DUPLIN COUNTY
NORTH CAROLINA

AIRFIELD HANGAR

222 AIRPORT ROAD
KENANSVILLE, NC, 28349

MARCH 28, 2025

DUPLIN COUNTY
NORTH CAROLINA

Air Field Hangar Building

222 Airport Road,
Kenansville, NC 28349

THE WILSON GROUP ARCHITECTS
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 51140
NORTH CAROLINA
CHARLOTTE, N. C.

LEWIS WALKER PENCE
REGISTERED ARCHITECT
9272
NORTH CAROLINA
CHARLOTTE, N. C.

THE WILSON GROUP
- ARCHITECTS -

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MECHANICAL-ELECTRICAL-PLUMBING
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10200 Mallard Creek Rd, Suite 105
Charlotte, NC 28262

REVISIONS

DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

COVER SHEET

SHEET NUMBER

G-000

SHEET INDEX

GENERAL

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	G-000	COVER SHEET
		03-28-2025	G-001	SHEET INDEX
		03-28-2025	G-002	GENERAL NOTES
		03-28-2025	G-003	PARTITION TYPES AND DETAILS
		03-28-2025	G-101	APPENDIX B
		03-28-2025	G-102	FIRST FLOOR LIFE SAFETY

ARCHITECTURAL

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	A-101	FIRST FLOOR PLAN
		03-28-2025	A-111	FIRST FLOOR CEILING PLAN
		03-28-2025	A-201	BUILDING ELEVATIONS
		03-28-2025	A-301	BUILDING SECTIONS
		03-28-2025	A-401	ENLARGED PLANS
		03-28-2025	A-501	PLAN DETAILS
		03-28-2025	A-701	FINISH PLAN

PLUMBING

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	P-001	PLUMBING GENERAL NOTES, SCHEDULES, DETAILS, AND LEGENDS
		03-28-2025	P-002	PLUMBING SCHEDULES
		03-28-2025	P-101	PLUMBING FLOOR PLAN
		03-28-2025	P-102	PLUMBING RISER DIAGRAM-WASTE AND VENT

CIVIL

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	1 OF 21	COVER SHEET
		03-28-2025	2 OF 21	GENERAL CONSTRUCTION NOTES
		03-28-2025	3 OF 21	GENERAL CONSTRUCTION NOTES
		03-28-2025	4 OF 21	GENERAL CONSTRUCTION NOTES
		03-28-2025	5 OF 21	EXISTING SITE CONDITIONS
		03-28-2025	6 OF 21	PROPOSED SITE PLAN
		03-28-2025	7 OF 21	DRAINAGE AND GRADING PLAN
		03-28-2025	8 OF 21	PAVEMENT DETAILS
		03-28-2025	9 OF 21	PAVEMENT DETAILS
		03-28-2025	10 OF 21	PAVEMENT DETAILS
		03-28-2025	11 OF 21	EROSION CONTROL PLAN
		03-28-2025	12 OF 21	WATER CONSTRUCTION
		03-28-2025	13 OF 21	SANITARY SEWER CONSTUCTION
		03-28-2025	14 OF 21	STORM DRAINAGE CONSTRUCTION
		03-28-2025	15 OF 21	STORM DRAINAGE DETAILS
		03-28-2025	16 OF 21	STORM DRAINAGE DETAILS
		03-28-2025	17 OF 21	WATER CONSTRUCTION DETAILS
		03-28-2025	18 OF 21	SANITARY SEWER DETAILS
		03-28-2025	19 OF 21	EROSION CONTROL DETAILS
		03-28-2025	20 OF 21	EROSION CONTROL DETAILS
		03-28-2025	21 OF 21	EROSION CONTROL DETAILS

MECHANICAL

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	M-001	MECHANICAL GENERAL NOTES, LEGEND, AND SCHEDULES
		03-28-2025	M-101	MECHANICAL FLOOR PLAN

STRUCTURAL

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	S-001	GENERAL NOTES AND ABBREVATIONS
		03-28-2025	S-101	FOUNDATION PLAN
		03-28-2025	S-301	PEMB SECTIONS AND DETAILS
		03-28-2025	S-302	PEMB PIER DETAILS

ELECTRICAL

REV.	CURRENT REVISION DATE	ORIGINAL ISSUANCE DATE	SHEET NO.	SHEET NAME
		03-28-2025	E-001	ELECTRICAL NOTES, LEGEND AND SCHEDULES
		03-28-2025	E-101	ELECTRICAL POWER PLAN
		03-28-2025	E-102	ELECTRICAL LIGHTING PLAN
		03-28-2025	E-201	ELECTRICAL ENLARGED PLANS
		03-28-2025	E-301	ELECTRICAL RISERS AND DETAILS
		03-28-2025	E-302	ELECTRICAL PANEL SCHEDULES

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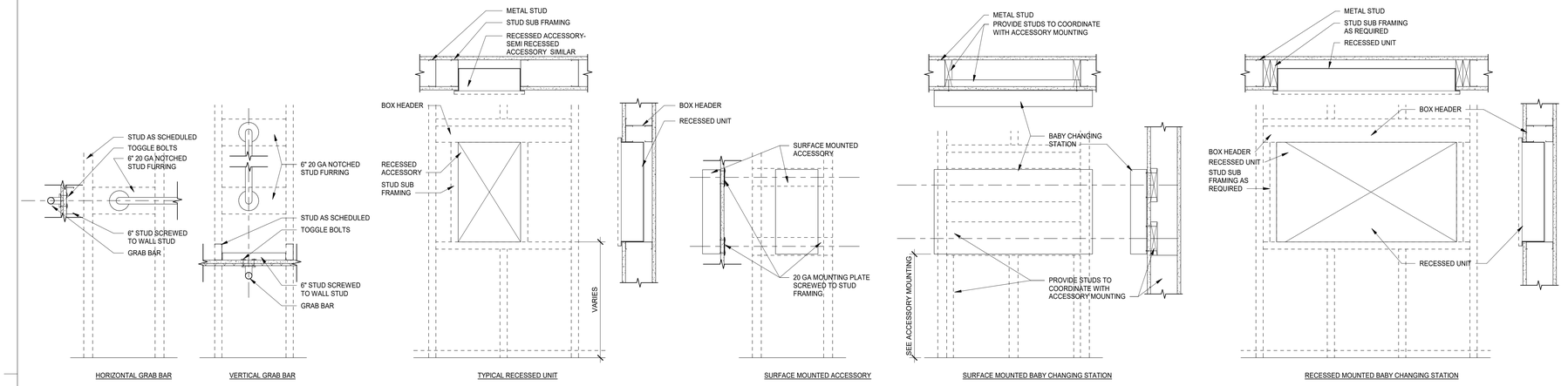
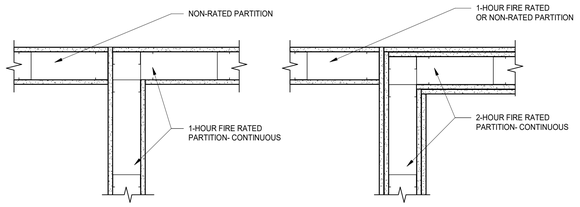
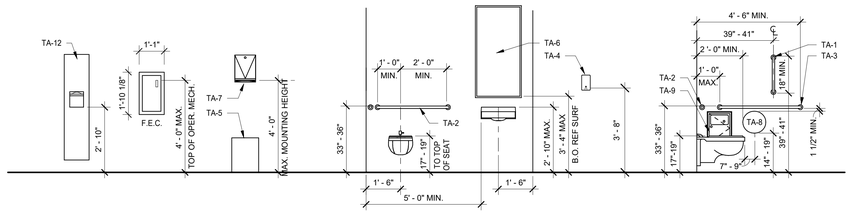
G-001



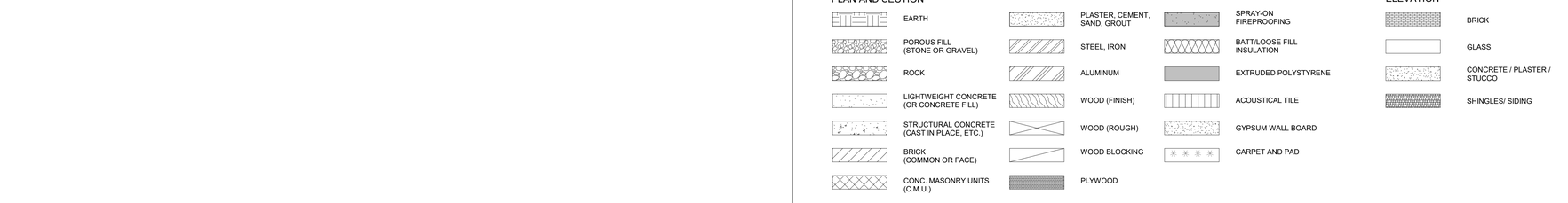
16 ACCESSORY MOUNTING DETAILS
1" = 1'-0"



11 RATED INTERSECTION DETAILS
1 1/2" = 1'-0"



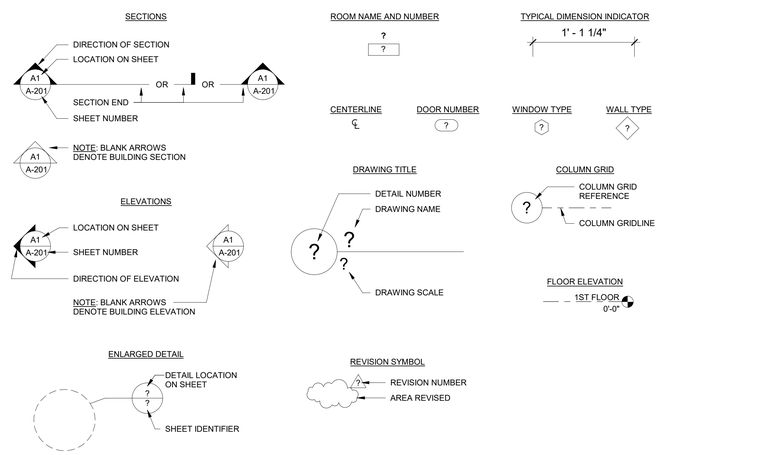
Typical Mounting Heights
N.T.S.



(NOT ALL MATERIALS APPLICABLE)

8 MATERIAL LEGEND
N.T.S.

9 MATERIAL LEGEND
1/8" = 1'-0"



3 GRAPHIC SYMBOLS
N.T.S.

SYMBOLS USED AS ABBREVIATIONS:

∠	ANGLE	LB./LBS.	POUND/POUNDS
℄	CENTERLINE	±	PLUS OR MINUS
Ø	DIAMETER (ROUND)	W/	WITH
#	NUMBER	W/O	WITHOUT

ABBREVIATIONS:

A/C	AIR CONDITION(ING)	MAINT	MAINTENANCE
ADMIN	ADMINISTRATION	MATL	MATERIAL
AFF	ABOVE FINISHED FLOOR	MAX	MAXIMUM
ALT	ALTERNATE	MECH	MECHANICAL
ALUM	ALUMINUM	MEZZ	MEZZANINE
APPROX	APPROXIMATE(LY)	MFG	MANUFACTURING
ARCH	ARCHITECT(URAL)	MFR	MANUFACTURER
AUTO	AUTOMATIC	MIN	MINIMUM
AUX	AUXILIARY	MISC	MISCELLANEOUS
AV	AUDIO/VISUAL	MO	MASONRY OPENING
BITUM	BITUMINOUS	MR	MOISTURE RESISTANT
BL	BUILDING LINE	MTD	MOUNTED
BLDG	BUILDING	MTG	MOUNTING
BN	BULL NOSE	MTL	METAL
BOS	BOTTOM OF STEEL	N	NORTH
BOT	BOTTOM	NIC	NOT IN CONTRACT
CAB	CABINET	NOM	NOMINAL
CJ	CONTROL JOINT	NON COMB	NON-COMBUSTIBLE
CL	CENTER LINE	NTS	NOT TO SCALE
CLG	CEILING	OC	ON CENTER
CLG HT	CEILING HEIGHT	OD	OUTSIDE DIAMETER
CLO	CLOSET	OPP	OPPOSITE
CLR	CLEAR(ANCE)	OPT	OPTION(AL)
CMU	CONCRETE MASONRY UNIT	PCF	POUNDS PER CUBIC FEET
COL	COLUMN	PLAM	PLASTIC LAMINATE
CONC	CONCRETE	PLF	POUNDS PER LINEAR FEET
CONF	CONFERENCE	PLYWD	PLYWOOD
CONT	CONTINUE. CONTINUOUS	PNL	PANEL
CORR	CORRIDOR	PR	PAIR
CU FT	CUBIC FOOT	PREFAB	PREFABRICATED
CU YD	CUBIC YARD	PREFIN	PREFINISH
DEMO	DEMOLISH	PRKG	PARKING
DEPT	DEPARTMENT	PSF	POUNDS PER SQUARE FOOT
DET	DETAIL	PSI	POUNDS PER SQUARE INCH
DF	DRINKING FOUNTAIN	PT	PAINT, POST-TENSIONED, PRE-TREATED
DIA	DIAMETER	PVC	POLYVINYL CHLORIDE (PLASTIC)
DIAG	DIAGONAL	QTR	QUARTER
DIM	DIMENSION	QTY	QUANTITY
DIV	DIVISION	R	RADIUS, RISER
DS	DOWNSPOUT	RCP	REFLECTED CEILING PLAN
E	EAST	RD	ROOF DRAIN
EA	EACH	REF	REFRIGERATOR, REFERENCE
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	REQD	REQUIRED
EJ	EXPANSION JOINT	RL	ROOF LEADER
EL	ELEVATION	RM	ROOM
ELEC	ELECTRIC(AL)	RO	ROUGH OPENING
ELEV	ELEVATOR	ROW	RIGHT OF WAY
ENCL	ENCLOSE(D)	S	SOUTH
EOS	EDGE OF SLAB	SC	SOLID CORE
EQ	EQUAL	SD	STORM DRAIN
EQUIP	EQUIPMENT	SECT	SECTION
EWC	ELECTRIC WATER COOLER	SF	SQUARE FEET
EXIST	EXISTING	SIM	SIMILAR
EXP JT	EXPANSION JOINT	SPEC	SPECIFICATION
EXT	EXTERIOR	SPKR	SPEAKER
F/F	FACE TO FACE	SQ	SQUARE
FD	FLOOR DRAIN	SS	STAINLESS STEEL
FE	FIRE EXTINGUISHER	STD	STANDARD
FEC	FIRE EXTINGUISHER CABINET	STOR	STORAGE
FF EL	FINISH FLOOR ELEVATION	SUSP	SUSPENDED
FHC	FIRE HOSE CABINET	SYS	SYSTEM
FIN FLR	FINISHED FLOOR	T	TREAD
FLR	FLOOR, FILLER	TEL	TELEPHONE
FOC	FACE OF CURB	TEMP	TEMPORARY
FOF	FACE OF FINISH	TFF	TOP OF FINISH FLOOR
FOM	FACE OF MASONRY	THK	THICKNESS
FOS	FACE OF SLAB	THRU	THROUGH
FOW	FACE OF WALL	TO	TOP OF
FT	FOOT, FEET	TOB	TOP OF BEAM
FTG	FOOTING	TOC	TOP OF CONCRETE, CURB
FURN	FURNISH, FURNITURE	TOF	TOP OF FOOTING
GA	GAGE	TOJ	TOP OF JOIST
GALV	GALVANIZED	TOM	TOP OF MASONRY
GC	GENERAL CONTRACTOR	TOP	TOP OF PARAPET
GYP BD	GYPSUM BOARD	TOS	TOP OF SLAB
GYP PLAS	GYPSUM PLASTER	TOW	TOP OF WALL
HC	HANDICAP	TRTD	TREATED
HD	HEAVY DUTY	TV	TELEVISION
HDWD	HARDWOOD	TYP	TYPICAL
HDWR	HARDWARE	UL	UNDERWRITERS LABORATORIES
HM	HOLLOW METAL	UNO	UNLESS NOTED OTHERWISE
HORIZ	HORIZONTAL	VERT	VERTICAL
HT	HEIGHT	VEST	VESTIBULE
HVAC	HEATING, VENTILATION & AIR CONDITIONING	VIF	VERIFY IN FIELD
ID	INSIDE DIAMETER	W	WEST, WIDE
INCL	INCLUDE(D), (ING)	W/	WITH
INFO	INFORMATION	W/O	WITHOUT
INSUL	INSULATION	WW	WALL TO WALL
INT	INTERIOR	WC	WATER CLOSET
JAN CLO	JANITOR CLOSET	WD	WOOD
KIT	KITCHEN	WP	WORKING POINT, WATERPROOFING
KO	KNOCKOUT	WR	WATER REPELLENT
LAB	LABORATORY	WT	WEIGHT
LAM	LAMINATE	WWF	WELDED WIRE FABRIC
LAU	LAUNDRY	YD	YARD
LAV	LAVATORY		
LF	LINEAR FEET		
LVR	LOUVER		

10 STANDARD ABBREVIATIONS
1 1/2" = 1'-0"

16	17	18	19	20
11	12	13	14	15
6	7	8	9	10
1	2	3	4	5

NOTES:
1. WHEN LESS THAN ALL TWENTY (20) DETAIL ZONES ARE UTILIZED OR WHEN ZONES ARE COMBINED, DETAIL NUMBERS WILL NOT BE CONSECUTIVE.
2. THE ZONE IN WHICH THE LOWER LEFT HAND CORNER OF A DETAIL IS LOCATED DETERMINES THE NUMBER OF THE DETAIL.

5 NUMBERING SYSTEM
N.T.S.

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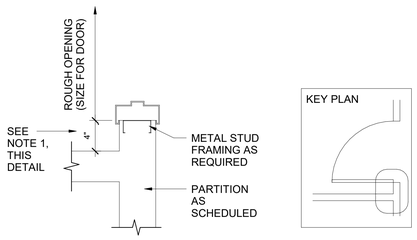
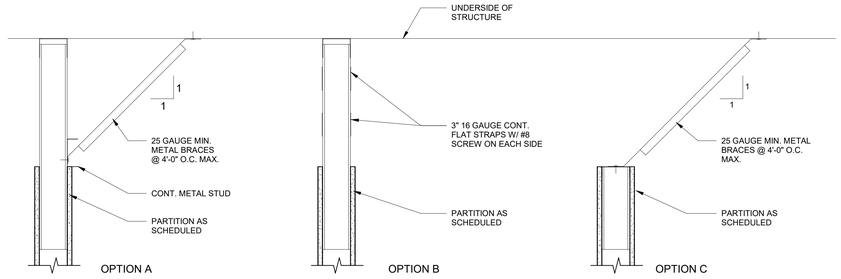
GENERAL NOTES

SHEET NUMBER
G-002

NOTES:
1. GC TO COORDINATE JAMB DEPTH WITH WIDTH OF TRIM.
2. GC TO COORDINATE DOOR LOCATION W/ JAMB DETAIL, TYP.



