0	21.5	11.5	6.0	3.0

VALUES ARE TABULATED IN SQUARE FEET

*Engineer to confirm actual required dimensions before construction of the Thrust Block. Bearing Area (square feet) = A(feet) x B(feet)

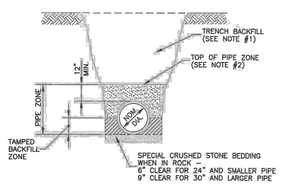
CONCRETE THRUST BLOCK

HENDERSONVILLE UTILITY DISTRICT	STANDARD DETAIL	W-5

1 CONCRETE THRUST BLOCK
NOT TO SCALE

NOTES:

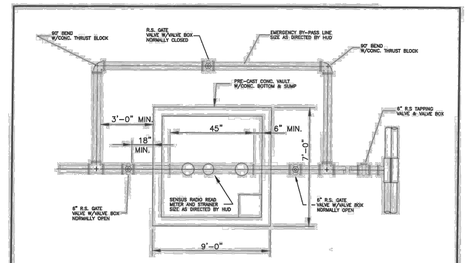
1. SEE PROJECT SPECIFICATIONS FOR BACKFILL REQUIREMENTS.
2. "PIPE ZONE" EXTENDS TO 12" ABOVE TOP OF PIPE AND IS AREA IN WHICH SPECIAL CARE IS TO BE GIVEN TO PLACEMENT AND COMPACTION TO PROJECT PIPE DURING AND AFTER LAYING.
3. LIMIT TRENCH WIDTH AT TOP OF PIPE TO NOMINAL PIPE DIAMETER PLUS 16", UNLESS PERMITTED OTHERWISE BY ENGINEER.
4. TRENCH SHALL BE DUG TO GIVE PIPE FULL AND CONTINUOUS SUPPORT. ALL ROCK TO BE REMOVED TO WITHIN 6" OF PIPE — BED TO PIPE GRADE WITH CRUSHED STONE BEDDING. BEDDING FROM PIPE GRADE TO 1/2 PIPE DIAMETER TO BE TAMPED EARTH, CRUSHED STONE OR OTHER MATERIAL (APPROVED).
5. PIPE TO BE CONTINUOUSLY SUPPORTED ALONG LENGTH OF PIPE BARREL EXCEPT AT BELLS. BELL HOLES ARE REQUIRED SUCH THAT NO BEARING LOAD IS TAKEN BY THE BELL.



WATER LINE INSTALLATION
FLAT BOTTOM TRENCH — TAMPED BACKFILL

HENDERSONVILLE UTILITY DISTRICT	STANDARD DETAIL	W-1

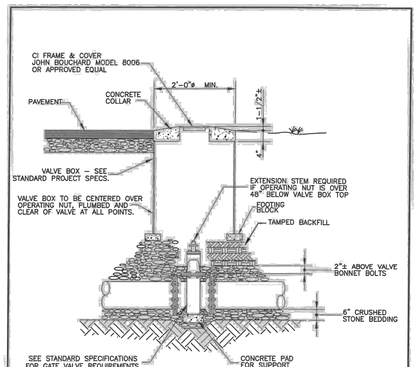
2 WATER LINE TRENCH DETAIL
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PRE-CAST CONCRETE METER VAULT FOR 4" AND LARGER METERS

HENDERSONVILLE UTILITY DISTRICT	STANDARD DETAIL	W-8

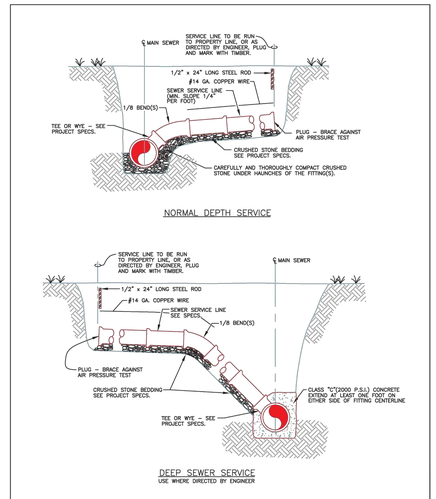
3 FIRE METER
NOT TO SCALE



GATE VALVE

HENDERSONVILLE UTILITY DISTRICT	STANDARD DETAIL	W-2

4 GATE VALVE DETAIL
NOT TO SCALE



SERVICE SERVICE
NOT TO SCALE

HENDERSONVILLE UTILITY DISTRICT	STANDARD DETAIL	S-4

5 SEWER SERVICE DETAIL
NOT TO SCALE

1

6 DETAIL NOT USED
NOT TO SCALE

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JAMES H. GILLIAM
REGISTERED
LICENSED
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08/01/25

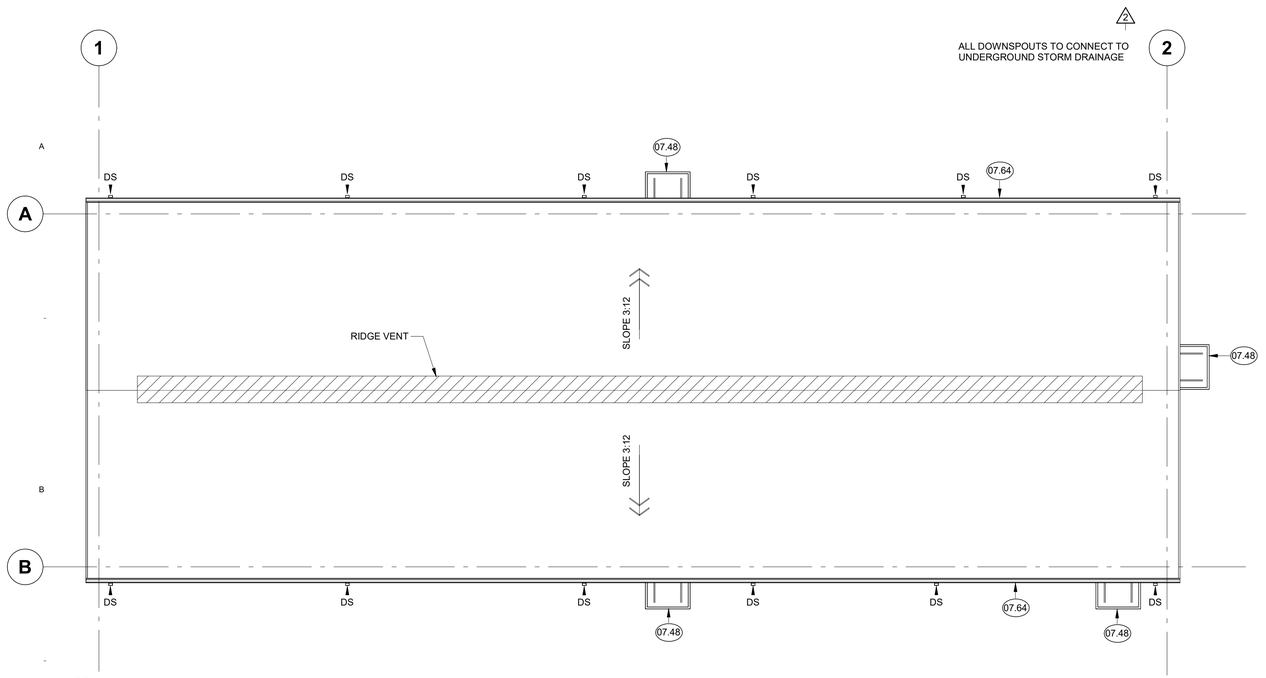
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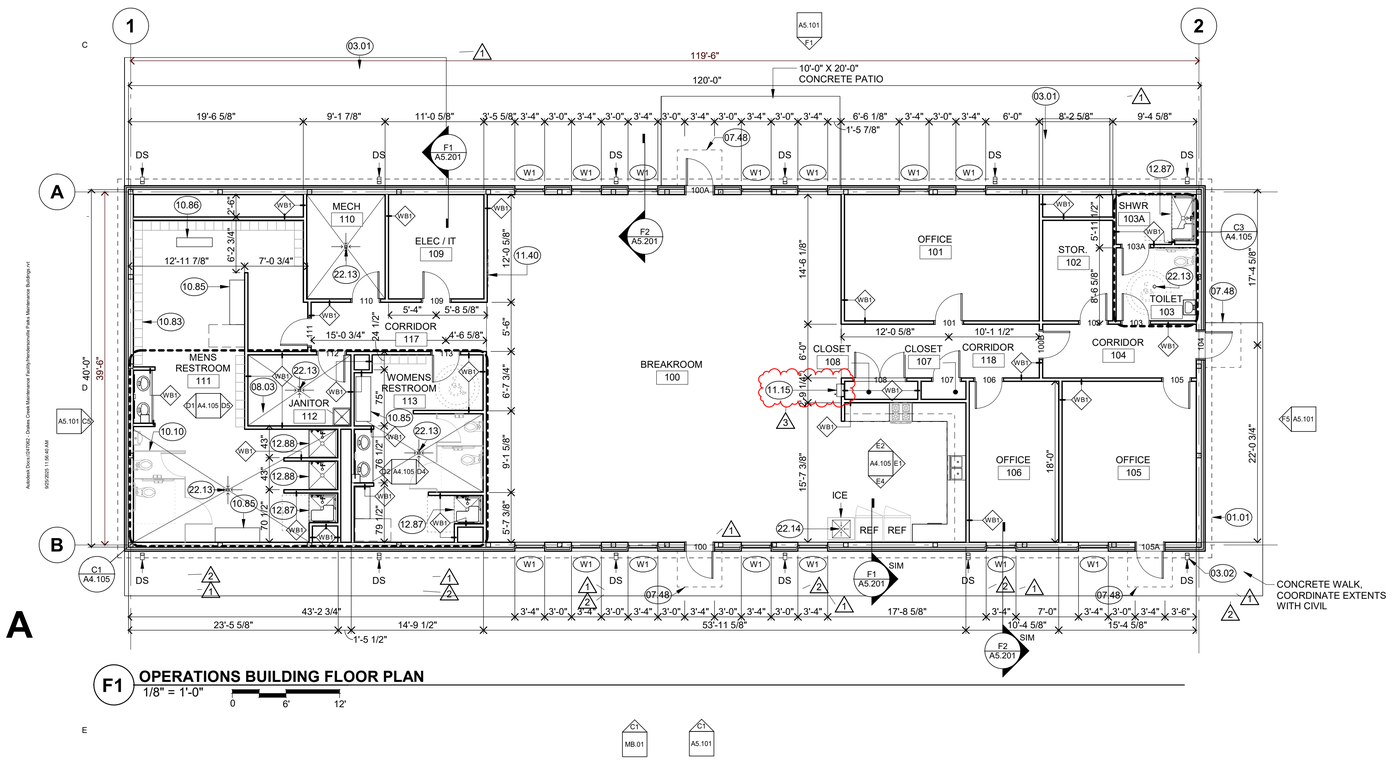
UTILITY DETAILS

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D1 OPERATIONS BUILDING ROOF PLAN
1/8" = 1'-0"
0 6' 12'



F1 OPERATIONS BUILDING FLOOR PLAN
1/8" = 1'-0"
0 6' 12'

KEYNOTE SCHEDULE

(#) DENOTED BY A NUMBER ENCLOSED INSIDE A HEXAGON. ONLY NOTES APPLICABLE TO THIS SHEET ARE SHOWN.

01.01	OUTLINE OF ROOF OVERHANG ABOVE
03.01	CONCRETE PAD, COORDINATE FINAL SIZE WITH MECH UNITS
03.02	DOWNSPOUTS FROM CANOPIES TO CONNECT TO U/G STORM DRAINAGE, TYP.
07.48	METAL OVERHEAD CANOPY. COLOR TO MATCH ROOF.
07.64	6X6 PREFINISHED ALUM. GUTTER
08.03	22x30 ATTIC ACCESS ABOVE
10.10	SOLID PLASTIC TOILET PARTITIONS, TYP.
10.83	LOCKERS, SINGLE-TIER (12" x 12" x 66") (OF/OI) TYP.
10.85	LOCKER ROOM BENCH (20"x60")
10.86	LOCKER ROOM BENCH (12" X 48")
11.15	DRINKING FOUNTAIN
11.40	TV MONITOR, OF/OI- PROVIDE BLOCKING IN WALL FOR MOUNTING
12.87	PREFABRICATED SHOWER PAN AND STALL WITH FOLD DOWN ADA SEAT
12.88	PREFABRICATED SHOWER PAN AND STALL
22.13	FLOOR DRAIN. SLOPE FLOOR TO DRAIN MIN 1/8" PER FOOT.
22.14	FLOOR DRAIN UNDER ICE MAKER. SLOPE FLOOR TO DRAIN MIN 1/4" PER FOOT. REF. PLUMBING

FLOOR PLAN GENERAL NOTES

1. ALL PLAN DIMENSIONS ARE NOMINAL TO FACE OF WALL. WALL THICKNESSES ARE SHOWN NOMINAL, SEE WALL TYPES FOR ACTUAL THICKNESS.
2. REFER TO WALL TYPE DETAILS FOR WALL THICKNESSES.
3. COORDINATE SIZE AND LOCATION OF ALL DUCT AND SHAFT OPENINGS IN WALLS AND FLOORS W/ MECH. AND ELEC.
4. FIELD VERIFY ALL MILLWORK OPENINGS.
5. VERIFY LOCATION, SIZE AND QUANTITY OF ALL EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL.
6. ALL DOOR / SIDELITE OPENINGS TO BEGIN 4" FROM ADJACENT WALL UNLESS OTHERWISE NOTED.

ROOM FINISH SCHEDULE REMARKS

1. PROVIDE IMPACT RESISTANT GWB TO HEIGHT OF 4'-0" A.F.F. ON WALLS WITH GWB FINISH.
2. PROVIDE EPOXY PAINT UP TO _8'-0"_ ABOVE FINISH FLOOR
3. PAINT ALL EXPOSED CEILING ITEMS, INC. STRUCTURE, PIPING, DUCTWORK, ELECTRICAL, ETC. TO MATCH CEILING.
4. MATCH ALL SECTIONAL AND COILING DOOR FINISH TO METAL PANEL EXTERIOR.
5. 4FT HIGH WAINSCOT - 1/2" PLYWOOD - UNPAINTED

ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	BASE	N WALL - TYP MATL	N WALL - TYP FIN	E WALL MATL	E WALL FIN	S WALL MATL	S WALL FIN	W WALL MATL	W WALL FIN	REMARKS
100	BREAKROOM	REF-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
101	OFFICE	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
102	STOR.	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
103	TOILET	REF-1	IB	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	
103A	SHWR	REF-1	IB	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	
104	CORRIDOR	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
105	OFFICE	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
106	OFFICE	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
107	CLOSET	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
108	CLOSET	LVT-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
109	ELEC / IT	SC	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
110	MECH	SC	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
111	MENS RESTROOM	REF-1	IB	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	
112	JANITOR	REF-1	RB-1	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	
113	WOMENS RESTROOM	REF-1	IB	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	
117	CORRIDOR	REF-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	
118	CORRIDOR	REF-1	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING [3]	OVERALL WIDTH	FRAME TYPE	FRAME DEPTH	FRAME MATL	GL	HDW GRP	REMARKS [3]
100	G	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
100A	G	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
100B	N	1	3'-0"	7'-0"	WD	45 MIN	3'-4"	FR 1	5 3/4"	HM	T	07	PROVIDE FIRE RATED GLAZING
101	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	05	
102	F	1	3'-0"	7'-0"	WD	45 MIN	3'-4"	FR 1	5 3/4"	HM	--	06	
103	F	1	3'-0"	7'-0"	WD	45 MIN	3'-4"	FR 1	5 3/4"	HM	--	04	
103A	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	02	
104	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	--		
105	F	1	3'-0"	7'-0"	WD	45 MIN	3'-4"	FR 1	5 3/4"	HM	--	05	
105A	G	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
106	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	05	
107	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	02	
108	F	2	2'-10"	7'-0"	WD	--	6'-0"	FR 1	5 3/4"	HM	--	02	
109	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	06	
110	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	06	
111	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	02	
112	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	5 3/4"	HM	--	06	
113	F	1	3'-0"	7'-0"	WD	--	3'-4"	FR 1	--	HM	--	02	

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS — REGISTERED ARCHITECT — No. 104178 — STATE OF TENNESSEE — 9-26-2025

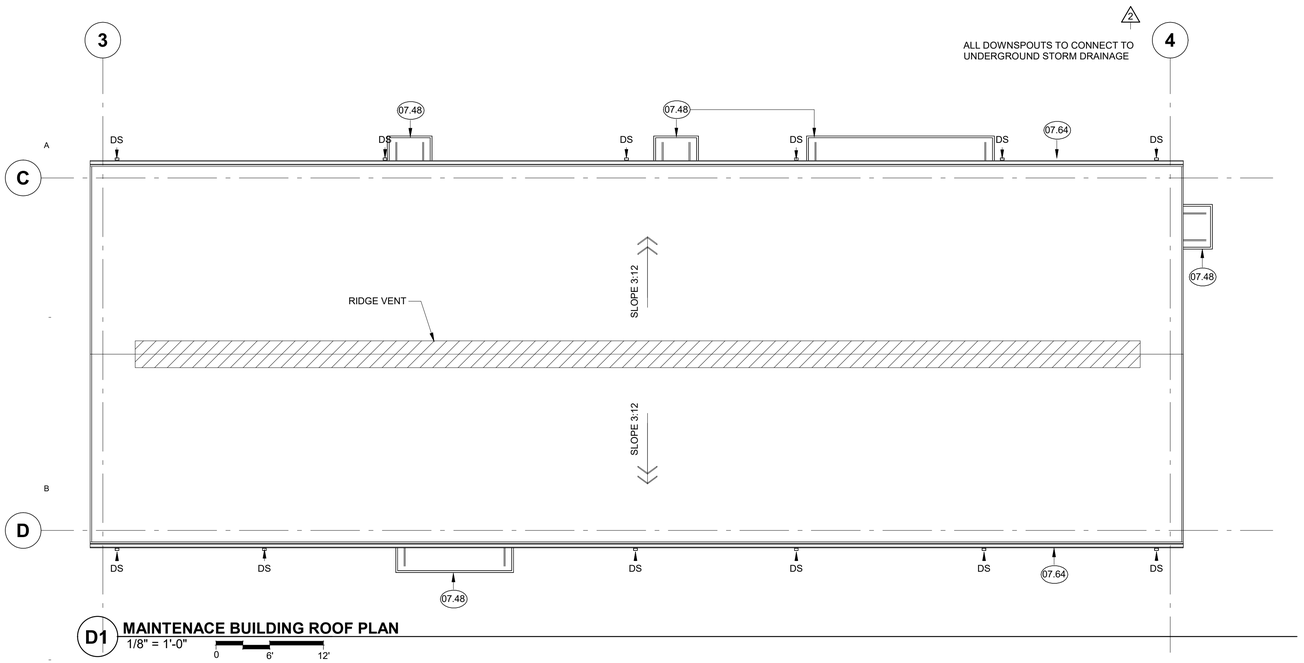
Revisions		
Description	Date	Num
Addendum 1	2025-08-01	1
Addendum 2	2025-09-03	2
Addendum 3	2025-09-26	3

Comm: 247062
Date: June 27, 2025
Drawn: YR
Check: BM

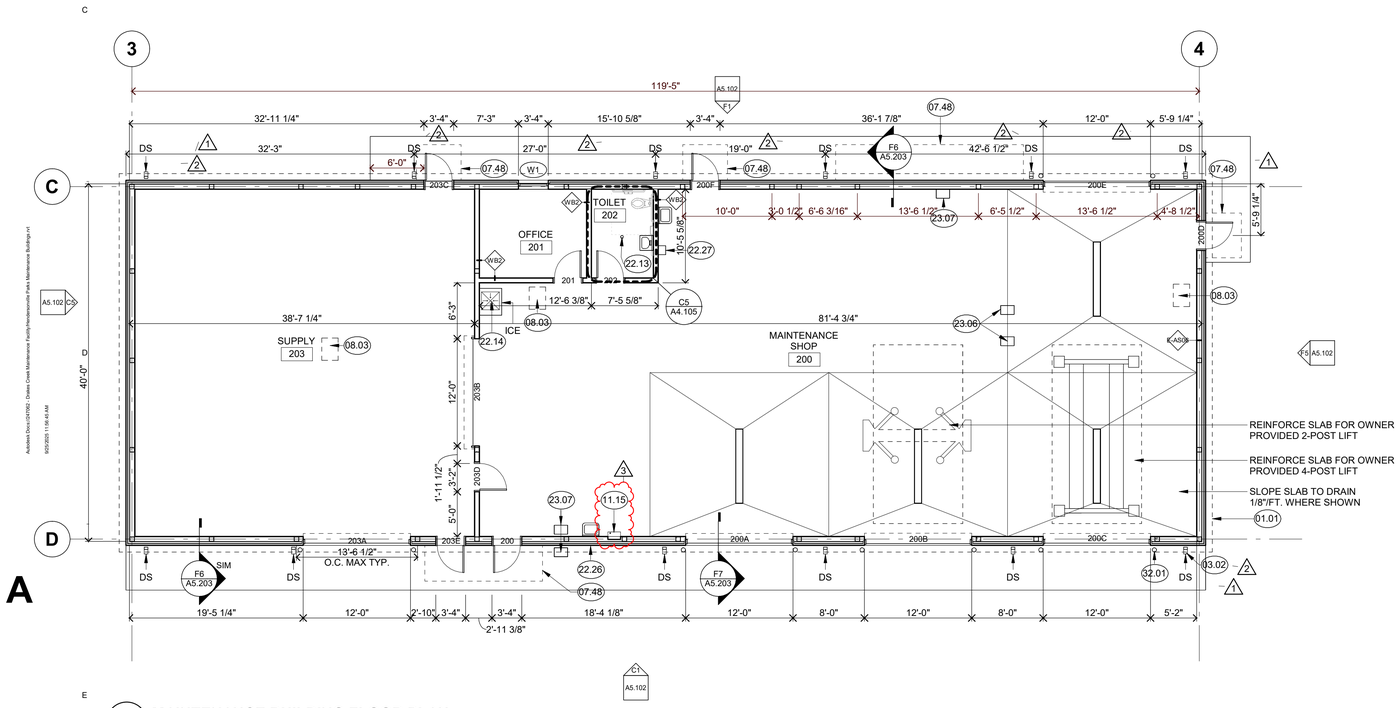
FLOOR & ROOF PLAN - OPERATIONS

Scale: As indicated

A2.101



D1 MAINTENACE BUILDING ROOF PLAN
1/8" = 1'-0"
0 6' 12'



F1 MAINTENANCE BUILDING FLOOR PLAN
1/8" = 1'-0"
0 6' 12'

KEYNOTE SCHEDULE

DENOTED BY A NUMBER ENCLOSED INSIDE A HEXAGON. ONLY NOTES APPLICABLE TO THIS SHEET ARE SHOWN.

01.01	OUTLINE OF ROOF OVERHANG ABOVE
03.02	DOWNSPOUTS FROM CANOPIES TO CONNECT TO U/G STORM DRAINAGE, TYP.
07.48	METAL OVERHEAD CANOPY. COLOR TO MATCH ROOF.
07.64	6X6 PREFINISHED ALUM. GUTTER
08.03	22x30 ATTIC ACCESS ABOVE
11.15	DRINKING FOUNTAIN
22.13	FLOOR DRAIN. SLOPE FLOOR TO DRAIN MIN 1/8" PER FOOT.
22.14	FLOOR DRAIN UNDER ICE MAKER. SLOPE FLOOR TO DRAIN MIN 1/4" PER FOOT. REF. PLUMBING
22.26	HOSE BIBB, (OF/OI)
22.27	PORTABLE EYEWASH STATION
23.06	OVER HEAD, CEILING MOUNTED, AIR COMPRESSOR CORD REEL
23.07	WAIST HEIGHT, WALL MOUNTED, AIR COMPRESSOR CORD REEL
32.01	6" PIPE BOLLARD, SEE CIVIL, TYP.

ROOM FINISH SCHEDULE REMARKS

1. PROVIDE IMPACT RESISTANT GWB TO HEIGHT OF 4'-0" A.F.F. ON WALLS WITH GWB FINISH.
2. PROVIDE EPOXY PAINT UP TO _8'-0"_ ABOVE FINISH FLOOR
3. PAINT ALL EXPOSED CEILING ITEMS, INC. STRUCTURE, PIPING, DUCTWORK, ELECTRICAL, ETC. TO MATCH CEILING.
4. MATCH ALL SECTIONAL AND COILING DOOR FINISH TO METAL PANEL EXTERIOR.
5. 4FT HIGH WAINSCOT - 1/2" PLYWOOD - UNPAINTED

FLOOR PLAN GENERAL NOTES

1. ALL PLAN DIMENSIONS ARE NOMINAL TO FACE OF WALL. WALL THICKNESSES ARE SHOWN NOMINAL, SEE WALL TYPES FOR ACTUAL THICKNESS.
2. REFER TO WALL TYPE DETAILS FOR WALL THICKNESSES.
3. COORDINATE SIZE AND LOCATION OF ALL DUCT AND SHAFT OPENINGS IN WALLS AND FLOORS W/ MECH. AND ELEC.
4. FIELD VERIFY ALL MILLWORK OPENINGS.
5. VERIFY LOCATION, SIZE AND QUANTITY OF ALL EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL.
6. ALL DOOR / SIDELITE OPENINGS TO BEGIN 4" FROM ADJACENT WALL UNLESS OTHERWISE NOTED.

ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	BASE	N WALL - TYP MATL	N WALL - TYP FIN	E WALL MATL	E WALL FIN	S WALL MATL	S WALL FIN	W WALL MATL	W WALL FIN	REMARKS
200	MAINTENANCE SHOP	SC	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	2
201	OFFICE	SC	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	2
202	TOILET	REF-1	IB	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	
203	SUPPLY	SC	RB-1	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	GWB	PT-6A	2

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING	OVERALL WIDTH	FRAME TYPE	FRAME DEPTH	FRAME MATL	GL	HDW GRP	REMARKS
200	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
200A	CDB	1	12'-0"	12'-0"	ST	--	12'-0"	CDB	--	ST	--	08	OVERHEAD COILING
200B	CDB	1	12'-0"	12'-0"	ST	--	12'-0"	CDB	--	ST	--	08	OVERHEAD COILING
200C	CDB	1	12'-0"	12'-0"	ST	--	12'-0"	CDB	--	ST	--	08	OVERHEAD COILING
200D	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
200E	CDB	1	12'-0"	12'-0"	ST	--	12'-0"	CDB	7 3/4"	ST	--	08	OVERHEAD COILING
200F	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	7 3/4"	HM	I/T	03	
201	G	1	3'-0"	7'-0"	FR 1	--	3'-4"	FR 1	--	HM	T	05	
202	F	1	3'-0"	7'-0"	FR 1	--	3'-4"	FR 1	--	HM	--	04	
203A	CDB	1	12'-0"	12'-0"	ST	--	12'-0"	CDB	10 1/8"	ST	--	08	OVERHEAD COILING
203B	CDF	1	12'-0"	12'-0"	ST	--	12'-4"	CDF	7 3/4"	ST	--	08	OVERHEAD COILING
203C	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	03	
203D	G	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	T	02	
203E	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	I/T	01	

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
No. 104779
STATE OF TENNESSEE
9-26-2025

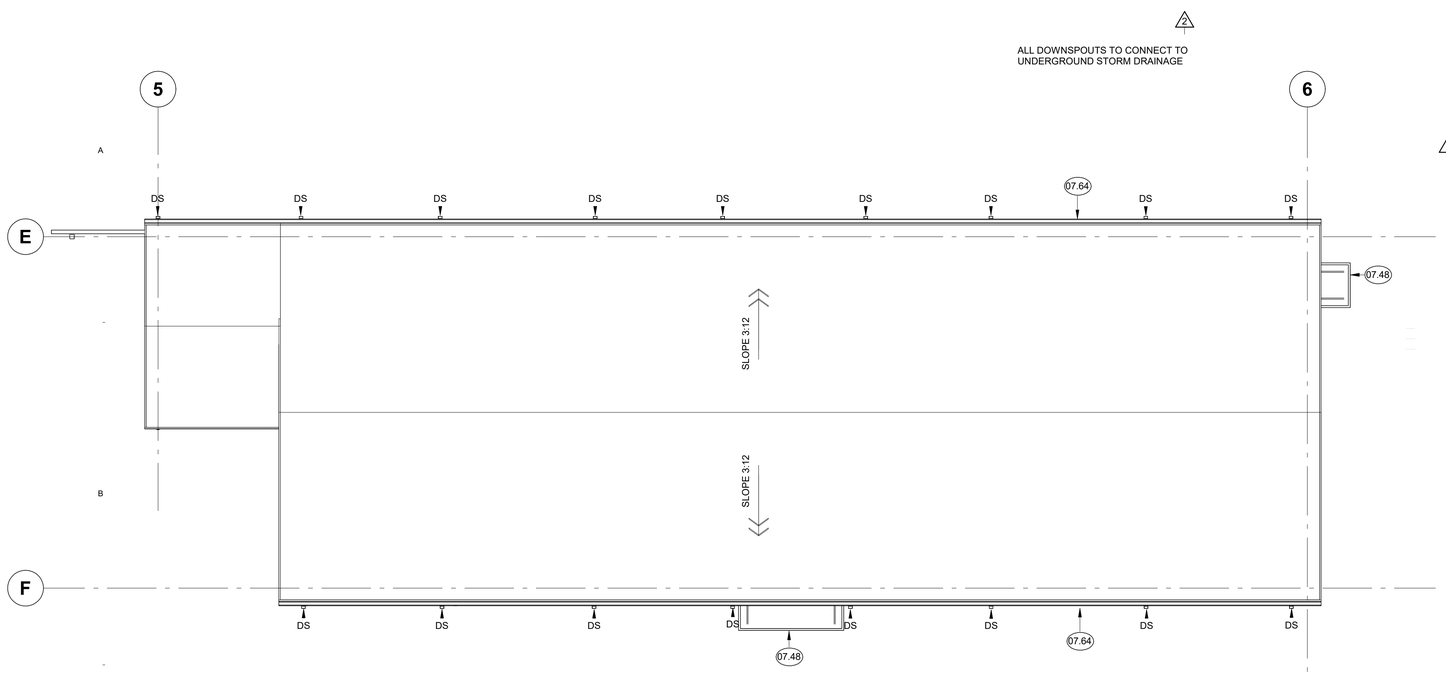
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Description	Date	Num
Addendum 1	**2025-08-01**	**1**
Addendum 2	**2025-09-03**	**2**
Addendum 3	**2025-09-26**	**3**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

FLOOR & ROOF PLAN - MAINTENANCE

Scale: **As indicated**

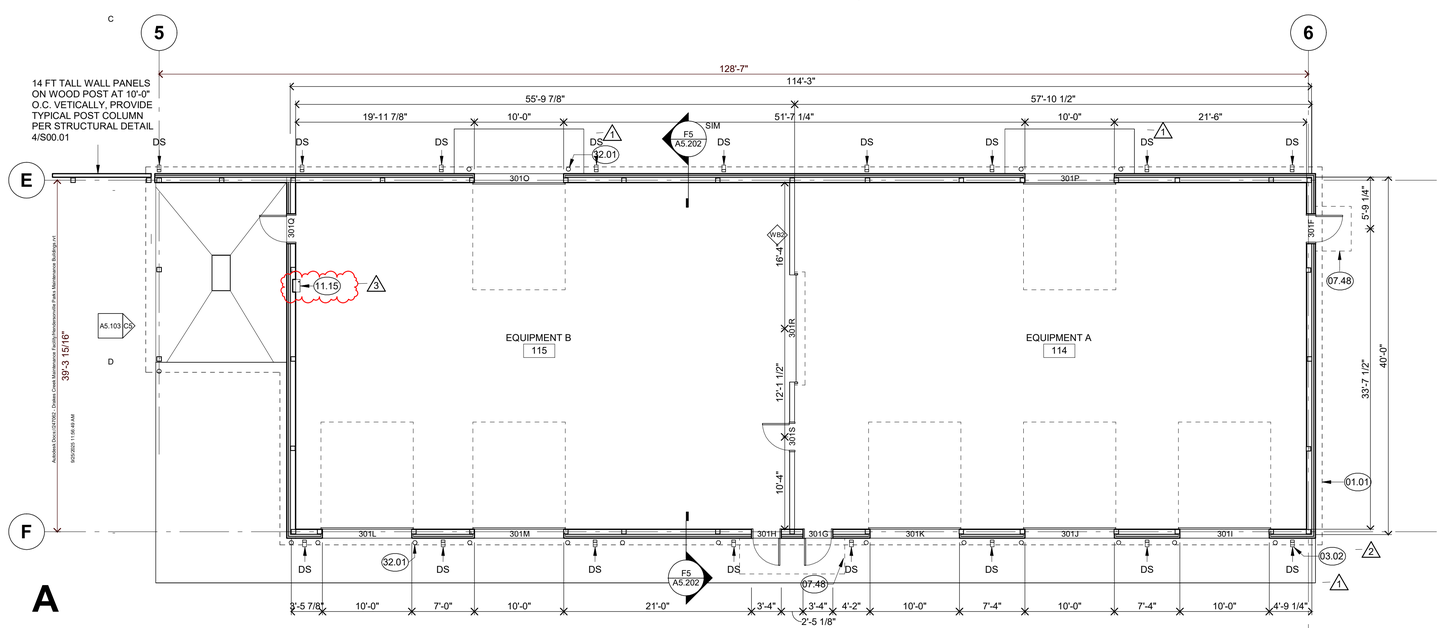
A2.102



D1 EQUIPMENT BUILDING ROOF PLAN

1/8" = 1'-0"

0 6' 12'



F1 EQUIPMENT BUILDING FLOOR PLAN

1/8" = 1'-0"

0 6' 12'

KEYNOTE SCHEDULE

DENOTED BY A NUMBER ENCLOSED INSIDE A HEXAGON. ONLY NOTES APPLICABLE TO THIS SHEET ARE SHOWN.

01.01	OUTLINE OF ROOF OVERHANG ABOVE
03.02	DOWNSPOUTS FROM CANOPIES TO CONNECT TO U/G STORM DRAINAGE, TYP.
07.48	METAL OVERHEAD CANOPY. COLOR TO MATCH ROOF.
07.64	6X6 PREFINISHED ALUM. GUTTER
11.15	DRINKING FOUNTAIN
32.01	6" PIPE BOLLARD, SEE CIVIL, TYP.

FLOOR PLAN GENERAL NOTES

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5. 4FT HIGH WAINSCOT - 1/2" PLYWOOD - UNPAINTED

ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	BASE	N WALL - TYP MATL	N WALL - TYP FIN	E WALL MATL	E WALL FIN	S WALL MATL	S WALL FIN	W WALL MATL	W WALL FIN	REMARKS
114	EQUIPMENT A	SC	--	PLYWD	PT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	5
115	EQUIPMENT B	SC	--	PLYWD	PT-6A	GWB	EPT-6A	GWB	EPT-6A	GWB	EPT-6A	5

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING	OVERALL WIDTH	FRAME TYPE	DEPTH	MATL	GL	HDW GRP	REMARKS
301F	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
301G	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
301H	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
301I	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301J	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301K	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301L	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301M	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301O	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301P	OH	1	10'-0"	12'-0"	ST	--	10'-4"	OH	--	--	--	08	OVERHEAD SECTIONAL
301Q	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	10 1/8"	HM	I/T	01	
301R	CDF	1	12'-0"	12'-0"	ST	--	12'-4"	CDF	--	ST	--		OVERHEAD COILING
301S	G	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	7 3/4"	HM	T	02	

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS — REGISTERED ARCHITECT — AGRICULTURE — COMMERCE — No. 104719 — STATE OF TENNESSEE — 9-26-2025

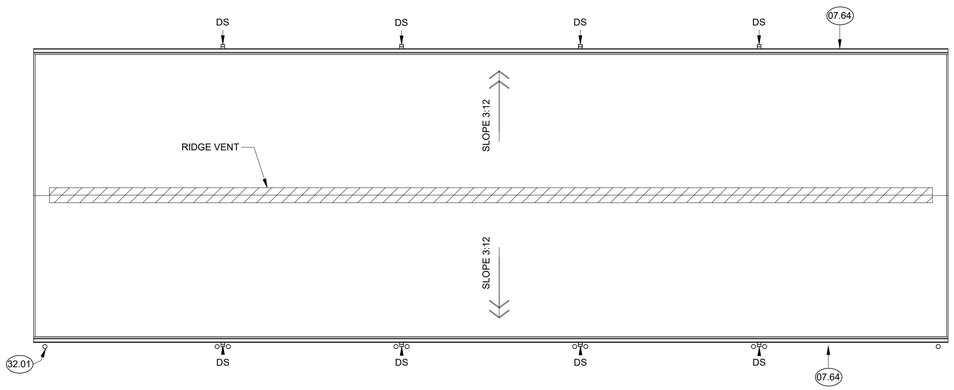
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Description	Date	Num
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Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

FLOOR & ROOF PLAN - EQUIPMENT

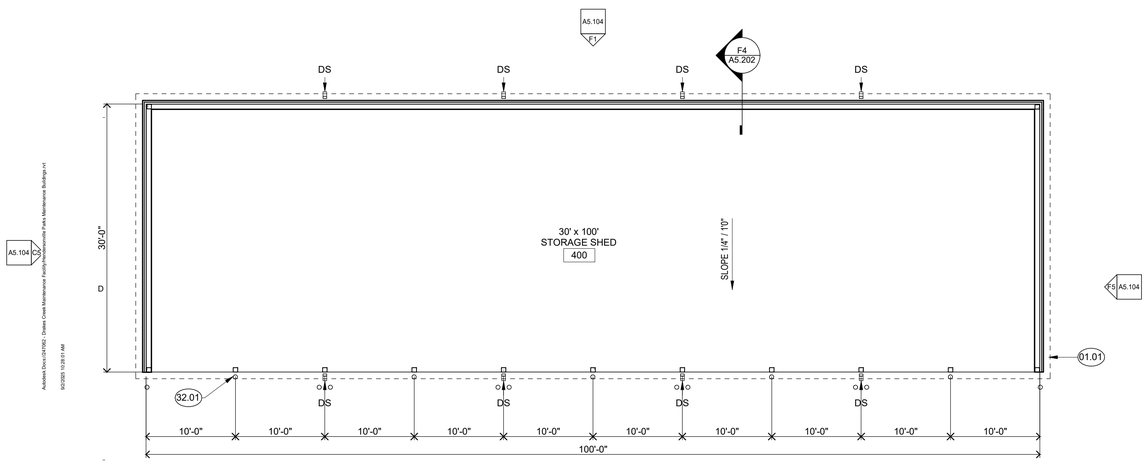
Scale: **As indicated**

A2.103



ALL DOWNSPOUTS TO CONNECT TO UNDERGROUND STORM DRAINAGE

X-50 STORAGE 100'X30' BUILDING ROOF PLAN
1/8" = 1'-0"
0 6' 12'



A

X-43 STORAGE 100'X30' BUILDING FLOOR PLAN
1/8" = 1'-0"
0 6' 12'

KEYNOTE SCHEDULE

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07.64 6X6 PREFINISHED ALUM. GUTTER
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Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
No. 104779
STATE OF TENNESSEE
9-3-2025

Revisions		
Description	Date	Num
Addendum 2	**2025-09-03**	**2**

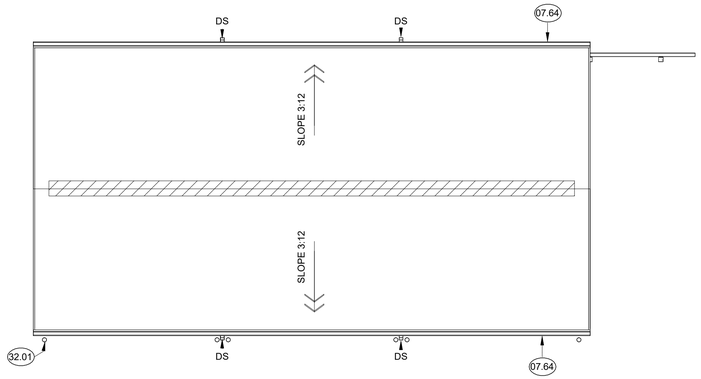
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Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

FLOOR & ROOF PLAN - STORAGE 100'X30'

Scale: **As indicated**

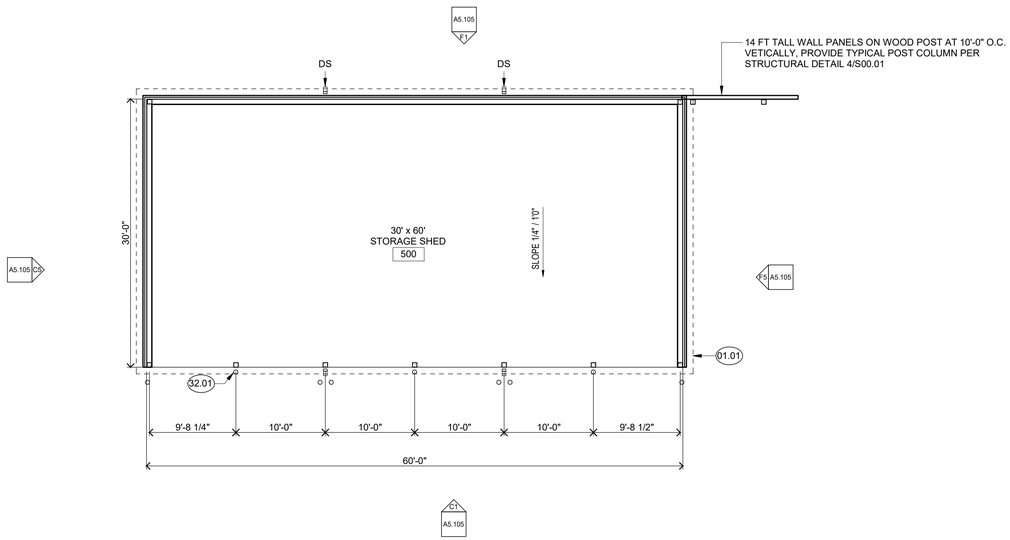
A2.104

Autodesk Docs://247062 - Drakes Creek Maintenance Facility/Architectural Parks Maintenance Building.rvt
9/3/2025 10:28:01 AM



ALL DOWNSPOUTS TO CONNECT TO UNDERGROUND STORM DRAINAGE

D1 STORAGE 60'X30' BUILDING ROOF PLAN
1/8" = 1'-0"
0 6' 12'



F1 STORAGE 60'X30' BUILDING FLOOR PLAN
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0 6' 12'

KEYNOTE SCHEDULE

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Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS



Revisions		
Description	Date	Num
Addendum 2	**2025-09-03**	**2**

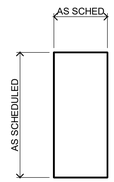
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FLOOR & ROOF PLAN - STORAGE 60'X30'

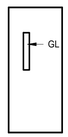
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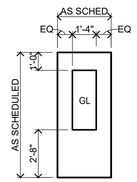
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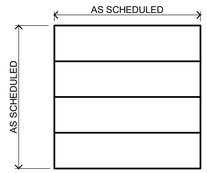
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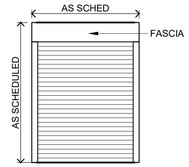
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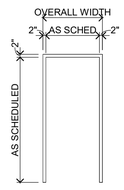
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HALF GLASS



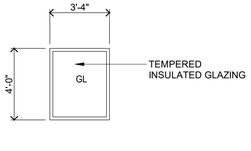
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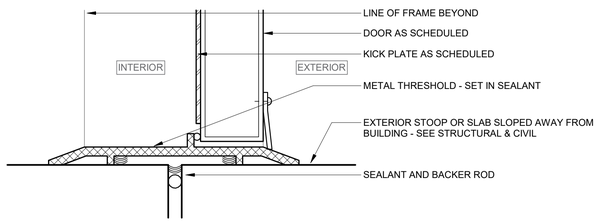
MCDF



FR 1



W1



E1 **THRESHOLD AT EXTERIOR DOOR**
6" = 1'-0"
0 1.5" 3"

Architect Docs\247062 - Drakes Creek Maintenance Facility\Hendersonville Parks Maintenance Building.rvt
7/3/2025 8:23:43 PM

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Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
COMMERCE
NO. 104778
STATE OF TENNESSEE
2025-06-27

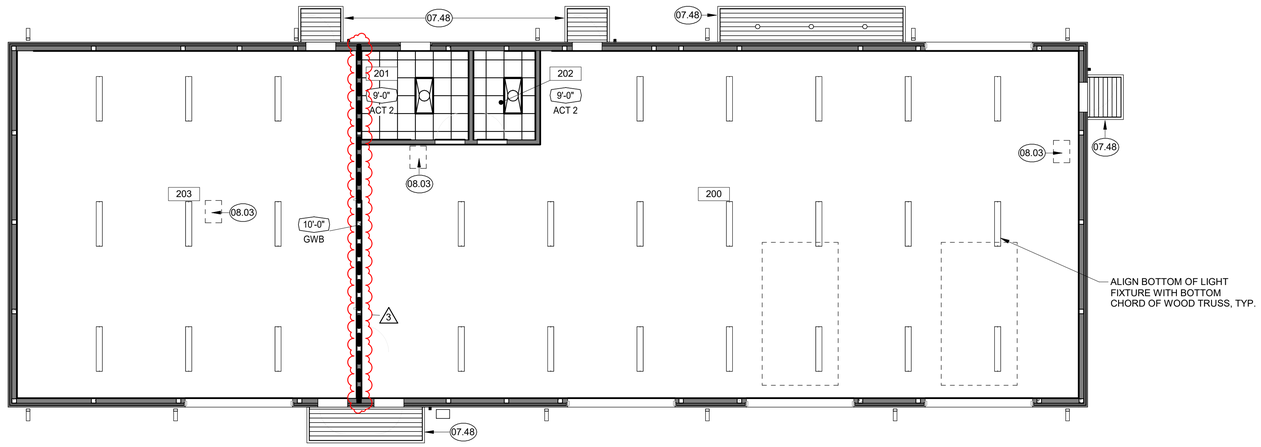
Revisions		
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Comm: **247062**
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Check: **JB**

OPENING TYPES

Scale: **As indicated**

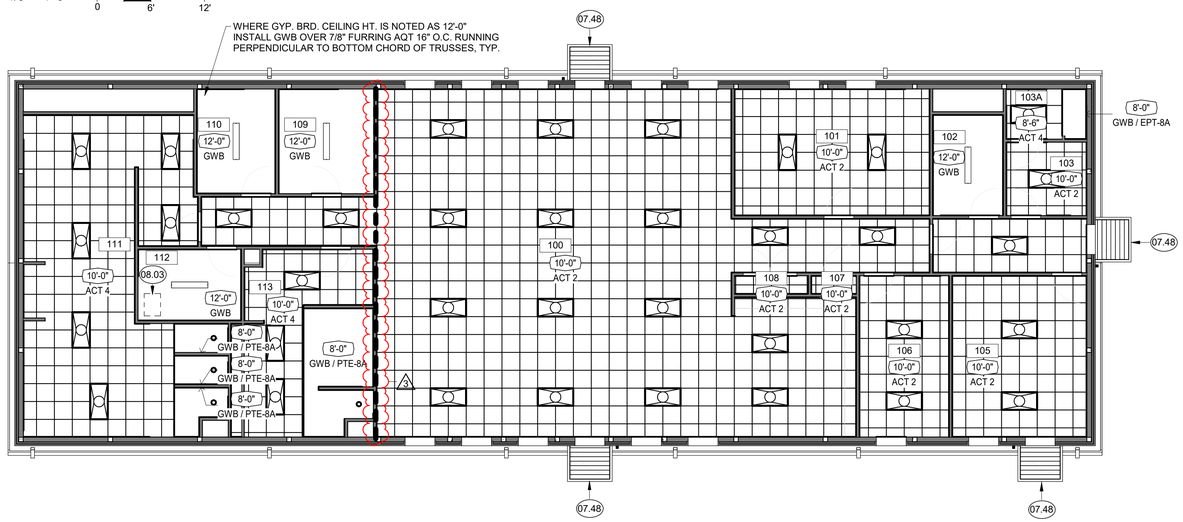
A2.901



C1 MAINTENANCE BUILDING REFLECTED CEILING PLAN

1/8" = 1'-0"

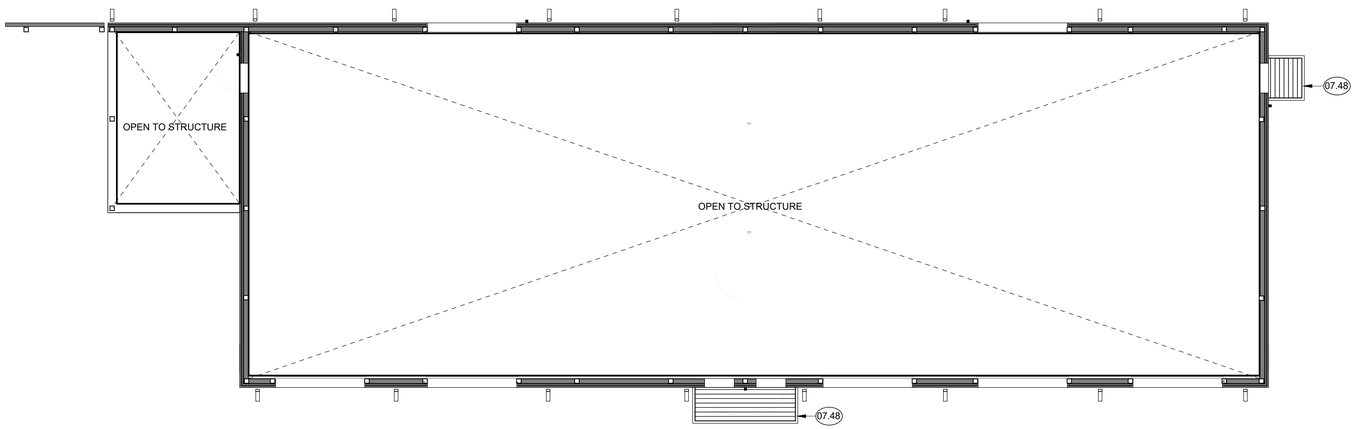
0 6' 12'



E1 OPERATIONS BUILDING REFLECTED CEILING PLAN

1/8" = 1'-0"

0 6' 12'



F1 EQUIPMENT REFLECTED CEILING PLAN

1/8" = 1'-0"

0 6' 12'

KEYNOTE SCHEDULE

(#) **DENOTED BY A NUMBER ENCLOSED INSIDE A HEXAGON. ONLY NOTES APPLICABLE TO THIS SHEET ARE SHOWN.**

07.48 METAL OVERHEAD CANOPY. COLOR TO MATCH ROOF.
08.03 22x30 ATTIC ACCESS ABOVE

CEILING MATERIAL LEGEND

GYPSUM BOARD

2 X 2 ACT

EQ TYP

EXPOSED STRUCTURE

RCP GENERAL NOTES

1. FOR WALLS THAT PENETRATE CEILINGS SEE WALL TYPES SHOWN ON THE FLOOR PLAN.
2. FOR DIFFUSER AND RETURN GRILL SIZES, SEE MECHANICAL PLANS.
3. FOR LIGHT FIXTURE TYPES, SEE ELECTRICAL LIGHTING PLANS.
4. CEILINGS HEIGHTS INDICATED ON PLAN (E.G. 9'-0") ARE FROM FINISHED FLOOR OF LEVEL OF PLAN SHOWN OR INDICATED AS 109'-0".
5. ACOUSTICAL TILE CEILING GRID IS TO BE CENTERED IN RECTANGULAR ROOM OR CENTERED BETWEEN LONGEST WALLS OF IRREGULARLY SHAPED ROOMS UNLESS OTHERWISE NOTED.
6. PLACE CONTROL JOINTS NOT MORE THAN 30 FEET APART ON WALLS, SOFFITS, AND CEILINGS OVER 50 FEET IN LENGTH, AT LOCATIONS SUSCEPTIBLE TO CRACKING AND AS SHOWN ON THE DRAWINGS. VERIFY CONTROL JOINT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION.

RCP LEGEND

- CANLIGHT
- 5' STRIP LIGHT FIXTURE
- 2 X 4 LIGHT FIXTURE (IN CEILING GRID)
- AIR DIFFUSER (IN CEILING GRID)
- RETURN AIR GRILLE (IN CEILING GRID)
- 3 — 1/2" G.B. ATTIC DRAFTSTOPPING - SEAL TO BOTTOM OF ROOF DECK AND G.B. ALONG BOTTOM CHORD OF TRUSSES. TAPE ALL JOINTS.

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS — REGISTERED ARCHITECT — AGRICULTURE CENTER — NO. 104719 — STATE OF TENNESSEE

9-26-2025

Revisions		
Description	Date	Num
Addendum 3	**2025-09-26**	**3**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

REFLECTED CEILING PLANS

Scale: **1/8" = 1'-0"**

A3.01

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A

ABBREVIATIONS

ACP	CEMENTITIOUS ACOUSTIC PANELS
ACT	ACOUSTICAL CEILING TILE
ADO	AUTOMATIC DOOR OPERATOR
AF	ACCESS FLOORING
AFF	ABOVE FINISHED FLOOR
AFS	AT FINISH SLAB
ALT #_	ALTERNATE NUMBER
ALUM	ALUMINUM
AMB	AMBULATORY
AP	ACCESS PANEL
AWC	ACOUSTICAL WALL COVERING
AWF	ACOUSTICAL WALL FABRIC
AWP	ACOUSTICAL WALL PANEL
B BLK	BURNISHED CONCRETE BLOCK
BLDG	BUILDING
BO___	BOTTOM OF _____
BRK	BRICK
C BLK	CONCRETE BLOCK
C TILE-__(#)	CERAMIC TILE
CC	CUBICAL CURTAIN
CG	CORNER GUARD
CH	COAT HOOK
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CM	CULTURED MARBLE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET
CR	CARD READER
CRF	CHEMICAL RESISTANT FLOORING
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CW-__(#)	CURTAINWALL TYPE
D TILE-__(#)	DECORATIVE TILE
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN
DP	DOOR PROTECTION
DPS	DOOR POSITION SWITCH
DS	DOWNSPOUT
DTL	DETAIL
DWGS	DRAWINGS
DWP	DECORATIVE WALL PANEL
EA	EACH
EDH	ELECTRIC HAND DRYER
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EPT__(#)	PAINT, EPOXY
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWG	END WALL GUARD
EXIST	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FEP	FINISHED END PANEL
FF&E	FIXTURES, FURNITURE, & EQUIPMENT
FFE	FINISHED FLOOR ELEVATION
FOB	FACE OF BRICK
FRP	FIBERGLASS REINFORCED PANEL
FTG	FOOTING
FZR	FREEZER
G BLK	GLAZED CONCRETE BLOCK
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GEN	GENERAL
GL	GLAZING
GRD BLK	GROUND FACE CONCRETE BLOCK
GST	GLAZED STRUCTURAL TILE
GWB	GYPSUM BOARD
HB	HOSE BIBB
HD	HEAD
HM	HOLLOW METAL
HR	IMPACT RESISTAND HANDRAILS
HRDBD	HARDBOARD
HSD	HAND SANITIZER DISPENSER
IB	INTEGRAL BASE
IDM	INTERACTIVE DISPLAY MONITOR
INFO	INFORMATION
INSUL	INSULATION
JT	JOINT
L-__(#)	LOUVER TYPE
LFD	LINEAR FLOOR DRAIN
LINO	LINOLEUM
LT-__(#)	LOCKER
LVT	LUXURY VINYL TILE
MACH	MACHINE
MATL	MATERIAL
MAX	MAXIMUM
MCDF	MOTORIZED COILING DOOR FACE OF WALL
MECH	MECHANICAL
MEF	MOSAIC EPOXY FLOORING
MFR	MANUFACTURER
MH	MOP/ BROOM HOLDER
MIN	MINIMUM
MIR	MIRROR
MIR/S	MIRROR WITH SHELF
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MON	MONITOR
MTD	MOUNTED
MTL	METAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NSF	NON-SLIP FLOORING
NTS	NOT TO SCALE
OC	ON CENTER
OD	OVERFLOW DRAIN
OFCI	OWNER FURNISHED / CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED / OWNER INSTALLED
OH	OVERHEAD
OPP	OPPOSITE
P LAM	PLASTIC LAMINATE
P TILE-__(#)	PORCELAIN TILE
PLAS	PLASTER
PLYWD	PLYWOOD
POL CONC	POLISHED CONCRETE
PREV	PREVIOUS
PRV	POWER ROOF VENTILATOR
PT CONC	PAINTED/ SEALED CONCRETE
PT__(#)	PAINT
PTD	PAPER TOWEL DISPENSER
PTL	PRESSURE TREATED LUMBER
PVC	POLYVINYL CHLORIDE
PWP	PLASTIC (PHENOLIC) WALL PANEL
Q TILE-__(#)	QUARRY TILE
QTZ	QUARTZ
R	RADIUS
RAF	RESILIENT ATHLETIC FLOORING
RB	RUBBER BASE
RBST	RUBBER STAIR TREAD
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFRIGERATOR
REF	REFER, REFERENCE
REF- __(#)	RESINOUS FLOORING
REINF	REINFORCING, REINFORCED
REQ'D	REQUIRED
RF	RESINOUS FLOORING
RFT	RUBBER FLOORING
RH	RELIEF HOOD
RO	ROUGH OPENING
RP	RESIN PANEL
RTU	ROOF TOP UNIT
RUB	RUBBER
RWL	RAIN WATER LEADER
S&R	SHELF AND ROD
SAN	SANITARY
SB	SPLASH BLOCK
SC	SEALED CONCRETE
SCHED	SCHEDULE
SD	SOAP DISPENSER
SEC	SECTION
SF	SQUARE FOOT (FEET)
SF-__(#)	STOREFRONT TYPE
SGNL	SIGNAL
SHLVG	SHELVING
SIM	SIMILAR
SMV	STONE MASONRY VENEER
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTOR
SPECS	SPECIFICATIONS
SS	STAINLESS STEEL
SSF	SOLID SURFACE FABRICATION
STD	STANDARD
STL	STEEL
STN	STONE
STRUCT	STRUCTURAL
SV	SHEET VINYL
TB	TOWEL BAR
TBD	TACKBOARD
TEMP	TEMPORARY
TERR	TERRAZZO
TO ___	TOP OF ____
TP	TOWEL PIN
TPH	TOILET PAPER HOLDER
TR	TOWEL RING
TT	TRAFFIC TOPPING
TWC	TACKABLE WALLCOVERING
TYP	TYPICAL
UL	UNDERWRITER'S LABORATORY
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
USF	URETHANE SLURRY FLOORING
V PLAS	VENEER PLASTER
VAT	VINYL ASBESTOS TILE
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VIF	VERIFY IN FIELD
VTR	VENT THROUGH ROOF
VWC	VINYL WALLCOVERING
W-__(#)	WINDOW TYPE
W/	WITH
WB	WOOD BASE
WC	WATER CLOSET
WD	WOOD
WG	WALL GUARD
WP-__(#)	WALL PROTECTION
WRB	WEATHER RESISTIVE BARRIER
WSCT	WAINSCOT
WWF	WELDED WIRE FABRIC

ROOM ABBREVIATIONS

ADMIN	ADMINISTRATION
CLO	CLOSET
CONF	CONFERENCE
CORR	CORRIDOR
DIR	DIRECTOR
JC	JANITORS CLOSET
KIT	KITCHEN
LAB	LABORATORY
LAV	LAVATORY
MAINT	MAINTENANCE
MED	MEDICAL
MGMT	MANAGEMENT
OPER	OPERATIONS
RECEPT	RECEPTION
RM	ROOM
SEC	SECRETARY
STOR	STORAGE
TDR	TECHNOLOGY DISTRIBUTION ROOM
TECH	TECHNICIAN
TECH	TECHNOLOGY
TLT	TOILET
TSER	TELECOMMUNICATIONS SERVICE ENTRACE ROOM
VEST	VESTIBULE

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SYMBOLS

EARTH
EARTH | GRANULAR FILL | SAND

CONCRETE
CONCRETE/ PRECAST | TOPPING | WIRE MESH

METAL
FERROUS | ALUMINUM | OTHER

WOOD
CONSTRUCTION LUMBER | FINISHED | PLYWOOD | PARTICLE BOARD

INSULATION
BATT | RIGID | SPRAY FOAM | GRANULAR LOOSE

MATERIAL FINISH SCHEDULE

Symbol	Item	Manufacture	Color/Style	Comments
08 14 16 Flush Wood Doors				
	Prefinished Stained Wood Doors	<Manufacturer>	Finish: To be selected by Owner	
09 51 00 Acoustical Ceilings				
ACT-1	Acoustical Ceiling Tile	USG	Size/Style/ Color: 2'x2', 86185 Mars Acoustical Panel, Square Edge/ White	
ACT-4	Vinyl Acoustical Ceiling Tile	USG	Size/Style/ Color: 2'x2',56644 Radar Ceramic Acoustical Panel, Square Edge/ White	
09 65 00 Resilient Flooring				
LVT-1	Luxury Vinyl Tile-1	Tarkett	Pattern/ Color: Color: To be selected by Owner	
RB-1	Rubber Base	Johnsonitte/Tarkett	Color: To be selected by Owner	
	Reducer/ Transition Strips	Schlutter	Style/Color: To be selected by Owner	
09 67 00 Fluid Applied Flooring				
REF-1	Resinous Flooring	<Manufacturer>	Color: To be selected by Owner	
09 72 60 Tackable Wallcovering				
TWC-1	Tacksurface 1	<Manufacturer>	Color: To be selected by Owner	
09 90 00 Painting and Coating				
PT-1A	PT 1-Exterior HM doors and frames at Brick 1	Sherwin Williams	Color: To be selected by Owner	
PT-3	PT 3- Exterior Rooftop Equipment	Sherwin Williams	Color: To be selected by Owner	
PT-4B	PT 4B- Interior HM Doors	Sherwin Williams	Color: To be selected by Owner	
PT-5	PT 5- Interior Misc Metals	Sherwin Williams	Color: To be selected by Owner	
PT-6A	PT 6A- Walls	Sherwin Williams	Color: To be selected by Owner	
PT-7A	PT 7A-Soffits	Sherwin Williams	Color: To be selected by Owner	
EPT-6A	Epoxy Paint 6A - Walls	Sherwin Williams	Color: To be selected by Owner	
10 14 19 Dimensional Characters				
	Anodized Aluminum Letters/ Numbers	<Manufacturer>	Color:	
12 32 00 Manufactured Casework				
PLAM-1	Plastic Laminate - Vertical Surfaces 1	Formica	Color: To be selected by Owner	
	PVC Edging- Plam-1	<Manufacturer>	Color: To be selected by Owner	
SSF-1	Solid Surface Fabrications-1	Formica	Color: To be selected by Owner	

