WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC 27616

BID SET
AUGUST 17, 2026

WAKE COUNTY
NORTH CAROLINA

NO	NAME	ISSUED	REVISION: NO	DATE
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NO	NAME	ISSUED	REVISION: NO	DATE
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NO	NAME	ISSUED	REVISION: NO	DATE
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E102	ELECTRICAL SITE DETAILS	08/17/2026		
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Esse Architects

632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY
MINI CITY EMS
STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY
FACILITIES DESIGN &
CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A.
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EFB734E97478...
Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	NA
CHECKED BY:	EMS

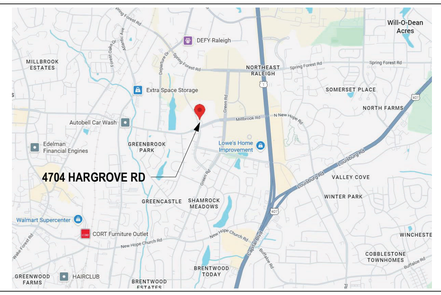
REVISIONS

NO.	DESCRIPTION	DATE

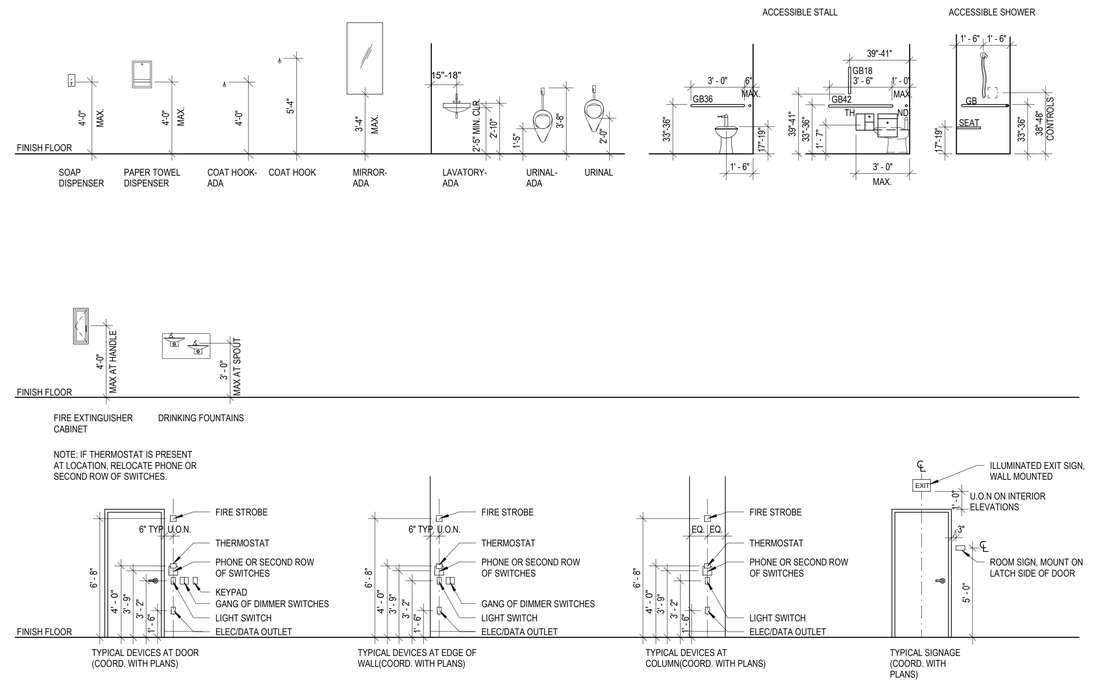
SHEET INFORMATION

G001
COVER AND INDEX

AREA MAP



MOUNTING HEIGHTS



ABBREVIATIONS

ABBR.	FULL DESCRIPTION
@	AT
A/C	AIR CONDITION(ER)(ING)
AB	AIR BARRIER
ACC	ACCESSIBLE
ACM	ALUMINUM COMPOSITE MATERIAL
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
AL	ALUMINUM
ALT	ALTERNATE
ARCH	ARCHITECT(URAL)
BD	BOARD
BFF	BELOW FINISH FLOOR
BLDG	BUILDING
BLKG	BLOCKING
BOS	BOTTOM OF STEEL
BRG	BEARING
CG	CORNERGUARD
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLR	CLEAR/CLEARANCE
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET
CW	CURTAIN WALL
DEMO	DEMOL(ISH)(ITION)
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DS	DOWNSPOUT
DTL	DETAIL
DWG	DRAWING
EA	EACH
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
ELEC	ELECTRICAL
EOD	EDGE OF DECK
EOS	EDGE OF STEEL
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EXST	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FIN	FINISH

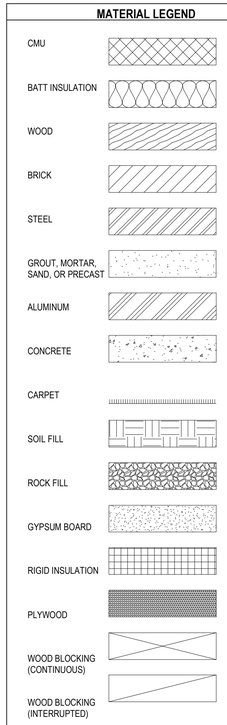
ABBREVIATIONS

ABBR.	FULL DESCRIPTION
FLR	FLOOR
FPRF	FIREPROOFING
FRT	FIRE RETARDANT TREATED
FT	FOOT/FEET
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFRC	GLASS FIBER REINFORCED CONCRETE
GL	GLASS
GWB	GYPSUM WALLBOARD
GYP	GYPSUM
HGT	HEIGHT
HM	HOLLOW METAL
HR	HOUR
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
INFO	INFORMATION
INT	INTERIOR
JT	JOINT
LAV	LAVATORY
LB	POUND
LH	LEFT HAND
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTL	METAL
N	NORTH
NA	NOT APPLICABLE
NC	NON-COMBUSTIBLE
NCSBC	NORTH CAROLINA STATE BUILDING CODE
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OM	ORNAMENTAL METAL
OPP	OPPOSITE
PL	PLATE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PME	PLUMBING/MECHANICAL/ELECTRICAL
PT	PRESSURE-TREATED
PVC	POLYVINYL CHLORIDE
PWD	PLYWOOD
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER

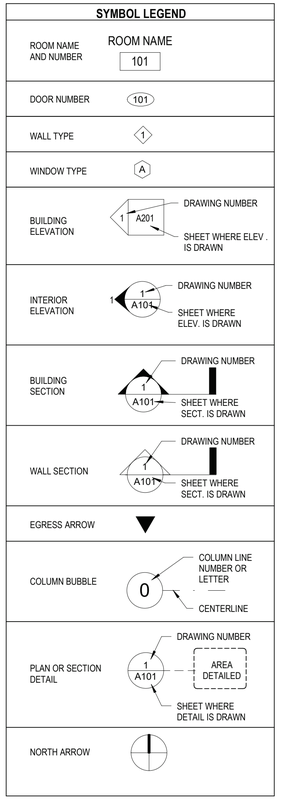
ABBREVIATIONS

ABBR.	FULL DESCRIPTION
REF	REFRIGERATOR
REINF	REINFORCE(D)(ING)(MENT)
REQ	REQUIRED
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
SCW	SOLID CORE WOOD
SF	SQUARE FOOT/FEET
SFT	STOREFRONT
SIM	SIMILAR
SPEC	SPECIFICATION
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SUSP	SUSPENDED
T&G	TONGUE AND GROOVE
THRU	THROUGH
TLT	TOILET
TOBB	TOP OF BOND BEAM
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET
TOS	TOP OF STEEL
TSTAT	THERMOSTAT
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VIF	VERIFY IN FIELD
W/	WITH
W/I	WITHIN
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WT	WEIGHT
WWF	WELDED WIRE FABRIC

MATERIAL LEGEND



SYMBOL LEGEND



GENERAL NOTES

1. GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY INSPECTIONS REQUIRED BY PUBLIC AUTHORITIES GOVERNING THE WORK.
2. REVIEW DOCUMENTS, VERIFY DIMENSIONS AND FIELD CONDITIONS. REPORT ANY CONFLICTS OR OMISSIONS TO THE ARCHITECT FOR CLARIFICATION PRIOR TO PERFORMING ANY WORK IN QUESTION.
3. CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND CONSULTANT DRAWINGS, AND SHALL OBTAIN WRITTEN CLARIFICATION FROM ARCHITECT BEFORE PROCEEDING WITH THE WORK IN QUESTION OR RELATED WORK.
4. SUBMIT REQUESTS FOR SUBSTITUTIONS, REVISIONS, OR CHANGES TO ARCHITECT FOR REVIEW PRIOR TO PURCHASE, FABRICATION, OR INSTALLATION.
5. OWNER WILL PROVIDE WORK NOTED "BY OTHERS" OR "NIC" UNDER SEPARATE CONTRACT. INCLUDE SCHEDULE REQUIREMENTS IN CONSTRUCTION PROGRESS SCHEDULE AND COORDINATE TO ASSURE ORDERLY SEQUENCE OF INSTALLATION, UNLESS OTHERWISE DIRECTED. NOTIFY ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES WITH NIC ITEMS.
6. COORDINATE TELECOMMUNICATIONS, DATA, AND SECURITY SYSTEM INSTALLATIONS.
7. DO NOT SCALE DRAWINGS; WRITTEN DIMENSIONS GOVERN. IN CASE OF CONFLICT, CONSULT THE ARCHITECT.
8. PROVIDE A PORTABLE FIRE EXTINGUISHER WITHIN 75 FOOT TRAVEL DISTANCE TO ALL PORTIONS OF THE BUILDING ON EACH FLOOR, AND ADDITIONAL FIRE EXTINGUISHERS AS REQUIRED BY FIRE OR BUILDING FIELD INSPECTORS.
9. PROVIDE ILLUMINATED EXIT SIGN OVER REQUIRED EXITS, WHERE SHOWN ON DRAWINGS, AND ADDITIONAL SIGNS AS REQUIRED BY FIRE OR BUILDING FIELD INSPECTORS. CONNECT EXIT SIGNS TO EMERGENCY POWER CIRCUITS.
10. PRIOR TO CORING SLAB FOR FLOOR POWER OR DATA, REVIEW LOCATIONS WITH ARCHITECT AND OWNER.
11. GANG ADJACENT LIGHT SWITCHES AND COVER WITH A SINGLE PLATE.
12. MAINTAIN INTEGRITY OF FIRE RESISTANCE RATING OF ALL RATED SHAFT ENCLOSURES AND RATED PARTITIONS BEHIND RECESSED WALL ACCESSORIES, SUCH AS FIRE EXTINGUISHER CABINETS, TOILET ACCESSORIES, AND ELECTRICAL BOXES.
13. NO EXPOSED CONDUIT, WIRING, PIPING, OR BOXES IS PERMITTED WITHOUT ARCHITECT APPROVAL, UNLESS SPECIFICALLY NOTED OTHERWISE.
14. GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION BETWEEN THE TRADES PROVIDING SYSTEMS IN OPEN CEILING CONDITIONS. COORDINATION DRAWINGS AND ANY CONFLICTS ARE TO BE REVIEWED WITH THE ARCHITECT PRIOR TO INSTALLATION.
15. REFER TO THE PROJECT MANUAL FOR COMPLETE GENERAL REQUIREMENTS AND CONDITIONS OF THE CONTRACT. THE PROJECT MANUAL SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES IN THE EVENT OF A CONFLICT.
16. IF PROVIDED, REFER TO ENLARGED PLANS AND PLAN DETAILS FOR ADDITIONAL INFORMATION AND DIMENSIONS.
17. ANY DIMENSIONS OF, OR TYING IN TO, EXISTING BUILDING COMPONENTS ARE TO BE FIELD VERIFIED PRIOR TO COMMENCEMENT OF WORK. REVIEW ANY DISCREPANCIES WITH ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
18. TYPICAL DETAILS SHOWN ON THE DRAWINGS SHALL BE INCORPORATED AT ALL APPROPRIATE LOCATIONS WHETHER OR NOT SPECIFICALLY REFERENCED AT EACH LOCATION.
19. IN AREAS OF HARD CEILING, BUILDING SYSTEMS SHALL BE CONFIGURED TO AVOID OR MINIMIZE ABOVE-CEILING ACCESS. THE LOCATION OF ALL ACCESS DOORS MUST BE COORDINATED WITH AND APPROVED BY ARCHITECT PRIOR TO THE INSTALLATION OF ANY ABOVE-CEILING EQUIPMENT, DAMPERS, VALVES, JUNCTION BOXES, ETC. ANY ACCESS DOORS OR PANELS REQUIRED IN WALLS MUST ALSO BE COORDINATED WITH AND APPROVED BY THE ARCHITECT PRIOR TO THE INSTALLATION OF THE EQUIPMENT REQUIRING ACCESS.
20. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF HIS MEASUREMENTS AND TAKE-OFFS FOR MATERIAL ORDERS.
21. VARIATIONS IN FLOOR LEVEL IN EXCESS OF 1/8" FOR EVERY 10'-0" (U.O.N.) SHALL BE LEVELED BY CONTRACTOR.

Esse Architects

632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

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WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects PA Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect 0944 DocuSigned by: Eric M. Sowers A72EFB734E97478... Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	DGH

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

G002

ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

NAME OF PROJECT: WAKE COUNTY MINI CITY EMS STATION
ADDRESS: 4704 HARGROVE ROAD RALEIGH, NC 27616
OWNER: TOMMY MOORMAN PHONE #: (919)280-5120 E-MAIL: tommy.moorman@wake.gov
AUTHORIZED AGENT: ERIC SOWERS PHONE #: (919)740-5669 E-MAIL: eric@esse-architects.com
OWNED BY: ■ COUNTY ☐ PRIVATE ☐ STATE
CODE ENFORCEMENT JURISDICTION: ■ CITY: RALEIGH, NC ■ COUNTY: WAKE ☐ STATE

CONTACT: ERIC SOWERS, ESSE ARCHITECTS PA

DESIGNER	FIRM	NAME	LICENSE #	PHONE #	EMAIL
ARCHITECTURAL	ESSE ARCHITECTS	ERIC SOWERS	9314	(919)740-5669	eric@esse-architects.com
CIVIL	WITHERSRAVENEL	SPENSER MEEKINS	056188	(252)216-7255	smeekins@withersravenel.com
ELECTRICAL	SALAS O'BRIEN	REGINALD ADAMS	19658	(919)840-9300	radams@salasobrien.com
FIRE ALARM	SALAS O'BRIEN	REGINALD ADAMS	19658	(919)840-9300	radams@salasobrien.com
PLUMBING	SALAS O'BRIEN	JOHN ERICKSON	050628	(919)840-9300	jerickson@salasobrien.com
MECHANICAL	SALAS O'BRIEN	JOHN ERICKSON	050628	(919)840-9300	jerickson@salasobrien.com
SPRINKLER	SALAS O'BRIEN	JOHN ERICKSON	050628	(919)840-9300	jerickson@salasobrien.com
STRUCTURAL	LYSAGHT & ASSOCIATES	ANDY TERRELL	044576	(919)833-0495	abt@lysaghtassociates.com
RETAINING WALLS	LYSAGHT & ASSOCIATES	ANDY TERRELL	044576	(919)833-0495	abt@lysaghtassociates.com
OTHER					

*OTHER" SHOULD INCLUDE FIRMS AND INDIVIDUALS SUCH AS TRUSS, PRECAST, PRE-ENGINEERED, INTERIOR DESIGNERS, ETC.

2018 NC BUILDING CODE: ■ NEW CONSTRUCTION ☐ PHASED CONSTRUCTION
☐ 1ST TIME INTERIOR COMPLETION ☐ RENOVATION
☐ SHELL/CORE ☐ ADDITION

2018 NC EXISTING BUILDING CODE: ☐ PRESCRIPTIVE ☐ REPAIR ☐ CHAPTER 14
ALTERATION: ☐ LEVEL I ☐ LEVEL II ☐ LEVEL III
☐ HISTORIC ☐ CHANGE OF USE

CONSTRUCTED N/A CURRENT OCCUPANCY (CHAPTER 3) N/A
RENOVATED N/A PROPOSED OCCUPANCY (CHAPTER 3) N/A
OCCUPANCY CATEGORY: (TABLE 1604.5) CURRENT: ☐ I ☐ II ☐ III ☐ IV
PROPOSED: ☐ I ☐ II ☐ III ■ IV

BASIC BUILDING DATA
CONSTRUCTION TYPE: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
☐ I-B ■ II-B ☐ III-B ☐ V-B
SPRINKLERS: ☐ N/A ■ YES ☐ NO ☐ PARTIAL
☐ N/A ■ NFPA 13 ☐ NFPA 13R ☐ NFPA 13 D
STANDPIPES: ■ NO ☐ CLASS 1 WET ☐ CLASS 1 DRY ☐ CLASS II WET ☐ CLASS II DRY
☐ CLASS III WET ☐ CLASS III DRY
FIRE DISTRICT: ■ NO ☐ YES FLOOD HAZARD AREA: ■ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: ☐ NO ■ YES

GROSS BUILDING AREA TABLE:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
6TH FLOOR	N/A	N/A	N/A
5TH FLOOR	N/A	N/A	N/A
4TH FLOOR	N/A	N/A	N/A
3RD FLOOR	N/A	N/A	N/A
2ND FLOOR	N/A	N/A	N/A
MEZZANINE	N/A	N/A	N/A
1ST FLOOR	N/A	3,963	3,963
BASEMENT	N/A	N/A	N/A
TOTAL			3,963

ALLOWABLE AREA
PRIMARY OCCUPANCY: ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
■ BUSINESS ☐ EDUCATIONAL FACTORY ☐ F-1 MODERATE ☐ F-2 LOW
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM
INSTITUTIONAL ☐ I-1 CONDITION 1 ☐ I-1 CONDITION 2 ☐ I-2 CONDITION 1 ☐ I-2 CONDITION 2
I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ I-4
MERCANTILE ☐ RESIDENTIAL ☐ R-1 ■ R-2 ☐ R-3 ☐ R-4
STORAGE ☐ S-1 ☐ S-1 HIGH PILED ■ S-2 ☐ S-2 HIGH-PILED ☐ STORAGE GARAGE OPEN
☐ UTILITY AND MISCELLANEOUS ☐ REPAIR GARAGE ☐ PARKING GARAGE ENCLOSED
ACCESSORY OCCUPANCY CLASSIFICATION: NA
INCIDENTAL USES: TABLE 509 NA
SPECIAL USES (CHAPTER 4 - LIST CODE SECTIONS): NA
SPECIAL PROVISIONS (CHAPTER 5 - LIST CODE SECTIONS): NA
MIXED OCCUPANCY: ☐ NO ■ YES SEPARATION: 1 HR EXCEPTION

ACTUAL AREA OF OCCUPANCY A / ALLOWABLE AREA OF OCCUPANCY A + ACTUAL AREA OF OCCUPANCY B / ALLOWABLE AREA OF OCCUPANCY B < 1

___ + ___ + __ __ __ = ___ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA	(C) AREA FOR FRONTAGE INCREASE[1]	(D) AREA FOR SPRINKLER INCREASE[2]	(E) ALLOWABLE AREA OR UNLIMITED[3]	(F) MAXIMUM BUILDING AREA [4]
1	FIRST FLOOR - R2	3,963	64,000	75%	200%	64,000	64,000

OCCUPANCY R2 IS THE MOST RESTRICTIVE AND CONTROLS

1. FRONTAGE AREA INCREASES FROM SECTION 506.2 ARE COMPUTED THUS:
   A. PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FEET MINIMUM WIDTH = 545 FT
   B. TOTAL BUILDING PERIMETER = 545 FT (P)
   C. RATIO (F/P) = 545 / 545 = 1 (F/P)
   D. W = MINIMUM WIDTH OF PUBLIC WAY = 30 T (W)
   E. PERCENT OF FRONTAGE INCREASE I = 100 [545 / 545 - 0.25] x 30/30 = 75 (%)
2. UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTION 507
3. MAXIMUM BUILDING AREA = TOTAL NUMBER OF STORIES IN BUILDING X D (MAXIMUM 3 STORIES) (506.2)
4. THE MAXIMUM AREA OF PARKING GARAGES MUST COMPLY WITH TABLE 406.5.4.
5. FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 506.2.

ALLOWABLE HEIGHT

		ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
BLDG HEIGHT IN FEET	TABLE 504.3 [2]	75	23'	TABLE 504.3
BLDG HEIGHT IN STORIES	TABLE 504.4 [3]	4	1	TABLE 504.4

[1] PROVIDE CODE REFERENCE IF THE "SHOWN ON PLANS" QUANTITY IS NOT BASED ON TABLE 504.3 OR 504.4.
[2] THE MAXIMUM HEIGHT OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH TABLE 412.3.1.
[3] THE MAXIMUM HEIGHT OF OPEN PARKING GARAGES MUST COMPLY WITH TABLE 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ ___" REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLIES	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES	OVER 30'	0	0				
BEARING WALLS							
EXTERIOR							
NORTH	OVER 30'	0	0				
EAST	OVER 30'	0	0				
WEST	OVER 30'	0	0				
SOUTH	OVER 30'	0	0				
INTERIOR							
NON-BEARING WALLS & PARTITIONS							
EXTERIOR		N/A					
NORTH	OVER 30'	N/A					
EAST	OVER 30'	N/A					
WEST	OVER 30'	N/A					
SOUTH	OVER 30'	N/A					
INTERIOR WALLS & PARTITIONS	N/A	N/A	N/A				
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	N/A	N/A	0				
FLOOR CEILING ASSEMBLY		0	0				
COLUMNS SUPPORTING FLOORS		0	0				
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS		N/A	0				
ROOF CEILING ASSEMBLY		N/A	0				
COLUMNS SUPPORTING ROOF		N/A	0				
SHAFT ENCLOSURES - EXIT		N/A	0				
SHAFT ENCLOSURES - OTHER		N/A	0				
CORRIDOR SEPARATION		N/A	0				
OCCUPANCY/FIRE BARRIER SEPARATION		0	0				
PART'Y/FIRE WALL SEPARATION		N/A	0				
SMOKE BARRIER SEPARATION		N/A	0				
SMOKE PARTITION		N/A	0				
TENANT/DWELLING UNIT/SLEEPING UNIT SEPARATION	1/2	1/2	G103	U419			
INCIDENTAL USE SEPARATION		N/A	0				

* INDICATE SECTION NUMBER PERMITTING REDUCTION

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEP DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
OVER 30'	NO LIMIT		

LIFE SAFETY SYSTEM REQUIREMENTS
EMERGENCY LIGHTING: ☐ NO ■ YES
EXIT SIGNS: ☐ NO ■ YES
FIRE ALARM: ☐ NO ■ YES
SMOKE DETECTION SYSTEMS: ☐ NO ■ YES ☐ PARTIAL
CARBON MONOXIDE DETECTION: ☐ NO ■ YES

LIFE SAFETY PLAN REQUIREMENTS
LIFE SAFETY PLAN SHEET # G102

■ FIRE AND/OR SMOKE WALL LOCATIONS (CHAPTER 7)
☐ ASSUMED AND REAL PROPERTY LINE LOCATIONS (IF NOT ON THE SITE PLAN) N/A
☐ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) N/A
■ OCCUPANCY USE FOR EACH AREA AS IT RELATES TO OCCUPANT LOAD CALCULATIONS (TABLE 1004.1.2)
■ OCCUPANT LOADS FOR EACH AREA
■ EXIT ACCESS TRAVEL DISTANCES (1017)
■ COMMON PATH OF TRAVEL DISTANCES (TABLES 1006.2.1 & 1006.3.2(1))
☐ DEAD END LENGTHS (1020.4) NO DEAD END CORRIDORS - N/A
■ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
■ MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY EACH EXIT DOOR CAN ACCOMMODATE BASED ON EGRESS WIDTH (1005.3)
■ ACTUAL OCCUPANT LOAD FOR EACH EXIT DOOR
☐ A SEPARATE SCHEMATIC PLAN INDICATING WHERE FIRE RATED FLOOR/CEILING AND /OR ROOF STRUCTURE IS PROVIDED FOR OCCUPANCY SEPARATION N/A
■ LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10)
☐ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7) N/A
☐ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9) N/A
☐ LOCATION OF DOORS EQUIPPED WITH HOLD OPEN DEVICES
☐ LOCATION OF EMERGENCY ESCAPE WINDOWS (1030) N/A
☐ THE SQUARE FOOTAGE OF EACH FIRE AREA (202) N/A
☐ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT FOR OCCUPANCY CLASSIFICATION I-2 (407.5) N/A
☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE NONE

ACCESSIBLE DWELLING UNITS (SECTION 1107) N/A

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS REQUIRED	TOTAL - ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING (SECTION 1106) - SEE SHEET C0.0

LOT OR PARKING AREA	TOTAL # PARKING REQUIRED	TOTAL # PARKING PROVIDED	# OF ACCESSIBLE SPACES PROVIDED: REGULAR W/ 5' ACCESS ISLE	VAN SPACE WITH 132" ACCESS ISLE	VAN SPACE WITH 8' ACCESS ISLE	TOTAL # ACCESSIBLE UNITS PROVIDED
	N/A	5	1		1	1
TOTAL	N/A	5	1		1	1

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1) NO PLUMBING - REMOVAL & CAPPING ON P-101.1

USE	WATER CLOSETS MALE	WATER CLOSETS FEMALE	WATER CLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS & TUBS MALE	SHOWERS & TUBS FEMALE	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
BUSINESS	0.2	0.2	0	0	0.15	0.15	0	0	0	1	1
RESIDENTIAL	0.2	0.2	0	0	0.2	0.2	0	0.25	0.25	0	0
STORAGE	0.4	0.4	0	0	0.4	0.4	0	0	0	0	0
REQUIRED	0.8	0.8	0	0	0.75	0.75	0	0.25	0.25	1	1
PROVIDED	1	1	0	0	1	1	0	1	1	1	1

SPECIAL APPROVALS
LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ETC., DESCRIBE BELOW)

ENERGY SUMMARY

ENERGY REQUIREMENTS:

THE FOLLOWING DATA SHALL BE CONSIDERED MINIMUM AND ANY SPECIAL ATTRIBUTE REQUIRED TO MEET THE ENERGY CODE SHALL ALSO BE PROVIDED. EACH DESIGNER SHALL FURNISH THE REQUIRED PORTIONS OF THE PROJECT INFORMATION FOR THE PLAN DATA SHEET. IF PERFORMANCE METHOD, STATE THE ANNUAL ENERGY COST FOR THE STANDARD REFERENCE DESIGN VS. ANNUAL ENERGY FOR THE PROPOSED DESIGN.

EXISTING BUILDING ENVELOPE COMPLIES WITH CODE: ☐ YES(REMAINDER OF THIS SECTION IS NOT APPLICABLE) ☐ NO
EXEMPT BUILDING: ☐ YES ☐ NO PROVIDE CODE OR STATUTORY REFERENCE:
CLIMATE ZONE: ☐ N/A ☐ 3A ■ 4A ☐ 5A
METHOD COMPLIANCE: ☐ ENERGY CODE PERFORMANCE ☐ ENERGY CODE PRESCRIPTIVE ☐ OTHER - PERFORMANCE
☐ ASHRAE 90.1 PERFORMANCE ☐ ASHRAE 90.1 PRESCRIPTIVE ☐
(IF "OTHER" SPECIFY SOURCE HERE)

THERMAL ENVELOPE (PRESCRIPTIVE METHOD ONLY)

ROOF/CEILING ASSEMBLY - STANDING SEAM
DESCRIPTION OF ASSEMBLY: SEE 1/A421: STANDING SEAM ROOF / R-30 CONTINUOUS RIGID INSULATION / 1 1/2" MTL DECK
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION: R-30 CONTINUOUS INSULATION
SKYLIGHTS IN EACH ASSEMBLY: N/A
U-VALUE OF SKYLIGHT: N/A
SKYLIGHTS AREA IN EACH ASSEMBLY: N/A

EXTERIOR WALLS - MASONRY VENEER
DESCRIPTION OF ASSEMBLY: SEE 1/A421 - 4" MASONRY VENEER / 2" AIR SPACE / AIR-WEATHER BARRIER / CONTINUOUS R-10 RIGID INSULATION / LOAD BEARING CMU
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION: R-10 CONTINUOUS INSULATION
OPENINGS (WINDOWS & DOORS):
U-VALUE OF ASSEMBLY: U-0.45
SOLAR HEAT GAIN COEF: 0.25
PROJECTION FACTOR: 0.00
DOOR R-VALUES: ENTRANCE - R-1.3 / HOLLOW METAL - R-2.0

WALLS ADJACENT TO UNCONDITIONED SPACE (EACH ASSEMBLY):
DESCRIPTION OF ASSEMBLY: SEE 3/421 - 8" CMU/ AIR WEATHER BARRIER / CONTINUOUS R-10 INSULATION / MTL STUDS/ 5/8" GYP. BD. .
U-VALUE OF TOTAL ASSEMBLY: U-0.080
R-VALUE OF INSULATION: R-10
OPENINGS (WINDOWS & DOORS):
U-VALUE OF ASSEMBLY: N/A
SOLAR HEAT GAIN COEF:
PROJECTION FACTOR:
DOOR R-VALUES: R-2.1

WALLS BELOW GRADE:
DESCRIPTION OF ASSEMBLY:
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:

FLOORS - UNCONDITIONED:
DESCRIPTION OF ASSEMBLY: N/A
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION:

FLOOR SLAB ON GRADE:
DESCRIPTION OF ASSEMBLY: SEE 2/A301 - 4" OR 6" CONCRETE ON A VAPOR BARRIER ON DRAINAGE STONE ON GRADE
U-VALUE OF TOTAL ASSEMBLY:
R-VALUE OF INSULATION: R-15 CONTINUOUS INSULATION
HORIZONTAL/VERTICAL REQMT: VERTICAL TO TOP OF FOOTING AT WALLS / 2'-0" HORIZONTAL AT ENTRANCES AND DOORS
SLAB HEATED: N/A

STRUCTURAL DESIGN

DESIGN LOADS:
IMPORTANCE FACTORS: SNOW (Is): ☐ 0.8 ☐ 1.0 ☐ 1.1 ■ 1.2
SEISMIC (Is): ☐ 1.0 ☐ 1.25 ■ 1.5
LIVE LOADS: ROOF 20 PSF
MEZZANINE N/A PSF
FLOOR / APPARATUS BAY 150 PSF
GROUND SNOW LOAD: 15 PSF
WIND LOAD: ULTIMATE WIND SPEED 128 MPH (ASCE-7)
EXPOSURE CATEGORY ☐ N/A ■ B ☐ C ☐ D

SEISMIC DESIGN CATEGORY: ☐ N/A ☐ A ☐ B ■ C ☐ D
PROVIDE THE FOLLOWING SEISMIC PARAMETERS:
RISK FACTOR (TABLE 1604.5): ☐ N/A ☐ I ☐ II ☐ III ■ IV
SPECIAL RESPONSE ACCELERATION: S_S 11.7 %g S_1 5.9 %g

SITE CLASSIFICATION (ASCE 7): ☐ N/A ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
DATA SOURCE: ☐ N/A ☐ FIELD TEST ■ PRESUMPTIVE ☐ HISTORICAL DATA
BASIC STRUCTURAL SYSTEM: ☐ N/A ■ BEARING WALL ☐ BLDG FRAME ☐ MOMENT FRAME
☐ DUAL W/ SPECIAL MOMENT FRAME ☐ INVERTED PENDULUM
☐ DUAL W/ INTERMEDIATE R/C OR SPECIAL STEEL
ANALYSIS PROCEDURE: ☐ N/A ☐ SIMPLIFIED ■ EQUIVALENT LATERAL FORCE ☐ DYNAMIC
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED: ☐ N/A ☐ YES ■ NO
LATERAL DESIGN CONTROL: ☐ N/A ☐ EARTHQUAKE ■ WIND
SOIL BEARING CAPACITIES: 3,000 PSF

PILE SIZE, TYPE & CAPACITY N/A

MECHANICAL DESIGN SEE MECHANICAL DRAWINGS

MECHANICAL SUMMARY: MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

THERMAL ZONE: WINTER DRY BULB: -
SUMMER DRY BULB: -

INTERIOR DESIGN COND: WINTER DRY BULB: -
SUMMER DRY BULB: -
RELATIVE HUMIDITY: -

BUILDING HEATING LOAD: -

MECHANICAL SPACING CONDITIONING SYSTEM
UNITARY:
DESCRIPTION OF UNIT: -
HEATING EFFICIENCY: -
COOLING EFFICIENCY: -
SIZE CATEGORY OF UNIT: -
UNITARY: SIZE CATEGORY: N/A
IF OVERSIZED STATE REASON
CHILLER: SIZE CATEGORY: N/A
IF OVERSIZED STATE REASON
LIST EQUIPMENT EFFICIENCIES: -

ELECTRICAL DESIGN SEE ELECTRICAL DRAWINGS

ELECTRICAL SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE: ☐ ENERGY CODE PERFORMANCE ☐ ENERGY CODE PRESCRIPTIVE ☐ N/A
☐ ASHRAE 90.1 PERFORMANCE ☐ ASHRAE 90.1 PRESCRIPTIVE

LIGHTING SCHEDULE: (EACH FIXTURE TYPE)
LAMP TYPE REQUIRED IN FIXTURE -
NUMBER OF LAMPS IN FIXTURE -
BALLAST TYPE USED IN THE FIXTURE -
NUMBER OF BALLASTS IN THE FIXTURE -
TOTAL WATTAGE PER FIXTURE -
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED - (WHOLE BUILDING OR SPACE BY SPACE)
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED -

ADDITIONAL EFFICIENCY PACKAGE OPTIONS: (WHEN USING 2018 NCECC; NOT REQUIRED FOR ASHRAE 90.1)
☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
☐ C406.3 REDUCED LIGHTING POWER DENSITY
☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
☐ C406.5 ON-SITE RENEWABLE ENERGY
☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects PA Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect DocuSigned by: Eric M. Sowers A72EF87A4E0747B Raleigh, NC

8/16/2026

PROJECT INFORMATION

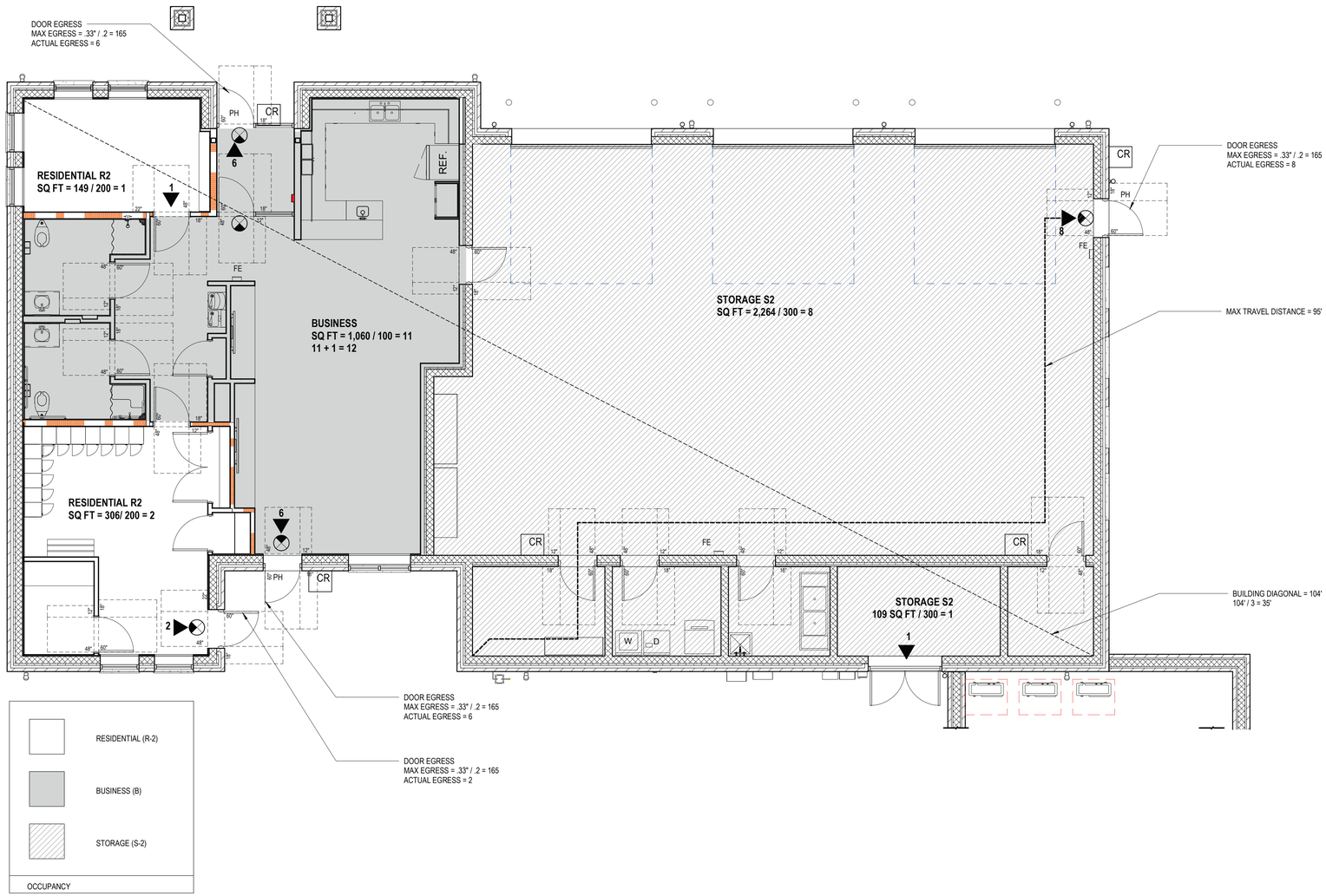
PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: EMS
CHECKED BY: EMS

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

G101
CODE SUMMARY



1 / G102 FIRST FLOOR LIFE SAFETY PLAN
3/16" = 1'-0"

WALL LEGEND

	GYPSUM BOARD CONSTRUCTION
	1/2 HR FIRE BARRIER UL U419
	CMU CONSTRUCTION
FE	FIRE EXTINGUISHER CABINET WITH EXTINGUISHER
FACP	WALL MOUNTED FIRE ALARM CONTROL PANEL
F	WALL MOUNTED FIRE ALARM PULL STATION
V	FIRE ALARM STROBE DEVICE
H	FIRE ALARM HORN/STROBE DEVICE
CR	CARD READER

NOTES

1. ALL DIMENSIONS ARE TO FINISHED FACE OF WALL.
2. COORDINATE AND PROVIDE BACKING/BLOCKING FOR MILLWORK, FURNITURE, EQUIPMENT, AND OTHER ITEMS ATTACHED OR MOUNTED TO WALLS OR CEILINGS.
3. LOCATE DOOR OPENINGS 6" OFF PERPENDICULAR WALL, U.O.N.
4. FINISH WALL TO FLOOR FOR BASE ADHESION.
5. CMU EXTERIOR WALLS IN MULTIPURPOSE, MENS AND WOMEN'S ROOMS, SUPERVISOR'S OFFICE, KITCHEN, DINING AND LIVING ROOMS ARE FURRED OUT WITH 7/8" HAT CHANNELS @ 16" O.C. AND 5/8" GYPSUM BOARD - PAINTED.

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

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27616

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CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect
DocuSigned by:
Eric M. Sowers
A7DE9F3AEB4A4B...
Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	EMS

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

G102

LIFE SAFETY PLAN

UL Solutions | **Product iQ®**

Design/System/Construction/Assembly Usage Disclaimer

- Authorities Having Jurisdiction should be consulted in all cases as to the particular requirements covering the installation and use of UL Certified products, equipment, system, devices, and materials.
- Authorities Having Jurisdiction should be consulted before construction.
- Fire resistance assemblies and products are developed by the design submitter and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
- When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the general Guide information for each product category and each group of assemblies. The Guide information includes specifics concerning alternate materials and alternate methods of construction.
- Only products which bear UL's Mark are considered Certified.

BXUV - Fire Resistance Ratings - ANSI/UL 263 Certified for United States
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

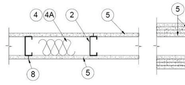
See General Information for Fire-Resistance Ratings - ANSI/UL 263 Certified for United States
Design Criteria and Allowable Variances

See General Information for Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada
Design Criteria and Allowable Variances

Design No. U419

December 15, 2025

Nonbearing Wall Ratings — 1, 2, 3 or 4 Hr (See Items 4 & 8 through 5J)
*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



2F. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.
SUPER STUD BUILDING PRODUCTS — The Edge

2G. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height.
STUDCO BUILDING SYSTEMS — CROCSTUD

2H. **Framing Members* — Steel Studs** — (Not Shown, As an alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
TELINO INDUSTRIES L L C — TRUE-STUD™

2I. **Framing Members* — Steel Studs** —

2J. **Framing Members* — Metal Studs** — Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights

2K. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item L channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
EB METAL INC — NITROSTUD

2L. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item L channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
OLMAR SUPPLY INC — PRIMESTUD

2M. **Framing Members* — Steel Studs** — As an alternate to Item 2 — For use with Item L channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Studlink™

horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, In. Item 2E	No. of Layers & Thickness of Panel	Min Thkns of Insulation (Item 4)
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, ULX or 3/4 in. thick Type IP-X3 or ULTRACODE

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Types C and 5/8 in. thick SCX

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR, ULIX; 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or 3/4 in. thick Types IP-X3 or ULTRACODE

5H. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5. Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).
MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

5I. **Gypsum Board* —** (As an alternate to Item 5) — Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5.
CGC INC — Type ULIX, ULX
UNITED STATES GYPSUM CO — Type ULIX, ULX

12A. **Lead Discs —** (Not Shown, for use with Item 5H) — Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

13. **Lead Batten Strips —** (Not Shown, For Use With Item 5E) — Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.8% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.

14. **Lead Tabs —** (Not Shown, For Use With Item 5E) — 2 in. wide, 5 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

15. **Barrier Mesh —** (Optional, Not Shown) - Attached to steel studs on one or both sides of the wall using Barrier Mesh Clips spaced at maximum 12 inches on center vertically, using a flat head type screw penetrating through the steel at least 3/8 of an inch. For Steel Studs less than 0.033 inches in thickness, use self-piercing screws. For Steel Studs equal to or greater than 0.033 inches in thickness, use steel drill screws (self-tapping). Gypsum Board (Item 5) to be installed directly over the Barrier Mesh using prescribed screw patterns with lengths increased by a minimum 1/8 in. Barrier Mesh may be installed with the long dimension of the diamond pattern positioned vertically or horizontally. Barrier Mesh joints may occur as butt joints at the framing members and secured using the Barrier Mesh Clips or occur in between framing members as overlapping joints secured using 18 SWG wire ties spaced a maximum 12 in. on center.
CLARKDIETRICH BUILDING SYSTEMS — Barrier Mesh, Barrier Mesh Clips

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

Last Updated on 2026-03-05

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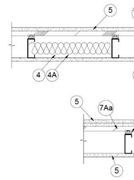
1 / G103 U419 - RATED PARTITION
12" = 1'-0"



1. **Floor and Ceiling Runners —** (Not Shown) — For use with Item 2 — Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. **Framing Members* — Floor and Ceiling Runner —** Not Shown — In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
CEMCO, LLC — Viper25™ Track
CRACO MFG INC — SmartTrack25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper25™ Track

1B. **Framing Members* — Floor and Ceiling Runner —** Not Shown — In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.018 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
CEMCO, LLC — Viper20™ Track
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track
IMPERIAL MANUFACTURING GROUP INC — Viper20™ Track

1C. **Framing Members* — Floor and Ceiling Runners —** (Not Shown) — In lieu of Item 1 — Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME 024/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME 024/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC — Type SUPREME 024/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME 024/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME 024/30EQD and Type SUPREME D20
TELINO INDUSTRIES L L C — Type SUPREME 024/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC — Type SUPREME 024/30EQD and Type SUPREME D20

1D. **Floor and Ceiling Runners —** (Not Shown) — For use with Item 2A — Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. **Framing Members* — Floor and Ceiling Runners —** (Not Shown, As an alternate to Item 1) — For use with Items 2E, 5F or 5G or 5I only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.
CLARKDIETRICH BUILDING SYSTEMS — CD ProTRAK
DMFCWSB L L C — ProTRAK
MBA METAL FRAMING — ProTRAK
RAM SALES L L C — Ram ProTRAK
STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK
THE MILL STEEL COMPANY — ProTRAK

1F. **Framing Members* — Floor and Ceiling Runner** — Not Shown — In lieu of Item 1 — For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.
SUPER STUD BUILDING PRODUCTS — The Edge

1G. **Framing Members* — Floor and Ceiling Runner** — For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC
IRONLINE METALS LLC — Bantam Stud.

3. **Wood Structural Panel Sheathing —** (Optional, For use with Item 5 Only) — (Not Shown) — 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural I sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 8 in. OC in the perimeter and 12 in. OC in the field. When used, gypsum panels attached over OSB or plywood panels and fastener lengths for gypsum panels increased by min. 1/2 in.

4. **Batts and Blankets* —** (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5.

See **Batts and Blankets** (BKNV or BZJZ) Categories for names of Classified companies.

2P. **Framing Members* — Steel Studs** — As an alternate to Item 2 — proprietary channel shaped steel studs, min width as indicated under Item 5, min 25 MSG galv steel. Studs to be cut 3/8 to 3/4 in. less in lengths than assembly height. Spaced 24 in. OC max.
OEG BUILDING MATERIALS — OEG Stud

2Q. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1Q, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CEMCO, LLC — Viper X

2R. **Framing Members* — Steel Studs** — (Not Shown — Alternate to Item 2, For use with Item 1P) — Channel shaped steel studs with attachment clips at top and bottom, min 3-5/8 in. depth, spaced a max of 24 in. OC. Studs clipped into floor and ceiling runners (Item 1P). Max 2-3/8 in. extension reveal from top of stud to inside of ceiling runner.
HYPERFRAME INC — Hyperstud

2S. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1Q, proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min. 20 EQ/22 mils. (min. 0.0221 in. thick) galvanized steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
JJC INTERNATIONAL DISTRIBUTORS — Non-structural Studs 3-5/8" and 6".

2T. **Framing Members* — Steel Studs** — Not Shown — In lieu of Item 2 — For use with Item 1R, proprietary channel shaped steelstuds, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 25 MSG (0.018 in. min. bare metal thickness). Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
USG MEXICO S A DE C V — Type SCX

5J. **Gypsum Board* —** (Not Shown) — (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified. For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

5K. **Gypsum Board* —** (As an alternate to Item 5 when Foam Plastic Insulation (Items 4C or 4D) is used) - — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Gypsum panels secured to studs with 1-1/4 in. long Type S steel screws spaced 8 in. OC at perimeter and in the field. For 2 layer assemblies outer layer will be attached to studs over inner layer with the 1-7/8 in. long steel screws spaced 8 in. OC.

5L. **Gypsum Board* —** (As an alternate to Item 5 when Foam Plastic Insulation (Items 4E) is used) — Any 5/8 in. thick, 4 ft. wide, Gypsum Board listed in Item 5 above. Additional layer of Gypsum Board is required to what is shown in Item 5 above. Applied vertically with vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. For 2 layer assemblies inner layer attached to studs with 1-1/4 in. long Type S steel screws spaced 8 in. OC, outer layer will be attached to studs over inner layer with the 1-7/8 in. long steel screws spaced 8 in. OC. For 3 layer assemblies inner layers installed as described in the 2 layer system above, third layer attached to studs over inner layers with 2-5/8 in. long steel screws spaced 8 in. OC.

6. **Fasteners —** (Not Shown) — For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. **Single layer system with Type ULIX:** 1 in. long, spaced 12 in. OC in the field and perimeter, when panels are applied horizontally or vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer. **Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below.

7. **Furring Channels —** (Optional, Not Shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Items 5B, 5E, 5H, or 5J.

7A. **Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Items 5B, 5E, 5H, or 5J.

b. **Steel Framing Members*** — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.
PAC INTERNATIONAL L L C — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

7B. **Framing Members* —** (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 6. Not for use with Items 5B, 5E, 5H, or 5J.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.
KINETICS NOISE CONTROL INC — Type Isomax

rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with minimum 20 MSG steel thickness.
BASF CORP — Enerstar® G, Walltite® MAX, Walltite® One, and Inertite® Max

4E. **Foamed Plastic* —** (As an alternate to Items 4 and alternates, for use with Item 5L) — Spray applied, foamed plastic insulation, at any thickness from partial fill to completely filling stud cavity, for up to 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 3-1/2 in. with minimum 20 MSG steel thickness.
BASF CORP — Walltite® v.5

5. **Gypsum Board* —** Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) with Type ULIX need not be staggered. Horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) with Type ULIX need not be staggered. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, In. Items 2, 2C, 2D, 2F, 2G, 2O	No. of Layers & Thkns of Panel	Min Thkns of Insulation (Item 4)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	2 layers, 3/4 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	2-1/2	2 layers, 3/4 in. thick	2 in.

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC- AR; WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC- AR, SCX, SHX, ULIX, WRX, IP-X3, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick ULTRACODE

THE SIAM GYPSUM INDUSTRY (SONGKHLA) CO — 1/2 in. thick Type C and 5/8 in. thick Type SCX

7C. **Framing Members* —** (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Items 5B, 5E, 5H, or 5J.

b. **Steel Framing Members* —** Used to attach furring channels (Item 7Ca) to studs (Item 2). Clips spaced max. 48 in. OC. GENECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.
PLITEQ INC — Type GENECLIP

7D. **Steel Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — Furring channels and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 8 in. and tied together with double strand of No. 18 AWG galvanized steel wire. Gypsum board attached to furring channels as described in Item 6. Not for use with Items 5B, 5E, 5H, or 5J.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

7E. **Steel Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — Resilient channels and Steel Framing Members as described below:

a. **Resilient Channels —** Formed of No. 25 MSG galv steel, spaced 24 in. OC, and perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured in place with two No. 8 15 x 1/2 in. Phillips Modified Truss screws spaced 2-1/2 in. from the center of the overlap. Gypsum board attached to resilient channels as described in Item 6. Not for use with Items 5B, 5E, 5H, or 5J.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 7Da) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
KEENE BUILDING PRODUCTS CO INC — Type RC+ Assurance Clip

7F. **Steel Framing Members* —** (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels —** Formed of No. 25 MSG galv steel. 2-3/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Items 5B, 5E, 5H, or 5J.

b. **Steel Framing Members* —** Used to attach resilient channels (Item 7Fa) to studs. Clips spaced 48 in. OC., and secured to studs with No. 8 x 2-1/2 in. coarse drywall screw through the center hole. Resilient channels are secured to clips with one No. 10 x 1/2 in. pan-head self-drilling screw.
CRACO MFG INC — SmartStud25™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™
IMPERIAL MANUFACTURING GROUP INC — Viper25™

2C. **Framing Members* — Steel Studs —** Not Shown — In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.018 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.
CEMCO, LLC — Viper20™
MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™
IMPERIAL MANUFACTURING GROUP INC — Viper20™

2D. **Framing Members* — Steel Studs —** In lieu of Item 2 — Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME 024/30EQD and Type SUPREME D20
CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME 024/30EQD and Type SUPREME D20
QUAIL RUN BUILDING MATERIALS INC — Type SUPREME 024/30EQD and Type SUPREME D20
SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME 024/30EQD and Type SUPREME D20
STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME 024/30EQD and Type SUPREME D20
TELINO INDUSTRIES L L C — Type SUPREME 024/30EQD and Type SUPREME D20
UNITED METAL PRODUCTS INC — Type SUPREME 024/30EQD and Type SUPREME D20

2E. **Framing Members* — Steel Studs —** (Not Shown, As an alternate to Item 2) — For use with Items 5F or 5G or 5I or Type ULIX only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD
DMFCWSB L L C — ProSTUD
MBA METAL FRAMING — ProSTUD
RAM SALES L L C — Ram ProSTUD
STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD
THE MILL STEEL COMPANY — ProSTUD

2I. **Framing Members* — Steel Studs —** (As an alternate to Item 2, For use with Items 5C, 5I or Type ULIX) — Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.
CEMCO, LLC — Viper20™

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, ULIX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR; 3/4 in. thick Types IP-X3 or ULTRACODE

USG BORAL DRYWALL SFZ LLC — 1/2 in. Type C; 5/8 in. Types C, SCX, SGX, ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE

When Item 7B, **Steel Framing Members***, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.

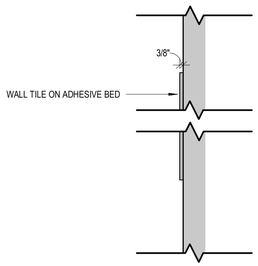
5A. **Gypsum Board* —** (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6.
CGC INC — Type SHX.

UNITED STATES GYPSUM CO — Type FRX-G, SHX.

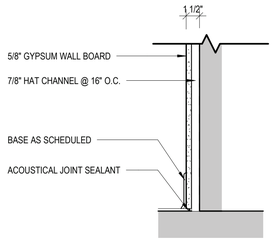
USG MEXICO S A DE C V — Type SHX.

5B. **Gypsum Board* —** (Not Shown) — As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) — Nom 5/8 in. or 3/4 in. may be used as alternate to all 5/8 in. or 3/4 in. shown in Item 5. Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

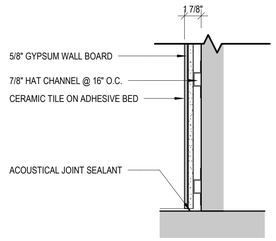
5C. **Gypsum Board* —** (For Use With Item 2B) — Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 8 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting



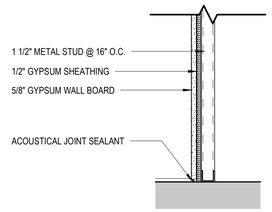
1 G104 TYPE A1
1 1/2" = 1'-0"



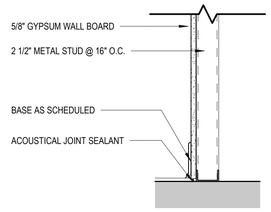
2 G104 TYPE A2
1 1/2" = 1'-0"



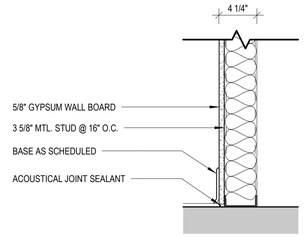
3 G104 TYPE A3
1 1/2" = 1'-0"



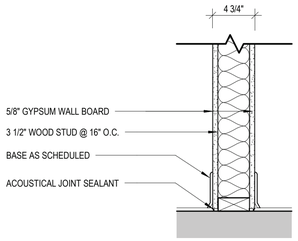
4 G104 TYPE A4
1 1/2" = 1'-0"



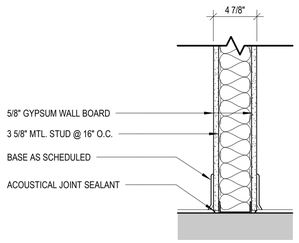
5 G104 TYPE A5
1 1/2" = 1'-0"



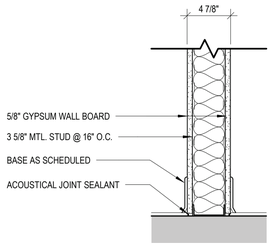
6 G104 TYPE B1
1 1/2" = 1'-0"



7 G104 TYPE B2
1 1/2" = 1'-0"



8 G104 TYPE B3
1 1/2" = 1'-0"



9 G104 TYPE B4 - 1 HR FIRE RATED
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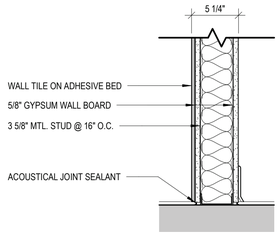
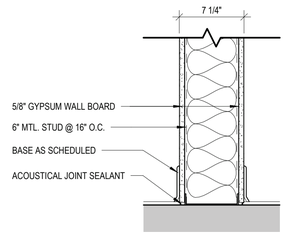
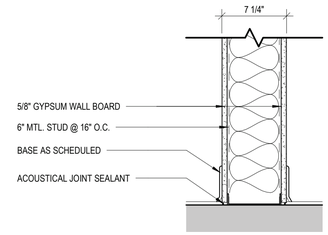


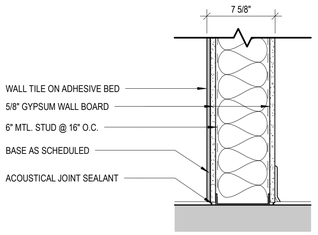
10 G104 TYPE B5
1 1/2" = 1'-0"



11 G104 TYPE C1
1 1/2" = 1'-0"



12 G104 TYPE C2 - 1 HR FIRE RATED - UL U 419
1 1/2" = 1'-0"



13 G104 TYPE C3 - 1 HR FIRE RATED - UL U 419
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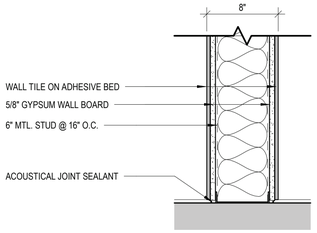
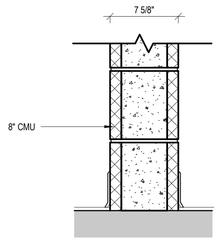
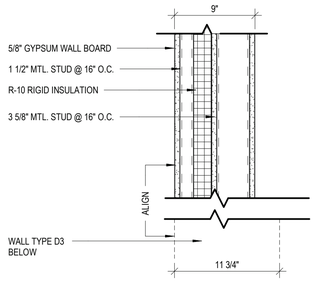


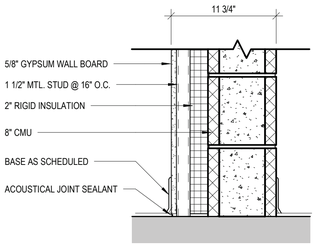
14 G104 TYPE C4
1 1/2" = 1'-0"



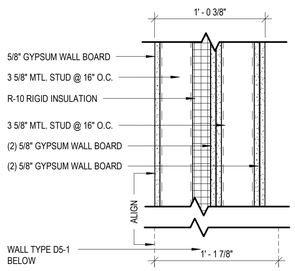
15 G104 TYPE D1
1 1/2" = 1'-0"



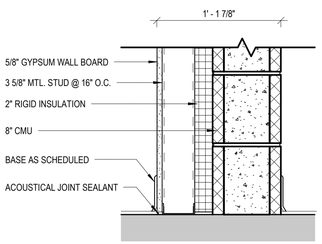
16 G104 TYPE D2
1 1/2" = 1'-0"



17 G104 TYPE D3
1 1/2" = 1'-0"



18 G104 TYPE D4
1 1/2" = 1'-0"



19 G104 TYPE D5-1 / D5-2
1 1/2" = 1'-0"

INTERIOR WALL SCHEDULE

TYPE	THICKNESS	COMPOSITION	HEIGHT	RATING	COMMENTS
A1	3/8"	1 LAYER CERAMIC TILE ON ADHESIVE BED			SEE ELEVATIONS FOR DETAILS
A2	1 1/2"	1 LAYER 5/8" GWB, 7/8" HAT CHANNEL	6" ABOVE CEILING		
A3	1 7/8"	1 LAYER 5/8" GWB, 7/8" HAT CHANNEL, CERAMIC TILE ON ADHESIVE BED	6" ABOVE CEILING		TILE STOPS AT BATHROOM CEILING
A4	2 5/8"	1 LAYER 5/8" GWB, 2" HIGH HAT CHANNEL @ 16" O.C.	6" ABOVE CEILING		
A5	3 1/8"	1 LAYER 5/8" GWB, 2 1/2" METAL STUDS @ 16" O.C.	6" ABOVE CEILING		
B1-1	4 1/4"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C.	6" ABOVE CEILING		
B1-2	4 1/4"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C.	TO DECK		SOFFIT
B2	4 3/4"	1 LAYER 5/8" GWB, 3 1/2" WOOD STUDS @ 16" O.C., 1 LAYER 5/8" GWB	SEE 2/A511		
B3-1	4 7/8"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	6" ABOVE CEILING		
B3-2	4 7/8"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	TO DECK		
B4	4 7/8"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	TO DECK	1/2 HR	
B5	5 1/4"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" CBB, CERAMIC TILE	TO DECK		TILE STOPS AT BATHROOM CEILING
C1	7 1/4"	1 LAYER 5/8" GWB, 6" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	TO DECK		
C2	7 1/4"	1 LAYER 5/8" GWB, 6" METAL STUDS @ 16" O.C., 1 LAYER GWB	TO DECK	1/2 HR	
C3	7 5/8"	CERAMIC TILE, 1 LAYER 5/8" CBB, 6" METAL STUDS @ 16" O.C., 1 LAYER 5/8" CWB	TO DECK	1/2 HR	TILE STOPS AT BATHROOM CEILING
C4	8"	CERAMIC TILE, 1 LAYER 5/8" CBB, 6" METAL STUDS @ 16" O.C., 1 LAYER 5/8" CWB, CERAMIC TILE	TO DECK		TILE STOPS AT BATHROOM CEILING
D1	7 5/8"	8" CMU	TO DECK		
D2	9"	1 LAYER OF 5/8" GWB, 3 5/8" METAL STUDS @16" O.C., LAYER OF 5/8" GWB, 2" RIGID INSUL, 1 1/2" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	SEE WALL SECTION		
D3	11 3/4"	8" CMU, 2" RIGID INSUL, 1 1/2" METAL STUDS @ 16" O.C., 1 LAYER OF 5/8" GWB	14' HIGH		
D4	1' - 0 3/8"	2 LAYERS OF 5/8" GWB, 3 5/8" METAL STUDS @16" O.C., 2 LAYERS OF 5/8" GWB, 2" RIGID INSUL, 3 5/8" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	SEE WALL SECTION		
D5-1	1' - 1 7/8"	8" CMU, 2" RIGID INSUL, 3 5/8" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	14' HIGH		
D5-2	1' - 1 7/8"	8" CMU, 2" RIGID INSUL, 3 5/8" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	TO DECK		

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EFB734E07478...
Raleigh, NC
8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	NA
CHECKED BY:	EMS

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

G104

INTERIOR WALL TYPES

Docusign Envelope ID: 15B60597-C743-8E22-81CA-C565E7577190

SURVEY NOTES:

1. THE FOLLOWING INFORMATION WAS USED FOR THE EXISTING SURVEY:
   a. COORDINATE SYSTEM: NORTH CAROLINA STATE PLANE FOOT
   b. PROJECT HORIZONTAL DATUM: NAD 83/2011
   c. VERTICAL DATUM: NAVD 88
   d. COORDINATE UNITS: US SURVEY FEET
   e. VERTICAL UNITS: US SURVEY FEET
2. PROPERTY BOUNDARY SHOWN AS PROVIDED BY MCKIM & CREED, DATED OCTOBER 30, 2025.
3. TOPOGRAPHIC SURVEY, WETLANDS, STREAMS, AND RIPARIAN BUFFERS SHOWN AS PROVIDED BY MCKIM & CREED, DATED OCTOBER 30, 2025, AND FIELD VERIFIED PER WITHERSRAVENEL ENVIRONMENTAL TEAM.
4. PROJECT DOES NOT FALL WITHIN FEMA FLOODPLAIN PER FEMA FIRM MAP 3720172600K, EFFECTIVE DATE JULY 19, 2022.
5. NO DETERMINATION HAS BEEN MADE BY THE SURVEYOR AS TO THE FOLLOWING: UNDERGROUND STORAGE FACILITIES, , GRAVES, CEMETERIES, BURIAL GROUNDS, HAZARDOUS WASTE DEPOSITS OR MATERIALS.
6. THE UNDERGROUND UTILITIES SHOWN HEREON WERE MARKED BY MCKIM & CREED IN OCTOBER 2025. THE DEPTH OF THESE UTILITIES IS UNKNOWN, UNLESS OTHERWISE INDICATED.
7. SURVEY CONTROL POINTS PROVIDED IN NC STATE PLANE COORDINATES. ALL PROPOSED COORDINATES ARE GROUND COORDINATES. THE CONTRACTOR'S SURVEYOR IS RESPONSIBLE FOR ANY CONVERSIONS NEEDED FOR THE STAKEOUT OF THE PROPOSED GROUND COORDINATES SHOWN.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ADDITIONAL CONTROLS THAT MAY BE NEEDED THROUGHOUT THE PROJECT.

GENERAL NOTES:

1. WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, CITY OF RALEIGH STANDARDS AND SPECIFICATIONS, GEOTECHNICAL REPORTS, AND ANY OTHER APPLICABLE DESIGN STANDARDS AT THE TIME OF PLAN APPROVAL. IN THE EVENT OF CONFLICT BETWEEN ANY OF THESE STANDARDS, SPECIFICATIONS OR PLANS, THE MOST STRINGENT SHALL GOVERN, UNLESS OTHERWISE NOTED IN THESE PLANS.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR HAVING VISITED THE SITE AND HAVING FAMILIARIZED THEMSELVES WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID AND/OR COMMENCING WORK.
3. ANY DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES FOUND BETWEEN THE DRAWINGS, SPECIFICATIONS, AND SITE CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER IN WRITING AND PRIOR TO BIDDING IF APPLICABLE. WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES, OR AMBIGUITIES WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER AND APPROVAL BY OWNER SHALL BE DONE AT THE CONTRACTOR'S RISK AND EXPENSE.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL JOBSITE SAFETY DURING ALL PHASES OF CONSTRUCTION. ALL WORK SHALL COMPLY WITH MUNICIPAL, COUNTY AND STATE REGULATIONS, AND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OSHA ACT.
5. THE CONTRACTOR SHALL CALL "811" FOR PROPER IDENTIFICATION OF EXISTING UTILITIES AT LEAST 72 HOURS PRIOR TO ANY DEMOLITION, GRADING, OR CONSTRUCTION ACTIVITY.
6. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTALLY AND VERTICALLY LOCATING, AND SUBSEQUENTLY PROTECTING, ALL PUBLIC AND PRIVATE UTILITIES (SHOWN OR NOT SHOWN) THAT LIE IN OR ADJACENT TO THE PROJECT SITE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE UNDERGROUND UTILITIES. ALL UTILITIES AND FACILITIES ARE NOT NECESSARILY SHOWN. HAND DIGGING TO PROTECT UTILITIES FROM DAMAGE MAY BE REQUIRED.
7. ANY UTILITIES AND EXISTING SITE ELEMENTS (I.E. SIGNS, ROADWAYS, PATHS, STRUCTURES, NATURAL VEGETATION, OTHER EXISTING PROPERTY ITEMS, ETC.) DAMAGED DURING THE PROJECT BY THE CONTRACTOR'S WORKERS OR EQUIPMENT SHALL BE PROMPTLY REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER, UTILITY OWNER, REGULATORY AGENCY, AND ENGINEER.
8. CONTRACTOR SHALL MAKE EVEBY EFFORT TO PRESERVE PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES. A NORTH CAROLINA LICENSED LAND SURVEYOR SHALL REPLACE, AT THE CONTRACTOR'S EXPENSE, PROPERTY IRONS, MONUMENTS, OTHER PERMANENT POINTS AND LINES OF REFERENCE AND CONSTRUCTION STAKES DESTROYED BY THE CONTRACTOR.
9. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK IN ORDER TO CAUSE MINIMUM DISTURBANCE TO THE OWNER, ADJACENT PROPERTIES AND THE PUBLIC. CONTRACTOR SHALL COORDINATE WITH AND OBTAIN APPROVAL FROM STATE AND LOCAL REGULATORY AGENCIES ON TRAFFIC CONTROL PLANS.
10. ADJACENT STREETS AND SIDEWALKS SHALL BE MAINTAINED IN AN UNOBSTRUCTED, CLEAN CONDITION, MUD AND DUST-FREE.
11. THE CONTRACTOR SHALL HAVE A COMPLETE SET OF CONTRACT DOCUMENTS AS WELL AS ALL PERMIT APPROVALS AND EXECUTED EASEMENTS ON THE JOB SITE AT ALL TIMES.
12. CONSTRUCTION STAKEOUT FOR THIS PROJECT MAY BE PERFORMED BY THE CONTRACTOR, USING A DIGITAL (CADD) FILE PROVIDED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOUND BETWEEN THE DIGITAL FILE AND THE CRITICAL STAKING DIMENSIONS SHOWN ON THIS PLAN (I.E. PAVEMENT WIDTHS, CURB RADII, BUILDING SETBACKS, BUILDING FOOTPRINTS, ETC.). ANY MODIFICATIONS MADE BY OTHERS TO THE DIGITAL FILE PROVIDED BY THE ENGINEER SHALL RENDER IT VOID.
13. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, ACCESSIBLE PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDINGS AS SHOWN ON THE PLANS. ALL PAVEMENT MARKING MATERIALS SHALL ADHERE TO NCDOT STANDARDS, UNLESS NOTED OTHERWISE.
14. ACCESSIBLE ROUTES AND PARKING AREAS MUST BE PROVIDED IN ACCORDANCE WITH THE CURRENT NORTH CAROLINA BUILDING CODE AND ADA STANDARDS FOR ACCESSIBLE DESIGN.
15. WHERE PROPOSED CURB AND GUTTER TIES TO EXISTING CURB OR CURB AND GUTTER, A TRANSITION OF 10' SHALL BE MADE TO CONFORM TO THE EXISTING HEIGHTS AND SHAPES, UNLESS OTHERWISE SHOWN ON THE PLANS.
16. ALL EXPANSION CURB JOINTS SHALL EXTEND THROUGH THE CURB. MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS IS 1.5', UNLESS OTHERWISE SHOWN ON PLANS. ALL JOINTS SHALL BE SEALED WITH JOINT SEALANT.
17. TESTING OF MATERIAL REQUIRED FOR THE CONSTRUCTION OF THE IMPROVEMENTS SHALL BE PERFORMED BY AN APPROVED AGENCY FOR TESTING MATERIALS. THE NOMINATION OF THE TESTING LAB AND THE PAYMENT OF EACH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SHOW BY STANDARD TESTING PROCEDURES THAT THE WORK CONSTRUCTED MEETS THE REQUIREMENT OF THE NCDOT AND MUNICIPAL SPECIFICATIONS.

DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH THE OWNER AND UTILITY OWNER TO PROPERLY MAINTAIN, REMOVE OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING SURROUNDING NEIGHBORS ABOUT ANY POTENTIAL INTERRUPTION TO SERVICE OF ANY KIND.
3. EXISTING UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING CONSTRUCTION ACTIVITIES.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS OTHERWISE NOTED AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. SAW CUTS OF EXISTING PAVEMENTS, CURBS, GUTTERS AND SIDEWALKS SHALL PRODUCE A NEAT VERTICAL EDGE.
7. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION.
8. ALL PERMITS REQUIRED FOR THE DEMOLITION WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN PRIOR TO THE START OF DEMOLITION ACTIVITIES.

STORM DRAINAGE NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CITY OF RALEIGH STANDARDS AND NCDOT STANDARD SPECIFICATIONS AND DETAILS.
2. ALL PUBLIC STORM DRAINAGE FRAMES, GRATES, AND HOODS SHALL BE STAMPED WITH "DRAINS TO RIVER" IN ACCORDANCE WITH CITY OF RALEIGH AND NCDOT STANDARDS.
3. RIM ELEVATION GIVEN FOR CATCH BASIN (CB) IS TOP OF CURB, YARD INLET (YI) IS OPENING INVERT FOR SLAB TOP, DROP INLET (DI) IS TOP OF GRATE AND JUNCTION BOX (JB) IS TOP OF RIM.
4. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING, BUT NOT LIMITED TO THE HORIZONTAL AND VERTICAL LOCATION OF STRUCTURES AND UTILITIES CROSSING THE STORM SEWER PIPE.
5. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER DRAINAGE SYSTEM.
6. ALL STORM SEWER PIPE SHALL BE MINIMUM CLASS III REINFORCED CONCRETE PIPE (RCP), UNLESS OTHERWISE NOTED.
7. IF THERE ARE DISCREPANCIES BETWEEN THE PLAN AND FIELD CONDITIONS RELATED TO WHERE THE PROPOSED STORM SEWER PIPING TIES TO EXISTING STRUCTURES, PIPES, SWALES, ETC., THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND OWNER. AFTER NOTIFICATION TO ENGINEER AND OWNER, THE CONTRACTOR SHALL PERFORM THE AGREED UPON FIELD ADJUSTMENTS TO MATCH THE LOCATIONS OF THESE EXISTING FEATURES.
8. ALL STORM SEWER PIPE SHALL HAVE A MINIMUM COVER OF 2 FEET FROM FINISHED SUBGRADE TO THE PIPE CROWN IN TRAFFIC BEARING AREAS, UNLESS APPROVED BY AUTHORITIES HAVING JURISDICTION.
9. ALL STORM SEWER PIPE SHALL HAVE A MINIMUM COVER OF 1 FOOT TO THE PIPE CROWN IN NON-TRAFFIC BEARING AREAS.
10. THE STORM PIPE LENGTHS AS SHOWN ON THE DRAWINGS REPRESENTS THE DISTANCE FROM CENTER TO CENTER OF THE RESPECTIVE STRUCTURES.
11. STORM SEWER UTILITY STRUCTURE TABLES ARE AVAILABLE UPON REQUEST.

GRADING NOTES:

1. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE, AND AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. IN ADDITION TO THE MEASURES SHOWN IN THESE PLANS, THE CONTRACTOR SHALL USE INTERIM DIVERSION DITCHES, BERMS, OR OTHER METHODS AS REQUIRED TO DIRECT DRAINAGE AS SHOWN ON THESE PLANS AND TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES, ROADWAYS, AND ENVIRONMENTALLY SENSITIVE AREAS SUCH AS BUFFERS AND WETLANDS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND OWNER IN WRITING OF ANY DISCREPANCIES OR CONCERNS.
2. ALL SOILS USED FOR BACKFILL SHALL BE FREE OF UNSATISFACTORY MATERIALS INCLUDING ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION AND OTHER DELETERIOUS MATTER. ROCK OR GRAVEL LARGER THAN 2 INCHES IN ANY DIMENSION SHALL NOT BE PLACED IN THE IN THE FINAL LIFT (MINIMUM OF 6 INCHES). UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE. REFER TO FINAL GEOTECHNICAL REPORT FOR ANY SPECIAL FILL MATERIAL REQUIRED FOR THIS PROJECT, IF ANY. THE CONTRACTOR SHALL CONSULT WITH THE SITE GEOTECHNICAL ENGINEER PRIOR TO BACKFILL PLACEMENT TO VERIFY BACKFILL MEETS PROJECT REQUIREMENTS.
3. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL SOIL TESTING IS PERFORMED AND THE RESULTS FORWARDED TO THE ENGINEER AND OWNER.
4. MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACKFILL AROUND DRAINAGE STRUCTURES, OR IN UTILITY TRENCHES FOR ANY OTHER DEPRESSION REQUIRING FILL OR BACKFILL SHALL MEET THE REQUIREMENTS OF THE PROJECT GEOTECHNICAL ENGINEER RECOMMENDATIONS.
5. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT TO THE OWNER AND PROJECT GEOTECHNICAL ENGINEER THE RESULTS OF THE PROCTOR TEST TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A NORTH CAROLINA CERTIFIED MATERIALS TESTING LABORATORY AND CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA REPRESENTING THE LABORATORY.
6. ALL PAVEMENT SUBGRADES SHALL BE SCARIFIED TO A DEPTH OF 8 INCHES AND COMPACTED TO A MINIMUM DENSITY OF 100 PERCENT OF ASTM D1557 DENSITY AT OPTIMUM MOISTURE CONTENT UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION PLANS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
7. CONTOURS AND GUTTER GRADIENTS ARE APPROXIMATE. SPOT ELEVATIONS ARE TO BE USED IN CASE OF DISCREPANCY.
8. CONTRACTOR SHALL OBTAIN ALL PERMITS AS REQUIRED FOR BLASTING ROCK IF BLASTING ROCK IS REQUIRED. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION RELATED TO BLASTING AND SAFETY.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING NECESSARY TO CONSTRUCT THE PROJECT AS SHOWN ON THE PLANS. DEWATERING SHALL BE INCIDENTAL TO GRADING OPERATIONS. THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT RELATED TO DEWATERING EFFORTS.
10. MASS GRADING OPERATIONS SHALL BE PHASED TO LIMIT EXPOSED AREAS, PRIOR TO PROCEEDING TO ANOTHER PHASE, THE PRESENT PHASE SHALL BE STABILIZED WITH ADEQUATE GROUND COVER SUFFICIENT TO RESTRAIN EROSION AND HAVE ALL INFRASTRUCTURE INSTALLED. SEE GROUND COVER REQUIREMENTS WITHIN THESE PLANS OR CONSULT THE MUNICIPAL EROSION CONTROL SPECIALIST.
11. THE FRAMES AND COVERS OF ALL EXISTING AND PROPOSED DRAINAGE, SANITARY SEWER, WATER MAIN, GAS AND ELECTRIC UTILITY STRUCTURES SHALL BE ADJUSTED TO MATCH PROPOSED FINISHED ELEVATIONS AND SLOPES UNLESS OTHERWISE SHOWN ON THE PLANS.
12. BEFORE ANY EARTHWORK COMMENCES, THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF CONSTRUCTION AND OTHER ITEMS ESTABLISHED IN THE PLANS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
13. THE PLACEMENT OF ANY FILL MATERIAL MUST BE CONDUCTED UNDER THE OBSERVATION OF A QUALIFIED LICENSED GEOTECHNICAL ENGINEER AND UPON COMPLETION OF THE EARTHWORK ACTIVITIES THE OWNER AND JURISDICTION MUST BE PROVIDED WITH A FINAL GRADING REPORT THAT INCLUDES THE CORRESPONDING COMPACTION TEST RESULTS AND CERTIFIES THE TYPE OF FILL MATERIAL AND ITS PROPER PLACEMENT.

GENERAL LANDSCAPE NOTES:

1. THE CONTRACTOR SHALL TAKE PROPER PRECAUTIONS NOT TO DAMAGE EXISTING PLANTS, FACILITIES AND STRUCTURES THAT ARE TO REMAIN. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT AND OWNER.
2. UTILITIES SHOWN ON THE LANDSCAPE DRAWINGS ARE FOR REFERENCE ONLY. SEE UTILITY DRAWINGS FOR EXISTING AND PROPOSED UTILITY LOCATIONS. SEE UTILITY NOTES FOR ADDITIONAL INFORMATION.
3. NO CHANGES TO ANY ASPECT OF APPROVED PLAN, INCLUDING BUT NOT LIMITED TO LANDSCAPING, GRADING, BUILDING ELEVATIONS, LIGHTING, OR UTILITIES SHALL BE MADE WITHOUT THE APPROVAL OF THE GOVERNING MUNICIPALITY, ENGINEER, LANDSCAPE ARCHITECT AND OWNER.
4. ALL PLANTS PROVIDED BY THE CONTRACTOR SHALL MEET OR SURPASS THE SPECIFICATIONS GIVEN IN THE PLANT TABLE AND CONFORM TO THE AMERICAN STANDARD OF NURSERY STOCK, ANSI Z601-1973 IN REGARD TO SIZING, GROWING AND BALLED AND BURLAPPED (B&B) SPECIFICATIONS. PLANTS SHALL BE FULL AND HEAVY, AND IN HEALTHY CONDITION AT THE TIME OF PLANTING. LANDSCAPE ARCHITECT SHALL REJECT ANY PLANT NOT MEETING THESE GUIDELINES AND REQUIRE REPLACEMENT.
5. ALL PLANTS ARE TO BE FULLY WARRANTED (INCLUDING LABOR AND MATERIALS) FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM FINAL ACCEPTANCE.
6. ALL PLANTS THAT ARE UNABLE TO BE IMMEDIATELY PLANTED SHALL BE STORED IN A PROTECTED AREA OUT OF DIRECT SUN AND WIND. PLANTS SHALL BE EVENLY AND CONSISTENTLY WATERED, AS NEEDED, TO PREVENT DRYING OF ROOTS. ROOT BALLS OF B&B STOCK SHALL BE COVERED WITH AT LEAST 4 INCHES OF HARDWOOD MULCH TO MAINTAIN MOISTURE IN ROOTS.
7. THE CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES SHOWN ON PLANS AND CLARIFY ANY DISCREPANCIES WITH LANDSCAPE ARCHITECT PRIOR TO PURCHASING PLANTS. CONTRACTOR SHALL TAG ALL TREES (AS DESIGNATED IN THE MASTER PLANT LIST) AT THE NURSERY FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO PURCHASING PLANTS.
8. LANDSCAPE ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY PROPOSED PLANT SUBSTITUTIONS BY THE CONTRACTOR. NO SUBSTITUTIONS SHALL BE MADE UNDER ANY CIRCUMSTANCES WITHOUT PRIOR APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.
9. ALL PLANTS AND PLANTING BEDS ARE TO BE LOCATED BY SCALED DIMENSIONS FROM BUILDINGS, CURBS, PAVEMENTS, ETC. SPECIFIC ATTENTION SHALL BE GIVEN TO ENSURE THAT PLANTS INDIVIDUALLY SHOWN ON THE PLAN ARE ACCURATELY LOCATED. LOCATION OF ALL PLANTS SHALL BE REVIEWED IN THE FIELD BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE FOR REVIEW.
10. A PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL NEW PLANTING BEDS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND ALLOWED TO DISSIPATE PRIOR TO INSTALLATION OF ANY PLANT MATERIAL.
11. ALL LANDSCAPE AREAS ARE TO BE GRADED FOR POSITIVE DRAINAGE AND TO ENSURE NO STANDING WATER. SEE GRADING PLAN FOR SPECIFIC GRADING INFORMATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT AND/OR ENGINEER OF ANY GRADING DISCREPANCIES OR CONCERNS.
12. ESTABLISH AND MAINTAIN TOP OF GRADE BELOW ADJACENT CURBS, WALKWAYS AND OTHER HARDSCAPE AREAS TO ALLOW FOR INSTALLATION OF MULCH.
13. ALL PLANTING BEDS ARE TO BE COVERED WITH MULCH TO A MINIMUM DEPTH OF 2-3 INCHES, UNLESS INDICATED OTHERWISE. MULCH SHALL BE AS SELECTED BY THE LANDSCAPE ARCHITECT. CONTRACTOR SHALL SUBMIT A SAMPLE FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE AND DELIVERY TO PROJECT SITE.
14. FINISH OFF 2-4 FOOT CLEAR ZONE AROUND TREES WITH A 2-3-INCH LAYER OF MULCH, BUT DO NOT PLACE UP AGAINST OR MOUND AROUND THE ROOT FLARE.
15. MIXED GROUNDCOVER AND PLANTS SPECIFIED FOR MASS PLANTINGS SHALL BE PLANTED IN ODD GROUPINGS AND LOCATED AS REQUIRED TO PROVIDE A GENERAL MIXING OF SPECIES. DO NOT PLANT IN ROWS OR REPETITIVE PATTERNS UNLESS OTHERWISE DIRECTED.
16. ALL TREES ADJACENT TO PEDESTRIAN WALKWAYS AND IN SIGHT TRIANGLES SHALL BE UNDER-TRIMMED SUFFICIENTLY TO ALLOW CLEAR SIGHT AND PEDESTRIAN ACCESS UP TO 6 FEET ABOVE SIDEWALK ELEVATION. ALL PRUNING SHALL BE PERFORMED BY A CERTIFIED ARBORIST AND ADHERE TO THE ANSI A300 PRUNING STANDARD. PRUNING CUTS ARE TO BE DELIBERATE AND TARGETED ONLY TO THE NECESSARY BRANCHES IN ORDER TO SATISFY SIGHT AND CLEARANCE REQUIREMENTS WHILE MAINTAINING THE INTEGRITY OF THE TREES.
17. THE SITE SHALL BE STABILIZED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO).
18. CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANTING (INCLUDING, BUT NOT LIMITED TO WATERING, MULCHING, SPRAYING, FERTILIZING, ETC.) OF THE PLANTING AREAS UNTIL FINAL ACCEPTANCE.
19. ANY PLANT WHICH DIES, TURNS BROWN OR DEFOLIATES PRIOR TO FINAL ACCEPTANCE OF THE WORK SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, IN ACCORDANCE WITH THE APPROPRIATE PLANTING SEASON; QUANTITY AND SIZE TO MEET PLAN SPECIFICATIONS.

TREE PROTECTION NOTES:

1. ALL TREES THAT ARE TO REMAIN, WITHIN OR DIRECTLY ADJACENT TO THE LIMITS OF WORK, MUST BE PROTECTED WITH TREE PROTECTION FENCE AS INDICATED ON THE PLANS TO THE EXTENT OF THE TREE BOX OR THE DRIP LINE IN A PLANTING STRIP. THE DRIP LINE IS DEFINED AS THE GROUND AREA UNDER THE CANOPY OF THE TREE. FENCING IS TO BE INSTALLED PRIOR TO CONSTRUCTION, MAINTAINED THROUGHOUT, AND REMOVED ONLY AT THE END OF THE PROJECT.
2. NONE OF THE FOLLOWING SHALL OCCUR WITHIN THE ROOT ZONE OF A TREE WITHOUT PERMISSION OF LANDSCAPE ARCHITECT OR PROJECT ARBORIST: ALTERATION OR DISTURBANCE TO EXISTING GRADE; STAGING OR STORAGE OF CONSTRUCTION MATERIALS, EQUIPMENT USE, SOIL OR DEBRIS REMOVAL OR STOCKPILING; TRENCHING; OR DISPOSAL OF ANY LIQUIDS.
3. APPROVED EXCAVATIONS WITHIN THE DRIP LINE SHALL PROCEED WITH CARE BY USE OF HAND TOOLS OR EQUIPMENT THAT WILL NOT CAUSE INJURY TO TREE TRUNKS, BRANCHES AND ROOTS.
4. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT PERMISSION OF LANDSCAPE ARCHITECT OR PROJECT ARBORIST. EXPOSED ROOTS 2 INCHES AND LARGER IN DIAMETER SHALL BE WRAPPED IN BURLAP OR OTHER APPROVED MATERIAL AND KEPT MOIST AT ALL TIMES.
5. IF THERE ARE ANY TREE CONFLICTS ON THIS JOB SITE, PERMIT HOLDER MUST SUSPEND ALL WORK THAT CONTRIBUTES TO THE CONFLICT AND IMMEDIATELY CONTACT LANDSCAPE ARCHITECT OR PROJECT ARBORIST FOR DIRECTION AND CLEARANCE TO CONTINUE THE CONFLICTING WORK.
6. TREES THAT ARE PROTECTED SHALL BE THOROUGHLY WATERED AS REQUIRED TO KEEP ROOT BALLS FROM DRYING OUT, ESPECIALLY BETWEEN APRIL THROUGH SEPTEMBER.

UTILITIES NOTES:

1. GENERALLY, FILL MATERIAL SHALL BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
2. ALL NECESSARY INSPECTIONS, CERTIFICATIONS, AND TESTING REQUIRED BY CODES AND UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO MUNICIPAL APPROVAL FOR THE FINAL CONNECTION OF SERVICE. CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT OF TESTING SERVICES AND COORDINATION WITH UTILITY OWNER.
3. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE IMPROVEMENTS SHOWN.
4. THE CONTRACTOR SHALL REPORT, IN WRITING ANY UTILITY CONFLICTS TO THE ENGINEER IMMEDIATELY UPON DISCOVERING CONFLICTS.
5. THE SANITARY SEWER PIPE LENGTHS AS SHOWN ON THE DRAWINGS REPRESENTS THE DISTANCE FROM CENTER TO CENTER OF THE RESPECTIVE STRUCTURES.
6. PRIOR TO UTILITY RELOCATION, REMOVAL OR ABANDONMENT, THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITY PROVIDERS, LOCAL MUNICIPALITY, AND NCDOT. KNOWN UTILITY PROVIDER INFORMATION IS CONTAINED ON THIS PLAN SHEET.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING SURROUNDING NEIGHBORS ABOUT ANY POTENTIAL INTERRUPTION TO SERVICE OF ANY KIND.
8. THE CONTRACTOR SHALL MAINTAIN A MINIMUM COVER OF 3 FEET ON ALL PROPOSED WATER LINES. THREE FEET SHALL BE MEASURED TO THE BOTTOM OF THE PROPOSED SUBGRADE WITHIN PAVED AREAS.
9. THE CONTRACTOR SHALL MAINTAIN A MINIMUM COVER OF 3 FEET ON ALL PROPOSED SANITARY LINES. THREE FEET SHALL BE MEASURED TO THE BOTTOM OF THE PROPOSED SUBGRADE WITHIN PAVED AREAS.
10. THE CONTRACTOR SHALL MAINTAIN SEPARATION OF WATER MAIN FROM SANITARY SEWER PIPING IN ACCORDANCE WITH THOSE DISTANCES SPECIFIED BY STATE AND/OR LOCAL CODE OR A MINIMUM OF 10 FEET HORIZONTAL OR 18 INCHES VERTICAL DISTANCE.
11. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR INSTALLATION OF ALL PROPOSED POWER AND COMMUNICATION LINES AND ASSOCIATED APPURTENANCES. THERE SHALL BE NO SEPARATE MEASUREMENT OR PAYMENT FOR COORDINATION WITH UTILITY COMPANIES.

EROSION & SEDIMENT CONTROL NOTES:

1. CONTRACTOR SHALL INSTALL EROSION CONTROLS IN ORDER WITH THE SEQUENCE PROVIDED.
2. CONTRACTOR SHALL ENSURE GRADING OPERATIONS ARE CONDUCTED IN A MANNER THAT DOES NOT ALLOW ANY SEDIMENT TO DRAIN OFFSITE OR INTO WATERCOURSES.
3. A GRAVEL CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE LOCATIONS SHOWN ON THE DRAWINGS AND AT EACH POINT OF CONSTRUCTION ACCESS.
4. CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AS NECESSARY TO ENSURE ALL SEDIMENT IS DIRECTED INTO EROSION CONTROL MEASURES.
5. IF STORM CROSS DRAINAGE CANNOT BE INSTALLED PRIOR TO GRADING, TEMPORARY HDPE STORM DRAINAGE PIPE SHALL BE USED TO CROSS WET WEATHER CHANNELS, EXCLUDING ANY PROTECTED WETLANDS OR STREAMS.
6. ALL STORM DRAINAGE PIPE SHALL BE PROTECTED AS SHOWN ON THE PLANS DURING CONSTRUCTION.
7. PERMANENT GROUND COVER SHALL BE ESTABLISHED PER APPROVED PLAN.
8. TREE PROTECTION FENCING SHALL BE INSTALLED AND INSPECTED PRIOR TO ISSUANCE OF A GRADING PERMIT. FENCING SHALL NOT BE REQUIRED ADJACENT TO AREAS WITHOUT WOODED VEGETATION. FENCING SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION PRIOR TO THE CERTIFICATE OF OCCUPANCY (CO) IS SCHEDULED. THE FENCING SHALL BE REMOVED PRIOR TO FINAL SITE INSPECTION FOR THE CO.
9. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT AN EROSION CONTROL PERMIT AND ANY OTHER RELATED PERMITS ARE SECURED FOR ANY OFF-SITE WASTE OR BORROW AREAS. UNLESS OTHERWISE STATED IN THE PROJECT DOCUMENTS, THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL AGREEMENTS WITH LANDOWNERS FOR PLACEMENT OF WASTE SOIL OR REMOVAL OF BORROW. OFF-SITE PERMITS AND AGREEMENTS SHALL EXIST PRIOR TO CONSTRUCTION ACTIVITIES ON WASTE OR BORROW AREAS. COPIES

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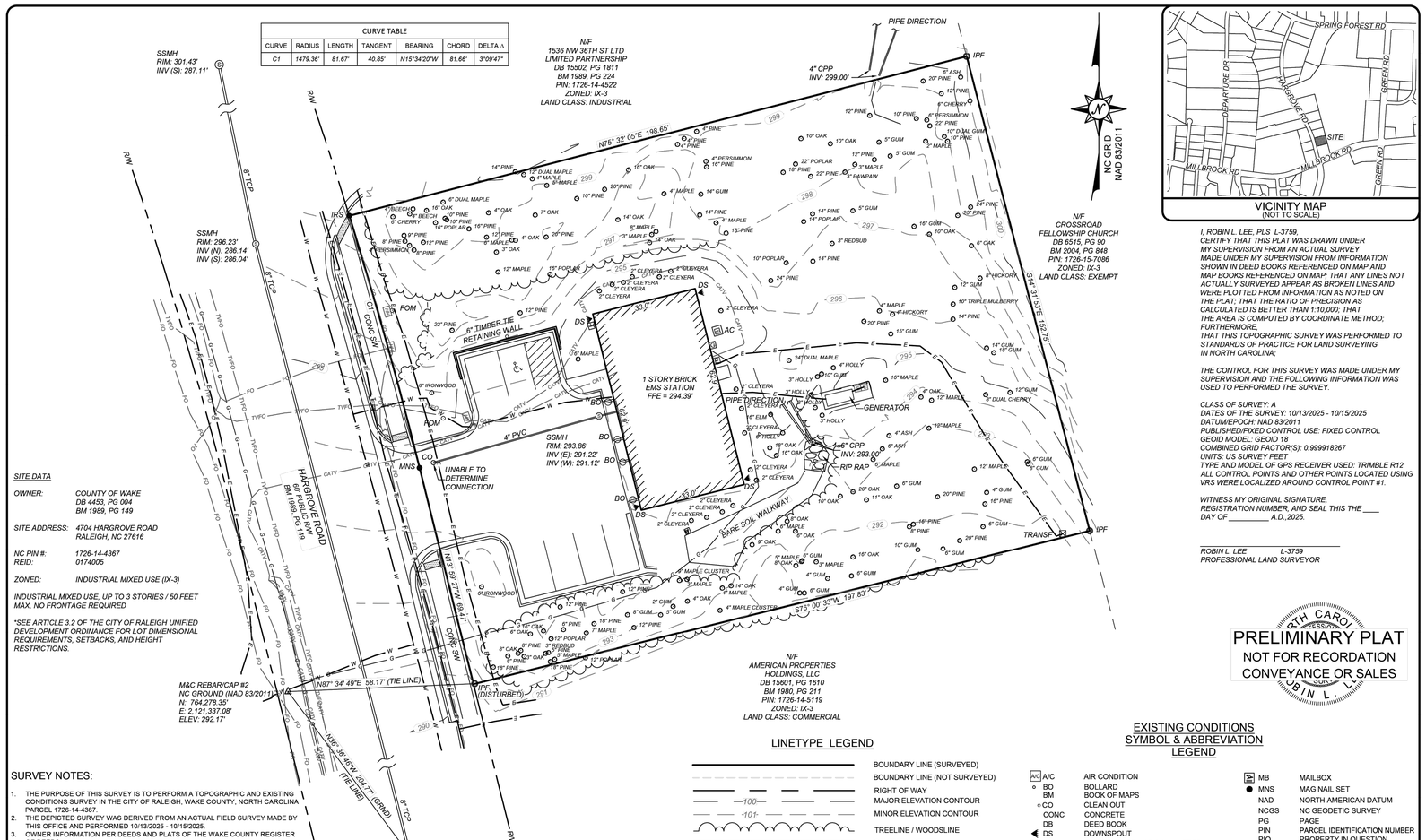
CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	BEARING	CHORD	DELTA Δ
C1	1479.36'	81.67'	40.85'	N15°34'20"W	81.66'	3°09'47"



VICINITY MAP
(NOT TO SCALE)

I, ROBIN L. LEE, PLS L-3759,
CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION FROM INFORMATION SHOWN IN DEED BOOKS REFERENCED ON MAP AND MAP BOOKS REFERENCED ON MAP; THAT ANY LINES NOT ACTUALLY SURVEYED APPEAR AS BROKEN LINES AND WERE PLOTTED FROM INFORMATION AS NOTED ON THE PLAT; THAT THE RATIO OF PRECISION AS CALCULATED IS BETTER THAN 1:10,000; THAT THE AREA IS COMPUTED BY COORDINATE METHOD; FURTHERMORE,
THAT THIS TOPOGRAPHIC SURVEY WAS PERFORMED TO STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA;

THE CONTROL FOR THIS SURVEY WAS MADE UNDER MY SUPERVISION AND THE FOLLOWING INFORMATION WAS USED TO PERFORMED THE SURVEY.

CLASS OF SURVEY: A
DATES OF THE SURVEY: 10/13/2025 - 10/15/2025
DATUM/EPOCH: NAD 83/2011
PUBLISHED/FIXED CONTROL USE: FIXED CONTROL
GEOID MODEL: GEOID 18
COMBINED GRID FACTOR(S): 0.999918267
UNITS: US SURVEY FEET
TYPE AND MODEL OF GPS RECEIVER USED: TRIMBLE R12
ALL CONTROL POINTS AND OTHER POINTS LOCATED USING VRS WERE LOCALIZED AROUND CONTROL POINT #1.

WITNESS MY ORIGINAL SIGNATURE,
REGISTRATION NUMBER, AND SEAL THIS THE ____
DAY OF _____, A.D.,2025.

ROBIN L. LEE L-3759
PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3759 ROBIN L. LEE

PRELIMINARY PLAT
NOT FOR RECORDATION
CONVEYANCE OR SALES

SITE DATA

OWNER: COUNTY OF WAKE
DB 4453, PG 004
BM 1989, PG 149

SITE ADDRESS: 4704 HARGROVE ROAD
RALEIGH, NC 27616

NC PIN #: 1726-14-4367
REID: 0174005

ZONED: INDUSTRIAL MIXED USE (IX-3)

INDUSTRIAL MIXED USE, UP TO 3 STORIES / 50 FEET MAX, NO FRONTAGE REQUIRED

*SEE ARTICLE 3.2 OF THE CITY OF RALEIGH UNIFIED DEVELOPMENT ORDINANCE FOR LOT DIMENSIONAL REQUIREMENTS, SETBACKS, AND HEIGHT RESTRICTIONS.

SURVEY NOTES:

1. THE PURPOSE OF THIS SURVEY IS TO PERFORM A TOPOGRAPHIC AND EXISTING CONDITIONS SURVEY IN THE CITY OF RALEIGH, WAKE COUNTY, NORTH CAROLINA PARCEL 1726-14-4367.
2. THE DEPICTED SURVEY WAS DERIVED FROM AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE AND PERFORMED 10/13/2025 - 10/15/2025.
3. OWNER INFORMATION PER DEEDS AND PLATS OF THE WAKE COUNTY REGISTER OF DEEDS.
4. VRS GPS OBSERVATIONS (3 MINUTE MULTIPLE OBSERVATIONS) WERE MADE ON TWO (2) MAIN CONTROL POINTS TO ESTABLISH GEODETIC AND STATE GRID COORDINATES (NAD83 NSRS 2011) USING AVERAGE POSITIONS FROM THE MULTIPLE OBSERVATIONS. THE VERTICAL DATUM USED WAS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) BASED ON GEOID 18.
5. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN US SURVEY FEET. BEARINGS ARE BASED ON NC GRID (NAD83/2011).
6. ALL AREAS SHOWN WERE COMPUTED BY THE COORDINATE CALCULATION METHOD.
7. THE LOCALIZED COORDINATE SYSTEM USED FOR THIS PROJECT IS BASED ON CONTROL POINT #1 HAVING THE FOLLOWING LOCALIZED NAD 83-2011 COORDINATES AND NAVD 88 ELEVATION: N: 764,113.98, E: 2,121,459.21; ELEV. 285.97
8. PROJECT COMBINED GRID FACTOR USED IS 0.999918267 (GROUND TO GRID)
9. THE LOCATION OF ALL UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE AND ARE BASED ON VISIBLE ABOVE GROUND STRUCTURES. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES, ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. THE CONTRACTOR OR OWNER SHALL HAVE ALL UNDERGROUND UTILITIES FIELD VERIFIED BY THE PROPER UTILITY COMPANIES BEFORE ANY CONSTRUCTION BEGINS. NORTH CAROLINA LAW REQUIRES CONTACTING NC 811 BEFORE ANY EXCAVATION CAN BE PERFORMED ON SITE.
10. THIS PROPERTY IS LOCATED IN FLOOD ZONE AREA, "ZONE X, OTHER AREAS, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN", AS SHOWN ON FEMA MAP NUMBER 3720172600K WITH AN EFFECTIVE DATE OF 07/19/2022.
11. UNLESS OTHERWISE NOTED ALL NEW IRON RODS SET (IRS) WERE SET USING 5/8" REBAR SET FLUSH WITH THE GROUND.
12. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO ALL EASEMENTS, RIGHTS OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.

LINETYPE LEGEND

BOUNDARY LINE (SURVEYED)
BOUNDARY LINE (NOT SURVEYED)
RIGHT OF WAY
100 MAJOR ELEVATION CONTOUR
101 MINOR ELEVATION CONTOUR
TREELINE / WOODSLINE
SANITARY SEWER
E UNDERGROUND ELECTRIC LINE
TVFO TELEVISION/FIBER OPTIC LINE
FO FIBER OPTIC LINE
T TELEPHONE LINE
G GAS SERVICE LINE
W WATER LINE

20' 0 20' 40'
SCALE: 1"=20' (Horiz.)

EXISTING CONDITIONS SYMBOL & ABBREVIATION LEGEND

A/C	A/C	AIR CONDITION	MB	MB	MAILBOX
BO	BO	BOLLARD	MNS	MNS	MAG NAIL SET
BM	BM	BOOK OF MAPS	NAD	NAD	NORTH AMERICAN DATUM
CO	CO	CLEAN OUT	NCGS	NCGS	NC GEODETIC SURVEY
CONC	CONC	CONCRETE	PG	PG	PAGE
DB	DB	DEED BOOK	PIN	PIN	PARCEL IDENTIFICATION NUMBER
DS	DS	DOWNSPOUT	PIQ	PIQ	PROPERTY IN QUESTION
ELB	ELB	ELECTRIC SERVICE BOX / METER	PVC	PVC	POLYVINYL CHLORIDE
ELEV	ELEV	ELEVATION	R/W	R/W	RIGHT OF WAY
FFE	FFE	FINISHED FLOOR ELEVATION	SF	SF	SQUARE FEET
GM	GM	GAS METER			ROAD SIGNS
HC	HC	HANDICAPPED	SSMH	SSMH	SANITARY SEWER MANHOLE
HH	HH	HAND HOLE	SW	SW	SIDEWALK
INV	INV	INVERT	TCP	TCP	TERRACOTTA PIPE
IPF	IPF	IRON PIPE FOUND	TRANSF	TRANSF	TRANSFORMER
IRS	IRS	IRON ROD SET			TREE SIZE - TYPE
LP	LP	LIGHT POLE			NO PARKING ZONE

TOPOGRAPHIC AND EXISTING CONDITIONS SURVEY
OF
HARGROVE EMS SITE
FOR
WAKE COUNTY

DATE: OCTOBER 30, 2025 SCALE: 1" = 20'

NEUSE TOWNSHIP WAKE COUNTY NORTH CAROLINA

PROJECT # : 00790-0440
PROJ. SVYR : RLL
DRAWN BY : WKB
FIELD BK. : R-1790
COMP. FILE : *.DWG
SHEET # : 1 OF 1

DWG. # : VT101

McKIM&CREED
4300 Edwards Mill Road
Suite 200, Raleigh, NC 27612
Phone: (919) 233-8091, Fax: (919) 233-8031

NC License# F-1222
Internet Site: http://www.mckimcreed.com

DATE	REVISION	BY

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C1.00

EXISTING CONDITIONS

J:\23\0853-0004-esse architects - hargrove ems station\CAD\drawing sets\site plan\C1.XX EXISTING CONDITIONS.dwg, Thursday, August 13, 2026 9:12:37 AM , JCROSSNO

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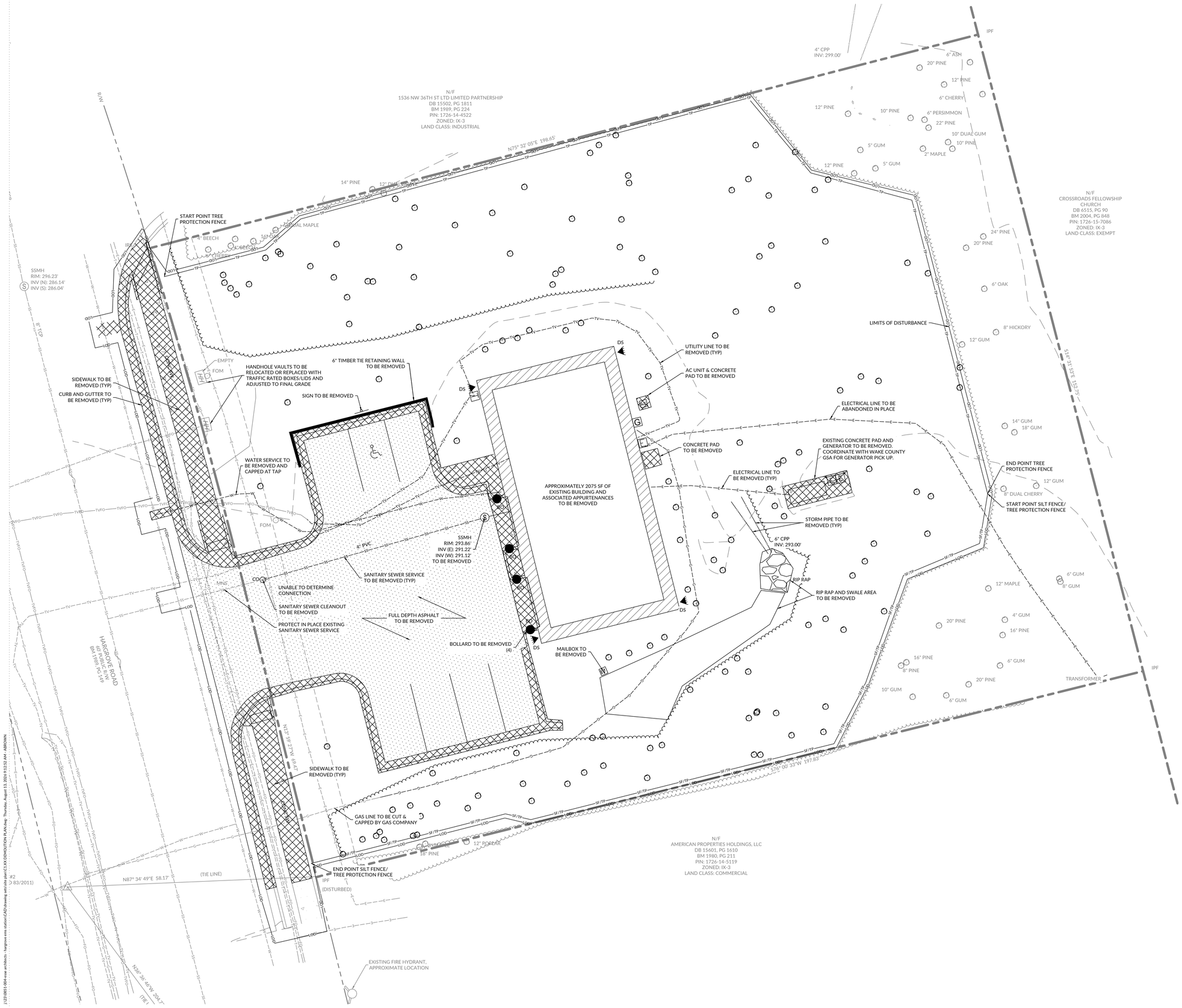

DEMO LEGEND

SYMBOL	DESCRIPTION
	FULL DEPTH ASPHALT TO BE REMOVED
	BUILDING TO BE REMOVED
	CONCRETE / CURB & GUTTER TO BE REMOVED
LOD	LIMITS OF DISTURBANCE
TP	TREE PROTECTION FENCE
SF/TP	SILT FENCE / TREE PROTECTION FENCE
E	ELECTRICAL LINE TO BE REMOVED
G	GAS LINE TO BE REMOVED (BY OTHERS)
SD	STORM PIPE TO BE REMOVED
TV	TV LINE TO BE REMOVED
W	WATER LINE TO BE REMOVED
A/C	A/C STRUCTURE TO BE REMOVED
BO	BOLLARD TO BE REMOVED
DS	DOWN SPOUT TO BE REMOVED
E	ELECTRICAL STRUCTURE TO BE REMOVED
G	GAS STRUCTURE TO BE REMOVED (BY OTHERS)
S	MANHOLE TO BE REMOVED
	SIGN TO BE REMOVED
T	TELEPHONE STRUCTURE TO BE REMOVED

NOTE:
ALL TREES AND PLANT MATERIAL WITHIN THE LIMITS OF DISTURBANCE ARE TO BE CLEARED AND GRUBBED.

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RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
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WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GREENS IN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL W. MORRIS
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C1.10

DEMOLITION PLAN

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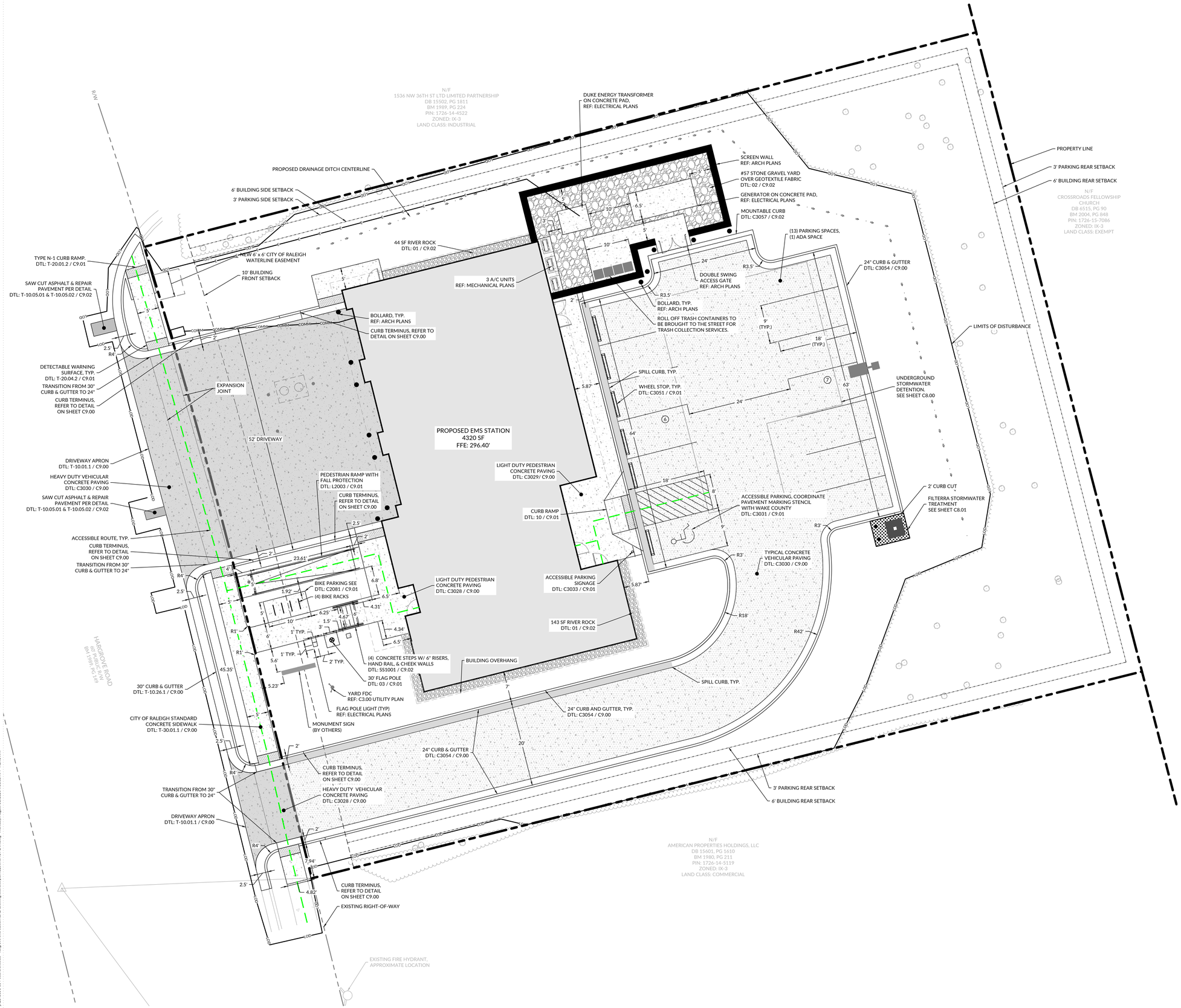

SITE LEGEND

SYMBOL	DESCRIPTION	
	ADJOINER	
	BOUNDARY	
	LIMIT OF DISTURBANCE	
	RIGHT OF WAY	
	BUILDING	
	ASPHALT PAVING	
	LIGHT DUTY PEDESTRIAN CONCRETE PAVING DTL: C3029 / C9.00	
	TYPICAL CONCRETE VEHICULAR PAVING DTL: C3030 / C9.00	
	HEAVY DUTY VEHICULAR CONCRETE PAVING DTL: C3028 / C9.00	
	DETECTABLE WARNING SURFACE DTL: T-20.04.2 / C9.01	
	UTILITY YARD DTL: 11 / C9.02	
	BUILDING OVERHANG	
	BUFFER	
	24" CURB & GUTTER	DTL: C3054 / C9.00
	EASEMENT	
	SETBACK	
— X — X — X —	CHAIN LINK FENCE WITH SLATS	
	BIKE RACKS	DTL: B-20.03 / C9.01
	BOLLARD	DTL: C2020 / C9.01
	FLAG POLE	DTL: 03/ C9.01
	SIGN	DTL: C3033 / C9.01
	WHEELSTOP	DTL: C3051 / C9.01
	MONUMENT SIGN	
	ACCESSIBLE ROUTE	
	DOUBLE SWING GATE	DTL: C2206 / C9.02

SITE NOTES:
1. CONTRACTOR TO PROVIDE A 5' X 8' AMERICAN FLAG. FLAG TO BE HEAVY-DUTY 2-PLY SPUN POLYESTER.

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RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
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STRUCTURAL
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120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GREPLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SPENCER W. MERRINS
DocuSigned by: Spencer W. Merrins
C4A5BA2A0B8F4C8...
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C2.00

SITE PLAN

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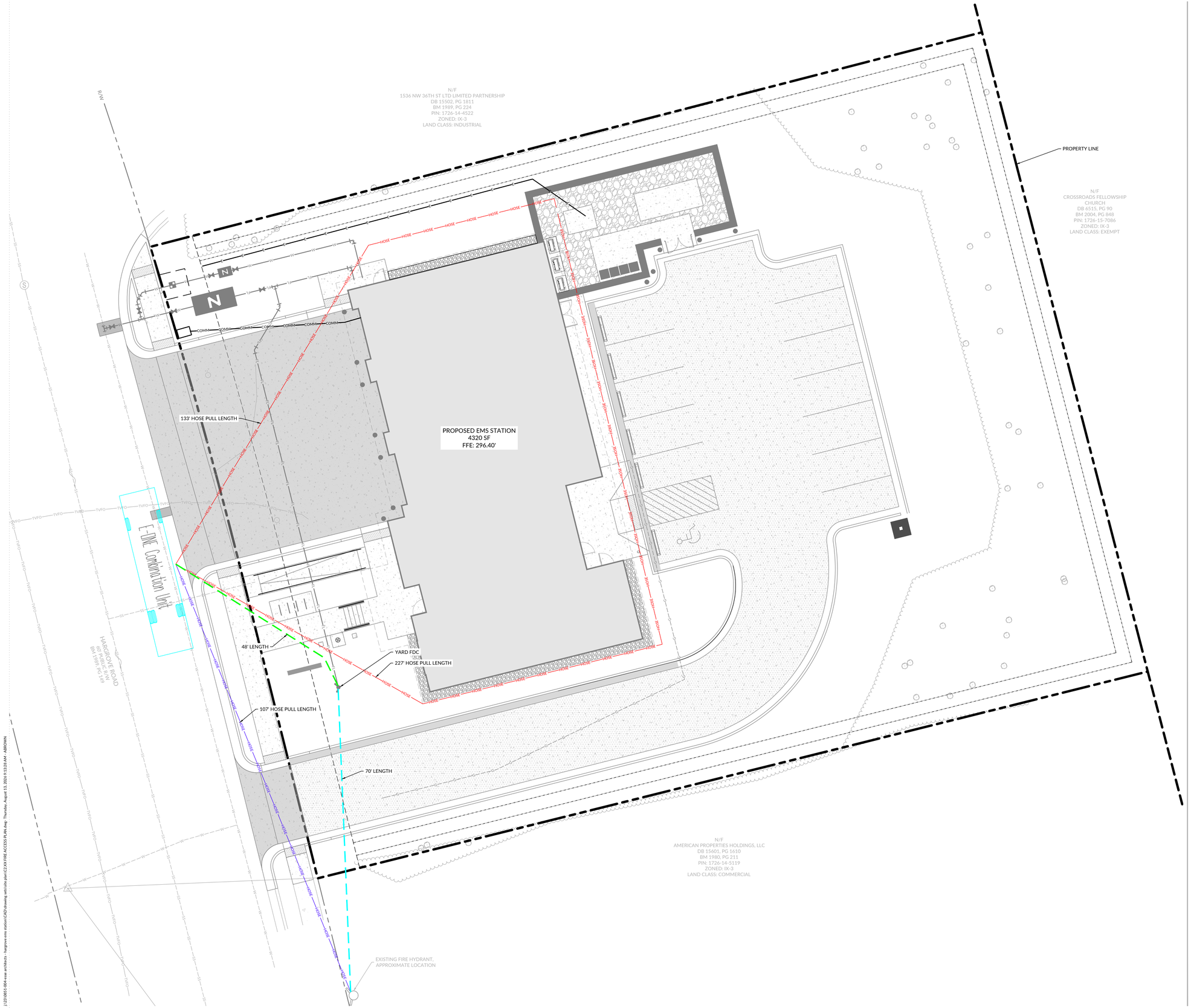

FIRE ACCESS LEGEND

- PROPOSED HOSE LAY ROUTE FROM FIRE TRUCK
- PROPOSED HOSE LAY ROUTE FROM FIRE HYDRANT ASSEMBLY
- PROPOSED DISTANCE FROM FDC TO FIRE TRUCK
- PROPOSED DISTANCE FROM FDC TO FIRE HYDRANT ASSEMBLY
- BACKFLOW PREVENTER
- YARD FDC

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RALEIGH, NC 27601
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919.833.0495 T

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NORTH CAROLINA, INC.
701 GREENS IN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL R. W. MERRINS
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C2.01

FIRE ACCESS PLAN

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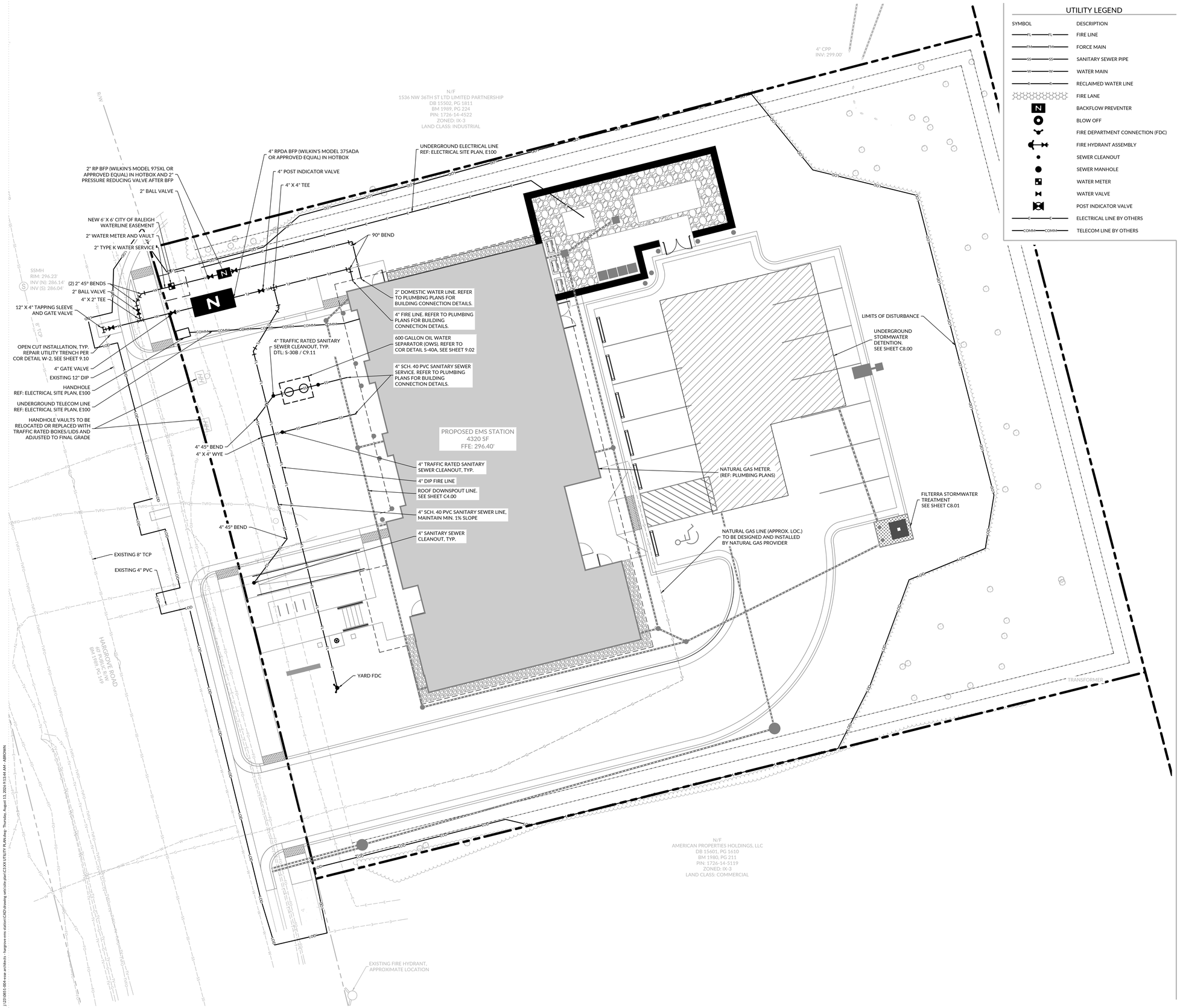

UTILITY LEGEND

SYMBOL	DESCRIPTION
FL	FIRE LINE
FM	FORCE MAIN
SS	SANITARY SEWER PIPE
W	WATER MAIN
R	RECLAIMED WATER LINE
	FIRE LANE
N	BACKFLOW PREVENTER
	BLOW OFF
	FIRE DEPARTMENT CONNECTION (FDC)
	FIRE HYDRANT ASSEMBLY
	SEWER CLEANOUT
	SEWER MANHOLE
	WATER METER
	WATER VALVE
	POST INDICATOR VALVE
E	ELECTRICAL LINE BY OTHERS
COMM	TELECOM LINE BY OTHERS

STANDARD UTILITY NOTES:

1. ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS, DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)

2. UTILITY SEPARATION REQUIREMENTS:

2.A. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.

2.B. WHEN INSTALLING WATER &/OR SEWER MAINS, THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER.

2.C. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER MAIN PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATION.

2.D. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.

2.E. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORMDRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 & S-49).

2.F. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION REQUIRED.

3. ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN&/OR PROFILE BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.

4. DEVELOPER SHALL PROVIDE 30 DAYS ADVANCE WRITTEN NOTICE TO OWNER FOR ANY WORK REQUIRED WITHIN AN EXISTING CITY OF RALEIGH UTILITY EASEMENT TRAVERSING PRIVATE PROPERTY.

5. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24-HOUR ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.

6. SEWER BYPASS PUMPING – A BYPASS PLAN SEALED BY AN NC PROFESSIONAL ENGINEER STALL BE PROVIDED TO RALEIGH WATER PRIOR TO PUMPING OPERATIONS FOR APPROVAL. THE OPERATIONS AND EQUIPMENT SHALL COMPLY WITH THE PUBLIC UTILITIES HANDBOOK.

7. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCE MAINS. 4.0' MINIMUM COVER IS REQUIRED ON ALL REUSE MAINS.

8. IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDED ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.

9. INSTALL WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSURE.

10. INSPECTIONS OF 4" AND LARGER WATER MAINS OF THE PRIVATE DISTRIBUTION SYSTEM WILL BE INSPECTED AS PART OF THE INFRASTRUCTURE PERMIT.

11. PRIVATE SEWER MAINS AS PART OF A COLLECTION SYSTEM ARE PERMITTED AND INSPECTED UNDER THE PRIVATE INFRASTRUCTURE PERMIT FOR SEWER.

12. ANY WATER OR SEWER SERVICES ON PRIVATE PROPERTY THAT WILL BE INSTALLED UNDER CONSTRUCTION DRAWINGS MAY REQUIRE A PLUMBING UTILITY PERMIT IN THE CITY OF RALEIGH. CONSULT WITH THE ENGINEERING INSPECTION COORDINATOR DURING THE PRE-CONSTRUCTION MEETING ON THE NECESSARY PERMITS.

13. INSTALL SEWER SERVICES WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE & SPACED PER THE CURRENT NC PLUMBING CODE.

14. PRESSURE REDUCING VALVED ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.

15. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.

16. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.

17. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE RW FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A UC AND/OR BUILDING PERMIT. CONTACT (919) 996-4516 OF FOG@RALEIGHNC.GOV FOR MORE INFORMATION.

18. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON THE DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA.

19. THE DEVICES SHALL MEET THE AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS AND BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST.

20. THE DEVICE AND INSTALLATION SHALL MEET THE GUIDELINES OF APPENDIX A – GUIDELINES AND REQUIREMENTS OF THE CROSS CONNECTION PROGRAM IN RALEIGH'S SERVICE AREA.

21. THE DEVICES SHALL BE INSTALLED & TESTED (BOTH, INITIAL & PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT CROSS.CONNECTION@RALEIGHNC.GOV FOR MORE INFORMATION.

22. NOTICE FOR PROJECTS THAT INVOLVE AN OVERSIZED MAIN OR URBAN MAIN REPLACEMENT. ANY CITY REIMBURSEMENT GREATER THAN $250,000.00 MUST UNDERGO THE PUBLIC BIDDING PROCESS.

23. PRIVATE SUB-METERING – NO RESALE OF WATER SHALL OCCUR WITHOUT THE APPROVAL OF THE NORTH CAROLINA UTILITY COMMISSION. SUB-METERING SHALL BE IN ACCORDANCE WITH SECTION 1400 OF THE "SAFE DRINKING WATER ACT".

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

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137 SOUTH WILMINGTON STREET, SUITE 200
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WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SPENCER W. MERRIS
GASBARRO
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C3.00

UTILITY PLAN

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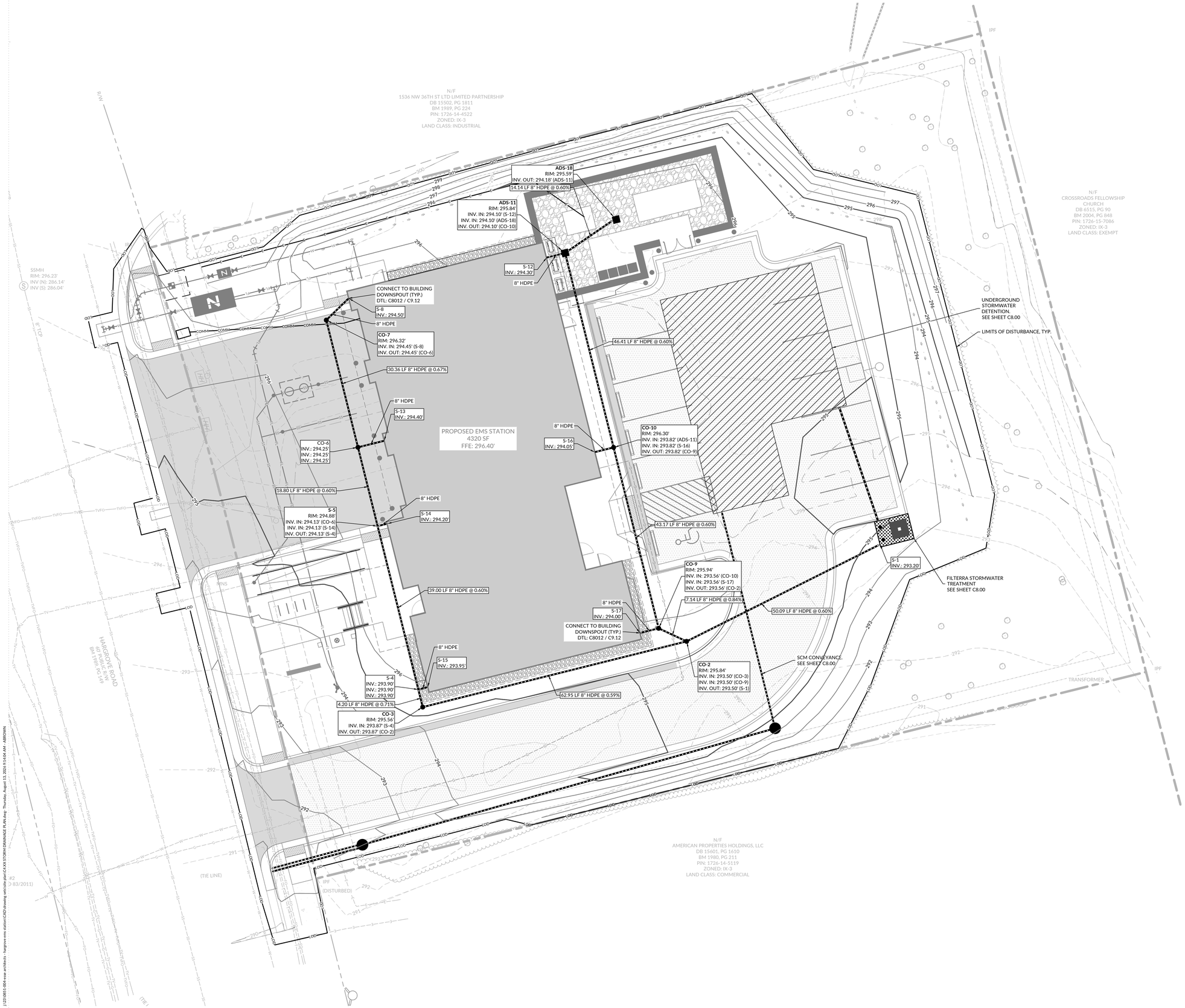

STORM DRAINAGE LEGEND

SYMBOL	DESCRIPTION
	STORM PIPE
	JUNCTION BOX (JB)
	ADS NYLOPLAST INLET OR APPROVED EQUAL

STORM DRAINAGE NOTE:

1. ALL ROOF DOWNSPOUT BRANCH AND CONNECTOR LINES TO BE HDPE N-12 DUAL WALL PIPE OR APPROVED EQUAL.
2. THE FOLLOWING PIPES SHALL HAVE WATER TIGHT GASKETS INSTALLED:

- CO-2 TO FILTERRA
- CO-3 TO CO-2
- CO-10 TO CO-9
- CO-9 TO CO-2
- FILTERRA TO UNDERGROUND DETENTION

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WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL W. MERRINS
DocuSigned by: Samuel W. Merrins
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C4.00

STORM DRAINAGE PLAN

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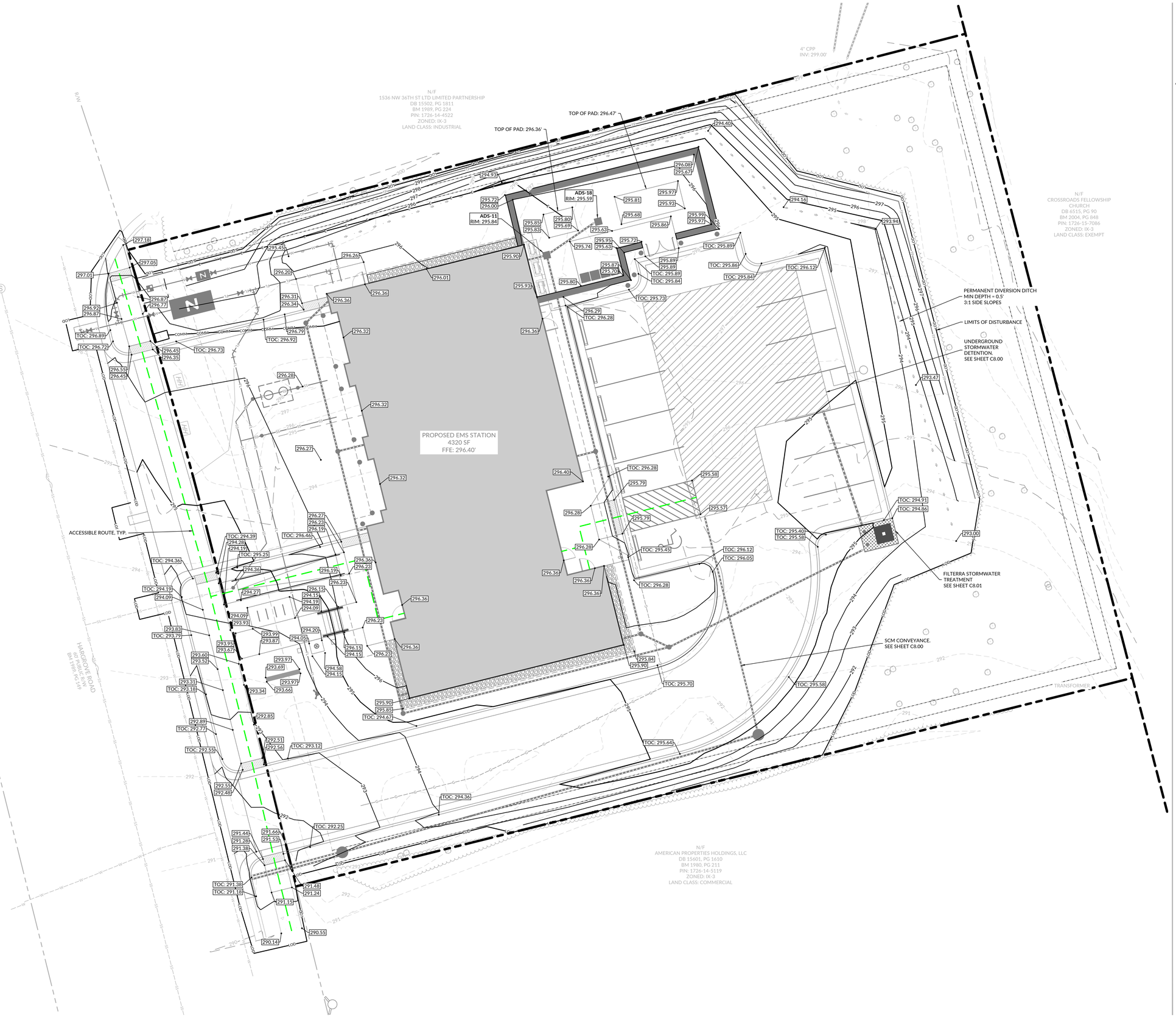

GRADING LEGEND

SYMBOL	DESCRIPTION
100	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
100	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	BOUNDARY
	ADJOINER
LOD	LIMITS OF DISTURBANCE
TP	TREE PROTECTION FENCE
X.XXX	SPOT ELEVATION
	ACCESSIBLE ROUTE

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SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL W. MERKINS
DocuSigned by: Samuel W. Merkins
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

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REVISIONS

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SHEET INFORMATION

C5.00

GRADING PLAN

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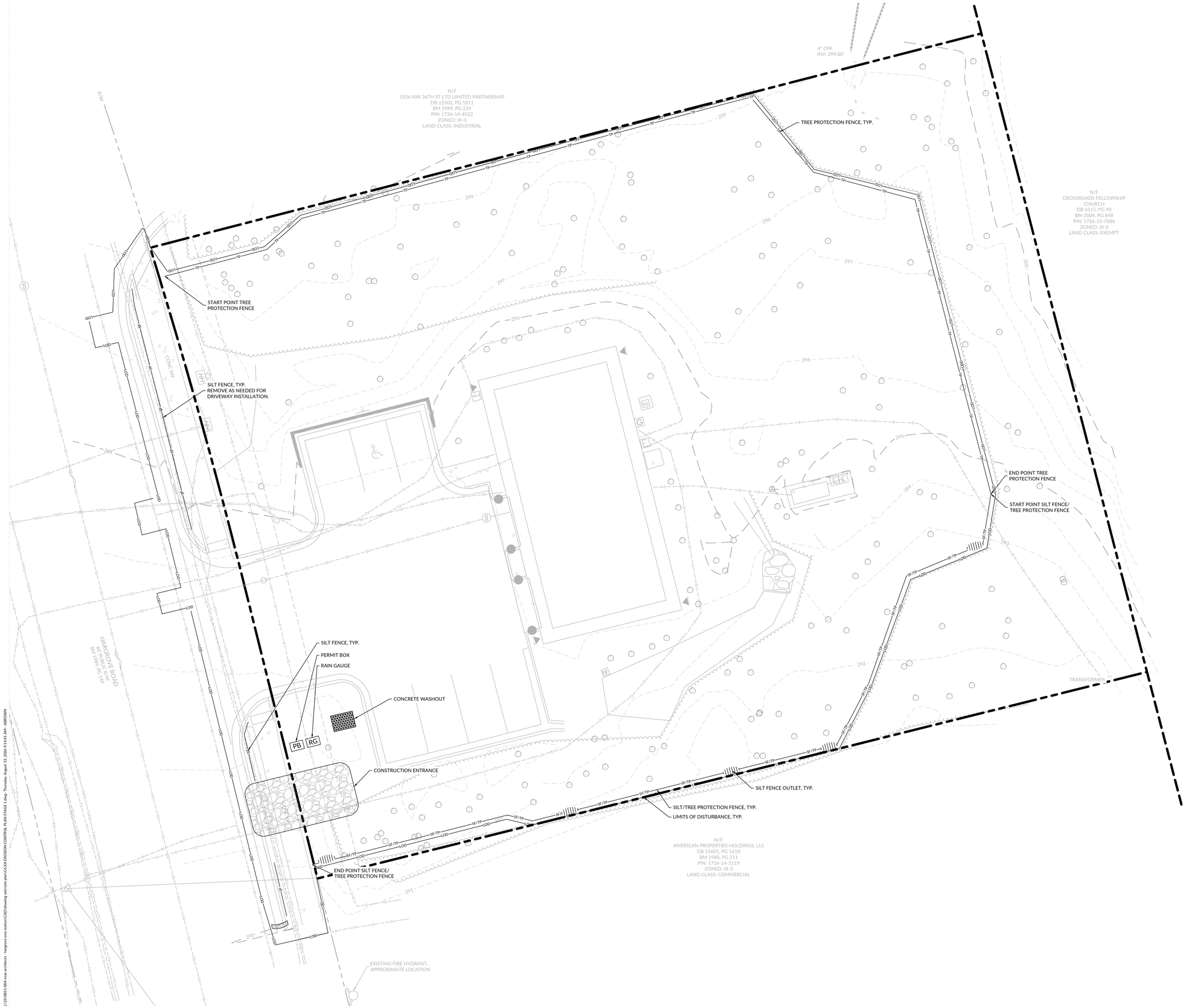

EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
LOD	LIMITS OF DISTURBANCE
SF/TP	SILT/TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE
	SILT FENCE OUTLET
	TEMPORARY CONCRETE WASHOUT
	TEMPORARY CONSTRUCTION ENTRANCE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL W. MEEKINS
GABBA2C0A0B0A0A0
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C6.00

EROSION CONTROL PLAN STAGE 1

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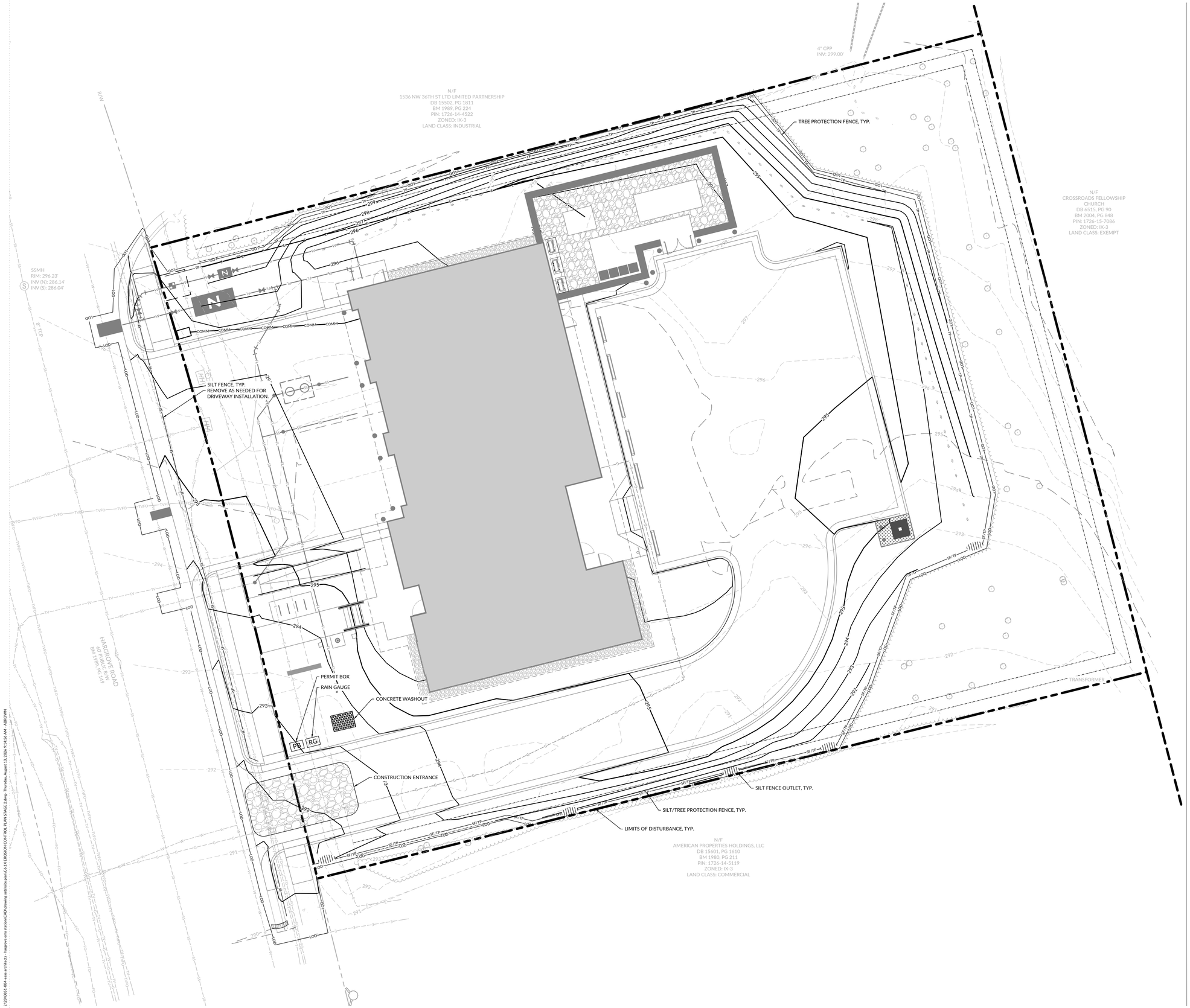

EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
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Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GREENS ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER FRASER W. MERKINS
DocuSigned by: Fraser Merkins
8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C6.01

EROSION CONTROL PLAN STAGE 2

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CONSTRUCTION SEQUENCE

1. ALL LAND DISTURBING ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL STANDARDS AND PRACTICES PRESCRIBED BY THE STATE OF NORTH CAROLINA, WAKE COUNTY, AND THE CITY OF RALEIGH. WHERE STANDARDS AND PRACTICES CONFLICT, THE MORE STRINGENT SHALL APPLY.
2. AT LEAST 48 HOURS PRIOR TO COMMENCING THE LAND-DISTURBING ACTIVITY, NOTIFY THE STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES AT 919-791-4200 OF CONSTRUCTION COMMENCEMENT AND SCHEDULE PRE-CONSTRUCTION CONFERENCE IF REQUIRED BY STATE OF NORTH CAROLINA ENVIRONMENTAL ENGINEER.
3. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT, NOTICE OF INTENT (NOI), AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES (INCLUDING TIMBERING AND DEMOLITION) OCCUR. THE COC CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (E-NOI) FORM AT DEQ.NC.GOV/NCG01.
4. FLAG PROPERTY LINES, EASEMENTS, BUFFERS, AND TREE PROTECTION AREAS. CONTACT THE CITY OF RALEIGH PLANNING DEPARTMENT'S CODE ENFORCEMENT OFFICER TO OBTAIN APPROVAL FOR TREE PROTECTION FENCING LOCATIONS.
5. INSTALL CONSTRUCTION ENTRANCE, TREE PROTECTION FENCE, SILT FENCE, SILT FENCE OUTLETS, AND OTHER MEASURES AS SHOWN ON THE PLANS. CLEAR ONLY AS REQUIRED TO INSTALL THESE DEVICES.
6. BEGIN LIMITED CLEARING, GRUBBING, AND DEMOLITION ACTIVES AS SHOWN ON THESE PLANS.
7. STOCKPILE TOPSOIL AND SUITABLE FILL MATERIAL. INSTALL SILT FENCE AROUND STOCKPILE AREAS. DISPOSE OF UNSUITABLE SOILS AND ALL OTHER WASTE MATERIALS OFF-SITE IN A LEGAL MANNER. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATIONS OF ALL STOCKPILES AND ALL ADDITIONAL SEDIMENT AND EROSION CONTROLS MEASURERS REQUIRED.
8. BEGIN DEMOLITION, EXCAVATION AND TRENCHING ACTIVITIES ONLY AFTER ALL REQUIRED EROSION CONTROL MEASURES HAVE BEEN INSTALLED. SEDIMENT FILTER BAGS SHALL BE INSTALLED AND CONTINUOUSLY MONITORED DURING USE.
9. BEGIN CONSTRUCTION AND INSTALLATION OF UTILITY LINE(S).
10. BACKFILL AND ESTABLISH FINISHED GRADE IMMEDIATELY AFTER PIPES HAVE BEEN INSTALLED.
11. GROUNDCOVER SHALL BE PROVIDED IN ACCORDANCE TO THE GROUND STABILIZATION CHART.
12. CONTRACTOR TO CONDUCT A WEEKLY SITE INSPECTION, AFTER EACH RAINFALL EVENT IN EXCESS 1 -INCH AND PERFORM ANY NECESSARY MAINTENANCE,
13. MAINTENANCE CONSISTS OF REMOVING SEDIMENT FROM BEHIND SILT FENCES. MAKE NECESSARY REPAIRS AS DIRECTED BY INSPECTOR, OWNER, OR ENGINEER.
14. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL MEASURES AND TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO ENSURE THAT NO SILT LEAVES THE PROJECT SITE AND ENTERS ANY NATURAL STREAM OR WATERWAY AND MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
15. PER NPDES REQUIREMENTS, A RAIN GAUGE, SELF-INSPECTIONS RECORDS, PERMIT, CERTIFICATE OF COVERAGE, AND S&E PLAN ARE REQUIRED TO BE MAINTAINED ON SITE AND ACCESSIBLE DURING INSPECTION. IT IS RECOMMENDED THAT THESE ITEMS BE PLACED IN A PERMITS BOX AT THE BEGINNING OR ENTRANCE OF PROJECT. CONTRACTOR IS RESPONSIBLE FOR FULFILLING THESE REQUIREMENTS.
16. SELF-INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING. CONTRACTOR IS RESPONSIBLE FOR FULFILLING THESE REQUIREMENTS.
17. ALL EXISTING VEGETATION NOT SCHEDULED FOR REMOVAL SHALL BE PROTECTED VIA TREE PROTECTION FENCING. LOCATE FENCING AS FAR AS PRACTICABLE FROM THE VEGETATION THE FENCE IS TO PROTECT.
18. STABILIZE SITE AS AREAS ARE BROUGHT TO FINISHED GRADE WITH VEGETATION OR STONE BASE. ALL AREAS INDICATED TO BE PAVED SHALL BE STABILIZED WITH STONE AS SOON AS THEY ARE BROUGHT TO FINAL GRADE. MAINTAIN EROSION CONTROLS UNTIL SITE IS COMPLETELY STABILIZED.
19. SLOPES SHALL BE NO STEEPER THAN 2:1 FOR VEGETATIVE COVER.
20. SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS, INCLUDING ALL STORAGE, STAGING, AND OFF SITE STAGING, IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH ON THE PLANS.
21. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED, CALL NCDEQ @ (919)791-4200 FOR AN INSPECTION BY AN ENVIRONMENTAL INSPECTOR.
22. IF SITE IS APPROVED, REMOVE ANY TEMPORARY DIVERSIONS, SILT FENCES, ETC., AND REGRADE AND SEED OR STABILIZE ANY RESULTING DISTURBED AREAS.
23. WHEN VEGETATION HAS BECOME ESTABLISHED, CALL NCDEQ @ (919)791-4200 FOR A FINAL SITE INSPECTION BY AN ENVIRONMENTAL INSPECTOR. OBTAIN CERTIFICATE OF COMPLETION.
24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES SHOWN ON THE DRAWINGS.

NOTES:

1. RECEIVING WATERSHED: NEUSE RIVER BASIN
2. RECEIVING WATERCOURSE: OXFORD BRANCH
3. ANY AREA DISTURBANCES BY CONTRACTOR NOT SHOWN ON THE CONSTRUCTION DRAWINGS ARE TO BE PERMITTED THROUGH THE APPROPRIATE PERMITTING AGENCY.
4. PURSUANT TO G.S. 113A-57(2), THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICE OR STRUCTURE.
5. PROVIDE A ROLLED EROSION CONTROL PRODUCT (RECP) TO STABILIZE DISTURBED DITCHES IF ANY SIGNS OF SCOURING ARE EVIDENT EVEN IF NO RECP HAS BEEN SHOWN ON THE CONSTRUCTION DRAWINGS.
6. NO STOCK OR WASTE PILES ARE ALLOWED WITHIN 50' OF STREAMS OR DRAINAGE STRUCTURES.
7. WHERE DEWATERING OF TRENCHES, PITS, AND OTHER EXCAVATIONS BECOMES NECESSARY THE DISCHARGE MUST BE DIVERTED TO A SEDIMENT FILTER BAG BEFORE BEING DISCHARGED TO THE GROUND.
8. ADEQUATE EROSION CONTROL MEASURES MUST BE INSTALLED, MAINTAINED, AND ADJUSTED AS NEEDED DURING THE DEMOLITION OR CLEARING AND GRUBBING PHASES AS WELL AS THROUGHOUT THE LIFE OF THE PROJECT AND UNTIL PERMANENT VEGETATION IS ESTABLISHED.

NARRATIVE:

1. PROJECT DESCRIPTION

   THE PURPOSE OF THE PROJECT IS TO REDEVELOP THE SITE AS SHOWN IN THIS PLAN SET. THE EXISTING SITE CONSISTS OF AN EMS STATION AND PARKING LOT. THE PROJECT INTENT IS TO REBUILD THE EMS STATION, IMPROVE UTILITY INFRASTRUCTURE, AND IMPROVE PEDESTRIAN ACCESS. THE PROPOSED IMPROVEMENTS INCLUDE SIDEWALKS, BICYCLE PARKING, DRIVEWAY ACCESS, UTILITY YARD, RETAINING WALL, STORM DRAINAGE, AND RELOCATION OF UTILITIES.

2. PERMANENT STABILIZATION

   ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING WILL CONSIST OF GRASSES TYPICAL OF THE AREA AND INSPECTION AND MAINTENANCE PERFORMED TO CONFIRM ESTABLISHMENT.

3. PLANNED EROSION AND SEDIMENTATION CONTROL PRACTICES

   A. STOCKPILES

   STOCKPILES WILL BE USED WHEN THE STORAGE OF EXCESS FILL MATERIAL IS NECESSARY. THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATIONS OF ALL STOCKPILES AND ALL ADDITIONAL SEDIMENT AND EROSION CONTROLS MEASURES REQUIRED. STOCKPILES SHOULD BE STABILIZED AND/OR SURROUNDED WITH SEDIMENT FENCE TO PREVENT RUNOFF.

   B. CONSTRUCTION ENTRANCE

   CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO REDUCE EROSION OF SEDIMENT INTO WETLANDS AND WATERWAYS CAUSED BY HEAVY TRUCKS AND MACHINERY ENTERING AND LEAVING THE PROJECT SITE. THIS PRACTICE ALSO PLAYS AN IMPORTANT ROLE IN COMMUNITY PERCEPTION OF THE PROJECT BY MINIMIZING THE DIRT AND MUD THAT IS TRACKED ONTO STREETS.

   C. TREE PROTECTION FENCE

   TREE PROTECTION FENCE SHALL BE PLACED IN A MANNER TO ESTABLISH A BUFFER ZONE TO PREVENT CONSTRUCTION ACTIVITIES FROM AFFECTING THE ROOT ZONE.

   D. SILT FENCE

   SEDIMENT FENCE SHALL BE CONSTRUCTED AS NECESSARY TO PREVENT SEDIMENT FROM ENTERING DITCHES AND ADJACENT WATERWAYS.

   E. SILT FENCE OUTLETS/STONE DRAINS

   SILT FENCE OUTLETS SHALL BE INSTALLED ALONG THE SILT FENCE AT LOCATIONS WERE SIGNS OF CONCENTRATED FLOW OCCUR AND WILL BE FIELD ADJUSTED AS REQUIRED. THE STONE DRAINS ARE USED TO LET WATER TRAPPED BEHIND THE SILT FENCE TO ESCAPE DOWNSTREAM HELPING TO PREVENT THE WEIGHT OF DETAINED WATER FROM COLLAPSING THE SILT FENCE AND ALLOWING TRAPPED SEDIMENT TO ENTER ADJACENT PROPERTY, WETLANDS, AND WATERWAYS.

   F. EROSION CONTROL MATTING

   EROSION CONTROL MATTING SHALL BE USED ON DISTURBED DITCHES AND SWALES. MATTING IS INTENDED TO STABILIZE SOIL ON DISTURBED SLOPES WHILE HOLDING SEED AND MULCH IN PLACE ALLOWING VEGETATION TO BECOME ESTABLISHED. DEPENDING UPON THE SLOPE AND DEPTH OF ANTICIPATED RUNOFF, DIFFERENT MATTING TYPES MAY BE NECESSARY FOR DIFFERENT APPLICATIONS.

   G. SEEDING, FERTILIZING, AND MULCHING

   SEEDING, FERTILIZING, AND MULCHING ARE A PERMANENT FORM OF EROSION CONTROL. GROUNDCOVER SHALL BE PROVIDED WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING. PERMANENT GROUNDCOVER SHALL BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES.

   H. WATTLES

   WATTLES SHALL BE PLACED AT THE TOP AND BOTTOM OF SLOPES, PERPENDICULAR TO THE FLOW OF WATER. WATTLES ARE INTENDED TO INTERCEPT RUNOFF AND TRAP SEDIMENT TO PREVENT CONTAMINATED WATER FROM LEAVING THE SITE.

SEED BED PREPARATION:

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, WITH STOCKPILED TOPSOIL. CONTRACTOR SHALL RESERVE SUFFICIENT TOPSOIL FOR SEEDBED PREPARATION.
2. RIP THE ENTIRE AREA TO 6 INCH DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPER-PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND IS LESS THAN 60% ESTABLISHED, THE ENTIRE AREA SHALL BE RESEEDED ACCORDING TO SPECIFICATIONS USING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT A CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

*APPLY AGRICULTURAL LIMESTONE - 2 TONS/ACRE (3 TONS/ACRE IN CLAY SOILS) FERTILIZER - 1,000 LB/ACRE - 10-10-10

SUPER-PHOSPHATE - 500 LB/ACRE - 20% ANALYSIS MULCH - 2 TONS/ACRE - SMALL GRAIN STRAW

ANCHOR - ASPHALT EMULSION @ 300 GALS/ACRE

EROSION CONTROL SELF INSPECTION:

NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM:

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010. THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS MUST BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM HTTP://WWW.DLR.ENR.STATE.NC.US/PAGES/SEDIMENTATION_NEW.HTML. IF YOU HAVE QUESTIONS OR CANNOT ACCESS THE FORM, PLEASE CONTACT THIS OFFICE AT (919) 791-4200.

GROUND STABILIZATION CHART

SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME EXCEPTIONS
DIKES, SWALES, DITCHES, AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

DATE: PAGE:

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding Dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding Dates
Mountains — May 15 - Aug. 15
Piedmont — May 1 - Aug. 15
Coastal Plain — Apr. 15 - Aug. 15

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding Dates
Mountains — Aug. 15 - Dec. 15
Coastal Plain and Piedmont — Aug. 15 - Dec. 31

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1-1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700 - 1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

DEQ

TEMPORARY SEEDING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

DATE: PAGE:

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE

Species	Rate
Centipede	5 lbs/acre
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Coastal or Eastern Piedmont for Centipede- Sept. 1 - May 1
Coastal and Piedmont for Indian Woodoats and Virginia Wild Rye- Feb 15 - April 1
Mountains for Indian Woodoats and Virginia Wild Rye- March 1 - May 15

Maintenance:
Significant maintenance may be required to obtain desired cover.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

Species	Rate
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - July 15- Aug 15
Piedmont - Aug 15 - Oct 15

Maintenance:
Indian Woodoats and Virginia Wild Rye are both sun and shade tolerant.

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

Species	Rate
Hard Fescue	15 lbs/acre
Switchgrass	2.5-3.5 lbs/acre*
Indian Grass	5-7 lbs/acre*
Big Bluestem	5-7 lbs/acre*
Indian Woodoats	1.5-2.5 lbs/acre*
Virginia Wild Rye	4-6 lbs/acre*

*Depending upon mix with other species. See table 6.11.d from Chapter 6 of the NC Erosion and Sediment Control Planning and Design Manual.

Seeding Dates
Mountains - Hard Fescue- Aug 1 - June 1
Mountains- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 15
Piedmont and Coastal- Switchgrass, Indian Grass, Big Bluestem- Dec 1 - April 1
Coastal- Indian Woodoats and Virginia Wild Rye- Sept 1 - Nov 1

Maintenance:
Hard Fescue is not recommended for slopes > 5%. Prefers shade.

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1½ tons/acre on coarse0textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.

FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.

SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. the finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. all ridges and depressions shall be removed and filled to provide the approved surface drainage . Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

NOTES:
1. Permanent seeding, sodding or other means of stabilization are required when all construction work is completed according to the NPDES timeframes table.
2. A North Carolina Department of Agriculture soils test (or equal) is highly recommended to be obtained for all areas to be seeded, sprigged, sodded or planted.
3. Use a seeding mix that will produce fast0growing nurse crops and includes non-invasive species that will eventually provide a permanent groundcover. Soil blankets may be used in lieu of nurse crops. Mat, tack or crimp mulch, as needed to stabilize seeded areas until root establishment. Mulch must cover at leaser 80% of the soil surface.
4. Ground cover shall be maintained until permanent vegetation is established and stable against accelerated erosion.

DEQ

PERMANENT SEEDING

Effective Date: 9/1/2023
In accordance with the 2013 Design Manual Updates

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL W. MERRITT
8/13/2026

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C6.10

EROSION CONTROL NOTES & DETAILS

J:\2506\1-004-esse architects - hargrove ems station\CAD\drawing sets\site plan\C6.XX EROSION CONTROL_NOTES AND DETAILS.dwg - Thursday, August 13, 2026 - 9:15:05 AM - KGROSKO

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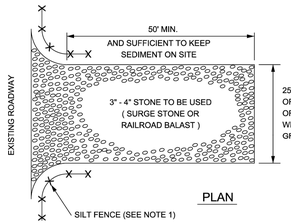
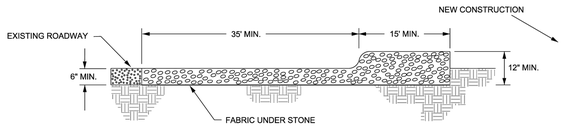


PLAN

NOTES:
1. SILT FENCE SHOULD BE INSTALLED TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF MUD IS NOT REMOVED FROM THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD OR THE LENGTH OF THE CONSTRUCTION ENTRANCE EXTENDED.

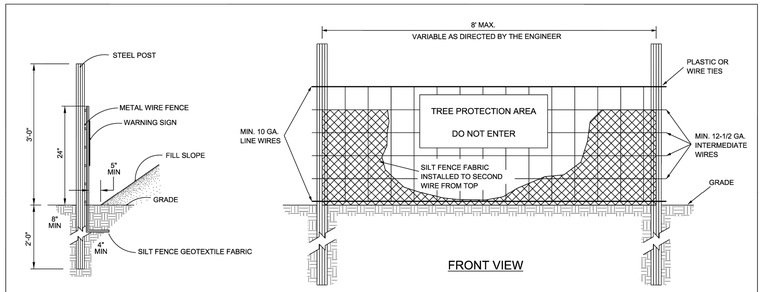


CROSS SECTION

MAINTENANCE:
ADD ADDITIONAL STONE AND "FLUFF" TOP DRESSING WITH 2" STONE.

SEE N.C. DEQ EROSION and SEDIMENT CONTROL PLANNING and DESIGN MANUAL FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATION & DESIGN CRITERIA.

REVISIONS	CITY OF RALEIGH STANDARD DETAIL
DATE: 6/2020	CONSTRUCTION ENTRANCE
NOT TO SCALE	SW-20.09



SIDE VIEW

FRONT VIEW

MAINTENANCE: CLEAN OUT AT 50% CAPACITY
LIFE OF FENCING: 6-9 MONTHS
DO NOT DISTURB TREE CONSERVATION AREAS
SILT FENCE SHOULD NOT BE USED ALONE BELOW GRADED SLOPES GREATER THAN 10' IN HEIGHT.

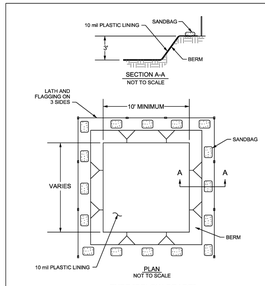
NOTES:
1. TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (SEE DETAIL TPP-02 FOR EXAMPLES)
2. THE TREE PROTECTION FENCING MUST REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY URBAN FORESTRY STAFF.
3. APPROVED IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION WHEN APPLICABLE.
4. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER FOR THE REMAINDER
5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH BASED ON ACTUAL FIELD CONDITIONS.
8. SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL WITH LETTERS A MINIMUM OF 2 1/2" HIGH, CLEARLY LEGIBLE AND SPACED AS SHOWN.
9. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
10. SEE NC STATE DEQ PRACTICE STANDARDS & SPECIFICATIONS SEDIMENT FENCE SET FOR CONDITIONS WHERE APPLIES; PLANNING CONSIDERATIONS & DESIGN CRITERIA. (HOWEVER, FLOW SHALL NOT RUN PARALLEL WITH THE TOE OF THE FENCE.)

PROVIDE WARNING LANGUAGE IN BOTH ENGLISH AND SPANISH, AS SHOWN

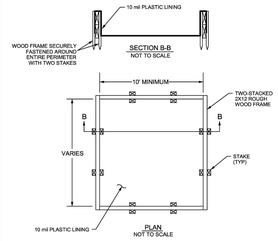
WARNING SIGN DETAIL

CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT
URBAN FORESTER:
TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

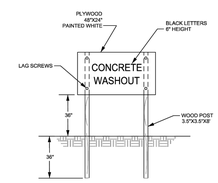
REVISIONS	CITY OF RALEIGH STANDARD DETAIL
DATE: 6/2020	STANDARD TEMPORARY SEDIMENT SILT / TREE PROTECTION FENCE
NOT TO SCALE	TPP-08



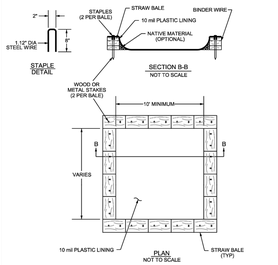
TYPE "BELOW GRADE"



TYPE "ABOVE GROUND" WITH WOOD PLANKS



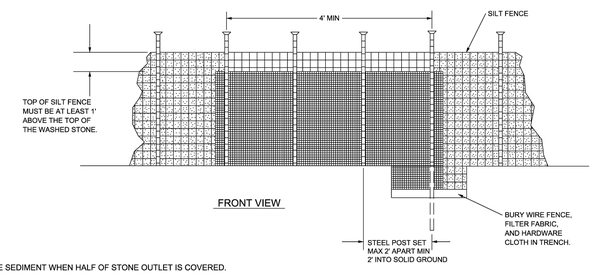
CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)



TYPE "ABOVE GRADE" WITH STRAW BALES

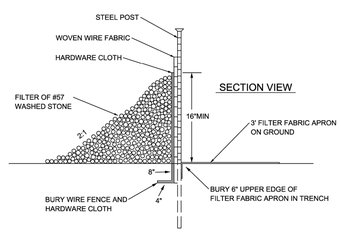
NOTES:
1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.
5. MUST BE LOCATED >50 FT AWAY FROM INLETS/WATERWAYS UNLESS THERE IS NO OTHER PRACTICAL ALTERNATIVE.

CITY OF RALEIGH STANDARD DETAIL	
REVISIONS	DATE: 6/2020 — NOT TO SCALE
	CONCRETE WASHOUT
	SW-20.25



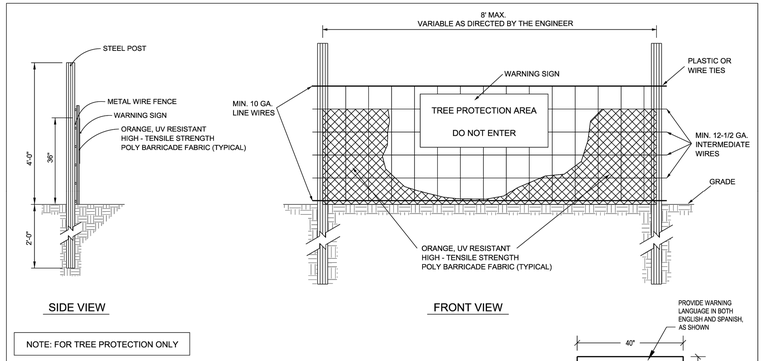
FRONT VIEW

NOTES:
1. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.



SECTION VIEW

REVISIONS	CITY OF RALEIGH STANDARD DETAIL
DATE: 6/2020	STANDARD SILT FENCE OUTLET
NOT TO SCALE	SW-20.24

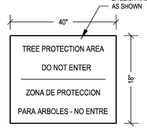


SIDE VIEW

FRONT VIEW

NOTE: FOR TREE PROTECTION ONLY

PROVIDE WARNING LANGUAGE IN BOTH ENGLISH AND SPANISH, AS SHOWN

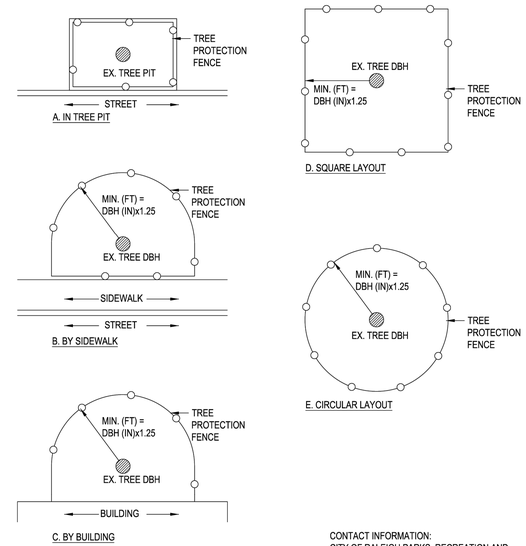


WARNING SIGN DETAIL

NOTES:
1. TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE (SEE DETAIL TPP-02 FOR EXAMPLES)
2. THE TREE PROTECTION FENCING MUST REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY URBAN FORESTRY STAFF.
3. APPROVED IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION WHEN APPLICABLE.
4. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER FOR THE REMAINDER
5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH BASED ON ACTUAL FIELD CONDITIONS.
8. SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL WITH LETTERS A MINIMUM OF 2 1/2" HIGH, CLEARLY LEGIBLE AND SPACED AS SHOWN.

CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT
URBAN FORESTER:
TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

REVISIONS	CITY OF RALEIGH STANDARD DETAIL
DATE: 6/2020	STANDARD TREE PROTECTION DETAIL
NOT TO SCALE	TPP-01



CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT
URBAN FORESTER: TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

NOTES:
1. CONTRACTOR MUST PROVIDE AND INSTALL TREE PROTECTION SIGNAGE.
2. A TREE IMPACT PERMIT IS REQUIRED PRIOR TO INITIATION OF CONSTRUCTION IF ANY TREES ON CITY PROPERTY ARE TO BE IMPACTED BY PRUNING, TRENCHING, BORING, REMOVAL, PAVING, PLANTING, ETC.

CITY OF RALEIGH STANDARD DETAIL	
REVISIONS	DATE: 6/2020 — NOT TO SCALE
	TREE PROTECTION FENCE LAYOUT
	TPP-02

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C6.11

EROSION CONTROL NOTES & DETAILS

J:\2018051-004-esse architects - hargrove ems station\CAD\drawing sets\site plan\C6.XX EROSION CONTROL NOTES AND DETAILS.dwg, Thursday, August 13, 2026 9:15:10 AM - JCROSSWO

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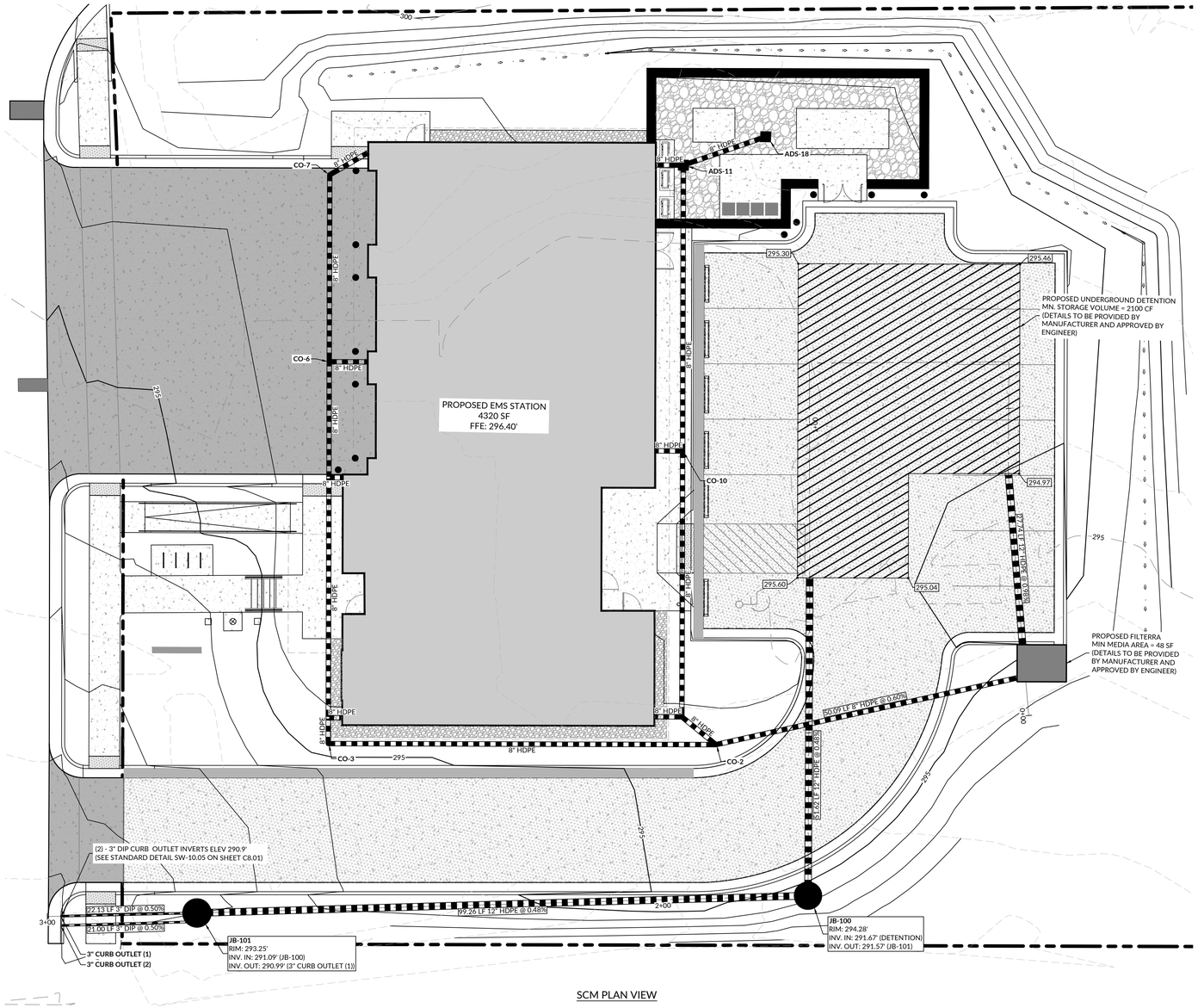
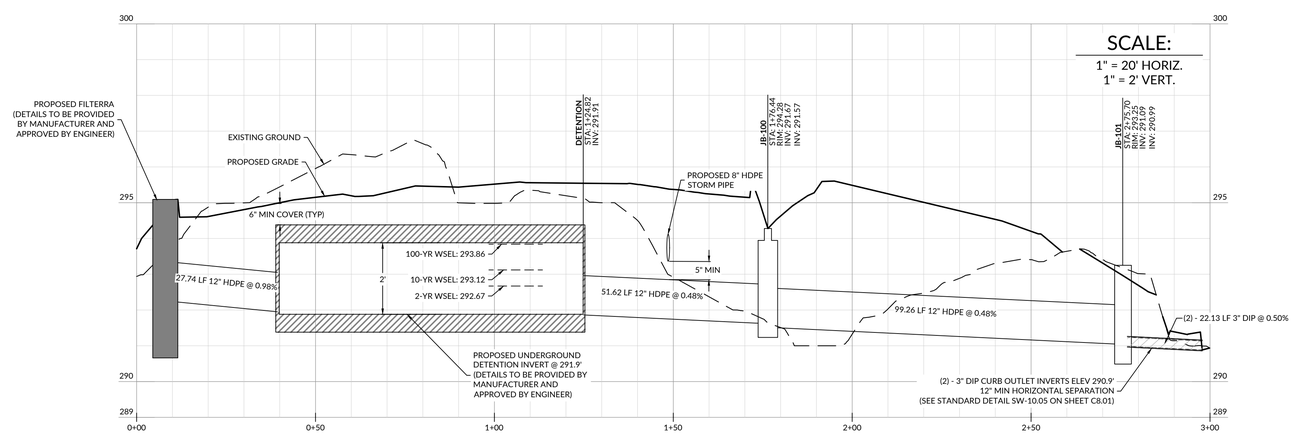


SCM PLAN VIEW



SCM PROFILE VIEW

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY
FACILITIES DESIGN &
CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GRERLIN ROAD, SUITE 300,
RALEIGH, NC 27603
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

WR JOB NUMBER 23-0851-004
DRN: KG DGN: KG CKD: SM

SCM PLAN & PROFILE

C8.00

J:\23-0851-004-esse architects - hargrove ems station\CAD\drawing sets\site plan\C8.XX SCM PLAN AND DETAILS.dwg - Thursday, August 13, 2026 9:13:31 AM - BRAHN

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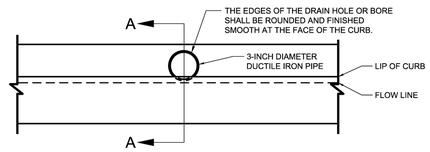
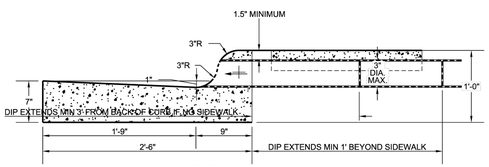


FRONT VIEW



SECTION A-A

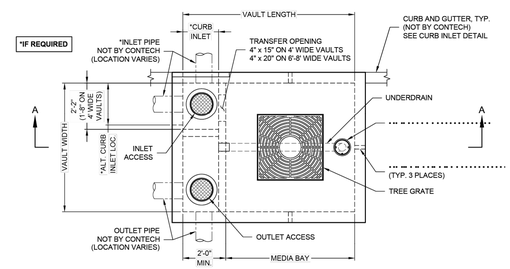
GENERAL NOTES:
1. A RIGHT-OF-WAY PERMIT IS REQUIRED FOR ANY CONNECTION OF RESIDENTIAL DRAINAGE INTO THE RIGHT-OF-WAY
2. ALL STORMWATER PIPE DISCHARGE SHALL BE TIED INTO A STORMWATER SYSTEM STRUCTURE (JUNCTION, MANHOLE, INLET, ETC. SEE DRAIN CONNECTION TO STRUCTURE DETAIL SW-10.06). IF A DIRECT TIE IN IS NOT POSSIBLE DUE TO ELEVATION CONSTRAINTS, LOCATION CONSTRAINTS, UTILITY/PHYSICAL OBSTRUCTIONS OR OTHER REASON ACCEPTABLE TO THE CITY, A CURB-O-LET (OR EQUAL) MAY BE USED TO TIE INTO THE CURB LINE. IF CURB-O-LET CANNOT BE USED, RESIDENTIAL CURB BORE DETAIL MAY BE USED WITH APPROVAL BY THE CITY.
3. WHEN SIDEWALK IS PRESENT, THE FULL SIDEWALK PANEL (FROM JOINT TO JOINT) MUST BE REPLACED WHEN INSTALLING DRAIN. BORING UNDER THE SIDEWALK IS NOT ALLOWED.
4. ALL CONCRETE USED SHALL BE 3000 PSI OR GREATER.
5. FUTURE MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY FROM WHICH THE DRAIN ORIGINATES

FOR CURB BORE:
1. ALL CURB BORES REQUIRE THE USE OF DUCTILE IRON PIPE A MINIMUM OF 3 FEET FROM THE CURB OR, FOR SIDEWALK LOCATIONS, THE DIP MUST EXTEND A MINIMUM OF 1 FOOT BEYOND THE CURB. SEE DETAIL.
2. PVC IS NOT ALLOWED IN CURB BORE CONNECTIONS.
3. CURB BORE CANNOT BE WITHIN 6 FEET OF A INTERSECTION RADIUS OR 12 INCHES OF CONSTRUCTION OR EXPANSION JOINTS.
4. ANY OVERBORE $\frac{1}{2}$" OR LESS SHALL BE SEALED WITH CEMENTITIOUS GROUT OR CAULK. IF OVERBORE IS $\frac{1}{2}$" OR GREATER THEN 3000 PSI CONCRETE FILLER IS REQUIRED.
5. DISCHARGE PIPE SHALL NOT EXTEND BEYOND OR PROTRUDE BEYOND THE CURB FACE.
6. MULTIPLE CURB BORES (DRAINS) IN THE CURB SHALL BE SEPARATED BY A MINIMUM OF 12 INCHES OF CURB.
7. ALL CURB BORES MUST USE A CONCRETE BORE NO GREATER THAN 4 INCHES.

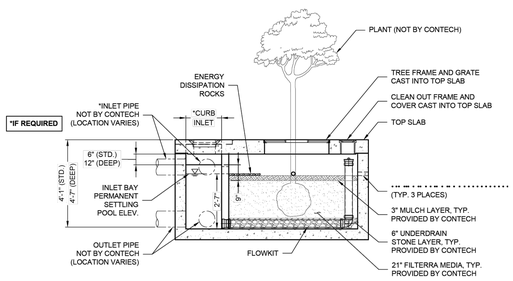
FOR PREMANUFACTURED CURB DRAIN STRUCTURES:
1. PREMANUFACTURED CURB DRAIN STRUCTURE MAY BE USED IN LIEU OF CURB BORE TIE-IN WITH CITY APPROVAL.
2. PREMANUFACTURED CURB DRAIN STRUCTURE SHALL BE CURB-O-LET OR EQUAL.
3. PREMANUFACTURED CURB DRAIN SHALL BE INSTALLED IN COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. PREMANUFACTURED CURB DRAINS MAY BE INSTALLED SIDE BY SIDE IF NECESSARY.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 9/2024	NOT TO SCALE
	RESIDENTIAL CURB BORE	
	SW-10.05	



PLAN VIEW

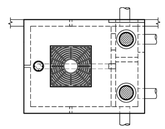


SECTION A-A
(STANDARD DEPTH SHOWN)

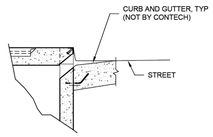
FTPD CONFIGURATION
(OPTIONS: DEEP "-D", THROAT INLET "-T", PIPE INLET "-P", PIPE AND THROAT INLET "-PT")

MODEL NAME	PART NUMBER	AVAILABILITY	MEDIA AREA (SF)	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR LENGTH/ MAX. CURB OPENING	*MAX. BYPASS FLOW (CFS) STD / DEEP	INLET/ OUTLET ACCESS DIA.	TREE GRATE QTY. AND SIZE
FTPD 4x4 (4x6 VAULT)	FTPD0404	ALL	16	4 x 4	4 x 6	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 4x6 (4x8 VAULT)	FTPD0406	ALL (EXCEPT DE, MD, NJ, PA, VA, WV)	24	4 x 6	4 x 8	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 6x4 (6x6 VAULT)	FTPD0604	ALL (EXCEPT CA, TX)	24	6 x 4	6 x 6	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 4.5x5.8 (4.5x7.8 VAULT)	FTPD045058	DE, MD, NJ, PA, VA, WV ONLY	26	4.5 x 5.83	4.5 x 7.83	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 6x6 (6x8 VAULT)	FTPD0606	ALL	36	6 x 6	6 x 8	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 6x8 (6x10 VAULT)	FTPD0608	ALL (EXCEPT CA, TX)	48	6 x 8	6 x 10	1'-8"	1.4 / 4.6	12"/12"	(1) 4' x 4'
FTPD 8x7 (8x10 VAULT)	FTPD0807	CA, TX ONLY	56	8 x 7	8 x 10	2'-6"	2.1 / 6.8	24"/24"	(1) 4' x 4'
FTPD 8x10 (8x12 VAULT)	FTPD0610	ALL (EXCEPT CA, TX)	60	6 x 10	6 x 12	1'-8"	1.4 / 4.6	12"/12"	(1) 4' x 4'
FTPD 7x10 (7x13 VAULT)	FTPD0710	ALL (EXCEPT CA, TX)	70	7 x 10	7 x 13	2'-6"	2.1 / 6.8	24"/24"	(1) 4' x 4'
FTPD 8x9 (8x12 VAULT)	FTPD0809	CA, TX ONLY	72	8 x 9	8 x 12	2' -6"	2.1 / 6.8	24"/24"	(1) 4' x 4'
FTPD 8x10.5 (8x14 VAULT)	FTPD08105	ALL	84	8 x 10.5	8 x 14	3'-0"	2.5 / 8.2	24"/24"	(1) 4' x 4'
FTPD 8x12.5 (8x16 VAULT)	FTPD08125	ALL (EXCEPT OR, WA)	100	8 x 12.5	8 x 16	3'-0"	2.5 / 8.2	24"/24"	(2) 4' x 4'
FTPD 9x11.5 (9x15 VAULT)	FTPD09115	OR, WA ONLY	103	9 x 11.5	9 x 15	3'-0"	2.5 / 8.2	24"/24"	(2) 4' x 4'

*MAX BYPASS FLOW IS INTERNAL WEIR FLOW. CAPACITIES SHOWN ARE FOR STANDARD DEPTH AND DEEP (-D), RESPECTIVELY. SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE CURB INLET FLOW CAPACITY.



ALTERNATE ORIENTATION



CURB INLET DETAIL

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION

filterra
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

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9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA PEAK DIVERSION (FTPD)
CONFIGURATION DETAIL

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY
FACILITIES DESIGN &
CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GRERLIN ROAD, SUITE 300,
RALEIGH, NC 27603
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

INITIAL PLAN DATE: 1/21/2026
REVISIONS:

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

WR JOB NUMBER 23-0851-004
DRN: KG DGN: KG CKD: SM

SCM DETAILS

C8.01

J:\23\0851-004-esse architects - hargrove ems station\CAD\drawing sets\site plan\CD\XX SCM PLAN AND DETAILS.dwg - Thursday, August 13, 2026 9:13:55 AM - BRAHN

I:\COMMON\CONTRACTMENTS\4 FILTERRA\02 STANDARD DRAWINGS\FTPD - PEAK DIVERSION\FTPD\LAYOUT DETAILS\DWG\FTPD - FILTERRA PEAK DIVERSION CONFIG DTL.DWG 3/17/2023 8:03 AM

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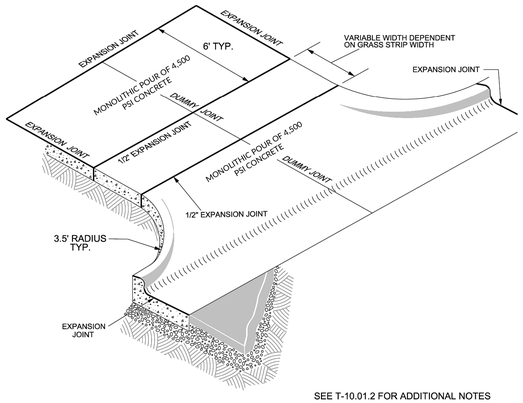
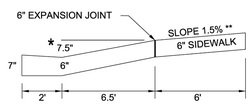


SEE T-10.01.2 FOR ADDITIONAL NOTES



* USE 6.5" WHEN DRIVEWAY IS USED IN LIEU OF A WHEELCHAIR RAMP TO ACCOMMODATE 12:1 MAXIMUM SLOPE (ADA COMPLIANT), SUCH AS IN A CUL-DE SAC.

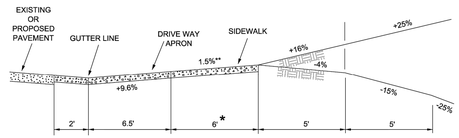
** 2.08% (1:48) max

SHEET 1 OF 4

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 12/2022	DRIVEWAY AND SIDEWALK DETAIL	
	T-10.01.1	

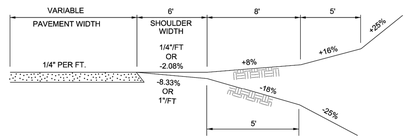
DRIVEWAY GRADES



* 5' FOR SENSITIVE AREA AVENUE AND SENSITIVE AREA RESIDENTIAL STREET

** 2.08% (1:48) max

A. CURB & GUTTER , SIDEWALK SECTION

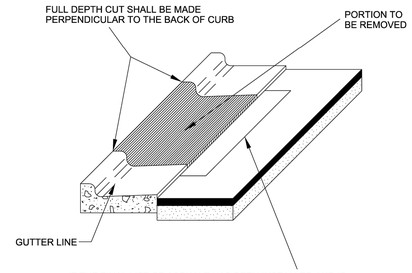


B. SHOULDER SECTION

NOTES:
IF THE SLOPE BETWEEN THE TOP OF CURB AND GUTTER AND A POINT 30 FEET FROM THE CURB AND GUTTER EXCEEDS 20%, THIS SLOPE SHALL BE ADJUSTED TO A MAXIMUM OF 8.33% (1"/FT) UP OR 4.17% (1/2" /FT) DOWN.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 12/2022	DRIVEWAY GRADES	
	T-10.04	



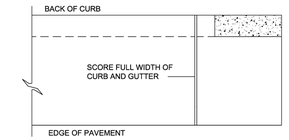
IF THE FINAL LIFT OF ASPHALT HAS BEEN INSTALLED AND IS DAMAGED DURING CURB REMOVAL, A ONE FOOT WIDE SECTION OF ASPHALT SHOULD BE SAWCUT AND REMOVED FOR FORMS TO BE USED TO KEEP A STRAIGHT EDGE ON THE DRIVEWAY APRON. REINSTALL HOT MIX SURFACE ASPHALT PATCH S9.5B.

IF THE FINAL LIFT OF ASPHALT HAS NOT BEEN INSTALLED, THE ASPHALT IN FRONT OF THE APRON CAN REMAIN IN PLACE.

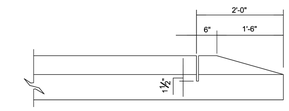
NOTES:
1. CURB AND GUTTER SECTION SHALL BE REMOVED IN ACCORDANCE WITH DRIVEWAY WIDTH APPROVED BY THE CITY.
2. IF PERPENDICULAR CUT IS LESS THAN 5' FROM NEXT JOINT, THEN THE PARALLEL CUT SHALL BE MADE TO THAT JOINT.
3. THIS METHOD IS NOT ALLOWED IN NEW ROADWAY CONSTRUCTION.

CITY OF RALEIGH
STANDARD DETAIL

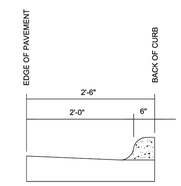
REVISIONS	DATE: 8/2020	NOT TO SCALE
	STANDARD METHOD OF REMOVING EXISTING CURB (FOR A DRIVEWAY APRON INSTALLATION)	
	T-10.24	



PLAN



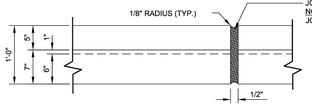
FRONT



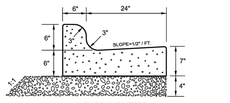
END

CITY OF RALEIGH
STANDARD DETAIL

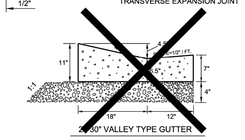
REVISIONS	DATE: 8/2020	NOT TO SCALE
	STANDARD METHOD OF ENDING CURB AND GUTTER	
	T-10.25	



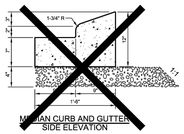
FRONT ELEVATION
TRANSVERSE EXPANSION JOINT



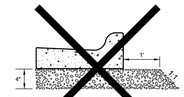
1. 30" CURB & GUTTER



2. 30" VALLEY TYPE GUTTER

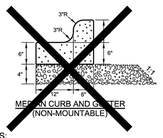


MEDIAN CURB AND GUTTER SIDE ELEVATION

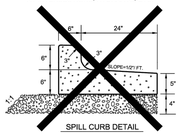


4" COMPACTED A.B.C. UNDER STANDARD CURB & GUTTER (MIN.)

NO VALLEY CURB SHALL BE USED AT INTERSECTIONS, HYDRANTS, ETC.



MEDIAN CURB AND GUTTER (NON-MOUNTABLE)



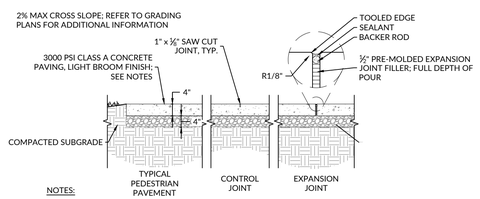
SPILL CURB DETAIL

NOTES:
1. 10' MAXIMUM BETWEEN DUMMY JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. 1/2" EXPANSION JOINT EVERY 50'.
3. 3000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURING COMPOUND SHALL MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS AND STRUCTURES.
5. ALL CONSTRUCTION JOINTS SHALL BE FILLED WITH JOINT FILLER AND SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01 THE JOINT MATERIAL SHALL CONFORM TO SECTION 1028-2 OF NCDOT STANDARD & SPECIFICATIONS FOR ROADS AND STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB AND GUTTER SUPERELEVATION RATES.

SHEET 1 OF 2

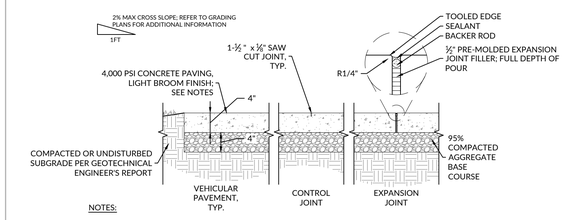
CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
	CURB AND GUTTER	
	T-10.26.1	



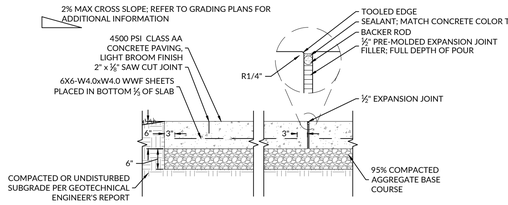
NOTES:
1. PROVIDE EXPANSION JOINT WHERE WALKS ARE POURED AGAINST VERTICAL SURFACES AND/OR DIFFERENT PAVING MATERIALS & AS SPECIFIED ON PLANS OR 25'-0" MAX O.C.
2. PROVIDE CONTRACTION JOINT AT 5' INTERVALS UNLESS OTHERWISE SPECIFIED (SEE PLAN).
3. CONTRACTOR TO PROVIDE MOCK-UP OF CONCRETE FINISH, COLOR, AND SCORING FOR OWNERS APPROVAL MOCK-UP CAN BE USED AS PART OF FINAL PROJECT.
4. SEE GEOTECHNICAL ENGINEER'S REPORT FOR COMPACTION AND PLACEMENT SPECIFICATIONS.

LIGHT DUTY PEDESTRIAN CONCRETE — STREETS AND PARKING AREAS
Scale: NTS — C3029



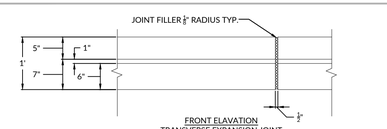
NOTES:
1. PROVIDE EXPANSION JOINT WHERE CONCRETE IS POURED AGAINST VERTICAL SURFACES AND/OR DIFFERENT PAVING MATERIALS & AS SPECIFIED ON PLANS OR 25'-0" MAX O.C.
2. PROVIDE CONTRACTION JOINT AT 5' INTERVALS UNLESS OTHERWISE SPECIFIED (SEE PLAN).
3. CONTRACTOR TO PROVIDE MOCK-UP OF CONCRETE FINISH, COLOR, AND SCORING FOR OWNERS APPROVAL MOCK-UP CAN BE USED AS PART OF FINAL PROJECT.
4. SEE GEOTECHNICAL ENGINEER'S REPORT FOR COMPACTION AND PLACEMENT SPECIFICATION

TYPICAL CONCRETE VEHICULAR PAVING — STREETS AND PARKING AREAS
Scale: NTS — C3030

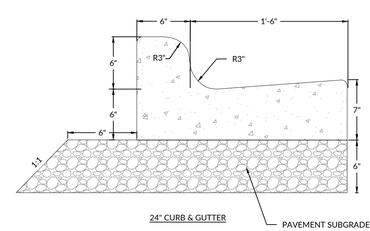


NOTES:
1. CONTRACTOR TO PROVIDE MOCK-UP OF CONCRETE PAVEMENT FINISH, COLOR, & SCORING FOR OWNER'S APPROVAL. MOCK-UP CAN BE USED AS PART OF FINAL PROJECT.
2. PROVIDE EXPANSION JOINT WHERE SLAB MEETS VERTICAL SURFACES AND/OR DIFFERENT PAVING MATERIALS & AS SPECIFIED ON PLANS.
3. PROVIDE ½" EXPANSION JOINTS AT 16' INTERVALS MIN., TYP.
4. SAW CUT (CONTROL JOINTS AT 4' INTERVALS OR AS SHOWN ON PLANS.
5. SEE GEOTECHICAL ENGINEER'S REPORT FOR COMPACTION AND PLACEMENT SPECIFICATIONS

HEAVY DUTY VEHICULAR CONCRETE PAVING — STREETS AND PARKING AREAS
Scale: NTS — C3028



FRONT ELAVATION
TRANSVERSE EXPANSION JOINT



24" CURB & GUTTER

PAVEMENT SUBGRADE PER TYPICAL SECTION

NOTES:
1. PROVIDE 10' MAXIMUM BETWEEN CONTROL JOINTS. 15' MAXIMUM BETWEEN DUMMY JOINTS ON MACHINE POURS.
2. PROVIDE A ½" EXPANSION JOINT EVERY 50 FEET.
3. CURB MUST BE 3,000 PSI CONCRETE MINIMUM, 4" SLUMP MAXIMUM.
4. LIQUID MEMBRANE CURBING COMPOUND MUST MEET THE REQUIREMENTS OF SECTION 1026-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS & STRUCTURES.
5. ALL CONSTRUCTION JOINTS MUST BE FILLED WITH JOINT FILLER & SEALER IN ACCORDANCE WITH NCDOT ROADWAY STANDARD DETAIL 846.01. THE JOINT MATERIAL MUST CONFORM TO SECTION 1028-2 OF NCDOT STANDARDS & SPECIFICATIONS FOR ROADS & STRUCTURES.
6. REFER TO NCDOT DETAIL 846.01 FOR CURB & GUTTER SUPERELEVATION RATES.

24" CURB AND GUTTER (STANDARD & SPILL) — STREETS AND PARKING AREAS
Scale:NTS — C3054

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
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120 ST. MARY'S STREET
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919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

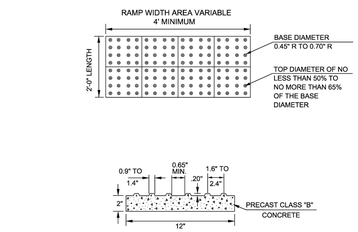
SHEET INFORMATION

C9.00

SITE DETAILS

J:\23\0851-004-esse architects - hargrove ems station\CAD\drawing sets\site plan-CY\04 SITE DETAILS.dwg - Thursday, August 13, 2026 9:13:48 AM - ABROWN

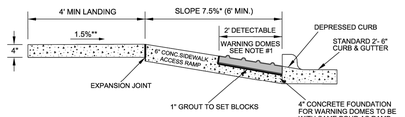
Docusign Envelope ID: 15B60597-C743-8E22-81CA-C565E7577190



DETECTABLE WARNING DOMES CONCRETE PAVER

* 8.33% (1:12) max

** 2.08% (1:48) max



RAMP SECTION

WITH DETECTABLE WARNING PAVERS

NOTES:

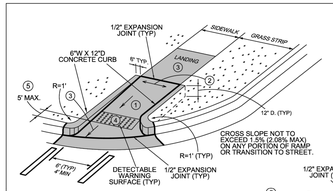
1. DETECTABLE WARNING DOMES SHALL COVER 2'-0" LENGTH AND FULL WIDTH OF THE RAMP FLOOR AS SHOWN ON DETAIL. SIZE OF PAVER SHALL BE 1' X 1'.
2. THE COLOR FOR THE DETECTABLE WARNING AREA SHALL BE YELLOW FOR CONTRAST.

SHEET 2 OF 4

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 12/2022	DETECTABLE WARNING SURFACE PAVERS	
	T-20.04.2	

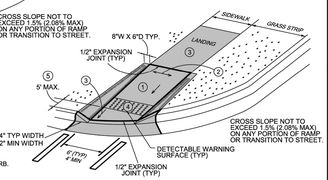
PAY LIMITS FOR CURB RAMP



TYPE N-1 (CURB TYPE)

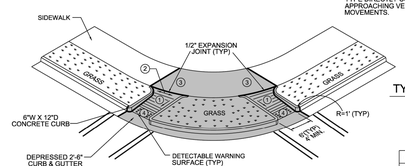
CONCRETE DEPTH	
RAMP / FLARE	6"
LANDING	4"

1. 7.5%; 8.33% (1:12) MAX RAMP SLOPE
2. 1.5%; 2.08% (1:48) MAX CROSS SLOPE
3. CURB RAMPS REQUIRE A (4'-0") MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 1.5% (2.08% MAX) WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SLOPE TO DRAIN TO CURB.
4. RAMPS AND DOMES SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
5. IF LENGTH EXCEEDS 5', TRUNCATED DOMES SHALL BE INSTALLED ALONG THE BACK OF THE CURB COVERING THE FULL WIDTH OF THE RAMP.



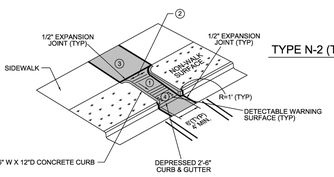
TYPE N-1A (FLARE TYPE)

NOTE: USE SMALL FLARES ONLY WHEN A CURB TYPE DIRECTLY CONFLICTS WITH APPROACHING VEHICULAR TURNING MOVEMENTS.



TYPE N-2 (RADIUS)

CONCRETE DEPTH	
RAMP / FLARE	6"
LANDING	4"



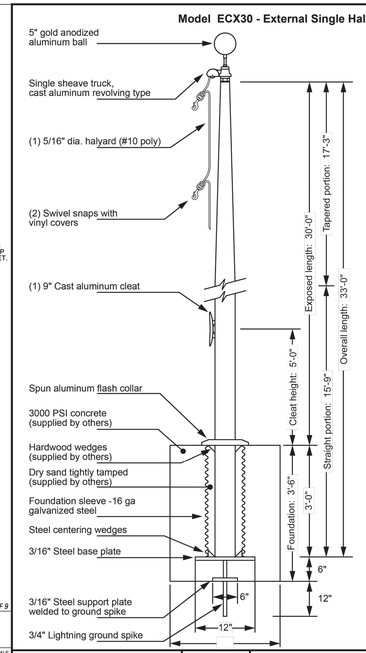
TYPE N-2 (TEE INTERSECTION)

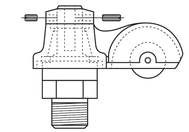
SHEET 2 OF 9

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 12/2022	CURB RAMPS (NEW DEVELOPMENT)	
	T-20.01.2	

Model ECX30 - External Single Halyard





Single Sheave Truck Detail
Revolving truck
Cast aluminum body
Stainless steel ball bearings
Nylon sheave
Cast aluminum spindle

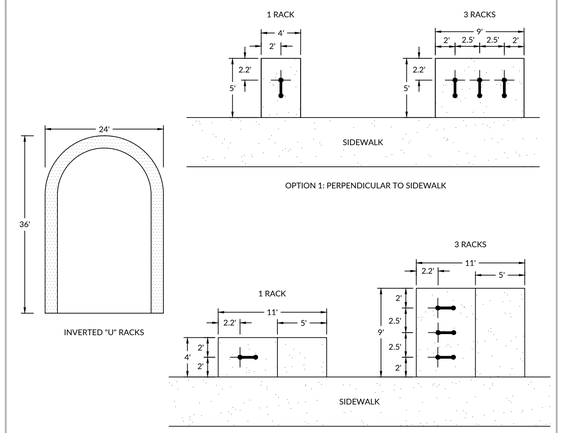
*OR APPROVED EQUAL

THE FLAG LOFT 1900 DELMAR BLVD ST LOUIS MO 63103 800 995 3524	85MPH FLAGGED	Exposed Height___30'-0" Overall Height___33'-0" Butt Diameter____5" Top Diameter____3" Wall Thickness____.125" Ships in 1 section	Ground Set Tapered Aluminum Flagpole ALLOY 6063T6 80 grit polish

EDER POLE MANUFACTURER

FLAG POLE — MISC - GENERAL

Scale:NTS — DTL 03



OPTION 1: PERPENDICULAR TO SIDEWALK

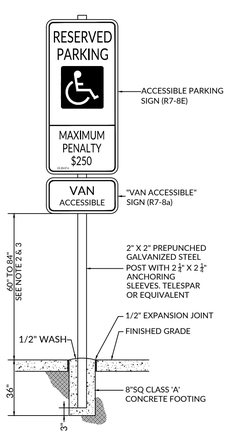
OPTION 2: PARALLEL TO SIDEWALK

NOTES:

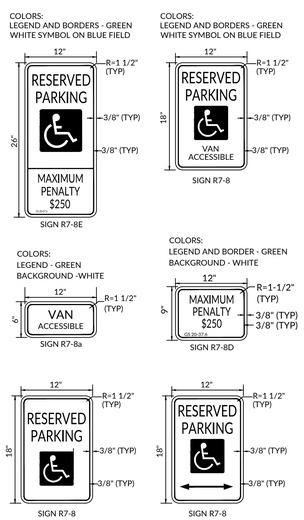
1. PARKING PAD IS 6" CONCRETE SLAB. SIZE SHOWN IS 4'X6' MIN PAD FOR SINGLE RACK AND 2'-6" ADDITIONAL WIDTH PER RACK FOR RACKS TO BE SPACED 2'-6" O.C. IF MORE THAN ONE.
2. 5' WIDE UNOBSTRUCTED MANEUVERING AREA IS REQUIRED BEHIND RACKS WHEN ORIENTED PARALLEL TO A SIDEWALK AS SHOWN; REQUIRES 4'X11' MIN PAD.
3. RACKS SHALL BE FLANGE MOUNTED AND SHALL HAVE BLACK POLYESTER POWDER COAT. OTHER PLACEMENTS SHALL MEET MINIMUM SIGN REQUIREMENTS.
4. BICYCLE PARKING SHALL NOT ENCROACH ON ACCESSIBLE PATHS.
5. DESIGNATED PLACEMENT WITHIN PARKING LOTS MAY ALSO BE ACCEPTABLE.

BICYCLE PARKING — MISC - GENERAL

Scale:NTS — C2081



ADA "VAN ACCESSIBLE" SIGN ELEVATION



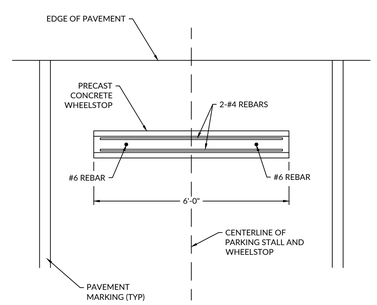
DISABLED/HANDICAP SIGNAGE

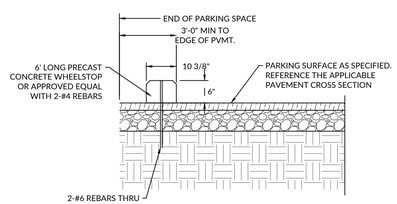
NOTES:

1. HEIGHT OF R-7 RESERVED PARKING SIGNS AS PRESCRIBED BY MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
2. 60" HEIGHT TO BOTTOM OF SIGN WHEN PEDESTRIAN PATH FROM CAR TO WALK DOES NOT PASS BY OR UNDER THE SIGN
3. 84" HEIGHT TO BOTTOM OF SIGN WHEN PEDESTRIAN PATH FROM CAR TO WALK PASSES BY OR UNDER THE SIGN
4. R-7-8D SIGNS ARE TO ACCOMPANY ALL R7-8 PARKING SIGNS
5. THE SIGN MAY BE MOUNTED ON A POST, THE BUILDING FACE, A COLUMN OR OTHER FIXED MOUNTING SURFACE.

ACCESSIBLE PARKING SIGNS — STREETS AND PARKING AREAS

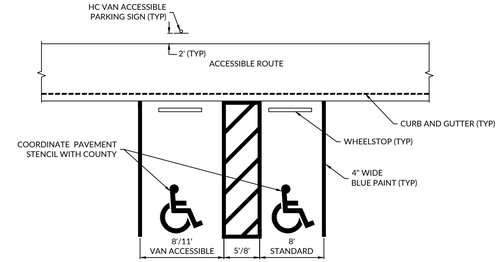
Scale:NTS — C3033





CONCRETE WHEELSTOP — STREETS AND PARKING AREAS

Scale:NTS — C3051



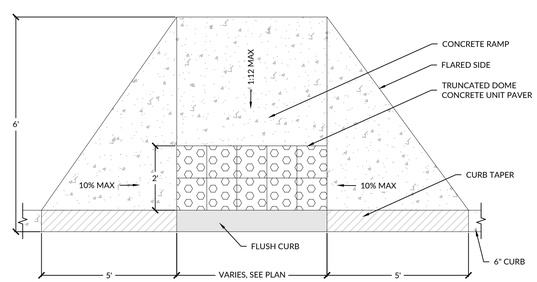
ACCESSIBLE PARKING WITH VAN SPACE

NOTES:

1. SPACE LENGTH AND WIDTH SHALL BE AS SHOWN ON THE PLAN. THE PROVIDED DIMENSIONS ARE MINIMUM REQUIREMENTS.

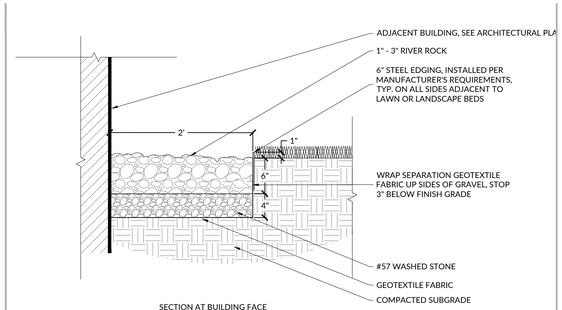
ACCESSIBLE PARKING SPACE — STREETS AND PARKING AREAS

Scale:NTS — C3031



CONCRETE CURB RAMP — PLAN

Scale:NTS — DTL: 10



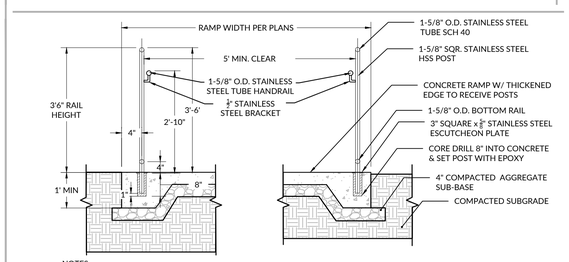
SECTION AT BUILDING FACE

NOTES:

1. RIVER ROCK BASIS OF DESIGN: GLACIER JAX RIVER ROCK 1" TO 3" SIZE, OR APPROVED EQUAL.

RIVER ROCK STRIP — SECTION

Scale:NTS — DTL: 01



NOTES:

1. HANDRAIL COMPONENTS ARE TO SCHEDULE 40 STAINLESS STEEL. ALL CONNECTIONS ARE TO BE WELDED AND FINISHED SUCH THAT THERE ARE NO SHARP EDGES.
2. TYPICAL POST SPACING IS 5' O CENTER. NON-STANDARD POST SPACING MUST BE ACCOMMODATED AT THE END OF THE RAMP (TOP OR BOTTOM) WITH A MINIMUM POST SPACING OF 2' ON CENTER.
3. HANDRAIL LAYOUT IS TO BE FINALIZED IN SHOP DRAWINGS.
4. SEE GRADING PLANS FOR RAMP DIMENSIONS AND SLOPES.
5. THE CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR THE CONCRETE RAMP WITH THICKENED EDGE, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED WITHIN THE PROJECT'S STATE, FOR REVIEW AND APPROVAL.

PEDESTRIAN RAMP WITH FALL PROTECTION — STAIRS AND RAMPS

Scale:NTS — L2003

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C9.01

SITE DETAILS

J:\2506S-004-esse architects - hargrove ems station\CAD\drawing sets\site plan\C9.00 SITE DETAILS.dwg - Thursday, August 13, 2026 9:15:54 AM - ABROWN

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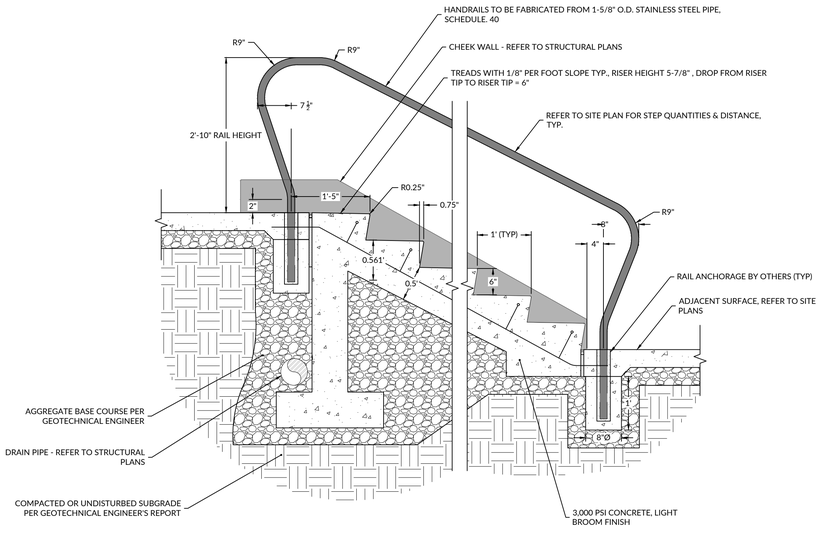
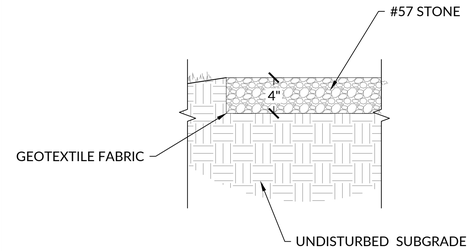


NOTES:

1. THE PURPOSED OF THIS DETAIL IS TO SHOW THE GENERAL CONFIGURATION OF THE STAIRS AND HANDRAIL. CONSTRUCTION DETAILS ARE SHOWN ON STRUCTURAL PLANS.
2. HANDRAIL COMPONENTS ARE TO SCHEDULE 40 STAINLESS STEEL. ALL CONNECTIONS ARE TO BE WELDED AND FINISHED SUCH THAT THERE ARE NO SHARP EDGES.
3. FOR STEP RUNS LONGER THAN 5 STEP RISERS, HANDRAILS SHALL INCLUDE A MID-POST, INSTALLED IN THE MIDDLE STEP OF THE RUN. IN LONGER STEP RUNS WHERE MULITPLE POSTS ARE REQUIRED, THE MID-POSTS SHALL BE EQUALLY SPACED IN THE STEP RUN.
4. REINFORCING AND FOUNDATIONS FOR STEPS ARE SHOWN FOR REFERENCE ONLY: REFER TO STRUCTURAL DRAWINGS.
5. THE CONTRACTOR MUST ENGAGE A QUALIFIED STRUCTURAL ENGINEER IN THE STATE OF THE PROJECT FOR STRUCTURAL DESIGN.

CONCEPTUAL DETAIL FOR TYPICAL CONCRETE STAIRS WITH HANDRAIL AND CHEEK WALLS (DESIGNS BY OTHERS) — STRUCTURAL SCHEMATICS

Scale:NTS — SS1001

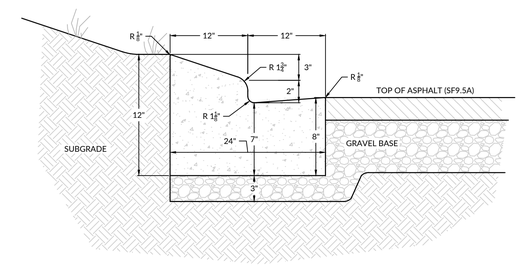


NOTES:

1. SOIL SUBGRADE UNDER THE #57 STONE SHALL BE MECHANICALLY COMPACTED PRIOR TO INSTALLATION.
2. GEOTEXTILE FABRIC SHALL BE A PERMEABLE GEOSYNTHETIC COMPRISED OF NON-BIODEGRADABLE TEXTILES.

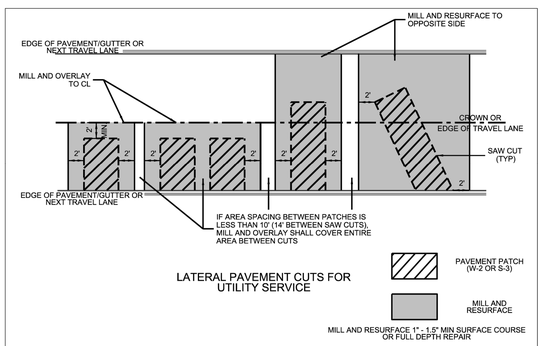
UTILITY YARD — SECTION

Scale: — DTL: 02

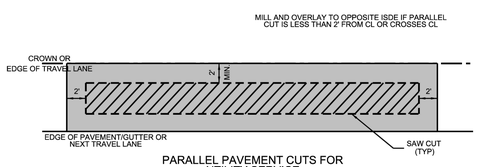


24" CONCRETE MOUNTABLE CURB & GUTTER — STREETS AND PARKING AREAS

Scale:NTS — C3057



LATERAL PAVEMENT CUTS FOR UTILITY SERVICE



PARALLEL PAVEMENT CUTS FOR UTILITY SERVICE

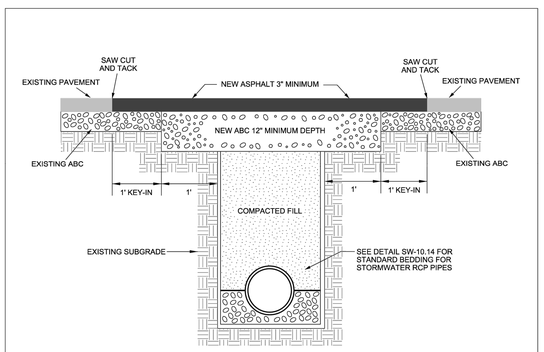
NOTES:

1. THE PAVEMENT EDGES SHALL BE DEFINED BY A STRAIGHT EDGE FORMED BY A MACHINED SAW CUT OR MILLING MACHINE
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT
3. THE FINAL 1" OF FILL SHALL CONSIST OF ABC MATERIAL COMPCATED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT
4. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED, COMPACTED THOROUGHLY AND ROLLED WITH A SMOOTH DRUM ROLLER TO LEVEL PATCH

SHEET 2 OF 2

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2023	NOT TO SCALE
	ASPHALT PAVEMENT PATCH AND RCP PIPE BACKFILL	
	T-10.05.2	



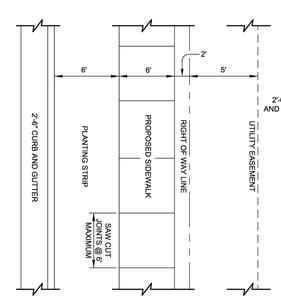
NOTES:

1. THE PAVEMENT EDGE SHALL BE DEFINED BY A STRAIGHT EDGE FORMED BY A MACHINED SAW CUT.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
3. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT. BITUMINOUS BASE OR BINDER MAY BE SUBSTITUTED IF APPROVED BY TRANSPORTATION DIRECTOR OR DESIGNEE.
4. THE ENTIRE THICKNESS/VERTICAL EDGE OF THE CUT SHALL BE TACKED.
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY AND ROLLED WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH, LEVEL PATCH.

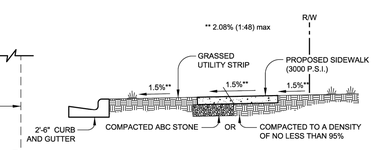
SHEET 1 OF 2

CITY OF RALEIGH
STANDARD DETAIL

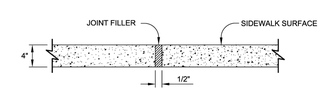
REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 08/2023	ASPHALT PAVEMENT PATCH AND RCP PIPE BACKFILL	
	T-10.05.1	



PLAN VIEW



TYPICAL SECTION



TRANSVERSE EXPANSION JOINT

NOTES:

1. TRANSVERSE EXPANSION JOINTS TO BE A MAXIMUM OF 50 FEET.
2. ALL CONCRETE TO BE 3000 PSI AND FINISHED WITH CURING COMPOUND.
3. A 6 INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS, AT STREET INJTERSECTIONS (ALONG THE LENGTH OF RADIUS CURB RETURNS), AND IN THE HANDICAP RAMPS.
4. COMPACTED ABC STONE MAY BE REQUIRED AS SUBGRADE AT THE DISCRESTION OF THE INSPECTOR
5. SURFACE SHALL BE FINISHED TO GRADE AND CROSS SECTION WITH A FLOAT, TROWEL SMOOTH AND FINISH WITH A BROOM
6. WHERE UTILITY BOXES/VAULTS MUST BE LOCATED IN THE SIDEWALK, THEY SHALL HAVE A MINIMUM 3" WIDE FRAME OF CONCRETE AROUND THEM

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 8/2020	NOT TO SCALE
DATE: 08/2023	CONCRETE SIDEWALK	
	T-30.01.1	

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SPENCER W. MERRIMAN
GA0804200
8/13/2026

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C9.02

SITE DETAILS

J:\2506\01-004-esse architects - hargrove ems station\CAD\drawing set\site plan\C9.00 SITE DETAILS.dwg - Thursday, August 13, 2026 9:15:59 AM - ABROWN

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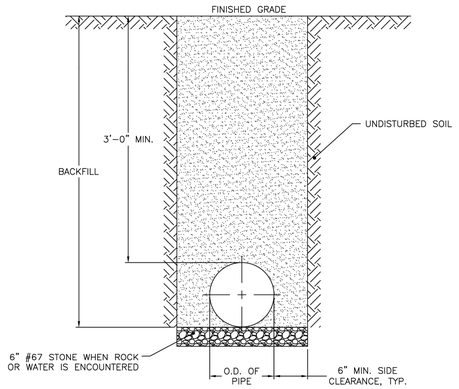
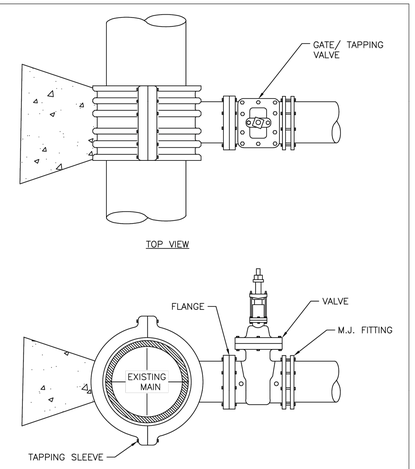


NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS.
5. ACHIEVE 95% COMPACTION IN BACKFILL.

CITY OF RALEIGH
STANDARD DETAIL

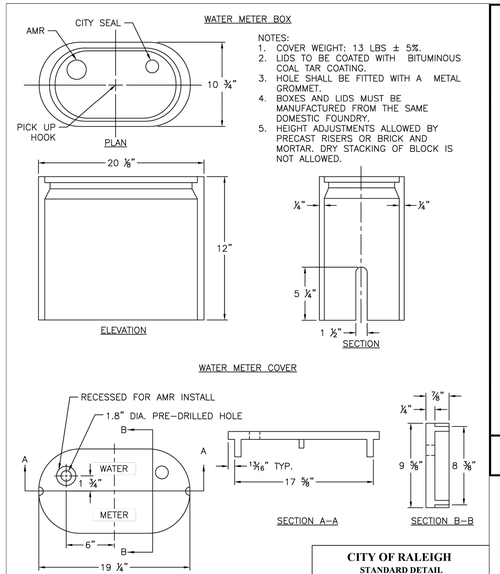
REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR DUCTILE IRON	
	W-3	



NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. SEE DETAIL W-10 & W-11 (REACTION BLOCK TABLES) FOR AREA OF CONCRETE REQUIRED.
3. 3,000 PSI SOLID CONCRETE SHALL BE USED AS FOOTING FOR DUCTILE IRON PIPE.
4. FULL CIRCUMFERENCE SLEEVE, STAINLESS STEEL MATERIAL REQUIRED.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	4"–24" STANDARD TAPPING SLEEVE AND VALVE ASSEMBLY	
	W-14	



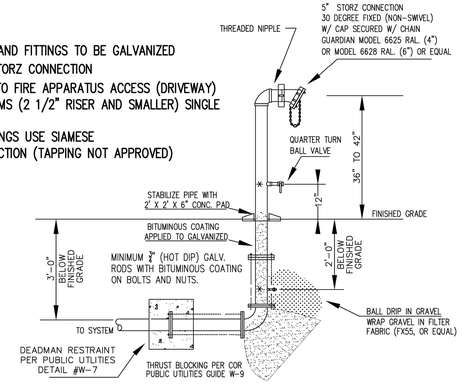
NOTES:
1. COVER WEIGHT: 13 LBS ± 5%.
2. LIDS TO BE COATED WITH BITUMINOUS COAL TAR COATING.
3. HOLE SHALL BE FITTED WITH A METAL GROMMET.
4. BOXES AND LIDS MUST BE MANUFACTURED FROM THE SAME DOMESTIC FOUNDRY.
5. HEIGHT ADJUSTMENTS ALLOWED BY PRECAST RISERS OR BRICK AND MORTAR. DRY STACKING OF BLOCK IS NOT ALLOWED.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	WATER METER BOX	
	W-25	

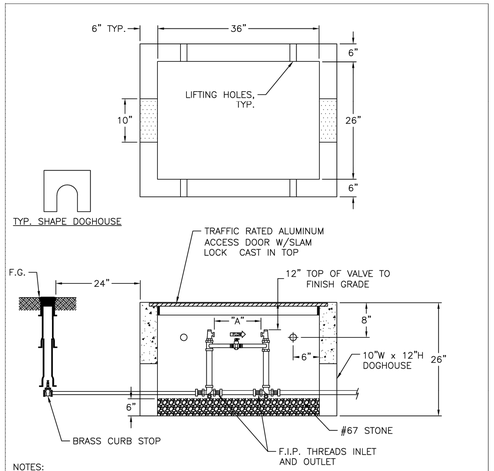
TYPICAL NOTES:

1)–ALL EXPOSED PIPING AND FITTINGS TO BE GALVANIZED WITH EXCEPTION OF STORZ CONNECTION
2)–40' MAX. FROM FDC TO FIRE APPARATUS ACCESS (DRIVEWAY)
3)–FOR NFPA 13R SYSTEMS (2 1/2" RISER AND SMALLER) SINGLE FDC
4)–FOR HIGH RISE BUILDINGS USE SIAMESE
5)–AN APPROVED CONNECTION (TAPPING NOT APPROVED)



CITY OF RALEIGH FIRE DEPARTMENT
FIRE PROTECTION DIVISION
310 WEST MARTIN ST. RALEIGH, NC 27602

DESCRIPTION:	REVISIONS:	DATE:	DRAWING NO.
YARD FDC DETAIL REQUIREMENTS	5–1–2017	5/1/06	FP–15



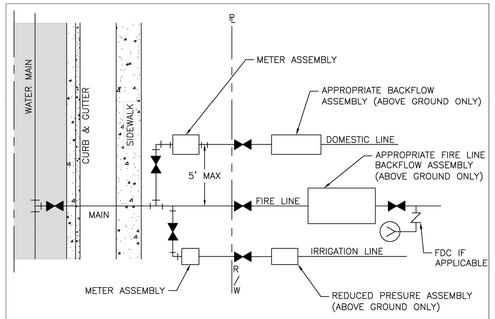
NOTES:
1. METER AS MANUFACTURED BY SENSUS OR NEPTUNE. METER TO BE PROVIDED BY RALEIGH WATER.
2. BACKFILL TAMPED IN 6" LIFTS.
3. REINFORCEMENT: #4 @ 6" O.C.E.W.
4. CONCRETE: 4,000 PSI @ 28 DAYS.
5. ALL RPZ BACKFLOW PREVENTION DEVICES MUST BE INSTALLED PRIOR TO METER BEING SET.
6. ALL COPPER SETTERS ARE TO HAVE A BALL TYPE SHUT OFF VALVE ON BOTH SIDES OF COPPER SETTER WITH HIGH RISE BYPASS THAT IS MANUFACTURED BY FORD, MUELLER, OR AY McDONALD (NO EXCEPTIONS).
7. HEIGHT ADJUSTMENTS ALLOWED BY PRECAST RISERS OR BRICK AND MORTAR. DRY STACKING OF BLOCK IS NOT ALLOWED.

	"A"
1 ½" METER	13 ¼"
2" METER	17 ¼"

** TRAFFIC RATED VAULT WALL THICKNESS

CITY OF RALEIGH
STANDARD DETAIL

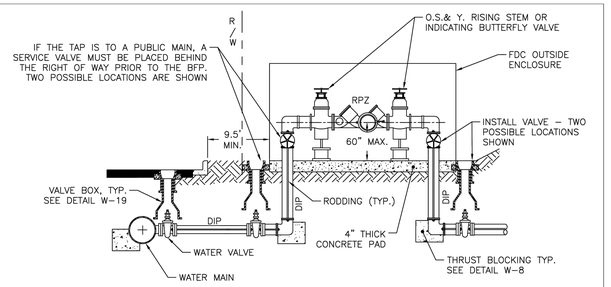
REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	TYPICAL 1 ½"–2" WATER METER BOX INSTALLATION	
	W-31	



NOTES:
1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW.
4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE CONTAINMENT BACKFLOW ASSEMBLY SHALL BE INSTALLED WITHIN 50 LINEAR PIPING FEET OF THE METER OR RIGHT–OF–WAY FOR FIRE SERVICE LINES.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF APPROVED MATERIALS AS LISTED IN NC PLUMBING CODE.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC	
	W-34	



NOTES:
1. ENCLOSURE MUST BE ASSE 1060 APPROVED AND HAVE ADEQUATE DRAINAGE.
2. CONTAINMENT RPZ/RPDA BACKFLOW ASSEMBLIES ARE TO BE INSTALLED WITHIN 50 LINEAR PIPING FEET OF THE METER OR RIGHT–OF–WAY FOR FIRE SERVICE LINES AND MEET INSTALLATION REQUIREMENTS AS LISTED IN APPENDIX A: GUIDELINES AND REQUIREMENTS OF THE CROSS CONNECTION AND HYDRANT METER PROGRAM.
3. NO VALVE IN THE EXISTING SYSTEM SHALL BE OPERATED WITHOUT FOLLOWING THE PROCEDURE OUTLINED IN THE RALEIGH WATER PUBLIC UTILITY DESIGN MANUAL. THE CONTRACTOR SHALL NOTIFY RALEIGH WATER'S DISTRIBUTION DIVISION AT 919–996–3245 TO REQUEST THE OPERATION OF ANY VALVE.
4. RESIDENTIAL LAWN IRRIGATION R.P. ASSEMBLIES THAT ARE REMOVED TO PREVENT FREEZING IN THE WINTER MONTHS MUST BE CAPPED OFF. ALL ABOVE GROUND ASSEMBLIES, EXCEPT RESIDENTIAL LAWN IRRIGATION ASSEMBLIES, MUST BE PROTECTED FROM FROST.
5. ALL CONTAINMENT BACKFLOW ASSEMBLIES MUST BE ASSE AND USC APPROVED.
6. STEEL RODS AND BOLTS SHALL BE ¾" 316 STAINLESS STEEL.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/19/2025	NOT TO SCALE
	REDUCED PRESSURE ZONE AND DOUBLE CHECK DETECTOR ASSEMBLY	
	W-36	

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RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SPENCER W. MERRIS
8/13/2026

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C9.10

WATER DETAILS

J:\2506\-0001-004-esse architects - hargrove ems station\CAD\drawing set\site plan\C9.1X UTILITY DETAILS.dwg - Thursday, August 13, 2026 9:16:15 AM - ABROWN

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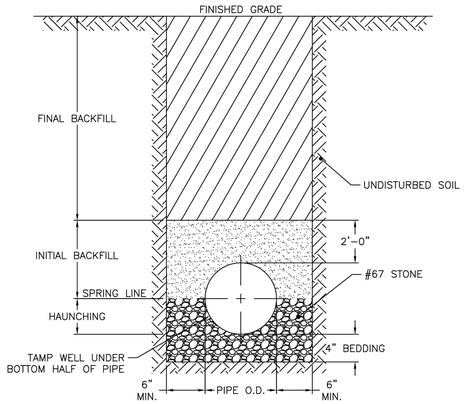
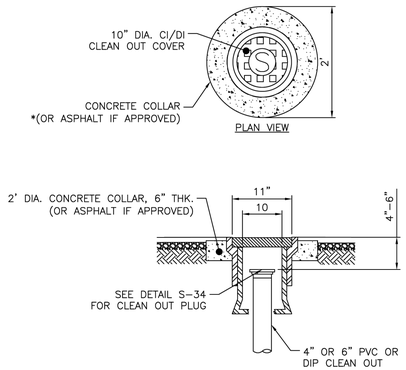


TYPICAL TRENCH BOTTOM DIMENSIONS FOR SDR 35 PVC GRAVITY PIPE

NOTES:
1. FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS, 4" OR LARGER, TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025 NOT TO SCALE
	TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN
	S-5

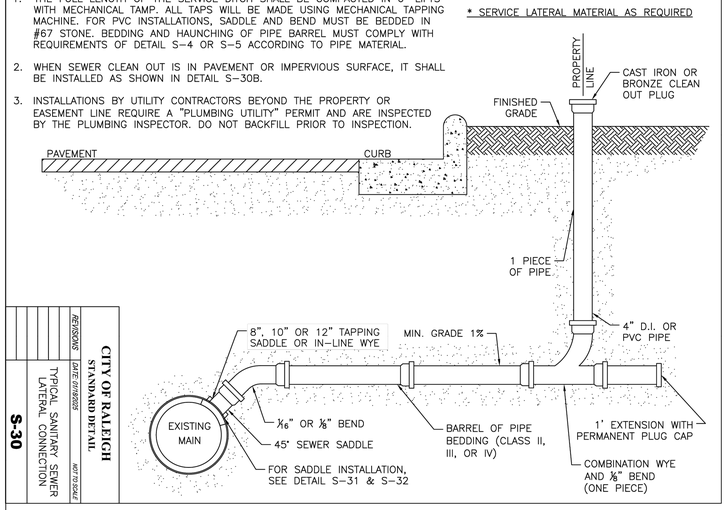


SECTION VIEW

CITY OF RALEIGH
STANDARD DETAIL

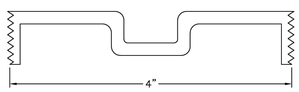
REVISIONS	DATE: 05/24/2024 NOT TO SCALE
	TRAFFIC RATED CLEAN OUT STRUCTURE
	S-30B

NOTES:
1. THE FULL LENGTH OF THE SERVICE DITCH SHALL BE COMPACTED IN 6" LIFTS WITH MECHANICAL TAMP. ALL TAPS WILL BE MADE USING MECHANICAL TAPPING MACHINE. FOR PVC INSTALLATIONS, SADDLE AND BEND MUST BE BEDDED IN #67 STONE. BEDDING AND HAUNCHING OF PIPE BARREL MUST COMPLY WITH REQUIREMENTS OF DETAIL S-4 OR S-5 ACCORDING TO PIPE MATERIAL.
2. WHEN SEWER CLEAN OUT IS IN PAVEMENT OR IMPERVIOUS SURFACE, IT SHALL BE INSTALLED AS SHOWN IN DETAIL S-30B.
3. INSTALLATIONS BY UTILITY CONTRACTORS BEYOND THE PROPERTY OR EASEMENT LINE REQUIRE A "PLUMBING UTILITY" PERMIT AND ARE INSPECTED BY THE PLUMBING INSPECTOR. DO NOT BACKFILL PRIOR TO INSPECTION.

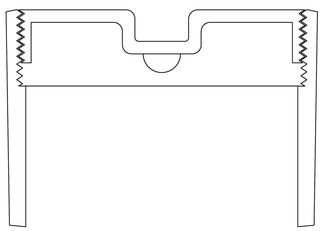


CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025 NOT TO SCALE
	TYPICAL SANITARY SEWER LATERAL CONNECTION
	S-30



STANDARD 4" BRONZE CLEANOUT PLUG

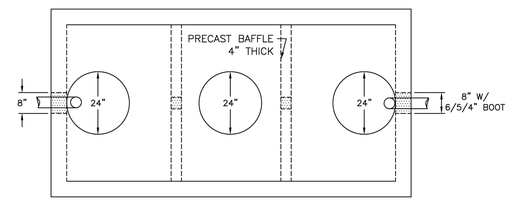


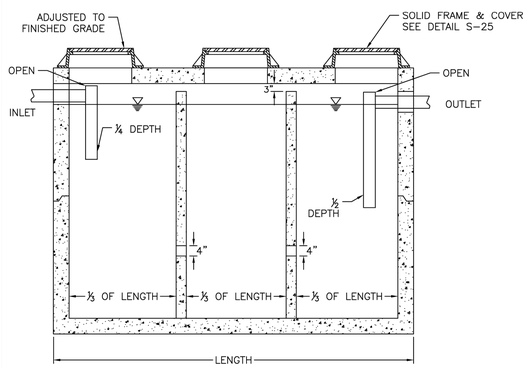
CLEANOUT FERRULE WITH PLUG

STYLES ACCEPTED:
INVERTED NUT
RAISED NUT

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025 NOT TO SCALE
	4" CLEANOUT PLUG
	S-34





NOTES:
1. REINFORCEMENT: H-20 BRIDGE LOADING (TRAFFIC RATED).
2. CONCRETE: 4,000 PSI @ 28 DAYS.
3. EARTHCOVER: 0' TO 5' MAX.
4. HDPE ALLOWED IN LIEU OF CONCRETE. MEET SAME LOADING REQUIREMENTS.

CITY OF RALEIGH
STANDARD DETAIL

REVISIONS	DATE: 01/18/2025 NOT TO SCALE
	1,000 GALLON OIL-WATER-SAND SEPARATOR
	S-40A

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P 919.742.5689
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RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SAMUEL W. MERRITT
8/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C9.11
SANITARY SEWER DETAILS

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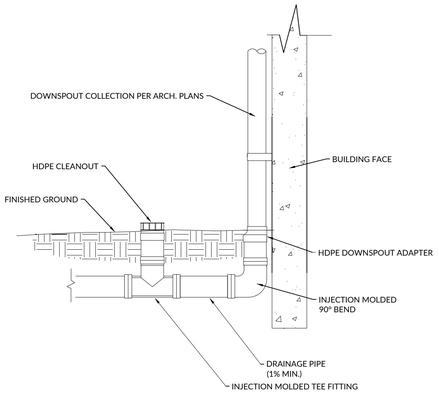
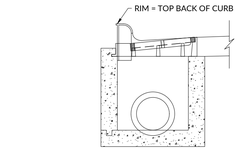
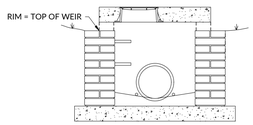


NOTES:
1. ALL DRAINAGE PIPES FROM DOWN SPOUTS SHALL BE 8" MINIMUM DIAMETER AND SLOPED AT A MINIMUM OF 1%, UNLESS OTHERWISE NOTED.
2. ALL DRAINAGE PIPES SHALL BE HDPE, UNLESS OTHERWISE NOTED.
3. CLEANOUTS IN PAVED AREAS SHALL BE IN ACCORDANCE WITH AUTHORITY HAVING JURISDICTION.
4. DOWN SPOUT COLLECTION LOCATIONS ARE SUBJECT TO MODIFICATIONS PER THE ARCHITECT AND MAY BE ADJUSTED IN THE FIELD IN COORDINATION WITH THE ARCHITECT AND ENGINEER PRIOR TO CONSTRUCTION.
5. CONNECTION TYPES AND DEPTHS RELATING TO BUILDING/FOOTERS MUST BE COORDINATED WITH ARCHITECT.

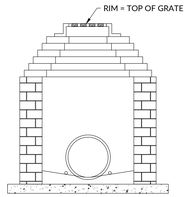
ROOF DRAIN CONNECTION — DRAINAGE MISC
Scale:NTS — C8012



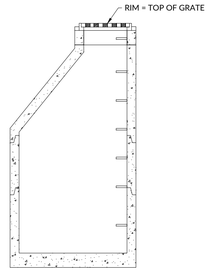
CATCH BASIN



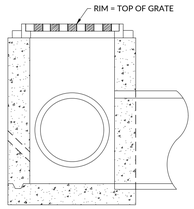
SLAB TOP YARD INLET



YARD INLET



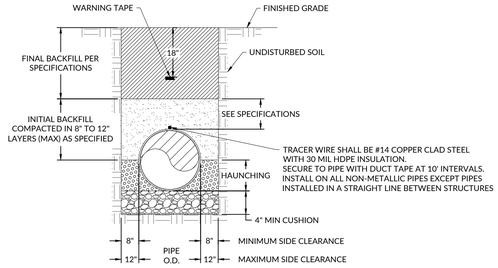
JUNCTION BOX



DROP INLET

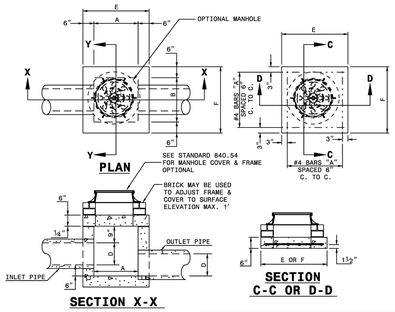
NOTES:
1. THIS DETAIL IS PROVIDED TO CLARIFY RIM ELEVATIONS ONLY.
2. REFER TO OTHER DETAILS AS APPROPRIATE FOR DETAILED REQUIREMENTS.
3. FOR RETROFIT PROJECTS, A RIM ELEVATION OF THE CATCH BASIN GRATE MAY BE REQUIRED.

STRUCTURE RIM ELEVATIONS — STORM DRAINAGE COLLECTION SYSTEMS
Scale:NTS — C8013



BEDDING REQUIRED FOR PVC AND HDPE

PIPE TRENCH FOR PVC AND HDPE — UTILITY TRENCHES
Scale:NTS — C5001



GENERAL NOTES:

CHAMFER ALL EXPOSED CORNERS 1".

USE CLASS "B" CONCRETE THROUGHOUT.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

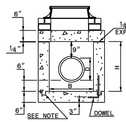
USE FORMS TO CONSTRUCT THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD NO. 840.00.

PROVIDE ALL JUNCTION BOXES OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.

ADJUST THE STEEL, CONCRETE AND BRICK MASONRY QUANTITIES TO INCLUDE THE ADDITION OF THE MANHOLE (I.E. DIAGONAL BARS SHORTENED AROUND OPENING IN TOP SLAB, ADDITIONAL VARIABLE HEIGHT BRICK MASONRY, OPENING IN TOP SLAB.)

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12'-0". STANDARD DRAWING 840.45 OR 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.