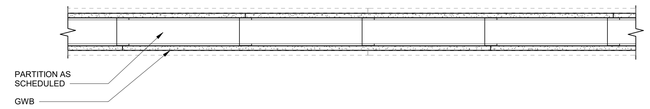
16 TYPICAL DOOR OFFSET DETAIL
1 1/2" = 1'-0"



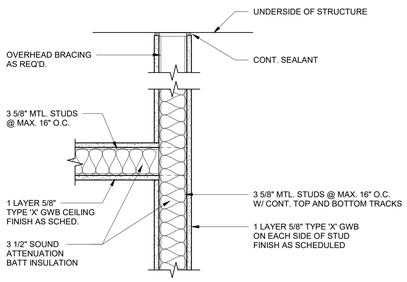
17 ABOVE-CEILING STUD TERMINATION DETAILS
1 1/2" = 1'-0"

STAGGER VERTICAL JOINTS OF GWB SO THAT THEY OCCUR OF DIFFERENT STUDS ON OPPOSITE SIDES OF PARTITION AND STAGGER JOINTS OF SECOND LAYER FROM FIRST LAYER WHEN PARTITION REQUIRES MULTIPLE GWB LAYERS.

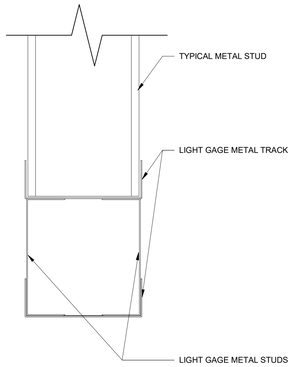
USE SAME METHOD WHEN 8'-0" GWB SHEETS ARE APPLIED HORIZONTALLY.



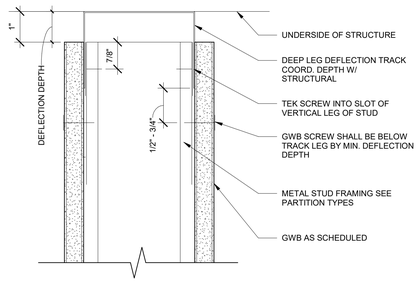
19 TYPICAL FRAMING LAYOUT
1 1/2" = 1'-0"



12 TYPICAL GWB CEILING DETAIL
1 1/2" = 1'-0"



13 TYPICAL STUD HEADER DETAIL
6" = 1'-0"



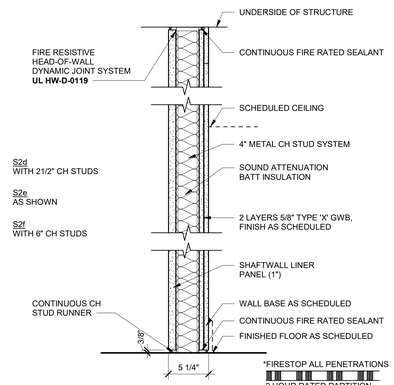
14 DELFECTION TRACK DETAIL
6" = 1'-0"

PARTITION NOTES

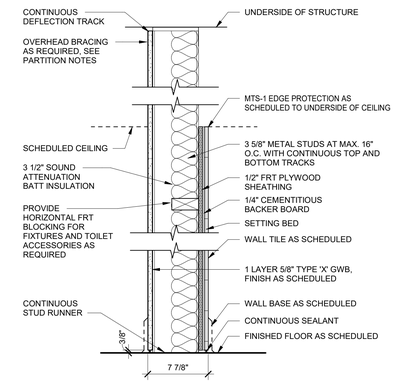
1. ALL GYPSUM WALL BOARD TO BE 5/8" TYPE 'X' U.N.O.
2. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TO COLUMN CENTER LINE, FACE OF GWB/STUD PARTITIONS, FACE OF MASONRY AND CONCRETE WALLS AND FACE OF EXISTING WALLS.
3. HOLD TOP OF PARTITION DOWN 1/2" FROM TOP RUNNER WHERE PARTITION EXTENDS TO STRUCTURE ABOVE.
4. ALL CAULK AND SEALANT SHALL BE CONTINUOUS.
5. ALL CMU WALLS AND SOUND RATED PARTITIONS SHALL EXTEND FROM FINISHED FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF STRUCTURE OR DECK AND BE ENTIRELY SEALED OFF U.N.O. ALL PENETRATIONS SUCH AS PIPING, CONDUITS, DUCTS, ETC. IN SUCH SEALED OFF WALLS OR PARTITIONS SHALL IN THEMSELVES BE PACKED AND SEALED OFF ALONG THE PERIMETER OF PENETRATION.
6. ALL FIRE AND/OR SMOKE PARTITIONS SHALL EXTEND FROM FINISH FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF THE STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH SAFEING MATERIAL ONLY. SAFEING MATERIAL SHALL BE HELD IN PLACE WITH A FIRE STOPPING MATERIAL ON BOTH SIDES, SUCH AS GYPSUM WALL BOARD OR UL LISTED FIRE PROOFING MATERIAL AND ASSEMBLY.
7. ALL SOUND RATED (STC) WALLS OR PARTITIONS SHALL HAVE CLOSURE GASKETS AT TOP, BOTTOM, AND SIDES WHERE A SOUND LEAK WOULD OTHERWISE EXIST.
8. STRUCTURAL STUDS (20 GA. MINIMUM) SHALL BE USED WHERE ANY NON-SELF-SUPPORTING WALL HUNG FIXTURES, EQUIPMENT, OR CABINETRY OCCUR AND SHALL EXTEND FROM FLOOR TO STRUCTURE ABOVE. SEE TYPICAL SUPPORT DETAILS FOR WALL MOUNTED ITEMS.
9. ALL METAL STUD FRAMED PARTITIONS SHALL BE BRACED ABOVE FINISHED CEILINGS. BRACING SHALL BE AS FOLLOWS:
   ATTACH A 3 5/8" OR 6" METAL STUD HORIZONTALLY AND CONTINUOUSLY TO PARTITION 8" MAXIMUM ABOVE FINISHED CEILING. PROVIDE 3 5/8" OR 6" METAL STUD KICKERS AT 45 DEGREE ANGLE TO STRUCTURE AT 4'-0" O.C.
10. KICKERS SHALL HAVE CLIP ANGLES (14 GA MIN.) WITH TWO 1/4" ANCHORS. ALL KICKER LOCATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES PERFORMING WORK ABOVE CEILING.
11. DO NOT FASTEN TOP RUNNER TO STUDS; CRIMP RUNNER ON BOTH SIDES OF STUD TO STABILIZE STUD.
12. SEE ROOM FINISH SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR FINISH MATERIALS SUCH AS TILE, PANELING, ETC. WHICH ARE NOT SHOWN OR INCLUDED IN THESE PARTITION TYPES.
13. WHERE PARTITION TYPES CHANGE IN A STRAIGHT RUN, THE EXPOSED OR MOST IMPORTANT EXPOSED FINISHED FACE, AND NOT NECESSARILY THE CENTERLINE OF STUDS, SHALL ALIGN. REVIEW CASES WHICH ARE UNCLEAR WITH THE ARCHITECT PRIOR TO CONSTRUCTION OF SUCH PARTITIONS.
14. WHERE ITEMS ARE RECESSED INTO RATED PARTITIONS, PROVIDE BOXING, INSULATION, ETC. AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING.
15. PURSUANT TO NCSBC 603 ALL WOOD PRODUCTS SHALL BE FIRE-RETARDANT TREATED (FRT), INCLUDING BUT NOT LIMITED TO WOOD BLOCKING, CABINETRY AND MILLWORK SUBSTRATES, AND EXPOSED PLYWOOD PANELS
16. WHERE SPECIALTY WALL PANEL SYSTEMS ARE TO BE APPLIED TO PARTITIONS, SHIMMING MAY BE REQUIRED TO ENSURE A FLUSH AND PLUMB INSTALLATION.
17. ELECTRICAL AND TELECOM ROOMS: IN ADDITION TO GWB AS SCHEDULED, WRAP ENTIRE ROOM IN 3/4" VIRGIN, VOID-FREE, FIRE-RATED PLYWOOD, FROM 0'-6" AFF TO 8'-6" AFF, LAG-BOLTED TO WALLS AT METAL STUD LOCATIONS. PAINT ALL WALL SURFACES AS SCHEDULED.
18. ALL CLOSETS ARE TO RECEIVE WOOD SHELVING AND ROD U.N.O.
19. PROVIDE FR SOLID WOOD BLOCKING IN WALL AS REQUIRED FOR MOUNTING OF CABINETS, GRAB BARS, TV'S, TOILET PARTITIONS AND ACCESSORIES, ETC. SEE PLANS AND ELEVATIONS FOR LOCATIONS OF WALL-MOUNTED BUILT-INS AND EQUIPMENT.
20. USE MOISTURE RESISTANT GWB AT ALL WET AREAS.
21. SEE STRUCTURAL FOR SHEAR WALL LOCATIONS AND INFORMATION. GC TO COORDINATE SHEATHING SIDE AND EXTENTS WITH ARCHITECTURAL AND STRUCTURAL.

METAL STUD GAUGES.	LOCATION	LENGTH	GAUGE
	PARTITION	UP TO 8'-0"	20 GAUGE
	PARTITION	UP TO 10'-0"	18 GAUGE
	PARTITION	UP TO 12'-0"	16 GAUGE
	PARTITION	GREATER THAN 12'-0"	SEE STRUCTURAL DRAWINGS.
	BULKHEAD	UP TO 6'-0"	25 GAUGE
	BULKHEAD	UP TO 8'-0"	20 GAUGE
	BULKHEAD	GREATER THAN 8'-0"	SEE SPECIFIC DETAILS AND/OR STRUCT. DRWGS.
	SOFFIT	UP TO 4'-0"	25 GAUGE
	SOFFIT	UP TO 8'-0"	25 GAUGE, SEE SPECIFIC DETAILS FOR SUPPORT
	SOFFIT	GREATER THAN 8'-0"	SUSPENDED SYSTEM MUST BE USED
	DOOR / WINDOW HEAD AND JAMB	U.N.O.	16 GA (2 STUDS AT ALL LOCATIONS)

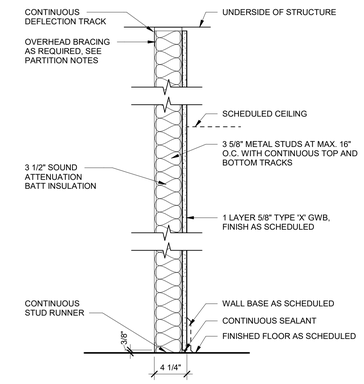
NOTE: U.L. AND STRUCTURAL REQUIREMENTS TAKE PRECEDENCE OVER THE ABOVE SPECIFICATIONS.



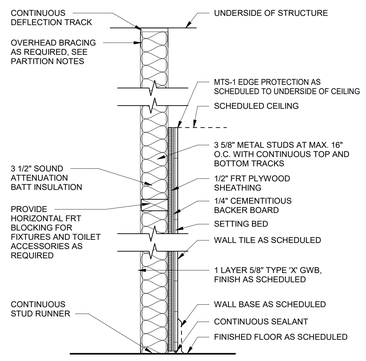
S2e	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	2 HR	U415	N/A	N/A



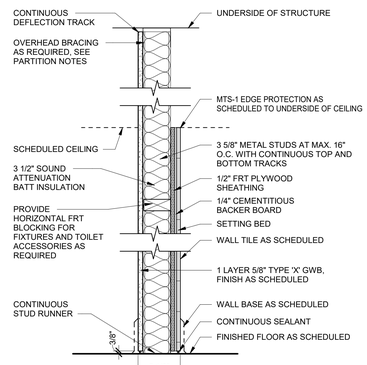
E3a	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	0 HR	N/A	N/A	N/A



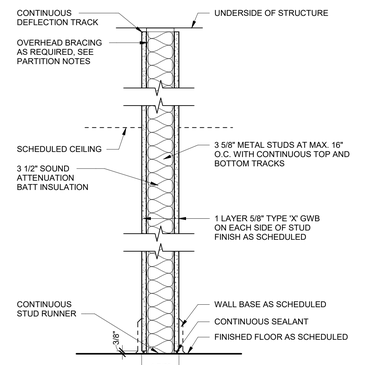
D4a	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	0 HR	N/A	N/A	N/A



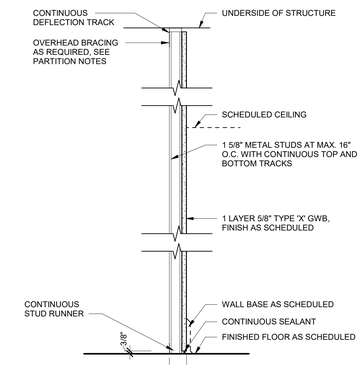
D3b	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	0 HR	N/A	N/A	N/A



D3a	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	0 HR	N/A	N/A	N/A



D1a	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	0 HR	N/A	N/A	N/A



B4a	FIRE RATING	ASSEMBLY NO.	STC	STC. TEST #
	0 HR	N/A	N/A	N/A

DUPLIN COUNTY NORTH CAROLINA

Air Field Hangar Building

222 Airport Road,
Kenansville, NC 28349

THE WILSON GROUP ARCHITECTS REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 51140 CHARLOTTE, N. C.

LEWIS WALKER PENCE REGISTERED ARCHITECT 9272 NORTH CAROLINA CHARLOTTE, N. C.

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STRUCTURAL ENGINEER
STEWART ENGINEERING
101 N. Tryon St., Suite 1400, Charlotte, NC 28202

MECHANICAL-ELECTRICAL-PLUMBING
SABER ENGINEERING
10200 Mallard Creek Rd, Suite 105
Charlotte, NC 28262

REVISIONS

DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

PARTITION TYPES AND DETAILS

SHEET NUMBER
G-003

2018 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Duplin County Shell Building – AirPark Hangar
Address: xxx
Owner/Authorized Agent: [name, phone number, email]
Owned By: ☒ City/County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☐ City: [city] ☒ County: Duplin County ☐ State

CONTACT: Travis Pence – Wilson Group Architecture – 704-331-9747
ze

Discipline	Firm	Name	Lic. #	Phone	E-Mail
Civil	McDavid Assoc. P.E.	Joseph W McKemey-	28431	252-753-2139	Jwm2@mcdavid-inc.com
Struct	Stewart Engineering	Chris Rose-	043725	704-909-3542	crose@stewartinc.com
Arch	The Wilson Group	Travis W. Pence	9272	704-331-9747	travis@twgarchitects.com
Pumb	Saber Engineering	Wayne King	26005	704-373-0068	hwk@saberenngineering.com
Mech	Saber Engineering	Wayne King	26005	704-373-0068	hwk@saberengineering.com
Elec	Saber Engineering	Rick Morrison	25969	704-373-0068	rmm@saberengineering.com

("Others" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

CODE CLASSIFICATION SUMMARY

2018 NC Code For:	☒ New Construction	☐ Addition	☐ Renovation
	☐ 1st Time Interior Completion	☐ Shell/Core	☐ Phased Construction – Shell/Core
2018 NC Existing Building Code:	☐ Prescriptive	☐ Repair	☐ Chapter 14
Alteration:	☐ Level I	☐ Level II	☐ Level III
	☐ Historic Property	☐ Change of Use	
Constructed:	[date]	Original Occupancy (Ch. 3):	[type]
Renovated:	[date]	Current Occupancy (Ch. 3):	[type]
	Current: ☐ I ☐ II ☐ III ☐ IV		

Risk Category (T 1604.5):	Proposed:	☒ I	☐ II	☐ III	☐ IV

BASIC BUILDING DATA

Construction Type: (Check all that apply)	☐ I-A	☐ II-A	☐ III-A	☐ IV-A	☐ V-A
	☐ I-B	☒ II-B	☐ III-B	☐ IV-B	☐ V-B
Sprinklers:	☒ No	☐ Partial	☐ Yes (Identify type below):		
			☐ NFPA 13	☐ NFPA 13R	☐ NFPA 13D
Standpipes:	☒ No	☐ Yes	Class (Identify below):		
			☐ I	☐ II	☐ III ☐ IV
			Type: (Identify below):		
			☐ Wet	☐ Dry	
Fire District:	☒ No	☐ Yes (Primary)	Flood Hazard Area:	☐ No	☐ Yes
SI Required:	☒ No	☐ Yes			

GROSS BUILDING AREA

Story	Existing SF	New SF	Reno/Alter SF	Sub-Total
[edit]		15,638		
Total		15,638		15,638

ALLOWABLE AREA

Primary Occupancy Classification: (Select One)					
Assembly:	☐ A-1	☐ A-2	☐ A-3	☐ A-4	☐ A-5
Business:	☒ B (Secondary Occupancy)				
Educational:	☐ E				
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	☐ 2		
	☐ I-2 Condition:	☐ 1	☐ 2		
	☐ I-3 Condition:	☐ 1	☐ 2	☐ 3	☐ 4
	☐ I-4				
Mercantile	☐ M				

ALLOWABLE HEIGHT

	Allowable (Table 503)	Shown on Plans	Code Reference
Building Height in Feet (Table 504.3)	55'-0"	41'-0"	
Building Height in Stories (Table 504.4)	2	1	

[1] Provide code reference if the "Show 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 412.5.1
[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 Required	Rating Provided (w/ * reduction)	Detail # and Sheet #	Design # for Rated Assembly	Design # for Rated Penetration	Design # for Rated Joints
Struc. Frame, incl. cols, girders, trusses		0 hr					
Bearing Walls							
Exterior							
North	>30'	0 hr					
East	>30'	0 hr					
West	>30'	0 hr					
South	>30'	0 hr					
Interior	>30'	0 hr					
Nonbearing Walls and Partitions							
Exterior Walls							
North	>30'	0 hr					
East	>30'	0 hr					
West	>30'	0 hr					
South	>30'	0 hr					
Interior walls and partitions		0 hr					
Floor Const., incl. supp. beams & joists		0 hr					
Floor Ceiling Assembly		0 hr					
Column Supporting Floors		0 hr					
Roof Const., incl. supp. beams & joists		0 hr					
Roof Ceiling Assembly		0 hr					
Column Supporting Roof		0 hr					
Shaft Enclosures - Exit		N/A					
Shaft Enclosures - Other		N/A					
Corridor Separation		N/A					
Occupancy/Fire Barrier Separation		1 hr	2 hr		UL-V433		
Party/Fire Wall Separation		N/A					
Smoke Barrier Separation		N/A					
Smoke Partition		N/A					
Tenant/Dwelling Unit/ Sleeping Unit Sep.		N/A					
Incidental Use Separation		N/A					

* Indicate section number permitting reduction

Residential:	☐ R:	☐ R-1	☐ R-2	☐ R-3					
Storage:	☒ S-1 Moderate	☐ S-2 Low	☐ High-Piled						
	☐ Parking Garage:	☐ Open	☐ Closed	☐ Repair Garage					
Utility and Miscellaneous:	☐ U								
Accessory Occupancy Classification(s):									
Incidental Uses (T 509):									
Special Uses (Chapter 4 – List Code Sections):	412								
Special Provisions (Chapter 5 – List Code Sections):									
Mixed Occupancy:	☐ No	☒ Yes – Separation:	2 Hour	Exception: [list]					
		☐ Non-Separated Use (508.3): The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.							
		☒ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.							