MISCELLANEOUS
TILE | ACOUSTIC TILE
PLASTER | ON METAL LATH | EXPANSION JOINT MATERIAL

SYMBOLS

PARTITIONS
WOOD STUD | CONCRETE/ PRECAST
CAVITY WALL | DEMOLISHED
GLAZED OPENING

SYMBOLS

SECTIONS — C1 / A5.2xx — DETAIL NO / DRAWING NO
GRIDS — 3
ELEVATIONS — INTERIOR: A1 / A4.1xx — DETAIL NO / DRWG NO; EXTERIOR: C1 / A5.1xx
OPENINGS, DEPRESSIONS OR AS NOTED
DETAIL REFERENCE — D2 / A4.2xx — DETAIL NO / DRAWING NO
NOTES, DIMENSIONS & DETAIL KEYS APPLY FROM NOTED DETAIL — 1 / A4.7xx — NOTES APPLY
MARKERBOARDS, TACKBOARDS, MAP RAILS — LENGTH: 8'-0" MBD; MATERIAL; TYPE: 2

ELEVATION
REVISIONS — 2
ROOM NAME: CLASSROOM / CLASSROOM; ROOM NUMBER: A102 OR A102 / ART
OWNER INFO, AS NEEDED
CEILING HEIGHT: 8'-8" / CEILING MATL/ FIN: ACT 1/-
DOOR OR WDW SWING & NO — A102
BORROWED LIGHT — A102L
HINGE SIDE
WALL TYPES - INTERIOR — GA2
WALL TYPES - EXTERIOR — WA-01
EXTERIOR WINDOWS — W1
LOUVER — L1

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS — REGISTERED ARCHITECT — AGRICULTURE — NO. 104710 — STATE OF TENNESSEE
2025.06.27

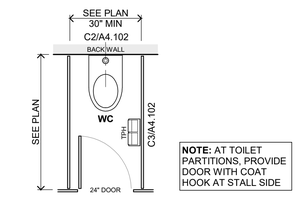
Revisions		
Description	Date	Num

Comm: 247062
Date: June 27, 2025
Drawn: Author
Check: Checker

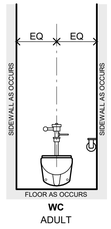
DETAILS - GENERAL - SYMBOLS, ABBREVIATIONS, MATERIALS

Scale: As indicated

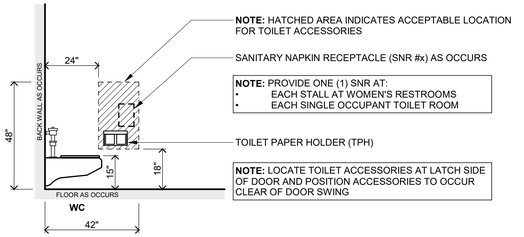
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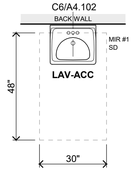
C1 STANDARD STALL (WC)
3/8" = 1'-0"



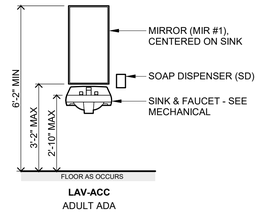
C2 WC ELEVATION - BACKWALL
3/8" = 1'-0"



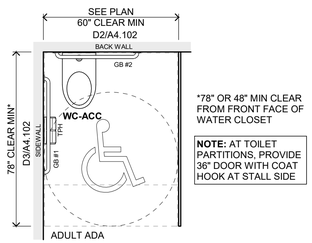
C3 WC ELEVATION - SIDEWALL
3/8" = 1'-0"



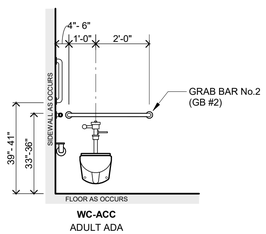
C5 PLAN AT SINK (LAV-ACC)
3/8" = 1'-0"



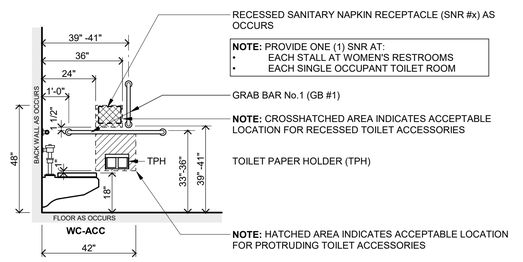
C6 ELEVATION AT SINK (LAV-ACC)
3/8" = 1'-0"



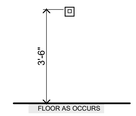
D1 ACCESSIBLE STALL (WC-ACC)
3/8" = 1'-0"



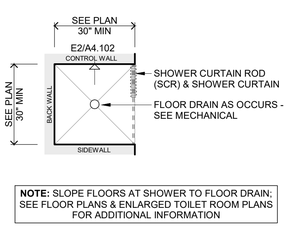
D2 WC-ACC ELEVATION - BACK WALL
3/8" = 1'-0"



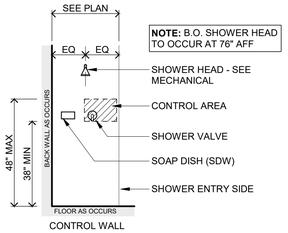
D3 WC-ACC ELEVATION - SIDEWALL
3/8" = 1'-0"



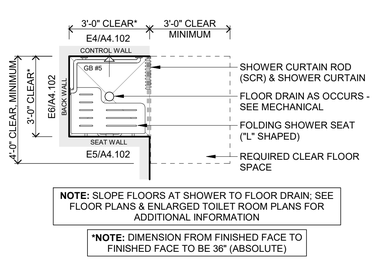
D5 TOWEL HOOK
3/8" = 1'-0"



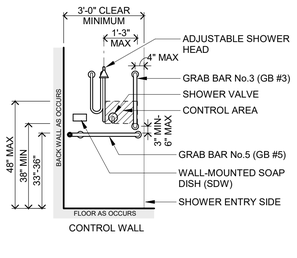
E1 PLAN AT SHOWER (NON-ADA)
3/8" = 1'-0"



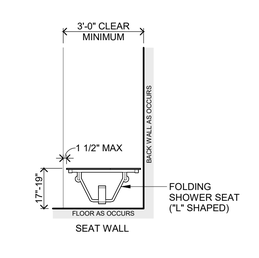
E2 CONTROL WALL AT SHOWER
3/8" = 1'-0"



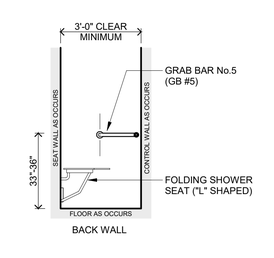
E3 PLAN AT TRANSFER SHOWER (36" x 36")
3/8" = 1'-0"



E4 TRANSFER SHWR - CONTROL
3/8" = 1'-0"



E5 TRANSFER SHWR - SEAT
3/8" = 1'-0"



E6 TRANSFER SHWR - BACK
3/8" = 1'-0"

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
NO. 10471
STATE OF TENNESSEE
2025-06-27

Revisions		
Description	Date	Num

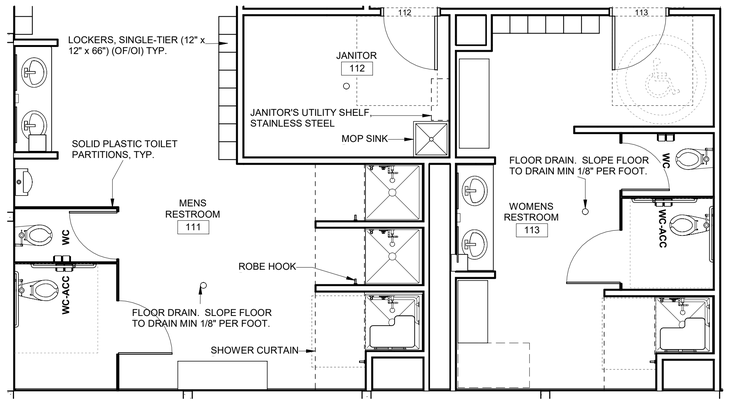
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Date: June 27, 2025
Drawn: Author
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DETAILS - MOUNTING HEIGHTS

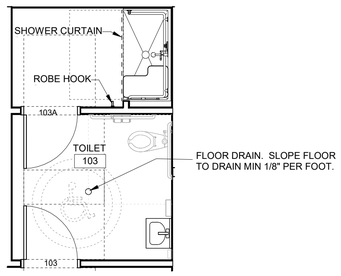
Scale: 3/8" = 1'-0"

A4.102

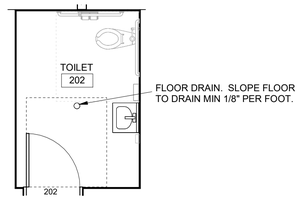
Autodesk Docs://24790 - Drakes Creek Maintenance Facility/Hendersonville Parks Maintenance Buildings.rvt
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C1 MEN / WOMENS RESTROOMS - OPERATIONS BUILDING
1/4" = 1'-0" (0, 3', 6')



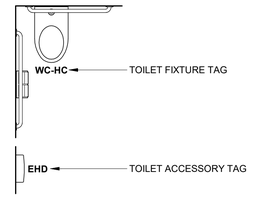
C3 TOILET ROOM 103 - OPERATIONS BUILDING
1/4" = 1'-0" (0, 3', 6')



C5 TOILET ROOM 202 - MAINTENANCE BUILDING
1/4" = 1'-0" (0, 3', 6')

ENLARGED TOILET ROOM PLAN LEGEND

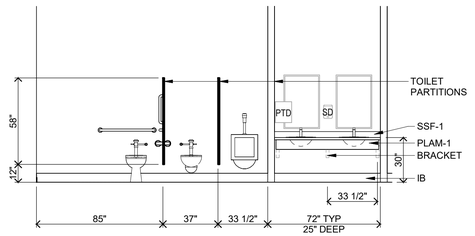
TOILET ROOM FIXTURE & ACCESSORY TAGGING



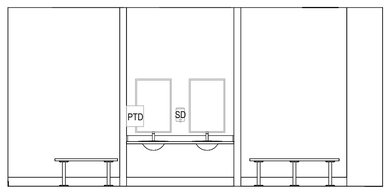
TOILET ROOM FIXTURES & ACCESSORIES

LAV-HC	C5 / A4.102	NOTES APPLY
WC	C1 / A4.102	NOTES APPLY
WC-HC	D1 / A4.102	NOTES APPLY
SHOWER	E1 / A4.102	NOTES APPLY
TRANSFER SHOWER	E3 / A4.102	NOTES APPLY

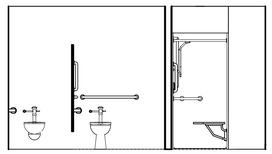
NOTE: TOILET ACCESSORIES SHOWN IN THE DETAILS ARE TO BE SUPPLIED AND INSTALLED COMPLETE, WHETHER SHOWN / TAGGED ON THE PLANS OR NOT



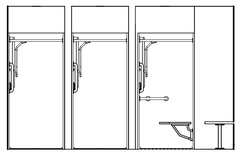
D1 MEN'S RESTROOM 111 - WEST WALL ELEVATION
1/4" = 1'-0" (0, 3', 6')



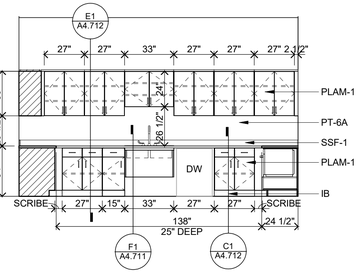
D2 WOMEN'S RESTROOM 113 - WEST WALL ELEVATION
1/4" = 1'-0" (0, 3', 6')



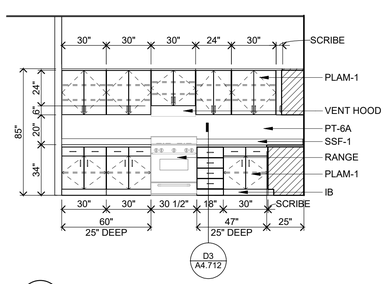
D4 WOMEN'S RESTROOM 113 - EAST WALL ELEVATION
1/4" = 1'-0" (0, 3', 6')



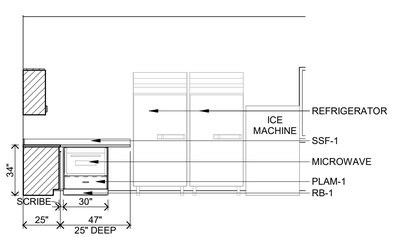
D5 MEN'S RESTROOM 111 - EAST WALL ELEVATION
1/4" = 1'-0" (0, 3', 6')



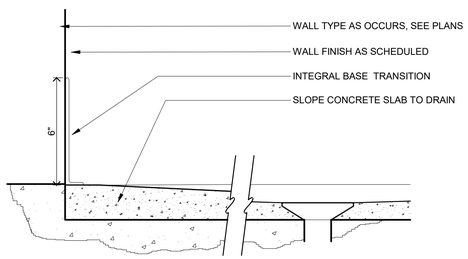
E1 BREAKROOM 100 - EAST KITCHEN ELEVATION
1/4" = 1'-0" (0, 3', 6')



E2 BREAKROOM 100 - NORTH KITCHEN ELEVATION
1/4" = 1'-0" (0, 3', 6')



E4 BREAKROOM 100 - SOUTH KITCHEN ELEVATION
1/4" = 1'-0" (0, 3', 6')



F1 TYP TOILET ROOM SECTION
3" = 1'-0" (0, 3", 6")

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
STATE OF TENNESSEE
LIC. NO. 104717
2025-06-27

Revisions		
Description	Date	Num

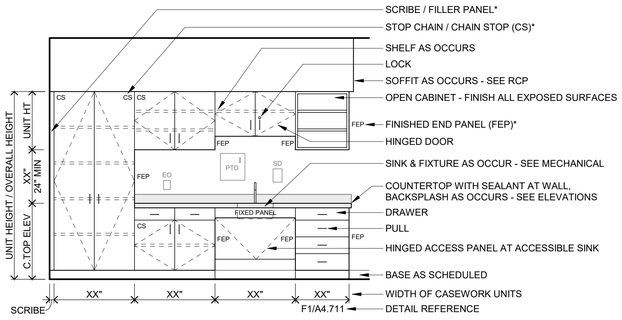
Comm: 247062
Date: June 27, 2025
Drawn: Author
Check: Checker

ENLARGED PLANS & FLOOR DETAILS

Scale: As indicated

A4.105

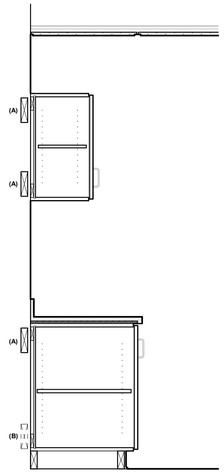
Autodesk Docs://247062 - Drakes Creek Maintenance Facility/Hendersonville Parks Maintenance Buildings.rvt
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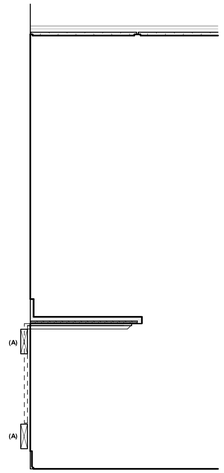
***NOTE:** ITEM(S) TO BE PROVIDED WHETHER SHOWN ON THE DRAWINGS OR NOT

CASEWORK / MILLWORK GENERAL NOTES

1. ALL VERTICAL SURFACES TO BE PLAM-1 UNLESS NOTED OTHERWISE. SEE INTERIOR MATERIAL FINISH / COLOR SCHEDULE FOR ADDITIONAL INFORMATION.
2. ALL HORIZONTAL SURFACES & COUNTERTOPS TO BE PLAM-2 UNLESS NOTED OTHERWISE; BACKSPLASH, SIDESPLASH TO MATCH MATERIAL OF ASSOCIATED COUNTERTOP. SEE INTERIOR MATERIAL FINISH / COLOR SCHEDULE FOR ADDITIONAL INFORMATION.
3. ALL EXPOSED SURFACES TO MATCH FINISH AT CABINET FACE, INCLUDING OPEN CUBBIES, SHELVING, FINSHED END PANELS, ETC.
4. PROVIDE LOCKS AT CASEWORK AS SHOWN AT THE CASEWORK ELEVATIONS.
5. 1 3/4" MAXIMUM SCRIBE WIDTH PER SIDE. IF OPENING IS LARGER THAN 3 1/2", INCREASE WIDTH OF END CASEWORK UNIT(S) BY 3".
6. SEE ROOM FINISH SCHEDULES AND / OR FINISH PLANS FOR BASE FINISH AT CASEWORK.
7. AT INSIDE CORNER CONDITIONS, PROVIDE BLIND CORNER CABINET(S) AT UPPER AND BASE CABINET CONDITIONS.
8. SEE CASEWORK SPECIFICATIONS FOR ADDITIONAL HARDWARE REQUIREMENTS, INCLUDING STOP CHAINS, ETC.



BASE CABINETS & UPPER CABINETS



COUNTERTOPS

NOTES:

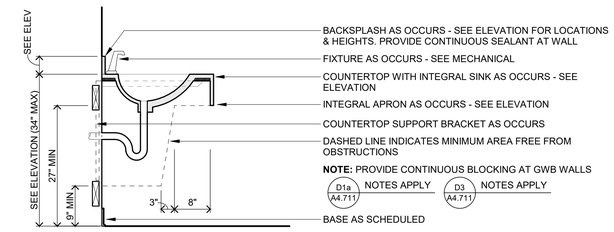
PROVIDE WOOD BLOCKING OR METAL STRAPPING AS REQUIRED PER AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) INSTALLATION RECOMMENDATIONS AND REQUIREMENTS

BLOCKING LOCATIONS AND SIZES SHOWN ARE NOMINAL.

(A) AT GWB / METAL STUD PARTITION WALLS, GWB / METAL FURRING WALLS, AND AS REQUIRED: PROVIDE CONTINUOUS BLOCKING AS DESCRIBED IN THE SPECIFICATIONS AND AS RECOMMENDED BY AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS)

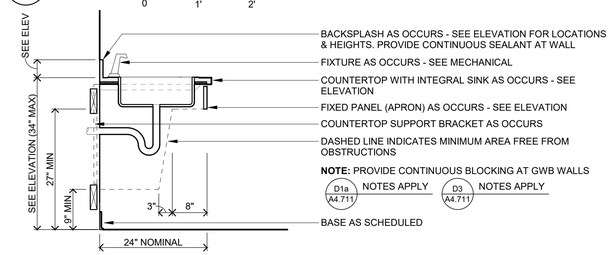
(B) FOR PROJECTS OCCURRING IN AREAS OF SEISMIC ACTIVITY, PROVIDE ADDITIONAL BLOCKING AS RECOMMENDED BY AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS)

D1a CASEWORK / MILLWORK GENERAL INFORMATION



E1 SECTION AT COUNTERTOP & SINK (ADA) - INTEGRAL SINK & APRON

3/4" = 1'-0"

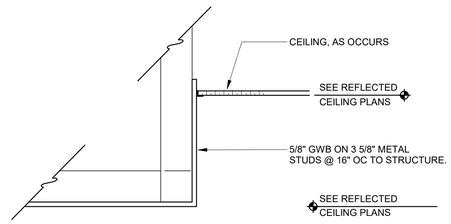


F1 SECTION AT COUNTERTOP & SINK (ADA)

3/4" = 1'-0"

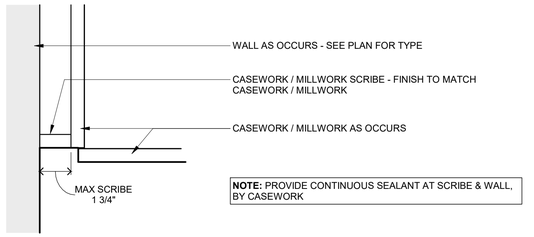
D3 TYPICAL NOTES AT CASEWORK / MILLWORK - BLOCKING AT GWB PARTITIONS

3/4" = 1'-0"



E3 GYPSUM BOARD SOFFIT

1 1/2" = 1'-0"



E5 PLAN DETAIL AT CASEWORK AND WALL (SCRIBE)

3" = 1'-0"

A

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
NOMMER
STATE OF TENNESSEE
2025-06-27

Revisions		
Description	Date	Num

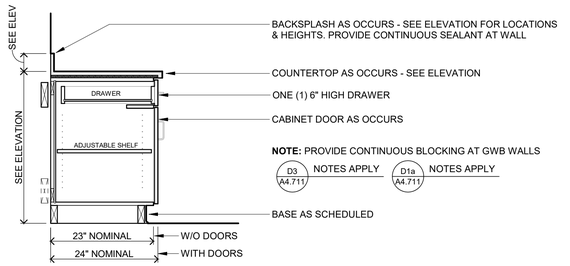
Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **JB**

DETAILS - CASEWORK

Scale: **As indicated**

A4.711

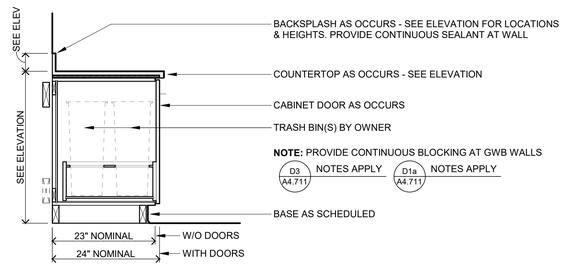
Autodesk Docs://247062 - Drakes Creek Maintenance Facility/Hendersonville Parks Maintenance Building.rvt
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C1 SECTION AT BASE CABINET, SINGLE DRAWER

3/4" = 1'-0"

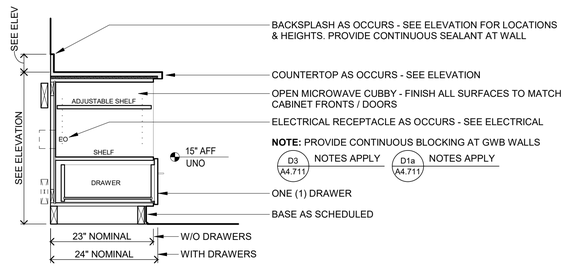
0 1' 2'



C3 SECTION AT BASE CABINET, TRASH CABINET (PULLOUT)

3/4" = 1'-0"

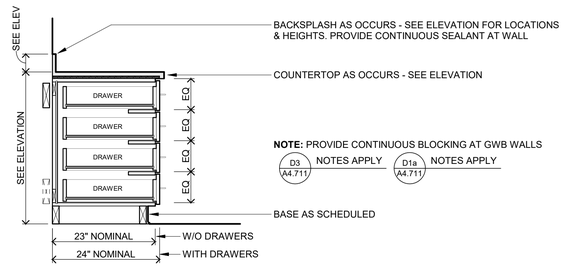
0 1' 2'



D1 SECTION AT BASE CABINET, MICROWAVE CUBBY

3/4" = 1'-0"

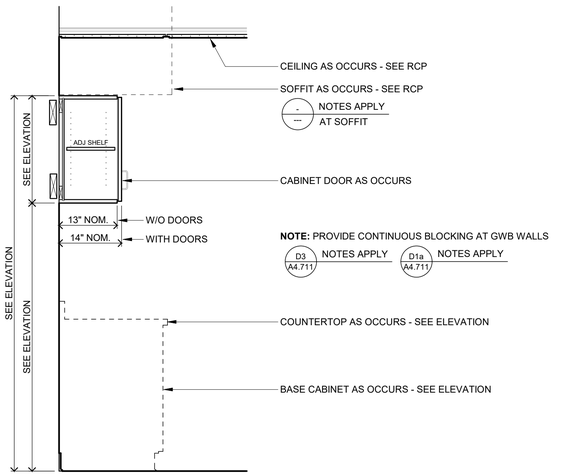
0 1' 2'



D3 SECTION AT BASE CABINET, FOUR (4) EQUAL DRAWERS

3/4" = 1'-0"

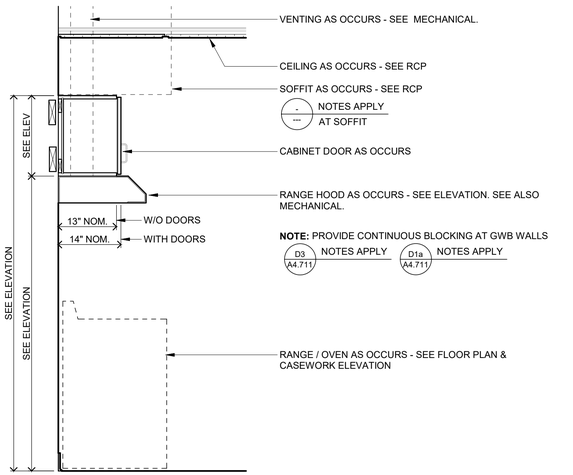
0 1' 2'



E1 SECTION AT UPPER CABINET

3/4" = 1'-0"

0 1' 2'



E3 SECTION AT UPPER CABINET & VENT HOOD

3/4" = 1'-0"

0 1' 2'

A

Architect Docs (247062) - Drakes Creek Maintenance Facility-Hendersonville Parks Maintenance Buildings.rvt
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Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
COMMERCE
NOVEMBER 10, 1978
10417
STATE OF TENNESSEE
2025-06-27

Revisions		
Description	Date	Num

Comm: 247062
Date: June 27, 2025
Drawn: YR
Check: JB

DETAILS - CASEWORK

Scale: 3/4" = 1'-0"

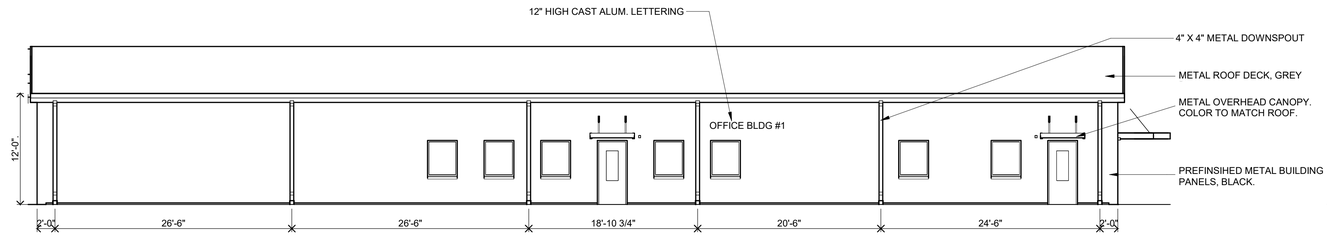
A4.712

EXTERIOR ELEVATIONS GENERAL NOTES

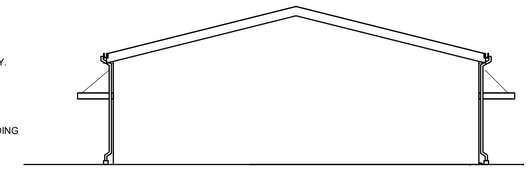
1. ALL DOWNSPOUTS CONNECT TO UNDERGROUND STORM DRAINAGE

2.PROVIDE GUTTER EXP. JOINTS AT MID-POINT BETWEEN DOWNSPOUTS.

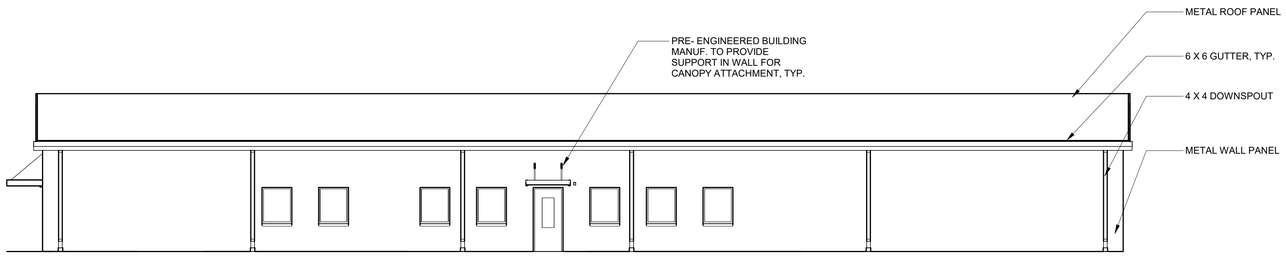
3.ROOF AND WALL PANELS TO BE INSTALLED USING CONCEALED FASTENERS.



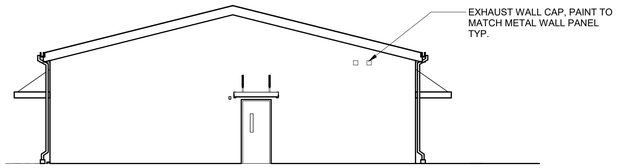
C1 OPERATIONS BUILDING SOUTH EAST ELEVATION
1/8" = 1'-0"
0 6' 12'



C5 OPERATIONS BUILDING SOUTH WEST ELEVATION
1/8" = 1'-0"
0 6' 12'



F1 OPERATIONS BUILDING NORTH WEST ELEVATION
1/8" = 1'-0"
0 6' 12'



F5 OPERATIONS BUILDING NORTH EAST ELEVATION
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
No. 104779
STATE OF TENNESSEE
9-3-2025

Revisions		
Description	Date	Num
Addendum 1	**2025-08-01**	**1**
Addendum 2	**2025-09-03**	**2**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

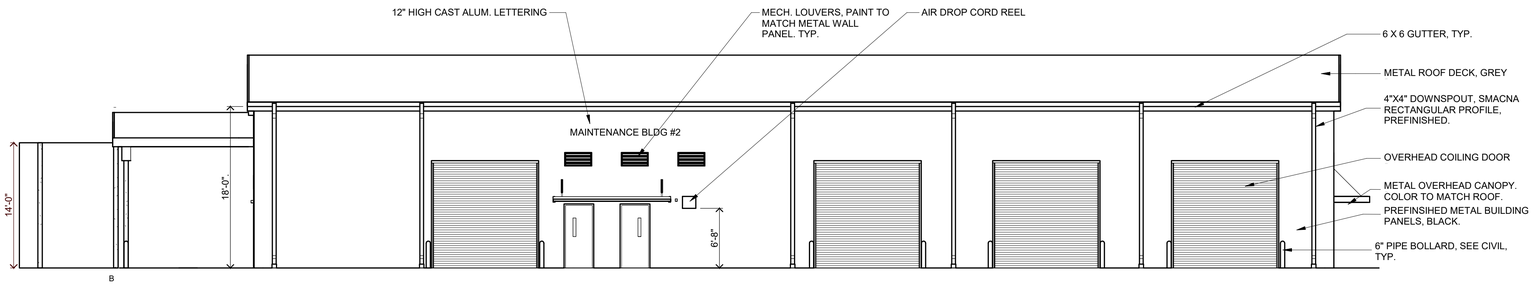
EXTERIOR ELEVATIONS - OPERATIONS

Scale: **1/8" = 1'-0"**

A5.101

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C1 MAINTENANCE BUILDING EAST ELEVATION
1/8" = 1'-0"
0 6' 12'

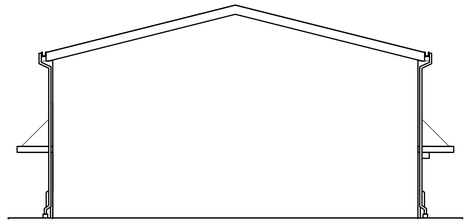
EXTERIOR ELEVATIONS GENERAL NOTES

2
1

1. ALL DOWNSPOUTS CONNECT TO UNDERGROUND STORM DRAINAGE

2.PROVIDE GUTTER EXP. JOINTS AT MID-POINT BETWEEN DOWNSPOUTS.

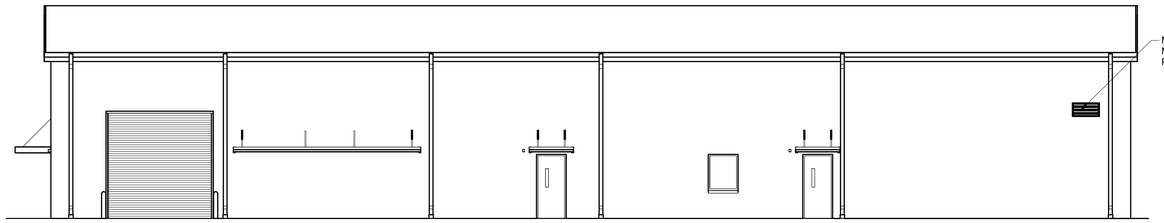
3.ROOF AND WALL PANELS TO BE INSTALLED USING CONCEALED FASTENERS.



C5 MAINTENANCE BUILDING SOUTH ELEVATION
1/8" = 1'-0"
0 6' 12'

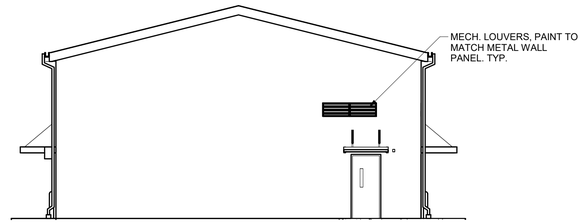
B

C



F1 MAINTENANCE BUILDING WEST ELEVATION
1/8" = 1'-0"
0 6' 12'

D



F5 MAINTENANCE BUILDING NORTH ELEVATION
1/8" = 1'-0"
0 6' 12'

E

A

Architect Docs\247062 - Drakes Creek Maintenance Facility\Revit\Hendersonville Parks Maintenance Buildings.rvt
9/2/2025 10:28:03 AM

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
No. 104779
STATE OF TENNESSEE
9-3-2025

Revisions		
Description	Date	Num
Addendum 1	**2025-08-01**	**1**
Addendum 2	**2025-09-03**	**2**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

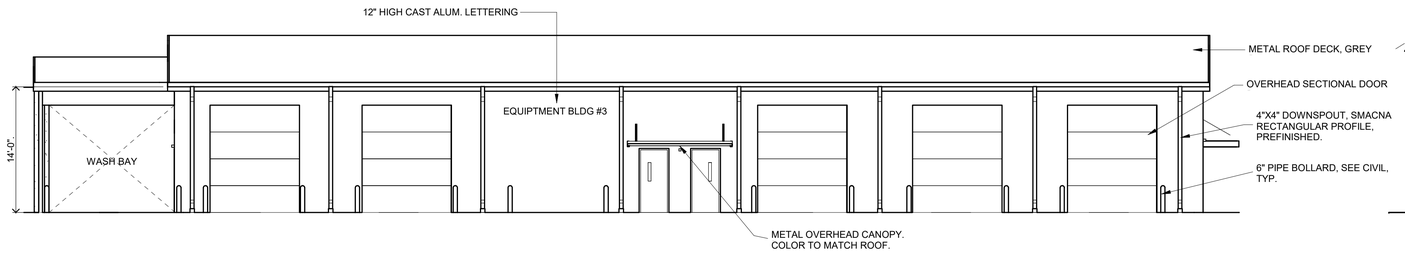
EXTERIOR ELEVATIONS - MAINTENANCE

Scale: **1/8" = 1'-0"**

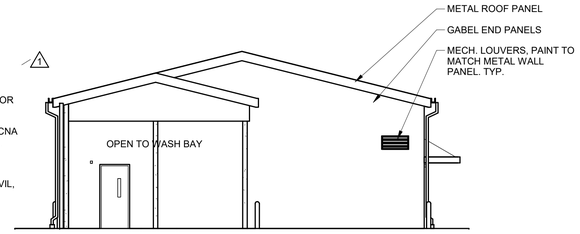
A5.102

EXTERIOR ELEVATIONS GENERAL NOTES

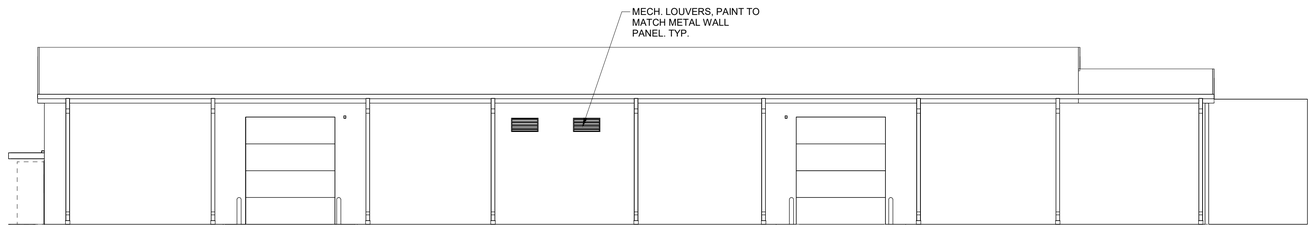
1. ALL DOWNSPOUTS CONNECT TO UNDERGROUND STORM DRAINAGE



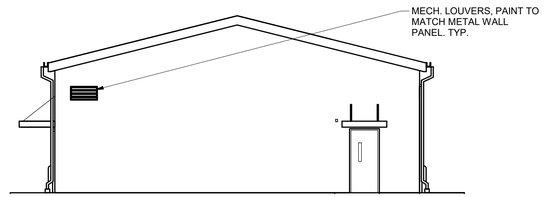
C1 EQUIPMENT BUILDING WEST ELEVATION
1/8" = 1'-0"
0 6' 12'



C5 EQUIPMENT BUILDING NORTH ELEVATION
1/8" = 1'-0"
0 6' 12'



F1 EQUIPMENT BUILDING EAST ELEVATION
1/8" = 1'-0"
0 6' 12'



F5 EQUIPMENT BUILDING SOUTH ELEVATION
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
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Addendum 1	**2025-08-01**	**1**
Addendum 2	**2025-09-03**	**2**

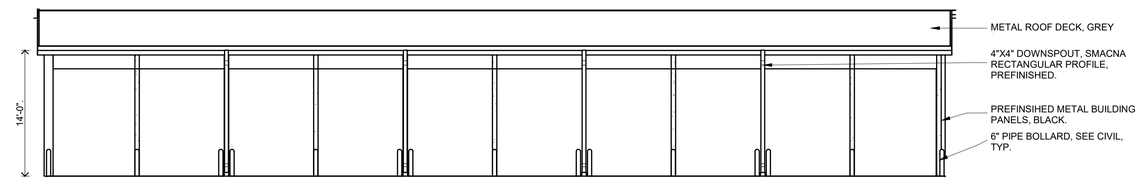
Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **JB**

EXTERIOR ELEVATIONS - EQUIPMENT BUILDING

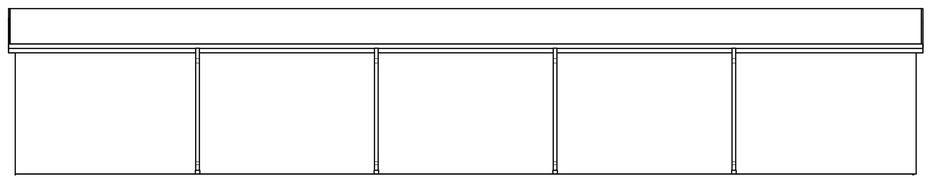
Scale: **1/8" = 1'-0"**

A5.103

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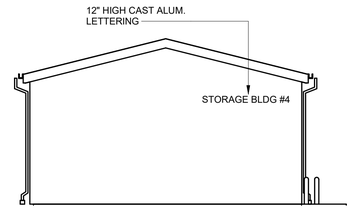
C1 3-SIDED STORAGE BUILDING 100'x30' NORTH ELEVATION
1/8" = 1'-0" 0 6' 12'



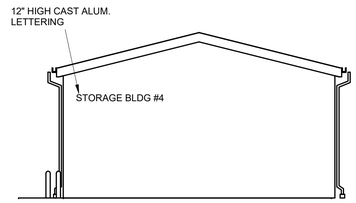
F1 3-SIDED STORAGE BUILDING 100'x30' SOUTH ELEVATION
1/8" = 1'-0" 0 6' 12'

EXTERIOR ELEVATIONS GENERAL NOTES

1. ALL DOWNSPOUTS CONNECT TO UNDERGROUND STORM DRAINAGE



C5 STORAGE BUILDING EAST ELEVATION
1/8" = 1'-0" 0 6' 12'



F5 STORAGE BUILDING WEST ELEVATION
1/8" = 1'-0" 0 6' 12'

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS
REGISTERED ARCHITECT
AGRICULTURE
No. 104779
STATE OF TENNESSEE
9-3-2025

Revisions		
Description	Date	Num
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Addendum 2	**2025-09-03**	**2**

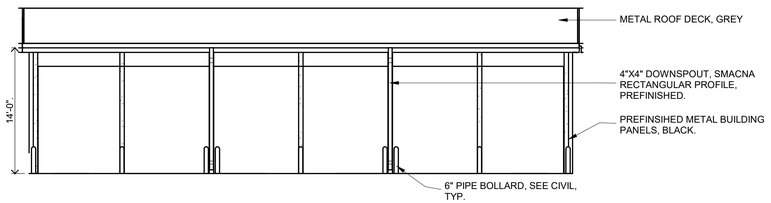
Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **JB**

EXTERIOR ELEVATIONS - STORAGE 100'X30'

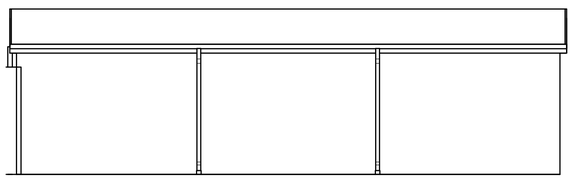
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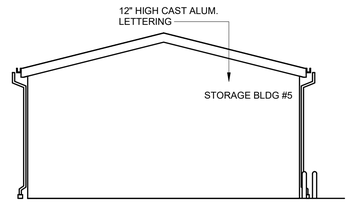
C1 3-SIDED STORAGE BUILDING 60'x30' WEST ELEVATION
1/8" = 1'-0" 0 6' 12'



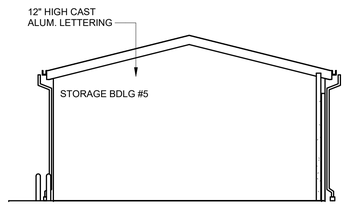
F1 3-SIDED STORAGE BUILDING 60'x30' EAST ELEVATION
1/8" = 1'-0" 0 6' 12'

EXTERIOR ELEVATIONS GENERAL NOTES

2 1. ALL DOWNSPOUTS CONNECT TO UNDERGROUND STORM DRAINAGE
1



C5 STORAGE BUILDING NORTH ELEVATION
1/8" = 1'-0" 0 6' 12'



F5 STORAGE BUILDING SOUTH ELEVATION
1/8" = 1'-0" 0 6' 12'

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

SARAH E. MEADOWS REGISTERED ARCHITECT AGRICULTURE No. 104779 STATE OF TENNESSEE 9-3-2025

Revisions		2 1
Description	Date	Num
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Addendum 2	**2025-09-03**	**2**

Comm: **247062**
Date: **June 27, 2025**
Drawn: **YR**
Check: **BM**

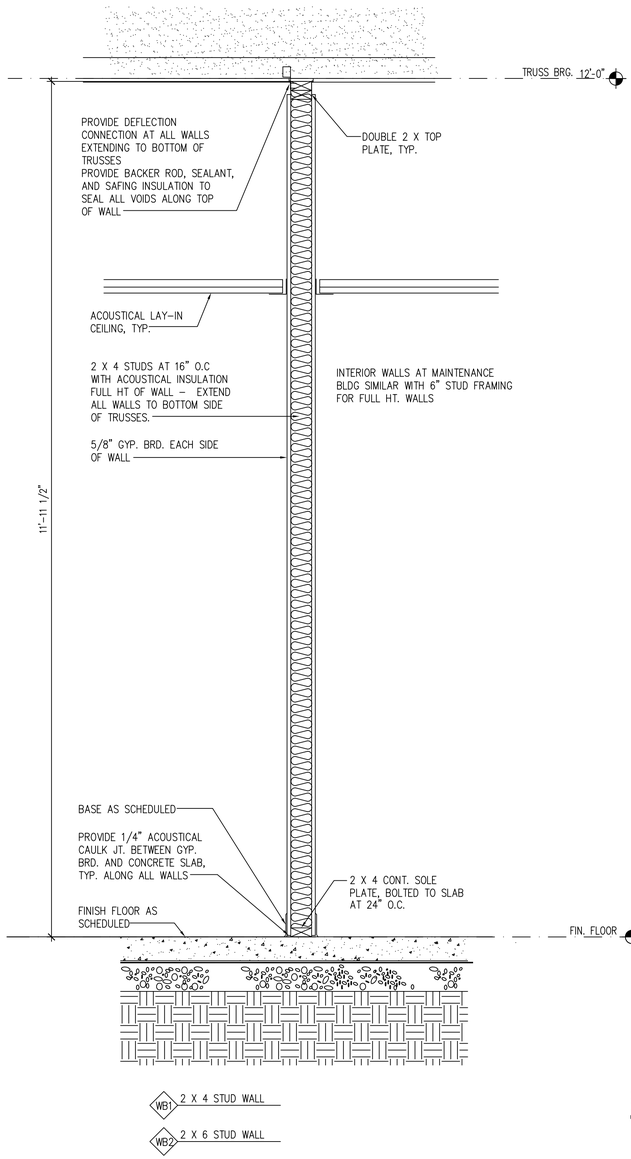
EXTERIOR ELEVATIONS - STORAGE 60'X30'

Scale: **1/8" = 1'-0"**

A5.105

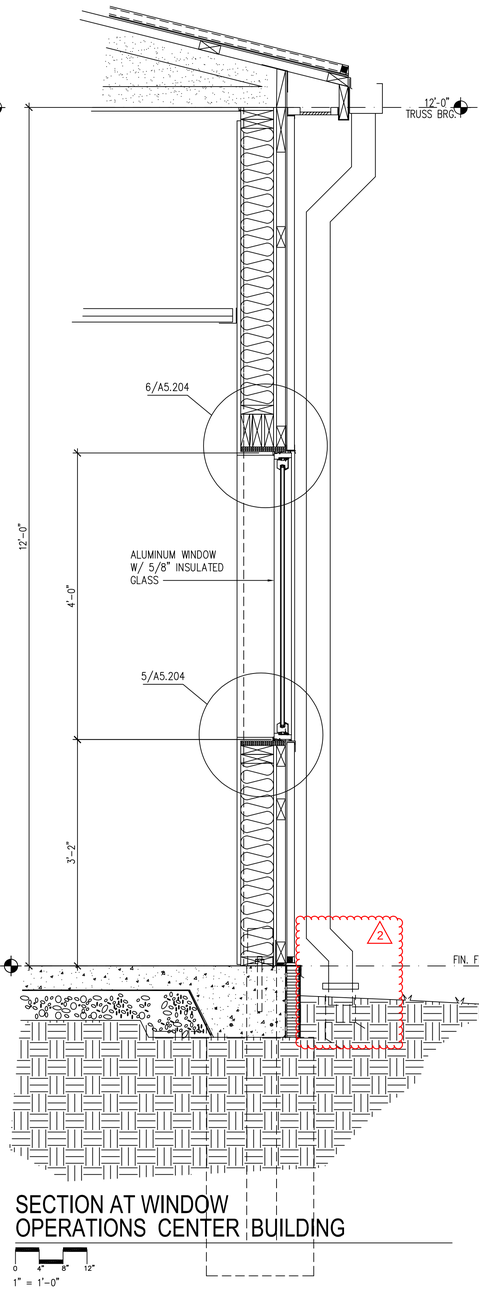
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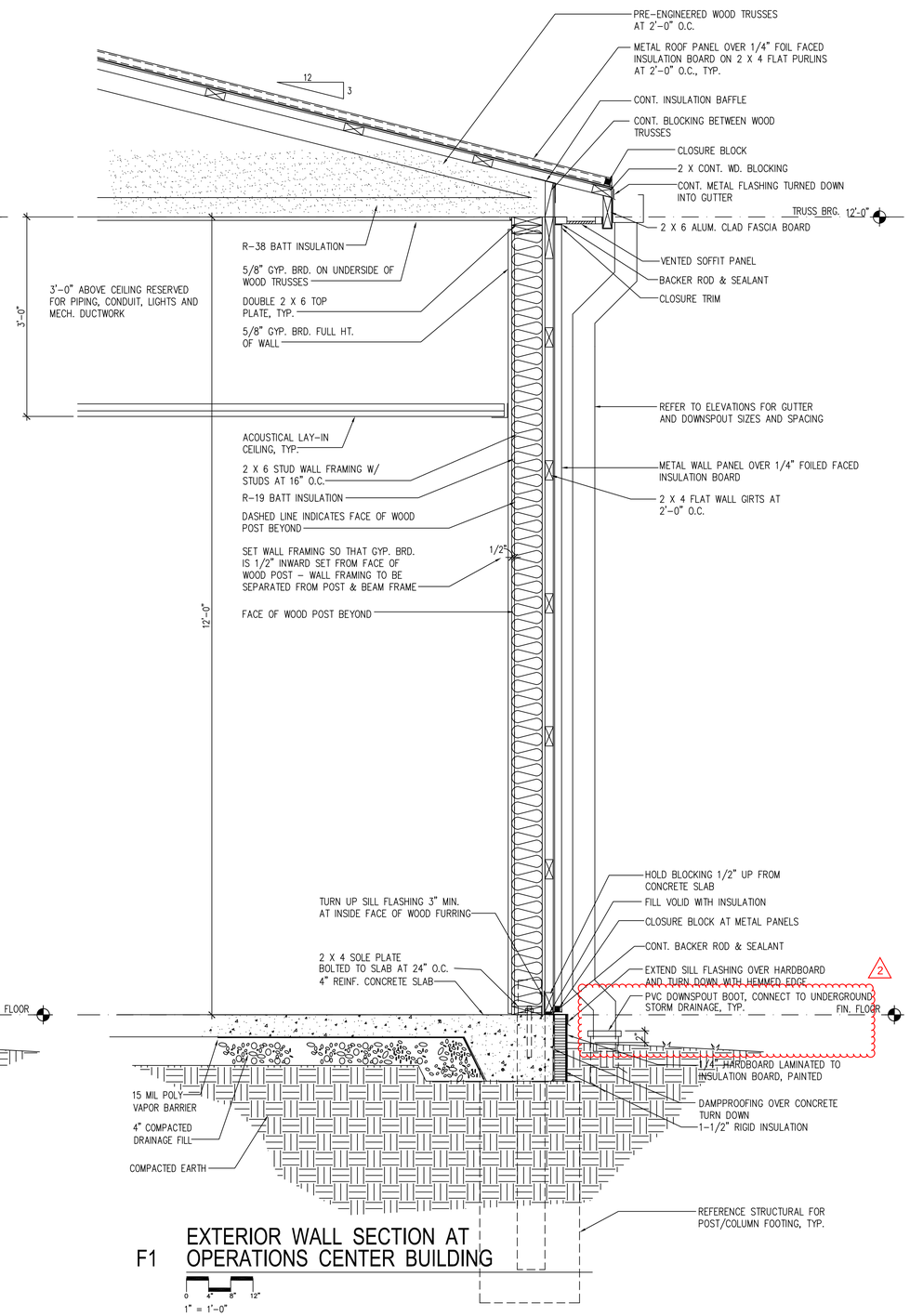
F3 TYPICAL INTERIOR WALL SECTION AT OPERATIONS CENTER BUILDING

0 4" 8" 12"
1" = 1'-0"



F2 SECTION AT WINDOW OPERATIONS CENTER BUILDING

0 4" 8" 12"
1" = 1'-0"



F1 EXTERIOR WALL SECTION AT OPERATIONS CENTER BUILDING

0 4" 8" 12"
1" = 1'-0"

Drakes Creek Park Maintenance Complex

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Hendersonville,TN
37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS & ENGINEERS
214 Centerview Dr #300
Brentwood, TN 37024
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SARAH E. MEADOWS REGISTERED ARCHITECT AGRICULTURE COMMERCE NO. 104778 STATE OF TENNESSEE
9-3-2025

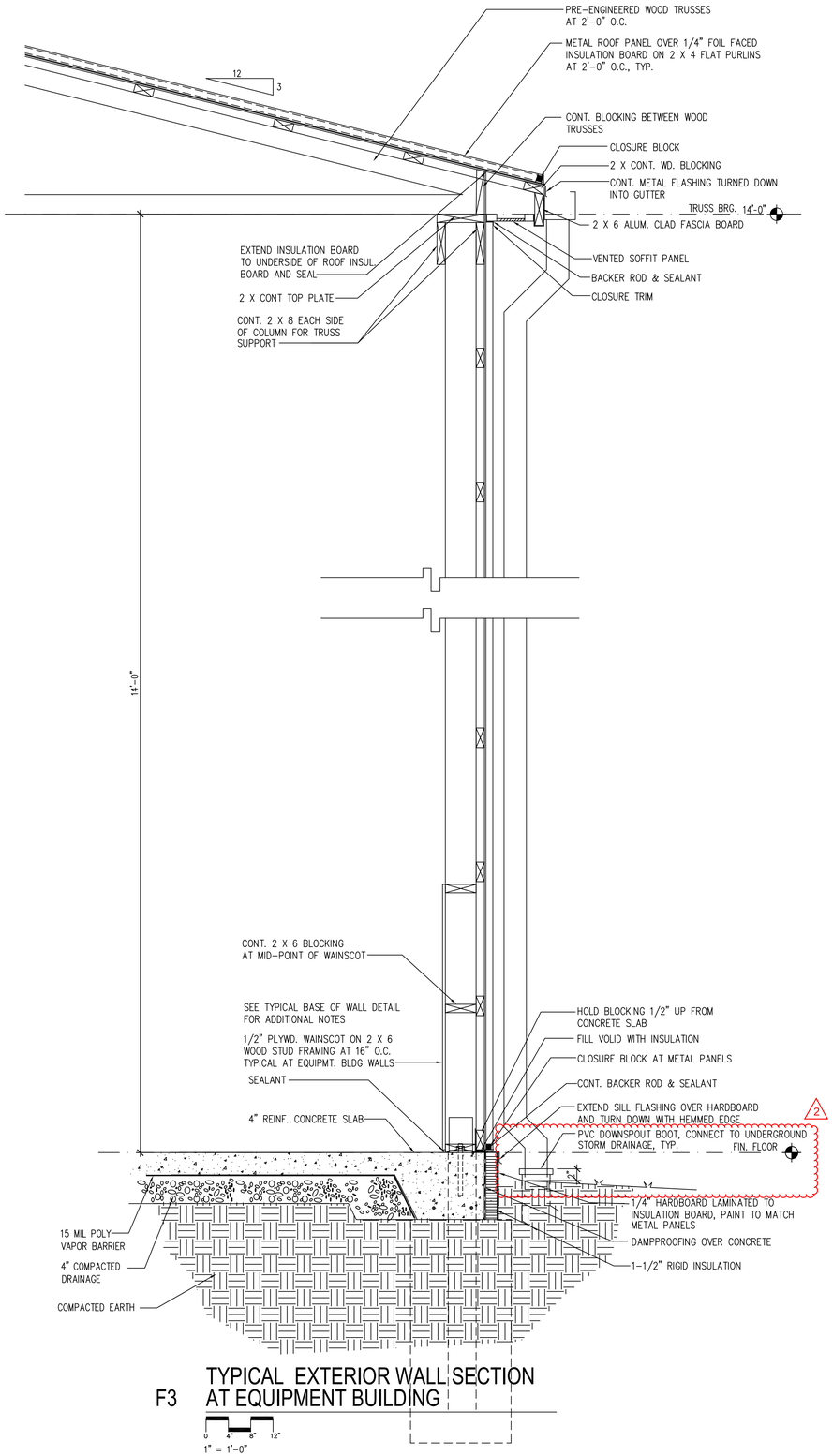
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Description	Date	Num
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Proj. #: 247062
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Drawn:
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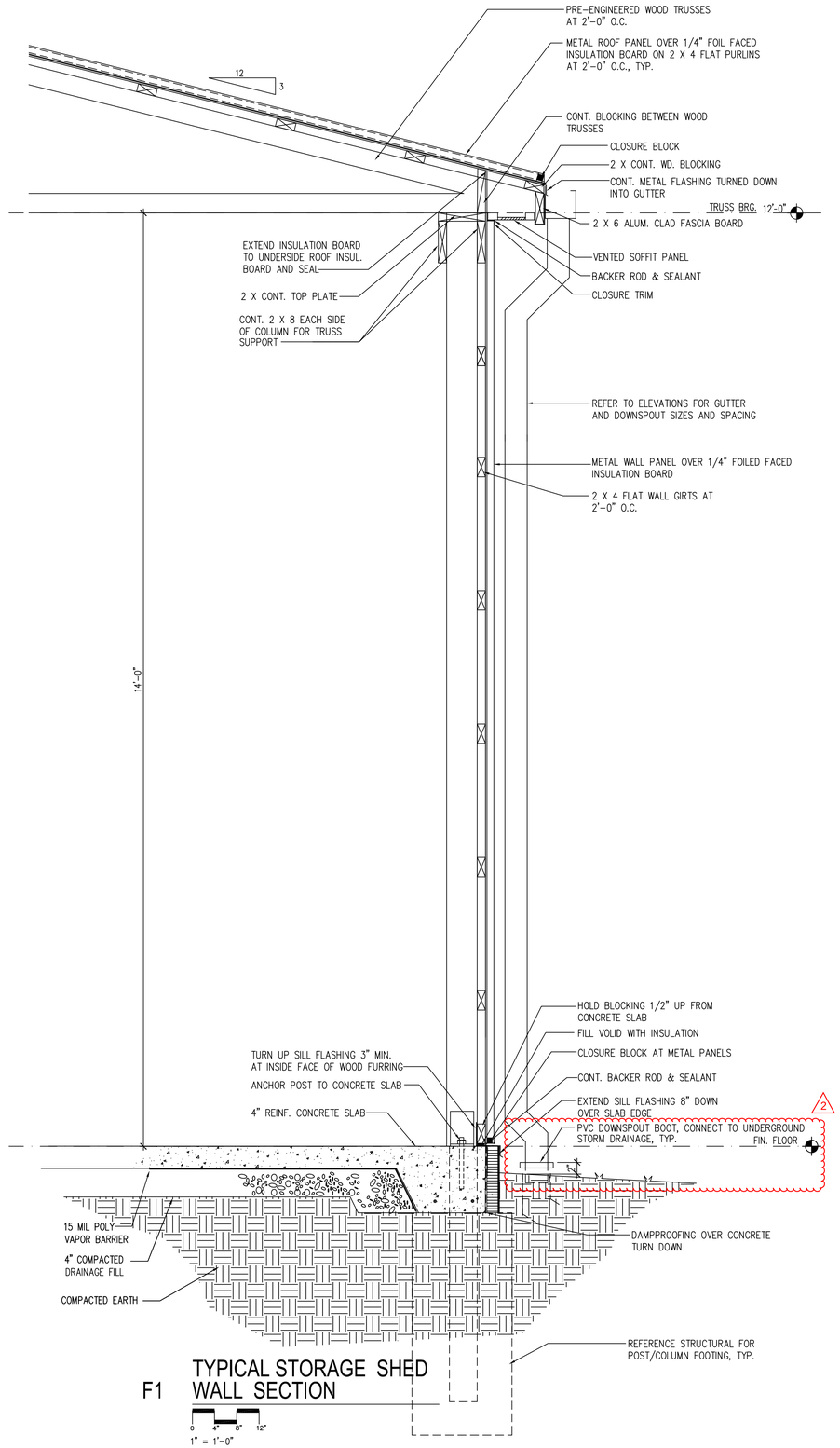
BUILDING SECTIONS & DETAILS

A5.201

TN



F3 TYPICAL EXTERIOR WALL SECTION AT EQUIPMENT BUILDING



F1 TYPICAL STORAGE SHED WALL SECTION

Drakes Creek Park Maintenance Complex

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City of Hendersonville Hendersonville, TN

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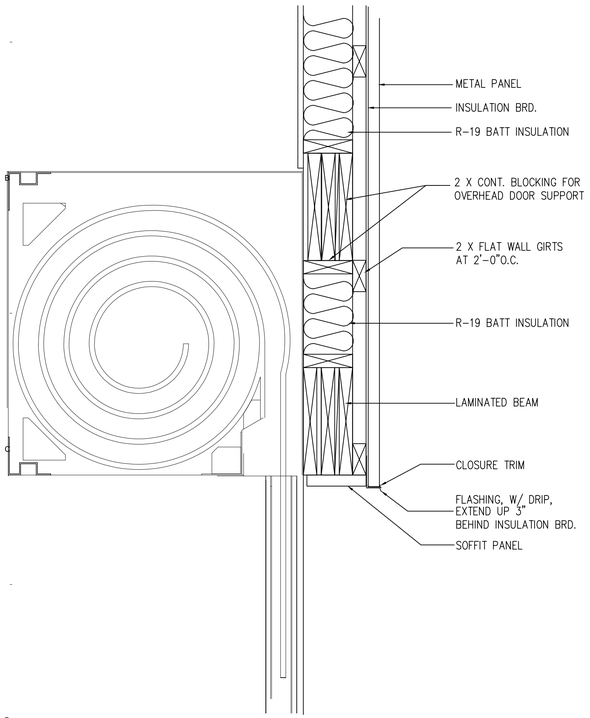
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Description	Date	Num
ADDENDUM 1	2025-08-01	1
ADDENDUM 2	2025-09-03	2

Proj. #: 247062
Date: 06/27/2025
Drawn:
Check:

BUILDING SECTIONS & DETAILS

A5.202

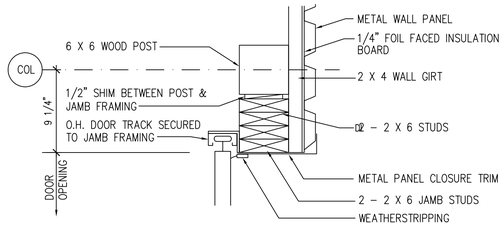
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E3 HEAD DETAIL

0 2" 4" 6" 1'

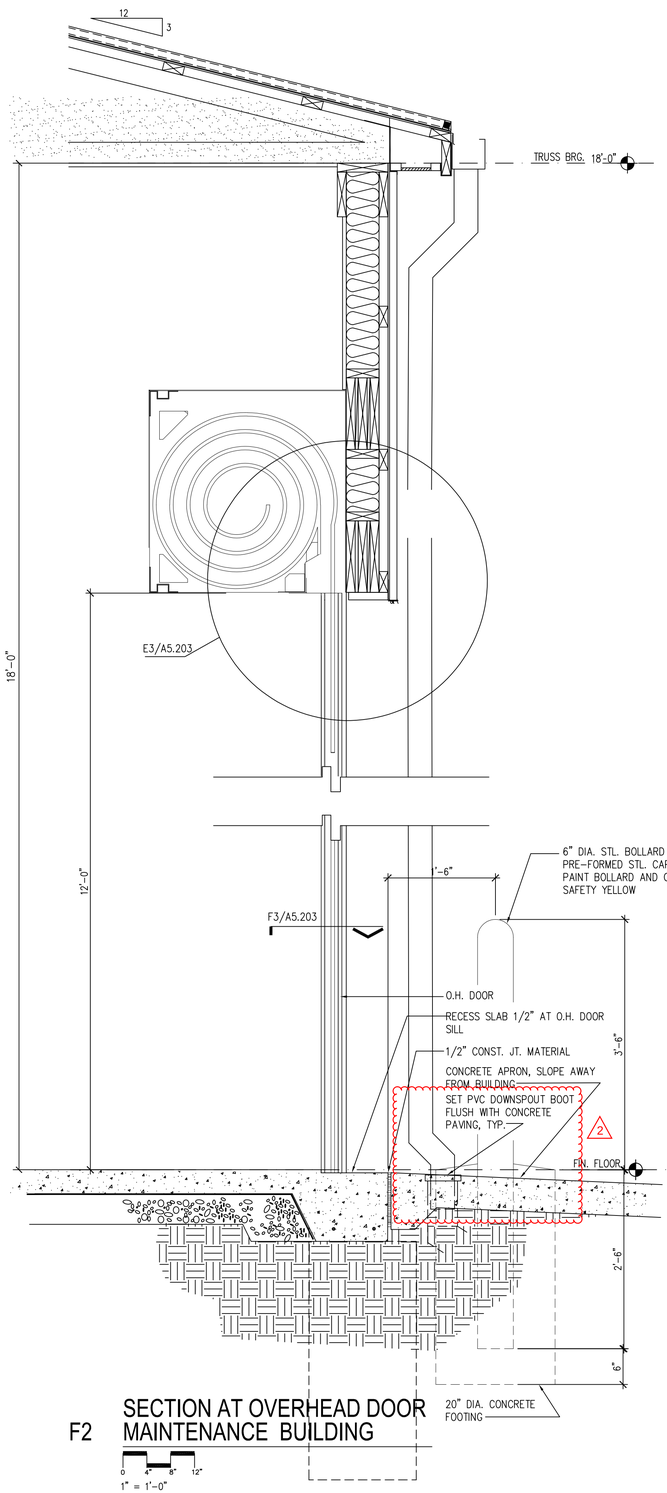
1-1/2" = 1'-0"