DIMENSIONS AND QUANTITIES FOR CONCRETE JUNCTION BOXES

DIMENSIONS OF BOX AND PIPE				REINFORCEMENT BARS "A"		TOP SLAB DIMENSIONS		CUBIC YARDS IN BOX			TOTAL QUANTITIES BOX AND SLABS		DEDUCTIONS FOR ONE PIPE CU.YDS.	
PIPE D	SPAN A	WIDTH B	HEIGHT H	NO.	LENGTH	E	F	TOP SLAB	BOTTOM SLAB	WALL/ FT. OF HT.	LBS. REINF	CU. YDS. MIN. "H"	C.S.	R.C.
12"	2'-0"	2'-0"	2'-3"	12	2'-9"	3'-0"	3'-0"	0.167	0.167	0.185	22	0.750	0.015	0.024
15"	2'-3"	2'-3"	2'-6"	12	3'-0"	3'-3"	3'-3"	0.196	0.196	0.204	24	0.902	0.023	0.036
18"	2'-6"	2'-6"	2'-9"	14	3'-3"	3'-6"	3'-6"	0.227	0.227	0.222	30	1.065	0.033	0.049
24"	3'-0"	3'-0"	3'-3"	16	3'-9"	4'-0"	4'-0"	0.296	0.296	0.259	40	1.434	0.059	0.085
30"	3'-6"	3'-6"	3'-9"	18	4'-3"	4'-6"	4'-6"	0.375	0.375	0.296	51	1.860	0.092	0.127
36"	4'-0"	4'-0"	4'-3"	20	4'-9"	5'-0"	5'-0"	0.463	0.463	0.333	64	2.341	0.132	0.178
42"	4'-6"	4'-6"	4'-9"	22	5'-3"	5'-6"	5'-6"	0.560	0.560	0.370	77	2.878	0.180	0.243
48"	5'-4"	5'-4"	5'-3"	26	6'-3"	6'-4"	6'-4"	0.743	0.743	0.407	111	3.623	0.235	0.317
54"	5'-10"	5'-10"	5'-9"	28	6'-7"	6'-10"	6'-10"	0.865	0.865	0.444	126	4.283	0.297	0.401
60"	6'-6"	6'-6"	6'-3"	30	7'-3"	7'-6"	7'-6"	1.042	1.042	0.481	145	5.090	0.367	0.495
66"	7'-1"	7'-1"	6'-9"	32	7'-10"	8'-1"	8'-1"	1.210	1.210	0.518	169	5.917	0.444	0.589

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-24

ROADWAY STANDARD DRAWING FOR
CONCRETE JUNCTION BOX
12" THRU 66" PIPE

SHEET 1 OF 1
840.31

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WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 056188 ENGINEER SPENCER W. MERRIS
8/13/2026

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: SM

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

C9.12

STORM DETAILS

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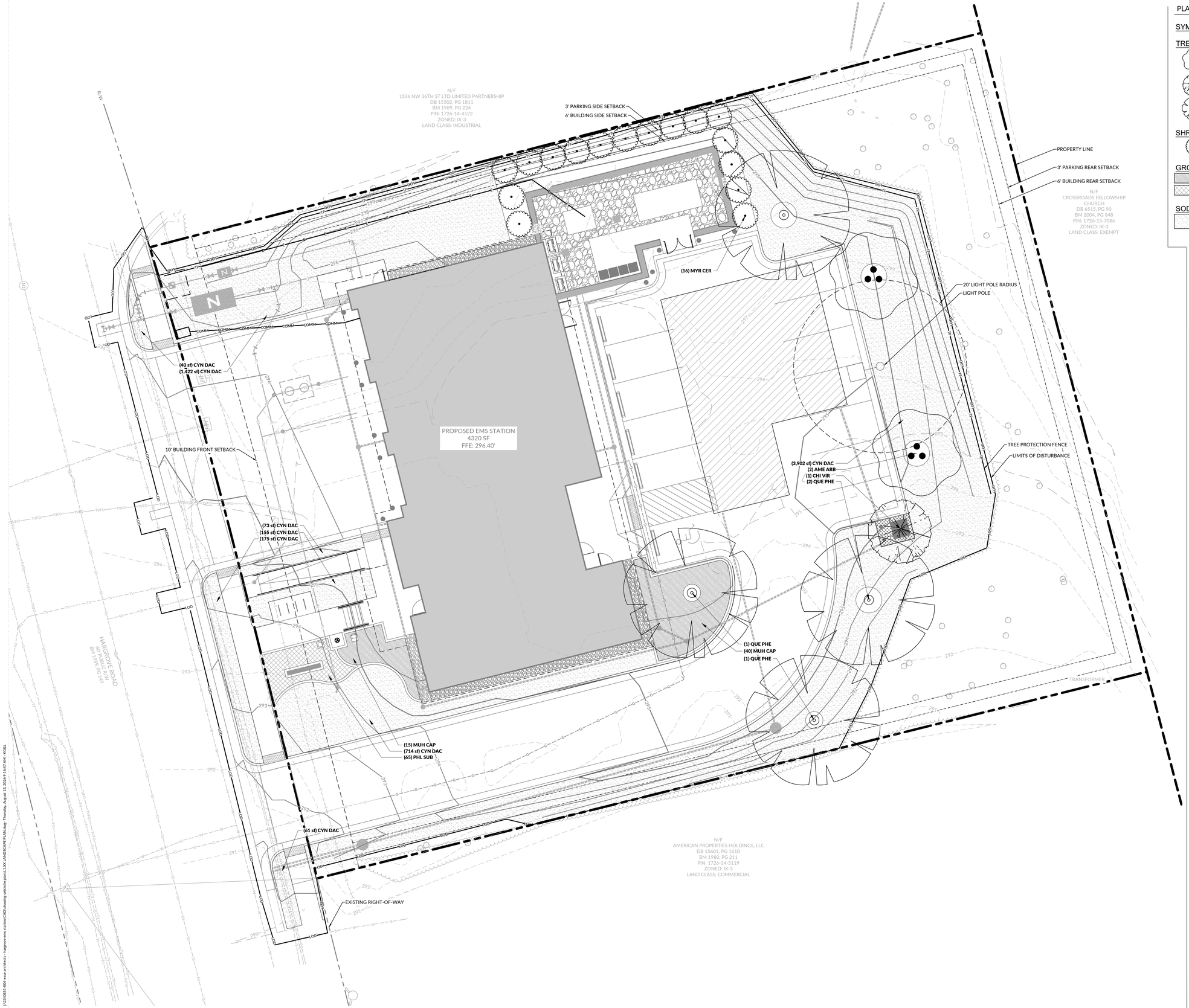

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME
TREES		
	AME ARB	AMELANCHIER ARBOREA DOWNY SERVICEBERRY
	CHI VIR	CHIONANTHUS VIRGINICUS WHITE FRINGETREE
	QUE PHE	QUERCUS PHELLOS 'HIGHTOWER' HIGHTOWER WILLOW OAK
SHRUBS		
	MYR CER	MYRICA CERIFERA WAX MYRTLE
GROUND COVERS		
	MUH CAP	MUHLENBERGIA CAPILLARIS PINK MUHLY GRASS
	PHL SUB	PHLOX SUBULATA CREEPING PHLOX
SOD/SEED		
	CYN DAC	CYNODON DACTYLON X TRANSVAALENSIS 'DT-1' TIFTUF™ BERMUDAGRASS

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RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
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WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL LANDSCAPE ARCHITECT 2455 KAITLYN GILL EIGHT

Signed by:
Kaitlyn Gill
SEAL

8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	MA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

L1.00

LANDSCAPE PLAN

J:\23-0085-006-esse architects - hargrove ems station\CAD\drawing sets\site plan\L1.XX LANDSCAPE PLAN.dwg - Thursday, August 13, 2026 9:16:47 AM - KGILL

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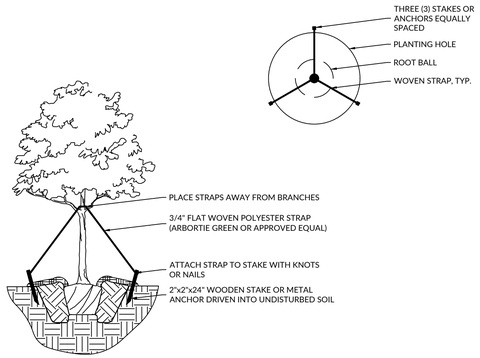
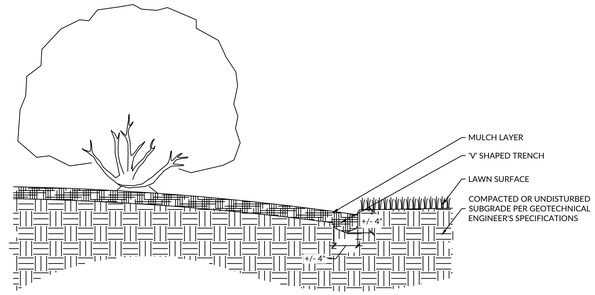
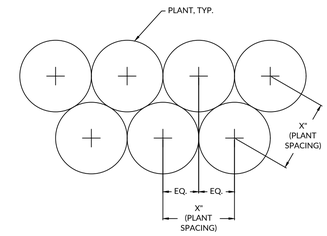


1 TREE STAKING SECTION
SCALE: NTS



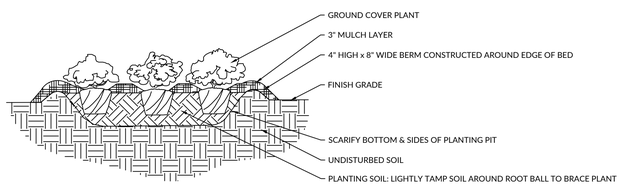
2 PLANTING BED SECTION
SCALE: NTS



NOTES:

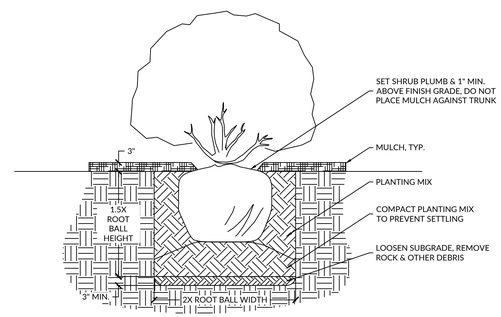
1. REFER TO PLANT SCHEDULE FOR SPACING REQUIREMENTS FOR EACH SPECIES.
2. PLANTS SHALL BE INSTALLED IN STRAIGHT AND PARALLEL ROWS FOLLOWING THIS PATTERN UNLESS OTHERWISE SHOWN ON DRAWINGS.

3 TYPICAL PLANT SPACING PLAN
SCALE: NTS



PLANTING NOTES:
1. SPLIT PLANT ROOTS WITH 2-3 EQUALLY-SPACED VERTICAL CUTS.

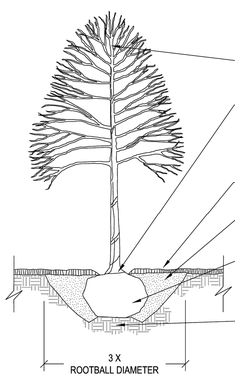
4 GROUNDCOVER PLANTING SECTION
SCALE: NTS



NOTES:

1. FOR CONTAINER PLANTS, SPLIT THE ROOT BALL WITH 4 EQUALLY SPACED VERTICAL CUTS & SCARIFY ROOT MASS PRIOR TO PLANTING.
2. FOR B&B PLANTS, REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM ROOT BALL.
3. A 3" HIGH x 8" WIDE BERM SHALL BE MADE AROUND THE ROOT BALL EDGE.
4. PLANTING AREAS WITH MULTIPLE SHRUBS ARE TO BE SIZED SO THAT THE OUTER EDGE OF PLANTING SOIL IS 8" MIN. FROM THE NEAREST SHRUB.
5. SHRUBS ARE TO BE LOCATED SUCH THAT MATURE CANOPY IS 5' MIN. FROM FIRE HYDRANTS AND 24" MIN. FROM CURB LINE.
6. SHRUBS ARE TO BE LOCATED WITH TRIANGULAR SPACING (SEE DETAIL) UNLESS OTHERWISE SHOWN ON THE PLANS.
7. PRUNE SHRUBS ONLY AS NEEDED TO REMOVE DEAD OR BROKEN BRANCHES.

5 SHRUB PLANTING SECTION
SCALE: NTS



CONTACT INFORMATION:
CITY OF RALEIGH PARKS, RECREATION AND CULTURAL RESOURCES DEPARTMENT URBAN FORESTER:
TREES@RALEIGHNC.GOV
WWW.RALEIGHNC.GOV

NOTES:
1. TREES MUST MEET THE TREE QUALITY STANDARDS IN CH. 2 OF THE CITY TREE MANUAL.
2. CONTRACTOR IS RESPONSIBLE FOR ADEQUATE DRAINAGE OF ALL PLANTING PITS. (POSITIVE DRAINAGE AWAY FROM PIT)
3. TREES SHALL BE PLANTED BETWEEN OCTOBER 1ST AND APRIL 30TH.
4. A TREE IMPACT PERMIT IS REQUIRED.
5. ELECTRICAL OUTLETS AND OTHER UTILITIES ARE PROHIBITED IN THE PLANTING AREA IMMEDIATELY SURROUNDING THE TREE.
6. IF STAKING IN ACCORDANCE WITH THE CITY TREE MANUAL, THE STAKING MUST BE REMOVED WITHIN ONE YEAR.
7. TREES WILL HAVE A MINIMUM 1 YEAR WARRANTY AFTER THE INITIAL PLANTING IS APPROVED BY THE CITY.

CITY OF RALEIGH STANDARD DETAIL		
REVISIONS	DATE: 8/2020	NOT TO SCALE
10/2019	TREE PLANTING DETAIL	
	TPP-03	

PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	HEIGHT
TREES							
	AME ARB	2	AMELANCHIER ARBOREA NATIVE	DOWNY SERVICEBERRY	B&B	2" CAL MIN	6` MIN
	CHI VIR	1	CHIONANTHUS VIRGINICUS NATVE	WHITE FRINGETREE	B&B	2" CAL MIN	6` MIN
	QUE PHE	4	QUERCUS PHELLOS 'HIGHTOWER' NATIVE	HIGHTOWER WILLOW OAK	B&B	3" CAL MIN	8` MIN

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT
SHRUBS						
	MYR CER	16	MYRICA CERIFERA NATIVE	WAX MYRTLE	3 GAL	

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
GROUND COVERS						
	MUH CAP	55	MUHLENBERGIA CAPILLARIS NATIVE	PINK MUHLY GRASS	1 GAL	36" o.c.
	PHL SUB	65	PHLOX SUBULATA NATIVE	CREEPING PHLOX	1 GAL	18" o.c.
SOD/SEED						
	CYN DAC	6,542 SF	CYNODON DACTYLON X TRANSVAALENSIS 'DT-1'	TIFTUF™ BERMUDAGRASS	SOD	

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.essearchitects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GRERLIN ROAD, SUITE 300,
RALEIGH, NC 27603
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 2455 KATHERINE ANNE GILL
SIGNATURE
8/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	KG
CHECKED BY:	MA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

L1.01

LANDSCAPE DETAILS

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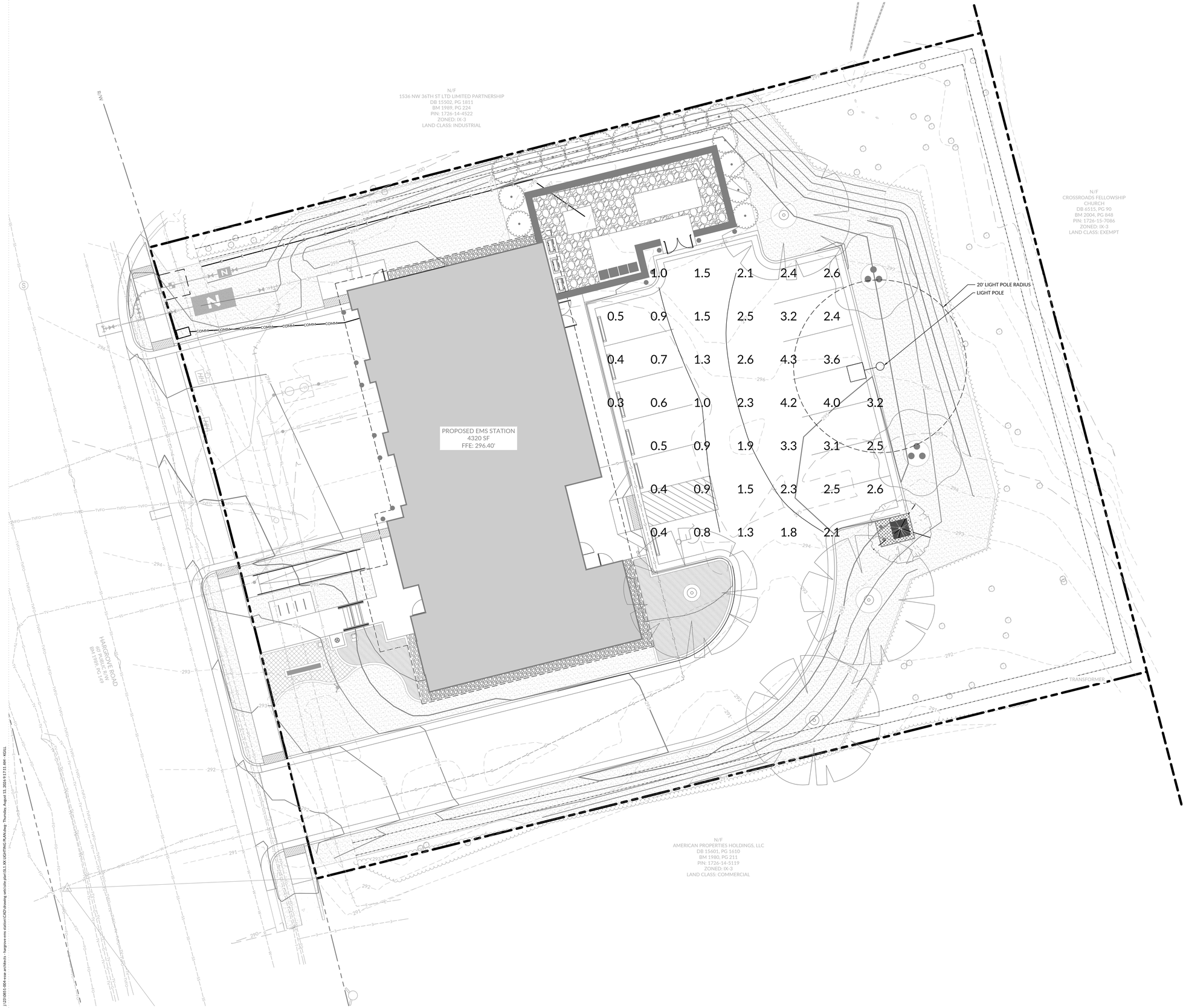

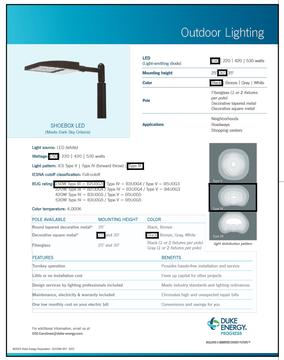

PARKING LOT PHOTOMETRIC SCHEDULE	
AVERAGE FOOT-CANDLES	1.89
MAXIMUM FOOT-CANDLES	4.3
MINIMUM FOOT-CANDLES	0.3
MINIMUM TO MAXIMUM FC RATIO	0.07
MAXIMUM TO MINIMUM FC RATIO	14.33
AVERAGE TO MINIMUM FC RATIO	6.58

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
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WAKE COUNTY MINI CITY EMS STATION

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RALEIGH, NC
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137 SOUTH WILLMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
701 GREENS IN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL LANDSCAPE ARCHITECT 2455 KEITH HOLL

Signed by:
Keith Holl
SEAL

8/13/2026

SCALE: 1 inch = 10 ft.

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: KG
CHECKED BY: MA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

SL1.00

LIGHTING PLAN

J:\25\0051-006-esse architects - hargrove ems station\CAD\drawing sets\site plan\SL1.00 LIGHTING PLAN.dwg - Thursday, August 13, 2026 9:17:11 AM - KGILL

GENERAL STRUCTURAL NOTES

GENERAL

THESE DRAWINGS, AS INSTRUMENTS OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF LYSAGHT & ASSOCIATES, P.A., FOR USE SOLELY WITH THIS PROJECT AND SHALL NOT BE REPRODUCED FOR OTHER PURPOSES.

THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS ON THESE DRAWINGS IS THE PROJECT STRUCTURAL ENGINEER-OF-RECORD (SER) WHO BEARS LEGAL RESPONSIBILITY FOR THE PERFORMANCE OF THE STRUCTURAL FRAMING RELATING TO PUBLIC HEALTH, SAFETY, AND WELFARE. NO OTHER PARTY, WHETHER OR NOT A PROFESSIONAL ENGINEER, MAY COMPLETE, CORRECT, REVISE, DELETE, OR ADD TO THESE CONSTRUCTION DOCUMENTS OR PERFORM INSPECTIONS OF THE WORK WITHOUT THE WRITTEN PERMISSION OF THE SER.

USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH JOB SPECIFICATIONS, AND OTHER DRAWINGS.

SECTIONS AND DETAILS SHOWN SHALL BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.

ALL NON-STRUCTURAL ELEMENTS INDICATED ON THE STRUCTURAL DRAWINGS HAVE BEEN SHOWN IN GENERAL RELATIONSHIP TO THE STRUCTURAL ELEMENTS. THEY SHALL NOT BE ASSUMED TO BE ACCURATE AND REFERENCE MUST BE MADE TO THE APPROPRIATE CONSULTANT(S) PLANS AND SPECIFICATIONS.

CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND TAKE ALL NECESSARY FIELD MEASUREMENTS.

THE STRUCTURE SHOWN ON THESE DRAWINGS IS STRUCTURALLY SOUND ONLY IN ITS COMPLETED FORM. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BRACING TO STABILIZE THE BUILDING DURING CONSTRUCTION.

SCOPE OF STRUCTURAL ENGINEERING SERVICES

LYSAGHT & ASSOCIATES, P.A. HAS PERFORMED THE STRUCTURAL DESIGN AND PREPARED THE STRUCTURAL WORKING DRAWINGS FOR THIS PROJECT.

PORTIONS OF THE STRUCTURAL DESIGN (AS NOTED ON THE DRAWINGS AND IN THESE NOTES) ARE THE RESPONSIBILITY OF THE MATERIAL SUPPLIERS. SHOP DRAWINGS FOR EACH OF THE STRUCTURAL COMPONENTS MUST BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION AND ERECTION.

THE STRUCTURAL ENGINEER IS RESPONSIBLE FOR THE DESIGN OF THE PRIMARY STRUCTURAL SYSTEM, EXCEPT FOR THE COMPONENTS NOTED ABOVE. RESPONSIBILITY FOR ANY SECONDARY STRUCTURAL AND NON-STRUCTURAL SYSTEMS NOT SHOWN ON THE STRUCTURAL PLANS RESTS WITH SOMEONE OTHER THAN THE STRUCTURAL ENGINEER.

THE STRUCTURAL ENGINEER HAS NOT DONE A SUBSURFACE INVESTIGATION (HE IS NOT A SOILS SPECIALIST). THE FOUNDATION DESIGN IS BASED UPON INFORMATION AND RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT PROVIDED BY TERRACON AS SHOWN IN THE "FOUNDATION" STRUCTURAL NOTES.

THE STRUCTURAL ENGINEER HAS DESIGNED THE STRUCTURAL SLAB CONSTRUCTION FOR CONCENTRATED LOADS DUE TO VEHICULAR OR FORKLIFT TRAFFIC. THE SLAB IS DESIGNED FOR UNIFORM AND CONCENTRATED LOADING AS NOTED IN THE "DESIGN LOADS" PORTION OF THE STRUCTURAL NOTES.

THE STRUCTURAL ENGINEER HAS NOT DESIGNED THE STRUCTURE FOR SPECIFIC VIBRATION LIMITS. VIBRATION LIMITATIONS ARE BASED ON STANDARD ENGINEERING PRACTICES AND PAST EXPERIENCE WITH SIMILAR CONSTRUCTION.

THE STRUCTURAL ENGINEER HAS NOT DESIGNED THE STRUCTURE TO SUPPORT DYNAMIC LOADS FROM VIBRATING MACHINERY OR EQUIPMENT. ALL VIBRATING EQUIPMENT AND MACHINERY MUST BE ISOLATED FROM THE STRUCTURE.

THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR, AND WILL NOT HAVE CONTROL OF, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE CONSTRUCTION WORK; NOR WILL HE BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

CODE

NORTH CAROLINA STATE BUILDING CODE - 2018 EDITION

BUILDING OCCUPANCY CATEGORY	IV

DESIGN LOADS - EMS BUILDING

ROOF DEAD LOAD	28	PSF
ROOF LIVE LOAD	20	PSF
FLOOR LIVE LOAD AT 4" SLAB	100	PSF
FLOOR LIVE LOAD AT 6" SLAB	250	PSF + AXLE LOAD
MAX AXLE LOAD	12	KIPS
SNOW LOAD DATA :		
GROUND SNOW LOAD	15	PSF
SNOW EXPOSURE FACTOR	1.0	
SNOW LOAD IMPORTANCE FACTOR	1.2	
THERMAL FACTOR	1.1	
ROOF SLOPE FACTOR	0.87	
PITCHED ROOF SNOW LOAD	12.1	PSF
UNBALANCED SNOW LOAD	PER TRUSS LOADING DIAGRAM	
WIND LOAD DATA :		
ULTIMATE WIND SPEED (ASCE 7-10)	120	MPH
NOMINAL WIND SPEED (ASD)	93	MPH
WIND IMPORTANCE FACTOR	1.0	
WIND EXPOSURE	B	
INTERNAL PRESSURE COEFFICIENTS	+0.18, -0.18	
WIND BASE SHEAR (x-x DIRECTION)(ASD)	11.2	KIPS
WIND BASE SHEAR (y-y DIRECTION)(ASD)	22.7	KIPS
WIND PRESSURE FOR COMPONENTS / CLADDING PER TABLES SEE SHEET S002 FOR LOADING TABLES		
SEISMIC LOAD DATA :		
SEISMIC IMPORTANCE FACTOR, I	1.50	
MAPPED SPECTRAL RESPONSE ACCELERATION, Ss	0.150	
MAPPED SPECTRAL RESPONSE ACCELERATION, S1	0.075	
SITE CLASS	D	
SPECTRAL RESPONSE COEFFICIENT, SDS	0.160	
SPECTRAL RESPONSE COEFFICIENT, SD1	0.121	
SEISMIC DESIGN CATEGORY	C	
BASIC STRUCTURAL SYSTEM	BEARING WALL SYSTEM	
SEISMIC RESISTING SYSTEM	INTERMEDIATE REINF. MASONRY SHEAR WALLS	
RESPONSE MODIFICATION COEFFICIENT, R	3.50	
SYSTEM OVERSTRENGTH FACTOR, Omega	2.50	
DEFLECTION AMPLIFICATION FACTOR, Cd	2.25	
SEISMIC RESPONSE COEFFICIENT, Cs	0.069	
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE	
SEISMIC BASE SHEAR (ASD)	32.7	KIPS
LATERAL DESIGN CONTROL: LONGITUDINAL	SEISMIC	
TRANSVERSE	WIND	

FOUNDATIONS

REFER TO FROEHLING & ROBERTSON, INC. GEOTECHNICAL ENGINEERING REPORT PROJECT NO. 66D-0150 DATED FEBRUARY 13, 2026, FOR ADDITIONAL SUBSURFACE INFORMATION AND RECOMMENDATIONS.

ALL FOOTINGS SHALL REST ON SOIL CAPABLE OF SAFELY SUPPORTING 3000 PSF. CONTACT STRUCTURAL ENGINEER IF UNSATISFACTORY SUBSURFACE CONDITIONS ARE ENCOUNTERED.

FOOTINGS SHALL BE CARRIED TO A LOWER ELEVATION THAN THOSE INDICATED ON THESE DRAWINGS IF NECESSARY TO REACH FIRM UNDISTURBED SOIL.

THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 24" BELOW FINISHED GRADE UNLESS NOTED OTHERWISE.

SLAB ON GRADE SHALL BE FOUNDED ON STABLE NATURAL SOIL OR CONTROLLED COMPACTED FILL. THE MINIMUM BEARING CAPACITY SHALL BE 3000 PSF.

ALL STRUCTURAL FILL SHALL BE PLACED IN 8" MAXIMUM LOOSE LIFTS FOR HEAVY SELF-PROPELLED COMPACTION EQUIPMENT AND 6" MAXIMUM LOOSE LIFTS FOR HAND GUIDED COMPACTION EQUIPMENT. STRCUTRAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM D-698 (STANDARD PROCTOR METHOD). THIS REQUIREMENT SHOULD BE INCREASED TO 98 PERCENT OF ASTM D-698 IN THE FINAL FOOT BENEATH FOOTINGS, FLOOR SLABS, AND PAVEMENTS.

STRUCTURAL FILL SHALL BE PLACED WITH A WATER CONTENT RANGE WITHIN ±3% OF OPTIMUM FOR FINE GRAINED SOILS WITH A PLASTICITY INDEX (PI)≤30, BETWEEN O AND +3% OF OPTIMUM FOR FINE GRAINED SOILS WITH A (PI)>30, WITHIN ±3% OF OPTIMUM FOR COARSE GRAINED SOILS (SM, SC), AND WITHIN ±5% OF OPTIMUM FOR COARSE GRAINED SAND (SP, SW).

THE RETAINING WALL FOUNDATION DESIGN IS BASED UPON AN ALLOWABLE BEARING PRESSURE AND SKIN FRICTION OF THE NATIVE SOILS AND THE UNIT WEIGHT AND INTERNAL FRICTION ANGLE OF RETAINING WALL BACKFILL MATERIAL AS SHOWN ON THE CONCRETE RETAINING WALL SECTIONS AND NOTES. THESE VALUES HAVE BEEN COORDINATED WITH FIELD TESTING BY TERRACON, REFER TO PROJECT GEOTECHNICAL REPORT REFERENCED ABOVE. ALLOWABLE BEARING PRESSURE OF SOILS BELOW RETAINING WALLS AND INTERNAL FRICTION ANGLE AND UNIT WEIGHT OF BACKFILL SOILS SHALL BE VERIFIED BY SPECIAL INSPECTOR PRIOR TO PLACEMENT OF FOUNDATION CONCRETE AND BACKFILLING. IF PROBLEMS ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER SHOULD BE RETAINED TO EVALUATE THE CONDITIONS.

CONCRETE

CONCRETE SHALL BE PROPORTIONED, MIXED AND PLACED IN ACCORDANCE WITH ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS". ANY ADMIXTURES MUST BE APPROVED BY THE STRUCTURAL ENGINEER.

CONCRETE SHALL BE SPECIFIED AND SUPPLIED TO MEET REQUIREMENTS FOR LOW CARBON CONCRETE. REFER TO SPECIFICATIONS FOR PERFORMANCE CRITERIA AND SUBMITTAL REQUIREMENTS.

CONCRETE REINFORCING SHALL HAVE THE FOLLOWING MINIMUM PROTECTIVE COVER:		
CONCRETE POURED ON EARTH OR GROUND	3	IN
CONCRETE EXPOSED TO EARTH OR WEATHER		
#6 THROUGH #18 REBAR	2	IN
#5 BAR AND SMALLER	1-1/2	IN

ADMIXTURES CONTAINING CHLORIDE SALTS ARE NOT PERMITTED.

MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 3000 PSI. USE NORMAL WEIGHT CONCRETE FOR FOOTINGS AND SLABS ON GRADE.

CONCRETE EXPOSED TO EXTERIOR CONDITIONS SHALL BE AIR-ENTRAINED WITH A TOTAL AIR CONTENT OF 6 PERCENT (+/- 1.5%).

DO NOT CAST CONCRETE IN WATER OR ON FROZEN GROUND. FOR SLABS ON GRADE, LIGHTLY DAMPEN THE SUBGRADE BEFORE PLACING CONCRETE TO PREVENT THE SUBGRADE FROM ABSORBING WATER FROM THE CONCRETE MIX. APPLY WATER AT NEARLY THE SAME RATE IT SOAKS INTO THE SUBGRADE SURFACE.

CRACK CONTROL JOINTS SHALL BE PLACED IN SLABS ON GRADE IN SQUARE PATTERNS AT A MAXIMUM SPACING OF 12' FOR 4" SLABS AND 18' FOR 6" SLABS UNLESS NOTED OTHERWISE. PLACE CONTROL JOINTS TO AVOID REENTRANT CORNERS. MAKE SAWCUTS TO FORM WEAKENED PLANE CONTROL JOINTS AS SOON AFTER CONCRETE PLACEMENT AS POSSIBLE.

START CURING FOR SLABS ON GRADE AS SOON AS THE FINISHERS ARE DONE. APPLY THE CURING COMPOUND IN TWO COATS AT RIGHT ANGLES TO EACH OTHER AND NOT MORE THAN 300 SQUARE FEET PER GALLON, ABOUT 15 MINUTES APART. DURING HOT WEATHER, USE A FOG SPRAY TO KEEP THE SURFACE DAMP BEFORE APPLYING A CURING COMPOUND.

CONCRETE DURABILITY REQUIREMENTS

USE	WEIGHT	EPOSURE CATEGORY	MAX W/CM	MIN F_c' (PSI)	MAX AGG SIZE (IN)	AIR CONTENT
FOOTINGS	NORMAL	F0/S0/W0/C1	.58	3,000	1"	N/A
INT SOG	NORMAL	F0/S0/W0/C1	.58	4,000	1"	N/A

REINFORCING STEEL

ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH THE LATEST "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315.

REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60. CLEAR CONCRETE COVER OVER BARS SHALL BE 3" FOR FOOTINGS CAST AGAINST GROUND.

LIGHT DUTY SLABS ON GRADE SHALL BE REINFORCED WITH 6 x 6 W 1.4 x W 1.4 W.W.F. SUPPORT THE MESH AS REQUIRED TO INSURE THAT IT WILL BE LOCATED IN THE UPPER THIRD OF THE SLAB THICKNESS. HEAVY DUTY SLABS ON GRADE SHALL BE REINFORCED ACCORDING PER .

PROVIDE CORNER BARS OF EQUAL11/S301ND SPACING TO HORIZONTAL REINFORCING FULLY LAPPED ON EACH END AT ALL FOOTING STEPS AND CORNERS.

LAP ALL SPLICES IN CAST-IN-PLACE CONCRETE PER .

LAP ALL SPLICES IN MASONRY 48 BAR DIAMETERS MI8/S302 UNLESS NOTED OTHERWISE.

PROVIDE DOWELS IN WALL FOOTINGS EQUIVALENT IN SIZE AND NUMBER TO VERTICAL STEEL PER SECTIONS, FULLY EMBED DOWELS INTO FOOTING AND LAP WITH WALL REBAR UNLESS NOTED OTHERWISE.

SUBMIT SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

CONCRETE MASONRY

CONCRETE MASONRY UNITS SHALL BE ERECTED AS LOAD BEARING CONCRETE MASONRY. COMPLY WITH THE REQUIREMENTS OF ACI 530.1 / ASCE 6 / TMS 602 SPECIFICATION FOR MASONRY STRUCTURES.

CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM SPECIFICATIONS FOR HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS (ASTM C90, ASA A79.1). MORTAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM STANDARD SPECIFICATIONS FOR MORTAR FOR UNIT MASONRY (ASTM C270), TYPE "M" OR "S". THE MINIMUM NET COMPRESSIVE STRENGTH OF MASONRY UNITS SHALL BE 2000 PSI (f'm = 2000 PSI FOR MASONRY SYSTEM).

ALL GROUT USED TO FILL REINFORCED MASONRY CAVITIES AND SHOWN AT OTHER LOCATIONS ON THE PLANS SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.

PROVIDE HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. IN ALL CMU WALLS UNLESS NOTED OTHERWISE ON THE DRAWINGS. USE LADDER TYPE DUR-O-WALL REINFORCEMENT, HOT DIP GALVANIZED AFTER FABRICATION. LONGITUDINAL WIRES SHALL BE A MINIMUM OF (2) NO. 9 GAGE. LOCATE JOINT REINFORCEMENT IN FIRST AND SECOND BED JOINTS, 8" APART IMMEDIATELY ABOVE LINTELS AND BELOW SILLS AT OPENINGS. REINFORCEMENT SHALL NOT EXTEND THROUGH VERTICAL MASONRY CONTROL JOINTS.

ALL STEEL BEARING SHALL BE ON A BOND BEAM OR SOLID BLOCK.

WHERE INTERIOR CONCRETE MASONRY PARTITIONS MEET OTHER INTERIOR PARTITIONS OR EXTERIOR WALLS, PROVIDE A CONTROL JOINT WITH METAL STRAP ANCHORS BETWEEN WALLS.

PROVIDE BOND BEAMS AT THE TOP OF MASONRY ELEVATIONS AS SHOWN ON THE DRAWINGS. BOND BEAMS TO HAVE (2) #5 BARS CONTINUOUS UNLESS OTHERWISE NOTED. WHERE THE BOND BEAM IS INTERSECTED BY A CONTROL JOINT, CHANGE THE BARS TO SMOOTH ROUND BARS AND GREASE ONE END SO THAT LATERAL MOVEMENT WILL NOT BE RESTRAINED.

BACKFILLING AGAINST MASONRY WALLS SHALL NOT BE PERMITTED UNTIL SUFFICIENT LATERAL SUPPORT IS PROVIDED.

MASONRY WALLS ARE TO BE LATERALLY BRACED DURING CONSTRUCTION IN ACCORDANCE WITH "STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION" BY THE COUNCIL FOR MASONRY WALL BRACING AND THE MASON CONTRACTORS ASSOCIATION OF AMERICA. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL PERMANENT SUPPORTING ELEMENTS OF THE STRUCTURE ARE IN PLACE.

REFER TO PLANS FOR LOCATIONS OF MASONRY CONTROL JOINTS. THE FOLLOWING GENERAL GUIDELINES SHALL BE USED TO LOCATE CONTROL JOINTS:

1. THE MAXIMUM HORIZONTAL SPACING BETWEEN VERTICAL CONTROL JOINTS IS:
   - A. EXTERIOR WALL - 20'-0"
   - B. INTERIOR WALL - 30'-0"
   - C. DISTANCE FROM CORNERS - 10'-0"
2. MASONRY CONTROL JOINTS SHOULD BE PLACED AT THE FOLLOWING TYPICAL LOCATIONS:
   - A. CHANGES IN WALL HEIGHT OR THICKNESS.
   - B. AT CONSTRUCTION JOINTS IN FOUNDATION, IN ROOF, AND IN FLOORS.
   - C. AT CHASES AND RECESSES FOR PIPING, COLUMNS, FIXTURES, ETC.
   - D. AT ABUTMENT OF WALL AND COLUMNS.
   - E. AT RETURN ANGLES IN "L", "T" AND "U" SHAPED STRUCTURES.
   - F. AT ONE OR BOTH SIDES OF WALL OPENINGS. (CONTROL JOINT TO BE PLACED NEAR THE OPENING, BEYOND THE END OF THE LINTEL, NOT AT THE EDGE OF THE OPENING).

STRUCTURAL STEEL

FABRICATE AND ERECT ALL STRUCTURAL STEEL IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR TRUCTURAL STEEL BUILDINGS (ANSI/AISC 360-10)".

STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF RUST-INHIBITIVE PAINT. STEEL COLUMNS BELOW GRADE THAT ARE NOT ENCASED IN CONCRETE SHALL BE FIELD PAINTED WITH A WATERPROOF MASTIC COMPOUND TO PREVENT CORROSION.

ALL STRUCTURAL STEEL LINTELS FOR CONCRETE MASONRY SUPPORT, LOOSE ANGLE LINTELS FOR BRICK MASONRY VENEER SUPPORT, AND MISCELLANEOUS STRUCTURAL STEEL EXPOSED TO EXTERIOR CONDITIONS SHALL BE HOT DIP GALVANIZED.

THE STEEL USED SHALL HAVE THE FOLLOWING MINIMUM YIELD STRESS:

WIDE FLANGE SHAPES ('W' SHAPES)	50 KSI (A992)
CHANNELS, ANGLES, PLATES, MISC. SHAPES	36 KSI (A36)
HSS TUBE SHAPES	46 KSI (A500, B)

USE 3/4" DIAMETER A-325N BOLTS FOR ALL STEEL TO STEEL CONNECTIONS U.N.O. BOLTS SHALL BE TIGHTENED TO THE SNUG TIGHT CONDITION UNLESS NOTED OTHERWISE. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT.

USE F1554 (GRADE 36) BOLTS FOR ALL ANCHOR BOLTS U.N.O. HEADED WELD STUDS SHALL BE MADE OF MATERIAL CONFORMING TO ASTM A108. USE E-70 ELECTRODES FOR ALL SHOP AND FIELD WELDING.

THE STEEL SUPPLIER SHALL DESIGN ALL STEEL STAIRS AND LADDERS IN ACCORDANCE WITH THE N.C. STATE BUILDING CODE. STAIR SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA.

FOR MISCELLANEOUS STEEL NOT SHOWN ON THESE DRAWINGS, SEE ARCHITECTURAL AND OTHER ENGINEERING DRAWINGS.

CONNECTIONS BETWEEN STRUCTURAL STEEL MEMBERS SHALL BE AS SHOWN ON STRUCTURAL DRAWING DETAILS. ALTERNATE CONNECTION DETAILS MUST BE APPROVED IN WRITING, BY THE STRUCTURAL ENGINEER OF RECORD, PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.

SUBMIT ERECTION AND SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

METAL DECK

DESIGN, FABRICATION AND ERECTION OF METAL DECK SHALL CONFORM TO THE STEEL DECK INSTITUTE "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS".

METAL ROOF DECK SHALL BE 22 GAGE, TYPE "B" BY VULCRAFT, WIDE RIB STEEL WITH 1 1/2" NOMINAL CORRUGATION DEPTH, OR APPROVED EQUAL. THE MINIMUM YIELD STRESS SHALL BE 33 KSI.

FASTEN METAL ROOF DECK TO LIGHT GAGE STEEL TRUSSES IN A 36/4 FASTENER PATTERN, AS SPECIFIED BY VULCRAFT: FOUR #12 TEK SCREWS AT EACH SUPPORT MEMBER WITH (1) #10 TEK SCREW SIDELAP PER DECK SPAN. LOCATE SCREW FASTENERS WITH A 12" MAXIMUM SPACING AT THE DIAPHRAGM PERIMETER.

SUSPENDED CEILINGS, LIGHT FIXTURES, DUCTS, AND OTHER UTILITIES OR FINISHES SHALL NOT BE SUPPORTED BY THE METAL DECK.

ALL DECK SHALL BE GALVANIZED IN CONFORMANCE WITH ASTM A653-94, G60 MINIMUM.

SUBMIT ERECTION DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

LIGHT GAGE STEEL TRUSSES

THE TRUSS FABRICATOR SHALL PROVIDE A DESIGN SUBMITTAL AND CALCULATIONS FOR ALL TRUSS TYPES, SEALED BY A N.C. PROFESSIONAL ENGINEER, FOR REVIEW BY THE PROJECT STRUCTURAL ENGINEER OF RECORD PRIOR TO FABRICATION.

CALCULATIONS SHALL INCLUDE COMPONENT SECTION PROPERTIES AND FASTENER CAPACITIES FOR ALL COMPONENTS USED.

THE SUPPLIER SHALL DESIGN ALL TRUSS TYPES FOR THE DESIGN LOADS LISTED ON THE GENERAL NOTES SHEET AND THE LOADING DIAGRAM SHOWN ON THE STRUCTURAL LOADING SHEET.

STRUCTURAL DRAWINGS SHOW STANDARD LIGHT GAGE METAL SECTIONS FOR METAL TRUSSES. THE TRUSS FABRICATOR MAY USE ANY PROPRIETARY LIGHT GAGE METAL SECTIONS FOR TRUSS CHORDS AND WEBS. TRUSS TOP AND BOTTOM CHORDS SHALL UTILIZE A MINIMUM 16 GAGE THICKNESS. TRUSS WEBS MAY UTILIZE MATERIAL THINNER THAN 16 GAGE, PROVIDED THAT THE WEBS AND CONNECTIONS ARE CAPABLE OF SUPPORTING THE REQUIRED FORCES AS DETERMINED BY THE TRUSS SUPPLIER.

THE DESIGN AND FABRICATION OF THE METAL TRUSSES SHALL COMPLY WITH THE AISI "COLD FORMED STEEL DESIGN MANUAL". ALL TRUSSES MUST BE SECURELY BRACED BOTH DURING ERECTION AND AFTER PERMANENT INSTALLATION.

THE TRUSS FABRICATOR SHALL SHOW ALL RECOMMENDED BRACING, BOTH TEMPORARY AND PERMANENT, ON THE TRUSS SHOP DRAWINGS. ALSO, THE DRAWINGS MUST SHOW ALL RECOMMENDED DETAILS FOR CONNECTING THE TRUSSES TO EACH OTHER AND/OR THEIR SUPPORTS.

TRUSS MEMBERS AND COMPONENTS SHALL NOT BE CUT, DRILLED, NOTCHED, SPLICED, OR OTHERWISE ALTERED IN ANY WAY WITHOUT WRITTEN PERMISSION FROM THE TRUSS DESIGN ENGINEER.

SUBMIT ERECTION DRAWINGS AND CALCULATIONS FOR THE STEEL TRUSSES TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

ERECTION DRAWINGS SHALL INCLUDE SECTIONS, PLANS OR ELEVATIONS DEPICTING COMPONENT LOCATION AND CONNECTION DETAILS SHOWING SCREW TYPES AND LOCATIONS, WELD LENGTHS AND LOCATIONS, OR OTHER RELATED FASTENER REQUIREMENTS.

SEE MECHANICAL PLANS FOR LOCATIONS & WEIGHTS OF SUSPENDED HVAC EQUIPMENT & DUCTS SUPPORTED FROM ROOF TRUSS BOTTOM CHORDS. SUPPORT FROM (2) TRUSSES MINIMUM.

TRUSSES SUPPORTING ALTERNATE ROOF FRAMING SECTION (REF 2/S104) SHALL HAVE ADDITIONAL BRIDGING AT ALL TOP CHORD PANEL POINTS. ADDITIONAL BRIDGING IS REQUIRED TO LATERALLY BRACE THE TOP CHORD DUE TO THE ABSENCE OF ROOF DECK IN THESE AREAS.

BRICK MASONRY

THE BRICK ON THIS PROJECT IS A NON-STRUCTURAL VENEER. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ALL REQUIREMENTS.

BRICK VENEER SHALL BE OF A QUALITY AT LEAST EQUAL TO THAT REQUIRED BY ASTM SPECIFICATIONS (C216). THE COMPRESSIVE STRENGTH OF BRICK UNITS SHALL BE 4500 PSI MINIMUM.

REFER TO THE ARCHITECTURAL PLANS FOR LOCATIONS OF BRICK EXPANSION JOINTS, OR IF NOT SHOWN, COORDINATE WITH ARCHITECT. IN GENERAL, CONTROL JOINTS SHOULD BE LOCATED WITH A MAXIMUM SPACING OF 30'-0".

SLAB ON GRADE CONSTRUCTION

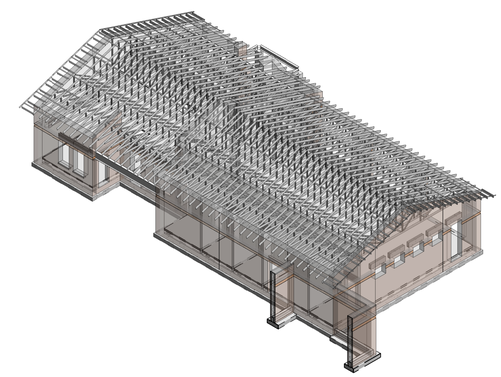
CONCRETE SHALL BE DESIGNED TO MEET THE DURABILITY REQUIREMENTS LISTED IN THE CONCRETE NOTES.

CALCIUM CHLORIDE OR ADMIXTURES CONTAINING MORE THAN 0.05% CHLORIDE IONS ARE NOT PERMITTED. FLY ASH, SLAG, AND BOTTOM ASH ARE NOT PERMITTED.

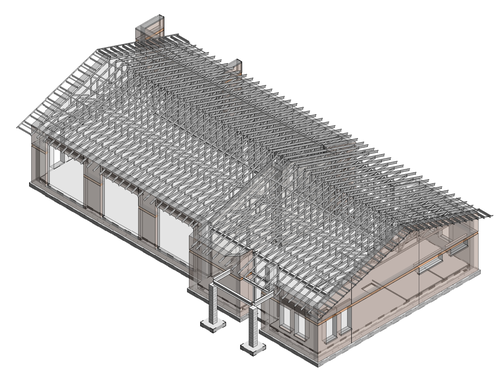
PLACE FLOOR SLAB ON A WELL COMPACTED BASE. THE SUBGRADE SHALL BE GRANULAR, NON-EXPANSIVE SOIL (THAT IS, WITHOUT CLAY) WHICH HAS BEEN COMPACTED TO AT LEAST 95% AND VERIFIED BY ON-SITE TESTING.

STRUCTURAL ABBREVIATIONS

@	AT	NTS	NOT TO SCALE
AB	ANCHOR BOLT	OC	ON CENTER
ADDL	ADDITIONAL	OD	OUTSIDE DIAMETER
ARCH	ARCHITECTURAL	OF	OUTSIDE FACE
BOT	BOTTOM	OP	OPENING
CIP	CAST IN PLACE	OPH	OPPOSITE HAND
CJ	CONTRACTION OR CONSTRUCTION JOINT	OPP	OPPOSITE
CJP	COMPLETE JOINT PENETRATION	PDF	POWDER DRIVEN FASTENER
CL	CENTERLINE	PLF	POUNDS PER LINEAR FOOT
CLR	CLEAR	PSF	POUNDS PER SQUARE FOOT
CMU	CONCRETE MASONRY UNIT	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	REF	REFERENCE
CONT	CONTINUOUS	REINF	REINFORCED OR REINFORCING
DEPR	DEPRESSION	REQD	REQUIRED
DET	DETAIL	REV	REVISION
DIM	DIMENSION	SIM	SIMILAR
EA	EACH	SOG	SLAB ON GRADE
EFW	EXTERIOR FACE OF WALL	SPEC	SPECIFICATION
EJ	EXPANSION JOINT	STD	STANDARD
EL	ELEVATION	STIR	STIRRUP
EQ	EQUAL	SW	SHEAR WALL
EMBED	EMBEDDED	THK	THICK
EODP	EDGE OF DEPRESSION	TOB	TOP OF BEAM
EOO	EDGE OF OPENING	TOC	TOP OF CONCRETE
EW	EACH WAY	TOF	TOP OF FOOTING
FF	FINISHED FLOOR	TOJ	TOP OF JOIST
FLR	FLOOR CONSTRUCTION	TOS	TOP OF STEEL
FTG	FOOTING	TOW	TOP OF WALL
FX	FOOTING DESIGNATION	TYP	TYPICAL
GC	GENERAL CONTRACTOR	UNO	UNLESS NOTED OTHERWISE
GL	GRID LINE	VIF	VERIFY IN FIELD
IF	INSIDE FACE	VWA	VERIFY WITH ARCHITECT
INT	INTERIOR	W/	WITH
MAX	MAXIMUM	W/O	WITHOUT
MECH	MECHANICAL	WP	WORK POINT
MIN	MINIMUM	WWF	WELDED WIRE FABRIC
MISC	MISCELLANEOUS		
MO	MASONRY OPENING		



2 PROJECT OVERVIEW 2



1 PROJECT OVERVIEW 1

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL

8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

S001

GENERAL STRUCTURAL NOTES

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_S) 1.20
Seismic (I_E) 1.50

Live Loads: Roof 20 psf
Mezzanine N/A psf
Floor 100/250 psf

Ground Snow Load: 15 psf

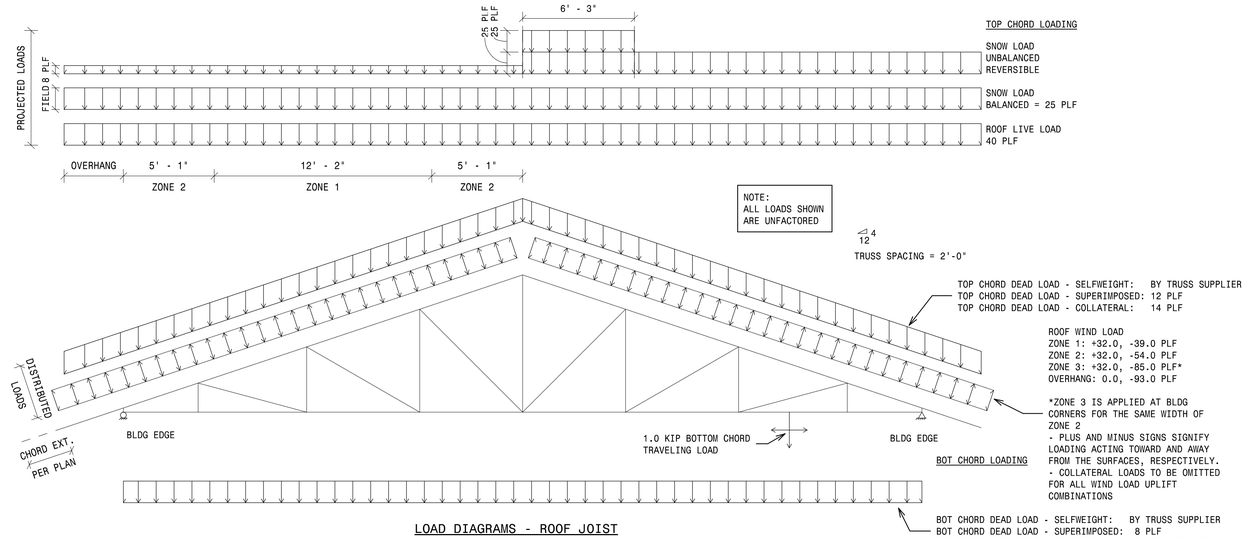
Wind Load: Ultimate Wind Speed 120 mph (ASCE-7)
Exposure Category B

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☒ C ☐ D

Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ☐ II ☐ III ☒ IV
Spectral Response Acceleration S_S 0.150 %g S_1 0.075 %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☒ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data
Basic structural system ☒ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☒ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☒ Wind ☐

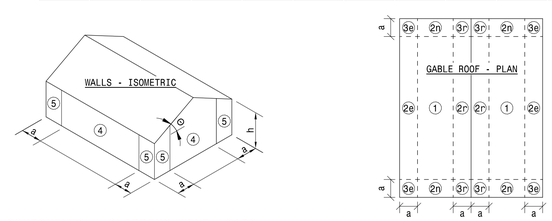
SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) 3,000 psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____



LOAD DIAGRAMS - ROOF JOIST

1 ROOF TRUSS LOAD DIAGRAM - TRUSS 1
1/4" = 1'-0"
D5201

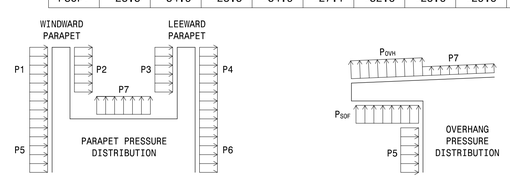
GABLE ROOF 7° ≤ Θ ≤ 20° WITH OVERHANG - COMPONENTS & CLADDING (C&C) DESIGN PRESSURE (PSF)																		
AREA	2		10		20		50		100		200		500		1000			
ZONE	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)		
1, 2e	+19.5	-48.2	+16.0	-48.2	+16.0	-48.2	+16.0	-29.3	+16.0	-16.0	+16.0	-16.0	+16.0	-16.0	+16.0	-16.0		
1, 2eOVH	+19.5	-59.2	+16.0	-59.2	+16.0	-59.2	+16.0	-46.7	+16.0	-37.1	+16.0	-37.1	+16.0	-37.1	+16.0	-37.1		
2n, 2r	+19.5	-70.3	+16.0	-70.3	+16.0	-60.8	+16.0	-48.2	+16.0	-38.7	+16.0	-29.1	+16.0	-26.1	+16.0	-26.1		
2n, 2rOVH	+19.5	-81.3	+16.0	-81.3	+16.0	-74.2	+16.0	-64.8	+16.0	-57.6	+16.0	-50.5	+16.0	-48.2	+16.0	-48.2		
3e	+19.5	-70.3	+16.0	-70.3	+16.0	-60.8	+16.0	-48.2	+16.0	-38.7	+16.0	-29.1	+16.0	-26.1	+16.0	-26.1		
3eOVH	+19.5	-94.6	+16.0	-94.6	+16.0	-82.2	+16.0	-65.9	+16.0	-53.5	+16.0	-41.1	+16.0	-37.1	+16.0	-37.1		
3r	+19.5	-83.6	+16.0	-83.6	+16.0	-71.6	+16.0	-55.7	+16.0	-43.8	+16.0	-43.8	+16.0	-43.8	+16.0	-43.8		
3rOVH	+19.5	-107.9	+16.0	-107.9	+16.0	-91.9	+16.0	-70.8	+16.0	-54.8	+16.0	-54.8	+16.0	-54.8	+16.0	-54.8		
4	+26.1	-28.3	+26.1	-28.3	+24.9	-27.1	+23.4	-25.6	+22.2	-24.4	+21.0	-23.2	+19.5	-21.7	+19.5	-21.7		
5	+26.1	-34.9	+26.1	-34.9	+24.9	-32.6	+23.4	-29.5	+22.2	-27.1	+21.0	-24.8	+19.5	-21.7	+19.5	-21.7		



COMPONENTS & CLADDING DESIGN PRESSURE NOTES:
1. PROJECT EDGE ZONE: a=5'-10"
2. PROJECT MEAN ROOF HEIGHT: h=18'-5"
3. PROJECT ROOF ANGLE: Θ=18.6°
4. DESIGNER SHALL USE EFFECTIVE WIND AREA OF COMPONENT TO DETERMINE PRESSURE FROM TABLE ABOVE.
5. WIND PRESSURES MAY BE INTERPOLATED FOR EFFECTIVE WIND AREAS BETWEEN SPECIFIED RANGES.
6. + / - SIGNS INDICATE PRESSURE ACTING TOWARD OR AWAY FROM SURFACES, RESPECTIVELY.
7. REFER TO PARAPET AND OVERHANG COMPONENTS & CLADDING DETAIL FOR DESIGN VALUES AND DISTRIBUTION AT PARAPETS AND OVERHANGS.

2 COMPONENTS & CLADDING WIND LOADS
12" = 1'-0"

GABLE ROOF 7° ≤ Θ ≤ 20° WITH OVERHANG - PARAPET & OVERHANG C&C DESIGN PRESSURE (PSF)																		
AREA	2		10		20		50		100		200		500		1000			
ZONE	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR	2/4-EDG	3/5-COR		
P1	+26.1	+26.1	+26.1	+26.1	+24.9	+24.9	+23.4	+23.4	+22.2	+22.2	+21.0	+21.0	+19.5	+19.5	+19.5	+19.5		
P2	-59.2	-94.6	-59.2	-94.6	-59.2	-82.2	-46.7	-65.9	-37.1	-53.5	-37.1	-41.1	-37.1	-37.1	-37.1	-37.1		
P3	+26.1	+26.1	+26.1	+26.1	+24.9	+24.9	+23.4	+23.4	+22.2	+22.2	+21.0	+21.0	+19.5	+19.5	+19.5	+19.5		
P4	-28.3	-34.9	-28.3	-34.9	-27.1	-32.6	-25.6	-29.5	-24.4	-27.1	-23.2	-24.8	-21.7	-21.7	-21.7	-21.7		
P5	+26.1	+26.1	+26.1	+26.1	+24.9	+24.9	+23.4	+23.4	+22.2	+22.2	+21.0	+21.0	+19.5	+19.5	+19.5	+19.5		
P6	-28.3	-34.9	-28.3	-34.9	-27.1	-32.6	-25.6	-29.5	-24.4	-27.1	-23.2	-24.8	-21.7	-21.7	-21.7	-21.7		
P7	-59.2	-94.6	-59.2	-94.6	-59.2	-82.2	-46.7	-65.9	-37.1	-53.5	-37.1	-41.1	-37.1	-37.1	-37.1	-37.1		
PSOF+	+26.1	+26.1	+26.1	+26.1	+24.9	+24.9	+23.4	+23.4	+22.2	+22.2	+21.0	+21.0	+19.5	+19.5	+19.5	+19.5		
PSOF-	-28.3	-34.9	-28.3	-34.9	-27.1	-32.6	-25.6	-29.5	-24.4	-27.1	-23.2	-24.8	-21.7	-21.7	-21.7	-21.7		



COMPONENTS & CLADDING DESIGN PRESSURE NOTES:
1. DESIGNER SHALL USE EFFECTIVE WIND AREA OF COMPONENT TO DETERMINE PRESSURE FROM TABLE ABOVE.
2. WIND PRESSURES MAY BE INTERPOLATED FOR EFFECTIVE WIND AREAS BETWEEN SPECIFIED RANGES.
3. + / - SIGNS INDICATE PRESSURE ACTING TOWARD OR AWAY FROM SURFACES, RESPECTIVELY.
4. REFER TO BUILDING COMPONENTS & CLADDING DETAIL FOR DESIGN VALUES AND DISTRIBUTION AT WALLS AND ROOFS.
5. PARAPET PRESSURES P1-P7 MUST BE COMBINED AS APPROPRIATE FOR WINDWARD AND LEEWARD PARAPET CASES.
6. P_{OVH} INCLUDES TOP & BOT PRESSURES, DO NOT COMBINE WITH P_{SOF}.

3 COMPONENTS & CLADDING WIND LOADS - PARAPET
12" = 1'-0"

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
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27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
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919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL
8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

PROJECT NO.: 15358
PHASE: BID SET
DATE: 08/17/2026
DRAWN BY: BLL
CHECKED BY: ABT

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

S002
STRUCTURAL LOADING

Statement of Special Inspections

Project: Wake County Mini City EMS Station
Location: 4704 Hargrove Rd, Raleigh NC 27616
Owner's Representative: Wake County Facilities Design & Construction
Owner's Address: P.O. Box 550, Raleigh NC 27602

This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with the Special Inspection requirements of the 2018 North Carolina State Building Code. It includes a Schedule of Special Inspection Services applicable to this project, the name of the Special Inspector, the identity of other approved agencies retained for conducting Special Inspections, and the required inspector qualifications. This Statement of Special Inspections was prepared by the following Designers of Record:

Structural	Andrew Terrell, PE		06/15/2026
	(Type or print name)	(Signature)	(Date)
Architectural	Eric Sowers, AIA		06/15/2026
	(Type or print name)	(Signature)	(Date)
Mechanical			
	(Type or print name)	(Signature)	(Date)
Other			
	(Type or print name)	(Signature)	(Date)

The Special Inspector shall keep records of all special inspections and tests and shall furnish reports to the Permit Office and the Designers of Record. Reports shall indicate if the work inspected or tested was or was not completed in conformance with the approved construction documents. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Permit Office and the Designers of Record. The Special Inspections program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Permit Office, Owner, and the Designers of Record.

Interim Report Frequency: Monthly

A Final Report of Special Inspections documenting completion of all required Special Inspections, testing, and correction of any discrepancies should be submitted prior to issuance of a Certificate of Use and Occupancy.

Job Site safety and means and methods of construction are solely the responsibility of the Contractor.

Owner's Authorization

Signature Date

Schedule of Special Inspection Services[a]

The following sheets comprise the required schedule of special inspections for this project. The construction divisions which require special inspections for this project are as follows.

- ☒ Structural Steel & High Strength Bolting
- ☒ Welding of Structural Steel
- ☒ Cold-Formed Steel Deck
- ☐ Open-Web Steel Joists & Joist Girders
- ☒ Cold-Formed Steel Framing
- ☒ Concrete Construction
- ☒ Masonry Construction [b]
- ☐ Wood Construction
- ☒ Soils
- ☐ Driven Deep Foundations
- ☐ Cast-in-Place Deep Foundations
- ☐ Helical Pile Foundations
- ☐ Rammed Aggregate Piers & Stone Columns
- ☐ Sprayed Fire-Resistant Material
- ☐ Mastic & Intumescent Fire-Resistant Coatings
- ☐ Exterior Insulation & Finish System
- ☒ Fire-Resistant Penetrations & Joints
- ☐ Smoke Control
- ☐ Retaining Wall & Systems > 5 Feet
- ☐ Special Inspections for Wind Resistance
- ☐ Special Inspections for Seismic Resistance

a. The inspection frequency indicated on the following inspection tables are "C" continuous, "P" periodic, & "O" random on a daily basis.
b. Level A is the minimum inspection program for empirically / prescriptively designed masonry in Risk Category I, II or III structures. Level B is the minimum inspection program for empirically / prescriptively designed masonry in Risk Category IV structures and engineered masonry in Risk Category I, II or III structures. Level C is the minimum inspection program for engineered masonry in Risk Category IV structures. Engineered masonry structures are those designed in accordance with portions of the TMS 402-13 / ACI 530-13/ASCE 5-13 other than Part 4 or Appendix A.

Inspection Agents	Firm Name & Point of Contact	Address / Phone / E-mail
1. Special Inspector (SI-1)		
2. Testing Agency (TA-1)		
3. Testing Agency (TA-2)		
4. Geotechnical Engineer (GE-1)	Froehling & Robertson, Inc. Michael S. Sabodish, Jr., Ph.D., PE	310 Hubert Street Raleigh, NC 27603 919-828-3441
5. Other (O-1)		

Note: The inspection and testing agent(s) shall be engaged by the Owner or the Registered Design Professional of Record acting as the Owner's agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Permit Office, prior to commencing work.

Seismic Design Category: ☐ A ☐ B ☒ C ☐ D

Ultimate Design Wind Speed (V_{ult}): ☐ 90-109mph ☐ 110-119mph ☒ ≥120mph

Nominal Design Wind Speed (V_{asd}): ☒ 90-109mph ☐ 110-119mph ☐ ≥120mph

Wind Exposure Category: ☒ B ☐ C ☐ D

Schedule of Special Inspection Services
Structural Steel and High-Strength Bolting

Inspection Task	Freq	Reference for Criteria		Agent
		AISC 360	NCBC	
1. Fabricator Certification / Verification of Quality Control Procedures				
a. Verify fabricator qualifications	C		1704.2.5.1	
b. Review material test reports & certifications	C	N5.2		
c. Collect certificates of compliance from the steel fabricator at completion of fabrication	C		1704.5	
2. Document acceptance or rejection of bolted connections after high-strength bolting is complete	C	Tbl N5.6-3		
3. Structural Details				
a. Verify diameter, grade, type and length of anchor rods and other embedded items supporting structural steel	P	N5.7		
b. Inspection of fabricated assemblies & erected steel framing verifying compliance with the construction documents	P	N5.7		

Schedule of Special Inspection Services
Welding of Structural Steel

Inspection Task	Freq	Code Reference		Agent
		AISC 360	NCBC	
1. Inspections Prior to Welding		N5.4		
a. Collect & review welding procedure specification (WPS) and verify manufacturer certifications for welding consumables	C	Table (Tbl) N5.4-1		
b. Confirm weld material type & grade	P	Tbl N5.4-1		
c. Confirm method of welder identification	P	Tbl N5.4-1		
d. Inspection of fit-up for groove & fillet welds including access hole configuration & finish	P	Tbl N5.4-1		
2. Inspections During Welding		N5.4		
a. Verify welder qualifications	P	Tbl N5.4-2		
b. Verify proper control and handling of welding consumables	P	Tbl N5.4-2		
c. Monitor environmental conditions	P	Tbl N5.4-2		
d. Monitor proper implementation of WPS	P	Tbl N5.4-2		
e. Inspection of welding techniques including no welding over cracked tack welds	P	Tbl N5.4-2		
3. Inspections After Welding		N5.4, N5.5		
a. Verify welds have been cleaned	P	Tbl N5.4-3		
b. Confirm the installed size, length and location of welds matches the contract documents	C	Tbl N5.4-3		
c. Verify welds meet visual acceptance criteria	C	Tbl N5.4-3		
d. Confirm arc strikes comply with Part 5.28 of AWS D1.1	C	Tbl N5.4-3		
e. Observe and inspect weld repair activities	C	Tbl N5.4-3		
f. For Risk Category III or IV structures, conduct ultrasonic testing (UT) of CJP groove welds in materials 5/16" at butt, T- and corner joints subject to transversely applied tension loading	C	N.5.5b, N5.5e		
g. Conduct magnetic particle testing (MT) or liquid penetrant testing (PT) at thermally cut surfaces of access holes for rolled section with tf > 2" and built-up shape with tw > 2"	C	N5.5c		
h. Radiographic or ultrasonic inspection at joints subject to fatigue	C	N5.5d, Tbl A-3.1		
i. Document acceptance / rejection of welded joints and members	C	Tbl N5.4-3, N5.5g		

Schedule of Special Inspection Services
Cold-Formed Steel Deck

Inspection Task	Freq	Reference for Criteria		Agent
		SDI QA/QC	NCBC	
1. Prior to deck placement, verify deck and deck accessories comply with the construction documents	C	Table (Tbl) 1.1		
2. Inspection Tasks After Deck Placement				
a. Verify the installation of deck & deck accessories complies with the construction documents	C	Tbl 1.2		
b. Verify that deck materials' mill certifications comply with the construction documents	C	Tbl 1.2		
3. Inspection Tasks Prior to Mechanical Fastening				
a. Verify manufacturer installation instructions available for mechanical fasteners	P	Tbl 1.6		
b. Proper tools available for fastener installation	P	Tbl 1.6		
c. Verify proper storage of mechanical fasteners	P	Tbl 1.6		
4. Inspection Tasks During Mechanical Fastening				
a. Observe fastener spacing and position	P	Tbl 1.7		
b. Verify fasteners are installed in accordance with manufacturer's instructions	P	Tbl 1.7		
5. Inspection Tasks After Mechanical Fastening				
a. Check spacing, type and installation of support fasteners	C	Tbl 1.8		
b. Check spacing, type, and installation of sidelap fasteners	C	Tbl 1.8		
c. Check spacing, type, and installation of perimeter fasteners	C	Tbl 1.8		
d. Verify repair activities	C	Tbl 1.8		
6. Document acceptance or rejection of deck & deck accessories for all phases of construction	C	Tbls 1.1 thru 1.8		

Schedule of Special Inspection Services
Cold-Formed Steel Framing

Inspection Task	Freq	Reference for Criteria		Agent
		Standard	NCBC	
1. Fabricator Certification / Verification of Quality Control Procedures				
a. Verify fabricator qualifications	C		1704.2.5.1	
b. Collect certificates of compliance from the steel fabricator at completion of fabrication	C		1704.5	

Schedule of Special Inspection Services
Concrete Construction

Inspection Task	Freq	Reference for Criteria		Agent
		Standard[a]	NCBC	
1. Inspect reinforcement, including prestressing tendons, and verify placement	P	ACI Ch.20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	
2. Concrete Anchors:				
a. Inspect anchors cast in concrete	P	ACI 17.8.2		
b. Inspect adhesive anchors installed in hardened concrete with horizontally or upwardly inclined orientations that resist sustained tension loads	C	ACI 17.8.2.4		
c. Inspect adhesive anchors installed in hardened concrete with orientations different from Item 3.b	P	ACI 17.8.2		
d. Inspect mechanical anchors installed in hardened concrete	P	ACI 17.8.2		
3. Collect mix designs and verify the correct mix used during installation	P	ACI Ch19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	
4. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	C	ASTM C172, ASTM C31, ACI 26.4, 26.12	1908.10	
5. Verify maintenance of specified curing temperature and techniques	P	ACI 26.5.3-26.5.5	1908.9	
6. Inspect formwork for shape, location and dimensions of the concrete member being formed	P	ACI 26.11.1.2(b)		

a. References to "ACI" in this table are to the ACI 318-14.

Schedule of Special Inspection Services
Masonry – Level C

Inspection Task	Freq	Reference for Criteria		Agent
		TMS 402[a]	TMS 602[a]	
1. Test & verify f'm & f'_{AAC} prior to construction & for every 5,000 square feet during construction	C	Table (Tbl) 3.1.3	Art. 1.5	
2. Test & verify proportions of materials in premixed / preblended mortar, prestressing grout, and grout other than self-consolidating, as delivered to site	C	Tbl 3.1.3		
3. Test & verify slump flow & visual stability index as delivered to site for self-consolidating grout	C	Tbl 3.1.3	Art. 1.5B.1.b.3	
4. Verify compliance with the approved submittals	P	Tbl 3.1.3	Art. 1.5	
5. Verify that the following are in compliance:				
a. Proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	P		Art. 2.1, 2.6A, 2.6B, 2.6C, 2.4G.1.b	
b. Grade, type, & size of reinforcement & anchor bolts, & prestressing tendons & anchorage	P	Sec 6.1	Art. 2.4, 3.4	
c. Placement of masonry units and construction of mortar joints	P		Art. 3.3B	
d. Placement of reinforcement, connectors, and prestressing tendons and anchorages	C	Sec 6.1, 6.2.1, 6.2.6, 6.2.7	Art. 3.2E, 3.4, 3.6A	
e. Grout space is clean, and cleanouts provided when required	C		Art. 3.2D, 3.2F	
f. Placement of grout and prestressing grout for bonded tendons	C		Art. 3.5, 3.6C	
g. Size and location of structural elements	P		Art. 3.3F	
h. Type, size, and location of anchors including other details of anchorage of masonry to structural members, frames, or other construction	C	Sec. 1.2.1(e), 6.1.4.3, 6.2.1		
i. Welding of reinforcement	C	Sec 8.1.6.7.2, 9.3.3.4(c), 11.3.3.4(b)		
j. Preparation, construction, and protection of masonry during cold weather (temperature < 40ºF) or hot weather (temperature > 90ºF)	P		Art. 1.8C, 1.8D	
k. Application and measurement of prestressing force	C		Art. 3.6B	
l. Placement of AAC masonry units and construction of thin-bed mortar joints	C		Art. 3.3B.9, 3.3F.1.b	
m. Properties of thin-bed mortar for AAC masonry	C		Art. 2.1C.1	
6. Observe preparation of grout specimens, mortar specimens, and or prisms	C		Art. 1.4B.2.a.3, 1.4B.2.b.3, 1.4B.2.c.3, 1.4B.3, 1.4B.4	

a. References to "TMS402" in this table are to the TMS402/ACI530/ASCE5-13. References to "TMS602" are to TMS602/ACI530.1/ASC

Schedule of Special Inspection Services
Soils

Inspection Task	Freq	Reference for Criteria		Agents
		Standard	NCBC	
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	P		1705.6	
2. Verify excavations extend to proper depth and have reached the correct soil material	P		1705.6	
3. Perform classification and testing of compacted fill materials	P		1705.6	
4. Verify that materials used, densities, lift thickness and procedures used during placement and compaction of compacted fill are in accordance with the approved soils report and the construction documents	C		1705.6	
5. Prior to placement of compacted fill, verify that the subgrade has been prepared in accordance with the approved soils report and the construction documents	P		1705.6	

Schedule of Special Inspection Services
Fire-resistant Penetrations and Joints [a]

Inspection Task	Freq	Reference for Criteria		Agent
		Standard	NCBC	
1. Inspect through-penetration firestop systems at fire walls, fire barriers, smoke barriers and fire partition walls in accordance with ASTM E2174	P		1705.17.1, 714.3.1.2	
2. Inspect penetration firestop systems at penetrations through membranes that are part of a horizontal assembly in accordance with ASTM E2174	P		1705.17.1, 714.4.2	
3. Inspect fire-resistant joint systems in accordance with ASTM 2393	P		1705.17.2, 715.3, 715.4	

a. The inspection of fire-resistant penetrations and joints applies only to high-rise buildings or buildings assigned to Risk Category III or IV.

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL
8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

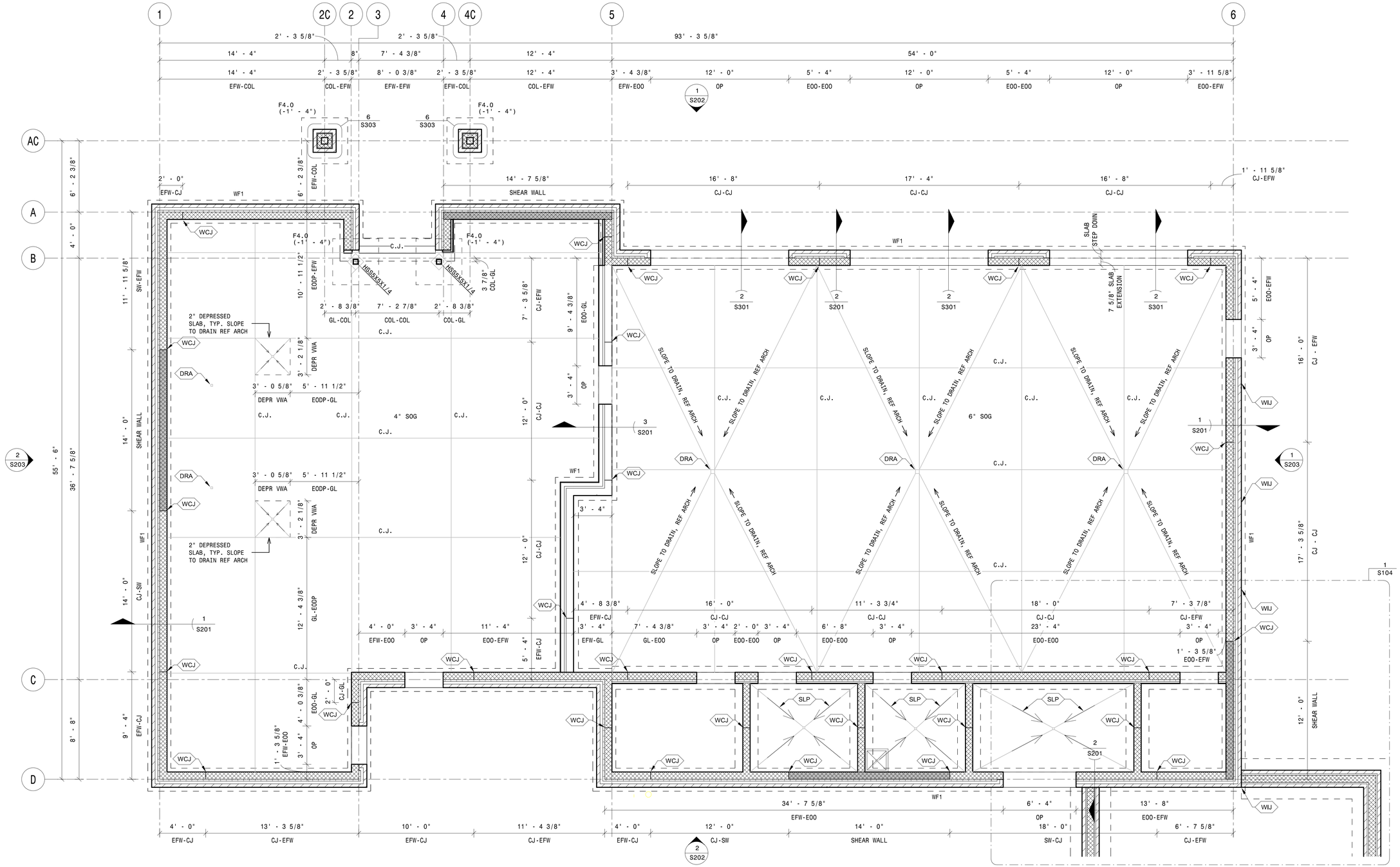
PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

S003
STATEMENT OF SPECIAL INSPECTIONS



1 FOUNDATION PLAN
1/4" = 1'-0"

PLAN NOTES S101	
INDEX	PLAN NOTE
DRA	FLOOR DRAIN.
SLP	SLOPE SLAB TO DRAIN. REF ARCH.
WCJ	MASONRY WALL CONTROL JOINT.
WIJ	MASONRY WALL ISOLATION JOINT.

FOUNDATION PLAN NOTES:

1. ALL ELEVATIONS ARE MEASURE FROM A REFERENCE FINISHED FLOOR ELEVATION OF 0'-0".
2. TOF (-1'-4") DENOTES A TOP OF FOOTING ELEVATION OF 1'-4" BELOW TOP OF FINISHED FLOOR.
3. SEE DETAILS FOR TYPICAL SLAB ON GRADE CONSTRUCTION. THE 4" SLAB IS DESIGNED FOR 100 PSF UNIFORM LIVE LOAD WITH NO PROVISION FOR HEAVY CONCENTRATED LOADS. THE 6" SLAB IS DESIGNED FOR 250 PSF LIVE LOAD AND WHEEL LOADS FROM THE EMS VEHICLES. REF 10/S301 & 11/S301 FOR SLAB ON GRADE.
4. SEE DETAIL FOR TYPICAL STEPPED FOOTING DETAIL.
5. SEE DETAIL FOR TYPICAL MASONRY CONTROL JOINT (MCJ) DETAIL. HORIZONTAL SPACING OF VERTICAL CONTROL JOINTS MUST NOT EXCEED 30' UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
6. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS NOT SHOWN ON THIS PLAN.
7. SLOPE EXTERIOR SLABS AWAY FROM BUILDING FOUNDATION WALLS FOR DRAINAGE.
8. SEE PLUMBING DRAWINGS FOR FLOOR DRAIN AND PIPING PENETRATIONS THROUGH THE FLOOR SLAB AND FOR PIPES ENTERING THE BUILDING. STEP FOOTINGS AS REQUIRED SO THAT PIPES CAN GO UNDER OR OVER FOOTINGS. COMPACT SOIL AROUND PIPES.
9. SEE ARCHITECTURAL PLANS TO VERIFY ALL DEPRESSED AND/OR SLOPED SLAB AREAS.

FOUNDATION SCHEDULE			
MK#	SIZE	REINFORCING	NOTES
WF1	2'-0" X 12" THICK	(3) #5 CONT BOT BARS	1
F4.0	4'-0" X 4'-0" X 12" THICK	(6) #4 BOTTOM BARS EACH WAY	1

NOTES:
1. BOTTOM BARS ARE TO BE LOCATED 3" CLEAR FROM BOTTOM OF FOOTING.

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL

8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

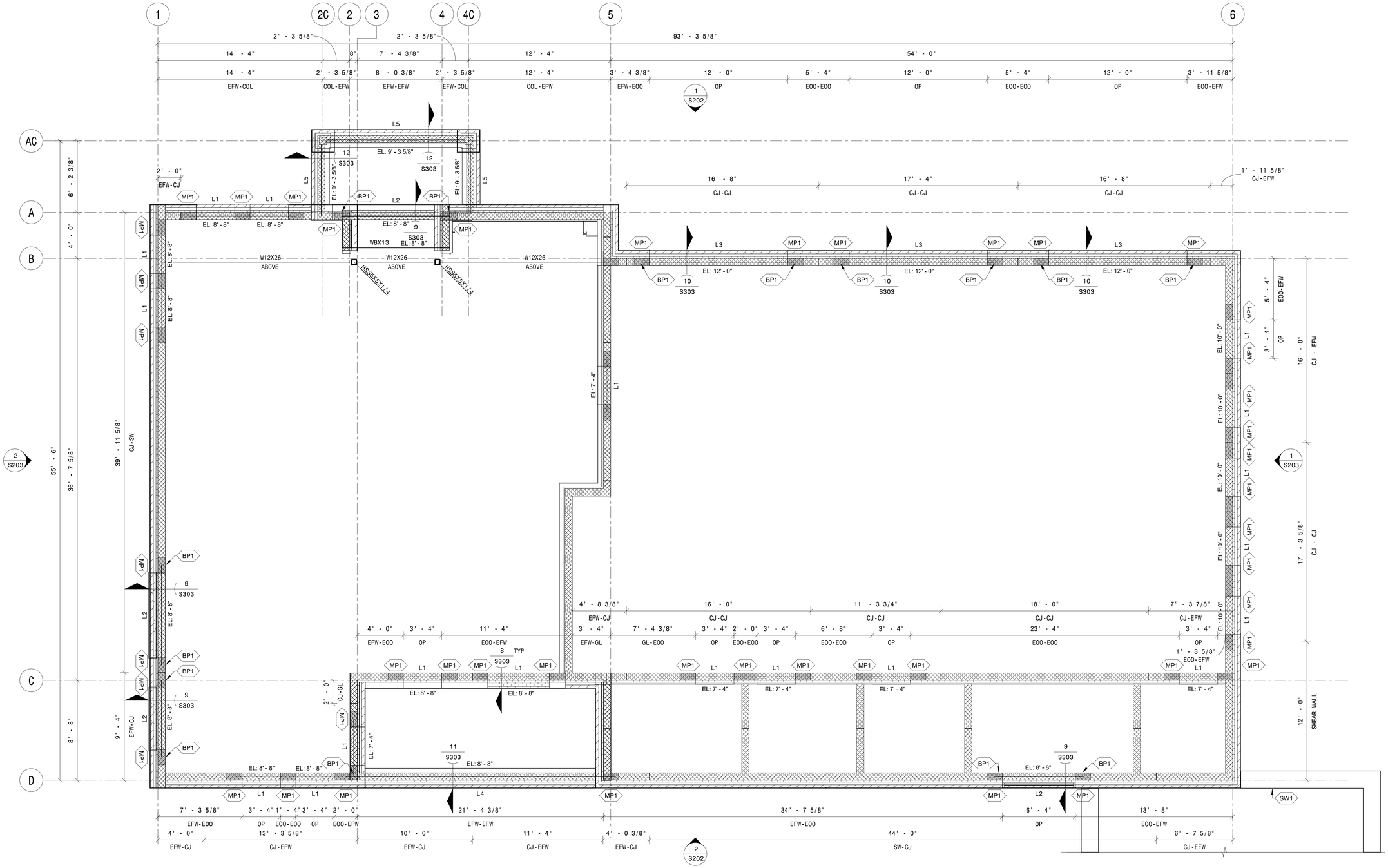
PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

S101
FOUNDATION PLAN



1 LINTEL PLAN
1/4" = 1'-0"

PLAN NOTES S102

INDEX	PLAN NOTE
BP1	BEARING PLATE - 3/8" X 8" X 12" WITH (2)5/8" X 8" WELD STUDS.
MP1	16" WIDE PILASTER AT LINTEL BEARING. FILL SOLID WITH GROUT AND REINFORCE PER 08/S301.
SW1	SITE WALL BELOW.

LOOSE LINTEL SCHEDULE - BRICK MASONRY

MASONRY OPENING L1	SIZE	DETAIL	MIN BEARING
RO ≤ 4'-0"	L 3-1/2x3-1/2x1/4	L	8" EA END
4'-0"≤ RO ≤5'-0"	L 5x3-1/2x1/4	L	8" EA END
5'-0"≤ RO ≤6'-0"	L 6x3-1/2x5/16	L	8" EA END
L2, L3, L4, L5	WIDE FLANGE W/ BOT PLATE	T	PER DETAIL

LOOSE LINTEL SCHEDULE NOTES:

- ONE ANGLE BE SHALL BE PROVIDED FOR EACH WYTHE OF BRICK.
- SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LINTEL LOCATIONS.
- MINIMUM BEARING LENGTH SHALL BE ESTABLISHED ON EACH END OF OPENING TO SOLID BRICK BEYOND OPENING.
- MAX BRICK HEIGHT ABOVE LOOSE ANGLE LINTEL FOR THIS PROJECT IS 12'-0". NOTIFY EOR FOR REVIEW OF BRICK HEIGHTS EXCEEDING THIS LIMIT FOR REVIEW.

MASONRY WALL CONSTRUCTION NOTES:

1. ALL CONCRETE MASONRY WALLS SHALL BE REINFORCED WITH #5'S AT 24" O.C. FULL HEIGHT WITH EXTRA REINFORCING AT OPENINGS, CONTROL JOINTS, CORNERS AND ENDS. SEE MASONRY REINFORCING DETAIL.
2. REINFORCED CORES SHALL BE FILLED SOLID WITH GROUT OR 3000 PSI GROUT.
3. PROVIDE AN 8" DEEP BOND BEAM REINFORCED WITH (2) #5'S CONTINUOUS ALL AROUND PERIMETER OF BUILDING AT THE ROOF TRUSS BEARING ELEVATION. THE ROOF FRAMING SHALL BE TIED TO THE WALL AS SHOWN AT THE STRUCTURAL DETAILS.
4. MASONRY WALLS SHALL BE BRACED IN ACCORDANCE WITH THE "MASONRY WALL BRACING DESIGN HANDBOOK', LATEST EDITION, PUBLISHED BY THE MASON CONTRACTORS ASSOCIATION OF AMERICA.
5. SEE ARCHITECTURAL PLANS FOR MASONRY VENEER REQUIREMENTS.
6. MASONRY CONTROL JOINT LOCATIONS FOR CONCRETE MASONRY WALLS SHALL BE AS SHOWN ON STRUCTURAL PLANS. REFER TO ARCHITECTURAL FOR MASONRY VENEER CONTROL JOINT LOCATIONS.
7. USE RUNNING BOND FOR WALL LAYUP.
8. ALL STEEL LINTEL ELEVATIONS PROVIDE BOTTOM OF STEEL AND TOP OF ROUGH OPENING U.N.O.
9. ALL MASONRY ROUGH OPENINGS TO HAVE BENT STEEL CLOSURE PLATE, REFER TO ARCHITECTURAL.
10. ALL STRUCTURAL STEEL LINTELS SHALL BE HOT DIP GALVANIZED PER GENERAL STRUCTURAL NOTES.

LINTEL SCHEDULE

MARK#	LINTEL SIZE	MINIMUM BEARING
L1	16" DEEP BOND BEAM WITH (2) #5 BARS CONT.	8" EACH END
L2	W8x18 WITH 3/8" BOTTOM PLATE	8" EACH END
L3	W16x26 WITH 3/8" BOTTOM PLATE	12" EACH END
L4	W24x55 WITH 3/8" BOTTOM PLATE	12" EACH END
L5	W12x26 WITH 3/8" BOTTOM PLATE	8" EACH END

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL

8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

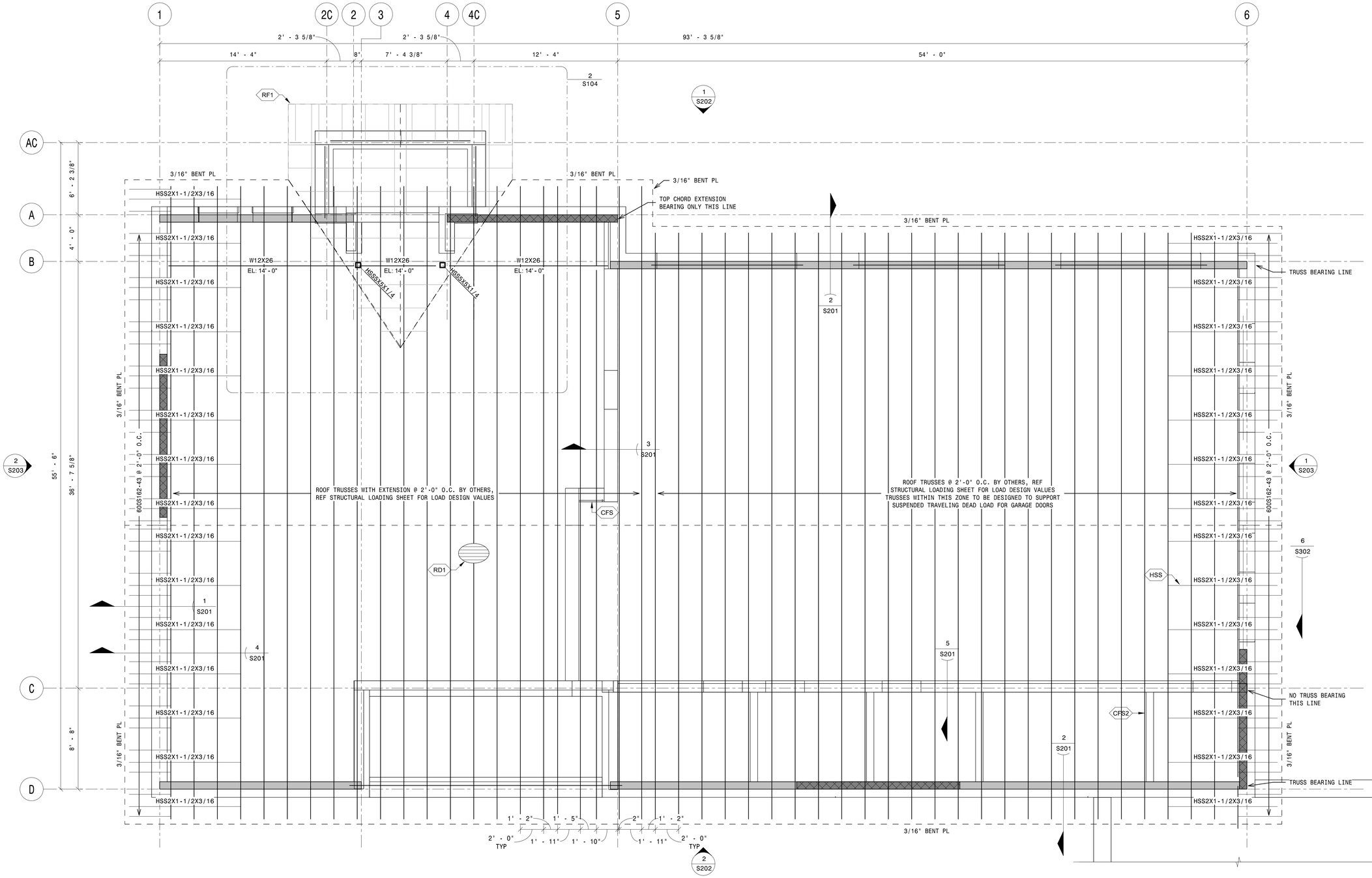
REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

S102

LINTEL PLAN



1 ROOF FRAMING PLAN
1/4" = 1'-0"

PLAN NOTES S103

INDEX	PLAN NOTE
CFS	INSTALL 600S162-43 COLD-FORMED STEEL STUD WALL MINIMUM @ 16" OC IN LIEU OF CMU WALL, EXTENDING FROM BOTTOM CHORD OF TRUSSES TO UNDERSIDE OF METAL ROOF DECK, TO ACCOMMODATE TRUSS PENETRATIONS. COLD-FORMED STUD WALL TO BE PROVIDED ONLY AT THE CENTRAL SHORT SEGMENT OF THE WALL; NOT TO BE CONTINUOUS ALONG FULL WALL LENGTH. STUD WALL DEPTH MAY BE INCREASED AS NEEDED TO ACCOMMODATE BUILDING FINISHES. REFER TO ARCHITECTURAL DETAILS FOR EXTENT AND COORDINATION.
CFS2	INSTALL 600S162-43 COLD-FORMED STEEL STUD WALL MINIMUM @ 16" OC IN LIEU OF CMU WALL, EXTENDING FROM BOTTOM CHORD OF TRUSSES TO UNDERSIDE OF METAL ROOF DECK. STUD WALL DEPTH MAY BE INCREASED AS NEEDED TO ACCOMMODATE BUILDING FINISHES. REFER TO ARCHITECTURAL DETAILS FOR EXTENT AND COORDINATION.
HSS	HSS TUBE MEMBER ON TOP OF THE ROOF DECK INSIDE THE FLUTES. THE HSS MEMBERS SHALL BE SPACED 4'-0" O.C. AND WELDED DOWN TO DECK ON BOTH SIDES OF TUBE @ 12" O.C. IN ADDITION, THE END OF THE HSS AT THE OVERHANG SHALL BE WELDED TO THE 1/4" BENT PLATE FASCIA SHOWN ON THE ARCHITECTURAL PLANS.
RD1	ROOF DECK SHALL BE 1.5B22 METAL DECK FASTENED TO TOP CHORD OF ROOF TRUSSES PER STRUCTURAL GENERAL NOTES.
RF1	THE ENLARGED ROOF FRAMING AREA IS SHOWN IN HALFTONE TO EMPHASIZE THE DIFFERENT FRAMING CONDITIONS IN THIS PORTION OF THE ROOF.

MASONRY WALL CONSTRUCTION NOTES:

1. ALL CONCRETE MASONRY WALLS SHALL BE REINFORCED WITH #5'S AT 24" O.C. FULL HEIGHT WITH EXTRA REINFORCING AT OPENINGS, CONTROL JOINTS, CORNERS AND ENDS. SEE MASONRY REINFORCING DETAIL.
2. REINFORCED CORES SHALL BE FILLED SOLID WITH GROUT OR 3000 PSI GROUT.
3. PROVIDE AN 8" DEEP BOND BEAM REINFORCED WITH (2) #5'S CONTINUOUS ALL AROUND PERIMETER OF BUILDING AT THE ROOF TRUSS BEARING ELEVATION. THE ROOF FRAMING SHALL BE TIED TO THE WALL AS SHOWN AT THE STRUCTURAL DETAILS.
4. MASONRY WALLS SHALL BE BRACED IN ACCORDANCE WITH THE "MASONRY WALL BRACING DESIGN HANDBOOK", LATEST EDITION, PUBLISHED BY THE MASON CONTRACTORS ASSOCIATION OF AMERICA.
5. SEE ARCHITECTURAL PLANS FOR MASONRY VENEER REQUIREMENTS.
6. MASONRY CONTROL JOINT LOCATIONS FOR CONCRETE MASONRY WALLS SHALL BE AS SHOWN ON STRUCTURAL PLANS. REFER TO ARCHITECTURAL FOR MASONRY VENEER CONTROL JOINT LOCATIONS.
7. USE RUNNING BOND FOR WALL LAYUP.
8. ALL STEEL LINTEL ELEVATIONS PROVIDE BOTTOM OF STEEL AND TOP OF ROUGH OPENING U.N.O.
9. ALL MASONRY ROUGH OPENINGS TO HAVE BENT STEEL CLOSURE PLATE, REFER TO ARCHITECTURAL.
10. ALL STRUCTURAL STEEL LINTELS SHALL BE HOT DIP GALVANIZED PER GENERAL STRUCTURAL NOTES.

ROOF FRAMING PLAN NOTES:

1. ROOF DECK OVER TRUSSES SHALL BE 1 1/2" X 22 GAGE WIDE RIB METAL DECK.
2. TRUSS BEARING ELEVATION SHALL BE 14'-0" A.F.F. UNLESS NOTED OTHERWISE.

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CIVIL & LANDSCAPE ARCHITECTS
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137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
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WAKE COUNTY
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NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL

8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

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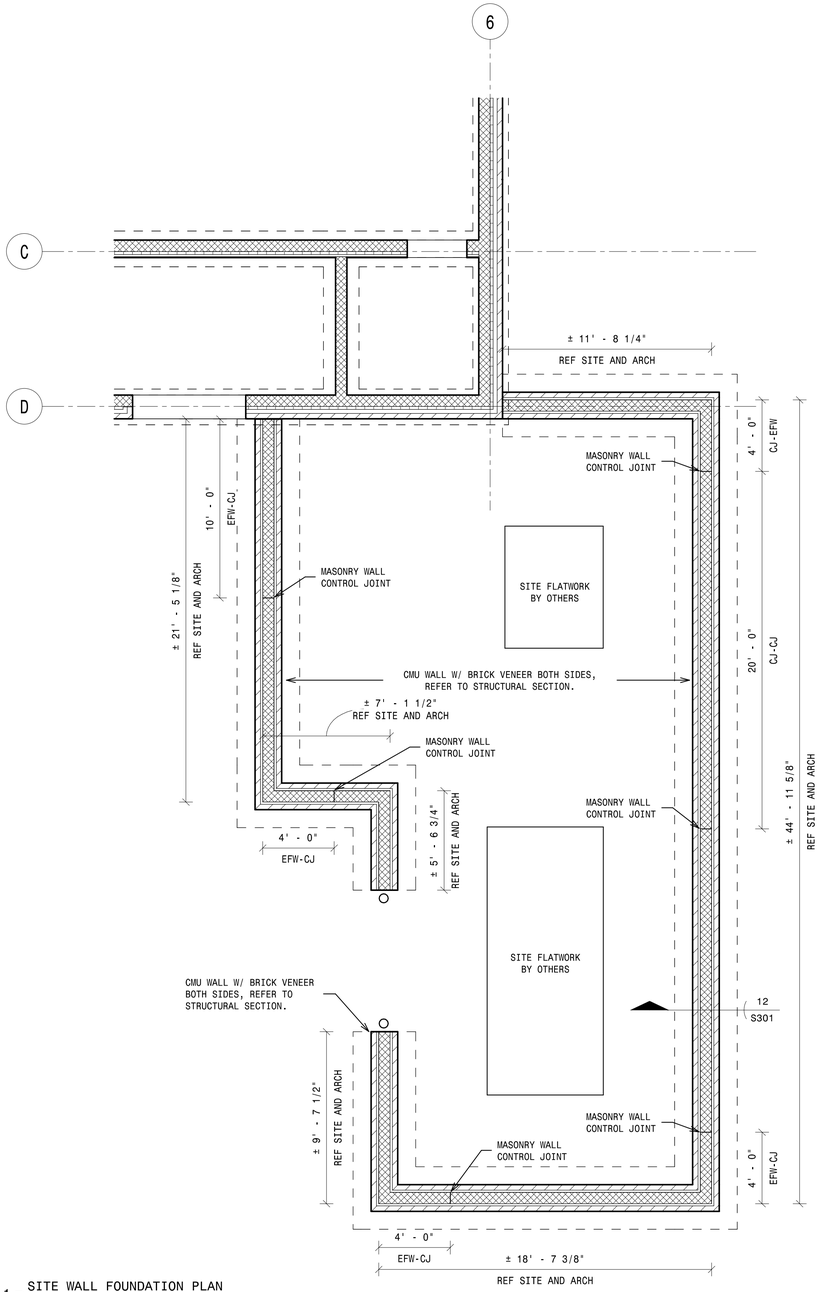
SHEET INFORMATION

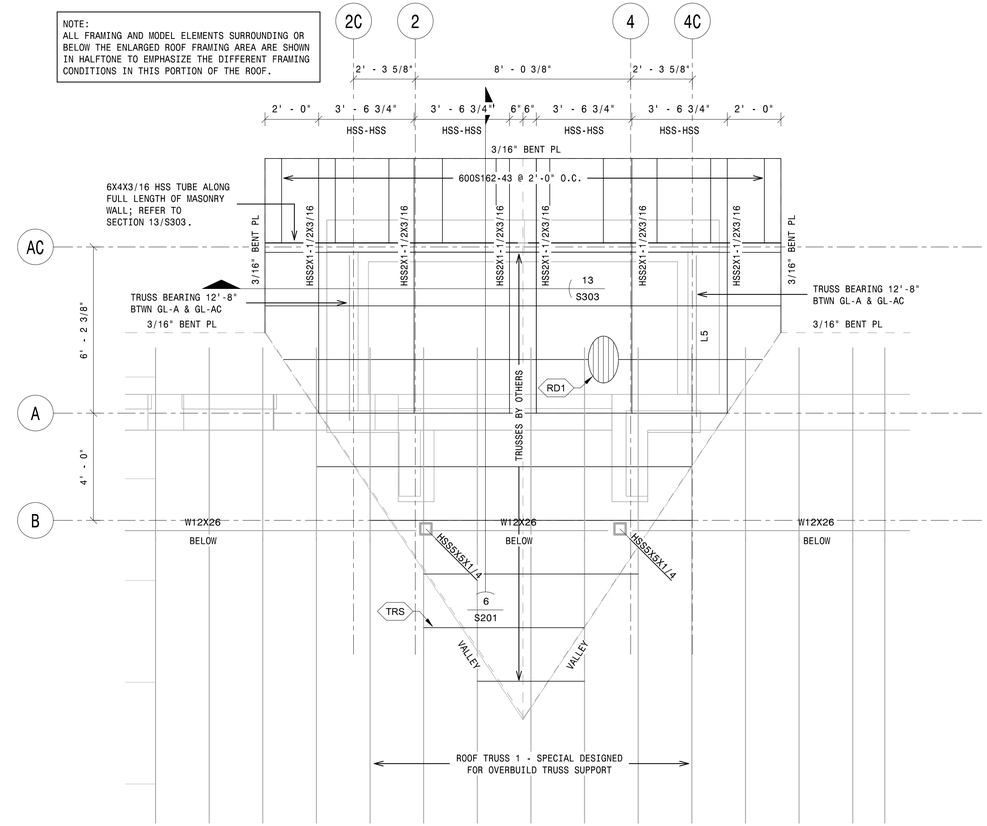
S103

ROOF FRAMING PLAN



1 SITE WALL FOUNDATION PLAN
1/4" = 1'-0"

NOTE:
ALL FRAMING AND MODEL ELEMENTS SURROUNDING OR BELOW THE ENLARGED ROOF FRAMING AREA ARE SHOWN IN HALFTONE TO EMPHASIZE THE DIFFERENT FRAMING CONDITIONS IN THIS PORTION OF THE ROOF.



2 ENLARGED ROOF FRAMING PLAN
3/8" = 1'-0"

PLAN NOTES S104	
INDEX	PLAN NOTE
RD1	ROOF DECK SHALL BE 1.5B22 METAL DECK FASTENED TO TOP CHORD OF ROOF TRUSSES PER STRUCTURAL GENERAL NOTES.
TRS	TRUSS DESIGNER SHALL DESIGN BLOCKING BETWEEN TRUSSES AS REQUIRED FOR SUPPORT OF OVERBUILT TRUSSES AND ATTACHMENT OF OVERBUILT TRUSSES TO TRUSS ELEMENTS.

ENLARGED PLAN NOTES:

1. ALL ELEVATIONS ARE MEASURE FROM A REFERENCE FINISHED FLOOR ELEVATION OF 0'-0".
2. TOF (-1'-4") DENOTES A TOP OF FOOTING ELEVATION OF 1'-4" BELOW TOP OF FINISHED FLOOR.
3. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS NOT SHOWN ON THIS PLAN.

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RALEIGH, NC 27601
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STRUCTURAL
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NORTH CAROLINA, INC.
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RALEIGH, NC 27605
919.832.8118 T

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120 Saint Mary's St. Raleigh, NC 27605
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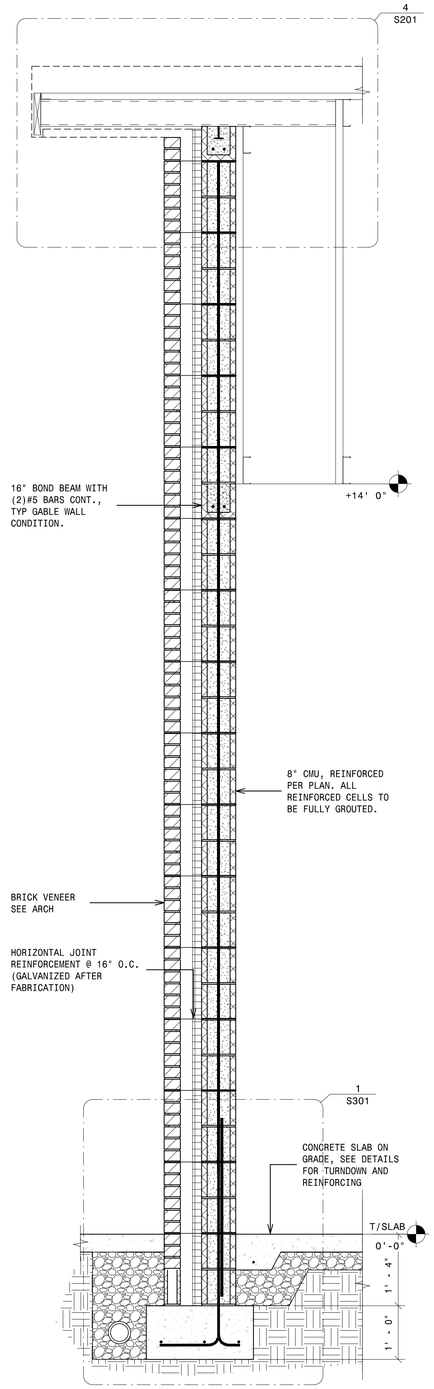
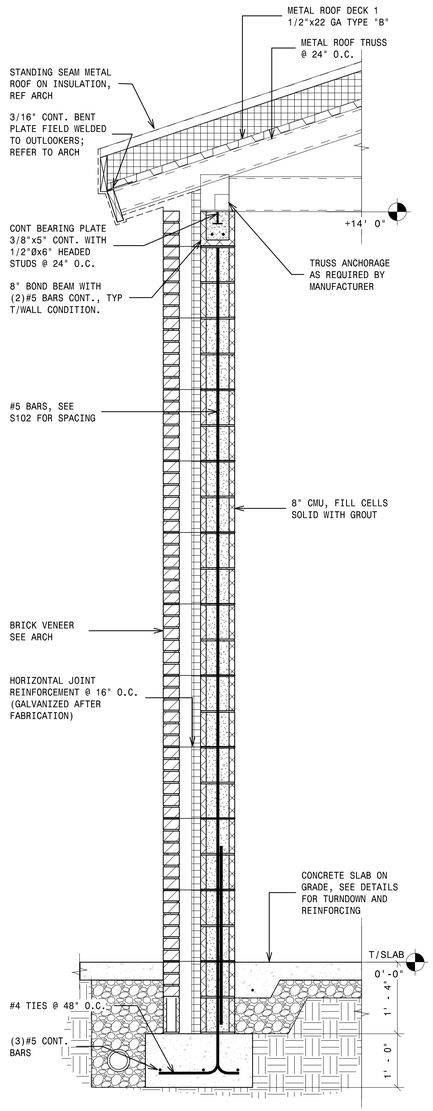
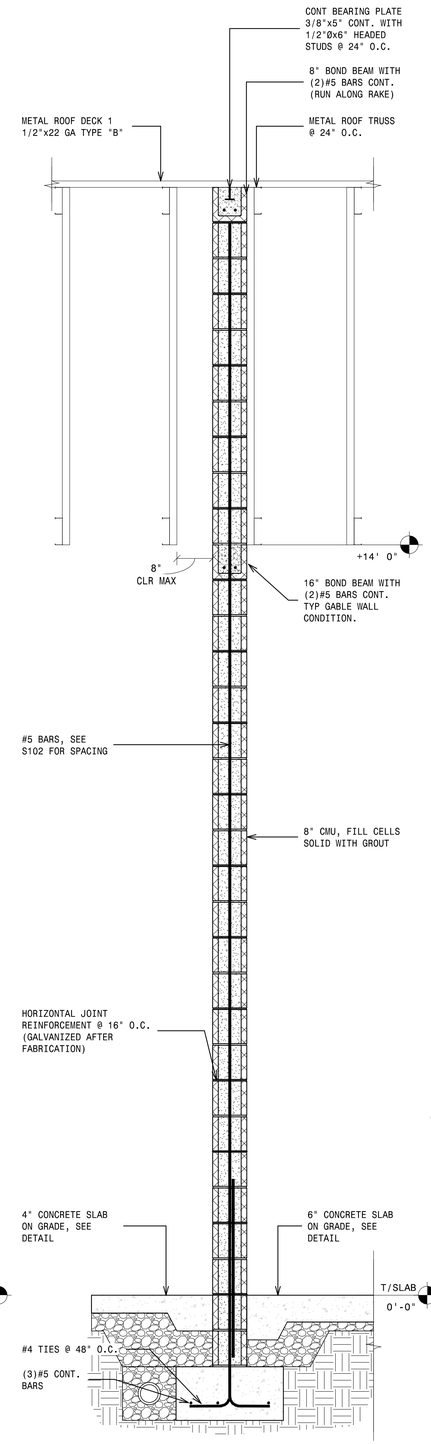
S104
ENLARGED PLANS



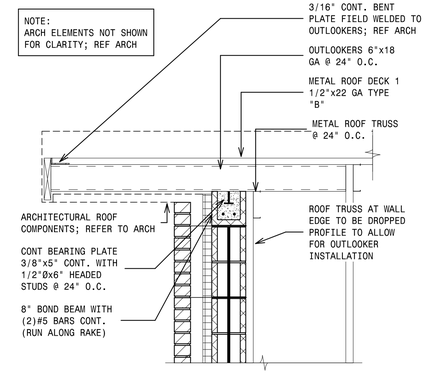
- 1 - WALL SECTION 1
3/4" = 1'-0"



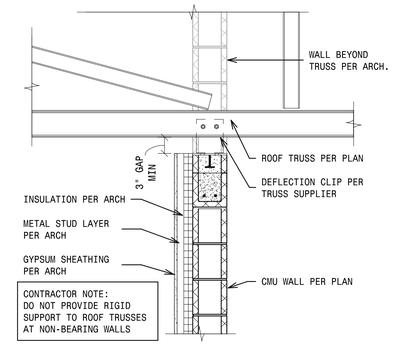
- 2 - WALL SECTION 2
3/4" = 1'-0"



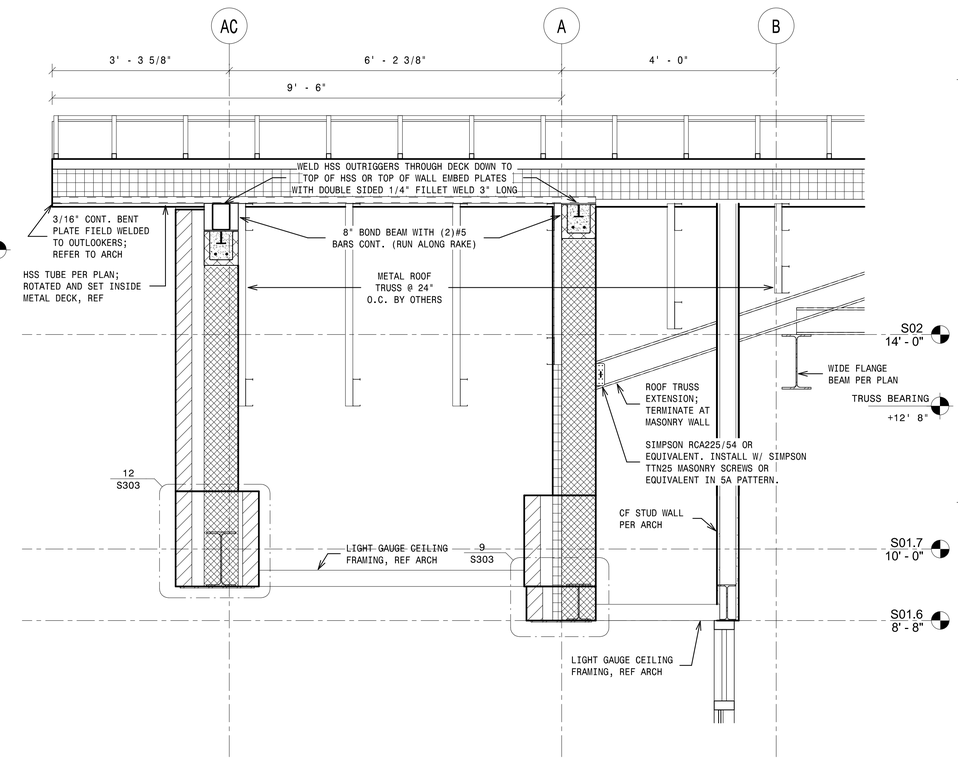
- 3 - WALL SECTION 3
3/4" = 1'-0"



- 4 - OUTLOOKERS AT END WALL
3/4" = 1'-0"



- 5 - TRUSS TO NON-BEARING WALL
3/4" = 1'-0"



- 6 - OVERBUILD ROOF SECTION
3/4" = 1'-0"

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702 OBERLIN ROAD, SUITE 300,
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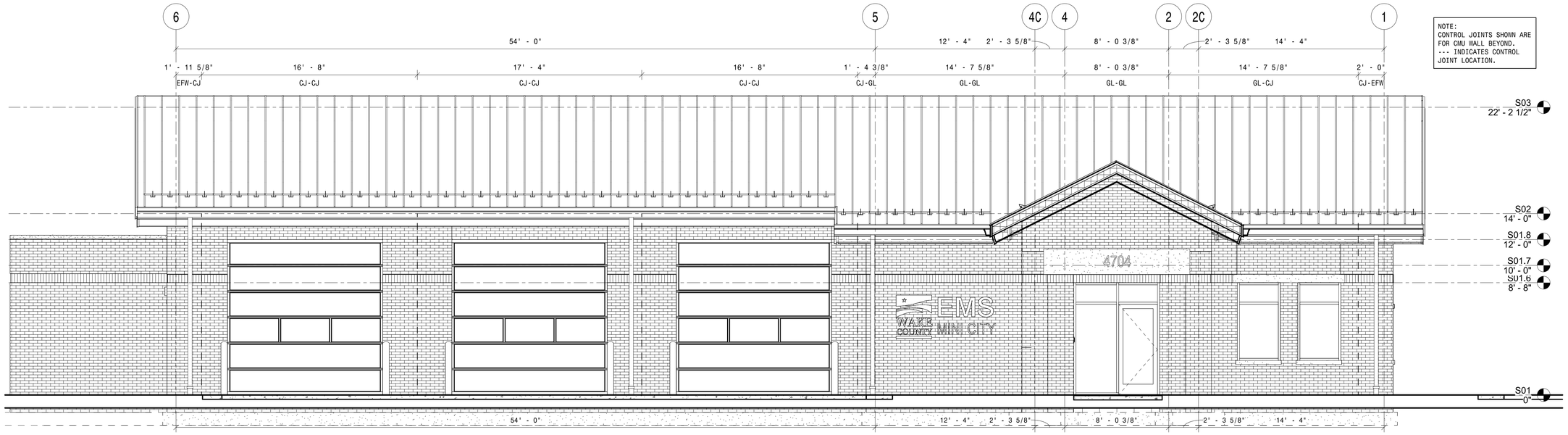
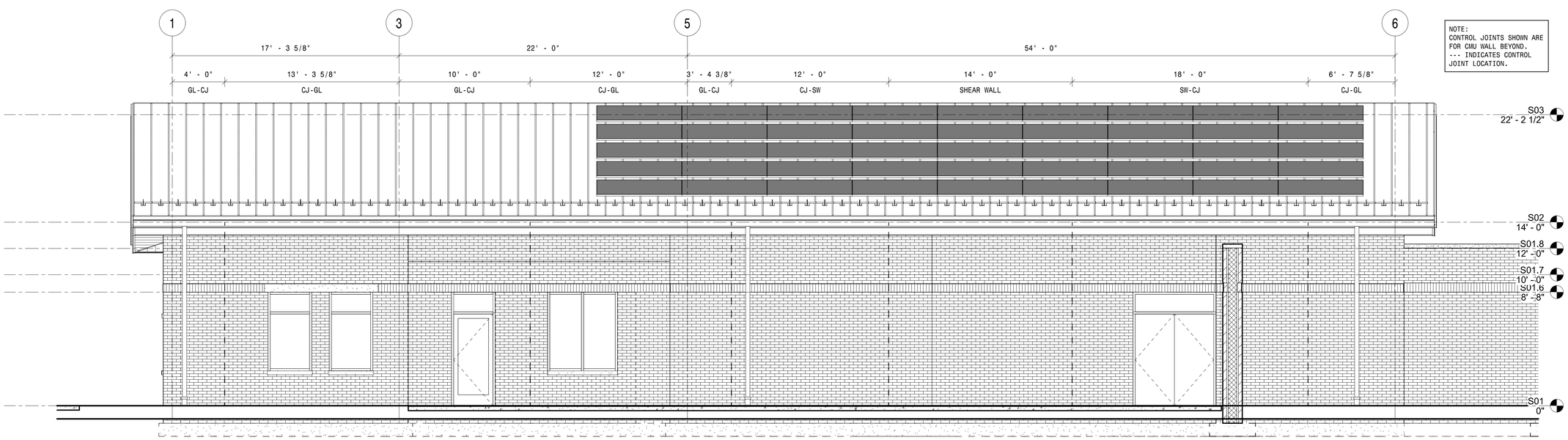
S201

WALL SECTIONS



NOTE:
CONTROL JOINTS SHOWN ARE FOR CMU WALL BEYOND.
--- INDICATES CONTROL JOINT LOCATION.

1 NORTH ELEVATION
1/4" = 1'-0"



NOTE:
CONTROL JOINTS SHOWN ARE FOR CMU WALL BEYOND.
--- INDICATES CONTROL JOINT LOCATION.

2 SOUTH ELEVATION
1/4" = 1'-0"

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RALEIGH, NC 27601
919.535.5200 T

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LYSAGHT & ASSOCIATES
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919.832.8118 T

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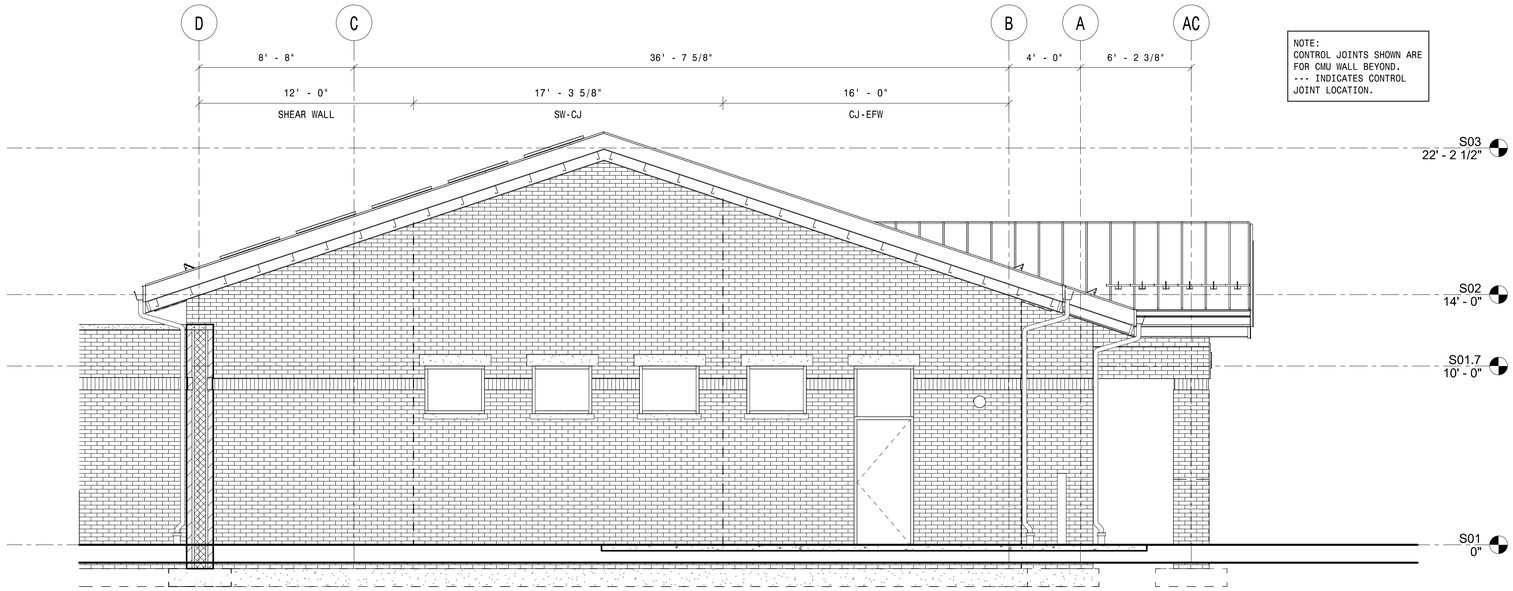
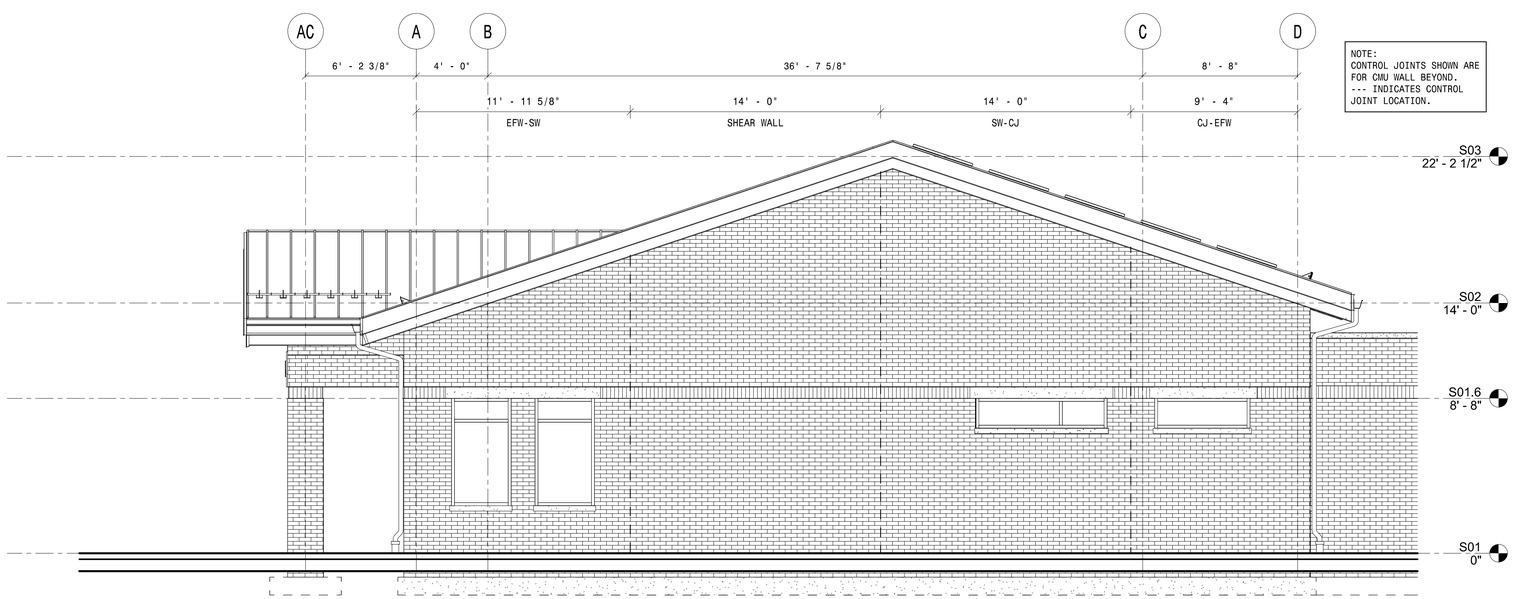
S202

ELEVATIONS



1 EAST ELEVATION
1/4" = 1'-0"



2 WEST ELEVATION
1/4" = 1'-0"

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919.833.0495 T

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8/14/26

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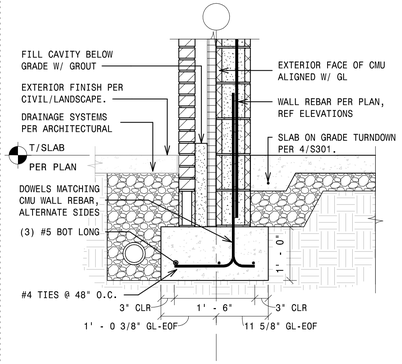
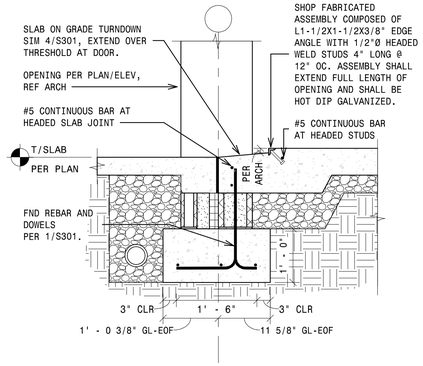
S203

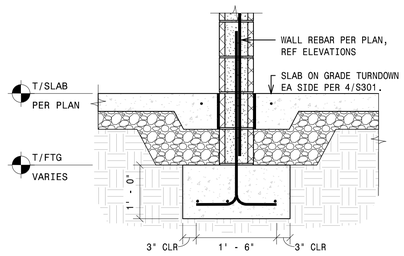
ELEVATIONS



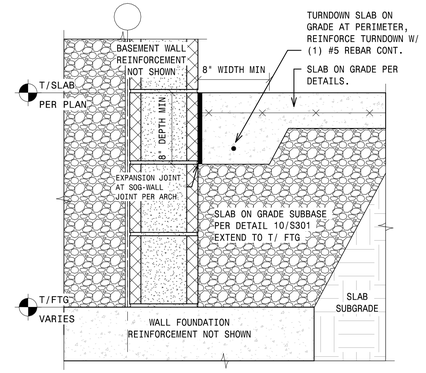
- 1 - CMU WALL FOUNDATION SECTION 1
3/4" = 1'-0"



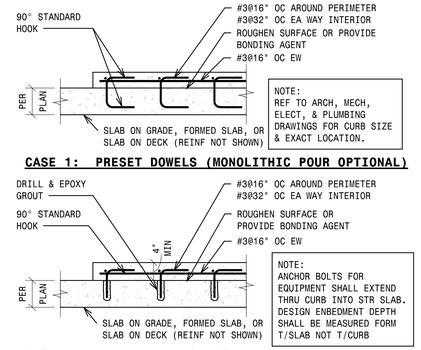
- 2 - CMU WALL FOUNDATION SECTION 2
3/4" = 1'-0"



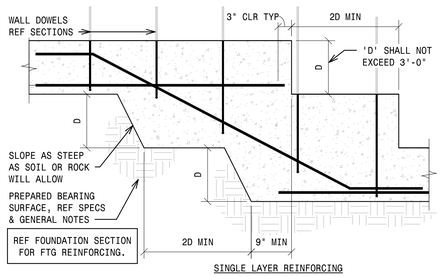
- 3 - CMU WALL FOUNDATION SECTION 3
3/4" = 1'-0"



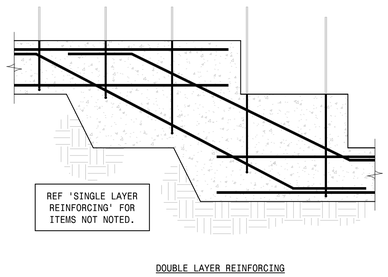
- 4 - SLAB ON GRADE PERIMETER TURNDOWN
1 1/2" = 1'-0"



- 5 - CONCRETE RAISED PAD DETAIL
3/4" = 1'-0"
D1007

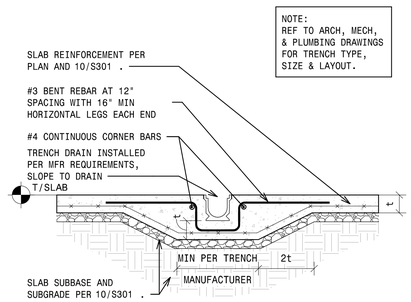


SINGLE LAYER REINFORCING

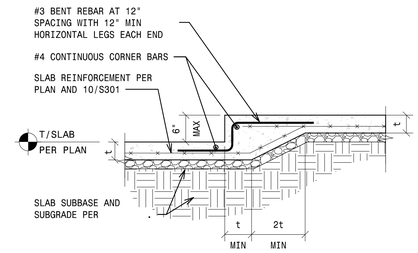


DOUBLE LAYER REINFORCING

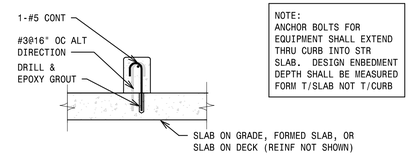
- 6 - TYPICAL WALL FOOTING STEP DETAIL
3/4" = 1'-0"
D1031



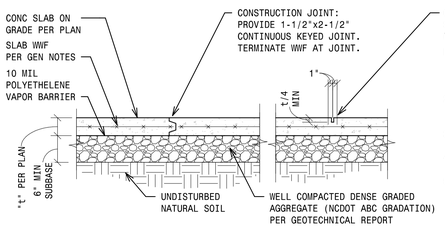
- 7 - TRENCH DRAIN SYSTEM DETAIL
3/4" = 1'-0"
D1011



- 8 - SLAB ON GRADE STEP
3/4" = 1'-0"



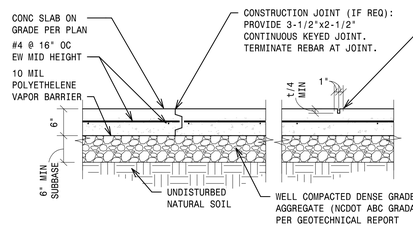
- 9 - CONCRETE CURB SECTION
3/4" = 1'-0"
D1008



CONTRACTION JOINT:
SAWCUT OR INSTALL PREMOLDED INSERT FILL JOINT WITH ELASTOMERIC SEALANT, JOINT LAYOUT PER PLAN

NOTES:
1. CONSTRUCTION JOINTS TO BE LOCATED BY THE CONTRACTOR, SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. REFER TO PLANS FOR GENERAL CONTROL JOINT LAYOUT, VERIFY CONTROL JOINT LOCATIONS MEET SPACING REQUIREMENTS PER GENERAL NOTES.
3. CONTROL JOINTS SHALL BE SAW CUT WITHIN 8 HOURS OF CONCRETE PLACEMENT.
4. SLAB SAW CUT CONTRACTION JOINTS SHALL BE 1/8"x1/3 SLAB DEPTH.
5. REF 11/S301 FOR TYPICAL SLAB ON GRADE DETAILS AT 6" SLAB AREAS.