[copy and paste this and change if required]

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00$$

Story	Description & Use	(A) Bldg. Area per Story (Actual)	(B) Table 506.2 [4] Area	(C) Area for Frontage Increase [1,5]	(D) Allowable Area per Story or Unlimited [2,3]
1	S1 Hangar	11,888	12,000*	Not Used	35,000
1	B (Office)	3,111	23,000	Not Used	

* T412.4.6

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = __ (F)
b. Total Building Perimeter = ____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase I_f = 100 [F/P - 0.25] x W/30= __ ____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

PERCENTAGE OF WALL OPENING CALCULATIONS

Fire Separation Distance (Feet from Property Lines)	Degrees of Opening Protection (Table 705.8)	Allowable Area (%)	Actual Shown on Plans (%)
>30'-0"	NS	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 #: _____LS-101_____
☒ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☒ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.2)
☒ Occupant loads for each area
☒ Exit access travel distances (1017)
☒ Common path of travel distances (1006.2.1 & 2006.3.2(1))
☒ Dead end lengths (1020.4)
☒ 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 purposes of occupancy separation and supporting construction for a fire barrier/fire partition/smoke barrier.
☐ 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)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)

☐ Note any code exceptions or table notes that may have been utilized regarding the items above

Section/Table/Note	Title

ACCESSIBLE DWELLING UNITS - (SECTION 1107)

Total Units	Accessible Units Required	Accessible Units Provided	Type A Units Required	Type A Units Provided	Type B Units Required	Type B Units Provided	Total Accessible Units Provided

ACCESSIBLE PARKING - (SECTION 1106)

Lot or Parking Area	Total Number of Parking Spaces		Total Number of Accessible Spaces		Accessible Space Summary					
	Required	Provided	Required	Provided	Regular		Van with 8' Access Aisle		Van with 8' Access Aisle	
					Required	Provided	Required	Provided	Required	Provided
[lot]										
Total										

PLUMBING FIXTURE REQUIREMENTS - (TABLE 2902.1)

[adjust per occupancy]
Use: S-1 (Aircraft Storage Hangar) – No requirement for Plumbing Fixtures
Use: B (Business) – 33 Occupants

	Water Closets	Urinals	Lavatories	Showers / Tubs	Drinking Fountains	Other
Required						
Provided						

	Male	Female		Male	Female		Regular	Accessible	
Required									
Provided									

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, SCO, DPI, DHHS, ICC, etc., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the **North Carolina Energy Conservation 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 cost for the proposed design.

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☐ No ☐ Yes (Provide Code or Statutory reference): _____

Climate Zone: ☐ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
(If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly: _____
U-Value of skylight: _____
Total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
Projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/Vertical requirement: _____
Slab Heated: _____

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) _____
Seismic (I_E) _____

Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf

Ground Snow Load: _____ psf

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

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration S_s _____ %g S_1 _____ %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) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

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

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: _____
summer dry bulb: _____

Interior design conditions
winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System
Unitary
description of unit: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____
Boiler
Size category. If oversized, state reason.: _____
Chiller

Size category. If oversized, state reason.: _____

List equipment efficiencies: _____

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: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

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 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 the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient Mechanical Equipment
☐ 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

Generated by COMcheck-Web Software
Envelope Compliance Certificate

Section 1: Project Information

Energy Code: **2009 IECC**
Project Title:
Project Type: New Construction

Construction Site: Owner/Agent: Designer/Contractor:

Building Location (for weather data): Kenansville, North Carolina
Climate Zone: 3a
Vertical Glazing / Wall Area Pct.: 8%

Building Use: Activity Type(s) **Floor Area**
1-Hangar (Transportation) : Nonresidential 15638

Section 2: Envelope Assemblies and Requirements Checklist

Envelope **PASSES**: Design 1% better than code.

Envelope Assemblies:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Roof: Metal Building, Standing Seam, [Bldg. Use 1 - Hangar]	15638	19.0	11.0	0.038	0.055
South Ext. Wall: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Hangar]	4896	19.0	0.0	0.113	0.084
Window: Metal Frame, Thermal Break, Pwrf, Type: Energy code default, Double Pane, Clear , SHGC:0.70, [Bldg. Use 1 - Hangar]	275	---	---	0.650	0.650
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Hangar]	21	---	---	0.130	0.700
West Ext. Wall: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Hangar]	3414	19.0	0.0	0.113	0.084
Window: Metal Frame, Thermal Break, Pwrf, Type: Energy code default, Double Pane, Clear , SHGC:0.70, [Bldg. Use 1 - Hangar]	36	---	---	0.650	0.650
North Ext. Wall: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Hangar]	5244	19.0	0.0	0.113	0.084
Door: Insulated Metal, Swinging, [Bldg. Use 1 - Hangar]	42	---	---	0.130	0.700
Door: Insulated Metal, Non-Swinging, [Bldg. Use 1 - Hangar]	144	---	---	0.130	1.450
East Ext. Wall: Metal Building Wall, Single Layer Mineral Fiber (compressed at girt), [Bldg. Use 1 - Hangar]	3414	19.0	0.0	0.113	0.084
Window: Metal Frame, Thermal Break, Pwrf, Type: Energy code default, Double Pane, Clear , SHGC:0.70, [Bldg. Use 1 - Hangar]	106	---	---	0.650	0.650
Window: , Pwrf, Type: Energy code default, Double Pane, Clear , SHGC:0.70, [Bldg. Use 1 - Hangar]	336	---	---	0.800	0.600
Door: Glass (over 50% glazing): Metal Frame, Entrance Door, Pwrf, Type: Energy code default, Double Pane, Clear , SHGC:0.70, [Bldg. Use 1 - Hangar]	24	---	---	0.800	0.900
Floor: Unheated Slab-On-Grade, [Bldg. Use 1 - Hangar]	544	---	---	---	---

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

Air Leakage, Component Certification, and Vapor Retarder Requirements:

❑ 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.
❑ 2. Windows, doors, and skylights certified as meeting leakage requirements.
❑ 3. Component R-values & U-factors labeled as certified.

Project Title: Report date: 04/10/25
Data filename: Page 1 of 7

❑ 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
❑ 5. 'Other' components have supporting documentation for proposed U-Factors.
❑ 6. Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
❑ 7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
❑ 8. Cargo doors and loading dock doors are weather sealed.
❑ 9. Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with gasket or caulk.
❑ 10. Building entrance doors have a vestibule equipped with self-closing devices.
Exceptions:
❑ Building entrances with revolving doors.
❑ Doors not intended to be used as a building entrance.
❑ Doors that open directly from a space less than 3000 sq. ft. in area.
❑ Doors used primarily to facilitate vehicular movement or materials handling and adjacent personnel doors.
❑ Doors opening directly from a sleeping/dwelling unit.

Section 3: Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2009 IECC requirements in COMcheck-Web and to comply with the mandatory requirements in the Requirements Checklist.

John H Barker - Project Manager — *John H. Barker* — 04/10/2025
Name - Title Signature Date

Project Title: Report date: 04/10/25
Data filename: Page 2 of 7

DUPLIN COUNTY NORTH CAROLINA

Air Field Hangar Building
222 Airport Road, Kenansville, NC 28349

THE WILSON GROUP ARCHITECTS REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 51140 NORTH CAROLINA CHARLOTTE, N. C.

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STRUCTURAL ENGINEER
STEWART ENGINEERING
101 N. Tryon St., Suite 1400, Charlotte, NC 28202

MECHANICAL-ELECTRICAL-PLUMBING
SABER ENGINEERING
10200 Mallard Creek Rd, Suite 105
Charlotte, NC 28262

REVISIONS

DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

APPENDIX B

SHEET NUMBER
G-101

LIFE SAFETY PLAN CALCULATIONS

(A) ROOM NUMBER	(B) ROOM NAME	(C) OCCUPANCY TYPE	(D) AREA	(E) AREA PER OCCUPANT	(F) ACTUAL OCCUPANTS (D/E)	(I) OTHER INCHES/OCC	(J) OTHER INCHES REQ (F*I)
Level 1							
101	HANGAR	AIRCRAFT HANGAR (GROSS)	11175.34 SF	500.00 SF	23	0.2	4.47"
102	LOBBY	BUSINESS AREA (GROSS)	527.20 SF	100.00 SF	6	0.2	1.05"
103	BREAK ROOM	BUSINESS AREA (GROSS)	107.11 SF	100.00 SF	2	0.2	0.21"
104	CORR	N/A	73.44 SF	0.00 SF		0.2	
105	RESTROOM	N/A	82.50 SF	0.00 SF		0.2	
106	RESTROOM	N/A	82.50 SF	0.00 SF		0.2	
107	CONFERENCE ROOM	BUSINESS AREA (GROSS)	494.43 SF	100.00 SF	5	0.2	0.99"
108	FUTURE	BUSINESS AREA (GROSS)	1534.71 SF	100.00 SF	16	0.2	3.07"
					52		9.80"
GRAND TOTALS					52		9.80"

LIFE SAFETY PLAN LEGEND

ROOM TAG — ROOM NAME: Room name; ROOM AREA: 101 (99,999 SF); ROOM NUMBER; NUMBER OF OCCUPANTS

EXIT WIDTH — ACTUAL CLEAR INCHES: 34"; ACTUAL OCCUPANTS: 888 888; MAX OCCUPANTS

MAXIMUM AREA DIAGONAL — X'

DISTANCE BETWEEN EXITS — REQUIRED: X' X"; ACTUAL

EXIT ACCESS TRAVEL DISTANCE — ALLOWABLE: X' X"; ACTUAL

EXIT SIGN - COORDINATE LOCATIONS AND REQUIREMENTS W/ ELEC DRAWINGS

FEC — FEC - FIRE EXTINGUISHER IN FIRE EXTINGUISHER CABINET

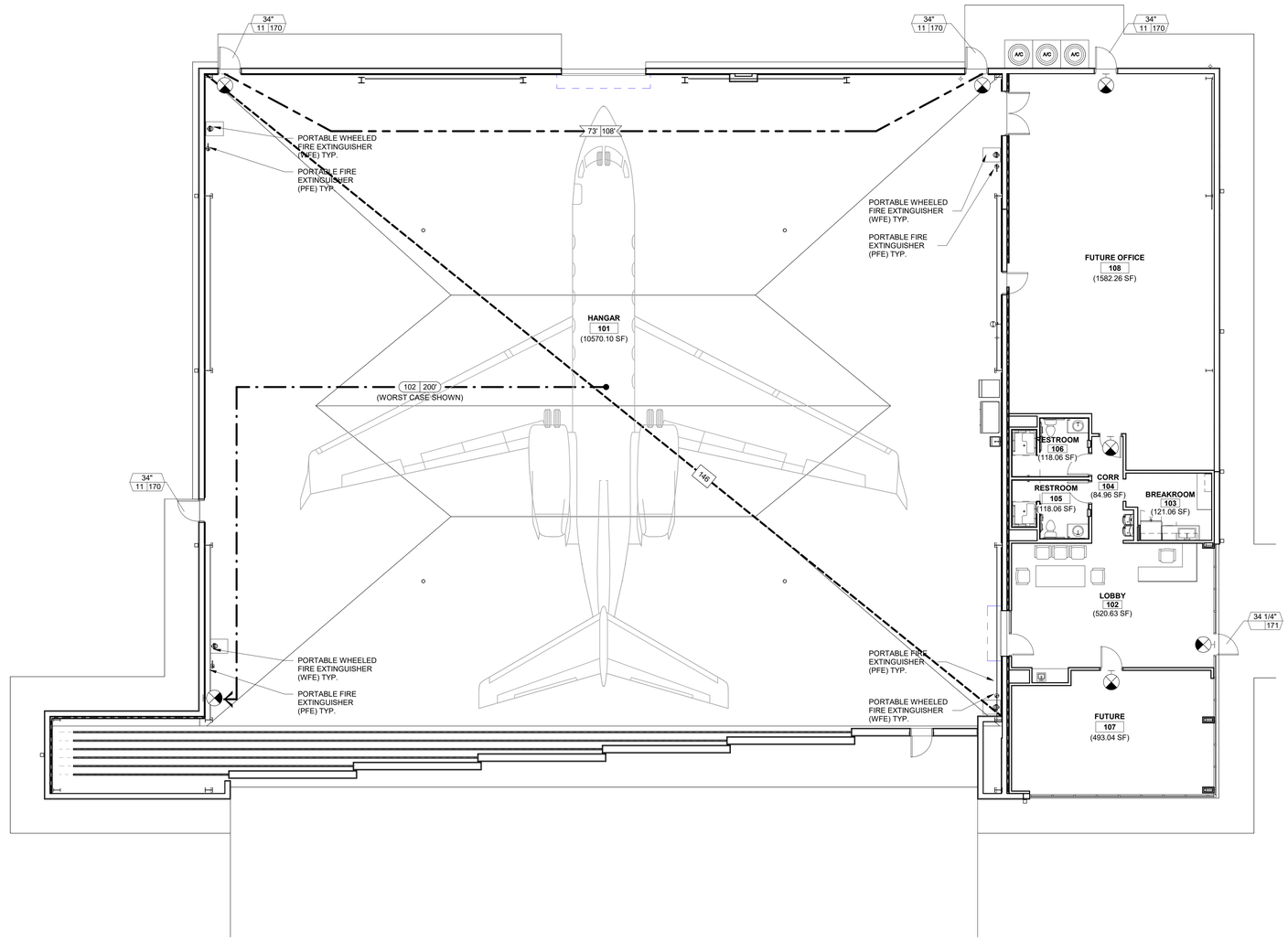
PFE — PFE - WALL-MOUNTED FIRE EXTINGUISHER

WFE — WFE - WHEELED FIRE EXTINGUISHER

FIRE EXTINGUISHER CALCULATIONS

ACTUAL AREA SERVICED BY FE:	15,600 SF
HAZARD LEVEL:	ORDINARY CLASS ABC
MIN / SF / A:	1,500 SF
EXTINGUISHER TYPE:	WFE (4A 60B:C)
SF / EXTINGUISHER:	6,000 SF
NUMBER OF EXTINGUISHERS:	4 WFE,
MAX. SF OF AREA SERVED:	24,000 SF
MAX TRAVEL DISTANCE:	50' SF
ACTUAL MAX. TRAVEL DISTANCE:	50' SF

REQUIRES REVISION PER PERMIT



1 LIFE SAFETY PLAN
1/8" = 1'-0"

PLAN NORTH N

TRUE NORTH N

DUPLIN COUNTY NORTH CAROLINA

Air Field Hangar Building

222 Airport Road,
Kenansville, NC 28349

THE WILSON GROUP ARCHITECTS REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 51140 NORTH CAROLINA CHARLOTTE, N. C.

DAVID WALKER PENCE REGISTERED ARCHITECT 9272 NORTH CAROLINA CHARLOTTE, N. C.

THE WILSON GROUP
- ARCHITECTS -

PO BOX 5510
CHARLOTTE, NC 28299
(704) 331-9747
www.twgarchitects.com
NC Cert. No.: 51140

GENERAL CONTRACTOR
Daniels and Daniels Construction Co., Inc.
P.O. Box 10337, Goldsboro, NC 27532

CIVIL ENGINEERING
McDAVID ASSOCIATES, P.E.
P.O. Box 49, 3714 North Main St
Farmville, NC 27828

STRUCTURAL ENGINEER
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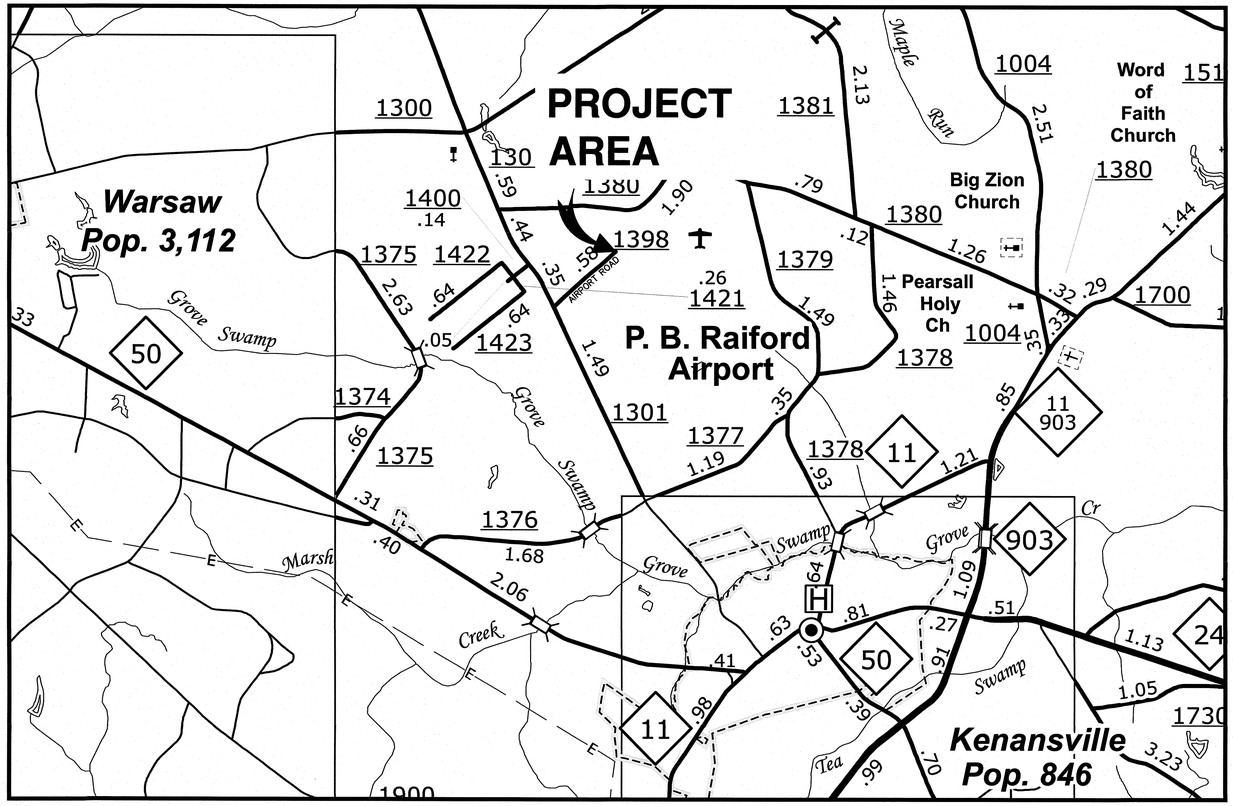
MECHANICAL-ELECTRICAL-PLUMBING
SABER ENGINEERING
10200 Mallard Creek Rd, Suite 105
Charlotte, NC 28262

REVISIONS

DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

FIRST FLOOR LIFE SAFETY

SHEET NUMBER
G-102



DUPLIN COUNTY

2025 AIRPORT HANGER PROJECT

CONTRACT NO. 3 - SITE IMPROVEMENTS

DUPLIN COUNTY, NORTH CAROLINA

MARCH 28, 2025

I CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND DIRECTION AND THAT THEY ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JOSEPH W. MCKEMEY, PE
NC REGISTRATION NO. 028431

FINAL DRAWING
FOR REVIEW PURPOSE ONLY
NOT RELEASED FOR CONSTRUCTION

INDEX OF PLANS

CONTRACT NO. 3 – SITE IMPROVEMENTS

REV: | DATE | DESCRIPTION

PROJECT NO.: 1-25-0305-3402 | SURVEYED BY: TDS
SCALE: NTS | DRAWN BY: MW
DATE: MARCH 28, 2025 | MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL SEAL 28431 ENGINEER JOSEPH W. MCKEMEY

DATE:

NAD 83 NORTH CAROLINA GRID

McDAVID ASSOCIATES, INC. CORPORATE SEAL 1972 FARMVILLE, N. C.