F3 JAMB DETAIL

0 2" 4" 6" 1'

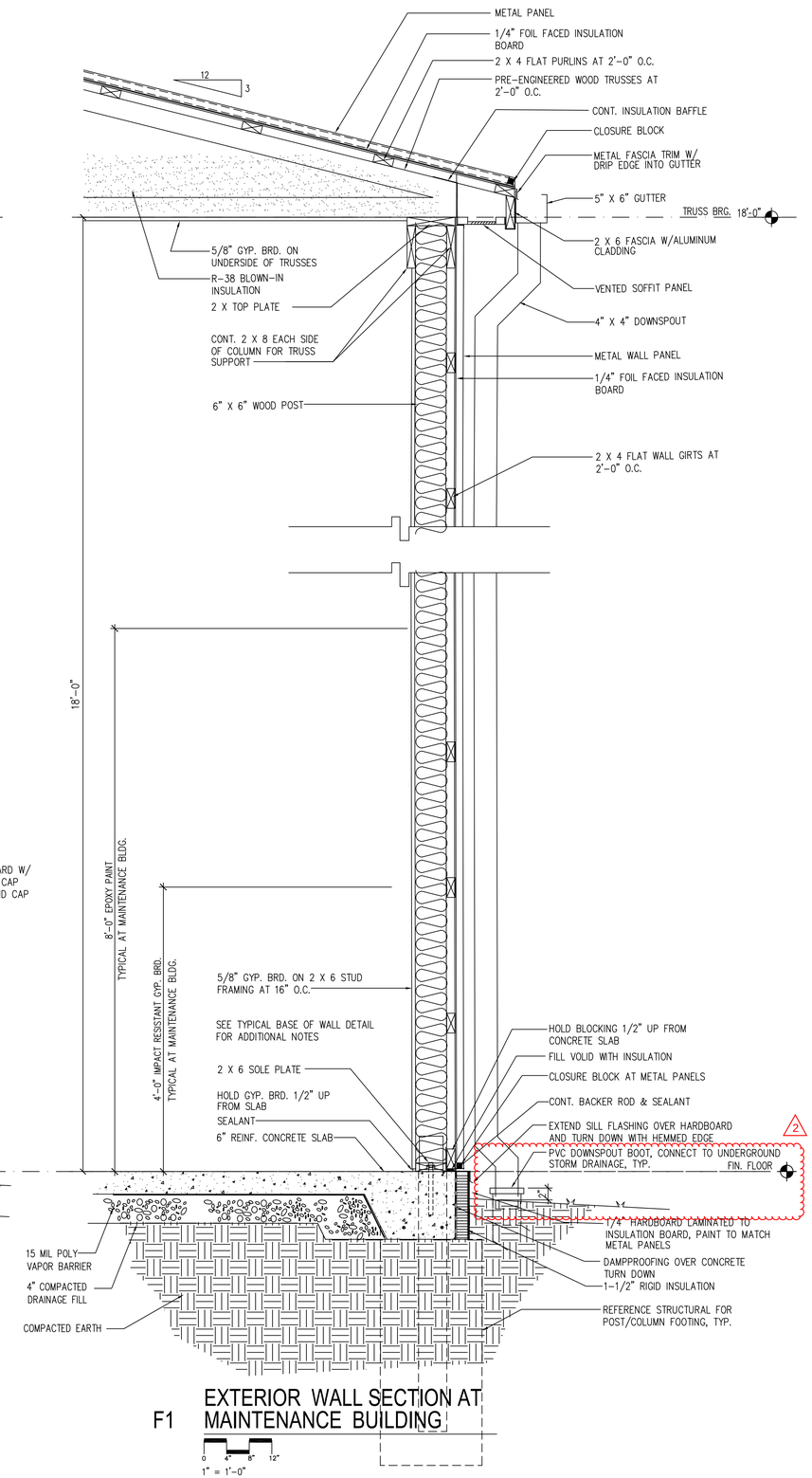
1-1/2" = 1'-0"



F2 SECTION AT OVERHEAD DOOR MAINTENANCE BUILDING

0 4" 8" 12"

1" = 1'-0"



F1 EXTERIOR WALL SECTION AT MAINTENANCE BUILDING

0 4" 8" 12"

1" = 1'-0"

Drakes Creek Park Maintenance Complex

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City of Hendersonville Hendersonville, TN

WOLD ARCHITECTS & ENGINEERS

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SARAH E. MEADOWS
REGISTERED ARCHITECT
No. 104713
STATE OF TENNESSEE
9-3-2025

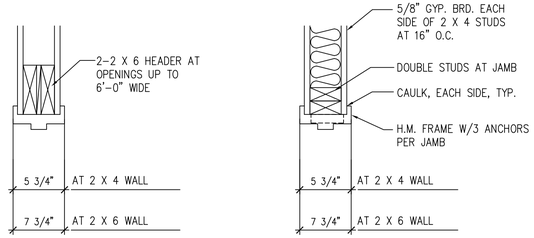
Revisions		
Description	Date	Num
ADDENDUM 1	2025-08-01	1
ADDENDUM 2	2025-09-03	2

Proj. #: 247062
Date: 06/27/2025
Drawn:
Check:

BUILDING SECTIONS & DETAILS

A5.203

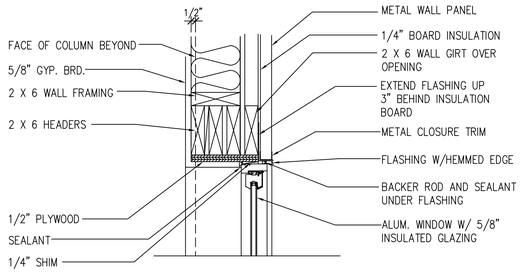
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B2 TYPICAL INTERIOR HEAD/JAMB DETAILS

0 2" 4" 6" 1'

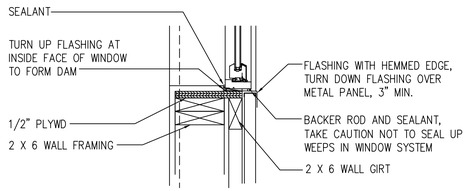
1-1/2" = 1'-0"



E2 WINDOW HEAD

0 2" 4" 6" 1'

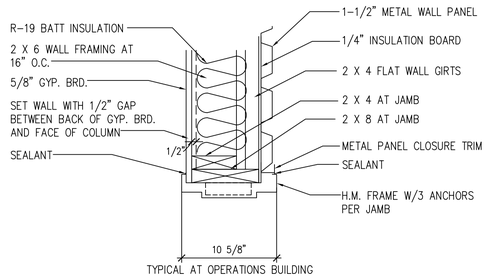
1-1/2" = 1'-0"



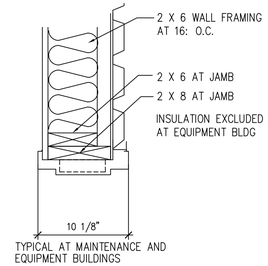
E1 WINDOW SILL

0 2" 4" 6" 1'

1-1/2" = 1'-0"



TYPICAL AT OPERATIONS BUILDING

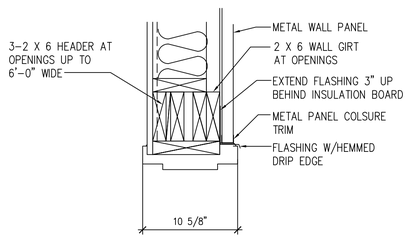


TYPICAL AT MAINTENANCE AND EQUIPMENT BUILDINGS

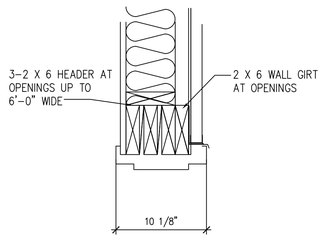
B1 JAMB DETAIL - EXTERIOR WALL

0 2" 4" 6" 1'

1-1/2" = 1'-0"



TYPICAL AT OPERATIONS BUILDING

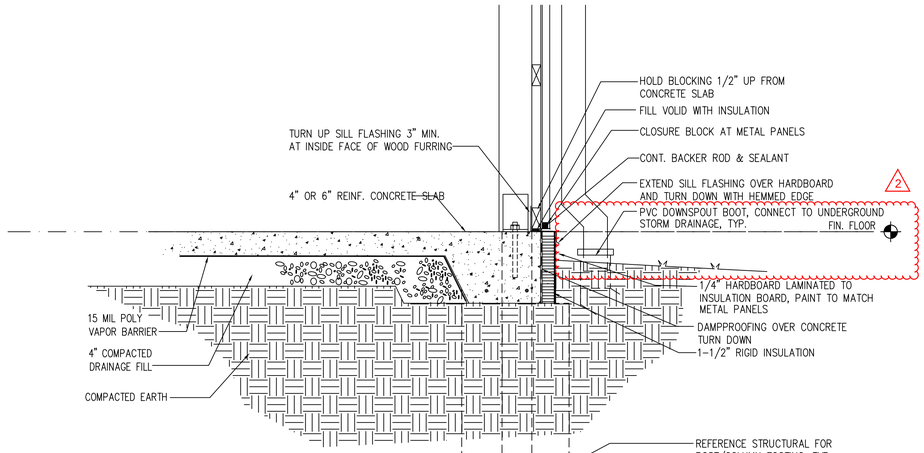


TYPICAL AT MAINTENANCE AND EQUIPMENT BUILDINGS

D1 HEAD DETAIL - EXTERIOR WALL

0 2" 4" 6" 1'

1-1/2" = 1'-0"



F1 TYPICAL BASE OF WALL

0 4" 8" 12"

1" = 1'-0"

Drakes Creek Park Maintenance Complex

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City of Hendersonville Hendersonville, TN

WOLD ARCHITECTS & ENGINEERS
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Brentwood, TN 37024
woldae.com | 615.370.8500

SARAH E. MEADOWS REGISTERED ARCHITECT ARCHITECTURE COMMERCE NO. 104779 STATE OF TENNESSEE 9-3-2025

Revisions		
Description	Date	Num
ADDENDUM 1	2025-08-01	1
ADDENDUM 2	2025-09-03	2

Proj. #: 247062
Date: 06/27/2025
Drawn:
Check:

BUILDING SECTIONS & DETAILS

A5.204

TN

Abbreviations

AFF	Above Finished Floor	Fnd	Foundation	Perp	Perpendicular
Approx	Approximate(ly)	FFE	Finished Floor Elevation	PL	Plate
Arch	Architectural	FP	Full Penetration	Prelim	Preliminary
		FS	Far Side	Proj	Projection
Bldg	Building	Ftg	Footing	PSF	Pounds per Square Foot
BTM	Bottom			PSI	Pounds per Square Inch
Brg	Bearing	Ga	Gage or Gauge		
				Reinf	Reinforcing(-ed, -ment)
CL	Centerline	Horiz	Horizontal	Req'd	Required
Clr	Clear or Clearance			Rev	Revision
CMU	Concrete Masonry Unit	Int	Interior	RW	Retaining Wall
Col	Column			Sched	Schedule(d)
Conc	Concrete	K	Kips(1000 LBS.)	Sect	Section
Conn	Connection	KSI	Kips per Square Inch	Sim	Similar
Const	Construction			Spec	Specifications(s)
Cont	Continuous	LB, #	Pound	Sym	Symmetrical
		LL	Live Load		
Dia, Ø	Diameter	LLH	Long Leg Horizontal	T	Top, Tension
Dim	Dimension	LLV	Long Leg Vertical	T/, T.O.	Top of
Dwg	Drawing	Long	Longitudinal	T/Conc	Top of Concrete
				T/Ftg	Top of Footing
Ea	Each	Manuf	Manufacturer	T/Slab	Top of Slab
EF	Each Face	Max	Maximum	T&B	Top & Bottom
Elec	Electrical	Mech	Mechanical	Temp	Temperature
Elev	Elevation	Mid	Middle	Thk	Thickness
Embed	Embedment	Min	Minimum	TOS	Top of Steel
Eq	Equal	Misc	Miscellaneous	TOW	Top of Wall
EW	Each Way			Trnv	Transverse
Exist	Existing	N/A	Not Applicable	Typ	Typical
Exp	Expansion	NS	Near Side	UNO	Unless Noted Otherwise
Ext	Exterior	NTS	Not to Scale	Vert	Vertical
		o.c.	On Center	w/	With
		Opp	Opposite	w/o	Without
				W.W.F.	Welded Wire Fabric

Design Criteria

Building Code
-2021 International Building Code (IBC)

Live Loads:
-Roof .....20 psf

Snow Loads:
-Ground Snow Load: Pg = 10 psf

Wind Load (Per ASCE 7-16):
-Ultimate Wind Speed = 105 mph
-Risk Category II
-Wind Exposure.....B

Seismic loads (Per ASCE 7-16):
-Occupancy Category.....II
-Spectral Response Coefficients ....S_s = 0.265
S_1 = 0.135
S_{ds} = 0.281
S_{d1} = 0.210
-Soil Site Class.....D
-Seismic Design Category.....D
-Response modification factor.....Per Bldg Manuf.
-Delfection amplification factor.....Per Bldg Manuf.
-System overstrength factor.....Per Bldg Manuf.
-Seismic force resisiting system.....Per Bldg Manuf.
-Design base shear.....V= CsW
-Analysis procedure.....Equivalent Lateral Force

Shallow Foundations

1. Foundations are designed based upon assumed soil bearing capacities as stated below.

2. Allowable soil bearing pressures used in design: Spread footings =1800 psf /Continuous footing = 1800 psf

3. Footing excavations shall be observed and tested by an experienced geotechnical engineer prior to steel or concrete placement in order to assess that the foundation materials are consistent with above stated assumed soil bearing capacities.

4. In the event that the soils test results are disapproved, footing excavations shall be undercut (under the direction of the soils engineer) until soils of adequate bearding capacity are encountered. Backfill under footings shall consist of concrete f'c = 2500 psi @ 28 days placed up to the proposed bottom of footing elevation.

5. Footings shall bear on undisturbed residual soils or compacted fill, maximum desnist of 98% ASTM D-698.

6. Footing elevations shown on the plans are for estimating purposes only. Actual footing elevations shall be determined by the contractor at the site and shall be a minimum of 12" below finished grade.

7. All water shall be removed from foundation excavations prior to placing of concrete. If bottoms of trenches become softened due to water before footings are cast, the contractor, at his own expense, shall excavate the softened material and replace with concrete.

8. All pipes (water lines, sewer lines, etc.) And conduits running through walls / slabs shall be protected with ½" expansion material.

9. Continuous footing perpendicular to pipe runs shall be either lowered to allow pipes to pass through above such footings or have concrete jacket if pipes are low enough to be placed below such footings. Footings parallel to pipe runs shall be lowered to avoid surcharge onto the trench excavations.

General Notes

1. No provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of the owner, contractor, architect, engineer, supplier, or any of the consultants, agents, or employees from those set forth in the contract documents, nor shall it be effective to assign to the structural engineer of record (S.E.R.) or any of the S.E.R.'s consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibilities contrary to the provisions of the contract documents.

2. Reference to standard specifications (concerning structural design) of any technical society, organization, or association or to codes of local or state authorities, shall mean the latest standard codes, specification or tentative specification adopted at the date of taking bids, unless specifically stated otherwise.

3. In the event contract documents conflict with the code of practice or specifications of ACI, PCI, AISC, AISI, SJI or other standards, contact structural engineer for clarification.

4. Notes and specific details on the drawings shall take precedence over general structural notes and typical details. Contact the architect / engineer for a determination of intent before proceeding with related work if there is any discrepancy or question regarding which note to follow.

5. Material, workmanship, and design shall conform to the referenced building code.

6. The contractor shall verify the dimensions, elevations and site conditions before starting work. The architect / engineer shall be notified of any discrepancy.

7. The design, adequacy, and safety of erection bracing, shoring, temporary supports, etc. is the sole responsibility of the contractor.

8. The contractor shall coordinate the architectural, mechanical, electrical, plumbing and civil works with the structural contract documents. The architect / engineer shall be notified of any discrepancies or omissions.

9. The contractor shall notify, in writing, the engineer of conditions encountered in the field that are contradictory to those shown on the contract documents.

10. For dimensions not shown on the structural drawings see the architectural drawings.

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Concrete

1. All phases of work pertaining to the concrete construction shall conform to the "Building Code Requirements for Structural Concrete" (ACI 318), latest edition with modifications as noted in the drawings or specifications.

2. Concrete mixes shall be designed by a qualified testing laboratory and approved by the structural engineer.

3. All exposed corners or edges of columns, piers, walls, etc., shall be formed with a 3/4" chamfer unless noted otherwise on structural or architectural drawings.

4. All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete.

5. Provide sleeves for plumbing and electrical openings in concrete before placing concrete. Do not cut any reinforcing that may conflict. Coring is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on the drawings.

6. Conduit or pipe size (o.d.) shall not exceed 30% of the slab thickness and shall be placed between the top and bottom reinforcing unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed openings are provided.

7. Curing compounds on concrete that is to receive special finish shall be approved by the manufacturer before use.

8. Roughen surface of horizontal or nearly horizontal construction joints so that the aggregate shall be exposed uniformly, leaving no laitance, loosed particles or damaged concrete.

9. Locate joints not indicated to least impair strength and appearance of the structure. Locate horizontal joints in concrete only where they normally occur or where indicated. Locate vertical joints in middle third of spans of slabs, beams, or girders unless a beam intersects a girder at middle location, in which case offset joints in girders twice the width of the beam.

10. Once formwork has been removed from concrete retaining walls, brace walls thoroughly before placing soil against wall and keep bracing in place for a minimum of 7 days after earthwork is complete.

Schedule of Concrete Strengths

Use (Location)	28 Day Strength	Aggregate Size (Max.)	Cement/CY (Min.)	W/C ratio (Max.)	Slump (Max.)	Air Entrainment
Slab-on-grade (Interior)	f'c=3,000 psi	1"	480#	.62	4-1/2"	None
Exposed Concrete	f'c=4,000 psi	1"	560#	.54	4-1/2"	4%-6%
Footings	f'c=3,000 psi	1"	480#	.62	4-1/2"	None

1. All aggregate shall be Limestone
2. All cement shall be Portland Cement Type 1

Reinforcing

1. Reinforcing shall be detailed and placed in conformance with ACI Detailing Manual.

2. Reinforcing bars shall conform to the requirements of ASTM A615 Grade 60 except all reinforcing in concrete moment frames and shear walls and all welded reinforcement shall conform to ASTM A706 Grade 60.

3. Welded wire fabric shall conform to ASTM A185.

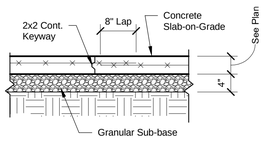
4. Minimum lap of welded wire fabric shall be 6" or one full mesh + 2", whichever is greater.

5. Dowels between footings and walls shall be the grade, size and spacing or number as the vertical reinforcing, respectively.

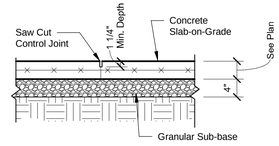
6. Reinforcing steel in all concrete walls and footings shall be continuous around corners.

7. Provide (2) #5 extra reinforcing bars around all side of openings in concrete, unless noted otherwise on the plans. Extend bars 2'-0" beyond each edge of opening.

8. Minimum clear coverage of concrete over reinforcement shall be:
   a. Concrete cast against and permanently exposed to earth .....3"
   b. Concrete exposed to earth or weather:
      i. No. 6 through no. 18 bar.....2"
      ii. No. 5 bar, w31 or d31 wire or smaller.....1-1/2"
   c. Concrete not exposed to weather or in contact with ground:
      i. Slabs walls and joists no. 14 & no. 18.....1-1/2"
      ii. Slabs walls and joists no. 11 & smaller.....3/4"
      iii. Beams, columns: ties and primary reinforcing.....1-1/2"



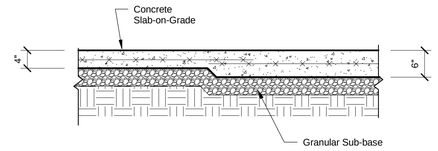
CONSTRUCTION JOINT



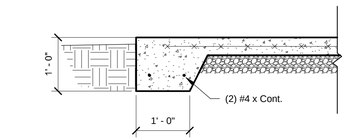
CONTROL JOINT

Notes:
1. Maximum spacing of control joints shall be 15'-0"o.c. (U.N.O.).
2. Locate control joints as specified on architectural drawings (when applicable).
3. Provide 10 MIL Vapor Barier below slab (U.N.O.)

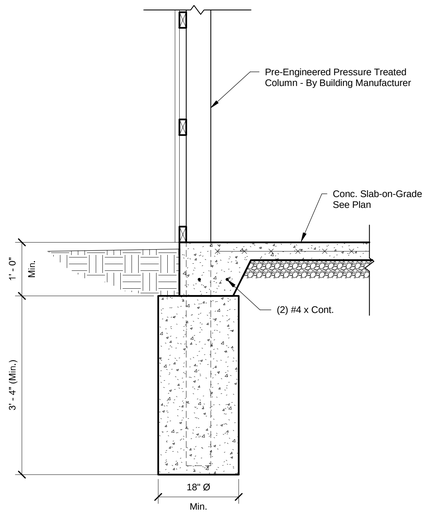
1 Slab-on-Grade Details
3/4" = 1'-0"



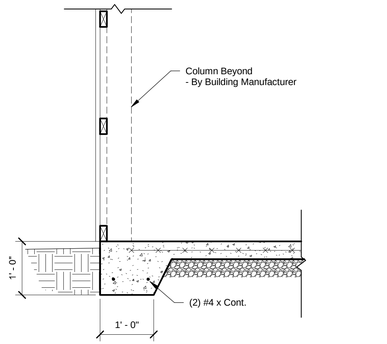
2 Conc. Slab Thickness Transistion
3/4" = 1'-0"



3 Slab Edge Detail
3/4" = 1'-0"



4 Foundation Section @ Column
3/4" = 1'-0"



5 Slab Edge Detail Along @ Wall
3/4" = 1'-0"

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
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City of Hendersonville
Hendersonville, TN

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SSE #23-045

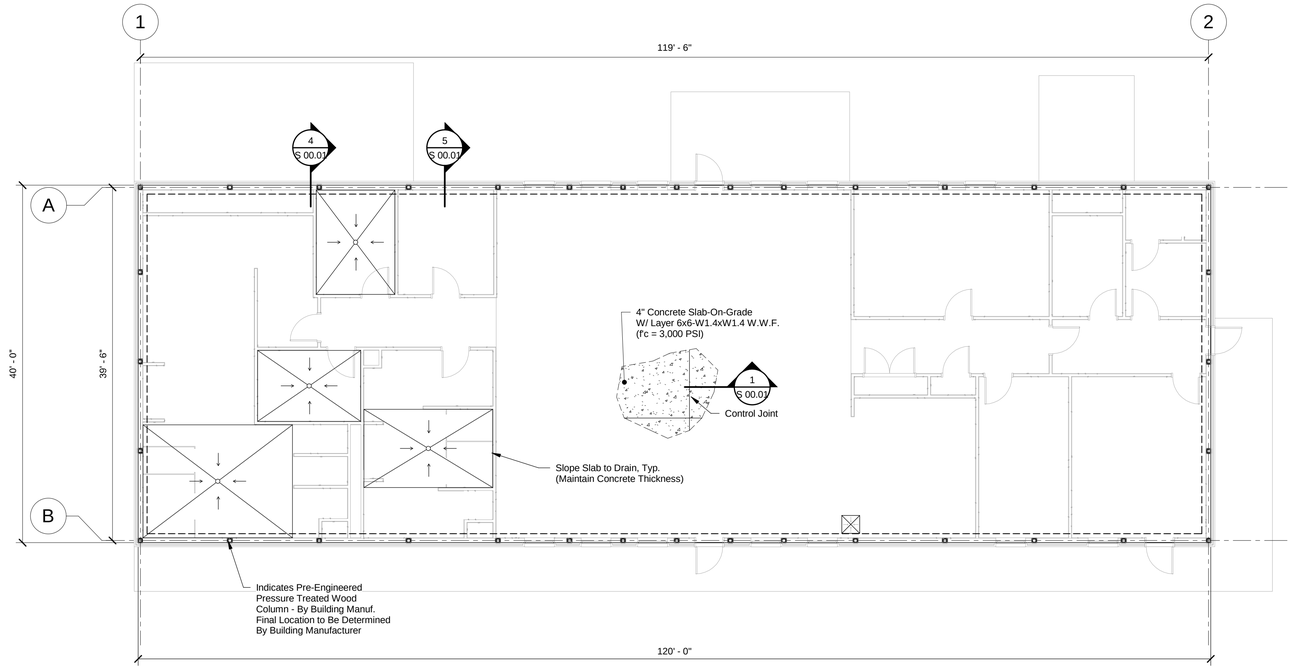
Revisions		
Description	Date	Num

Proj. #: 247062
Date: June 27, 2025
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General Notes & Foundation Sections

S 00.01

TN



1 Foundation Plan - Operations Center
1/8" = 1'-0"

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Drakes Creek Park
Parks Maintenance Complex

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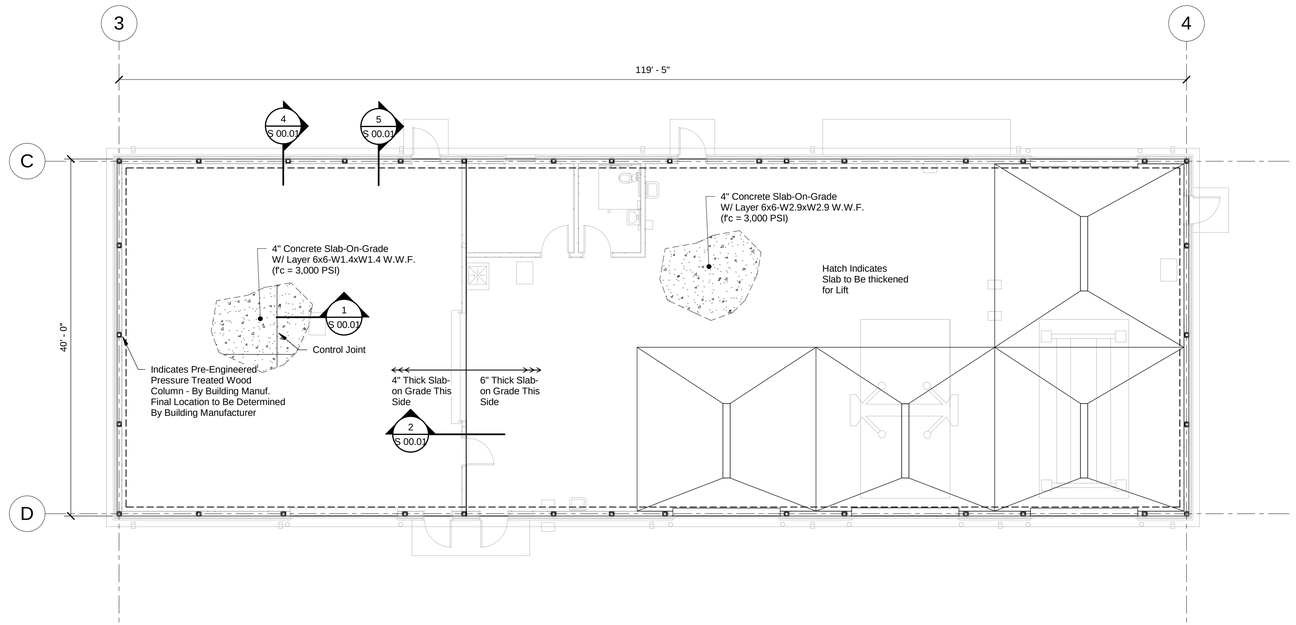
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Description	Date	Num

Proj. #: 247062
Date: June 27, 2025
Drawn:
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Foundation Plan
Operations Building

S 01.01

TN



1 Foundation Plan - Maintenance Building
1/8" = 1'-0"

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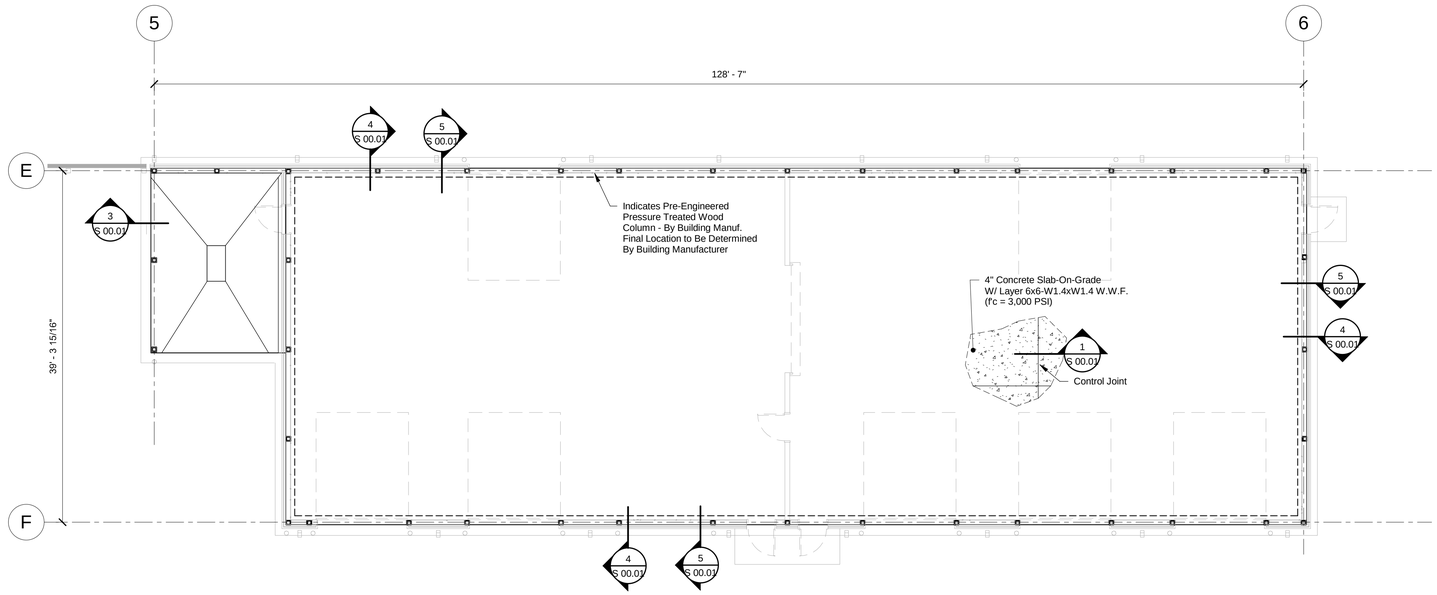
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Description	Date	Num

Proj. #: 247062
Date: June 27, 2025
Drawn:
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Foundation Plan - Maintenance & Supply Building

S 01.02

TN



1 Foundation Plan
1/8" = 1'-0"

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Drakes Creek Park
Parks Maintenance Complex

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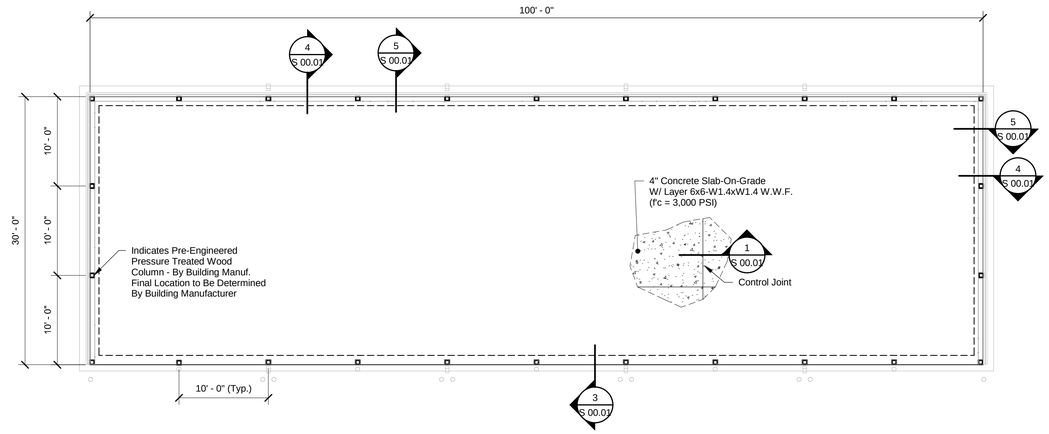
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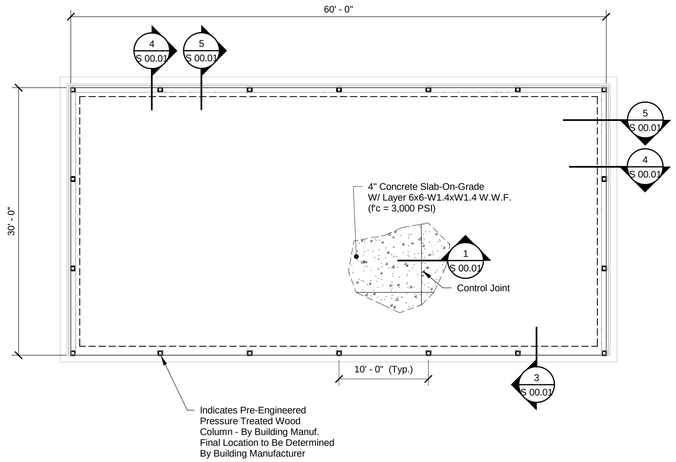
Foundation Plan
Equipment Building

S 01.03

TN



1 Foundation Plan - 100' Storage Building
1/8" = 1'-0"



2 Foundation Plan - 60' Storage Building
1/8" = 1'-0"

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Drakes Creek Park Parks Maintenance Complex

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Description	Date	Num

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Drawn:
Check:

Foundation Plan - Storage Sheds

S 01.04

MECHANICAL GENERAL NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE OPERATIONAL COOLING AND HEATING SYSTEM IN ACCORDANCE WITH THE DESIGN DRAWINGS.

2. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE, NFPA REQUIREMENTS, AND ALL LOCAL CODES.

3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. DRAWINGS SHALL NOT BE SCALED.

4. CONTRACTOR SHALL FIELD VERIFY BY MEASUREMENT THE EXACT LOCATION OF EQUIPMENT, DUCTWORK, PIPING, STRUCTURE, AND OTHER CONDITIONS WHICH WILL AFFECT INSTALLATION. CONTRACTOR SHALL LOCATE EQUIPMENT AND ROUTE DUCTWORK AND PIPING TO AVOID CONFLICTS AND INTERFERENCES WITH EXISTING CONDITIONS.

5. COORDINATE DUCT, PIPING, AND EQUIPMENT LOCATIONS WITH ELECTRICAL ROOMS, ELEVATOR EQUIPMENT ROOMS, AND ALL ELECTRICAL PANEL LOCATIONS. DO NOT PASS ANY MECHANICAL OR PLUMBING PIPING OR CONDENSATE PRODUCING EQUIPMENT DIRECTLY OVER ELECTRICAL PANELS, ELECTRICAL EQUIPMENT, ELEVATOR EQUIPMENT, CONTROLS, OR TELECOMMUNICATIONS EQUIPMENT. SEE ELECTRICAL AND TELECOMMUNICATION DRAWINGS FOR EXACT EQUIPMENT LOCATIONS.

6. CEILING DIFFUSER AND REGISTER LOCATIONS ARE APPROXIMATE ONLY. SEE ARCHITECTURAL FOR EXACT LOCATIONS OF ALL AIR DISTRIBUTION DEVICES (WALL AND CEILING).

7. ALL CUTTING AND PATCHING SHALL BE COORDINATED. ALL PATCHING SHALL RESTORE EACH DAMAGED SURFACE TO ITS ORIGINAL FINISH.

8. ALL EXPOSED DUCTWORK, PIPING, AND EQUIPMENT IN FINISHED SPACES TO BE INSTALLED AS HIGH AS POSSIBLE ABOVE FINISHED FLOOR AND SHALL BE PREPARED WITH PAINT GRIP SUITABLE FOR PAINTING.

9. ALL AIR DISTRIBUTION SYSTEM(S) SHALL BE TESTED AND BALANCED IN ACCORDANCE WITH A.A.B.C. OR N.E.B.B. REQUIREMENTS. A CERTIFIED AIR BALANCE REPORT SHALL BE PREPARED PRIOR TO PROJECT CLOSEOUT.

10. ALL LOW PRESSURE DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA HVAC DUCT CONSTRUCTION MANUAL FOR 2" W.G. STATIC PRESSURE. DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL.

11. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR. ALLOWANCE MUST BE MADE IN SHEET METAL SIZE WHERE DUCT LINER IS SPECIFIED.

12. SUPPLY DUCTWORK SHALL BE INTERNALLY INSULATED FOR THE FIRST 20 FEET OF SUPPLY DUCT FROM AIR HANDLING UNIT. ALL OUTSIDE AIR DUCT, AND ALL TRANSFER AIR DUCT (TAD) SHALL BE INTERNALLY INSULATED WITH 1" THICK, 3 LB. DENSITY, EQUAL TO CERTAINEED TOUGHGUARD. CONCEALED LOW PRESSURE SUPPLY DUCT NOT INTERNALLY LINED SHALL HAVE EXTERIOR WRAP INSULATION AS SPECIFIED.

13. NO FLEXIBLE DUCT SHALL BE EXPOSED. NO DUCT WRAP INSULATION SHALL BE EXPOSED. DUCT EXPOSED IN MECHANICAL ROOMS SHALL BE EXTERNALLY INSULATED WITH RIGID INSULATION AS SPECIFIED.

14. DUCT RUNOUTS TO REGISTERS TO BE AS SCHEDULED UNLESS OTHERWISE INDICATED ON PLANS. CONTRACTOR TO PROVIDE A TRANSITION AT NECK OF EACH AIR DISTRIBUTION DEVICE AS REQUIRED.

15. FIRE DAMPERS TO BE TYPE "B" OR "C" DYNAMIC UNLESS OTHERWISE NOTED. INSTALLATION OUT OF AIRSTREAM AND IN STRICT ACCORDANCE WITH MANUFACTURER'S U.L. LISTED INSTALLATION INSTRUCTIONS AND SMACNA FIRE DAMPER GUIDE.

16. PROVIDE 4" HIGH CONCRETE PAD FOR ALL FLOOR-MOUNTED OR GRADE MOUNTED EQUIPMENT.

17. WHERE BRANCH TAPS OCCUR, PROVIDE INDIVIDUAL SPIN-IN FITTINGS WITH MANUAL-VOLUME DAMPERS FOR BALANCING. DO NOT USE TYPE WITH AIR SCOOP/EXTRACTOR. ADDITIONALLY, PROVIDE OPPOSED-BLADE VOLUME DAMPERS AT EACH AIR DISTRIBUTION DEVICE.

18. COORDINATE LOCATION AND PROVIDE DUCT ACCESS DOORS FOR ACCESS TO ALL FIRE DAMPERS, VALVES AND OTHER ENCLOSED ITEMS. DUCT ACCESS DOORS MAY BE OMITTED WHERE TYPE "A" FIRE DAMPERS ARE ACCESSIBLE THROUGH SIDEWALL REGISTER FACE. INSURE DUCT ACCESS DOORS AND DAMPERS ARE ACCESSIBLE THROUGH CEILINGS AND WALLS. LOCATE DUCT ACCESS DOORS ABOVE SPACES WITH LAY-IN CEILINGS OR EXPOSED CEILINGS WHERE POSSIBLE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING TYPES.

19. PROVIDE CANVAS, FLAME RETARDANT FLEXIBLE DUCT CONNECTORS AT ALL CONNECTIONS OF FANS TO DUCTWORK.

20. PROVIDE A MINIMUM 15'-0" SEPARATION BETWEEN ANY FRESH AIR INTAKE AND ANY MECHANICAL EXHAUST, PLUMBING VENT, OR OTHER VENT OUTLETS.

21. COORDINATE INSTALLATION OF DUCT-MOUNTED SMOKE DETECTORS WITH FIRE ALARM SYSTEM PROVIDER.

22. DUCT-MOUNTED SMOKE DETECTORS ARE PROVIDED BY DIV. 26, INSTALLED BY DIV. 23.

23. REFER TO THE IBC AND NFPA FOR CAULKING REQUIREMENTS AROUND FIRE AND FIRE/SMOKE DAMPERS.

SUPPLY DIFFUSER SCHEDULE

SYMBOL	ADAPTOR/ NECK SIZE	FACE SIZE	MAX CFM	MAX TP	MAX NC	THROW	DUCT RUNOUT SIZE *
SA	6" Ø	24"x24"	100	0.022	20	4-WAY	8"x5"/6" Ø
SB	8" Ø	24"x24"	200	0.042	20	4-WAY	10"x7"/8" Ø
SC	10" Ø	24"x24"	350	0.088	20	4-WAY	12"x8"/10" Ø
SD	12" Ø	24"x24"	500	0.127	20	4-WAY	14"x9"/12" Ø
SE	14" Ø	24"x24"	700	0.173	23	4-WAY	16"x10"/14" Ø
SF	15" Ø	24"x24"	950	0.259	28	4-WAY	16"x12"/16" Ø
SWA	8"x8"	10"x10"	275	0.03	19	2-WAY	8"x8"
SWB	16"x60"	18"x62"	2700	0.016	20	2-WAY	16"x60"
SWC	36"x24"	38"x26"	2700	0.016	20	2-WAY	36"x24"
SWF	20"x16"	22"x18"	1040	0.016	20	2-WAY	20"x16"
SWG	18"x10"	20"x12"	850	0.04	27	2-WAY	18"x10"

1. SA THRU SE ARE TITUS MODEL OMNI STEEL DIFFUSERS.

2. SWA THRU SWG SHALL BE TITUS MODEL 1707 SIDE WALL DIFFUSERS.

ALL SUPPLY DIFFUSERS SHALL BE PROVIDED W/2" INSULATION BLANKET ON BACK OF DIFFUSER.
ALL DIFFUSERS SHALL HAVE OPPOSED BLADE DAMPERS (OBD).
* RUNOUTS ARE DUCTS SERVING ONLY ONE SUPPLY DIFFUSER.

CEILING GRILLES & REGISTERS

SYMBOL	NECK	FACE	MAX CFM	MAX SP	MAX NC	DUCT RUNOUT SIZE *
RA/EA	6" SQ	24"x24"	100	.06	20	8"x5"/6" Ø
RB/EB	8" SQ	24"x24"	200	.06	20	10"x7"/8" Ø
RC/EC	10" SQ	24"x24"	350	.06	20	12"x8"/10" Ø
RD/ED	12" SQ	24"x24"	500	.06	20	14"x9"/12" Ø
RE/EE	14" SQ	24"x24"	700	.06	20	16"x10"/14" Ø
RF/EF	16" SQ	24"x24"	1000	.06	20	20"x10"/16" Ø
RG/EG	18" SQ	24"x24"	1250	.06	20	24"x10"/18" Ø
RH/EH	22" SQ	24"x24"	1750	.06	20	24"x12"/18" Ø
SRA/SEA	24"x16"	26"x18"	1230	.04	20	24"x16"
SRB/SEB	10"x10"	12"x12"	240	.06	25	10"x10"
SRC/SEC	16"x16"	18"x18"	320	.002	20	16"x16"

PERFORMANCE BASIS:

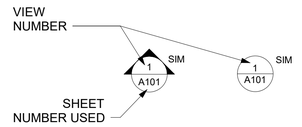
1. RA/EA THRU RH/EH SHALL BE TITUS MODEL 50F OR APPROVED EQUAL WITH 1/2"x1/2"x1/2" EGG-CRATE CORE.

2. SRA/SEA AND RK/EK SHALL BE FILTER RETURN TITUS MODEL 350RLF OR APPROVED EQUAL WITH 1/2" BLADE SPACING.

3. TRANSFER AIR GRILLE (TAG) SHALL BE TITUS 350RL OR APPROVED EQUAL FOR SIDEWALL OR TITUS 50F FOR CEILING APPLICATIONS. SIZE AS SHOWN ON PLANS.

* RUNOUTS ARE DUCTS SERVING ONLY ONE GRILLE OR REGISTER.

VIEW NAME LEGEND



PIPING LEGEND

- MCD — MOISTURE CONDENSATE DRAIN LINE
- RRS — REFRIGERANT SUPPLY
- RRR — REFRIGERANT RETURN
- DIRECTION OF WATER FLOW
- TEE
- PIPE TURNING DOWN
- PIPE TURNING UP
- PIPE SHUT OFF VALVE

LEGEND

- MEDIUM PRESSURE TEE
- RECTANGULAR DUCT TURNING DOWN
- ROUND DUCT TURNING DOWN
- DUCT TURNING DOWN TO SIDEWALL REGISTER
- DOUBLE LINE TO DUCTWORK
- DUCT LINER IN LOW PRESSURE DUCT OR DOUBLE WALL INSULATED MEDIUM PRESSURE DUCT
- BRANCH TAP OFF MAIN W/45º BOOT FITTING OR SPIN-IN FITTING W/DAMPER (LOW PRESSURE)
- TRANSITION IN DUCT (NOT DIRECTION OF AIRFLOW)
- REGISTER TAPPING INTO BOTTOM OF DUCT
- FD — FIRE DAMPER
- FSD — FIRE/SMOKE DAMPER
- SD — SMOKE DETECTOR
- DSD — DUCT SMOKE DETECTOR
- AD — ACCESS DOOR
- AFF — ABOVE FINISHED FLOOR
- BFC — BELOW FINISHED FLOOR
- VFD — VARIABLE FREQUENCY DRIVE
- TAD — TRANSFER AIR DUCT
- TAO — TRANSFER AIR OPENING
- BAS — BUILDING AUTOMATION CONTROL SYSTEM
- (P) — PRESSURE SENSOR
- DUCT TERMINATION
- 45º FULL RADIUS TURN
- SQUARE ELBOW W/TURNING VANES
- FULL RADIUS TURN
- (CO) — CO2 SENSOR
- (T) — THERMOSTAT
- MVD — MANUAL VOLUME DAMPER
- VAV — VARIABLE VOLUME BOX
- EA 100 — INDICATES A SIZE "A" EXHAUST REGISTER SET FOR 100 CFM
- RB 200 — INDICATES A SIZE "B" RETURN REGISTER SET FOR 200 CFM
- SB 200 — INDICATES A SIZE "B" SUPPLY DIFFUSER SET FOR 200 CFM
- SUPPLY DIFFUSER (1-WAY)
- SUPPLY DIFFUSER (2-WAY)
- SUPPLY DIFFUSER (3-WAY)
- SUPPLY DIFFUSER (4-WAY)
- EXHAUST GRILLE
- RETURN GRILLE
- DG — DOOR GRILLE
- UNDERCUT DOOR 3/4" UNLESS OTHERWISE NOTED

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DAVID BRIAN PEARCE — REGISTERED ENGINEER — AGRICULTURE — No. 108155 — STATE OF TENNESSEE — 06/27/2025

Revisions		
Description	Date	Num

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

HVAC - GENERAL NOTES & LEGENDS

Scale: As indicated

M00.0A

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING

230100 - BASIC MECHANICAL REQUIREMENTS

A. PROVIDE ALL EQUIPMENT, MATERIALS, LABOR, SUPERVISION, AND SERVICES NECESSARY FOR OR INCIDENTAL TO THE INSTALLATION OF COMPLETE AND OPERATING MECHANICAL SYSTEMS AS SHOWN OR INDICATED ON THE DRAWINGS. PROPER PRECAUTIONS SHALL BE TAKEN TO PROTECT ALL EXISTING OPERATIONS AND PROPERTY WITH WHICH WORK COMES IN CONTACT OR OVER WHICH MATERIALS, EQUIPMENT, DEBRIS, ETC. MAY BE TRANSPORTED, HOISTED, OR MOVED. ALL DAMAGE RESULTING FROM THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER.

B. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR THE SERVICE INTENDED. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMEN IN A MANNER DEMONSTRATING NEAT WORKMANSHIP.

C. THE SCOPE OF WORK SHALL INCLUDE ALL MATERIAL, TOOLS, SERVICE, AND COSTS NECESSARY TO COMPLETELY INSTALL ALL MECHANICAL WORK. IT IS THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS THAT THE MECHANICAL SYSTEM BE INSTALLED COMPLETE INCLUDING ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLY INCIDENTAL, OR CUSTOMARILY INCLUDED EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFICALLY MENTIONED OR SHOWN.

D. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND ALL APPLICABLE CODES AND STANDARDS WHICH INCLUDE ALL ORDINANCES, AMENDMENTS, AND UTILITY COMPANY REGULATIONS. WHERE CONFLICTS EXIST AMONG APPLICABLE CODES AND STANDARDS, THE ARCHITECT SHALL BE NOTIFIED IN WRITING. SHOULD WORK BE PERFORMED THAT DOES NOT COMPLY WITH APPLICABLE CODES AND STANDARDS, THOSE DEFECTS SHALL BE CORRECTED WITH NO CHANGE IN CONTRACT AMOUNT.

E. THE CONTRACT DOCUMENTS WERE PREPARED FROM INFORMATION MADE AVAILABLE; HOWEVER, CONDITIONS SURROUNDING THE INSTALLATION OF THE WORK SHALL BE CAREFULLY INVESTIGATED PRIOR TO SUBMITTING A BID, FABRICATION OF DUCTS OR PIPING, OR PROCEEDING WITH INSTALLATION. CONFLICTS DUE TO EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR REVIEW AND RESOLUTION. UPON COMMENCEMENT OF CONSTRUCTION, IT SHALL BE UNDERSTOOD THAT THE CONDITIONS OF THE PREMISES HAVE BEEN ACCEPTED.

F. ALL MECHANICAL EQUIPMENT SHALL BE AS SCHEDULED OR AS APPROVED EQUAL BY THE ENGINEER.

G. ALL BIDDERS SHALL BE FAMILIAR WITH EXISTING CONDITIONS ON THE PREMISES AND BE PREPARED TO COORDINATE WITH ALL EXISTING CONDITIONS TO BE ENCOUNTERED BY ALL TRADES. ANY EXCEPTIONS SHALL BE NOTED IN WRITING AND SHALL BE INCLUDED IN THE BID.

H. COORDINATE EQUIPMENT SUBSTITUTIONS FOR THE SCHEDULED OR SPECIFIED ITEM WITH ALL OTHER TRADES. COMPENSATION TO OTHER TRADES DUE TO CHANGES IN RATED VOLTAGE, PHASE, AMPERAGE, PHYSICAL SIZE, WEIGHT, ARRANGEMENT, SHAPE, COLOR, OR OTHER CHARACTERISTIC AND THE RELATED EFFECTS ARISING FROM THE SUBSTITUTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR MAKING THE CHANGE.

I. THE DRAWINGS ARE DIAGRAMMATIC, BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. PIPING ARRANGEMENTS, MECHANICAL COMPONENT LOCATIONS, AND THE LIKE HAVE BEEN DESIGNED FOR ECONOMY CONSISTENT WITH GOOD PRACTICE AND OTHER CONSIDERATIONS. MAJOR CHANGES TO THE SYSTEMS ARRANGED AS SHOWN ON THE DRAWINGS MUST BE APPROVED IN WRITING AND ALL SUCH CHANGES SHALL BE INCORPORATED INTO THE 'AS-BUILT' DRAWINGS.

J. MAINTAIN MINIMUM CLEARANCES ABOVE FINISHED CEILINGS TO ALLOW INSTALLATION OF MECHANICAL EQUIPMENT, DUCTS, CONDUIT, PLUMBING PIPING, FIRE SUPPRESSION PIPING, AND LIGHT FIXTURES.

230549 - BASIC MECHANICAL MATERIALS AND METHODS

A. MATERIALS AND/OR EQUIPMENT FAILING TO GIVE SATISFACTORY SERVICE DURING A ONE YEAR MATERIALS AND LABOR WARRANTY PERIOD SHALL BE REPAIRED OR REPLACED WITH NEW.

B. SUBMIT A PDF FILE OF PRODUCT DATA FOR ALL MECHANICAL ITEMS FOR APPROVAL.

C. UPON COMPLETION OF THE WORK, ALL EXPOSED PORTIONS OF THE MECHANICAL EQUIPMENT PROVIDED SHALL BE THOROUGHLY CLEANED. REMOVE ALL TRACES OF SOIL, LABELS, GRADE, OIL, AND OTHER FOREIGN MATERIAL USING ONLY THE TYPES OF CLEANERS RECOMMENDED BY THE MANUFACTURERS OF THE EQUIPMENT BEING CLEANED.

D. UPON COMPLETION, PROVIDE MANUFACTURER'S OPERATING AND MAINTENANCE MANUALS FOR ALL EQUIPMENT INSTALLED AS PART OF THE WORK TO THE OWNER.

E. PROVIDE TRAINING TO OPERATING PERSONNEL FOR ALL SYSTEMS AND EQUIPMENT INSTALLED AS PART OF THE WORK.

F. UPON THE COMPLETION OF THE WORK, PROVIDE 'AS-BUILT' RECORD DRAWINGS TO THE OWNER. DRAWINGS SHALL BE PROVIDED IN ELECTRONIC FORMAT COMPATIBLE WITH AUTOCAD RELEASE 2022.

G. ALL EQUIPMENT AND PIPING SHALL BE PROPERLY SUPPORTED WITHIN THE BUILDING AND ADEQUATE PROVISIONS SHALL BE MADE FOR SLOPE AND ANCHORAGE. HANGERS, RODS, CLAMPS, AND INSERTS SHALL BE APPROVED BY UL FOR THE SERVICE INTENDED.

H. ALL MAJOR EQUIPMENT SHALL BE PROVIDED WITH ENGRAVED NAMEPLATES ATTACHED WITH SCREWS. LABELS SHALL USE NOMENCLATURE FROM EQUIPMENT SCHEDULES.

I. PIPING SYSTEMS SHALL BE IDENTIFIED WITH SNAP-ON PIPE MARKERS LOCATED EVERY TEN FEET. MARKERS SHALL DESIGNATE PIPE CONTENT AND FLOW DIRECTION.

230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

A. ALL MECHANICAL SYSTEMS SHALL BE TESTED AND BALANCED USING AABC OR NEBB PROCEDURES. FINAL REPORT SHALL BE SUBMITTED TO THE OWNER.

230710 - DUCT INSULATION

A. INTERIOR METAL DUCTS SHALL BE INSULATED EXTERNALLY WITH TYPE IV DUCT WRAP, TWO INCH THICKNESS (ONE AND ONE-HALF INCHES IN PLACE), OR LINED WITH ONE-HALF INCH THICKNESS DUCT LINER. ALL DUCT DIMENSIONS INDICATE FREE AREA REQUIRED. INCREASE DUCT DIMENSIONS AS REQUIRED IF LINER IS USED.

B. INSTALLED R-VALUE SHALL BE EQUAL TO 5.0.

C. ALL INSULATION AND JACKET MATERIALS EXPOSED TO RETURN AIR SHALL BE SPECIFICALLY APPROVED FOR THAT APPLICATION.

230923 - INSTRUMENTATION AND CONTROLS FOR HVAC

A. PROVIDE ALL CONTROLS REQUIRED TO COMPLETELY ACCOMPLISH THE IMPLIED OR INTENDED FUNCTIONS AND OPERATION OF THE SYSTEMS AND EQUIPMENT INSTALLED.

B. CONTROLS SHALL COMPATIBLE WITH AND CONNECT TO THE EXISTING BUILDING CONTROL SYSTEM. IF PNEUMATIC CONTROLS ARE USED, THE QUALITY AND CAPACITY OF THE EXISTING CONTROL AIR SYSTEM SHALL BE VERIFIED AND COORDINATED WITH THE NEW CONTROL DEVICES.

C. ELECTRIC AND/OR ELECTRONIC CONTROLS SHALL BE INSTALLED COMPLETE WITH REQUIRED POWER CIRCUITS, POWER SUPPLIES, WIRING, CONDUIT, ACCESSORIES, AND ENCLOSURES.

D. PROVIDE DDC CONTROLS.

E. LOCATIONS OF ALL THERMOSTATS/SENSORS SHALL BE COORDINATED WITH FURNITURE LOCATIONS AND FINISHES. THERMOSTATS/SENSORS SHALL NOT BE INSTALLED BEHIND SYSTEM FURNITURE PANELS, IN MILLWORK, OR ABOVE DIMMERS.

F. THERMOSTATS AND SENSORS SHALL BE INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ADA

G. EACH SYSTEM SHALL HAVE ONE SOLID-STATE PROGRAMMABLE THERMOSTAT WHICH SHALL HAVE THE CAPABILITY TO SET BACK OR SHUT DOWN THE SYSTEM BASED ON DAY OF THE WEEK AND TIME OF DAY, AND PROVIDE A READILY ACCESSIBLE MANUAL OVERRIDE THAT WILL RETURN TO PRESET OR SHUTDOWN SCHEDULE WITHOUT REPROGRAMMING.

232300 - REFRIGERANT PIPING

A. REFRIGERANT PIPING SHALL BE DRAWN COPPER TUBE: ASTM B 280, TYPE ACR. WROUGHT- COPPER FITTINGS: ASME B16.22. WROUGHT-COPPER UNIONS: B16.22.

233110 - METAL DUCTS

A. PROVIDE SHOP DRAWINGS FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE:

1. FABRICATION, ASSEMBLY, AND INSTALLATION, INCLUDING PLANS, ELEVATIONS, SECTIONS, COMPONENTS, AND ATTACHMENTS TO OTHER WORK.
2. DUCT LAYOUT INDICATING SIZES, CONFIGURATION, LINER MATERIAL, AND STATIC-PRESSURE CLASSES.
3. ELEVATION OF BOTTOM OF DUCTS.
4. FITTINGS.
5. PENETRATIONS THROUGH FIRE-RATED AND OTHER PARTITIONS.
6. LOCATIONS FOR DUCT ACCESSORIES, INCLUDING DAMPERS, TURNING VANES, AND ACCESS DOORS AND PANELS.

B. DUCTS SHALL BE MINIMUM 24 GAUGE SHEETMETAL CONSTRUCTED AND SEALED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS FOR THE PRESSURE CLASS OF THE SYSTEM SERVED.

C. UNLESS NOTED OTHERWISE, ALL DUCT DIMENSIONS INDICATE THE FREE AREA REQUIRED. WHERE INTERNAL DUCT LINER IS USED, INCREASE THE DUCT DIMENSIONS ACCORDINGLY.

D. ALL SUPPLY AND RETURN DUCTS WITHIN TWENTY FEET OF AIR CONDITIONING UNITS AND WITHIN EIGHT FEET OF TERMINAL BOXES SHALL BE LINED WITH ONE INCH THICKNESS, ONE AND ONE-HALF POUND DENSITY ACOUSTIC DUCT LINER APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

E. PROVIDE PAINT GRIP DUCT WHERE EXPOSED.

233310 - AIR DUCT ACCESSORIES

A. PROVIDE FLEXIBLE DUCT CONNECTIONS AT EQUIPMENT.

B. FLEXIBLE DUCTS MAY BE USED FOR INDIVIDUAL RUNOUTS; HOWEVER, RUNOUTS SHALL NOT EXCEED 6 FEET IN TOTAL LENGTH AND BE PROPERLY SUPPORTED TO PREVENT RESTRICTIONS TO AIR FLOW. ALL CHANGES IN DIRECTION GREATER THAN FORTY-FIVE DEGREES SHALL BE MADE WITH RIGID DUCT FITTINGS.

C. FLEXIBLE DUCTS SHALL HAVE ONE INCH THICKNESS EXTERNAL INSULATION WITH FOIL JACKET AND VAPOR BARRIER. FLEXIBLE DUCTS SHALL MEET CLASS I, UL-181 AND 25/50 FIRE RATING REQUIREMENTS.

D. VERIFY ADEQUATE PATHS ARE PROVIDED FOR RETURN AIR. LINED RETURN AIR TRANSFER BOOTS SHALL BE PROVIDED IN ALL FLOOR TO STRUCTURE PARTITIONS TREATED FOR SOUND. TRANSFER BOOTS SHALL BE SIZED FOR A MAXIMUM VELOCITY OF 500 FPM.

E. ALL FIRE DAMPERS SHALL BE TYPE B WITH THE CURTAIN OUT OF THE AIRSTREAM.

F. PROVIDE ACCESS DOORS AT EACH DUCT MOUNTED FIRE DAMPER.

G. PROVIDE MANUAL VOLUME CONTROL DAMPER IN THE DUCT RUNOUT TO EACH AIR SUPPLY DEVICE.

H. DIFFUSERS, REGISTERS, AND GRILLES SHALL BE BUILDING STANDARD UNLESS NOTED OTHERWISE AND SHALL BE PROVIDED WITH MOUNTING FRAMES COMPATIBLE WITH THE CEILING OR WALL TYPE IN WHICH THEY ARE TO BE INSTALLED.

233450 - HVAC FANS

A. ALL FANS SHALL BE AMCA CERTIFIED.

238126 - SPLIT-SYSTEM AIR-CONDITIONERS

A. PRODUCT OPTIONS: DRAWINGS INDICATE SIZE, PROFILES, AND DIMENSIONAL REQUIREMENTS OF SPLIT-SYSTEM UNITS AND ARE BASED ON THE SPECIFIC SYSTEM INDICATED. OTHER MANUFACTURERS' SYSTEMS WITH EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED.

B. COORDINATE SIZE, LOCATION, AND CONNECTION DETAILS WITH EQUIPMENT SUPPORTS, AND WALL PENETRATIONS.

C. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

1. FILTERS: ONE SET OF FILTERS FOR EACH UNIT.
2. FAN BELTS: ONE SET OF BELTS FOR EACH UNIT.

D. REFRIGERANT COIL: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS, COMPLYING WITH ARI 210/240, AND WITH THERMAL-EXPANSION VALVE.

E. INSTALL UNITS LEVEL AND PLUMB.

F. INSTALL EVAPORATOR-FAN COMPONENTS USING MANUFACTURER'S STANDARD MOUNTING DEVICES SECURELY FASTENED TO BUILDING STRUCTURE.

G. INSTALL PIPING ADJACENT TO UNIT TO ALLOW SERVICE AND MAINTENANCE. UNLESS OTHERWISE INDICATED, CONNECT PIPING WITH UNIONS AND SHUTOFF VALVES TO ALLOW UNITS TO BE DISCONNECTED WITHOUT DRAINING PIPING.

H. AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS.

1. CASING: STEEL, FINISHED WITH BAKED ENAMEL, WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. PROVIDE BRASS SERVICE VALVES, FITTINGS, AND GAGE PORTS ON EXTERIOR OF CASING.
2. RELAY, AND CONTACTOR. REFRIGERANT COIL: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS, COMPLYING WITH ARI 210/240, AND WITH LIQUID SUBCOOLER.
3. FAN: PROPELLER TYPE, DIRECTLY CONNECTED TO MOTOR.
4. MOTOR: PERMANENTLY LUBRICATED, WITH INTEGRAL THERMAL-OVERLOAD PROTECTION.

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

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HVAC - ON SHEET SPECIFICATIONS

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M00.0B

SPLIT SYSTEM UNIT SCHEDULE

DESIGNATION	AC-1	AC-2		
SERVES	OFFICE	ELEC/IT		
MANUFACTURER	MITSUBISHI	TRANE		
MODEL	SLA-KF09	PKA-A24KA8		
TYPE	CEILING CASSETTE	WALL MOUNTED		
NOM TONS	0.75	2		
DIMENSIONS (wxdxh (in))	22X22X12	46x12x15		
WEIGHT (LBS)	75	46		
COOLING				
E.A.D.B (F)	80	80		
E.A.W.B. (F)	67	67		
OUTSIDE AIR TEMP (F)	95/75	95/75		
TOTAL CAPACITY (MBH)	9	24		
SENSIBLE CAPACITY (MBH)	7.2	19.2		
COOLING SEER	21	21.3/12.2		
HEATING		NA		
E.A.D.B (F)	60	---		
SENSIBLE CAPACITY (MBH)	6.9	---		
OAT (F)	17	---		
HSPF / COP	12.2	---		
AUXILLIARY ELECTRIC HEAT (KW)	N/A	---		
EVAPORATOR FAN				
TOTAL FLOW (CFM)	300	800		
OUTSIDE AIR (CFM)	15	N/A		
EXTERNAL STATIC	FREE DISCH.	FREE DISCH.		
CONDENSING UNIT	CU-1	CU-2		
MODEL	SUZ-KA09	PUY-A24NHA7		
DIMENSIONS	38X14X38	38X14X38		
WEIGHT (LBS)	151	151		
ELECTRICAL	208-1-60	208-1-60		
MCA	9	14		
MOCP	15	25		
MAX REFRIG LINE LENGTH (FT)	65	225		
REMARKS	1 THRU 8	1 THRU 8		

TYPE:

UNITS TO BE SINGLE ZONE SPLIT SYSTEM UNIT WITH INVERTER DRIVEN COMPRESSOR WITH WALL MOUNTED, DUCTED OR CEILING CASSETTE DESIGNATION AS INDICATED

REMARKS:

1. 5 YEAR COMPRESSOR WARRANTY
2. WALL MOUNTED WIRED CONTROLLER/THERMOSTAT (BATTERY POWERED THERMOSTAT OR REMOTE IS UNACCEPTABLE)
3. IF INDOOR UNIT DOES NOT HAVE INTEGRAL CONDENSATE PUMP, CONTRACTOR TO PROVIDE SEPARATE CONDENSATE PUMP TO DISPOSE OF CONDENSATE. CONTRACTOR TO PROVIDE ANY ADDITIONAL POWER CONNECTIONS AT NO ADDITIONAL COST TO OWNER. COORDINATE WITH ELECTRICAL CONTRACTOR AS REQUIRED.
4. 0 DEGREE LOW AMBIENT COOLING. PROVIDE & INSTALL ALL NECESSARY HOODS & WIND BAFFLES AS REQUIRED.
5. CONTRACTOR SHALL REVIEW REFRIGERANT PIPE LENGTHS & SIZING PRIOR TO SUBMITTING A BID
6. CONDENSATE OVERFLOW SWITCH, HARDWIRED TO SHUT DOWN UNIT & ALARM BAS.
7. DESIGN INCLUDES SINGLE POINT POWER CONNECTION AT CONDENSING UNIT THAT POWERS INDOOR UNIT. ANY SUBMITTAL DEVIATING FROM THIS METHOD OF SERVICE TO BE EXPRESSLY INDICATED ON SUBMITTAL.
8. HAIL GUARD

ELECTRIC HEATER SCHEDULE

TAG:	EH-1	EH-1,2,3,4-10KW	EH-6,7,8-12.5KW	EH-5-15KW
MANUFACTURER	BERKO	BERKO	BERKO	BERKO
MODEL	QFF1500	HUHAA1020	HUHA1220	HUHAA1520
TYPE	B	A	A	A
SERVES				
HEAT CAPACITY (KW)	1.5	10	12.5	15
ELECTRICAL	120-1	208-3	208-3	208-3
UNIT DIMENSIONS (LxWxH)	15.5X4X19.5	14X19X22	14X27X30	14X27X30
MOUNTING	CEILING	WALL/STRUCTURE	WALL/STRUCTURE	WALL/STRUCTURE
DISCONNECT	YES	YES	YES	YES
REMARKS	1 THRU 3	1 THRU 3	1 THRU 3	1 THRU 3

REMARKS

A. FAN-FORCED HORIZONTAL WALL HEATER

B. CEILING HEATER

1. DISCONNECT SWITCH
2. PROVIDE LOW VOLTAGE REMOTE MOUNTED THERMOSTAT
3. BRACKET FOR HANGING FROM STRUCTURE

Drakes Creek Park
Parks Maintenance Complex

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DAVID BRYAN HALL
REGISTERED ENGINEER
AGRICULTURE
247062
06-27-2025
STATE OF TENNESSEE

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OUTSIDE AIR UNIT (DOAS-1) SCHEDULE

Design Conditions

Elevation (ft)	Summer DB (F)	Summer WB (F)	Winter DB (F)	Supply (CFM)	Outdoor Air (CFM)	Exhaust Air (CFM)
604	95.0	78.0	10.0	1,120	1,120	1,120

Unit Specifications

Qty	Weight (lb)	Cooling Type	Primary Heating Type	Secondary Heating Type	Unit Installation	Unit ETL Listing
1	3,348 (+/- 5%)	Air-Source Heat Pump	Air-Source Heat Pump	Electric	Outdoor	UL\cUL 1995/ 60335-2-40

Configuration

Outdoor Air		Exhaust Air	
Intake	Discharge	Intake	Discharge
End	Side	Side	Side

ASHRAE 90.1 Compliance

	ASHRAE 90.1 Min. Efficiency	Calculated Efficiency	Compliance
ISMRE2 (ASHRAE 90.1-2022)	5	8.5	✓
ISCOP2 (ASHRAE 90.1-2022)	3.2	3.91	✓
Enthalpy Recovery Ratio (%)	50	73.71	✓

Energy Recovery Performance

Design Condition	Temperature (F)							
	Outdoor Air		Supply Air		Return Air		Exhaust Air	
	DB	WB	DB	WB	DB	WB/RH	DB	WB
Summer	95.0	78.0	79.8	67.2	75.0	62.5/50	90.2	74.4
Winter	10.0	7.4	55.5	45.4	72.0	55.7/35	24.6	22.7

Cooling Specifications

Type	Total Capacity (MBH)	Sensible Capacity (MBH)	Coil (DB/WB)		Reheat	
			EAT (F)	LAT (F)	Capacity...	LAT (F)
Air-Source Heat Pump	62.1	37.1	79.8 / 67.2	47.6 / 47.4	45.1	86.1

Primary Heat Specifications

Type	Total Capacity (MBH)	Dry Bulb Temperatures		
		EAT (F)	LAT (F)	Ambient Outdoor Air (F)
Air-Source Heat Pump	43.9	55.5	92.9	10.0

Secondary Heat Specifications

Type	Capacity (kW)	Full Load Amps (FLA)	Capacity Control	Performance (w/ASHP)		Performance (w/o ASHP)	
				EAT (F)	LAT (F)	EAT (F)	LAT (F)
Electric	12.3	34.1	Modulating (SCR)	92.9	127.6	55.5	90.2

Motor Specifications

Motor	Qty	Operating Power (hp)	Size (hp)	Enclosure	Efficiency	RPM
Supply	1	0.4	1	ODP	NEMA Premium	1150
Exhaust	1	0.49	1	ODP	NEMA Premium	1150

Electrical Specifications

Power Supply	Rating (V/C/P)	MCA (A)	MOP (A)	FLA (A)	Fan Power (W/CFM)*
Unit	208/60/3	79.8	90.0	66.0	0.594

ACCESSORIES:

1. UNIT SHALL BE SUITABLE FOR MOUNTING ON CONCRETE PAD ON GRADE WITH HORIZONTAL DUCT CONN. PLENUM CURB NOT ACC.
2. HEAT PUMP WITH BACKUP SCR HEAT
3. MIN 5-YEAR COMPRESSOR WARRANTY
4. MODULATING HOT GAS REHEAT FOR DEHUMIDIFICATION
5. ENERGY RECOVERY WHEEL
6. MERV 8 FILTERS
7. FACTORY PROVIDED CONTROLS, MAKEUP AIR WITH SPACE TEMPERATURE CONTROL. PROVIDE INTERNET BASED SOFTWARE TO PROGRAM AND SCHEDULE UNIT.

EXHAUST FAN SCHEDULE

TAG	MODEL	DRIVE TYPE	VOLUME (CFM)	TOTAL EXTERNAL SP	FAN SPEED (RPM)	OPERATING POWER (HP)	FEI	MOTOR SIZE (HP)	V/C/P	FEP INPUT POWER...	SONES (INLET)	NOTES
EF-1	SP-B110	Direct	75	0.500	805	0.03	-		115/60/1	-	2.4	1
EF-2	SP-B110	Direct	75	0.500	805	0.03	-		115/60/1	-	2.4	1
EF-3	SP-B110	Direct	75	0.500	805	0.03	-		115/60/1	-	2.4	1
VF-1	BAER-24-02-0315	Belt	3,000	0.500	1,236	0.75	-	3/4	115/60/1	-	26	2
VF-2	BAER-24-02-0315	Belt	3,000	0.500	1,236	0.75	-	3/4	115/60/1	-	26	2
VF-3	BAER-24-02-0315	Belt	2,000	0.500	1,236	0.75	-	3/4	115/60/1	-	26	2
VF-4	BAER-24-02-0315	Belt	3,000	0.500	1,236	0.75	-	3/4	115/60/1	-	26	2
VF-5	BAER-24-02-0315	Belt	3,000	0.500	1,236	0.75	-	3/4	115/60/1	-	26	2

NOTES/REMARKS:

1. FAN SPEED CONTROLLER, ALUMINUM CEILING GRILLE (PLASTIC NOT ACCEPTABLE), ALUMINIM WALL CAP WITH BACKDRAFT DAMPER
2. WALL HOUSING, OSA INLET GUARD, MOTORIZED BACKDRAFT DAMPER. ADDITIONALLY PROVIDE CONTROLS FOR CO/NOX MONITORING, AND INTERLOCK TO INTAKE LOUVER.

PACKAGED HEAT PUMP SCHEDULE

Mark	HP-1	HP-2
Manufacturer (Basis of Design)	Trane	Trane
Nominal Tonnage	3-ton	7.5 ton
Airflow	1200 cfm	2550 cfm
Total Static Pressure	0.989 in H2O	0.971 in H2O
Height	46.875 in	50.875 in
Width	44.250 in	53.250 in
Length	69.875 in	88.125 in
MIN. OUTSIDE AIR	150 CFM	350 CFM
Refrigerant	R-454B Refrigerant	R-454B Refrigerant
EER @ AHRI	12.00 Number	11.00 Number
SEER @ AHRI	14.30 Number	14.10 Number
EER2 @ AHRI	11.00 Number	
SEER2 @ AHRI	13.40 Number	
Hinged Service Access/Filters	Standard Panels with 2-in MERV 8 Filters	Standard Panels with 2-in MERV 8 Filters
Fresh Air Selection	Economizer, Comparative Enthalpy with BR	Economizer, Comparative Enthalpy with BR
Refrigeration Systems Option	Modulating Hot Gas Reheat (HGRH)	Modulating Hot Gas Reheat (HGRH)
Unit Electrical		
Voltage/phase/hertz	208-230/60/3	208-230/60/3
MCA	68.00 A	93.00 A
MOP	70.00 A	100.00 A
Condenser Fan FLA	4.30 A	6.30 A
Evaporator Fan FLA	5.70 A	8.80 A
Electric Heat FLA	36.30 A	36.30 A
Compressor 1 RLA	12.50 A	16.50 A
Compressor 2 RLA	0.00 A	9.90 A
Compressor Power	2.41 kW	5.96 kW
System Power	3.47 kW	8.35 kW
Cooling Section		
Entering Dry Bulb	80.00 F	80.00 F
Entering Wet Bulb	67.00 F	67.00 F
Ambient Temp	95.00 F	95.00 F
Leaving Coil Dry Bulb	56.40 F	57.34 F
Leaving Coil Wet Bulb	56.31 F	57.12 F
Leaving Unit Dry Bulb	59.02 F	59.20 F
Leaving Unit Wet Bulb	57.34 F	57.85 F
Saturated Discharge Temperature	117.44 F	119.13 F
Saturated Suction Temperature	53.30 F	52.66 F
Capacity		
Gross Total	37.86 MBh	89.56 MBh
Gross Latent	8.86 MBh	18.27 MBh
Gross Sensible	29.00 MBh	71.29 MBh
Net Total	36.69 MBh	86.91 MBh
Net Sensible	27.83 MBh	68.64 MBh
Net Sensible Heat Ratio	75.85 %	79%
Fan Motor Heat	0.78 MBh	1.46 MBh
Refrig Charge-Circuit 1	6.6 lb	17.0 lb
Reheat Section		
Hot Gas Reheat	Modulating Hot Gas Reheat (HGRH)	Modulating Hot Gas Reheat (HGRH)
Entering Dry Bulb (in HRGH)	73.00 F	73.00 F
Entering Wet Bulb (in HRGH)	64.00 F	64.00 F
Evap Coil LAT DB (HGRH)	55.52 F	56.49 F
Evap Coil LAT WB (HGRH)	55.32 F	56.42 F
Ambient DB (in HGRH)	70.00 F	70.00 F
Capacity		
Dehumidification/Hot Gas Reheat	20.45 MBh	46.45 MBh
Reheat Mode Leaving Unit Temp	71.83 F	72.21 F
Leaving Unit Dew Point in HGRH	55.39 F	56.40 F
Reheat Coil Temperature Rise	15.25 F	13.95 F
Reheat Mode Moisture Removal	0.87 gph	1.62 gph
Reheat Coil LAT (HGRH)	70.77 F	70.44 F
Reheat Coil LWB (HGRH)	61.20 F	56.42 F
Heating Section		
Heating	18 kW Electric Heat	18 kW Electric Heat
Output Heating Capacity	61.47 MBh	61.47 MBh
Heating EAT	70.00 F	70.00 F
Heating LAT	116.92 F	88.69 F
Heating Temp Rise	46.92 F	18.69 F
Heat Pump		
Heat pump Heating Capacity	14.32 MBh	42.49 MBh
Heat pump EAT	70.00 F	70.00 F
Heat pump LAT	82.94 F	85.25 F
Heat pump heating ambient temperature	10.00 F	10.00 F
Heat pump heating temperature rise	12.94 F	15.25 F
Heat pump heating ambient relative humid	70.00 %	0.7
AHRI COP @ 47 F	3.50 Number	3.40 Number
AHRI COP @ 17 F	2.04 Number	2.25 Number
Fan Section		
Indoor Fan Data		
Airflow Application	Horizontal	Horizontal
Design ESP	0.750 in H2O	0.750 in H2O
Component SP	0.219 in H2O	0.191 in H2O
Heat SP	0.020 in H2O	0.030 in H2O
Total SP	0.989 in H2O	0.971 in H2O
Indoor Fan Drive Type	Direct	Variable Direct
Indoor Fan Quantity	1.00 Number	1.00 Number
Indoor Fan Type	FC Centrifugal	BC Plenum
Indoor Fan Performance		
Airflow	1200 cfm	3000 cfm
Supply Motor Horsepower	0.750 hp	3.000 hp
Total Supply Motor Operating Power	0.420 hp	0.952 hp
Indoor RPM	969 rpm	1135 rpm
Outdoor Fan Data		
Outdoor Fan Drive Type	Direct	Direct
Outdoor Fan Quantity	1	1
Outdoor Fan Type	Propeller	Propeller
Accessories		
1. 5- year compressor warranty		
2. Horizonal discharge suitable for mounting on concrete pad		
3. heat pump wth auxilliary electric heat		
4. Hot Gas Reheat		
5. Economizer with Barometric Relief.		
6.Hail Guard.		

Drakes Creek Park Parks Maintenance Complex

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Hendersonville, TN

Wold

WOLD ARCHITECTS AND ENGINEERS

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DAVID BRIAN PHILLIPS REGISTERED ENGINEER AGRICULTURE No. 106155 STATE OF TENNESSEE
06-30-2025

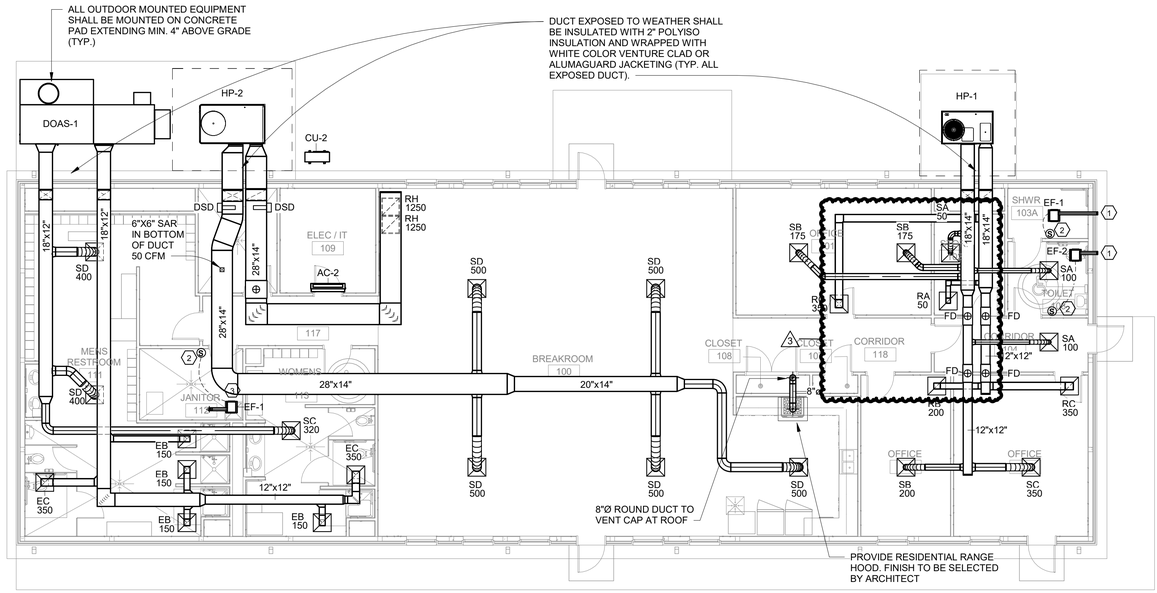
Revisions		
Description	Date	Num

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

HVAC - SCHEDULES

Scale: As indicated

M00.02



1 HVAC - FLOOR PLAN - OPERATIONS CENTER

1/8" = 1'-0"

0 6' 12'

NOTES ⬠ :

1. ROUTE 6" ROUND EXHAUST DUCT FROM CEILING MOUNTED EXHAUST FAN TO EXTERIOR ALUMNIMUM WALL CAP WITH BACKDRAFT DAMPER.
2. INTERLOCK FAN WITH LIGHT SWITCH.
3. ROUTE 6" ROUND EXHAUST DUCT FROM CEILING MOUNTED EXHAUST FAN TO GOOSENECK TERMINATION AT ROOF .

HVAC KEYED NOTES:

1. ROUTE 6" ROUND DUCT TO ALUMINUM WALL CAP AT EXTERIOR WALL WITH BIRDSCREEN AND BACKDRAFT DAMPER. PAINT WALL CAP TO MATCH BUILDING.

2. INTERLOCK FAN WITH LIGHT SWITCHRR

Drakes Creek Park Parks Maintenance Complex

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WOLD ARCHITECTS AND ENGINEERS

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DAVID BRIAN PEARCE — REGISTERED ENGINEER — AGRICULTURE — 26-20325 — STATE OF TENNESSEE

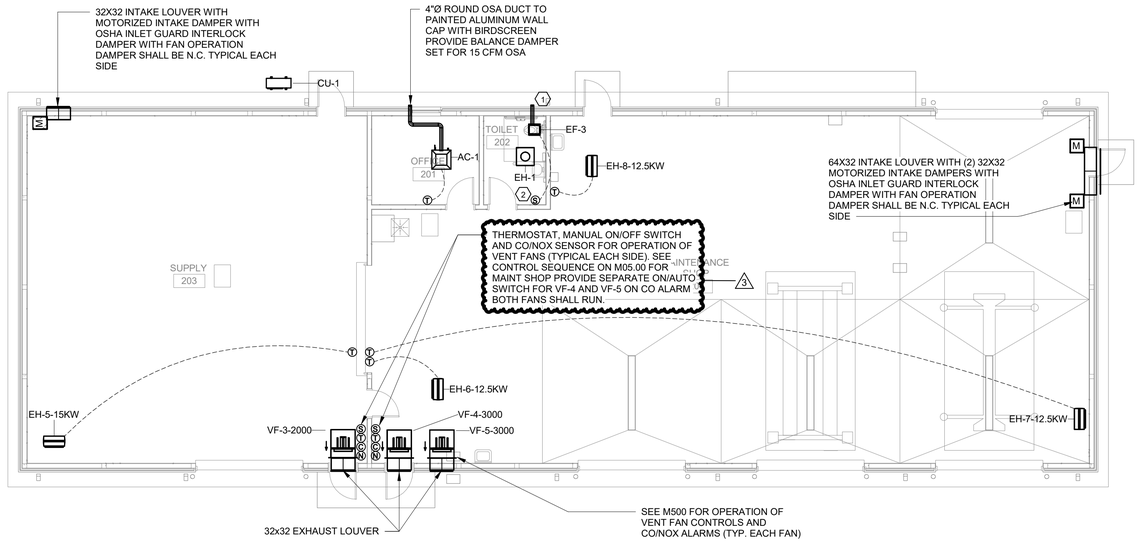
Revisions		
Description	Date	Num
Addendum 3	2025-09-26	3

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

HVAC - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

M01.01



1 HVAC - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING
1/8" = 1'-0"
0 6' 12'

NOTES ⬡ :
1. ROUTE 6" ROUND EXHAUST DUCT FROM CEILING MOUNTED EXHAUST FAN TO EXTERIOR ALUMNIMUM WALL CAP WITH BACKDRAFT DAMPER.
2. INTERLOCK FAN WITH LIGHT SWITCH.

HVAC KEYED NOTES:

1. ROUTE 6" ROUND DUCT TO ALUMINUM WALL CAP AT EXTERIOR WALL WITH BIRDSCREEN AND BACKDRAFT DAMPER. PAINT WALL CAP TO MATCH BUILDING.

2. INTERLOCK FAN WITH LIGHT SWITCHRR

Drakes Creek Park Parks Maintenance Complex

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DAVID B. RATAN PE
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AGRICULTURE
No. 106125
STATE OF TENNESSEE
09-26-2025

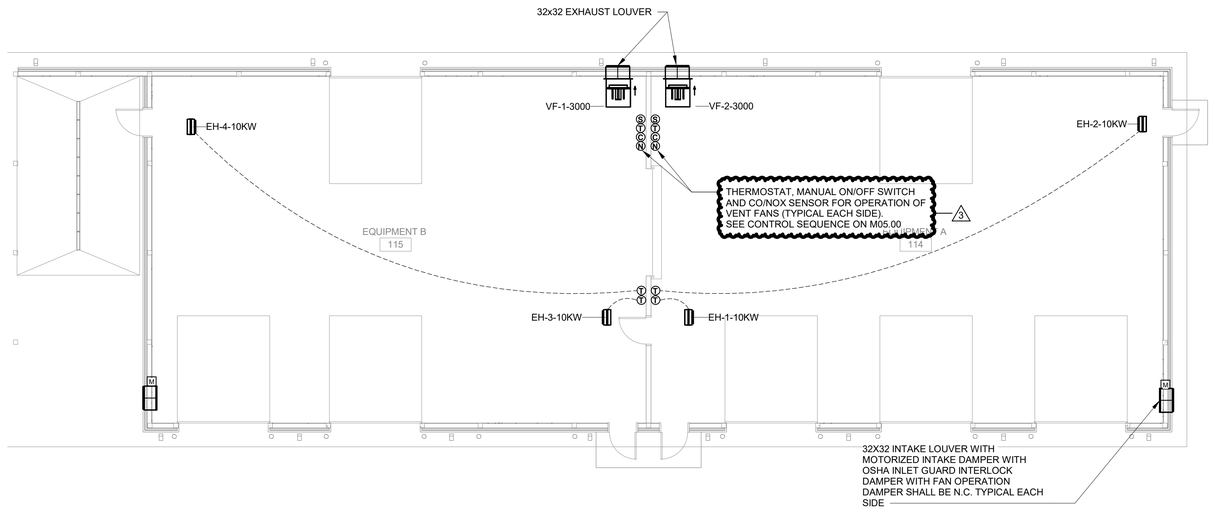
Revisions		
Description	Date	Num
Addendum 3	2025-09-26	3

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

HVAC - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

M01.02



1 HVAC - FLOOR PLAN - EQUIPMENT BUILDING
1/8" = 1'-0"
0 6' 12'

1 HVAC - FLOOR PLAN - EQUIPMENT BUILDING
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park Parks Maintenance Complex

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DAVID B. KLAN
REGISTERED ENGINEER
AGRICULTURE
106125
STATE OF TENNESSEE
09-26-2025

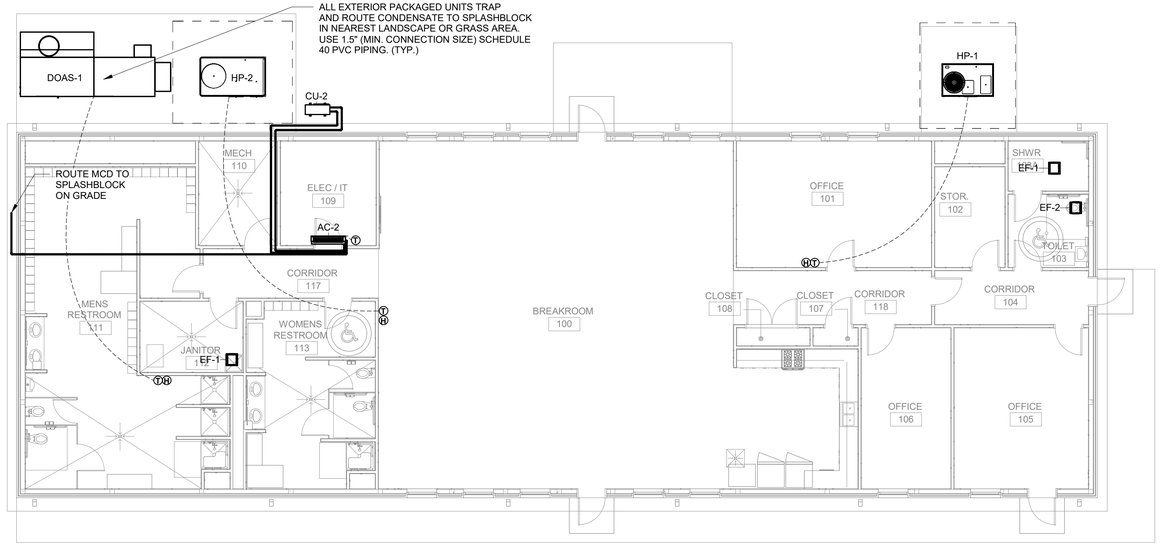
Revisions		
Description	Date	Num
Addendum 3	2025-09-26	3

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Drawn:
Check:

HVAC - FLOOR PLAN - EQUIPMENT BUILDING

Scale: As indicated

M01.03



1 **PIPING - FLOOR PLAN - OPERATIONS CENTER**
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park
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No. 108755
STATE OF TENNESSEE
06-27-2025

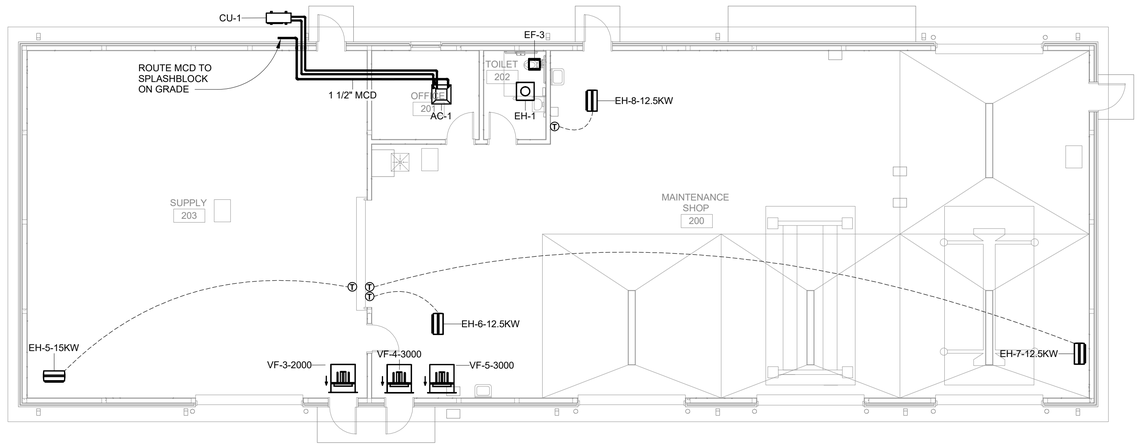
Revisions		
Description	Date	Num

Comm: 247062
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PIPING - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

M02.01



1 **PIPING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING**
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park
Parks Maintenance Complex

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DAVID BRIAN LEWIS
REGISTERED ENGINEER
AGRICULTURE
109825
09-30-2025
STATE OF TENNESSEE

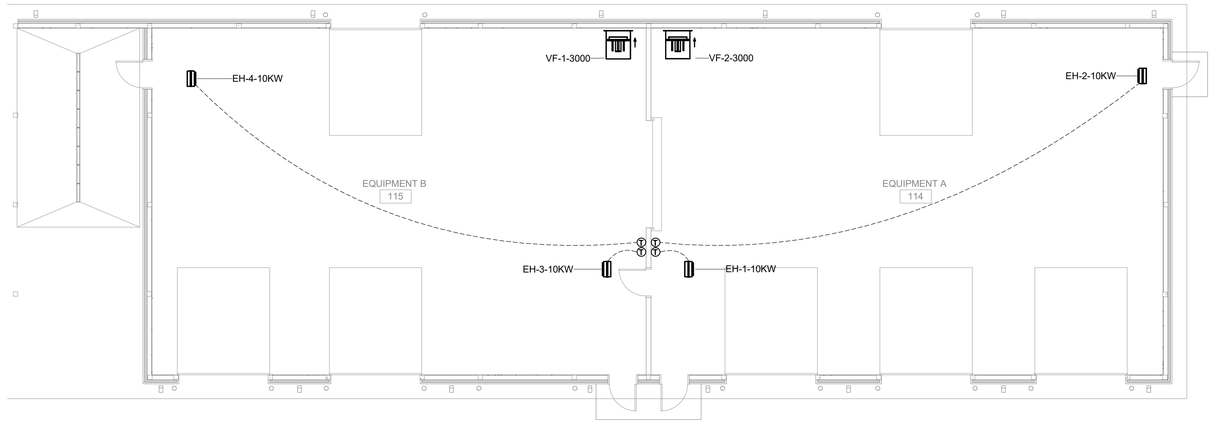
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Description	Date	Num

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Drawn:
Check:

PIPING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

M02.02



1 **PIPING - FLOOR PLAN - EQUIPMENT BUILDING**
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park Parks Maintenance Complex

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DAVID MATAN PATEL
REGISTERED ENGINEER
AGRICULTURE
106
STATE OF TENNESSEE
07-29-2025

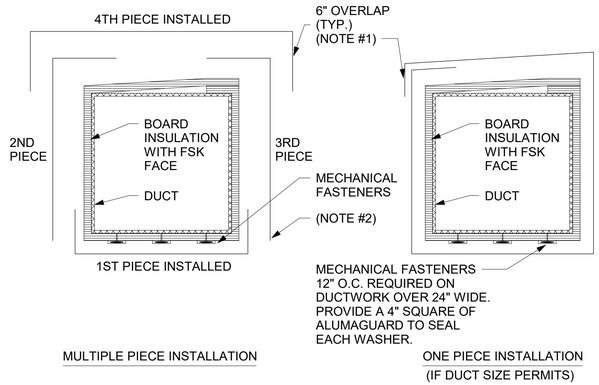
Revisions		
Description	Date	Num

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Date: 06/27/2025
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PIPING - FLOOR PLAN - EQUIPMENT BUILDING

Scale: As indicated

M02.03



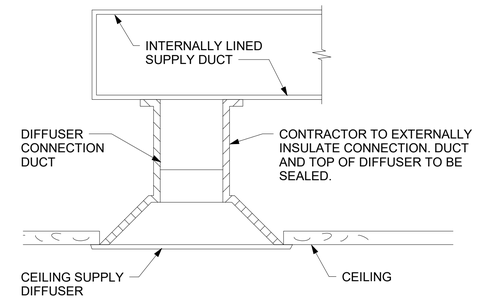
NOTE:

1. ALL OVERLAPS SHALL BE A MINIMUM OF 6".
2. SIDE PIECES SHOULD BE CUT FLUSH WITH THE BOTTOM CORNER AND SHOULD NOT BE FOLDED UNDER THE DUCT.
3. OVERLAP BOARD INSULATION ON TOP OF DUCT TO CREATE A SLOPED TOP TO PREVENT PONDING OF WATER. TAPE ALL INSULATION JOINTS BEFORE APPLYING WEATHER PROOFING MATERIAL.

INSULATED DUCT EXPOSED TO WEATHER

No Scale

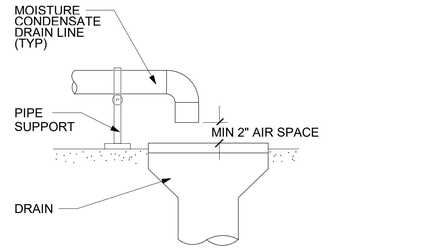
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INSULATING DETAIL OF SUPPLY DIFFUSER

No Scale

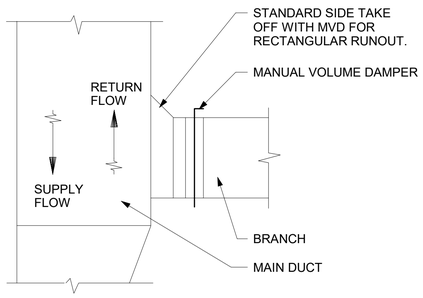
2



TERMINATION DETAIL OF MOISTURE CONDENSATE LINE

No Scale

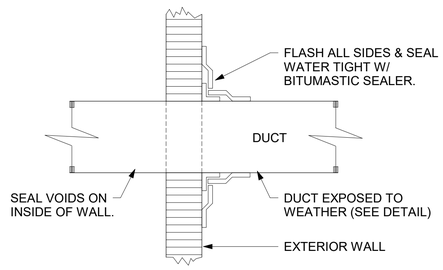
3



LOW PRESSURE RECTANGULAR BRANCH DUCT RUNOUT

No Scale

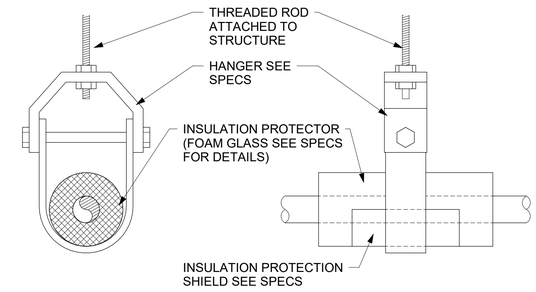
4



DUCT THRU WALL DETAIL

No Scale

5



PIPE HANGER DETAIL

No Scale

6

Drakes Creek Park
Parks Maintenance Complex

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DAVID WAYNE PEARCE
REGISTERED ENGINEER
AGRICULTURE
09-30-2025
STATE OF TENNESSEE

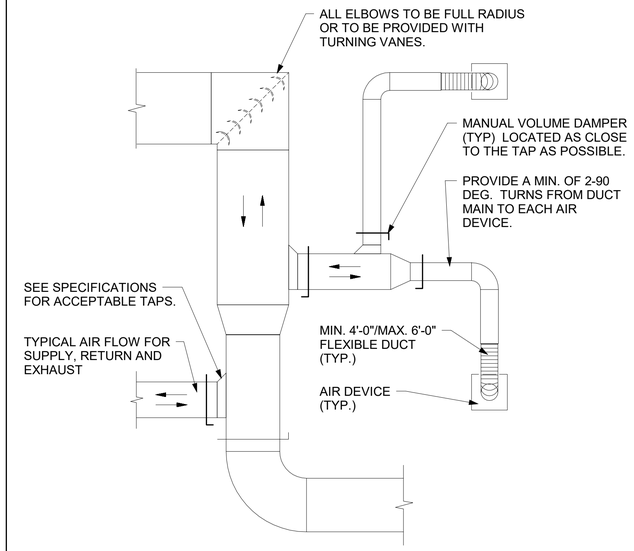
Revisions		
Description	Date	Num

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Date: 06/27/2025
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HVAC - DETAILS

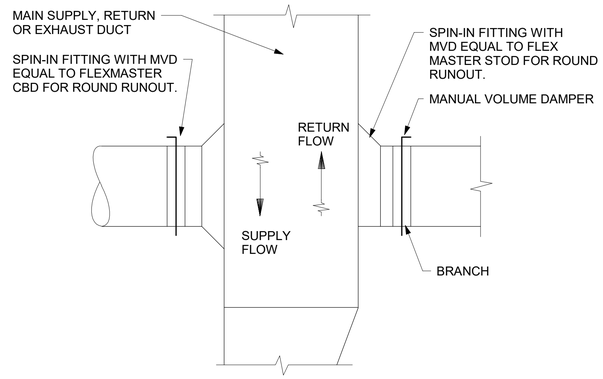
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M04.00



TYPICAL LOW PRESSURE SUPPLY, RETURN AND EXHAUST DUCT DETAIL — 1

No Scale



LOW PRESSURE ROUND BRANCH DUCT RUNOUT — 2

No Scale

Drakes Creek Park
Parks Maintenance Complex

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DAVID NATAN PEREZ
REGISTERED ENGINEER
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No. 106[illegible]
STATE OF TENNESSEE

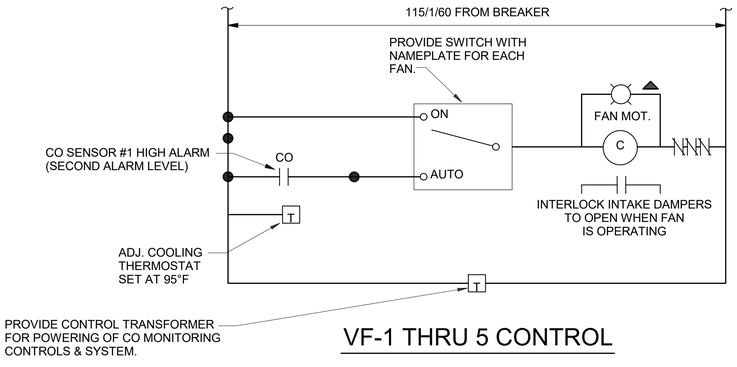
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VF-1 THRU 5 CONTROL

APPARATUS BAY VENTILATION SEQUENCE (TYPICAL EACH FAN)

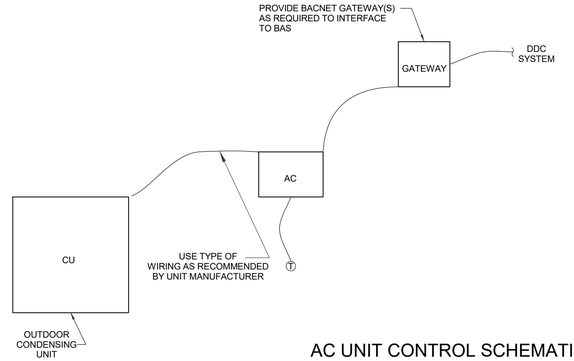
VENT FAN CONTROL

A. HIGH NOX/CO ALARM SEQUENCE: EACH GARAGE AREA SHALL HAVE CO/NOX SENSOR AND ALARM SYSTEM TO ACTIVATE FANS AND GENERATE ALARM AS FOLLOWS:
SYSTEM SHALL INITIATE DISTINCT AUDIBLE AND VISUAL ALARM SIGNALS IN THE REPAIR GARAGE, THE VENTILATION SYSTEM SHALL BE INTERLOCKED WITH GAS DETECTION. ALARM CONDITION SHALL DEACTIVATE ALL HEATING SYSTEMS LOCATED IN THE REPAIR GARAGE, ACTIVATE THE MECHANICAL VENTILATION SYSTEM WHEN ALARM IS ELIMINATED FANS SHALL RESUME NORMAL OPERATION.

B. WALL MOUNTED AUTO/ON SWITCH SHALL BE PROVIDED TO OVERIDE OPERATION OF EACH FAN.

C. VENT FAN SHALL ACTIVATE FOR SPACE COOLING / VENT WHEN SPACE TEMP RISES ABOVE 90°F (ADJ.) WALL MOUNTED ON/OFF SWITCH SHALL BE PROVIDED FOR OPERATION OF FAN.

D. WIRING AND CONTROLS SHOWN ON PLANS ARE DIAGRAMMATIC AND ONLY INTENDED TO SHOW DESIGN INTENT. MECHANICAL CONTRACTOR TO PROVIDE ALL WIRING POWER AND COMPONENTS TO ACCOMPLISH SEQUENCE OF CONTROLS SHOWN ON THE DRAWINGS.



AC UNIT CONTROL SCHEMATIC

DRAWING IS SCHEMATIC ONLY. COORDINATE ALL REQUIREMENTS WITH UNIT MANUFACTURER PRIOR TO BID. ADDITIONAL PAYMENT WILL NOT BE GRANTED FROM LACK OF COORDINATION. CONTRACTOR SHALL COORDINATE BETWEEN CONTROLS CONTRACTOR, AND EQUIPMENT VENDOR, ALL REQUIRED WIRING AND ACCESSORIES REQUIRED FOR OPERATIONAL SYSTEM.

AC Unit Control
A. Run Conditions - Automatic Operation: The unit and fan shall cycle to maintain

* A 75 F (adj.) cooling setpoint

B. Alarms shall be provided as follows: High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.). Low Zone Temp: If the zone Temperature is less than the heating setpoint by a user definable amount (adj.).

C. Run Conditions - Manual Operation: The occupant shall be able to override automatic operation through the zone sensor as follows:

Adjust the cooling setpoints

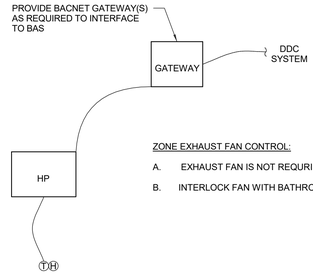
D. Zone Setpoint Adjust: The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor within user defined limits (unless locked out through BAS).

E: Fan: The fan shall run anytime the unit is commanded to run, unless shutdown on safeties. The fan speeds shall automatically be indexed from Low speed to High speed to maintain Space cooling setpoint

F. Cooling: The controller shall measure the zone temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, the stage shall have a user definable (adj.) minimum runtime.

G. Manufacturer Fault Code:
Provide programming and display to indicate manufacturer provided fault code for all available faults at owners work station. For Example: "Error Code 106" Outdoor fan motor current high, check that fans rotate freely, and are connected correctly.

AC-1 THRU 3	HARDWARE POINTS				SOFTWARE POINTS					
POINT NAME	AI	AO	BI	BO	AV	BV	SCHED.	TREND	ALARM	SHOW ON GRAPHIC
ZONE TEMP	X							X		X
ZONE SETPOINT ADJUST	X									X
ZONE OVERRIDE			X					X		X
FAN SPEED				X				X		X
SCHEDULE							X			
HEATING SETPOINT								X		X
COOLING SETPOINT								X		
HIGH ZONE TEMP									X	
LOW ZONE TEMP									X	
MANUFACTURERS FAULT CODE					X				X	X



ZONE EXHAUST FAN CONTROL:

A. EXHAUST FAN IS NOT REQURIED TO BE CONNECTED TO THE BAS.

B. INTERLOCK FAN WITH BATHROOM OR JANITOR CLOSET LIGHT SWTICH

HP Unit Control
A. Run Conditions - Automatic Operation: The unit and fan shall cycle to maintain

* A 75° F (adj.) cooling setpoint and 70° F degree heating setpoint
* Fan shall run during all Occupied hours to provide Space Ventilation.

B. Alarms shall be provided as follows: High Zone Temp: If the zone temperature is greater than the cooling setpoint by a user definable amount (adj.). Low Zone Temp: If the zone Temperature is less than the heating setpoint by a user definable amount (adj.).

C. Run Conditions - Manual Operation: The occupant shall be able to override automatic operation through the zone sensor as follows:

Adjust the cooling setpoints

D. Zone Setpoint Adjust: The occupant shall be able to adjust the zone temperature heating and cooling setpoints at the zone sensor within user defined limits (unless locked out through BAS).

E: Fan: The fan shall run anytime the unit is commanded to run, unless shutdown on safeties.

F. Cooling: The controller shall measure the zone temperature and stage the cooling to maintain its cooling setpoint. To prevent short cycling, the stage shall have a user definable (adj.) minimum runtime.

G. Humidity: if zone humidity rises above 62% RH unit shall go into full cooling and shall activate hot gas reheat to maintain zone temperature setpoint.

H. Outside Air: Outside air damper shall open and unit shall provide set volume of outside air during all scheduled occupied hours.

I. Economizer: Unit shall modulate outside air as needed for cooling anytime outside air temp falls below 60 degrees F (adj.)

HP UNIT CONTROL SCHEMATIC

DRAWING IS SCHEMATIC ONLY. COORDINATE ALL REQUIREMENTS WITH UNIT MANUFACTURER PRIOR TO BID. ADDITIONAL PAYMENT WILL NOT BE GRANTED FROM LACK OF COORDINATION. CONTRACTOR SHALL COORDINATE BETWEEN CONTROLS CONTRACTOR, AND EQUIPMENT VENDOR, ALL REQUIRED WIRING AND ACCESSORIES REQUIRED FOR OPERATIONAL SYSTEM.

HP-1 & 2	HARDWARE POINTS				SOFTWARE POINTS					
POINT NAME	AI	AO	BI	BO	AV	BV	SCHED.	TREND	ALARM	SHOW ON GRAPHIC
ZONE TEMP	X							X		X
ZONE HUMIDITY	X							X		X
ZONE SETPOINT ADJUST	X									X
ZONE OVERRIDE			X					X		X
SCHEDULE							X			
HEATING SETPOINT								X		X
COOLING SETPOINT								X		
HIGH ZONE TEMP									X	
HIGH ZONE HUMIDITY									X	
LOW ZONE TEMP									X	

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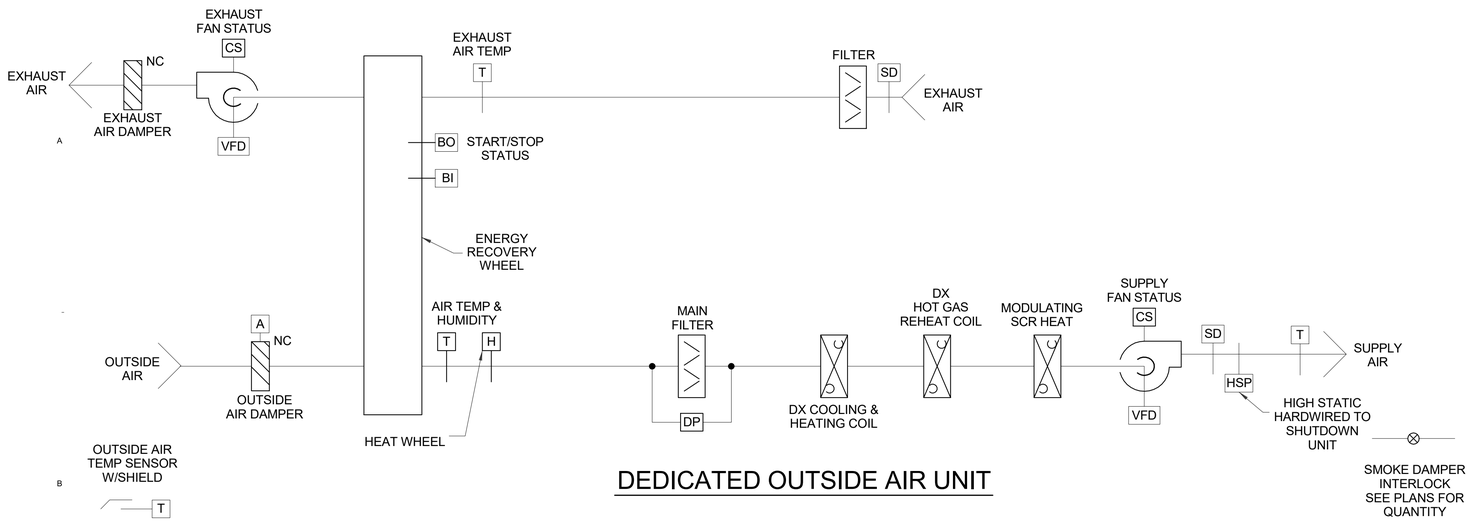
Revisions		△
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Addendum 3	2025-09-26	3

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

HVAC - CONTROLS

Scale: As indicated

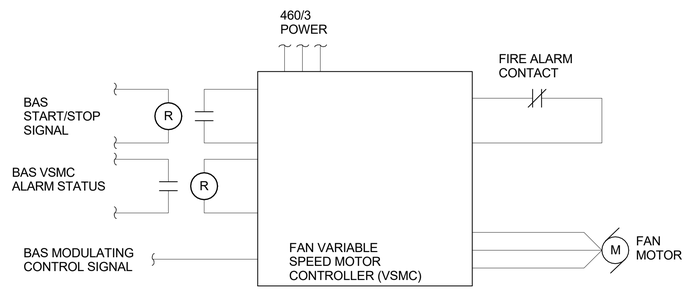
M05.00



DEDICATED OUTSIDE AIR UNIT

T SPACE TEMP

DOAS CONTROL	HARDWARE POINTS				SOFTWARE POINTS						
POINT NAME	AI	AO	BI	BO	AV	BV	SCHED.	TREND	ALARM	SHOW ON GRAPHIC	NOTES
HEAT WHEEL DISCH. AIR TEMP	X							X		X	
HEAT WHEEL DISCH. AIR HUMIDITY	X							X		X	
SUPPLY AIR TEMP	X							X	X	X	
COOLING STATUS (PERCENT)		X								X	
HEATING STATUS (PERCENT)		X								X	
HOT GAS REHEAT STATUS		X								X	
EXHAUST AIR TEMP	X							X		X	
HEAT WHEEL STATUS			X						X	X	
SUPPLY FAN STATUS			X						X	X	
EXHAUST FAN STATUS			X						X	X	
OSA/ECONOMIZER DAMPERS		X								X	
HEAT WHEEL START/STOP				X						X	
SUPPLY FAN START/STOP				X						X	
EXHAUST FAN START/STOP				X						X	
EMERGENCY SHUTDOWN			X						X	X	
SCHEDULE							X				
DIRTY FILTER			X						X	X	
EXHAUST FAN SPEED		X						X		X	
SUPPLY FAN SPEED		X						X		X	
SPACE TEMPERATURE	X							X	X	X	
SUPPLY AIR TEMP SETPOINT					X		X	X		X	3.



FAN VFD CONTROL

TYP. SUPPLY & EXHAUST

OAU GENERAL NOTES:

1. COORDINATE WITH OAU MANUFACTURER FOR ALL REQUIRED FIELD MTD, AND WIRED DEVICES. EXTRA PAYMENT WILL NOT BE PROVIDED FOR LACK OF COORDINATION BETWEEN UNIT MANUFACTURER & TEMPERATURE CONTROL SYSTEM PROVIDER.

2. PROVIDE ALL GATEWAYS AND CONTROL INTERFACES TO OAU AS REQUIRED TO ACCOMPLISH INDICATED CONTROL & INTERFACE WITH EMS.

DEDICATED OUTSIDE AIR UNIT

Occupied Mode
- Unit scheduled to operate continuously during occupied mode based on owner occupied schedule.

Unoccupied Mode:
- Unit is intended to be OFF during occupied mode and cycle as needed to maintain night setback temperature.
- Supply fan, exhaust fan and energy recovery wheel are off and outside air damper is closed during unoccupied mode.

Cooling Mode
- Cooling is two stages of Digital Scroll Compressors
- Cooling is enabled when the Outdoor Air Temperature rises above the Outdoor Cooling Setpoint plus differential.
  Cooling is disabled when the Outdoor Air Temperature falls below the Outdoor Cooling Setpoint minus differential.
- In the Cooling Mode, the Digital Compressor will energize and modulate to control the Supply Air Temperature Setpoint.
- If the SAT is above the Supply Air Temperature Setpointand the Digital Compressor is at 100% for timed period, the second stage compressor is staged on. Once second compressor the conmpressors will operate togehter to maintain the Supply Air Temperature Setpoint.
- Second stage compressor will remain on until SAT drops below the Supply Air Temperature Setpoint and the Compressors area at a minimum % for timed period. Once second stage compressor stages off the first stage compressor will go to 100% and modulate to control the Supply Air Temperature Setpoint..
- Compressor must meet Minimum Off Time before allowed to energize and Minimum Run Time before allowed to de-energize.

Heating Mode
- Heating is Modulating Gas Heat.
- Heating is enabled when the Outdoor Air Temperature falls below the Outdoor Heating Setpoint minus differential. Heating is disabled
  when the Outdoor Air Temperature rises above the Outdoor Heating Setpoint plus differential.
- In the Heating Mode, Heating will energize and modulate to control the Supply Air Temperature Setpoint,
- Heating must meet Minimum Off Time before allowed to energize and Minimum Run Time before allowed to de-energize.

Dehumidification Mode
- Dehumidification is Compressor(s) to control Coil Suction Temperature and Modulating Hot Gas Reheat to control Supply Air Temperature.
- Dehumidification is enabled when the Outdoor Air Dewpoint rises above Outdoor Dewpoint Setpoint plus differential (Outside Air Dewpoint setpoint shall be 55 degrees F).
  Dehumidification is disabled when the Outdoor Air Dewpoint falls below the Outdoor Dewpoint Setpoint minus differential. .
- In the dehumidification mode, the digital compressor will modulate to control the Evaporator Coil Suction Temperature Setpoint.
- If additional dehumidification is required, second stage compressor is staged on.
- Modulating Hot Gas Reheat will control the Supply Air Temperature Setpoint during Dehumidification.

Supply Air Temperature (SAT) Setpoint Reset
- Supply air setpoint shall be maintained between 55 degrees and 75 degrees. Supply air temp setpoint shall reset from 75 to 55 degrees F (adj.) at 50 F to 90 F respectively
- Space Temperature will reset the Supply Air Temperature (SAT) Setpoint downwards if space temp senses space temperature at 78 degrees F (adj) or above or upwards if senses space temperature 65 degrees or below (adj.)

Supply Air Temperature Limitations
- Supply air temperature shall be limited to a maximum setpoint of 75 degrees to maintain a ventilation effectiveness equal to 1 in accordance with ASHRAE Standard 62.Supply air temperature setpoint may be lower.

Supply Fan
- Supply fan operates continuous during occupied mode. Supply fan is off during unoccupied mode.
- If Supply Fan fails to operate when called to run, an alarm shall be generated and unit operations are disabled.

- During occupied hours Supply fan and exhaust fan shall modulate to 100% airflow

Outside Air Damper Operation
- Outside Air Damper opens when the supply fan operates during occupied mode.
- Outside Air Damper closed during unoccupied mode.

Exhaust Fan
- Exhaust Fan operates when the supply fan operates during occupied mode.
- Exhaust Fan off during unoccupied mode.
- If Exhaust Fan fails to operate when called to run, an alarm shall be generated.
- Exhaust fan airflow percentage shall track supply airflow percentage. (Example: if supply fan is at 70% airflow, exhaust fan shall be at 70% airflow), speed shall account for any adjustments made to fan speed during balancing (i.e.) if fan is balanced to 50hz for 100% airflow, 25hz would be 50% airflow.

Energy Recovery Wheel
- Energy Recovery Wheel operates when the supply fan operates during occupied mode.
- Energy Recovery Wheel off during unoccupied mode.
- If Energy Recovery Wheel fails to rotate when called to run, an alarm shall be generated.

Outdoor Air Lockout
- Mechanical cooling is disabled when the Outdoor Air Temperature is below the Cooling Lockout Setpoint
- Natural gas heating is disabled when the outside air temperature is above the heating lockout setpoint

Outside Air Monitoring
- If outside air falls 10% below setpoint an alarm shall be generated at the BAS. (see equipment schedules for minimum outside air setpoint)

Temperature Protection
- If the Supply Air Temperature (SAT) rises above the High Cutoff Temperature or drops below the Low Cutoff Temperature an alarm is generated and unit operations are disabled.

Emergency Shutdown
- Remote Fire Alarm Contact or High Duct Static Pressure Switch will initiate Emergency Shutdown and an alarm will be generated.

Drakes Creek Park
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09/30/2025
STATE OF TENNESSEE

Revisions		
Description	Date	Num

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Check:

HVAC - CONTROLS

Scale: As indicated

M05.01

PLUMBING GENERAL NOTES

1. PLUMBING CONTRACTOR SHALL COORDINATE ALL ASPECTS OF WORK WITH OTHER TRADES PRIOR TO AND DURING CONSTRUCTION/INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE OPERABLE SYSTEM AS DETERMINED BY THE DESIGNER OF RECORD.

2. ALL WORK SHALL CONFORM TO THE 2021 INTERNATIONAL PLUMBING CODE (IPC), 2021 INTERNATIONAL BUILDING CODE (IBC), ASHRAE 90.1 (2019), AND LOCAL PLUMBING CODEAMENDMENTS. THE REQUEST FOR PROPOSAL AND ALL REFERENCED STANDARDS ARE ALSO CONSIDERED PART OF THIS DOCUMENT.

3. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE LOCATION OF ALL SUCH FACILITIES AND THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITIES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT WITH LOCATION OF THE NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED. WHERE UTILITIES ARE INADVERTENTLY DISTURBED, THE REPAIR OF THE SAME UTILITY SHALL BE THE RESPONSIBILITY OF THE RESPONSIBLE CONTRACTOR. VERIFICATION OF LOCATIONS AND DIRECTIONS OF FLOWS OF UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, WILL BE THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO AND DURING CONSTRUCTION/INSTALLATION

4. WHEN A CONFLICT BETWEEN PLANS AND SPECIFICATIONS OR NOTES OCCURS, THE ENGINEER SHALL DECIDE WHICH GOVERNS. GENERALLY THE MORE RESTRICTIVE, MORE SPECIFIC, OR STRICTER PROVISION SHALL GOVERN. IF ANY DISCREPANCIES ARE DISCOVERED ON THE PLANS OR BETWEEN THE PLANS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN CLARIFICATION OF THE INTENT FROM THE ENGINEER PRIOR TO CONSTRUCTION OR INSTALLATION OF PROPOSED IMPROVEMENTS.

5. THE CONTRACT DOCUMENTS FORM A GUIDE FOR A COMPLETE SYSTEM. PROVIDE ALL ITEMS NECESSARY TO PROVIDE A COMPLETE SYSTEM BUT NOT SPECIFICALLY MENTIONED, SUCH AS HANGARS, TRANSITIONS, OFFSETS AND DRAINS.

6. LAYOUTS INDICATED ON DRAWINGS ARE DIAGRAMMATICAL ONLY. DRAWINGS SHALL NOT BE SCALED. COORDINATE EXACT LOCATION OF EQUIPMENT, DUCTWORK, AND PIPING TO ELIMINATE CONFLICT WITH OTHER DIVISIONS. DESIGNER RESERVES RIGHT TO MAKE REASONABLE CHANGES IN LOCATIONS OF EQUIPMENT, DUCTWORK AND PIPING PRIOR TO CONSTRUCTION.

7. SUPERVISE ALL WORK WITH A COMPETENT PLUMBER SPECIFICALLY QUALIFIED IN PLUMBING DISCIPLINE.

8. CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, MATERIALS, TOOLS AND EQUIPMENT TO PERFORM WORK REQUIRED ON THE DRAWINGS AND SPECIFICATIONS.

9. CONTRACTOR SHALL PAY ALL FEES AND CHARGES REQUIRED TO ACHIEVE THE INSTALLATION.

10. ALL PLUMBING EQUIPMENT AND FLOOR DRAINS IN EQUIPMENT ROOMS TO BE LOCATED PER MECHANICAL EQUIPMENT REQUIREMENTS AND ARCHITECTURAL DRAWINGS. NOT SCALED OFF PLUMBING DRAWINGS.

11. CONTRACTOR SHALL OFFSET ALL VENTS THRU ROOF AS REQUIRED TO MAINTAIN 15'-0" MINIMUM SEPARATION FROM ROOF TOP UNIT CURB AND ALL AIR INTAKE LOCATIONS.

12. ALL PIPE FITTINGS AND VALVES IN INSULATED PIPE SYSTEMS TO BE INSULATED.

13. LOCATE ALL SHUTOFF VALVES FOR EASY ACCESS AND OPERATION. WHERE VALVES MUST NECESSARILY BE LOCATED IN ENCLOSED SPACES, THEY SHALL BE PROVIDED WITH ACCESS PANELS OF SUFFICIENT SIZE FOR OPERATION. IDENTIFY QUANTITY AND COORDINATE WITH GENERAL CONTRACTOR. FURNISH THESE ACCESS PANELS TO PROPER TRADES FOR INSTALLATION.

14. PROVIDE SHOCK ARRESTORS AT COLD & HOT WATER CONNECTIONS TO FIXTURE CONNECTIONS WITH QUICK CLOSING VALVES (II.E. WATER CLOSETS, ETC.). SHOCK ARRESTORS INSTALLATIONS SHALL BE AS RECOMMENDED BY PDI INSTITUTE AND EQUIPMENT MANUFACTURER. AIR CHAMBERS SHALL NOT BE USED.

15. FIXTURES AND ROUGHED IN FIXTURES SHALL BE COMPLETE WITH SUPPLY PIPES WITH STOPS. SUPPLIES, STOPS, & ESCUTICHEONS TO BE CHROME PLATED. WHERE EXPOSED TO VIEW ESCUTCHIONS SHALL BE SET SCREW TYPE.

16. ALL ISOLATION/SHUT OFF VALVES SHALL BE INSTALLED SUCH THAT THEY MAY BE EASILY SEEN AND REACHED FROM FLOOR OR STEP LADDER.

17. PROVIDE AND INSTALL 4" CONCRETE PADS OR CURBS DOWELED IN PLACE FOR ALL WATER HEATERS, TANKS, AND ANY OTHER FLOOR MOUNTED EQUIPMENT.