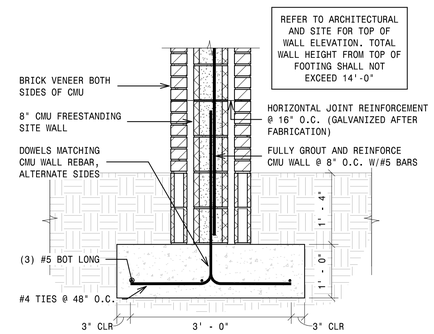
- 10 - LIGHT DUTY SLAB ON GRADE AND JOINT DETAIL
3/4" = 1'-0"
D1001



CONTRACTION JOINT:
SAWCUT OR INSTALL PREMOLDED INSERT FILL JOINT WITH ELASTOMERIC SEALANT, JOINT LAYOUT PER PLAN. CUT 2" OUT OF 1/2 OF REINF BARS (EVERY OTHER BAR) AT CONTRACTION JOINTS.

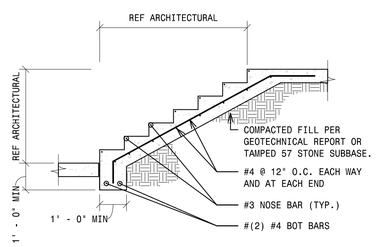
NOTES:
1. CONSTRUCTION JOINTS TO BE LOCATED BY THE CONTRACTOR, SUBMIT TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. REFER TO PLANS FOR GENERAL CONTROL JOINT LAYOUT, VERIFY CONTROL JOINT LOCATIONS MEET SPACING REQUIREMENTS PER GENERAL NOTES.
3. CONTROL JOINTS SHALL BE SAW CUT WITHIN 8 HOURS OF CONCRETE PLACEMENT.
4. SLAB SAW CUT CONTRACTION JOINTS SHALL BE 1/8"x1/3 SLAB DEPTH.
5. REF 10/S301 FOR TYPICAL SLAB ON GRADE DETAILS AT 4" SLAB AREAS.

- 11 - HEAVY DUTY SLAB ON GRADE AND JOINT DETAIL
3/4" = 1'-0"
D1001

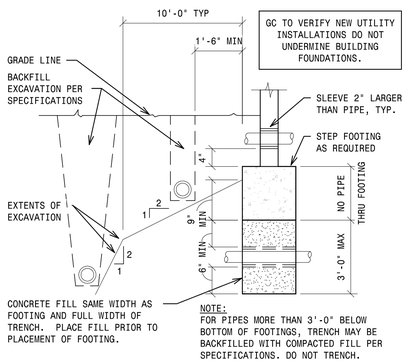


- 12 - SITE WALL FOUNDATION SECTION
3/4" = 1'-0"

STAIR RISE AND RUN SHALL BE PER ARCHITECTURAL AND SHALL COMPLY WITH ALL STAIR REQUIREMENTS OF THE CONTROLLING BUILDING CODE.



- 13 - STAIRS ON GRADE DETAILS
3/8" = 1'-0"
D1711



- 14 - TYPICAL PIPE AND TRENCH AT FOUNDATION
3/4" = 1'-0"
D1601

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WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL

8/14/26

LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

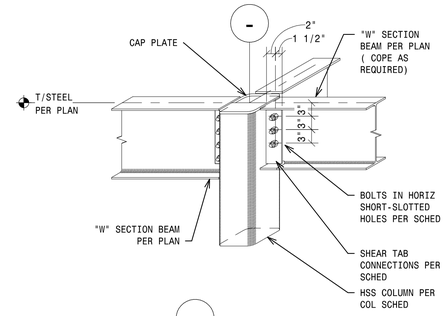
REVISIONS

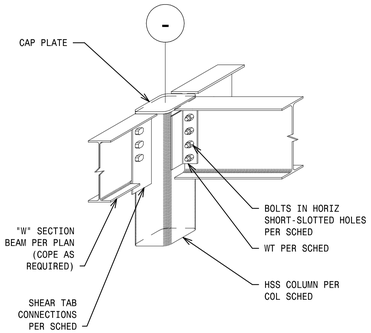
NO.	DESCRIPTION	DATE

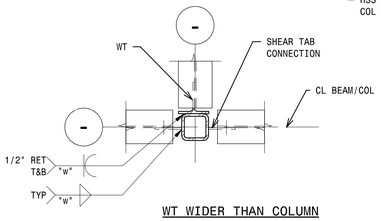
SHEET INFORMATION

S301

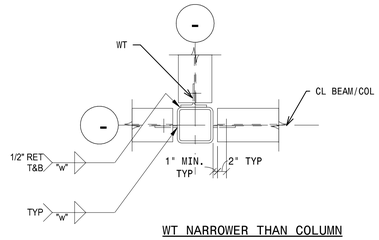
FOUNDATION DETAILS







WT WIDER THAN COLUMN

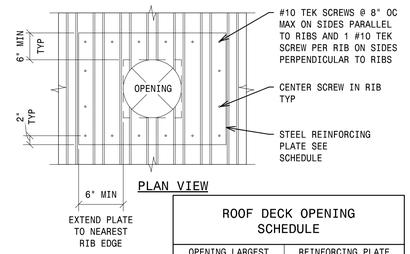


WT NARROWER THAN COLUMN

- 1 - TYPICAL WF BEAM TO HSS COLUMN SHEAR CONNECTIONS
3/4" = 1'-0"

CONNECTION SCHEDULE					
BEAM SIZE	"N" NO. OF 3/4"Ø BOLTS A325-N	SHEAR TAB		WT CONNECTION	
		"T" PLATE THICKNESS	"w" WELD SIZE	WT SIZE	"w" WELD SIZE
W6, W8, W10	2	1/4"	3/16"	WT4x20	7/16"
W12, W14	3	5/16"	1/4"	WT4x20	5/16"
W16	4	5/16"	1/4"	WT4x20	5/16"
W18, W21	5	5/16"	1/4"	WT6x32.5	5/16"
W24	6	5/16"	1/4"	WT9x38	5/16"
W27	7	5/16"	1/4"	WT9x38	5/16"
W30	8	3/8"	1/4"	WT9x38	3/8"
W33	9	3/8"	1/4"	WT9x38	3/8"
W36	10	3/8"	1/4"	WT9x38	3/8"

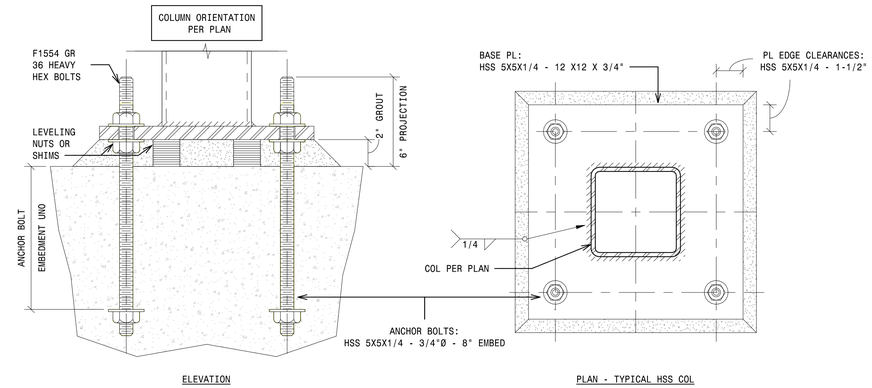
NOTES:
1. FOR DEEP COPES AND GIRDERS WITH LARGE "k" DIMENSIONS ADJUST FIRST HOLE BELOW TOP OF BEAM AS REQUIRED TOMAINTAIN EDGE DISTANCES SHOWN
2. 3" BOLT SPACING, TYPICAL.
3. "S" BEAM USE THE SAME DEPTH AS "W"



PLAN VIEW

ROOF DECK OPENING SCHEDULE	
OPENING LARGEST DIMENSION - "D"	REINFORCING PLATE THICKNESS - MIN
0" TO 6"	NOT REQUIRED
6" TO 13"	16 GA
PROVIDE A WELDED ANGLE FRAME FOR OPENINGS LARGER THAN 13" OR FOR CLOSELY SPACED OPENINGS IN WHICH REINFORCING OVERLAPS.	

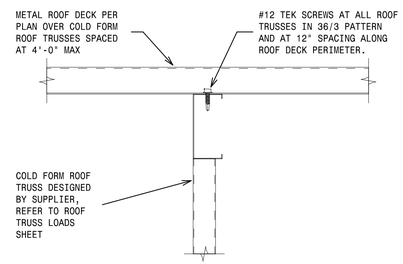
- 2 - OPENING DETAIL - ROOF DECK
D5012 3/4" = 1'-0"



ELEVATION

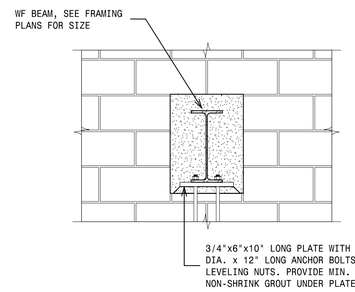
PLAN - TYPICAL HSS COL

- 3 - COLUMN BASE DETAILS
D5100 3" = 1'-0"



- 4 - ROOF DECK TO CF TRUSS
3" = 1'-0"

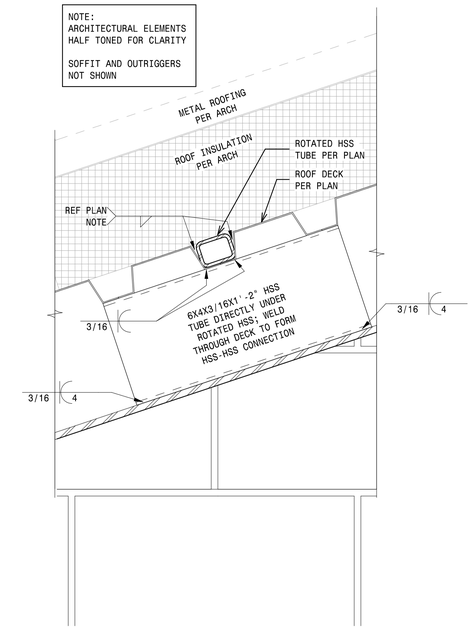
NOTE:
CMU WALL REINFORCEMENT NOT SHOWN FOR CLARITY.



- 5 - TYP BEAM BEARING IN CMU WALL
3/4" = 1'-0"

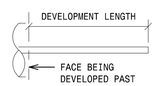
NOTE:
ARCHITECTURAL ELEMENTS HALF TONED FOR CLARITY

SOFFIT AND OUTRIGGERS NOT SHOWN



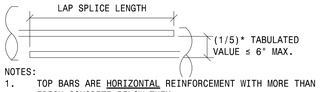
- 6 - END ROOF OVERHANG SECTION
3" = 1'-0"

TENSION DEVELOPMENT LENGTH GR. 60 UNCOATED BARS, N.W. CONCRETE, SORTED BY f'c BELOW										
	3,000 PSI		3,500 PSI		4,000 PSI		4,500 PSI		≥ 5,000 PSI	
BAR SIZE	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT
#3	1'-10"	1'-5"	1'-8"	1'-4"	1'-7"	1'-3"	1'-6"	1'-2"	1'-5"	1'-1"
#4	2'-5"	1'-10"	2'-3"	1'-9"	2'-1"	1'-7"	2'-0"	1'-6"	1'-11"	1'-5"
#5	3'-0"	2'-4"	2'-9"	2'-2"	2'-7"	2'-0"	2'-6"	1'-11"	2'-4"	1'-10"
#6	3'-7"	2'-9"	3'-4"	2'-7"	3'-1"	2'-5"	2'-11"	2'-3"	2'-10"	2'-2"
#7	5'-3"	4'-0"	4'-10"	3'-9"	4'-6"	3'-6"	4'-3"	3'-4"	4'-1"	3'-2"
#8	6'-0"	4'-7"	5'-6"	4'-3"	5'-2"	4'-0"	4'-11"	3'-9"	4'-8"	3'-7"
#9	6'-9"	5'-2"	6'-3"	4'-10"	5'-10"	4'-6"	5'-6"	4'-3"	5'-3"	4'-0"
#10	7'-7"	5'-10"	7'-0"	5'-5"	6'-7"	5'-1"	6'-2"	4'-9"	5'-11"	4'-6"
#11	8'-5"	6'-6"	7'-9"	6'-0"	7'-3"	5'-7"	6'-10"	5'-4"	6'-6"	5'-0"



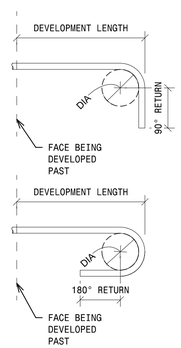
NOTES:
1. TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 12" OF FRESH CONCRETE BELOW THEM.
2. TENSION DEVELOPMENT LENGTH SHALL NOT BE LESS THAN 12".
3. TABULATED VALUES FOR DEVELOPMENT LENGTH TO BE MULTIPLED BY THE FOLLOWING FACTORS:
   A. 1.5 FOR EPOXY COATED BOTTOM REBAR.
   B. 1.31 FOR EPOXY COATED TOP REBAR.
   C. 1.33 FOR LIGHTWEIGHT CONCRETE.
   D. FOR REINFORCEMENT OTHER THAN GRADE 60 MULTIPLY THE TABULATED VALUES BY THE YIELD STRENGTH DIVIDED BY 60 KSI.
   E. 1.5 IF THE REQUIREMENTS BELOW ARE NOT MET.
4. TABULATED VALUES ARE CORRECT ONLY IF A OR B BELOW ARE MET:
   A.
      a. CLEAR SPACING IS MORE THAN THE BAR DIAMETER AND
      b. CLEAR COVER IS MORE THAN THE BAR DIAMETER AND
      c. STIRRUPS OR TIES ARE PRESENT AT CODE MINIMUM SPACINGS.
   B.
      a. CLEAR SPACING IS MORE THAN TWICE THE BAR DIAMETER AND
      b. CLEAR COVER IS MORE THAN THE BAR DIAMETER.
5. IF INSUFFICIENT LENGTH IS PRESENT FOR DEVELOPMENT, USE STANDARD ACI HOOKS.

TENSION LAP SPLICE LENGTH, CLASS B GR. 60 UNCOATED BARS, N.W. CONCRETE, SORTED BY f'c BELOW										
	3,000 PSI		3,500 PSI		4,000 PSI		4,500 PSI		≥ 5,000 PSI	
BAR SIZE	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT
#3	2'-5"	1'-11"	2'-2"	1'-9"	2'-1"	1'-8"	2'-0"	1'-7"	1'-11"	1'-5"
#4	3'-2"	2'-5"	3'-0"	2'-4"	2'-9"	2'-1"	2'-8"	2'-0"	2'-6"	1'-11"
#5	3'-11"	3'-1"	3'-7"	2'-10"	3'-5"	2'-8"	3'-3"	2'-6"	3'-1"	2'-5"
#6	4'-8"	3'-7"	4'-4"	3'-5"	4'-1"	3'-2"	3'-10"	3'-0"	3'-9"	2'-10"
#7	6'-10"	5'-3"	6'-4"	4'-11"	5'-11"	4'-7"	5'-7"	4'-4"	5'-4"	4'-2"
#8	7'-10"	6'-0"	7'-2"	5'-7"	6'-9"	5'-3"	6'-5"	4'-11"	6'-1"	4'-8"
#9	8'-10"	6'-9"	8'-2"	6'-4"	7'-7"	5'-11"	7'-2"	5'-7"	6'-10"	5'-3"
#10	9'-9"	7'-6"	9'-0"	7'-0"	8'-6"	6'-6"	7'-11"	6'-1"	7'-6"	5'-11"
#11	10'-8"	8'-3"	9'-11"	7'-7"	9'-3"	7'-2"	8'-8"	6'-9"	8'-3"	6'-5"



NOTES:
1. TOP BARS ARE HORIZONTAL REINFORCEMENT WITH MORE THAN 12" OF FRESH CONCRETE BELOW THEM.
2. LAP SPLICE LENGTH SHALL NOT BE LESS THAN 12".
3. TABULATED VALUES FOR DEVELOPMENT LENGTH TO BE MULTIPLED BY THE FOLLOWING FACTORS:
   A. 1.5 FOR EPOXY COATED BOTTOM REBAR.
   B. 1.31 FOR EPOXY COATED TOP REBAR.
   C. 1.33 FOR LIGHTWEIGHT CONCRETE.
   D. FOR REINFORCEMENT OTHER THAN GRADE 60 MULTIPLY THE TABULATED VALUES BY THE YIELD STRENGTH DIVIDED BY 60 KSI.
   E. 1.5 IF THE REQUIREMENTS BELOW ARE NOT MET.
4. TABULATED VALUES ARE CORRECT ONLY IF A OR B BELOW ARE MET:
   A.
      a. CLEAR SPACING IS MORE THAN THE BAR DIAMETER AND
      b. CLEAR COVER IS MORE THAN THE BAR DIAMETER AND
      c. STIRRUPS OR TIES ARE PRESENT AT CODE MINIMUM SPACINGS.
   B.
      a. CLEAR SPACING IS MORE THAN TWICE THE BAR DIAMETER AND
      b. CLEAR COVER IS MORE THAN THE BAR DIAMETER.
5. WHEN SPLICING BARS OF DIFFERENT SIZE, SPLICE LENGTH SHALL BE THE GREATER OF "DEVELOPMENT LENGTH OF LARGER BAR" AND "SPLICE LENGTH OF SMALLER BAR".
6. IF INSUFFICIENT LENGTH IS PRESENT TO LAP, USE A MECHANICAL SPLICE W/ 125% YIELD CAPACITY OF THE REINFORCEMENT.

- 7 - REINFORCEMENT LENGTHS
D3001 3/4" = 1'-0"



HOOKED REINFORCEMENT LENGTHS GR. 60 UNCOATED BARS, N.W. CONCRETE								
BAR SIZE	DIA	90° RETURN	180° RETURN	DEVELOPMENT LENGTH BY CONCRETE STRENGTH (f'c) IN PSI				
				3,000	3,500	4,000	4,500	≥5,000
#3	2 1/4"	4 1/2"	2 1/2"	0'-9"	0'-8"	0'-8"	0'-7"	0'-7"
#4	3"	6"	2 1/2"	0'-11"	0'-11"	0'-10"	0'-9"	0'-9"
#5	3 3/4"	7 1/2"	2 1/2"	1'-2"	1'-1"	1'-0"	1'-0"	0'-11"
#6	4 1/2"	9"	3"	1'-5"	1'-4"	1'-3"	1'-2"	1'-1"
#7	5 1/4"	10 1/2"	3 1/2"	1'-8"	1'-6"	1'-5"	1'-4"	1'-3"
#8	6"	12"	4"	1'-10"	1'-9"	1'-7"	1'-6"	1'-5"
#9	9 1/4"	13 5/8"	4 5/8"	2'-1"	1'-11"	1'-10"	1'-9"	1'-8"
#10	10 1/4"	15 1/4"	5 1/4"	2'-4"	2'-2"	2'-1"	1'-11"	1'-10"
#11	11 1/2"	17"	5 3/4"	2'-7"	2'-5"	2'-3"	2'-2"	2'-0"

NOTES:
1. DEVELOPMENT LENGTH SHALL NOT BE LESS THAN THE SMALLER OF 8*Db AND 6".
2. Db DENOTES THE NOMINAL DIAMETER OF THE BAR BEING DEVELOPED.
3. VALUES DO NOT APPLY TO TIES OR STIRRUPS.
4. TABULATED VALUES FOR DEVELOPMENT LENGTH ONLY TO BE MULTIPLED BY THE FOLLOWING FACTORS:
   A. 1.2 FOR EPOXY COATED REBAR.
   B. 1.33 FOR LIGHTWEIGHT CONCRETE.
   C. 0.7 FOR SIDE COVER MORE THAN 2 1/2" AND END COVER MORE THAN 2".
   D. 0.8 FOR STIRRUPS OR TIES ENCLOSING THE HOOK SPACED LESS THAN 3*Db WITH THE TIE CLOSEST TO THE BENT PORTION OF THE HOOK SPACED LESS THAN 2*Db MEASURED FROM THE OUTSIDE OF THE RADIUS BEND.
   E. FOR REINFORCEMENT OTHER THAN GRADE 60 MULTIPLY THE TABULATED VALUES BY THE YIELD STRENGTH DIVIDED BY 60 KSI.

- 8 - HOOKED REINFORCEMENT LENGTHS
D3002 3/4" = 1'-0"

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

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SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL
8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
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FIRM NO. C-0621

PROJECT INFORMATION

PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

REVISIONS

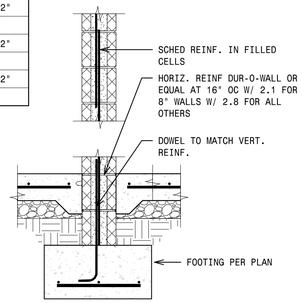
NO.	DESCRIPTION	DATE

SHEET INFORMATION

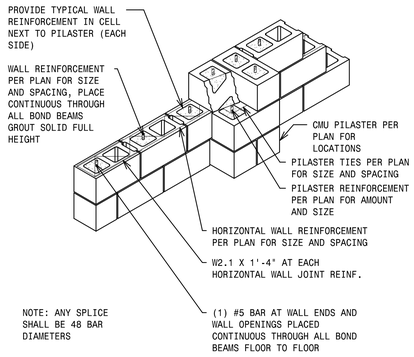
S302

CONCRETE & STEEL DETAILS

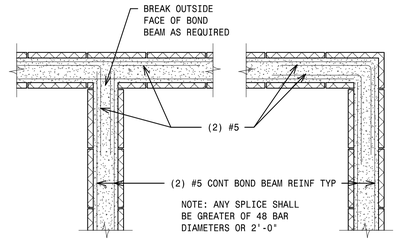
LAP SPLICE & EMBEDMENT LENGTH		
BAR SIZE	LAP SPICE	EMBEDMENT
#3	18"	13 1/2"
#4	24"	18"
#5	30"	22 1/2"
#6	36"	27"
#7	42"	31 1/2"
#8	48"	36"



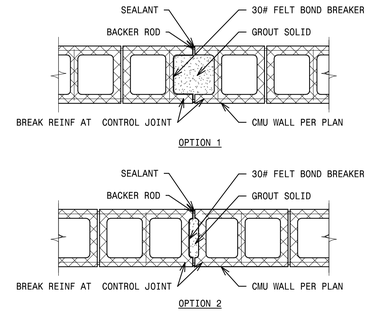
- 1 - TYPICAL CMU WALL MINIMUM REINFORCEMENT
D4001 3/4" = 1'-0"



- 2 - REINFORCED MASONRY WALL REINFORCING
D4002 1" = 1'-0"



- 3 - BOND BEAM INTERSECTION & CORNER
D4003 1" = 1'-0"

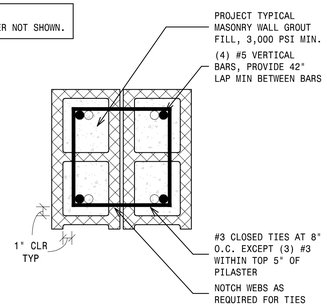


NOTES:
1. AT REINFORCED WALLS, PLACE VERTICAL BAR AND GROUT IN THE FIRST CELL ON EACH SIDE OF THE CONTROL JOINT.

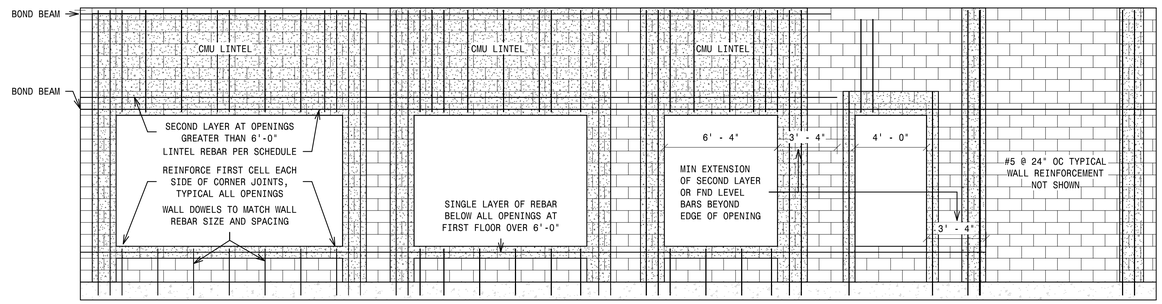
- 4 - MASONRY EXPANSION JOINT DETAIL
D4004 1" = 1'-0"

- 5 - 8" CMU LINTEL
D4012 3/4" = 1'-0"

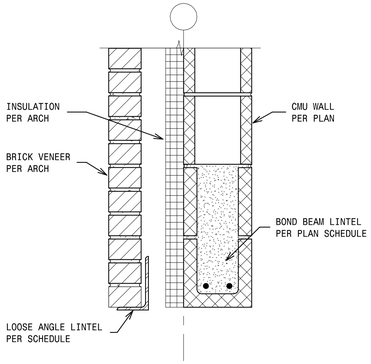
NOTE:
BRICK VENEER NOT SHOWN.



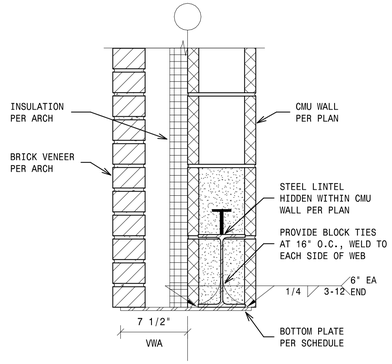
- 6 - TYP CMU PILASTER
1 1/2" = 1'-0"



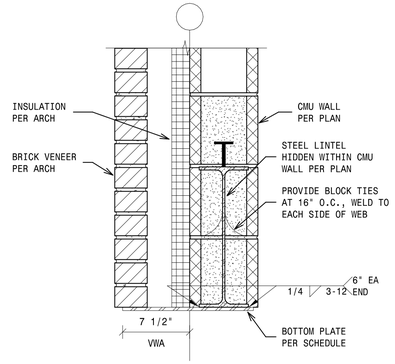
- 7 - PROJECT TYPICAL MASONRY WALL OPENING ELEVATIONS
1/4" = 1'-0"



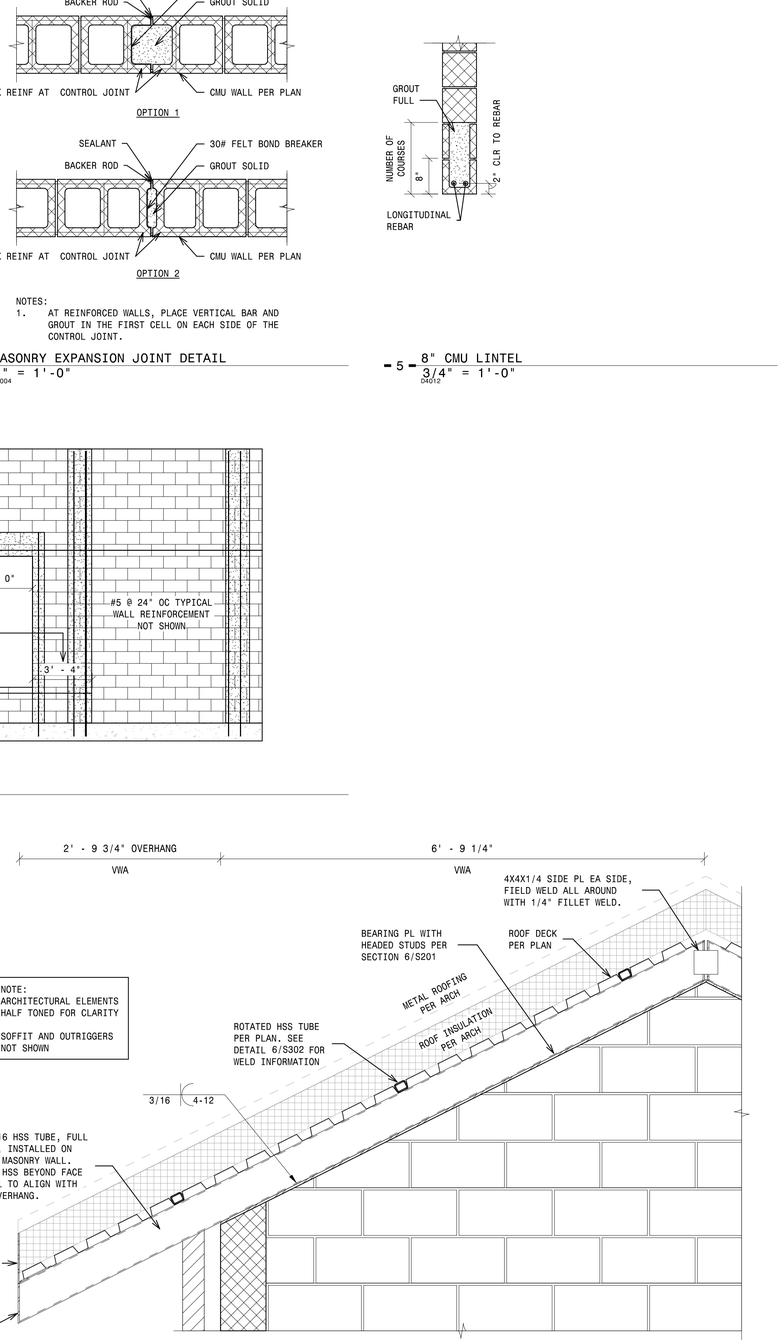
- 8 - L1 LINTEL SECTION
1 1/2" = 1'-0"



- 9 - L2 LINTEL SECTION
1 1/2" = 1'-0"



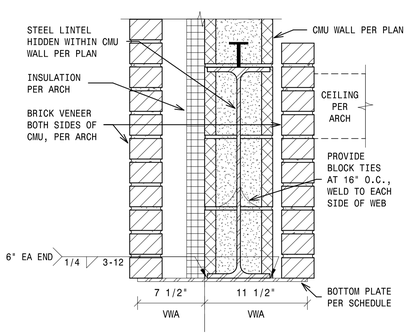
- 10 - L3 LINTEL SECTION
1 1/2" = 1'-0"



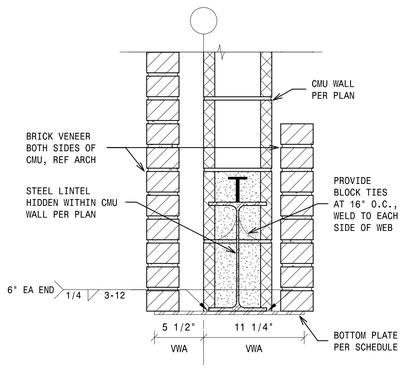
NOTE:
ARCHITECTURAL ELEMENTS HALF TONED FOR CLARITY

SOFFIT AND OUTRIGGERS NOT SHOWN

- 13 - HSS TUBE AT OVERHANG
1" = 1'-0"



- 11 - L4 LINTEL SECTION
1 1/2" = 1'-0"



- 12 - L5 LINTEL SECTION
1 1/2" = 1'-0"

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27616

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CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 044576 ENGINEER ANDREW B. TERRELL
8/14/26

L&A LYSAGHT & ASSOCIATES
structural engineers
120 Saint Mary's St. Raleigh, NC 27605
919.833.0495 LysaghtAssociates.com
FIRM NO. C-0621

PROJECT INFORMATION

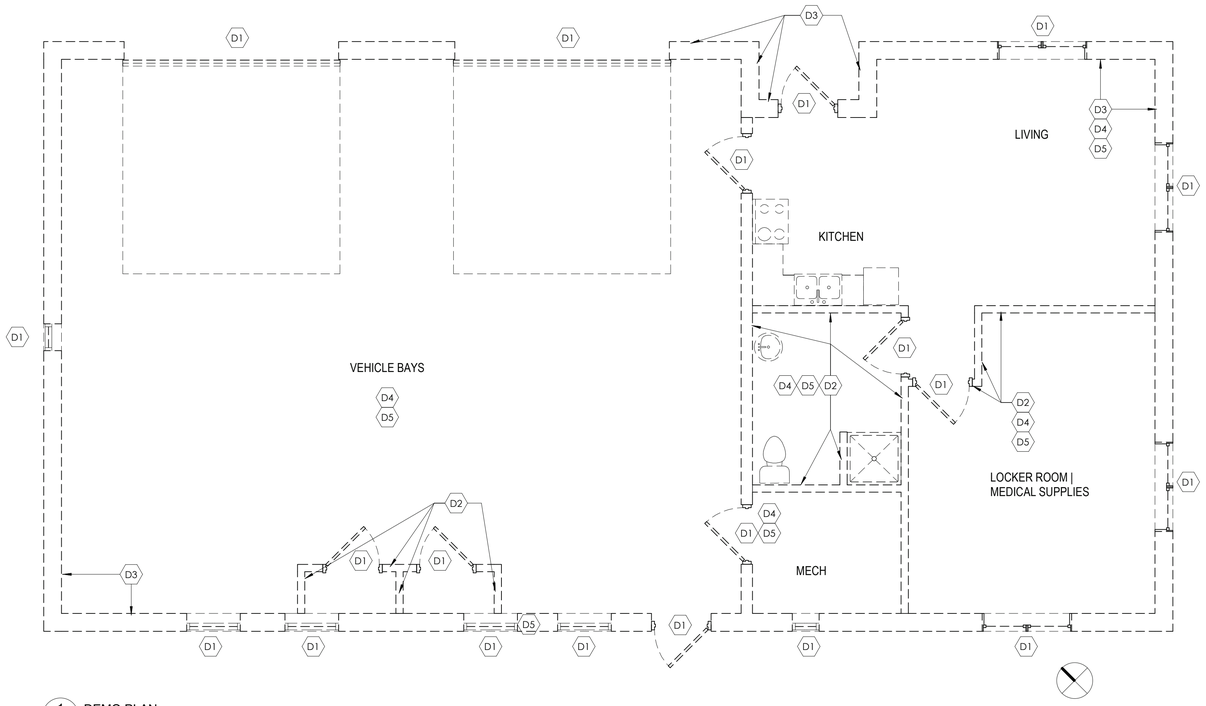
PROJECT NO.:	15358
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	BLL
CHECKED BY:	ABT

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

S303
MASONRY DETAILS



1 AD100 DEMO PLAN
1/4" = 1'-0"

DEMOLITION GENERAL NOTES

1. SEE PME DRAWINGS FOR MORE SPECIFIC HVAC, ELECTRICAL, AND PLUMBING DEMOLITION NOTES.
2. GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL GENERAL CONSTRUCTION DEMOLITION. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR MECHANICAL DEMOLITION. PLUMBING CONTRACTOR IS RESPONSIBLE FOR PLUMBING DEMOLITION. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL DEMOLITION, UNLESS OTHERWISE NOTED.
3. ALL TRENCHING, CORING, ETC. IS TO BE DONE BY THE CONTRACTOR OF THE RESPECTIVE TRADE INVOLVED. EACH PRIME CONTRACTOR IS RESPONSIBLE FOR HIS OWN FIRE PENETRATION SYSTEMS, FOR NEW PENETRATIONS, AND FOR PATCHING ANY NEW HOLES HE MAKES.
4. THE TERM "REMOVED" SHALL BE DEFINED TO MEAN REMOVE AND DISPOSE OF OFFSITE IN A LEGAL, ENVIRONMENTALLY RESPONSIBLE MANNER.
5. EACH CONTRACTOR IS RESPONSIBLE FOR RELOCATING OR REPLACING HIS UTILITIES LOCATED WITHIN EXISTING CONSTRUCTION THAT SHALL BE REMOVED. (I.E. PLUMBING CONTRACTOR IS RESPONSIBLE FOR RELOCATING PLUMBING VENTS AND ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR RELOCATING DEVICES, RACEWAY, CONDUIT, ETC.)
6. EXISTING WORK TO REMAIN SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION. GENERAL CONTRACTOR IS RESPONSIBLE FOR PROTECTING WORK TO MAINTAIN THE CONDITION IN WHICH IT WAS FOUND.
7. REMOVE ALL EXISTING WINDOW BLINDS.
8. NOISE AND DEBRIS FROM DEMOLITION WORK MUST BE CONTROLLED. TEMPORARY BARRIERS MUST BE INSTALLED TO COMPLETELY ISOLATE THE NOISE, DUST, AND DEBRIS FROM DEMOLITION ACTIVITIES TO PREVENT THEM FROM AFFECTING OCCUPIED AREAS.
9. SEE PHASING PLANS TO DETERMINE IN WHICH PHASE DEMOLITION WORK OCCURS.

SHEET NOTES - DEMO

#	SHEET NOTES - DEMOLITION
D1	REMOVE EXISTING DOORS/ WINDOWS
D2	REMOVE EXISTING INTERIOR WALLS
D3	REMOVE EXISTING EXTERIOR WALLS
D4	REMOVE EXISTING CEILING WITH ROOF STRUCTURE. REMOVE EXISTING FLOORING WITH FOUNDATION
D5	REMOVE EXISTING PLUMBING, ELECTRICAL AND MECHANICAL EQUIPMENT

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4704 HARGROVE RD.
RALEIGH, NC
27616

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CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect DocuSigned by: Eric M. Sowers A73EEB734E97478... North Carolina Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	DGH

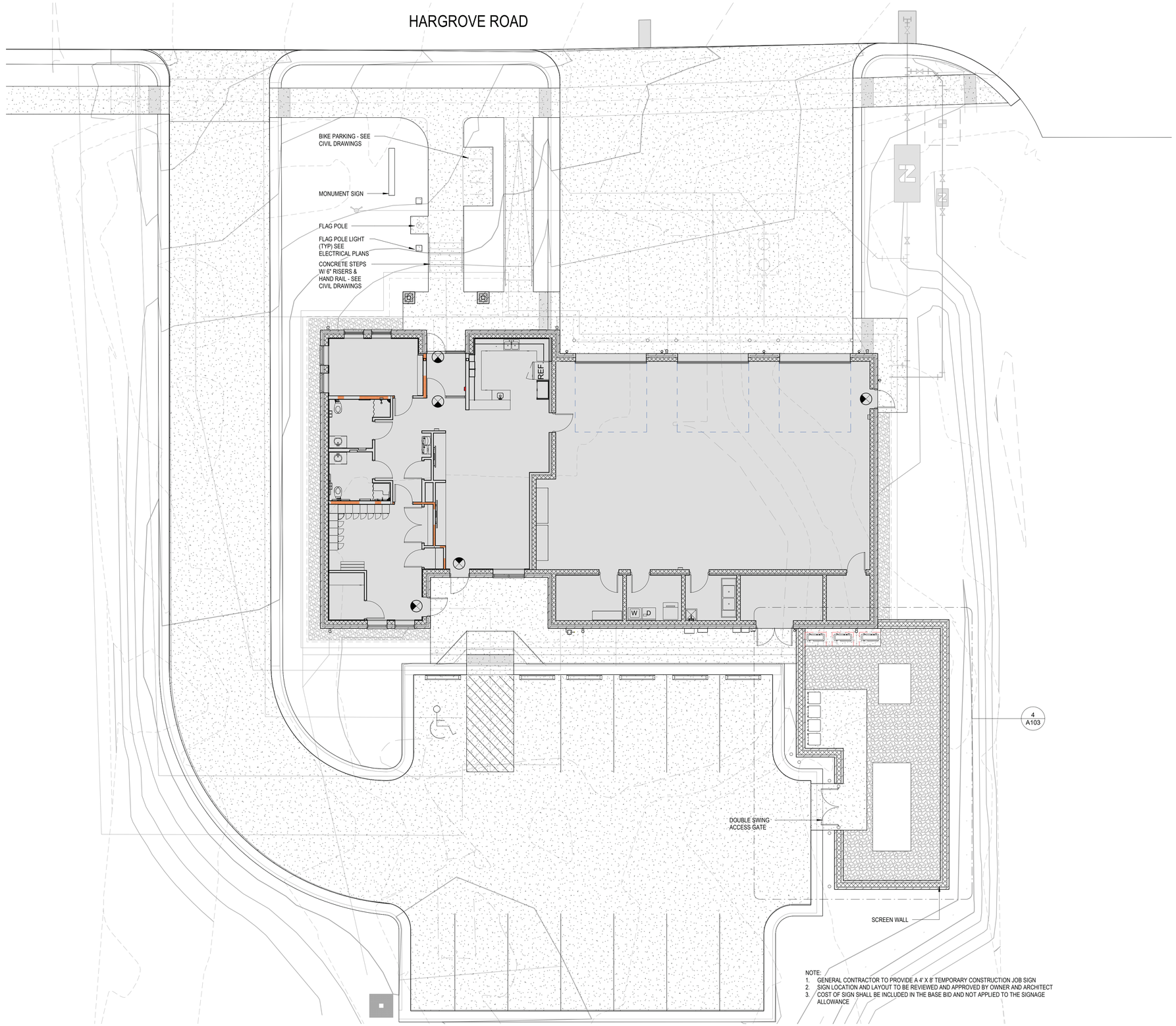
REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

AD100

DEMOLITION PLAN



NOTE:
1. GENERAL CONTRACTOR TO PROVIDE A 4' X 8' TEMPORARY CONSTRUCTION JOB SIGN
2. SIGN LOCATION AND LAYOUT TO BE REVIEWED AND APPROVED BY OWNER AND ARCHITECT
3. COST OF SIGN SHALL BE INCLUDED IN THE BASE BID AND NOT APPLIED TO THE SIGNAGE ALLOWANCE

1 / A100 SITE PLAN
1/8" = 1'-0"

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WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
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919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Organization 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect DocuSigned by: Eric M. Sowers A72EFB734E0F478... Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
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CHECKED BY:	EMS

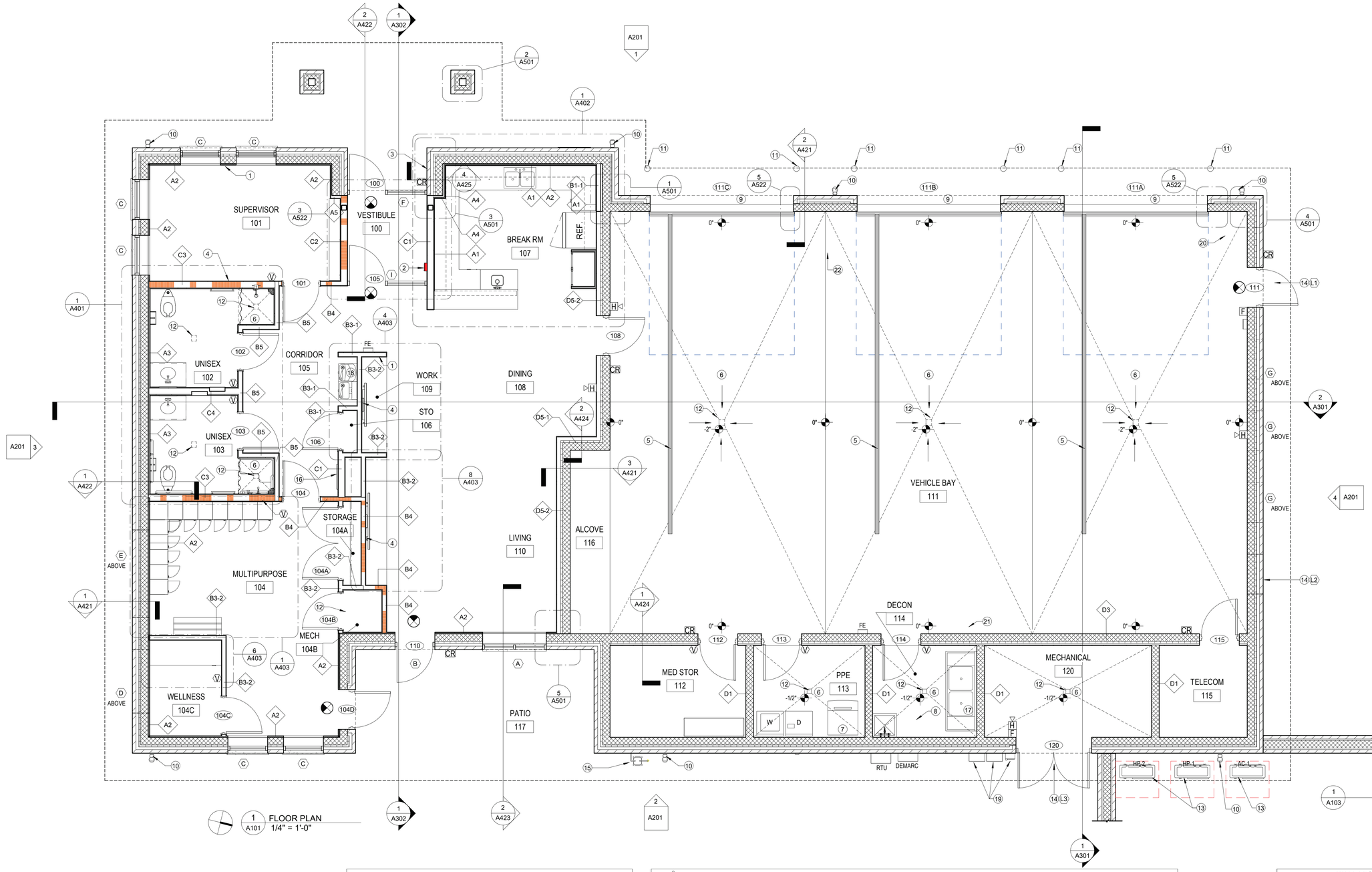
REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

A100

SITE PLAN



1 A101 FLOOR PLAN
1/4" = 1'-0"

GENERAL KEY NOTES

KEY	DESCRIPTION
1	TIME CLOCK - COORDINATE EXACT LOCATION WITH OWNER
2	FACP - SEE FIRE ALARM SHEETS
3	(1) KNOX BOX - RECESSED MOUNT - COORDINATE WITH ELECTRICAL AND SECURITY FOR TAMPER SWITCH
4	WALL MOUNTED TV/MONITOR - COORDINATE POWER AND DATA - SEE ELECTRICAL DRAWINGS
5	4" WIDE YELLOW PAINTED STRIPE - COORDINATE IN FIELD W/ OWNER AND ARCHITECT
6	SLOPE FLOOR TO DRAIN
7	ICE MAKER
8	EMERGENCY EYE WASH - SEE PLUMBING
9	PRESENCE DETECTORS (ABOVE)
10	DOWNSPOUTS TO BELOW GRADE DRAINAGE - SEE SITE/CIVIL DRAWINGS
11	6" DIA. SCHEDULE 40 GALV. STEEL PIPE FILLED W/ CONCRETE W/ POST GUARD PVC SLEEVE AND CAP - SEE DETAIL C9.01
12	FLOOR DRAIN - SEE PLUMBING DRAWINGS
13	HVAC EQUIPMENT - SEE MECHANICAL DRAWINGS
14	LOUVER ABOVE
15	GAS METER, SEE P201
16	ELECTRICAL PANEL, SEE E201
17	SS-1, SCULLERY SINK, SEE P001
18	EWC-1 ELECTRIC WATER COOLER, SEE P001
19	ELECTRICAL EQUIPMENT - SEE ELECTRICAL DRAWINGS
20	FIRE RISER - SEE PLUMBING DRAWINGS
21	CONTROLS PANEL - SEE ELECTRICAL
22	GREASE TRAP - SEE PLUMBING DRAWINGS

INTERIOR WALL SCHEDULE

TYPE	THICKNESS	COMPOSITION	HEIGHT	RATING	COMMENTS
A1	3/8"	1 LAYER CERAMIC TILE ON ADHESIVE BED			SEE ELEVATIONS FOR DETAILS
A2	1 1/2"	1 LAYER 5/8" GWB, 7/8" HAT CHANNEL	6" ABOVE CEILING		
A3	1 7/8"	1 LAYER 5/8" GWB, 7/8" HAT CHANNEL, CERAMIC TILE ON ADHESIVE BED	6" ABOVE CEILING		TILE STOPS AT BATHROOM CEILING
A4	2 5/8"	1 LAYER 5/8" GWB, 2" HIGH HAT CHANNEL @ 16" O.C.	6" ABOVE CEILING		
A5	3 1/8"	1 LAYER 5/8" GWB, 2 1/2" METAL STUDS @ 16" O.C.	6" ABOVE CEILING		
B1-1	4 1/4"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C.	6" ABOVE CEILING		
B1-2	4 1/4"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C.	TO DECK		SOFFIT
B2	4 3/4"	1 LAYER 5/8" GWB, 3 1/2" WOOD STUDS @ 16" O.C., 1 LAYER 5/8" GWB	SEE 2/A511		
B3-1	4 7/8"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	6" ABOVE CEILING		
B3-2	4 7/8"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	TO DECK		
B4	4 7/8"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	TO DECK	1/2 HR	
B5	5 1/4"	1 LAYER 5/8" GWB, 3 5/8" METAL STUDS @ 16" O.C., 1 LAYER 5/8" CBB, CERAMIC TILE	TO DECK		TILE STOPS AT BATHROOM CEILING
C1	7 1/4"	1 LAYER 5/8" GWB, 6" METAL STUDS @ 16" O.C., 1 LAYER 5/8" GWB	TO DECK		
C2	7 1/4"	1 LAYER 5/8" GWB, 6" METAL STUDS @ 16" O.C., 1 LAYER GWB	TO DECK	1/2 HR	
C3	7 5/8"	CERAMIC TILE, 1 LAYER 5/8" CBB, 6" METAL STUDS @ 16" O.C., 1 LAYER 5/8" CWB	TO DECK	1/2 HR	TILE STOPS AT BATHROOM CEILING
C4	8"	CERAMIC TILE, 1 LAYER 5/8" CBB, 6" METAL STUDS @ 16" O.C., 1 LAYER 5/8" CWB, CERAMIC TILE	TO DECK		TILE STOPS AT BATHROOM CEILING
D1	7 5/8"	8" CMU	TO DECK		
D2	9"	1 LAYER OF 5/8" GWB, 3 5/8" METAL STUDS @16" O.C., LAYER OF 5/8" GWB, 2" RIGID INSUL, 1 1/2" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	SEE WALL SECTION		
D3	11 3/4"	8" CMU, 2" RIGID INSUL, 1 1/2" METAL STUDS @ 16" O.C., 1 LAYER OF 5/8" GWB	14' HIGH		
D4	1' - 0 3/8"	2 LAYERS OF 5/8" GWB, 3 5/8" METAL STUDS @16" O.C., 2 LAYERS OF 5/8" GWB, 2" RIGID INSUL, 3 5/8" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	SEE WALL SECTION		
D5-1	1' - 1 7/8"	8" CMU, 2" RIGID INSUL, 3 5/8" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	14' HIGH		
D5-2	1' - 1 7/8"	8" CMU, 2" RIGID INSUL, 3 5/8" METAL STUDS @16" O.C., 1 LAYER OF 5/8" GWB	TO DECK		

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- CMU CONSTRUCTION
- FE — FIRE EXTINGUISHER CABINET WITH EXTINGUISHER
- FACP — WALL MOUNTED FIRE ALARM CONTROL PANEL
- F — WALL MOUNTED FIRE ALARM PULL STATION
- V — FIRE ALARM STROBE DEVICE
- H — FIRE ALARM HORN/STROBE DEVICE
- CR — CARD READER

NOTES

1. ALL DIMENSIONS ARE TO FINISHED FACE OF WALL.
2. COORDINATE AND PROVIDE BACKING/BLOCKING FOR MILLWORK, FURNITURE, EQUIPMENT, AND OTHER ITEMS ATTACHED OR MOUNTED TO WALLS OR CEILINGS.
3. LOCATE DOOR OPENINGS 6" OFF PERPENDICULAR WALL, U.O.N.
4. FINISH WALL TO FLOOR FOR BASE ADHESION.
5. CMU EXTERIOR WALLS IN MULTIPURPOSE, MENS AND WOMEN'S ROOMS, SUPERVISOR'S OFFICE, KITCHEN, DINING AND LIVING ROOMS ARE FURRED OUT WITH 7/8" HAT CHANNELS @ 16" O.C. AND 5/8" GYPSUM BOARD - PAINTED.

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www.esse-architects.com

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CIVIL & LANDSCAPE ARCHITECTS
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137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
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NORTH CAROLINA, INC.
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RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect DocuSigned by: Eric M. Sowers A2D5F8734B2F42F8 North Carolina Raleigh, NC

8/16/2026

PROJECT INFORMATION

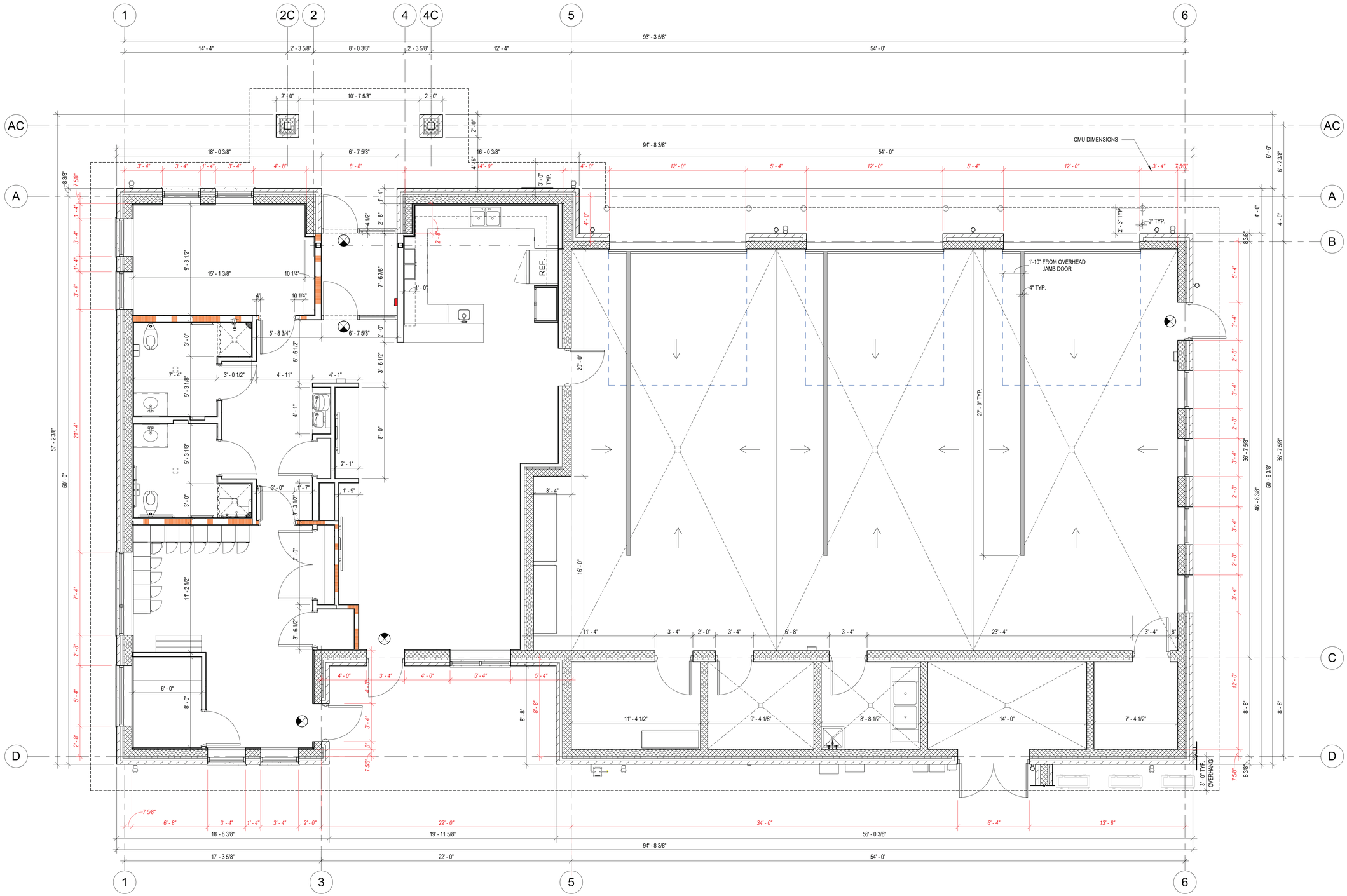
PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	EMS

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

A101
FLOOR PLAN



1 A102 FLOOR PLAN - DIMENSIONS
1/4" = 1'-0"

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919.833.0495 T

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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EFB734E9748...
Raleigh, NC
8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
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REVISIONS

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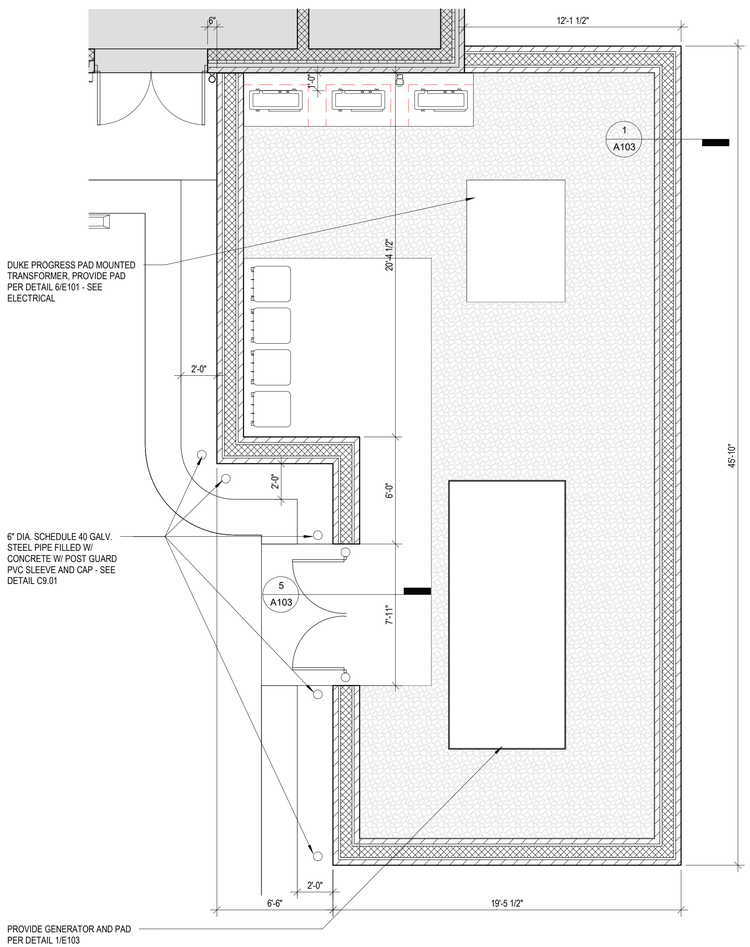
SHEET INFORMATION

A102

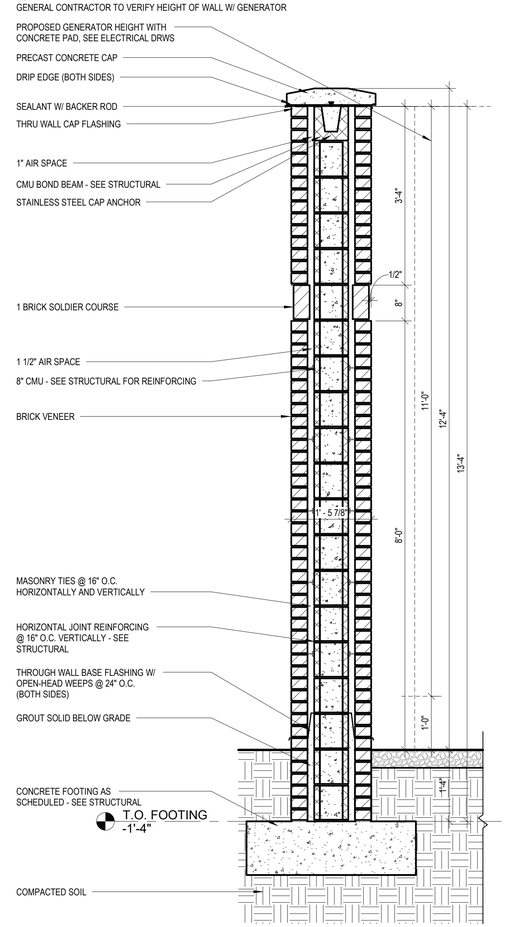
DIMENSION PLAN

NOTE:
GENERAL CONTRACTOR TO VERIFY ALL EQUIPMENT DIMENSION, LOCATION AND CLEARANCES

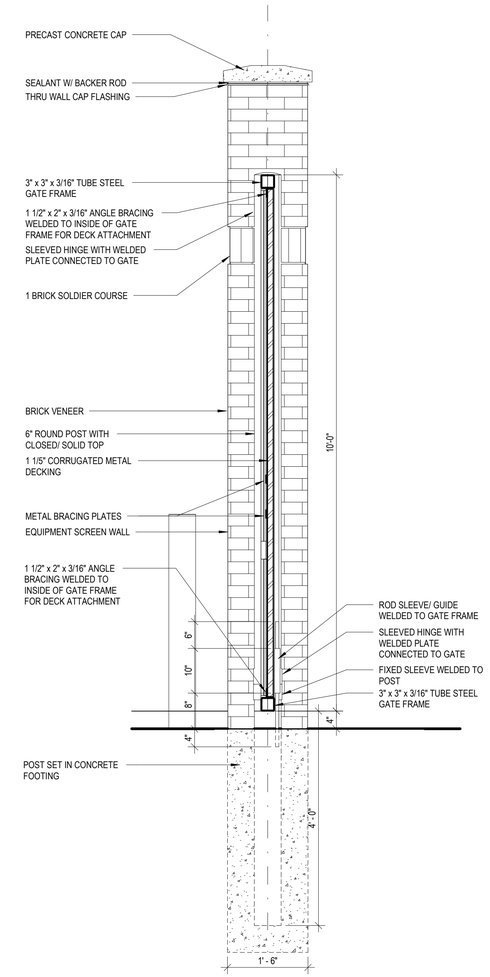


4 A103 EQUIPMENT PARK ENLARGED PLAN
1/4" = 1'-0"

NOTE:
GENERAL CONTRACTOR TO VERIFY HEIGHT OF WALL W/ GENERATOR



1 A103 SCREEN WALL
3/4" = 1'-0"



5 A103 GATE SECTION DETAIL
3/4" = 1'-0"

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WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
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120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A.
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A7E6FB73AE0FA7B...
North Carolina
Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	NA
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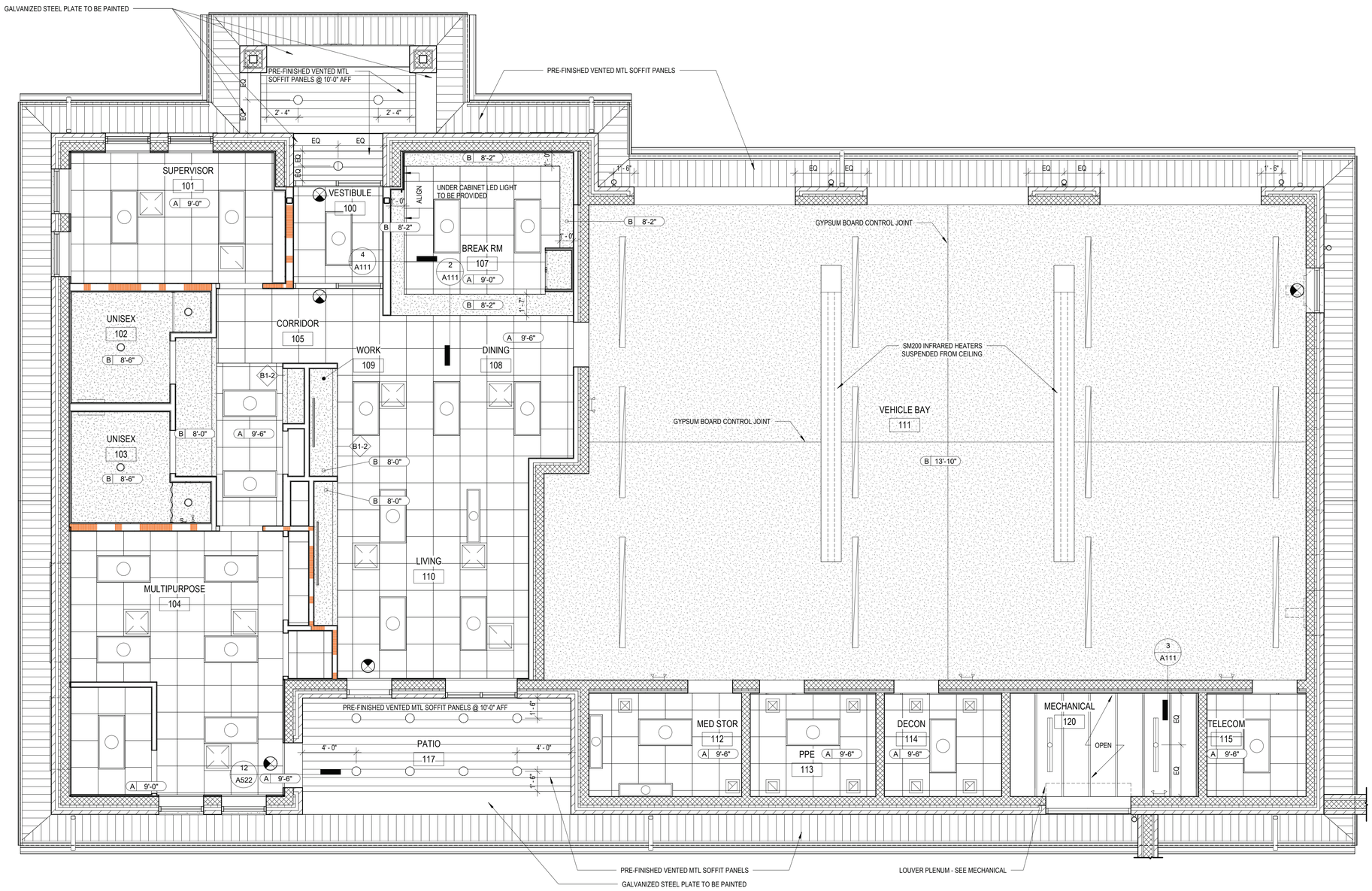
REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

A103
EQUIPMENT PARK PLAN



1 A111 REFLECTED CEILING PLAN
1/4" = 1'-0"

CEILING LEGEND

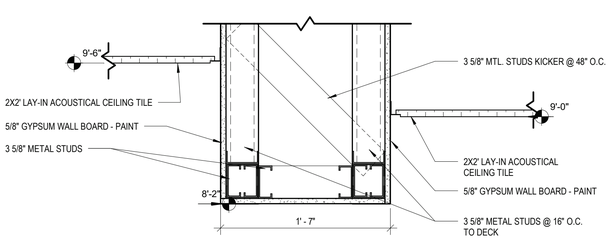
CEILING TYPE — A 10'-0" — CEILING HEIGHT

PATTERN	KEY	CEILING MATERIAL
	A	SUSPENDED 2'x2' ACOUSTICAL CEILING TILES - TEGULAR EDGE
	B	GYPSUM BOARD

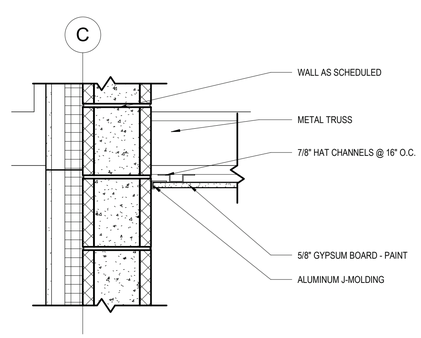
SYMBOL	DESCRIPTION
	2X4 LED FIXTURE
	1X4 LED FIXTURE
	LED DOWNLIGHT
	LED STRIP LIGHTING
	VANITY LIGHTING
	EXTERIOR WALL SCONCE
	EXTERIOR RECESSED LED DOWNLIGHT
	LED DOWNLIGHT
	COMBINATION EXIT AND EMERGENCY LIGHT WALL OR CEILING MOUNTED
H	HEAT DETECTOR, CEILING OR WALL MOUNTED
	AIR SUPPLY
	AIR RETURN
	SPRINKLER HEAD
	SIDE WALL SPRINKLER HEAD
F	FLOW SWITCH
T	TAMPER SWITCH
SD	SMOKE DETECTOR, CEILING OR WALL MOUNTED
D	DUCT MOUNTED SMOKE DETECTOR
H	CEILING MOUNTED FIRE ALARM AUDIO/VISUAL DEVICE
PE	REMOTE INDICATOR LAMP
	EMERGENCY WALL LIGHT

CEILING NOTES:

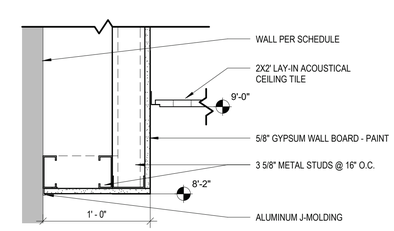
1. SEE ELECTRICAL AND MECHANICAL PLANS FOR MORE INFORMATION.
2. WHERE CEILING KEYNOTE IS NOT NOTED, ROOM HAS EXPOSED STRUCTURE.
3. CENTER CEILING GRID IN ROOM UNLESS SHOWN OTHERWISE. CENTER LIGHTS AS INDICATED. NOTIFY ARCHITECT OF ANY CONFLICTS OF LOCATIONS PRIOR TO INSTALLATION.
4. ALL DIMENSIONS ARE TO CENTERLINE OF FIXTURE UNLESS OTHERWISE NOTED.
5. SEE FINISH PLANS FOR PAINT COLORS OF CEILING SOFFITS.
6. CONTRACTOR IS NOT TO INSTALL ANY ACCESS PANELS IN GWB CEILING WITHOUT PRIOR APPROVAL AND COORDINATION WITH ARCHITECT.



2 A111 CEILING DETAIL @ BULKHEAD
1 1/2" = 1'-0"



3 A111 GYPSUM BOARD TO WALL DETAIL
1 1/2" = 1'-0"



4 A111 DETAIL AT GYPSUM BOARD SOFFIT AND WALL
1 1/2" = 1'-0"

WALL LEGEND

	GYPSUM BOARD CONSTRUCTION
	1/2 HR FIRE BARRIER UL U419
	CMU CONSTRUCTION
FE	FIRE EXTINGUISHER CABINET WITH EXTINGUISHER
FACP	WALL MOUNTED FIRE ALARM CONTROL PANEL
F	WALL MOUNTED FIRE ALARM PULL STATION
V	FIRE ALARM STROBE DEVICE
H	FIRE ALARM HORN/STROBE DEVICE
CR	CARD READER

NOTES

1. ALL DIMENSIONS ARE TO FINISHED FACE OF WALL.
2. COORDINATE AND PROVIDE BACKING/BLOCKING FOR MILLWORK, FURNITURE, EQUIPMENT, AND OTHER ITEMS ATTACHED OR MOUNTED TO WALLS OR CEILINGS.
3. LOCATE DOOR OPENINGS 6" OFF PERPENDICULAR WALL, U.O.N.
4. FINISH WALL TO FLOOR FOR BASE ADHESION.
5. CMU EXTERIOR WALLS IN MULTIPURPOSE, MENS AND WOMEN'S ROOMS, SUPERVISOR'S OFFICE, KITCHEN, DINING AND LIVING ROOMS ARE FURRED OUT WITH 7/8" HAT CHANNELS @ 16" O.C. AND 5/8" GYPSUM BOARD - PAINTED.

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WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
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27616

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CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects PA
52498
Registered Architectural Corporation
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EF873ME07478...
Cert#:
Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	EMS

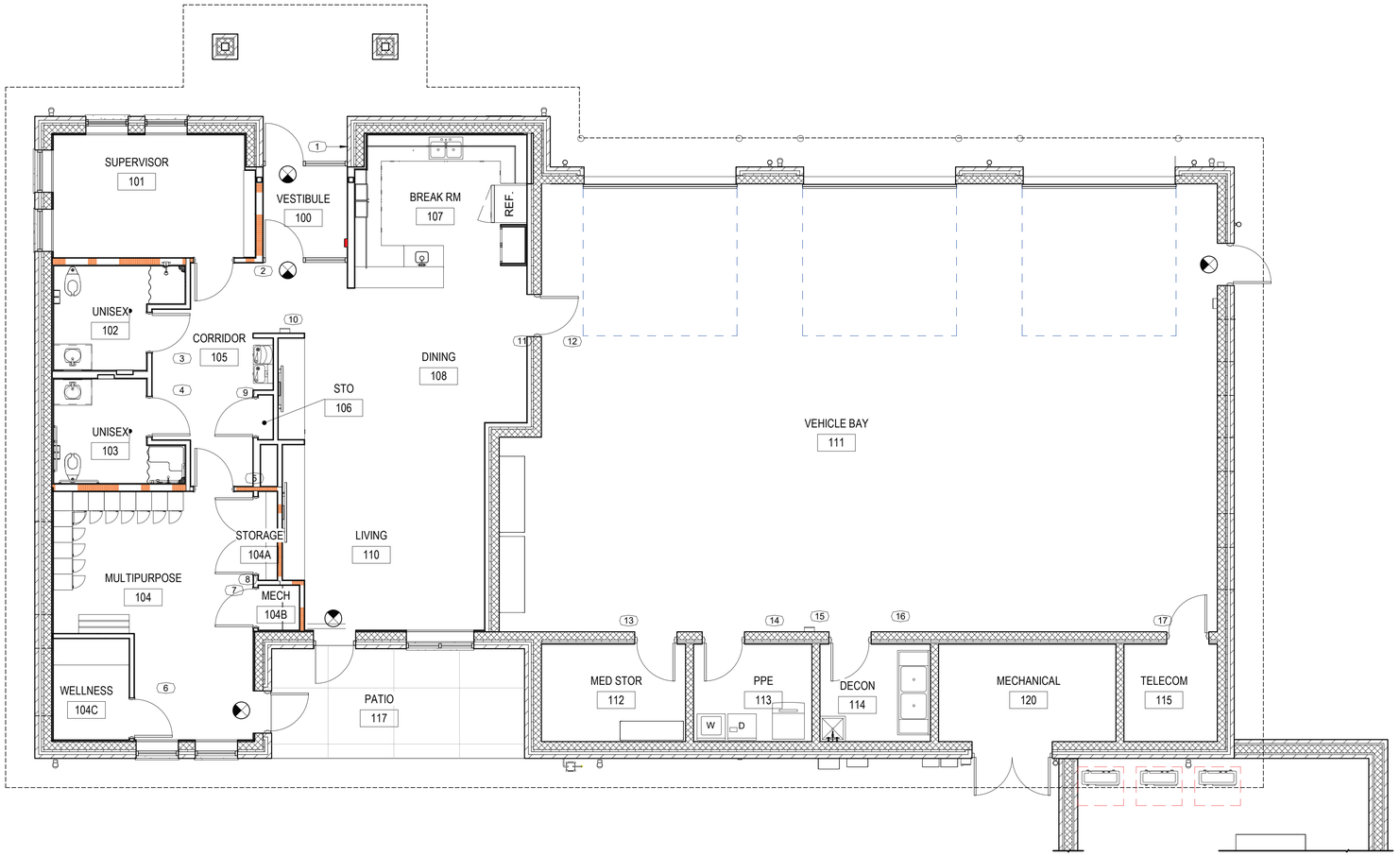
REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

A111

REFLECTED CEILING PLAN



1 / A112 SIGNAGE PLAN
3/16" = 1'-0"

SIGNAGE SCHEDULE

SIGN NUMBER	ROOM NUMBER	SIGNAGE TEXT	SIGN TYPE	COMMENTS
1		DEDICATION PLAQUE	6	
2	101	SUPERVISOR	1	
3	102	RESTROOM	3A	RESTROOM (M / W)
4	103	RESTROOM	3	RESTROOM (M / W / HC)
5	104	MULTIPURPOSE	1	
6	104C	WELLNESS	1	
7	104B	MECHANICAL	2	
8	104A	STORAGE	2	
9	106	STORAGE	2	
10	105	FIRE EXTINGUISHER	4	
11	111	BAY		
12	108	DINING		
13	112	MED STORAGE	1	
14	113	PPE	1	
15	111	FIRE EXTINGUISHER	4	
16	114	DECONTAMINATION	1	
17	115	TELECOM	1	

NOTES:
1. CONFIRM SIGNAGE TEXT WITH OWNER BEFORE FABRICATION
2. FIRE EVACUATION PLANS - QUANTITY AND LOCATION AS DETERMINED BY FIRE MARSHALL
3. THE CONTRACTOR SHALL BID ALL INTERIOR AND EXTERIOR SIGNAGE WORK OUT TO A LIST OF VENDORS PROVIDED BY THE OWNER. THE COST OF THIS WORK SHALL BE APPLIED TO ALLOWANCE NO. 11

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RALEIGH, NORTH CAROLINA 27608
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137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

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LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A.
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EF8734E9743...
North Carolina
Raleigh, NC
8/16/2026

PROJECT INFORMATION

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DRAWN BY:	MLD
CHECKED BY:	EMS

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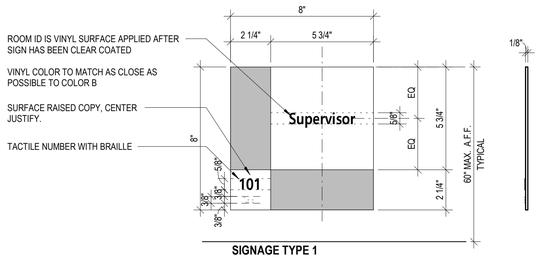
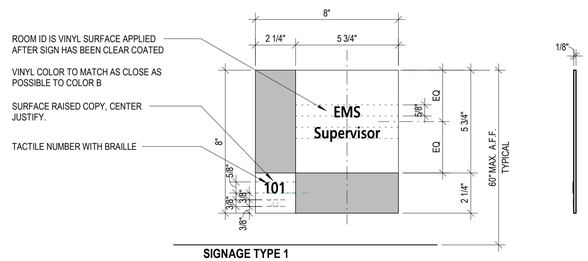
SHEET INFORMATION

A112

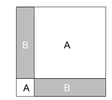
SIGNAGE PLAN AND SCHEDULE



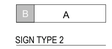
SIGNAGE TYPE 1



SIGNAGE TYPE 1



SIGN TYPE 1,3



SIGN TYPE 2

NOTES SIGNS 1-3

MATERIAL - 1/8" THICK SUBSURFACE PAINTED PHOTOPOLYMER SIGN - SIGN TO BE CLEARCOATED AFTER FOIL STAMP HAS BEEN APPLIED

EDGE CORNERS - SQUARE

BRAILLE - SURFACE APPLIED, CLEAR IN COLOR

BRAILLE CHARACTERS ARE FOR GRAPHIC REPRESENTATION ONLY - ACTUAL BRAILLE CHARACTERS TO BE DETERMINED BY SIGN FABRICATOR

TYPEFACE: OPTIMA MEDIUM

CHARACTER SPACING: 1/8" MINIMUM CHARACTER SPACING PER ADA

COLOR A: WHITE

COLOR B: SHERWIN WILLIAMS SW 7670 SHINGLE GRAY

GRAPHICS:
PROVIDE COLOR A GRAPHICS ON COLOR B BACKGROUNDS.
PROVIDE COLOR B GRAPHICS ON COLOR A BACKGROUNDS,

NOTE: MEET ADA REQUIREMENTS FOR COLOR CONTRAST RATIO

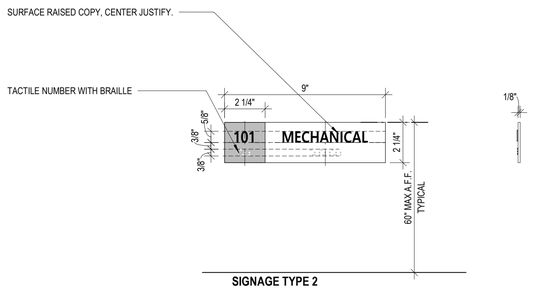
MOUNTING: 3M #4910 CLEAR VHB DOUBLE-SIDED TAPE AND CLEAR SILICONE ADHESIVE

MOUNTING HEIGHT: TOP OF SIGN 60" AFF

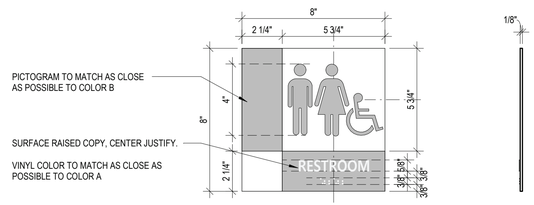
MOUNTING LOCATION: LATCH SIDE - 9" FROM DOOR FRAME TO CENTERLINE OF SIGN

ALL RAISED CHARACTERS (LETTERING, BRAILLE, PICTOGRAMS, ETC) SHALL BE RAISED 1/32" MINIMUM FROM THE SIGN SURFACE.

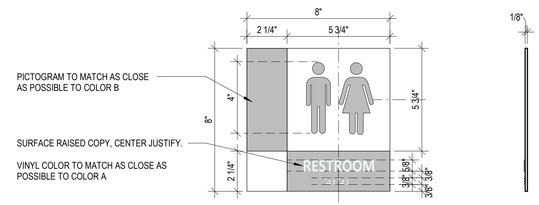
FINISHED SIGN SAMPLES SHALL BE SUBMITTED AND APPROVED BY OWNER AND ARCHITECT PRIOR TO MANUFACTURING OF SIGNS.



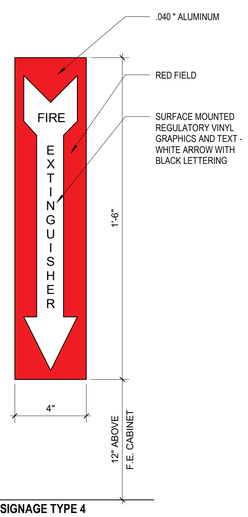
SIGNAGE TYPE 2



SIGNAGE TYPE 3



SIGNAGE TYPE 3A



SIGNAGE TYPE 4

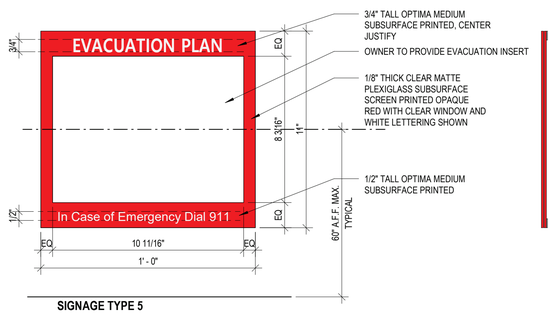
NOTES SIGNS 4-5

MOUNTING: 3M #4910 CLEAR VHB DOUBLE-SIDED TAPE AND CLEAR SILICONE ADHESIVE

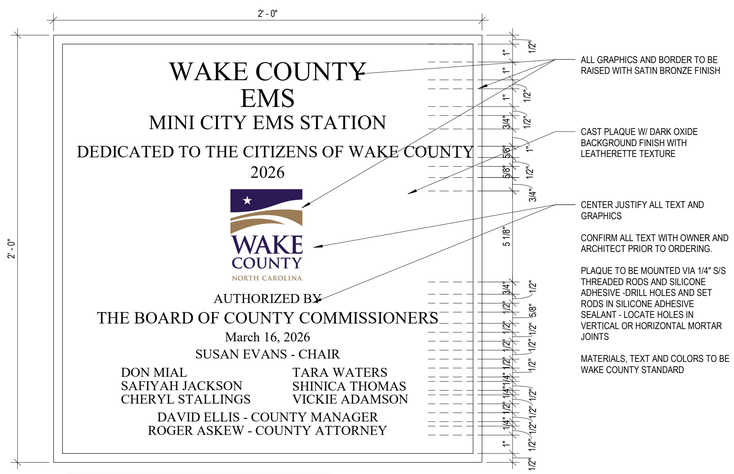
MOUNTING HEIGHT: TOP OF SIGN 60" AFF

MOUNTING LOCATION: LATCH SIDE - 9" FROM DOOR FRAME TO CENTERLINE OF SIGN

FINISHED SIGN SAMPLES SHALL BE SUBMITTED AND APPROVED BY OWNER AND ARCHITECT PRIOR TO MANUFACTURING OF SIGNS.



SIGNAGE TYPE 5



SIGNAGE TYPE 6

SIGNAGE TYPES

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919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
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RALEIGH, NC 27605
919.833.0495 T

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SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
ATTESTATION STATE
North Carolina
Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	NA
CHECKED BY:	Checker

REVISIONS

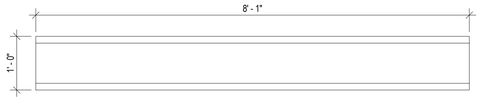
NO.	DESCRIPTION	DATE

SHEET INFORMATION

A113

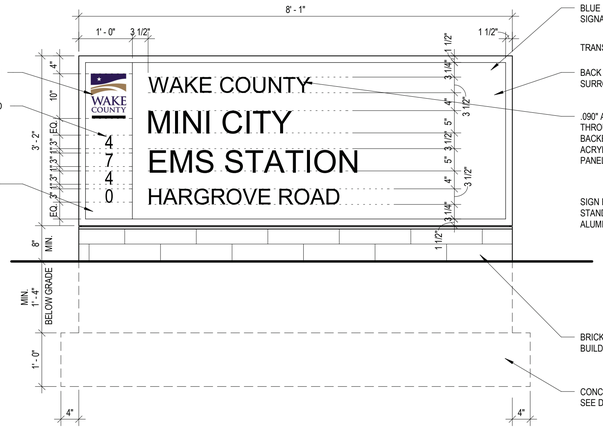
SIGNAGE DETAILS

NOTE - GROUND SIGN DETAILS ARE NTS UNLESS OTHERWISE NOTED

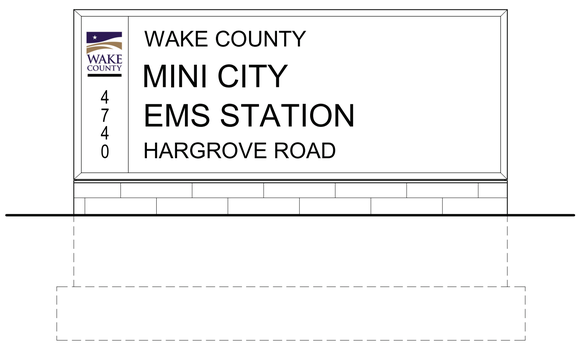


GROUND SIGN - PLAN

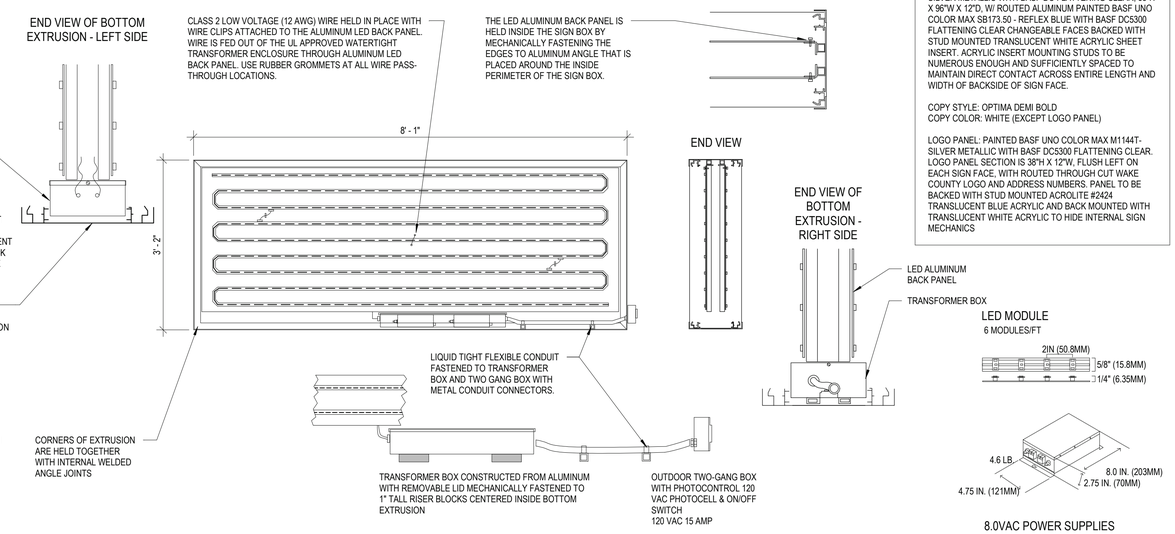
NOTE: GROUND SIGN TO BE DOUBLE SIDED



GROUND SIGN - FRONT ELEVATION



GROUND SIGN - BACK ELEVATION



GROUND SIGN - DETAILS

GROUND SIGN NOTES:

INTERNALLY ILLUMINATED ALUMINUM PYLON, ALLOY GRADE 6061, ALL PAINTED PARTS TO BE PREPPED PRIOR TO PAINTING WITH BASF DP POWERFILL DP26, ALUMINUM EXTRUSION PAINTED BASF UNO COLOR MAX M1144T-SILVER METALLIC WITH BASF DC FLATTENING CLEAR, 38"H X 96"W X 12"D, W/ ROUTED ALUMINUM PAINTED BASF UNO COLOR MAX SB173.50 - REFLEX BLUE WITH BASF DC5300 FLATTENING CLEAR CHANGEABLE FACES BACKED WITH STUD MOUNTED TRANSLUCENT WHITE ACRYLIC SHEET INSERT. ACRYLIC INSERT MOUNTING STUDS TO BE NUMEROUS ENOUGH AND SUFFICIENTLY SPACED TO MAINTAIN DIRECT CONTACT ACROSS ENTIRE LENGTH AND WIDTH OF BACKSIDE OF SIGN FACE.

COPY STYLE: OPTIMA DEMI BOLD
COPY COLOR: WHITE (EXCEPT LOGO PANEL)

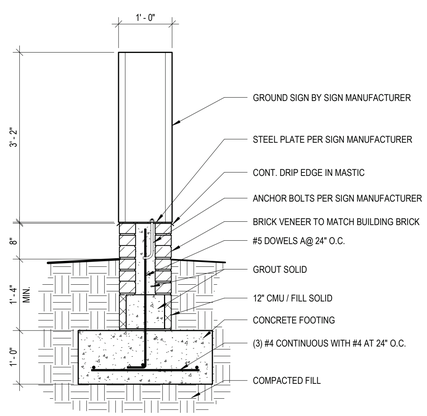
LOGO PANEL: PAINTED BASF UNO COLOR MAX M1144T-SILVER METALLIC WITH BASF DC5300 FLATTENING CLEAR. LOGO PANEL SECTION IS 38"H X 12"W, FLUSH LEFT ON EACH SIGN FACE, WITH ROUTED THROUGH CUT WAKE COUNTY LOGO AND ADDRESS NUMBERS. PANEL TO BE BACKED WITH STUD MOUNTED ACROLITE #2424 TRANSLUCENT BLUE ACRYLIC AND BACK MOUNTED WITH TRANSLUCENT WHITE ACRYLIC TO HIDE INTERNAL SIGN MECHANICS

LED MODULE
6 MODULES/FT

8.0VAC POWER SUPPLIES

HRL-PS96-70
POWERS UP TO 70 FEET (21.3M)

NOTE:
1. GENERAL CONTRACTOR TO PROVIDE A 4' X 8' TEMPORARY CONSTRUCTION JOB SIGN
2. SIGN LOCATION AND LAYOUT TO BE REVIEWED AND APPROVED BY OWNER AND ARCHITECT
3. COST OF SIGN SHALL BE INCLUDED IN THE BASE BID AND NOT APPLIED TO THE SIGNAGE ALLOWANCE

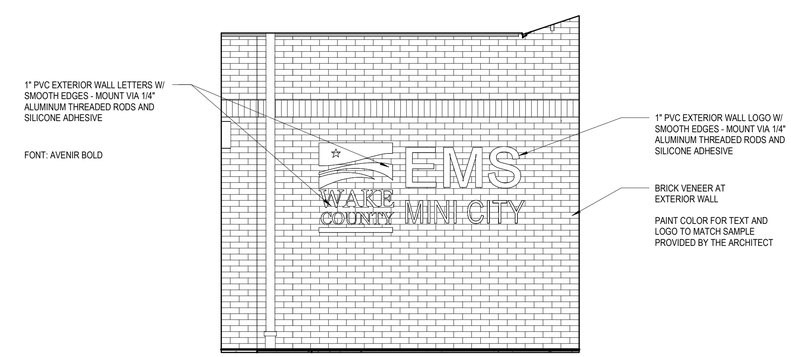


GROUND SIGN NOTES:

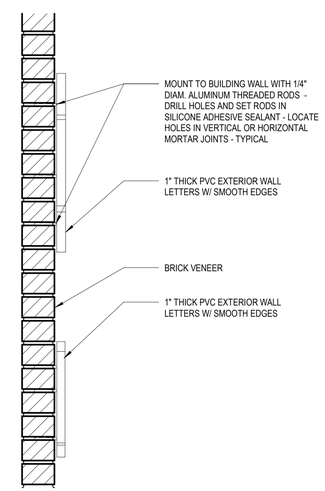
1. PROVIDE FOUNDATION PAD 38"Wx96"Lx12"D. REINFORCE AS REQUIRED TO ACCOMMODATE BRICK BASE AND SECURELY ANCHOR SIGN.
2. REFER TO CIVIL DRAWINGS FOR LOCATION.
3. REFER TO ELECTRICAL SITE PLAN FOR ELECTRICAL CIRCUIT AND CONDUIT WORK.
4. LETTERING TO BE 'OPTIMA DEMI BOLD' CONDENSED TO 90% OF NORMAL LENGTH.
5. SIGN TO BE LIT FROM INSIDE
6. SIGN TO BE DOUBLE SIDED WITH LETTERING AND LOGOS VISIBLE AND LEGIBLE FROM BOTH SIDES.

GC TO COORDINATE REQUIRED SIGN ANCHORS AND ELECTRICAL CONNECTIONS W/ SIGN MANUFACTURER

GROUND SIGN - SECTION



2 A114 BUILDING SIGN - WEST ELEVATION
3/8" = 1'-0"



3 A114 SECTION DETAIL @ BUILDING SIGN
1 1/2" = 1'-0"

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RALEIGH, NC 27601
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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect
DocuSigned by: Eric M. Sowers
A7DEFB73ED7A7B... Cert. Type: Cert.
Raleigh, NC
8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
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CHECKED BY:	EMS

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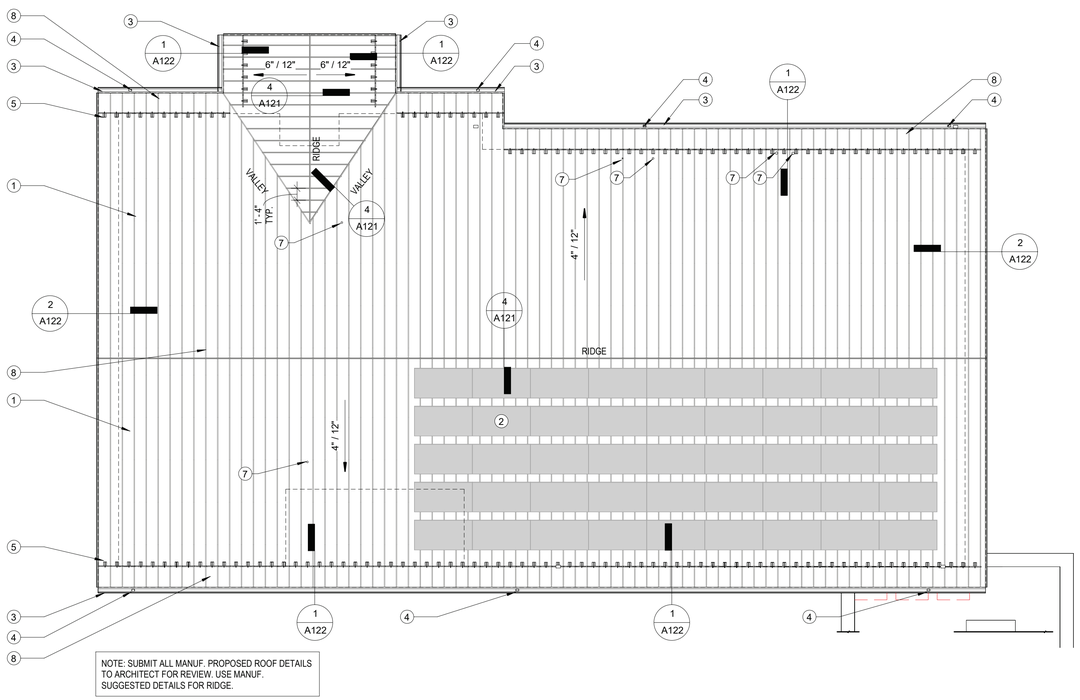
SHEET INFORMATION

A114

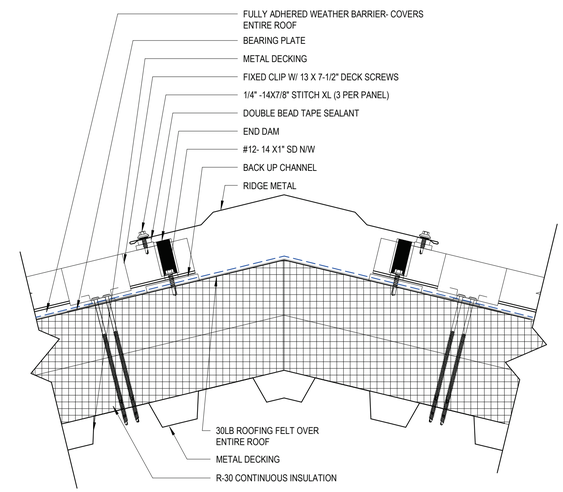
EXTERIOR SIGNAGE

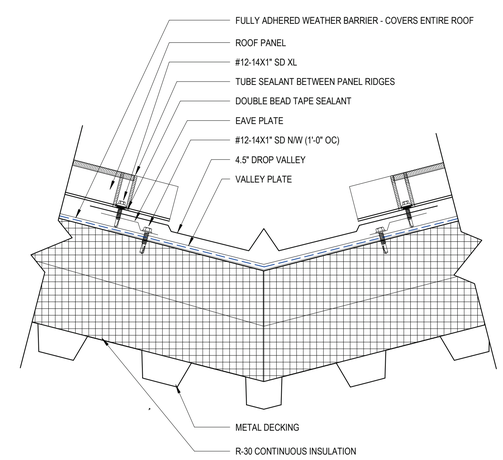
#	ROOF NOTES
KEY	DESCRIPTION
1	STANDING SEAM METAL ROOF ON R-30 CONTINUOUS INSULATION
2	PHOTOVOLTAIC (PV) PANELS - SEE ELECTRICAL DRAWINGS
3	CONTINUOUS ALUMINUM GUTTER
4	ALUMINUM DOWNSPOUT
5	METAL SNOW ROOF GUARD W/ ICESTOPPERS
6	MECHANICAL PENETRATION - SEE MECHANICAL DRAWINGS
7	VTR - SEE PLUMBING DRAWINGS
8	FULLY ADHERED WEATHER BARRIER- COVERS ENTIRE ROOF



NOTE: SUBMIT ALL MANUF. PROPOSED ROOF DETAILS TO ARCHITECT FOR REVIEW. USE MANUF. SUGGESTED DETAILS FOR RIDGE.

1 A121 ROOF PLAN
1/8" = 1'-0"





4 A121 TYP. ROOF RIDGE AND VALLEY DETAIL
3" = 1'-0"

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RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A73E9E7A4E9F475...
North Carolina
Raleigh, NC
8/16/2026

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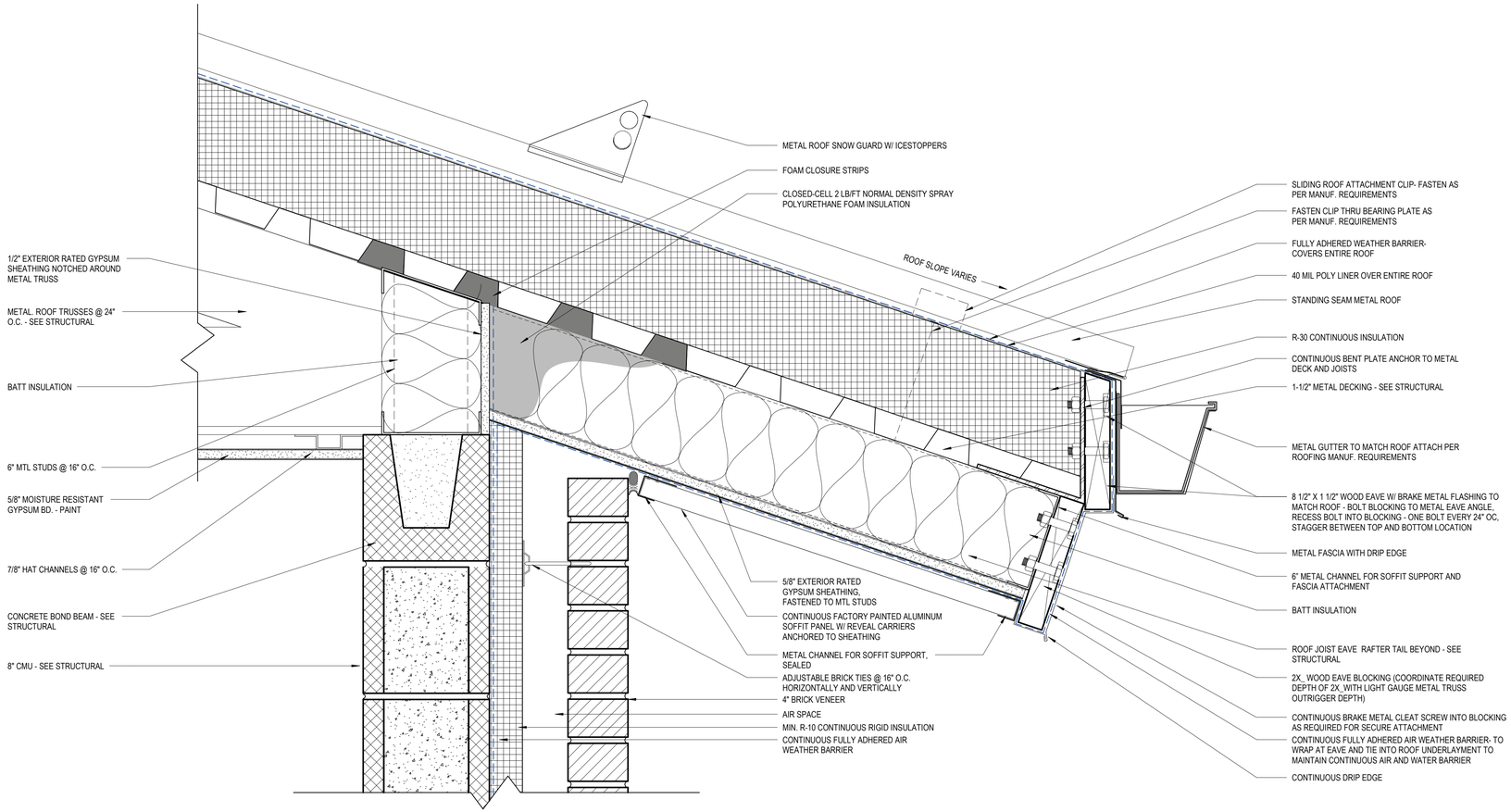
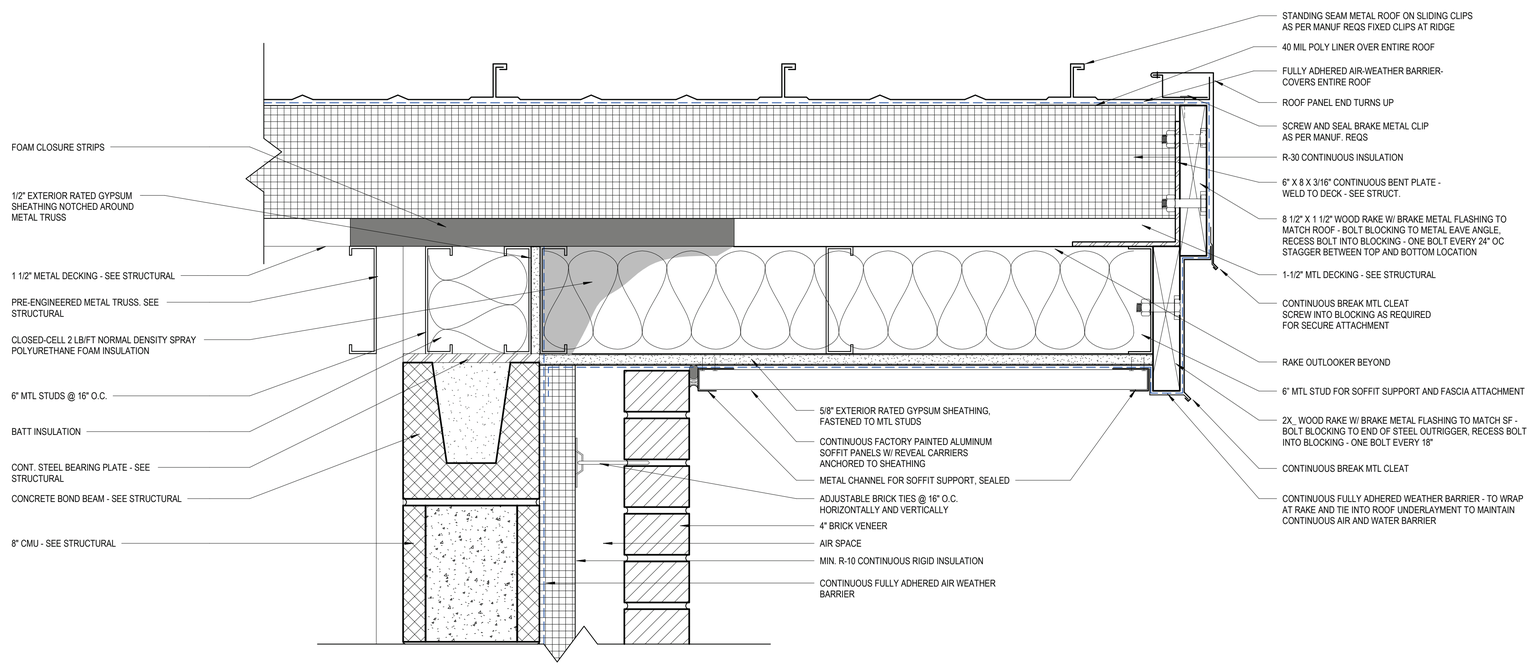
A121
ROOF PLAN



1 A122 ROOF EAVE DETAIL
3" = 1'-0"



2 A122 ROOF RAKE DETAIL1
3" = 1'-0"

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919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
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Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect DocuSigned by: Eric M. Sowers A72EFB734E97478... North Carolina Raleigh, NC

8/16/2026

PROJECT INFORMATION

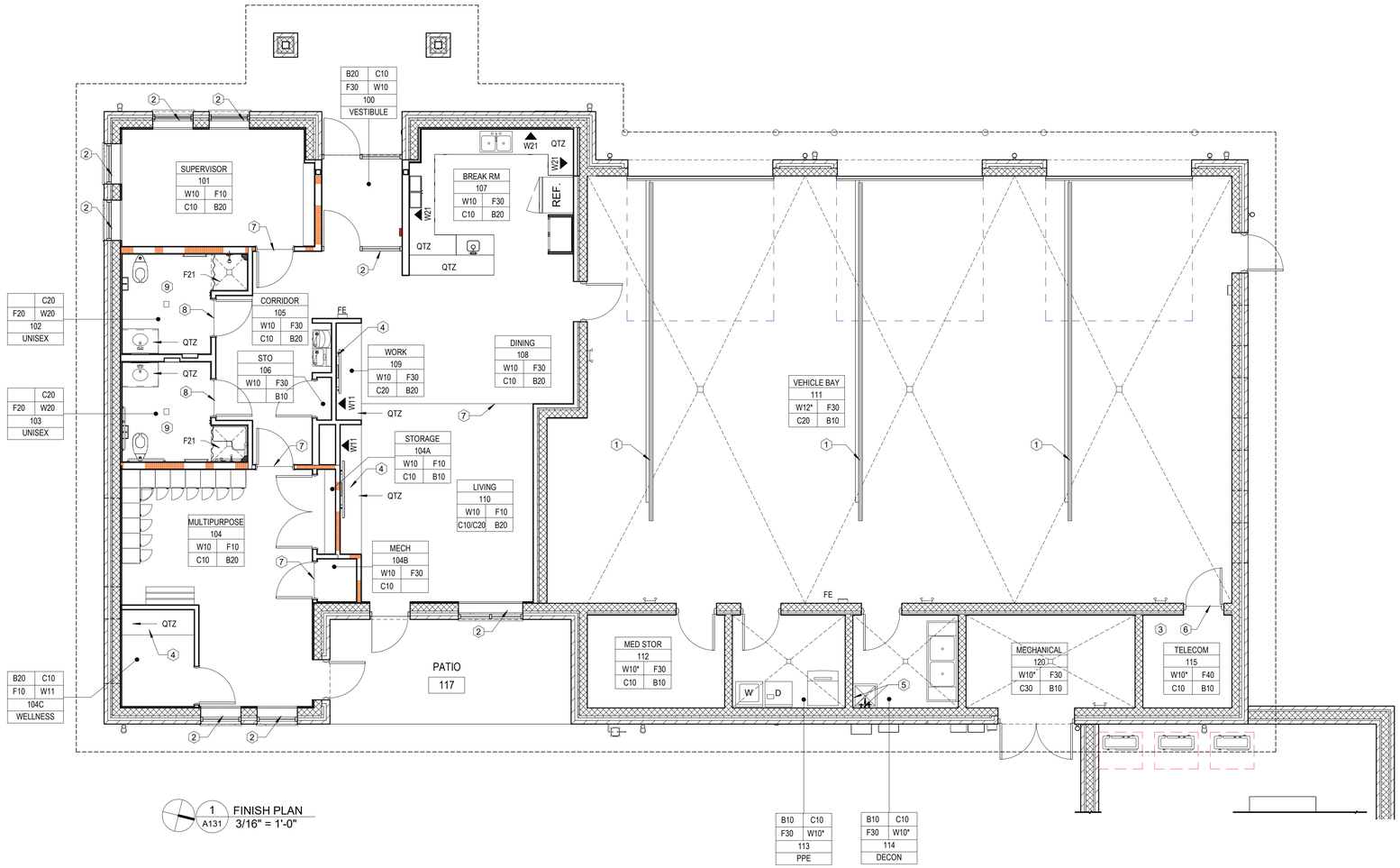
PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	Author
CHECKED BY:	Checker

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

A122
ROOF DETAILS



FINISH SCHEDULE

ROOM NAME — ROOM ### — ROOM NUMBER
WALL FINISH — W## F## — FLOOR FINISH
CEILING MATERIAL OR FINISH — C## B## — WALL BASE MATERIAL

KEY	FLOOR MATERIAL	B.O.D.
F10	CARPET TILE	MOHAWK - EXPEDITION - DIGITAL TERRAIN GT341 - 955 COASTAL - 12"X36" - HALF-LAP
F20	PORCELAIN TILE	DALTILE - REMINISCENT - SOUVENIR GRAY - 12"x24"
F21	PORCELAIN TILE	DALTILE - REMINISCENT - SOUVENIR GRAY - 2"x2" (SHOWERS)
F30	CONCRETE - CLEAR SEALED	POLISHED CONCRETE
F40	VCT - STATIC DISSIPATIVE	ARMSTRONG EXCELON STD 51959 FOSSIL GRAY
KEY	**BASE MATERIAL**	
B10	RUBBER BASE	ALLSTATE - 4" x 1/8" COVEBASE, A33
B20	RUBBER BASE	ALLSTATE - 4 1/4" x 1/4" CAVA BAJA, A33
KEY	**WALL MATERIAL**	
W10	PAINT	SW7674 - SNOWBOUND
W11	PAINT	SW9045 - BORA BORA SHORE
W12	PAINT	SW7064 - PASSIVE (UPPER); SW7067 - CITY SCAPE (LOWER)
W20	PORCELAIN WALL TILE	DALTILE - FABRIQUE - BLANC LINEN - 12"x24"
W21	PORCELAIN WALL TILE	BACKSPLASH - BEST TILE - COLOR COLLECTION - TENDER GRAY BRIGHT - 4X10 - MATTE
KEY	**CEILING MATERIAL**	
C10	ACOUSTICAL CEILING TILE	2'X2' ACT - ARMSTRONG ULTIMA HIGH NRC, BEVELED - TEGULAR 1941 - 1937
C20	GYPSUM BOARD	SW6252 - ICE CUBE
C30	OPEN AND PAINTED	SW6252 - ICE CUBE
KEY	**MISCELLANEOUS**	
QTZ	QUARTZ COUNTERTOP & SILL	SILESTONE - LAGOON - POLISHED
WD1	DOOR FRAME PAINT	SW7674 - PEPPERCORN
WD2	MAPLE WOOD VENEER DOOR	FORTE OPENING SOLUTIONS, ASPIRO SERIES, PLAIN SLICED WHITE MAPLE, CLEAR STAIN
M10	MILLWORK	JIM BISHOPS CABINETS, BIRCH, 'HI' SHEEN, COLOR - NATURAL. DOOR STYLE - PETERSBURG
PL10	PLASTIC LAMINATE	FORMICA - OYSTER GRAY - MATTE

#	KEYNOTES
1	PROVIDE (1) 4" YELLOW STRIPE AT EACH OVERHEAD DOOR - COORDINATE LOCATION IN FIELD WITH OWNER AND ARCHITECT
2	PROVIDE ROLLER WINDOW SHADES
3	PROVIDE 3/4" FIRE RETARDANT PLYWOOD SHEATHING AROUND ENTIRE TELECOM ROOM - SEE ELECTRICAL DRAWINGS - PAINT
4	PROVIDE GROMMETS IN COUNTER - FIELD VERIFY LOCATION W/ OWNER AND ARCHITECT PRIOR TO INSTALLATION
5	PROVIDE STAINLESS STEEL PANELS AT MOPSINK
6	REDUCER STRIP VCT TO POLISHED CONCRETE
7	REDUCER STRIP - CARPET TO POLISHED CONCRETE
8	MARBLE THRESHOLD
9	PROVIDE SCHLUTER TRIM AT WALL-TO-FLOOR TILE TRANSITION THROUGHOUT BATHROOM. B.O.D. - SCHLUTER DILEX-AHK BRUSHED CHROME ANODIZED ALUMINUM PROFILE

NOTES:

* INDICATES EPOXY FINISH, SEE SPECS
1. ALL PAINT TO BE LATEX EGGSHELL FINISH, U.O.N.
2. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION.
3. REFER TO MILLWORK DRAWINGS FOR ADDITIONAL MILLWORK FINISHES AND APPLICATIONS. FINISH PLANS INDICATE COUNTERTOP MATERIAL ONLY.
4. ALL FINISHES TO MEET "CLASS B" FLAME SPREAD REQUIREMENTS ("CLASS A" IN A NON-SPRINKLERED BUILDING) PER NC STATE BUILDING CODE CHAPTER 8.
5. HOLLOW METAL DOOR FRAMES AND DOORS TO BE PAINTED SW7674 PEPPERCORN SEMIGLOSS FINISH. EXCEPT EXTERIOR OF DOORS - MATCH STOREFRONT
6. WOOD DOORS TO HAVE A CLEAR FINISH.
7. EXPOSED STRUCTURE/DECKING AND DUCTWORK TO BE PAINTED C30, SPRAY APPLIED.
8. PAINT THE UNDERSIDE OF SOFFITS AND BULKHEADS THE SAME COLOR AS THAT SPECIFIED FOR THE FACE, U.O.N.
9. ALL WINDOW SILLS TO BE 1/2" QUARTZ - SILESTONE - LAGOON - POLISHED.

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- CMU CONSTRUCTION
- FE — FIRE EXTINGUISHER CABINET WITH EXTINGUISHER
- FACP — WALL MOUNTED FIRE ALARM CONTROL PANEL
- F — WALL MOUNTED FIRE ALARM PULL STATION
- V — FIRE ALARM STROBE DEVICE
- H — FIRE ALARM HORN/STROBE DEVICE
- CR — CARD READER

NOTES

1. ALL DIMENSIONS ARE TO FINISHED FACE OF WALL.
2. COORDINATE AND PROVIDE BACKING/BLOCKING FOR MILLWORK, FURNITURE, EQUIPMENT, AND OTHER ITEMS ATTACHED OR MOUNTED TO WALLS OR CEILINGS.
3. LOCATE DOOR OPENINGS 6" OFF PERPENDICULAR WALL, U.O.N.
4. FINISH WALL TO FLOOR FOR BASE ADHESION.
5. CMU EXTERIOR WALLS IN MULTIPURPOSE, MENS AND WOMEN'S ROOMS, SUPERVISOR'S OFFICE, KITCHEN, DINING AND LIVING ROOMS ARE FURRED OUT WITH 7/8" HAT CHANNELS @ 16" O.C. AND 5/8" GYPSUM BOARD - PAINTED.