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

CORPORATE OFFICE
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BRANCH OFFICE
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COVER SHEET
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 1 OF 21

Drawing: W:\D8xx_gen\D84x_eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wot SS-TS - Planning & Design\DWG\P001-Cover.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:12:48pm

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR shall assign a full-time competent resident superintendent or supervisor employed by the CONTRACTOR. The superintendent/supervisor shall have authority to act, direct the WORK, supervise all subcontractors, etc. on behalf of the respective CONTRACTOR. CONTRACTOR shall not replace resident superintendent without written acknowledgment to ENGINEER and approval from OWNER.

   CONTRACTOR shall provide contact information for foremen and/or superintendents for after work hours for emergency contact if airport operations are disrupted. Airport management should be able to contact CONTRACTOR 24 hours per day.

2. CONTRACTOR shall be responsible for coordination of the following:

   A. Field Superintendent/Project Manager shall contact ENGINEER daily between 6:30am and 7:00am beginning three (3) days in advance of starting construction throughout the duration of the PROJECT.

   B. Construction and operation efforts between PROJECT related CONTRACTORS.

   C. All subcontractors for each respective CONTRACTOR.

   D. Tie-ins, site construction, etc. by all PROJECT related CONTRACTORS.

   E. Notification to ENGINEER of field conflicts, delays, changes, coordination issues, etc.

3. CONTRACTOR shall submit shop drawings and/or catalogue cuts on selected materials for approval prior to ordering materials.

4. Legend of abbreviations used in PLANS

   A. W with Dashed Line = Existing Water Line

   B. W with Solid Line = Proposed Water Line

   C. FM with Dashed Line = Existing Sanitary Sewer Force Main

   D. FM with Solid Line = Proposed Sanitary Sewer Force Main

   E. SA with Dashed Line = Existing Sanitary Sewer

   F. SA with Solid Line = Proposed Sanitary Sewer

   G. ST with Dashed Line = Existing Storm Sewer

   H. ST with Solid Line = Proposed Storm Sewer

   I. OE with Dashed Line = Existing Overhead Electrical Line

   J. OE with Solid Line = Proposed Overhead Electrical Line

   K. UE with Dashed Line = Existing Underground Electrical Conduit and Wire

   L. UE with Solid Line = Proposed Underground Electrical Conduit and Wire

   M. OT with Dashed Line = Existing Overhead Telephone Line

   N. OT with Solid Line = Proposed Overhead Telephone Line

   O. UT with Dashed Line = Existing Underground Telephone Line

   P. UT with Solid Line = Proposed Underground Telephone Line

   Q. CW with Dashed Line = Existing Underground Control Conduit and Wire

   R. CW with Solid Line = Proposed Underground Control Conduit and Wire

   S. = Proposed Water Valve

   T. = Proposed Water Valve

   U. = Proposed Reducer

   V. = Proposed Fire Hydrant

   W. = Proposed Air Release Manhole

   X. MJ = Mechanical Joint

   Y. RJ = Restrained Joint

   Z. BRJ = Boltless Restrained Joint

   AA. DIP = Ductile Iron Pipe = Ductile Iron Pipe for Water Lines

   BB. PVC = Polyvinyl Chloride Pipe = Polyvinyl Chloride Pipe for Water Lines

   CC. RCP = Reinforced Concrete Pipe

   DD. CB = Catch Basin

   EE. DI = Ductile Iron or Drop Inlet

   FF. JB = Junction Box

   GG. MH = Manhole

   HH. PUE = Permanent Utility Easement

   II. R/W = Right-of-Way

5. Individual plan sheets depicting proposed construction and detailed plan sheets should be used together. In the event that discrepancies exist between individual plan sheets and detailed plan sheets, such discrepancies shall immediately be brought to the attention of the ENGINEER. The better quality or greater quantity involved in any such discrepancy shall govern unless otherwise directed by the ENGINEER. All items necessary or incidental for a complete and operational installation shall be provided and constructed although all such items may not be included in or shown on the PLANS.

6. The OWNER is responsible for obtaining the following PERMITS or approvals associated with this PROJECT:

   A. Land Quality Section Erosion and Sedimentation Control Permit

   B. Department of Transportation Encroachment Agreement (16.1)

   C. Department of Transportation Driveway Permits

   The CONTRACTOR shall be responsible for all expenses incurred associated with WORK required to comply with provisions of the above Permits or corrective actions necessary to achieve compliance with provisions of the above Permits to include CONTRACTOR'S expenses associated with any and all WORK stoppages required or directed by government agencies to obtain compliance with Permit conditions or provisions of the CONTRACT DOCUMENTS.

   The CONTRACTOR shall be responsible for properly notifying permitting agencies prior to start of construction. The CONTRACTOR shall be responsible for providing information to permitting agencies in accordance with the permit.

   The CONTRACTOR shall comply with all applicable federal, state, and local laws and regulations and shall be responsible for obtaining other federal, state, or local permits as necessary to complete the WORK.

7. The CONTRACTOR shall post all required permits, posters, certificates of approval, and other documents on site readily accessible to employees and the public.

8. CONTRACTOR shall contact all utility companies prior to beginning work and shall fully coordinate and have all utilities flagged, protected, and/or adjusted within the area of construction. Known utilities within the PROJECT area and their respective contacts are as follows:

   A. Electrical

      (1) Tri-County Electric Membership Corporation
      4255 US 117 Alt, Dudley, NC 28333
      (919) 735-2611
      (800) 548-4869

   B. Gas

      (1) Piedmont Natural Gas
      (800) 752-7504

   C. Telephone/Cable

      (1) Brightspeed
      (833) 370-3248

   D. Sanitary Sewer

      (1) Duplin County
      (910) 296-0144

   E. Owner Operated Water

      (1) Duplin County Water Department
      (910) 296-0144

   F. Locator Service

      (1) North Carolina One Call Center
      800-632-4949 (811)

   G. Duplin County Airport Operations Department Head

      (1) Joshua Raynor
      260 Airport Road
      Kenansville, NC 28349
      (910) 296-2188
      josh.raynor@duplincountync.com

9. CONTRACTOR shall contact the North Carolina Department of Transportation (NC DOT) as follows:

   A. CONTRACTOR shall contact the NC DOT District Engineer or the NC DOT District Engineer's representative at the following times:

      (1) Five (5) days prior to any WORK within NC DOT rights-of-way

      (2) Upon completion of all WORK within NC DOT rights-of-way

      (3) Prior to any lane closures within NC DOT rights-of-way

   B. The NC DOT District Engineer's representative for this PROJECT is:

      Joseph P. Wurzel, Assistant District Engineer
      N. C. Department of Transportation
      Division of Highways
      220 North Boulevard
      Clinton, NC 28328
      Telephone: 910-682-5100
      Facsimile: 910-592-8209
      Email: jpwurzel@ncdot.gov

10. CONTRACTOR shall maintain an executed copy of the NC DOT right-of-way encroachment agreement at the construction site at all times during construction. If safety or traffic conditions warrant, NC DOT reserves the right to further limit, restrict, or suspend operations within the NC DOT right-of-way.

11. All material and workmanship shall conform to the NC Department of Transportation "Standard Specifications for Roads and Structures", "Roadway Standard Drawings", and "Policies and Procedures for Accommodating Utilities on Highway Rights of Way", latest edition.

12. Construction zones and approaches to construction zones shall be signed and marked to maximize public safety in accordance with the following:

   A. "Manual on Uniform Traffic Control Devices for Streets and Highways", latest revision, by U.S. Department of Transportation, Federal Highway Administration

   B. "North Carolina Construction and Maintenance Operations Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways", latest revision, by Division of Highways, NC Department of Transportation

   C. "North Carolina Highway Marking Manual and Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways", latest revision, by Division of Highways, NC Department of Transportation

   D. NC DOT "Roadway Standard Drawings", latest revision, by NC Department of Transportation

   E. NC DOT "Standard Specifications for Roads and Structures", latest revision, by NC Department of Transportation

13. The CONTRACTOR shall adhere to all NC DOT safety standards, rules and regulations. A "Work Zone Traffic Control Supervisor" is a trained and qualified individual who is employed by the CONTRACTOR and is capable of identifying unsafe work zone conditions and improper traffic control. NC DOT qualified "Work Zone Flaggers" shall be used for all flagging operations.

14. The CONTRACTOR shall not perform any construction or cleanup activities unless appropriate traffic control devices and/or flagmen are in place and functional. Traffic control devices and/or flagmen shall remain in place and be maintained by the CONTRACTOR as long as necessary to prevent any unsafe condition.

15. Any work requiring equipment or personnel within five (5) feet of the edge of any travel lane of an undivided highway and within ten (10) feet of the edge of any travel lane of a divided highway shall require a lane closure with appropriate traffic control devices.

16. Work shall not be performed on both sides of the road simultaneously within the same area with the exception of a drybore or road crossing.

17. No material storage will be allowed within NC DOT rights-of-way. During non-working hours, equipment shall be parked off NC DOT rights-of-way.

18. CONTRACTOR shall perform exploratory due diligence as necessary to verify the horizontal and vertical location and size of all existing utilities (parallel and perpendicular) a minimum of three hundred (300) feet in advance of pipe laying activities.

    CONTRACTOR shall notify the ENGINEER immediately if a potential conflict or problem is identified that prevents the CONTRACTOR from maintaining required utility clearances/separations for new installation. ENGINEER shall be given forty-eight (48) hour notice of discovered conflict, in order to assess conflict and assist CONTRACTOR with resolving conflict prior to installation activities.

19. CONTRACTOR shall perform exploratory excavations as necessary to locate and protect utilities. Hand shovel work will be necessary at times to determine the exact location of utilities and to prevent damage.

20. Excavation material shall not be placed on pavements. If material must be placed on pavement, written permission shall be obtained from NC DOT and presented to the ENGINEER prior to placement of the excavation material on the pavement.

21. All excavations inside the theoretical 1:1 slope from the existing edge of pavement to the bottom of the nearest excavation wall shall be made in accordance with the following:

   A. Active excavation shoring, such as sheet piling, shall be installed. The design of the shoring shall include the effects of traffic loads. The shoring system shall be designed and sealed by a professional engineer licensed in North Carolina. Shoring plans and design calculations shall be submitted to the NC DOT Division Engineer for review and approval prior to construction. Trench boxes are not acceptable as shoring.

   B. A qualified NC DOT inspector shall be on site at all times during construction. The CONTRACTOR shall reimburse NC DOT for the cost of providing the inspector.

   C. All trench excavation inside the limits of the theoretical 1:1 slope, shall be completely backfilled and compacted at the end of each construction day. No portion of the trench shall be left open overnight.

   D. An appropriate performance bond shall be posted by the CONTRACTOR with NC DOT for a period of two (2) to five (5) years to cover any long term pavement repairs which may be required as a result of the installation.

22. All soils encountered shall be considered Type "C" soil. All sloping, benching, trenching, shoring, and shield systems shall follow OSHA guidelines for Type "C" soils.

   A. Sloping and Benching

      (1) Maximum allowable slope is 1.5:1.

      (2) The actual slope shall be less steep than the maximum allowable slope when there are signs of distress. If that situation occurs, the slope shall be cut back to an actual slope of 2:1.

      (3) When surcharge loads from stored material or equipment, operating equipment, or traffic are present, a "competent person" shall determine the degree to which the actual slope must be reduced below the maximum allowable slope and shall assure that such reduction is achieved.

   B. Trenching, Shoring and Shielding systems (trench boxes)

      (1) The CONTRACTOR shall keep a "competent person" on site at all times to monitor trenching, and the utilization of shoring and shielding systems.

23. Trenches, bore pits and/or other excavations shall not be left open or unsafe overnight.

24. CONTRACTOR shall be responsible and liable for any damages to existing items caused by the CONTRACTOR or resulting from the CONTRACTOR'S work associated with accomplishing the PROJECT. PLANS do not show all items that exist in the PROJECT area. For those items shown on the PLANS, locations are approximate. The existence of these items will significantly impact the CONTRACTOR'S ability to install the proposed piping and accomplish the WORK required by the CONTRACT DOCUMENTS. The CONTRACTOR shall make his own pre-bid field determination and investigation regarding the existence and the exact location of all items within the PROJECT area. The CONTRACTOR shall be responsible for judging and determining how and to what extent existing items will impact the CONTRACTOR'S ability to accomplish the WORK. The CONTRACTOR shall contact the owner of the respective utilities within the PROJECT area and coordinate the protection of the existing utility. Any and all fees charged by the owner of the existing utility related to the protection, holding, or relocation of the existing utility shall be paid by the CONTRACTOR. The CONTRACTOR shall repair, provide new, or replace items damaged or destroyed during construction whether said items are shown on the PLANS or not. Damage repair, new, or replacement of those items shall be included within the UNIT PRICE of the work. NC DOT owned or maintained items damaged or removed shall be replaced or reinstalled in conformance with NC DOT "Roadway Standard Drawings", latest revision, by NC Department of Transportation and NC DOT "Standard Specifications for Road and Structures", latest revision, by NC Department of Transportation. The costs associated with accomplishing the proposed WORK in the immediate vicinity of existing items and the protection of these existing items shall be included within the UNIT PRICE of the work. There shall be no additional payment to the CONTRACTOR for costs associated with temporary or permanent locating and/or relocating existing items necessary to accomplish proposed construction activities; holding existing items out of the way of construction activities; measures required for the protection of existing items; or, temporary repair, removal, providing new, and/or replacement of existing items damaged by the CONTRACTOR.

   A. CONTRACTOR shall protect existing storm drainage pipe before, during, and after removal and replacement. Existing undamaged storm drainage piping may be reused. Existing drainage piping damaged by the CONTRACTOR shall be replaced with new piping. Existing damaged drainage piping shall be replaced with new piping if CONTRACTOR disturbs the existing damaged piping. A storm drain pipe collar shall be installed around the joint of any pipe segment disturbed, installed, or reinstalled during construction. Drainage structures shall not be blocked with excavation materials.

   B. CONTRACTOR shall protect existing underground and above ground utilities within the PROJECT area. Existing underground and above ground utilities within the PROJECT area include but are not limited to: water lines, sewer lines, natural gas lines, telephone cables (including fiber optic cables), cable TV cables, and electric cables.

      (1) Existing utilities are numerous and alignments are irregular. Accurate depiction of the utilities on the PLANS is not possible or practical and therefore the PLANS do not typically attempt to illustrate all utilities and locations of all utilities.

      (2) CONTRACTOR shall replace all existing water service lines damaged or cut during construction of the PROJECT from the existing water line to the existing meter stop with new 200 psi service line with no joints or splices.

   C. CONTRACTOR shall protect above ground items within the PROJECT area. Existing above ground items within the PROJECT area include but are not limited to: right-of-way monuments, roadway signs, fences, paved and unpaved driveways, pavements, paths, etc.

      (1) Other improvements disturbed, damaged, or removed shall be replaced, restored, and reinstalled by the CONTRACTOR.

      (2) CONTRACTOR shall locate and protect any airport facilities from damage. Such facilities include but are not limited to taxiway lighting, navigation aids, electrical conduits, and duct markers, etc. Any Damage to airport facilities shall be repaired immediately.

      (3) Fences disturbed, damaged, or removed shall be replaced, restored, and reinstalled by the CONTRACTOR the same day disturbed, damaged, or removed.

      (4) All paved (concrete and/or asphalt) driveways disturbed, damaged, or removed during construction shall have the pavement replaced within thirty (30) calendar days of disturbance.

      (5) CONTRACTOR shall provide a minimum six (6) inches of INCIDENTAL STONE BASE to temporarily and satisfactorily restore all paved and unpaved driveways, roads, paths, walkways, and drives to mail boxes within two (2) hours of disturbance. INCIDENTAL STONE BASE shall be provided and installed in all areas where pavements are removed. INCIDENTAL STONE BASE shall be provided and installed for the full width of the unpaved driveway or walkway from the edge of the NC DOT pavement to fifteen (15) feet past the opposite side of the water line trench or any other areas of driveways, roads, paths, or walkways disturbed by the CONSTRUCTION. CONTRACTOR shall maintain all driveways, roads, paths, walkways and drives to mail boxes until said driveways, roads, paths, walkways, and drives to mailboxes are accepted by the OWNER and the ENGINEER as being as good as or better than their original condition.