18. COORDINATE EXTERIOR WALL HYDRANT LOCATIONS WITH ARCHITECTURAL PLANS AND ELEVATIONS.

19. ALL EQUIPMENT MOUNTED OVERHEAD OR ABOVE SUSPENDED CEILING, WEIGHING 31 POUNDS OR MORE, MUST BE SECURED TO PERMANENT STRUCTURE BY MEANS HAVING SUFFICIENT CAPACITY TO RESIST HORIZONTAL FORCES OF 0.5 TIMES THE EQUIPMENT WEIGHT AND VERTICAL FORCES OF 1.5 TIMES THE EQUIPMENT WEIGHT.

20. PLUMBING COMPONENTS THAT ARE PERMANENTLY ATTACHED TO STRUCTURES AND THEIR SUPPORTS AND ATTACHEMENTS, SHALL BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF EARTHQUAKE MOTIONS FOR SEISMIC DESIGN CATEGORY D IN ACCORDANCE WITH THE 2005 EDITION OF ASCE 7, EXCLUDING CHAPTER 14 AND APPENDIX 11A. REFER TO SPECIFICATION SECTION 13 48 00.00, SEISMIC PROTECTION FOR MECHANICAL EQUIPMENT, FOR ADDITIONAL REQUIREMENTS.

21. COORDINATE PLUMBING FIXTURE/EQUIPMENT REQUIREMENTS WITH INTERIORS DRAWINGS. SHOWER HEADS TO BE INSTALLED 6'-0" ABOVE FLOOR. SHOWER VALVES TO BE INSTALLED 4'-0" ABOVE FLOOR.

22. CONTRACTOR SHALL PERFORM X-RAY PRIOR TO ANY CORE DRILLING.

PLUMBING ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	MEDICAL AIR LINE	MECH	MECHANICAL
ADA	AMERICANS WITH DISABILITIES ACT	MTD	MOUNTED
AFF	ABOVE FINISHED FLOOR	O2	OXYGEN LINE
AVTR	ACID VENT THROUGH ROOF	OFE	OWNER FURNISHED EQUIPMENT
BPW	BED PAN WASHER	PAT	PATIENT
CLG	CEILING	PUB	PUBLIC
CONT	CONTINUATION	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
COORD	COORDINATION	RWL	RAINWATER PIPING
CO	CLEAN OUT	SS	SANITARY SEWER PIPING
CW	COLD WATER LINE	SD	UNDERGROUND STORM PIPING
DN	DOWN	SF	SQUARE FOOT
DWG	DRAWING	SV	SANITARY VENT PIPING
EA	EACH	TMP	TEMPERATURE
FM	FLOOR MOUNTED	TMV	THERMOSTATIC MIXING VALVE
FV	FLUSH VALVE	TYP	TYPICAL
GN	GOOSENECK	V	MEDICAL VACUUM PIPING
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
HW	HOT WATER LINE	W/	WITH
HWR	HOT WATER RETURN	WB	WRIST BLADE
LAV	LAVATORY	WC	WATER CLOSET
LPA	LINE PRESSURE ALARM	WCO	WALL CLEAN OUT
MAP	MASTER ALARM PANEL	WH	WALL HUNG

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	REDUCED PRESSURE BACKFLOW PREVENTER
	P TRAP
	BALL VALVE
	CONNECTION TO EXISTING
	FLOOR DRAIN
P- No.	PLUMBING FIXTURE DESIGNATION
	END CAP
CW	COLD WATER SUPPLY
HW	HOT WATER SUPPLY
HWR	HOT WATER RETURN
SV	SANITARY VENT
SS	SANITARY WASTE
A	COMPRESSED AIR LINE

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	CW	HW	WASTE
P-1	WATER CLOSET	1"	---	4"
P-2	WATER CLOSET (ADA)	1"	---	4"
P-3	URINAL	1"	---	2"
P-4	LAVATORY (PUBLIC)	1/2"	1/2"	1 1/4"
P-5	LAVATORY (PRIVATE)	1/2"	1/2"	1 1/4"
P-6	SINK	1/2"	1/2"	1 1/4"
P-7	SERVICE SINK	1/2"	1/2"	3"
P-8	DRAIN - FLOOR	---	---	3"
P-9	SHOWER	1/2"	1/2"	2"
P-10	SHOWER (ADA)	1/2"	1/2"	2"
P-11	TRENCH DRAIN	---	---	4"
P-12	EMERGENCY EYEWASH/SHOWER	---	1"	3"
P-13	WALL HYDRANT	1/2"	---	---
P-14	SINK - DOUBLE COMPARTMENT	1/2"	1/2"	1 1/4"
P-15	WATER CONNECTION BOX	1/2"	---	---
P-16	FLOOR SINK	---	---	3"
P-17	DRINKING FOUNTAIN	1/2"	---	---

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	SANITARY SEWER BELOW FLOOR
	SANITARY SEWER AT CLG.
	COLD WATER SUPPLY
	HOT WATER SUPPLY
	HOT WATER RETURN
	VENT LINE
A	COMPRESSED AIR
CO OR CO	CLEAN OUT
	BALL VALVE
	CHECK VALVE
	BALANCING VALVE
P-NO.	FIXTURE DESIGNATION
VTR	VENT THRU ROOF
	CONNECT TO EXISTING
FCO	FLOOR CLEAN OUT

ELECTRIC STORAGE WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	STORAGE (GAL.)	RECOVERY (GPH @ 140 °F)	K.W.	ELECTRICAL	LOCATION
WH-1	LOCHINVAR	LHS-80	80	194	45	208/3/60	MECH ROOM - OPERATIONS CENTER

NOTE:

WH-1 CONFIGURATION TO INCLUDE A LOCHINVAR LTCPA12 THERMAL EXPANSION TANK OR AN EQUAL APPROVED BY DESIGN ENGINEER.

ELECTRIC INSTANTANEOUS WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	FLOW (GPM)	TEMP. RISE (°F)	ELECTRICAL	K.W.	LOCATION
WH-2	EEMAX	SPEX35	0.3	59	208/1/30	3.5	UNDER MAINTENANCE SHOP SINK - MAINTENANCE/SUPPLY BUILDING (PLAN SOUTH)
WH-3	EEMAX	SPEX35	0.3	59	208/1/30	3.5	UNDER RESTROOM SINK - MAINTENANCE/SUPPLY BUILDING (PLAN NORTH)

HOT WATER CIRCULATING PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	FLOW (GPM)	HEAD (PSI)	HORSEPOWER	ELECTRICAL	LOCATION
CP-1	GRUNDFOS	ALPHA 15-58	2.5	9	1/20	115/1/60	MECH ROOM - OPERATIONS CENTER

THERMOSTATIC MIXING VALVE SCHEDULE

TAG	MANUFACTURER	MODEL	FLOW (GPM)	PRESSURE LOSS (PSI)	LOCATION
TMV-1	LEONARD	TM-5100-LF	3	10	MECH ROOM - OPERATIONS CENTER

Drakes Creek Park Parks Maintenance Complex

131 Conway Twitty Ln,
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City of Hendersonville
Hendersonville, TN

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09-26-2025
STATE OF TENNESSEE

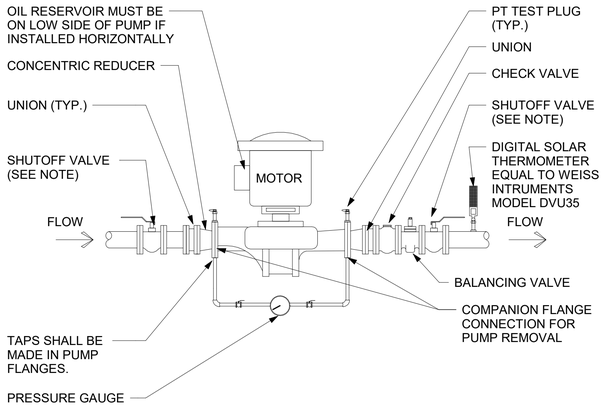
Revisions		
Description	Date	Num
Addendum 3	2025-09-26	3

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Check: DP

PLUMBING - GENERAL NOTES & LEGENDS

Scale: As indicated

P00.00



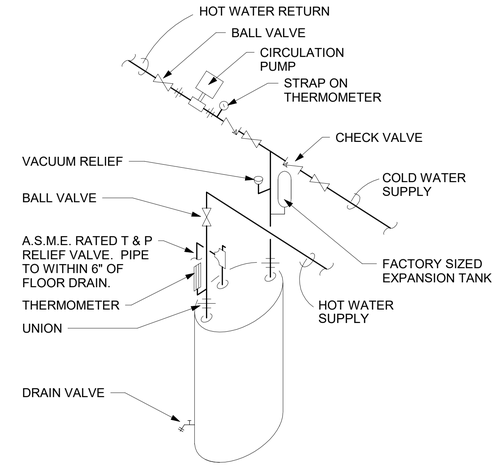
NOTE:

PROVIDE BALL VALVE FOR THIS APPLICATION.

IN-LINE CIRCULATING PUMP DETAIL

No Scale

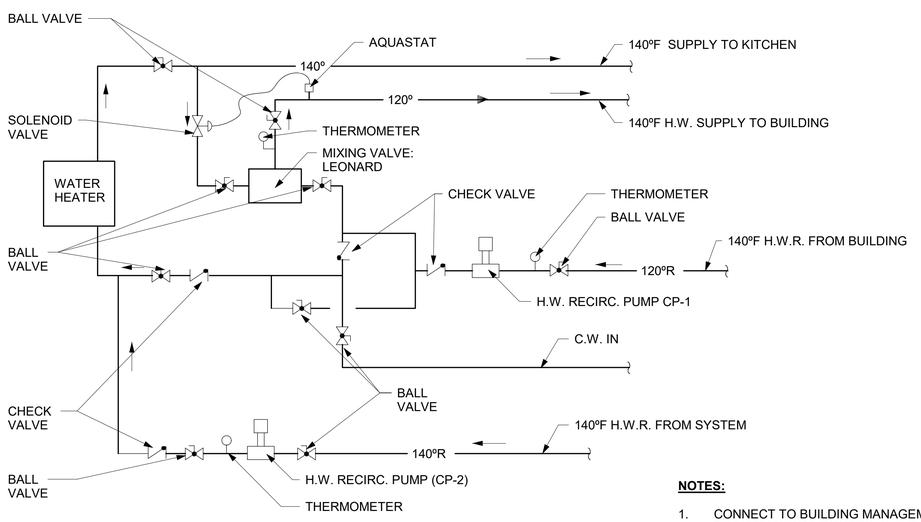
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ELECTRIC WATER HEATER DETAIL WITH CIRCULATION PUMP

No Scale

2



NOTES:

1. CONNECT TO BUILDING MANAGEMENT SYSTEM. REFER TO MECHANICAL CONTROLS SHEETS.
2. BALANCING VALVES TO BE CALIBRATED PER SPECIFIC VALVE MANUFACTURER'S PRINTED INSTRUCTIONS.

PIPING SCHEMATIC AT BUILDING MIXING VALVE

No Scale

3

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PLUMBING - DETAILS

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SECTION 22 01 00 - PLUMBING GENERAL PROVISIONS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Provide all labor, materials, tools, and services for a complete installation of equipment and systems contained in contract documents.

B. Principal features of work included are:
1. Plumbing system.

1.2 RELATED WORK

A. Electrical power and interlock and control wiring and conduit.

1.3 GENERAL

A. The contract documents form a guide for a complete system. Provide all items necessary to provide a complete system but not specifically mentioned, such as hangers, transitions, offsets, and drains.

B. Layouts indicated on drawings are diagrammatical only. Coordinate exact location of equipment, ductwork, and piping to eliminate conflict with other divisions. Designer reserves right to make reasonable changes in location of equipment, ductwork, and piping prior to construction.

C. Should Contractor find during progress of work that in his judgment existing conditions make desirable a modification, report such item promptly to Designer for instructions. Do not make deviations from contract documents without review of Designer.

D. Supervise all work with a competent mechanic specifically qualified in mechanical discipline.

E. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification.

1.4 PERMITS

A. Secure and pay for permits, licenses, and inspections for work under this Division, including water and sewage connections.

1.5 CODES

A. Comply with all pertinent local, state, and national codes.

1.6 STANDARDS

A. Comply with all pertinent standards. This list is provided as a convenience to Contractor and is not to be considered all inclusive.
1. American Gas Association (AGA).
2. CISPI Standard 301.
3. ASTM A 74.

1.7 SUBMITTALS

A. Submit for review complete brochures and shop drawings for materials and equipment proposed.
1. Brochures: Submit complete descriptions, illustrations and specification data for materials and equipment proposed. Clearly indicate proposed items when other items are shown on same sheet. Submit samples on request and/or set up for inspection. Samples will be returned to Contractor.
2. Submittals shall be submitted in line by line format. Each submittal shall be provided with a cover letter and supporting documentation indicating how the submittal meets each line of the referenced specification section. All discrepancies between the construction documents and the submitted product shall be clearly identified for engineer evaluation.
3. If a product other than the basis of design is rejected by the engineer for any reason, the Contractor shall provide the basis of design product at no additional cost to the Owner.
4. Shop Drawings:
a. Complete equipment and piping systems in equipment rooms.
b. Complete equipment and piping systems in entire building.
c. Owner furnished equipment rough-in layouts.
d. Kitchen equipment rough-in layouts.
e. Laboratory equipment rough-in layouts.
f. Firestop systems.

1.8 PROJECT MAINTENANCE MANUALS

A. Prior to final acceptance of project, provide Owner with bound maintenance manuals.

1.9 PROJECT TECHNICAL INSTRUCTION

A. Prior to final inspection of project, provide technical instruction to Owner as follows:
1. Field Instruction: Provide explanation of how systems and equipment are to operate during each season and during emergencies.
2. Field Demonstration: Demonstrate operation and routine maintenance for systems and equipment.
3. Videotape: Provide videotape or DVD of field instruction and demonstration to Owner at completion.

1.10 CONSTRUCTION RECORD DOCUMENTS

A. Provide construction record documents. Keep at the project one set of drawings and daily record changes at the time they are made. Give drawings to Owner at project completion.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Provide materials and equipment of domestic manufacturer bearing the U.L. label when such label is available.

B. Cast Iron Soil Pipe and Fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute ® and listed by NSF® International.

PART 3 EXECUTION

3.1 COORDINATION

A. Coordinate locations of equipment and piping to eliminate conflict with other divisions.

B. Carefully examine contract documents to be thoroughly familiar with items which require plumbing or mechanical connections and coordination.

C. Provide proper chases and openings. Place sleeves and supports prior to pouring concrete or installation of masonry.

3.2 CUTTING AND PATCHING

A. Repair or replace routine damage caused by cutting in performance of contract.

B. Correct unnecessary damage caused due to installation of plumbing work.

C. Perform repairs with materials that match existing in accordance with the appropriate section of these specifications.

3.3 FLASHING, COUNTERFLASHING, AND SEALING

A. Flash, counterflash, and seal piping at penetrations of roofs and outside walls.

3.4 TRENCHING, EXCAVATION AND BACKFILLING

A. Excavate to a depth at least 6" below bottom of pipe and a minimum of 36" above top of pipe. Fill below pipe, around pipe, and minimum of 12" above pipe with sand or Class "B" crushed stone tamped firm and even. Provide topsoil for final layer of dirt (12" minimum). Provide 6" spacing between pipes and between pipe and trench sides. Hand-grade with batterboards placed every 25'. Backfill by hand. Do not use rock or stone above sand or Class "B" crushed stone.

3.5 CONNECTION TO EQUIPMENT

A. Rough-in and connect to sterilizers, lab equipment, kitchen equipment, and Owner furnished equipment and provide a shutoff valve and union at each connection. Operating valves and/or controls for this equipment will be provided as an integral part of the equipment. Do not rough-in until shop drawings showing rough-in locations have been reviewed by Designer.

3.6 FOUNDATIONS AND PADS

A. Provide foundations, pads, and bases required for equipment. Concrete to be in accordance with concrete division of specifications.

B. Coordinate proper sizes and locations of foundations, pads, bases, anchors, supports, and other items to be built into structure.

3.7 IDENTIFICATION

A. Identify exposed or accessible piping with stenciling contents indicating pipe contents and direction of flow on piping not more than 20 feet apart, at valves, at access panels, and at least once above each space.

B. Contractors option to identify exposed or accessible piping with snap-on or strap-on type markers. Color code markers in accordance with ANSI. Indicate pipe contents and direction of flow on marker. Install markers on piping not more than 20 feet apart, at valves, at access panels, and at least once above each space.

C. Include design operating pressures in psig for compressed air services.

D. Sanitary waste, storm and buried lines need not be marked.

E. Identify all equipment with engraved brass, aluminum, or stainless steel nameplates or tags. Use equipment names and numbers appearing in schedules on drawings. Fasten nameplates to equipment using screws. Glue or adhesive is not acceptable. Fasten tags to equipment using brass, aluminum or stainless steel chains.

F. Identify each valve with engraved brass, aluminum, or stainless steel identification tag indicating valve service and sequential identification number. Attach tag to valve handle with brass, aluminum or stainless steel chain. Provide two bound manuals to Owner listing each valve sequentially and indicating valve manufacturer, style, size, service, normal position, and specific location for each valve.

3.8 CLEANING

A. Repair damaged factory finishes covering all bare places and scratches.

B. Cleaning Domestic Water System: Flush domestic water system progressively by opening building outlets and permitting flow to continue from each until water runs clear. Sterilize system in accordance with requirements of State Department of Public Health by the following method or other method acceptable to local authorities:
1. Introduce chlorine or a solution of calcium or sodium hypochlorite, filling lines slowly and applying sterilizing agent at a rate of 50 ppm of chlorine as determined by residual chlorine tests at ends of lines. Open and close all valves while the system is being chlorinated.
2. After sterilizing agent has been applied and left standing for 24 hours, test for residual chlorine at ends of lines. If less than 25 ppm is indicated, repeat sterilizing process.
3. After standing for 24 hours and tests show at least 25 ppm of residual chlorine, flush out system until all traces of chemical used are removed.

3.9 TESTING

A. Test all installed equipment and systems and demonstrate proper operation. Correct and retest work found defective when tested.

B. Thoroughly check piping system for leaks. Do not add any leak-stop compounds to the system. Make repairs to piping system with new materials. Peening, doping, or caulking of joints or holes is not acceptable.

C. Test hot and cold domestic water piping systems upon completion of rough-in and before connection to fixtures at a water pressure of 125 psig for two hours without leaks.

D. Test drainage and venting system with necessary openings plugged to permit system to be filled with water and subjected to a minimum water pressure of 10 feet head at top of system. System to hold water for two hours without a water

level drop greater than 4" in a 4" standpipe and without visible leakage. Test system in sections if minimum head can be maintained in each section.

E. Conduct air or smoke test if in opinion of Designer reasonable cause exists to suspect leakage or low quality workmanship.

F. Test foundation drain system in sections of 100 foot lengths before and after backfilling. Pass plumbers tape or Roto-Rooter through drain sections to ensure there are no restrictions to water flow.

G. Test gas piping and compressed air piping with Nitrogen at 100 psi for two hours without leaks.

H. Test flush valves for proper operation.

END OF SECTION 22 01 00

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
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SECTION 22 07 19 - PLUMBING INSULATION

PART 1 GENERAL

1.1 WORK INCLUDED

A. Contractor shall provide all necessary labor, materials, tools, and equipment to perform work required on the drawings and specified herein.

B. Certain equipment and/or systems to be factory insulated by manufacturer. Factory insulation materials to be as specified in applicable sections of the specifications.

C. All pipe fittings, valves in insulated pipe systems to be insulated.

D. Thermal resistance "R" values used herein are expressed in units of "Hour, Degrees F., Sq. Ft./BTU per Inch of Thickness" on a flat surface at a mean temperature of 75 degrees F.

1.2 DEFINITIONS

A. "Exposed" equipment, and piping are areas which will be visible without removing ceilings or opening access panels.

B. Outdoors is considered exposed to the weather.

C. Underground is buried, whereas in a trench below grade is considered concealed.

1.3 CERTIFICATION/QUALITY ASSURANCE

A. Products shall meet applicable national, state, and local building codes and be U.L. (or other recognized testing lab) listed for intended service.

B. All insulations, jackets, adhesives, coatings, sealers, and tapes shall have a flame spread rating of 25 or less and smoke development rating of 50 or less when tested in accordance with ASTM E-84, NFPA 225, U.L. 723, and further must meet the requirements of NFPA 90-A and applicable building, and plumbing, codes.

C. All insulation materials shall be delivered and stored in manufacturers' containers and kept free from dirt, water, chemical, and mechanical damage.

D. Insulation shall be applied in a workmanlike manner by experienced, qualified tradesmen.

E. Insulation shall not be applied until all pressure testing has been completed, inspected, and released for insulation application.

F. Surfaces shall be clean and dry.

G. Insulation joints shall be butted firmly together and all jackets and tapes shall be smoothly and securely installed.

H. Insulation for duct, pipe, and equipment for above grade exposed to weather outside building shall be certified as being self-extinguishing for 1" thickness in less than 53 seconds when tested in accordance with ASTM D-1692.

1.4 APPLICABLE CODES AND STANDARDS

A. ASTM E-84.

B. U.L. 723.

PART 2 PRODUCTS

2.1 MATERIALS FOR PIPE AND EQUIPMENT

A. Materials for Pipe and Equipment: Provide factory pre-molded or shop or site mitered segment type insulation for pipe, pipe fittings, and valves. Fitting insulation to be of same thickness and material as adjoining pipe insulation. All insulation and related materials such as tape and mastic to meet applicable building code requirements for fire and smoke development.
   1. Fiberglass: Provide factory-formed, factory-jacketed fiberglass piping insulation. Product to be Manville "Micro-Lok 650" with "Type AP-T" jacketing or equivalent product manufactured by CertainTeed, Knauf, or Owens-Corning. Product to have continuous operational temperature limit of 850 degrees F and a minimum "R" value of 3.6 per inch (K=0.28) at 100 degrees F mean temperature. Jacket to be fiberglass reinforced kraft paper with aluminum foil and pressure sensitive closure system. Vapor-barrier mastic for application to below ambient pipe insulation shall be fungus resistant per ASTM D 5590 with 0 growth rating; Water based; Permeance per ASTM E 96, Procedure B, 0.013 perm or less at 43-mil dry film thickness suitable for indoor and jacketed outdoor use. Products: Foster 30-80 AF. Color: White. A breather mastic for application to above ambient pipe insulation (fittings, tees, valves, etc.) shall be water based Foster 46-50 mastic or Childers CP-10 / CP-11. Use fiberglass piping insulation for the following services:
      a. Domestic hot water supply without recirculating system: 1-1/4" and under - 1" thick; 1-1/2" and greater – 1-1/2" thick.
      b. Domestic hot water supply and recirculating return piping: 1-1/4 and under – 1" thick, 1-1/2" and greater 1-1/2 thick.
      c. Domestic cold water piping: 1/2" thick.
      d. Horizontal rainwater leaders, overflow leaders, and roof drain bodies: 1" thick.

2.2 MATERIALS FOR FITTINGS, VALVES, AND SPECIAL COVERINGS

A. Provide coverings and finishes for specific items hereinafter specified.
   1. Use pre-molded insulation fabricated by the manufacturer of insulation material or shop or site mitered segment type insulation for all pipe fittings, elbows, tees, valves, and couplings.

B. For any service, when below grade direct buried, cover straight pipe and fitting insulation with equivalent of Pittsburgh Corning "Pittwrap", Foster C.I. Wrap 50 mil or "Pittwrap SS11" jacketing. Valves in systems operating above 60 degrees F. and installed in valve boxes shall not be insulated; however, the valves shall be painted with a rust resistant product equivalent to Rustoleum.

C. For flexible tubular pipe and fitting insulation when exposed-to-view inside building, finish with two coats of paint, custom color blended to match surrounding surfaces.

D. When specifically approved by designer, when it is impossible to completely insulate pipe, fittings, or valves with specified insulation, Armstrong Armaflex insulation tape may be used to prevent condensate drip on small piping. Use of cork insulation tape is prohibited.

PART 3 EXECUTION

3.1 GENERAL

A. No insulation shall be cut where a hanger is located. If hangers have been installed by pipefitter tradesmen which violates this strict requirement, notify Designer immediately.

B. Piping systems shall be tested and found free of all leaks prior to installation of insulation covering.

C. All surfaces shall be clean and dry when covering is applied. Covering to be dry when installed and during application of any finish, unless such finish specifically requires a wetted surface for application.

D. All adhesives, cements, and mastics shall be compatible with materials applied and shall not attack materials in either wet or dry state.

E. Install insulation using professional insulators who have adequate experience and ability.

F. Exposed-to-view insulation shall have a well tailored appearance.

G. Treat insulated pipe in equipment rooms and where exposed to normal view, so surfaces may be painted with water base latex paint. Use of mastics, adhesives, or jacketing which cause "bleeding" is prohibited.

3.2 INSTALLATION OF PIPE AND EQUIPMENT COVERING

A. Where fiberglass or flexible tubular insulation is used on piping sized 2" and larger, insert a section of foamglass insulation at hanger or support points between pipe and metal shield for full length of shield to prevent crushing of insulation. Insulation thickness to be same as adjoining insulation. Where insulation passes through pipe hangers and across trapeze supports, 12" long metal saddles shall be used. On cold pipe, vapor barrier should be carried through the hanger and sealed.

B. Apply and precut insulation inserts as follows:
   1. Installation for hot systems:
      a. Place the precut fiberglass insert around the fitting, positioning the points of the insert on the inside radius of the elbow.
      b. Butt the ends of the fiberglass insert against the ends of the pipe covering. Tuck and fold the insulation so that it covers all bare surfaces. Keep the fiberglass fluffed up to the thickness of the adjacent pipe insulation to assure maximum thermal efficiency.
      c. Insert two stainless steel serrated tacks approximately 1/4" from one of the lap edges of the fitting cover. Then snap the cover in place over the fiberglass insulation.
      d. After the fitting cover is in position, push the tacks into the overlapping throat seam. Apply color-matched, pressure-sensitive tape to the butt joints.
   2. Installation for cold systems:
      a. Position, tuck, and fold the fiberglass insulation insert as described above in steps (a) and (b) for hot systems.
      b. Apply a vapor barrier mastic around the edges of the adjoining pipe insulation. Apply the mastic along the inside of the fitting cover throat overlap seam.
      c. Place the fitting cover over the insulation, lapping the mastic-covered edge over the other side of the throat seam.
      d. Apply color-matched, pressure-sensitive tape over the circumferential joints. The tape should extend over the adjacent pipe insulation and overlap itself by at least 2" on the downward side of the lap.

END OF SECTION 22 07 19

SECTION 22 11 19 - DOMESTIC WATER BACKFLOW PREVENTERS, TRAP PRIMERS, AND SHOCK ABSORBERS

PART 1 GENERAL

1.1 WORK INCLUDED

A. This section includes requirements for:
   1. Backflow preventers.
   2. Shock absorbers.
   3. Equipment connection backflow device.
   4. Vacuum breakers.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers are indicated in subsequent paragraphs.

B. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification.

2.2 BACKFLOW PREVENTERS

A. Acceptable Manufacturers: Apollo, Febco, Cla-Val, Wilkins, or Watts.

B. Product must meet NSF-61.

C. Provide completely automatic, unit, fitted with tight closing shut-off valves and test cocks at each end.

D. Construct such that all parts are replaceable without removing unit from line.

E. Design such that total pressure drop through complete backflow preventer does not exceed 12 PSI at rated flow. Certified U.S.C. flow curves shall be provided for each device as part of the submittal package.

2.3 SHOCK ABSORBERS

A. Acceptable Manufacturers: Josam, Wade, J.R. Smith, Precision Products, Zurn, or Sioux Chief.

B. Refer to drawings for placement and size of shock absorbers.

C. Access Covers: Minimum size 12" x 12" located for access to shock absorbers.

2.4 VACUUM BREAKERS

A. Wilkins model 420

PART 3 EXECUTION

3.1 INSTALLATION AND TESTING

A. Backflow Preventers:
   1. Pipe relief through fixed air gap and discharge to sewer.
   2. Install adjacent to wall and/or floor utilizing stand-off brackets, angle frame, and/or concrete piers.
   3. Test unit for leaks and pressure drop. Clean and/or replace soiled strainer media.
   4. Provide dual parallel reduced pressure backflow preventers on the main domestic water entrance to the facility.
   5. Provide backflow prevention vacuum breaker on any water line feeding any piece of equipment which could cause back siphonage such as mechanical equipment, trap primer lines, etc.

B. Shock Absorbers:
   1. Install shock absorbers above ceiling, outside wall so access and maintenance can be performed without disturbing walls and non-liftouts ceilings.
   2. Install shock absorbers on all flush valves, solenoid valves and quick closing devices.
   3. Test and certify shock absorbers by plumbing and drainage institute.

C. Equipment Connection Backflow device: Provide on all water lines feeding coffee makers, ice machines and beverage dispensers.

D. Vacuum Breakers: Provide on water lines feeding equipment to protect against back siphonage of contaminated water.

END OF SECTION 22 11 19

Drakes Creek Park Parks Maintenance Complex

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SECTION 22 11 16 - DOMESTIC WATER PIPING AND VALVES

PART 1 GENERAL

1.1 SYSTEM REQUIREMENTS

A. Submit pipe, valves, and fittings and have approved before starting installation. Pipe, valves, and fittings to be new, manufactured domestically, and marked clearly with manufacturers' name, weight, and classification or working pressure.

B. Piping to run approximately as shown on drawings or as structural and architectural conditions permit.

C. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification.

PART 2 PRODUCTS

2.1 COPPER PIPES

A. Type "L" hard-drawn seamless copper tubing, ASTM B-88: Domestic hot and cold water 4" O.D. and smaller.

B. Type "K" hard-drawn seamless copper tubing:
1. Domestic water lines located under slab.
2. Exterior domestic water lines 2-1/2" and smaller underground.

C. Copper Pipe Fittings:
1. Provide sweat fittings, ASTM B-62, dimensions conforming to ANSI B16.22, wrought copper, with sweep patterns for copper tubing.
2. Dielectric connection: Provide Epco Sales, lead free dielectric couplers at junction of steel pipe and equipment with copper piping systems. Use of steel or cast iron fittings in copper piping systems prohibited. T-drill branch tee connections shall not be allowed for domestic water piping.

D. Unions to be brass ground joint, 250-pound working pressure.

E. Nipples used in conjunction with copper pipe to be brass.

2.2 VALVES

A. Valves are specified by Manufacturer and Model Numbers to establish quality levels unless otherwise noted. Crane, Milwaukee, Hammond, Nibco, Stockham, Centerline, Apollo, Kitz, or Watts are considered equal manufacturers. Provide

clamp lock hand lever operators on valves less than 8 inches. Provide hand wheel and closed housing worm gear on valves 8 inches and larger unless indicated otherwise below. Provide chain operators for all equipment room and powerhouse valves 4 inch and larger which are located over 6 feet 6 inches above the finish floor. All valves shall meet NSF-61 requirements.

1. Gate Valves:
   a. Gate valves for 2-1/2" and larger steel piping systems to be Class 125, cast iron body, bronze mounted, flanged ends, Nibco F-607-RW. Valves to have solid wedge disc, outside stem and yoke with rising stem, and bolted bonnet. Provide dielectric bolt protectors at all flanges when connecting dissimilar metals.
   b. Gate valves for copper piping 2" and smaller systems to be Class 125, bronze body, solder ends, Nibco S-113 LF. Valve to have either solid or split wedge disc, inside screw, non-rising stem, and screwed bonnet.
2. Globe Valves:
   a. Globe valves 2-1/2" and larger to be Class 150, cast iron body, bronze mounted, flanged ends, Watts M6115-74 lead free. Valves to have renewable seat and disc, outside stem and yoke with rising stem, and bolted bonnet.
   b. Globe valves 2" and smaller to be Class 150, bronze body, screwed ends, Apollo 121T-LF. Valve to be plug type with renewable seat and disc, rising stem, and union bonnet.
3. Ball Valves:
   a. Ball valves for copper water piping systems 2" O.D. and smaller to be equal to Apollo "3" S-585-66LF, solder ends, and for 2-5/8" thru 3-1/8" O.D. to be equal to Nibco T T-585-66LF, threaded ends. Valves to have bronze body, chromium plated bronze ball, PTFE seats, stuffing box ring and seals, and quarter turn on-off. Provide memory stops for valves used for balancing service. Valves to be rated for 400-psi WOG at 200 degrees F. Install threaded end valves with lead free brass adapters.
4. Check Valves:
   a. Check valves for copper water piping systems to be swing type, Class 125, bronze body, screwed ends, Nibco T-413-Y-LF.
5. Flow balancing valves for domestic hot water service shall be Bell & Gossett lead free Circuit Setter Plus or approved equal. Valve shall provide flow balancing, flow measuring, and positive shutoff service. Provide valve with memory stop, capped differential pressure readout ports with internal check valves and preformed insulation. Valve construction to be bronze body and brass ball rated for 200 psig at 250 degrees F.

2.3 STRAINERS

A. Provide cleanable "Y" type strainers in pump suction lines. Strainers to have iron body with screwed bronze or bolted iron cap. Strainer baskets to be brass. Water strainers to be Monel 20 mesh screen. Strainers to be line size complete with blow-down hose bibbs. When Suction Diffusers are specified for end suction pumps, strainers are not required.

2.4 HANGERS

A. Non-insulated copper tubing 1/2" O.D. thru 4" O.D. with no longitudinal movement to be Grinnell Figure CT-99C, MSS SP-69 TYPE 9, plastic coated adjustable tubing ring hanger.

B. Insulated copper piping 1/2" O.D. thru 2-1/8" O.D. with longitudinal movement to be Grinnell Figure 171, MSS SP-69 TYPE 41, pipe roll complete with Figure 167, MSS SP-69 TYPE 40, galvanized steel insulation protection shield sized for maximum 10' span on 4 psi compressive strength insulation.

C. Support copper pipe risers by Grinnell Figure CT-121C, MSS SP-69 TYPE 8, plastic coated riser clamps at floor penetrations.

D. Support three or more parallel lines by trapeze hangers utilizing Unistrut channel or equal in bottom mounting arrangement with rod hanging support.

E. Adequately size hangers on insulated piping for insulation to pass continuously through hangers. Insulated piping to be supported outside insulation covering.

F. Provide concrete inserts, Grinnell Figure 282, MSS SP-69 TYPE 18, universal concrete insert, for attaching hangers to building structure. Inserts to be adequately sized and correctly positioned to support piping, valves, etc., when full of water and system is in operation.

G. Provide C-clamps with locknut, Grinnell Figure 86, MSS SP-69 TYPE 23, where piping is to be hung from steel beams. Welding hanger rods to steel members is not permitted. Provide malleable beam clamps, Grinnell Figure 218, MSS SP-69 TYPE 30, with extension piece, Grinnell Figure 157, where piping is hung from bar joist.

H. Attention is called to pipe spring isolation specified to be furnished by this Contractor.

I. Support all piping by heavy steel, adjustable hangers, or brackets suitably fastened to structural portion of building. Place hangers in accordance with following tables.

COPPER TUBING SUPPORTS	
SIZE (IN.)	DISTANCE BETWEEN SUPPORTS (FT.)
5/8	6
7/8 - 1-1/8	8
1-3/8 - 2-1/8	10
2-5/8 - 5-1/8	12
6-1/8 - 8-1/8	14

J. Perforated metal, strap iron, or band iron hangers are not permitted. Offsets in hangers are not allowed. Pipe risers to be supported at regular intervals in pipe shafts within the limits of good practice.

K. See Insulation Section for requirements at pipe hangers.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install piping not to interfere with opening of doors or other moving parts. Do not install piping near or directly over any portion of electrical equipment.

3.2 FIRE-RATED PARTITIONS

A. Provide permanent firestop system at all piping penetrations of fire-rated walls and floors. Review details on drawing as well as this specification for permissible firestop systems. The firestop system shall have been tested and approved in accordance with ASTM E119 and U.L. 1479 (ASTM E814) and classified for up to 2 hours fire rating. Firestop system to be 3M, Hilti, Nelson, Johns Manville, or Specified Technologies. Firestop system shall be installed in strict accordance with published U.L. approved installation instructions. Submit U.L. approved installation drawing for each type of penetration prior to construction.

3.3 NON-RATED PARTITIONS

A. Piping to pass through the walls insulated or non-insulated as specified. Wall should be finished to fit neatly around the piping. Firestopping is not required at non-rated partitions.

3.4 PIPE SLEEVES

A. Pipe sleeves shall be provided at non-rated partitions and floor penetrations. Pipe sleeves to be Schedule 40 or 18 gage steel. Sleeves to extend 1-1/2" in excess of partition depth on each side. Sleeves penetrating floors in wet areas, including all mechanical rooms, shall extend a minimum of 1 inch above the floor.
1. Piping requiring sleeves: Copper pipes thru masonry walls

B. Provide chromium-plated escutcheon plates for exposed uninsulated pipes projecting through floors or walls in finished spaces. Mechanical rooms and janitor closets are not considered "finished" spaces.

C. Hang piping so equipment, flanges, and connections do not bear weight of piping.

D. Adequately support vertical lines at their bases or by a suitable hanger placed in horizontal line near riser or by a base fitting set on pedestal.

E. Pipes not to be hung or supported by pumps. No torque to be applied to pumps by connecting pipes. After final pipe adjustments and initial operation of the pumps, this Contractor to recheck alignment of pumps and realign as required.

F. Run piping in straight lines; riser lines to be plumb with such offsets only as indicated or necessary. No sagging of lines permitted.

G. Unless otherwise shown on drawings, lines to be installed to drain to sumps or sewer.

H. Ream pipe after cutting to full bore. Remove foreign matter from inside of pipe before installing. Keep installed piping free from dirt and scale and protect open ends from foreign matter. Use temporary plugs or other approved methods of open end closure.

I. Threads to be right-hand, pipe standard, clean cut, full depth, and tapered. Joints to be made tight without caulking. Approved pipe joint lubricant to be used, applied in thin layer to the male thread only.

J. Install copper fittings with suitable flux and silver solder with a melting temperature of at least 1000 degrees F. and 95/5 lead free solder. Type K copper pipe to be joined by means of suitable flux and silver or phos-copper.

K. Piping to have sufficient number of flanges or unions for convenient installation and removal of piping and equipment.

L. Remake or replace defective, leaking, or otherwise unsatisfactory joints or material. Peening, caulking, or doping of piping is not permitted.

M. Install piping to prevent stresses and strains to piping and hangers from expansion or contraction. Provision for proper loops, offsets, or expansion joints to be responsibility of Contractor. Make provision for servicing and removal of equipment without dismantling piping.

3.5 PIPING IN TRANSFORMER, ELECTRICAL, AND ELEVATOR EQUIPMENT ROOMS

A. Refer to drawings. No water piping permitted in transformer, electrical, or elevator equipment rooms.

3.6 VALVE ACCESS

A. Locate all shutoff and control valves for easy access and operation. Where valves must necessarily be located in enclosed spaces, they shall be provided with access panels of sufficient size for operation. Furnish these access panels to proper trades for installation.

END OF SECTION 22 11 16

Drakes Creek Park Parks Maintenance Complex

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SECTION 22 13 16 - SANITARY WASTE AND VENT PIPING

PART 1 GENERAL

1.1 WORK INCLUDED

A. Submit pipe and fittings and have approved before starting installation. Pipe and fittings to be new, manufactured domestically, and marked clearly with manufacturers' name, weight, and classification or working pressure.

B. Piping to run approximately as shown on drawings or as structural and architectural conditions permit.

C. Fittings 1-1/2" and smaller to be threaded, Class 150, standard, malleable iron fittings, conforming to ANSI B16.3 and ASTM A-197.

D. Fittings for galvanized steel pipe to be same as above except have galvanized coating. Fittings for waste, vent, and drainage piping to be drainage pattern type.

E. Unions to be Class 150 malleable iron with bronze-to-iron ground joint conforming to ANSI B16.39, ANSI B1.20.1, and ASTM A-197

F. Bolting materials to be semi-finished carbon steel bolts and hex nuts conforming to ASTM A-307. Threads and dimensions to be in accordance with ANSI B1.1 and B18.2.

G. Thread lubricant to be Crane "Formular 425" or equal. Approved Teflon tape may be used at Contractor's option.

H. Gaskets to be 1/8" thick "Sepco" or equal.

1.2 CAST IRON SOIL PIPE

A. Standard weight cast iron soil pipe with drainage fittings:
1. Waste, drainage, and vent lines 2" and larger. All pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute ® and listed by NSF® International.
2. Drain lines under concrete or other paving and under buildings, including to a distance of not less than 5'-0" from building. All pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute ® and listed by NSF® International.
3. Manufacturers: Charlotte Pipe and Foundry, Tyler Pipe, AB&I Foundry.
4. Joints in cast iron soil pipe may be hub and spigot with neoprene compression gaskets conforming to ASTM C564 or "No-hub". No-hub shall not be permitted on underground systems. No-hub couplings shall be standard CISPI 310 couplings manufactured with 300 series stainless steel and neoprene rubber sleeve.

1.3 PVC PIPE

A. Schedule 40 PVC DWV pipe, ASTM D-2665 solid wall Type 1, Grade 1. Schedule 40 DWV waste and drainage piping below grade ONLY. PVC piping not permitted within Boiler Room, Central Sterile or Food Prep/Dishwashing areas.

B. TYPE PSM SDR-35 PVC sewer pipe with gasket slip joints, ASTM D-3034. Outside gravity, underground sanitary sewer drainage, from 5'-0" outside building to connection to local sewer.

C. Fittings to match piping system. Fittings to have manufacturer's trademark permanently identified in accordance with MSS-SP-25. Supplier to include with submittal data certification that fittings and flanges have met requirements.

D. Joints for piping to be made with tetrahydrofuron solvent cement. Joints to be in accordance with manufacturer's recommendations.

E. Pipe, fittings, and cement to all be supplied by single manufacturer for entire project.

F. All solvent cements shall be low emitting VOC at 510 g/L or less.

1.4 HANGERS

A. Non-insulated steel piping 1-1/2" and smaller with no longitudinal movement to be Grinnell Figure 260, MSS SP-69 Type 1, adjustable clevis hanger.

B. Non-insulated cast iron soil pipe thru 8" to be Grinnell Figure 104, MSS SP-69 TYPE 6, adjustable swivel ring, split ring type, and pipe 10" thru 15" Grinnell Figure 260, MSS SP-69 TYPE 1, adjustable clevis hanger.

C. Non-insulated PVC pipe 1/2" O.D. thru 4" O.D. with no longitudinal movement to be Grinnell Figure CT-99C, MSS SP-69 TYPE 9, plastic coated adjustable tubing ring hanger.

D. Support PVC pipe risers by Grinnell Figure CT-121C, MSS SP-69 TYPE 8, plastic coated riser clamps at floor penetrations.

E. Support steel pipe risers by Grinnell Figure 261, MSS SP-69 TYPE 8, riser clamps at floor slab penetrations.

F. Support three or more parallel lines by trapeze hangers utilizing Unistrut channel or equal in bottom mounting arrangement with rod hanging support.

G. Adequately size hangers on insulated piping for insulation to pass continuously through hangers. Insulated piping to be supported outside insulation covering.

H. Provide concrete inserts, Grinnell Figure 282, MSS SP-69 TYPE 18, universal concrete insert, for attaching hangers to building structure. Inserts to be

adequately sized and correctly positioned to support piping, valves, etc., when full of water and system is in operation.

I. Provide C-clamps with locknut, Grinnell Figure 86, MSS SP-69 TYPE 23, where piping is to be hung from steel beams. Welding hanger rods to steel members is not permitted. Provide malleable beam clamps, Grinnell Figure 218, MSS SP-69 TYPE 30, with extension piece, Grinnell Figure 157, where piping is hung from bar joist.

J. Attention is called to pipe spring isolation specified to be furnished by this Contractor.

K. Support all piping by heavy steel, adjustable hangers, or brackets suitably fastened to structural portion of building. Place hangers in accordance with following.
1. PVC and Cast Iron Supports: Support each fitting, at intervals of not more than 5 feet, and at least at each joint.

L. Perforated metal, strap iron, or band iron hangers are not permitted. Offsets in hangers are not allowed. Pipe risers to be supported at regular intervals in pipe shafts within the limits of good practice.

PART 2 EXECUTION

2.1 INSTALLATION

A. Install piping not to interfere with opening of doors or other moving parts. Do not install piping near or directly over any portion of electrical equipment.

2.2 FIRE-RATED PARTITIONS

A. Provide permanent firestop system at all piping penetrations of fire-rated walls and floors. Review details on drawing as well as this specification for permissible firestop systems. The firestop system shall have been tested and approved in accordance with ASTM E119 and U.L. 1479 (ASTM E814) and classified for up to 2 hours fire rating. Firestop system to be 3M, Hilti, Nelson, Johns Manville, or Specified Technologies. Firestop system shall be installed in strict accordance with published U.L. approved installation instructions. Submit U.L. approved installation drawing for each type of penetration prior to construction.

2.3 NON-RATED PARTITIONS

A. Piping to pass through the walls insulated or non-insulated as specified. Wall should be finished to fit neatly around the piping. Firestopping is not required at non-rated partitions.

B. Provide chromium-plated escutcheon plates for exposed uninsulated pipes projecting through floors or walls in finished spaces. Mechanical rooms and janitor closets are not considered "finished" spaces.

C. Hang piping so equipment, flanges, and connections do not bear weight of piping.

D. Adequately support vertical lines at their bases or by a suitable hanger placed in horizontal line near riser or by a base fitting set on pedestal.

E. Pipes not to be hung or supported by pumps. No torque to be applied to pumps by connecting pipes. After final pipe adjustments and initial operation of the pumps, this Contractor to recheck alignment of pumps and realign as required.

F. Run piping in straight lines; riser lines to be plumb with such offsets only as indicated or necessary. No sagging of lines permitted.

G. Unless otherwise shown on drawings, lines to be installed to drain to sumps or sewer.

H. Ream pipe after cutting to full bore. Remove foreign matter from inside of pipe before installing. Keep installed piping free from dirt and scale and protect open ends from foreign matter. Use temporary plugs or other approved methods of open end closure.

I. Threads to be right-hand, pipe standard, clean cut, full depth, and tapered. Joints to be made tight without caulking. Approved pipe joint lubricant to be used, applied in thin layer to the male thread only.

J. Piping to have sufficient number of flanges or unions for convenient installation and removal of piping and equipment.

K. Remake or replace defective, leaking, or otherwise unsatisfactory joints or material. Peening, caulking, or doping of piping is not permitted.

L. Install piping to prevent stresses and strains to piping and hangers from expansion or contraction. Provision for proper loops, offsets, or expansion joints to be responsibility of Contractor. Make provision for servicing and removal of equipment without dismantling piping.

2.4 PIPING IN TRANSFORMER, ELECTRICAL, AND ELEVATOR EQUIPMENT ROOMS

A. Refer to drawings. No water piping permitted in transformer, electrical, or elevator equipment rooms.

2.5 GRADES AND ELEVATIONS

A. Uniformly grade sanitary drainage lines to elevations shown. If no elevations are given, pitch sewers not less than 1/8" per foot.

END OF SECTION 22 13 16

Drakes Creek Park Parks Maintenance Complex

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PLUMBING SPECIFICATIONS

Scale: As indicated

P00.05

161

SECTION 22 13 19 - SANITARY WASTE PIPING SPECIALTIES

PART 1 GENERAL

1.1 WORK INCLUDED

A. This section includes requirements for:
1. Cleanouts.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers are indicated in subsequent paragraphs.

2.2 CLEANOUTS

A. Acceptable Manufacturers: Josam, Wade, J.R. Smith, or Zurn. The following model numbers listed are Zurn.

B. Exterior: ZN-1402-BP-HD cast iron cutoff ferrule with round nickel bronze scoriated frame and cover, secured.

C. Finished Concrete Floor: ZN-1400-HD-BP inside caulk round nickel bronze scoriated frame and cover.

D. Resilient Tile Floor: ZN-1400-X-BP inside caulk round nickel bronze scoriated frame and cover, secured.

E. Carpet: ZN-1400-CM-BP inside caulk round nickel bronze scoriated frame and cover; provide carpet marker and permanent marker in ceiling above.

F. Wall: ZN-1441-BP cast iron cleanout with bronze plug and round stainless steel cover.

G. Access Covers: Minimum size 12" x 12" located for access to valves, shock absorbers, trap primers, wall cleanouts, etc.

H. Furnish cleanouts occurring in waterproof floors with clamping devices.

PART 3 EXECUTION

3.1 INSTALLATION AND TESTING

A. Cleanouts:
1. Locate line size cleanouts, except 4" largest required, at base of all soil and waste stacks, at all changes in direction and in straight runs. Ensure spacing in straight runs does not exceed 50 feet inside building and 100 feet outside the building.
2. Extend inaccessible cleanouts up through floor and/or wall provided easy accessibility cannot be obtained otherwise.

END OF SECTION 22 13 19

SECTION 22 42 13 - COMMERCIAL PLUMBING FIXTURES

PART 1 GENERAL

1.1 MANUFACTURERS

A. Provide plumbing fixtures and drains as listed on drawings and described herein. Equal fixtures by Kohler, Zurn, American Standard, Crane or Sloan will be considered equivalents.

B. All drainage products to be Josam, Zurn, J.R. Smith, MIFAB, Wade or Watts. All drains installed above slab to be complete with clamping device.

C. Stainless steel sinks shall be Just, Elkay, or Kohler.

D. Commercial or public faucets shall be Zurn, Chicago Faucets, Symmons, Kohler, American Standard, or Speakman.

E. Gooseneck faucets shall be Zurn, Chicago Faucet, T & S, Kohler, American Standard, or Speakman.

F. Fixture supplies, stops, and traps to be commercial grade McGuire, E.B.C., Zurn, or approval equal. Traps to be 17 gauge with wall flange. Supplies and stops to be heavy pattern with wheel handle unless noted otherwise.

G. Thermostatic mixing valves shall be Symmons, Holby, Powers, or Leonard.

H. China or enamel fixtures to be white color, unless otherwise noted.

I. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification.

PART 2 PRODUCTS

P-1 Water Closet - Public, Floor Mounted, 1.6 Gallon:
Kohler K-96053
Kohler K-4670-C seat
Zurn Z-6000-AV-WS1

P-2 Water Closet – ADA, Public, Floor Mounted, Barrier-Free, 1.6 Gallon:
Kohler K-96057
Kohler K-4670-C seat
Zurn Z-6000-AV-WS1

P-3 Urinal:
Kohler K-4991-ET
Zurn Z-6003-AV-WS1

P-4 Lavatory, Oval, Public:
Kohler K-2196-4
Symmons S-20 single lever faucet
Zurn Z8743 grid drain
Zurn ZH8822-XL-LR supplies
Zurn Z8700 p-trap

P-5 Lavatory, Wall Hung, Private:
Kohler K-2005
Symmons S-20 single lever faucet
Zurn Z8743 grid drain
Zurn ZH8822-XL-LR supplies
Zurn Z8700 p-trap
Zurn wall carrier

P-6 Sink, Wall Hung, Public:
Kohler K-2005
Symmons S-20 single lever faucet
Zurn Z8743 grid drain
Zurn ZH8822-XL-LR supplies
Zurn Z8700 p-trap
Zurn wall carrier

P-7 Service Sink:
Kohler K-6852 wall-mounted service sink with stainless steel rim guards
Kohler K-6673 trap
TS2900 Zurn trap standard
Zurn ZZ843M4CSRC integral spring-loaded check stops

P-8 Drain – Floor, Regular:
Zurn ZN-415-P-Y B strainer, nickel bronze top, trap primer, sediment bucket

P-9 Shower, Barrier-Free:
Symmons C-96-500-B30-X-V-231
Zurn ZN-415-5B

P-10 Shower, Barrier-Free:
Symmons C-96-1-X-231
Zurn ZN-415-5B

P-11 Trench Drain, ADA:
Zurn Z-890M-KC-HCA
Length as shown on the plan

P-12 Emergency Eyewash/Shower:
Bradley S19-314EW shower and eyewash, manual close valves
Bradley S19-2150 thermostatic control valve

P-13 Wall Hydrant, Exterior:
Zurn Z-1310, non-freeze with vacuum breaker and stainless steel face
Install 18" above finished grade

P-14 Sink – Double Compartment, Gooseneck Faucet:
Elkay DLR-331910
Zurn Z831C4-XL-FC gooseneck, wrist blades
Zurn Z8739 grid drains
Zurn ZH8822-XL-LR supplies
Zurn Z8752 continuous waste, 17 ga.
Zurn Z8702 p-trap

P-15 Water Connection Box:
Oatey No. 39140 metal ice maker box with metal face plate.
Box with valve and water hammer arrestor

P-16 Floor Sink, 12" Square, Half Grate:
Zurn ZN-1901-KC-2, nickel bronze half grate, flange, A.R.E. coating, 8" sump

P-17 Drinking Fountain: Freeze Resistant, Dual Height, Barrier, Bottle Filler
Elkay LZSTL8WSLK with stainless steel finish
Elkay MLP200 Mounting Plate
Elkay LKAPREZL ADA Apron
Elkay LKFRB1 Freeze Resistant Valve Box (2 Req'd)
Elkay 51300C WaterSentry Filter
Install with lower bubbler 36" above finished floor

EXECUTION

2.1 REQUIREMENTS

A. Water closets shall be installed complete with wall carriers, wax rings, bolt caps, and flush valves (or float valves).

B. Elevated vacuum breakers, where specified, shall be installed 7'-6" above the finished floor.

C. Countertop sinks shall be installed complete with required mounting rim or clips.

D. After installation, all fixtures shall be cleaned and labels removed. Where fixtures are in contact with walls, floors, or countertops, caulking shall be applied. Caulking shall be General Electric white silicon sanitary sealant.

E. Water closets identified on plans as barrier free fixtures shall have the flush valves installed per American Disabilities Act. Flush valves shall have the handle installed on the wide side of the stall. Coordinate with the architectural drawings.

F. Non pre-fabricated showers shall have chloraloy 240 brand non-plasticized chlorinated polyethylene concealed waterproofing membrane .040 inch thick. Installation shall be per manufacturers recommendations.

G. At each floor drain installed above slab on grade, install a 36" x 36" apron equal to chloraloy 240 brand non-plasticized chlorinated polyethylene concealed waterproofing membrane, .040 inch thick, waterproofing membrane to be installed per manufacturers recommendations.

END OF SECTION 22 42 13

△3

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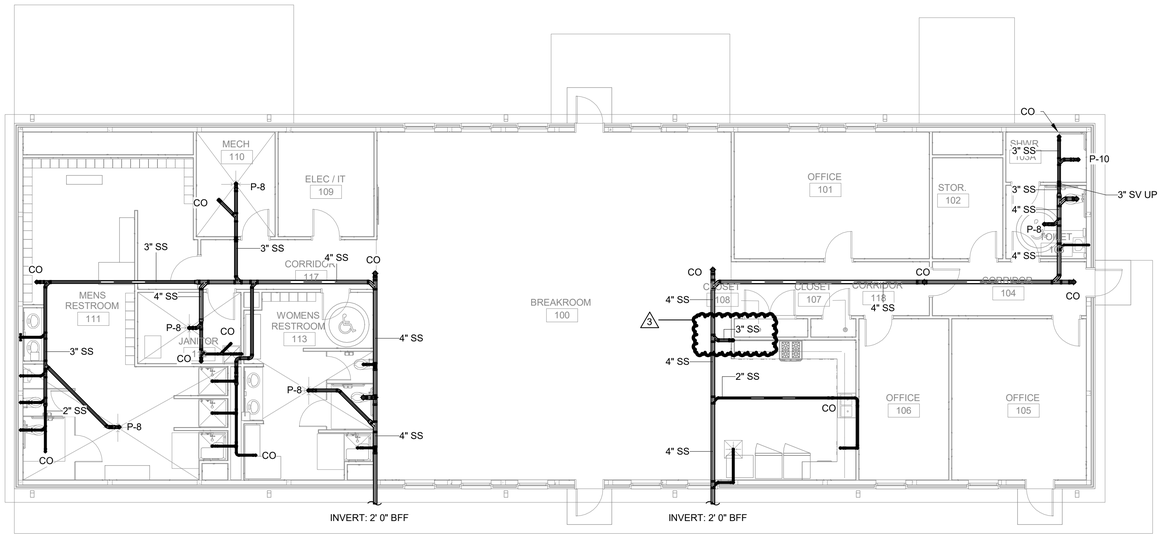
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PLUMBING SPECIFICATIONS

Scale: As indicated

P00.06



1 UNDERGROUND - FLOOR PLAN - OPERATIONS CENTER

1/8" = 1'-0"

0 6' 12'

SHEET NOTES:

COORDINATE WITH CIVIL TO VERIFY LOCATION OF SS MAIN.

Drakes Creek Park Parks Maintenance Complex

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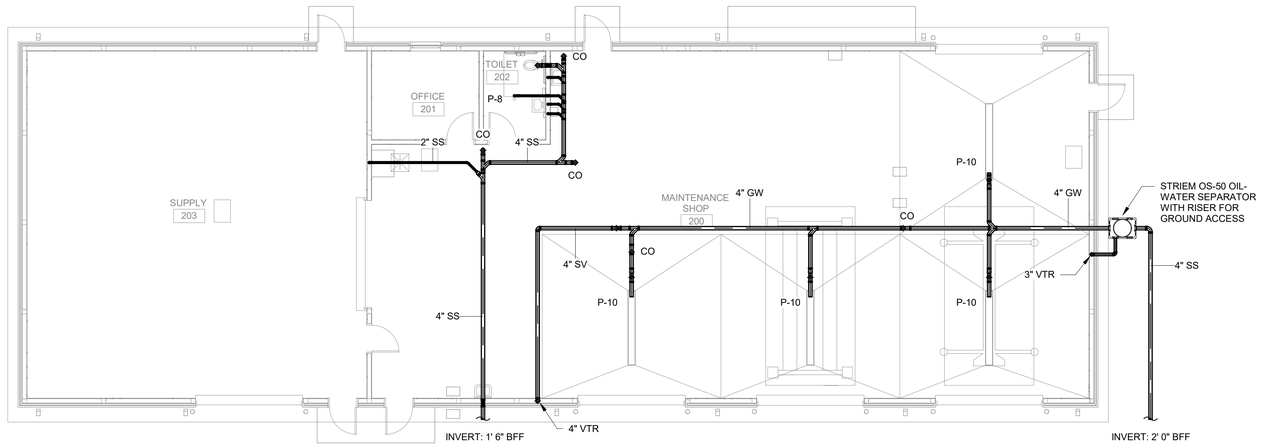
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UNDERGROUND - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

P01.01



1 UNDERGROUND - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

1/8" = 1'-0"

0 6' 12'

SHEET NOTES:

COORDINATE WITH CIVIL TO VERIFY LOCATION OF SS MAIN.

Drakes Creek Park Parks Maintenance Complex

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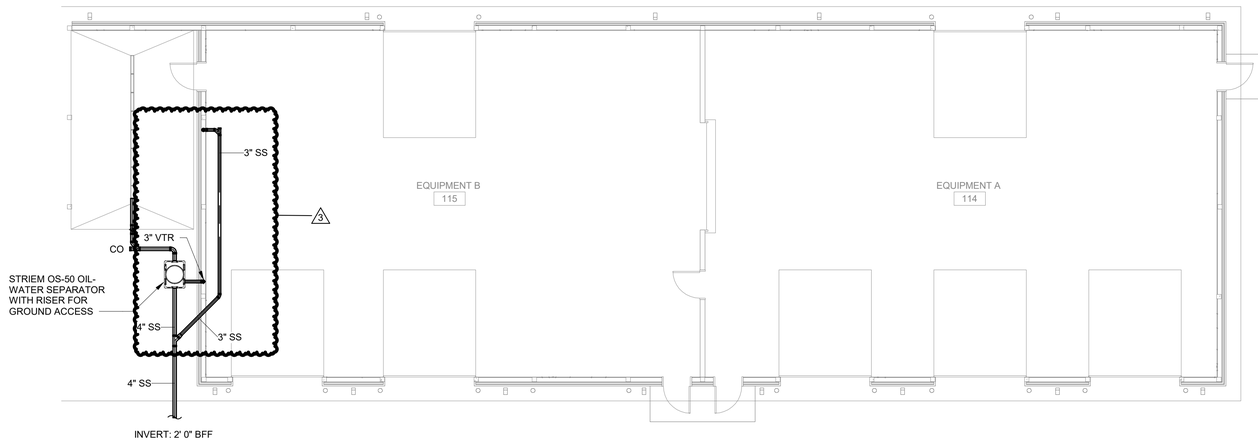
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UNDERGROUND - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

P01.02

16-4



1 UNDERGROUND - FLOOR PLAN - EQUIPMENT BUILDING

1/8" = 1'-0"

0 6' 12'

SHEET NOTES:

COORDINATE WITH CIVIL TO VERIFY LOCATION OF SS MAIN.

Drakes Creek Park
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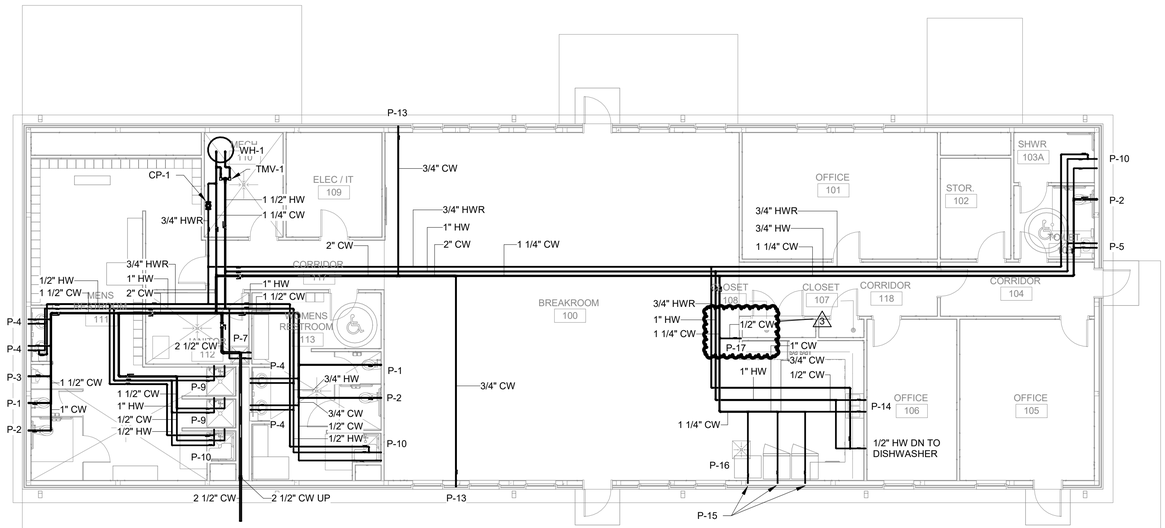
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UNDERGROUND - FLOOR PLAN - EQUIPMENT BUILDING

Scale: As indicated

P01.03



1 PLUMBING - FLOOR PLAN - OPERATIONS CENTER

1/8" = 1'-0"

0 6" 12"

SHEET NOTES:

COORDINATE WITH CIVIL TO VERIFY LOCATION OF DOMESTIC CW MAIN.