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RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

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CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
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137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
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702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

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DocuSigned by: Eric M. Sowers A72EF973A69747B... North Carolina Raleigh, NC
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PROJECT NO.:	2506
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DRAWN BY:	HCK
CHECKED BY:	DGH

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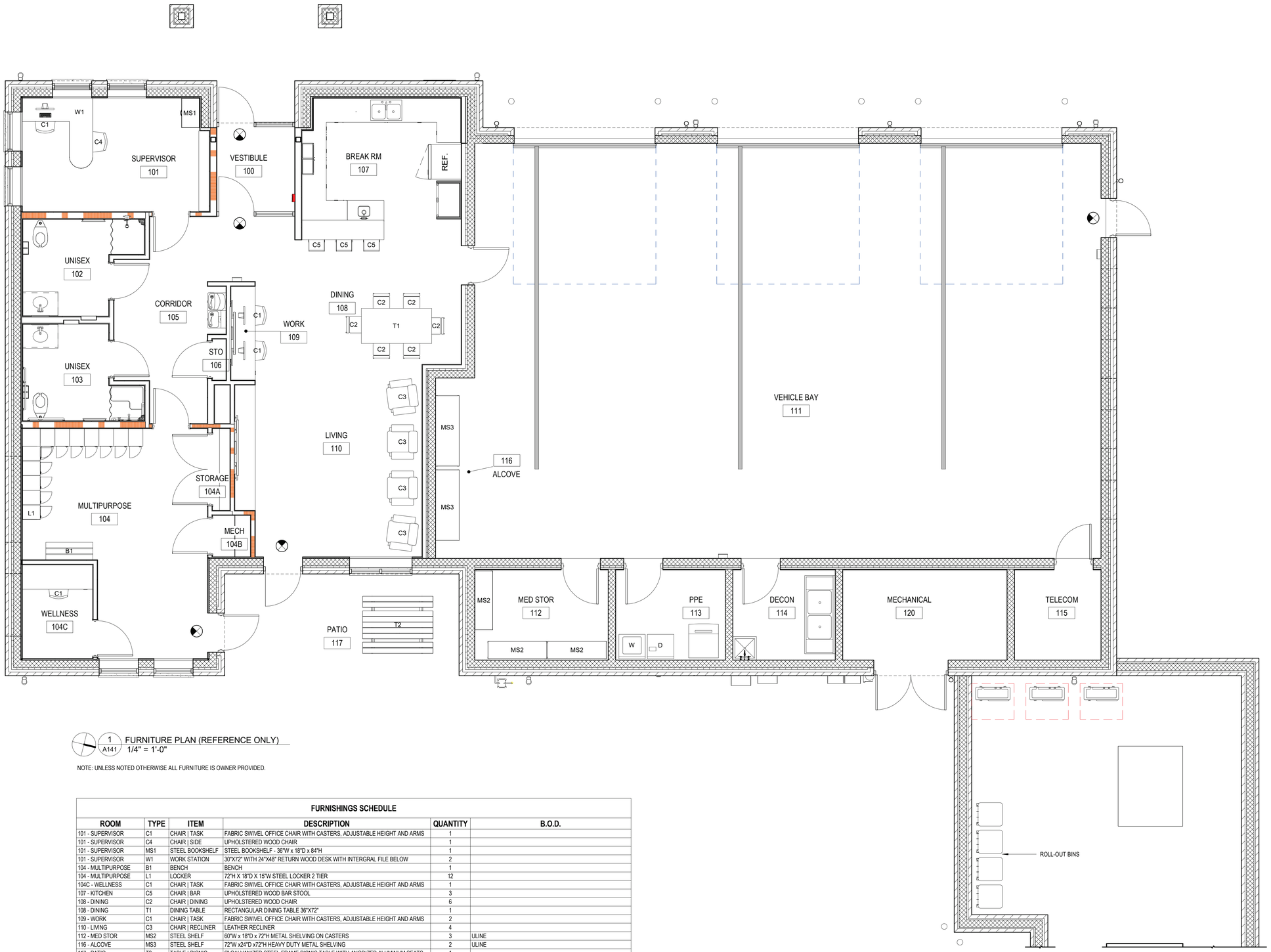
SHEET INFORMATION

A131

FINISH PLAN



1 A141 FURNITURE PLAN (REFERENCE ONLY)
1/4" = 1'-0"

NOTE: UNLESS NOTED OTHERWISE ALL FURNITURE IS OWNER PROVIDED.

FURNISHINGS SCHEDULE

ROOM	TYPE	ITEM	DESCRIPTION	QUANTITY	B.O.D.
101 - SUPERVISOR	C1	CHAIR | TASK	FABRIC SWIVEL OFFICE CHAIR WITH CASTERS, ADJUSTABLE HEIGHT AND ARMS	1	
101 - SUPERVISOR	C4	CHAIR | SIDE	UPHOLSTERED WOOD CHAIR	1	
101 - SUPERVISOR	MS1	STEEL BOOKSHELF	STEEL BOOKSHELF - 36"W x 18"D x 84"H	1	
101 - SUPERVISOR	W1	WORK STATION	30"X72" WITH 24"X48" RETURN WOOD DESK WITH INTERGRAL FILE BELOW	2	
104 - MULTIPURPOSE	B1	BENCH	BENCH	1	
104 - MULTIPURPOSE	L1	LOCKER	72"H X 18"D X 15"W STEEL LOCKER 2 TIER	12	
104C - WELLNESS	C1	CHAIR | TASK	FABRIC SWIVEL OFFICE CHAIR WITH CASTERS, ADJUSTABLE HEIGHT AND ARMS	1	
107 - KITCHEN	C5	CHAIR | BAR	UPHOLSTERED WOOD BAR STOOL	3	
108 - DINING	C2	CHAIR | DINING	UPHOLSTERED WOOD CHAIR	6	
108 - DINING	T1	DINING TABLE	RECTANGULAR DINING TABLE 36"X72"	1	
109 - WORK	C1	CHAIR | TASK	FABRIC SWIVEL OFFICE CHAIR WITH CASTERS, ADJUSTABLE HEIGHT AND ARMS	2	
110 - LIVING	C3	CHAIR | RECLINER	LEATHER RECLINER	4	
112 - MED STOR	MS2	STEEL SHELF	60"W x 18"D x 72"H METAL SHELVING ON CASTERS	3	ULINE
116 - ALCOVE	MS3	STEEL SHELF	72"W x24"D x72"H HEAVY DUTY METAL SHELVING	2	ULINE
117 - PATIO	T2	TABLE | PICNIC	6' GALVANIZED STEEL FRAME PICNIC TABLE WITH ANODIZED ALUMINUM SEATS AND TABLE TOP	1	

NOTE: SHELVING MS2 AND MS3 ARE GENERAL CONTRACTOR PROVIDED AND INSTALLED

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A72EF8F34E0747B...
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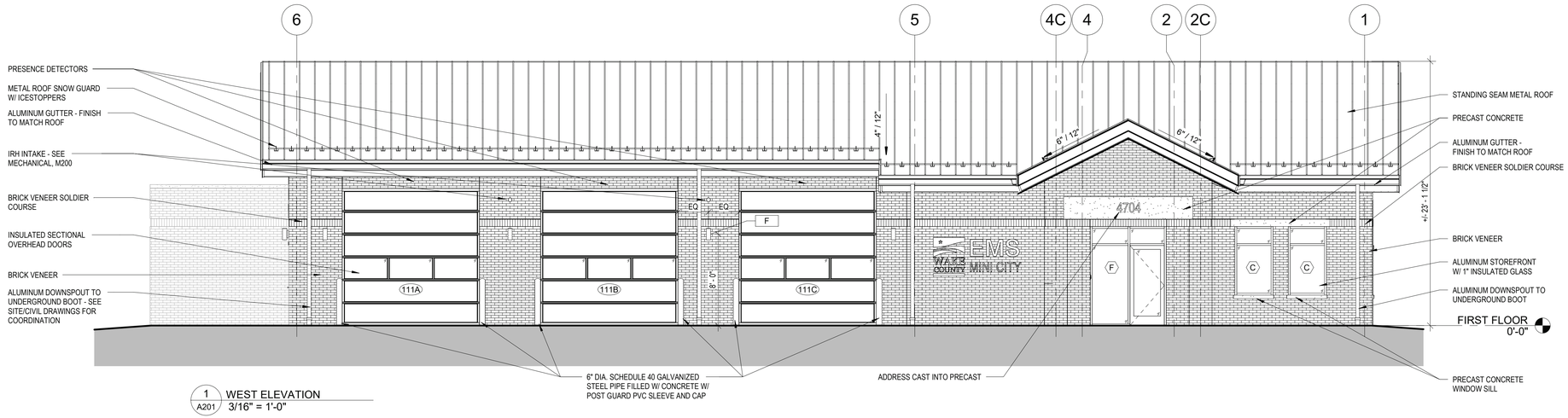
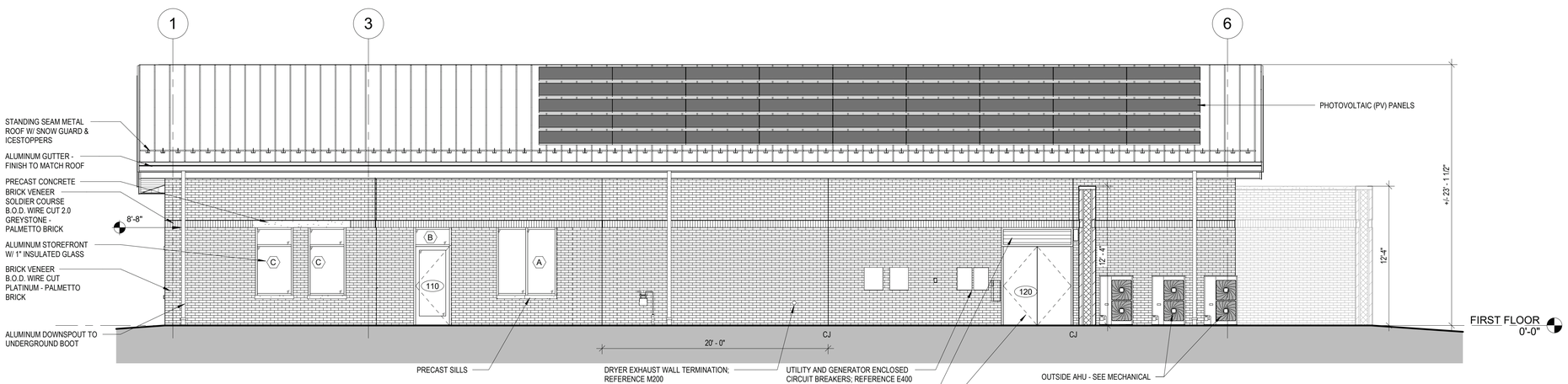
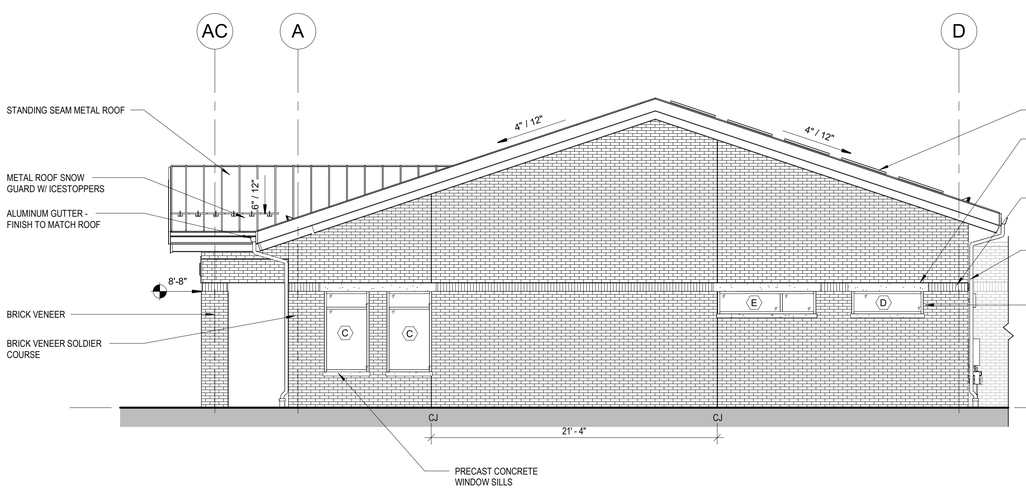
FURNITURE PLAN



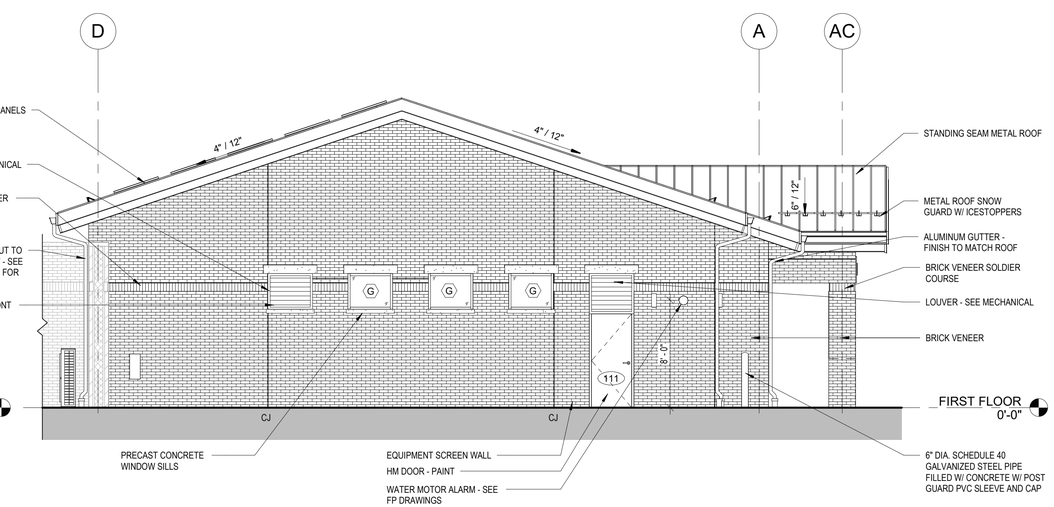
1 A201 WEST ELEVATION
3/16" = 1'-0"



2 A201 EAST ELEVATION
3/16" = 1'-0"



3 A201 SOUTH ELEVATION
3/16" = 1'-0"



4 A201 NORTH ELEVATION
3/16" = 1'-0"

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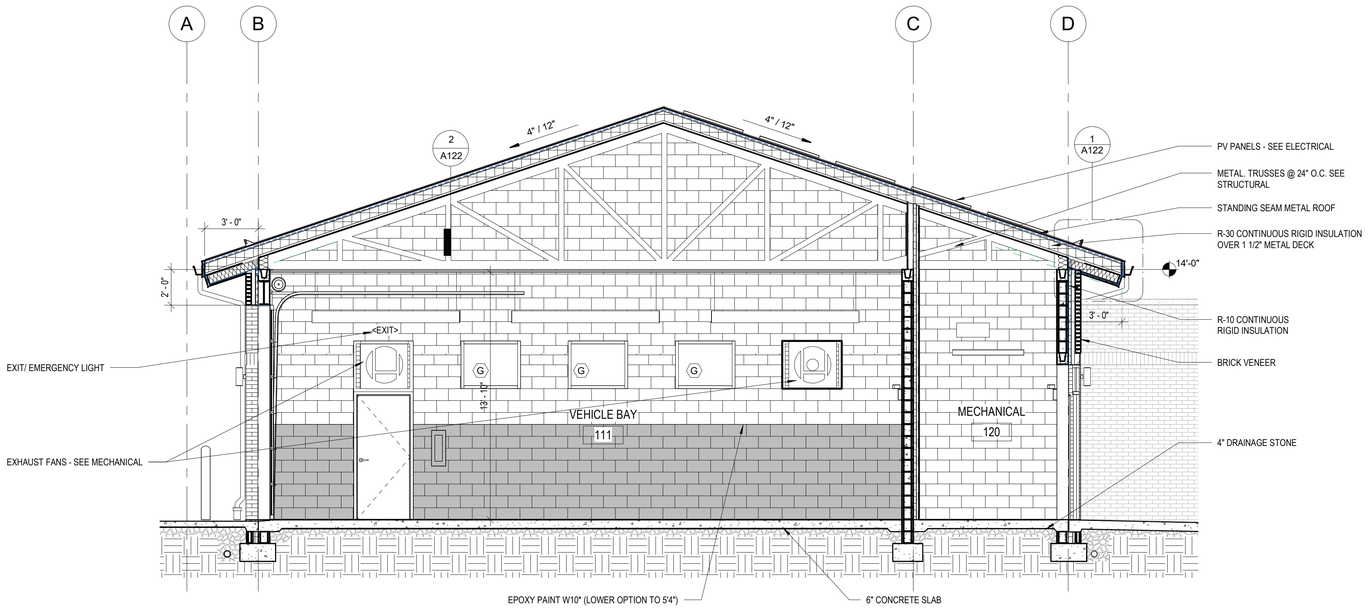
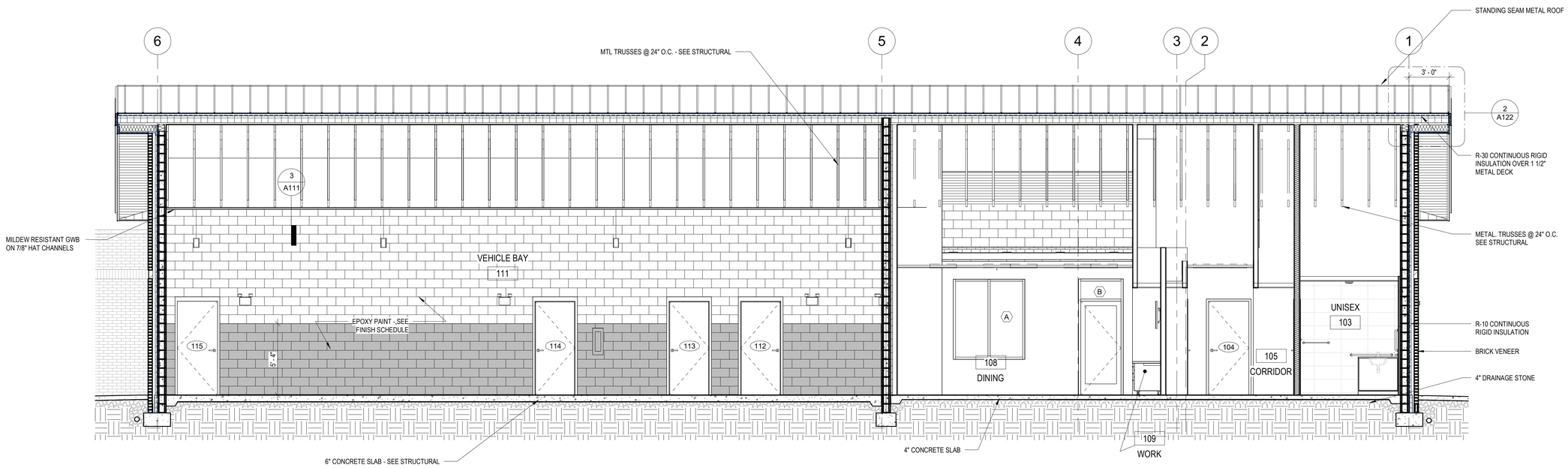
A201

EXTERIOR ELEVATIONS



1 A301 BUILDING SECTION @ BAY
1/4" = 1'-0"



2 A301 BUILDING SECTION - LONGITUDINAL
1/4" = 1'-0"

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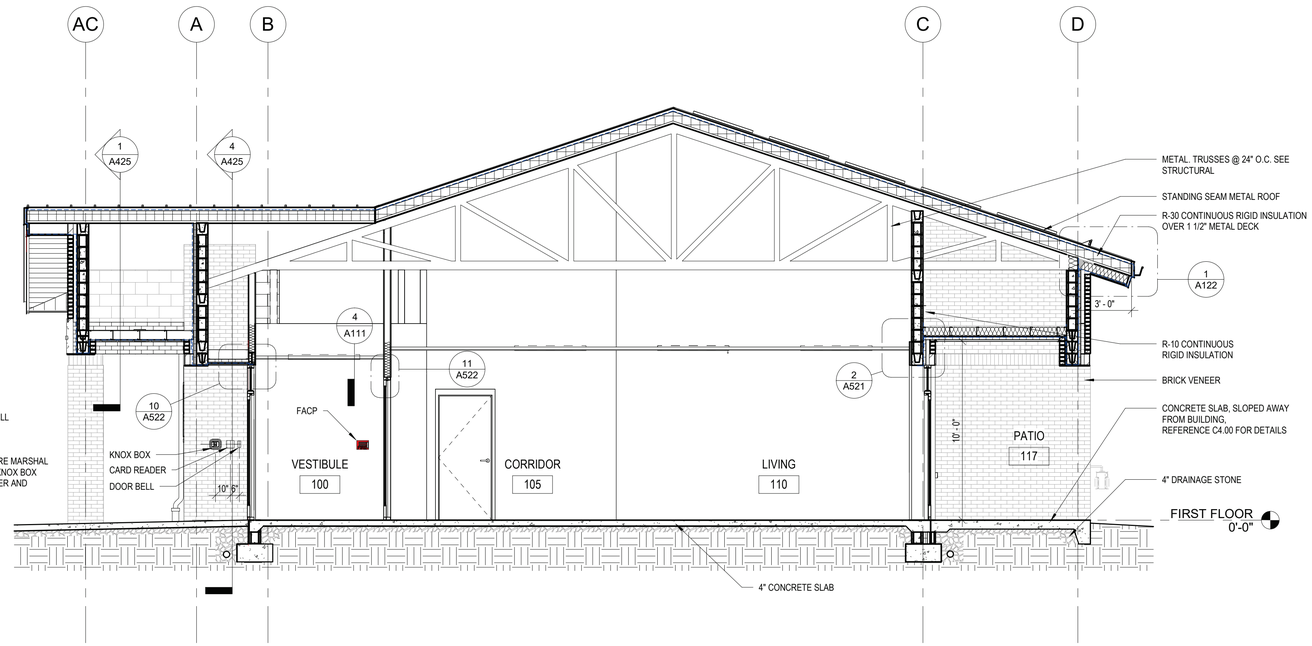
A301

BUILDING SECTIONS



NOTES:
FOR KNOX BOX, CARD READER AND DOOR BELL INSTALLATION:
1. GENERAL CONTRACTOR TO VERIFY
   - ALL DIMENSIONS;
   - KNOX BOX MOUNTING HEIGHT FROM FIRE MARSHAL
2. GENERAL CONTRACTOR TO COORDINATE KNOX BOX MOUNTING HEIGHT W/ADJACENT CARD READER AND DOOR BELL

1 / A302 BUILDING SECTION @ VESTIBULE & LIVING
1/4" = 1'-0"

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CHECKED BY:	DGH

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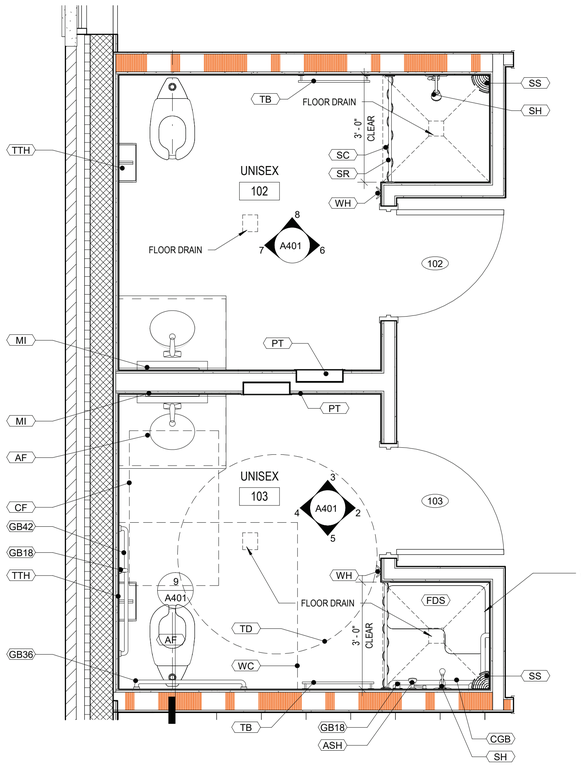
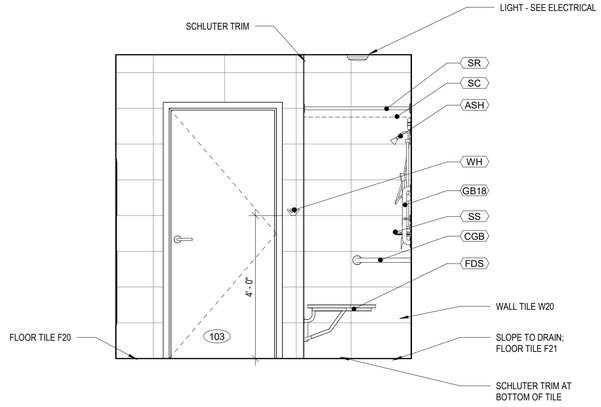
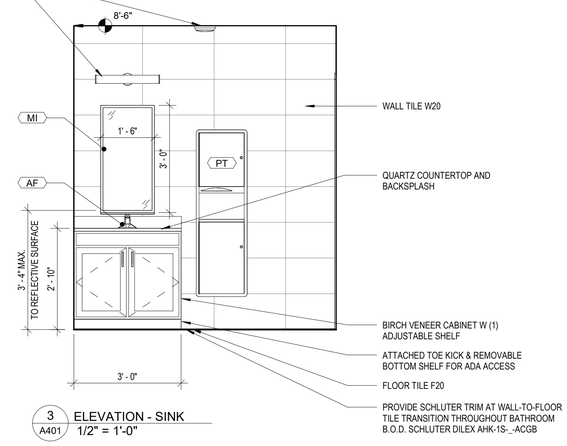
A302
BUILDING SECTIONS



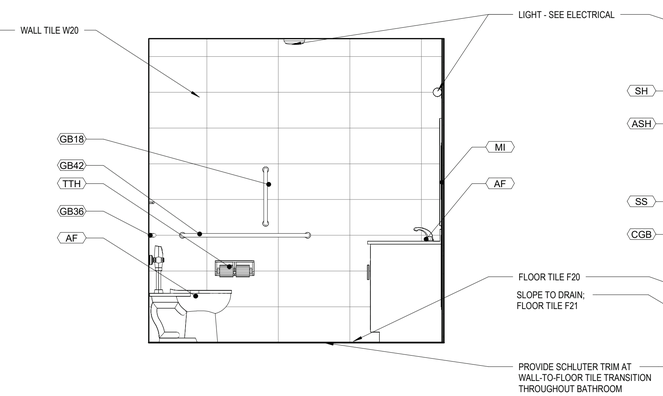
1 A401 ENLARGED PLAN - TOILETS
1/2" = 1'-0"



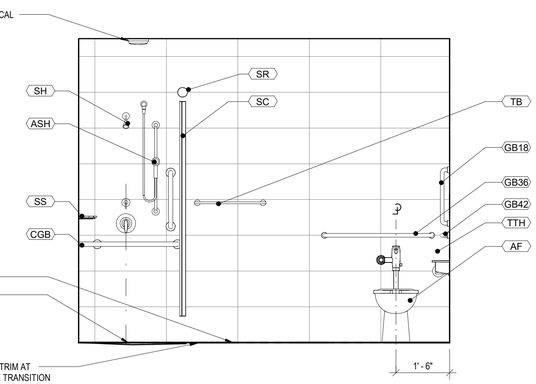
2 A401 ELEVATION - ACCESSIBLE SHOWER
1/2" = 1'-0"



3 A401 ELEVATION - SINK
1/2" = 1'-0"

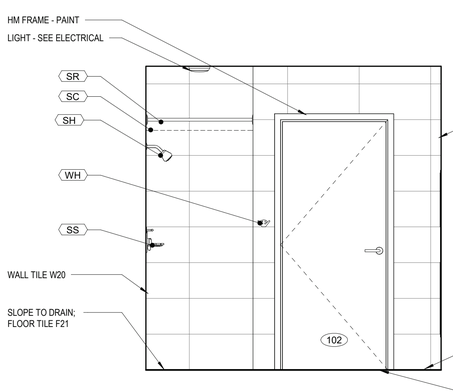


4 A401 ELEVATION - ACCESSIBLE WATER CLOSET
1/2" = 1'-0"

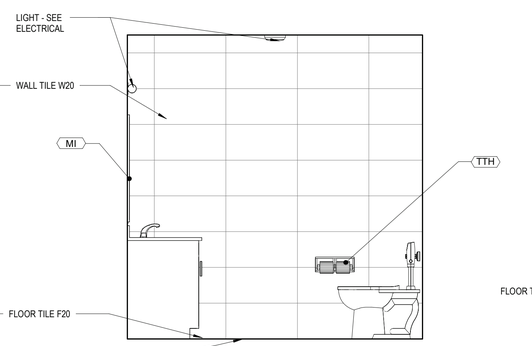


5 A401 ELEVATION ACCESSIBLE TOILET
1/2" = 1'-0"

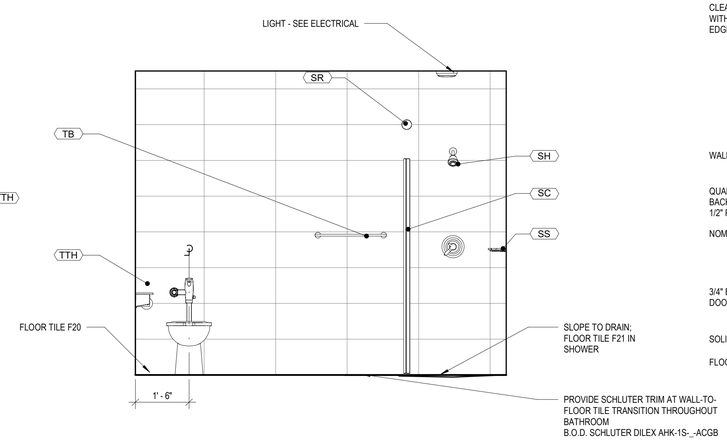
NOTE: IN RESTROOM 102, ADD BLOCKING FOR FUTURE GRAB BAR INSTALLATION



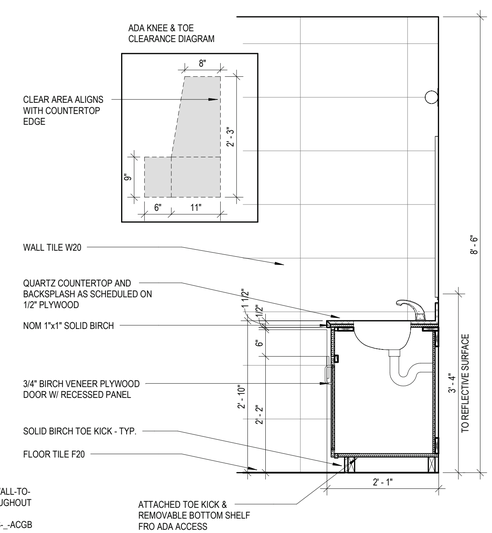
6 A401 ELEVATION - SHOWER
1/2" = 1'-0"



7 A401 ELEVATION - WATER CLOSET
1/2" = 1'-0"



8 A401 ELEVATION - TOILET
1/2" = 1'-0"



9 A401 SECTION THROUGH RESTROOM SINK
3/4" = 1'-0"

TOILET ACCESSORIES LEGEND

KEY	DESCRIPTION
AF	ACCESSIBLE FIXTURE
ASH	ACCESSIBLE SHOWER HEAD
CF	CLEAR FLOOR SPACE 30 "X 52"
CGB	CONTINUOUS GRAB BAR
FDS	FOLD-DOWN SEAT
GB18	GRAB BAR, 18" LONG (VERTICAL)
GB36	GRAB BAR, 36" LONG
GB42	GRAB BAR, 42" LONG
MI	MIRROR
PT	PAPER TOWEL DISPENSER
SC	SHOWER CURTAIN
SH	SHOWER HEAD
SR	SHOWER ROD
SS	SOAP SHELF
TB	STAINLESS STEEL TOWEL BAR
TD	67" TURNING DIAMETER
TTH	TOILET TISSUE HOLDER
WC	60" x 56" CLEARANCE FOR WATER CLOSET
WH	WALL HOOK

NOTES:

1. PLUMBING CONTRACTOR TO PROVIDE PROTECTIVE INSULATION AT HOT PIPES BELOW LAVATORY PER ACCESSIBILITY CODE.
2. FLUSH CONTROL VALVES AT ACCESSIBLE TOILETS TO BE MOUNTED ON THE WIDE SIDE OF TOILET STALL.
3. SEE SPECIFICATIONS FOR TOILET ACCESSORIES.
4. SLOPE FLOOR TILE IN SHOWER TO DRAIN WITH MUD BED.
5. THRESHOLDS SLOPE IN DOOR OPENINGS SHALL NOT EXCEED 1:8 SLOPE OR 1/2" IN HEIGHT PER ACCESSIBILITY CODE.
6. PROVIDE BLOCKING IN WALL IN UNISEX 102 FOR ALL FUTURE ACCESSIBLE FIXTURES.

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919.535.5200 T

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919.833.0495 T

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RALEIGH, NC 27605
919.832.8118 T

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ERIC M. SOWERS Registered Architect
DocuSigned by: Eric M. Sowers A72EFB734E9747...
Raleigh, NC
8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	EMS

REVISIONS

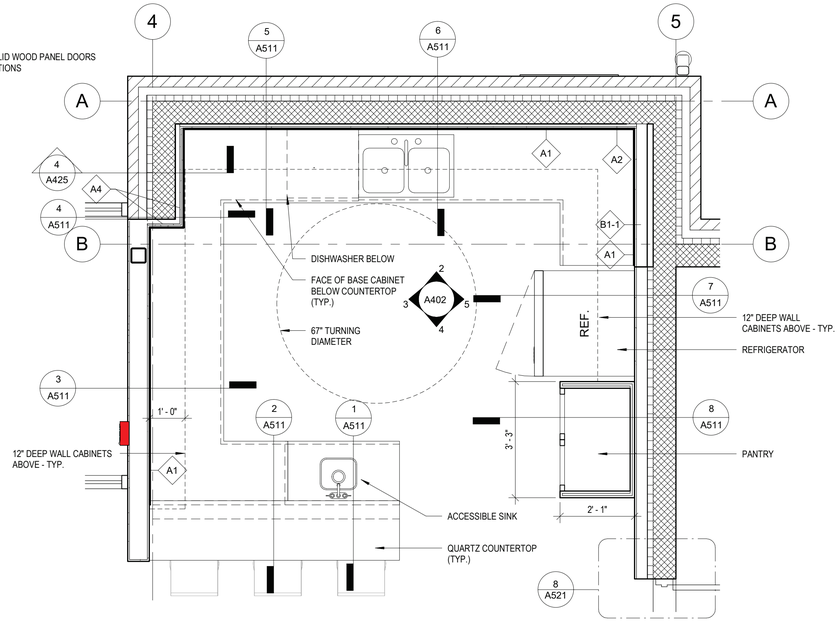
NO.	DESCRIPTION	DATE

SHEET INFORMATION

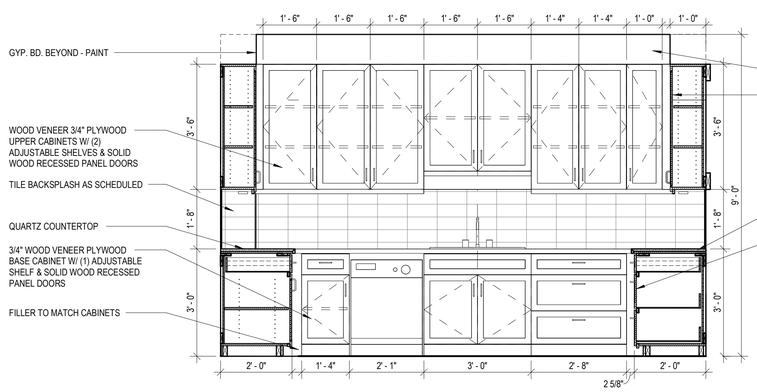
A401

ENLARGED TOILET PLANS AND ELEVATIONS

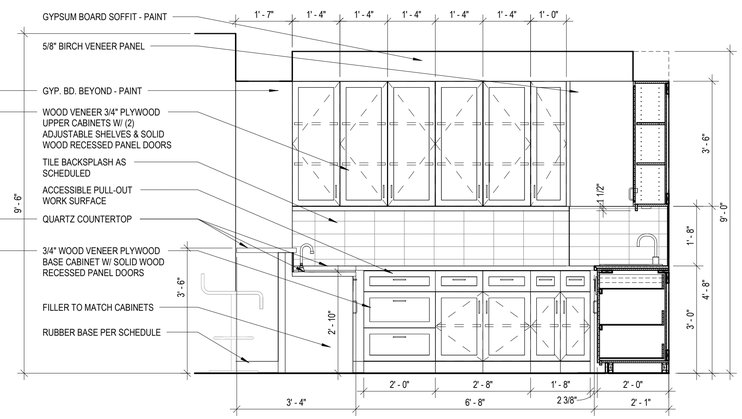
NOTE: SOLID WOOD PANEL DOORS
ALL LOCATIONS



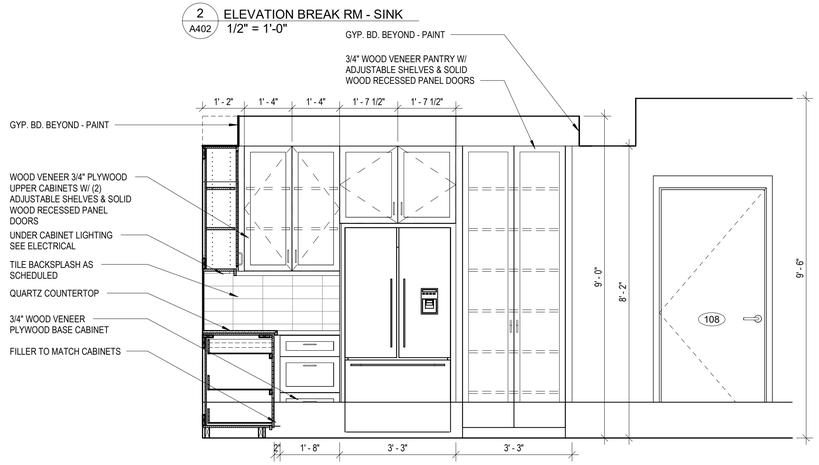
1 / A402 ENLARGED PLAN - BREAK RM
1/2" = 1'-0"



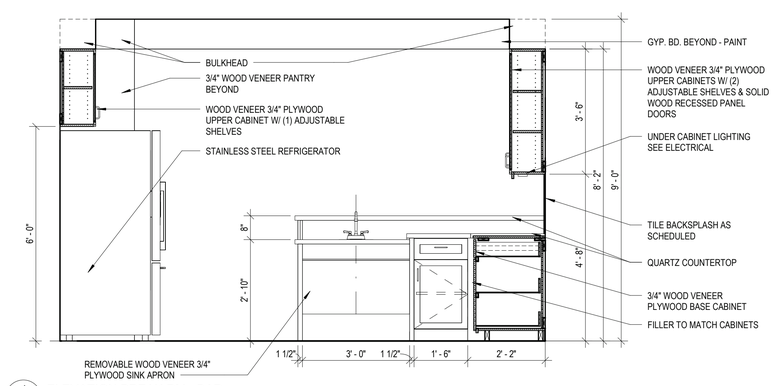
2 / A402 ELEVATION BREAK RM - SINK
1/2" = 1'-0"



3 / A402 ELEVATION BREAK RM
1/2" = 1'-0"



5 / A402 ELEVATION BREAK RM - PANTRY
1/2" = 1'-0"



4 / A402 ELEVATION BREAK RM - BAR
1/2" = 1'-0"

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RALEIGH, NC 27601
919.535.5200 T

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LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EF87345D747B...
CA=US
Raleigh, NC

8/16/2026

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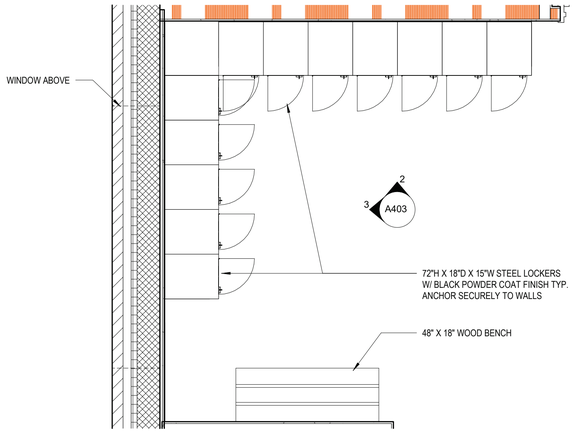
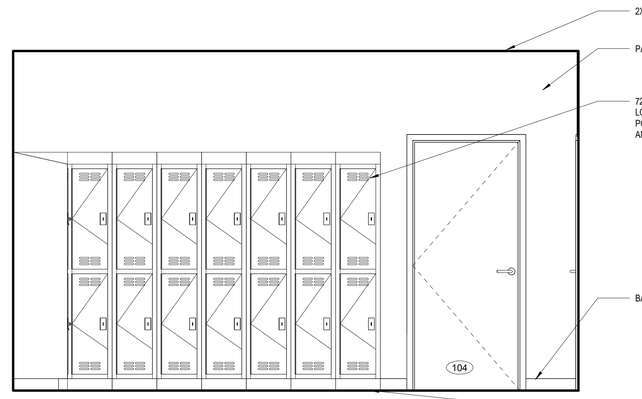
A402

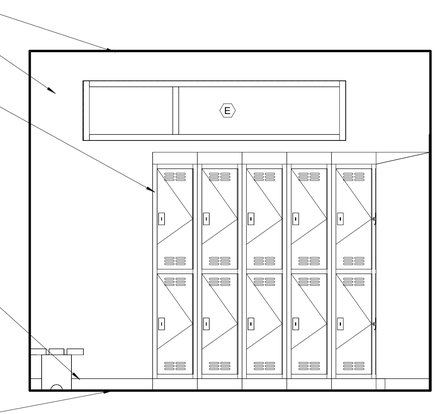
ENLARGED KITCHEN
PLAN & ELEVATIONS



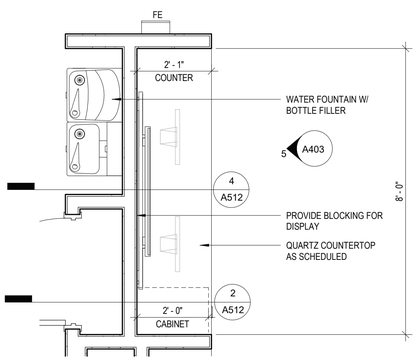
1 A403 ENLARGED PLAN - MULTIPURPOSE
1/2" = 1'-0"



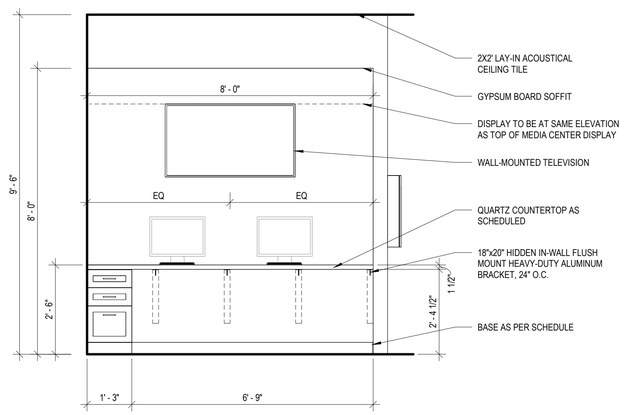
2 A403 ELEVATION- DORM LOCKERS 1
1/2" = 1'-0"



3 A403 ELEVATION-DORM LOCKERS 2
1/2" = 1'-0"

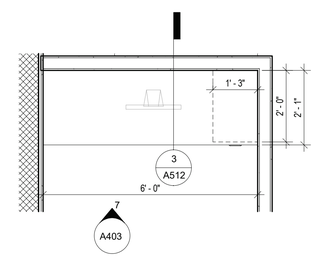


4 A403 ENLARGED PLAN - WORKSTATION
1/2" = 1'-0"

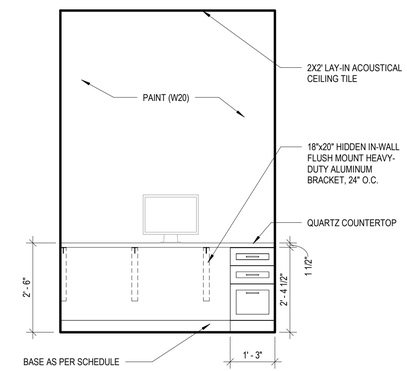


5 A403 ELEVATION - WORKSTATION
1/2" = 1'-0"

NOTE: PROVIDE GROMMETS IN COUNTER - FIELD VERIFY LOCATION W/ OWNER AND ARCHITECT PRIOR TO INSTALLATION

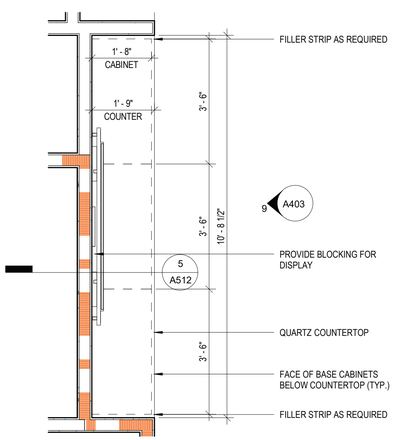


6 A403 ENLARGED PLAN - WELLNESS
1/2" = 1'-0"

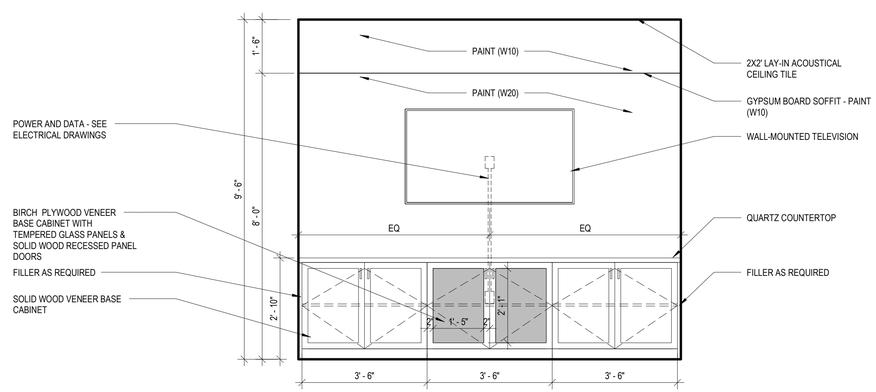


7 A403 ELEVATION - WELLNESS
1/2" = 1'-0"

NOTE: PROVIDE GROMMETS IN COUNTER - FIELD VERIFY LOCATION W/ OWNER AND ARCHITECT PRIOR TO INSTALLATION



8 A403 ENLARGED PLAN - MEDIA CENTER
1/2" = 1'-0"



9 A403 ELEVATION - MEDIA CENTER
1/2" = 1'-0"

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RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects P.A.
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EFB73457475...
North Carolina
Raleigh, NC
8/16/2026

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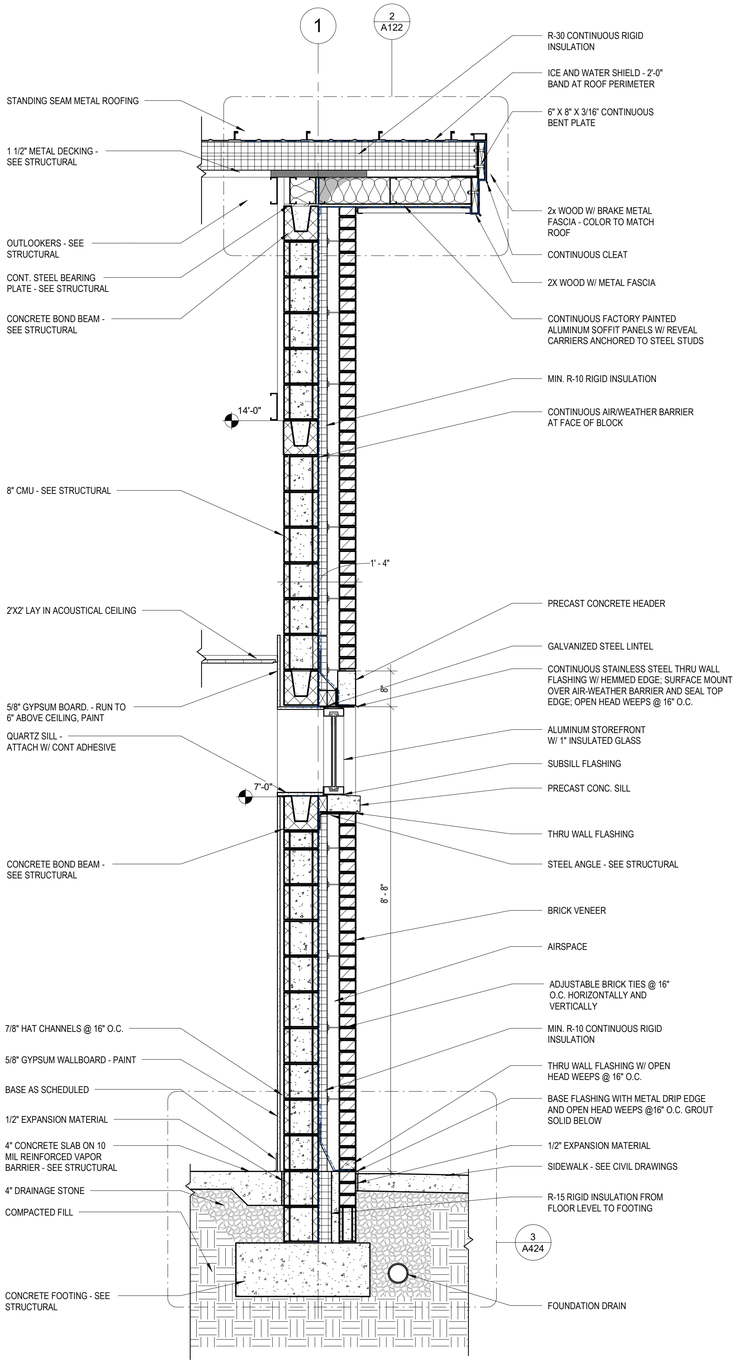
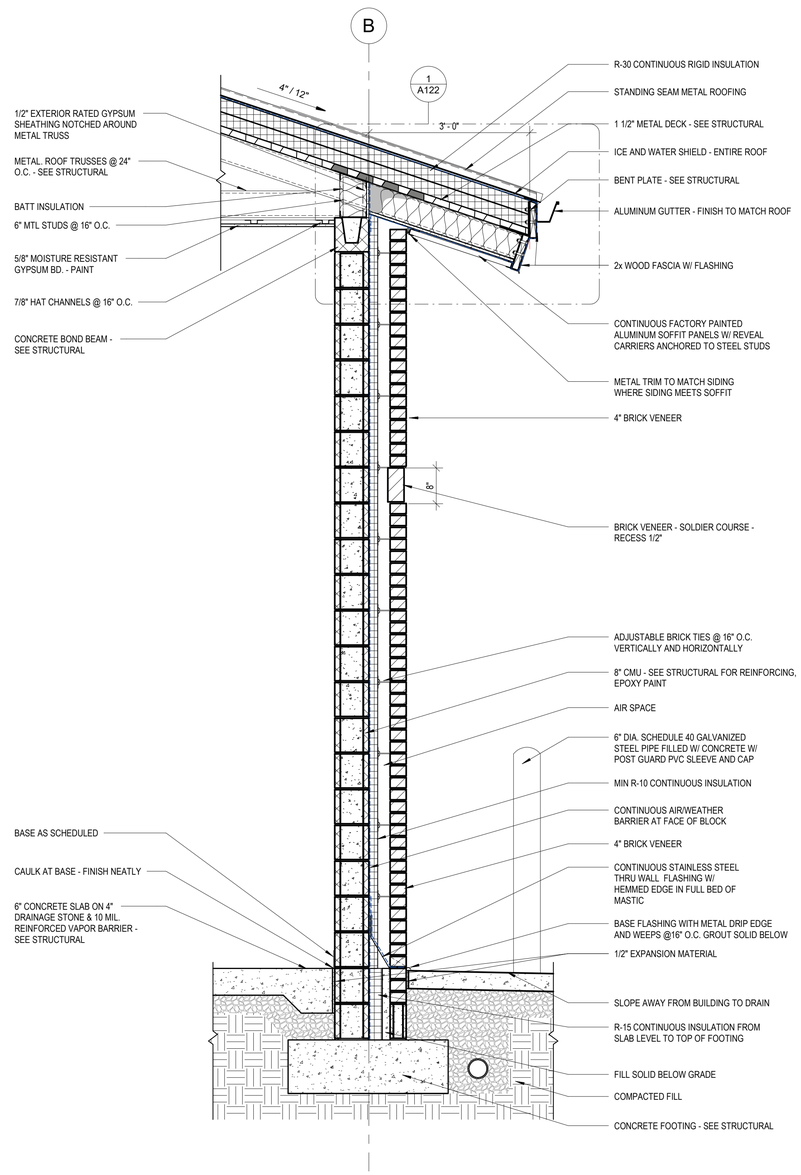
A403

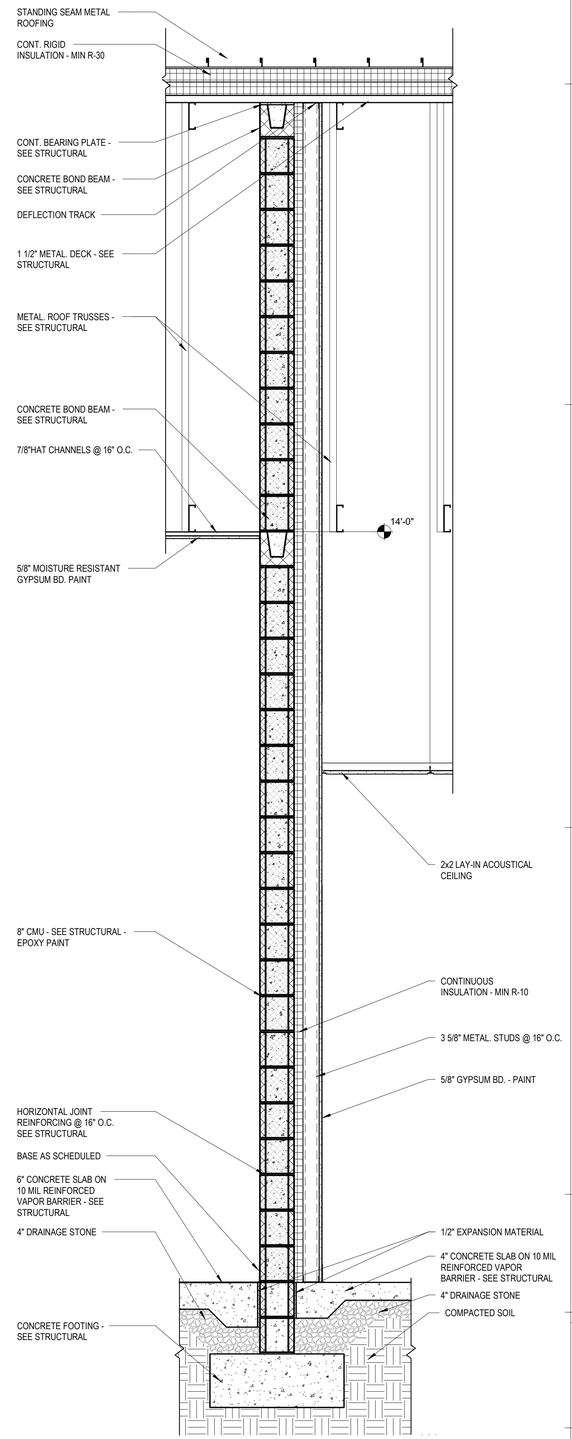
ENLARGED PLANS &
ELEVATIONS



1 A421 WALL SECTION @ LIVING AREA
3/4" = 1'-0"



2 A421 WALL SECTION @ APPARATUS BAY
3/4" = 1'-0"



3 A421 WALL SECTION THROUGH D5-2 WALL
3/4" = 1'-0"

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RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
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SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect
DocuSigned by: Eric M. Sowers
A72EEF73482E4E8... Cert. Carr.
Raleigh, NC
8/16/2026

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PHASE:	BID SET
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CHECKED BY:	EMS

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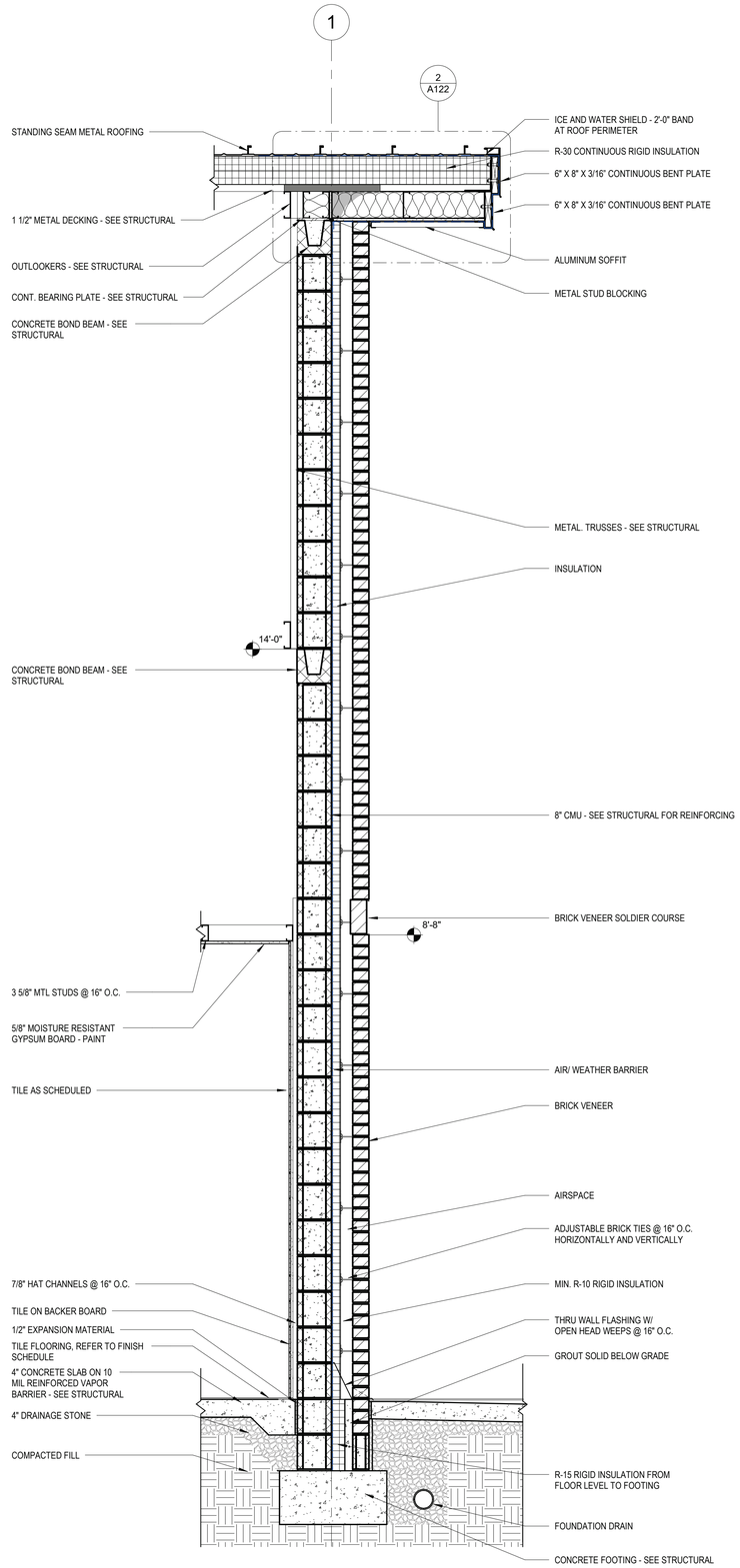
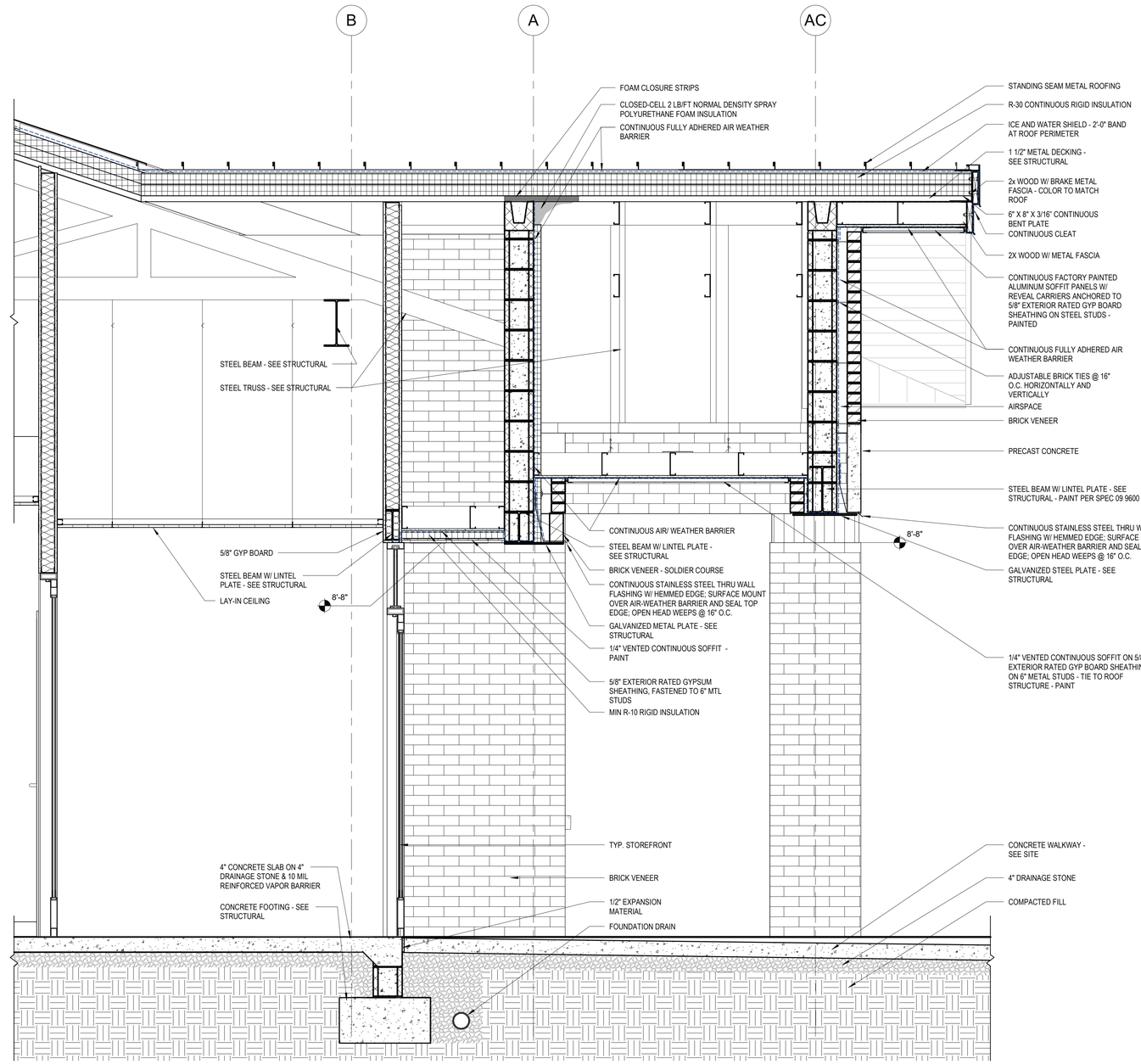
A421

WALL SECTIONS



1 / A422 WALL SECTION @ BATHROOM
3/4" = 1'-0"



2 / A422 WALL SECTION @ VESTIBULE
3/4" = 1'-0"

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ERIC M. SOWERS Registered Architect
DocuSigned by: Eric M. Sowers
A7EEFB734E0F47B...
Raleigh, NC
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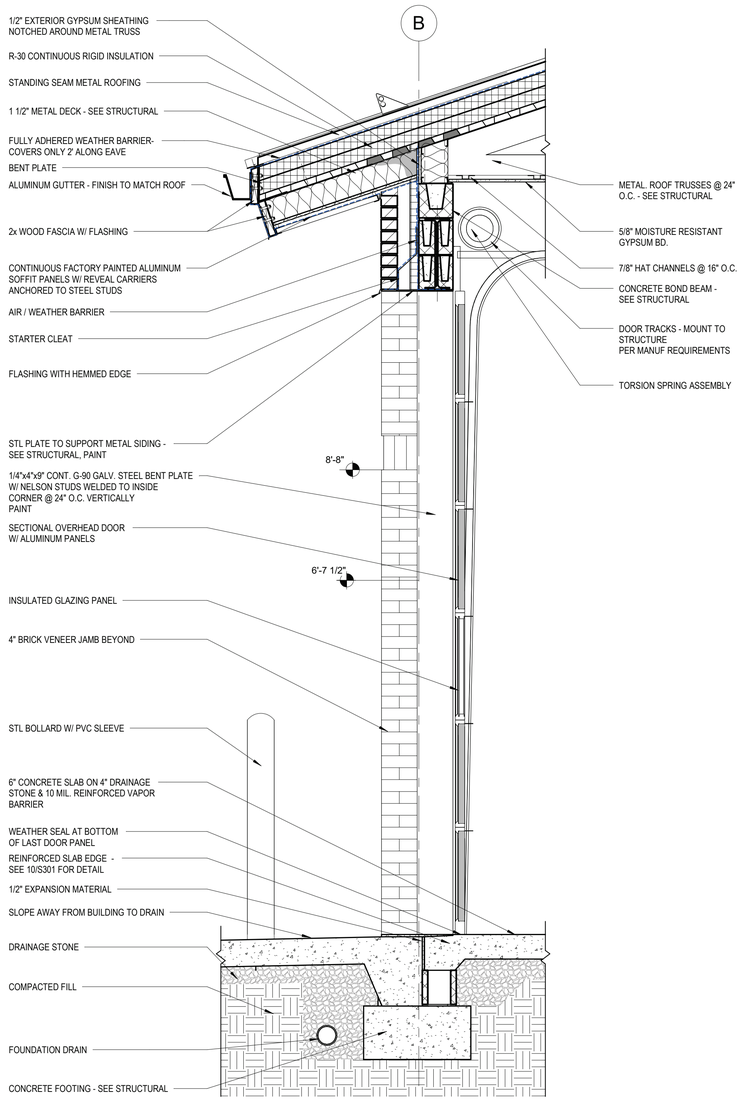
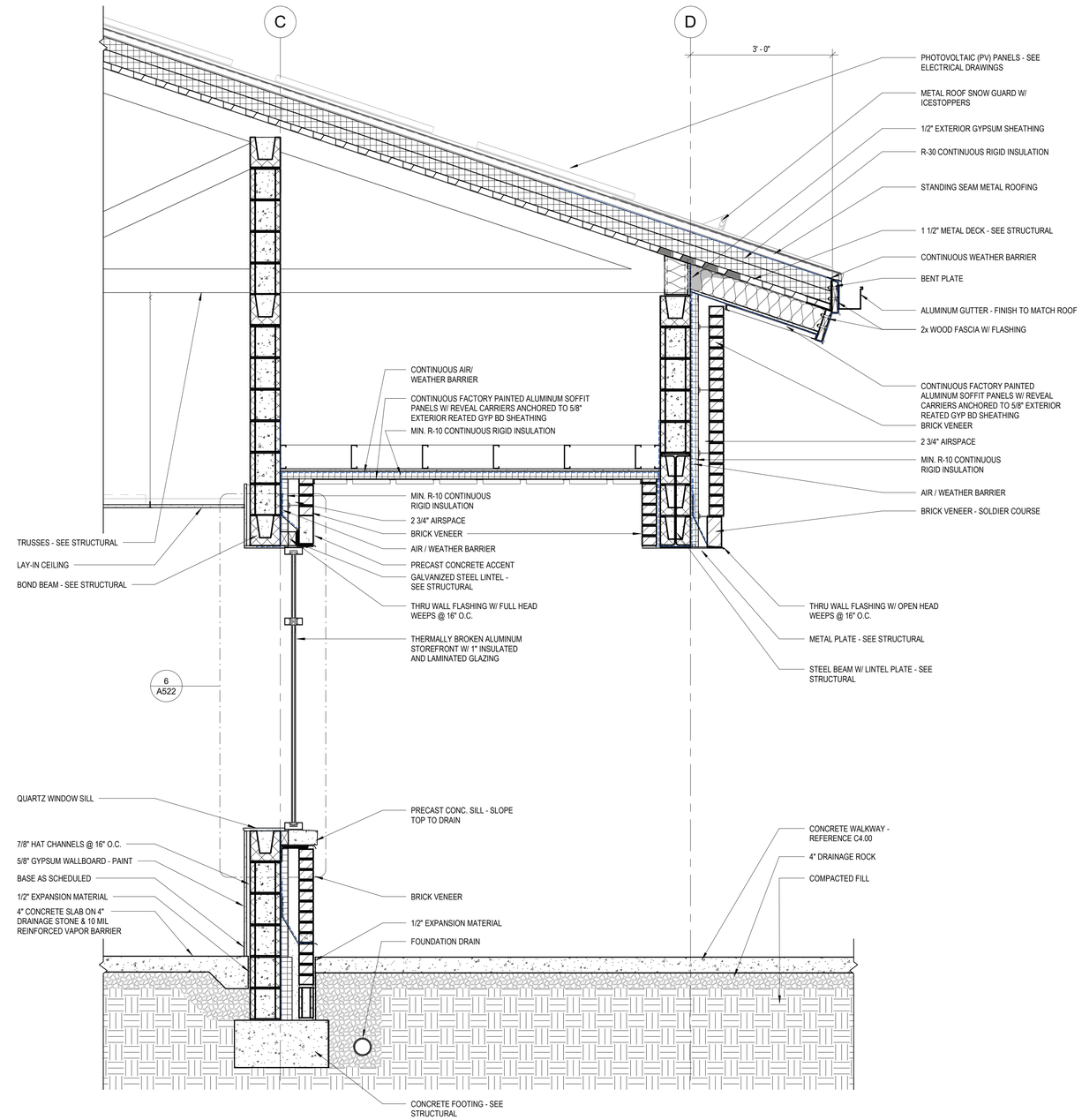
A422

WALL SECTIONS



1 A423 WALL SECTION @ OVERHEAD DOOR
3/4" = 1'-0"



2 A423 WALL SECTION @ PATIO
3/4" = 1'-0"

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Registered Architectural Corporation
52498
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DocuSigned by:
Eric M. Sowers
A72EFB734E07478...
North Carolina
Raleigh, NC

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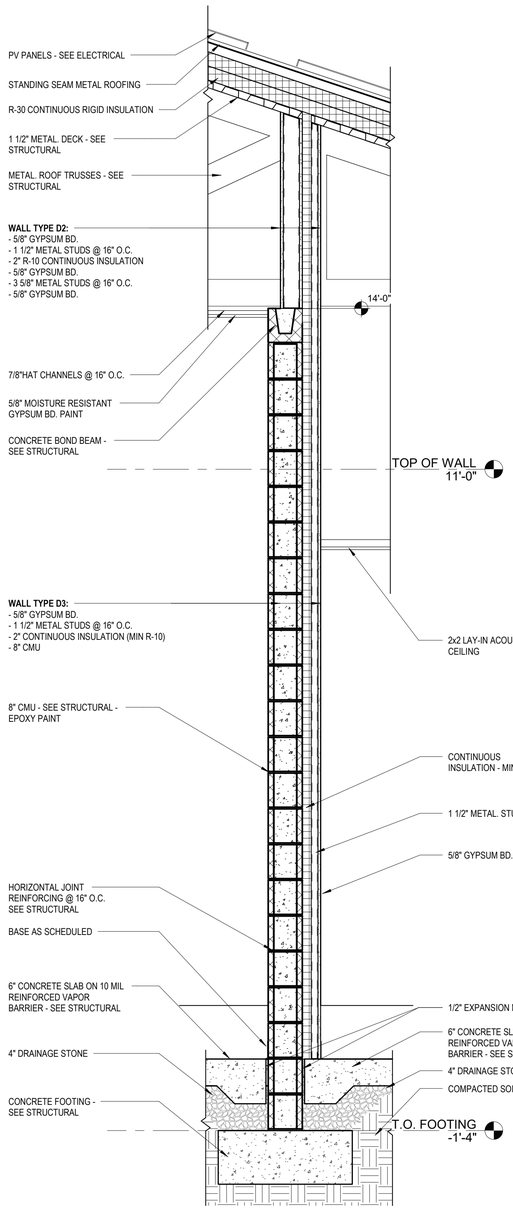
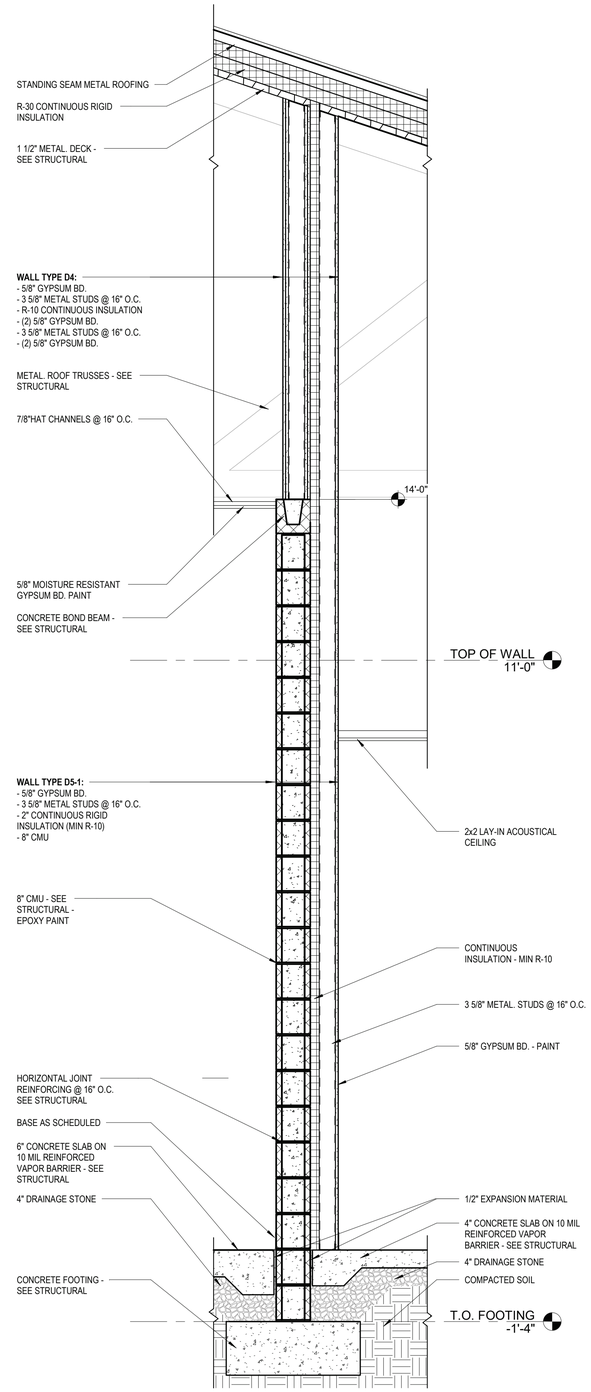
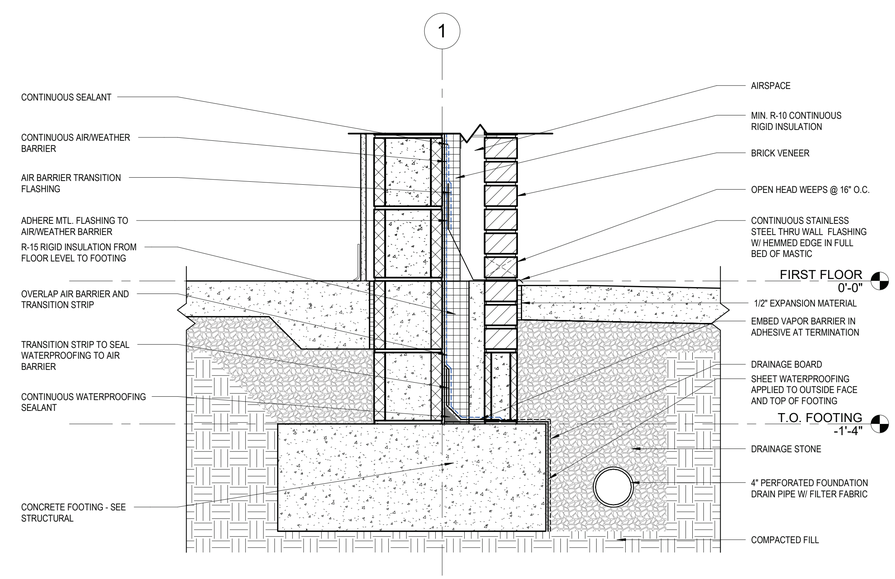
WALL SECTIONS



1 A424 WALL SECTION THROUGH D3 WALL
3/4" = 1'-0"



2 A424 WALL SECTION THROUGH D5-1 WALL
3/4" = 1'-0"



3 A424 DETAIL @ FOOTING - TYPICAL
1 1/2" = 1'-0"

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NORTH CAROLINA, INC.
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RALEIGH, NC 27605
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Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EF973A697478...
Cat=0
North Carolina
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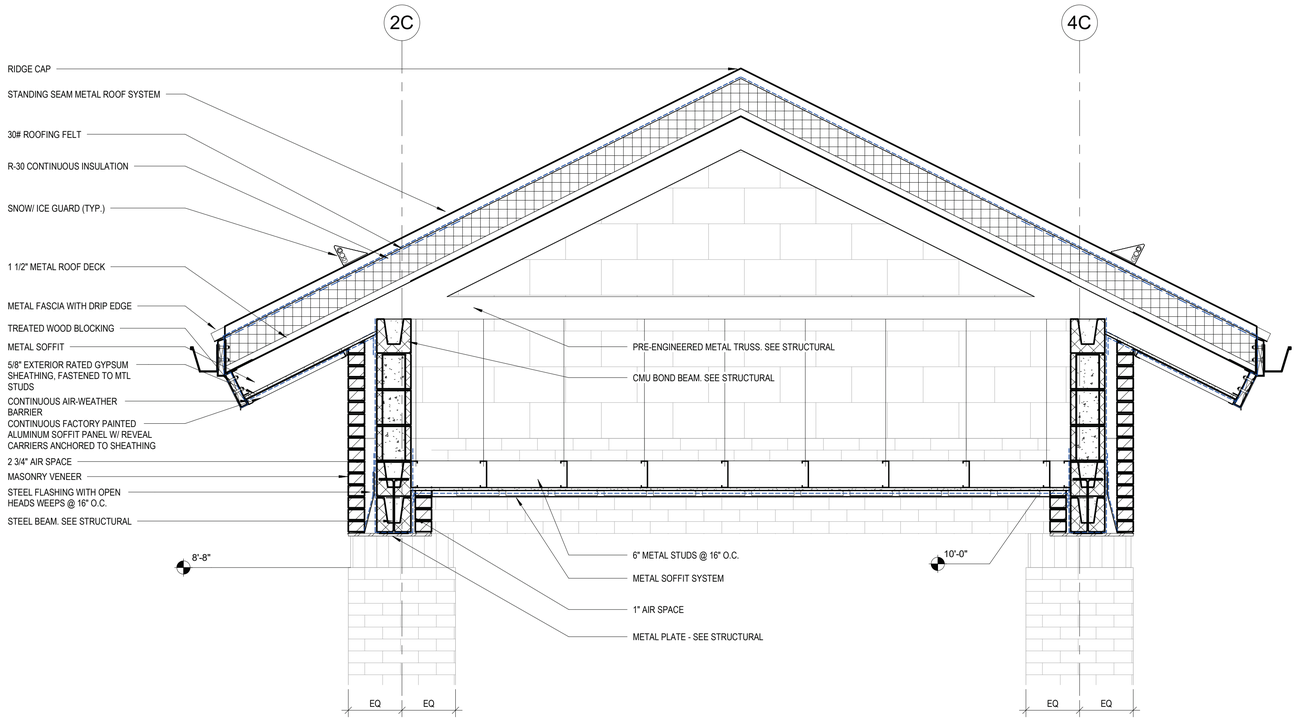
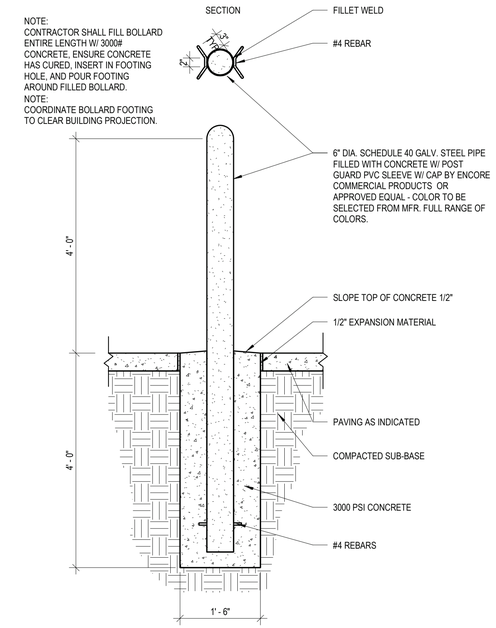
A424

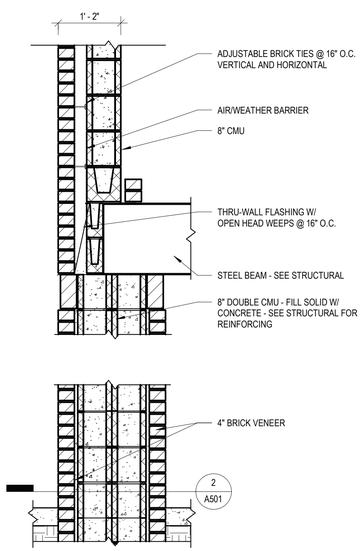
WALL SECTIONS



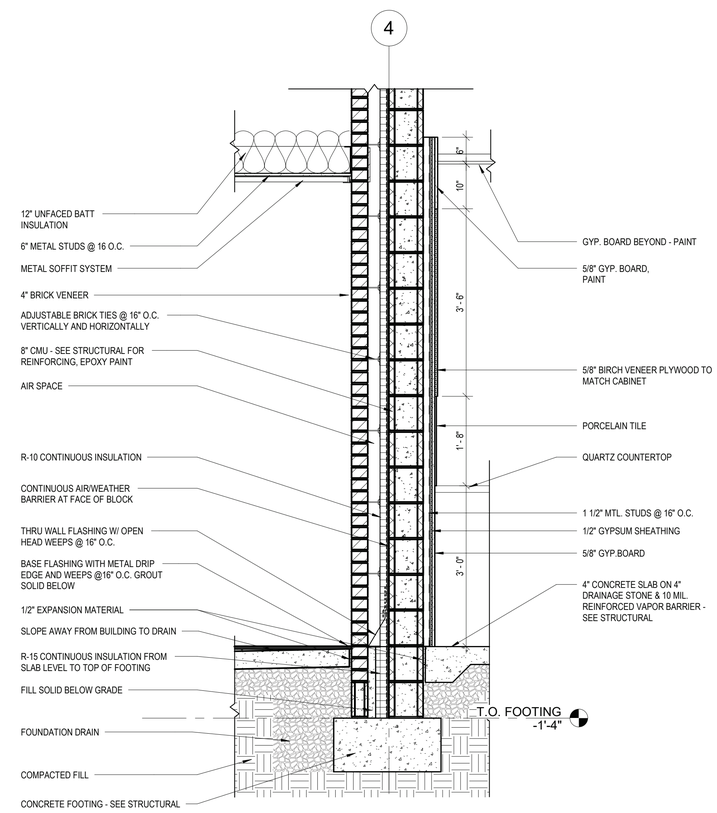
1 A425 SECTION @ FRONT ENTRY
3/4" = 1'-0"



2 A425 BOLLARD DETAIL
3/4" = 1'-0"



3 A425 SECTION @ BRICK COLUMN
3/4" = 1'-0"



4 A425 SECTION 3
3/4" = 1'-0"

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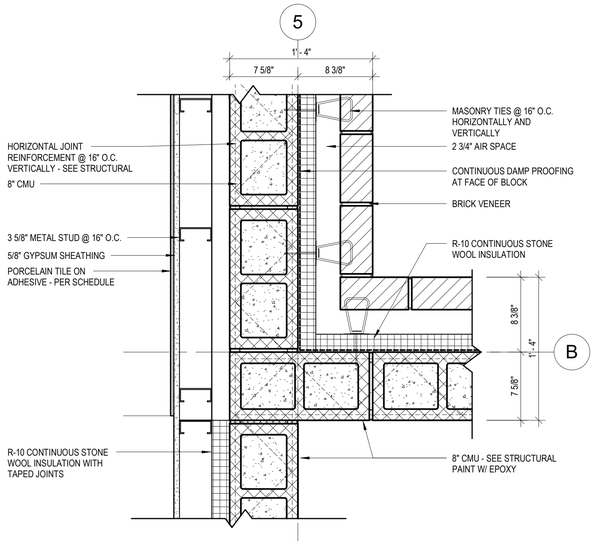
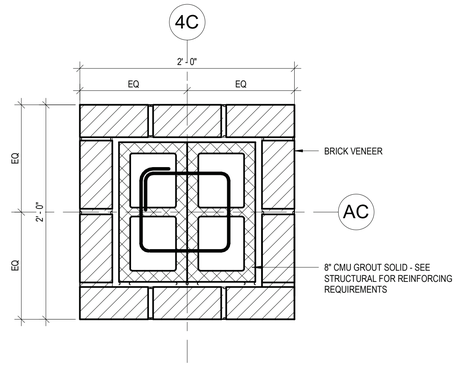
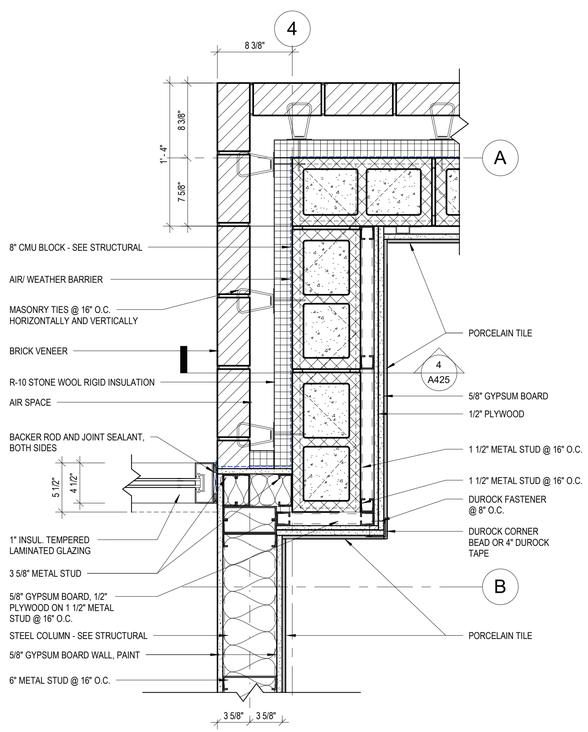
A425
WALL SECTIONS



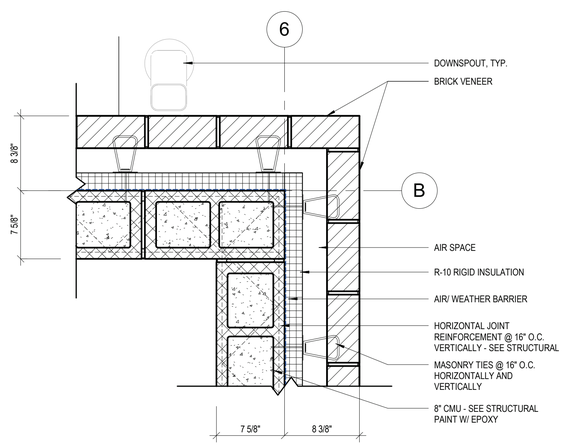
1 A501 FLOOR PLAN - INTERIOR CORNER
1 1/2" = 1'-0"



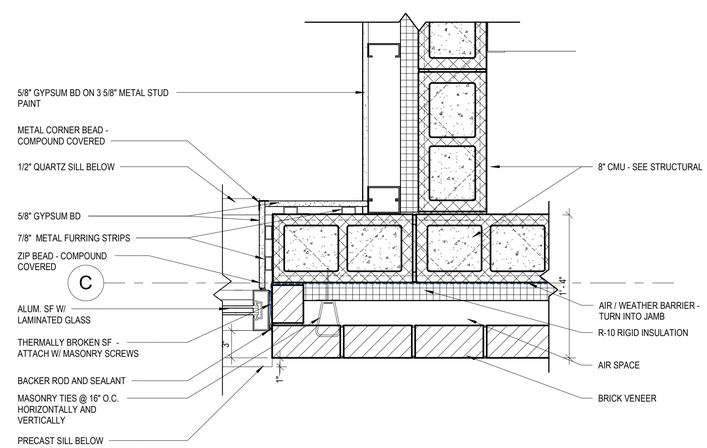
2 A501 PLAN DETAIL @ BRICK COLUMN
1 1/2" = 1'-0"



3 A501 FLOOR PLAN @ VESTIBULE
1 1/2" = 1'-0"



4 A501 FLOOR PLAN - EXTERIOR CORNER
1 1/2" = 1'-0"



5 A501 FLOOR PLAN @ PATIO
1 1/2" = 1'-0"

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RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
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919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A72EF8734E07475...
Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
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DRAWN BY:	NA
CHECKED BY:	EMS

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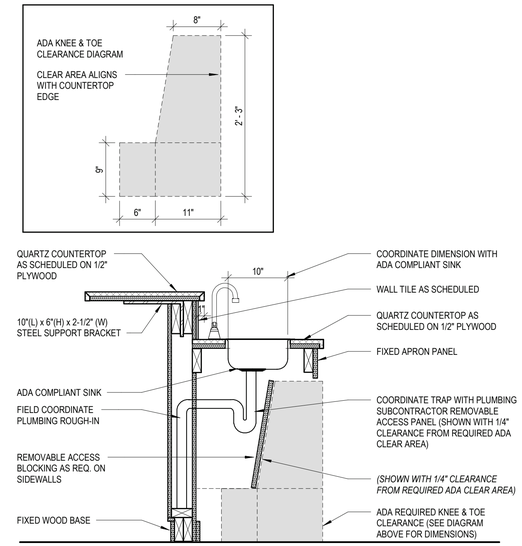
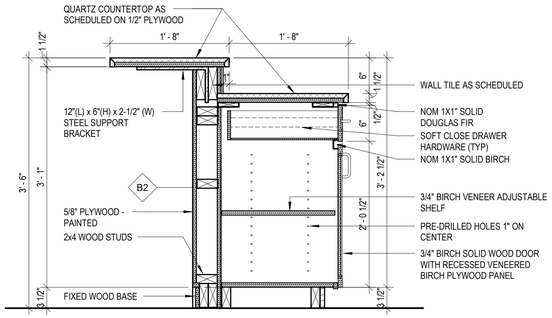
A501

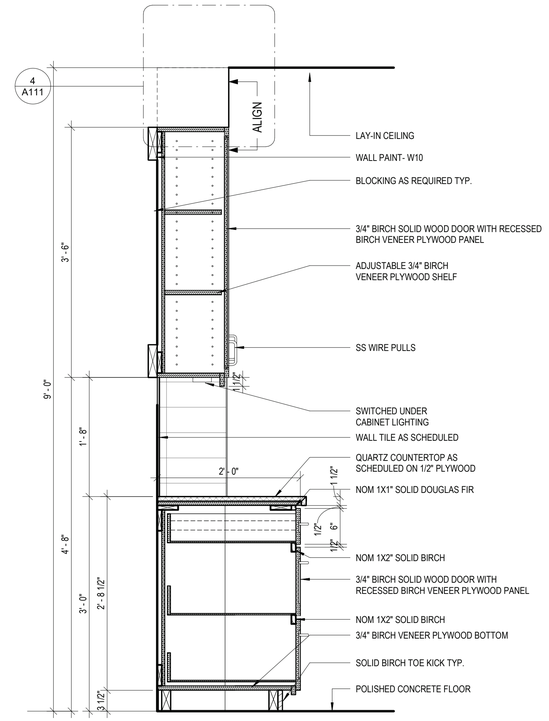
PLAN DETAILS



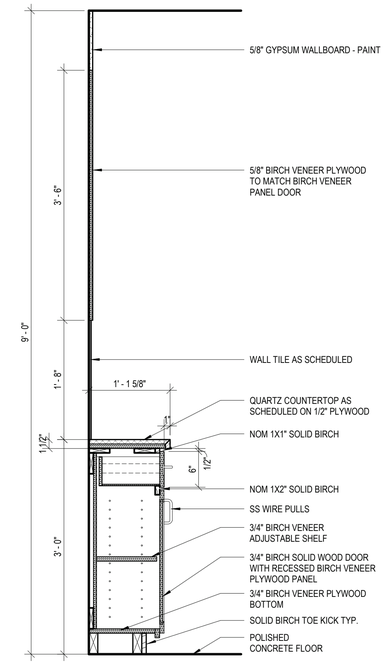
1 A511 KITCHEN MILLWORK SECTION @ ADA COUNTERTOP
1" = 1'-0"



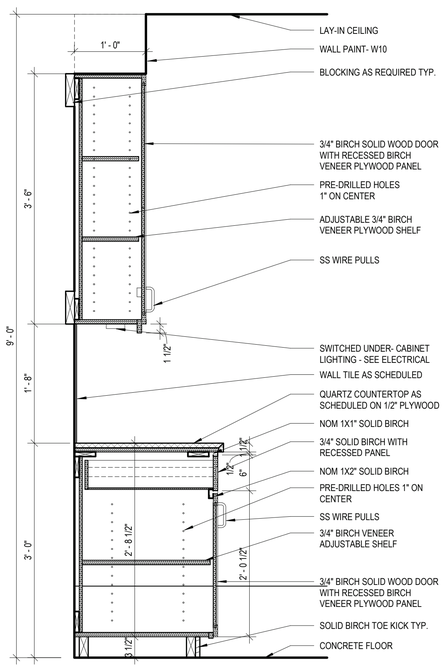
2 A511 KITCHEN MILLWORK SECTION - @ COUNTERTOP
1" = 1'-0"



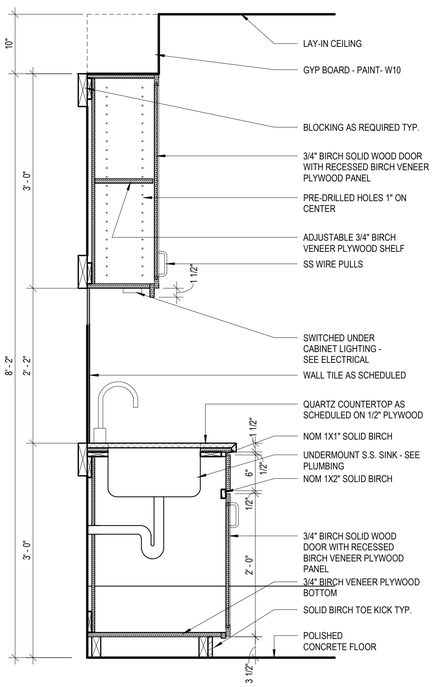
3 A511 SECTION - KITCHEN CABINETS 4
1" = 1'-0"



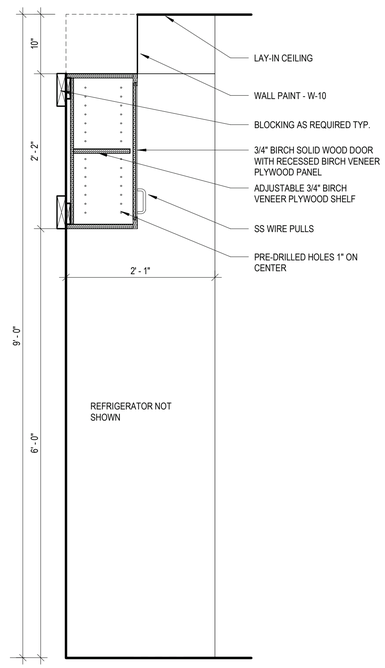
4 A511 SECTION - KITCHEN CABINETS 3
1" = 1'-0"



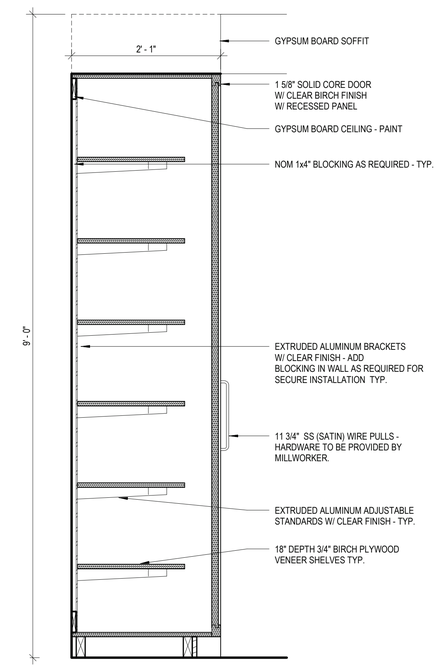
5 A511 KITCHEN MILLWORK SECTION
1" = 1'-0"



6 A511 KITCHEN MILLWORK SECTION @ SINK
1" = 1'-0"



7 A511 KITCHEN MILLWORK SECTION @ REFRIGERATOR
1" = 1'-0"



8 A511 KITCHEN PANTRY SECTION - TYP.
1" = 1'-0"

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919.833.0495 T

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NORTH CAROLINA, INC.
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RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY
NORTH CAROLINA

SEALS

Esse Architects PA
Registered Architectural Corporation
52498
North Carolina
Raleigh, NC

ERIC M. SOWERS
Registered Architect
DocuSigned by:
Eric M. Sowers
A7E8F5F7A8E9478...
North Carolina
Raleigh, NC

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PROJECT INFORMATION

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REVISIONS

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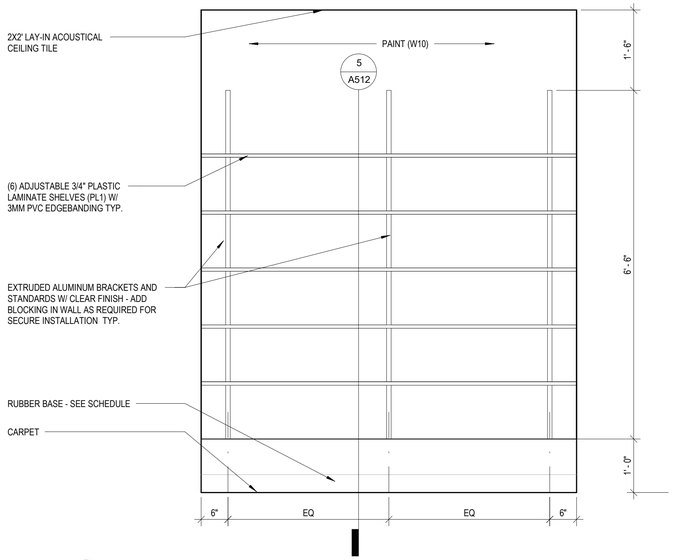
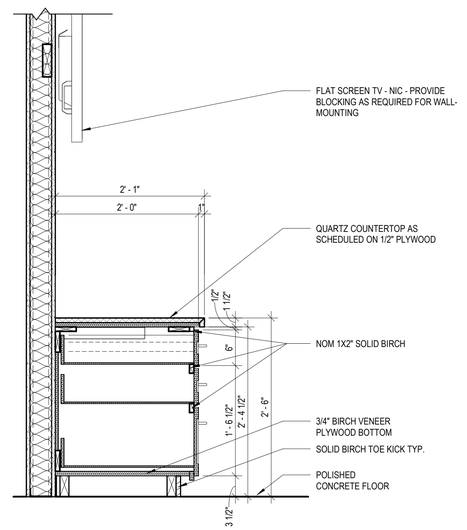
A511

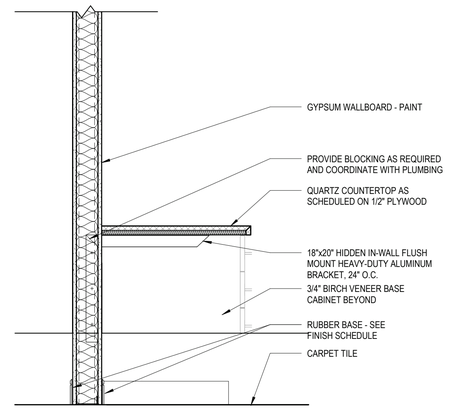
MILLWORK DETAILS



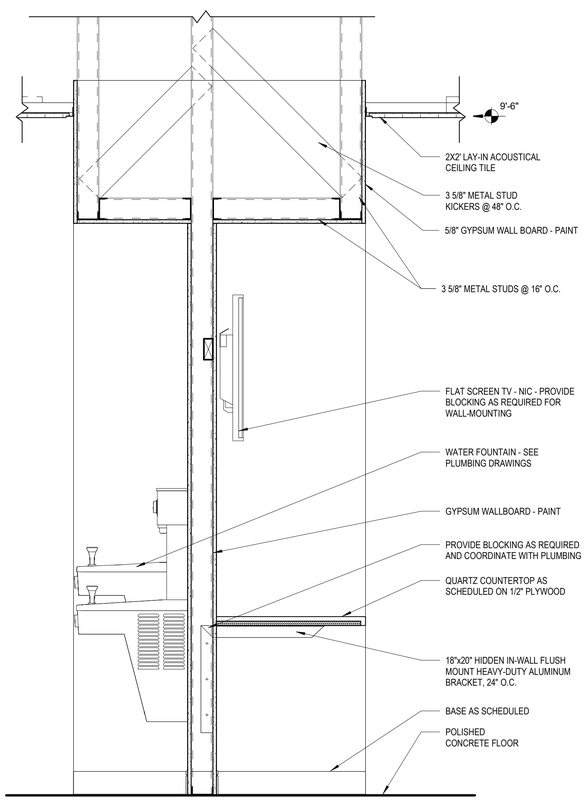
1 A512 ELEVATION - STORAGE CLOSET 104A
3/4" = 1'-0"



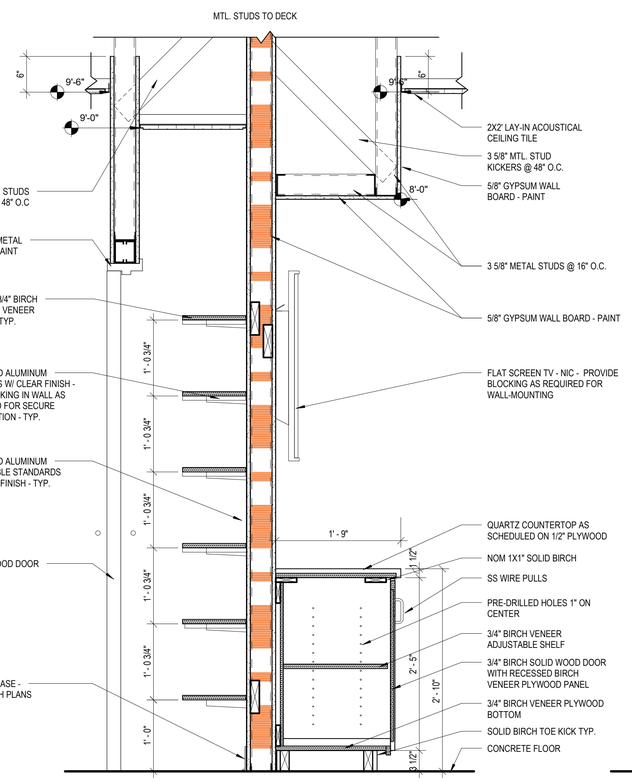
2 A512 MILLWORK DETAIL @ WORK
1" = 1'-0"



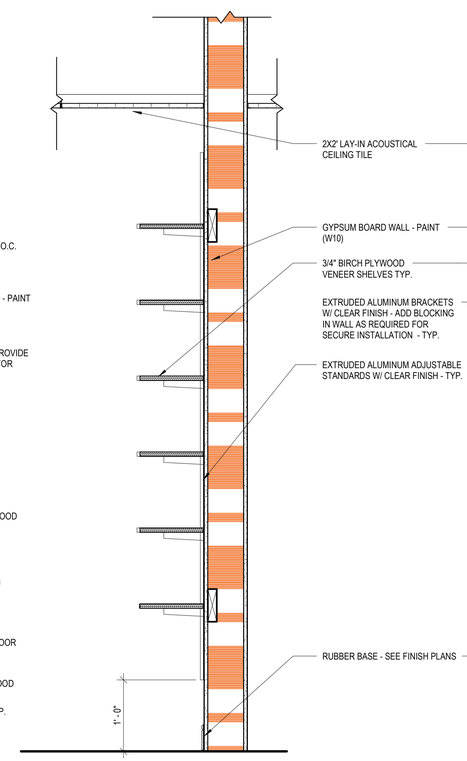
3 A512 MILLWORK DETAIL @ WELLNESS
1" = 1'-0"



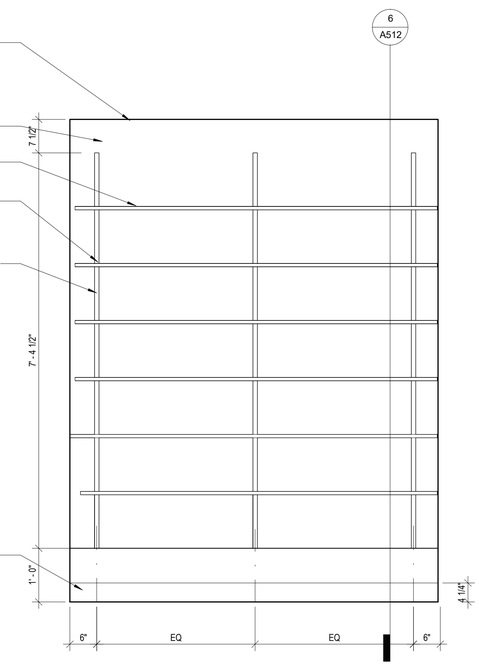
4 A512 MILLWORK DETAIL @ WORK AND WATER FOUNTAIN
1" = 1'-0"



5 A512 MILLWORK DETAIL @ STORAGE AND LIVING
1" = 1'-0"



6 A512 SECTION - SUPERVISOR OFFICE SHELVING
1" = 1'-0"



7 A512 ELEVATION - SUPERVISOR OFFICE SHELVING
3/4" = 1'-0"

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919.833.0495 T

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NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect
DocuSigned by: Eric M. Sowers
A72EFB734E07478...
Raleigh, NC
8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
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DRAWN BY:	NA
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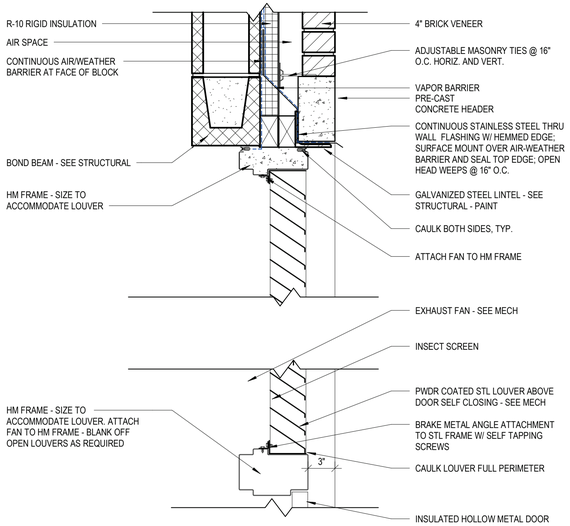
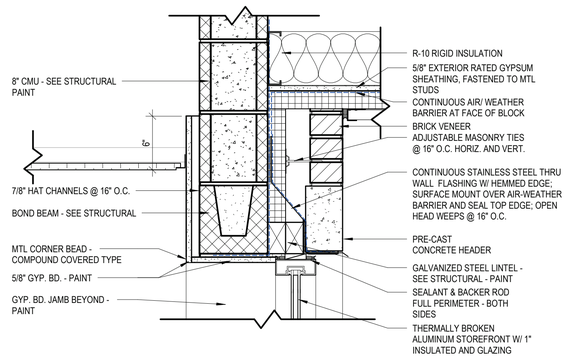
SHEET INFORMATION

A512

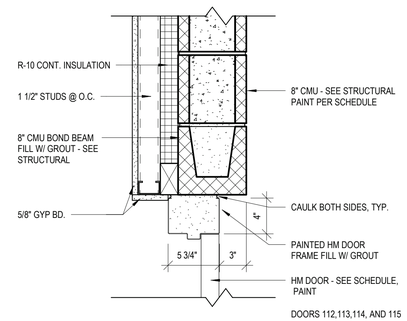
MILLWORK DETAILS AND ELEVATIONS



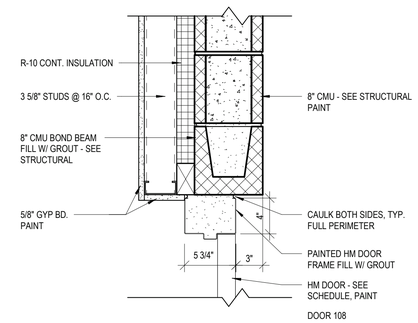
1 A521 HM DOOR HEAD @ LOUVERS
1 1/2" = 1'-0"



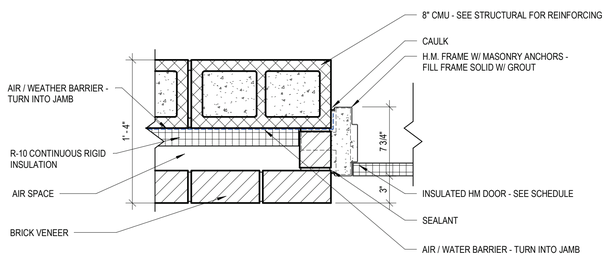
2 A521 WINDOW HEAD STOREFRONT @ EXTERIOR WALL
1 1/2" = 1'-0"



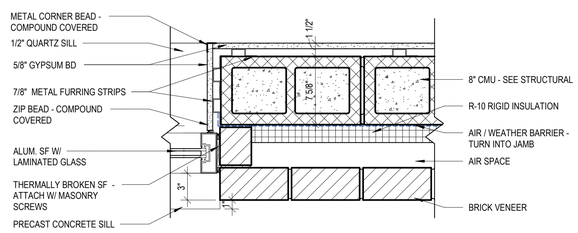
3 A521 4" HM DOOR HEAD FRAME @ TYPE D2 WALL
1 1/2" = 1'-0"



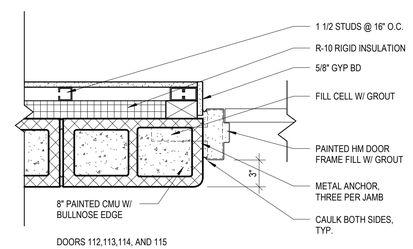
4 A521 4" HM DOOR HEAD FRAME @ TYPE D3 WALL
1 1/2" = 1'-0"



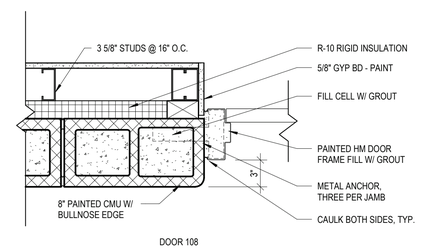
5 A521 HM DOOR JAMB @ EXTERIOR WALL
1 1/2" = 1'-0"



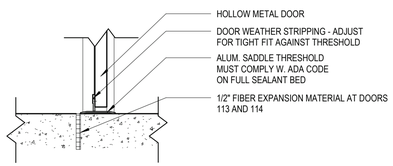
6 A521 WINDOW JAMB STOREFRONT @ EXTERIOR WALL
1 1/2" = 1'-0"



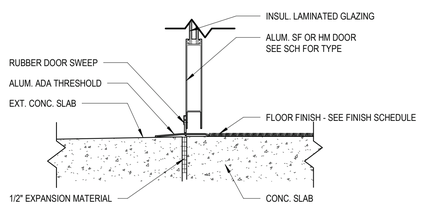
7 A521 HM DOOR JAMB @ TYPE D2 WALL
1 1/2" = 1'-0"



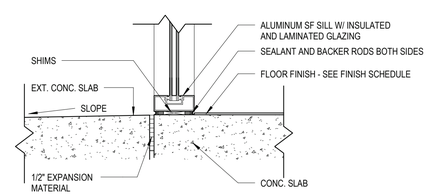
8 A521 HM DOOR JAMB @ TYPE D3 WALL
1 1/2" = 1'-0"



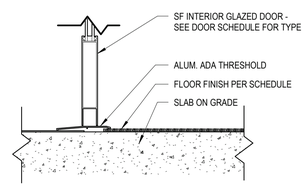
9 A521 HM DOOR SILL TYP
1 1/2" = 1'-0"



10 A521 DOOR SILL STOREFRONT @ EXTERIOR
1 1/2" = 1'-0"



11 A521 SF SILL @ ENTRY
1 1/2" = 1'-0"



12 A521 DOOR SILL STOREFRONT @ INTERIOR
1 1/2" = 1'-0"

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702 OBERLIN ROAD, SUITE 300,
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919.832.8118 T

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SEALS

Esse Architects PA
Registered Architectural Corporation
52498
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Eric M. Sowers
A72EF87345E7478...
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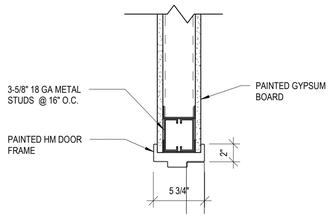
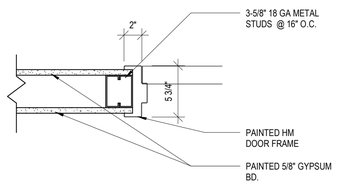
SHEET INFORMATION

A521

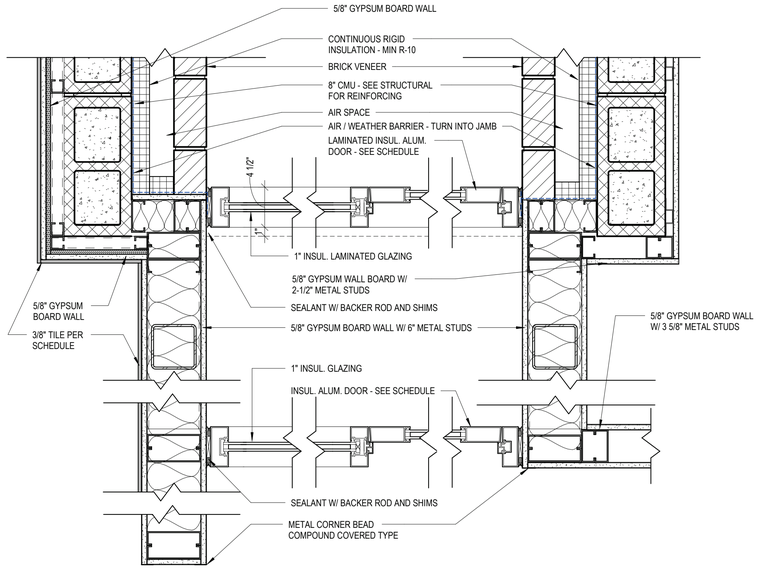
HEAD JAMB AND SILL DETAILS



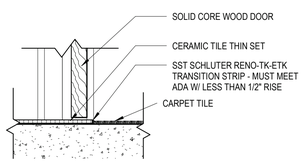
1 A522 HM FRAME HEAD AT 3 5/8" STUD WALL
1 1/2" = 1'-0"



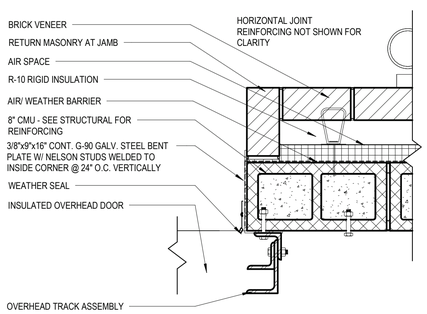
2 A522 HM FRAME JAMB @ 3 5/8" MTL STUD WALL
1 1/2" = 1'-0"



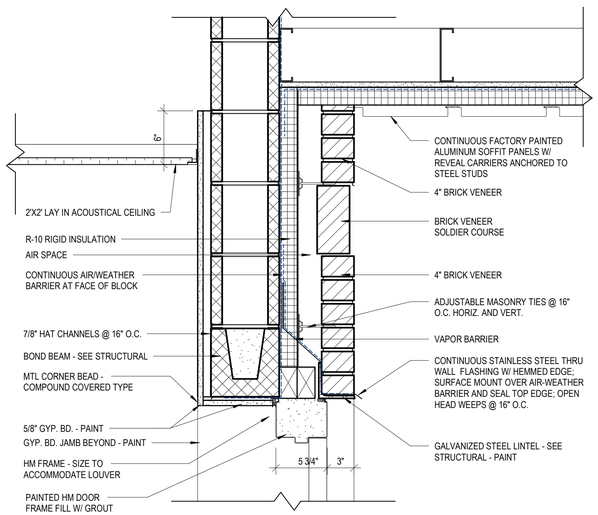
3 A522 SF JAMB @ SIDE LIGHT
1 1/2" = 1'-0"



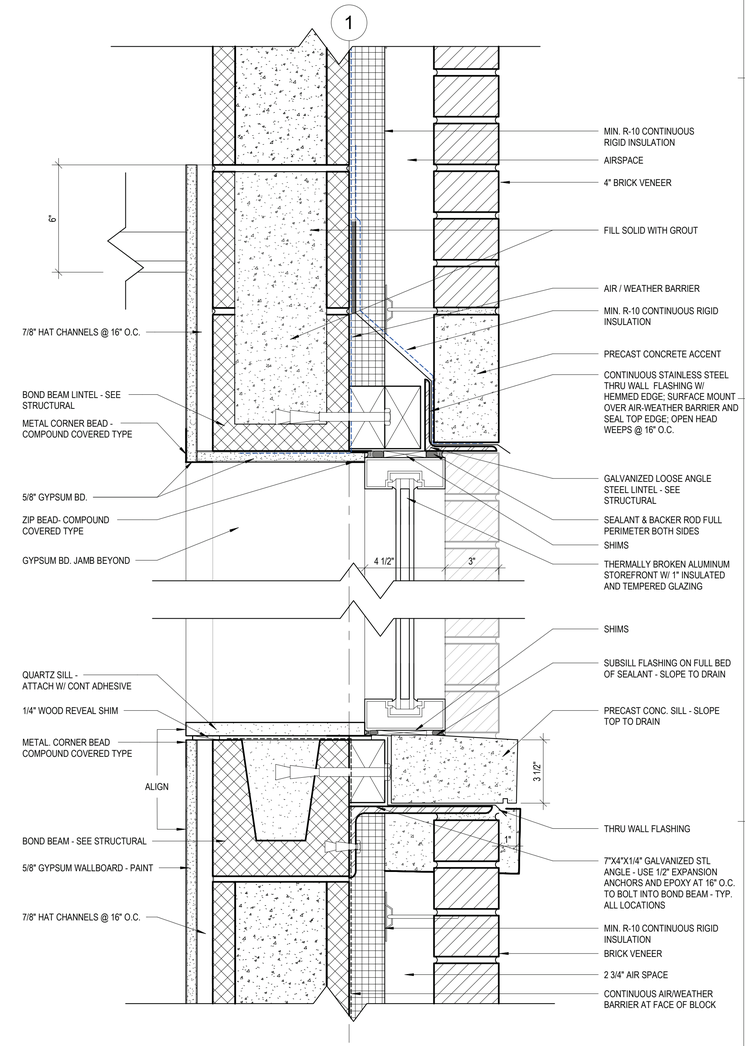
4 A522 HM DOOR SILL @ TILE TRANSITION
1 1/2" = 1'-0"



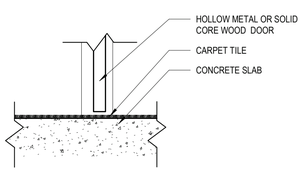
5 A522 JAMB AT OVERHEAD DOOR
1 1/2" = 1'-0"



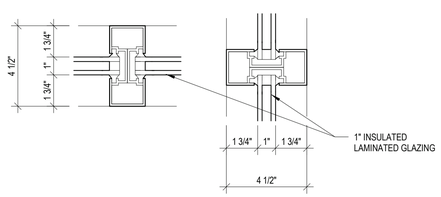
12 A522 HM DOOR HEAD @ EXTERIOR WALL
1 1/2" = 1'-0"



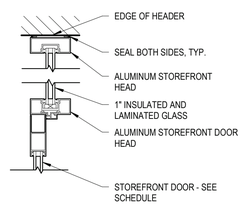
6 A522 WINDOW HEAD AND SILL - STOREFRONT @ EXTERIOR WALL
3" = 1'-0"



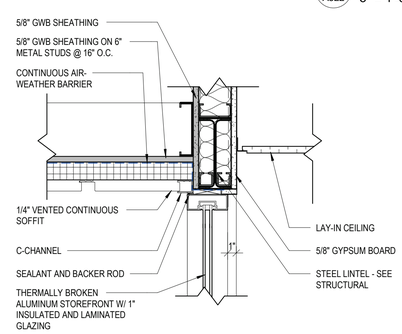
7 A522 HM DOOR SILL NO THRESHLD
1 1/2" = 1'-0"



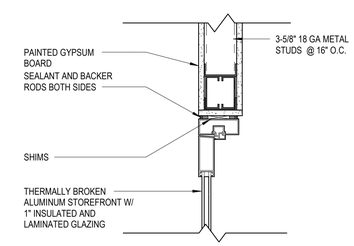
8 A522 TYP SF MULLION DETAILS
3" = 1'-0"



9 A522 DOOR HEAD STOREFRONT @ MULLION
1 1/2" = 1'-0"



10 A522 SF HEAD @ FRONT ENTRANCE
1 1/2" = 1'-0"



11 A522 SF HEAD @ VESTIBULE
1 1/2" = 1'-0"

Esse Architects

632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect North Carolina Raleigh, NC
DocuSigned by: Eric M. Sowers
A72EFB734E97478...
8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	NA
CHECKED BY:	EMS

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

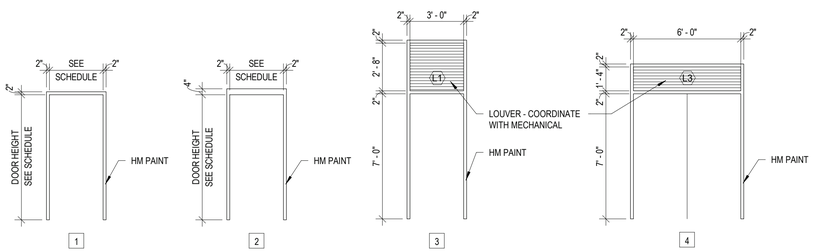
A522

HEAD JAMB AND SILL DETAILS

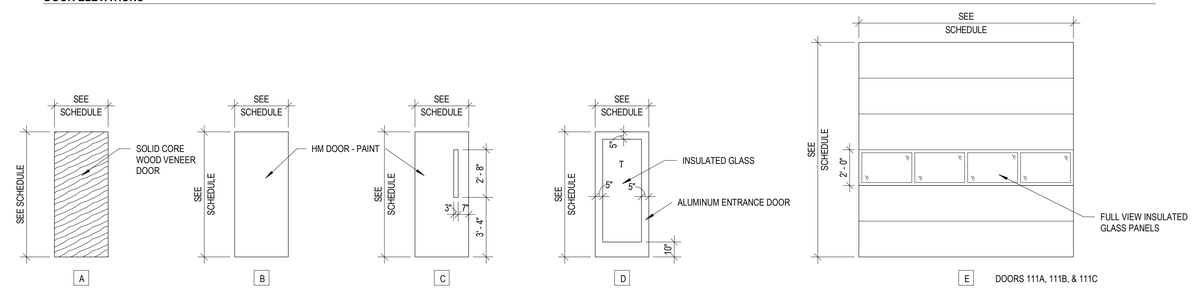
DOOR SCHEDULE

NUMBER	LOCATION	DOOR HEIGHT	DOOR WIDTH	DOOR MATERIAL	DOOR FINISH	DOOR ELEVATION	FRAME MATERIAL	FRAME FINISH	FRAME ELEVATION	DETAIL HEAD	DETAIL JAMB	DETAIL SILL	HW	RATING	COMMENTS
100	VESTIBULE 100 - EXTERIOR	7'-0"	3'-0"	FRAME MATERIAL	CLEAR	D	AL	CLEAR	F	9/A522	5/A522	10/A521	1.0		CARD READER, PANIC HARDWARE
101	SUPERVISOR 101	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	1/A522	2/A522	5/A522	9.0	20 MIN	
102	UNISEX 102	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	1/A522	2/A522	3/A522	11.0		
103	UNISEX 103	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	1/A522	2/A522	3/A522	11.0		
104	MULTIPURPOSE 104	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	1/A522	2/A522	5/A522	16.0	20 MIN	
104A	STORAGE 104A	7'-0"	6'-0"	WD	CLEAR	A	HM	PAINT	1	1/A522	2/A522	5/A522	8.0		
104B	MECH 104B	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	1/A522	2/A522	5/A522	7.0		
104C	WELLNESS 104C	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	1/A521	2/A522	5/A522	15.0		
104D	MULTIPURPOSE 104 - EXTERIOR	7'-0"	3'-0"	HM	CLEAR	B	HM	CLEAR	2	12/A521	7/A521	9/A521	14.0		
105	VESTIBULE 100	7'-10"	3'-0"	AL	CLEAR	D	AL	CLEAR	I	9/A522	5/A522	12/A521	4.0		
106	STORAGE 106	7'-0"	3'-0"	WD	CLEAR	A	HM	PAINT	1	5/A521	7/A521	5/A522	10.0		
108	DINING 108	7'-0"	3'-0"	WD	CLEAR	C	HM	PAINT	2	4/A521	8/A521	9/A521	5.0	90 MIN	
110	LIVING 110 - EXTERIOR	7'-0"	3'-0"	AL	CLEAR	D	AL	CLEAR	B	2/A521	6/A521	10/A521	1.0		CARD READER, PANIC HARDWARE
111	VEHICLE BAY 111 - EXTERIOR	7'-0"	3'-0"	HM	PAINT	B	HM	PAINT	3	1/A521	5/A521	9/A521	2.0		CARD READER, PANIC HARDWARE
111A	VEHICLE BAY 111	12'-0"	12'-0"	ST	MANUF.	E					6/A522		13.0		
111B	VEHICLE BAY 111	12'-0"	12'-0"	ST	MANUF.	E					6/A522		13.0		
111C	VEHICLE BAY 111	12'-0"	12'-0"	ST	MANUF.	E					6/A522		13.0		
112	MED STOR 112	7'-0"	3'-0"	HM	PAINT	B	HM	PAINT	2	3/A521	7/A521	9/A521	6.0		CARD READER
113	PPE 113	7'-0"	3'-0"	HM	PAINT	B	HM	PAINT	2	3/A521	7/A521	9/A521	12.0		
114	DECON 114	7'-0"	3'-0"	HM	PAINT	B	HM	PAINT	2	3/A521	7/A521	9/A521	12.0		
115	TELECOM 115	7'-0"	3'-0"	HM	PAINT	B	HM	PAINT	2	3/A521	7/A521	9/A521	6.0		CARD READER
120	MECHANICAL 120	7'-0"	3'-0"	HM	PAINT	B	HM	PAINT	4	1/A521	5/A521	9/A521	3.0		DOUBLE DOORS

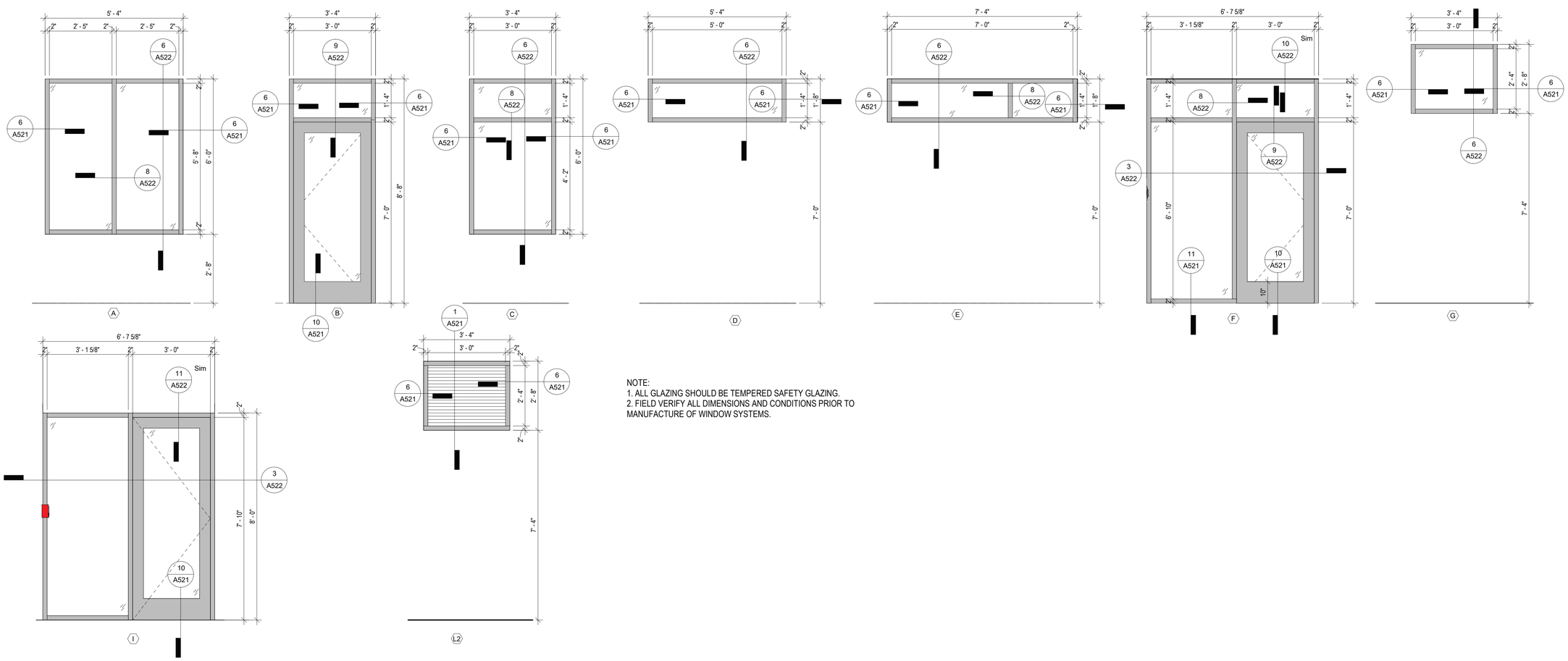
FRAME ELEVATIONS



DOOR ELEVATIONS



WINDOW ELEVATIONS



NOTE:
1. ALL GLAZING SHOULD BE TEMPERED SAFETY GLAZING.
2. FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO MANUFACTURE OF WINDOW SYSTEMS.