25. All traffic related to construction shall enter/exit through the gravel construction entrance as shown on plans. Airport owner shall approve the location of the construction entrance. Entrance through the House of Raeford driveway is not permitted.

26. Work shall be confined within the limits of construction as shown on the plans. Areas outside the limits of construction along the tarmac, taxiway or runway is considered restricted areas for safety and to prevent disruption of airport operations. Contact airport staff for permission to enter restricted areas. Tarmac, taxiway and runway shall

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402 | SURVEYED BY: TDS
SCALE: NTS | DRAWN BY: MW
DATE: MARCH 28, 2025 | MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH P. WURZEL, JR. DATE:

McDAVID ASSOCIATES, CORPORATION FARMVILLE, N.C. SEAL 1972 MAP REVIEW OFFICER: DATE:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131
CORPORATE OFFICE — *Engineers • Planners • Land Surveyors* — 312 North Main Street — P. O. Drawer 49 — Farmville, NC 27828 — Telephone: (252) 753-4620 — Facsimile: (252) 753-7227
BRANCH OFFICE — *Engineers • Planners • Land Surveyors* — 109 East Vernon Street — P. O. Box 1778 — Goldsboro, NC 27533 — Telephone: (919) 735-7300 — Facsimile: (919) 735-7351

GENERAL CONSTRUCTION NOTES
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 2 OF 21

D8x025
DUPLIN-CO-23-AIRPARK-WAT-SS(MP-CN)-CONTRUCTION-NOTES-20250512-003.wpl

Drawing: W:\D8xx_gen\D84x_eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P002-General Construction Notes.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:12:56pm

remain open at all times. Provide barricades to prevent vehicle traffic from entering restricted areas.

27. CONTRACTOR shall designate an area for materials and equipment storage and parking within the limits of construction in an area that will not cause damage to pavements, structures or utilities. Stone shall be provided as necessary for parking and storage areas. Temporary drainage shall be provided to prevent standing water in these areas. Equipment that is not being used shall be kept in the staging area.

28. All packaging, loose materials, debris, etc. shall be managed to prevent wind from carrying items towards tarmac area, taxiway or runway to prevent disruption in airport operations. Trash and debris shall be removed from site on a weekly basis. Foreign object debris (FOD) inspections shall be conducted multiple times per week.

29. Blocking of Water Lines

    A. Provide concrete thrust blocking, or other means approved by the ENGINEER to prevent movement of pipe, fittings, and valves, due to internal pressures resulting from system operation.

30. CONTRACTOR shall obtain permission from respective property owners prior to encroaching on private properties for construction purposes including, but not limited to, bore pits for drybores.

31. For water lines installed under storm drains, water line joints shall not be installed within eight (8) feet of an existing storm drain. Water lines shall be centered on existing storm drains. Water lines to be installed under existing storm drains shall be installed by open cut.

32. The CONTRACTOR is responsible for all subsurface conditions and construction methods necessary to install the facilities.

33. Backfill compaction for all storm sewer construction shall be in accordance with SECTION 02222, EXCAVATION, BACKFILL, AND COMPACTION FOR SEWER LINES. This section shall supersede any less stringent compaction requirements found elsewhere in the PLANS and/or SPECIFICATIONS.

34. Tie-in of existing storm sewer lines to new storm sewer lines.

    A. Lines to be tied-in are shown on PLANS for CONTRACTOR'S convenience only. These lines are shown based upon the best known evidence with respect to their size, location, and type of material. CONTRACTOR shall predetermine and field verify the exact size, type, and location of existing storm sewer lines.

35. Backfill compaction for all force mains shall be in accordance with SECTION 02226, EXCAVATION, BACKFILL, AND COMPACTION FOR FORCE MAINS. This section shall supercede any less stringent compaction requirements found elsewhere in the PLANS and/or SPECIFICATIONS.

36. CONTRACTOR shall install all sewer collection lines, manholes, and appurtenances in the locations shown on the PLANS. CONTRACTOR shall notify the ENGINEER immediately if a conflict or problem is identified which warrants the installation in a location other than that shown on the PLANS.

37. Crossing Asphalt and Concrete Pavements:

    A. All existing pavements crossed by Sewer Force Mains shall be within casing. No open cuts will be permitted for their installation unless shown otherwise on PLANS.

    B. Casing shall be installed by boring and jacking. Under no conditions shall jetting or wet boring be permitted.

        (1) Casing shall extend a minimum of five (5) feet beyond the edge of the pavement or to the limit of the theoretical one to one slope from the edge of the pavement to the bottom of the proposed pipe trench or as shown on PLANS whichever is greater.

        (2) All roadway crossings in casing shall be a minimum of 60" below the elevation of the existing roadway and 48" below the existing ditches unless shown otherwise on PLANS

38. With respect to Sewer Force Main installation under existing facilities, i.e., storm drainage, gas mains, etc., force main joints shall not be installed within eight (8) feet of the existing facility. Force main shall be centered on existing facility. The existing facility, i.e., storm drainage, gas main, etc., shall not be disturbed.

39. For force mains installed under proposed or existing storm drains, force main joints shall not be installed within eight (8) feet of the storm drain. Force mains shall be centered on proposed or existing storm drains. Force Mains to be installed under existing storm drains shall be installed by open cut.

40. Relation of sanitary sewer lines to storm sewer:

    A. A minimum twenty four (24) inch vertical separation shall be provided between any sanitary sewer line and storm sewer.

41. Relation of sanitary sewer lines to water mains:

    A. If a sanitary sewer line cannot be laid with a ten (10) foot lateral separation with respect to water mains, the sanitary sewer line shall be laid within a separate trench with the elevation of the top of the sanitary sewer line at least eighteen (18) inches below the bottom of the water main.

    B. Crossing a sanitary sewer line under a water main.
        (1) Whenever it is necessary for a sanitary sewer line to cross under a water main, the sanitary sewer line shall be laid at such an elevation that the top of the sanitary sewer line is at least eighteen (18) inches below the bottom of the water main, unless local conditions or barriers prevent an eighteen (18) inch vertical separation. If an eighteen (18) inch separation can not be achieved, both the water main and sanitary sewer line shall be constructed of ferrous materials and with joints that are equivalent to water main standards for a distance of ten (10) feet on each side of the point of crossing. A section of the conflicting sanitary sewer line shall be centered at the point of crossing.

    C. Crossing of a sanitary sewer line over a water main.

        (1) Whenever it is necessary for a sanitary sewer line to cross over a water main, both the sanitary sewer line and the water main shall be constructed of ferrous materials and with joints equivalent to water main standards for a distance of ten (10) feet on each side of the point of crossing. A section of the sanitary sewer line shall be centered at the point of crossing.

42. Blocking of Sewer Force Mains

    A. Provide concrete thrust blocking, or other means approved by the ENGINEER to prevent movement of pipe, fittings, and valves due to internal pressures resulting from hydrostatic testing and system operation.

43. CONTRACTOR shall install marking tape made of three (3) inch wide, electromagnetic detectable, metallic material, which shall read "CAUTION: BURIED FORCE MAIN BELOW". Install the tape above the pipe approximately one (1) foot below the ground surface, for the entire length of all force main installed.

44. Final Backfill and Compaction

    A. Final Backfill Materials

        (1) Native soil free of lumps, clods, stones, rocks, boulders, highly plastic clay, frozen lumps, or other objectionable material. Provide and add suitable soil materials as required to meet compaction requirements. Suitable soil materials shall be soil classified as Type GW, GP, SW, SP, GM, GC, SM, or SC in accordance with ASTM D2487.

    B. Final Backfill Compaction Requirements Not Within Public Rights-of-way

        (1) All Traffic Ways – 98% Standard Proctor Density (ASTM D698)

        (2) Non-Traffic Ways – 95% Standard Proctor Density (ASTM D698)

    C. Final Backfill Compaction Requirements Within Public Rights-of-way

        (1) Zone B - Between the edge of pavement and bottom of side ditch (or 10 feet from edge of pavement when there is no side ditch) below the theoretical 1:1 slope from the edge of pavement to the bottom of the nearest excavation wall

            (a) From the top of initial backfill to the finished grade – 98% Standard Proctor Density (ASTM D698)

        (2) Zone C - Between the edge of pavement and bottom of side ditch (or 10 feet from edge of pavement when there is no side ditch) above the theoretical 1:1 slope from the edge of pavement to the bottom of the nearest excavation wall

            (a) All Traffic Ways – 98% Standard Proctor Density (ASTM D698)

            (b) Non-Traffic Ways – 95% Standard Proctor Density (ASTM D698)

        (3) Between the centerline of side ditch (or 10 feet from edge of pavement when there is no side ditch)

            (a) All Traffic Ways – 98% Standard Proctor Density (ASTM D698)

            (b) Non-Traffic Ways – 95% Standard Proctor Density (ASTM D698)

    D. Compaction Requirements Adjacent to Buildings, Structures, and Utilities

        (1) 98% Standard Proctor Density (ASTM D698)

    E. Moisture Control

        (1) Moisten and/or dry backfill materials as necessary to adjust moisture content to within two (2) percent of optimum moisture content and achieve the required density and structural stability.

    F. Disposal of Excess And/or Unsuitable Materials

        (1) Dispose of excess and/or unsuitable excavated materials not required for fill or backfill at an approved off-site disposal site provided by the CONTRACTOR.

45. Relation of Water Lines to Non-potable Water Lines

    A. Water Service Lines and Sewer Service Lines

        (1) Water service lines shall be located at least ten (10) feet horizontally from sewer service lines.

        (2) Water service lines shall be located at least ten (10) feet horizontally from existing or proposed sewers.

        (3) A water service line that crosses a sewer service line shall be laid a minimum vertical distance of eighteen (18) inches from the outside of the water line and the outside of the sewer service line, either above or below the sewer service line, with preference to the water service line located above the sewer service line.

46. Interruption of Service

    A. Detachments or Tie-ins

        (1) CONTRACTOR shall notify OWNER, all affected users, and the ENGINEER prior to interruption of service.

        (2) If interruption of service will last greater than two (2) hours, the CONTRACTOR shall pre-schedule the work with OWNER at a mutually agreeable time that would impose a minimum inconvenience on the affected users.

47. Daily Cleanup and Maintenance of Ingress and Egress

    A. Ingress and egress shall be maintained to all businesses, and dwellings affected by the PROJECT. The CONTRACTOR shall utilize any and all construction methods, including INCIDENTAL STONE BASE, as necessary to maintain ingress and egress to all properties at all times during the construction period except during the time period required for excavation, pipelaying, and backfilling.

    B. All excavation, pipelaying, and backfilling activities shall be completed not later than 5:00 p.m. each work day. INCIDENTAL STONE BASE, grading, provisions for temporary drainage, and cleanup after each day's construction activities shall be completed immediately following completion of excavation, pipelaying, and backfilling operations each day. The CONTRACTOR shall not leave or abandon the work site until all daily cleanup, provisions for temporary drainage, and provisions for convenient ingress and egress have been completed.

    C. Maintenance of all disturbed areas shall be provided on a daily basis as required to provide drainage and convenient ingress and egress to all properties, minimize threats for injuries associated with vehicular and/or pedestrian traffic, and maintain all unpaved areas in a manner acceptable for normal lawn care activities by adjoining residents and/or property owners.

    D. The CONTRACTOR shall initiate and continuously pursue until completion all specific cleanup, cleanup maintenance, and/or repair activities requested by the ENGINEER within four (4) hours of the ENGINEER's request. The ENGINEER may request such activities based upon his observations, citizen complaints, directions from regulatory agencies, and items brought to the ENGINEER's attention by others.

    E. The cost for providing temporary drainage, satisfactory ingress and egress, cleanup, and maintenance of disturbed areas shall be included within the price for the WORK.

48. Erosion and Sedimentation Control

    A. Cost of all erosion and sedimentation control measures and devices shall be included in the UNIT PRICES of the WORK as shown in the BID SCHEDULE.

    B. CONTRACTOR shall retain a copy of the latest approved erosion and sedimentation control plan on site to be made available upon request.

    C. Failure by the CONTRACTOR to adequately implement the erosion and sedimentation control measures described in these PLANS and SPECIFICATIONS may result in the employment by the OWNER of an outside party to accomplish these activities.

    D. Failure by the CONTRACTOR to comply with any part of the approved erosion and sedimentation control plan or with any Division of Land Resources Land Quality Section requirements may result in civil penalty. Any violation penalties imposed upon the OWNER by the State shall be charged by the OWNER to the CONTRACTOR and paid to the OWNER by the CONTRACTOR .

    E. Appropriate temporary and permanent measures shall be used to control erosion and sedimentation in accordance with all local, State, and Federal regulations. Erosion and sedimentation control measures or devices shall be installed to safely prevent erosion from leaving the site resulting from a ten (10) year storm event (6.5 inches to 7.0 inches of rain in twenty four hours or rain at a rate of 6.5 inches to 7.0 inches in one hour).

    F. CONTRACTOR shall schedule land-disturbing activities to minimize the area of exposure and the time between the land disturbances and providing ground cover.

    G. CONTRACTOR shall maintain a buffer zone sufficient to restrain visible sedimentation between any land-disturbing activity and any adjacent property or watercourse.

    H. The CONTRACTOR shall not begin construction until after all erosion control devices have been installed.

    I. Temporary Erosion and Sedimentation Control Measures

        (1) Install silt fence around all proposed spoil piles. Silt fences shall be installed along all land disturbed areas where necessary to prevent sediment from leaving the PROJECT site.

        (2) Construct and maintain gravel construction entrances/exits for all sites.

        (3) All land disturbed areas shall be graded to minimize runoff. New or affected slopes shall be graded to an angle that can be retained by vegetative cover.

        (4) Protect storm pipe inlets from sediment runoff generated by land disturbing activities with silt fences and gravel filter check dams.

        (5) Protect drop inlets and catch basins with block and gravel filters.

        (6) Install Class 1 rip rap protection around disturbed storm pipe outlets within seven (7) days.

        (7) Construct and maintain detention basins, silt traps, check dams, and barriers. Divert all surface runoff into roadway ditches, detention basins, or silt basins. Install erosion control devices as necessary to prevent sediment from leaving PROJECT area.

        (8) All land disturbed areas on the banks and approaches to ditches, streams, or creek crossings shall be graded not to exceed 2:1 ratio. Install bank stabilization. Surface water runoff shall be diverted from land disturbed areas.

        (9) All land disturbed areas on the banks and approaches to ditches, streams, or creek crossings shall be fertilized, limed, seeded, and mulched within twenty-four (24) hours of completion of any land disturbing activity. Within riparian buffer areas, lime and fertilizer shall not be utilized.

        (10) All land disturbed areas, other than approaches to ditches, streams, or creek crossings, shall be graded, dressed, fertilized, limed, seeded, and mulched within ten (10) calendar days of completion of any land disturbing activity phase of grading (rough or final). Rye grass is not an approved seeding for establishment of ground cover.

        (11) Mulching shall be applied at a minimum rate of two (2) tons per acre to all seeded areas. For each square foot of seeded area, the mulch must cover a minimum of 75% after it is tacked or crimped in place.

        (12) If other erosion control devices fail to stabilize and prevent erosion, CONTRACTOR shall install erosion control matting as necessary to prevent erosion.

        (13) Temporary ground cover (grass, mulching, matting, etc.) shall be established and effectively restraining erosion within twenty-one (21) calender days of completion of any phase of grading (rough or final).

        (14) Seeding shall not be done in areas to receive pavement.

    J. Ground Stabilization

        (1) Soil stabilization shall be achieved on any area of a site where land-disturbing activities have temporarily or permanently ceased according to the following schedule:

            (a) All perimeter dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1) shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within seven (7) calendar days from the last land-disturbing activity.

            (b) For portions of projects within the Sediment Control Commission defined "High Quality Water Zone" (15A NCAC 04A. 0105), stabilization with ground cover shall be achieved as soon as practicable but in any event on all areas of the site within seven (7) calendar days from the last land-disturbing act.

            (c) All slopes fifty (50) feet in length or greater shall have the ground cover applied within seven (7) days after the last land-disturbing activity except when the slope is flatter than 4:1.

            (d) Any sloped area flatter than 4:1 shall have the ground cover applied within fourteen (14) calendar days after the last land-disturbing activity.

            (e) All other disturbed areas not mentioned above shall be provided temporary or permanent stabilization with ground cover as soon as practicable but in any event within fourteen (14) calendar days from the last land-disturbing activity.

    K. Permanent Erosion and Sedimentation Control Measures

        (1) Final grading, soil preparation, fertilizing, liming, seeding, and mulching of the PROJECT area shall be completed within the time frame requirements for Ground Stabilization above.

        (2) All land disturbed areas on residential or commercial yards/lawns shall be fine graded, topsoil added, hand raked, fertilized, limed, seeded, and mulched within fifteen (15) working days after completion of construction.

        (3) Mulching shall be applied at a minimum rate of two (2) tons per acre to all seeded areas. For each square foot of seeded area, the mulch must cover a minimum of 75% of the exposed ground after it is tacked or crimped in place. Mulching shall be applied in an uniform manner.

        (4) If other erosion control devices fail to stabilize and prevent erosion, install erosion control matting as necessary to prevent erosion.

        (5) Permanent ground cover (grass, mulching, matting, etc.) shall be established and effectively restraining erosion within the time frame requirements for Ground Stabilization above.

    L. Erosion Control Construction Sequence

        (1) Obtain and post copy of certificate of erosion control plan approval on PROJECT site.

        (2) Clear PROJECT area only as necessary to install erosion control devices.

        (3) Once approved erosion control devices and measures are in place, notify PROJECT engineer and NCDEQ, Energy, Mineral, and Land Resources Section for site inspection prior to commencing construction.

        (4) Begin construction.

        (5) Maintain erosion control devices as necessary during project construction.

        (6) As construction progresses, install additional erosion control devices as necessary to prevent erosion leaving the PROJECT area.

        (7) Temporarily seed and mulch disturbed area within prescribed time frames.

        (8) After disturbed areas are stabilized, permanently seed and mulch disturbed areas within prescribed time frames.

        (9) After CONSTRUCTION is complete, all erosion control devices are installed and the PROJECT area is stabilized, request a site inspection from NCDEQ, Energy, Mineral, and Land Resources Section and provide documentation that NCDEQ is satisfied with implementation of erosion control devices.

        (10) After the PROJECT area is stabilized, remove temporary erosion control devices, dress out area and seed and mulch any disturbed areas.