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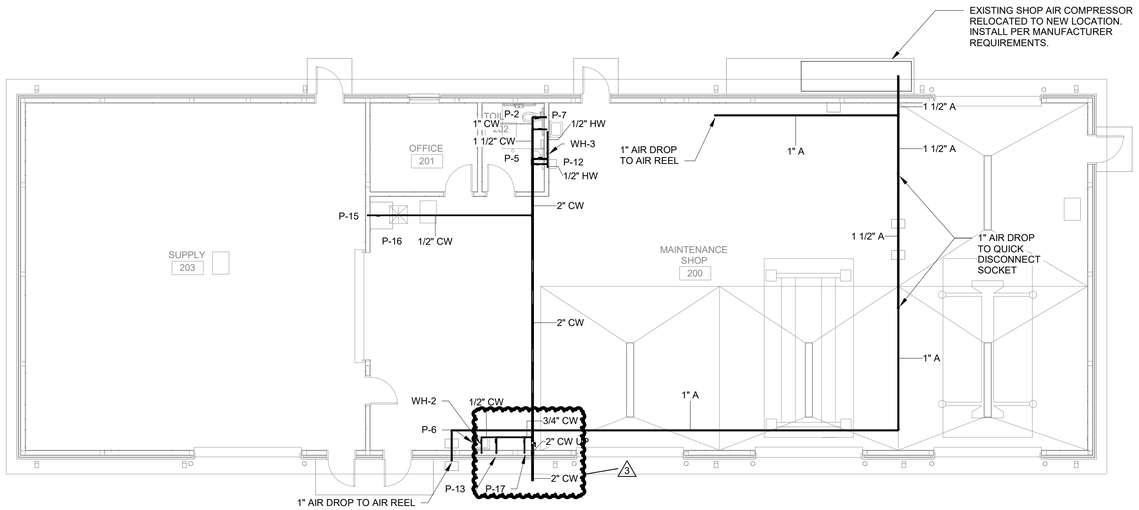
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PLUMBING - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

P02.01



1 PLUMBING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

1/8" = 1'-0"

0 6' 12'

SHEET NOTES:

COORDINATE WITH CIVIL TO VERIFY LOCATION OF DOMESTIC CW MAIN.

COORDINATE WITH SITE OWNER FOR EXACT LOCATION OF AIR LINE CONNECTION TO AIR COMPRESSOR.

Drakes Creek Park Parks Maintenance Complex

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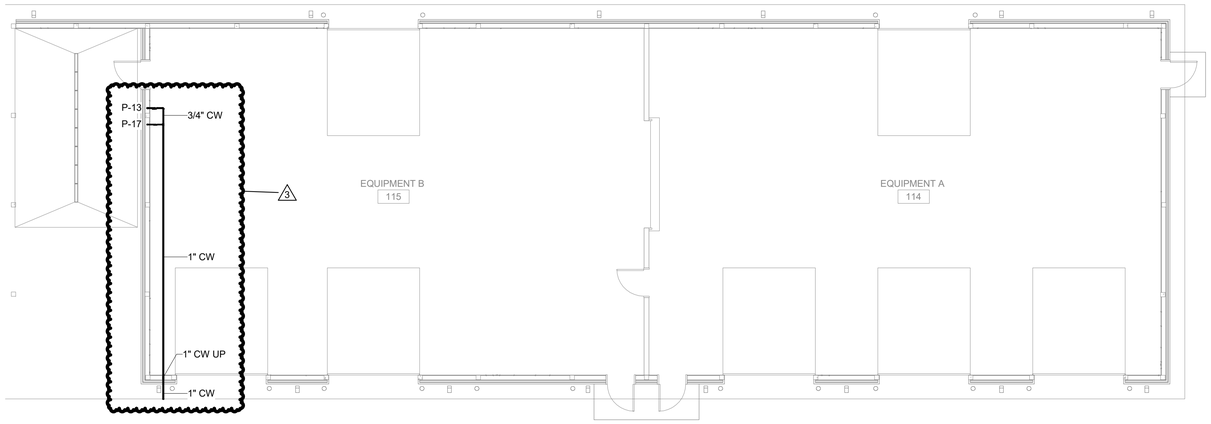
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PLUMBING - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

P02.02



1 PLUMBING - FLOOR PLAN - EQUIPMENT BUILDING

1/8" = 1'-0"

0 6' 12'

SHEET NOTES:

COORDINATE WITH CIVIL TO VERIFY LOCATION OF DOMESTIC CW MAIN.

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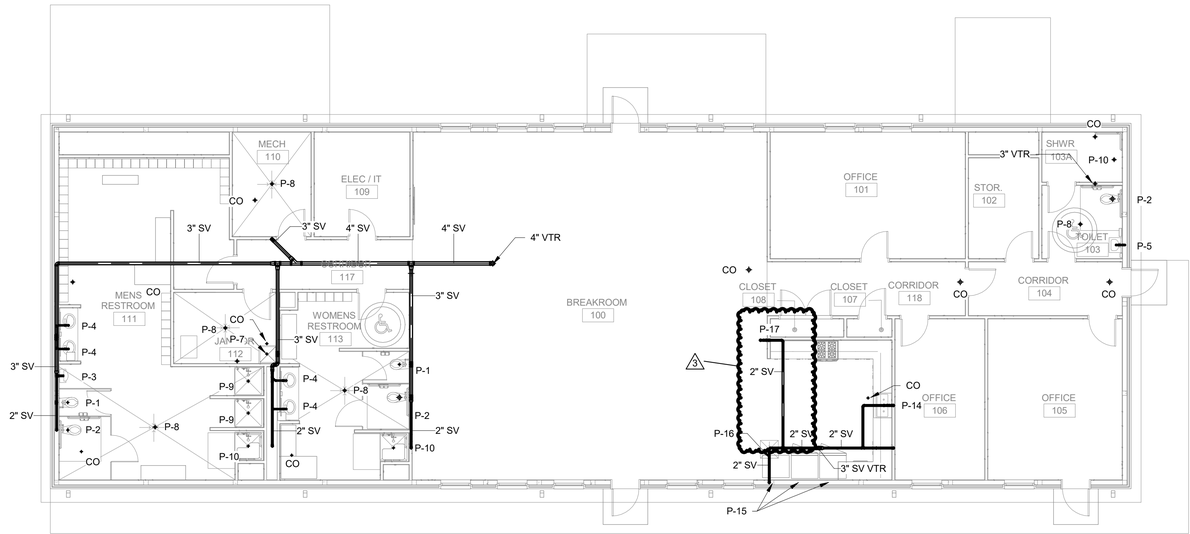
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PLUMBING - FLOOR PLAN - EQUIPMENT BUILDING

Scale: As indicated

P02.03



1 **SANITARY - FLOOR PLAN - OPERATIONS CENTER**
1/8" = 1'-0"
0 6' 12'

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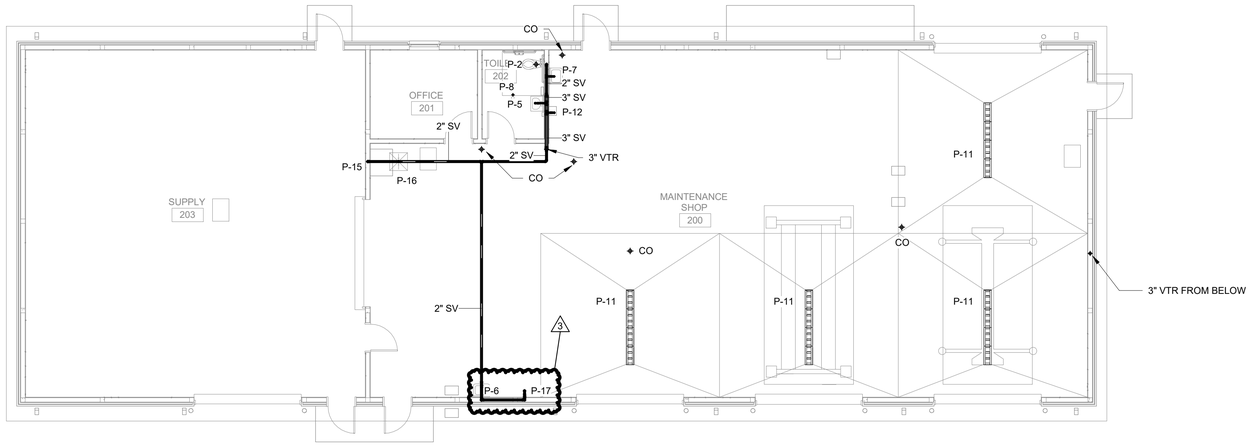
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SANITARY - FLOOR PLAN - OPERATIONS CENTER

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P03.01



1 SANITARY - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

1/8" = 1'-0"

0 6' 12'

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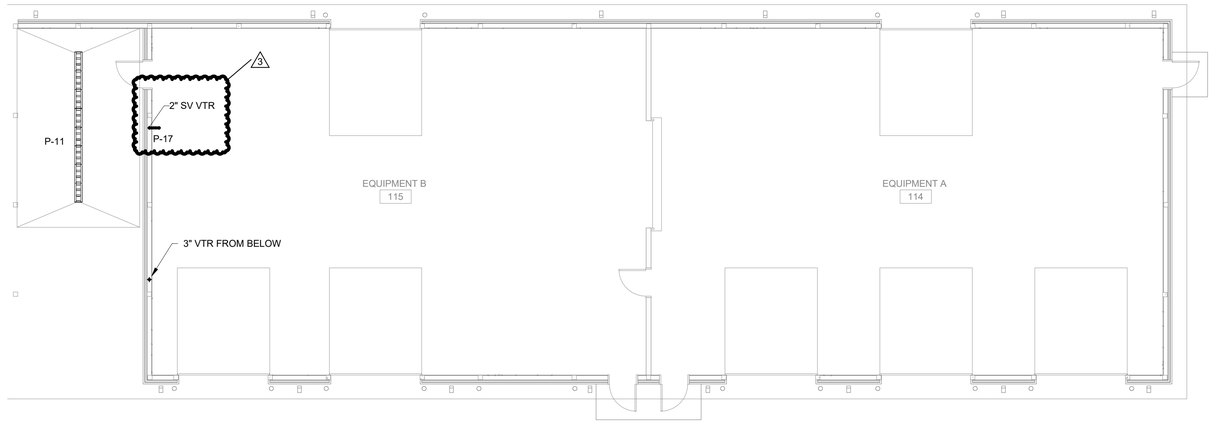
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SANITARY - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

P03.02



1 **SANITARY - FLOOR PLAN - EQUIPMENT BUILDING**
1/8" = 1'-0"
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Drakes Creek Park Parks Maintenance Complex

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SANITARY - FLOOR PLAN - EQUIPMENT BUILDING

Scale: As indicated

P03.03

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	MOUNTING HEIGHT TO CENTERLINE UON
	FIRE ALARM SYSTEM	
L	FLASHING LIGHT	80"
L	FLASHING LIGHT/SPEAKER SIGNAL STATION	80"
L	FLASHING LIGHT/HORN SIGNAL STATION	
F	MANUAL PULL STATION	46"
DSD	DUCT-SMOKE DETECTOR	
HD	AUTOMATIC HEAT DETECTOR (RATE OF RISE TYPE)	
SDE	SYSTEM CONNECTED SMOKE DETECTOR FOR FIREMAN'S RECALL	CEILING
SD	SMOKE DETECTOR	CEILING
FSD	FIRE SMOKE DAMPER	
DH	SMOKE DOOR HOLDER	
TS	TAMPER SWITCH	
FS	FLOW SWITCH	
FACP	FIRE ALARM CONTROL PANEL	
FAA	FIRE ALARM REMOTE ANNUNCIATOR	
FRS	FIRE ALARM RELAY (ADDRESSABLE) FOR INTERFACE WITH SECURITY SYSTEM	
	DATA, TELEPHONE, COMMUNICATIONS, SECURITY SYSTEMS	
	DATA OUTLET	18"
	DATA OUTLET ABOVE COUNTER	AS SPECIFIED
PROJ	PROJECTOR LOW VOLTAGE OUTLET IN PROJECTOR MOUNTING PLATE	CEILING
CR	CARD READER - DMP P-300HA, PROVIDE DMP 734 MODULE AT EACH LOCATION	46"
S	SPEAKER	
	ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR	
AFG	ABOVE FINISHED GRADE	
CLG	CEILING MOUNTED	
EWC	ELECTRIC WATER COOLER	
EWF	ELECTRIC WASH FOUNTAIN	
FBE	FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR	
FBO	FURNISHED BY OTHERS, INSTALLED BY ELECTRICAL CONTRACTOR	
NL	NIGHT LIGHT	
UON	UNLESS OTHERWISE NOTED	
WP	WEATHER PROOF, NEMA 3R	

SYMBOL	DESCRIPTION	MOUNTING HEIGHT TO CENTERLINE UON
	CONDUIT CONCEALED IN WALL OR CEILING	
	CONDUIT CONCEALED IN FLOOR	
	CONDUIT EXPOSED ON WALL OR CEILING.	
	HOMERUN CONDUIT, 2 CIRCUITS	
	CONDUIT TURNING UP	
	CONDUIT TURNING DOWN	
	SURFACE MOUNTED FLUORESCENT/LED LIGHT FIXTURE	
	SURFACE MOUNTED FLUORESCENT/LED LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP	
	RECESSED FLUORESCENT/LED FIXTURE	
	RECESSED FLUORESCENT/LED LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP	
	SURFACE MOUNTED WALL LIGHT FIXTURE	
	SURFACE MOUNTED WALL LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP	
	RECESSED WALL LIGHT FIXTURE	
	RECESSED WALL LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP	
	SURFACE MOUNTED FLUORESCENT/LED LIGHT FIXTURE	
	SURFACE MOUNTED FLUORESCENT/LED LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP	
	RECESSED FLUORESCENT/LED LIGHT FIXTURE	
	RECESSED FLUORESCENT/LED LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP	
	SURFACE MOUNTED FLUORESCENT/LED FIXTURE	
	SURFACE MOUNTED FLUORESCENT/LED FIXTURE WITH EMERGENCY BATTERY BACKUP	
	EXIT LIGHT, CEILING MOUNTED	
	EXIT LIGHT, WALL MOUNTED	
	EXIT LIGHT, WALL MOUNTED W/TWO HEAD BATTERY POWERED EMERGENCY EGRESS LIGHT	
	TWO HEAD BATTERY POWERED EMERGENCY EGRESS LIGHT	
"5"	LIGHTING FIXTURE TYPE DESIGNATION-SEE LIGHTING FIXTURE SCHEDULE	
	AREA OR STREET LIGHT FIXTURE	
P	DRESSING ROOM PILOT LIGHT	
A/P	DISCONNECT SWITCH, NON-FUSIBLE (A = SWITCH AMP RATING, P = NUMBER OF POLES)	
A/P/FAR	DISCONNECT SWITCH, FUSIBLE (A = SWITCH AMP RATING, P = NUMBER OF POLES, FAR = FUSE AS REQUIRED)	
A/P/3R	DISCONNECT SWITCH, NON-FUSIBLE (A = SWITCH AMP RATING, P = NUMBER OF POLES, 3R = NEMA 3R)	
A/P/3R/FAR	DISCONNECT SWITCH, FUSIBLE (A = SWITCH AMP RATING, P = NUMBER OF POLES, FAR = FUSE AS REQUIRED, 3R = NEMA 3R)	
SV	SOLENOID VALVE	
R	RELAY	
TR	TRANSFORMER	
J	JUNCTION BOX	
PB	PULL BOX	
	ENCLOSED CIRCUIT BREAKER	
VS	CEILING MOUNTED VACANCY SENSOR	
PE	PHOTO-ELECTRIC SWITCH	
OS	CEILING MOUNTED OCCUPANCY SENSOR	
S	SINGLE POLE SWITCH	46"
S_2	TWO POLE SWITCH	46"
S_3	THREE-WAY SWITCH	46"
S_4	FOUR WAY SWITCH	46"
S_D	SINGLE POLE DIMMER SWITCH	46"
S_{OC}	WALL MOUNTED OCCUPANCY SENSOR SWITCH	46"
S_{D3}	THREE-WAY DIMMER SWITCH	46"
S_T	THERMAL MOTOR SWITCH, LOCKABLE IN THE "OFF" POSITION - (FBE)	
S_{TWP}	THERMAL MOTOR SWITCH, LOCKABLE IN THE "OFF" POSITION, WEATHERPROOF-(FBE)	
S_{NT}	NON-THERMAL MOTOR SWITCH, LOCABLE IN THE "OFF" POSITION, SQUARE D TYPE K OR APPROVED EQUAL	
S_K	KEY OPERATED SWITCH	46"
S_P	SINGLE POLE SWITCH WITH PILOT LIGHT	46"
S_{WP}	SINGLE POLE SWITCH, WEATHERPROOF	46"
S_{LV}	LOW VOLTAGE CONTROL SWITCH	
H	PUSHPAD FOR AUTOMATIC DOORS (F.B.O.)	
PROJ	20A 120V. DUPLEX RECEPTACLE IN PROJECTOR MOUNTING PLATE	CEILING
	20A 120V. DUPLEX RECEPTACLE	18"
E	20A 120V. DUPLEX RECEPTACLE ON EMERGENCY BRANCH CIRCUIT (RED)	18"
	20A 120V. DUPLEX RECEPTACLE ABOVE COUNTER	42"
E	20A 120V. DUPLEX RECEPTACLE ABOVE COUNTER ON EMERGENCY BRANCH CIRCUIT (RED)	42"
TV	20A 120V. DUPLEX RECEPTACLE FOR TV POWER	84"
	20A 120V. QUADRAPLEX RECEPTACLE	18"
E	20A 120V. QUADRAPLEX RECEPTACLE ON EMERGENCY BRANCH CIRCUIT (RED)	18"
	SINGLE RECEPTACLE, AMPERAGE, VOLTAGE, NEMA CONFIGURATION AS REQUIRED BY EQUIP. SUPPLIER OR AS NOTED	18"
	20A 120V. QUADRAPLEX RECEPTACLE ABOVE COUNTER	42"
E	20A 120V. QUADRAPLEX RECEPTACLE ABOVE COUNTER ON EMERGENCY BRANCH CIRCUIT (RED)	42"
GFI	20A GROUND FAULT TYPE RECEPTACLE	18"
GFI/E	20A GROUND FAULT TYPE RECEPTACLE ON EMERGENCY BRANCH CIRCUIT (RED)	18"
GFI/WP	20A GROUND FAULT RECEPTACLE WEATHERPROOF	18"
DW/GFP	20A 120V. DUPLEX RECEPTACLE FOR DISHWASHER PROTECTED BY GFI CIRCUIT BREAKER	18"
USB	20A 120V. DUPLEX USB TYPE	18"
IG	20A DUPLEX RECEPTACLE, ISOLATED GROUNDING.	18"
IG	20A DUPLEX RECEPTACLE, ISOLATED GROUNDING, INSTALL ABOVE COUNTER	42"
IG	20A QUADRAPLEX RECEPTACLE, ISOLATED GROUNDING	18"
WP	20A WEATHERPROOF DUPLEX RECEPTACLE	18"
	20A 120V. FLOOR BOX WITH (1) DUPLEX RECEPTACLE	FLOOR BOX
	TWO GANG FLOOR BOX WITH ONE DUPLEX 20A 120V RECEPTACLE AND ONE DATA OUTLET	FLOOR BOX

SYMBOLS GENERAL NOTES:

A. ALL MOUNTING HEIGHTS GIVEN IN THE LEGEND, SCHEDULES, PLANS, AND DRAWING NOTES ARE TO THE CENTERLINE OF THE DEVICE, UNLESS OTHERWISE NOTED.

B. INSTALL ALL SWITCHES AT A CENTERLINE HEIGHT OF 46" A.F.F. UNLESS OTHERWISE NOTED. WHERE SWITCHES OR RECEPTACLES ARE MOUNTED ABOVE CASEWORK OR MILLWORK, LOCATE AT A HIGHT OF 3'-8" MAX. ABOVE FINISHED FLOOR OR 3" ABOVE BACKSPLASH TO CENTERLINE.

C. WHERE COVERPLATES CONFLICT WITH CASEWORK OR MILLWORK, SLIGHTLY ADJUST THE MOUNTING HEIGHTS OF THE WIRING DEVICES TO MAKE THE COVERPLATES CLEAR THE COUNTERTOP OR BACKSPLASH BY 1".

D. ALL SYMBOLS, NOTES, AND ABBREVIATIONS SHOWN ON THE LEGEND ARE NOT NECESSARILY USED IN THIS SET OF CONTRACT DOCUMENTS.

E. NUMERICAL SUBSCRIPT ADJACENT TO DEVICE FIXTURE, EQUIPMENT OR JUNCTION BOX SYMBOL ON THE DRAWINGS DENOTES THE PANELBOARD CIRCUIT NUMBER TO WHICH DEVICE, FIXTURE, EQUIPMENT OR WIRING IN JUNTION BOX IS CONNECTED.

Lighting Fixture Schedule

Type	Manufacturer	Model	Lamp	Mount	Description
'1'	WILLIAMS	FT24LS8CSAFDIMUNV	LED	RECESSED	2x4 RECESSED FIXTURE
'1E'	WILLIAMS	FT24LS8CSAFDIMUNV W/EM/10W	LED	RECESSED	2x4 RECESSED FIXTURE W/EM. BATT. BACKUP
'2'	WILLIAMS	4PR-TL-L15835ATH DIMUNV L M CSIPI	16.7W LED	RECESSED	SHOWER RECESSED CAN, WET LOCATION
'3'	WILLIAMS	EGL24L107835HIAFR DIMUNV	43.3W LED	SURFACE	SURFACE MOUNT INDUSTRIAL LIGHT
'4'	WILLIAMS	VWPVL60830T2BLKSDGL EM/4W DIMUNV	49W LED	SURFACE	EXTERIOR WALLPACK W/EM. BATT. BACKUP - 10' AFF
'5'	WILLIAMS	EGL24L107835HIAFR DIMUNV	72.9W LED	CHAIN	INDUSTRAIL STRIP LIGHT
	CHLORIDE	VLTCR3R	LED	WALL	EXIT/EMERGENCY LIGHT W/EM. BATT. BACKUP

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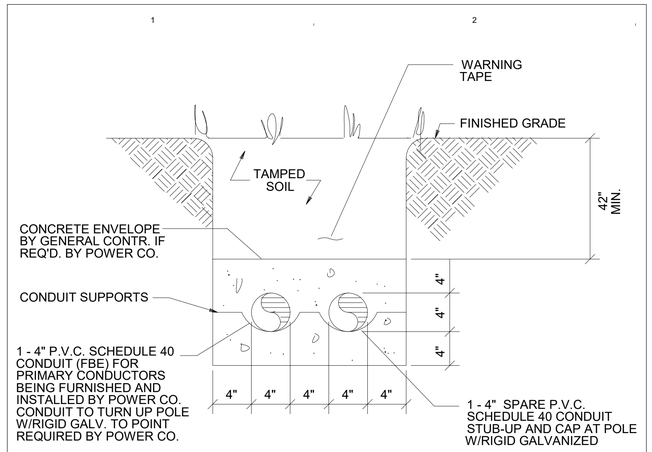
Revisions		
Description	Date	Num

Comm: 247062
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ELECTRICAL LEGEND AND SCHEDULES

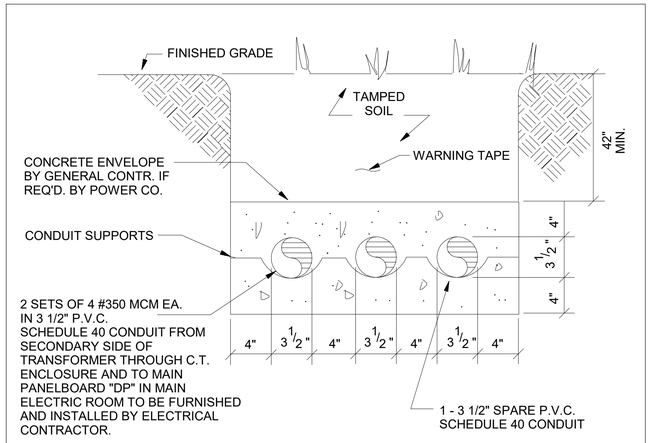
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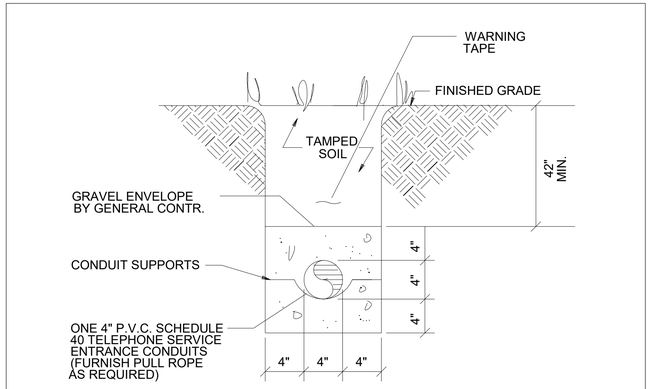
SECTION TWO CONDUIT "A-A"

No Scale



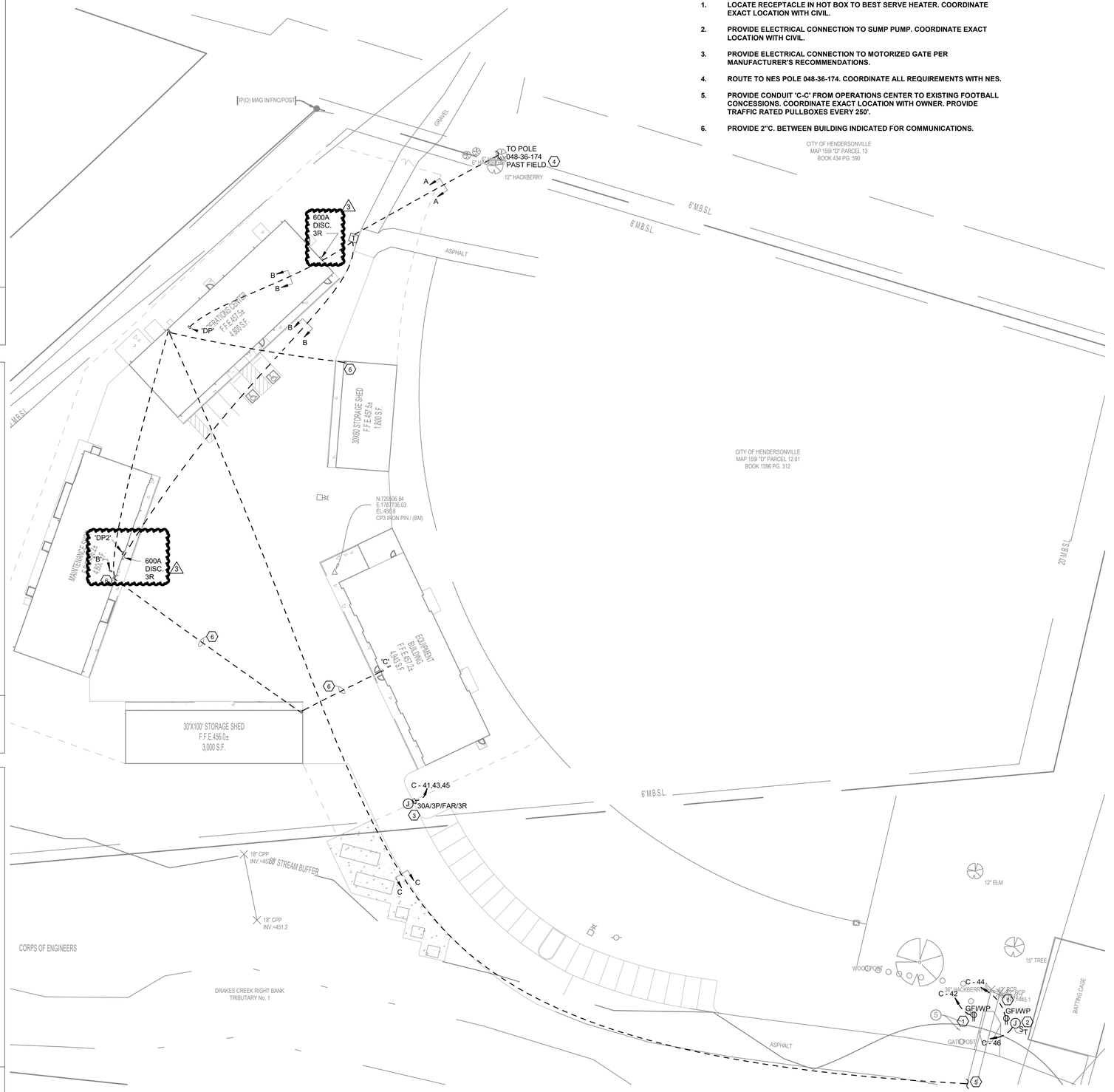
SECTION THREE CONDUIT "B-B"

No Scale



SECTION ONE CONDUIT "C-C"

No Scale



1 **ELECTRICAL - SITE PLAN**
1" = 30'-0"

ELECTRICAL NOTES:

1. LOCATE RECEPTACLE IN HOT BOX TO BEST SERVE HEATER. COORDINATE EXACT LOCATION WITH CIVIL.
2. PROVIDE ELECTRICAL CONNECTION TO SUMP PUMP. COORDINATE EXACT LOCATION WITH CIVIL.
3. PROVIDE ELECTRICAL CONNECTION TO MOTORIZED GATE PER MANUFACTURER'S RECOMMENDATIONS.
4. ROUTE TO NES POLE 048-36-174. COORDINATE ALL REQUIREMENTS WITH NES.
5. PROVIDE CONDUIT 'C-C' FROM OPERATIONS CENTER TO EXISTING FOOTBALL CONCESSIONS. COORDINATE EXACT LOCATION WITH OWNER. PROVIDE TRAFFIC RATED PULLBOXES EVERY 250'.
6. PROVIDE 2"C. BETWEEN BUILDING INDICATED FOR COMMUNICATIONS.

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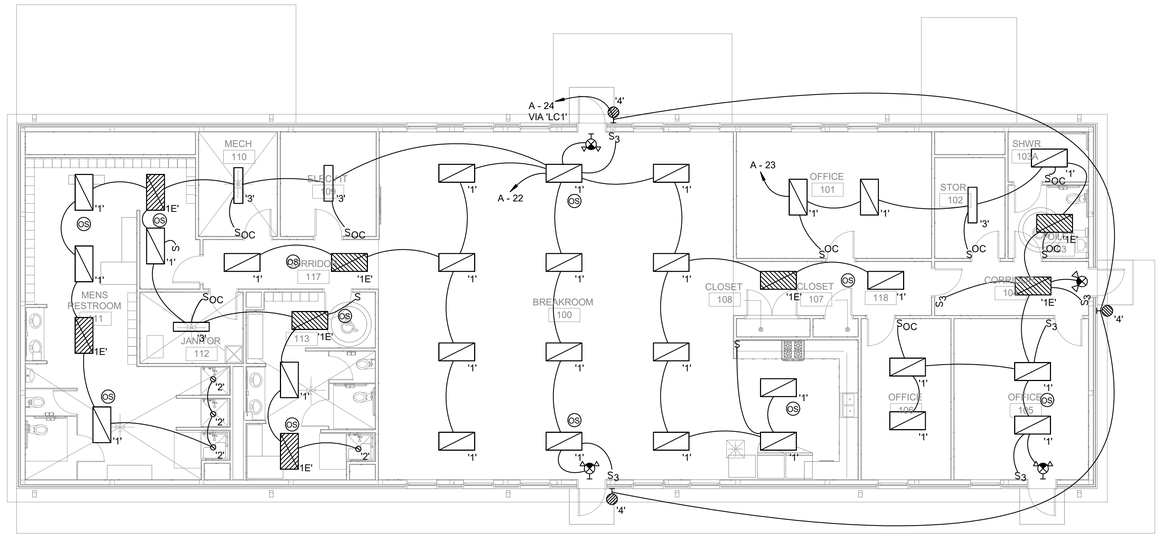
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Description	Date	Num
Addendum 1	2025-08-01	1
Addendum 3	2025-09-19	3

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ELECTRICAL - SITE PLAN

Scale: As indicated

E00.02



1 **LIGHTING - FLOOR PLAN - OPERATIONS CENTER**
1/8" = 1'-0"
0 6' 12'

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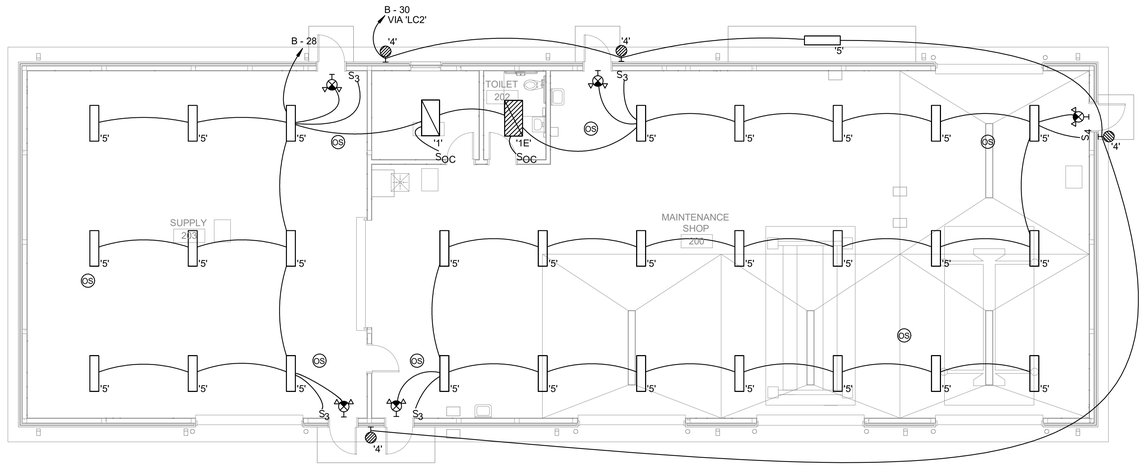
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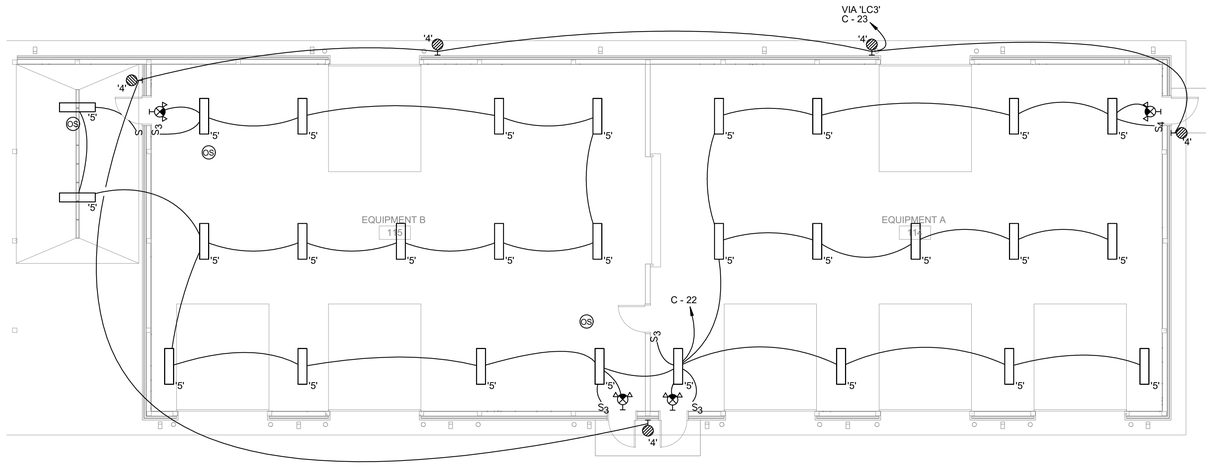
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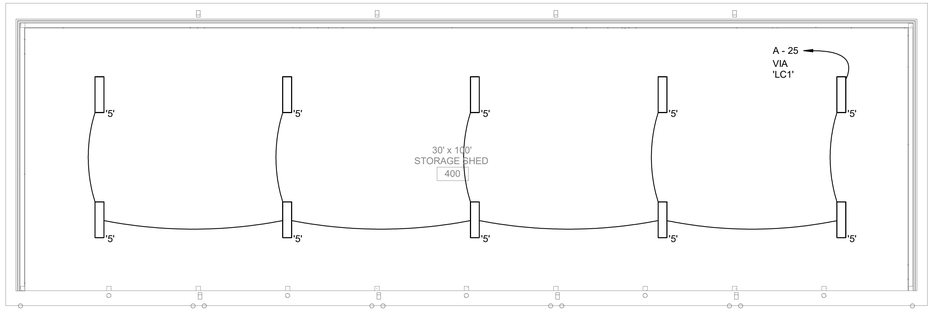
LIGHTING - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

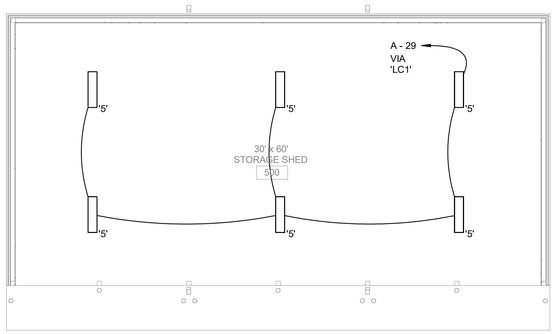
E01.01


B - 30
VIA 'LC2'
B - 28
'4'
'4'
'5'
S3
S3
TOILET
205
OS
'1'
SOC
'1E'
SOC
'5'
'5'
'5'


VIA 'LC3'
C - 23
'4'
'4'
'4'
'5'
'5'
OS
'5'
'5'
'5'



1 **LIGHTING - FLOOR PLAN - STORAGE SHED**
1/8" = 1'-0"
0 6' 12'



2 **LIGHTING - FLOOR PLAN - STORAGE SHED 2**
1/8" = 1'-0"
0 6' 12'

Drakes Creek Park Parks Maintenance Complex

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Wold

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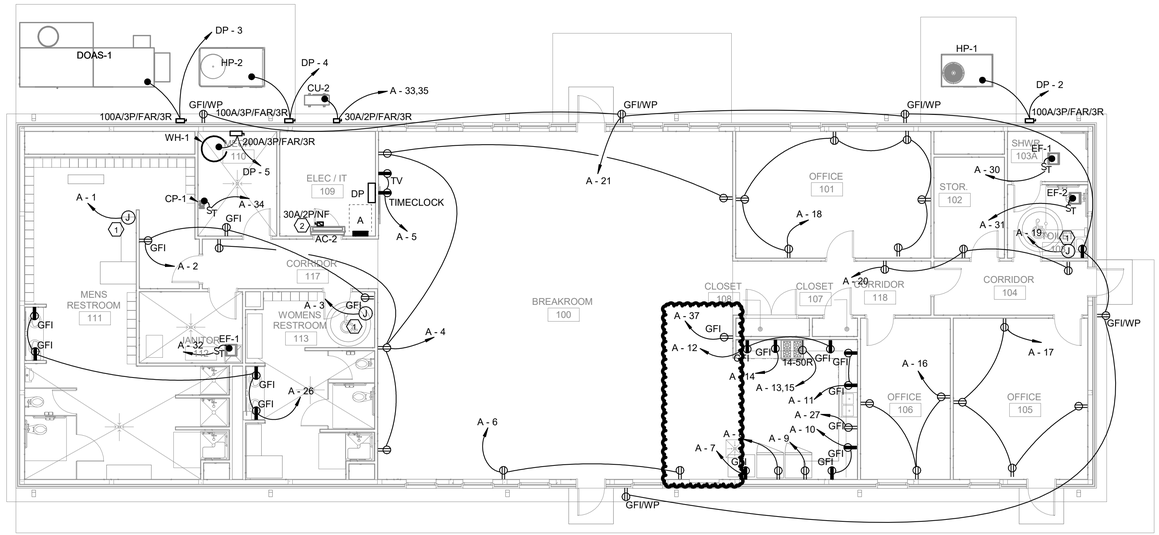
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LIGHTING - FLOOR PLAN - STORAGE SHED

Scale: As Indicated

E01.04



1 **POWER - FLOOR PLAN - OPERATIONS CENTER**
1/8" = 1'-0"
0 6' 12'

ELECTRICAL NOTES:

1. PROVIDE ELECTRICAL CONNECTION TO HAND DRYER.
2. INDOOR UNIT POWERED FROM OUTDOOR UNIT. PROVIDE CONNECTION FROM OUTDOOR UNIT TO INDOOR UNIT PER MANUFACTURER'S RECOMMENDATIONS.

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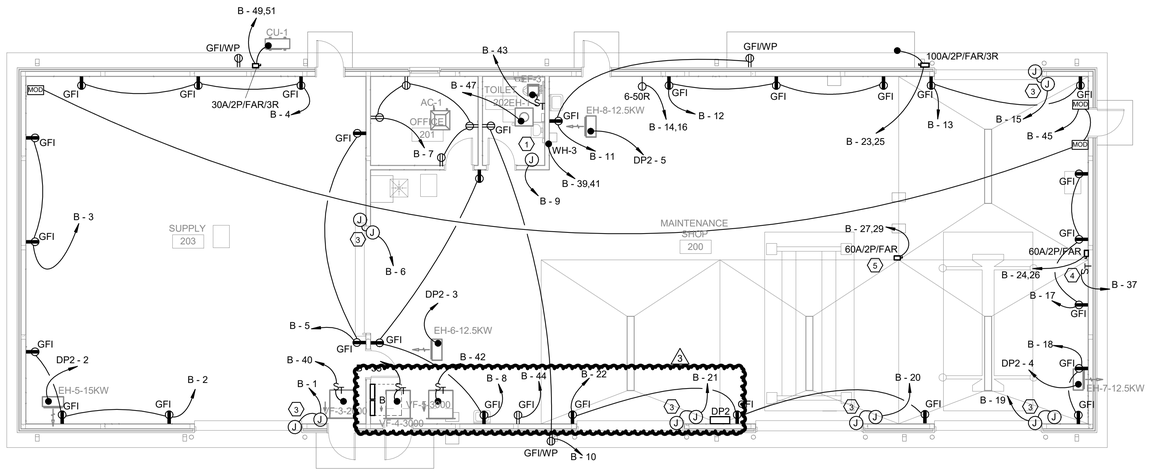
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POWER - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

E02.01



1 **POWER - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING**
1/8" = 1'-0"
0 6' 12'

ELECTRICAL NOTES:

1. PROVIDE ELECTRICAL CONNECTION TO HAND DRYER.
2. PROVIDE ELECTRICAL CONNECTION TO LIFT PER MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE ELECTRICAL CONNECTION TO MOTORIZED DOOR AND CONTROLS PER MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE ELECTRICAL CONNECTION TO 4 POST RACK PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE THERMAL DISCONNECT AND WIRING PLUG AS REQUIRED.
5. PROVIDE ELECTRICAL CONNECTION TO 2 POST RACK PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE DISCONNECT AND WIRING PLUG AS REQUIRED.

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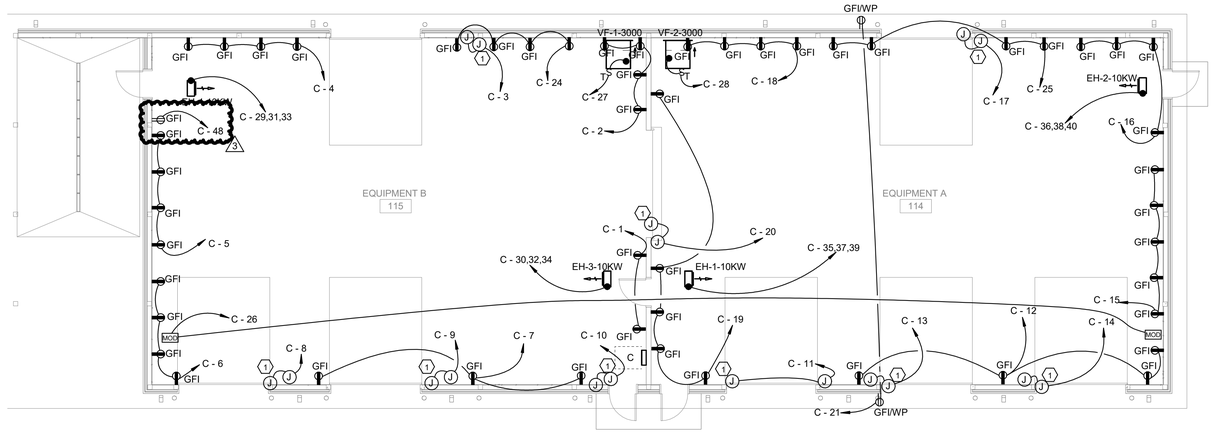
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POWER - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

E02.02



ELECTRICAL NOTES: ⬡

1. **PROVIDE ELECTRICAL CONNECTION TO MOTORIZED DOOR AND CONTROLS PER MANUFACTURER'S RECOMMENDATIONS.**

1 POWER - FLOOR PLAN - EQUIPMENT BUILDING

1/8" = 1'-0"

0 6' 12'

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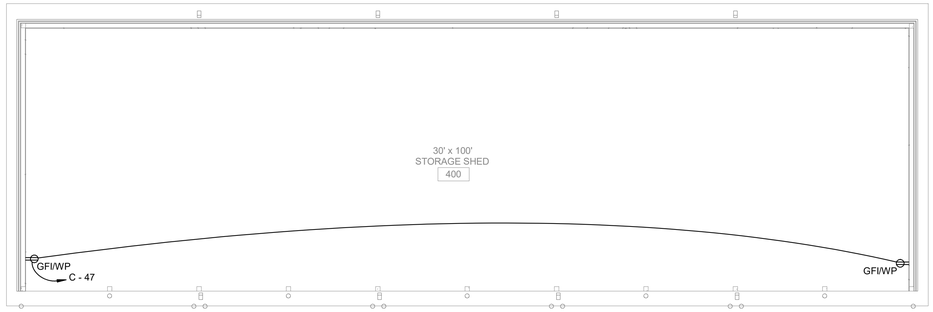
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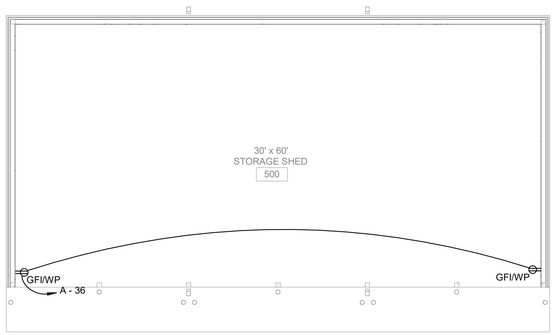
POWER - FLOOR PLAN - EQUIPMENT BUILDING

Scale: As indicated

E02.03



1 **POWER - FLOOR PLAN - STORAGE SHED**
1/8" = 1'-0"
0 6' 12'



2 **POWER - FLOOR PLAN - STORAGE SHED 2**
1/8" = 1'-0"
0 6' 12'

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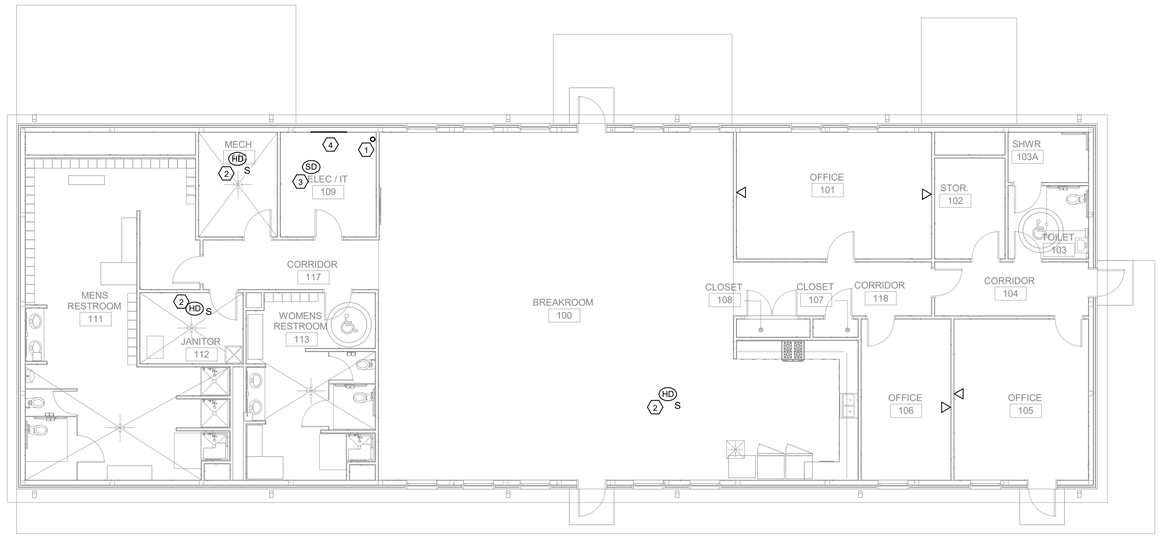
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Description	Date	Num
Addendum 1	2025-08-01	1

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Drawn:
Check:

POWER - FLOOR PLAN - STORAGE SHED

Scale: As indicated

E02.04



1 **SYSTEMS - FLOOR PLAN - OPERATIONS CENTER**
1/8" = 1'-0"
0 6' 12'

ELECTRICAL NOTES: ⬡

1. PROVIDE 2"C. TO ROOF FOR LIGHTNING DETECETION SYSTEM.
2. PROVIDE HEAT DETECTOR WITH SOUNDER BASE.
3. PROVIDE SMOKE DETECTOR WITH SOUNDER BASE.
4. PROVIDE 3/4"x8'x4' PLWOOD BACKBOARD WITH TWO COATS OF FLAT GREY FIRE RETARDANT PAINT FOR TELECOMM.

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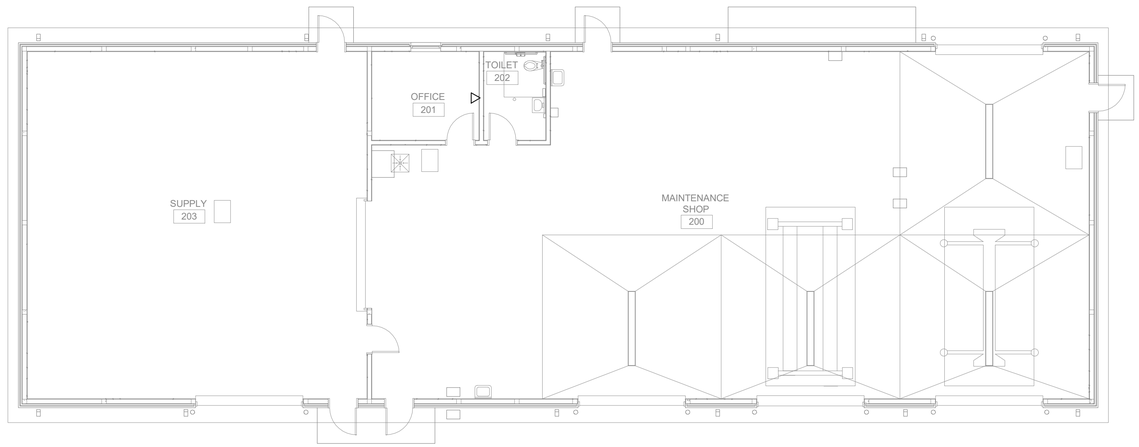
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Description	Date	Num

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SYSTEMS - FLOOR PLAN - OPERATIONS CENTER

Scale: As indicated

E03.01



1 **SYSTEMS - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING**
1/8" = 1'-0"
0 6' 12'

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City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

I.C. Thomasson Associates, Inc.
ICT
A Sales O'Brien Company
2950 Kraft Drive
Nashville, TN 37204
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ERICH PAUL VIERKANT
REGISTERED ENGINEER
AGRICULTURE
No. 110051
STATE OF TENNESSEE
04/30/2026

Revisions		
Description	Date	Num

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

SYSTEMS - FLOOR PLAN - MAINTENANCE / SUPPLY BUILDING

Scale: As indicated

E03.02

CONDUIT AND WIRE DESIGNATION SCHEDULE

WIRE/BKR MAX AMPS	DESIG. #	DESCRIPTION	WIRE/BKR MAX AMPS	DESIG. #	DESCRIPTION
20	1	2#12, 1/2"C	200	32	2#3/0, 1#6G,2"C
20	2	2#12, 1#12G, 1/2"C	200	33	3#3/0, 1#6G, 2"C
20	3	3#12,1#12G, 1/2"C	200	34	4#3/0, 1#6G, 2"C
20	4	4#12, 1#12G, 1/2"C	230	35	2#4/0, 1#4G,2"C
30	5	2#10, 1#10G, 3/4"C	230	36	3#4/0, 1#4G, 2"C
30	6	3#10, 1#10G, 3/4"C	230	37	4#4/0, 1#4G,2-1/2"C
30	7	4#10, 1#10G, 3/4"C	255	38	3#250MCM,1#4G, 2-1/2"C
40	8	2#8, 1#10G, 3/4"C	255	39	4#250MCM, 1#4G,2-1/2"C
40	9	3#8, 1#10G, 3/4"C	285	40	3#300MCM, 1#4G,2-1/2"C
40	10	4#8, 1#10G, 3/4"C	285	41	4#300MCM,1#4G,3"C
55	11	2#6, 1#10G, 3/4"C	310	42	3#350MCM,1#3G, 2-1/2"C
55	12	3#6, 1#10G, 3/4"C	310	43	4#350MCM, 1#3G, 3"C
55	13	4#6, 1#10G, 1"C	380	44	3#500MCM, 1#3G, 3"C
70	14	2#4, 1#8G, 1"C	380	45	4#500MCM,1#3G,3-1/2"C
70	15	3#4, 1#8G, 1"C	460	46	2 SETS,EA:4#4/0,1#2G,,2-1/2"C
70	16	4#4, 1#8G, 1-1/4"C	510	47	2 SETS,EA:4#250MCM,1#1G,2-1/2"C
85	17	2#3, 1#8G, 1-1/4"C	620	48	2 SETS,EA: 4#350MCM,1#1/0G,3"C
85	18	3#3, 1#8G, 1-1/4"C	760	49	2 SETS,EA: 4#500MCM, 1#1/0G,3-1/2"C
85	19	4#3, 1#8G, 1-1/4"C	855	50	3 SETS, EA: 4#300MCM,1#2/0G,3"C
95	20	2#2, 1#8G, 1-1/4"C	930	51	3 SETS, EA: 4#350MCM,1#2/0G,3"C
95	21	3#2, 1#8G, 1-1/4"C	1005	52	3 SETS, EA: 4#400MCM,1#3/0G,3"C
95	22	4#2, 1#8G, 1-1/4"C	1140	53	3 SETS,EA:4#500MCM,1#3/0G,3-1/2"C
130	23	2#1, 1#6G, 1-1/4"C	1240	54	4 SETS,EA: 4#350MCM,1#4/0G,3"C
130	24	3#1, 1#6G, 1-1/4"C	1675	55	5 SETS,EA:4#400MCM,1#250MCMG,3"C
130	25	4#1, 1#6G, 1-1/2"C	1900	56	5 SETS,EA:4#500MCM,1#250MCMG,3-1/2"C
150	26	2#1/0, 1#6G, 1-1/2"C	2010	57	6 SETS,EA:4#400MCM,1#350MCMG,3-1/2"C
150	27	3#1/0, 1#6G,1-1/2"C	2280	58	6 SETS,EA:4#500MCM,1#350MCMG,3-1/2"C
150	28	4#1/0, 1#6G, 2"C	2660	59	7 SETS,EA:4#500MCM,1#400MCMG,3-1/2"C
175	29	2#2/0, 1#6G, 1-1/2"C	3040	60	8 SETS, EA:4#500MCM,1#500MCMG,3-1/2"C
175	30	3#2/0, 1#6G,1-1/ 2"C	4180	61	11 SETS, EA:4#500MCM,1#600MCMG,3-1/2"C
175	31	4#2/0, 1#6G, 2"C			

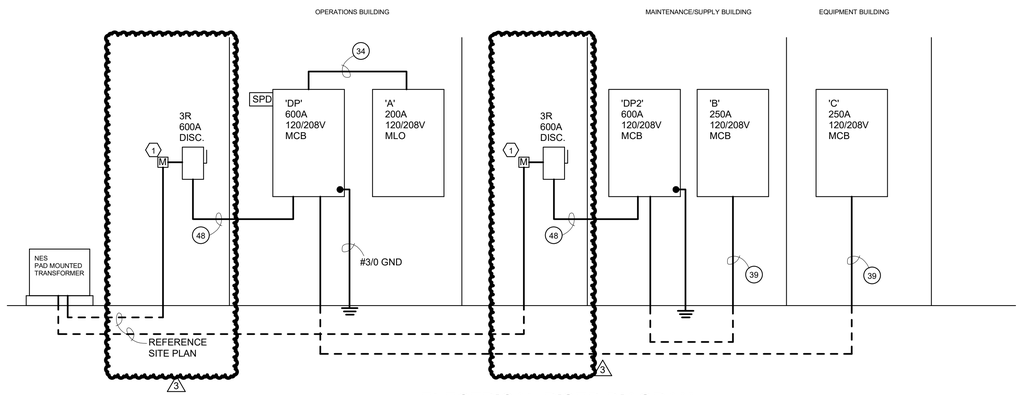
CONDUIT SIZE BASED ON THHN/THWN 40% FILL CALCULATION
WIRE SIZE BASED ON NEC 110-14C WITH 60°C AMPACITY TABLES FOR 20A THRU 100 AMPS
AND 75°C AMPACITY TABLES FOR VALUES > 100 AMPS.

NOTE!
IN GENERAL, THE ACTUAL BREAKER AMPERAGE SHALL BE EQUAL TO OR NEXT STANDARD SIZE SMALLER THAN THE MAXIMUM WIRE AMPS. EXCEPTIONS SHALL BE MOTOR AND SPECIAL EQUIPMENT BREAKERS WHICH SHALL BE SIZED PER N.E.C. AND VENDOR REQUIREMENTS. OMIT GROUND CONDUCTORS ON SERVICE ENTRANCE FEEDERS (TYPICAL). USE #12 WIRE U.O.N. PRIOR TO ROUGH-IN, CONTRACTOR SHALL COORDINATE BREAKER AND WIRING WITH ACTUAL REQUIREMENTS OF EQUIPMENT BEING FURNISHED FOR THIS SPECIFIC PROJECT.

UNLESS NOTED OTHERWISE ALL 20A., 1P. BREAKERS TO UTILIZE #12 CONDUCTORS. EXCEPT WHERE BRANCH CIRCUIT IS IN EXCESS OF 90 LINEAR FEET CONDUCTORS TO BE #10 AND OVER 175 FEET LINEAR FEET CONDUCTORS TO BE #8.

ELECTRICAL NOTES: ⬡

1. PROVIDE ALL ELECTRIC METERING REQUIRED PER NES DESIGN GUIDLINES.



ELECTRICAL RISER DIAGRAM

SCALE: NONE

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

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STATE OF TENNESSEE
04/30/2026

Revisions		
Description	Date	Num
Addendum 3	2025-09-19	3

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

ELECTRICAL RISER DIAGRAM

Scale: As indicated

E04.01

Branch Panel: B

Location:
Supply From: DP2
Mounting: Surface-Mounted
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 A
Mains Type: MLO
Mains Rating: 250 A

Notes:

CKT	Circuit Description	Demand Code	TRIP	P	A		B		C		P	TRIP	Demand Code	Circuit Description	CKT
1	OVERHEAD DOOR - SUPPLY	Equip...	20 A	1	1000	540					1	20 A	Recept...	Receptacle - SUPPLY	2
3	Receptacle - SUPPLY	Recept...	20 A	1			360	540			1	20 A	Recept...	Receptacle - SUPPLY	4
5	Receptacle - SUPPLY	Recept...	20 A	1					360	1000	1	20 A	Equip...	OVERHEAD DOOR - SUPPLY	6
7	Receptacle - OFFICE	Recept...	20 A	1	720	540					1	20 A	Recept...	Receptacle - SHOP	8
9	HAND DRYER - TLT	Equip...	20 A	1			1000	360			1	20 A	Recept...	Receptacle - SHOP	10
11	Receptacle - SHOP	Recept...	20 A	1					360	540	1	20 A	Recept...	Receptacle - SHOP	12
13	Receptacle - SHOP	Recept...	20 A	1	360	2250					2	50 A	Equip...	WELDER - SHOP (2 #6, #10 GND.,3/4"C.)	14
15	OVERHEAD DOOR - SHOP	Equip...	20 A	1			1000	2250			--	--	--	--	16
17	Receptacle - SHOP	Recept...	20 A	1					540	360	1	20 A	Recept...	Receptacle - SHOP	18
19	OVERHEAD DOOR - SHOP	Equip...	20 A	1	1000	1000					1	20 A	Equip...	OVERHEAD DOOR - SHOP	20
21	OVERHEAD DOOR - SHOP	Equip...	20 A	1			1000	540			1	20 A	Recept...	Receptacle - SHOP	22
23	AIR COMPRESSOR (2#3, #8 GND., 1-1/4"C.)	Equip...	80 A	2					3565	1248	2	35 A	Equip...	LIFT (2#8,#10 GND.,3/4"C.)	24
25	--	--	--	--	3565	1248					--	--	--	--	26
27	LIFT (2#8,#10 GND.,3/4"C.)	Equip...	35 A	2			1248	2236			1	20 A	Lighting	Lighting	28
29	--	--	--	--					1248	285	1	20 A	Lighting	Lighting	30
31	Spare	--	20 A	1	0	0					1	20 A	--	Spare	32
33	Spare	--	20 A	1			0	0			1	20 A	--	Spare	34
35	VF-4-2000 (3 #10, 3/4"C.)	Motor;...	20 A	1					1656	0	1	20 A	--	Spare	36
37	4 POST LIFT	Motor	20 A	1	1500	0					1	20 A	--	Spare	38
39	WH-3 - 200	Power	25 A	2			1750	1656			1	25 A	Motor;...	VF-3-2000 (3 #10, 3/4"C.)	40
41	--	--	--	--					1750	1656	1	20 A	Motor;...	VF-5-2000 (3 #10, 3/4"C.)	42
43	EF-3 - 202	Motor	20 A	1	200	500					1	20 A	Equip...	WATER COOLER	44
45	MOD'S	Motor	20 A	1			500				1	20 A	--	Spare	46
47	EH-1 - 202	Power	20 A	1					1500	0	1	20 A	--	Spare	48
49	CU-1 (2#12, 1/2"C.)	Equip...	15 A	2	749	0					1	20 A	--	Spare	50
51	--	--	--	--			749	0			1	20 A	--	Spare	52
53	Spare	--	20 A	1					0	0	1	20 A	--	Spare	54
55	Spare	--	20 A	1	0	0					1	20 A	--	Spare	56
57	Spare	--	20 A	1			0	0			1	20 A	--	Spare	58
59	Spare	--	20 A	1					0	0	1	20 A	--	Spare	60
61	Spare	--	20 A	1	0	0					1	20 A	--	Spare	62
63	Spare	--	20 A	1			0	0			1	20 A	--	Spare	64
65	Spare	--	20 A	1					0	0	1	20 A	--	Spare	66
67	Spare	--	20 A	1	0	0					1	20 A	--	Spare	68
69	Spare	--	20 A	1			0	0			1	20 A	--	Spare	70
71	Spare	--	20 A	1					0	0	1	20 A	--	Spare	72
73	Spare	--	20 A	1	0	0					1	20 A	--	Spare	74
75	Spare	--	20 A	1			0	0			1	20 A	--	Spare	76
77	Spare	--	20 A	1					0	0	1	20 A	--	Spare	78
79	Spare	--	20 A	1	0	0					1	20 A	--	Spare	80
81	Spare	--	20 A	1			0	0			1	20 A	--	Spare	82
83	Spare	--	20 A	1					0	0	1	20 A	--	Spare	84
		Total Load:			15172 VA		15093 VA		16054 VA						
		Total Amps:			127 A		126 A		134 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	2521 VA	100.00%	2521 VA		
Motor	2200 VA	85.00%	1870 VA	**Total Conn. Load:**	46310 VA
Power	9968 VA	90.00%	8971 VA	**Total Est. Demand:**	41141 VA
Equipment	25620 VA	85.00%	21777 VA	**Total Conn. Current:**	129 A
Receptacle	6120 VA	100.00%	6120 VA	**Total Est. Demand Current:**	114 A

Notes:

Distribution Panel: DP

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 18,000 A
Mains Type: MCB
Mains Rating: 600 A
MCB Rating: 600 A

Notes:

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	A	3	200 A	26116 VA	
2	AC-1-3 (3 #3, #8 GND., 1-1/4"C.)	3	80 A	21600 VA	
3	DOAS-1 (3 #2, #8 GND.,	3	90 A	23760 VA	
4	AC-1-7.5 (3 #1, #6 GND., 1-1/4"C.)	3	100 A	28800 VA	
5	WH-1 - 110	3	175 A	45000 VA	
6	SPD	1	60 A	0 VA	
7	SPACE	3	200 A	0 VA	
8	SPACE	3	200 A	0 VA	
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
				145261 VA	
				403 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	3082 VA	100.00%	3082 VA		
Motor	800 VA	85.00%	680 VA	**Total Conn. Load:**	145261 VA
Equipment	132890 VA	85.00%	112957 VA	**Total Est. Demand:**	125208 VA
Receptacle	8640 VA	100.00%	8640 VA	**Total Conn. Current:**	403 A
				Total Est. Demand Current:	348 A

Notes:
PROVIDE SERVICE ENRANCE RATED PANELBOARD WITH MAIN BREAKER.