Esse Architects

632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
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CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
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919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, & PLUMBING
SALAS O'BRIEN
NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T

WAKE COUNTY NORTH CAROLINA

SEALS

Esse Architects P.A. Registered Architectural Corporation 52498 North Carolina Raleigh, NC

ERIC M. SOWERS Registered Architect DocuSigned by: Eric M. Sowers A72EF8734E87478... Cat50... Raleigh, NC

8/16/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/2026
DRAWN BY:	EMS
CHECKED BY:	EMS

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

A601

WINDOW AND DOOR SCHEDULE

Docusign Envelope ID: 67D47CE3-AC6A-8430-81F6-8C1FFF56D3C7

PLUMBING LEGEND

LEGEND		
	CW	DOMESTIC COLD WATER
	HW	DOMESTIC HOT WATER SUPPLY
	HWR	DOMESTIC HOT WATER RETURN
	SAN/S	SANITARY WASTE
	V	SANITARY VENT
GW	GW	GREASE WASTE
		EXTENT OF CUTTING
	DN; UP	PIPE ELBOW TURNS DOWN; UP
	DN; UP	PIPE TEES DOWN; UP
	CAP	PIPE CAP
	BV	BALL VALVE
	U	UNION
	CV	CHECK VALVE
	GV	GAS COCK
	DCV	DOUBLE CHECK VALVE
RPZ	RPZ	REDUCED PRESSURE ZONE
FCO	FCO	FLOOR CLEANOUT
CO	CO	IN-LINE CLEANOUT
WCO	WCO	CLEANOUT AT FINISH WALL
	TR	TRAP
	FD	FLOOR DRAIN
	YCO	YARD CLEAN OUT
	AD/RD	AREA/ROOF DRAIN
	TD	TRENCH DRAIN
	HB/NFHB	(NON-FREEZE) HOSE BIBB
	CTE	CONNECT TO EXISTING
	DEMO	END POINT OF DEMOLITION

ADDITIONAL ABBREVIATIONS			
AAV	AIR ADMITTANCE VALVE	JS	JANITORS SINK
ABV	ABOVE		
ACC	ACCESS OR ACCESSIBLE	KS	KITCHEN SINK
AFF	ABOVE FINISHED FLOOR		
AFG	ABOVE FINISHED GRADE	LAV	LAVATORY
ARCH	ARCHITECTURAL		
		M	METER
BFP	BACKFLOW PREVENTER	MAX	MAXIMUM
BT	BATH TUB	MECH	MECHANICAL
BTU	BRITISH THERMAL UNIT	MFR	MANUFACTURER
		MH	MAN HOLE
CBV	CIRCUIT BALANCING VALVE	MIN	MINIMUM
CD	CONDENSATE	MS	MOP SINK
CLG	CEILING		
COL	COLUMN	NC	NORMALLY CLOSED
CONT	CONTINUED	NFHB	NON FREEZE HOSE BIB
		NO	NORMALLY OPEN
DF	DRINKING FOUNTAIN	NTS	NOT TO SCALE
DFU	DRAINAGE FIXTURE UNITS		
DW	DISHWASHER	OD	OUTSIDE DIAMETER
DWG(S)	DRAWING(S)	OSD	OPEN SITE DRAIN
EA	EACH	P&T	PRESSURE AND TEMPERATURE
EL	ELEVATION	PD	PLANTER DRAIN
ELEC	ELECTRICAL	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION	PRES	PRESSURE
EWC	ELECTRIC WATER COOLER		
EWH	ELECTRIC WATER HEATER	RL	RAIN LEADER
		RTU	ROOF TOP UNIT
F	FIRE		
FDC	FIRE DEPARTMENT CONNECTION	SH	SHOWER
FF	FINISHED FLOOR	SPEC	SPECIFICATIONS
FG	FINISHED GRADE	SS	SERVICE SINK
FLR	FLOOR	STD	STANDARD
FM	FORCED MAIN		
FS	FLOW SWITCH	TBD	TO BE DETERMINED
FU	FIXTURE UNIT	TOS	TOP OF SLAB
		TUB	BATHTUB
GI	GREASE INTERCEPTOR	TYP	TYPICAL
GPM	GALLONS PER MINUTE	TW	TEMPERED WATER
GM	GAS METER		
		UG	UNDERGROUND
HB	HOSE BIBB	UNO	UNLESS NOTED OTHERWISE
HC	ADA ACCESSIBILITY COMPLIANT	UR	URINAL
HS	HAND SINK	U/S	UNDER SLAB
ID	INSIDE DIAMETER	V	VENT
IND	INDIRECT	VTR	VENT THROUGH ROOF
INT	INTERIOR		
I.E.	INVERT ELEVATION	W	WASTE
IMB	ICE MAKER BOX	WC	WATER CLOSET
IWH	INSTANT WATER HEATER	WH	WATER HEATER
		WHA	WATER HAMMER ARRESTOR
		w/	WITH
		EX	EXISTING

GENERAL PLUMBING NOTES

1. NOT ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS DRAWING MAY BE USED ON THIS PROJECT.
2. ALL PLUMBING WORK SHALL BE FURNISHED AND INSTALLED PER THE STATE OF NORTH CAROLINA BUILDING CODE: PLUMBING CODE 2018.
3. UNLESS OTHERWISE NOTED ON DRAWINGS, ALL 1½"-2½" SANITARY WASTE AND VENT PIPING SHALL BE RUN AT ¼" PER FT SLOPE. ALL 3"-6" SANITARY WASTE AND VENT PIPING SHALL BE RUN AT ⅛" PER FT SLOPE. ALL WASTE AND VENT PIPING 8" OR LARGER SHALL BE RUN AT 1/16" PER FT SLOPE. ALL STORM DRAINAGE PIPING SHALL BE RUN AT ⅛" PER FT SLOPE.
4. THE DESIGN/DETAIL/SCHEDULE SHOWN IS BASED ON (MANUFACTURER, MODEL) EQUIPMENT AND IS INTENDED ONLY TO SHOW THE GENERAL SIZE, CONFIGURATION, LOCATION, CONNECTIONS, AND/OR SUPPORT FOR EQUIPMENT OR SYSTEMS SPECIFIED WITH RELATION TO THE OTHER BUILDING SYSTEMS.
5. INSTALL ALL PIPING AT THE MAXIMUM ELEVATION POSSIBLE, PROVIDE ALL FITTINGS, TRANSITIONS AND MATERIALS REQUIRED TO ACHIEVE MAXIMUM ELEVATION. COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO THE START OF WORK TO AVOID CONFLICTS.
6. CONTRACTOR SHALL FURNISH ALL DISCONNECTS REQUIRED FOR PLUMBING EQUIPMENT.
7. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL MANUFACTURER SUBSTITUTIONS OF PLUMBING EQUIPMENT. SUBMIT A DESCRIPTION OF ANY/ALL CHANGES REQUIRED BY THE SUBSTITUTION, INCLUDING ELECTRICAL AND MECHANICAL CONNECTIONS, SIZES, WEIGHTS, AND CLEARANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COST ASSOCIATED WITH THE SUBSTITUTION.
8. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. THE CONTRACTOR SHALL INFORM THE ARCHITECT AND/OR ENGINEER OF ANY CONFLICTS AS SOON AS THEY ARE DETECTED.
9. CONTRACTORS MUST CAREFULLY COORDINATE THE ARRANGEMENT AND INSTALLATION OF THE DUCT, PIPING, AND CONDUIT IN THE MECHANICAL CHASES PRIOR TO THE START OF WORK. ALL PENETRATIONS SHALL BE SLEEVED AND FIRE-PROOFED.
10. ALL WORK SHALL BE NEW AND PROVIDED UNDER THIS CONTRACT UNLESS SPECIFICALLY MARKED "EX", "EXISTING", OR "EXIST.".
11. VERIFY LOCATIONS AND DIMENSIONS OF ALL EXISTING EQUIPMENT AND COORDINATE ALL WORK PRIOR TO THE START OF CONSTRUCTION.
12. THESE DRAWINGS ARE NECESSARILY DIAGRAMMATIC IN NATURE. NOT ALL FITTINGS, OFFSETS, VENTS, OR DRAINS ARE SHOWN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND INCLUDE ALL FITTINGS, OFFSETS, VENTS, AND DRAINS AS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONING SYSTEM.
13. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING OR SUBCONTRACTING OF TESTING OF DOMESTIC WATER QUALITY. SUBMIT DOMESTIC WATER QUALITY TEST RESULTS TO DESIGNER AND OWNER. REPORT(S) TO BE INCLUDED IN O&M MANUALS.
14. PROVIDE BACKFLOW TEST REPORT(S) TO OWNER AT PROJECT COMPLETION. REPORT(S) TO BE INCLUDED IN O&M MANUALS.
15. PRIOR TO BURIAL, VIDEO REORD ALL UNDERGROUND DOMESTIC AND WASTE SYSTEMS. VIDEO MUST BE PROVIDED WITH CLOSEOUT DOCUMENTS AT SUBSTANTIAL COMPLETION.

PLUMBING SPECIALTY FIXTURE SCHEDULE

MARK	FIXTURE	FIXTURE: SPECIFICATION/DESCRIPTION	SAN	VENT	PICTURE	REMARKS
FD-1	FLOOR DRAIN	SMITH 2005 FLOOR DRAIN 6" TYPE-A SQUARE TOP STRAINER. CAST IRON BODY. POLISHED NICKEL BRONZE FINISH. PROVIDE WITH P-TRAP.	SEE DWGS	2"		REFER TO DRAWING DETAILS COORDINATE WITH GENERAL CONTRACTOR. WORK TO SET THE FLOOR DRAIN FLUSH WITH FINISHED FLOOR.
FD-2	FLOOR DRAIN	SMITH 2142-S FLOOR DRAIN 12" SQUARE TOP HEAVY-DUTY TRACTOR GRATE STRAINER. CAST IRON BODY. PROVIDE WITH P-TRAP.	SEE DWGS	2"		REFER TO DRAWING DETAILS COORDINATE WITH GENERAL CONTRACTOR. WORK TO SET THE FLOOR DRAIN FLUSH WITH FINISHED FLOOR.
FD-3	FLOOR DRAIN	SMITH 2005 FLOOR DRAIN 6" TYPE-A ROUND TOP STRAINER. CAST IRON BODY. POLISHED NICKEL BRONZE FINISH. PROVIDE WITH P-TRAP.	SEE DWGS	2"		REFER TO DRAWING DETAILS COORDINATE WITH GENERAL CONTRACTOR. WORK TO SET THE FLOOR DRAIN FLUSH WITH FINISHED FLOOR.
FS-1	FLOOR SINK	WATTS MODEL #FS-503-5-150. 12"X12"X6"D SANITARY FLOOR SINK. PROVIDE WITH HALF GRATE AND SEDIMENT BUCKET.	3"	2"		REFER TO DRAWING DETAILS COORDINATE WITH GENERAL CONTRACTOR. WORK TO SET THE FLOOR DRAIN FLUSH WITH FINISHED FLOOR.
OI-1	OIL INTERCEPTOR	OLDCASTLE OW-1000 OR EQUAL, 1000 GAL OIL/WATER SEPARATOR	4"	2"		REFER DETAILS ON SHEET P500 FOR INSTALLATION OF PRECAST OIL/WATER SEPARATOR.

APPROVED MANUFACTURERS:	SPECIFIED MANUFACTURER/PRODUCT:	ACCEPTED SUBSTITUTIONS:
CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER LISTED. SUBSTITUTIONS SHALL BE APPROVED BY OWNER PRIOR TO ENGINEER REVIEW. EQUIPMENT AND FIXTURE SUBMITTALS SHALL BE CLEARLY MARKED. ALL EQUIPMENT AND FIXTURES SHALL BE SUBMITTED.	AMERICAN STANDARD-WATER CLOSETS CHURCH-TOILET SEATS DELTA-FAUCETS ELKAY-S.S. SINKS MCGUIRE-SUPPLY STOPS OASIS-WATER COOLERS AO SMITH-WATER HEATERS SMITH-FLOOR DRAINS, CLEANOUTS WOODFORD-HOSE BIB FLORESTONE-MOP, UTILITY SINK HAWS-EMERGENCY PROCEPTOR-OIL INTERCEPTORS ZURN-GREASE INTERCEPTOR JAY R. SMITH-FLOOR DRAINS JAY R. SMITH-CLEANOUTS	KOHLER, ZURN, TOTO CENTOCO, BENEKE, BEMIS MOEN, AMERICAN STANDARD, SYMMONS JUST, FRANKE BRASSCRAFT, E.B.C., ZURN ELKAY, HAWS RUUD, BRADFORD WHITE, RHEEM ZURN, WADE, WATTS MIFAB, ZURN, SMITH, PRIER FIAT, STERN WILLIAMS ENCON, GUARDIAN, ACORN SCHIER, ZURN, SMITH PROCEPTOR, SMITH, MIFAB, SCHIER ZURN, JOSAM, WADE, WATTS ZURN, JOSAM, WADE, WATTS

FIXTURE PLUMBING SCHEDULE

MARK	FIXTURE	FIXTURE: SPECIFICATION/DESCRIPTION	SAN	VENT	FAUCET: PICTURE	FAUCET: DESCRIPTION	COLD WATER	HOT WATER	PICTURE	REMARKS
WC-1	WATER CLOSET FLOOR-MOUNT SENSOR FLUSH VALVE	AMERICAN STANDARD 3043.001 "MADERA FLOWISE" 15" HEIGHT OR EQUAL. WHITE VIT CHINA, PROVIDE HIGH EFFICIENCY ELONGATED BOWL WITH 2⅛" TRAPWAY, 12" ROUGH-IN AND TOP SPUD.	4"	2"		SLOAN MODEL#G2-111 OR EQUAL HARDWIRED FLUSH VALVE. CHROME 1.6 GPF PROVIDE WITH SELF-CLEANING BRASS PISTON.	1"	-		PROVIDE ANTI-MICROBIAL, HEAVY DUTY, OPEN FRONT SEAT, COLOR WHITE.
LAV-1	UNDERMOUNT LAVATORY	AMERICAN STANDARD "OVALYN" UNDERMOUNT, MODEL# 0491.019 WHITE VITREOUS CHINA WITH FRONT OVERFLOW.	1½"	1¼"		CHICAGO FAUCETS 3400 (OR EQUAL) THREE-HOLE METERING FAUCET, 0.5GPM.	1/2"	1/2"'		PROVIDE COMPLETE WITH TRAP, SUPPLIES AND STRAINER. ADA COMPLIANT WITH PVC TRAP AND SUPPLY COVERS. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATION. PROVIDE 1070 ASSE THERMOSTATIC MIXING VALVE CONCEALED BELOW SINK.
HB-1	HOSE BIBB	INTERIOR DUTY, POLYCARBONATE WHEEL HANDLE AND LOOSE TEE KEY				WOODFORD 24 FINISH: POLISHED CHROME	¾"	-	-	COORDINATE MOUNTING HEIGHT WITH WITH OWNER. REMOVE HANDLE AND RETURN TO OWNER ALONG WITH LOOSE TEE KEY.
NFWH	NON-FREEZE WALL HYDRANT	FREEZELESS, BRASS				B65 FINISH: BRASS	¾"	-	-	COORDINATE MOUNTING HEIGHT WITH WITH OWNER.
KS-1	KITCHEN SINK	ELKAY ELUHAD191655, 19"X16"X5-1/2", SINGLE BOWL, 18 GA STAINLESS STEEL CONSTRUCTION, UNDERMOUNT. PROVIDE WITH REMOVABLE STRAINER.	1½"	1¼"		DELTA 470-WE-DST OR EQUAL SINGLE HANDLE KITCHEN FAUCET 1.5GPM SPOUT. CHROME FINISH. PROVIDE WITH VANDAL-PROOF AERATOR.	½"	½"		PROVIDE TURN BALL VALVES, AND P-TRAP W/CLEANOUT. COORDINATE INSTALLATION WITH CASEWORK.
KS-2	KITCHEN SINK	ELKAY ELUH3118 OR EQUAL DOUBLE-BOWL STAINLESS STEEL KITCHEN SINK. 30-3/4" X 18-1/2".	1½"	1¼"		ELKAY LKD2433C 8" CENTERSET CONCEALED DECK MOUNT FAUCET WITH ARC SPOUT, LEVER HANDLERS, AND SPRAYER.	½"	½"		PROVIDE TURN BALL VALVES, AND P-TRAP w/CLEANOUT. PROVIDE WITH MOEN CHEF SERIES 1HP CONTINUOUS FEED GARBAGE DISPOSAL.
WMB-1	WASHING MACHINE BOX	OATEY MODEL 38995. ASSE 1010, METAL, HAMMER ARRESTORS, WASHING MACHINE OUTLET BOX.	2"			PROVIDE WITH QUARTER BALL SHUT-OFF VALVES.	½"	½"	-	COORDINATE MOUNTING HEIGHT WITH WASHING MACHINE. INSTALL TRAP AND VENT INSIDE WALL.
IMB-1	ICE MAKER BOX	OATEY MODEL 39141. ASSE 1010, METAL, ICEMAKER OUTLET BOX.	-	-		PROVIDE WITH QUARTER TURN BALL SHUT-OFF VALVE.	½"	-	-	COORDINATE MOUNTING HEIGHT WITH ICE MAKER ON APPLIANCE. PROVIDE WITH APPLIANCE BACKFLOW PREVENTOR. PROVIDE METAL FACEPLATE.
EWC-1	ELECTRIC WATER COOLER	ELKAY LZSTL8WSLK WATER REFILLING STATION, BI-LEVEL REVERSIBLE, WITH FILTER, TOUCHLESS SENSOR ACTIVATION.	1¼"	1¼"		SINGLE-POINT WASTE AND WATER CONNECTIONS.	½"	-	-	MOUNT IN COMPLIANCE WITH ADA REQUIREMENTS.
SS-1	SCULLERY SINK	ELKAY 2C18X18-2-24X OR EQUAL STAINLESS STEEL 86" X 23-13/16" X 44-3/4" 16 GAUGE TWO COMPARTMENT SINK W/ 24" LEFT & RIGHT DRAINBOARDS, 12" DEEP BOWLS, AND STAINLESS STEEL LEGS	2"	1¼"		8" CENTERSET WALL MOUNT FAUCET WITH 44" FLEXIBLE HOSE ELKAY LK943C OR EQUAL.	½"	½"		18 GAUGE, CENTER DRAIN. PROVIDE QUARTER-TURN BALL VALVES WITH ANGLED STOPS. COMBINE DRAINS INTO SINGLE COMMON
SH-1	SHOWER	ZURN ZN415B-P CAST IRON BODY, 6" ADJUSTABLE NICKEL BRONZE STRAINER TOP.	2"	1¼"		DELTA 51600 ADJUSTABLE SLIDE BAR AND SHOWER HOSE & DELTA 75609 HANDHELD SHOWER HEAD.	½"	½"		
MS-1	MOP SINK	FIAT TSB100 "STOCKTON" TERRAZZO MOP SERVICE BASIN. 24"X24"X12" WITH STAINLESS STEEL CAPS ON CURBS.	2"	1¼"		DELTA 51600 ADJUSTABLE SLIDE BAR AND SHOWER HOSE & DELTA 75609 HANDHELD SHOWER HEAD.	½"	½"		PROVIDE COMPLETE WITH HOSE & HOSE BRACKET, MOP HANGER, AND STAINLESS STEEL WALL GUARDS ON ALL ADJACENT WALLS.
EWS-1	EMERGENCY EYEWASH & SHOWER	HAWS MODEL 8309WC AXION MSP COMBINATION SHOWER AND EYE/FACE WASH	1¼"	1¼"		PROVIDE WITH THERMOSTATIC MIXING VALVE HAWS 9201 E SHOWER	1"	1"		PROVIDE SCALD PROTECT BLEED VALVE MOUNTED ON WALL BEHIND SHOWER.

GAS FIRED WATER HEATER SCHEDULE

MARK	LOCATION	MANUFACTURER/ MODEL #	GAS BURNER DATA: GAS TYPE AND PRESSURE, INCHES W.C.	GALLONS STORAGE	BTU/HR INPUT	GPH RECOVERY	η_{th}	INTAKE/ EXHAUST FLUE SIZE	SUPPLY AIR FAN: VOLTS	SUPPLY AIR FAN: PHASE	CONTROL CIRCUIT: VOLTS @ 5.0 A	CONTROL CIRCUIT: PH	REMARKS
GWH	MECHANICAL ROOM	AO SMITH BTH-199	N.G. 7-14" W.C.	100	199,999	235 @ 100°F RISE	95%	4"	120	1	120	1	PROVIDE WATER HEATER PAN W/ DRAIN. PROVIDE WITH HEAT TRAP NIPPLES.

NOTES:
PROVIDE VENT KIT AND CONDENSATE NEUTRALIZER FROM MANUFACTURER.

GAS LOAD SUMMARY PER NCFGC 402.4(1)

FIXTURE TYPE	LOAD	PRESSURE	LENGTH	SIZE
WATER HEATER	199,999 BTU	7"-14"	LLM*	1-1/4"
IRH-1	40,000 BTU	7"-14"	LLM*	3/4"
IRH-2	40,000 BTU	7"-14"	LLM*	3/4"
2018 NCFGC 402.4(1)		TOTAL: TOTAL LENGTH: PRESSURE DROP: OUTLET PRESSURE: REGULATOR CONNECTION:		280MBH 125' 0.3" W.C <2PSI 1-1/2"

NOTE: P.C. SHALL INSTALL GAS PIPING FROM THE METER (BY UTILITY) TO THE EQUIPMENT. PROVIDE GAS REGULATOR FOR EACH PIECE OF EQUIPMENT. COORDINATE REGULATOR SETPOINT WITH MANUFACTURER. GAS REGULATORS OVER 2PSI SHALL BE PROVIDED WITH INTEGRAL OPD.
*THE METHOD OF CALCULATION IS THE LONGEST LENGTH METHOD PER NCFGC A.6.1

PUMP SCHEDULE

TAG	*MANUFACTURER/MODEL		FLOW RATE	HEAD	MOTOR HP	RPM	TYPE	VOLTAGE	NOTES
RCP-1	B&G	XL B 36-45	2 GPM	20 FT	1/6 HP	3500	INLINE	115V/1P/60Hz	1

B&G IS RCP BASIS OF DESIGN. PROVIDE TACO, GRUNDFOS, & ARMSTRONG AS EQUALS.
NOTES:
1. PUMP SHALL BE SELECTED OF MATERIALS RATED FOR DOMESTIC WATER USE AND PROVIDED WITH LATERAL PIPING SUPPORTS TO PREVENT PUMP MOVEMENT.

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WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 050628 ENGINEER JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/26
DRAWN BY: JRE
CHECKED BY: JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

P001
PLUMBING COVER

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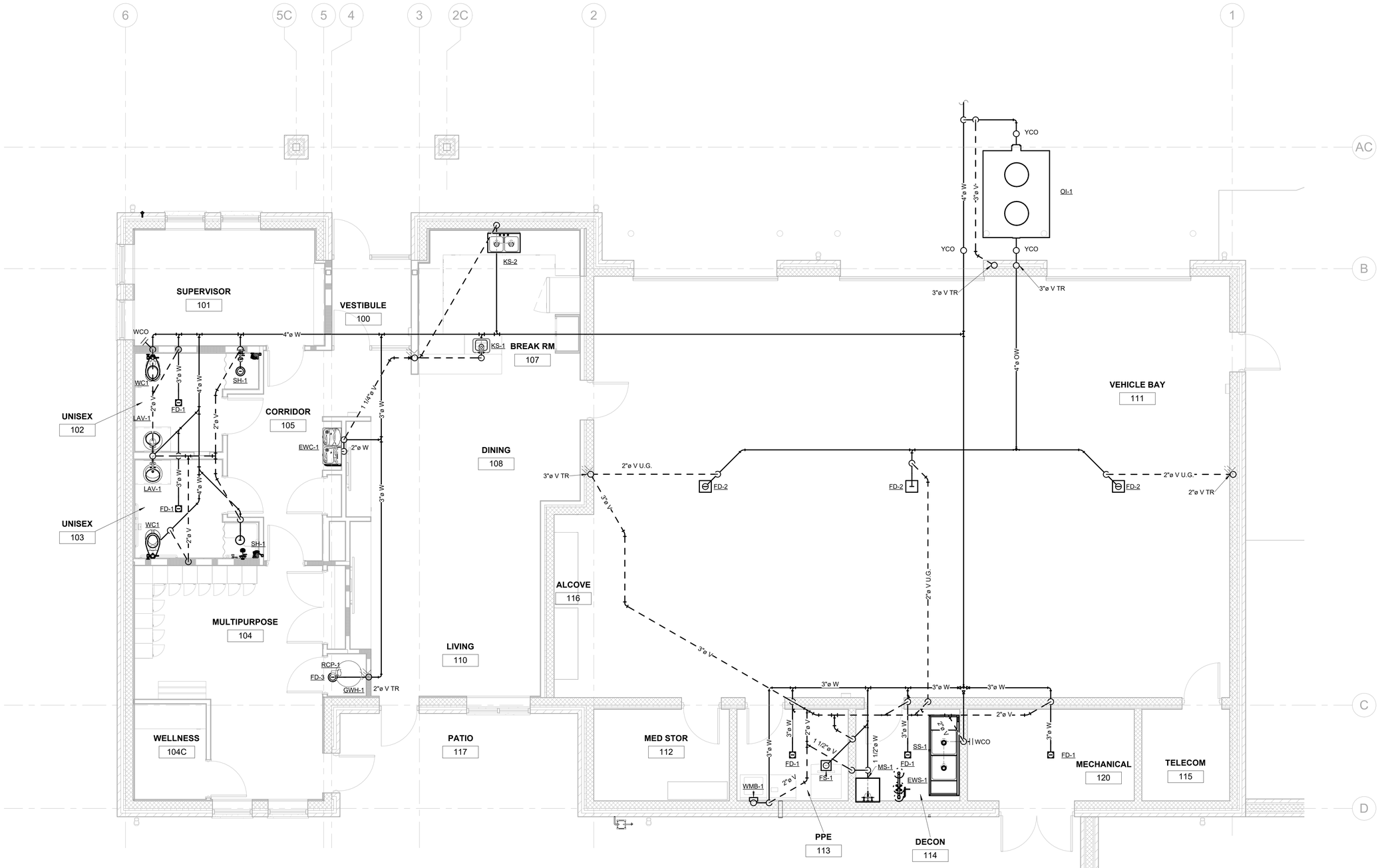

1 / P200 Waste & Vent Renovation Floor 1
1/4" = 1'-0"

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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RALEIGH, NC 27601
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LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
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919.833.0495 T

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 050628 JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
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SHEET INFORMATION

P200

PLUMBING WASTE & VENT FLOOR PLAN

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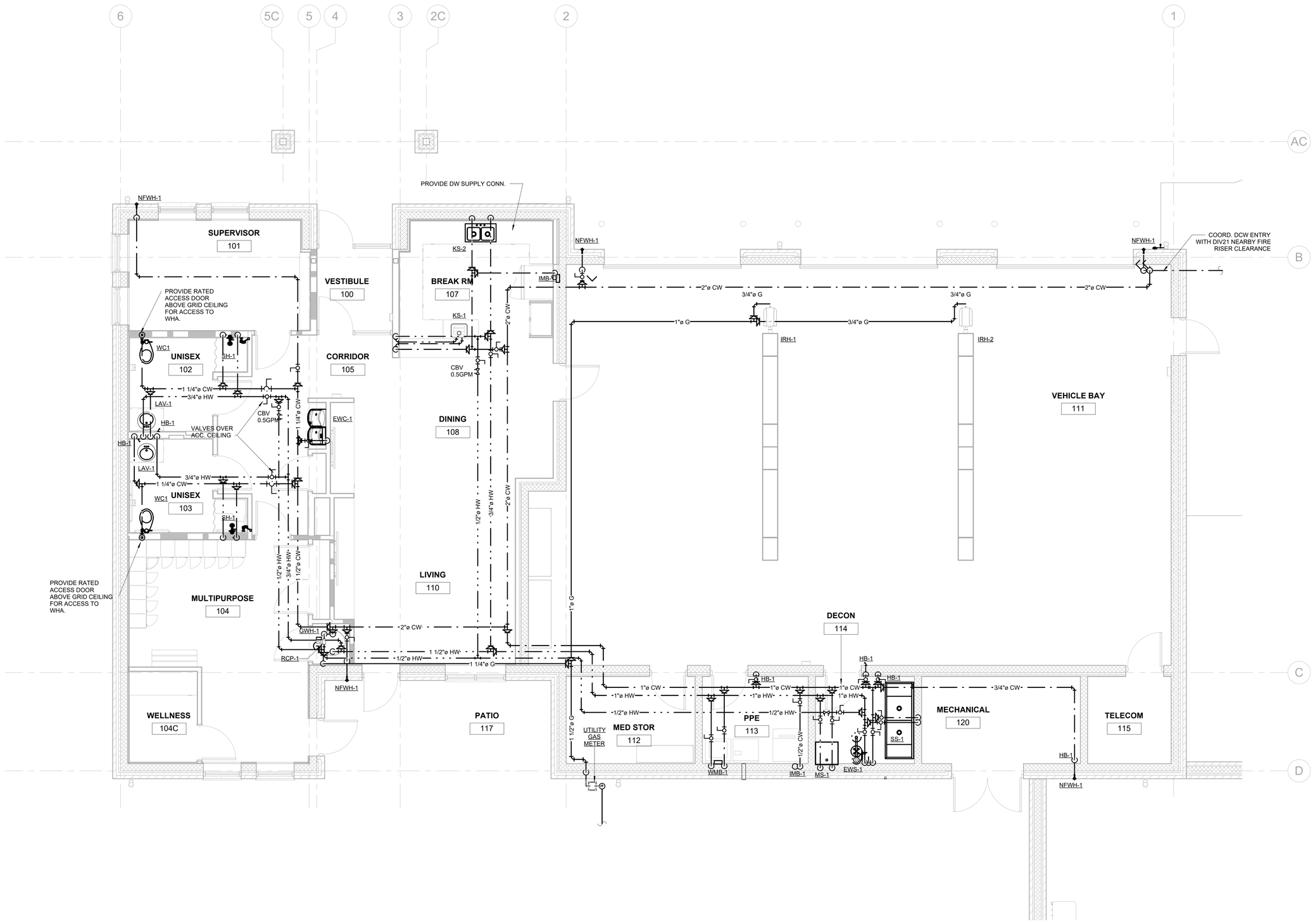

1 / P201 Water & Gas Renovation Floor 1
1/4" = 1'-0"

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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RALEIGH, NC 27605
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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER JOHN R. ERICKSON 036626
08/12/2026

PROJECT INFORMATION

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P201

PLUMBING WATER & GAS FLOOR PLAN

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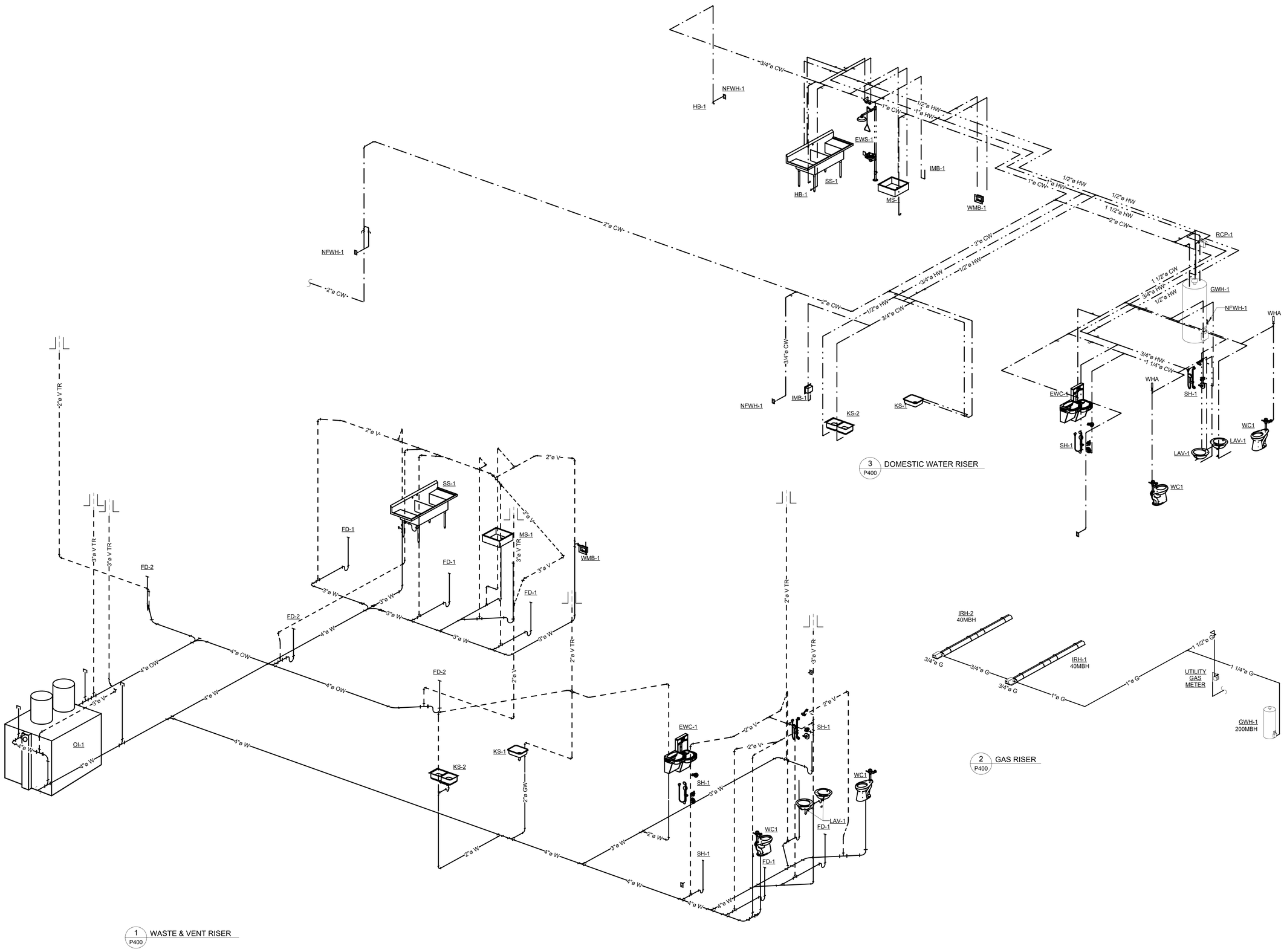

3 P400 DOMESTIC WATER RISER

2 P400 GAS RISER

1 P400 WASTE & VENT RISER

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SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030626 JOHN R. ERICKSON

08/12/2026

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P400

PLUMBING RISER

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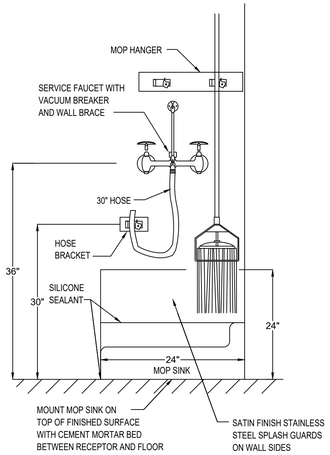
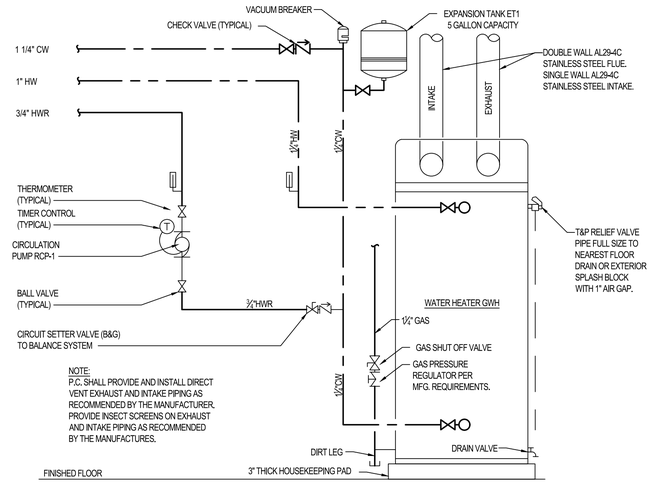
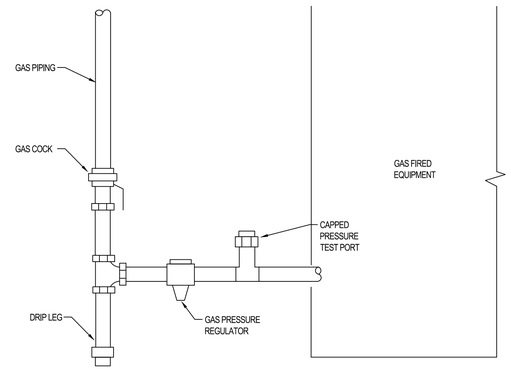


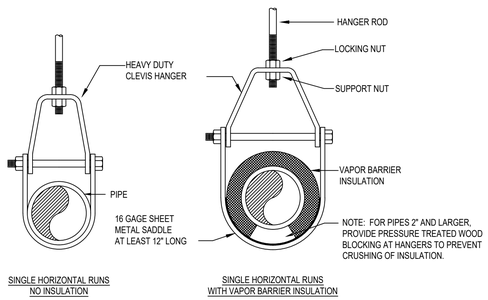
1 P500 JANITORS SINK AND ACCESSORIES
NO SCALE



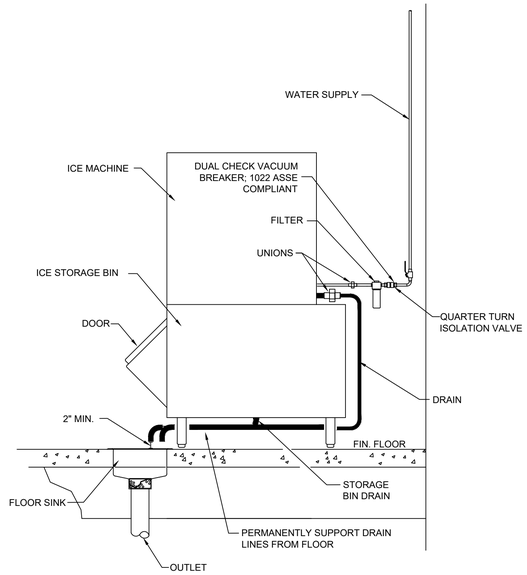
2 P500 GAS FIRED WATER HEATER SCHEMATIC
NO SCALE



3 P500 GAS SERVICE TO EQUIPMENT WITH PRV PIPING SCHEMATIC
NO SCALE



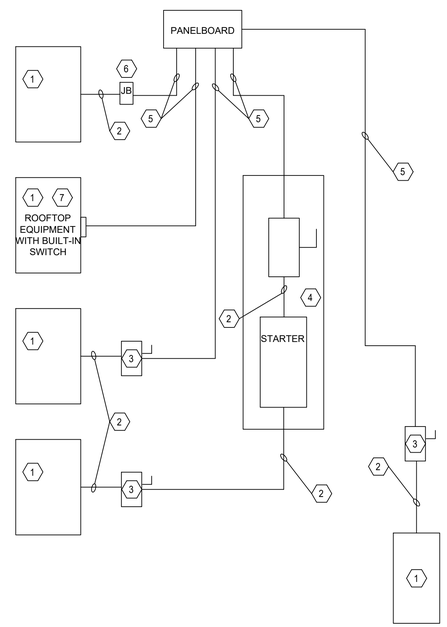
4 P500 PIPE HANGER SCHEMATIC
NO SCALE



5 P500 ICEMAKER DETAIL
NO SCALE

KEYED NOTES:

1. EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
2. CONDUIT & WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP, AND TEST EQUIPMENT.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATED ADJACENT TO EQUIPMENT.
5. FEEDER CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
7. IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.



NOTE: DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DIRECTION OF ROTATION FOR ALL THREE PHASE EQUIPMENT.
NOTE: DIVISION 26 CONTRACTOR SHALL BE RESPONSIBLE FOR LABELING OF ALL DISCONNECTS.

NOTE: ALL FINAL ELECTRICAL CONNECTIONS SHALL BE MADE BY A LICENSED ELECTRICAL CONTRACTOR.
NOTE: ALL OUTDOOR DISCONNECTS SHALL BE NEMA 4X. REFERENCE SPECIFICATION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS.

6 P500 DIVISION OF WORK
NO SCALE

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PLUMBING DETAILS

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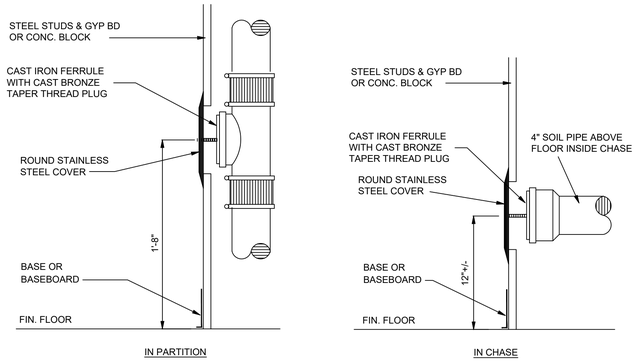
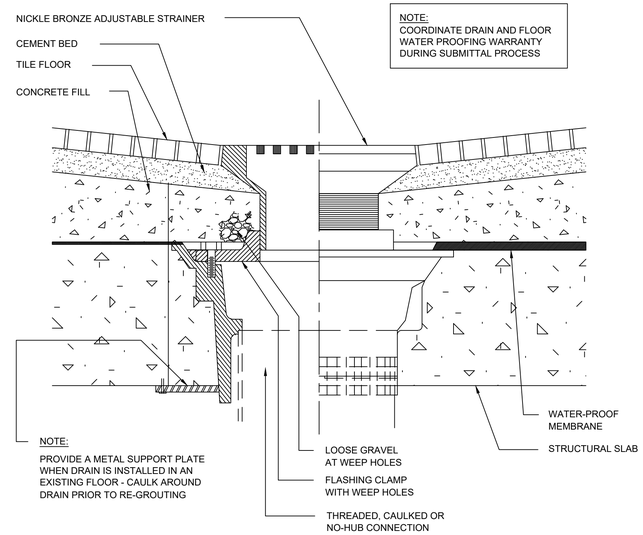


1 P501 WALL CLEANOUT DETAILS
NO SCALE

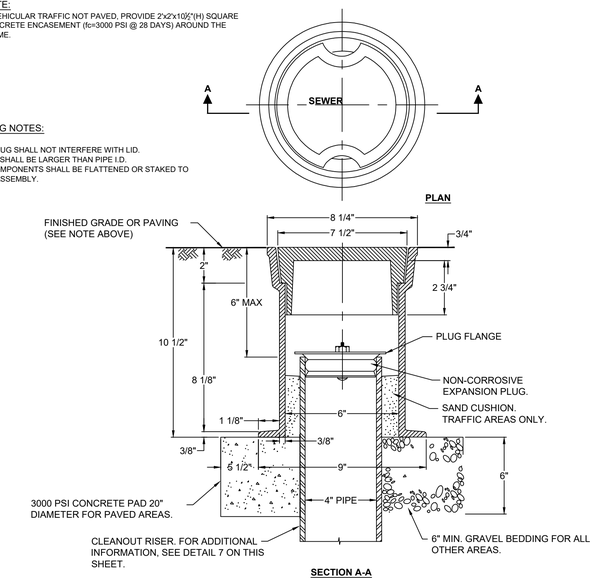


2 P501 FLOOR DRAIN DETAILS
NO SCALE

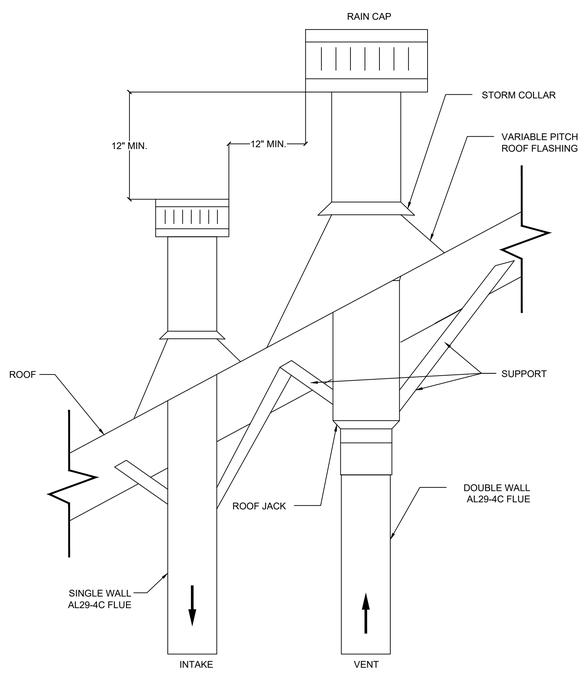
NOTE:
IN VEHICULAR TRAFFIC NOT PAVED, PROVIDE 2'x2'x10½"(H) SQUARE CONCRETE ENCASEMENT (fc=3000 PSI @ 28 DAYS) AROUND THE FRAME.

EXPANSION PLUG NOTES:

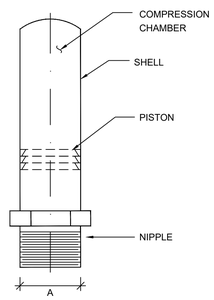
1. EXPANSION PLUG SHALL NOT INTERFERE WITH LID.
2. PLUG FLANGE SHALL BE LARGER THAN PIPE I.D.
3. THREADED COMPONENTS SHALL BE FLATTENED OR STAKED TO PREVENT DISASSEMBLY.



3 P501 CLEAN OUT COVER DETAILS
NO SCALE



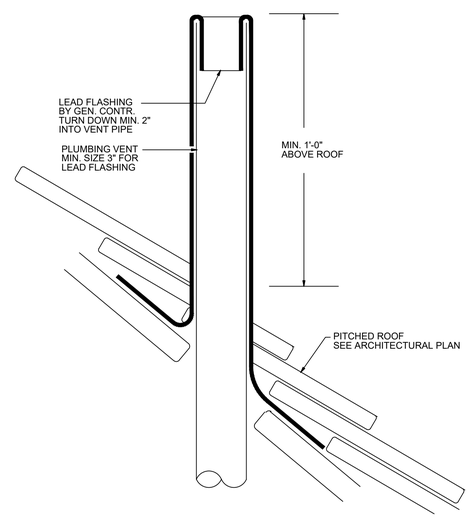
4 P501 WATER HEATER DIRECT VENT DETAIL
NO SCALE



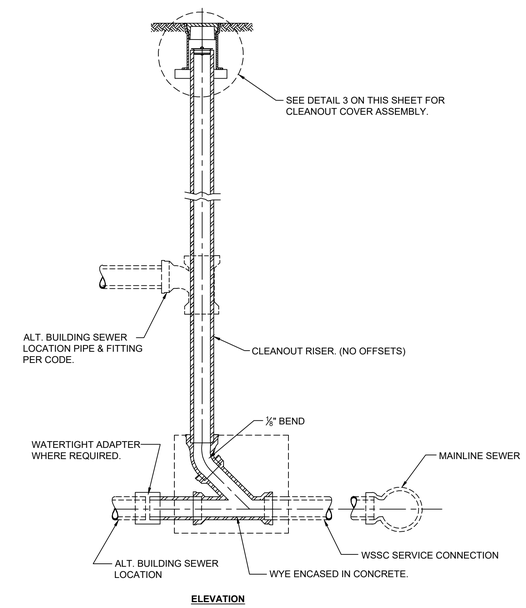
PLUMBING CONTRACTOR SHALL INSTALL SHOCK ARRESTOR ACCORDING TO THE NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE LATEST EDITION. ALSO P.C. SHALL INSTALL IN AN UPRIGHT POSITION AND EITHER IN AN ACCESSIBLE PIPE CHASE OR ABOVE THE CEILING OUTSIDE THE PIPE CHASE. PROVIDE AN APPROVED TYPE CEILING ACCESS DOOR IF THE SHOCK ARRESTOR IS NOT ABOVE A LAY-IN CEILING.

JOSAM NO.	P.D.I. SYMBOL	FIXTURE UNIT RATING	A SIZE
75001-S	A	1-11	1/2
75002-S	B	12-32	3/4
75003-S	C	33-60	1
75004-S	D	61-113	1 1/4
75005-S	E	114-154	1 1/2
75006-S	F	155-330	2

5 P501 SHOCK ARRESTOR DETAIL
NO SCALE



6 P501 SLOPED ROOF PENETRATION DETAIL
NO SCALE



7 P501 CLEAN OUT DETAILS
NO SCALE

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PROJECT INFORMATION

PROJECT NO.:	2506
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PLUMBING DETAILS

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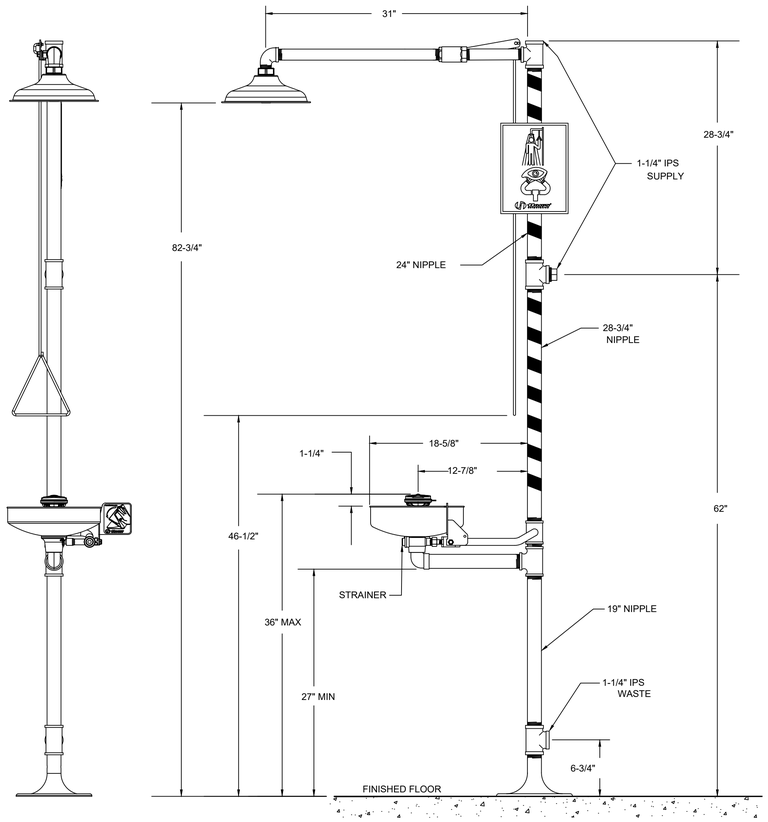
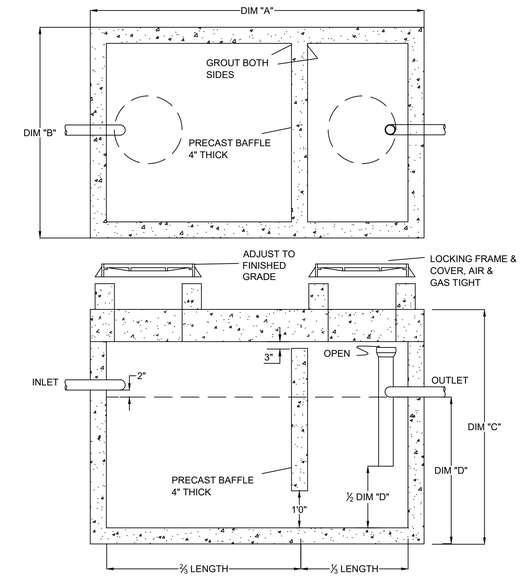


1 P502 COMBINATION EMERGENCY SHOWER / EYE WASH DETAIL
NO SCALE

OIL AND GREASE TRAP DIMENSION CHART				
CAP (GAL.)	DIM "A"	DIM "B"	DIM "C"	DIM "D"
600	7'0"	4'8"	7'0"	3'6"
750	7'0"	4'8"	7'0"	4'3"
1000	9'0"	5'0"	7'2"	4'2"
1250	9'0"	5'0"	7'2"	5'2"
1500	11'2"	5'8"	7'2"	4'4"
1750	11'2"	5'8"	7'2"	4'11"
2000	12'8"	6'8"	8'0"	4'7"
2500	12'8"	6'8"	8'0"	5'6"
2750	12'8"	6'8"	8'0"	6'0"
3000	15'7"	9'7"	8'6.5"	5'0"
4000	15'7"	9'7"	8'6.5"	6'3"
5000	19'11"	9'11"	8'11"	6'2"
6000	19'11"	9'11"	10'5"	7'2"

NOTES:

1. CONCRETE: 28 DAY *c=4500 psi
2. REBAR: ASTM A-615 GRADE 60
3. MESH: ASTM A-185 GRADE 65
4. DESIGN: ACI 318-83 BUILDING CODE
   ASTM C-857 MINIMUM STRUCTURAL DESIGN
   LOADING FOR UNDERGROUND PRECAST
   CONCRETE UTILITY STRUCTURES
5. LOADS: H-20 TRUCK WHEEL WITH 30% IMPACT PER AASHTO
6. FILL WITH CLEAN WATER PRIOR TO START UP OF SYSTEM
7. CONTRACTOR TO SUPPLY AND INSTALL ALL PIPING, SANITARY TEEs, AND 4" DUAL SWEEP CLEAN OUTS (FOR CLEANING TOWARD AND AWAY FROM TRAP ON BOTH THE INLET AND OUTLET SIDE).
8. GRAY WATER ONLY, BLACK WATER SHALL BE CARRIED BY SEPARATE SEWER.
9. ALL PIPE PENETRATIONS SHALL BE WATERTIGHT



DETAIL 40A CONTAINS THE DIMENSION CHART FOR THE OIL/GREASE TRAP

DRAWING NOT TO SCALE

2 P502 OIL / GREASE INTERCEPTOR DETAIL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY
FACILITIES DESIGN &
CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY
NORTH CAROLINA

SEALS

08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

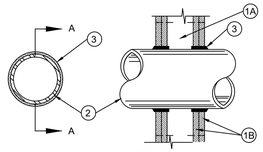
SHEET INFORMATION

P502

PLUMBING DETAILS

Docusign Envelope ID: 67D47CE3-AC6A-8430-81F6-8C1FFF56D3C7

SYSTEM NO. W-L-1001
JUNE 15 2005
F RATINGS-1, 2, 3 AND 4 HR (SEE ITEM 2 AND 3)
T RATING-0, 1, 2, 3, AND 4 HR. (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM PER SQ. FT.
L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.



SECTION A-A

1. THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE WALL ASSEMBLY-CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 H FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

   B. GYPSUM BOARD* - NOM 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN.

2. THROUGH - PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX MAX. 2 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED.

   A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. IRON PIPE - NOM 24 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE LINE PRESSURE PIPE.

   C. CONDUIT - NOM 6 IN. DIAM. (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

   D. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   E. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

   F. THROUGH PENETRANTING PRODUCT* - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:

1. NOM 2 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPIING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   OMEGA FLEX INC

2. NOM 1 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   GASTILE, DIV OF TILEFLEX

3. NOM 1 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   WARD MFG INC

3. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 5/8. 1-1/4, 1-7/8 AND 2-1/2 IN THICKESS OF CAULK FOR 1, 2, 3, 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OR WALL. MIN 1/4 IN DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIZE OF WALL. THE HOURLY F RATING OF THE FIRESTOP IS DEPENENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSATEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW.

MAX PIPE OR CONDUIT DIAM, IN	F RATING HR	T RATING HR
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

+WHEN COPPER PIPE IS USED, T RATING IS 0 H.
3M COMPANY - CP 25WB+ or FB-3000 WT.
*BEARING THE UL CLASSIFICATION MARKING.

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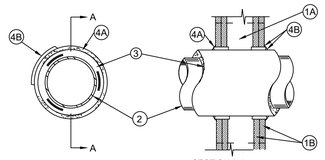
SYSTEM NO. W-L-5001
MAY 19 2005
F RATINGS-1, AND 2 HR (SEE ITEM 1)
T RATING-3/4, 1 AND 1-1/2 HR. (SEE ITEM 3)
L RATING AT AMBIENT - 2 CFM PER SQ. FT.
L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.



SECTION A-A

1. THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

   B. GYPSUM BOARD* - NOM 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE SHALL BE AS SPECIFIED IN THE INDIVIDUAL DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 14-1/2 IN FOR WOOD STUD WALLS AND 18 IN FOR STEEL STUD WALLS

   THE HOURLY F RATING OF THE FIRE STOP SYSTEM IS 1 HR WHEN INSTALLED IS A 1 HR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN 2 HR RATED WALL.

2. THROUGH - PENETRANTS - ONE METALLIC PIPE, OR TUBING ITO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED

   A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   C. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PIPE COVERING* NOM 1 IN OR 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH PRODUCT. WHEN NOM 1 IN THICK PIPE COVERING IS USED, ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IS GYPSUM WALLBOARD LAYERS IN EACH SIDE OF THE WALL SHALL BE 1/4 IN TO 3/8 IN. WHEN 2 IN THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM BOARD LAYERS ON EACH SIDE OF THE SHALL BE MIN 1/2 IN TO MAX 3/4 IN.

   SEE PIPE AND EQUIPMENT COVING MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURES. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OF MAY BE MAY BE USED.

   THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 3/4 HR WHEN NOM 1 IN THICK PIPE COVERING IS USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 1 HR AND 1-1/2 HR WHEN 2 IN THICK PIPE COVERING IS USED WITH 1 HR AND 2 HR FIRE RATED WALLS, RESPECTIVELY.

4. FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS.

   A. FILL, VOID OR CAVITY MATERIAL* - WRAP STRIP - NOM 1/4 IN THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN WIDE STRIPS. NOM 2 IN WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVING (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX 1-1/4 SUCH APPROX 3/4 IN OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP SRTIP IS REQUIRED WHEN NOM 1 IN THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2 IN THICK PIPE COVERING IS USED.

   3M COMPANY - FS-195+

   B. FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - MIN 1/4 IN DIAM CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL IINTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROX 3/4 IN FROM THE WALL SURFACE

   3M COMPANY - CP 25WB+, IC 15WB+, FIREDAM 150+ CAULK OR FB-3000 WT SEALANT.

* BEARING THE UL CLASSIFICATION MARK

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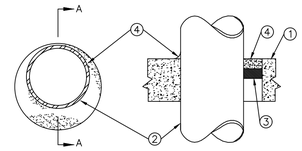
SYSTEM NO. C-AJ-1001
MARCH 05 2007
F RATINGS-3 4 HR
T RATING-0 HR.
W RATING - CLASS 1 (SEE ITEM 4)



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN.

   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

   1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. AS AN ALTERATE, NOM 12 IN DAIM (OR SMASLLER) SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GROUNTED INTO FLOOR OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE.

   2. THROUGH-PENETRANT- ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 1-3/8" IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

   A. STEEL PIPE-NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   A1. IRON PIPE-NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   B. CONDUIT-NOM 6 IN. DIAM (OR SMALLER) RIGID STEEL CONDUIT.
   C. CONDUIT- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

   3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. OR, A MIN 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OF MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.

   4. FILL, VOID OR CAVITY MATERIALS* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

MAX PIPE DIAM IN	MAX ANNULAR SPACE IN.	PACKING MATERIAL TYPE (A)	MIN. CAULK THKNS IN
10	1	BR, CF, GF OR MW	1/2 (B)
10	1	CF OR MW	1/2 (C)
30	2-1/2	BR, CF, GF OR MW	1 (B)

(A) BR= POLYETHYLENE BACKER ROD.

CF= CERAMIC FIBER BLANKET.

GF= GLASS FIBER INSULATION.

MW= MINERAL WOOL BATT

(B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL

(C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACEOF SOLID (NON-CONCRETE BLOCK) WALL.

3M COMPANY- TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USEDON TOP SIRFACE OR FLOOR AND WHEN IT LAPS ONTO CONCRETE FOR SLEECED OPENING.)

* BEARING THE UL CLASSIFICATION MARKING.

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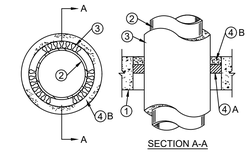
System No. C-AJ-5001
MARCH 05, 2007

F RATINGS - 1-1/2, 2 AND 3 HR (SEE ITEM 4)
T RATINGS - 0, 1/2, 3/4 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM PER SQ FT
L RATING AT 400 F - LESS THAN 1 CFM PER SQ FT



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150) PCF CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 18 IN.

   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 10 IN. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL. AS AN ALTERNATE, NOM 10 IN, DIAM (OR SMALLER)SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GOURTED INTO OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE. T RATING IS 0 HR WHEN SLEEVE IS USED.

2. THROUGH PENETRANT - NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 12 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.

3. PIPE COVERING* - NOM 1/2 TO 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.

   SEE PIPE AND EQUIPMENT COVERING - MATERIALS* (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

   A. PACKING MATERIAL - MIN 1 IN. THICKNESS OF FIRMLY PACKED MINERAL WOOL BATT INSULATION USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM B).

   B. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL. WHEN NOM PIPE COVERING THICKNESS IS 2 IN., MIN THICKNESS OF CAULK FILL MATERIAL IS 2 IN. WHEN NOM PIPE COVERING THICKNESS IS 1-1/2 IN. OR LESS, MIN THICKNESS OF CAULK FILL MATERIALIS 1 IN. THE HOURLY F AND T RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL, THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL AND THE SIZE OF THE ANNULAR SPACE (BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING), AS SHOWN IN THE FOLLOWING TABLE:

MIN FLOOR OR WALL THKNS IN.	MAX PIPE DIAM. IN.	NOM. PIPE COVERING THKNS. IN.	ANNULAR SPACE IN.	F RATING HR.	T RATING HR.
2-1/2	4	1 or 1-1/2	1/2 to 2-3/8	2	1
4-1/2	4	2	1/4 to 3-5/8	2	1-1/2
2-1/2	12	1	1/2 to 1-1/2	2	1/2
4-1/2	12	1	1/2 to 2-3/8	3	1
2-1/2	12	1/2	1/2 to 2-3/8	2	0

3M COMPANY - CP- 25WB+ OR FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK

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1 / P503 UL DETAILS
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

P503

PLUMBING DETAILS

Docusign Envelope ID: 3192AB46-E89F-8D0E-8270-D5DAD80F4B32

MECHANICAL SYSTEMS ENERGY CODE COMPLIANCE

PRESCRIPTIVE: [X] ENERGY COST BUDGET: [ ]

THERMAL ZONE: 4A

EXTERIOR DESIGN CONDITIONS:

WINTER DRY BULB: 15°F
SUMMER DRY BULB: 95°F
SUMMER WET BULB: 76°F

INTERIOR DESIGN CONDITIONS:

WINTER DRY BULB: 70°F
SUMMER DRY BULB: 75°F

AREA HEAT LOAD: 145.7 MBH

AREA COOLING LOAD: 70.7 MBH

MECHANICAL CONDITIONING SYSTEM:

DESCRIPTION OF UNIT: SPLIT HEAT PUMPS & NG INFRARED HEATERS
HEATING EFFICIENCY: 9+HSPF2 & N/A
COOLING EFFICIENCY: 19+SEER2 & N/A
HEATING OUTPUT: 143.4 MBH + 51.2MBH AUX
COOLING OUTPUT: 87.4 MBH

BOILER OUTPUT: N/A

CHILLER TOTAL CAPACITY: N/A

DESIGNER STATEMENT:

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, 2018 ENERGY CONSERVATION CODE.

SIGNED:
NAME: JOHN R. ERICKSON, PE
TITLE MECHANICAL ENGINEER

MECHANICAL LEGEND

PIPING SYMBOLS

- REMOVE EXISTING PIPE
- EXISTING PIPE TO REMAIN
- PIPE ELBOW TURNS DOWN; UP
- PIPE TEES DOWN; UP
- PIPE CAP
- BALL VALVE
- CHECK VALVE
- C — CONDENSATE
- G — GAS
- R — REFRIGERANT
- MAKE-UP WATER
- DUAL-TEMP WATER SUPPLY
- DUAL-TEMP WATER RETURN
- DP — DIFFERENTIAL PRESSURE SENSOR

MISCELLANEOUS SYMBOLS AND ABBREVIATIONS

- T — THERMOSTAT OR TEMPERATURE INDICATOR
- H — HUMIDITY SENSOR
- N — NITROGEN OXIDE SENSOR
- C — CARBON DIOXIDE SENSOR

DEVICES WITH OPERABLE CONTROLS SUCH AS THERMOSTATS SHALL BE MOUNTED BETWEEN 44" AND 48" A.F.F COMPLIANT WITH ADA HEIGHTS COORDINATE WITH OTHER DEVICES.

- # — REVISION NOTES
- # — SPECIFIC OR NEW WORK NOTES

DUCTWORK SYMBOLS

- DUCT DROP
- DUCT RISE
- SUPPLY OR MAKE-UP AIR
- RETURN OR RELIEF AIR
- EXHAUST AIR
- MANUAL BALANCE DAMPER
- 8"Ø — FLEXIBLE DUCT

NOTES:
ALL DUCT DIMENSIONS SHOWN ARE IN INCHES
AND ARE SHEET METAL SIZES UNLESS OTHERWISE SHOWN.

- 21X12 — RECTANGULAR DUCT
- 12"Ø — ROUND DUCT
- 21X12 Ø — FLAT OVAL DUCT

- AMS — AIR MONITORING STATION
- S — DUCT MOUNTED SMOKE DETECTOR
- CO — DUCT MOUNTED CO2 SENSOR
- VERTICAL FIRE DAMPER W/ACCESS DOOR
- HORIZONTAL FIRE DAMPER W/ACCESS DOOR
- S — COMBINATION VERTICAL FIRE DAMPER/SMOKE DAMPER WITH ACCESS DOOR
- S — COMBINATION HORIZ. FIRE DAMPER/SMOKE DAMPER WITH ACCESS DOOR
- H — DUCT MOUNTED HUMIDISTAT
- MANUAL VOLUME DAMPER
- STEAM HUMIDIFIER
- SIDEWALL DIFFUSER, GRILLE OR REGISTER
- EXHAUST GRILLE OR REGISTER
- SUPPLY GRILLE OR DIFFUSER
- RETURN GRILLE OR REGISTER
- ST 200 — DIFFUSER TYPE; CFM — GRILLE, REGISTER OR DIFFUSER DESIGNATION
- AIRFLOW DIRECTION

MECHANICAL ABBREVIATIONS

AC	Air Conditioning
ACH	Air Changes per Hour
AEE	Association of Energy Engineers
AFD	Adjustable Frequency Drive
AFUE	Annual Fuel Efficiency Ratio
AHU	Air Handling Unit
BI	Backward Incline
BTU	British Thermal Unit
BTUH	Brtish Thermal Units / Hour
CAV	Constant Air Volume
CFC	ChloroFluoroCarbon
CC	Cooling Coil
CFM	Cubic Feet per Minute
COP	Coefficient Of Performance
CRAC	Computer Room Air Conditioner
CV	Constant Volume
DA	Discharge Air
DB	Dry Bulb
DH	Duct Heater
DN	Down
DP	Dew Point
DX	Direct Expansion
EAT	Entering Air Temperature
EC	Electrical Contratror (Div 26, 27 or 28)
ECM	Electronically Commutated Motor
EDH	Electric Duct Heater
EER	Energy Efficiency Ratio
EF	Exhaust Fan
EH	Electric Heater
EHC	Electric Heating Coil
ESP	External Static Pressure
ETR	Existing to Remain
EUH	Electric Unit Heater
EX	Existing
FC	Forward Curve
FCU	Fan Coil Unit
FLA	Full Load Amps
FPM	Feet Per Minute
FW	Feed Water
GC	General Contractor
GPM	Gallons Per Minute
GUI	Graphical User Interface
HCFC	Hydrochlorocfuorocarbon
HEPA	High Efficiency Particulate Arresting
HFC	HydroFluoroCarbon
HL	High Limit
HP	Horsepower
HR	Heat Recovery
HRU	Heat Recovery Unit
HRV	Heat Recovery Ventilator
HSPF	Heating Seasonal Performance Factor
HVAC	Heating Ventilation and Air Conditioning
HX	Heat Exchanger
I/O	Input Output
IAQ	Indoor Air Quality
IR	Infra-Red

LAT	Leaving Air Temperature
LL	Low Limit
LON	Local Operating Network
LP	Low Pressure
LRA	Locked Rotor Amps
LWBT	Leaving Wet Bulb Temperature
LWT	Leaving Water Temperature
M&V	Measurement and Verification
MA	Mixed Air
MAT	Mixed Air Temperature
MC	Mechanical Contratror (Div 23)
MCC	Motor Control Center
MUA	Make-up Air Unit
MVD	Manual Volume Damper
MZ	Multi-Zone
N/A	Not Applicable
NEMA	National Electrical Manufacturers Association
OA	Outside Air
OAT	Outside Air Temperature
OC	On Center
ODP	Open Drip Proof
PC	Plumbing Contratror (Div 22)
PH	Pre-Heat
PHC	Pre-heat Coil
PTAC	Packaged Terminal Air Conditioner
QTY	Quantity
RA	Return Air
REF	Refrigerant
RF	Return Fan
RH	Reheat
RH	Relative Humidity
RHC	Re-heat Coil
RPM	Revolutions Per Minute
RTD	Resistance Temperature Detector
RTU	Roof Top Unit
SA	Supply Air
SAT	Supply Air Temperature
SC	Shading Coefficient
SEER	Seasonal Energy Efficiency Ratio
SF	Supply Fan
SHFG	Solar Heat Gain Factor
TEV	Thermostatic Expansion Valve
TSP	Total Static Pressure
TXV	Thermostatic Expansion Valve
UC	Undercut
UH	Unit Heater
UV	UltraViolet
UV	Unit Ventilator
VAV	Variable Air Volume
VFD	Variable Frequency Drive
VSD	Variable Speed Drive
WB	Wet Bulb
WC	Water Column
XFER	Transfer

CONTROLS ABBREVIATIONS	
AI	Analog Input
AO	Analog Output
BACnet	Building Automation and Control Network Protocol
BAS	Building Automation System
DCV	Demand Controlled Ventilation
DDC	Direct Digital Control
DI	Digital Input
DO	Digital Output
DP	Differential Pressure
dP	Pressure Differential
dT	Temperature Differential
EMS	Energy Management System
NC	Normally Closed
NO	Normally Open
OWS	Operator Work Station
PID	Proportional Integral Derivative
SP	Set Point
SP	Static Pressure
T	Thermostat

HYDRONIC SYSTEM ABBREVIATIONS	
B	Boiler
CH	Chiller
CHW	Chilled Water
CHWP	Chilled Water Pump
CHWR	Chilled Water Return
CHWS	Chilled Water Supply
CT	Cooling Tower
CWP	Condenser Water Pump
CWR	Condenser Water Return
CWS	Condenser Water Supply
EWT	Entering Water Temperature
HPS	High Pressure Steam
HPS	High Pressure Steam
HWP	Hot Water Pump
HWR	Hot Water Return
HWS	Hot Water Supply
LPS	Low Pressure Steam
LPS	Low Pressure Steam
MPS	Medium Pressure Steam
NPSH	Net Positive Suction Head
PRV	Pressure Relief Valve
PRV	Pressure Reducing Valve

GENERAL NOTES:

1. THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL INSTALLATION WITH THE STRUCTURE AND OTHER TRADES AND SHALL PROVIDE ADDITIONAL OFFSETS AND FITTINGS AS NECESSARY.
2. PRIOR TO BIDDING, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL VISIT THE JOB SITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED AND SHALL INCLUDE IN THE BID ALL WORK REQUIRED FOR A COMPLETE JOB. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING FIELD CONDITIONS A MINIMUM OF FIVE DAYS PRIOR TO BID.
3. THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS SHALL COMPLY WITH THE 2018 NORTH CAROLINA MECHANICAL CODE AND NFPA 90A.
4. DUCT DIMENSIONS ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.
5. THE CONTRACTOR SHALL CHECK AND VERIFY ALL CLEARANCES PRIOR TO FABRICATION OR INSTALLATION OF EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS. WHERE CONDITIONS REQUIRE A CHANGE IN DUCT OR PIPE ROUTING, NOTIFY THE ENGINEER FOR AN ACCEPTABLE ALTERNATIVE METHOD. AVOID ROUTING DUCTWORK DIRECTLY OVER LIGHT FIXTURES, DIFFUSERS, AND OTHER CEILING MTD. DEVICES. LOCATE ALL MECHANICAL EQUIPMENT SO THAT FILTERS AND COMPONENTS REQUIRING ACCESS (SERVICE AND MAINTENANCE) ARE FULLY ACCESSIBLE.
6. PROVIDE CURVED RADIUS ELBOW AT FIRST SUPPLY & RETURN FITTING FOR ALL HVAC UNITS. PROVIDE TURNING VANES IN ALL 90 DEGREE ELBOWS IN ALL RECTANGULAR SUPPLY/RETURN/EXHAUST DUCT SYSTEMS. ANY OFFSETS REQUIRED IN DUCT SYSTEMS SHALL BE INSTALLED PER SMACNA STANDARDS. SHARP ANGLED TRANSITIONS OR OFFSETS WILL NOT BE ALLOWED. PROVIDE DUCT ACCESS DOORS AT LOCATIONS SPECIFIED.
7. INSTALL ALL DUCT MOUNTED DEVICES (DAMPERS, ACCESS DOORS, ETC.) AND PIPING SPECIALTIES IN EASILY ACCESSIBLE LOCATIONS. ADVISE THE ENGINEER IN ADVANCE OF INSTALLATION IF ACCESS WILL BE HINDERED SO AN ALTERNATE LOCATION CAN BE SELECTED.
8. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH PRESCRIBED CLEARANCES FOR SERVICE AND MAINTENANCE. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER IF RECOMMENDED CLEARANCES ARE NOT POSSIBLE BEFORE INSTALLING EQUIPMENT.
9. ALL ROTATING MECHANICAL EQUIPMENT SHALL BE PROVIDED WITH VIBRATION ISOLATION. PROVIDE FLEXIBLE NEOPRENE DUCT CONNECTORS BETWEEN DUCTWORK AND ISOLATED MECHANICAL EQUIPMENT.
10. THE CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS OF FIRE RATED WALLS/FLOORS/CEILINGS BY DUCTWORK PIPING, ETC., WITH U.L. LISTED FIRE STOPPING MATERIAL TO MAINTAIN FIRE RATING OF THE BARRIER.
11. BALANCE ALL AIR DISTRIBUTION DEVICES, EXHAUST FANS, AND OUTSIDE AIR QUANTITIES AS SCHEDULED OR SHOWN ON THE DRAWINGS. PROVIDE MARKERS AT ALL DAMPER LOCATIONS SHOWING FULL OPEN/CLOSED POSITIONS AND DAMPER SETTING FOR REQUIRED AIRFLOW. PROVIDE FINAL TEST AND BALANCE REPORT ALONG W/ SCHEMATIC DRAWINGS SHOWING DIFFUSER LOCATION W/ DESIGN AND ACTUAL CFM. THE DIFFUSER TAGS ON THE DRAWINGS SHALL CORRESPOND TO THE DIFFUSER TAGS ON THE REPORT. THIS REPORT SHALL BE SUBMITTED BEFORE THE FINAL INSPECTION IS PERFORMED. SEE SPECIFICATION SECTIONS FOR FURTHER INFORMATION. DO NOT BALANCE FOR DIVERSITY.
12. WHERE PIPING CONTAINING FLAMMABLE AND COMBUSTIBLE GAS IS TO BE REMOVED, PROCEDURE OF NCGC 406.7.1.1 ALONG WITH NFPA 54 7.2.7 AND 8.3.1 SHALL BE OBSERVED. THE LINE SHALL BE FIRST DISCONNECTED FROM ALL SOURCES OF GAS PRESSURE, VENTED TO THE OUTDOORS, AND THEN THOROUGHLY PURGED WITH AIR, WATER, OR INERT GAS BEFORE ANY CUTTING OR WELDING IS DONE.
13. THERMOSTATS AND SENSORS CONTAINING MERCURY SHALL BE DISPOSED IN ACCORDANCE WITH EPA RESOURCE CONSERVATION AND RECOVERY ACT (RCRA). CONTRACTOR SHALL REFER TO EPA WEBSITE FOR HANDLING PROCEDURES FOR DISPOSAL AND SPILL MANAGEMENT OF PRODUCTS CONTAINING MERCURY.
14. IN THE AREA OF WORK, ANY "OPEN" DUCTWORK INCLUDING INLET AND OUTLET REGISTERS AND DIFFUSERS SHALL BE COVERED WITH FILTRATING MATERIAL OR VISQUINE TO PROTECT INSIDE OF THE SYSTEM AGAINST DUST AND DEBRIS.
15. ANY DAMAGE OF EXTERIOR PIPE AND DUCT INSULATION CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AND RESTORED AT NO EXTRA COST TO THE OWNER.

REFRIGERATION EDVC CALCULATIONS PER ASHRAE 15/34-2022

Space Description	Equipment Mark	REFR	LFL (lb/kcf)	Floor Area (sf)	Height (ft)	Veff (cf)	Std. Charge	Add'l Lineset (ft)	Lineset Charge (oz/ft)	Lineset Charge (lb)	Total Charge (lb)	Total Charge <6.6lb?	mrel (lb)	EVDC (lb)	mrel < EDVC?
DINING	HP-1	R454B	18.5	969	9	8,721	9.9	0	0.32	0.0	9.9	NO	9.9	80.7	YES
LOCKERS	HP-2	R454B	18.5	670	9	6,030	9.9	0	0.32	0.0	9.9	NO	9.9	55.8	YES
TELECOMM 115	AC-1	R454B	18.5	56.7	9	510	4.4	0	0.16	0.0	4.4	YES	4.4	4.7	YES

NOTES:
1. PER NCMC 1104.4.2 EXCEPTION, SPACES SERVED CANNOT BE REDUCED BELOW ONE-QUARTER OF ITS MAXIMUM AND THUS THE ENTIRE SPACE SERVED BY THE AIR DUCT SYSTEM IS USED TO DETERMINE SPACE VOLUME.
2. PER NCMC 1104.2 EXCEPTION 1, MACHINERY ROOMS ARE NOT REQUIRED FOR UNDER 6.6LBS REGARDLESS OF SAFETY CLASSIFICATION.

OUTSIDE AIR SUMMARY:

TABLE M1 : AHU-1 OUTSIDE AIR CALCULATIONS SUMMARY

REF	OCCUPANCY TYPE	AREA	PEOPLE	REQUIRED VENTILATION AIR
1	Food and beverage service :Dining rooms	142 sf	10	101 CFM
2	Food and beverage service :Kitchens (cooking)	158 sf	0	0 CFM
3	Hotels, motels, resorts and dormitories :Lobbies/prefunction	247 sf	8	72 CFM
4	Offices :Office spaces	153 sf	1	14 CFM
5	Public spaces :Corridors	252 sf	0	16 CFM
		PEOPLE TOTAL	19	
			DIVERSITY	1.00
			TOTAL	203 CFM

TABLE M1 : AHU-2 OUTSIDE AIR CALCULATIONS SUMMARY

REF	OCCUPANCY TYPE	AREA	PEOPLE	REQUIRED VENTILATION AIR
1	Education :Multiuse assembly	256 sf	26	208 CFM
2	Offices :Office spaces	48 sf	1	5 CFM
3	Public spaces :Toilet rooms — public	140 sf	0	0 CFM
4	Retail stores, sales floors and showroom floors :Storage rooms	226 sf	0	28 CFM
		PEOPLE TOTAL	27	
			DIVERSITY	1.00
			TOTAL	241 CFM

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 050628 ENGINEER JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.: 2506
PHASE: BID SET
DATE: 08/17/26
DRAWN BY: JRE
CHECKED BY: JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

M001
MECHANICAL COVER

Docusign Envelope ID: 3192AB46-E89F-8D0E-8270-D5DAD80F4B32

EXHAUST FAN SCHEDULE

TAG	SERVICE	*MANUFACTURER/MODEL		MAX AIRFLOW	SP	TYPE	MOTOR	RPM	DRIVE	POWER	NOTES
SF-1	VEHICLE BAY	CAPTIVEAIRE	WP-16	1750 CFM	.40"	WALL MOUNT	1/2	1342	DIRECT	230V/1P/60Hz	1,2,3,5,8,10
EF-1	VEHICLE BAY	CAPTIVEAIRE	WP-16	1750 CFM	.40"	WALL MOUNT	1/2	1010	DIRECT	230V/1P/60Hz	1,2,3,5,8,10
EF-2	UNISEX 103	CAPTIVEAIRE	CFA-D150-CA	100 CFM	.25"	CEILING MOUNT	0.06	676	DIRECT	120V/1P/60Hz	1,3,4,6,7,9
EF-3	UNISEX 102	CAPTIVEAIRE	CFA-D150-CA	100 CFM	.25"	CEILING MOUNT	0.06	676	DIRECT	120V/1P/60Hz	1,3,4,6,7,9

*BASIS OF DESIGN: PROVIDE CAPTIVEAIRE, COOK, TRANE, OR GREENHECK.
NOTES:
1. FANS SHALL BE UL LISTED AND AMCA CERTIFIED FOR SOUND AND AIR.
2. DIV 26 CONTRACTOR SHALL PROVIDE FIRE ALARM CONTROL MODULE NEAR UNIT. DIV23 CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL WIRING SIGNAL TO SHUT DOWN FANS UPON BUILDING FIRE ALARM SIGNAL.
3. PROVIDE STARTER AND DISCONNECTS AS REQUIRED FOR ALL FANS.
4. PROVIDE HANGING BRACKETS WITH VIBRATION ISOLATION.
5. EXHAUST FANS AND ASSOCIATED LOUVER DAMPERS SHALL BE CONTROLLED BY GAS DETECTION SYSTEM.
6. WALL MOUNTED SWITCH (ON/OFF) BY E.C. CONNECTED TO ROOM LIGHT SWITCH.
7. PROVIDE ROOF CAP PER DETAIL 6/M502.
8. PROVIDE FAN SAFETY GUARD.
9. EXHAUST GRILLE.
10. SIDE WALL PROPELLER FANS SHALL HAVE MOTOR FACTORY MOUNTED AND ACCESSIBLE BETWEEN OCCUPIED SPACE AND FAN BLADES.
11. RUN CONTINUOUSLY.

ELECTRIC UNIT HEATER SCHEDULE

TAG	SERVICE	*MANUFACTURER/MODEL		MOUNT	CFM	WATTS	VOLTS/PHASE	NOTES
UH-1	MECH 120	MARLEY	MUH	WALL	350	3 KW	240V/1P	ALL

NOTES:
1. INSTALL 7' A.F.F.
2. PROVIDE REMOTE THERMOSTAT MOUNTED BELOW UNIT HEATER AT 48" A.F.F.

DUCTLESS SPLIT SYSTEM (INDOOR UNIT) SCHEDULE

TAG	SERVICE	*MANUFACTURER/MODEL		AIRFLOW	COOLING BTUH	POWER	NOTES
DMSS-1	TELECOM	MITSUBISHI	PKA-AL12NL	385	11,536	BY OUTDOOR	ALL

*BASIS OF DESIGN: PROVIDE CARRIER, DAIKIN
NOTES:
1. PROVIDE WALL MOUNTED UNIT.
2. PROVIDE FACTORY LINE SETS BETWEEN INDOOR AND OUTDOOR UNITS.
3. PROVIDE MOTOR RATED SWITCH FOR DISCONNECTING MEANS.
4. ROUTE CONDENSATE PIPING WITH LINE SET AND SPILL TO GRADE.
5. PROVIDE BACNET THERMOSTAT MOUNTED BELOW UNIT. REFERENCE THERMOSTAT REQUIREMENTS THIS SHEET.

DUCTLESS SPLIT SYSTEM (OUTDOOR UNIT) SCHEDULE

TAG	SERVICE	*MANUFACTURER/MODEL		COOLING BTUH	VOLT/PHASE	MCA	MOCP	REFR.	REFR. CHARGE	NOTES
AC-1	TELECOM	MITSUBISHI	PUY-AK12NL	12,000	230V/1P	16	27	R454B	4.4LB	ALL

*BASIS OF DESIGN: PROVIDE MITSUBISHI, CARRIER, DAIKIN
NOTES:
1. MOUNT UNIT ON 4" THICK CONCRETE PAD WITH MANUFACTURERS RECOMMENDED CLEARANCES ON ALL SIDES.
2. BASIS OF DESIGN OPERATES TO -20F AS STANDARD. PROVIDE LOW AMBIENT ACCESSORY WITH EQUALS IF NOT STANDARD.

SPLIT SYSTEM HEAT PUMP SCHEDULE

TAG INDOOR/ OUTDOOR	*MANUFACTURER/MODEL INDOOR/OUTDOOR	PERFORMANCE								INDOOR UNIT											OUTDOOR UNIT					NOTES
		COOLING @ 95°F AMBIENT					MECHANICAL HEATING @ 17°F AMBIENT			FAN			AUX HEATING COIL					ELECTRICAL SINGLE POINT CONNECTION			COMPRESSOR		POWER SUPPLY		VOLT/ PHASE	
		CAPACITY		ENTERING AIR		MIN. SEER	TOTAL CAPACITY	EAT	LAT	SUPPLY	OUTSIDE	MOTOR SIZE	EAT	LAT	TOTAL CAPACITY	KW	STAGES	MCA	MOCP	POWER	RLA	LRA	MCA	MOCP		
		TOTAL	SENSIBLE	DB	WB																					
AHU-1 / HP-1	MITSUBISHI PVA-AA42NL / PUZ-AK42NL	41,921	35,535	80°F	67°F	18.0	29,600	70°F	92°F	1,200 CFM	205 CFM	430W	88°F	104°F	25,605 BTU	7.5	2	49.3 A	50 A	208V/1P	5.0 A	14.4 A	25 A	31 A	208V / 1P	ALL
AHU-2 / HP-2	MITSUBISHI PVA-AA36NL / PUZ-AK36NL	33,936	27,750	80°F	67°F	19.3	23,600	70°F	94°F	900 CFM	250 CFM	430W	90°F	111°F	25,605 BTU	7.5	2	49.3 A	50 A	208V/1P	5.0 A	14.4 A	25 A	31 A	208V / 1P	ALL

*BASIS OF DESIGN: PROVIDE TRANE, CARRIER, MITSUBISHI OR YORK.
NOTES:
1. PROVIDE BACNET THERMIDISTAT PER THERMOSTAT REQUIREMENTS ON THIS SHEET.
2. PROVIDE DISCONNECTING MEANS FOR ALL EQUIPMENT.
3. ALL UNITS SHALL BE AGA CERTIFIED AND UL LISTED. ALL COILS EVAPORATOR AND CONDENSER COILS SHALL BE PLATE FIN.
4. PROVIDE COIL GUARDS ON ALL OUTDOOR UNITS.
5. PROVIDE WITH LOW AMBIENT CONTROLS.
6. COORDINATE CONNECTION OF FIRE ALARM SHUTDOWN RELAY WITH DIV. 26/28 CONTRACTOR.
7. BASIS OF DESIGN OPERATES TO -4F. PROVIDE LOW AMBIENT ACCESSORY WITH EQUALS IF NOT STANDARD OR PROVISIONS MAY BE NECESSARY FOR ADDITIONAL AUXILIARY ELECTRIC HEAT.

INFRARED RADIANT HEATER SCHEDULE

TAG	SERVICE	*MANUFACTURER/MODEL		GAS INPUT (BTUH)	TUBE LENGTH	FLUE SIZE	O.A. SIZE	AMPS	VOLT/PHASE
IRH-1	VECHICLE BAY	SPACE RAY	LTS40	40,000	20 FT	4"Ø	6"Ø	2.6	120V/60Hz/1P
IRH-2	VECHICLE BAY	SPACE RAY	LTS40	40,000	20 FT	4"Ø	6"Ø	2.6	120V/60Hz/1P

*BASIS OF DESIGN: PROVIDE STERLING, RAY-TEC
NOTES:
1. HEATER SHALL BE AGA CERTIFIED.
2. UNITS SHALL BE SUPPLIED WITH: NON-PILOT IGNITIONS.
3. PROVIDE REMOTE THERMOSTATS AND SWITCHED DISCONNECTS FOR UNITS.
4. MINIMUM MOUNTING HEIGHT SHALL BE 11'-0".

LOUVER SCHEDULE

TAG	SERVICE	*MANUFACTURER/MODEL		CFM	FPM	AIRFLOW	DIMENSIONS (W X H)	MIN. FREE AREA (FT^2)	MAX STATIC PRESSURE	NOTES
L-1	VEHICLE BAY	RUSKIN	ELF375DX	1750	500	SUPPLY	40X32	3.5	0.15"	2, 3
L-2	VEHICLE BAY	RUSKIN	ELF375DX	1750	700	EXHAUST	40X32	2.5	0.15"	2, 3
L-3	MECHANICAL	RUSKIN	ELF375DX	600	500	OUTSIDE	76X18	1.2	0.15"	1,2

*PROVIDE EQUAL PRODUCTS BY GREENHECK, RUSKIN, OR METALAIRE.
NOTES:
1. PROVIDE WITH PLENUM BOX SIZED FOR THE FULL AREA OF LOUVER, EXTENDING 12" PAST THE WALLS INTERIOR FACE.
2. LOUVER FINISH IS TO MATCH BUILDING EXTERIOR. SUBMIT FINISH SELECTION FOR APPROVAL BY ARCHITECT.
3. PROVIDE WITH MOTORIZED DAMPER CONTROLLED BY GAS DETECTION SYSTEM.

AIR DISTRIBUTION SCHEDULE

TAG	*MANUFACTURER/MODEL		FACE SIZE	MOUNT	MATERIAL	FINISH	DAMPER	TYPE	NC	NOTES
S1	PRICE	SCD	24x24	ACT	ALUMINUM	WHITE	NONE	CONE	< 20	1
S2	PRICE	SCD	12x12	ACT	ALUMINUM	WHITE	NONE	CONE	< 20	1
R1	PRICE	SERIES 600	24X24	ACT	ALUMINUM	WHITE	NONE	LOUVERED	< 20	1
R2	PRICE	SERIES 600	12X12	ACT	ALUMINUM	WHITE	NONE	LOUVERED	< 20	1
E1	PRICE	SERIES 600	12X12	ACT	ALUMINUM	WHITE	NONE	LOUVERED	< 20	1

*BASIS OF DESIGN: PRICE, TITUS, OR METALAIRE.
NOTES:
1. SEE RUNOUTS ON PLANS FOR NECK SIZING.

THERMOSTAT REQUIREMENTS

MANUFACTURER *	MODEL	QTY
SCHNEIDER	SE8650U5B11	3
MONITORING POINTS	NOTES	REQUIRED
TEMPERATURE	°F	YES
HUMIDITY	%RH	YES
CARBON DIOXIDE	PPM	YES
OCCUPANCY SENSOR	BINARY	YES
PARTICULATES	PPM	NO
DISPLAY		
DIGITAL TEMPERATURE DISPLAY	°F	YES
RELATIVE HUMIDITY	%RH	YES
OCCUPIED/UNOCCUPIED STATUS	OCC/UNOCC	YES
LOCAL CO2 ALARM	ALARM	YES
INDOOR AIR QUALITY	1-100	NO
CONTROLS		
PROGRAMMABLE SCHEDULE	24/HR / 7DAY (NOTE 1)	YES
OVERRIDE REQUEST	2HR	YES
SET POINT ADJUST	+/- 4 °F	YES
SECURITY		
PASSWORD PROTECTED	PIN	NO
SECURITY COVER	LOCKABLE	NO
COMMUNICATIONS		
BACNET COMPATIBLE	MS/TP	YES
STAND-ALONE		YES

NOTES:
1. MODES SHALL INCLUDE OCCUPIED, UNOCCUPIED, MORNING WARM-UP.
2. DMSS THERMOSTAT MAY OMIT HUMIDITY, CO2 AND OCC SENSOR.
3. PROVIDE A BACNET CONTROLLER IN MECHANICAL ROOM AND CONNECT EACH THERMOSTAT VIA CAT6. PROVIDE CAT6 CABLE FROM BACNET CONTROLLER TO TELECOM ROOM FOR CONNECTION BY OWNER TO ROUTER & WAKE COUNTY NETWORK. CAT6 CABLE COLOR TBD. ROUTE ALL CABLE ABOVE CEILING. PROVIDE CONDUIT WHERE EXPOSED IN MECHANICAL ROOM.

DEHUMIDIFICATION UNIT SCHEDULE

TAG INDOOR/OUTDOOR	*MANUFACTURER/MODEL INDOOR/OUTDOOR	PERFORMANCE				FAN		POWER		NOTES
		CAPACITY AT 80°F, 60% RH	CAPACITY AT 70°F, 60% RH	CAPACITY AT 60°F, 60% RH	ENERGY	SUPPLY AIR CFM	STATIC IN.WG	AMPS	VOLT/ PHASE	
DH-1	HONEYWELL DR65A3000	65 PINTS/DAY	47 PINTS/DAY	34 PINTS/DAY	4.7 PINTS/KWH	140	0.2	5.2	120V/1P	1-5
DH-2	HONEYWELL DR65A3000	65 PINTS/DAY	47 PINTS/DAY	34 PINTS/DAY	4.7 PINTS/KWH	140	0.2	5.2	120V/1P	1-5
DH-3	HONEYWELL DR120A3000	120 PINTS/DAY	88 PINTS/DAY	63 PINTS/DAY	6.1 PINTS/KWH	350	0.2	7.3	120V/1P	ALL

PROVIDE EQUALS BY HONEYWELL, APRILAIRE, OR ALOR AIR.
1. PROVIDE WITH MERV 11 FILTER.
2. INSTALL AUX DRAIN PAN UNDER ENTIRE UNIT. INSTALL FLOAT SWITCH IN DRAIN PAN AND DISABLE UNIT UPON DETECTION OF WATER.
3. INSTALL UNIT ABOVE CEILING. PROVIDE HARD WIRED CONNECTION. DUCT UNIT TO GRILLES OR DUCT AS SHOWN ON PLANS. PROVIDE ACCESS.
4. PROVIDE COMPLETE WITH ONBOARD DEHUMIDISTAT.
5. INSTALL UNITS A MAXIMUM OF 2FT ABOVE CEILING GRID.
6. PROVIDE COMPLETE WITH OPTIONAL BACKDRAFT DAMPER BY MANUFACTURER.
7. CAP OUTSIDE AIR CONNECTION.

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919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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919.832.8118 T
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WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030628 ENGINEER JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.: 2506
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DATE: 08/17/26
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SHEET INFORMATION

M002
MECHANICAL SCHEDULES

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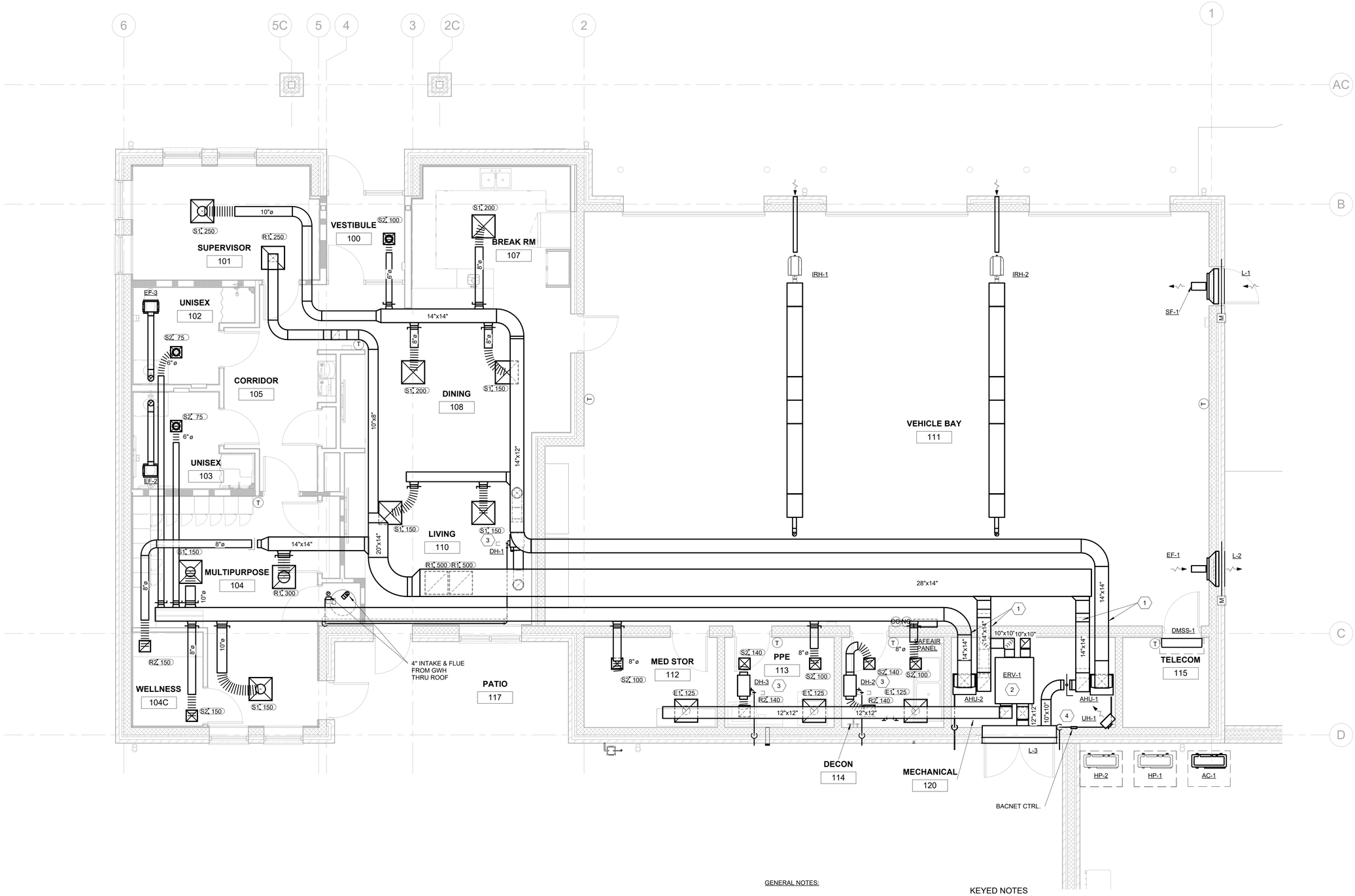

1 M200 Mechanical Floor Plan
1/4" = 1'-0"

GENERAL NOTES:

1. REFERENCE SHEET M001 FOR LEGEND, SCHEDULES, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. REFERENCE M201 FOR RCP FOR COORDINATION OF CEILINGS.

KEYED NOTES

1. PROVIDE DUCT AT MAXIMUM ELEVATION. DUCT MUST BE A MIMIMUM OF 6'6" ABOVE TOP OF ELECTRICAL PANELS BELOW. COORDINATE PENETRATION LOCATION WITH CEILING AND STRUCTURE OF ADJACENT APPARATUS BAY. DUCT IS TO BE LOCATED ABOVE GYP BOARD CEILING WITHIN BAYS.
2. PROVIDE ERV AT APPROX. 11' AFF. ENSURE EXHAUST AND FRESH AIR DUCTS ARE A MINIMUM OF 6'6" ABOVE PANELS BELOW.
3. COORDINATE DEHUMIDIFIER INSTALLATION LOCATION WITH NEARBY GRID, LIGHTS, DUCTWORK, AND PIPING. A FULL UNOBSTRUCTED TILE MUST BE ACCESSIBLE IN FRONT OF THE UNIT FOR SERVICE/MAINTENANCE. LOCATE DEHUMIDIFIER NO MORE THAN 2FT ABOVE CEILING.
4. PROVIDE A BACNET CONTROLLER AND CONNECT EACH THERMOSTAT VIA CAT6. PROVIDE CAT6 CABLE FROM BACNET CONTROLLER TO TELECOM ROOM FOR CONNECTION BY OWNER TO ROUTER & WAKE COUNTY NETWORK. CAT6 CABLE COLOR TBD. ROUTE ALL CABLE ABOVE CEILING. PROVIDE CONDUIT WHERE EXPOSED IN MECHANICAL ROOM AND WHERE EXPOSURE IS REQUIRED IN OTHER LOCATIONS.

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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919.832.8118 T
SALASOBRIEN.COM
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SEALS

NORTH CAROLINA PROFESSIONAL SEAL 036628 ENGINEER JOHN R. ERICKSON

08/12/2026

PROJECT INFORMATION

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M200

MECHANICAL FLOOR PLAN

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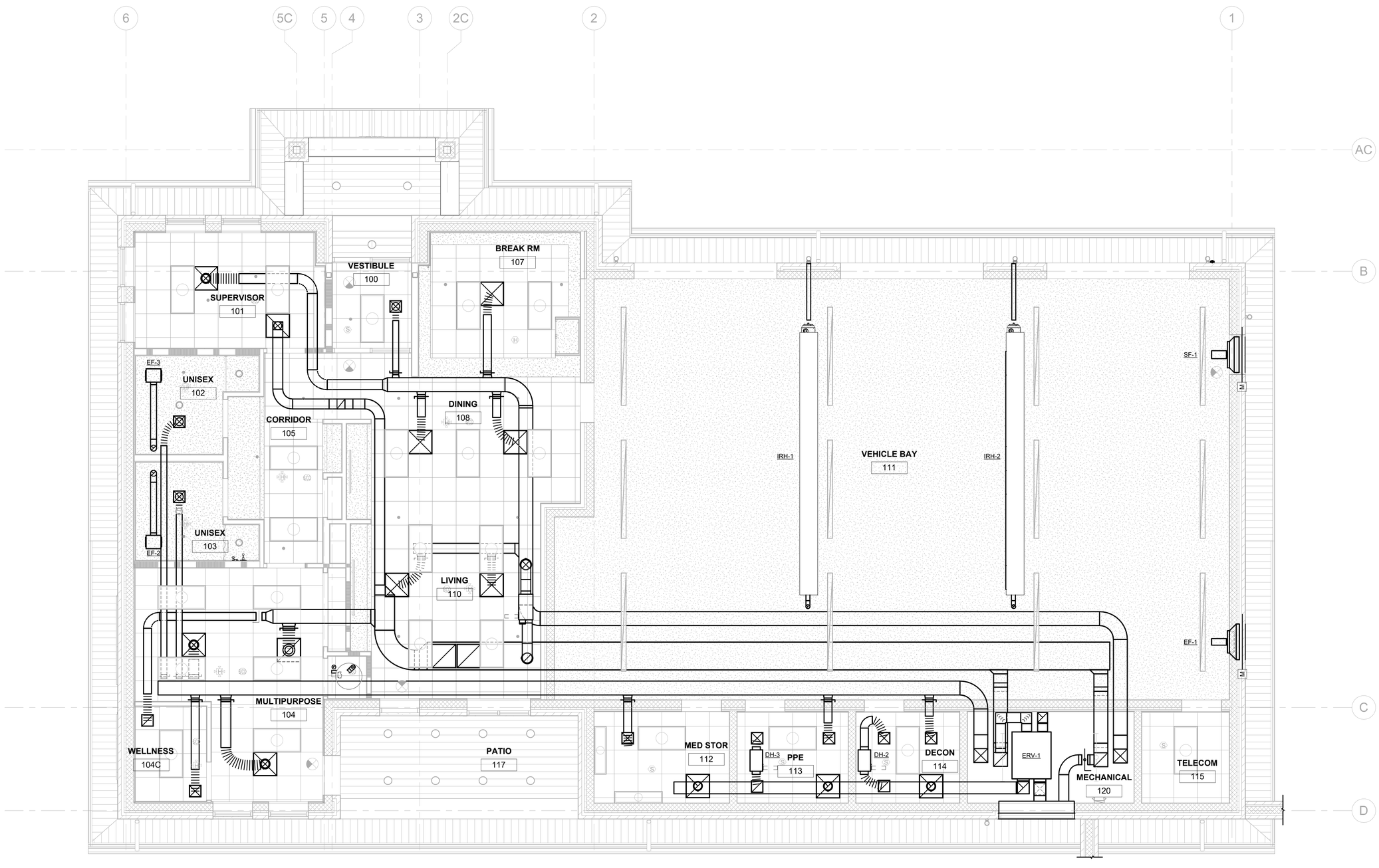

1 M201 Mechanical Reflected Ceiling Plan
1/4" = 1'-0"

GENERAL NOTES:

1. REFERENCE SHEET M001 FOR LEGEND, SCHEDULES, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. RCP HAS BEEN PROVIDED FOR COORDINATION WITH CEILING AND OTHER TRADES ONLY. REFERENCE M200 FOR NEW WORK.

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL ENGINEER 050628 JOHN R. ERICKSON
08/12/2026

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MECHANICAL RCP

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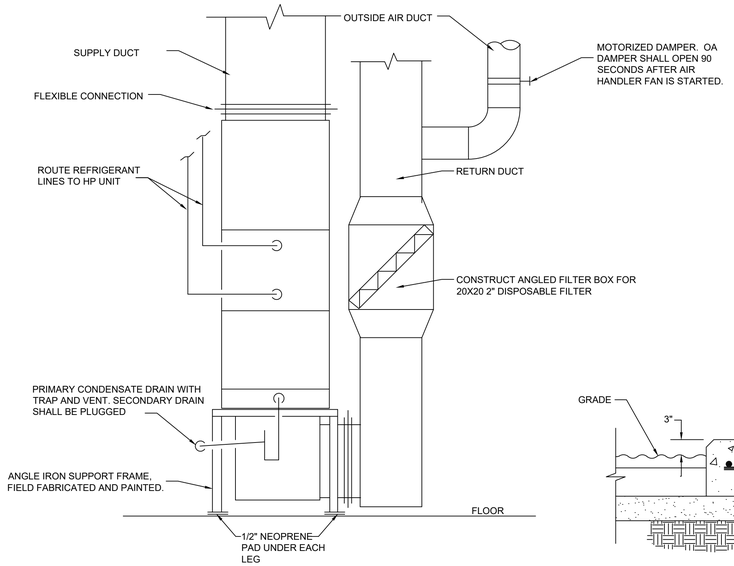
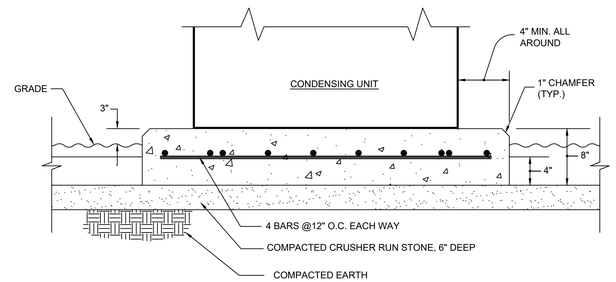


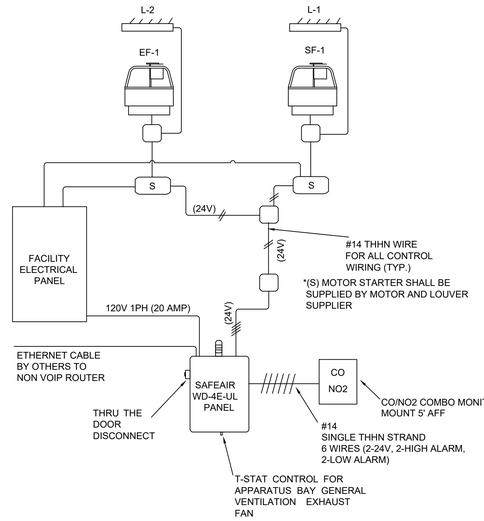
NOTES:
INSTALL A WATERTIGHT GALVANIZED STEEL EMERGENCY DRAIN PAN UNDER THE UNIT. THE PAN SHALL BE 3"DEEP AND 3" WIDER THAN THE UNIT ALL AROUND. INSTALL A FLOAT SWITCH IN THE PAN AND WIRE INTO THE CONTROL CIRCUIT.

1 M500 VERTICAL AHU INSTALLATION DETAIL
TYPICAL OF ALL AHUs



NOTES:
REFERENCE FLOOR PLANS FOR PAD DIMENSIONS.

2 M500 CONDENSING UNIT CONCRETE PAD DETAIL
TYPICAL OF PAD FOR AC AND HPs



NOTES:

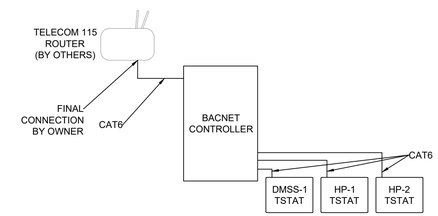
EQUIPMENT, LABOR, AND TESTING PROVIDED BY MC:

* (1) WD-4E-UL SAFEAIR CONTROL PANEL 120V -1PH (20 AMP)
* STARTERS FOR EF-1 AND SF-1 FANS
* STARTERS FOR L-1 AND L-2 LOUVERS
* CO/NO2 COMBO TOXIC GAS MONITOR UNIT
* FINAL TERMINATION OF WIRES INSIDE SAFEAIR PANEL
* SAFEAIR, CO/NO2 TESTING
* PROGRAM SYSTEM TO ENERGIZE FANS AND LOUVER UPON DETECTION OF CO ABOVE 25PPM ANDNO2 ABOVE 1PPM AND REMAIN ACTIVE UNTIL VALUES FALL BELOW CONCENTRATIONS.

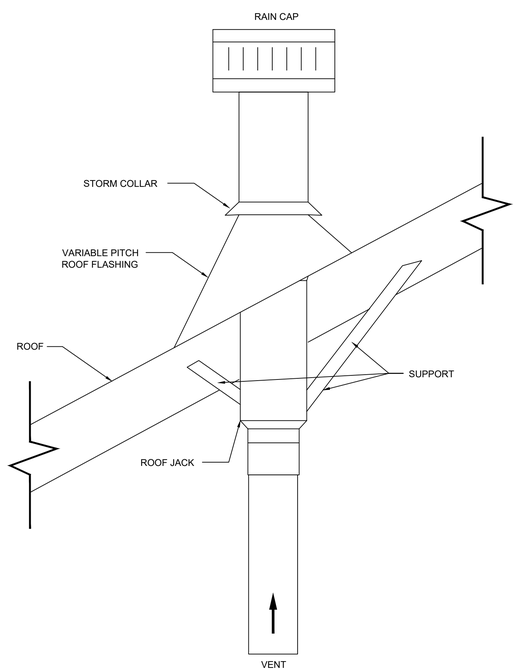
EQUIPMENT INSTALLED AND PROVIDED BY ELECTRICAL CONTRACTOR:

* MOUNTING OF WD-4E-UL SAFEAIR PANEL AND CO/NO2 COMBO UNIT
* ALL WIRE AND CONDUIT FOR CONTROL WIRE FROM THE SAFEAIR PANEL TO CO/NO2 COMBO SENSORS
* ALL 24V, AND 120V 1PH POWER TO RESPECTIVE SYSTEMS; TO INCLUDE CONDUIT AND WIRE
* WIRING OF SAFEAIR PANEL AND CO/NO2 COMBO SENSORS
* WIRING OF EF-1 AND SF-1 FANS/LOUVERS
* FINAL TERMINATION OF CO/NO2 COMBO SENSORS
* FURNISHING AND INSTALLING CAT 5 WIRE FOR SAFEAIR NON-VOIP ROUTER CONNECTION FOR EMAIL DIALER, IF REQUIRED

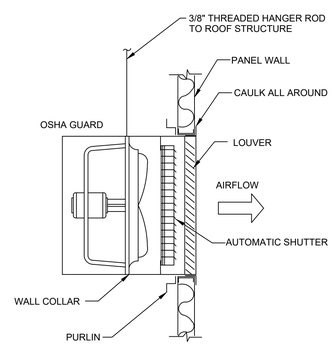
3 M500 VEHICLE BAY CONTROL DIAGRAM
TYPICAL OF VEHICLE BAY 111



7 M500 HVAC CONTROL INFRASTRUCTURE DIAGRAM



4 M500 PITCHED ROOF FLUE DETAIL
TYPICAL OF IRHS

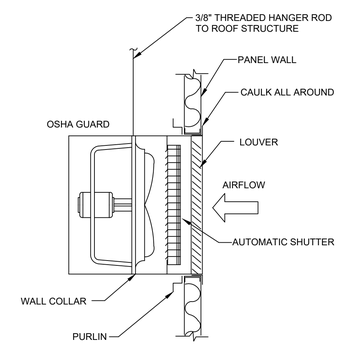


PROVIDE AUXILARY FRAMING AS REQUIRED TO SUPPORT FRAME.

NOTES:

FAN SHUTOFF SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM THOUGH A LOCAL CONTROL MODULE PROVIDED BY DIV 26. DIV 23 SHALL INSTALL CONTROL WIRING FROM CONTROL MODULE TO FAN STARTER. COMPLY WITH ALL REQUIREMENTS IN DIV 26 FOR RACEWAY AND WIRING.

5 M500 PROP EXHAUST FAN DETAIL
TYPICAL OF EF-1



PROVIDE AUXILARY FRAMING AS REQUIRED TO SUPPORT FRAME.

NOTES:

FAN SHUTOFF SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM THOUGH A LOCAL CONTROL MODULE PROVIDED BY DIV 26. DIV 23 SHALL INSTALL CONTROL WIRING FROM CONTROL MODULE TO FAN STARTER. COMPLY WITH ALL REQUIREMENTS IN DIV 26 FOR RACEWAY AND WIRING.

6 M500 PROP SUPPLY FAN DETAIL
TYPICAL OF SF-1

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WAKE COUNTY
NORTH CAROLINA

SEALS

08/12/2026

PROJECT INFORMATION

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CHECKED BY:	JRE

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M500
MECHANICAL DETAILS

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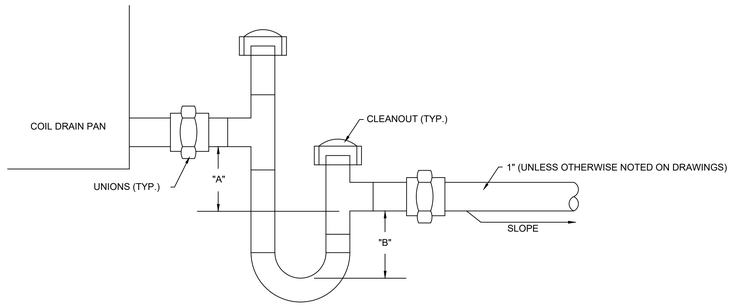
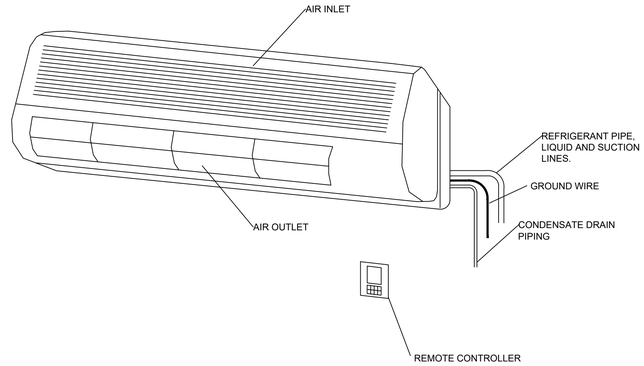


NOTES:

1. ``A" = SYSTEM STATIC IN INCHES, AT DRAIN POINT.
2. ``B" = 1/2 SYSTEM STATIC IN INCHES, AT DRAIN POINT.
3. SIZE IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
4. MATERIAL SHALL BE COPPER ONLY.

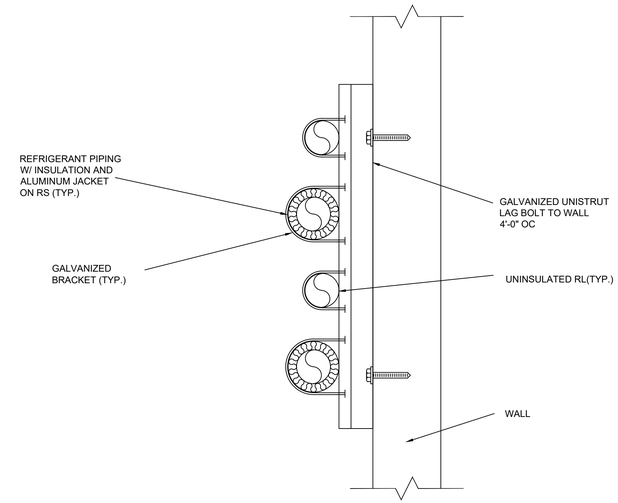
1 / M501 CONDENSATE DRAIN DETAIL
TYPICAL OF CONDENSATE



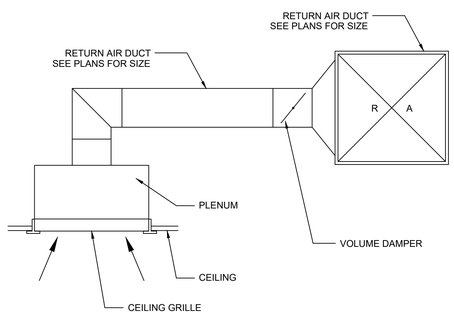
NOTE:

1. MOUNT UNIT TO ITS ROOM WALL. MOUNT UNIT AS HIGH AS POSSIBLE PER MANUFACTURER'S SPECIFICATIONS.
2. REFER TO PLANS FOR REFRIGERANT AND CONDENSATE DRAIN ROUTING. MINIMUM 3/4" CONDENSATE DRAIN LINE WITH 1" INSULATION.