49. CONTRACTOR shall, at its own expense, strictly adhere to all pertinent safety standards, rules, and OSHA regulations required or recommended by governmental or quasi-governmental authorities having jurisdiction. By submitting a BID for this CONTRACT, CONTRACTOR acknowledges that it has its own OSHA compliant safety program for all WORK covered by or performed under this CONTRACT. The CONTRACTOR by submitting a BID for this CONTRACT further acknowledges that OSHA Safety Regulations require the CONTRACTOR to keep a trained "competent person" on the job. A "competent person" is a trained individual who is employed by the CONTRACTOR and is capable of identifying existing and predictable hazards or working conditions that are hazardous, unsanitary, or dangerous to employees and has the authority to take prompt corrective measures to eliminate or control any hazard or unsafe conditions. The CONTRACTOR agrees to keep as many "competent persons" on site as necessary to maintain safe working conditions at all times. In addition to keeping as many "competent persons" on site at all times workers are in trenches and other types of excavation, the CONTRACTOR also agrees to conduct its own frequent and regular inspections of all WORK covered by or performed under this CONTRACT at the PROJECT site to verify compliance with the CONTRACTOR'S safety program and all applicable safety standards, rules, and

D30025
DUPLIN-CO-23-AIRPARK-WAT-SS-IMP-CNT-CONSTRUCTION-NOTES-20250512-003.wpd

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P003-General Construction Notes.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:13:05pm

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: NTS
DATE: MARCH 28, 2025
SURVEYED BY: BY OTHERS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL SEAL 28431 ENGINEER JOSEPH H.W. MCKENZIE

DAVID ASSOCIATES, INC. CORPORATE SEAL 1972 FARMVILLE, N.C.

I.M. RICKER OPTIMEN

DATE:

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GENERAL CONSTRUCTION NOTES
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

OSHA regulations. The CONTRACTOR and the OWNER acknowledge and agree that neither the OWNER nor the ENGINEER has any control, responsibility, or authority over the CONTRACTOR or the CONTRACTOR'S employees or SUBCONTRACTOR'S with regard to the safety and health conditions relating to or arising out of the CONTRACTOR'S work or the performance of any work covered by this CONTRACT. The PROJECT OBSERVER is an employee of the ENGINEER and is not a trained "competent person". The CONTRACTOR has the sole responsibility and authority for ensuring that any and all hazardous conditions relating to or arising out of the CONTRACTOR'S work are identified and corrected. With regard to the CONTRACTOR'S work or any WORK covered by or performed under this CONTRACT, the OWNER is not the controlling employer or controlling entity for the purpose of detecting hazardous conditions or ensuring that hazardous conditions are corrected.

50. Contractor Certified Record Drawings

A. The CONTRACTOR shall provide Contractor Certified Record Drawings to the ENGINEER of all water and sewer line construction WORK. Record Drawings shall be developed based upon field measurements of "as-built" conditions. All deviations (horizontal and vertical) from PLAN requirements shall be clearly illustrated by a single line "strike through" of the original criteria and the as-built condition written above or beside the "strike through."

B. CONTRACTOR's submission and ENGINEER's approval of Record Drawings are required before the CONTRACTOR will be considered substantially complete.

C. Record Drawings shall contain the following certification by the CONTRACTOR:

Contractor's Record Drawing Certification

I, _____, being duly authorized by the Board of Directors
(Individual)

of _____, the prime contractor for the PROJECT
(Contractor)
as shown on these PLANS, do hereby certify that these Record Drawings are made from field measurements of "as-built" facilities and are true and accurate to the best of my knowledge and belief.

_____

Attest:

Seal

_____
Corporation Secretary

Engineer's Disclosure

These "Record Drawings" were prepared from marked up drawings supplied by the CONTRACTOR and have not been field verified by the ENGINEER.

_____
Engineer's Name, P.E.

Seal

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SURVEYED BY: BY OTHERS
SCALE: NTS
DRAWN BY: MW
DATE: MARCH 28, 2025
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMIE

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N.C.

MAY REVIEW OFFICIAL

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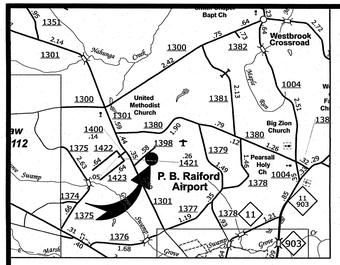
GENERAL CONSTRUCTION NOTES
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA

DUPLIN COUNTY

SHEET 4 OF 21

Drawing: W:\D8xx_gen\D84x_eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P004-General Construction Notes.dwg
Layout:
Layout: Friday, May 16, 2025, 4:13:10pm
Plotted:

D8023
DUPLIN-CO-25-AIRPARK-WAT-SS-IMP-CNT-CONTRUCTION-NOTES-20250512-0403.wpd



VICINITY MAP

RIM MANHOLE = 147.50'
INV OUT W = 138.26'
INV IN E = 138.27'
INV IN S = 140.21'

RIM MANHOLE = 147.31'
INV OUT W = 139.23'
INV IN N = 139.52'
INV IN E = 139.49'

NCSR 1398 – AIRPORT ROAD
(60' R/W – 24' ASPHALT)

ELEV. = 143.37'
TOP OF CONTROL IRON
NAVD88 DATUM

RIM MANHOLE = 144.96'
INV OUT W = 141.09'

NC GRID NAD 83(2011)

NOTE: VERTICAL DATUM: NAVD88

EXISTING BUILDING
FINISHED FLOOR
ELEVATION = 134.44'

RIM= 131.90'
INV OUT SE = 128.12'
INV IN NE = 128.05'

RIM= 132.87'
INV OUT SW = 128.61'
INV IN NW = 128.87'
INV IN SE = 128.95'

RIM= 136.71'
INV OUT E = 129.26'
INV IN SW = 129.02'
INV IN NW = 129.01'
INV IN N = 129.80'

RIM= 135.57'
INV OUT E = 130.01'
INV IN SW = 130.05'

RIM= 133.23'
INV OUT SW = 128.57'
INV IN NW = 128.57'
INV IN NE = 128.57'

RIM= 132.24'
INV OUT SW = 129.45'
INV IN NW = 129.46'

RIM= 131.11'
INV OUT SW = 12142'
INV IN NE = 130.91'

RIM= 130.07'
INV OUT SE = 124.42'
INV IN W = 124.36'
INV IN SW = 124.62'

RIM= 137.70'
INV OUT E = 129.03'
INV IN W = 129.03'
INV IN SW = 129.05'

RIM= 134.11'
INV OUT E = 130.47'

RIM= 129.34'
INV OUT E = 129.59'

ASPHALT

CLEAN OUTS

ELECTRIC TRANSFORMER

ELECTRIC BOX

TELEPHONE BOX

WATER METER

WATER VALVE

24"RCP

30"RCP

18"RCP

48"RCP

36"RCP

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: 1" = 40'
DATE: MARCH 28, 2025

SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMEY

DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N.C.

MA REVIEW OFFICER:

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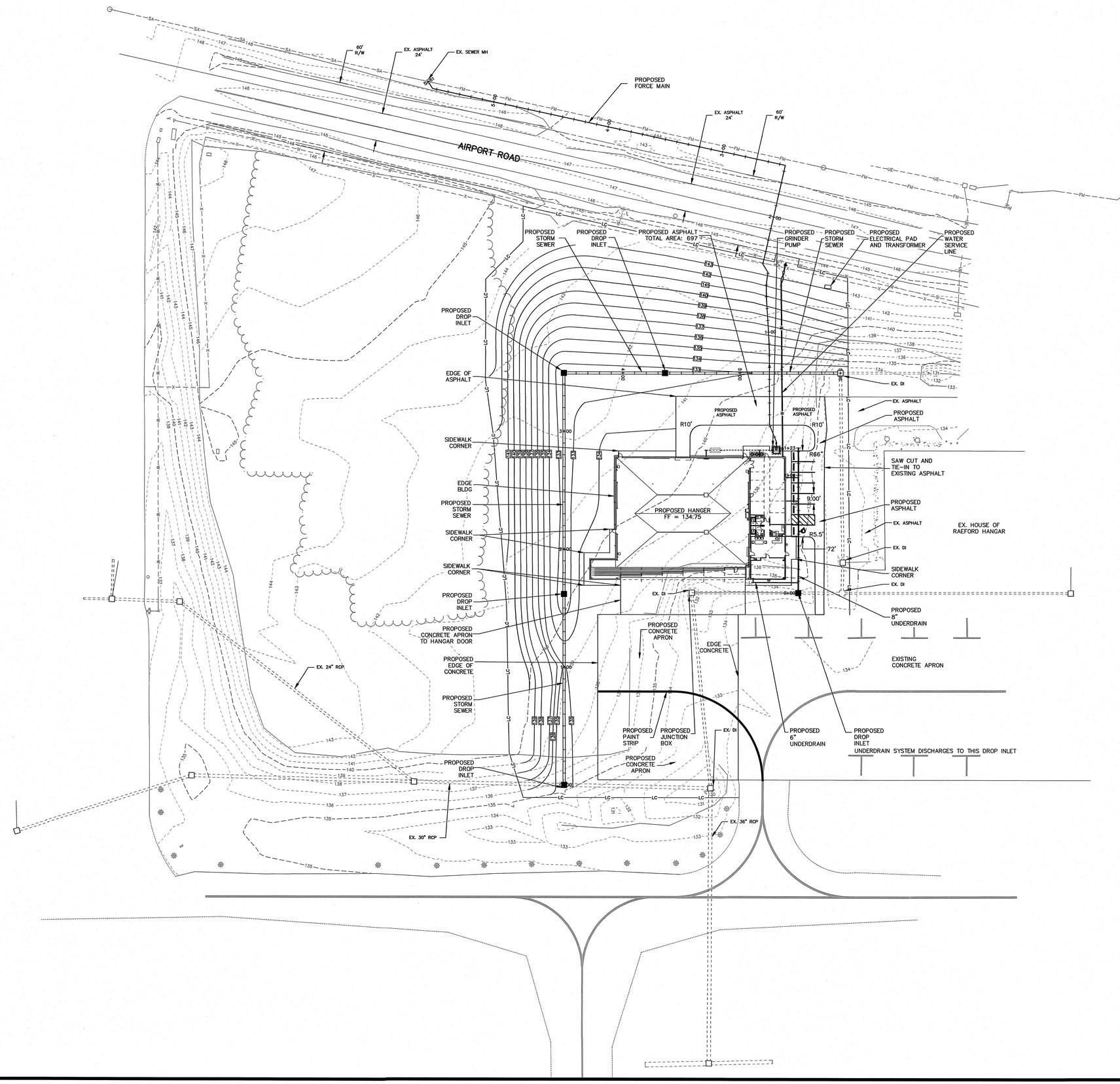
EXISTING SITE CONDITIONS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY

NORTH CAROLINA

DUPLIN COUNTY

SHEET 5 OF 21

Drawing: W:\D8xx_gen\D84x_eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wot SS-TS - Planning & Design\DWG\P005-Existing Site Conditions.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:13:20pm



NOTES:
–SEE ARCHITECTURAL PLANS FOR EXACT LOCATION AND DIMENSIONS OF BUILDING, SIDEWALKS, DOWNSPOUTS, AND DOORS.

–ALL DOWNSPOUTS ON NORTHEASTERN SIDE OF HANGAR AND THE DOWNSPOUT AT THE SOUTHEASTERN SIDE OF OFFICE AREA SHALL DRAIN TO AN UNDERDRAIN SYSTEM

–BUILDING WASTEWATER IS DISCHARGED THROUGH A GRINDER PUMP WITH WET WELL AND SMALL DIAMETER FORCE MAIN.

LEGEND

125	PROPOSED CONTOUR ELEVATION
140	EXISTING CONTOUR ELEVATION
-X-	EXISTING CHAIN LINK FENCE
W	PROPOSED WATER SERVICE LINE
LC	LIMITS OF CONSTRUCTION
UE	PROPOSED UNDERGROUND ELECTRICAL
SA	EXISTING SANITARY SEWER
FM	PROPOSED FORCE MAIN
	EXISTING SANITARY SEWER MANHOLE
	PROPOSED DROP INLET
	EXISTING DROP INLET

REV. | DATE | DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: 1" = 40'
DATE: MARCH 28, 2025
SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 3/28/25 JOSEPH W. McKEMEY

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N. C.

MA RENDER OFFICER: DATE:

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PROPOSED SITE PLAN
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 6 OF 21

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P006-Proposed Site Plan.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:13:33pm

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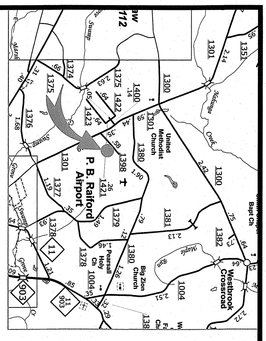

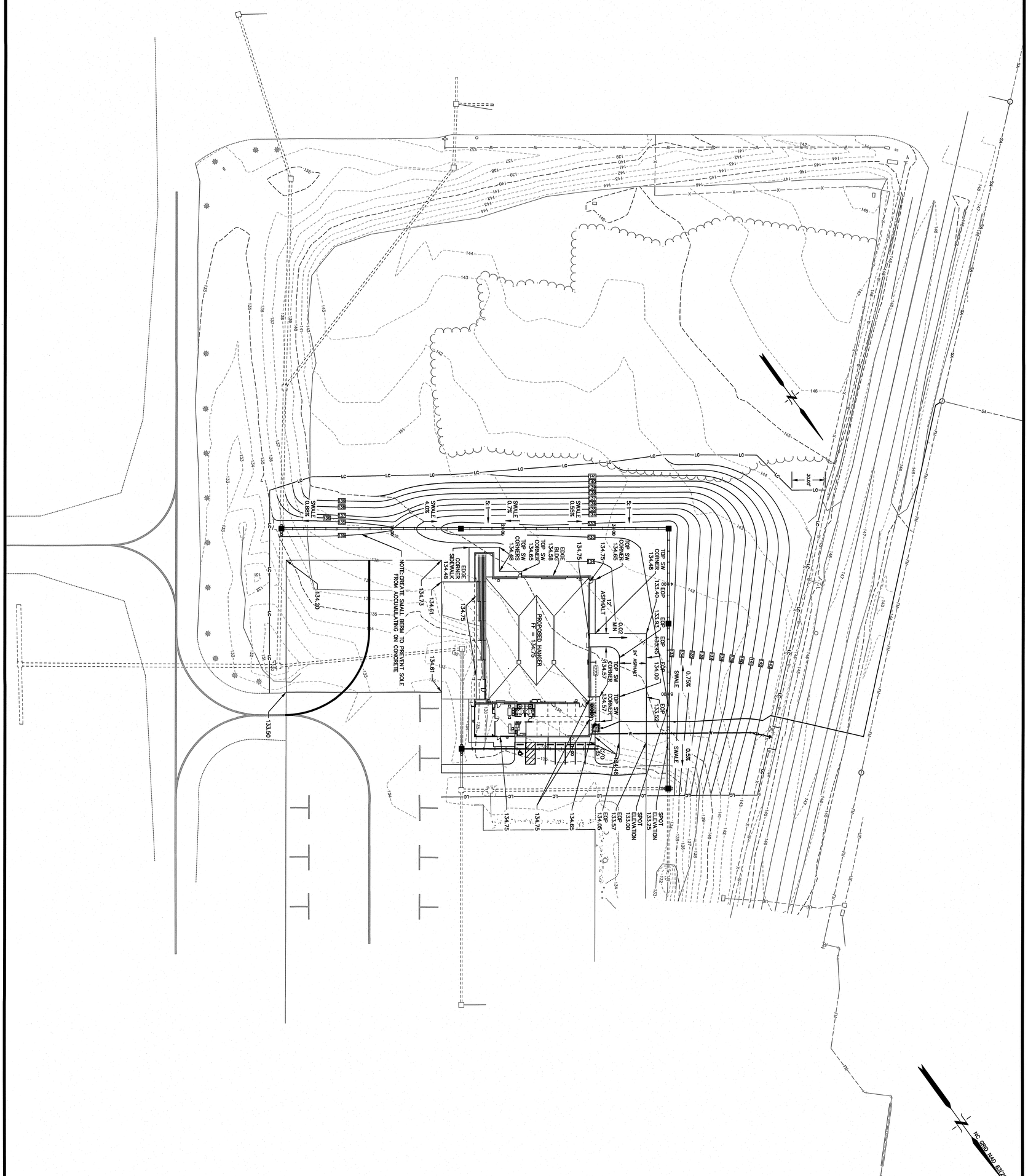

DRAINAGE AND GRADING PLAN
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
DUPLIN COUNTY NORTH CAROLINA

SHEET 7 OF 21

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McDAVID ASSOCIATES, INC. SEAL 1972 NORTH CAROLINA CORPORATION

PROFESSIONAL ENGINEER SEAL 28431 NORTH CAROLINA

MAI REVIEW OFFICER: DATE:

REV.	DATE	DESCRIPTION

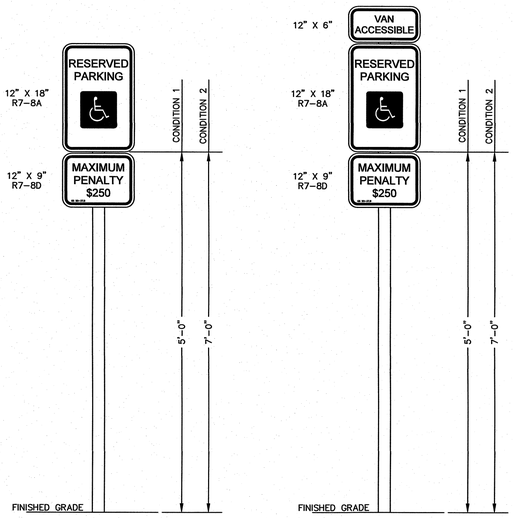
PROJECT NO.: 1-25-0305-3402	SURVEYED BY: TDS
SCALE: 1" = 40'	DRAWN BY: MW
DATE: MARCH 28, 2025	MAP FILE REFERENCE: D-1213 PINK

20040803

SD010502

SIGNS SHALL BE REFLECTIVE ALUMINUM

BACKGROUNDS – WHITE
LEGENDS AND BORDERS – GREEN
WHITE FIGURES ON BLUE FIELDS



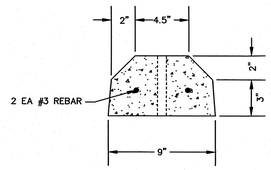
CONDITION 1: PEDESTRIAN PATH DOES NOT PASS BY, UNDER, OR AROUND SIGN.