Branch Panel: A

Location:
Supply From: DP
Mounting: Surface-Mounted
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 A
Mains Type: MLO
Mains Rating: 200 A

Notes:

CKT	Circuit Description	Demand Code	TRIP	P	A		B		C		P	TRIP	Demand Code	Circuit Description	CKT
1	HAND DRYER - MENS	Equip...	20 A	1	1000	540					1	20 A	Recept...	Receptacle - MEN/WOMEN LOCKERS	2
3	HAND DRYER - WOMENS	Equip...	20 A	1			1000	900			1	20 A	Recept...	Receptacle - BREAKROOM	4
5	Receptacle - TV/TIMECLOCK	Recept...	20 A	1					680	360	1	20 A	Recept...	Receptacle - BREAKROOM	6
7	Receptacle - KITCHEN	Recept...	20 A	1	180	1200					1	20 A	Equip...	REFRIG - KITCHEN	8
9	REFRIG - KITCHEN	Equip...	20 A	1			1200	360			1	20 A	Recept...	Receptacle - KITCHEN	10
11	Receptacle - KITCHEN	Recept...	20 A	1					360	360	1	20 A	Recept...	Receptacle - KITCHEN	12
13	OVEN - KITCHEN (3 #6,#10 GND., 3/4"C.)	Equip...	50 A	2	2500	180					1	20 A	Recept...	Receptacle - KITCHEN	14
15	--	--	--	--			2500	540			1	20 A	Recept...	Receptacle - OFFICE	16
17	Receptacle - OFFICE	Recept...	20 A	1					720	1080	1	20 A	Recept...	Receptacle - OFFICE	18
19	HAND DRYER - TLT	Equip...	20 A	1	1000	540					1	20 A	Recept...	Receptacle - CORRIDOR	20
21	Receptacle - EXERTIOR	Recept...	20 A	1			1080	1287			1	20 A	Lighting	Lighting	22
23	Lighting	Lighting	20 A	1					407	156	1	20 A	Lighting	Lighting	24
25	Lighting - SHED 400	Lighting	20 A	1	770	720					1	20 A	Recept...	Receptacle - MEN/WOMEN LOCKERS	26
27	DISHWASHER	Recept...	20 A	1			180	0			1	20 A	--	Spare	28
29	Lighting - SHED 500	Lighting	20 A	1					462	200	1	15 A	Motor	EF-1 - 103A	30
31	EF-2 - 103	Motor	15 A	1	200	200					1	15 A	Motor	EF-1 - 112	32
33	CU-2 (2#10, 3/4"C.)	Equip...	25 A	2			1165	200			1	15 A	Motor	CP-1 - 110	34
35									1165	360	1	20 A	Recept...	Receptacle - STORAGE SHED 500	36
37	WATER COOLER	Equip...	20 A	1	500	0					1	20 A	--	Spare	38
39	Spare	--	20 A	1			0	0			1	20 A	--	Spare	40
41	Spare	--	20 A	1					0	0	1	20 A	--	Spare	42
43															44
45															46
47															48
49															50
51															52
53															54
55															56
57															58
59															60
		Total Load:			9495 VA		10355 VA		6267 VA						
		Total Amps:			83 A		90 A		52 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	3082 VA	100.00%	3082 VA		
Motor	800 VA	85.00%	680 VA	**Total Conn. Load:**	26116 VA
Equipment	13730 VA	85.00%	11671 VA	**Total Est. Demand:**	23938 VA
Receptacle	8640 VA	100.00%	8640 VA	**Total Conn. Current:**	72 A
				Total Est. Demand Current:	66 A

Notes:

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
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City of Hendersonville
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ELICH PAUL VIEKAMP — REGISTERED ENGINEER — AGRICULTURE — No. 110067 — STATE OF TENNESSEE

Revisions		
Description	Date	Num
Addendum 1	2025-08-01	1

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

ELECTRICAL PANEL SCHEDULES

Scale: As indicated

E04.02

Switchboard: DP2

Location:
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 18,000 A
Mains Type: MCB
Mains Rating: 600 A
MCB Rating: 600 A

Notes:

CKT	Circuit Description	# of Poles	Trip Rating	Load	Remarks
1	B	3	250 A	46310 VA	
2	EH-5-15 (3 #4, #8 GND., 1"C.) - 203	3	60 A	15000 VA	
3	EH-6-12.5 (3 #6, #10 GND., 3/4"C.) - 203	3	45 A	12500 VA	
4	EH-7-12.5 (3 #6, #10 GND., 3/4"C.)	3	45 A	12500 VA	
5	EH-8-12.5 (3 #6, #10 GND., 3/4"C.)	3	45 A	12500 VA	
6	C	3	250 A	71389 VA	
7	SPD	3	60 A	0 VA	
8	SPACE	3	200 A	0 VA	
9	SPACE	3	200 A	0 VA	
10					
				170195 VA	
				472 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	4939 VA	100.00%	4939 VA		
Motor	7712 VA	85.00%	6555 VA	**Total Conn. Load:**	170195 VA
Power	102468 VA	90.00%	92221 VA	**Total Est. Demand:**	148838 VA
Equipment	36296 VA	85.00%	30852 VA	**Total Conn. Current:**	472 A
Receptacle	19020 VA	76.29%	14510 VA	**Total Est. Demand Current:**	413 A

Notes:
PROVIDE SERIVICE ENTRANCE RATED PANELBOARD WITH MAIN BREAKER.

Branch Panel: C

Location:
Supply From: DP2
Mounting: Surface-Mounted
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 A
Mains Type: MCB
Mains Rating: 250 A
MCB Rating: 250 A

Notes:

CKT	Circuit Description	Demand Code	TRIP	P	A		B		C		P	TRIP	Demand Code	Circuit Description	CKT
1	Receptacle - EQUIP. B	Recept...	20 A	1	360	720					1	20 A	Recept...	Receptacle	2
3	OVERHEAD DOOR - EQUIP. B	Equip...	20 A	1			1000	720			1	20 A	Recept...	Receptacle - EQUIP. B	4
5	Receptacle - EQUIP. B	Recept...	20 A	1					720	720	1	20 A	Recept...	Receptacle - EQUIP. B	6
7	Receptacle - EQUIP. B	Recept...	20 A	1	540	1000					1	20 A	Equip...	OVERHEAD DOOR - EQUIP. B	8
9	OVERHEAD DOOR - EQUIP. B	Equip...	20 A	1			1000	1000			1	20 A	Equip...	OVERHEAD DOOR - EQUIP. B	10
11	OVERHEAD DOOR - EQUIP. A	Equip...	20 A	1					1000	720	1	20 A	Recept...	Receptacle - EQUIP. A	12
13	OVERHEAD DOOR - EQUIP. A	Equip...	20 A	1	1000	1000					1	20 A	Equip...	OVERHEAD DOOR - EQUIP. A	14
15	Receptacle - EQUIP. A	Recept...	20 A	1			900	720			1	20 A	Recept...	Receptacle - EQUIP. A	16
17	OVERHEAD DOOR - EQUIP. A	Equip...	20 A	1					1000	720	1	20 A	Recept...	Receptacle - EQUIP. A	18
19	Receptacle - EQUIP. A	Recept...	20 A	1	900	1000					1	20 A	Equip...	Equipment	20
21	Receptacle	Recept...	20 A	1			360	2158			1	20 A	Lighting	Lighting	22
23	Lighting	Lighting	20 A	1					260	720	1	20 A	Recept...	Receptacle - EQUIP. STOR.	24
25	Receptacle - EQUIP. A	Recept...	20 A	1	720	200					1	20 A	Motor	Motor Operated Damper	26
27	VF-1 (3#10, 3/4"C.)	Motor	25 A	1			1656	1656			1	25 A	Motor	VF-2 (3#10, 3/4"C.)	28
29	EH-4 (3#8, #10GND, 3/4"C.)	Power	35 A	3					3333	3333	3	35 A	Power	EH-3 (3#8, #10GND, 3/4"C.)	30
31	--	--	--	--	3333	3333					--	--	--	--	32
33	--	--	--	--			3333	3333			--	--	--	--	34
35	EH-1 (3#8, #10GND, 3/4"C.)	Power	35 A	3					3333	3333	3	35 A	Power	EH-2 (3#8, #10GND, 3/4"C.)	36
37	--	--	--	--	3333	3333					--	--	--	--	38
39	--	--	--	--			3333	3333			--	--	--	--	40
41	GATE (4 #10, 3/4"C.)	Motor	30 A	3					667	1500	1	20 A	Recept...	Receptacle - HOT BOX	42
43	--	--	--	--	667	1500					1	20 A	Recept...	Receptacle - HOT BOX	44
45	--	--	--	--			667	1176			1	20 A	Water...	PUMP PUMP - SITE	46
47	Receptacle - SHED 400	Recept...	20 A	1					360	500	1	20 A	Equip...	WATER COOLER	48
49	Spare	--	20 A	1	0	0									
51	Spare	--	20 A	1			0	0			1	20 A	--	Spare	52
53	Spare	--	20 A	1					0	0	1	20 A	--	Spare	54
55	Spare	--	20 A	1	0	0					1	20 A	--	Spare	56
57	Spare	--	20 A	1			0	0			1	20 A	--	Spare	58
59	Spare	--	20 A	1					0	0	1	20 A	--	Spare	60
				Total Load:	22940 VA		26247 VA		22207 VA						
				Total Amps:	192 A		220 A		185 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	2418 VA	100.00%	2418 VA		
Motor	5512 VA	85.00%	4685 VA	**Total Conn. Load:**	71389 VA
Power	40000 VA	90.00%	36000 VA	**Total Est. Demand:**	63511 VA
Equipment	10676 VA	85.00%	9075 VA	**Total Conn. Current:**	198 A
Receptacle	12900 VA	88.76%	11450 VA	**Total Est. Demand Current:**	176 A

Notes:

Drakes Creek Park
Parks Maintenance Complex

131 Conway Twitty Ln,
Hendersonville, TN, 37075

City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

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REGISTERED ENGINEER
AGRICULTURE
No. 110057
STATE OF TENNESSEE
06/27/2025

Revisions		
Description	Date	Num
Addendum 1	2025-08-01	1

Comm: 247062
Date: 06/27/2025
Drawn:
Check:

ELECTRICAL PANEL SCHEDULES

Scale: As indicated

E04.03

SECTION 260100
GENERAL PROVISIONS

PART 1 - GENERAL

1.1 Provide all labor, materials, tools, and service for a complete installation of equipment and systems specified herein and indicated on the drawings.

1.2 CODES AND STANDARDS: Electrical installation to be in accordance with the latest editions, including amendments or revisions to the following Codes:

A. International Building Code, 2021.

B. National Fire Protection Association Codes, specifically NFPA-70-National Electrical Code, NFPA-101 Life Safety Code.

PART 2 - PRODUCTS

2.1 All materials and equipment used in carrying out these specifications to be new and bear the UL labels when such labels are available.

PART 3 - EXECUTION

3.1 Visit site and be informed of conditions under which work must be performed.

3.2 Examine other sections of these specifications and drawings to be familiar with work to be furnished by other tradesmen.

3.3 Upon completion of work, installation to be tested including all systems and equipment.

3.4 Electrical Contractor to provide materials necessary for temporary lights and power as directed by the General Contractor.

3.5 Power consumption will be paid for by the Owner.

SECTION 260534
RACEWAYS - ELECTRIC METALLIC TUBING

PART 1 - GENERAL

1.1 Provide a complete conduit system with associated couplings, connectors, and fittings.

1.2 Electric metallic tubing may be installed concealed overhead and on exposed branch circuits above 6'.

PART 2 - PRODUCTS

2.1 Conduit to be 1/2" minimum size.

2.2 Provide steel set screw couplings, connectors, and fittings with case-hardened locknuts.

PART 3 - EXECUTION

3.1 Run concealed conduits in as direct line as possible between outlets.

3.2 Maintain integrity of fire partitions and floor slabs where conduits pass through sleeves from one area to another with UL listed 3-hour fire and smoke-stop fittings.

3.3 Complete all conduit systems before installing conductors.

SECTION 260534.01
RACEWAYS - FLEXIBLE METALLIC CONDUIT

PART 1 - GENERAL

1.1 Provide a flexible metallic conduit system for the termination points at equipment that may possibly vibrate, such as motors, and also for connection to recessed lighting fixtures.

PART 2 - PRODUCTS

2.1 Conduit to be 3/8" minimum size for lighting fixtures and 1/2" minimum size for utilization equipment.

2.2 In damp or wet locations, flexible conduit will be the Sealtite type.

PART 3 - EXECUTION

3.1 Install a copper ground wire inside of the flexible conduit to achieve continuity of ground. This applies to both lighting fixtures and utilization equipment.

3.2 Allow sufficient slack conduit to reduce the effect of vibration.

SECTION 260537
OUTLET BOXES

PART 1 - GENERAL

1.1 Provide each fixture, switch receptacle, and other device with a galvanized outlet box of appropriate size and depth for its particular location and use.

PART 2 - PRODUCTS

2.1 Ceiling outlet boxes to be 4" octagon and wall boxes to be 4" square with raised plaster rings or device rings.

PART 3 - EXECUTION

3.1 Use boxes of sufficient cubic capacity to accommodate the number of conductors to be installed in accordance with the National Electrical Code.

3.2 Install boxes so that covers will be accessible at all times.

SECTION 262726
WIRING DEVICES

PART 1 - GENERAL

1.1 Provide switches, receptacles, and other wiring devices as indicated on drawings.

PART 2 - PRODUCTS

2.1 All devices to be Bryant, Hubbell, or approved equivalent by Eagle, Arrow Hart, Pass and Seymour, Bryant, Leviton, or General Electric.

2.2 Switches to be 20-amp, 120/277-volt.

2.3 Receptacles to be 20-amp, 125-volt.

PART 3 - EXECUTION

3.1 Mount all switches 48" above finished floor unless noted otherwise.

3.2 Mount all receptacles up 18" unless noted otherwise.

3.3 Check Architectural drawings for special mounting conditions in special areas.

3.4 Install green ground wire from panel to all receptacles.

SECTION 262726.01
DEVICE PLATES

PART 1 - GENERAL

1.1 Provide device plates on all switches, receptacles, telephone outlets, etc.

PART 2 - PRODUCTS

2.1 Device plates shall be nylon type and shall be ivory.

2.2 Plates to be Bryant, Hubbell, Sierra, or approved equivalent by device manufacturer.

PART 3 - EXECUTION

3.1 Install device plates in full contact with wall surfaces.

SECTION 262878
SAFETY SWITCHES

PART 1 - GENERAL

1.1 Contractor to provide all disconnect switches indicated on the drawings.

PART 2 - PRODUCTS

2.1 Safety switches to be as manufactured by Square D, Westinghouse, Gould, or GTE Sylvania.

2.2 Safety switches to be of the heavy-duty type with arc shields and rated for the voltage of the system to which it is being used.

PART 3 - EXECUTION

3.1 Firmly attach all safety switches to the surface on which it is being mounted.

3.2 Safety switches installed in moist or damp locations shall be of the NEMA 3R enclosures.

SECTION 260519
CONDUCTORS

PART 1 - GENERAL

1.1 Provide a complete system of conductors for lighting, power, fire alarm systems, and communication systems throughout the project.

PART 2 - PRODUCTS

2.1 All conductors to be 98 percent conductivity copper with 600-volt minimum insulation.

2.2 All conductors No. 10 and smaller to have type THHN/THWN insulation.

2.3 All conductors No. 8 and larger to have type THWN/THHN insulation and to be stranded.

PART 3 - EXECUTION

3.1 Install pull boxes in circuits or feeders over 100' long.

3.2 Make all splices or connections only at outlet or junction boxes.

SECTION 260529
SUPPORTING DEVICES AND HANGERS

PART 1 - GENERAL

1.1 Provide all hangers and supports required for all work.

PART 2 - PRODUCTS

2.1 Supports as manufactured by Caddy, Erico, and Steel City or approved equal.

PART 3 - EXECUTION

3.1 Secure conduits to within 3' of each outlet box at intervals not to exceed 5'.

3.2 Use of chains, perforated iron, baling wire, or tie wire for supporting conduit runs will not be permitted.

SECTION 260526
GROUNDING

PART 1 - GENERAL

1.1 The entire installation shall be grounded in conformance with the National Electrical Code, Article 250.

1.2 All current consuming devices to have a green ground wire installed in the same conduit as the phase conductors from the panel to the device. This applies to receptacles, motors, etc.

PART 2 - PRODUCTS

2.1 All ground wire to be copper with a green insulation or if a green insulation is not available, then green identifying tape will be installed at both termination points.

PART 3 - EXECUTION

3.1 Provide ground wires throughout distribution system and to all utilization equipment, such as receptacles, motors, and other equipment.

SECTION 265100
INTERIOR LIGHTING AND LAMPS

PART 1 - GENERAL

1.1 Provide labor and materials, equipment, and services necessary to provide all interior lighting fixtures and lamps.

PART 2 - PRODUCTS

2.1 Provide lighting fixtures as indicated on lighting fixture schedule on drawings or approved equivalents.

2.2 Fluorescent ballasts to be high-power factor and bear ETL and CMB labels for Class "P" protection.

2.3 Incandescent lamps to be rated at 130-volt inside frosted.

2.4 Lamps to be as manufactured by General Electric, Sylvania, or Westinghouse, or approved equivalent.

PART 3 - EXECUTION

3.1 Joints and fixture wiring to be made using wire nuts, preinsulated Scotch locks or other approved mechanical means of connection.

3.2 Recess fixtures on lay-in type grid ceilings to be suitable for installation on this type ceiling and may use the ceiling suspension system to support the fixture.

3.3 Coordinate fixture locations to clear diffusers, ductwork, piping, etc.

Drakes Creek Park
Parks Maintenance Complex

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City of Hendersonville
Hendersonville, TN

WOLD ARCHITECTS AND ENGINEERS

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STATE OF TENNESSEE
07/16/2025

Revisions		
Description	Date	Num

Comm: 247062
Date: 06/27/2025
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Check:

ELECTRICAL SPECIFICATIONS

Scale: As indicated

E05.01

City of Hendersonville

Drakes Creek Park Maintenance Complex

Notes and Specifications

1-20-2026

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Architectural Notes (A0.102)

Division 1 – General Requirements

A. Provide special inspections and testing as required by the 2021 International Building Code.
B. Owner to provide contractors and pre-engineered building manufacturer a copy of geo-technical report
C. Pre-Engineered building manufacturer to provide stamped drawings and calculations for review prior to fabrication. Refer to Division 13 for additional requirements.
D. Comply with all applicable federal, state and local codes.
E. General contractor to coordinate all trades so that work is installed in an orderly and efficient manner

Division 3 - Concrete

A. Concrete, reference Structural notes,
B. Provide special inspections and testing per Chapter 17 of the 2021 IBC.
C. Provide material and workmanship in accordance with American Concrete Institute "Specifications for Structural Concrete for Buildings" (ACI 301) latest Edition.

Division 5 - Metals

A. Structural steel shall conform to the AISC "Specifications for the Design, Fabrication, and Erection of
B. Structural Steel for Buildings" 13th Edition.
C. For metal fabrications exposed to view, provide materials with smooth finish without seam marks or blemishes.
D. All steel exposed to exterior elements shall be galvanized.
E. Fabricate bollards from schedule 40 steel pipe.
F. Provide slotted metal framing for support of mechanical and electrical devices.

Division 6 – Wood

A. Coordinate with Division 13 for pre-engineered structure requirements.
B. For interior wall framing, provide Southern Yellow Pine (SYP), No. 2 grade and better, with maximum 19 percent moisture content.
C. Fasteners and anchors.
   1. Provide stainless steel for treated wood locations.

Plain finish elsewhere; size and type to suit conditions.

   2. Provide wood preservative pressure treatment for all components in contact with concrete slab

Division 7 – Thermal and Moisture Protection

A. Insulation
   1. Provide polystyrene rigid board for below grade applications.
   2. Batt/blanket insulation to conform to ASTM C-665.

3. Provide Kraft Paper insulation at concealed conditions; Type II, Class C.
4. Provide FSK faced insulation at exposed conditions; Type III, Class A, non-combustible.
5. 3-1/2" = R-13; 6-1/4" = R-19.
6. Provide fiberglass blown in insulation material per ASTM C764 for pneumatic placement; R-value of 30 per 12.5 inches.
7. Refer to Division 9 for acoustical insulation.

B. Sealants
1. Provide sealants validated by the Sealant, Waterproofing, and Restoration Institute, passing per ASTM C719 and ASTM C661.
2. Provide 2-year installer warranty and 5-year manufacturer.
3. Sealant Schedule:
   a. Use Acrylic Caulk at interior openings/joints in walls and partitions, between casework and walls, around door frames
   b. Use Polyurethane Sealant at exterior joints, metal to metal joints, thresholds, and expansion joints.
   c. Use Silicone Calk in toilets and kitchens
4. Provide air barrier sealing at all penetrations in exterior walls and interior partitions of exterior walls.

Division 8 – Openings

A. Steel doors and frames.
1. All frames to be fully welded.
2. Exterior frames to be level 4, 14 gage, galvanized.
3. Interior frames to be level 3, 16 gage.
4. All hollow metal doors to be level 3, heavy duty 16 gage face sheets; fully welded seamless edge.
5. Provide doors prepped and reinforced for hardware.
6. Provide doors primed for field painting.

B. Steel Windows.
1. Steel window assemblies provided by pre-engineered building manufacturer.
2. Provide 5/8" insulated, tempered glazing in all windows.
3. Provide Kynar 5000 pre-finished units in color as selected by Owner from manufacturers full, premium color range.

C. Wood Doors.
1. Solid core, 5 ply.
2. Warranty: Extend to life of installation.
3. Provide doors prepped and reinforced for hardware.
4. Provide doors primed for field painting.
5. Veneer facing: Grade A veneer quality.

D. Overhead Doors.
1. Coordinate power requirements with manufacturer and electrical drawings.

2. Provide flush interior and exterior panels formed from galvanized sheet material. Interior pan 24 gage; exterior panel 20 gage.
3. Provide insulated, foam-in-place panels.
4. Finishes, Exterior: Baked on polyester finish; custom color to match exterior wall panels.
5. Finishes, Interior: Door panels to manufacturers standard white.
6. Provide 5-year warranty on door operation, including motor, operator, etc.
7. Provide 10-year warranty on finishes.
8. Provide chain hoist operator for emergency use.
9. Provide remote control systems for all doors with devices capable of operating 3 doors per device.
10. Provide obstruction detection safety system interfaced with door operator controls.

Division 8 – Door Hardware

A. General
1. Provide door hardware schedule prepared by a certified Architectural Hardware Consultant.
2. Arrange and conduct keying meeting with Owner prior to finalizing hardware schedule.
3. Provide warranties as follows:
   a. Door closers – 10 years
   b. Cylinders – 2 years
   c. Locks – 10 years
   d. Exit devices – 5 years
   e. Hardware not mentioned – 2 years
4. Hardware Finishes: To greatest extent possible provide matching finish at each opening.
   a. 710 CU antimicrobial finish on push/pull plates, door pulls
   b. 630AM antimicrobial finish on locksets and exit devices
   c. 689 finish on closers
   d. 628 finish on hinges
5. Provide lock boxes; one per building. Coordinate with local AHJ for type and mounting location
6. Install hardware per manufacturer's instructions and requirements of SDI, AWI, ANSI/NFPA 8 and BHMA.
7. At rated openings provide closer, gasketing, and positive latching hardware.

B. Door Hardware Schedule:

- Set 01 Openings 100, 100A, 104, 200, 200D, 203E, 301H, 301G, 301F, 301Q
  - 3 hinges
  - 1 exit device
  - 1 closer
  - 1 key lock
  - 1 gasketing and threshold

Description:
- Free egress at all times

- Exterior entry with key
- Exterior lever can be left locked on unlocked with key

- Set 02 Openings 301S, 203D, 103A, 107, 108, 111, 113
  - 3 hinges
  - 1 passage set
  - 3 silencers
- Set 03 Openings 200F, 203C
  - 3 hinges
  - 1 exit device
  - 1 closer
  - 1 gasketing and threshold

Description:

- Free egress at all times
- No exterior hardware

- Set 04 Openings 202, 103
  - 3 hinges
  - 1 privacy lock
  - 1 closer
  - 1 wall stop
  - 3 silencers
  - ➢ DOOR 103 TO BE 3/4 HR FIRE RATED
- Set 05 Openings 201, 105, 106, 101
  - 3 hinges
  - 1 office function lock
  - 1 wall stop
  - 3 silencers
  - ➢ DOOR 105 TO BE 3/4 HR FIRE RATED
- Set 06 Opening 102, 109, 110, 112
  - 3 hinges
  - 1 storeroom function lock
  - 1 wall stop
  - 1 closer
  - 3 silencers
  - Description:
  - Key required for access
  - Always free egress
  - ➢ DOOR 102 TO BE 3/4 HR FIRE RATED
- Set 07 Openings 100B

- 3 hinges
- 1 exit device
- 1 closure
- 1 wall stop
- 3 silencers
- Description:
- Free egress both directions
- 3/4 HR FIRE RATED

- Set 08 Openings 203A, 301M, 200A, 200B, 200C, 200E, 301K, 301J, 301I, 301P, 3010, 301L
  - 1 chain hoist operator w/chain hasp
  - 1 gasketing and weatherstripping
  - 1 pad lock hasp (interior)

  Description:
  - Reference plans for doors with motor operators.

Division 9 – Finishes

A. Finish material and color selections to be made by Owner. Reference drawings for general finishes.
B. Gypsum Board.
   1. Provide 5/8" gypsum board full height of all walls, unless noted otherwise.
   2. Perform work in accordance with ASTM C840, GA-214, GA-216, and manufacturer's instructions.
   3. Provide type "x" at fire rated conditions.
   4. Provide glass mat, mold and mildew resistant board at kitchens, toilet rooms, showers and mechanical spaces.
   5. Provide impact resistant board where called for on drawings.
   6. Provide exterior gypsum soffit/ceiling boards at all horizontal applications.
   7. Provide level 4 finish.
   8. Provide control joints per gypsum board manufacturer's recommendations.
C. Provide base per finish schedule.
D. Flooring.
   1. Refer to finish schedule for material and locations.
   2. Follow manufacturer's installation procedures for concrete slab prep, moisture content limits, and floor levelness and flatness.
   3. Submit results of field moisture and pH tests prior to beginning installation of flooring.
E. Ceilings – Lay-In.
   1. Refer to finish schedule for material and locations.
   2. Installed systems to conform to ASTM E119.
   3. Maximum deflection of 1/360 including mechanical and electrical components.
   4. Provide hold down clips within 10 feet of exterior doors.

5. Provide safety wires:
    a. 2 wires for items weighing 50 pounds or less.
    b. 4 wires for items over 50 pounds.
    c. Do not support fixtures or equipment from ceiling grid.

Division 10 – Specialties

A. Interior signage by Owner.
B. Exterior signage.
    1. 12" high cast aluminum letters; 3/8" thick.
    2. Clear anodized aluminum finish.
    3. Coordinate final verbiage and/or address with Owner.
    4. Mount to building with ½" stand-offs.
    5. Coordinate required framing and blocking for mounting with pre-engineered building manufacturer.
C. Fire extinguishers by Owner.
D. Metal lockers and benches by Owner.
E. Toilet and bath accessories.
    1. Provide grab bars in lengths and configuration as shown on drawings.
    2. Grab bars to be stainless steel, 0.05 inch thick, with slip resistant texture in grip area.
    3. Provide framed mirror; size and quantities as shown on drawings.
    4. Provide mop and broom holder in janitor closet. 36" long with 3 broom holders, cam type and 4 hooks.
    5. The following accessories are Owner furnished; Owner installed.
        a. Toilet tissue dispensers
        b. Paper towel dispensers
        c. Soap dispensers
        d. Robe hooks
        e. Shower curtain rod and curtain

Division 12 – Furnishings

A. All window treatments by Owner.

Division 13 – Pre-Engineered Buildings

A. Informational Submittals
    1. Delegated-Design Submittal: Indicate profiles, sizes, spacing and locations of structural members, connections, attachments, trim, openings, fasteners, cambers, loads and accessory items.
    2. Indicate framing anchor bolt settings, sizes and locations from datum.
    3. Indicate truss framing plans; and grid line; species and grades of lumber used; design loading and allowable stress increase; force analysis of each member; pitch, span and spacing of trusses; gage thickness, nominal sizes and locations of connectors at joints; bearing and anchorage details; framed openings; permanent bracing and bridging.
    4. Indicate wall and roof system dimensions, panel layout, general construction details, anchorages and method of anchorage and method of installation.

5. Prepare shop drawings under seal of a professional structural engineer registered in State in which the Project is located.

B. Warranty
   1. Provide manufacturer's warranty.
      a. Warranty: Cover prefinished color coat against chipping, cracking or crazing, blistering, peeling, chalking and fading for 20-years.
      b. Warranty: Cover roof against leaks for five years.
      c. Warranty: Cover structure against snow load failure for five years.

C. Lumber Materials
   1. Lumber Grading Rules: AFPA and SFPA.
   2. Column Framing: Pressure treated SYP species #1 or better grade.
   3. Splash Boards: Pressure treated SYP #2 of better grade.
   4. Light Framing: Standard and better treated Spruce Pine Fir (SPF) species, free of warping, twisting or splitting beyond workable limits.

D. Truss Framing Materials
   1. Stress Group: B
   2. Species (Commercial Designation): Hem-Fir, Southern Yellow Pine
   3. Wood Chords and Webs: Treated PS 20, graded to AFPA rules, No. 2 Structural grade, stress group B maximum moisture content of 15 percent.
   4. Lateral Support: Recommended by truss manufacturer.

E. Wall And Roof System
   1. Sheet Steel Stock: ASTM A653 Structural Quality Grade 80 Class 1; zinc-coated (galvanized) to ASTM A653 G90 designation.
   2. Sealant: Polyurethane type as specified in Section 079200, non-staining, elastomeric, skinning.

F. Accessories
   1. Fasteners: Hot-dipped galvanized steel for exterior, high humidity and treated wood locations; type 316 stainless-steel for below
   2. grade locations; size and type to suit condition; to maintain load requirements and weathertight installation.
   3. Connectors: Galvanized steel.
   4. Anchors: Toggle bolt type for anchorage to hollow masonry; expansion shield type for anchorage to solid masonry or concrete; and bolts or ballistic fasteners for anchorage to steel.
      a. Anchor Bolts: ASTM A325 or ASTM F1554, GRADE 36.
      b. Bolts, Nuts and Washers: ASTM A325 or ASTM F1554, GRADE 36.

G. Wall And Roof Systems Fabrication
   1. Siding, Roofing and Liners: Minimum 24 gage metal, 3/4-inches deep; male/female edges fitted with continuous gaskets; in continuous lengths 40'-0" maximum.
   2. Soffit Panels: Minimum 0.019 -inch-thickness aluminum; perforated for ventilation and unperforated.

3. Internal and External Corners: Same material thickness and finish as adjacent material; profile brake formed or shop cut and factory mitered to required angles. Back brace mitered internal corners with minimum 26 gage -inch-thick sheet.
4. Flashings, Closure Pieces, Facia, Infills, Caps and Trim: Same material and finish as adjacent material; profile to suit system.
5. Continuous ridge vent where shown on drawings.

H. Wall And Roof Systems Finish
1. Exterior and Interior Surfaces: Precoated enamel on steel of Polyvinylidene fluoride (PVDF) resin finish, color as noted on drawings.

I. Gutter And Downspout Fabrication
1. Fabricate of same material and finish as roofing metal.
2. Form gutter and downspouts of profile and size as indicated on drawings. Fabricate with connection pieces.
3. Form sections in maximum possible lengths. Hem exposed edges. Allow for expansion at joints.
4. Fabricate support straps of same material and finish as roofing metal, color as selected.
5. Finishes, Gutter: Same finish and color as roof panels.
6. Finishes, Downspouts: Same finish and color as wall panels.

Civil Notes (C0.01)

GENERAL NOTES

1. Existing information/topographic survey was prepared by wold architects and engineers.
2. Property map reference: map 159i "D" parcel 12.01
3. Property is zoned suburban residential sr-2
4. The property is located in zone "ae" areas affected by the 100-year flood plain based on F.E.M.A. "flood rate insurance map" no. 47165c0411g, dated: April 17, 2012.
5. Bidder has visited the site, become familiar with local conditions under which work is to be done, and has correlated the bidder's personal observations with requirements of contract documents. Contractor will not be given extra payment for differences between survey and site conditions that may be encountered.
6. Contractor shall comply with all federal, state, and local codes, obtain, at its own expense, all permits and pay all fees required prior to beginning work.
7. The contractor shall call 811 or visit call811.com/811-your-state at least 3 working days prior to all excavation and/or demolition.
8. The owner does not assume responsibility for the possibility that during construction, utilities other than those shown may be encountered or that actual locations of those shown maybe different from the locations designated on the contract drawings. In areas where it is necessary that the exact location be known of underground facilities, the contractor, at its own expense, shall furnish all labor and tools to either verify and substantiate or definitively establish the positions of underground utility lines.
9. All damage to existing asphalt pavement to remain which results from new construction shall be replaced with like materials at contractor's expense.
10. Prior to construction, the contractor shall flag and protect all trees to remain in accordance with the specifications. Do not operate or store heavy equipment, nor handle or store materials, within the driplines of trees or outside the limit of grading.
11. Tree protection shall consist of the following steps:
    a. Contractor shall hire a licensed landscape contractor to oversee tree protection.
    b. Prior to all grading operations, locate trees to be protected and neatly cut roots to a depth of 30" at the dimensioned limits shown using a utility trenching machine.
    c. Treat exposed roots with a horticultural tree pruning protection product.
    d. Prune tree limbs by the same proportional percentage as tree roots removed (i.e. 25% of roots removed shall result in 25% of tree limbs removed).

12. It is the owner's intent to preserve all of the existing site vegetation outside the limits of grading. 12. All trees are to be protected and saved if they fall outside the limits of grading, even if they are not located or identified on the survey.
13. Selective clearing beyond the limit of grading shall consist of removal of honeysuckle, herbaceous shrubs, poison ivy. And noxious weeds. Grass shall be sown on the whole site after preparation, as noted in the specifications.
14. The contractor shall, at its own expense, repair all damage caused by construction or the construction process. All damage shall be repaired according to current local standards and specifications. Coordinate all construction with the appropriate company.
15. Excess material shall be disposed of by the contractor off the owner's property at no additional cost, in a legal manner.
16. The contractor shall check existing grades, dimensions, and inverts in the field and report all discrepancies to the architect/engineer prior to beginning work.
17. In the event of any discrepancies found in the drawings or if problems are encountered during construction, the contractor shall notify the architect/engineer before proceeding with the work.
18. Provide as-built drawings and documents of all utilities installed for the project. Drawings shall include vertical and horizontal information on all new utilities as well as existing utilities encountered. As-built drawings and documents shall meet requirements of the utility owner. Submit files to engineer and authorities having jurisdiction.
19. Guard reference points staked in the field. All reference points that are destroyed or lost shall be replaced at the contractor's expense.

DEMOLITION NOTES

1. Verify the clearing limits and field conditions before bidding this project. No extras will be allowed due to the irregular surface conditions that may be encountered on this site.
2. Demolition and removal operations shall commence only after all erosion and sedimentation control measures are in place and functional.
3. Provide neat and straight saw cuts of existing pavement along all limits of pavement demolition.
4. All demolished materials become the property of the contractor unless otherwise designated. Dispose of off the owner's property in a legal manner.
5. All pavement base courses, sidewalk, curbs, buildings, foundations, etc. In the area to be removed shall be removed to full depth. Existing base course materials may be worked into the new pavement or building subgrade provided that the gradation,

consistency, compaction, subgrade condition, etc. Are in accordance with the specifications. Base course materials shall not be worked into the subgrade of areas to receive planting.

6. The contractor shall use water sprinkling and other suitable methods as necessary to control dust and dirt caused by the demolition work.
7. All items of construction remaining and specifically mentioned that interfere with the new construction shall be immediately brought to the attention of the architect/engineer.
8. Cavities left by structure removal shall be backfilled with satisfactory material and compacted to 98% of maximum density per ASTM d698.
9. Pavement markings to be removed shall be painted over to match pavement or removed with wire brushing.
10. Except as shown, no trees shall be removed and/or vegetation disturbed without approval of the architect/engineer.

SITE NOTES

1. The following is a minimum construction sequence for site work. If further measures are needed, the contractor shall furnish at no additional cost to the project:
    a. Provide adequate tree protection measures.
    b. Install erosion/siltation controls as designated on plans.
    c. Construct detention basin(s) and structure(s), if required.
    d. Grade the building and parking areas.
2. Construct storm drains and drainage structures. Install siltation control measures to prevent soil from washing into storm drainage structures.
3. Provide a smooth transition between existing pavement and new pavement. Field adjustment of final grades may be necessary. Install all utilities prior to installation of pavement.
4. Dimensions and radii are to the face of curb, edge of concrete, or to the face of building unless otherwise noted.
5. Coordinates are for face of building, center lines of driveways, center of sanitary sewer manholes, and center at face of curb on curb inlets, unless otherwise noted.
6. Verify the clearing limits and field conditions before bidding this project. No extras will be allowed due to the irregular surface conditions that may be encountered on this site.

GRADING AND DRAINAGE NOTES

1. Strip available topsoil and store on site. Install siltation control (silt fence) around soil stockpiles, as needed. Contractor to furnish additional topsoil or remove excess topsoil at no additional expense to the owner.
2. Provided temporary seeding on stockpiles and all other areas of the site that will remain undisturbed for 30 days or more.
3. Place topsoil and apply seed and mulch to all disturbed areas. Place and rake topsoil to a minimum depth of six (6) inches in areas to receive landscaping.
4. It is the owner's intent to preserve all of the existing site vegetation outside the limits of grading.
5. All graded areas shall be seeded and mulched within 15 days after grading is completed.
6. All drainage structures, pipes within the limits of construction, and detention ponds shall have sediment removed prior to final acceptance.
7. Top of grate elevations for curb inlets are given to the center of the inlets at the face of curb. The grates shall slope longitudinally with the pavement grade. Adjust the casting to fall along the curb line.
8. Spot elevations and contours represent proposed finished grade and top of finished pavement.
9. Contractor shall verify existing elevations and inverts prior to beginning work.
10. Contour lines and spot elevations are the result of a detailed engineering grading design and reflect a planned intent with regard to drainage. Should the contractor have questions of this intent or problems with continuity of grades, the architect/engineer shall be contacted prior to beginning work.
11. All curbs and sidewalks shall be backfilled with topsoil, seeded and mulched, unless otherwise noted.
12. Mechanically till lawn areas with a powered skid steer, landscape rake, to pick up rocks and prepare a smooth, uniform surface plane, free of dirt clods and rocks, with loose, uniformly fine texture topsoil. Grade to within plus or minus 1/2-inch of finish elevation. Hand rake to remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

EROSION PREVENTION AND SEDIMENT CONTROL

1. The owner and the contractor are required to submit a notice of intent (NOI) application to discharge construction-activity stormwater to the local Tennessee environmental assistance center at least 30 days prior to beginning construction. The contractor and owner shall provide (with the NOI for this project) existing NPDES permit tracking

numbers for sites where borrow material may be obtained and where spoil material may be placed. Should permits not exist for borrow and spoil sites, separate NOI's shall be provided by the owner and contractor.

2. The notice of coverage (NOC) of the permit to discharge construction-activity stormwater shall be posted near the construction entrance. The contractor shall have a set of approved erosion control plans on site during all construction.
3. The receiving water is Drakes Creek, Hendersonville, Tennessee.
4. Construction shall be sequenced to minimize exposure time of cleared surface area. Erosion and sediment control measures shall be in place and functional prior to earth moving operations. All control measures shall be checked and repaired as necessary, at maximum 14 calendar days in dry periods, and within 24 hours of all rainfall exceeding 0.25 inch per 24-hour period.
5. The contractor shall designate in writing the name and phone number of the individual responsible for erosion and sediment controls.
6. Pre-construction vegetative ground cover shall not be removed more than 14 calendar days prior to grading. All graded areas expected to remain unfinished and unworked for more than 7 calendar days shall be covered with temporary grass, sod, straw, mulch or fabric material. Permanent soil stabilization shall be installed within 14 calendar days of final grading.
7. The contractor shall maintain records of erosion control inspections and repairs for a minimum of 3 years after completion of construction.
8. Temporary seeding for Tennessee projects include the following options;
   A. Jan 1-May 1 Italian rye/Korean lespedeza/summer oats
   B. May 1-July 15 Sudan or Starr millet
   C. July 15-Jan 1 Balboa rye/Italian rye
9. Silt barriers and sediment traps shall be cleaned of accumulated sediment when approximately 50% filled.
10. Stockpiles shall be stabilized and protected from erosion.
11. Upon completion of site stabilization, the owner and contractor shall provide a notice of termination (not) for the project to the local environmental assistance center. A copy of the notice of termination shall be provided to the engineer.
12. Comply with all local and state soil erosion and sediment control requirements. Prevent all soil erosion onto public roads or into existing drainage ditches or waterways as per instructions in the approved state storm water pollution prevention plan (SWPPP). All soil erosion and sediment control costs, as well as regular inspections by a state certified inspector, shall be the contractor's responsibility and shall be included in the project bid.

13. Maintain crushed stone at the site access. Construction vehicles shall not track soil onto public streets. 16. Install and maintain erosion/siltation control devices, as designated on the plan, until adequate vegetation is present to prevent erosion.
14. All locations of temporary erosion control devices shall be subject to adjustment.
15. When the temporary erosion control devices are no longer required, they shall be removed.
16. Replace damaged and worn-out silt barriers.
17. This project is planned to disturb more than one acre. It therefore falls under the Tennessee division of water pollution control's general NPDES permit to discharge storm water associated with construction activity.

UTILITY NOTES

1. Water and sewer construction shall be performed in accordance with all local codes and specifications.
2. Maintain horizontal and vertical separation between sanitary sewer and water supply lines according to local codes.
3. The contractor shall be responsible for coordinating the sequencing of construction for all utility lines so that water lines and underground electric do not conflict with sanitary sewers or storm sewers. Install utilities prior to final pavement construction.
4. All water and sewer construction shall be in accordance with local and state specifications, and the project specifications. Contractor to verify with local utility provider(s) for compliance prior to purchase of material.
5. Coordinate with local utility and/or fire department on approved fire hydrant, reduced pressure back flow preventor, double detector check valve assembly and vault manufacturers.
6. All piping from the "point of service", including underground, used for sprinkler or standpipe system shall be installed by a licensed sprinkler contractor.
7. Adjust all existing castings to proposed finish grade.
8. All water connections shall be made by the contractor.

Structural Notes (S00.01)

Shallow Foundations

1. Foundations are designed based upon assumed soil bearing capacities as stated below.
2. Allowable soil bearing pressures used in design: Spread footings =1800 psf /Continuous footing = 1800 psf
3. Footing excavations shall be observed and tested by an experienced geotechnical engineer prior to steel or concrete placement in order to assess that the foundation materials are consistent with above stated assumed soil bearing capacities.
4. In the event that the soils test results are disapproved, footing excavations shall be undercut (under the direction of the soils engineer) until soils of adequate bearding capacity are encountered. Backfill under footings shall consist of concrete f'c = 2500 psi @ 28 days placed up to the proposed bottom of footing elevation.
5. Footings shall bear on undisturbed residual soils or compacted fill, maximum desnist of 98% ASTM D-698.
6. Footing elevations shown on the plans are for estimating purposes only. Actual footing elevations shall be determined by the contractor at the site and shall be a minimum of 12" below finished grade.
7. All water shall be removed from foundation excavations prior to placing of concrete. If bottoms of trenches become softened due to water before footings are cast, the contractor, at his own expense, shall excavate the softened material and replace with concrete.
8. All pipes (water lines, sewer lines, etc.) And conduits running through walls / slabs shall be protected with ½" expansion material.
9. Continuous footing perpendicular to pipe runs shall be either lowered to allow pipes to pass through above such footings or have concrete jacket if pipes are low enough to be placed below such footings. Footings parallel to pipe runs shall be lowered to avoid surcharge onto the trench excavations.

General Notes

1. No provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of the owner, contractor, architect, engineer, supplier, or any of the consultants, agents, or employees from those set forth in the contract documents, nor shall it be effective to assign to the structural engineer of record (S.E.R.) or any of the S.E.R.'s consultants, agents, or employees any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibilities contrary to the provisions of the contract documents.
2. Reference to standard specifications (concerning structural design) of any technical society, organization, or association or to codes of local or state authorities, shall mean the latest standard codes, specification or tentative specification adopted at the date of taking bids, unless specifically stated otherwise.

3. In the event contract documents conflict with the code of practice or specifications of ACI, PCI, AISC, AISI, SJI or other standards, contact structural engineer for clarification.
4. Notes and specific details on the drawings shall take precedence over general structural notes and typical details. Contact the architect / engineer for a determination of intent before proceeding with related work if there is any discrepancy or question regarding which note to follow.
5. Material, workmanship, and design shall conform to the referenced building code.
6. The contractor shall verify the dimensions, elevations and site conditions before starting work. The architect / engineer shall be notified of any discrepancy.
7. The design, adequacy, and safety of erection bracing, shoring, temporary supports, etc. is the sole responsibility of the contractor.
8. The contractor shall coordinate the architectural, mechanical, electrical, plumbing and civil works with the structural contract documents. The architect / engineer shall be notified of any discrepancies or omissions.
9. The contractor shall notify, in writing, the engineer of conditions encountered in the field that are contradictory to those shown on the contract documents.
10. For dimensions not shown on the structural drawings see the architectural drawings.

Concrete

1. All phases of work pertaining to the concrete construction shall conform to the "Building Code Requirements for Structural Concrete" (ACI 318), latest edition with modifications as noted in the drawings or specifications.
2. Concrete mixes shall be designed by a qualified testing laboratory and approved by the structural engineer.
3. All exposed corners or edges of columns, piers, walls, etc., shall be formed with a 3/4” chamfer unless noted otherwise on structural or architectural drawings.
4. All reinforcing bars, anchor bolts and other concrete inserts shall be well secured in position prior to placing concrete.
5. Provide sleeves for plumbing and electrical openings in concrete before placing concrete. Do not cut any reinforcing that may conflict. Coring is not permitted except as shown. Notify the structural engineer in advance of conditions not shown on the drawings.
6. Conduit or pipe size (o.d.) shall not exceed 30% of the slab thickness and shall be placed between the top and bottom reinforcing unless specifically detailed otherwise. Concentrations of conduits or pipes shall be avoided except where detailed openings are provided.
7. Curing compounds on concrete that is to receive special finish shall be approved by the manufacturer before use.
8. Roughen surface of horizontal or nearly horizontal construction joints so that the aggregate shall be exposed uniformly, leaving no laitance, loosed particles or damaged concrete.
9. Locate joints not indicated to least impair strength and appearance of the structure. Locate horizontal joints in concrete only where they normally occur or where indicated. Locate vertical joints in middle third of spans of slabs, beams, or girders unless a beam intersects a girder at middle location, in which case offset joints in girders twice the width of the beam.

10. Once formwork has been removed from concrete retaining walls, brace walls thoroughly before placing soil against wall and keep bracing in place for a minimum of 7 days after earthwork is complete.

Schedule of Concrete Strengths						
Use (Location)	28 Day Strength	Aggregate Size (Max.)	Cement/CY (Min.)	W/C ratio (Max.)	Slump (Max.)	Air Entrainment
Slab-on-grade (Interior)	f'c=3,000 psi	1”	480#	.62	4-1/2"	None
Exposed Concrete	f'c=4,000 psi	1”	560#	.54	4-1/2"	4%-6%
Footings	f'c=3,000 psi	1”	480#	.62	4-1/2"	None
1. All aggregate shall be Limestone 2. All cement shall be Portland Cement Type 1						

Reinforcing

1. Reinforcing shall be detailed and placed in conformance with ACI Detailing Manual.
2. Reinforcing bars shall conform to the requirements of ASTM A615 Grade 60 except all reinforcing in concrete moment frames and shear walls and all welded reinforcement shall conform to ASTM A706 Grade 60.
3. Welded wire fabric shall conform to ASTM A185.
4. Minimum lap of welded wire fabric shall be 6" or one full mesh + 2", whichever is greater.
5. Dowels between footings and walls shall be the grade, size and spacing or number as the vertical reinforcing, respectively.
6. Reinforcing steel in all concrete walls and footings shall be continuous around corners.
7. Provide (2) #5 extra reinforcing bars around all side of openings in concrete, unless noted otherwise on the plans. Extend bars 2'-0" beyond each edge of opening.
8. Minimum clear coverage of concrete over reinforcement shall be:
   a. Concrete cast against and permanently exposed to earth .....3"
   b. Concrete exposed to earth or weather:
      i. No. 6 through no. 18 bar.....2"
      ii. No. 5 bar, w31 or d31 wire or smaller.....1-1/2"

   c. Concrete not exposed to weather or in contact with ground:

      i. Slabs walls and joists no. 14 & no. 18.....1-1/2"
      ii. Slabs walls and joists no. 11 & smaller.....3/4"
      iii. Beams, columns: ties and primary reinforcing.....1-1/2"

MECHANICAL GENERAL NOTES (M00.0A)

1. Contractor shall be responsible for providing a complete operational cooling and heating system in accordance with the design drawings.
2. All work shall conform to the requirements of the International Mechanical Code, NFPA requirements, and all local codes.
3. Drawings are diagrammatic and indicate general arrangement of systems. Drawings shall not be scaled.
4. Contractor shall field verify by measurement the exact location of equipment, ductwork, piping, structure, and other conditions which will affect installation. Contractor shall locate equipment and route ductwork and piping to avoid conflicts and interferences with existing conditions.
5. Coordinate duct, piping, and equipment locations with electrical rooms, elevator equipment rooms, and all electrical panel locations. Do not pass any mechanical or plumbing piping or condensate producing equipment directly over electrical panels, electrical equipment, elevator equipment, controls, or telecommunications equipment. See electrical and telecommunication drawings for exact equipment locations.
6. Ceiling diffuser and register locations are approximate only. See architectural for exact locations of all air distribution devices (wall and ceiling).
7. All cutting and patching shall be coordinated. All patching shall restore each damaged surface to its original finish.
8. All exposed ductwork, piping, and equipment in finished spaces to be installed as high as possible above finished floor and shall be prepared with paint grip suitable for painting.
9. All air distribution system(s) shall be tested and balanced in accordance with A.A.B.C. or N.E.B.B. requirements. A certified air balance report shall be prepared prior to project closeout.
10. All low-pressure ductwork shall be fabricated and installed in accordance with the latest SMACNA HVAC duct construction manual for 2" w.g. Static pressure. Ductwork shall be constructed of galvanized sheet metal.
11. All duct dimensions shown on drawings are inside clear. Allowance must be made in sheet metal size where duct liner is Specified.
12. Supply ductwork shall be internally insulated for the first 20 feet of supply duct from air handling unit. All outside air Duct, and all transfer air duct (tad) shall be internally Insulated with 1" thick, 3 lb. Density, equal to certaineed Toughguard. Concealed low pressure supply duct not Internally lined shall have exterior wrap insulation as specified
13. No flexible duct shall be exposed. No duct wrap insulation Shall be exposed. Duct exposed in mechanical rooms shall be Externally insulated with rigid insulation as specified.
14. Duct runouts to registers to be as scheduled unless Otherwise indicated on plans. Contractor to provide a Transition at neck of each air distribution device as required.
15. Fire dampers to be type "b" or "c" dynamic unless otherwise noted. Installation out of airstream and in strict accordance with manufacturer's U.L. listed installation instructions and SMACNA fire damper guide.

16. Provide 4" high concrete pad for all floor-mounted or grade-mounted equipment.
17. Where branch taps occur, provide individual spin-in fittings with manual-volume dampers for balancing. Do not use type with air scoop/extractor. Additionally, provide opposed-blade volume dampers at each air distribution device.
18. Coordinate location and provide duct access doors for access to all fire dampers, valves and other enclosed items. Duct access doors may be omitted where type "a" fire damper are accessible through sidewall register face. Insure duct access doors and dampers are accessible through ceilings and walls. Locate duct access doors above spaces with lay-in ceilings or exposed ceilings where possible. Refer to architectural reflected ceiling plans for ceiling types.
19. Provide canvas, flame retardant flexible duct connectors at all connections of fans to ductwork.
20. Provide a minimum 15'-0" separation between any fresh air intake and any mechanical exhaust, plumbing vent, or other vent outlets.
21. Coordinate installation of duct-mounted smoke detectors with fire alarm system provider.
22. Duct-mounted smoke detectors are provided by div. 26, installed by div. 23.
23. Refer to the IBC and NFPA for caulking requirements around fire and fire/smoke dampers.

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (Page M00.0B)

230100 - BASIC MECHANICAL REQUIREMENTS

A. PROVIDE ALL EQUIPMENT, MATERIALS, LABOR, SUPERVISION, AND SERVICES NECESSARY FOR OR INCIDENTAL TO THE INSTALLATION OF COMPLETE AND OPERATING MECHANICAL SYSTEMS AS SHOWN OR INDICATED ON THE DRAWINGS. PROPER PRECAUTIONS SHALL BE TAKEN TO PROTECT ALL EXISTING OPERATIONS AND PROPERTY WITH WHICH WORK COMES IN CONTACT OR OVER WHICH MATERIALS, EQUIPMENT, DEBRIS, ETC. MAY BE TRANSPORTED, HOISTED, OR MOVED. ALL DAMAGE RESULTING FROM THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER.

B. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS FOR THE SERVICE INTENDED. THE INSTALLATION OF ALL EQUIPMENT SHALL BE MADE BY EXPERIENCED CRAFTSMEN IN A MANNER DEMONSTRATING NEAT WORKMANSHIP.

C. THE SCOPE OF WORK SHALL INCLUDE ALL MATERIAL, TOOLS, SERVICE, AND COSTS NECESSARY TO COMPLETELY INSTALL ALL MECHANICAL WORK. IT IS THE INTENT AND MEANING OF THE CONTRACT DOCUMENTS THAT THE MECHANICAL SYSTEM BE INSTALLED COMPLETE INCLUDING ALL ITEMS AND APPURTENANCES NECESSARY, REASONABLY INCIDENTAL, OR CUSTOMARILY INCLUDED EVEN THOUGH EACH AND EVERY ITEM IS NOT SPECIFICALLY MENTIONED OR SHOWN.

D. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND ALL APPLICABLE CODES AND STANDARDS WHICH INCLUDE ALL ORDINANCES, AMENDMENTS, AND UTILITY COMPANY REGULATIONS. WHERE CONFLICTS EXIST AMONG APPLICABLE CODES AND STANDARDS, THE ARCHITECT SHALL BE NOTIFIED IN WRITING. SHOULD WORK BE PERFORMED THAT DOES NOT COMPLY WITH APPLICABLE CODES AND STANDARDS, THOSE DEFECTS SHALL BE CORRECTED WITH NO CHANGE IN CONTRACT AMOUNT.

E. THE CONTRACT DOCUMENTS WERE PREPARED FROM INFORMATION MADE AVAILABLE; HOWEVER, CONDITIONS SURROUNDING THE INSTALLATION OF THE WORK SHALL BE CAREFULLY INVESTIGATED PRIOR TO SUBMITTING A BID, FABRICATION OF DUCTS OR PIPING, OR PROCEEDING WITH INSTALLATION. CONFLICTS DUE TO EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR REVIEW AND RESOLUTION. UPON COMMENCEMENT OF CONSTRUCTION, IT SHALL BE UNDERSTOOD THAT THE CONDITIONS OF THE PREMISES HAVE BEEN ACCEPTED.

F. ALL MECHANICAL EQUIPMENT SHALL BE AS SCHEDULED OR AS APPROVED EQUAL BY THE ENGINEER.

G. ALL BIDDERS SHALL BE FAMILIAR WITH EXISTING CONDITIONS ON THE PREMISES AND BE PREPARED TO COORDINATE WITH ALL EXISTING CONDITIONS TO BE ENCOUNTERED BY ALL

TRADES. ANY EXCEPTIONS SHALL BE NOTED IN WRITING AND SHALL BE INCLUDED IN THE BID.

H. COORDINATE EQUIPMENT SUBSTITUTIONS FOR THE SCHEDULED OR SPECIFIED ITEM WITH ALL OTHER TRADES. COMPENSATION TO OTHER TRADES DUE TO CHANGES IN RATED VOLTAGE, PHASE, AMPERAGE, PHYSICAL SIZE, WEIGHT, ARRANGEMENT, SHAPE, COLOR, OR OTHER CHARACTERISTIC AND THE RELATED EFFECTS ARISING FROM THE SUBSTITUTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR MAKING THE CHANGE.
I. THE DRAWINGS ARE DIAGRAMMATIC BUT SHALL BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT. PIPING ARRANGEMENTS, MECHANICAL COMPONENT LOCATIONS, AND THE LIKE HAVE BEEN DESIGNED FOR ECONOMY CONSISTENT WITH GOOD PRACTICE AND OTHER CONSIDERATIONS. MAJOR CHANGES TO THE SYSTEMS ARRANGED AS SHOWN ON THE DRAWINGS MUST BE APPROVED IN WRITING AND ALL SUCH CHANGES SHALL BE INCORPORATED INTO THE 'AS-BUILT' DRAWINGS.
J. MAINTAIN MINIMUM CLEARANCES ABOVE FINISHED CEILINGS TO ALLOW INSTALLATION OF MECHANICAL EQUIPMENT, DUCTS, CONDUIT, PLUMBING PIPING, FIRE SUPPRESSION PIPING, AND LIGHT FIXTURES.

230549 - BASIC MECHANICAL MATERIALS AND METHODS

A. MATERIALS AND/OR EQUIPMENT FAILING TO GIVE SATISFACTORY SERVICE DURING A ONE YEAR MATERIALS AND LABOR WARRANTY PERIOD SHALL BE REPAIRED OR REPLACED WITH NEW.
B. SUBMIT A PDF FILE OF PRODUCT DATA FOR ALL MECHANICAL ITEMS FOR APPROVAL.
C. UPON COMPLETION OF THE WORK, ALL EXPOSED PORTIONS OF THE MECHANICAL EQUIPMENT PROVIDED SHALL BE THOROUGHLY CLEANED. REMOVE ALL TRACES OF SOIL, LABELS, GRADE, OIL, AND OTHER FOREIGN MATERIAL USING ONLY THE TYPES OF CLEANERS RECOMMENDED BY THE MANUFACTURERS OF THE EQUIPMENT BEING CLEANED.
D. UPON COMPLETION, PROVIDE MANUFACTURER'S OPERATING AND MAINTENANCE MANUALS FOR ALL EQUIPMENT INSTALLED AS PART OF THE WORK TO THE OWNER.
E. PROVIDE TRAINING TO OPERATING PERSONNEL FOR ALL SYSTEMS AND EQUIPMENT INSTALLED AS PART OF THE WORK.
F. UPON THE COMPLETION OF THE WORK, PROVIDE 'AS-BUILT' RECORD DRAWINGS TO THE OWNER. DRAWINGS SHALL BE PROVIDED IN ELECTRONIC FORMAT COMPATIBLE WITH AUTOCAD RELEASE 2022.
G. ALL EQUIPMENT AND PIPING SHALL BE PROPERLY SUPPORTED WITHIN THE BUILDING AND ADEQUATE PROVISIONS SHALL BE MADE FOR SLOPE AND ANCHORAGE. HANGERS, RODS, CLAMPS, AND INSERTS SHALL BE APPROVED BY UL FOR THE SERVICE INTENDED.
H. ALL MAJOR EQUIPMENT SHALL BE PROVIDED WITH ENGRAVED NAMEPLATES ATTACHED WITH SCREWS. LABELS SHALL USE NOMENCLATURE FROM EQUIPMENT SCHEDULES.
I. PIPING SYSTEMS SHALL BE IDENTIFIED WITH SNAP-ON PIPE MARKERS LOCATED EVERY TEN FEET. MARKERS SHALL DESIGNATE PIPE CONTENT AND FLOW DIRECTION.

230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

A. ALL MECHANICAL SYSTEMS SHALL BE TESTED AND BALANCED USING AABC OR NEBB PROCEDURES. FINAL REPORT SHALL BE SUBMITTED TO THE OWNER.

230710 - DUCT INSULATION

A. INTERIOR METAL DUCTS SHALL BE INSULATED EXTERNALLY WITH TYPE IV DUCT WRAP, TWO INCH THICKNESS (ONE AND ONE-HALF INCHES IN PLACE), OR LINED WITH ONE-HALF INCH THICKNESS DUCT LINER. ALL DUCT DIMENSIONS INDICATE FREE AREA REQUIRED. INCREASE DUCT DIMENSIONS AS REQUIRED IF LINER IS USED.
B. INSTALLED R-VALUE SHALL BE EQUAL TO 5.0.
C. ALL INSULATION AND JACKET MATERIALS EXPOSED TO RETURN AIR SHALL BE SPECIFICALLY APPROVED FOR THAT APPLICATION.