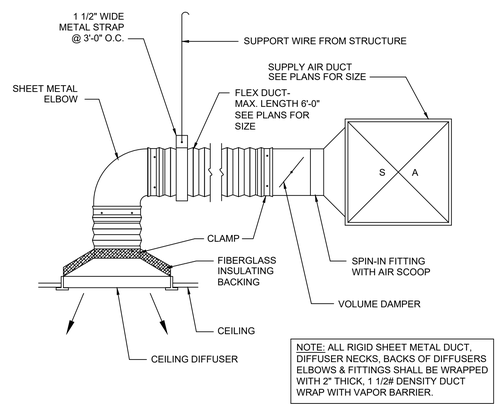
2 / M501 DUCTLESS MINI-SPLIT INSTALLATION DETAIL
TYPICAL OF DMSS-1



3 / M501 REFRIGERANT WALL PIPE SUPPORT DETAIL
TYPICAL ALL

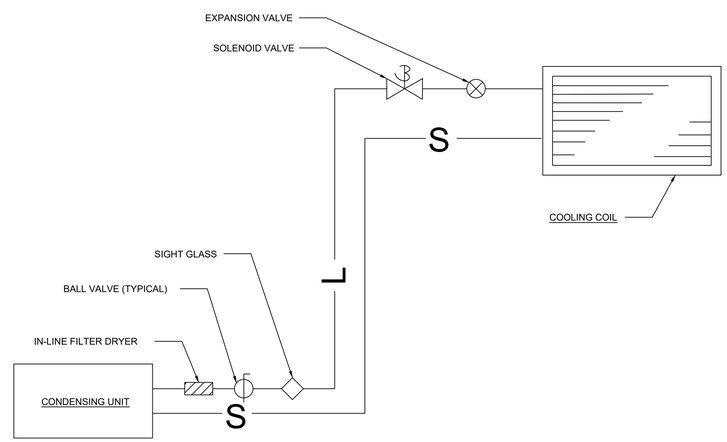


4 / M501 RETURN GRILL DETAIL DETAIL
TYPICAL OF RETURNS



NOTE: ALL RIGID SHEET METAL DUCT, DIFFUSER NECKS, BACKS OF DIFFUSERS ELBOWS & FITTINGS SHALL BE WRAPPED WITH 2" THICK, 1 1/2# DENSITY DUCT WRAP WITH VAPOR BARRIER.

5 / M501 SUPPLY DIFFUSER RUNOUT DETAIL
TYPICAL SUPPLIED



6 / M501 REFRIGERANT PIPING SCHEMATIC
TYPICAL ALL HEAT PUMPS & AIR CONDITIONERS

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PROJECT INFORMATION

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MECHANICAL DETAILS

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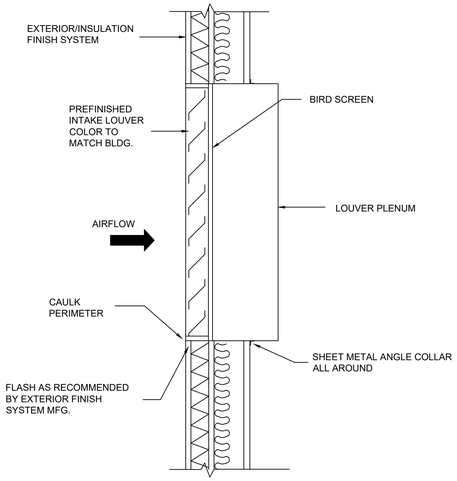
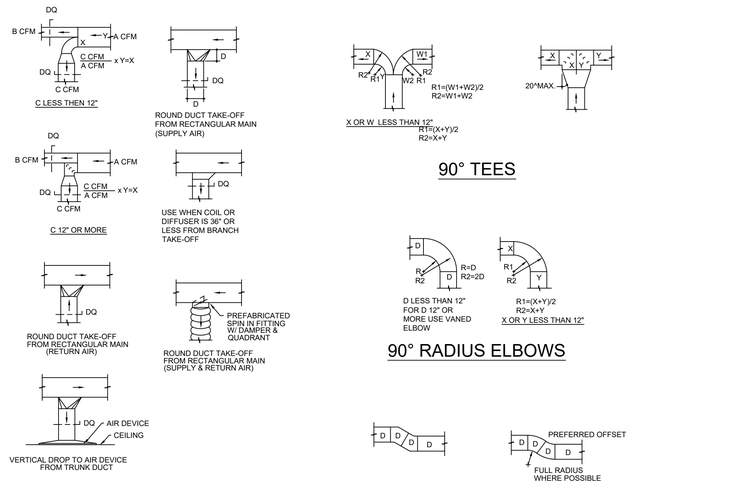
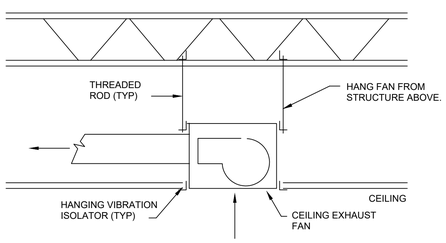


1 / M502 INTAKE LOUVER DETAIL
TYPICAL OF MECHANICAL 120



2 / M502 LOW PRESSURE DUCTWORK DETAIL
TYPICAL ALL DUCTWORK

3 / M502 UNUSED



4 / M502 CEILING EXHAUST FAN DETAIL
TYPICAL OF MECHANICAL 120

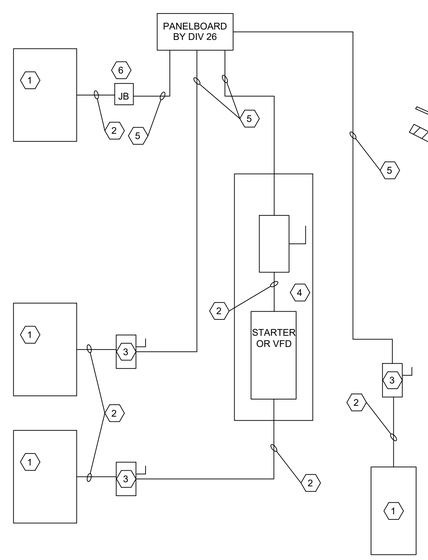
1. EQUIPMENT BY THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR.
2. CONDUIT & WIRING BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR COORDINATED WITH THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY THE NATIONAL ELECTRICAL CODE, IT SHALL BE FURNISHED BY THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER, LOCATED ADJACENT TO EQUIPMENT. STARTERS AND VFD FURNISHED BY THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR.
5. FEEDER CIRCUIT WIRING AND CONDUIT FURNISHED AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE DIVISION 26 (ELECTRICAL) CONTRACTOR SHALL FURNISH AND INSTALL LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE FURNISH AND INSTALL BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR COORDINATED WITH THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR.

NOTES:

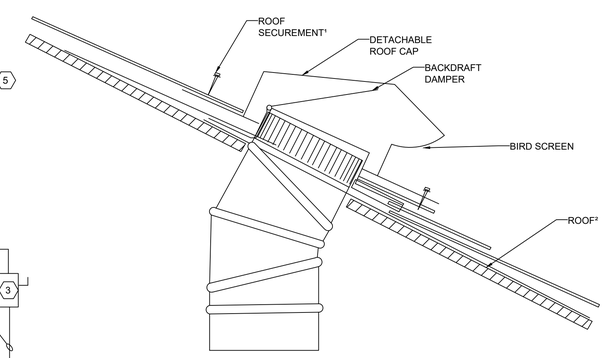
THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DIRECTION OF ROTATION FOR ALL THREE PHASE MOTORS AND EQUIPMENT.

IN ALL CASES THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR SHALL BE CONTRACTUALLY OBLIGATED TO INSURE ALL FINAL CONNECTIONS, START UP, AND TESTING OF EQUIPMENT IS PROVIDED PER THE MANUFACTURERS' STRICT INSTRUCTIONS; HOWEVER ALL FINAL CONNECTIONS SHALL FURNISHED AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR

ALL OUTDOOR DISCONNECTS SHALL BE NEMA 4X. REFERENCE SPECIFICATION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS.



5 / M502 DIVISION OF WORK. DETAIL
TYPICAL OF POWERED EQUIPMENT; EXCEPT LOW VOLTAGE



NOTE:

1. PROVIDE SECUREMENT SPECIFIED BY CAP MANUFACTURER FOR ROOF TYPE PROVIDED AND SECURE AT DESIGNATED LOCATIONS.
2. REFERENCE ARCHITECTURAL PLANS FOR ROOF TYPE AND COORDINATE FLASHING BETWEEN INSTALLATION INSTRUCTIONS AND ARCHITECTURAL PENETRATION DETAILS.

6 / M502 ROOFTOP EXHAUST CAP DETAIL
TYPICAL OF EF-2&3 & MICROWAVE HOOD VENT

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030628 JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

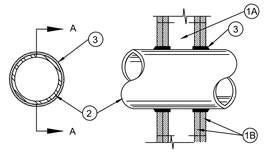
SHEET INFORMATION

M502

MECHANICAL DETAILS

Docusign Envelope ID: 3192AB46-E89F-8D0E-8270-D5DAD80F4B32

SYSTEM NO. W-L-1001
JUNE 15 2005
F RATINGS-1, 2, 3 AND 4 HR (SEE ITEM 2 AND 3)
T RATING-0, 1, 2, 3, AND 4 HR. (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM PER SQ. FT.
L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.



SECTION A-A

1. THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE WALL ASSEMBLY-CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 H FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

   B. GYPSUM BOARD* - NOM 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN.

2. THROUGH - PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX MAX. 2 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED.

   A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. IRON PIPE - NOM 24 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE LINE PRESSURE PIPE.

   C. CONDUIT - NOM 6 IN. DIAM. (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

   D. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   E. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

   F. THROUGH PENETRANTING PRODUCT* - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:

1. NOM 2 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPIING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   OMEGA FLEX INC

2. NOM 1 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   GASTILE, DIV OF TILEFLEX

3. NOM 1 IN. DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

   WARD MFG INC

3. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 5/8. 1-1/4, 1-7/8 AND 2-1/2 IN THICKESS OF CAULK FOR 1, 2, 3, 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OR WALL. MIN 1/4 IN DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIZE OF WALL. THE HOURLY F RATING OF THE FIRESTOP IS DEPENENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSATEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW.

MAX PIPE OR CONDUIT DIAM, IN	F RATING HR	T RATING HR
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

+WHEN COPPER PIPE IS USED, T RATING IS 0 H.
3M COMPANY - CP 25WB+ or FB-3000 WT.
*BEARING THE UL CLASSIFICATION MARKING.

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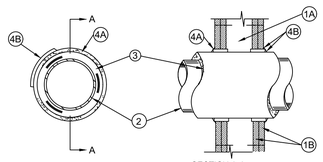
SYSTEM NO. W-L-5001
MAY 19 2005
F RATINGS-1, AND 2 HR (SEE ITEM 1)
T RATING-3/4, 1 AND 1-1/2 HR. (SEE ITEM 3)
L RATING AT AMBIENT - 2 CFM PER SQ. FT.
L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.



SECTION A-A

1. THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

   A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

   B. GYPSUM BOARD* - NOM 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE SHALL BE AS SPECIFIED IN THE INDIVIDUAL DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 14-1/2 IN FOR WOOD STUD WALLS AND 18 IN FOR STEEL STUD WALLS

   THE HOURLY F RATING OF THE FIRE STOP SYSTEM IS 1 HR WHEN INSTALLED IS A 1 HR FIRE RATED WALL AND 2 HR WHEN INSTALLED IN 2 HR RATED WALL.

2. THROUGH - PENETRANTS - ONE METALLIC PIPE, OR TUBING ITO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED

   A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. COPPER TUBING - NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

   C. COPPER PIPE - NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PIPE COVERING* NOM 1 IN OR 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF SEALING LAP TAPE. TRANSVERSE JOINTS SEALED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH PRODUCT. WHEN NOM 1 IN THICK PIPE COVERING IS USED, ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IS GYPSUM WALLBOARD LAYERS IN EACH SIDE OF THE WALL SHALL BE 1/4 IN TO 3/8 IN. WHEN 2 IN THICK PIPE COVERING IS USED, THE ANNULAR SPACE BETWEEN THE PIPE COVERING AND THE CIRCULAR CUTOUT IN THE GYPSUM BOARD LAYERS ON EACH SIDE OF THE SHALL BE MIN 1/2 IN TO MAX 3/4 IN.

   SEE PIPE AND EQUIPMENT COVING MATERIALS (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURES. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OF MAY BE MAY BE USED.

   THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 3/4 HR WHEN NOM 1 IN THICK PIPE COVERING IS USED. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS 1 HR AND 1-1/2 HR WHEN 2 IN THICK PIPE COVERING IS USED WITH 1 HR AND 2 HR FIRE RATED WALLS, RESPECTIVELY.

4. FIRESTOP SYSTEM - INSTALLED SYMMETRICALLY ON BOTH SIDES OF THE WALL ASSEMBLY. THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS.

   A. FILL, VOID OR CAVITY MATERIAL* - WRAP STRIP - NOM 1/4 IN THICK INTUMESCENT ELASTOMERIC MATERIAL FACED ON ONE SIDE WITH ALUMINUM FOIL, SUPPLIED IN 2 IN WIDE STRIPS. NOM 2 IN WIDE STRIP TIGHTLY WRAPPED AROUND PIPE COVING (FOIL SIDE OUT) WITH SEAM BUTTED. WRAP STRIP LAYER SECURELY BOUND WITH STEEL WIRE OR ALUMINUM FOIL TAPE AND SLID INTO ANNULAR SPACE APPROX 1-1/4 SUCH APPROX 3/4 IN OF THE WRAP STRIP WIDTH PROTRUDES FROM THE WALL SURFACE. ONE LAYER OF WRAP SRTIP IS REQUIRED WHEN NOM 1 IN THICK PIPE COVERING IS USED. TWO LAYERS OF WRAP STRIP ARE REQUIRED WHEN NOM 2 IN THICK PIPE COVERING IS USED.

   3M COMPANY - FS-195+

   B. FILL, VOID OR CAVITY MATERIALS* - CAULK OR SEALANT - MIN 1/4 IN DIAM CONTINUOUS BEAD APPLIED TO THE WRAP STRIP/WALL IINTERFACE AND TO THE EXPOSED EDGE OF THE WRAP STRIP LAYER APPROX 3/4 IN FROM THE WALL SURFACE

   3M COMPANY - CP 25WB+, IC 15WB+, FIREDAM 150+ CAULK OR FB-3000 WT SEALANT.

* BEARING THE UL CLASSIFICATION MARK

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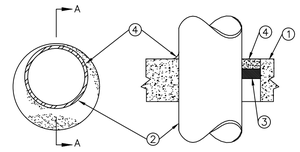
SYSTEM NO. C-AJ-1001
MARCH 05 2007
F RATINGS-3 4 HR
T RATING-0 HR.
W RATING - CLASS 1 (SEE ITEM 4)



SECTION A--A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN.

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. AS AN ALTERATE, NOM 12 IN DAIM (OR SMASLLER) SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GROUNTED INTO FLOOR OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE.

2. THROUGH-PENETRANT- ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 1-3/8" IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

   A. STEEL PIPE-NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   A1. IRON PIPE-NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   B. CONDUIT-NOM 6 IN. DIAM (OR SMALLER) RIGID STEEL CONDUIT.
   C. CONDUIT- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. OR, A MIN 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OF MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.

4. FILL, VOID OR CAVITY MATERIALS* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

MAX PIPE DIAM IN	MAX ANNULAR SPACE IN.	PACKING MATERIAL TYPE (A)	MIN. CAULK THKNS IN
10	1	BR, CF, GF OR MW	1/2 (B)
10	1	CF OR MW	1/2 (C)
30	2-1/2	BR, CF, GF OR MW	1 (B)

(A) BR= POLYETHYLENE BACKER ROD.

CF= CERAMIC FIBER BLANKET.

GF= GLASS FIBER INSULATION.

MW= MINERAL WOOL BATT

(B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL

(C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACEOF SOLID (NON-CONCRETE BLOCK) WALL.

3M COMPANY- TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USEDON TOP SIRFACE OR FLOOR AND WHEN IT LAPS ONTO CONCRETE FOR SLEECED OPENING.)

* BEARING THE UL CLASSIFICATION MARKING.

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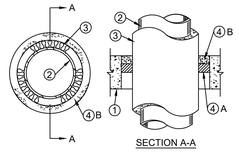
System No. C-AJ-5001
MARCH 05, 2007

F RATINGS - 1-1/2, 2 AND 3 HR (SEE ITEM 4)
T RATINGS - 0, 1/2, 3/4 AND 1 HR (SEE ITEMS 1A AND 4)
L RATING AT AMBIENT - 2 CFM PER SQ FT
L RATING AT 400 F - LESS THAN 1 CFM PER SQ FT



SECTION A-A

1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150) PCF CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 18 IN.

   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 10 IN. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL. AS AN ALTERNATE, NOM 10 IN, DIAM (OR SMALLER)SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GOURTED INTO OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE. T RATING IS 0 HR WHEN SLEEVE IS USED.

2. THROUGH PENETRANT - NOM 4 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE, NOM 12 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. DIAM (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE OR NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE CENTERED IN THE OPENING AND RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.

3. PIPE COVERING* - NOM 1/2 TO 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN. 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT STRIP TAPE SUPPLIED WITH THE PRODUCT.

   SEE PIPE AND EQUIPMENT COVERING - MATERIALS* (BRGU) CATEGORY IN BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY PIPE COVERING MATERIAL MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD INDEX OF 25 OR LESS AND A SMOKE DEVELOPED INDEX OF 50 OR LESS MAY BE USED.

4. FIRESTOP SYSTEM - THE DETAILS OF THE FIRESTOP SYSTEM SHALL BE AS FOLLOWS:

   A. PACKING MATERIAL - MIN 1 IN. THICKNESS OF FIRMLY PACKED MINERAL WOOL BATT INSULATION USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM B).

   B. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR FLUSH WITH BOTH SURFACES OF WALL. WHEN NOM PIPE COVERING THICKNESS IS 2 IN., MIN THICKNESS OF CAULK FILL MATERIAL IS 2 IN. WHEN NOM PIPE COVERING THICKNESS IS 1-1/2 IN. OR LESS, MIN THICKNESS OF CAULK FILL MATERIALIS 1 IN. THE HOURLY F AND T RATINGS OF THE FIRESTOP SYSTEM ARE DEPENDENT UPON THE THICKNESS OF THE FLOOR OR WALL, THE SIZE OF PIPE, THE THICKNESS OF PIPE COVERING MATERIAL AND THE SIZE OF THE ANNULAR SPACE (BETWEEN THE PIPE COVERING MATERIAL AND THE EDGE OF THE CIRCULAR THROUGH OPENING), AS SHOWN IN THE FOLLOWING TABLE:

MIN FLOOR OR WALL THKNS IN.	MAX PIPE DIAM. IN.	NOM. PIPE COVERING THKNS. IN.	ANNULAR SPACE IN.	F RATING HR.	T RATING HR.
2-1/2	4	1 or 1-1/2	1/2 to 2-3/8	2	1
4-1/2	4	2	1/4 to 3-5/8	2	1-1/2
2-1/2	12	1	1/2 to 1-1/2	2	1/2
4-1/2	12	1	1/2 to 2-3/8	3	1
2-1/2	12	1/2	1/2 to 2-3/8	2	0

3M COMPANY - CP- 25WB+ OR FB-3000 WT

*BEARING THE UL CLASSIFICATION MARK

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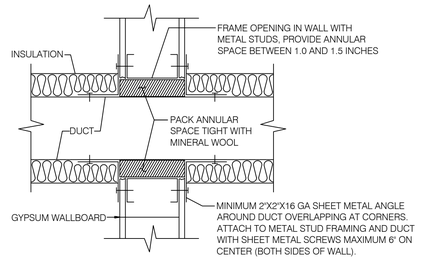
1 M503 **U.L. FIRE PENETRATION DETAILS**



2 M503 **DUCT PENETRATION THROUGH 1-HR OR LESS STUD WALL WITHOUT FIRE DAMPER DETAIL**

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

M503
MECHANICAL DETAILS

Docusign Envelope ID: C8E6ADD2-2D45-811D-814F-FF94C986F4F9

LIGHTING SYMBOLS

WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY BACK-UP, SINGLE FACE. ARROW WHEN USED INDICATES DIRECTION.

WALL OR CEILING MTD EXIT SIGN WITH SELF CONTAINED BATTERY BACK-UP, DOUBLE FACE. ARROW WHEN USED INDICATES DIRECTION.

SUSPENDED OR SURFACE MTD LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT

SUSPENDED OR SURFACE MTD LED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT

CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT

CEILING MTD OR LAY-IN LED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT

CEILING MTD OR LAY-IN TYPE LED LIGHTING FIXTURE AND OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT

CEILING MTD OR LAY-IN LED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT

CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE AND OUTLET, LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT

CEILING/PENDENT MTD/RECESSED LIGHTING FIXTURE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT INSTALLED WITH EMERGENCY DRIVER ON NITE-LITE CIRCUIT

SURFACE MOUNTED WALL LUMINAIRE

OUTLET, LETTER INDICATES FIXTURE TYPE; NUMBER INDICATES CIRCUIT

SURFACE MOUNTED WALL LUMINAIRE LETTER DESIGNATES FIXTURE TYPE AND NUMBER INDICATES CIRCUIT CONNECTED TO REMOTE EMERGENCY INVERTER

EMERGENCY WALL BATTERY PACK UNIT PER THE SCHEDULE. LETTER NEXT TO FIXTURE ON PLANS INDICATES FIXTURE TYPE. CONNECT UNSWITCHED TO INDICATED BRANCH CIRCUIT.

EMERGENCY CEILING BATTERY PACK UNIT PER THE SCHEDULE. LETTER NEXT TO FIXTURE ON PLANS INDICATES FIXTURE TYPE. CONNECT UNSWITCHED TO INDICATED BRANCH CIRCUIT.

NOTE TO ALL LIGHTING:

X/Y-SUBSCRIPTS @ LIGHTING FIXTURES:

1. X-REPRESENTS OCCUPANCY SENSOR THAT CONTROLS FIXTURE.
2. Y-REPRESENTS SWITCH THAT CONTROLS FIXTURE.
3. WHEN NO SUBSCRIPT IS SHOWN, LOCAL OCC SENSOR AND SWITCH CONTROLS FIXTURE.
4. WHERE NL IS DESIGNATED AT FIXTURE, IT SHALL REMAIN UNSWITCHED.

S_{OR} DIGITAL TIMER SWITCH-INTERMATIC EI235 OR EQUAL

S_{DT} DIGITAL TIMER SWITCH-INTERMATIC ST01 OR EQUAL

S FLUSH MTD TOGGLE SWITCH, S.P.S.T., 20A, 120/277V

S_3 FLUSH MTD 3-WAY TOGGLE SWITCH, 20A, 120/277V

S_4 FLUSH MTD 4-WAY TOGGLE SWITCH, 20A, 120/277V

S_D FLUSH MTD 0-10V LED DIMMER SWITCH

S_{OS} SWITCH TYPE OCCUPANCY SENSOR WITH BUILT-IN OVERRIDE SWITCH

S_L SURFACE MTD TOGGLE SWITCH, S.P.S.T., 20A, 120/277V W/LOCKABLE COVER PLATE

S_a S_b LOWER CASE SUBSCRIPT INDICATE WHICH LIGHTS THE SWITCH IS TO BE CONNECTED TO.

OSC DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR; A/V DESIGNATES SENSOR PROVIDED AS PART OF DIMMING OR A/V PACKAGE
U/H DESIGNATES ULTRA-SONIC DEVICE RATED FOR HALLWAY INSTALL

WSW WALL MOUNTED OCCUPANCY SENSOR

NOTE ON OCC SENSORS: SENSORS SHALL PROVIDE COVERAGE TO 1000 SF AND SWITCH LOAD OFF AFTER 20 MIN.

PS PARTITION SENSOR

LC LIGHTING CONTACTOR

POWER SYMBOLS

J OUTLET BOX WITH BLANK COVER - LOCATE AS REQUIRED TO FOR EQUIPMENT SERVED.

FLUSH MTD DUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W

FLUSH MTD QUADRUPLEX RECEPTACLE AND OUTLET, 20A, 125V, 3W

FLUSH MOUNTED QUADRUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS.

FLUSH MOUNTED QUADRUPLEX RECEPTACLE AND OUTLET 20A, 125V, 3W, INSTALLED 4" ABOVE BACKSPLASH OR COUNTER IF NO BACKSPLASH EXISTS.

FB-x FLOOR BOX. BOX TO BE FLUSH MOUNTED IN CONCRETE FLOORS. PROVIDE PER SECTION 262726 OF THE PROJECT MANUAL.

PT-x FLOOR MOUNTED POKE-THRU DEVICE. PROVIDE PER SECTION 262726 OF THE PROJECT MANUAL.

NOTE TO ALL RECEPTACLES/JUNCTION BOXES:

1. SUBSCRIPT EWC INDICATES GROUND FAULT TYPE RECEPTACLE/ OR PROTECTED CIRCUIT FOR ELECTRIC WATER COOLER.
2. SUBSCRIPT WP INDICATES GROUND FAULT TYPE RECEPTACLE/ OR PROTECTED CIRCUIT WITH STEEL LOCKABLE CLOSED WEATHERPROOF COVER.
3. SUBSCRIPT GFI INDICATES GROUND FAULT TYPE RECEPTACLE/ OR PROTECTED CIRCUIT.
4. SUBSCRIPT VEN INDICATES GROUND FAULT TYPE RECEPTACLE/ OR PROTECTED CIRCUIT FOR VENDING MACHINE.
5. SUBSCRIPT TV INDICATES RECEPTACLE FOR TV MOUNTED IN BRACKET.
6. SUBSCRIPT SL INDICATES SHORELINE INSTALLATION PER DETAILS.
7. SUBSCRIPT USB INDICATES COMBINATION 20A OUTLET AND USB PORT.
8. SUBSCRIPT HD INDICATES HAND DRYER CONNECTION.
9. SUBSCRIPT MF INDICATED GFI RECEPTACLE MOUNTED BELOW SINK FOR ELECTRIC METERED FAUCET CONNECTION.
10. SUBSCRIPT DW INDICATES DISHWASHER CONNECTION. PROVIDE WITH 120 VOLT 20 AMPERE SWITCH ABOVE COUNTER FOR DISCONNECT.
11. SUBSCRIPT GD INDICATES GARBAGE DISPOSAL CONNECTION. PROVIDE WITH 120 VOLT 20 AMPERE SWITCH ABOVE COUNTER FOR DISCONNECT.
12. SUBSCRIPT RH INDICATES RANGE HOOD CONNECTION.
13. SUBSCRIPT RNG INDICATES RANGE CONNECTION.
14. SUBSCRIPT MW INDICATES MICROWAVE. REFERENCE A-SERIES DWGS FOR ELEVATIONS.
15. SUBSCRIPT CR INDICATES 120 V POWER FOR CARD READER.
16. SUBSCRIPT HB INDICATES 120 V POWER CONNECTION FOR HOT BOX CONNECTION.
17. SUBSCRIPT GS INDICATES 120 V POWER CONNECTION FOR WAKE COUNTY GROUND SIGN CONNECTION.
18. SUBSCRIPT FP INDICATES 120 V POWER CONNECTION FOR FLAG POLE LIGHTING CONNECTION.
19. SUBSCRIPT MR INDICATES 120 VOLT POWER CONNECTION FOR MOTORIZED HVAC REGISTER.
20. SUBSCRIPT OHD INDICATES OVERHEAD DOOR CONTROLS PER DETAILS.
21. SUBSCRIPT EL-ATS INDICATES ELEVATOR/TRANSFER SWITCH INTERFACE AS NOTED ON DRAWINGS.

TELE/COMM OUTLET 4" SQ. BOX WITH 1"C TO J-HOOKS.

TELE/COMM OUTLET 4" SQ. BOX WITH 1"C TO J-HOOKS. MOUNT 4" ABOVE BACKSPLASH OR AS NOTED.

J — J J-HOOKS PER DRAWINGS AND PROJECT MANUAL.

NOTE TO ALL TELECOM OUTLETS:

1. SUBSCRIPT WAP DESIGNATES WIRELESS ACCESS POINT MOUNTED ON WALL AT 84" AFF.
2. SUBSCRIPT WAP (C) DESIGNATES WIRELESS ACCESS POINT MOUNTED IN CEILING.
3. SUBSCRIPT FA DESIGNATES CONNECTION FOR FIRE ALARM DIAL OUT.
4. SUBSCRIPT EL DESIGNATES CONNECTION FOR ELEVATOR PHONES.
5. SUBSCRIPT W DESIGNATES WALL MOUNTED PHONE MOUNTED AT 48" AFF.
6. SUBSCRIPT DC DESIGNATES DOOR COUNTER CONNECTION.
7. SUBSCRIPT SEC DESIGNATES CONNECTION FROM DROP .
8. SUBSCRIPT ER DESIGNATES EMERGENCY RESPONSE PHONE WITH DEDICATED LINE.
9. SUBSCRIPT AV DESIGNATES 1"C TO ABOVE CEILING FOR AV CONNECTION.
10. SCADA INDICATES 1" CONDUIT TO SCADA SYSTEM FOR CONNECTION TO NETWORK
11. PV INDICATES 1" CONDUIT TO INVERTERS FOR CONNECTION TO NETWORK.
12. ECP INDICATES 1" CONDUIT FROM BAY EXHAUST CONTROL PANEL TO NETWORK.

HC HANDICAPPED DOOR OPERATOR

DISCONNECT SWITCH-PROVIDE 30A, NON-FUSED U.O.N.

NF/30 NON-FUSED DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

20/30 30 AMP FUSED DISCONNECT SWITCH, FUSED AT 20 AMP. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

WP WEATHERPROOF NEMA 3R DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

4X NEMA 4X SS DISCONNECT SWITCH. NUMBER OF POLES AND VOLTAGE PER CIRCUIT FED.

FVNR COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER OR VFD (IF MARKED VFD)

S_M MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOAD HEATERS

1 A.C. MOTOR, NUMERAL INDICATES HP "F" INDICATES FRACTIONAL HP

PANEL BOARD, FLUSH MOUNTED

PANEL BOARD, SURFACE MOUNTED

CONCEALED RACEWAY. INDICATES HOMERUN TO PANEL IN 3/4" CONDUIT-WIRE PER PANEL SCHEDULES.

ELECTRICAL SYMBOL NOTES

1. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
2. SYMBOLS NOT LISTED IN THIS ELECTRICAL SYMBOL LEGEND ARE IDENTIFIED ON THE DRAWINGS WHERE THEY OCCUR.
3. MOUNTING HEIGHT GIVEN IN THE ELECTRICAL SPECIFICATIONS IS TO THE CENTERLINE OF THE DEVICE AND SHALL BE FOLLOWED UNLESS OTHERWISE NOTED.

AV SYSTEM SYMBOLS

TV WALL MOUNTED TV. PROVIDE POWER, T/C AND HDMI OUTLETS AS REQUIRED PER 1/T400. MOUNT AT 84" AFF PER DETAIL.

MISC. SYSTEM SYMBOLS

B DOOR BELL BUTTON MOUNTED AT 48" AFF. CONNECT TO CHIME SYSTEM.

C DOOR BELL CHIME. PROVIDE 120 VOLT CONNECTION TO 24V TRANSFORMER AND 24V CHIME. MOUNT CHIME AT 80" AFF.

SECURITY SYSTEM SYMBOLS

REFER TO DETAILS SHEETS SS400 &SS401 FOR ROUGH-IN DETAILS RELATED TO SEC. SYSTEMS INSTALLATION.

DROP x REFER TO SS401 FOR ROUGH-IN INFORMATION

CR CARD READER.

J CAX CARD READER DOOR ROUGH IN. PROVIDE POWER CONNECTION AS NOTED ON POWER DRAWINGS.

J ELX ELECTRIC LOCK ROUGH IN AND POWER.

J DCX DOOR CONTACT.

J GB GLASS BREAK.

KS KEYED SWITCH

KB SECURITY CONNECTION AT KNOX BOX.

ST STENPHONE

LRC J LATCH RELEASE CONTROL.

J MX MOTION DETECTOR.

J DX DURESS BUTTON.

V1-2, V1-2, V1, V1-2 — SECURITY CAMERAS.

ABBREVIATIONS

A	AMPERE, AMMETER	KW	KILOWATTS
AFF	ABOVE FINISHED FLOOR	LC	LIGHTING CONTACTOR
AIC	AMPERES INTERRUPTING CAPACITY	LTG	LIGHTING
AHU	AIR HANDLING UNIT	LV	LOW VOLTAGE
APP	APPARATUS	MB	MAIN BREAKER
ATS	AUTOMATIC TRANSFER SWITCH	MC	MECHANICAL CONTRACTOR
AV,A/V	AUDIO-VISUAL	MCB	MAIN CIRCUIT BREAKER
BDA	BI-DIRECTIONAL ANTENNA SYSTEM	MCC	MOTOR CONTROL CENTER
BFG	BELOW FINISHED GRADE	MH	MANHOLE
C/CON.	CONDUIT	MLO	MAIN LUGS ONLY
CATV	CABLE (COMMUNITY) ANTENNA TELEVISION	MT./MNT.	MOUNTING
CU	COPPER	NF	NON FUSED
DISC	DISCONNECT	NIC	NOT IN CONTRACT
D.W.	DOMESTIC WATER	NL	NIGHT LIGHT
EC	ELECTRICAL CONTRACTOR	P	POLE, PHASE
ECB	ENCLOSED CIRCUIT BREAKER	PB	PULL BOX
EGC	EQUIPMENT GROUNDING CONDUCTOR	PC	PLUMBING CONTRACTOR
EVCS	ELECTRIC VEHICLE CHARGING STATION	P/BD, PNL	PANELBOARD
EWC	ELECTRIC WATER COOLER	PR	PAIR
E	EXISTING	PV	PHOTO-VOLTAIC
FA, F/A	FIRE ALARM	SN	SOLID NEUTRAL
FAAP	FIRE ALARM ANNUNCIATOR PANEL	SW	SWITCH
FACP	FIRE ALARM CONTROL PANEL	SWBD	SWITCHBOARD
F.P.	FIRE PROTECTION	T/C	TELECOM
GEC	GROUNDING ELECTRODE CONDUCTOR	UG	UNDERGROUND
G,GND	GROUND	UON	UNLESS OTHERWISE NOTED
GC	GENERAL CONTRACTOR	V	VOLT
GF,GFI	GROUND FAULT INTERRUPTER	WP	WEATHERPROOF
HH	HANDHOLE	XFMR	TRANSFORMER
HP	HORSEPOWER		
HT	HEIGHT		
IG, ISG	ISOLATED GROUND		
JB	JUNCTION BOX		
KVA	KILOVOLT-AMPERES		

Conduit Box and Color Scheme Standards

System	Junction Box and Cover	Conduit Color	Raceway Labels	Comments
208Y/120 V Equipment	Galvanized	Galvanized		
480Y/277 V Equipment	Black	Galvanized		
Fire Alarm	Bright Red	Red	White	
Emergency Systems	Green	Green		
Telephone Systems	Orange	Orange		
Data Systems	Brown	Orange		
Paging	White	Orange		
TV Systems	Purple	Orange		
Audio Visual	Blue	Galvanized		
HVAC Controls	Gavanized	Blue		
Communications (Security)	Galvanized	Yellow	Orange	Intercom System
Security Control	Galvanized	Yellow	Green	Card Reader System
Video Surveilance	Galvanized	Yellow	Blue	Camera System
Network - Security	Galvanized	Yellow	Yellow	Security Backbone

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.740.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

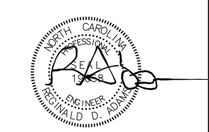
CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY NORTH CAROLINA

SEALS



08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E001

ELECTRICAL LEGEND

Docusign Envelope ID: C8E6ADD2-2D45-811D-814F-FF94C986F4F9

GENERAL NOTES

1. NOT ALL NOTES ARE NECESSARILY APPLICABLE FOR THIS PROJECT. COORDINATE WITH DESIGNER WHERE APPLICABILITY IS IN QUESTION.
2. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE 2020 NEC, ALL LOCAL AND STATE CODES, STATE BUILDING CODE AND REQUIREMENTS BY THE AUTHORITY HAVING JURISDICTION.
3. SYMBOLS AND ABBREVIATIONS MAY NOT ALL BE UTILIZED FOR THIS PROJECT.
4. UNLESS OTHERWISE INDICATED THE CONTRACTOR, IS RESPONSIBLE FOR ALL CUTTING, CORE- DRILLING AND PATCHING REQUIRED TO INSTALL ELECTRICAL RELATED WORK.
5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ELECTRICAL RELATED WORK WITH OTHER TRADES. THE CONTRACTOR IS CAUTIONED THAT IT IS TOTALLY HIS RESPONSIBILITY TO COORDINATE HANGERS AND SUPPORTS WITH OTHER TRADES. ADDITIONAL REQUIRED HANGERS & SUPPORTS MUST BE IN PLACE PRIOR TO APPLICATION OF FIRE PROOFING MATERIAL. ANY DAMAGE INCURRED ON FIRE PROOFING MATERIAL DUE TO INSTALLATION OF ELECTRICAL HANGERS WILL BE REPAIRED BY FIRE PROOFING SUB-CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
6. UTILITIES SERVING AREAS OF THIS PROJECT STILL OCCUPIED BY THE OWNER DURING DEMOLITION AND NEW CONSTRUCTION SHALL BE MAINTAINED UNTIL THE OWNER VACATES THE AREA. UNLESS OTHERWISE NOTED.
7. ALL SHUTDOWNS WILL BE COORDINATED AND APPROVED THROUGH THE OWNER'S PROJECT MANAGER AND THE BUILDING MANAGER AND WILL REQUIRE ADVANCE NOTICE OF 10 WORKING DAYS EXCLUDING WEEKEND. THIS TIME LENGTH MAY BE LONGER OR SHORTER FOR SOME SHUTDOWNS AT THE OWNER'S DISCRETION. THE SCHEDULING OF SUCH SHUTDOWNS MAY TAKE TWO WEEKS OR MORE AND THE CONTRACTOR MUST BE PREPARED TO WORK SECOND OR THIRD SHIFT, SATURDAY OR SUNDAY AS NECESSARY TO PERFORM THE WORK. FURTHERMORE, IN SOME CASES AN ALTERNATE POWER SOURCE MAY BE REQUIRED, THE CONTRACTOR MUST BE PREPARED TO MAKE TAPS, INSTALL CIRCUIT BREAKERS, ETC., WHILE EXISTING EQUIPMENT IS ENERGIZED. ALL SHUTDOWNS WILL BE INITIATED AND CONTROLLED BY OWNER.
8. VISIT THE SITE PRIOR TO BID DATE AND EXAMINE ALL AREAS TO BE DEMOLISHED AND RENOVATED. THOROUGHLY FAMILIARIZE YOURSELF WITH EXISTING CONDITIONS. NO EXTRA COMPENSATION WILL BE GIVEN FOR FAILURE TO THOROUGHLY EXAMINE EXISTING CONDITIONS TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK. "KEYED" NOTES ON THE DEMOLITION DRAWINGS ARE PROVIDED TO ASSIST BIDDERS TO DETERMINE THE SCOPE OF DEMOLITION WORK.
9. EXISTING AREAS WHETHER WITHIN OR WITHOUT THE "GENERAL LIMITS OF CONSTRUCTION", SHALL BE REPAIRED WHERE ANY DAMAGE HAS OCCURRED DUE TO CONSTRUCTION BY THE CONTRACTOR.
10. ALL AREAS OUTSIDE THE PROJECT LIMITS IN WHICH WORK MUST TAKE PLACE WILL BE CLEANED AND RETURNED TO NORMAL (INCLUSIVE OF CEILING TILE REPLACEMENT) AT THE END OF EACH DAY. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE EACH DAY BEFORE LEAVING THE CONTRACT PROJECT LIMITS REGARDING THE CLEANLINESS OF THE AREA IN WHICH WORK TOOK PLACE OUT SIDE OF THE PROJECT LIMITS.
11. WHERE WORK IS TAKING PLACE OUTSIDE THE PROJECT LIMITS CANNOT ALLOW A RETURN TO NORMAL APPEARANCE OF WALLS, CEILING, ETC., AT THE END OF EACH DAY DUE TO ITS EXTENSIVE NATURE; THE CONTRACTOR SHALL ERECT A BLACK PLASTIC CURTAIN AROUND HIS WORK. SUCH A CURTAIN SHALL REMAIN IN PLACE UNTIL THE WORK IS COMPLETE. SUCH CURTAINS WILL HAVE CAUTIONARY SIGNS AFFIXED INDICATING CONSTRUCTION ACTIVITY WITHIN.
12. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PADS WITH CHAMFERED EDGES UNDER ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.
13. DO NOT MOUNT ANY WALL RECEPTACLES OR TELEPHONE/COMPUTER OUTLETS BACK TO BACK.
14. USE 3/4" DEEP MUD RINGS ON BOXES IN 5/8" DRYWALL SO FACE OF RING IS FLUSH WITH FACE OF DRYWALL. PROVIDE CADDY #RLC ADAPTER ON ALL OUTLETS WHERE DRYWALL IS CUT IN EXCESS OF 1/8" LARGER THAN MUD RING OR WHERE THE DEVICE "EARS" ARE NOT SUPPORTED BY THE DRYWALL.
15. 20A BRANCH CIRCUIT WIRE SIZING SHALL BE IN ACCORD WITH THE FOLLOWING TABLE:

VOLTS	DISTANCE	(FIRST DEVICE)	REMAINDER OF CIRCUIT
120/208	0' - 50'	#12	#12
	50' - 100'	#10	#12
	100' - 150'	# 8	#10

16. THE ELECTRICAL CONTRACTOR SHALL VERIFY LOCATION OF LIGHTS, ETC. IN MECHANICAL ROOMS WITH MECHANICAL CONTRACTOR BEFORE ROUGH-IN TO AVOID CONFLICT WITH DUCT WORK.
17. ALL CONDUCTORS SHALL BE COPPER WITH A MINIMUM SIZE OF #12 AWG EXCEPT FOR FIRE ALARM.
18. ALL BRANCH CIRCUIT BREAKERS SHALL BE 20A, 1P, WITH 2 #12 AWG 1#12 GND IN 3/4" MINIMUM CONDUIT, UNLESS OTHERWISE NOTED. EXTERIOR CONDUIT OR UNDERGROUND/SLAB CONDUIT SHALL BE 1"C MINIMUM.
19. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING BUT NOT LIMITED TO BREAKERS, PANELBOARD/SWITCHBOARD LUGS, SAFETY SWITCH LUGS, AND TRANSFORMER LUGS, SHALL BE RATED FOR USE WITH 75 DEGREE CONDUCTORS SIZED IN ACCORDANCE WITH NEC TABLE 310-16.
20. ALL RACEWAYS SHALL BE METAL UNLESS SPECIFICALLY NOTED OR APPROVED OTHERWISE. ANY RACEWAY IN POURED CONCRETE SHALL BE RIGID METAL (HEAVY WALL). REFER TO SPECIFICATIONS FOR ALL OTHERS.
21. CONTRACTOR SHALL MINIMIZE NUMBER OF HOME RUN CONDUITS. CONTRACTOR MAY COMBINE UP TO THREE CIRCUITS PER HOME RUN IN A SINGLE CONDUIT; WHERE MORE THAN THREE (3) CONDUCTORS ARE PROVIDED PER RACEWAY MINIMUM CONDUIT SIZE SHALL BE 3/4".
22. IN GENERAL ALL ELECTRICAL CONDUIT WILL BE RUN AT THE ELEVATION JUST BELOW THE BOTTOM OF THE STRUCTURAL BEAMS. THE CONTRACTOR SHALL OFFSET THE ELECTRICAL CONDUIT TO AVOID INTERFERENCE WITH ANY DUCTWORK, SPRINKLER OR MECHANICAL PIPING. THE CONTRACTOR SHALL COORDINATE HIS CONDUIT AND RACEWAY LOCATIONS WITH ALL OTHER TRADES BEFORE INSTALLATION.
23. THE ROUTING FOR THE RACEWAY SHOWN ON THE DWGS. IS DIAGRAMMATIC ONLY, BASED ON CURSORY FIELD SURVEY BY DESIGNER. CONTRACTOR IS CAUTIONED THAT SPACE ABOVE CLG. IS VERY CONGESTED WITH EXISTING MECHANICAL, ELECTRICAL & PLUMBING ITEMS, AND WORK SPACE IS LIMITED. CONTRACTOR IS REQUIRED TO VISIT THE SITE PRIOR TO BID DATE AND LOOK ABOVE THE CLG. OF THE PROPOSED ROUTING TO FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. PROVIDE ANY AND ALL ADDITIONAL JB'S, OFFSETS, CONDUITS AND FITTINGS AS REQUIRED TO AVOID ANY EXIST. OBSTRUCTIONS ALONG THE PROPOSED ROUTING. ANY SHUTDOWNS CAUSED BY RELOCATING EXISTING EQUIPMENT SHALL BE COORDINATED WITH OWNER. FAILURE TO EXAMINE EXISTING CONDITIONS AND COORDINATE THE EXACT CONDUIT ROUTING WILL NOT EXCUSE CONTRACTOR FROM PERFORMING ALL DUTIES NECESSARY TO COMPLETE THE WORK. DO NOT ROUTE CONDUIT IN A MANNER THAT WILL BLOCK ACCESS TO EXISTING ITEMS AS JUNCTION BOXES, VALVES, FILTERS OR SERVICE ACCESS TO EQUIPMENT.
24. ELECTRICAL PLANS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL ALIGN FIXTURES, FIRE ALARM DETECTORS, CEILING DIFFUSERS, ETC. AS REQUIRED TO PROVIDE A PATTERN OF UNIFORMITY. AT NO TIME SHALL A SMOKE DETECTOR BE LOCATED WITHIN 3'-0" OF A SUPPLY OR RETURN GRILLE.
25. WIRE AND CIRCUIT BREAKERS ARE SIZED FOR SPECIFIC EQUIPMENT. BEFORE ORDERING WIRE, BREAKERS AND CONDUIT FOR THIS PROJECT, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OTHER CONTRACTORS ON THE JOB AND SHALL VERIFY THE ELECTRICAL DATA FOR EQUIPMENT WHICH WILL ACTUALLY BE INSTALLED BY THE OTHER CONTRACTORS AND RECOMPUTE WIRE AND BREAKER SIZES IF REQUIRED TO COMPLY WITH THE N.E.C.
26. REFER TO MECHANICAL DRAWINGS AND COORDINATE VERTICAL RUNS OF WIRE AND CONDUIT WITH MECHANICAL PIPING. COORDINATE WITH MECHANICAL CONTRACTORS. (NOTE: STACK RUNS OF CONDUIT AND PROVIDE OFFSETS AS NECESSARY.)
27. LABEL ALL CONDUITS TERMINATING IN THE CEILING CAVITIES.
28. LIGHTING & POWER PANELS ARE DESIGNED AROUND SQUARE "D" "NQOD" WITH A MAXIMUM DEPTH OF 5 3/4" AND WIDTH OF 20".
29. THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS, JUNCTION BOXES AND DISCONNECT SWITCHES SHALL BE REVIEWED AND COORDINATED WITH CASEWORK DRAWINGS AND ACTUAL EQUIPMENT LOCATION, PRIOR TO INSTALLATION. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
30. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND FINISHES BEFORE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR THE CEILING TO BE INSTALLED. ANY DIFFERENCES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
31. EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
32. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
33. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE. PROVIDE COORDINATION DRAWINGS TO THE ENGINEER FOR APPROVAL. ANY REWORK THAT NEEDS TO BE DONE DO TO CONFLICTS BETWEEN TRADES SHALL BE DONE AT THIS CONTRACTORS EXPENSE.
34. ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE SUSPENDED CEILING SYSTEM. REFER TO THE SPECIFICATIONS FOR MORE DETAILED INFORMATION.
35. WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS OR THE ROOF, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED WORK.
36. IN ALL AREAS WHERE THE FIRE RATED WALLS, FLOORS AND CEILINGS ARE INSTALLED OR ARE EXISTING, ALL PENETRATIONS OF ELECTRICAL CONDUITS OR OTHER RELATED ELECTRICAL MATERIALS SHALL BE PROPERLY SEALED WITH APPROVED FIRE RATED MATERIALS TO MAINTAIN THE RATINGS OF THE BUILDING CONSTRUCTION.
37. ALL FUSES, DISCONNECT SWITCHES AND BREAKER SIZES, SHOWN FOR MECHANICAL EQUIPMENT, SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND MECHANICAL CONTRACTOR.
38. UPON COMPLETION OF WORK ALL KEYS TO ELECTRICAL POWER PANELS SHALL BE TURNED OVER TO THE OWNER AND A SIGNED RECEIPT SHALL BE OBTAINED.
39. ALL MULTIWIRE BRANCH CIRCUITS NEED TO HAVE SEPARATE NEUTRAL CONDUCTORS TO COMPLY WITH NEC 2020 ARTICLE 210.4. NO SHARED NEUTRAL CONDUCTORS PERMITTED ON THIS PROJECT.
41. ANY RECEPTACLE WITH-IN 6'-0" OF A SINK OR LAVATORY SHALL BE A GROUND FAULT TYPE (GFI) RECEPTACLE.
42. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN COMPLIANCE WITH ANSI A117.1, ADA STANDARDS FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUF. NAME	MANUFACTURER CAT. NUMBERS	LAMPS	NO. OF BALLASTS/ DRIVER	INPUT WATTS	VOLT	REMARKS
PA	CHAIN MOUNTED LED STRIP	LITHONIA	ZLID-L48-3000LM-FST-MVOLT-35K-80CRI-ZACVH	LED	LED DRIVER	30	120	COORDINATE MT. HT. WITH DESGINER IN FIELD
		COLUMBIA	EQUAL					
		DAY-BRITE	EQUAL					
PB	CHAIN MOUNTED LED STRIP	LITHONIA	TZLID-L96-10000LM-FST-MVOLT-35K-80CRI-ZACVH	LED	LED DRIVER	81	120	COORDINATE MT. HT. WITH DESGINER IN FIELD
		COLUMBIA	EQUAL					
		DAY-BRITE	EQUAL					
PBE	CHAIN MOUNTED LED STRIP	LITHONIA	TZLID-L96-10000LM-FST-MVOLT-35K-80CRI-ZACVH-2E10W	LED	LED DRIVER	81	120	COORDINATE M.T HT. WITH DESGINER IN FIELD
		COLUMBIA	EQUAL					
		DAY-BRITE	EQUAL					
RA	CENTER BASKET STYLE RECESSED TROFFER	COLUMBIA	LCAT24-35-VW-G-ED-U	LED	LED DRIVER	24	120	
		LITHONIA	EQUAL					
		COLUMBIA	EQUAL					
RAE	CENTER BASKET STYLE RECESSED TROFFER	COLUMBIA	LCAT24-35-VW-G-ED-U-ELL14	LED	LED DRIVER	24	120	
		LITHONIA	EQUAL					
		COLUMBIA	EQUAL					
RB	LED TROFFER	COLUMBIA	EQUAL	LED	LED DRIVER	34	120	
		LITHONIA	2GTL-F-40L-EZ1-LP835					
		DAY-BRITE	EQUAL					
RC	RECESSED CEILING DOWNLIGHT	PRESCOLITE	LTR-6RD-H-SL-15L-DM1/LTR-6RD-SH-SL-35K-8-WT-PML	LED	LED DRIVER	19	120	SUITABLE FOR DAMP LOCATION LOCATION.
		LITHONIA	EQUAL					
		LIGHTOLIER	EQUAL					
RCE	RECESSED CEILING DOWNLIGHT	PRESCOLITE	LTR-6RD-H-SL-15L-DM1-EMRI/LTR-6RD-SH-SL-35K-8-WT-PML	LED	LED DRIVER	19	120	SUITEABLE FOR DAMP LOCATION LOCATION.
		LITHONIA	EQUAL					
		LIGHTOLIER	EQUAL					
SA1	UNDER CABINET LIGHT	COLUMBIA	CUC1-CS-ES120	LED	LED DRIVER	7.5	120	
		LITHONIA	EQUAL					
		LIGHTOLIER	EQUAL					
SA2	UNDER CABINET LIGHT	COLUMBIA	CUC2-CS-ES120	LED	LED DRIVER	15	120	
		LITHONIA	EQUAL					
		LIGHTOLIER	EQUAL					
WA	VANITY LIGHT	ACUITY	CONVEX P5953-077	LED	LED DRIVER	19	120	
		LITHONIA	EQUAL					
		LIGHTOLIER	EQUAL					
XAE	EXTERIOR WALL SCONCE	HUBBELL	SG1-10-4K7-FT-120-CTBD	LED	LED	11	120	MOUNT PER ARCH ELEVATIONS. CONNECT TO LIGHTING INVERTER PER THE DETAILS.
		EQUAL						
		EQUAL						
XAE	EXTERIOR WALL SCONCE	HUBBELL	SG1-10-4K7-FT-120-CTBD	LED	LED	11	120	MOUNT PER ARCH ELEVATIONS. CONNECT TO LIGHTING INVERTER PER THE DETAILS.
		EQUAL						
		EQUAL						
XBE	RECESSED CEILING DOWNLIGHT	PRESCOLITE	LTR-6RD-H-SL-06L-DM1/LTR-6RD-SL-40K-8-WT-MD-S-BT	LED	LED DRIVER	6	120	SUITEABLE FOR DAMP LOCATION LOCATION. CONNECT TO LIGHTING INVERTER PER THE DETAILS.
		LITHONIA	EQUAL					
		LIGHTOLIER	EQUAL					
XC	FLAG POLE LIGHTING	LUMARK	TCRL-20-M-BK-7030	LED	LED	20	120	PROVIDE ON A CONCRETE PAD. PAD SHALL BE 4"W4"X12" WITH 6" OF CONCRETE ABOVE GRADE.
		EQUAL						
		EQUAL						
EM	EMERGENCY EGRESS FIXTURE	DUALITE	LM-40-1205L	LED	LED DRIVER	10	120	
		LITHONIA						
		CHLORIDE						
EX1	EXIT SIGN	DUALITE	LE-TBD-TBD-G-N-TBD-E-M	LED	LED DRIVER	10	120	
		EELP						
		CHLORIDE						
EX2	EXIT SIGN	DUALITE	SE-AR-G-CTBD-E	LED	LED DRIVER	10	120	
		EELP						
		CHLORIDE						

NOTES:
PD=PER DRAWINGS
AR=AS REQUIRED
TBD=MOUNTING OR OTHER OPTION TO BE DECIDED BASED ON FIELD CONDITIONS
CTBD=COLOR TO BE DECIDED FROM MANUFACTURER'S STANDARD COLOR PALLETTE

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ☒ PRESCRIPTIVE
ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE

LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE	PER SCHEDULE
NUMBER OF LAMPS IN FIXTURE	PER SCHEDULE
BALLAST TYPE USED IN THE FIXTURE	PER SCHEDULE
NUMBER OF BALLASTS IN FIXTURE	PER SCHEDULE
TOTAL WATTAGE PER FIXTURE	PER SCHEDULE
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED	xxxW vs xxxW
TOTAL EXTERIOR WATTAGE SPECIFIED VS ALLOWED	xxxW vs xxxxW

ADDITIONAL EFFICIENCY PACKAGE OPTIONS
(WHEN USING THE 2018 NCECC; NOT REQUIRED FOR ASHRAE 90.1)

- ☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
- ☒ C406.3 REDUCED LIGHTING POWER DENSITY
- ☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
- ☒ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM
- ☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

DESIGNER STATEMENT:
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENT OF THE NORTH CAROLINA STATE BUILDING CODE

SIGNED: Reggie Adams
NAME: REGGIE ADAMS P.E.
TITLE: ELECTRICAL ENGINEER

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5669
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY
FACILITIES DESIGN &
CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 045182 ENGINEER REGINALD D. ADAMS

08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E002
GENERAL NOTES &
LIGHTING SCHEDULE

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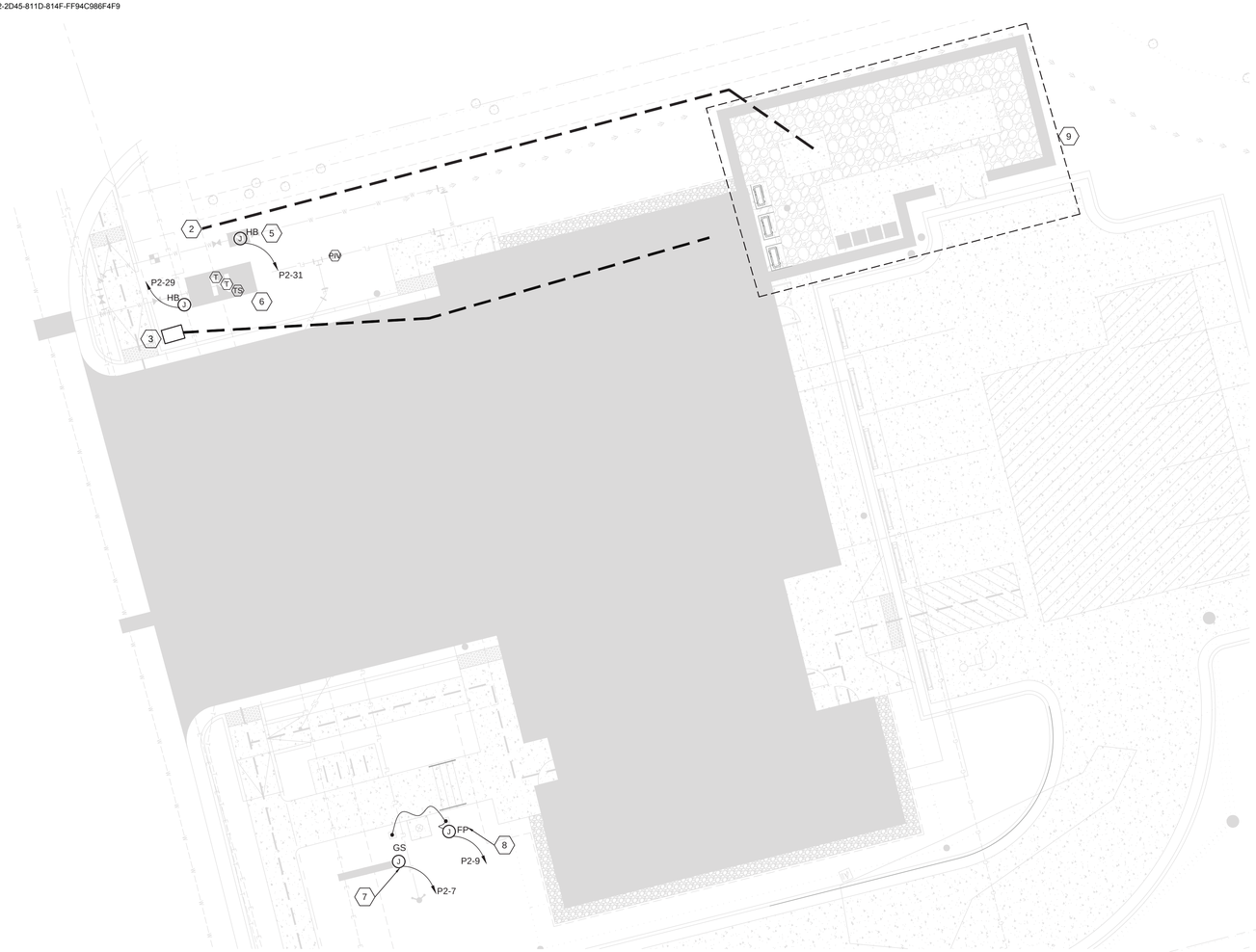


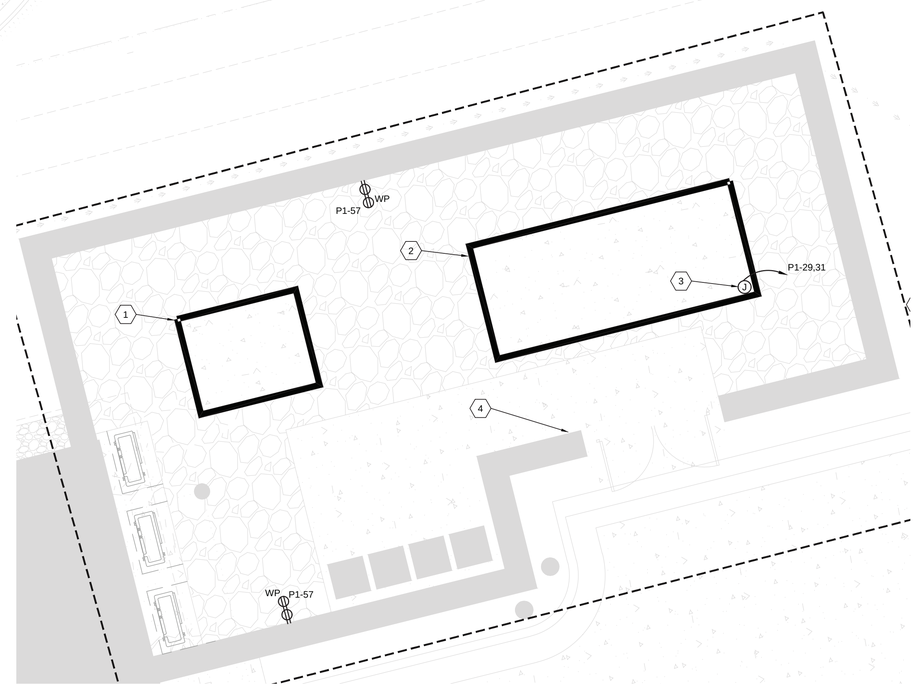
1 E100 ELECTRICAL SITE PLAN NEW WORK
1" = 10'-0"

NOTES KEYED TO 1/E100:

1. DUKE PROGRESS PAD MOUNTED TRANSFORMER. PROVIDE PAD PER 6/E101.
2. PROVIDE 2-4" PVC CONDUIT AS REQUIRED BY DUKE PROGRESS FROM PRIMARY COMPARTMENT OF TRANSFORMER TO LOCATION DESIGNATED BY DUKE POWER REPRESENTATIVE. PROVIDE CONDUIT INSTALLATION PER DUKE STANDARDS.
3. PROVIDE T/C DUCTBANK PER DETAIL 1/E101. TERMINATE AT ROW IN 36"x24"x24" T15 RATED QUAZITE HANDHOLE PER DETAIL 5/E101.
4. PROVIDE GENERATOR AND PAD PER DETAIL 1/E103.
5. PROVIDE POWER CONNECTION AT DOMESTIC WATER HOTBOX.
6. PROVIDE POWER CONNECTION AT FIRE PROTECTION HOT BOX; MONITOR TAMPERS AND TEMP SENSOR IN HOT BOX AND POST INDICATOR VALVE ADJACENT TO HOT BOX.
7. PROVIDE POWER CONNECTION AT WAKE COUNTY GROUND SIGN.
8. PROVIDE TWO (2) TYPE "XC" IN-GROUND FIXTURES AT FLAG POLE AND CONNECT AS SHOWN.
9. REFERENCE 2/E100 FOR ENLARGED PLAN.

NOTES KEYED TO 2/E100:

1. DUKE PROGRESS PAD MOUNTED TRANSFORMER. PROVIDE PAD PER 6/E101.
2. PROVIDE GENERATOR AND PAD PER DETAIL 1/E103.
3. POWER CONNECTION FOR BLOCK HEATER, BATTERY CHARGER, ETC.
4. GENERATOR REMOTE EPO BUTTON. PROVIDE WIRING FROM BUTTON IN 1"C TO GENERATOR. PROVIDE 2" HIGH PHENOLIC LABEL TO READ-"GENERATOR EMERGENCY POWER OFF".



2 E100 ENLARGED SITE PLAN NEW WORK
1/4" = 1'-0"

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632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

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4704 HARGROVE RD.
RALEIGH, NC
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137 SOUTH WILMINGTON STREET, SUITE 200
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702 OBERLIN ROAD, SUITE 300,
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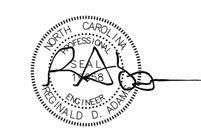
WAKE COUNTY NORTH CAROLINA

SEALS



PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E100

ELECTRICAL SITE PLAN NEW WORK

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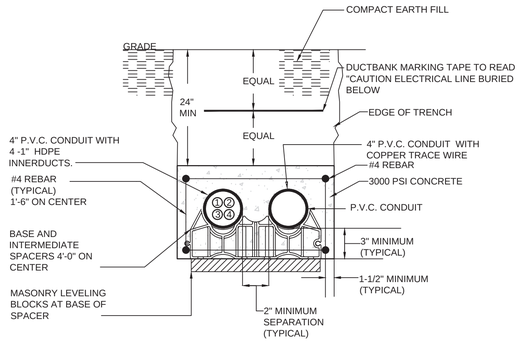


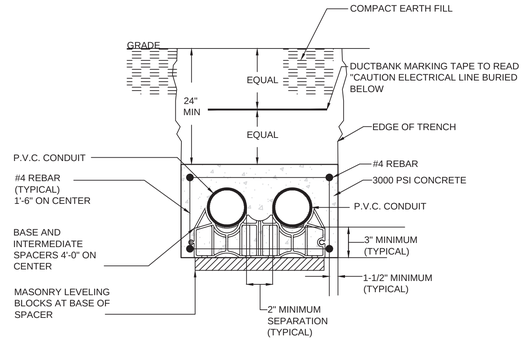
Site Telecom Conduit Matrix		
	Size	Service
Conduit #1	4"	Spare
Conduit #2	4"	(See Below)
Conduit #2/Innerduct #1	1"	TBD
Conduit #2/Innerduct #2	1"	TBD
Conduit #2/Innerduct #3	1"	TBD
Conduit #2/Innerduct #4	1"	Spare

NOTES:
1. ALL CONDUIT INSTALLATIONS TO BE COORDINATED BY THE G.C. WITH THE SERVICE PROVIDERS.
2. GC TO PAY FOR ANY SERVICES RELATED TO INCORRECT INSTALLATION OF SERVICE PROVIDER SYSTEMS BASED ON THIS MATRIX.
3. TBD AS NOTED WILL BE VERIFIED WITH THE COUNTY PRIOR TO CONSTRUCTION.

NOTE:

1. PROVIDE WITH MAGNETIC MARKING TAPE AND COPPER TRACE WIRE.

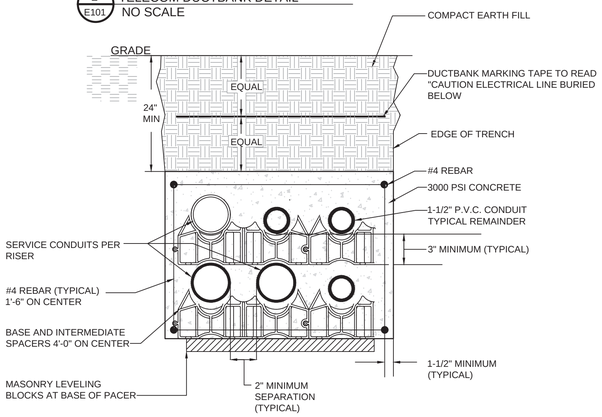
1 / E101 TELECOM DUCTBANK DETAIL
NO SCALE



NOTE:

1. PROVIDE WITH MAGNETIC MARKING TAPE.
2. CONDUIT SIZES PER DRAWINGS AND RISERS.

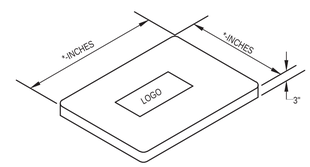
2 / E101 SERVICE LATERAL DETAIL
NO SCALE



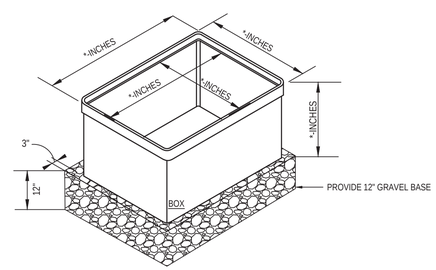
NOTE:

1. PROVIDE WITH MAGNETIC MARKING TAPE.
2. CONDUIT SIZES PER DRAWINGS AND RISERS.
3. SCADA CONDUITS NOT SHOWN.

3 / E101 GENERATOR DUCTBANK DETAIL
NO SCALE



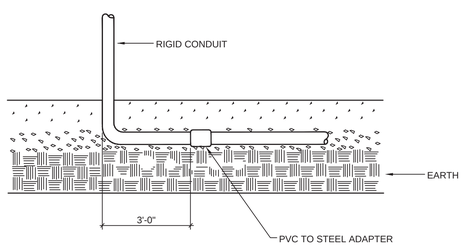
COVER



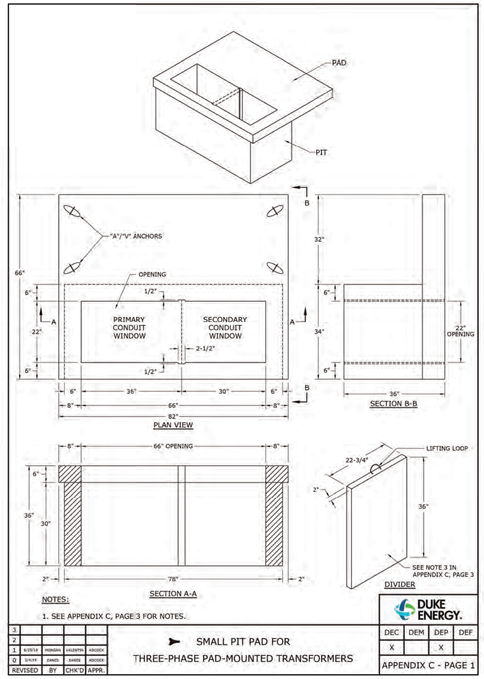
NOTE:

1. POLYMER CONCRETE ENCLOSURE WITH STANDARD COVER. LABEL COVER FOR SYSTEM. COORDINATE LOGO WITH DESIGNER.
2. ALL CONDUITS SHALL SLOPE TOWARD HANDHOLE WHERE CONNECTING BUILDING ELEMENTS.

5 / E101 HANDHOLE DETAIL
NO SCALE



4 / E101 PVC TO GRC TRANSITION DETAIL
NO SCALE



NOTES:

1. SEE APPENDIX C, PAGE 3 FOR NOTES.

REVISED	BY	CHK'D	APPR.
3			
2			
1	3/28/18	DHMS	KJ/TDHS	GRAHAM
0	5/4/14	DMGD	DHMS	MCDOD

SMALL PIT PAD FOR THREE-PHASE PAD-MOUNTED TRANSFORMERS

DUKE ENERGY.

DEC	DEM	DEP	DEF
X		X	

APPENDIX C - PAGE 1

NOTES:

1. THIS STANDARD APPLIES TO DUKE ENERGY CAROLINAS AND THE NON-COASTAL REGIONS OF DUKE ENERGY PROGRESS.
2. CUSTOMER TO PROVIDE AND INSTALL TRANSFORMER PAD PER REFERENCED DOCUMENT IN APPENDIX C - PAGE 6.
3. FOR PIT PAD INSTALLATIONS ONLY, MECKLENBURG COUNTY, NC REQUIRES A 2" THICK CONCRETE DIVIDER TO BE INSTALLED BETWEEN THE PRIMARY AND SECONDARY COMPARTMENTS OF THE PAD.
4. THE COMPANY RESERVES THE RIGHT TO REFUSE SERVICE TO NEW INSTALLATIONS THAT DO NOT MEET DUKE ENERGY REQUIREMENTS.
5. REFERENCE APPENDIX C, PAGE 7 TO DETERMINE IF CURBING AND ABSORPTION BED IS REQUIRED.
6. PROTECTIVE POLES ARE REQUIRED WHEN TRANSFORMERS ARE EXPOSED TO VEHICLE TRAFFIC. SEE FIGURE 61 FOR PROTECTIVE POLE DETAILS.
7. THERE SHALL BE MINIMUM CLEARANCES OF 10' IN FRONT OF THE TRANSFORMER AND 3' ON ALL OTHER SIDES OF THE TRANSFORMER. SEE FIGURES 52 AND 53 FOR MORE DETAILS ON CLEARANCES.
8. TRANSFORMER MUST BE LOCATED IN AN AREA THAT ALLOWS SAFE ACCESS BY DUKE ENERGY CONSTRUCTION AND MAINTENANCE EQUIPMENT IN WET OR DRY WEATHER.
9. CONSIDER FROST ACTION, DRAINAGE, AND LOCAL SOIL CONDITIONS WHEN PREPARING SITE FOR PAD. SOIL UNDERNEATH PADS SHALL BE LEVELED AND COMPACTED. SOIL SHALL ALSO BE FREE OF ROOTS AND OTHER ORGANIC MATERIALS TO PREVENT SETTLING AND EROSION. SOD MAY BE REQUIRED AROUND PAD TO PREVENT SOIL EROSION.
10. ALL CONDUITS IN A PIT PAD SHALL BE CUT 6" ABOVE THE GRAVEL BED IN THE PIT.
11. CUSTOMER SHALL INSTALL THE CONDUIT FOR THE PRIMARY CONDUCTORS AS CLOSE TO THE CENTER OF THE PRIMARY AREA AS PRACTICAL. THE SECONDARY CONDUITS SHALL BE INSTALLED TO THE RIGHT INSIDE THE SECONDARY AREA. SEE APPENDIX C, PAGE 6 FOR PAD INSTALLATION DETAILS AND SPECIFICATIONS.
12. OTHER UTILITIES SHALL NOT BE INSTALLED UNDER TRANSFORMER PAD.
13. PRECAST PAD SUPPLIERS ARE REQUIRED TO PROVIDE THE PADS AND PITS WITH RECESSED "A/V" ANCHORS, TO BE USED FOR LIFTING.

REVISED	BY	CHK'D	APPR.
3			
2			
1	3/28/18	DHMS	KJ/TDHS	GRAHAM
0	5/4/14	DMGD	DHMS	MCDOD

PIT PAD INFORMATION FOR THREE-PHASE TRANSFORMERS

DUKE ENERGY.

DEC	DEM	DEP	DEF
X		X	

APPENDIX C - PAGE 3

6 / E101 TRANSFORMER PAD DETAIL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.740.5669
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
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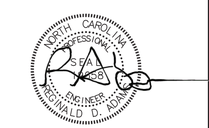
WAKE COUNTY
NORTH CAROLINA

SEALS



PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E101

ELECTRICAL SITE DETAILS

Docusign Envelope ID: CBE6ADD2-2D45-811D-814F-FF94C986F4F9

RTU PANEL

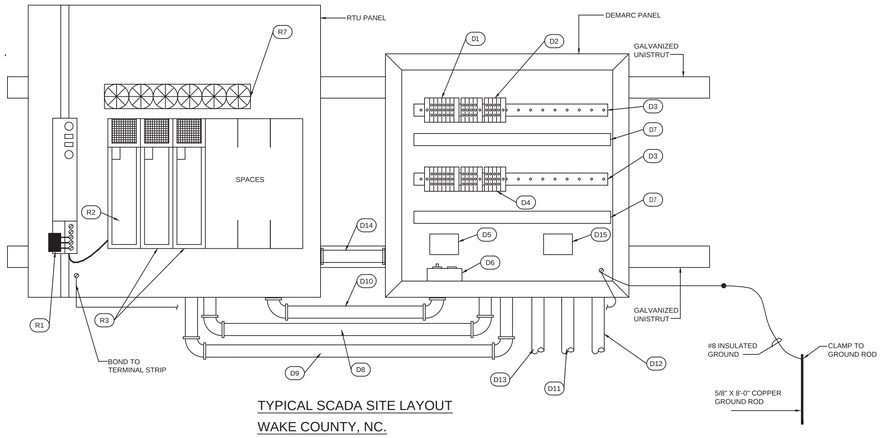
- R1 AC PROTECTOR
- R2 CPU
- R3 INPUT/OUTPUT MODULES
- R4 XXXXX
- R5 XXXXX
- R6 XXXXXX
- R7 BATTERIES

DEMARC PANEL

- D1 AC BREAKER OR FUSE
- D2 IO DISTRIBUTION TERMINALS
- D3 DIN RAIL
- D4 INTERFACING RELAYS INPUT/OUTPUT
- D5 POWER MODULE
- D6 DISCONNECT SWITCH WITH RECEPTACLE
- D7 SLOTTED WIRE DUCT
- D8 1 1/4" CONDUIT (DIGITAL INPUT/OUPUT)
- D9 1" CONDUIT (ANALOG INPUT/OUTPUT
- D10 1" CONDUIT FOR AC POWER
- D11 1" CONDUIT FOR ANALOG AND DRY CONTACTS
- D12 1 1/4" CONDUIT (DIGITAL INPUT/ OUTPUT TO GENERATOR)
- D13 3/4" CONDUIT FOR AC POWER
- D14 1 1/4" CONDUIT FOR RS232 AND ETHERNET
- D15 5-PORT SWITCH

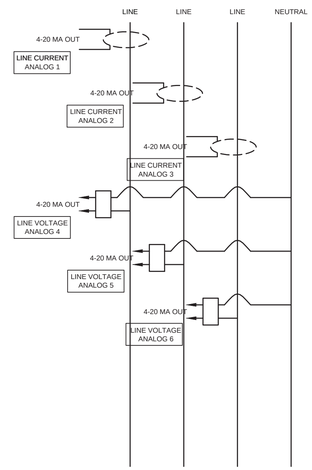
NOTES:

1. NOT ALL ITEMS USED AT ALL SITES. COMPONENTS ARE APPLICATION DEPENDENT
2. BOTH CABINETS MUST BE GROUNDED



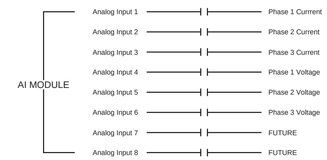
TYPICAL SCADA SITE LAYOUT
WAKE COUNTY, NC.

THREE PHASE POWER MONITORING
FOR SCADA INPUTS

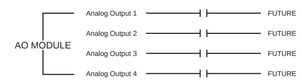


CTS AND PTS MUST BE PROVIDED EXACTLY PER SPECIFICATIONS.

Generator
Analog Input Points
Three Phase Power



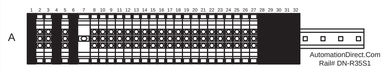
Generator
Analog Output Points



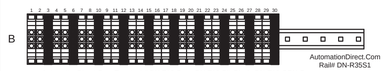
WAKE COUNTY GENERATOR SITE DEMARC CONNECTIONS

THIS DRAWING IS CORRECTED AS OF 10/20/03 AND PRECEEDS ALL PREVIOUS DEMARC DRAWINGS.

THREE PHASE POWER



AutomationDirect.Com Terminal # DN-T10 Gray, DN-T10-Blk Black, DN-T10-GRN Green

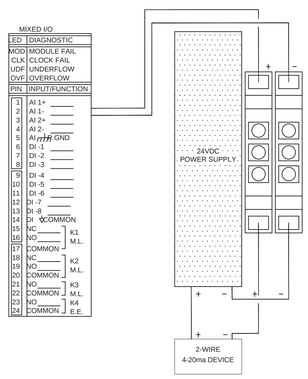


AutomationDirect.Com Terminal # DN-T10 Gray, DN-T10-Blk Black, DN-T10-GRN Green

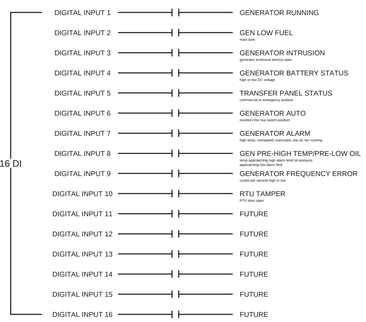
A	
1.	AC Hot
2.	AC Neutral
3.	AC Ground
4.	AC Hot
5.	AC Neutral
6.	AC Ground
7.	RTU Fuse
8.	Generator Running
9.	Generator Low Fuel
10.	Generator Intrusion
11.	Generator Battery Status
12.	Transfer Panel Status
13.	General Auto
14.	General Alarm
15.	Gen Pre-High Temp/Pre-Low Oil
16.	Generator Frequency Error
17.	RTU Tamper
18.	
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	Input Common
29.	Input Common
30.	Input Common
31.	Input Common
32.	Input Common

B	
1.	Phase 1 Current
2.	Phase 1 Current
3.	Signal Ground
4.	Phase 2 Current
5.	Phase 2 Current
6.	Signal Ground
7.	Phase 3 Current
8.	Phase 3 Current
9.	Signal Ground
10.	Phase 1 Voltage
11.	Phase 1 Voltage
12.	Signal Ground
13.	Phase 2 Voltage
14.	Phase 2 Voltage
15.	Signal Ground
16.	Phase 3 Voltage
17.	Phase 3 Voltage
18.	Signal Ground
19.	
20.	
21.	
22.	
23.	
24.	
25.	
26.	
27.	
28.	
29.	
30.	
31.	
32.	

TYPICAL ANALOG INPUT WIRING

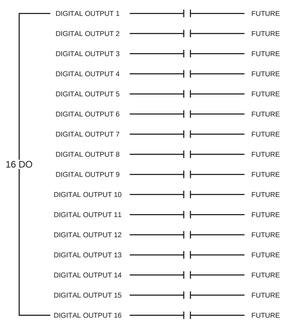


Generator
Digital Input Points



NOTES
RUN TIME AND NUMBER OF STARTS CAN BE DERIVED FROM SOFTWARE.
SEVERAL TRANSFER PANEL ALARMS CAN BE DERIVED FROM SOFTWARE LOGIC.

Generator
Digital Output Points



NOTES
RUN TIME AND NUMBER OF STARTS CAN BE DERIVED FROM SOFTWARE.
SEVERAL TRANSFER PANEL ALARMS CAN BE DERIVED FROM SOFTWARE LOGIC.

1 / E102 SCADA WIRING DETAILS
NO SCALE

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632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
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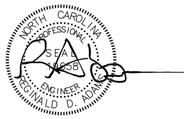
SEALS



08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E102

ELECTRICAL SITE DETAILS

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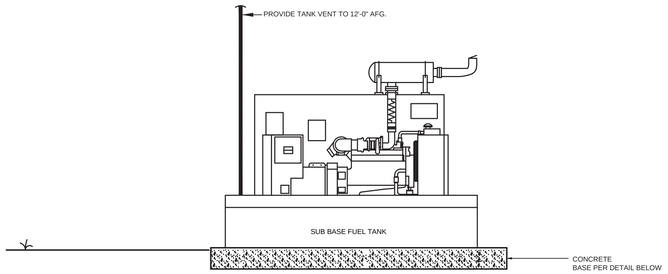


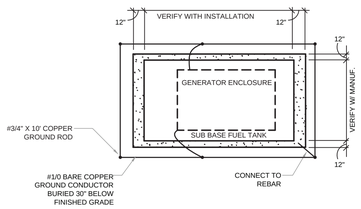
GENERATOR IS FOR OPTIONAL STANDBY POWER ONLY. EMERGENCY MEANS OF EGRESS LIGHTING IS PROVIDED BY EXISTING OR NEW BATTERIES IN LIGHTING.

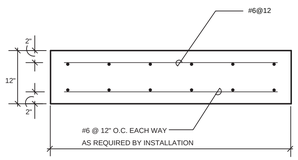
GENERAL NOTES:

1. ALL CONDUIT SHALL BE GALVANIZED RIGID STEEL.
2. CONTRACTOR SHALL PRESSURE TEST THE DIESEL FUEL TANK PER THE MANUFACTURER'S RECOMMENDATIONS. TEST SHALL BE WITNESSED BY THE DESIGNER, OWNER AND WAKE COUNTY INSPECTIONS.
3. CONTRACTOR SHALL PROVIDE A 20B FIRE EXTINGUISHER AT THE GENERATOR. LOCATION TO BE DETERMINED IN FIELD.
4. CONTRACTOR SHALL PROVIDE HAZARDOUS MATERIALS SIGNAGE AT THE GENERATOR ENCLOSURE IN LOCATION TO BE DETERMINED IN FIELD.
5. SUBBASE-MOUNTED, DOUBLE-WALL, FUEL-OIL TANK: FACTORY INSTALLED AND PIPED, COMPLYING WITH UL 142 FUEL-OIL TANK. FEATURES INCLUDE THE FOLLOWING:
   - TANK LEVEL INDICATOR.
   - LEAK DETECTION IN INTERSTITIAL SPACE.
   - VANDAL-RESISTANT FILL CAP.
6. FUEL TYPE AND FUEL CAPACITY (IN GALLONS) SHALL BE CONSPICUOUSLY MARKED ON TANK ON ALL FOUR (4) SIDES.

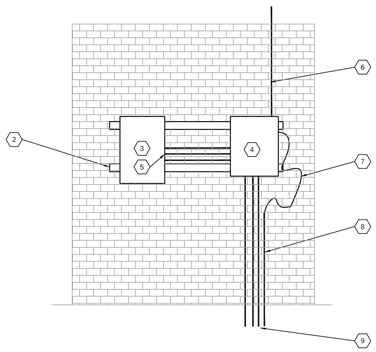
PROVIDE SIGNAGE AT A CONSPICUOUS LOCATION APPROVED BY THE AHJ AND THE ENGINEER.

SIGNAGE TO BE A SIZE TO BE A MINIMUM OF 10" IN ANY DIMENSION.





1 / E103 GENERATOR PAD AND INSTALLATION DETAIL
NO SCALE



KEYED NOTES:

1. NOT USED.
2. PROVIDE GALVANIZED UNISTRUT ON BUILDING FACADE FOR MOUNTING SCADA EQUIPMENT.
3. RTU PANEL.
4. DEMARC PANEL.
5. PROVIDE 1-1"C AND WIRING FOR DIGITAL I/O POINTS AND PROVIDE 1-1 1/4"C AND WIRING FOR ANALOG I/O POINTS. PROVIDE 1-1 1/4"C FOR COMMUNICATIONS WIRING AND 1-1"C AND 3#12 FOR POWER WIRING.
6. PROVIDE 1-1 1/4"C FOR COMMUNICATIONS WIRING TO TELECOM ROOM.
7. PROVIDE #8 BARE GND COPPER WIRE. BOND UNI-STRUT AND DEMARC PANEL AND CONTINUE IN 1"C TO GND RING.
8. 1"C AND WIRING TO GND RING.
9. PROVIDE 1-1"C AND WIRING FOR DIGITAL I/O POINTS AND PROVIDE 1-1 1/4"C AND WIRING FOR ANALOG I/O POINTS. PROVIDE 1-1"C AND 3#12 FOR POWER WIRING.

2 / E103 SCADA RTU AND DEMARC INSTALL DETAIL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
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08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
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DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

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SHEET INFORMATION

E103

ELECTRICAL SITE DETAILS

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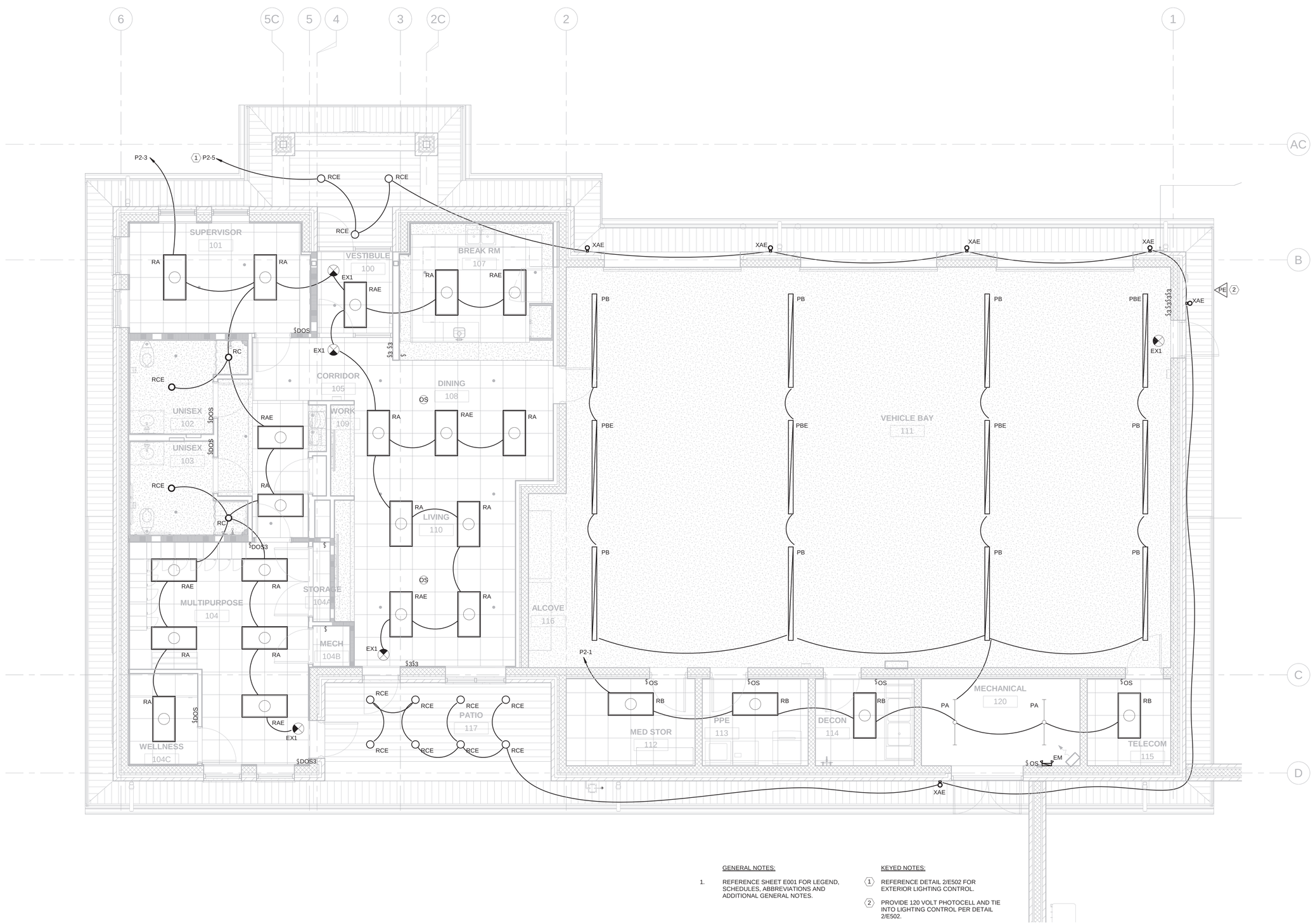

GENERAL NOTES:

1. REFERENCE SHEET E001 FOR LEGEND, SCHEDULES, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.

KEYED NOTES:

1. REFERENCE DETAIL 2/E502 FOR EXTERIOR LIGHTING CONTROL.
2. PROVIDE 120 VOLT PHOTOCELL AND TIE INTO LIGHTING CONTROL PER DETAIL 2/E502.

1 / E200 ELECTRICAL LIGHTING NEW WORK
1/4" = 1'-0"

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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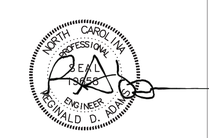

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PROJECT INFORMATION

PROJECT NO.:	2506
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DRAWN BY:	TAV
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SHEET INFORMATION

E200

ELECTRICAL LIGHTING NEW WORK

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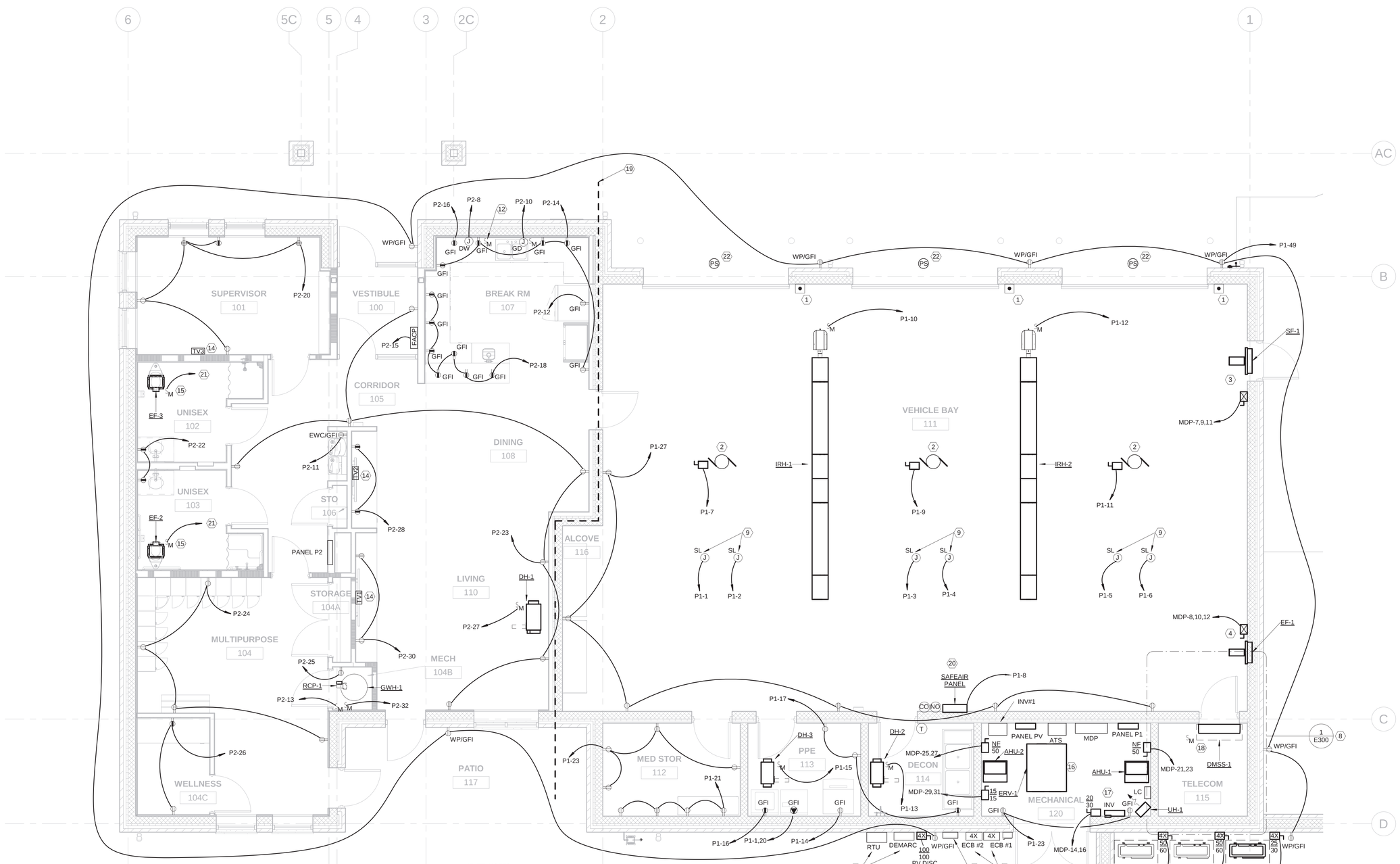

GENERAL NOTES:

1. REFER TO SHEET E400 FOR RISERS AND E600 PANEL SCHEDULES.
2. COORDINATE LOCATIONS OF ALL MONITORS AND FLOOR BOXES WITH DESIGNER PRIOR TO BEGINNING ROUGH-IN.

1 E201 ELECTRICAL POWER NEW WORK
1/4" = 1'-0"

KEYED NOTES:

1. DOOR OPERATOR AND RED/GREEN LIGHT COMPONENTS TO BE PROVIDED PER DETAILS E503. TYPICAL.
2. PROVIDE POWER TO DOOR OPERATOR MOTOR AS SHOWN. CONNECT TO CONTROL COMPONENTS PER KEYNOTE ABOVE. TYPICAL.
3. MOTOR STARTER FOR EXHAUST FAN SF-1. COORDINATE LOCATION AND CONNECTION WITH DIVISION 23. COORDINATE FIRE ALARM SHUT-DOWN RELAY INSTALLATION WITH DIVISION 28.
4. MOTOR STARTER FOR SUPPLY FAN EF-1. COORDINATE LOCATION AND CONNECTION WITH DIVISION 23.
5. UTILITY REQUIRED PV SYSTEM DISCONNECTING MEANS. PROVIDE IN SIGHT OF TRANSFORMER. REFERENCE E400 FOR RISER INFORMATION.
6. UTILITY AND GENERATOR ENCLOSED CIRCUIT BREAKERS; REFERENCE E400.
7. PROVIDE SCADA EQUIPMENT PER DETAILS SHEET E102 AND E103.
8. REFER TO 1/E300 FOR ENLARGED PLAN THIS AREA.
9. PROVIDE 20 AND 30 AMPERE SHORE-LINE DROPS PER DETAIL 2/E503. EXACT LOCATIONS WILL BE FIELD VERIFIED WITH OWNER AND DESIGNER IN FIELD PRIOR TO BEGINNING ROUGH-IN. TYPICAL.
10. 600 AMPERE DUKE APPROVED CT CABINET AND METER BASE.
11. NOT USED.
12. SWITCHES MOUNTED ABOVE BACKSPLASH FOR GARBAGE DISPOSAL AND DISHWASHER DISCONNECTING MEANS.
13. NOT USED.
14. PROVIDE TV POWER/DATA CONNECTION PER T400. TYPICAL TV1/TV2/TV3.
15. BATHROOM EXHAUST FANS SHALL BE CONTROLLED VIA LIGHTING OCC. SENSORS.
16. BOTTOM OF ERV IS MOUNTED AT 7'-6" AFF.
17. EXTERIOR LIGHTING CONTACTOR AND INVERTER.
18. PROVIDE WIRING FROM EXTERIOR CONDENSING UNIT TO DMMS-1. DIVISION 23 AND DIVISION 26 SHALL CLOSELY COORDINATE NECESSARY WIRING METHODS BETWEEN THESE UNITS AT BOTH THE SHOP DRAWING STAGE AND PRIOR TO BEGINNING ANY ROUGH-IN.
19. ALL CIRCUITING PLAN WEST OF THIS LINE IS TO PANEL P1 UON.
20. REFERENCE 3/E503 FOR ADDITIONAL WIRING REQUIREMENTS RELATED TO SAFE AIR PANEL.
21. EXHAUST FAN CONNECTED AND CONTROLLED BY LIGHTING CIRCUIT. REFER TO 1/E200 FOR CIRCUIT INFORMATION".
22. PROVIDE PRESENCE SENSOR CENTERED OVER DOOR AT 15'-4". BASIS-OF-DESIGN BEA INC. MODEL #IS40P. INTEGRATE RELAYING INTO DOOR CONTROLS, COORDINATING WITH DOOR VENDOR. TYPICAL.

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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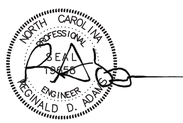

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PROJECT INFORMATION

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PHASE:	BID SET
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DRAWN BY:	TAV
CHECKED BY:	RDA

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SHEET INFORMATION

E201

ELECTRICAL POWER NEW WORK

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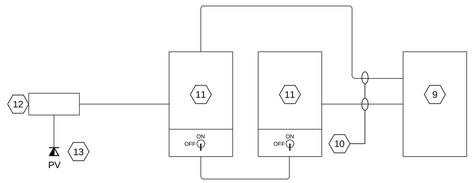
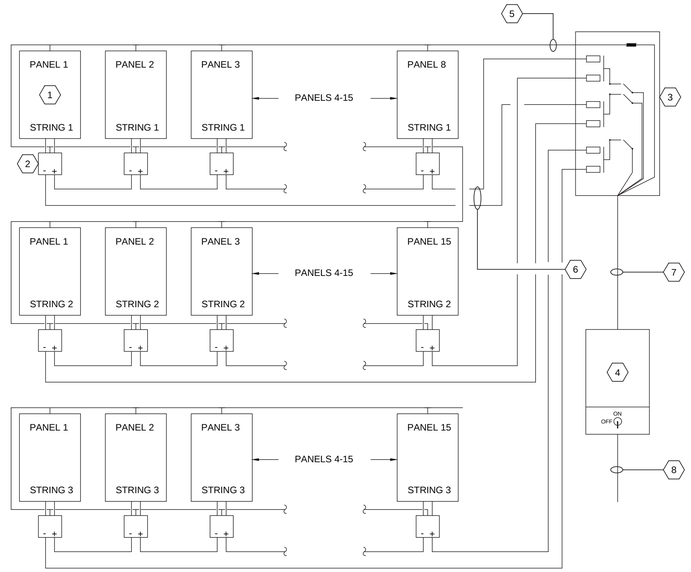
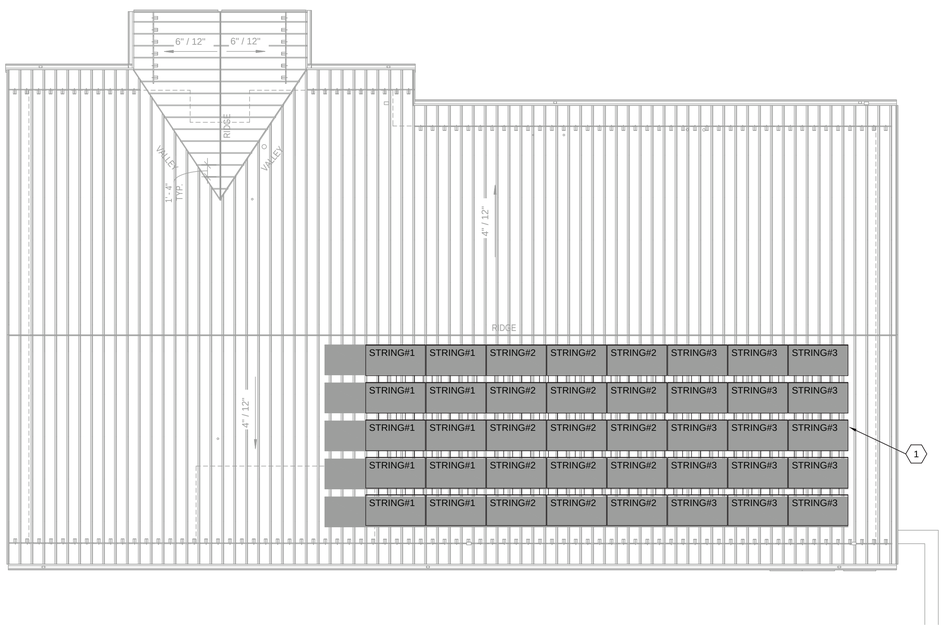




NOTES KEYED TO SCHEMATIC:

1. 580 (MAX) WATT STC HIGH EFFICIENCY SOLAR PANEL. TYPICAL.
2. POWER OPTIMIZER.
3. DC COMBINER (IF REQUIRED).
4. 30.2 kW/17.3 kVA INVERTER.
5. #10 BARE COPPER GND CONDUCTOR (ON ROOF); IN CONDUIT INSIDE BUILDING.
6. 2#10 AWG DC CONDUCTORS IN 1" CONDUIT TO COMBINER.
7. 3#8 AWG CONDUCTORS IN 1" CONDUIT TO INVERTER.
8. CONDUCTOR FROM INVERTER TO PANEL "PV1" AS NOTED ON PANEL "PV1" SCHEDULE.
9. PROVIDE MANUFACTURER FURNISHED CTs AT EACH PV FEEDER IN MDP PANEL.
10. PROVIDE WIRING IN CONDUIT FROM CTs PER MANUFACTURER'S RECOMMENDATIONS.
11. CONNECT MONITOR WIRING AT BUILT-IN RGM IN EACH INVERTER.
12. CONTROL AND COMMUNICATION GATEWAY. WHERE MULTIPLE INVERTERS ARE PROVIDED, DAISY-CHAIN AND CONNECT TO GATEWAY.
13. CONNECT TO OWNER'S NETWORK.



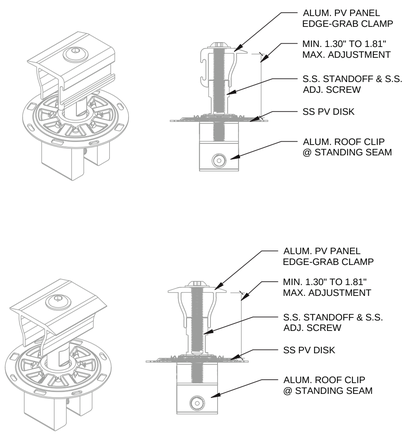
1 E202 ELECTRICAL ROOF PLAN
1/8"=1'-0"

GENERAL NOTES:

1. REFER TO DETAIL ABOVE FOR PV WIRING SCHEMATIC.
2. PV SYSTEM SHALL BE PROVIDED AS ADD ALTERNATE #1. ADD ALTERNATE PRICING SHALL INCLUDE ROOF MOUNTED PANELS, INVERTERS, COMBINER BOXES, EXTERIOR DISCONNECTS, PANEL PV1 AND ALL OTHER MINOR EQUIPMENT RELATED TO THE PV SYSTEM. PROVIDE PRICING ON BID FORM AS INDICATED.
3. AS PART OF BASE BID, PROVIDE ALL CONDUIT FOR THE ADDITION OF A FUTURE PV SYSTEM AT A LATER DATE. THIS SHALL INCLUDE 4-1"C TO THE ROOF TO THE MAIN ELECTRICAL ROOM AS WELL AS ANY UNDERGROUND CONDUITS FROM THE PV DISCONNECT ON THE EXTERIOR OF THE BUILDING TO THE PROPOSED LOCATION OF PANELS PV1 AND MDP.
4. LOCATION OF PANELS SHALL BE COORDINATED WITH BOTH DIVISION 22 AND DIVISION 23 SUBCONTRACTOR PRIOR TO SUBMISSION OF SHOP DRAWINGS.

NOTES KEYED TO 1/E202:

1. NOMINAL 580 WATT PV PANEL. TYPICAL.



2 E202 PV PANEL FASTENER DETAILS
NO SCALE

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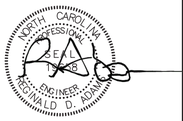

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PROJECT INFORMATION

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REVISIONS

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SHEET INFORMATION

E202

ELECTRICAL ROOF PLAN

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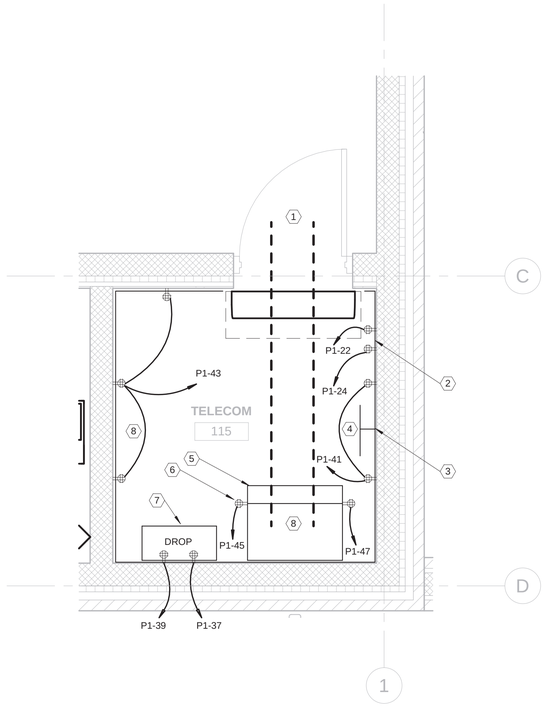

1 / E300 ELECTRICAL POWER ENLARGED TELECOM NEW WORK
1/2" = 1'-0"

GENERAL NOTES:

1. REFERENCE SHEET E001 FOR LEGEND, SCHEDULES, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. REFER TO SHEET E400 FOR RISERS AND E600 PANEL SCHEDULES.
3. COORDINATE LOCATIONS OF ALL MONITORS AND FLOOR BOXES WITH DESIGNER PRIOR TO BEGINNING ROUGH-IN.

KEYED NOTES:

1. PROVIDE T/C DUCTBANK PER DETAIL SHEET E100 AND E101. EXTEND TO 12" AFF.
2. AREA DESIGNATED FOR CELL PHONE EXTENDER SYSTEM (IF REQUIRED).
3. PROVIDE 3/4" FIRE RATED PLYWOOD SHEATHING TO 8'-0" AROUND ENTIRE ROOM FOR EQUIPMENT MOUNTING. PAINT WHITE WITH THREE COATS OF PAINT. MASK ANY LABELING PRIOR TO PAINTING.
4. PROVIDE GROUND BAR PER DETAIL 2/SS400 AT 84" AFF.
5. TELECOM RACK PER THE SPECIFICATIONS.
6. PROVIDE TWO (2) QUAD OUTLETS ON FUTURE RACK OR FUTURE LADDER TRAY AS DIRECTED BY THE DESIGNER.
7. SECURITY DROP BY DIVISION 27-SECURITY. DIVISION 26 SHALL PROVIDE WIREWAY OVER DROP LOCATION FOR CONDUIT INTERFACE. COORDINATE LOCATION OF DROP IN FIELD WITH OWNER AND SECURITY VENDOR.
8. PROVIDE LADDER RACK ALONG WALLS AND OVER RACK PER THE SPECIFICATIONS.

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919.833.0495 T

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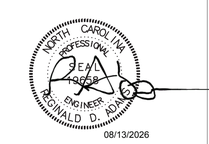
SEALS



PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	TAV
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E300

ELECTRICAL POWER TELECOM ROOM NEW WORK

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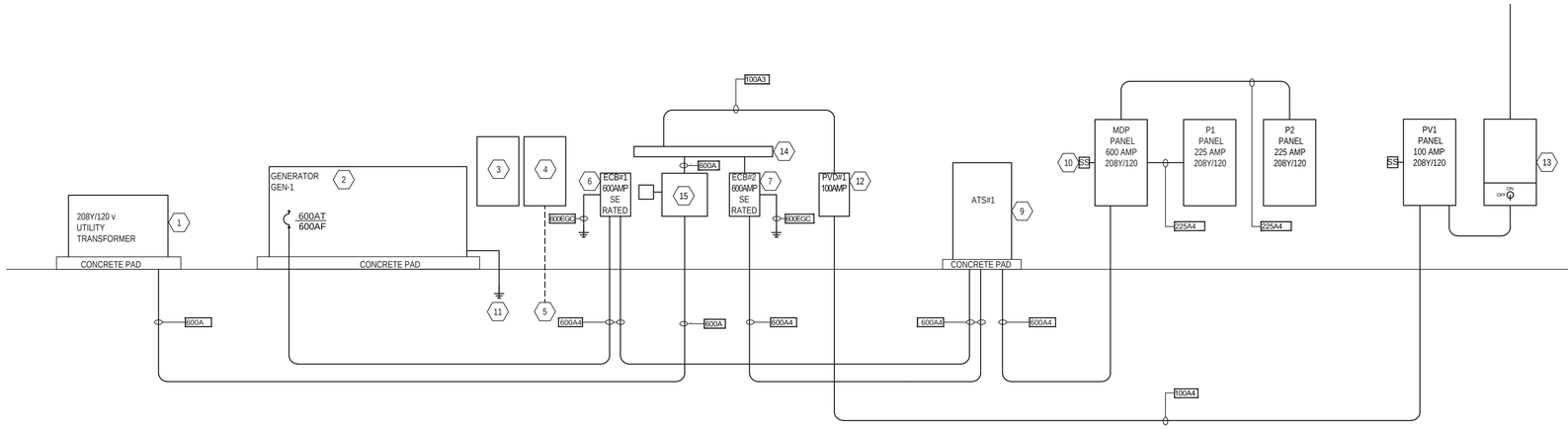


GENERAL NOTES:

1. ALL EXTERIOR FEEDERS SHALL BE CONCRETE ENCASED PER DETAILS SHEET E101.
2. PROVIDE SERVICE ENTRANCE GROUNDING PER DETAIL BELOW.
3. THE CONTRACTOR SHALL PROVIDE PROVIDE ARC-FLASH CALCULATIONS FOR DESIGNER REVIEW AND PROVIDE LABELS ON EACH PANEL, DISCONNECT AND ATS.

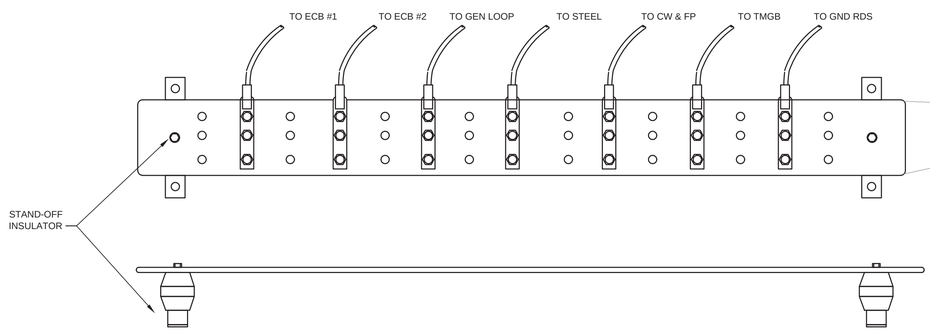
NOTES KEYED TO 1/E400:

1. DUKE PROGRESS TRANSFORMER AND PAD.
2. 150 kW DIESEL GENERATOR AND PAD.
3. PROVIDE SCADA DEMARC PER DETAILS SHEETS E102 AND E103.
4. PROVIDE SCADA RTU PER DETAILS SHEETS E102 AND E103.
5. INPUT/OUTPUT WIRING FROM SCADA TO GENERATOR, ATS AND POWER PANELS.
6. SERVICE ENTRANCE LISTED 80% RATED BREAKER-GENERATOR OUTPUT.
7. SERVICE ENTRANCE LISTED 80% RATED BREAKER-UTILITY.
8. DUKE APPROVED METER BASE.
9. 600 AMPERE 3-POLE, SOLID NEUTRAL 208Y/120 VOLT AUTOMATIC TRANSFER SWITCH.
10. PROVIDE SURGE SUPPRESSION ON PANELS INDICATED.
11. #2/0 AWG TO GND LOOP AROUND GENERATOR PAD.
12. DUKE ENERGY REQUIRED PHOTO-VOLTAIC DISCONNECT.
13. 17. KW PV INVERTER SYSTEM.
14. PROVIDE NEMA 4XSS WIRE TROUGH FOR CONNECTION OF PV SYSTEM TO SERVICE LATERAL.
15. DUKE APPROVED CT CABINET AND METER BASE.

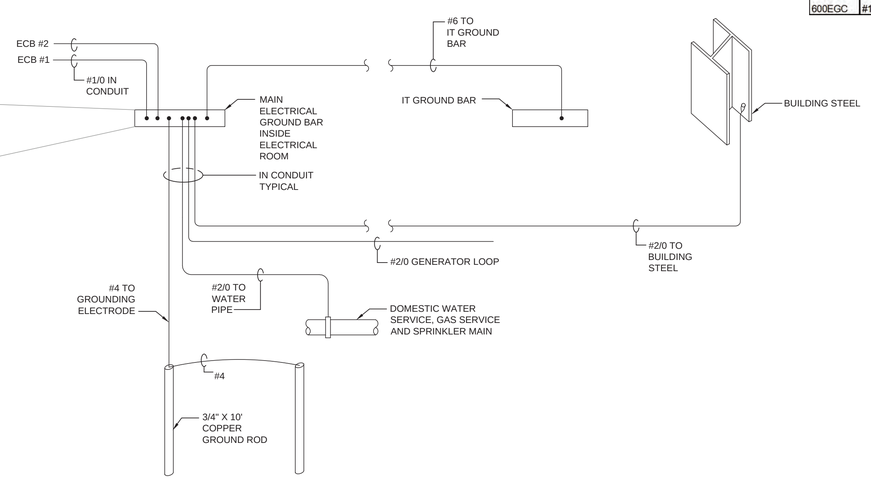
SERVICE FEEDERS	
AMPERE SIZE	WIRE SIZE
200A	4#3/0 2"C
225A	4#4/0 2 1/2"C
250A	4-250 MCM 2 1/2"C
300A	4-350 MCM GND 3"C
400A	4-500 MCM 3 1/2"C
500A	2 SETS 4-250 MCM 2 1/2"C
600A	2 SETS 4-350 MCM 3"C
800A	2 SETS 4-500 MCM 3 1/2"C
1000A	3 SETS 4-400 MCM 3 1/2"C

4-WIRE FEEDERS	
AMPERE SIZE	WIRE SIZE
60A4	4#6, #10 GND 1"C
100A4	4#3, #8 GND 1 1/4"C
125A4	4#2, #6 GND 1 1/4"C
150A4	4#1/0, #6 GND 1 1/2"C
175A4	4#2/0, #6 GND 2"C
200A4	4#3/0, #6 GND 2"C
225A4	4#4/0, #4 GND 2 1/2"C
225A42	4#4/0, #2 GND 2 1/2"C
250A45	4-250 MCM, #4 GND 2 1/2"C
300A4	4-350 MCM, #3 GND 3"C
400A4	4-500 MCM, #2 GND 3 1/2"C
600A4	2 SETS 4-350 MCM, #2/0 GND 3"C
800A4	2 SETS 4-500 MCM, #2/0 GND 3 1/2"C
1000A4	3 SETS 4-400 MCM, #2/0 GND 3 1/2"C

SERVICE EGC	
SERVICE SIZE	WIRE SIZE
60EGC	#8, 1"C
100EGC	#6, 1"C
200EGC	#4, 1.25"C
225EGC	#2, 1.25"C
600EGC	#1/0, 1.5"C



ELECTRICAL MAIN GROUND BUS



ALL GROUND WIRES SHALL BE PROTECTED IN CONDUIT.

NOTES:

1. PROVIDE 18" ELECTRICAL MAIN GROUND BAR (EMGB) ASSOCIATED EQUIPMENT, MOUNTED AT 84" AFF IN MAIN ELECTRICAL ROOM AND AS NOTED ON THE ELECTRICAL PLANS. REFER TO FLOOR PLAN FOR LOCATIONS. REFER TO E503 FOR SIZES.
2. EMGB SHALL BE CHATSWORTH MODEL 40153-018 OR EQUAL.

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632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5669
www.esse-architects.com

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SALASOBRIEN.COM
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NORTH CAROLINA PROFESSIONAL SEAL 045 ENGINEER RONALD D. ADAMS

08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
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SHEET INFORMATION

E400

ELECTRICAL RISER

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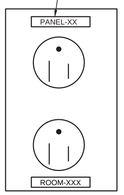
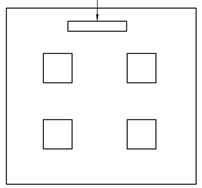
PROVIDE CLEAR SELF-ADHESIVE LABEL. LETTERING TO BE 3/8" IN HEIGHT. COLOR OF LABELING TO BE FIELD VERIFIED. LABEL TO READ DELINIATE PANEL FEEDING DEVICE AND ITS CIRCUIT NUMBER. TYPICAL ALL RECEPTACLES.



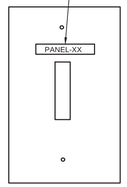
RECEPTACLE

PROVIDE CLEAR SELF-ADHESIVE LABEL. LETTERING TO BE 3/8" IN HEIGHT. COLOR OF LABELING TO BE FIELD VERIFIED. LABEL SCHEME TO BE VERIFIED WITH OWNER'S REPRESENTATIVE. TYPICAL ALL WALL MOUNTED TELECOM. OUTLETS



DATA OUTLET

PROVIDE CLEAR SELF-ADHESIVE LABEL. LETTERING TO BE 3/8" IN HEIGHT. COLOR OF LABELING TO BE FIELD VERIFIED. LABEL TO READ DELINEATE PANEL FEEDING DEVICE AND ITS CIRCUIT NUMBER. TYPICAL ALL OCCUPANCY SENSORS AND SWITCHES.



SWITCH OR OCCUPANCY SENSOR-WALL MOUNTED

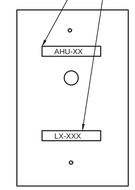
PROVIDE WHITE SELF-ADHESIVE LABEL. LETTERING TO BE 1/2" IN HEIGHT. COLOR OF LABELING TO BE FIELD VERIFIED. LABEL TO SHOW LOOP AND DEVICE NUMBER. TYPICAL ALL PULLSTATIONS.

PULL STATION

PROVIDE WHITE SELF-ADHESIVE LABEL. LETTERING TO BE 1/2" IN HEIGHT. COLOR OF LABELING TO BE FIELD VERIFIED. LABEL TO SHOW LOOP AND DEVICE NUMBER. TYPICAL ALL SMOKE OR HEAT DETECTORS.

CEILING MOUNTED DETECTOR

PROVIDE WHITE SELF-ADHESIVE LABEL. LETTERING TO BE 1/2" IN HEIGHT. COLOR OF LABELING TO BE FIELD VERIFIED. TOP LABEL TO SHOW DEVICE BEING CONTROLLED OR MONITORED. BOTTOM LABEL TO SHOW LOOP AND DEVICE NUMBER. TYPICAL ADDRESSABLE MODULES OR TEST SWITCHES.

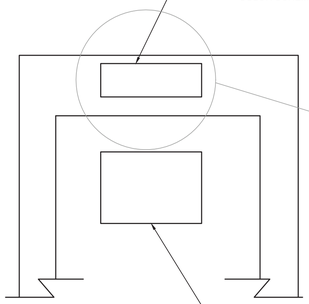


FIRE ALARM MODULE OR TEST SWITCH

PROVIDE ENGRAVED PHENOLIC LABEL. LABEL TO READ:

(PANELBOARD NAME)
(VOLTAGE)
(FED FROM)
(EMERGENCY, STANDBY POWER, UPS, ETC)

LABELS TO BE 2 1/2" HIGH MINIMUM WITH 1/2" LETTERING. COLOR SCHEME PER SPECIFICATIONS.



PANELBOARD "XXX"
208Y/120 VOLTS

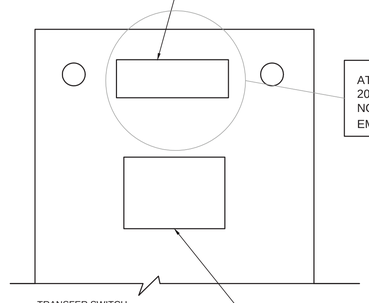
PANELBOARD

INSTALL SELF ADHESIVE ARC FAULT INFORMATION AND WARNING LABEL. LABEL TO BE PROVIDED BY THE CONTRACTOR.

PROVIDE ENGRAVED PHENOLIC LABEL. LABEL TO READ:

(TRANSFER SWITCH NAME)
(VOLTAGE)
(NORMAL SOURCE FEED)
(EMERGENCY OR STANDBY SOURCE FEED)

LABELS TO BE 2 1/2" HIGH MINIMUM WITH 1/2" LETTERING. COLOR SCHEME PER SPECIFICATIONS.