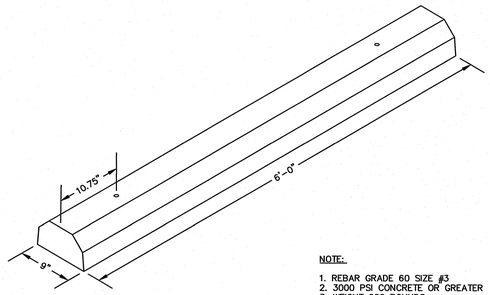
CONDITION 2: PEDESTRIAN PATH PASSES BY, UNDER, OR AROUND SIGN.

STANDARD HANDICAPPED PARKING SPACE SIGN

VAN ACCESSIBLE HANDICAPPED PARKING SPACE SIGN

HANDICAPPED PARKING SPACE SIGNS — A

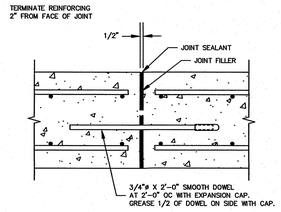




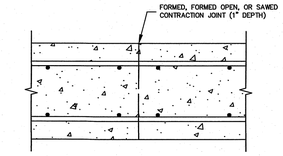
NOTE:

1. REBAR GRADE 60 SIZE #3
2. 3000 PSI CONCRETE OR GREATER
3. WEIGHT 200 POUNDS

TYPICAL CONCRETE PARKING BUMPER — B

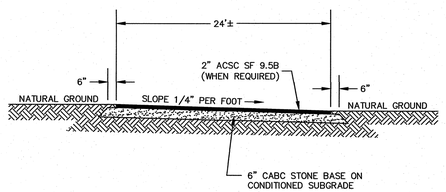


SLAB ON GRADE EXPANSION JOINT — C

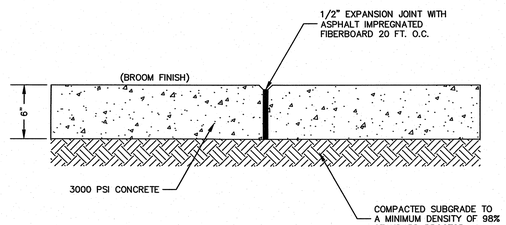


SLAB ON GRADE CONTRACTION JOINT — D

SD010410



TYPICAL ACCESS ROAD CROSS SECTION — G



TYPICAL SIDEWALK SECTION — H

E — F

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SURVEYED BY: BY OTHERS
SCALE: NTS
DRAWN BY: MW
DATE: MARCH 28, 2025
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMEY — DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 — INC. FARMVILLE, N.C.

MA REVIEW OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

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PAVEMENT DETAILS

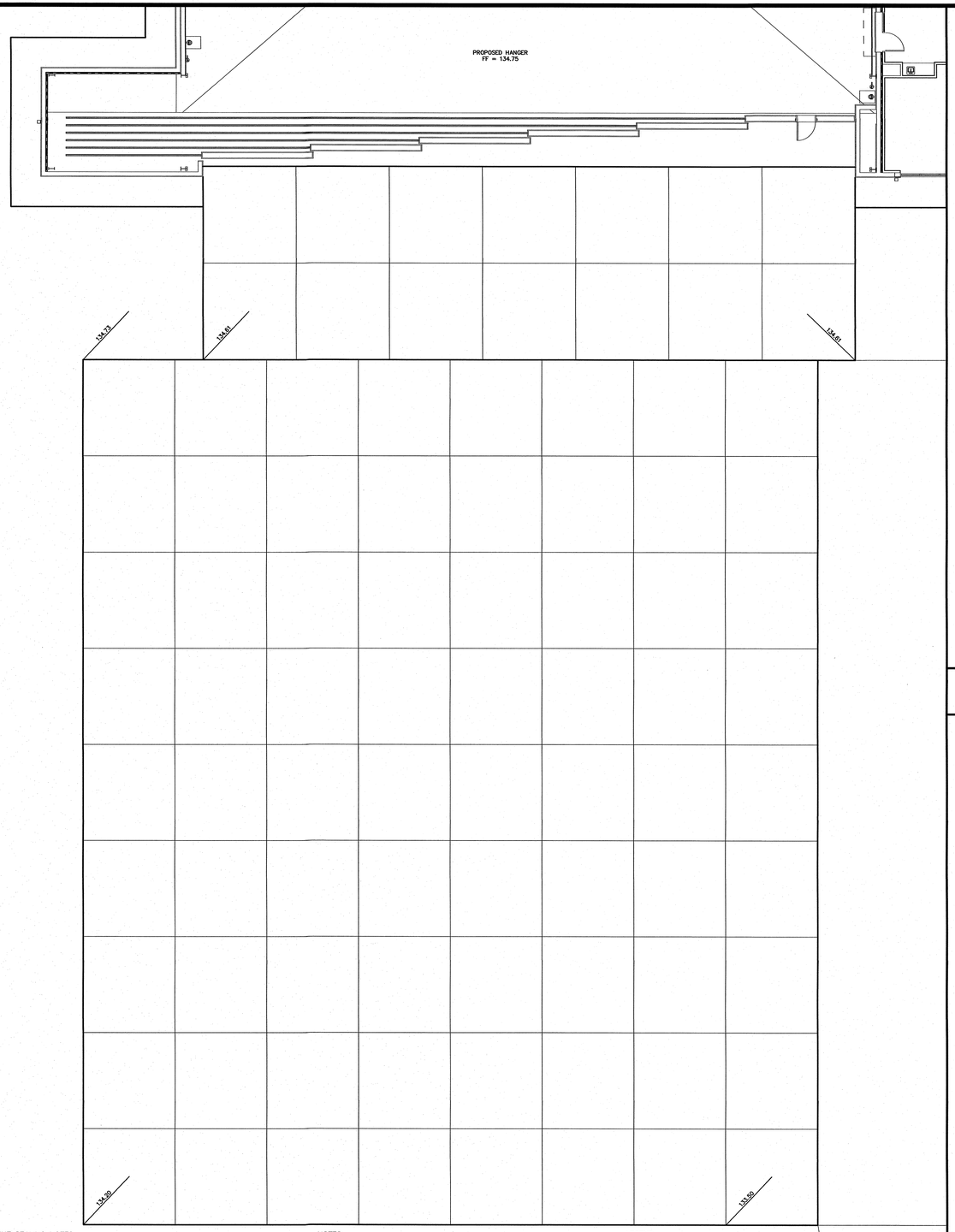
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY

NORTH CAROLINA

DUPLIN COUNTY

SHEET 8 OF 21

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P008-Pavement Details.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:14:00pm



CONCRETE JOINT LAYOUT
1" = 10'

1

JOINT SEALING NOTES:

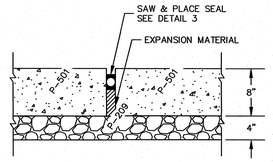
1. THE CONTRACTOR SHALL SUBMIT THE MANUFACTURER'S LITERATURE AND RECOMMENDATIONS FOR INSTALLATION OF THE SEALANT TO THE ENGINEER FOR APPROVAL.
2. THE CONTRACTOR SHALL SUBMIT HIS/HER PLAN FOR SEALING ALL JOINTS WITH THE DIMENSIONS OF MATERIAL AND WIDTHS APPROPRIATE FOR THE TYPE SEALANT SELECTED, TO THE ENGINEER FOR APPROVAL.
3. ALL JOINTS SHALL BE MECHANICALLY CLEANED OF ALL CURING COMPOUND AND BLOWN OUT WITH COMPRESSED AIR BEFORE INSTALLATION OF THE SEALANT.
4. THE CONTRACTOR SHALL DEMONSTRATE HIS/HER ABILITY TO COMPLY WITH THE DRAWINGS AND SPECIFICATION REQUIREMENTS BY PLACING A TEST SECTION WHICH INCLUDES BOTH LONGITUDINAL AND TRANSVERSE JOINTS.
5. JOINTS SHALL BE SEALED WITH FUEL RESISTANT SILICONE JOINT

NOTES:

1. PAVING LANES SHALL BE PLACED IN THE DIRECTION OF DRAINAGE.
2. METAL FORMS REQUIRED (SEE SPECIFICATIONS)

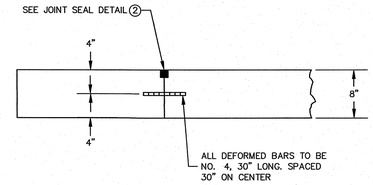
LEGEND:

- [A] EXPANSION JOINT (SEE DETAIL)
- [B] HINGED CONSTRUCTION JOINT (SEE DETAIL)
- [C] HINGED CONTRACTION JOINT (SEE DETAIL)
- [D] SAWED TRANSVERSE JOINT (SEE DETAIL))
- 134.50 JOINT ELEVATION
- (A) PAVEMENT LANE IDENTIFER
- (1) PAVEMENT LANE IDENTIFIER



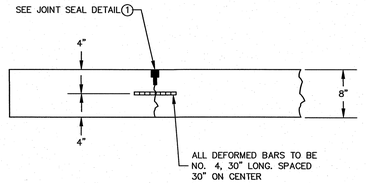
EXPANSION JOINT DETAIL
N.T.S.

A



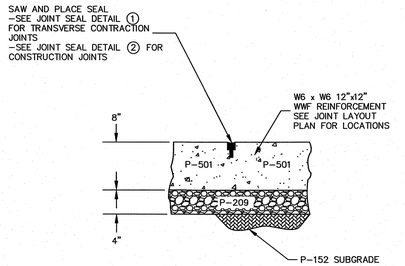
HINGED CONSTRUCTION JOINT DETAIL
N.T.S.

B



HINGED CONTRACTION JOINT DETAIL
N.T.S.

C



SAWED JOINT DETAIL
N.T.S.

D

REV:	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402 | SURVEYED BY: TDS
SCALE: AS-NOTED | DRAWN BY: MW
DATE: MARCH 28, 2025 | MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKENNEY

DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N. C.

DAN MCNEW DIRECTOR

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

CORPORATE OFFICE
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3714 North Main Street
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109 East Walnut Street
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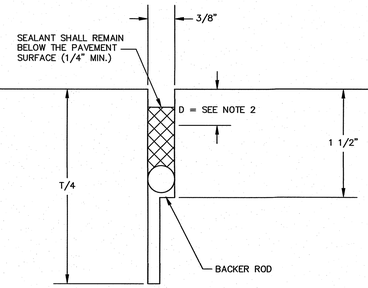
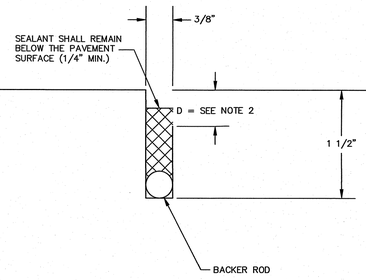
PAVEMENT DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

Drawing: W:\D8xx-gen\D84x-eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P009-Pavement Details.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:14:07pm



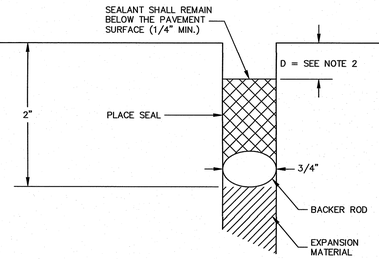
CONTRACTION JOINT SEALANT DETAIL

A



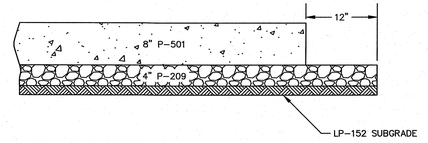
CONSTRUCTION JOINT SEALANT DETAIL

B



EXPANSION JOINT SEALANT DETAIL

C



PCC PAVEMENT SECTION

D

E

F

G

H

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: NTS
DATE: MARCH 28, 2025
SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMEY

DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N.C.

MA REVIEW OFFICER:

McDAVID ASSOCIATES, INC.

Corporate License No. C-131

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PAVEMENT DETAILS

CONTRACT NO. 3 - SITE IMPROVEMENTS

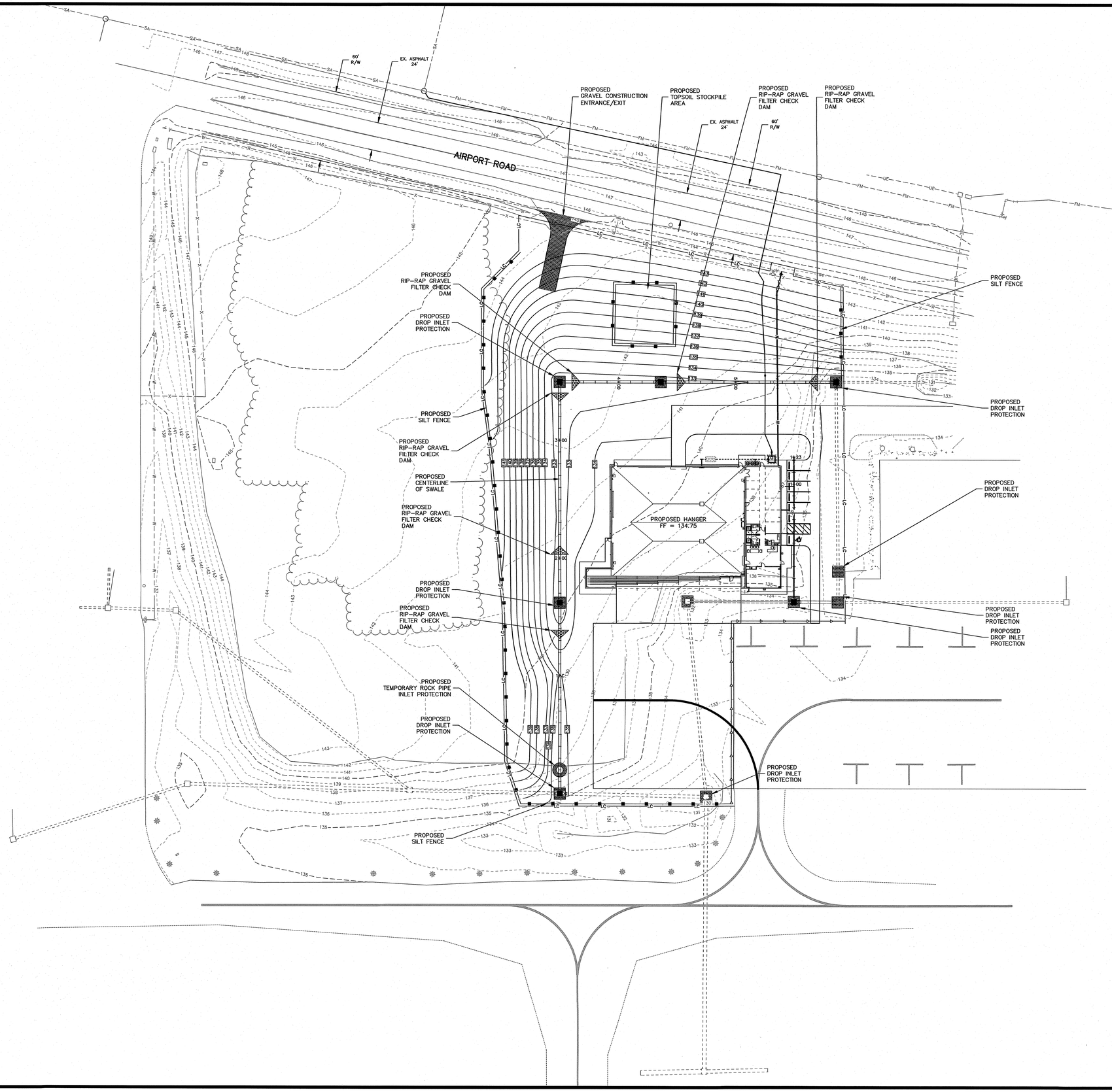
2025 AIRPORT HANGER PROJECT

DUPLIN COUNTY

NORTH CAROLINA

DUPLIN COUNTY

SHEET 10 OF 21



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Layout: Layout1
Plotted: Friday, May 16, 2025, 4:14:29pm

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: 1" = 40'
DATE: MARCH 28, 2025
SURVEYED BY: BY OTHERS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMEY
DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 INC. FARMVILLE, N.C.
MA REVIEW OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

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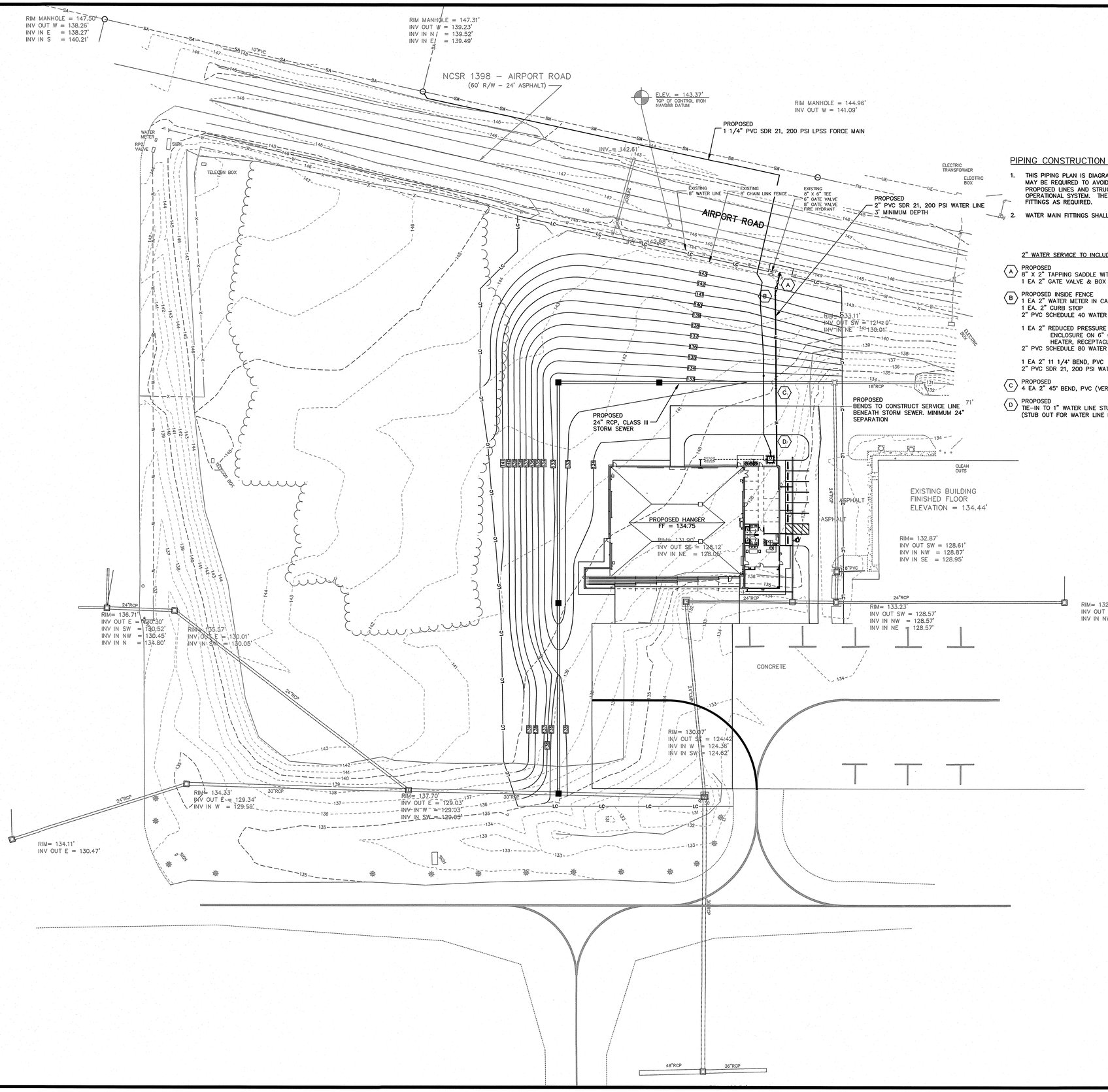
EROSION CONTROL PLAN
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 11 OF 21



PIPING CONSTRUCTION NOTES

1. THIS PIPING PLAN IS DIAGRAMMATIC ONLY. ADDITIONAL PIPE AND/OR FITTINGS MAY BE REQUIRED TO AVOID CONFLICTS, TIE–IN TO EXISTING AND/OR PROPOSED LINES AND STRUCTURES, AND/OR PROVIDE A COMPLETE AND FULLY OPERATIONAL SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL PIPE AND FITTINGS AS REQUIRED.
2. WATER MAIN FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC).