230923 - INSTRUMENTATION AND CONTROLS FOR HVAC

A. PROVIDE ALL CONTROLS REQUIRED TO COMPLETELY ACCOMPLISH THE IMPLIED OR INTENDED FUNCTIONS AND OPERATION OF THE SYSTEMS AND EQUIPMENT INSTALLED.
B. CONTROLS SHALL COMPATIBLE WITH AND CONNECT TO THE EXISTING BUILDING CONTROL SYSTEM. IF PNEUMATIC CONTROLS ARE USED, THE QUALITY AND CAPACITY OF THE EXISTING CONTROL AIR SYSTEM SHALL BE VERIFIED AND COORDINATED WITH THE NEW CONTROL DEVICES.
C. ELECTRIC AND/OR ELECTRONIC CONTROLS SHALL BE INSTALLED COMPLETE WITH REQUIRED POWER CIRCUITS, POWER SUPPLIES, WIRING, CONDUIT, ACCESSORIES, AND ENCLOSURES.
D. PROVIDE DDC CONTROLS.
E. LOCATIONS OF ALL THERMOSTATS/SENSORS SHALL BE COORDINATED WITH FURNITURE LOCATIONS AND FINISHES. THERMOSTATS/SENSORS SHALL NOT BE INSTALLED BEHIND SYSTEM FURNITURE PANELS, IN MILLWORK, OR ABOVE DIMMERS.
F. THERMOSTATS AND SENSORS SHALL BE INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ADA
G. EACH SYSTEM SHALL HAVE ONE SOLID-STATE PROGRAMMABLE THERMOSTAT WHICH SHALL HAVE THE CAPABILITY TO SET BACK OR SHUT DOWN THE SYSTEM BASED ON DAY OF THE WEEK AND TIME OF DAY AND PROVIDE A READILY ACCESSIBLE MANUAL OVERRIDE THAT WILL RETURN TO PRESET OR SHUTDOWN SCHEDULE WITHOUT REPROGRAMMING.

232300 - REFRIGERANT PIPING

A. REFRIGERANT PIPING SHALL BE DRAWN COPPER TUBE: ASTM B 280, TYPE ACR. WROUGHT-COPPER FITTINGS: ASME B16.22. WROUGHT-COPPER UNIONS: B16.22.

233110 - METAL DUCTS

A. PROVIDE SHOP DRAWINGS FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE:
    1. FABRICATION, ASSEMBLY, AND INSTALLATION, INCLUDING PLANS, ELEVATIONS, SECTIONS, COMPONENTS, AND ATTACHMENTS TO OTHER WORK.

2. DUCT LAYOUT INDICATING SIZES, CONFIGURATION, LINER MATERIAL, AND STATIC-PRESSURE CLASSES.
3. ELEVATION OF BOTTOM OF DUCTS.
4. FITTINGS.
5. PENETRATIONS THROUGH FIRE-RATED AND OTHER PARTITIONS.
6. LOCATIONS FOR DUCT ACCESSORIES, INCLUDING DAMPERS, TURNING VANES, AND ACCESS DOORS AND PANELS.

B. DUCTS SHALL BE MINIMUM 24 GAUGE SHEETMETAL CONSTRUCTED AND SEALED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS FOR THE PRESSURE CLASS OF THE SYSTEM SERVED.
C. UNLESS NOTED OTHERWISE, ALL DUCT DIMENSIONS INDICATE THE FREE AREA REQUIRED. WHERE INTERNAL DUCT LINER IS USED, INCREASE THE DUCT DIMENSIONS ACCORDINGLY.
D. ALL SUPPLY AND RETURN DUCTS WITHIN TWENTY FEET OF AIR CONDITIONING UNITS AND WITHIN EIGHT FEET OF TERMINAL BOXES SHALL BE LINED WITH ONE INCH THICKNESS, ONE AND ONE-HALF POUND DENSITY ACOUSTIC DUCT LINER APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
E. PROVIDE PAINT GRIP DUCT WHERE EXPOSED.

233310 - AIR DUCT ACCESSORIES

A. PROVIDE FLEXIBLE DUCT CONNECTIONS AT EQUIPMENT.
B. FLEXIBLE DUCTS MAY BE USED FOR INDIVIDUAL RUNOUTS; HOWEVER, RUNOUTS SHALL NOT EXCEED 6 FEET IN TOTAL LENGTH AND BE PROPERLY SUPPORTED TO PREVENT RESTRICTIONS TO AIR FLOW. ALL CHANGES IN DIRECTION GREATER THAN FORTY-FIVE DEGREES SHALL BE MADE WITH RIGID DUCT FITTINGS.
C. FLEXIBLE DUCTS SHALL HAVE ONE INCH THICKNESS EXTERNAL INSULATION WITH FOIL JACKET AND VAPOR BARRIER. FLEXIBLE DUCTS SHALL MEET CLASS I, UL-181 AND 25/50 FIRE RATING REQUIREMENTS.
D. VERIFY ADEQUATE PATHS ARE PROVIDED FOR RETURN AIR. LINED RETURN AIR TRANSFER BOOTS SHALL BE PROVIDED IN ALL FLOOR TO STRUCTURE PARTITIONS TREATED FOR SOUND. TRANSFER BOOTS SHALL BE SIZED FOR A MAXIMUM VELOCITY OF 500 FPM.
E. ALL FIRE DAMPERS SHALL BE TYPE B WITH THE CURTAIN OUT OF THE AIRSTREAM.
F. PROVIDE ACCESS DOORS AT EACH DUCT MOUNTED FIRE DAMPER.
G. PROVIDE MANUAL VOLUME CONTROL DAMPER IN THE DUCT RUNOUT TO EACH AIR SUPPLY DEVICE.
H. DIFFUSERS, REGISTERS, AND GRILLES SHALL BE BUILDING STANDARD UNLESS NOTED OTHERWISE AND SHALL BE PROVIDED WITH MOUNTING FRAMES COMPATIBLE WITH THE CEILING OR WALL TYPE IN WHICH THEY ARE TO BE INSTALLED.

233450 - HVAC FANS

A. ALL FANS SHALL BE AMCA CERTIFIED.

238126 - SPLIT-SYSTEM AIR-CONDITIONERS

A. PRODUCT OPTIONS: DRAWINGS INDICATE SIZE, PROFILES, AND DIMENSIONAL REQUIREMENTS OF SPLIT-SYSTEM UNITS AND ARE BASED ON THE SPECIFIC SYSTEM INDICATED. OTHER MANUFACTURERS' SYSTEMS WITH EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED.
B. COORDINATE SIZE, LOCATION, AND CONNECTION DETAILS WITH EQUIPMENT SUPPORTS, AND WALL PENETRATIONS.
C. FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
    1. FILTERS: ONE SET OF FILTERS FOR EACH UNIT.
    2. FAN BELTS: ONE SET OF BELTS FOR EACH UNIT.
D. REFRIGERANT COIL: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS, COMPLYING WITH ARI 210/240, AND WITH THERMAL-EXPANSION VALVE.
E. INSTALL UNITS LEVEL AND PLUMB.
F. INSTALL EVAPORATOR-FAN COMPONENTS USING MANUFACTURER'S STANDARD MOUNTING DEVICES SECURELY FASTENED TO BUILDING STRUCTURE.
G. INSTALL PIPING ADJACENT TO UNIT TO ALLOW SERVICE AND MAINTENANCE. UNLESS OTHERWISE INDICATED, CONNECT PIPING WITH UNIONS AND SHUTOFF VALVES TO ALLOW UNITS TO BE DISCONNECTED WITHOUT DRAINING PIPING.
H. AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS.
    1. CASING: STEEL, FINISHED WITH BAKED ENAMEL, WITH REMOVABLE PANELS FOR ACCESS TO CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. PROVIDE BRASS SERVICE VALVES, FITTINGS, AND GAGE PORTS ON EXTERIOR OF CASING.
    2. RELAY, AND CONTACTOR. REFRIGERANT COIL: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS, COMPLYING WITH ARI 210/240, AND WITH LIQUID SUBCOOLER.
    3. FAN: PROPELLER TYPE, DIRECTLY CONNECTED TO MOTOR.
    4. MOTOR: PERMANENTLY LUBRICATED, WITH INTEGRAL THERMAL-OVERLOAD PROTECTION.

PLUMBING GENERAL NOTES (P00.00)

1. Plumbing contractor shall coordinate all aspects of work with other trades prior to and during construction/installation. Contractor is responsible for providing a complete operable system as determined by the designer of record.
2. All work shall conform to the 2021 International plumbing code (IPC), 2021 international building code (IBC), ASHRAE 90.1 (2019), and local plumbing code amendments. The request for proposal and all referenced standards are also considered part of this document.
3. It is the contractors responsibility to determine the location of all such facilities and their protection from damage due to construction operations. If existing utilities of any nature are encountered which conflict with location of the new construction, the contractor shall notify the engineer so that the conflict can be resolved. Where utilities are inadvertently disturbed, the repair of the same utility shall be the responsibility of the responsible contractor. Verification of locations and directions of flows of underground utilities, shown or not shown, will be the responsibility of the contractor prior to and during construction/installation
4. When a conflict between plans and specifications or notes occurs, the engineer shall decide which governs. Generally, the more restrictive, more specific, or stricter provision shall govern. If any discrepancies are discovered on the plans or between the plans and the specifications, the contractor shall notify the engineer and obtain clarification of the intent from the engineer prior to construction or installation of proposed improvements.
5. The contract documents form a guide for a complete system. Provide all items necessary to provide a complete system but not specifically mentioned, such as hangars, transitions, offsets and drains.
6. Layouts indicated on drawings are diagrammatical only. Drawings shall not be scaled. Coordinate exact location of equipment, ductwork, and piping to eliminate conflict with other divisions. Designer reserves right to make reasonable changes in locations of equipment, ductwork and piping prior to construction.
7. Supervise all work with a competent plumber specifically qualified in plumbing discipline.
8. Contractor shall provide all necessary labor, materials, tools and equipment to perform work required on the drawings and specifications.

9. Contractor shall pay all fees and charges required to achieve the installation.
10. All plumbing equipment and floor drains in equipment rooms to be located per mechanical equipment requirements and architectural drawings. Not scaled off plumbing drawings.
11. Contractor shall offset all vents thru roof as required to maintain 15'-0" minimum separation from roof top unit curb and all air intake locations.
12. All pipe fittings and valves in insulated pipe systems to be insulated.
13. Locate all shutoff valves for easy access and operation. Where valves must necessarily be located in enclosed spaces, they shall be provided with access panels of sufficient size for operation. Identify quantity and coordinate with general contractor. Furnish these access panels to proper trades for installation.
14. Provide shock arrestors at cold & hot water connections to fixture connections with quick closing valves (i.e. water closets, etc.). Shock arrestors installations shall be as recommended by PDI institute and equipment manufacturer. Air chambers shall not be used.
15. Fixtures and roughed-in fixtures shall be complete with supply pipes with stops. Supplies, stops, & escutcheons to be chrome plated. Where exposed to view escutcheons shall be set screw type.
16. All isolation/shut off valves shall be installed such that they may be easily seen and reached from floor or step ladder.
17. Provide and install 4" concrete pads or curbs doweled in place for all water heaters, tanks, and any other floor mounted equipment.
18. Coordinate exterior wall hydrant locations with architectural plans and elevations.
19. All equipment mounted overhead or above suspended ceiling, weighing 31 pounds or more, must be secured to permanent structure by means having sufficient capacity to resist horizontal forces of 0.5 times the equipment weight and vertical forces of 1.5 times the equipment weight.
20. Plumbing components that are permanently attached to structures and their supports and attachments, shall be designed and constructed to resist the effects of earthquake motions for seismic design category d in accordance with the 2005 edition of ASCE 7, excluding chapter 14 and appendix 11a. Refer to specification section 13 48 00.00, seismic protection for mechanical equipment, for additional requirements.

21. Coordinate plumbing fixture/equipment requirements with interiors drawings. Shower heads to be installed 6'-0" above floor. Shower valves to be installed 4'-0" above floor.
22. Contractor shall perform x-ray prior to any core drilling.

SECTION 22 01 00 - PLUMBING GENERAL PROVISIONS

PART 1 GENERAL

1.1. WORK INCLUDED

A. Provide all labor, materials, tools, and services for a complete installation of equipment and systems contained in contract documents.
B. Principal features of work included are;
   1. Plumbing system

1.2. RELATED WORK

A. Electrical power and interlock and control wiring and conduit

1.3. GENERAL

A. The contract documents form a guide for a complete system. Provide all items necessary to provide a complete system bin riot specifically mentioned, such as hangers, transitions, offsets, and drains.
B. Layouts indicated on drawings are diagrammatical only Coordinate exact location of equipment, ductwork, and piping to eliminate conflict with other divisions. Designer reserves right to make reasonable changes in location of equipment ductwork, and piping prior to construction.
C. Should Contractor find during progress of work that in his judgment existing conditions make desirable a modification, report such item promptly to Designer for instructions. Do not make deviations from contract documents without review of Designer.
D. Supervise all work with a competent mechanic specifically qualified in mechanical discipline,
E. Alt products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification

1.4. PERMITS

A. Secure and pay for permits. licenses, ant? inspections for work under this Division including water and sewage connections.

1.5. CODES

A. Comply with all pertinent local, state, and national codes.

1.6. STANDARDS

A. Comply with all pertinent standards. This list is provided as a convenience to Contractor and is not to be considered all inclusive.
   1. 1 American Gas Association (AGA)
   2. 2 CISPI Standard 301.

3. 3 ASTM A 74.

1.7. SUBMITTALS

A. Submit for review complete brochures and shop drawings for materials and equipment proposed.
    1. Brochures: Submit complete descriptions, illustrations and specification data for materials and equipment proposed. Clearly indicate proposed items when other items are shown on same sheet. Submit samples on request and/or set up for inspection. Samples will be returned to Contractor.
    2. Submittals shall be submitted in line by line formal Each submittal shall be provided with a cover letter and supporting documentation indicating how the submittal meets each line of the referenced specification section. All discrepancies between the construction documents and the submitted product shall be clearly identified for engineer evaluation
    3. If a product other than the basis of design is rejected by the engineer for any reason, the Contractor shall provide the basis of design product at no additional cost to the Owner.
    4. Shop Drawings:
        a. Complete equipment and piping systems in equipment rooms
        b. Complete equipment and piping systems in entire building.
        c. Owner furnished equipment rough-in layouts.
        d. Kitchen equipment rough-in layouts
        e. Laboratory equipment rough-in layouts.
        f. Firestop systems.

1.8. PROJECT MAINTENANCE MANUALS

A. Prior to final acceptance of project, provide Owner with bound maintenance manuals.

1.9. PROJECT TECHNICAL INSTRUCTION

A. Prior to final inspection of project, provide technical instruction to Owner as follows”
    1. 1, Field Instruction: Provide explanation of how systems and equipment are to operate during each season and during emergencies.
    2. F eld Demonstration: Demonstrate operation and routine maintenance for systems and equipment
    3. Videotape: Provide videotape or DVD of field instruction and demonstration io Owner at completion

1.10. CONSTRUCTION RECORD DOCUMENTS

A. Provide construction record documents. Keep at the project one set of drawings and daily record changes at the time they are made. Give drawings to Owner al project completion.

PART 2 PRODUCTS

2.1. MATERIALS AND EQUIPMENT

A. Provide materials and equipment of domestic manufacturer bearing the U.L label when such label is available

B. Cast Iron Soil Pipe and Fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute ® and listed by NSF® International

PART 3 EXECUTION

3.1. COORDINATION

A. Coordinate location of equipment and piping to eliminate conflict with other divisions.

B. Carefully examine contract documents to be thoroughly familiar with items which require plumbing or mechanical connections and coordination

C. Provide proper chases and openings. Place sleeves and supports prior to pouring concrete or installation of masonry.

3.2. CUTTING AND PATCHING

A. Repair or replace routine damage caused by cutting in performance of contract.

B. Correct unnecessary damage caused due to installation of plumbing work.

C. Perform repairs with materials that match existing in accordance with the appropriate section of these specifications.

3.3. FLASHING. COUNTERFLASHING, AND SEALING

A. Flash, counterflash, and seal piping at penetrations of roofs and outside walls,

3.4. TRENCHING. EXCAVATION AND BACKFILLING

A. Excavate to a depth at least 6" below bottom of pipe and a minimum of 36" above lop of pipe. Fill below pipe, around pipe, and minimum of 12’ above pipe with sand or Class "B" crushed stone tamped firm and even. Provide topsoil for final layer of dirt (12" minimum) Provide 6" spacing between pipes and between pipe and trench sides. Hand -grade with batter boards placed every 25’ Backfill by hand. Do not use rock or stone above sand or Class "B" crushed stone.

3.5. CONNECTION TO EQUIPMENT

A. Rough-in and connect to sterilizers, lab equipment, kitchen equipment, and Owner furnished equipment and provide a shutoff valve and union at each connection. Operating valves and/or controls for this equipment will be provided as an integral part of the equipment. Do not rough-in until shop drawings showing rough-in locations have been reviewed by Designer

3.6. FOUNDATI ONS AND PADS

A. Provide foundations, pads, and bases required for equipment. Concrete to be in accordance with concrete division of specifications.

B. Coordinate proper sizes and locations of foundations, pads, bases, anchors, supports, and other items to be built into structure.

3.7. IDENTIFICATION

A. Identify exposed or accessible piping with stenciling contents indicating pipe contents and direction of flow on piping not more than 20 feet apart, at valves, at access panels, and at least once above each space.
B. Contractors option to identify exposed or accessible piping with snap-on or strap- on type markers. Color code markers in accordance with ANSI. Indicate pipe contents and direction of flow on marker Install markers on piping not more than 20 feet apart, at valves, at access panels, and at least once above each space.
C. Include design operating pressures in psig for compressed air services
D. Sanitary waste, storm and buried lines need not be marked
E. Identify all equipment with engraved brass, aluminum, or stainless-steel nameplates or tags. Use equipment names and numbers appearing in schedules on drawings Fasten nameplates to equipment using screws. Glue or adhesive is not acceptable. Fasten tags to equipment using brass, aluminum or stainless-steel chains.
F. Identify each valve with engraved brass, aluminum or stainless-steel identification tag indicating valve service and sequential identification number. Attach tag to valve handle with brass, aluminum or stainless-steel chain. Provide two bound manuals to Owner listing each valve sequentially arid indicating valve manufacturer, style, size, service, normal position, and specific location for each valve.

3.8. CLEANING

A. Repair damaged factory finishes covering all bare places and scratches.
B. Cleaning Domestic Water System' Flush domestic water system progressively by opening building outlets and permitting flow to continue from each until water runs clear. Sterilize system in accordance with requirements of State Department of Public Health by the following method or other method acceptable to local authorities:
    1. Introduce chlorine or a solution of calcium or sodium hypochlorite, filling lines slowly and applying sterilizing agent at a rate of 50 ppm of chlorine as determined by residual chlorine tests at ends of lines. Open and close all valves while the system is being chlorinated.
    2. After sterilizing agent has been applied and left standing for 24 hours, test for residual chlorine at ends of lines. If less than 25 ppm is indicated, repeat sterilizing process.
    3. After standing for 24 hours and tests show at least 25 ppm of residual chlorine, flush out system until all traces of chemical used are re moved.

3.9. TESTING

A. Test all installed equipment and systems and demonstrate proper operation. Correct and retest work found defective when tested.
B. Thoroughly check piping system for leaks. Do not add any leak-stop compounds to the system. Make repairs lo piping system with new materials. Peening, doping, or caulking of joints or holes is not acceptable.
C. Test hot and cold domestic water piping systems upon completion of rough-in and before connection to fixtures at a water pressure of 125 psig for two hours without leaks.

D. Test drainage and venting system with necessary openings plugged to permit system to tie filled with water and subjected to a minimum water pressure of 10 feet head at top of system. System to hold water for Iwo hours without a water level drop greater than 4" in a 4" standpipe and without visible leakage. Test system in sections if minimum head can be maintained in each section.
E. Conduct a r or smoke test if in opinion of Designer reasonable cause exists lo suspect leakage or low-quality workmanship.
F. Test foundation drain system in sections of 100-foot lengths before and after backfilling Pass plumbers tape or Roto-Rooter through drain sections to ensure there are no restrictions lo water flow
G. Test gas piping and compressed air piping with Nitrogen at 100 psi for two hours without leaks
H. Test flush valves for proper operation.

END OF SECTION 22 01 00

SECTION 22 07 19 - PLUMBING INSULATION

PART 1 GENERAL

1.1. WORK INCLUDED

A. Contractor shall provide all necessary labor, materials, tools, and equipment to perform work required on the drawings and specified herein.
B. Certain equipment and/or systems to be factory insulated by manufacturer. Factory insulation materials to be as specified in applicable sections of the specifications.
C. All pipe fittings, valves in insulated pipe systems to be insulated.
D. Thermal resistance "R* values used herein are expressed in units of "Hour, Degrees F., Sq. Ft/BTU per inch of Thickness' on a flat surface at a mean temperature of 75 degrees F

1.2. DEFINITIONS

A. "Exposed" equipment, and piping are areas which will be visible without removing ceilings or opening access panels,
B. Outdoors is considered exposed to the weather.
C. Underground is buried, whereas in a trench below grade is considered concealed.

1.3. CERTIFICAT ION/QUALI TY ASSURANCE

A. Products shall meet applicable national, state. and local building codes and be U.L. (or other recognized testing lab) listed for intended service.
B. All insulations, jackals, adhesives, coatings, sealers, and tapes shall have a flame spread rating of 25 or less and smoke development rating of 30 of less when tested in accordance with ASTM E-84, NFPA 225, U.L. 723, and further must meet the requirements of NFPA 90-A and applicable building, and plumbing, codes.
C. All insulation materials shall be delivered and stored in manufacturers' containers and kept free from dirt. water, chemical, and mechanical damage.
D. Insulation shall be applied in a workmanlike manner by experienced, qualified tradesmen.
E. Insulation shall not be applied until al: pressure testing has been completed, inspected, and released for insulation application.
F. Surfaces shall be clean and dry.
G. Insulation joints shall be butted firmly together and al! jackets and tapes shall be smoothly and securely installed.
H. Insulation for duct, pipe, and equipment for above grade exposed to weather outside building shall be certified as being self-extinguishing for 1” thickness in less than 53 seconds when tested in accordance with ASTM D-1692.

1.4. APPLICABLE CODES AND STANDARDS

A. ASTM E-84.
B. U.L 723.

PART 2 PRODUCTS

2.1. MATERIALS FOR PIPE AND EQUIPMENT

A. Materials for Pipe and Equipment: Provide factory pre-molded or shop or site mitered segment type insulation for pipe, pipe fittings, and valves. Fitting insulation to be of same thickness and material as adjoining pipe insulation. All insulation and related materials such as tape and mastic to meet applicable building code requirements for fire and smoke development.
   1. Fiberglass: Provide factory-formed factory-jacketed fiberglass piping insulation Product to be Manville "Micro-Lok 650" with "Type AP-T" jacketing or equivalent product manufactured by CertainTeed, Knauf, or Owens-Coming Product to have continuous operational temperature limit of 850 degrees F and a minimum "R" value of 3.6 per inch (K=0.28) at 100 degrees F mean temperature. Jacket to be fiberglass reinforced kraft paper with aluminum foil and pressure sensitive closure system. Vapor-barrier mastic for application to below ambient pipe insulation shall be fungus resistant per ASTM D 5590 with 0 growth rating: Water based; Permeance per ASTM E 96, Procedure B, 0.013 perm or less at 43-mil dry film thickness suitable for indoor and jacketed outdoor use. Products: Foster 30-80 AF. Color: White. A breather mastic for application to above ambient pipe insulation (fittings, tees, valves, etc.) shall be water-based Foster 46-50 mastic or Childers CP-1D / CP-11. Use fiberglass piping insulation for the following services:
      a. Domestic hot water supply without recirculating system: 1-1/4" and under -1 “thick; 1-1/2" and greater -1-1 /2" thick.
      b. Domestic hot water supply and recirculating return piping: 1-1/4 and under - 1' thick 1-1/2" and greater 1-1/2 thick,
      c. Domestic cold-water piping: TKT thick
      d. Horizontal rainwater leaders, overflow leaders, and roof drain bodies 1" thick.

2.2. MATERIALS FOR FITTINGS, VALVES, AND SPECIAL COVERINGS

A. Provide coverings and finishes for specific items hereinafter specified.
   1. Use pre-molded insulation fabricated by the manufacturer of insulation material or shop or site mitered segment type insulation for all pipe fittings, elbows, tees, valves, and couplings
B. For any service, when below grade direct buried, cover straight pipe and fitting insulation with equivalent of Pittsburgh Corning "Pittwrap", Foster C.I. Wrap 50 mi or "Pittwrap SS1T jacketing Valves in systems operating above 60 degrees F. and installed in valve boxes shall not be insulated; however, the values shall be painted with a rust resistant product equivalent to Rustoleum.
C. For flexible tubular pipe and fitting insulation when exposed-to-view inside building, finish with two coats of paint, custom color blended to match surrounding surfaces.
D. When specifically approved by designer, when it is impossible to completely insulate pipe fittings, or valves with specified insulation, Armstrong Armafiex insulation tape may be used to prevent condensate drip on small piping. Use of cork insulation tape is prohibited.

PART 3 EXECUTION

3.1. GENERAL

A. No insulation shall be cut where a hanger is located. If hangers have been installed by pipefitter tradesmen which violates this strict requirement notify Designer immediately.

B. Piping systems shall be tested and found free of all leaks prior to installation of insulation covering.
C. All surfaces shall be clean and dry when covering is applied. Covering to be dry when installed and during application of any finish, unless such finish specifically requires a wetted surface for application.
D. All adhesives, cements, and mastics shall be compatible with materials applied and shall not attack materials in either wet or dry state
E. Install insulation using professional insulators who have adequate experience and ability
F. Exposed-to-view insulation shall have a well-tailored appearance.
G. Treat insulated pipe in equipment rooms and where exposed to normal view, so surfaces may be painted with water base latex paint Use of mastics, adhesives, or jacketing which cause ’bleeding" is prohibited.

3.2. INSTALLAT ION OF PIPE AND EQUIPMENT COVERING

A. Where fiberglass or flexible tubular insulation is used on piping sized 2" and larger, insert a section of foamglass insulation at hanger or support points between pipe and metal shield for full length of shield to prevent crushing of insulation. Insulation thickness to be same as adjoining insulation. Where insulation passes through pipe hangers and across trapeze supports 12" long metal saddles shall be used. On cold pipe, vapor barrier should be carried through the hanger and sealed.
B. Apply and precut insulation inserts as follows:
    1. Installation for hot systems:
        a. Place the precut fiberglass insert around the filling. positioning the points of the insert on the inside radius of the elbow.
        b. Butt the ends of the fiberglass insert against the ends of the pipe covering. Tuck and fold the insulation so that it covers ah bare surfaces Keep the fiberglass fluffed up to the thickness of the adjacent pipe insulation to assure maximum thermal efficiency.
        c. Insert two stainless steel serrated lacks approximately 1/4" from one of the lap edges of the fitting cover. Then snap the cover in place over the fiberglass insulation.
        d. After the fitting cover is in position, push the tacks into the overlapping throat seam. Apply color-matched, pressure-sensitive tape to the butt joints.
    2. Installation for cold systems:
        a. Position, tuck, and fold the fiberglass insulation insert as described above in stops (a) and (b) for hot systems.
        b. b, Apply a vapor barrier mastic around the edges of the adjoining pipe insulation Apply we mastic along the inside of the fitting cover throat overlap seam.
        c. c Place the fitting cover over the insulation, lapping the mastic- covered edge over the other side of the throat seam.
        d. Apply color-matched, pressure-sensitive tape over the circumferential joints The tape should extend over the adjacent pipe Insulation and overlap itself by at least 2" on the downward side of the lap

END OF SECTION 22 07 19

SECTION 22 11 19- DOMESTIC WATER SACKFLOW PREVENTERS. TRAP PRIMERS. AND SHOCK ABSORBERS

PART 1 GENERAL

1.1. WORK INCLUDED

A. This section includes requirements for.
   1. Backflow preventers.
   2. Shock absorbers.
   3. Equipment connection backflow device.
   4. Vacuum breakers

PART 2 PRODUCTS

2.1. ACCEPTABLE MANUFACTURERS

A. Acceptable manufacturers are indicated in subsequent paragraphs.
B. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification

2.2. BACKFLOW PREVENTERS

A. Acceptable Manufacturers: Apollo. Febco, Cla Vat Wilkins or Watts
B. Product must meet NSF-61
C. Provide completely automatic, unit, fitted with tight closing shut-off valves and test cocks at each end.
D. Construct such that all parts are replaceable without removing unit from line.
E. Design such that total pressure drop through complete backflow preventer does not exceed 12 PSI at rated flow Certified U.S.C. flow curves shall be provided for each device as part of the submittal package.

2.3. SHOCK ABSORBERS

A. Acceptable Manufacturers: Josam Wade J.R. Smith, Precision Products, Zum, or Sioux Chief.
B. B Refer to drawings for placement and size of shock absorbers.
C. Access Covers: Minimum size 12* x 12" located for access to shock absorbers.

2.4. VACUUM BREAKERS

A. Wilkins model 420

PART 3 EXECUTION

3.1. INSTALLATION AND TESTING

A. Backflow Preventers:
   1. 1 Pipe relief through fixed air gap and discharge to sewer.
   2. Install adjacent to wall and/or floor utilizing stand-off brackets, angle frame. and/or concrete piers.
   3. Test unit for leaks and pressure drop Clean and/or replace soiled strainer media.

4. Provide dual parallel reduced pressure backflow preventers on the main domestic water entrance to the facility.
5. Provide backflow prevention vacuum breaker on any water line feeding any piece of equipment which could cause back siphonage such as mechanical equipment, trap primer lines, etc.

B. Shock Absorbers:
   1. 1 Install shock absorbers above ceiling, outside wall so access and maintenance can be performed without disturbing walls and non-liftouts ceilings.
   2. Install shock absorbers on all flush valves, solenoid valves and quick closing devices.
   3. Test and certify shock absorbers by plumbing and drainage institute.

C. Equipment Connection Backflow device; Provide on all water lines feeding coffee makers, ice machines and beverage dispensers.

D. Vacuum Breakers. Provide on water lines feeding equipment to protect against back siphonage of contaminated water.

END OF SECTION 22 11 19

SECTION 22 1116 - DOMEST IC WATER PIPING AND VALVES

PART I GENERAL

1.1. SYSTEM REQUIREMENTS

A. A Submit pipe, valves, and fittings and have approved before starting installation. Pipe, valves, and fittings to be new, manufactured domestically, and marked clearly with manufacturers name, weight, and classification or working pressure.

B. Piping to run approximately as shown on drawings or as structural and architectural conditions permit.

C. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification

PART 2 PRODUCTS

2.1. COPPER PIPES

A. Type "L" hard-drawn seamless copper tubing, ASTM B-88: Domestic hot and cold-water 4" O.D. and smaller.

B. Type "K" hard-drawn seamless copper tubing:
   1. Domestic water lines located under slab.
   2. Exterior domestic water lines 2-1 /2" and smaller underground.

C. Copper Pipe Fittings:
   1. Provide sweat fittings, ASTM B-62, dimensions conforming to ANSI B16.22, wrought copper, with sweep patterns for copper tubing.
   2. Dielectric connection: Provide Epco Sales, lead free dielectric couplers at junction of steel pipe and equipment with copper p ping systems. Use of steel or cast iron fittings in copper piping systems prohibited. T-drill branch tec connections shall not be allowed for domestic water piping.

D. Unions to be brass ground joint 250-pound working pressure.

E. Nipples used in conjunction with copper pipe to be brass

2.2. VALVES

A. Valves are specified by Manufacturer and Model Numbers to establish quality levels unless otherwise noted. Crane, Milwaukee, Hammond, Nibco, Stockham, Centerline, Apollo, Kitz, or Watts are considered equal manufacturers. Provide clamp lock hand lever operators on valves less than 8 inches. Provide hand wheel and closed housing worm gear on valves 8 inches and larger unless indicated otherwise below. Provide chain operators for all equipment room and powerhouse valves 4 inch and larger which are located over 6 feet 6 inches above the finish floor. All valves shall meet NSF-61 requirements.
   1. Gate Valves;
      a. Gate valves for 2-1/2" and larger steel piping systems to be Class 125. cast iron body, bronze mounted, flanged ends, Nibco F-607- RW Valves to have solid wedge

disc, outside stem and yoke with rising stem, and bolted bonnet. Provide dielectric bolt protectors at all flanges when connecting dissimilar metals

b. Gate valves for copper piping 2" and smaller systems to be Class 125. bronze body, solder ends, Nibco S-113 LF. Valve to have either solid or split wedge disc inside screw, non-rising stem, and screwed bonnet,

2. Globe Valves:
    a. Globe valves 2-1/2" and larger to be Class 150 cast iron body, bronze mounted, flanged ends. Watts M61 15-74 lead free. Valves to have renewable seat and disc, outside stem and yoke with rising stem and bolted bonnet.
    b. Globe valves 2" and smaller to be Class 150, bronze body, screwed ends, Apollo 121T-LF. Valve to be plug type with renewable seat and disc, rising stem, and union bonnet.
3. Ball Valves:
    a. Ball valves for copper water piping systems 2" O.D. and smaller to be equal to Apollo "3" S-585-66LF. solder ends and for 2-5/8" thru 3-1/8" O.D to be equal to Nibco T T-585-66LF, threaded ends. Valves to have bronze body, chromium plated bronze ball PTFE seats stuffing box ring and seals, and quarter turn on-off Provide memory stops for valves used for balancing service. Valves to be rated for 400 psi WOG at 200 degrees F. install threaded end valves with lead free brass adapters
4. Check Valves:
    a. Check valves for copper water piping systems to be swing type, Class 125, bronze body, screwed ends, Nibco T-413-Y-LF

5. Flow balancing valves for domestic hot water service shall be Bell & Gossett lead free Circuit Setter Plus or approved equal. Valve shall provide flow balancing, flow measuring, and positive shutoff service. Provide valve with memory stop, capped differential pressure readout ports with internal check valves and preformed insulation. Valve construction to be bronze body and brass ball rated for 200 psig at 250 degrees F.

2.3. STRAINERS

A. Provide cleanable "Y" type strainers in pump suction lines. Strainers to have iron body with screwed bronze or bolted iron cap Strainer baskets to be brass. Water strainers to be Monel 20 mesh screen. Strainers to be line size complete with blow-down hose bibbs. When Suction Diffusers are specified for end suction pumps, strainers are not required

2.4. HANGERS

A. Non insulated copper tubing 1/2" O.D. thru 4" O.D with no longitudinal movement to be Grinnell Figure CT-99C, MSS SP-69 TYPE 9. plastic coated adjustable tubing ring hanger
B. Insulated copper piping 1/2" O.D. thru 2- 1/8" O.D. with longitudinal movement to be Grinnell Figure 171, MSS SP-69 TYPE 41 pipe roll complete with Figure 167, MSS SP-69 TYPE 40, galvanized steel insulation protection shield sized for maximum 10' span on 4 psi compressive strength insulation
C. Support copper pipe risers by Grinnell Figure CT-121C, MSS SP-69 TYPE B, plastic coated riser clamps at floor penetrations.

D. Support three or more parallel lines by trapeze hangers utilizing Unistrut channel or equal in bottom mounting arrangement with rod hanging support
E. Adequately size hangars on insulated piping for insulation to pass continuously through hangers. Insulated p ping to be supported outside insulation covering
F. Provide concrete inserts Grinnell Figure 282, MSS SP-69 TYPE 18, universal concrete insert, for attaching hangers to building structure. Inserts to be adequately sized and correctly positioned to support piping, valves etc. when full of water and system is in operation
G. Provide C-clamps with locknut. Grinnell Figure 86, MSS SP 69 TYPE 23, where piping is to be hung from steel beams Welding hanger rods to steel members is not permitted. Provide malleable beam clamps, Grinnell Figure 218, MSS SP- 69 TYPE 30. with extension piece, Grinnell Figure 157. where piping is hung from bar joist.
H. Attention is called to pipe spring Isolation specified to be furnished by this Contractor.
I. Support all piping by heavy steel adjustable Hangers, or brackets suitably fastened to structural portion of building. Place hangers in accordance with following tables.

COPPER TUBING SUPPORTS	
SIZE (IN.)	DISTANCE BETWEEN SUPPORTS (FT)
5/8	6
7/8- 1-1/8	8
1-3/8-2-1/8	10
2-5/8 - 5-1/8	12
6- 1/8 8 1/8	14

J. Perforated metal strap iron, or band iron hangers are not permitted Offsets in hangers are not allowed. Pipe risers to be supported at regular intervals in pipe shafts within the limits of good practice.
K. See Insulation Section for requirements at pipe hangers

PART 3 EXECUTION

3.1. INSTALLATION

A. Install piping not to interfere with opening of doors Or other moving parts Do not install piping near or directly over any portion of electrical equipment

3.2. FIRE-RATED PARTITIONS

A. Provide permanent firestop system at all piping penetrations of fire-rated walls and floors. Review details on drawing as well as this specification for permissible firestop systems. The firestop system shall have been tested and approved in accordance with ASTM Ft 19 and U.L 1479 (ASTM E814) and classified for up to 2 hours fire rating Firestop system to be 3M Hilti, Nelson, Johns Manville. or Specified Technologies. Firestop system shall be installed in strict accordance with published U.L approved installation instructions. Submit U.L approved installation drawing for each type of penetration prior to construction

3.3. NON-RATE D PARTITIONS

A. Piping to pass through the walls insulated or non-insulated as specified. Wall should be finished to fit neatly around the piping. Firestopping is not required at non-rated partitions

3.4. PIPE SLEEVES

A. Pipe sleeves shall be provided at non-rated partitions and floor penetrations. Pipe sleeves to be Schedule 40 or 18 gage steel Sleeves to extend 1-1/2" in excess of partition depth on each side. Sleeves penetrating floors in wet areas, including all mechanical rooms, shall extend a minimum of 1 inch above the floor.
   1. Piping requiring sleeves: Copper pipes thru masonry walls.

B. Provide chromium-plated escutcheon plates for exposed uninsulated pipes projecting through floors or walls in finished spaces. Mechanical rooms and janitor closets are not considered "finished" spaces

C. Hang piping so equipment, flanges, and connections do not bear weight of piping.

D. Adequately support vertical lines at their bases or by a suitable hanger placed in horizontal line near riser or by a base fitting seton pedestal.

E. Pipes not to be hung or supported by pumps. ND torque to be applied to pumps by connecting pipes. After final pipe adjustments and initial operation of the pumps, this Contractor to recheck alignment of pumps and realign as required.

F. Run piping in straight lines; riser lines to be plumb with such offsets only as indicated or necessary. No sagging of lines permitted,

G. Unless otherwise shown on drawings, lines to be installed to drain to sumps or sewer

H. Ream pipe after cutting to full bore. Remove foreign matter from inside of pipe before installing. Keep installed piping free from dirt and scale and protect open ends from foreign matter. Use temporary plugs or other approved methods of open end closure.

I. Threads to be right-hand, pipe standard, clean cut. full depth, and tapered. Joints to be made light without caulking. Approved pipe joint lubricant to be used, applied in thin layer to the male thread only.

J. Install copper fillings with suitable flux and silver solder with a melting temperature of at least 1000 degrees F and 95/5 lead free solder Type K copper pipe to be joined by means of suitable flux and silver or phos-copper.

K. Piping to have sufficient number of flanges or unions for convenient installation and removal of piping and equipment.

L. Remake or replace defective, leaking, or otherwise unsatisfactory Joints or material. Peening, caulking, or doping of piping is not permitted.

M. Install piping to prevent stresses and strains to piping and hangers from expansion or contraction. Provision for proper loops, offsets, or expansion joints to be responsibility of Contractor. Make provision for servicing and removal of equipment without dismantling piping

3.5. PIPING IN TRANSFORMER, ELECTRICAL AND ELEVATOR EQUIPMENT ROOMS

A. Refer to drawings. No water piping permitted in transformer. electrical, or elevator equipment rooms.

3.6. VALVE ACCESS

A. Locate all shutoff and control valves for easy access and operation. Where valves must necessarily be located in enclosed spaces, they shall be provided with access panels of sufficient size for operation. Furnish these access panels to proper trades for installation.

END OF SECTION 22 11 16

SECTION 22 13 16 - SANITARY WASTE AND VENT PIPING

PART I GENERAL

1.1. WORK INCLUDED

A. Submit pipe and fittings and have approved before starting installation. Pipe and fittings to be new, manufactured domestically, and marked clearly with manufacturers' name weight, and classification or working pressure.

B. Piping to run approximately as shown on drawings or as structural and architectural conditions permit.

C. Fittings 1-1/2" end smaller to be threaded. Class 150 standard malleable iron fittings, conforming to ANSI B16.3 and ASTM A-197.

D. Fittings for galvanized steel pipe to be same as above except have galvanized coating Fittings for waste, vent, and drainage piping to be drainage pattern type.

E. Unions to be Class 150 malleable iron with bronze-to-iron ground joint conforming to ANS! B16.39, ANSI B1 20.1. and ASTM A-197

F. Bolting materials Io be semi-finished carbon steel bolts and hex nuts conforming to ASTM A-307. Threads and dimensions to be in accordance with ANSI B1.1 and B18.2.

G. Thread lubricant to be Crane "Formular 425" or equal. Approved Teflon tape may be used at Contractor's option.

H. Gaskets to be 1/8" thick "Sepco" or equal

1.2. CAST IRON SOIL PIPE

A. Standard weight cast iron so I pipe with drainage fittings:

1. Waste, drainage, and vent lines 2" and larger All pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute® and listed by NSF® International.
2. Drain lines under concrete or other paving and under buildings, including to a distance of not less than 5'-0" from building. All pipe and fillings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute ® and listed by NSF© International
3. Manufacturers' Charlotte Pipe and Foundry, Tyler Pipe. AB&I Foundry.
4. Joints in cast iron soil pipe may be hub and spigot with neoprene compression gaskets conforming to ASTM C564 or "No-hub". No-hub shall not be permitted on underground systems No-hub couplings shall be standard CISP: 310 couplings manufactured with 300 series stainless steel and neoprene rubber sleeve.

1.3. PVC PIPE

A. Schedule 40 PVC DWV pipe. ASTM D-2665 solid wall Type 1. Grade 1. Schedule 40 DWV waste and drainage pip ng below grade ONLY PVC piping not permitted within Boiler Room, Central Sterile or Food Prep/Dishwashing areas.

B. B TYPE PSM SDR-35 PVC sewer pipe with gasket slip joints, ASTM D-3034, Outside gravity, underground sanitary sewer drainage, from 5'-0" outside building to connection to local sewer.

C. Fittings to match piping system. Fillings to have manufacturer's trademark permanently identified in accordance with MSS-SP-25. Supplier to include with submittal data certification that fittings and flanges have met requirements.
D. Joints for piping to be made with tetrahydrofuron solvent cement Joints to be in accordance with manufacturer's recommendations.
E. Pipe, fittings, and cement to all be supplied by single manufacturer for entire project.
F. Alt solvent cements shall be low emitting VOC at 510 g/L or less.

1.4. HANGERS

A. Non-insulated steel piping 1-1/2" and smaller with no longitudinal movement to be- Grinnell Figure 260, MSS SP-69 Type 1, adjustable clevis hanger.
B. Non-insulated cast iron soil pipe thru B' to be Grinnell Figure 104 MISS SP-69 TYPE 6, adjustable swivel ring, split ring type, and pipe 10" thru 15" Grinnell Figure 260, MSS SP-69 TYPE 1 adjustable clevis hangar.
C. Non-insulated PVC pipe 1/2" O D thru 4" O.D. with no longitudinal movement to be Grinnel Figure CT-99C, MSS SP-69 TYPE 9, plastic coated adjustable tubing ring hanger,
D. Support PVC pipe risers by Grinnell Figure CT-121C, MSS SP-69 TYPE 8 plastic coated riser clamps at floor penetrations.
E. Support steel pipe risers by Grinnell Figure 261. MSS SP 69 TYPE 8. riser clamps at floor slab penetrations
F. Support three or more parallel lines by trapeze hangers utilizing Unistrut channel or equal in bottom mounting arrangement with rod hanging support.
G. Adequately size hangers on insulated piping for insulation to pass continuously through hangers. Insulated piping to be supported outs de insulation covering
H. Provide concrete inserts, Grinnel Figure 282. MSS SP-69 TYPE 18. universal concrete insert, far attaching hangers to build ing structure inserts to be adequately sized and correctly positioned to support piping, valves, etc., when full of water and system is in operation.
I. Provide C-ci amps with locknut. Grinnell Figure 86, MSS SP-69 TYPE 23, where piping is to be hung from steel beams. Welding hanger rods to steel members is not permitted. Provide malleable team clamps. Grinnell Figure 21B, MSS SP-69 TYPE 30, with extension piece Grinnell Figure 157, where piping is hung from bar joist
J. Attention is called to pipe spring isolation specified to be furnished by this Contractor
K. Support all piping by heavy steel, adjustable hangers, or brackets suitably fastened to structural portion of building Place hangers in accordance with following
    1. PVC and Cast Iron Supports. Support each fitting, al intervals of not more than 5 feet, and at least at each joint
L. Perforated metal strap iron or band iron hangers are not permitted Offsets in hangers are not allowed. Pipe risers to be supported at regular intervals in pipe shafts within the limits of good practice

PART 2 EXECUTION

2.1. INSTALLATION

A. Install piping not to interfere with opening of doors or other moving parts. Do not install piping near or directly over any portion of electrical equipment.

2.2. FIRE-RATED PARTITIONS

A. Provide permanent firestop system at all piping penetrations of fire-rated wads and floors Review details on drawing as well as this specification for permissible firestop systems. The firestop system shall have boon tested and approved in accordance with ASTM El 19 and U L 1479 (ASTM E814) and classified for up to 2 hours fire rating. Firestop system to be 3M, Hilti, Nelson, Johns Manville, or Specified Technologies. Firestop system shall be installed in strict accordance with published U L. approved installation instructions. Submit UL approved installation drawing for each type at penetration prior to construction.

2.3. NO N-RATED PARTIT IONS

A. Piping lo pass through the walls insulated or non-insulated as specified Wall should be finished to fit neatly around the piping. Firestopping is not required at non-roled partitions.
B. Provide chromium-plated escutcheon plates for exposed uninsulated pipes projecting through floors or walls in finished spaces. Mechanical rooms and janitor closets are not considered "finished" spaces.
C. Hang piping so equipment, flanges and connections do not bear weight of piping.
D. Adequately support vertical lines al their bases or by a suitable hanger placed in horizontal line hear riser or by a base fitting set on pedestal.
E. Pipes not to be hung or supported by pumps. No torque to be applied to pumps by connecting pipes Afte r final pipe adjustments and initial operation of the pumps, this Contractor to recheck alignment of pumps and realign as required.
F. Run piping in straight lines; riser lines to be plumb with such offsets only as indicated or necessary. No sagging of lines permitted.
G. Unless otherwise shown on drawings, lines to be installed to drain to sumps or sewer
H. Ream pipe after cutting to full bore. Remove foreign matter from inside of pipe before installing. Keep Installed piping free from dirt and scale and protect open ends from foreign matter Use temporary plugs or other approved methods of open and closure.
I. Threads to be right-hand, pipe standard, clean cut, full depth, and tapered. Joints to be made tight without caul king. Approved pipe joint lubricant to be used, applied in thin layer to the male thread only.
J. Piping to have sufficient number of flanges or unions for convenient installation and removal of piping and equipment.
K. Remake or replace defective, leaking, or otherwise unsatisfactory joints or material. Peening, caulking, or doping of piping is not permitted.
L. Install piping to prevent stresses and strains to piping and hangers from expansion or contraction. Provision for proper loops, offsets, or expansion joints to be responsibility of Contractor. Make provision for servicing and removal cf equipment without dismantling piping

2.4. PIPING IN TRANSFORMER, ELECTRICAL, AND ELEVATOR EQUIPMENT ROOMS

A. Refer to drawings. No waler piping permitted in transformer, electrical, or elevator equipment rooms.

2.5. GRADES AND ELEVATIONS

A. Uniformly grade sanitary drainage lines to elevations shown. If no elevations are given, pitch sewers not less than 1/8" per foot.

END OF SECTION 22 13 16

SECTION 22 13 19 - SANITARY WASTE PIPING SPECIALTIES

PART 1 GENERAL

1.1. WORK INCLUDED

A. This section includes requirements for:
   1. Cleanouts.

PART 2 PRODUCTS

2.1. ACCEPTABL E MANUFACTURERS

B. Acceptable manufacturers are indicated in subsequent paragraphs.

2.2. CLEANOUTS

A. Acceptable Manufacturers: Josam, Wade, J.R. Smith, or Zurn. The following model numbers listed are Zurn.
B. B Exterior: ZN-1402-BP-HD cast iron cutoff ferrule with round nickel bronze scoriated frame and cover, secured.
C. Finished Concrete Floor: ZN-1400-HD-BP inside caulk round nickel bronze scoriated frame and cover,
D. Resilient Tile Floor. ZN-1400-X-BP inside caulk round nickel bronze scoriated frame and cover, secured.
E. E Carpet: ZN-1400-CM-BP inside caulk round nickel bronze scoriated frame and cover: provide carpet marker and permanent marker in ceiling above.
F. F Wall ZN-1441-BP cast iron cleanout with bronze plug and round stainless-steel cover.
G. Access Covers. Minimum size 12" x 12" located for access to valves, shock absorbers, trap primers, wall cleanouts, etc.
H. Furnish cleanouts occurring in waterproof floors with clamping devices.

PART 3 EXECUTION

3.1. INSTALLATION AND TESTING

A. Cleanouts:
   1. Locate line size cleanouts, except 4" largest required, at base of all soil and waste slacks, at all changes in direction and in straight runs. Ensure spacing in straight runs does not exceed 50 feet inside building and 100 feet outside the building.
   2. Extend inaccessible cleanouts up through floor and/or wall provided easy accessibility cannot be obtained otherwise

END OF SECTION 22 13 19

SECTION 22 42 13-COMMERCIAL PLUMBING FIXTURES

PART 1 GENERAL

1.1. MANUFACTURERS

A. Provide plumbing fixtures and drains as listed on drawings and described herein. Equal fixtures by Kohler. Zum, American Standard. Crane or Sloan will be considered equivalents

B. All drainage products to be Josam, Zurn, J.R. Smith, MIFAB, Wade or Watts. All drains installed above slab to be complete with clamping device.

C. Stainless steel sinks shall be Just. Elkay, of Kohler,

D. Commercial or public faucets shall be Zurn, Chicago Faucets, Symmons, Kohler,American Standard, or Speakman.

E. Gooseneck faucets shall be Zurn, Chicago Faucet, 7 6 S, Kohler, American Standard, or Speakman.

F. Fixture supplies, stops, and traps to be commercial grade McGuire. E B.C., Zum, or approval equal Traps to be 17 gauge with wall flange. Supplies and slops to be heavy pattern with wheel handle unless noted otherwise.

G. Thermostatic mixing valves shall be Symmons, Holby, Powers, or Leonard.

H. China or enamel fixtures to be white color, unless otherwise noted.

I. All products used for dispensing potable drinking water must be lead free and meet the requirements of NSF 61 and NSF 372 test standards via third party testing and certification

PART 2 PRODUCTS

- P-1 Water Closet-Public Floor Mounted 1.6 Gallon:
  - Kohler K-96053
  - Kohler K-4670-C seat
  - Zum Z-6000-AV-WS1
- P-2 Water Closet — ADA. Public Floor Mounted Barrier-Free, 1.6 Gallon;
  - Kohler K-96057
  - Kohler K-4670-C seat
  - Zum Z-6000-AV-WS1
- P-3 Urinal
  - Kohler K-4991-ET
  - Zum Z-6003-AV-WS1
- P-4 Lavatory, Oval, Public:
  - Kohler K-21 96-4
  - Symmons S-20 single lever faucet
  - Zur Z8743grid drain
  - Zum ZH8822-XL-LR supplies
  - Zur Z8700 p-trap

- P-5 Lavatory. Wall Hung, Private:
  - Kohler K-2005
  - Symmons S-20 single lever faucet
  - Zurn 28743^00 drain
  - Zum ZH8822-XL-LR supplies
  - Zum Z8700 p-trap
  - Zurn wall carrier
- P.6 Sink. Wall Hung. Public:
  - Kohler K-2005
  - Symmons S-20 single lever faucet
  - Zum Z8743grid drain
  - Zum ZH8822-XL-L R supplies
  - Zum Z8700 p-trap
  - Zurn wall carrier
- P-7 Service Sink:
  - Kohler K-6652 wall-mounted service sink with stainless steel rim guards
  - Kohler K-6673 trap
  - TS2900 Zurn trap standard
  - Zum ZZ843M4CSRC integral spring-loaded check stops
- P-8 Drain — Floor, Regular:
  - Zum ZN-415-P-Y B strainer, nickel bronze lop, trap primer, sediment bucket
  - P-9 Shower. Barrier-Free:
  - Symmons C-96-500-B30-X-V-231
  - Zum ZN-415-5B
- P-10 Shower. Barrier-Free:
  - Symmons C-96- 1-X-231
  - Zum ZN-415-5B
- P-11 Trench Drain. ADA:
  - Zum Z-890M -KC-HCA
  - Length as shown on the plan
- P-12 Emergency Eyewash/Shower:
  - Bradley S19-314EW shower and eyewash, manual close valves
  - Bradley S19-2150 thermostatic control valve
- P-13 Wall Hydrant, Exterior;
  - Zum Z-1310, non-freeze with vacuum breaker and stainless-steel face
  - Install 18” above finished grade
- P-14 Sink — Double Compartment, Gooseneck Faucet:
  - Elkay DLR 331910
  - Zurn Z831C4-XL-FC gooseneck, wrist blades
  - Zum 28 739 grid drains
  - Zum ZH8822-XL-LR supplies

- Zurn Z8752 continuous waste, 17 ga
- Zum Z8702 p-trap

- P-15 Water Connection Box:
  - Oatey No 39140 metal ice maker box with metal face plate.
  - Box with valve and water hammer arrestor
- P-16 Floor Sink, 12" Square, Half Grate
  - Zum ZN-1 901-KC-2, nickel bronze half grate, flange, A.R E. coaling. 8" sump
- P-17 Drinking Fountain: Freeze Resistant, Dual Height, Barrier, Bottle Filler
  - Elkay LZSTLBWSLK with stainless steel finish
  - Elkay MLP200 Mounting Plate
  - Elkay LKAPREZL ADA Apron
  - Elkay LKFRB1 Freeze Resistant Valve Box (2 Req'd)
  - Elkay 51300C WaterSentry Filter
  - Install with lower bubbler 36" above finished floor

EXECUTION

2.1. REQUIREMENTS

A. A Water closets shall be installed complete with wall carriers, wax rings, bolt caps, and flush valves (or float valves).

B. Elevated vacuum breakers, where specified, shall be installed 7-6" above the finished floor

C. Countertop sinks shall be installed complete with required mounting rim or dips.

D. After installation, ail fixtures shall be cleaned and labels removed. Where fixtures are in contact with walls, floors, or countertops, caulking shall be applied Caulking shall be General Electric white silicon sanitary sealant.

E. E Water closets identified on plans as barrier free fixtures shall have the flush valves installed per American Disabilities Act. Flush valves shall have the handle installed on the wide side of the stall. Coordinate with the architectural drawings.

F. F Non prefabricated showers shall have chloraloy 240 brand non-plasticized chlorinated polyethylene concealed waterproofing membrane ,040 inch thick. Installation shall be per manufacturers recommendations.

G. At each floor drain installed above slab on grade install a 36" x 36" apron equal to chloraloy 240 brand non-plasticized chlorinated polyethylene concealed waterproofing membrane, .040 inch thick, waterproofing membrane to be installed per manufacturers recommendations.

END OF SECTION 22 42 13

ELECTRICAL (E05.01)

SECTION 260100 GENERAL PROVISIONS

PART 1 - GENERAL

1.1. Provide all labor, materials, tools, and service for a complete installation of equipment and systems specified herein and indicated on the drawings.

1.2. CODES AND STANDARDS: Electrical installation to be in accordance with the latest editions, including amendments or revisions to the following

Codes:

A. International Building Code, 2021
B. National Fire Protection Association Codes, specifically NFPA-70-National Electrical Code, NFPA-101 Life Safety Code.

PART 2 - PRODUCTS

2.1. All materials and equipment used in carrying out these specifications to be new and bear the UL labels when such labels are available.

PART 3 - EXECUTION

3.1. Visit site and be informed of conditions under which work must be performed.

3.2. Examine other sections of these specifications and drawings to be familiar with work to be furnished by other tradesmen.

3.3. Upon completion of work, installation to be tested including all systems and equipment.

3.4. Electrical Contractor to provide materials necessary for temporary lights and power as directed by the General Contractor.

3.5. Power consumption will be paid for by the Owner.

SECTION 260534 RACEWAYS - ELECTRIC METALLIC TUBING

PART 1 - GENERAL

1.1. Provide a complete conduit system with associated couplings, connectors, and fittings.

1.2. Electric metallic tubing may be installed concealed overhead and on exposed branch circuits above 6'.

PART 2 - PRODUCTS

2.1. Conduit to be 1/2" minimum size.

2.2. Provide steel set screw couplings, connectors, and fittings with case-hardened locknuts.

PART 3 - EXECUTION

3.1. Run concealed conduits in as direct line as possible between outlets.
3.2. Maintain integrity of fire partitions and floor slabs where conduits pass through sleeves from one area to another with UL listed 3-hour fire and smoke-stop fittings.
3.3. Complete all conduit systems before installing conductors.

SECTION 260534.01 RACEWAYS - FLEXIBLE METALLIC CONDUIT

PART 1 - GENERAL

1.1. Provide a flexible metallic conduit system for the termination points at equipment that may possibly vibrate, such as motors, and also for connection to recessed lighting fixtures.

PART 2 - PRODUCTS

2.1. Conduit to be 3/8" minimum size for lighting fixtures and 1/2" minimum size for utilization equipment.
2.2. In damp or wet locations, flexible conduit will be the Sealtite type.

PART 3 - EXECUTION

3.1. Install a copper ground wire inside of the flexible conduit to achieve continuity of ground. This applies to both lighting fixtures and utilization equipment.
3.2. Allow sufficient slack conduit to reduce the effect of vibration.

SECTION 260519 CONDUCTORS

PART 1 - GENERAL

1.1. Provide a complete system of conductors for lighting, power, fire alarm systems, and communication systems throughout the project.

PART 2 - PRODUCTS

2.1. All conductors to be 98 percent conductivity copper with 600-volt minimum insulation.
2.2. All conductors No. 10 and smaller to have type THHN/THWN insulation.
2.3. All conductors No. 8 and larger to have type THWN/THHN insulation and to be stranded.

PART 3 - EXECUTION

3.1. Install pull boxes in circuits or feeders over 100' long.
3.2. Make all splices or connections only at outlet or junction boxes.

SECTION 260537 OUTLET BOXES

PART 1 - GENERAL

1.1. Provide each fixture, switch receptacle, and other device with a galvanized outlet box of appropriate size and depth for its particular location and use.

PART 2 - PRODUCTS

2.1. Ceiling outlet boxes to be 4" octagon and wall boxes to be 4" square with raised plaster rings or device rings.

PART 3 - EXECUTION

3.1. Use boxes of sufficient cubic capacity to accommodate the number of conductors to be installed in accordance with the National Electrical Code.
3.2. Install boxes so that covers will be accessible at all times.

SECTION 262726 WIRING DEVICES

PART 1 - GENERAL

1.1. Provide switches, receptacles, and other wiring devices as indicated on drawings.

PART 2 - PRODUCTS

2.1. All devices to be Bryant, Hubbell, or approved equivalent by Eagle, Arrow Hart, Pass and Seymour, Bryant, Leviton, or General Electric.
2.2. Switches to be 20-amp, 120/277-volt.
2.3. Receptacles to be 20-amp, 125-volt.

PART 3 - EXECUTION

3.1. Mount all switches 48" above finished floor unless noted otherwise.
3.2. Mount all receptacles up 18" unless noted otherwise.
3.3. Check Architectural drawings for special mounting conditions in special areas.
3.4. Install green ground wire from panel to all receptacles.

SECTION 262726.01 DEVICE PLATES

PART 1 - GENERAL

1.1. Provide device plates on all switches, receptacles, telephone outlets, etc.

PART 2 - PRODUCTS

2.1. Plates to be Bryant, Hubbell, Sierra, or approved equivalent by device manufacturer.

PART 3 - EXECUTION

3.1. Install device plates in full contact with wall surfaces.

SECTION 262878 SAFETY SWITCHES

PART 1 - GENERAL

1.1. Contractor to provide all disconnect switches indicated on the drawings.

PART 2 - PRODUCTS

2.1. Safety switches to be as manufactured by Square D, Westinghouse, Gould, or GTE Sylvania.
2.2. Safety switches to be of the heavy-duty type with arc shields and rated for the voltage of the system to which it is being used.

PART 3 - EXECUTION

3.1. Firmly attach all safety switches to the surface on which it is being mounted.
3.2. Safety switches installed in moist or damp locations shall be of the NEMA 3R enclosures.

SECTION 260526 GROUNDING

PART 1 - GENERAL

1.1. The entire installation shall be grounded in conformance with the National Electrical Code, Article 250.
1.2. All current consuming devices to have a green ground wire installed in the same conduit as the phase conductors from the panel to the device. This applies to receptacles, motors, etc.

PART 2 - PRODUCTS

2.1. All ground wire to be copper with a green insulation or if a green insulation is not available, then green identifying tape will be installed at both termination points.

PART 3 - EXECUTION

3.1. Provide ground wires throughout distribution system and to all utilization equipment, such as receptacles, motors, and other equipment.

SECTION 265100 INTERIOR LIGHTING AND LAMPS

PART 1 - GENERAL

1.1. Provide labor and materials, equipment, and services necessary to provide all interior lighting fixtures and lamps.

PART 2 - PRODUCTS

2.1. Provide lighting fixtures as indicated on lighting fixture schedule on
2.2. Fluorescent ballasts to be high-power factor and bear ETL and CMB labels for Class "P" protection.
2.3. Incandescent lamps to be rated at 130-volt inside frosted.
2.4. Lamps to be as manufactured by General Electric, Sylvania, or Westinghouse, or approved equivalent.

PART 3 - EXECUTION

3.1. Joints and fixture wiring to be made using wire nuts, preinsulated Scotch locks or other approved mechanical means of connection.
3.2. Recess fixtures on lay-in type grid ceilings to be suitable for installation on this type ceiling and may use the ceiling suspension system to support the fixture.
3.3. Coordinate fixture locations to clear diffusers, ductwork, piping, etc.

City of Hendersonville Park Vendor Contact Information

- Concrete – Shannon House LLC – Contact Shannon House 615-405-6543
- Fencing – Volunteer Fence – Contact Cody Langston 615-854-1902
- HVAC – Derryberry Heating and Air – John McEachen 615-804-2791
- Dirt, Topsoil, Gravel – STS Distribution – Ryan Morarity 615-566-9799
- IT/Security Cameras – City of Hendersonville – Jason Hollars 615-243-5141