ATS-
208Y/120 VOLTS
NORMAL SOURCE: UTILITY
EMERGENCY SOURCE: GENERATOR

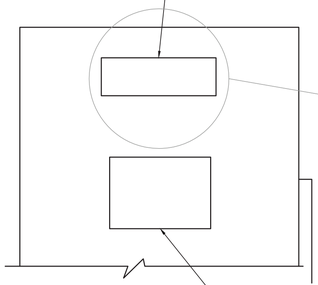
TRANSFER SWITCH

NSTALL SELF ADHESIVE ARC FAULT INFORMATION AND WARNING LABEL. LABEL TO BE PROVIDED BY THE CONTRACTOR.

PROVIDE ENGRAVED PHENOLIC LABEL. LABEL TO READ:

(MOTOR OR LOAD BEING SERVED)
(VOLTAGE)
(FED FROM PANEL AND CIRCUIT)

LABELS TO BE 2 1/2" HIGH MINIMUM WITH 1/2" LETTERING. COLOR SCHEME PER SPECIFICATIONS.

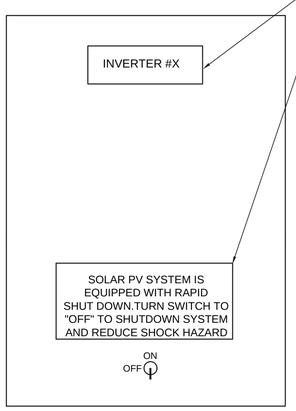


DS-1
208Y/120 VOLTS
FED FROM PANEL "XXX"

DISCONNECT SWITCH, MOTOR STARTER OR VARIABLE FREQUENCY DRIVE

NSTALL SELF ADHESIVE ARC FAULT INFORMATION AND WARNING LABEL. LABEL TO BE PROVIDED BY THE CONTRACTOR.

PROVIDE ENGRAVED PHENOLIC LABEL. LABELS TO BE MIN. 2 1/2" HIGH MINIMUM WITH 1/2" LETTERING. COLOR SCHEME PER SPECIFICATIONS.



INVERTER/INVERTER DISCONNECT

1 / E500 ELECTRICAL LABELING DETAILS
NO SCALE

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PROJECT INFORMATION

PROJECT NO.:	2506
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E500

ELECTRICAL DETAILS

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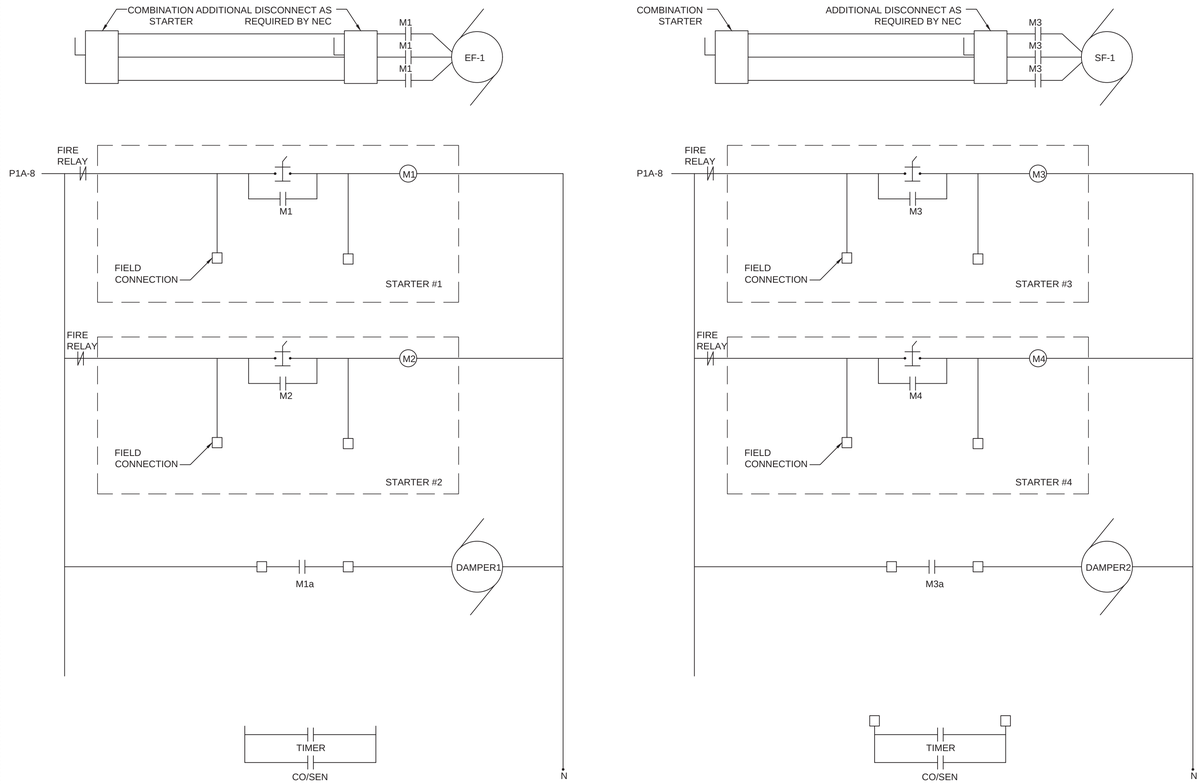
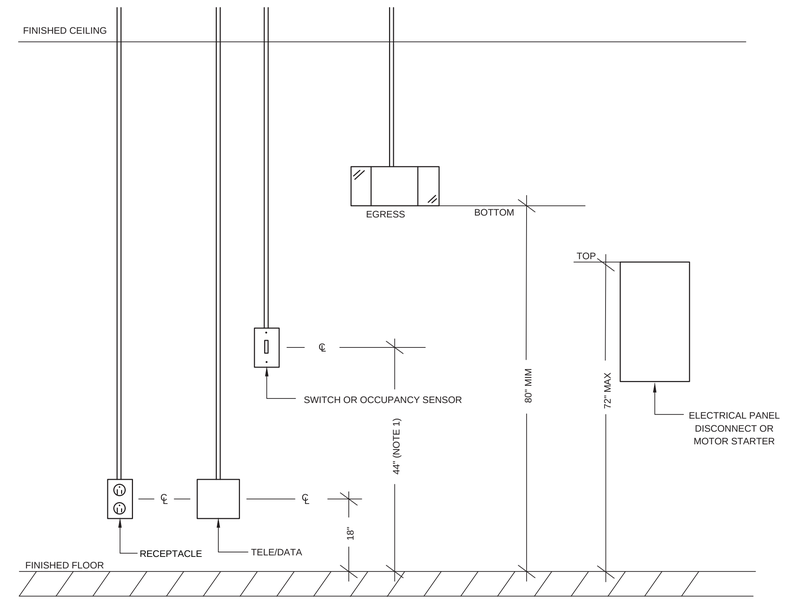


1 E100 ELECTRICAL SITE PLAN NEW WORK
NO SCALE



NOTE:
1. IF MOUNTED TO ADJACENT SECURITY DEVICES SUCH AS CARD READERS, ALIGN THOSE DEVICES WITH SWITCHES.

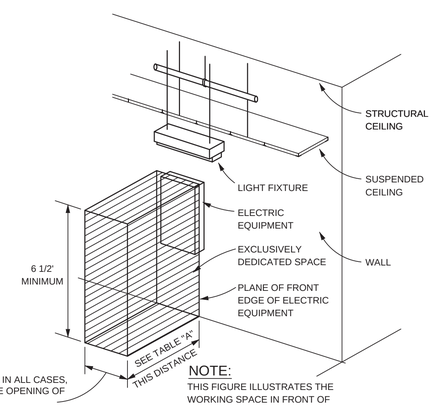
2 E501 ELECTRICAL SITE PLAN NEW WORK
NO SCALE

TABLE "A" WORKING CLEARANCES

NOMINAL VOLTAGE TO GROUND	CONDITION: 1	2	3
	MINIMUM CLEAR DISTANCE (FEET)		
0-150	3	3	3
151-600	3	3.5	4

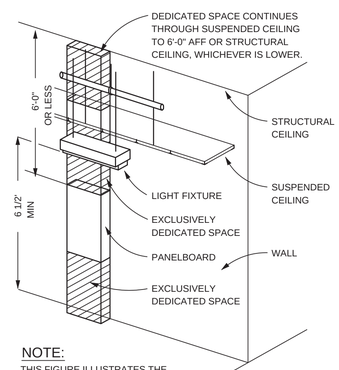
WHERE THE "CONDITIONS" ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300 VOLTS SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE. CONCRETE, BRICK, OR TILE WALLS SHALL BE CONSIDERED AS GROUNDED.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.



WIDTH OF EQUIPMENT OR 30", WHICHEVER IS GREATER. IN ALL CASES, THE WORK SPACE SHALL PERMIT AT LEAST A 90 DEGREE OPENING OF EQUIPMENT DOORS OR HINGED PANELS.

NOTE:
THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF ELECTRIC EQUIPMENT REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.



NOTE:
THIS FIGURE ILLUSTRATES THE ADDITIONAL EXCLUSIVELY DEDICATED SPACE REQUIRED OVER AND UNDER PANELBOARDS FOR CABLES, RACEWAYS, ETC. TO AND FROM PANELBOARDS REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.

ALL ELECTRIC EQUIPMENT

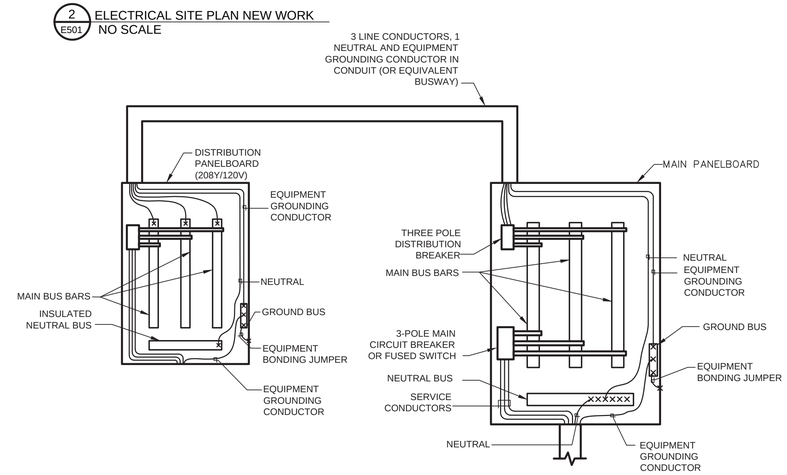
NOTE:
THIS INCLUDES BUT IS NOT LIMITED TO PANELBOARDS, SAFETY SWITCHES, MOTOR STARTERS, JUNCTION BOXES AND OTHER ELECTRIC EQUIPMENT.

NOTE:
NO PIPING, DUCTS OR EQUIPMENT FOREIGN TO THE ELECTRICAL EQUIPMENT OR ARCHITECTURAL APPURTENANCES SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH THE DEDICATED SPACES SHOWN ABOVE.

PANELBOARDS

NOTE:
DEDICATED SPACE CONTINUES THROUGH SUSPENDED CEILING TO A HEIGHT OF 6FT ABOVE THE EQUIPMENT OR TO THE STRUCTURE CEILING, WHICH EVER IS LOWER.

3 E501 ELECTRICAL EQUIP. CLEARANCES
NO SCALE



NOTES:
1. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE SIZED PER NEC, TABLE 250.122 OR 250.66. SEE ELECTRICAL RISER AND PANEL SCHEDULES FOR SIZING REQUIREMENTS.
2. SYSTEM GROUND CONDUCTOR SHALL BE CONTINUOUS AND UNBROKEN, AND SHALL BE RUN BETWEEN BONDING POINTS ALONG THE SHORTEST POSSIBLE PATH.
3. THIS DETAIL DIAGRAMS THE PREFERRED METHOD OF ESTABLISHING A SYSTEM GROUND AND BONDING POINTS WITHIN A TYPICAL DISTRIBUTION SYSTEM. THE GROUNDING SYSTEM SHALL COMPLY WITH NEC ARTICLE 250.

4 E501 ELECTRICAL PANEL GROUNDING
NO SCALE

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RALEIGH, NORTH CAROLINA 27608
P 919.740.5689
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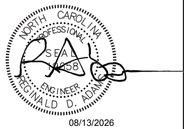

PROJECT INFORMATION

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SHEET INFORMATION

E501
ELECTRICAL DETAILS

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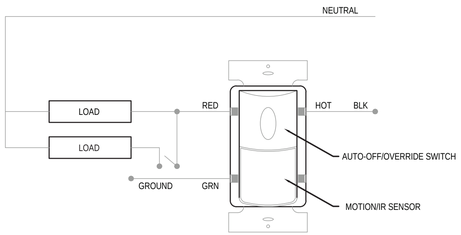
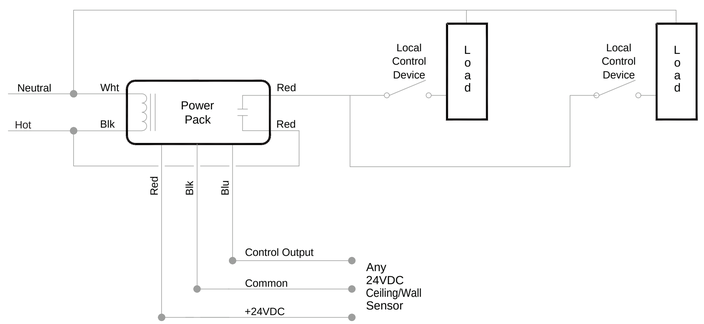
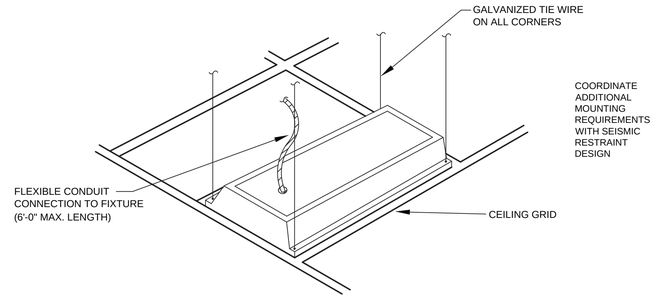
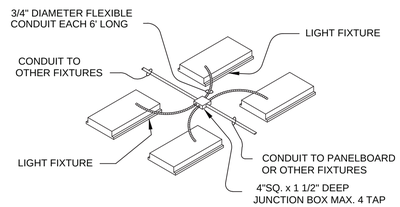




1 E502 LIGHTING CONTROL DETAILS
NO SCALE



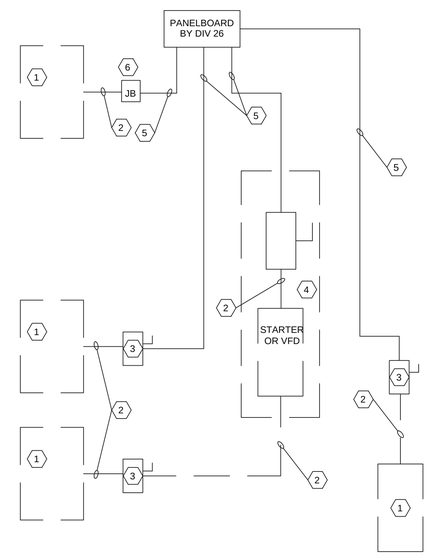


2 E502 LIGHTING INSTALLATION DETAILS
NO SCALE

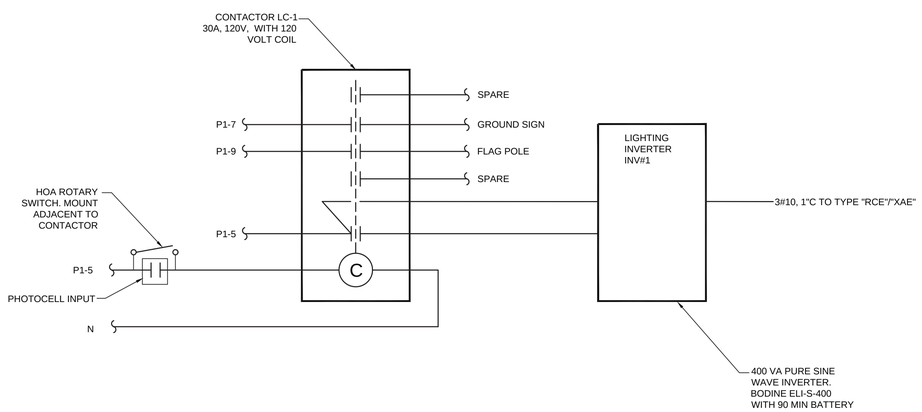
1. EQUIPMENT BY THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR.
2. CONDUIT & WIRING BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR COORDINATED WITH THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR.
3. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY THE NATIONAL ELECTRICAL CODE, IT SHALL BE FURNISHED BY THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR.
4. A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER, LOCATED ADJACENT TO EQUIPMENT. STARTERS AND VFD FURNISHED BY THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR.
5. FEEDER CIRCUIT WIRING AND CONDUIT FURNISHED AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
6. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE DIVISION 26 (ELECTRICAL) CONTRACTOR SHALL FURNISH AND INSTALL LINE SIDE WIRING TO THE JUNCTION BOX. LOAD SIDE WIRING WILL BE FURNISH AND INSTALL BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR COORDINATED WITH THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR.

NOTES:
THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DIRECTION OF ROTATION FOR ALL THREE PHASE MOTORS AND EQUIPMENT.

IN ALL CASES THE DIVISION 22 (PLUMBING) AND DIVISION 23 (HVAC) CONTRACTOR SHALL BE CONTRACTUALLY OBLIGATED TO INSURE ALL FINAL CONNECTIONS, START UP, AND TESTING OF EQUIPMENT IS PROVIDED PER THE MANUFACTURERS' STRICT INSTRUCTIONS; HOWEVER ALL FINAL CONNECTIONS SHALL FURNISHED AND INSTALLED BY THE DIVISION 26 (ELECTRICAL) CONTRACTOR



4 E502 DIVISION OF WORK DETAIL
NO SCALE



3 E502 EXTERIOR LIGHTING CONTROL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

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4704 HARGROVE RD.
RALEIGH, NC
27616

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WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
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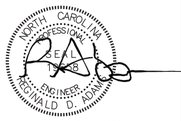


08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

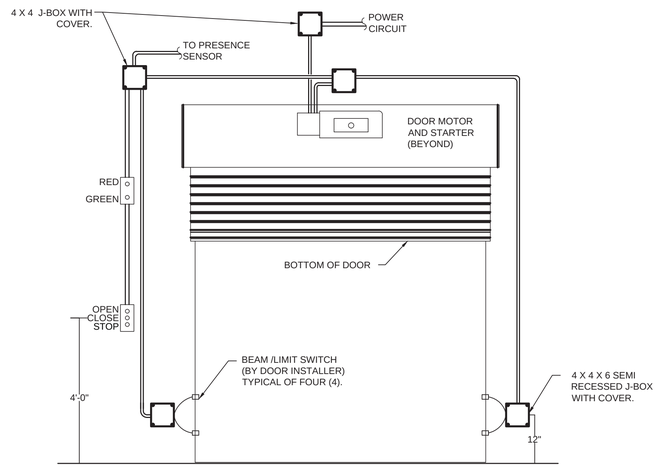
NO.	DESCRIPTION	DATE

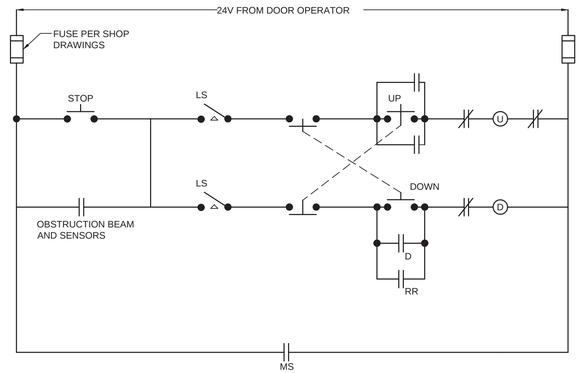
SHEET INFORMATION

E502

ELECTRICAL DETAILS

Docusign Envelope ID: CBE6ADD2-2D45-811D-814F-FF94C986F4F9



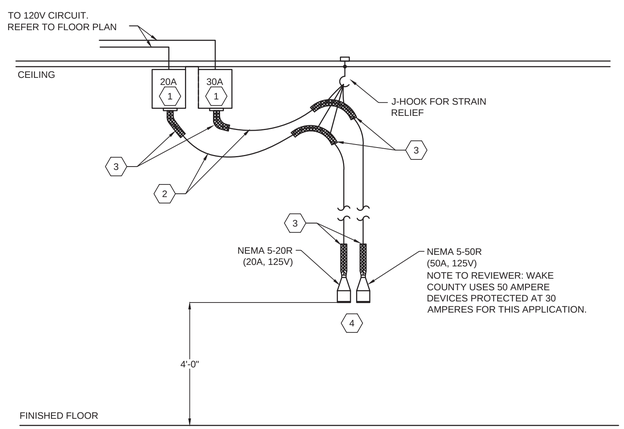


NOTES:

1. OVERHEAD DOORS ARE TO OPERATE FROM LOCAL WALL MOUNTED SWITCHES AND ALSO FROM MOBILE UNITS IN THE TRUCKS.
2. SEE POWER PLANS FOR EXACT QUANTITY OF MOTORS.
3. ONE SYSTEM EACH DOOR.

INTERIOR ELEVATION AT DOOR

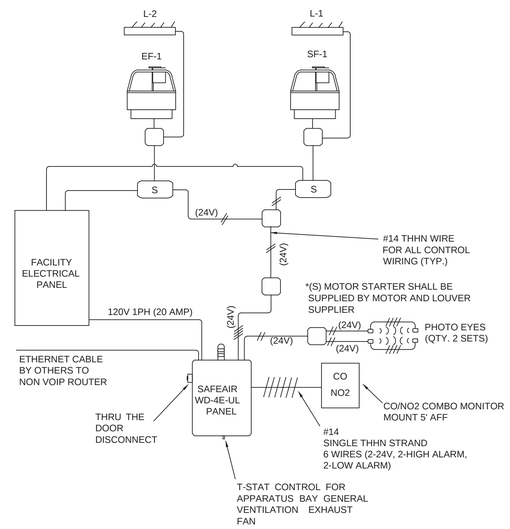
1 / E503 OVERHEAD DOOR INSTALL. DETAILS
NO SCALE



NOTES KEYED TO DETAIL:

1. JUNCTION BOX AT THE CEILING.
2. PROVIDE SO CORD SIZED AS FOLLOWS AND TO A DISTANCE OF 4'-0" ABOVE FINISHED FLOOR WITH A FEMALE PLUG ATTACHMENT AT LOWER END.
   3-#12 SO CORD FOR 20A DROP.
   3-#10 SO CORD FOR 30A DROP.
3. PROVIDE STRAIN RELIEF CORD GRIPS AT EACH OUTLET AND AT CEILING MOUNTED J-HOOK.
4. FOR EACH 20 AMPERE SHORE LINE DROP PROVIDE A 24" 20 AMPERE SO CORD (CORD LENGTH, NOT TOTAL LENGTH) WITH HUBBELL HBL5369C AND HBL5366C CONNECTORS.
   FOR EACH 30 AMPERE SHORE LINE DROP PROVIDE A 24" 30 AMPERE SO CORD (CORD LENGTH, NOT TOTAL LENGTH) WITH HUBBELL HBL7513C AND LAPP 720224FX CONNECTORS.
   CABLES ARE TO BE TURNED OVER TO THE OWNER AT THE END OF THE PROJECT.

2 / E503 SHORELINE INSTALLATION DETAILS
NO SCALE



NOTES:

EQUIPMENT, LABOR, AND TESTING PROVIDED BY MC:

* (1) WD-4E-UL SAFEAIR CONTROL PANEL 120V -1PH (20 AMP)
* STARTERS FOR EF-1 AND SF-1 FANS
* STARTERS FOR L-1 AND L-2 LOUVERS
* CO/NO2 COMBO TOXIC GAS MONITOR UNIT
* FINAL TERMINATION OF WIRES INSIDE SAFEAIR PANEL
* SAFEAIR, CO/NO2 TESTING
* FURNISH AND INSTALL TWO SETS OF PHOTO-EYES

EQUIPMENT INSTALLED AND PROVIDED BY ELECTRICAL CONTRACTOR:

* MOUNTING OF WD-4E-UL SAFEAIR PANEL AND CO/NO2 COMBO UNIT
* ALL WIRE AND CONDUIT FOR CONTROL WIRE FROM THE SAFEAIR PANEL TO CO/NO2 COMBO SENSORS
* ALL 24V, AND 120V 1PH POWER TO RESPECTIVE SYSTEMS; TO INCLUDE CONDUIT AND WIRE
* WIRING OF SAFEAIR PANEL AND CO/NO2 COMBO SENSORS
* WIRING OF EF-1 AND SF-1 FANS/LOUVERS
* FINAL TERMINATION OF CO/NO2 COMBO SENSORS
* FURNISHING AND INSTALLING CAT 5 WIRE FOR SAFEAIR NON-VOIP ROUTER CONNECTION FOR EMAIL DIALER, IF REQUIRED

3 / E503 SAFE-AIR PANEL INSTALL DETAIL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

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702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
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WAKE COUNTY NORTH CAROLINA

SEALS

08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

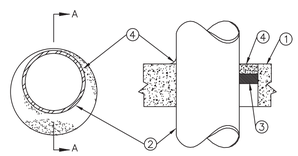
SHEET INFORMATION

E503

ELECTRICAL DETAILS

Docusign Envelope ID: CBE6ADD2-2D45-811D-814F-FF94C986F4F9

SYSTEM NO. C-AJ-1001
MARCH 05 2007
F RATINGS-3 4 HR
T RATING-0 HR.
W RATING - CLASS 1 (SEE ITEM 4)



SECTION A—A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN.

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. AS AN ALTERNATE, NOM 12 IN DAIM (OR SMALLER) SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE.

2, THROUGH-PENETRANT- ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 1-3/8" IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE-NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
A1. IRON PIPE-NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
B. CONDUIT-NOM 6 IN. DIAM (OR SMALLER) RIGID STEEL CONDUIT.
C. CONDUIT- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. OR, A MIN 1 IN. THICKNESS OF TIGHTLY-PACKED CERAMIC FIBER BLANKET OF MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.

4. FILL, VOID OR CAVITY MATERIALS* - CAULK - APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

MAX PIPE DIAM IN	MAX ANNULAR SPACE IN.	PACKING MATERIAL TYPE (A)	MIN. CAULK THKNS IN
10	1	BR, CF, GF OR MW	1/2 (B)
10	1	CF OR MW	1/2 (C)
30	2-1/2	BR, CF, GF OR MW	1 (B)

(A) BR= POLYETHYLENE BACKER ROD.

CF= CERAMIC FIBER BLANKET.

GF= GLASS FIBER INSULATION.

MW= MINERAL WOOL BATT

(B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL

(C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF SOLID (NON-CONCRETE BLOCK) WALL.

3M COMPANY- TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USED ON TOP SURFACE OR FLOOR AND WHEN IT LAPS ONTO CONCRETE FOR SLEEVED OPENING.)

* BEARING THE UL CLASSIFICATION MARKING.

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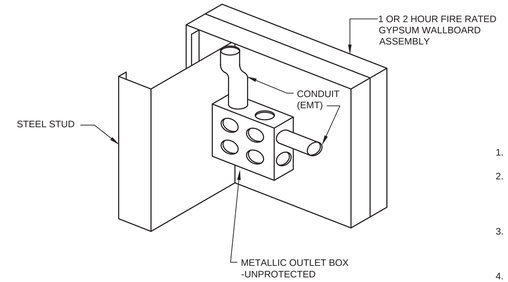
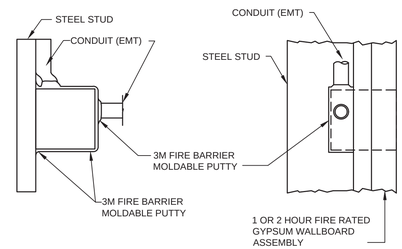
1 / E504 PENETRATION DETAIL
NO SCALE





2 / E504 PUTTY-PAD DETAIL
NO SCALE

SYSTEM DETAILS

1. DRAWING NO.: 5300-ICG85.01
2. SYSTEM JUSTIFICATION: UL TEST REPORT R9700, 89NK19575 (11/9/89) AND R9700, 91NK21798 (10/10/91). TESTS CONDUCTED IN ACCORDANCE WITH THE STANDARD, FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS, ANSI/UL 263 (ASTM E 119, NFPA 251).
3. ASSEMBLY: 1 OR 2 HR. FIRE RATED GYPSUM WALLBOARD/STUD WALL. WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS - 1 HR. RATING OR STEEL CHANNEL STUDS - 2 HR. RATING.
4. RATING: 1 HR. OR 2 HR.
5. ITEM TO BE PROTECTED: METALLIC OUTLET BOX - UP TO 4S. NOTE: THIS APPLICATION IS INTENDED TO PREVENT FLAME THROUGH AND SMOKE PROPAGATION BY SEALING "KNOCK-OUTS" AND OPENINGS IN THE BOX/ASSEMBLY. IT ALSO INHIBITS HEAT TRANSFER TO THE NON-FIRESIDE SURFACE OF THE WALL.

APPLICATION DETAILS

1. APPLY A LAYER OF 3M FIRE BARRIER MOLDABLE PUTTY PAD TO THE METALLIC OUTLET BOX, COVERING ALL EXPOSED SURFACES. NOMINAL PUTTY THICKNESS IS 1/8 IN. (MPP1 = 4"x8"x1/8", MPP - 4S =6"x7"x1/8")
2. PRESS THE PUTTY INTO THE INTERFACE PERIMETER OF THE OUTLET BOX AND THE STUD AND ALSO THE INTERFACE OF THE OUTLET BOX AND THE GYPSUM WALLBOARD.
3. SEAL ANY "KNOCK-OUT" OR HOLE CONTAINING WIRE OR CONDUIT WITH A GENEROUS AMOUNT OF MOLDABLE PUTTY.

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.740.5689
www.esse-architects.com

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4704 HARGROVE RD.
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919.833.0495 T

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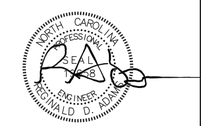

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PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

E504

ELECTRICAL DETAILS

Docusign Envelope ID: CBE6ADD2-2D45-811D-814F-FF94C986F4F9

PANEL "MDP"

PANEL TYPE: ILINE
BUS SIZE: 600A
VOLTAGE: 208Y/120
MCB or MLO: MLO
MOUNTING: SURFACE
MINIMUM AIC: 22,000

CKT	LOAD SERVED	TRIP	POLE	WIRE*	GND	COND	kVA	kVA PER PHASE A	B	C	kVA	COND	GND	WIRE*	POLE	TRIP	LOAD SERVED	CKT
1	PANEL "P1"	225	3	REFER TO RISER FOR WIRE & CONDUIT SIZES			16.04	26.54			10.50	REFER TO RISER FOR WIRE & CONDUIT SIZES			3	225	PANEL "P2"	2
3							13.46		23.76		10.30							4
5							15.24			24.74	9.50							6
7	SF-1	15	3	3#12, #12G 3/4"C			0.30	0.60			0.50	3#12, #12G 3/4"C			3	15	EF-1	8
9							0.30		0.60		0.30							10
11							0.30			0.60	0.30							12
13	HP-1	30	2	3#10, #10G 1"C			3.00	3.75			0.75	3#12, #12G 3/4"C			2	20	UH-1	14
15							3.00		3.75		0.75							16
17	HP-2	30	2	3#10, #10G 1"C			3.00			3.00							SPACE	18
19							3.00	3.00									SPACE	20
21	AHU-1	50	2	3#8, #10G 1"C			6.00		6.00								SPACE	22
23							6.00			6.00							SPACE	24
25	AHU-2	50	2	3#8, #10G 1"C			6.00	6.00									SPACE	26
27							6.00		6.00								SPACE	28
29	ERV-	15	2	3#12, #12G 3/4"C			1.08			1.08							SPACE	30
31							1.08	1.08									SPACE	32
33	DMMS-1	25	2	3#12, #12G 3/4"C			1.92		1.92								SPACE	34
35							1.92			1.92							SPACE	36
37	SPARE	20	1					0.00				REFER TO RISER FOR WIRE & CONDUIT SIZES			3	60	SDP	38
39	SPARE	20	1						0.00									40
41	SPARE	20	1							0.00								42

[redacted]

TOTALS: 40.97 | 42.03 | 37.34

	CONNECTED LOAD (KVA)	DEMAND LOAD (KVA)
LIGHTING	6.00	7.50
FIRST 10K RECEPTS	11.60	10.00
REMAINDER RECEPT	1.80	1.60
LARGEST MOTOR	6.00	7.50
MOTOR	37.80	37.80
MISC	58.93	47.14
TOTAL (KVA)	120.33	111.54
TOTAL AMPS		465

NOTES
L-PROVIDE WITH LOCK OUT CLIP
G-GFC PROTECTED
S- SHUNT TRIP
*-PHASE/NEUTRAL

PANEL "P1"

PANEL TYPE: NQ
BUS SIZE: 225A
VOLTAGE: 208Y/120
MCB or MLO: MLO
MOUNTING: SURFACE
MINIMUM AIC: 22,000

CKT	LOAD SERVED	TRIP	POLE	WIRE*	GND	COND	kVA	kVA PER PHASE A	B	C	kVA	COND	GND	WIRE*	POLE	TRIP	LOAD SERVED	CKT
1	CORD DROP	30G	1	#10	#10	3/4"	1.50	2.50			1.00	3/4"	#12	#12	1	20G	CORD DROP	2
3	CORD DROP	30G	1	#10	#10	3/4"	1.50		2.50		1.00	3/4"	#12	#12	1	20G	CORD DROP	4
5	CORD DROP	30G	1	#10	#10	3/4"	1.50			2.50	1.00	3/4"	#12	#12	1	20G	CORD DROP	6
7	OVERHEAD DOOR	25	1	#10	#10	3/4"	1.66	2.86			1.20	3/4"	#10	#10	1	20	SAFE AIR PANEL	8
9	OVERHEAD DOOR	25	1	#10	#10	3/4"	1.66		2.66		1.00	3/4"	#12	#12	1	20	IH-1	10
11	OVERHEAD DOOR	25	1	#10	#10	3/4"	1.66			2.66	1.00	3/4"	#12	#12	1	20	IH-2	12
13	DH-2	20	1	#12	#12	3/4"	0.60	1.60			1.00	3/4"	#10	#10	1	15G	ICE MACHINE	14
15	DH-3	20	1	#12	#12	3/4"	0.60		2.10		1.50	3/4"	#12	#12	1	20	WASHER	16
17	DECON/PPE REC	20	1	#12	#12	3/4"	0.60			3.48	2.88	3/4"	#10	#10	2	30	DRYER	18
19	MED STORAGE REC	20	1	#12	#12	3/4"	0.60	3.48			2.88			#10				20
21	MED STORAGE REC	20	1	#12	#12	3/4"	0.60		1.60		1.00	3/4"	#12	#12	1	20	RES. FOR CELL EX	22
23	MEC ROOM REC	20	1	#12	#12	3/4"	0.60			1.60	1.00	3/4"	#12	#12	1	20	RES. FOR CELL EX	24
25	APP BAY REC	20	1	#12	#12	3/4"	0.60	0.60									SPACE	26
27	APP BAY REC	20	1	#12	#12	3/4"	0.60		0.60								SPACE	28
29	GENERATOR	30L	2	#10	#10	1"	2.00			2.00							SPACE	30
31				#10			2.00	2.00									SPACE	32
33	SCADA	20L	1	#12	#12	3/4"	1.00		1.00								SPACE	34
35	SCADA	20L	1	#12	#12	3/4"	1.00			1.00							SPACE	36
37	SECURITY DROP	20L	1	#12	#12	3/4"	1.00	1.00									SPACE	38
39	SECURITY DROP	20L	1	#12	#12	3/4"	1.00		1.00								SPACE	40
41	T/C ROOM	20L	1	#12	#12	3/4"	1.00			1.00							SPACE	42
43	T/C ROOM	20L	1	#12	#12	3/4"	1.00	1.00									SPACE	44
45	RACK	20L	1	#12	#12	3/4"	1.00		1.00								SPACE	46
47	RACK	20L	1	#12	#12	3/4"	1.00			1.00							SPACE	48
49	ALL EXT. REC	20	1	#12	#12	3/4"	1.00	1.00									SPACE	50
51	BACNET CONTROLLER								0.00								SPACE	52
53	SPARE	20	1							0.00							SPACE	54
55	SPARE	20	1					0.00									SPACE	56
57	RECEPTACLES AT CY	20	1	#12	#12	3/4"	1.00		1.00								SPACE	58
59	SPARE	20	1							0.00							SPACE	60
61	SPARE	20	1					0.00									SPACE	62
63	SPARE	20	1						0.00								SPACE	64
65	SPARE	20	1							0.00							SPACE	66

TOTALS: 16.04 | 13.46 | 15.24

	CONNECTED LOAD (KVA)	DEMAND LOAD (KVA)
LIGHTING		0.00
FIRST 10K RECEPTS	3.60	3.60
REMAINDER RECEPT		
LARGEST MOTOR		
MOTOR		
MISC	41.13	32.90
TOTAL (KVA)	44.73	36.50
TOTAL AMPS	124	101

NOTES
L-PROVIDE WITH LOCK OUT CLIP
G-GFC PROTECTED
S- SHUNT TRIP
*-PHASE/NEUTRAL

PANEL "P2"

PANEL TYPE: NQ
BUS SIZE: 225A
VOLTAGE: 208Y/120
MCB or MLO: MCB
MOUNTING: SURFACE
MINIMUM AIC: 10,000

CKT	LOAD SERVED	TRIP	POLE	WIRE*	GND	COND	kVA	kVA PER PHASE A	B	C	kVA	COND	GND	WIRE*	POLE	TRIP	LOAD SERVED	CKT
1	INTERIOR LIGHTING	20	1	#12	#12	3/4"	1.30	1.30							1	20	SPARE	2
3	INTERIOR LIGHTING	20	1	#12	#12	3/4"	1.20		1.20						1	20	SPARE	4
5	EXTERIOR LIGHTING	20	1	#10	#10	1"	1.00			1.00					1	20	SPARE	6
7	GROUND SIGN	20	1	#10	#10	1"	1.00	2.50			1.50	3/4"	#12	#12	1	20	DISHWASHER	8
9	FLAG POLE	20	1	#10	#10	3/4"	1.50		3.00		1.50	3/4"	#12	#12	1	20	DISPOSAL	10
11	EWC	20G	1	#12	#12	3/4"	1.00			2.00	1.00	3/4"	#12	#12	1	20G	REFRIGERATOR	12
13	GWH	20	1	#12	#12	3/4"	0.50	1.50			1.00	3/4"	#12	#12	1	20G	KITCHEN RECEP	14
15	FACP	20L	1	#12	#12	3/4"	1.00		2.00		1.00	3/4"	#12	#12	1	20G	KITCHEN RECEP	16
17	MONITOR	20	1	#10	#10	3/4"	1.00			2.00	1.00	3/4"	#12	#12	1	20G	KITCHEN RECEP	18
19	MONITOR	20	1	#10	#10	3/4"	1.00	2.00			1.00	3/4"	#12	#12	1	20	RECEPTACLES RM 101	20
21	MONITOR	20	1	#10	#10	3/4"	1.00		2.00		1.00	3/4"	#12	#12	1	20	RECEP. RM 102/103	22
23	RECEP. RM 108/110	20	1	#10	#10	3/4"	1.00			2.00	1.00	3/4"	#12	#12	1	20	RECEPTACLES RM 104	24
25	RECEP. RM 104B	20	1	#10	#10	3/4"	1.00	2.00			1.00	3/4"	#12	#12	1	20	RECEPTACLES RM 104c	26
27	DH-1	20	1	#12	#12	3/4"	0.60		1.60		1.00	3/4"	#12	#12	1	20	RECEP-WORK STATION	28
29	FP HOT BOX	20L	1	#10	#10	1"	1.00			2.00	1.00	3/4"	#12	#12	1	20	RECEP-MEDIA CENTER	30
31	DW HOT BOX	20L	1	#10	#10	1"	1.00	1.20			0.20	3/4"	#12	#12	1	20	RCP-1	32
33	CELL DIALER	20L	1	#12	#12	3/4"	0.50		0.50								SPACE	34
35	NAC	20L	1	#12	#12	3/4"	0.50			0.50							SPACE	36
37	SPARE	20	1					0.00									SPACE	38
39	SPARE	20	1						0.00								SPACE	40
41	SPARE	20	1							0.00							SPACE	42

[redacted]

TOTALS: 10.50 | 10.30 | 9.50

	CONNECTED LOAD (KVA)	DEMAND LOAD (KVA)
LIGHTING	6.00	7.50
FIRST 10K RECEPTS	8.00	8.00
REMAINDER RECEPT	0.00	
LARGEST MOTOR		
MOTOR	0.00	
MISC	16.30	13.04
TOTAL (KVA)	30.30	28.54
TOTAL AMPS		119

NOTES
L-PROVIDE WITH LOCK OUT CLIP
G-GFC PROTECTED
S- SHUNT TRIP
*-PHASE/NEUTRAL

PANEL "PV1"

PANEL TYPE: NQOD
BUS SIZE: 100A
VOLTAGE: 208Y/120V
MCB or MLO: MLO
MOUNTING: SURFACE
MINIMUM AIC: 22,000

CKT	LOAD SERVED	TRIP	POLE	WIRE*	GND	COND	kVA	kVA PER PH A	B	kVA	COND	GND	WIRE*	POLE	TRIP	LOAD SERVED	CKT
1	LINE SIDE UTILITY CONNECTION	100	3	REFER TO RISER FOR WIRE & CONDUIT SIZES				5.76		5.76	1"	#10	#8	3	60	INVERTER #1	2
3									5.75	5.75			#8				4
5	SPACE															SPACE	6
7	SPACE							0.00								SPACE	8
9	SPACE								0.00							SPACE	10
11	SPACE															SPACE	12
13	SPACE							0.00								SPACE	14
15	SPACE								0.00							SPACE	16
17	SPACE															SPACE	18
19	SPACE							0.00								SPACE	20
21	SPACE								0.00							SPACE	22
23	SPACE															SPACE	24
25								0.00								SPACE	26
27	SDP	60	3	REFER TO RISER FOR WIRE & CONDUIT SIZES					0.00							SPACE	28
29																SPACE	30

[redacted]

TOTALS: 5.76 | 5.75

	CONNECTED LOAD (KVA)	DEMAND LOAD (KVA)
LIGHTING		0.00
FIRST 10K RECEPTS		0.00
REMAINDER RECEPT		
LARGEST MOTOR		
MOTOR		
MISC	11.51	11.51
TOTAL (KVA)		11.51
TOTAL AMPS		32

NOTES
L-PROVIDE WITH LOCK OUT CLIP
G-GFC PROTECTED
S- SHUNT TRIP
*-PHASE/NEUTRAL

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5669
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY
NORTH CAROLINA

SEALS

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE
1	Permit Revision 1	1/23/2026

SHEET INFORMATION

E600

ELECTRICAL
PANEL SCHEDULES

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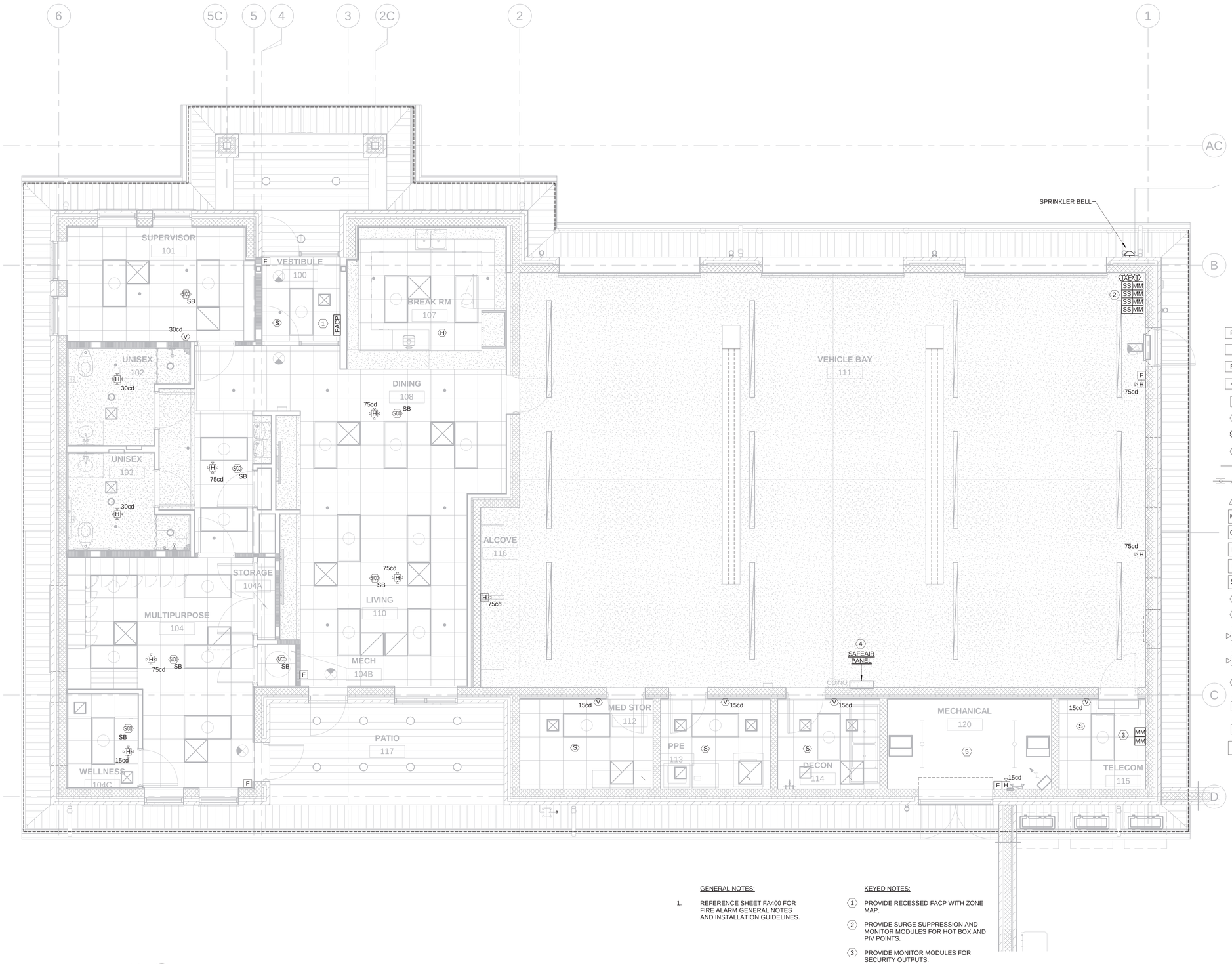

FIRE ALARM SYMBOLS

FACP	WALL MTD FIRE ALARM CONTROL PANEL
NAC	WALL MTD FIRE ALARM NOTIFICATION APPLIANCE CONTROL PANEL
RFAA	FIRE ALARM ANNUNCIATOR
COM	FIRE ALARM COMMUNICATOR
F K	WALL MOUNTED KEYED PULLSTATION
S	SMOKE DETECTOR, CEILING MTD
S/CO	COMBINATION SMOKE AND CO DETECTOR
H	HEAT DETECTOR, CEILING MTD
CON S	CONVENTIONAL DUCT MOUNTED SMOKE DETECTOR
S	SMOKE DAMPER
RA	REMOTE INDICATOR LAMP WITH TEST SWITCH
MM	MONITOR MODULE
CM	CONTROL MODULE
IM	ISOLATION MODULE
M	MAGNETIC DOOR HOLDER
SP	SURGE PROTECTOR
F	FLOW SWITCH
T	TAMPER SWITCH
xxcd H	CEILING MOUNTED FIRE ALARM AUDIO/VISUAL DEVICE XXcd -CANDELA LEVEL PER DRAWING
H	CEILING MOUNTED FIRE ALARM AUDIO DEVICE
xxcd V	CEILING MOUNTED FIRE ALARM VISUAL DEVICE XXcd -CANDELA LEVEL PER DRAWING
xxcd H	WALL MOUNTED FIRE ALARM AUDIO/VISUAL DEVICE XXcd -CANDELA LEVEL PER DRAWING
xxcd V	WALL MOUNTED FIRE ALARM AUDIO DEVICE XXcd -CANDELA LEVEL PER DRAWING
B	24VOLT SPRINKLER BELL.

GENERAL NOTES:

1. REFERENCE SHEET FA400 FOR FIRE ALARM GENERAL NOTES AND INSTALLATION GUIDELINES.

KEYED NOTES:

1. PROVIDE RECESSED FACP WITH ZONE MAP.
2. PROVIDE SURGE SUPPRESSION AND MONITOR MODULES FOR HOT BOX AND PIV POINTS.
3. PROVIDE MONITOR MODULES FOR SECURITY OUTPUTS.
4. PROVIDE FA SHUTDOWN RELAY AT SAFEAIR PANEL.
5. PROVIDE SHUTDOWN RELAYS AT EACH AHU AND ERV.

1 / FA200 FIRE ALARM NEW WORK
1/4" = 1'-0"

WALL LEGEND
GYPSUM BOARD CONSTRUCTION
1/2 HR FIRE BARRIER UL U419
2 HR FIRE BARRIER UL U905
CMU CONSTRUCTION

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

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CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

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SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY NORTH CAROLINA

SEALS

08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	TAV
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

FA200

FIRE ALARM NEW WORK

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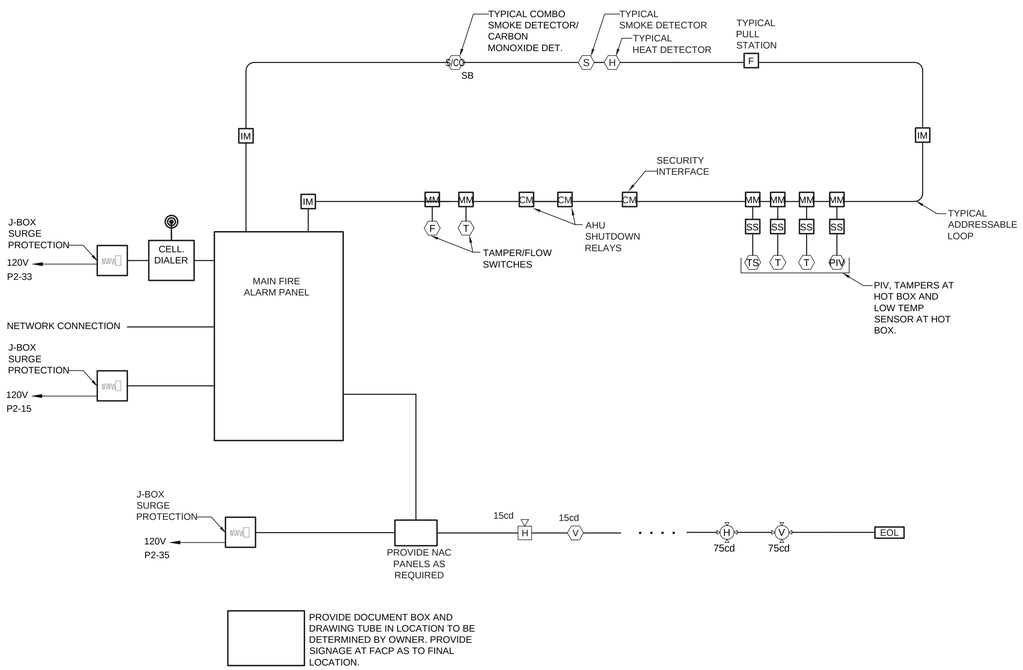


1 FA400 FIRE ALARM RISER DIAGRAM
NO SCALE

FIRE ALARM SPECIFICATION AND INSTALLATION:

1. CONTRACTOR SHALL PROVIDE FIRE ALARM SHOP DRAWINGS TO THE COUNTY FIRE MARSHALL FOR APPROVAL. DO NOT START ANY FIRE ALARM ROUGH-IN WORK UNTIL APPROVED SHOP DRAWINGS ARE RECEIVED FROM THE FIRE MARSHALL
2. THIS DRAWING IS INTENDED TO SHOW ONLY WHICH DEVICES ARE CONNECTED TO WHICH CIRCUIT. THIS DRAWING DOES NOT SHOW THE OPTIMUM PATH FOR THE CIRCUITS. REFER TO FLOOR PLAN FOR SPECIFIC QUANTITIES AND LOCATIONS OF FIRE ALARM DEVICES.
3. ALL NEW FIRE ALARM CABLE SHALL BE IN MINIMUM 3/4" CONDUIT. RACEWAYS CONTAINING FIRE ALARM CONDUCTORS SHALL BE MARKED IN RED FOR READY IDENTIFICATION. UNLESS OTHERWISE NOTED ON THIS RISER.
4. ALL SMOKE DETECTORS SHALL BE PHOTOELECTRIC.
5. ALL ADDRESSABLE LOOP CONTROLLER (INITIATING) CIRCUITS SHALL BE WIRED IN A CLASS 'A' CONFIGURATION WITH NO 'T' TAPS MADE. PROVIDE 20% SPARE ADDRESSES PER CIRCUIT.
6. NOTIFICATION APPLIANCE CIRCUITS (NACs) SHALL BE WIRED CLASS 'B', AND ZONED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, NOT TO EXCEED 80% OF ZONE MODULE RATED OUTPUT. ALL NAC'S SHALL BE EQUIPPED WITH E.O.L. SUPERVISORY RELAYS.
7. FIRE ALARM NOTIFICATION DEVICES SHALL HAVE NOMINAL MOUNTING HEIGHT OF 80" AFF TO BOTTOM OF DEVICE. COORDINATE WITH REFLECTED CEILING PLAN AND ARCHITECT PRIOR TO ROUGH-IN. UNLESS NOTED OTHERWISE ON THE FLOOR PLANS, LIGHT LEVEL AND SOUND OUTPUT LEVELS FOR NEW DEVICES SHALL BE AS FOLLOWS:

   -STROBES 75 cd
   -HORNS 95 dB

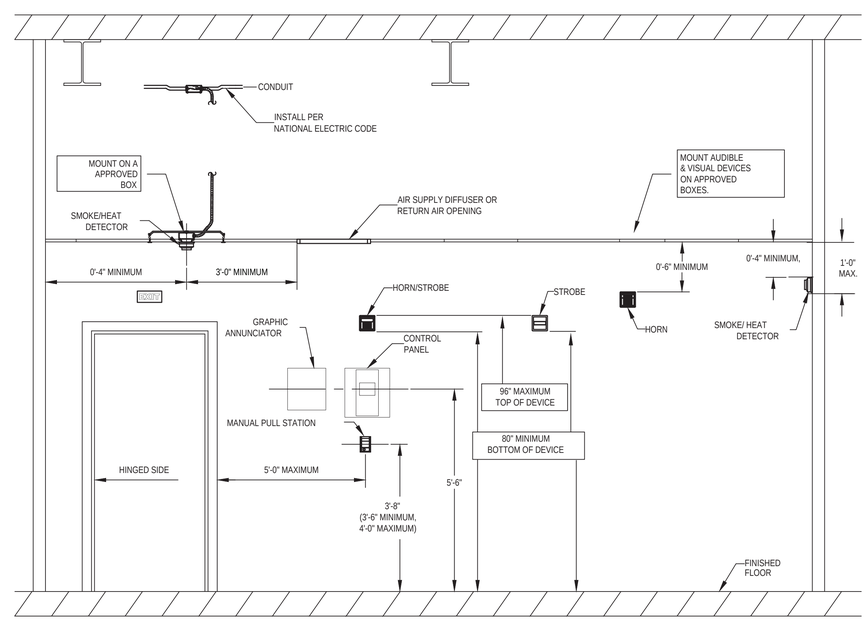
8. ADDITIONAL POWER AMPLIFICATION DEVICES THAT MAY BE NEEDED TO DRIVE NOTIFICATION DEVICES ARE COMPLETELY THE DUTY OF THE E.C./FIRE ALARM VENDOR TO PROVIDE. ANY POWER CIRCUITRY OR ADDITIONAL WIRING NEEDED FOR THIS SYSTEM SHALL BE PROVIDED AS PART OF THE BASE BID ON BID DAY.
9. ALL DEVICES SHALL BE ADA COMPLIANT.
10. INSTALLATION SHALL MEET REQUIREMENTS OF THE LATEST ADOPTED VERSIONS OF THE NFPA 72, NFPA 70 (NEC), AND THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
11. CONTRACTOR SHALL PROVIDE FRAMED, PROTECTED ZONE MAP INDICATING LOCATION AND ADDRESS OF ALL INSTALLED DEVICES AT FACP AND REMOTE ANNUNCIATOR.
12. AT THE CONCLUSION OF THIS PROJECT, THE FIRE ALARM SYSTEM WILL BE TESTED IN ACCORDANCE WITH THE 2013 EDITION OF THE NFPA 72 SECTION 10.4.1.2.
13. REFER TO CONTRACT DOCUMENT FOR ADDITIONAL INFORMATION REQUIRED FOR SUBMITTALS.
14. THE TECHNICIANS WHO MAKE THE CONNECTIONS TO (PERFORM AND PROGRAMING FOR) THE FIRE ALARM SYSTEM ARE REQUIRED TO BE TRAINED AND INDIVIDUALLY CERTIFIED BY THE MANUFACTURER, FOR THE FACP MODEL/SERIES BEING INSTALLED. THIS TRAINING AND CERTIFICATION MUST HAVE OCCURRED WITHIN THE MOST RECENT 24 MONTHS.
15. AN 100% ACCEPTANCE TEST WILL BE REQUIRED. THIS MUST BE PERFORMED IN THE PRESENCE OF A WAKE COUNTY FIRE MARSHAL. A SEPARATE 100% TEST WILL BE PERFORMED BY THE DESIGNER AND OWNER.
16. THE FIRE ALARM CONTRACTOR SHALL SUBMIT A COPY OF THE FIRE ALARM SHOP DRAWING FOR REVIEW AND APPROVAL TO THE AUTHORITIES HAVING JURISDICTION PRIOR TO SYSTEM INSTALLATION. SHOP DRAWINGS SHALL INCLUDE , BUT NOT BE LIMITED TO, ALL OF THE FOLLOWING.
   A. A FLOOR PLAN
   B. LOCATION OF ALARM-INITIATING AND NOTIFICATION APPLIANCES
   C. ALARM CONTROL AND TROUBLE SIGNALING EQUIPMENT
   D. ANNUNCIATION
   E. POWER CONNECTION
   F. BATTERY CALCULATIONS
   G. CONDUCTOR TYPE AND SIZES
   H. VOLTAGE DROP CALCULATIONS
   I. MANUFACTURERS, MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS
   J. DETAILS CO CEILING HEIGHT AND CONSTRUCTION
   K. THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS.
17. REFER TO CONTRACT DOCUMENT FOR ADDITIONAL INFORMATION REQUIRED FOR SUBMITTALS.

FIRE ALARM SYSTEM RESPONSE MATRIX

	Control Unit Annuciation							Notification							Security		Safety
	Common Alarm Indicator	Audible Alarm Signal	Common Supervisory Signal Indicator	Audible Common Supervisory Signal	Common Trouble Signal Indicator	Audible Common Trouble Signal	Floor Alarm Indicators	Activate Floor Evacuation Signals	Activate Sounder Base Devices	Activate Sprinkler Bell	Print Change of Status	Transmit Alarm Signal	Transmit Supervisory Signal	Transmit Trouble Signal	Activate Control Module #1 at Sec. Panel	Activate Control Module #2 at Sec. Panel	AHU Shutdown/Bay Fan Shut-Down
Manual Pull Stations	X	X					X	X			X	X			X		X
Smoke Detectors	X	X					X	X			X	X			X		X
CO Detectors					X	X		X	X		X			X		X	
Heat Detectors-Floor	X	X					X	X			X	X			X		X
Ductmounted Smoke Detectors			X	X				X			X		X		X		X
Tamper Switch-PIV			X	X									X			X	
Tamper Switch			X	X									X			X	
Flow Switch	X	X					X	X		X	X	X			X		X
Fire Alarm Loss of AC Power					X	X					X			X		X	
Fire Alarm Low Battery					X	X					X			X		X	
Shunt Trip Loss of Power			X	X							X		X				
AV Circuit By-Pass					X	X					X			X		X	
AHJ By-Pass					X	X					X			X		X	
Open Circuit					X	X					X			X		X	
Ground Fault					X	X					X			X		X	
Notification Appliance circuit short					X	X					X			X		X	

2 FA400 FIRE ALARM MATRIX
NO SCALE

NFPA 72 AND ADA DEVICE INSTALLATION REQUIREMENTS



3 FA400 FIRE ALARM DEVICE MOUNTING DETAIL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
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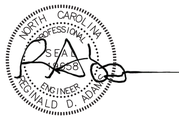

08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	RDA
CHECKED BY:	RDA

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

FA400

FIRE ALARM RISER

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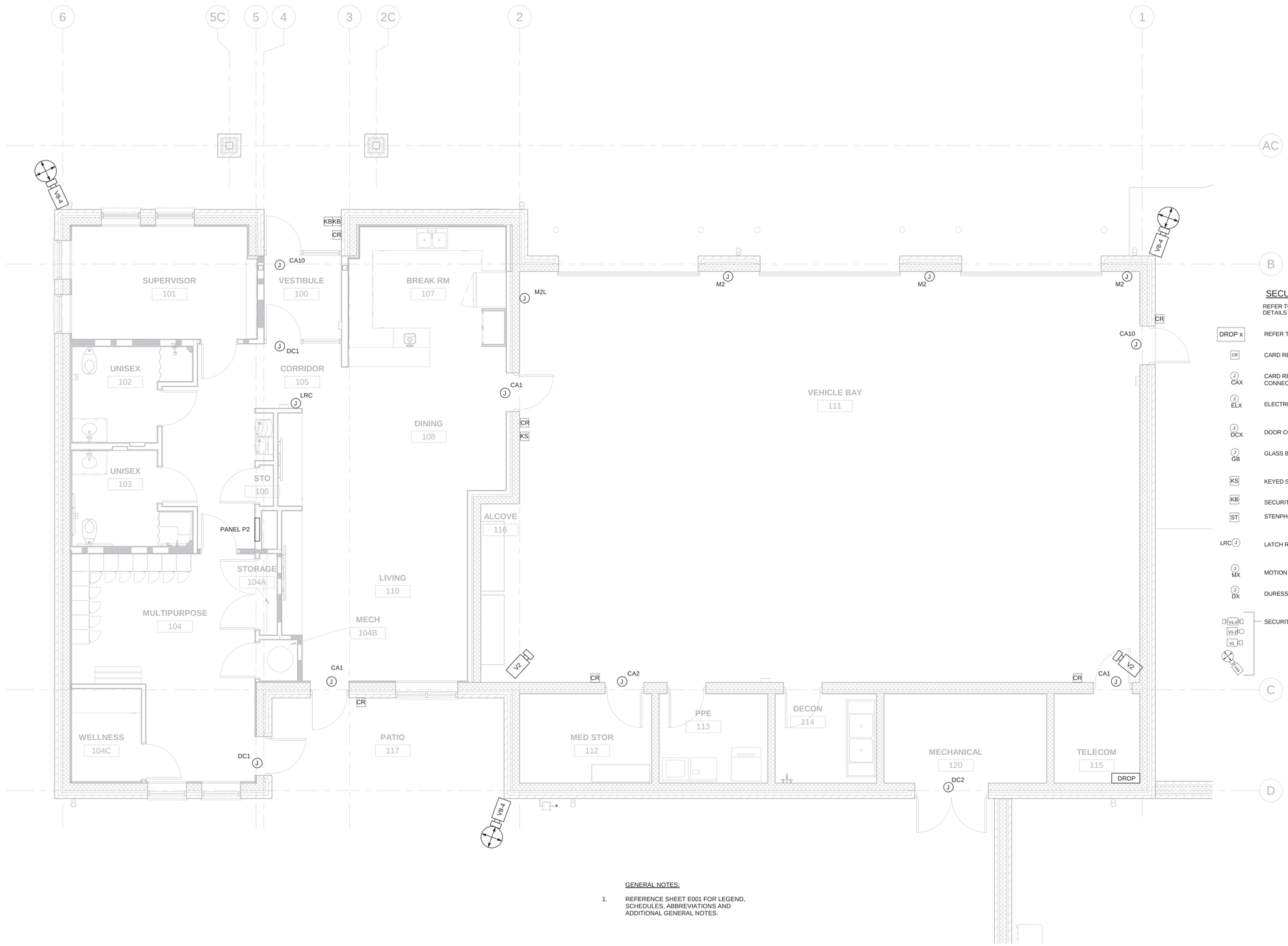

SECURITY SYSTEM SYMBOLS

REFER TO DETAILS SHEETS SS400 &SS401 FOR ROUGH-IN DETAILS RELATED TO SEC. SYSTEMS INSTALLATION.

DROP x	REFER TO SS401 FOR ROUGH-IN INFORMATION
CR	CARD READER.
J CAX	CARD READER DOOR ROUGH IN. PROVIDE POWER CONNECTION AS NOTED ON POWER DRAWINGS.
J ELX	ELECTRIC LOCK ROUGH IN AND POWER.
J DCX	DOOR CONTACT.
J GB	GLASS BREAK.
KS	KEYED SWITCH
KB	SECURITY CONNECTION AT KNOX BOX.
ST	STENPHONE
LRC J	LATCH RELEASE CONTROL.
J MX	MOTION DETECTOR.
J DX	DURESS BUTTON.
V1-2, V1-2, V1, V1-2x	SECURITY CAMERAS.

GENERAL NOTES:

1. REFERENCE SHEET E001 FOR LEGEND, SCHEDULES, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.

1 / SC200 SECURITY NEW WORK
1/4" = 1'-0"

WALL LEGEND
GYPSUM BOARD CONSTRUCTION
1/2 HR FIRE BARRIER UL U419
2 HR FIRE BARRIER UL U905
CMU CONSTRUCTION

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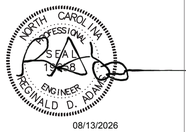
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY NORTH CAROLINA

SEALS



08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	Author
CHECKED BY:	Checker

REVISIONS

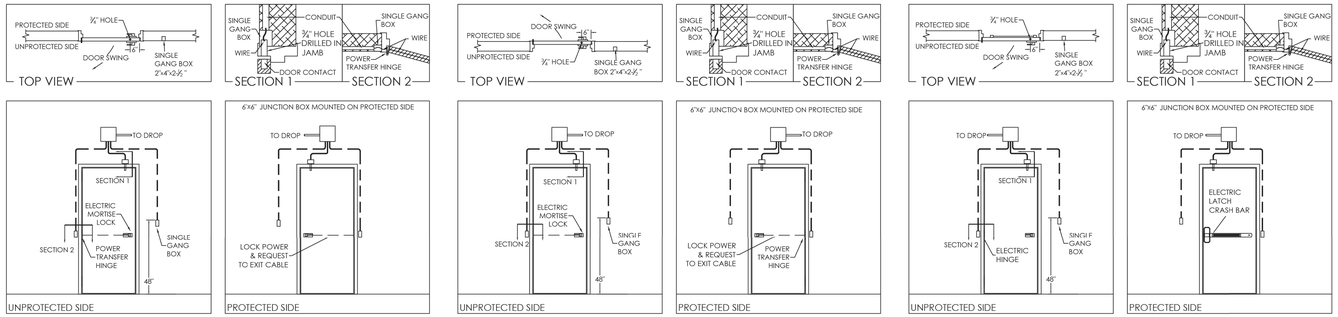
NO.	DESCRIPTION	DATE

SHEET INFORMATION

SC200

SECURITY NEW WORK

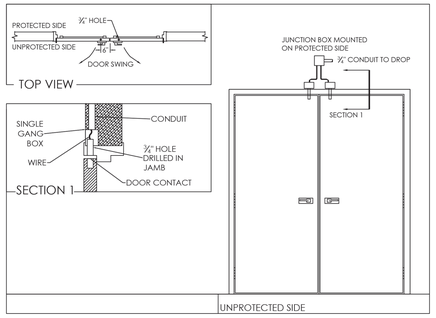
Docusign Envelope ID: CBE6ADD2-2D45-811D-814F-FF94C986F4F9



CA1 CARD ACCESS SINGLE DOOR, MORTISE LOCK, SWING TO UNPROTECTED SIDE
NOT TO SCALE

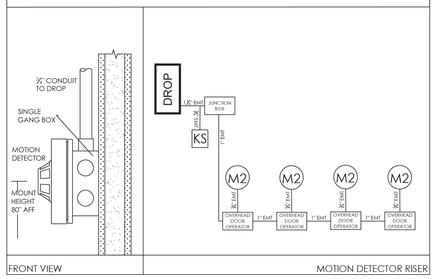
CA2 CARD ACCESS SINGLE DOOR, MORTISE LOCK, SWING TO PROTECTED SIDE
NOT TO SCALE

CA10 CARD ACCESS SINGLE DOOR, EXIT DEVICE, SWING TO UNPROTECTED SIDE
NOT TO SCALE



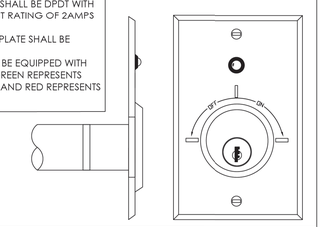
DC2 DOUBLE DOOR CONTACT
NOT TO SCALE

NOTES:
1. BOX TO BE SPOTTED IN FIELD EXACT LOCATION.
2. OVERHEAD DOOR INTERLOCK ONLY. NOT A SECURITY DEVICE.

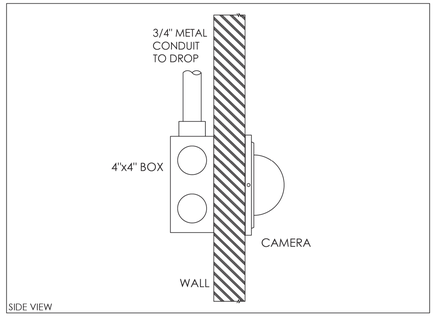


M2 WALL MOUNT MOTION DETECTOR
NOT TO SCALE

NOTES:
1. KEY SWITCHES BE MOMENTARY UNLOCKING AND KEY SHALL NOT BE CAPABLE OF BEING REMOVED FROM CYLINDER WHEN IN THE POSITION.
2. ALL KEY SWITCHES SHALL BE DPDT WITH A MINIMUM CONTACT RATING OF 2AMPS AT 30V DC.
3. KEY SWITCH FACE PLATE SHALL BE STAINLESS STEEL.
4. KEY SWITCH SHALL BE EQUIPPED WITH STATUS LED; WHERE GREEN REPRESENTS UNLOCK CONDITION AND RED REPRESENTS LOCKED POSITION.



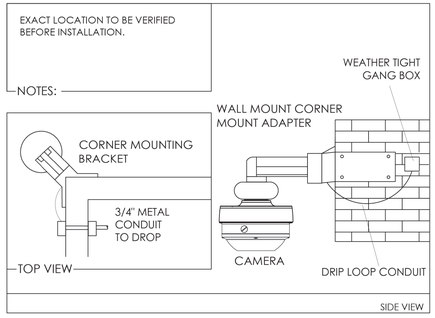
KS KEYSWITCH OVERRIDE
NOT TO SCALE



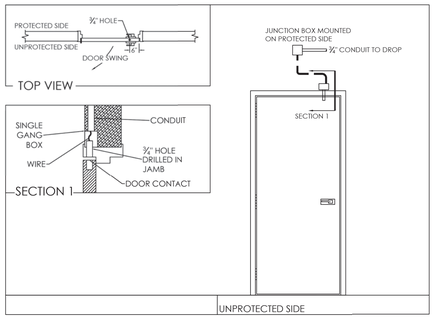
V2 WALL MOUNT FIXED CAMERA
NOT TO SCALE

EXACT LOCATION TO BE VERIFIED BEFORE INSTALLATION.

NOTES:



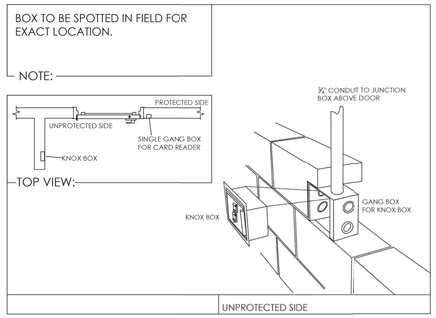
V8-4 C CORNER BRACKET EXTERIOR 360° MULTI LENS CAMERA
NOT TO SCALE



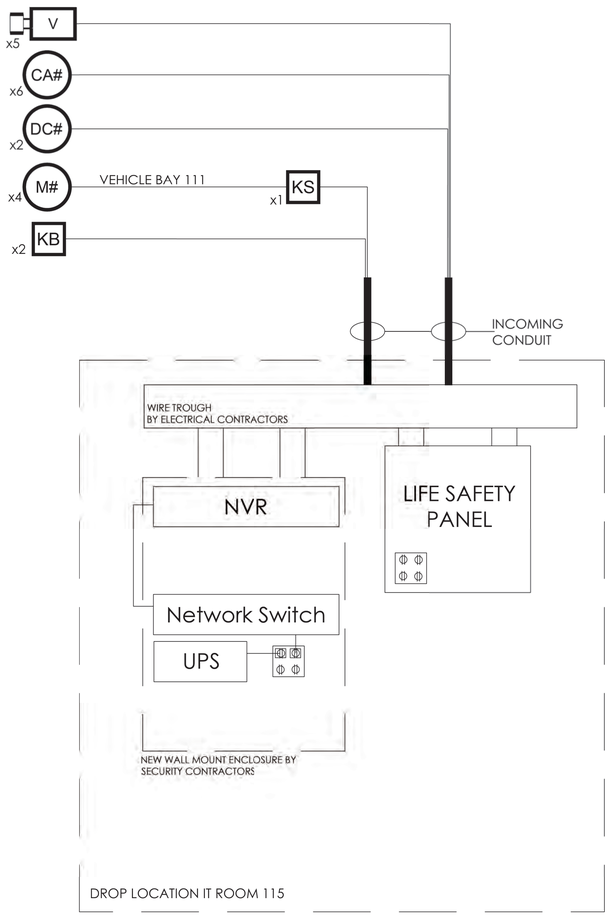
DC1 SINGLE DOOR CONTACT
NOT TO SCALE

BOX TO BE SPOTTED IN FIELD FOR EXACT LOCATION.

NOTE:



KB KNOX BOX
NOT TO SCALE



Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.740.5669
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
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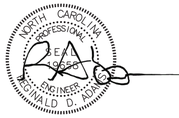
WAKE COUNTY
NORTH CAROLINA

SEALS



08/13/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
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DRAWN BY:	MP
CHECKED BY:	RDA

REVISIONS

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SHEET INFORMATION

SC300
SECURITY DETAILS

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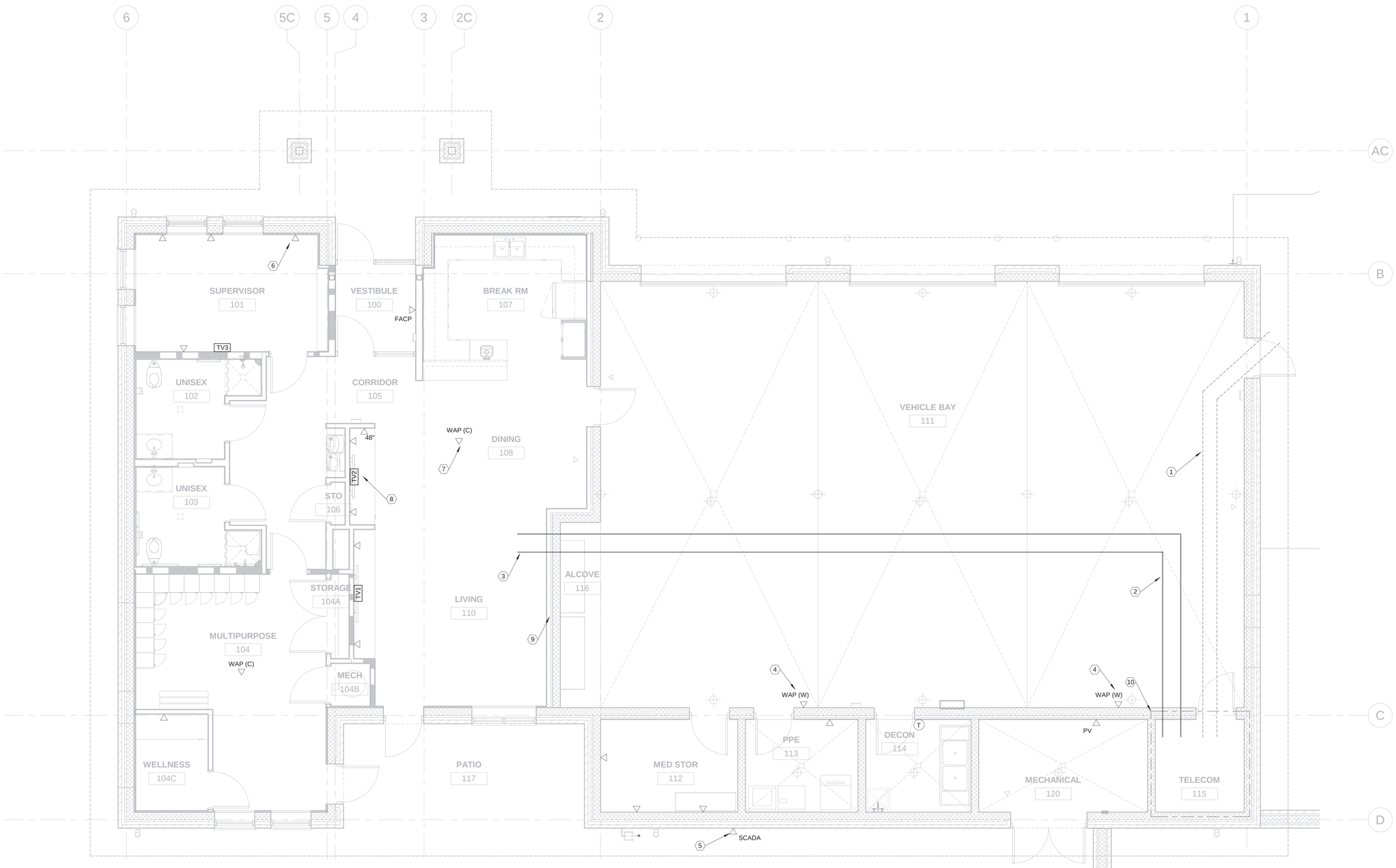

1 T200 TELECOM NEW WORK
1/4" = 1'-0"

GENERAL NOTES:

1. REFERENCE SHEET E001 FOR LEGEND, SCHEDULES, ABBREVIATIONS AND ADDITIONAL GENERAL NOTES.
2. REFER TO SHEET E400 FOR RISERS AND E600 PANEL SCHEDULES.
3. ALL OUTLETS SHALL BE WIRED WITH TWO (2) CAT 6 CABLES UON.
4. WAP OUTLETS SHALL BE WIRED PER THE PROJECT MANUAL.
5. TV2 IN LIVING 110 SHALL BE PROVIDED WITH TWO (2) CAT 6 CABLES AND ONE (1) RG-6U COAXIAL CABLE.
6. TV3 IN WORK 109 SHALL BE PROVIDED WITH TWO (2) CAT6 CABLES.
7. TV3 IN SUPERVISOR 101 SHALL BE PROVIDED WITH TWO (2) CAT6 CABLES ONE (1) RG-6U COAXIAL CABLE..

KEYED NOTES:

1. PROVIDE T/C DUCTBANK PER DETAIL SHEET E100 AND E101. EXTEND TO 12" AFF.
2. PROVIDE TWO (2) 2"C AS HIGH AS POSSIBLE FROM TELECOM ROOM TO DAYROOM SIDE OF BUILDING.
3. EXTEND TWO (2) 2"C INTO PLENUM SPACE ABOVE ACT CEILING.
4. PROVIDE ROUGH-IN FOR WALL MOUNTED WAP. PROVIDE 4X4 BOX WITH SINGLE GANG PLASTER RING AND ONE (1) 1"C WITH PULLSTRING TO JUNCTION BOX IN NOTE #3, TYPICAL.
5. PROVIDE ONE (1) 1"C WITH PULLSTRING FROM SCADA RTU TO TELECOM ROOM.
6. PROVIDE ROUGH-IN FOR WALL MOUNTED STATION OUTLET. PROVIDE 4X4 BOX WITH SINGLE GANG PLASTER RING AND ONE (1) 1"C WITH PULLSTRING TO EITHER A)JUNCTION BOX IN NOTE #3, OR B) TO ABOVE ACT CEILING BASED ON KEYNOTE #10 BELOW. TYPICAL.
7. PROVIDE ROUGH-IN FOR CEILING MOUNTED WAP. PROVIDE 4X4 BOX WITH SINGLE GANG PLASTER RING AND ONE (1) 1"C WITH PULLSTRING TO 12" FROM BOX. TYPICAL ALL CEILING MOUNTED WAPS.
8. PROVIDE TV POWER/DATA CONNECTION PER T400. TYPICAL TV1/TV2/TV3.
9. ALL OUTLETS PLAN EAST OF THIS WALL SHALL HAVE CONDUIT STUBBED 12" AFC; ALL OUTLETS PLAN WEST OF THIS WALL SHALL HAVE CONDUIT PROVIDED TO EITHER A) DIRECTLY TO THE MAIN TELECOM ROOM OR B) TO JUNCTION BOX NOTED IN KEYNOTE #3.
10. REFER TO SHEET E300 FOR ADDITIONAL INFORMATION THIS AREA.

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

Esse Architects
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RALEIGH, NORTH CAROLINA 27608
www.esse-architects.com

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919.535.5200 T

STRUCTURAL
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120 ST. MARY'S STREET
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702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
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WAKE COUNTY NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 19406 ENGINEER REGINALD D. ADAMS

08/13/2026

PROJECT INFORMATION

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CHECKED BY:	Checker

REVISIONS

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T200

TELECOM NEW WORK

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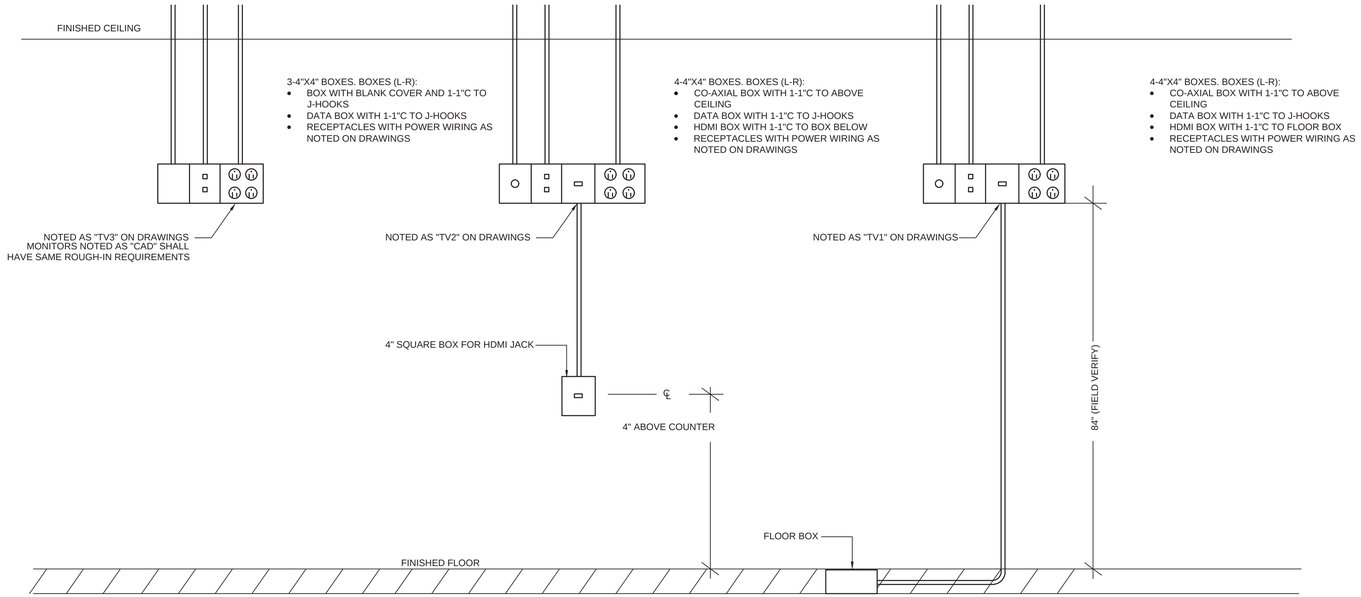
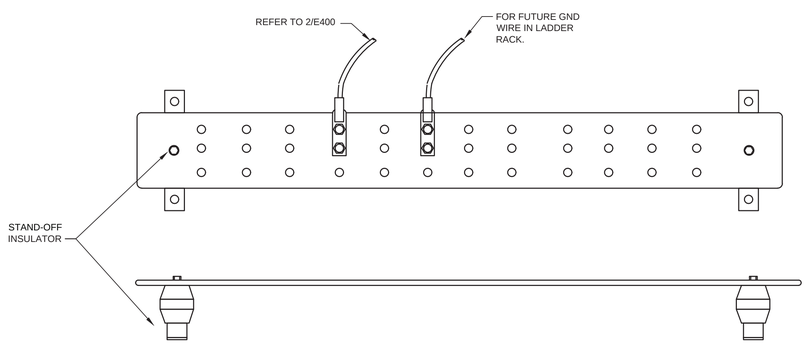


1 / T400 MONITOR INSTALLATION DETAIL
NO SCALE



TELECOM. MAIN GROUND BUS

NOTES:

1. PROVIDE 12" TELECOM MAIN GROUND BAR (TMGB) AND ASSOCIATED EQUIPMENT, MOUNTED AT 84" AFF IN MAIN TELECOM ROOM AND AS NOTED ON THE ELECTRICAL PLANS. REFER TO FLOOR PLAN FOR LOCATIONS.

2. TMGB SHALL BE CHATSWORTH MODEL 40153-012 OR EQUAL.

2 / T400 TMGB DETAIL
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
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27616

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SEALS

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SHEET INFORMATION

T400

TELECOM DETAILS

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FIRE PROTECTION SYMBOLS AND ABBREVIATIONS

- PIPE TURNING UP
- PIPE TURNING DOWN
- TEE DOWN
- TEE UP
- 45° OFFSET
- DIRECTION OF FLOW IN PIPE
- PIPE SLOPED IN DIRECTION OF ARROW
- PIPE CAP
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- PIPE UNION
- GATE VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- BALL VALVE
- (S) SOLENOID VALVE
- PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE
- (S) BASKET STRAINER
- PRESSURE GAUGE (W/ BALL VALVE)
- PIPE ANCHOR
- FLEXIBLE PIPE CONNECTION
- PUMP
- FIRE HOSE CABINET
- 1 HYDRAULIC CALCULATION NODE (SPRINKLER SYSTEM)
- 24 HYDRAULIC CALCULATION NODE (STANDPIPE SYSTEM)
- ALARM CHECK VALVE
- DRY PIPE VALVE WITH EXHAUSTER OR ACCELERATOR
- DELUGE VALVE
- PREACTION VALVE
- HOSE END VALVE
- TS TAMPER SWITCH (SHOWN ON VALVE)
- PS PRESSURE SWITCH
- FS FLOW SWITCH
- ANGLE VALVE (ELEVATION VIEW)
- ANGLE VALVE (PLAN VIEW)
- FIRE HYDRANT WITH OS&Y VALVE IN ROADWAY BOX
- SIAMESE CONN., FIRE DEPT. CONN.
- FIRE PUMP TEST HEADER
- F.C.A. FLOOR CONTROL ASSEMBLY

℄	CENTER LINE
<	ANGLE
Ø	ROUND, DIAMETER OR PHASE
#	POUNDS OR NUMBER
A	COMPRESSED AIR
ABV.CLG.	ABOVE CEILING
ACFM	ACTUAL CUBIC FEET PER MINUTE
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ALUM.	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARD ASSOCIATION
AP	ACCESS PANEL
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASV	AUTOMATIC SPRINKLER VALVE
AUTO	AUTOMATIC
AWWA	AMERICAN WATER WORKS ASSOCIATION
BFF	BELOW FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BOP	BOTTOM OF PIPE
C	CELSIUS
C/C	CENTER TO CENTER
CI	CAST IRON
CLG.	CEILING
CONC.	CONCRETE
CONFIG.	CONFIGURATION
CONN.	CONNECTION
CONT.	CONTINUATION
CONST.	CONSTRUCTION
CONTR.	CONTRACTOR
COORD.	COORDINATE
COP	COEFFICIENT OF PERFORMANCE
CTR	CENTER
CU	COPPER
CU.FT.	CUBIC FOOT
CW	COLD WATER OR CITY WATER
CU.YD.	CUBIC YARD
D.I.	DUCTILE IRON
DIA.	DIAMETER
DN.	DOWN
DWG.	DRAWING
E.C.	ELECTRICAL CONTRACTOR
EL	ELEVATION
ELEC.	ELECTRICAL
EQUIP.	EQUIPMENT
EQ.	EQUAL
EXIST.	EXISTING
FCA	FLOOR CONTROL ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
FIN.	FINISHED
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE
FP	FIRE PROTECTION
F.P.C.	FIRE PROTECTION CONTRACTOR
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FOOT/FEET
GA.	GAGE
GAL.	GALLONS
GALV.	GALVANIZED
G.C.	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
H.C.	HEATING, VENTILATING, AND AIR CONDITIONING CONTRACTOR
HGR.	HANGER
H.CAB.	HOSE CABINET
HOA	HAND-OFF-AUTOMATIC
HORZ.	HORIZONTAL
HP	HIGH PRESSURE OR HORSEPOWER
HR	HOUR
HTG.	HEATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HYD.	HYDRANT
IN.	INCH
KW	KILOWATT
MAX.	MAXIMUM
MECH.	MECHANICAL
MEZZ	MEZZANINE
MFG.	MANUFACTURING
MFR.	MANUFACTURER
MIN.	MINIMUM
MJ	MECHANICAL JOINT
MTD	MOUNTED
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NPSH	NET POSITIVE SUCTION HEAD
N.R.S.	NON RISING STEM
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OPNG	OPENING
O.R.	OPERATING ROOM
OSD	OPEN SIGHT DRAIN
O.S.&Y.	OUTSIDE SCREW AND YOKE
P.C.	PLUMBING CONTRACTOR
PICU	PEDIATRIC INTENSIVE CARE UNIT
PLBG.	PLUMBING
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
QR	QUICK RESPONSE
QTY.	QUANTITY
REINF.	REINFORCING
REQ'D	REQUIRED
REV.	REVISION
RPDA	REDUCED PRESSURE DETECTOR ASSMBLY
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
R.S.	RISING STEM
S.C.	SITE CONTRACTOR
SCH.	SCHEDULE
SPEC.	SPECIFICATION
SPR	SPRINKLER
SSU	STANDARD SPRAY UPRIGHT
SSS	STANDARD SPRAY SIDEWALL
STA.	STEEL
STRUCT.	STRUCTURAL
SYM	SYMBOL OR SYMMETRICAL
SYS.	SYSTEM
T.O.P.	TOP OF PIPE
T.O.S.	TOP OF STEEL
TS	TAMPER SWITCH
TYP.	TYPICAL
U.F.	UNDER FLOOR
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
VLV.	VALVE
W/	WITH
W/O	WITHOUT
ZCA	ZONE CONTROL ASSEMBLY

FIRE PROTECTION GENERAL NOTES

1. DIVISION 21 SHALL PROVIDE ALL LABOR AND MATERIALS REQUIRED FOR A COMPLETE WORKING SYSTEM WHICH SHALL COMPLY FULLY WITH NFPA #13, 2013 EDITION, STANDARD FOR INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS. THE NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION, REQUIREMENTS OF ALL LOCAL FIRE MARSHALL AUTHORITIES. FINAL ACCEPTANCE IS CONTINGENT UPON APPROVAL OF ALL WORK AND COMPLETION OF THE CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FORM 85A.

2. DIVISION 21 SHALL PROVIDE ENGINEERED SHOP DRAWINGS FOR THE PROPOSED BUILDING. THE DRAWINGS SHALL INCLUDE THE FULLY AUTOMATIC WET PIPE SPRINKLER SYSTEM WITH ALL PIPING, SPRAY HEADS OF EVERY TYPE REQUIRED, FITTINGS, VALVES, DEVICES, ACCESSORIES, HANGERS AND SUPPORTS, ALARM CHECK VALVES, WATER MOTOR GONG AND CONNECTIONS. THE WORK SHALL INCLUDE HYDRAULIC CALCULATIONS FOR THE AUTOMATIC WET PIPE SPRINKLER SYSTEMS MOST REMOTE AREAS (APPLY 10PSI REDUCTION ON STATIC AND RESIDUAL PRESSURES AND A 10% REDUCTION ON FLOW) SEE SPRINKLER DESIGN DATA ON THIS SHEET, SUBMIT TO ENGINEER FOR APPROVAL.

3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, UL LISTED AND FM APPROVED FOR THE INTENDED USE AND SHALL BE INSTALLED IN FULL COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS.

4. THE FIRE SPRINKLER SYSTEM SHALL BE AN AUTOMATIC WET PIPE SYSTEM. DRY SPRINKLER HEADS SHALL BE UTILIZED IN UNHEATED AREAS.

5. SPRINKLER HEADS SHALL BE SPACED AS PER N.F.P.A. 13, 2013 EDITION.

6. ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED FOR THIS PROJECT.

7. ALL PIPING AND/OR CONDUIT PENETRATIONS THRU FIRE RATED FLOORS AND/OR WALLS SHALL BE MADE/SEALED IN ACCORDANCE WITH UL LISTED SYSTEMS.

8. UNLESS OTHERWISE INDICATED DIVISION 21 IS RESPONSIBLE FOR ALL CUTTING, CORE DRILLING AND PATCHING REQUIRED TO INSTALL FIRE PROTECTION WORK.

9. ALL SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILES WHERE LAY-IN CEILINGS OCCUR UNLESS SHOWN OR NOTED OTHERWISE.

10. REFER TO ALL ARCHITECTURAL/GENERAL CONSTRUCTION CONTRACT SPECIFICATIONS AND DRAWING DOCUMENTS FOR PROJECT REQUIREMENTS.

11. IT IS TOTALLY DIVISION 21'S RESPONSIBILITY TO COORDINATE HANGERS & SUPPORTS WITH OTHER TRADES. ANY DAMAGE INCURRED ON EXISTING FIREPROOFING MATERIAL DUE TO INSTALLATION OF HANGERS BY THIS CONTRACTOR, SHALL BE REPAIRED BY THE FIREPROOFING SUBCONTRACTOR AT THE FIRE PROTECTION CONTRACTOR'S EXPENSE.

12. ALL PIPE LARGER THAN 2" SHALL BE BLACK STEEL SCH. 10 WITH GROOVED ENDS JOINED BY GROOVE FITTINGS. USE RIGID COUPLINGS WITH ALL 2" BRANCH LINES TO PREVENT PIPE ROTATION.

13. ALL PIPE 2" AND SMALLER SHALL BE BLACK STEEL SCH. 40 WITH THREADED ENDS JOINED BY THREADED FITTINGS.

14. FINAL PIPE SIZING SHALL BE BASED ON HYDRAULIC CALCULATIONS FOR APPROPRIATE HAZARD AND A WATER FLOW TEST OF FIRE HYDRANT FLOW NEAREST TO THE SITE. THE TEST SHALL BE PROVIDED BY DIVISION 21.

15. ALL ARMOVERS SHALL BE 1", ARMOVERS EXCEEDING 1"X 2'-0" SHALL BE SUPPORTED WITH A HANGER PER NFPA #13.

16. ALL INTERIOR SPRINKLER PIPING SHALL BE PRESSURE TESTED FOR 2 HOURS AT 200 PSI OR 50 PSI ABOVE THE MAXIMUM SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER.

17. AUTOMATIC SPRINKLERS SHALL BE PROVIDED UNDER DUCTS OF 48" AND GREATER WIDTH AND UNDER LESSER WIDTH DUCTS WHERE SPRAY HEADS CANNOT BE LOCATED TO COMPLY WITH THE CLEARANCE GUIDELINES OF NFPA # 13.

18. ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR THE PROCEDURES USED. ALL SLAG CAUSED BY WELDING OR CUTTING PROCEDURES SHALL BE REMOVED FROM PIPING BEFORE INSTALLATION OF PIPING.

19. FLUSHING CONNECTIONS SHALL BE PROVIDED AT THE ENDS OF EACH CROSS MAIN.

20. A PERMANENT METAL PLACARD SHALL BE PROVIDED AT THE BASE OF THE RISER INDICATING THE DESIGN CRITERIA AND SYSTEM DEMANDS.

21. ENGRAVED LAMINATED LABELS SHALL BE PROVIDED ON ALL EQUIPMENT.

22. EQUIPMENT NAME PLATED (METAL) FOR PERMANENT ATTACHMENT SHALL LIST THE FOLLOWING:
1. MANUFACTURER, PRODUCT NAME, MODEL NUMBER, AND SERIAL NUMBER.
2. CAPACITY, OPERATING AND POWER CHARACTERISTICS, AND ESSENTIAL DATA.
3. LABELS OF TESTED COMPLIANCES.

23. PROVIDE FLOW SWITCHES FOR SYSTEM MAIN AND ZONES AND TAMPER SWITCHES FOR ALL ABOVE GROUND GATE, WAFER, AND BALL VALVES ABOVE GROUND AND INSIDE THE BUILDING.

24. WIRING FROM TAMPER SWITCHES AND FLOW SWITCHES TO FIRE ALARM PANEL SHALL BE BY ELECTRICAL CONTRACTOR.

25. ALL PENETRATIONS OF RATED WALLS AND FLOORS SHALL BE FIRE STOPPED IN ACCORDANCE WITH THE SCHEDULE AND DETAILS ON THIS SHEET.

26. ALL SPRINKLER PIPING, AS SHOWN, IS DIAGRAMMATIC WITH APPROXIMATE PIPE LOCATIONS, ELEVATIONS, ROUTING, ETC., AND IS PROVIDED FOR INFORMATIONAL PURPOSES. EVERY FITTING, ELL, TEE AND LENGTH OF PIPE MAY NOT BE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO REVIEW THE CONTRACT DRAWINGS AND COORDINATE THE FIRE PROTECTION SYSTEM INSTALLATION WITH THE BUILDING STRUCTURAL, MECHANICAL AND ELECTRICAL SYSTEMS. THE FIRE PROTECTION CONTRACTOR SHALL CREATE A FABRICATION DRAWING SHOWING ALL PIPE SIZES, LOCATION, ROUTING, HANGERS & ELEVATIONS THAT IS A RESULT OF THIS COORDINATION EFFORT. NECESSARY OFFSETS IN PIPING REQUIRED TO PROPERLY INSTALL THE FIRE PROTECTION SYSTEM AS TO TAKE UP MINIMUM SPACE SHALL BE FURNISHED AND INSTALL BY THE CONTRACTOR WITH NO ADDITIONAL EXPENSE TO THE OWNER.

SPRINKLER HEAD LEGEND

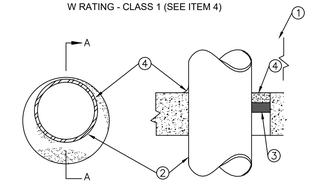
- CONCEALED PENDENT SPRINKLER HEAD, QR, CHROME BODY, WHITE COVER PLATE, 1/2, 155°, K=5.6.
- UPRIGHT SPRINKLER HEAD, QR, SSU BRASS BODY, 1/2", 155°, K=5.6.
- HT HIGH TEMPERATURE UPRIGHT SPRINKLER HEAD, QR, SSU BRASS BODY, 1/2", 286°, K=5.6.
- SIDEWALL SPRINKLER HEAD: QR CHROME BODY, 1/2", 155°, SSS, K=5.6.
- HT HIGH TEMPERATURE SIDEWALL SPRINKLER HEAD: QR CHROME BODY, 1/2", 286°, SSS, K=5.6.
- DRY TYPE SIDEWALL SPRINKLER HEAD: QR CHROME BODY, 1/2", 155°, SSS, K=5.6.

NOTE:

ALL SPRINKLER HEAD SPECIFICATION INFORMATION LISTED ABOVE IS TYPICAL UNLESS OTHERWISE INDICATED ON THE DRAWINGS AND/OR AS OTHERWISE REQ'D. BY CODE (ORIFICE SIZES, TEMP. RATINGS, ETC.).

FIRE RATED PENTRATION DETAILS

SYSTEM NO. C-JA-1001
MARCH 05 2007
F RATINGS-3 4 HR
T RATING-0 HR.
W RATING - CLASS 1 (SEE ITEM 4)



SECTION A–A

1. FLOOR OR WALL ASSEMBLY - MIN 4-1/2 IN. THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF CIRCULAR THROUGH OPENING IS 32-1/2 IN.

SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE - (OPTIONAL, NOT SHOWN) - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL. AS AN ALTERATE, NOM 12 IN DAIM (OR SMASLLER) SLEEVE FABRICATED FROM NOM 0.019 IN THICK GALV STEEL CAST OR GROUNTED INTO FLOOR OR WALL ASSEMBLY FLUSH WITH FLOOR OR WALL SURFACE.

2. THROUGH–PENETRANT– ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (POINT CONTACT) TO MAX 1–3/8" IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

A. STEEL PIPE–NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
A1. IRON PIPE–NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
B. CONDUIT–NOM 6 IN. DIAM (OR SMALLER) RIGID STEEL CONDUIT.
C. CONDUIT– NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

3. PACKING MATERIAL – POLYETHYLENE BACKER ROD OR NOM 1 IN. THICKNESS OF TIGHTLY–PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF SOLID CONCRETE OR CONCRETE BLOCK WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4). AS AN ALTERNATE WHEN MAX PIPE SIZE IS 10 IN. DIAM AND WHEN MAX ANNULAR SPACE IS 1 IN. OR, A MIN 1 IN. THICKNESS OF TIGHTLY–PACKED CERAMIC FIBER BLANKET OF MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN 1/2 IN. FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF SOLID CONCRETE WALL.

4. FILL, VOID OR CAVITY MATERIALS* – CAULK – APPLIED TO FILL THE ANNULAR SPACE TO THE MIN THICKNESS SHOWN IN THE FOLLOWING TABLE:

MAX PIPE DIAM IN	MAX ANNULAR SPACE IN.	PACKING MATERIAL TYPE (A)	MIN. CAULK THKNS IN
10	1	BR, CF, GF OR MW	1/2 (B)
10	1	CF OR MW	1/2 (C)
30	2-1/2	BR, CF, GF OR MW	1 (B)

(A) BR= POLYETHYLENE BACKER ROD.

CF= CERAMIC FIBER BLANKET.

GF= GLASS FIBER INSULATION.

MW= MINERAL WOOL BATT

(B) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL

(C) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACEOF SOLID (NON-CONCRETE BLOCK) WALL.

3M COMPANY- TYPE CP 25WB+ OR FB-3000 WT

(NOTE - W RATING APPLIES ONLY WHEN FB-3000 WT IS USEDON TOP SIRFACE OR FLOOR AND WHEN IT LAPS ONTO CONCRETE FOR SLEECED OPENING.)

* BEARING THE UL CLASSIFICATION MARKING.

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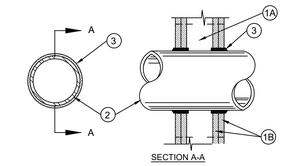
SYSTEM NO. WL1001
JUNE 15 2005
F RATINGS-1, 2, 3 AND 4 HR (SEE ITEM 2 AND 3)
T RATING-0, 1, 2, 3, AND 4 HR. (SEE ITEM 3)
L RATING AT AMBIENT - LESS THAN 1 CFM PER SQ. FT.
L RATING AT 400°F - LESS THAN 1 CFM PER SQ. FT.



SECTION A-A

1. THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE WALL ASSEMBLY-CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 8 FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC WITH NOM 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. WIDE BY 1-3/8 IN. DEEP CHANNELS SPACED MAX 24 IN. OC.

B. WALLBOARD, GYPSUM* - NOM 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 13-1/2 IN.

2. THROUGH - PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY F OPENING SHALL BE MIN OF 0IN. (POINT CONTACT) TO MAX MAX. 2 IN. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED.

A. STEEL PIPE - NOM 24 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

B. IRON PIPE - NOM 24 IN. DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE LINE PRESSURE PIPE.

C. CONDUIT - NOM 6 IN. DIAM. (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.

D. COPPER TUBING - NOM 24 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.

E. COPPER PIPE - NOM 24 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

F. THROUGH PENETRANTING ORIDUCT* - FLEXIBLE METAL PIPING THE FOLLOWING TYPES OF STELL FLEXIBLE METAL GAS PIPING MAY BE USED.

3. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - MIN 5/8. 1-1/4, 1-7/8 AND 2-1/2 IN THICKESS OF CAULK FOR 1, 2, 3, 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OR WALL. MIN 1/4 IN DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIZE OF WALL. THE HOURLY F RATING OF THE FIRESTOP IS DEPENENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSATEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW.

MAX PIPE OR CONDUIT DIAM, IN	F RATING HR	T RATING HR
1	1 or 2	0+, 1 or 2
1	3 or 4	3 or 4
4	1 or 2	0
6	3 or 4	0
12	1 or 2	0

+WHEN COPPER PIPE IS USED, T RATING IS 0 H.

3M COMPANY - CP 25WB+ or FB-3000 WT.

*BEARING THE UL CLASSIFICATION MARKING.

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FIRE PROTECTION DESIGN DATA

Project Name: WAKE COUNTY MINI CITY EMS		System: WET	
Project Location: 4704 HARGROVE ROAD, RALEIGH, NC 27616		Sys. Sq. Ft.: +/- 4,060	
Suite: ——	Floor#: 1	Ceiling Hgt.: VARIES	
Designed By: SIGMA ENGINEERED SOLUTIONS	Phone#: (919) 840-9300	Total Bldg. Hgt.: 23'-0" MAXIMUM	
Occupancy: EMS STATION	Hazard: SEE BELOW		

FIRE PROTECTION DESIGN SUMMARY

	System #1					
Design Method	CALCULATED					
Design Area #	R/A-1					
Location	OFFICE					
Type of System	WET					
Hazard Class	LIGHT					
Criteria From	NFPA 13					
Design Area	900 SQ FT					
Sprinkler Spacing	130 SQ FT (MAX)					
Density	0.15					
K-Factor	5.6					
Hose Allowance	250 GPM					
# Design Sprklr's.	14					
Special App Spklr	N/A					
Req.@ BOR						
G.P.M. Req'd.	TBD GPM					
P.S.I. Req'd.	TBD PSI					
Req.@ PUMP						
G.P.M. Req'd.	N/A					
P.S.I. Req'd.	N/A					
Safety Factor@Test	TBD PSI					
Dry Sys. Vol. (gal)	N/A					

FIRE PROTECTION WATER SUPPLY INFORMATION

TESTED BY	DREW KING	DATE/TIME	10/20/2025 11:10AM	PRESSURE HYDRANT	WHYD105529	
HYDRANT ELEV.	290' +/-	FLOW HYDRANT #1	WHYD100927	FLOW HYDRANT #2	N/A	
STATIC (PSI)	84PSI	RESIDUAL (PSI)	82PSI	FLOW (GPM)	1,990	

COPY OF TEST DATA SHALL BE INCLUDED WITH CALCULATION, WATER SUPPLY SHALL BE REDUCED FOR SAFETY FACTOR PER GENERAL NOTES

DIV 21 CONTRACTOR SHALL OBTAIN UPDATED FLOW TEST AND INCLUDE THAT DATE AND RESULTS WITH SUBMITTAL CALCULATIONS.

SEISMIC BRACING NOTES

ALL COUPLINGS ARE INTENDED TO BE RIGID WITH THE FOLLOWING NOTED EXCEPTIONS BELOW. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH STRUCTURAL AND ALL OTHER TRADES TO LOCATE BRACING AS NEEDED. THE FIRE PROTECTION CONTRACTOR SHALL PERFORM SEISMIC BRACING CALCULATIONS FOR ALL BRACES IN THE SYSTEM AND PROVIDE AS PART OF THE SHOP DRAWING SUBMITTAL.

1. PROVIDE FLEXIBLE COUPLINGS WITHIN 12" ON EITHER SIDE OF RATED WALLS AND MASONRY.

2. PROVIDE FLEXIBLE COUPLINGS WITHIN 24" OF THE TOP AND BOTTOM OF ALL RISERS.

3. PROVIDE FLEXIBLE COUPLINGS WITHIN 12" ABOVE AND WITHIN 24" BELOW THE FLOOR

4. PROVIDE FLEXIBLE COUPLINGS WITHIN 24" OF THE TOP OF DROPS EXCEEDING 15' IN LENGTH TO PORTIONS OF SYSTEMS SUPPLYING MORE THAN 1 SPRINKLER

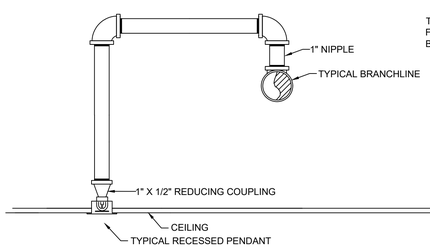
5. PROVIDE FLEXIBLE COUPLINGS WITHIN 24" ABOVE AND 24" BELOW ANY INTERMEDIATE POINTS OF SUPPORT FOR A RISER OR OTHER VERTICAL PIPE.

6. PROVIDE SWAY BRACES AT THE TOP OF RISER, ALONG ALL FEED AND CROSS MAINS, AND LATERAL BRACING ON BRANCH LINES 2½" AND LARGER.

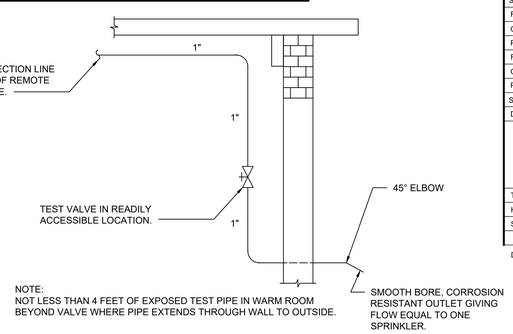
7. PROVIDE BRANCH LINE BRACING PER NFPA 13 - 9.3.6.

8. PROVIDE CLEARANCES WHERE PIPE PASSES THROUGH PLATFORM, FOUNDATION, WALLS, OR FLOORS, THE HOLES SHALL BE SIZED SUCH THAT THE DIAMETER OF THE HOLES IS NOMINALLY 2 IN. LARGER THAN THE PIPE FOR PIPE 1 IN. NOMINAL TO 3-1/2 IN NOMINAL AND 4 IN. LARGER THAN THE PIPE FOR 4 IN. NOMINAL AND LARGER.

9. WHERE CLEARANCE IS PROVIDED BY A PIPE SLEEVE, A NOMINAL DIAMETER 2 IN. LARGER THAN THE NOMINAL DIAMETER OF THE PIPE SHALL BE ACCEPTABLE FOR PIPE SIZES 1 IN THROUGH 3-1/2 IN. AND THE CLEARANCE PROVIDED BY A PIPE SLEEVE OF NOMINAL DIAMETER OF THE PIPE SHALL BE ACCEPTABLE FOR PIPE SIZES 4 IN. AND LARGER.



1 FP001 **RETURN BEND DETAIL**
NO SCALE



NOTE:
NOT LESS THAN 4 FEET OF EXPOSED TEST PIPE IN WARM ROOM BEYOND VALVE WHERE PIPE EXTENDS THROUGH WALL TO OUTSIDE.

2 FP001 **LOW POINT DRAIN OR INSPECTION TEST**
NO SCALE

Esse Architects
632 PERSHING ROAD
RALEIGH, NORTH CAROLINA 27608
P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
NC LICIF-1434

WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL SEAL 026326 ENGINEER JOHN R. ERICKSON

08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

FP001

FIRE PROTECTION COVER

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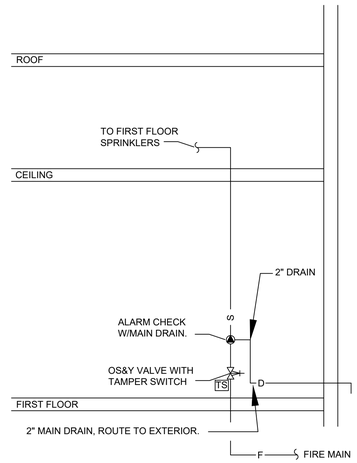
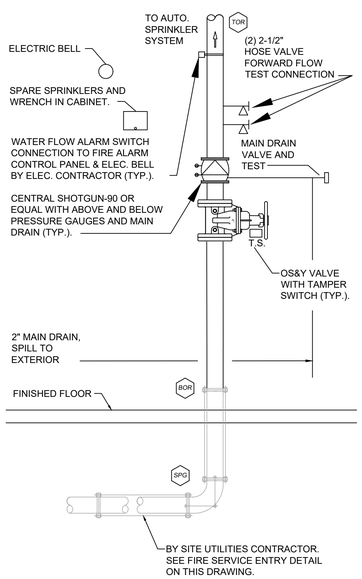
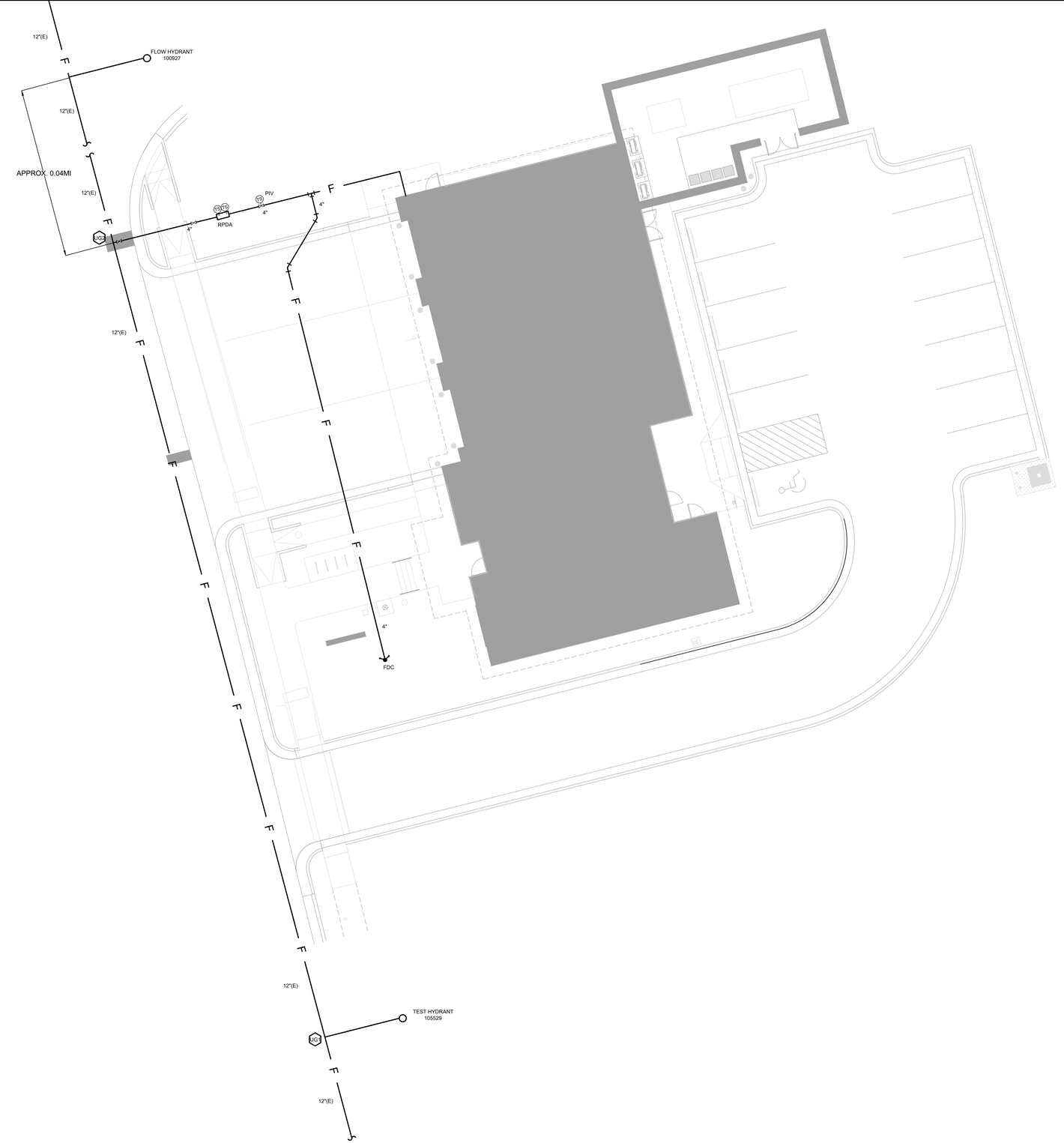


FIRE LINE BACKFLOW PREVENTION IS PROVIDED AT THE STREET ALONG WITH THE FIRE DEPARTMENT CONNECTION. REFER TO SHEET C3.00 FOR SITE UTILITY PLAN AND ADDITIONAL INFORMATION.

1 FP002 **SPRINKLER RISER SCHEMATIC**
NO SCALE



2 FP002 **SPRINKLER RISER DETAIL**
NO SCALE



3 FP002 **FIRE PROTECTION SITE PLAN**
3/32" = 1'-0"

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P 919.742.5689
www.esse-architects.com

WAKE COUNTY MINI CITY EMS STATION

4704 HARGROVE RD.
RALEIGH, NC
27616

WAKE COUNTY FACILITIES DESIGN & CONSTRUCTION

CONSULTANTS

CIVIL & LANDSCAPE ARCHITECTS
WITHERSRAVENEL
137 SOUTH WILMINGTON STREET, SUITE 200
RALEIGH, NC 27601
919.535.5200 T

STRUCTURAL
LYSAGHT & ASSOCIATES
120 ST. MARY'S STREET
RALEIGH, NC 27605
919.833.0495 T

MECHANICAL, ELECTRICAL, PLUMBING, & FIRE PROTECTION
SALAS O'BRIEN NORTH CAROLINA, INC.
702 OBERLIN ROAD, SUITE 300,
RALEIGH, NC 27605
919.832.8118 T
SALASOBRIEN.COM
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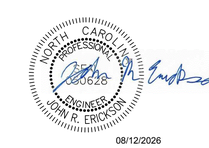
WAKE COUNTY NORTH CAROLINA

SEALS



PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

FP002

FIRE PROTECTION SITE PLAN & DETAILS

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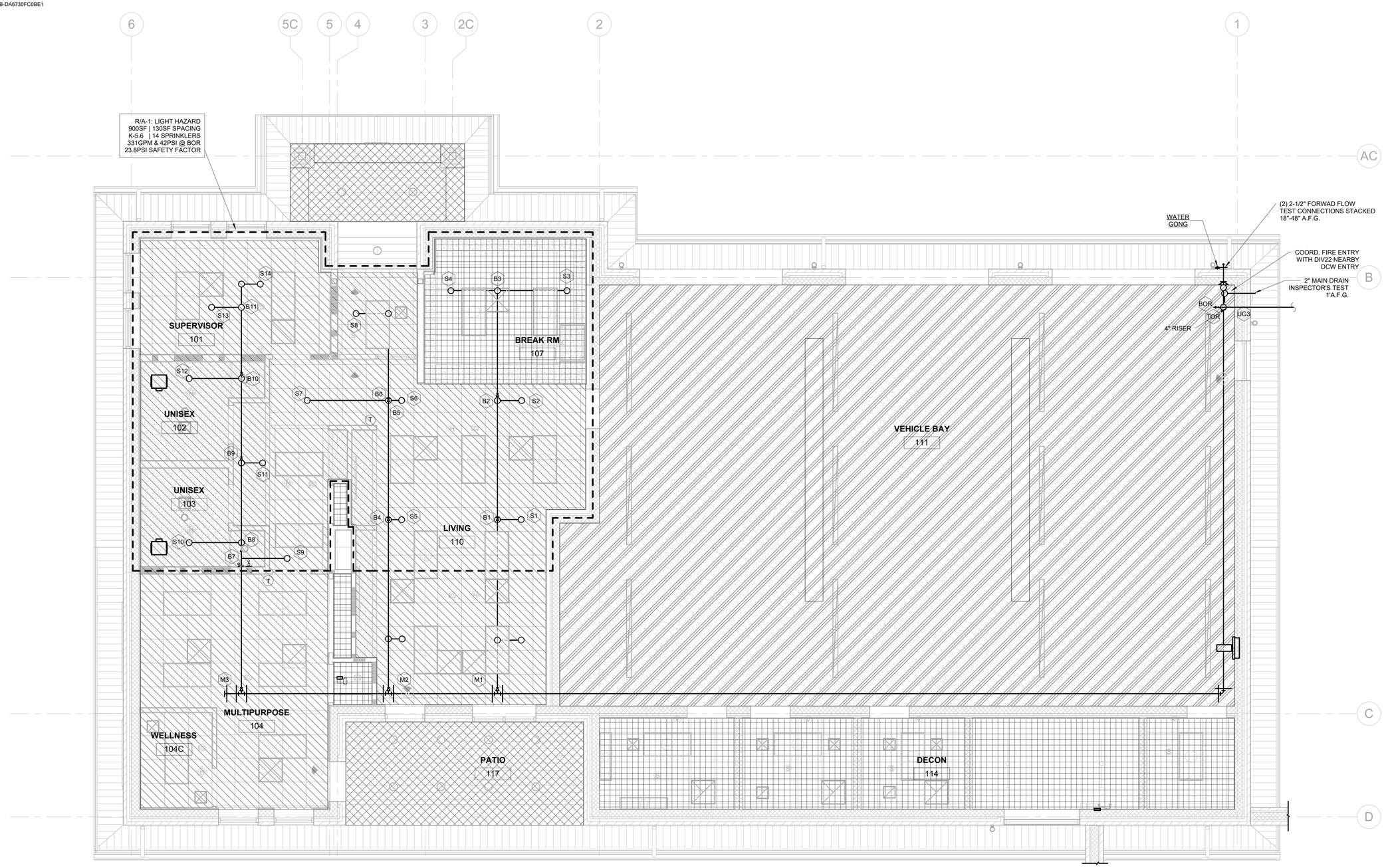

1 FP200 Fire Protection RCP
1/4" = 1'-0"

HATCH PATTERN KEY

- LIGHT HAZARD COVERAGE - WET SYSTEM
- LIGHT HAZARD COVERAGE - WET SYSTEM WITH DRY HEADS
- ORDINARY GROUP I COVERAGE - WET SYSTEM
- ORDINARY GROUP II COVERAGE - WET SYSTEM

WALL LEGEND

- GYPSUM BOARD CONSTRUCTION
- 1/2 HR FIRE BARRIER UL U419
- 2 HR FIRE BARRIER UL U905
- CMU CONSTRUCTION

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919.832.8118 T
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WAKE COUNTY
NORTH CAROLINA

SEALS

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 030626 JOHN R. ERICKSON
08/12/2026

PROJECT INFORMATION

PROJECT NO.:	2506
PHASE:	BID SET
DATE:	08/17/26
DRAWN BY:	JRE
CHECKED BY:	JRE

REVISIONS

NO.	DESCRIPTION	DATE

SHEET INFORMATION

FP200

FIRE PROTECTION RCP