2" WATER SERVICE TO INCLUDE THE FOLLOWING

(A) PROPOSED
8" X 2" TAPPING SADDLE WITH CORPORATION STOP
1 EA 2" GATE VALVE & BOX WITH THREADED ENDS

(B) PROPOSED INSIDE FENCE
1 EA 2" WATER METER IN CAST IRON METER BOX
1 EA. 2" CURB STOP
2" PVC SCHEDULE 40 WATER LINE AND BENDS AS REQUIRED

1 EA 2" REDUCED PRESSURE BACKFLOW DEVICE (RPZ) WITH INSULATED ENCLOSURE ON 6" CONCRETE PAD. ENCLOSURE TO INCLUDE RESISTANCE HEATER, RECEPTACLE, CONDUIT AND WIRING FROM HANGER.
2" PVC SCHEDULE 80 WATER LINE AND APPURTENANCES (SEE DETAILS)

1 EA 2" 11 1/4" BEND, PVC
2" PVC SDR 21, 200 PSI WATER LINE AND BENDS FROM RPZ TO BUILDING

(C) PROPOSED
4 EA 2" 45° BEND, PVC (VERTICAL)

(D) PROPOSED
TIE–IN TO 1" WATER LINE STUB–OUT FROM BUILDING
(STUB OUT FOR WATER LINE FROM BUILDING IS 2 1/2 FEET FROM OUTSIDE WALL)

NOTE: VERTICAL DATUM: NAVD88

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: 1" = 40'
DATE: MARCH 28, 2025
SURVEYED BY: BY OTHERS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 5/21/25 JOSEPH W. MCKEMEY

NORTH CAROLINA LAND SURVEYOR ASSOCIATE SEAL 1972

DATE:

MA BENEW OFFICER:

McDAVID ASSOCIATES, INC.

Corporate License No. C-131

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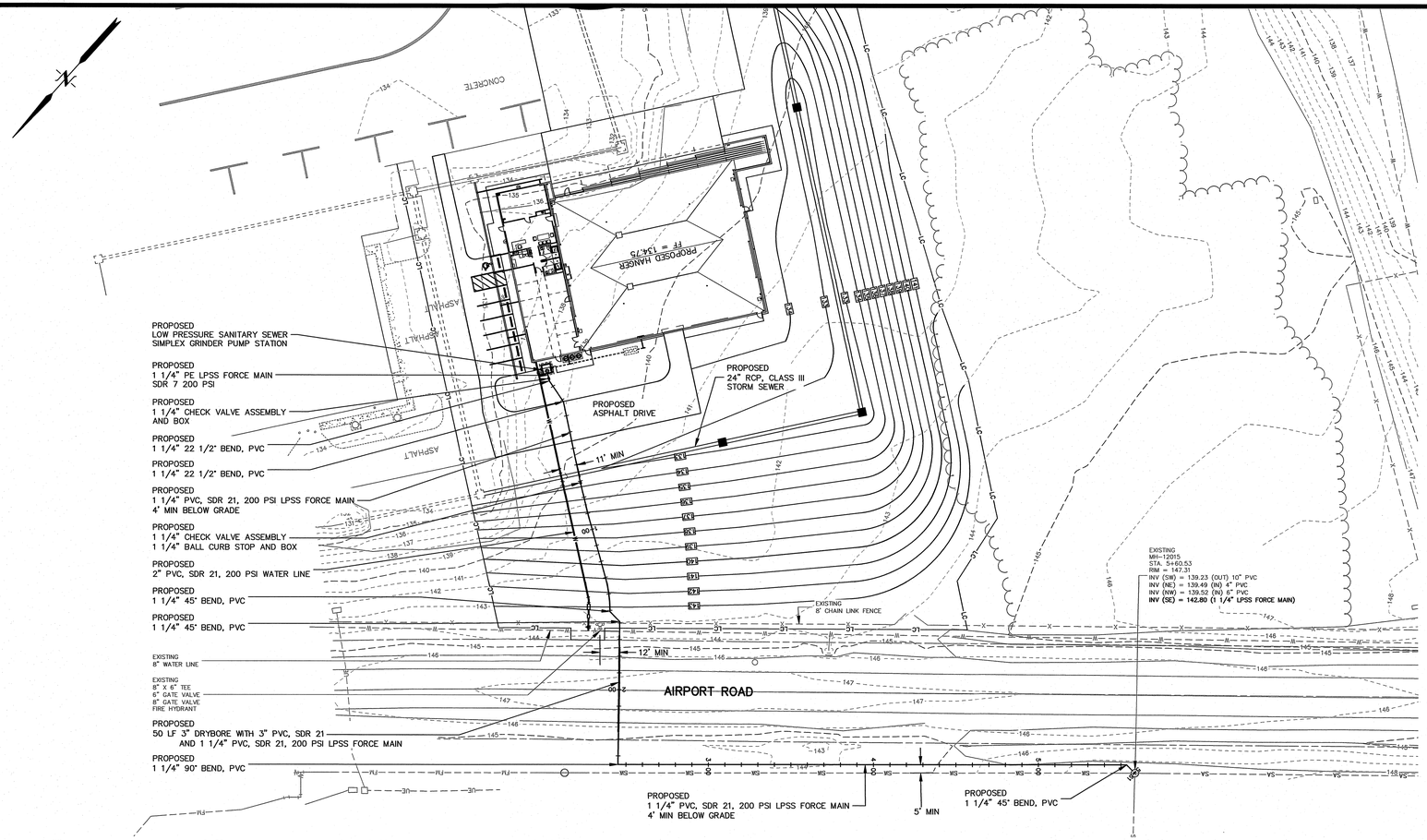
WATER CONSTRUCTION
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA

DUPLIN COUNTY

SHEET 12 OF 21

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P012-Water Construction.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:14:44pm



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Layout: Layout1
Plotted: Friday, May 16, 2025, 4:14:59pm

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402 SURVEYED BY: TDS
SCALE: H 1" = 40' V 1" = 4' DRAWN BY: MW
DATE: MARCH 28, 2025 MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMEY
DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972
MA PERMIT OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131
Engineers • Planners • Land Surveyors

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Goldsboro, NC 27533
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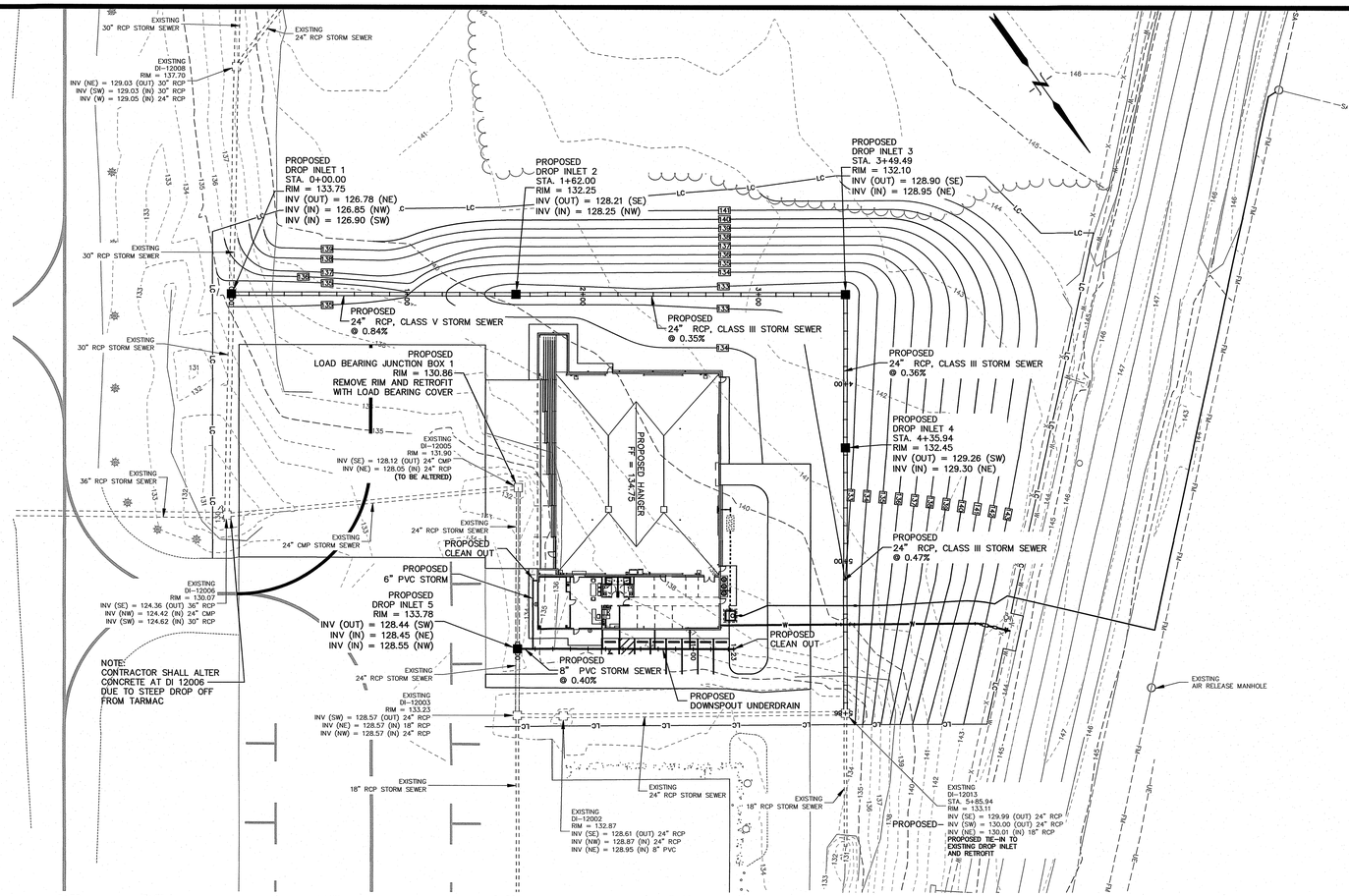
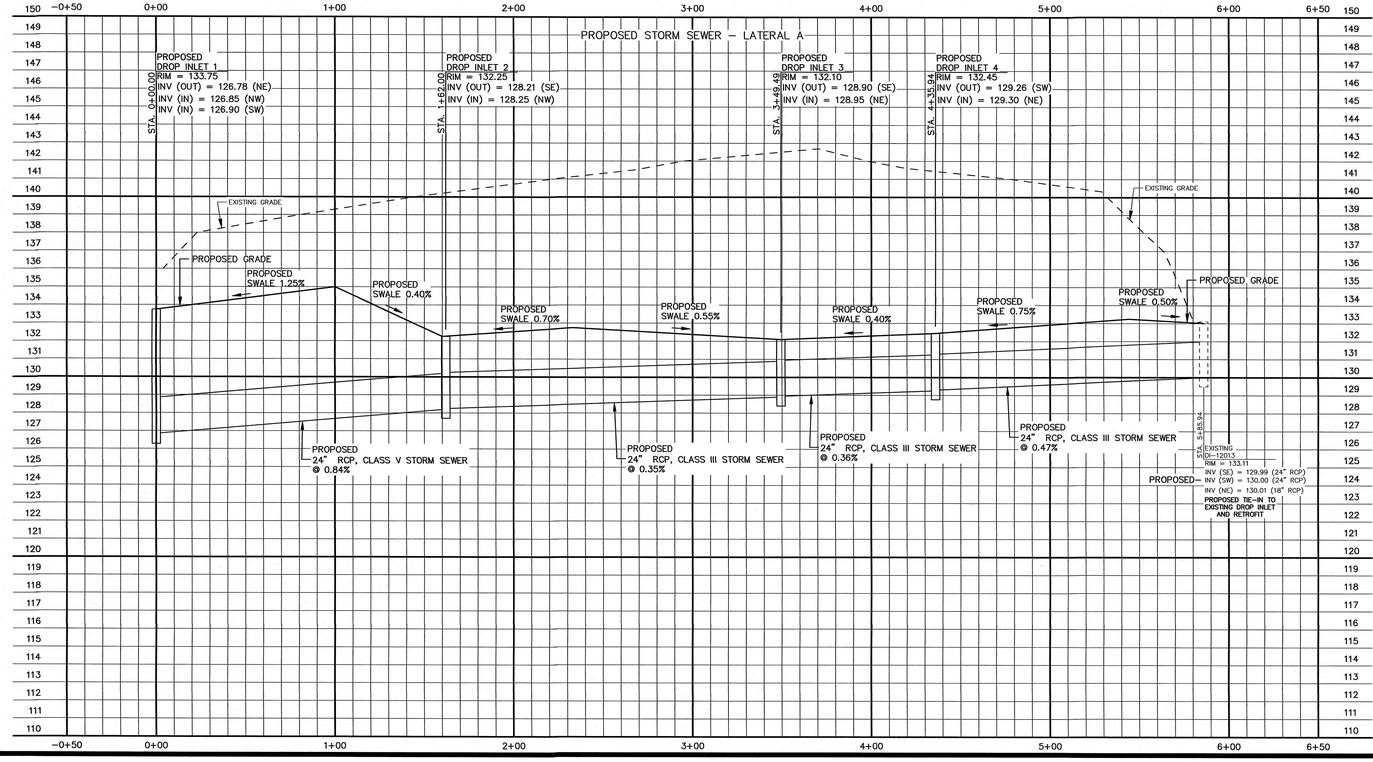
SANITARY SEWER CONSTRUCTION
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA

DUPLIN COUNTY

SHEET 13 OF 21





REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: H. 1" = 40' V. 1" = 4'
DATE: MARCH 28, 2025
SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKENNEY

DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N.C.

QA REVIEW OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

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STORM DRAINAGE CONSTRUCTION
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY

NORTH CAROLINA

DUPLIN COUNTY

SHEET 14 OF 21

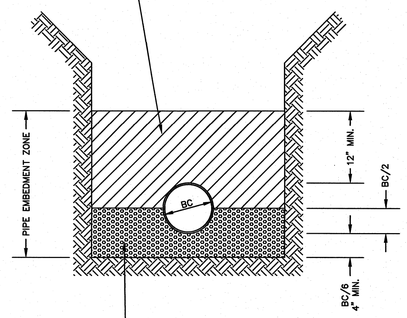
Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P014-Storm Drainage Construction.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:15:16pm

A

B

20200407 SD100541

HAND PLACED INITIAL BACKFILL ZONE MATERIAL SHALL CONSIST OF:
CLASS I – ASTM D2321, ASTM C33 NO. 57 GRADATION STONE,
CLASS II – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, OR SP,
CLASS III – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GM, GC, SM, OR SC,
OR A COMBINATION OF ANY OF THE ABOVE.
(MINIMUM COMPACTION 90% STANDARD PROCTOR)



BEDDING ZONE MATERIAL SHALL CONSIST OF:
CLASS I – ASTM D2321, ASTM C33 NO. 57 GRADATION STONE.
(MINIMUM COMPACTION 90% STANDARD PROCTOR)

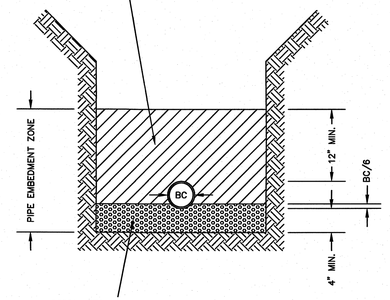
SANITARY SEWER PVC PIPE
CLASS "I" STONE BEDDING TO HORIZONTAL CENTERLINE OF PIPE
ASTM D2321

PVC STORM SEWER UNDERDRAIN

C

20200407 SD100544

HAND PLACED INITIAL BACKFILL ZONE MATERIAL SHALL CONSIST OF:
CLASS I – ASTM D2321, ASTM C33 NO. 57 GRADATION STONE,
CLASS II – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, OR SP,
CLASS III – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GM, GC, SM, OR SC,
OR A COMBINATION OF ANY OF THE ABOVE.
(MINIMUM COMPACTION 90% STANDARD PROCTOR)



BEDDING ZONE MATERIAL SHALL CONSIST OF:
CLASS I – ASTM D2321, ASTM C33 NO. 57 GRADATION STONE,
CLASS II – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, OR SP,
CLASS III – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GM, GC, SM, OR SC,
OR A COMBINATION OF ANY OF THE ABOVE.
(MINIMUM COMPACTION 90% STANDARD PROCTOR)

PVC SANITARY SEWER SERVICE
CLASS I, II, OR III NATIVE SOIL OR STONE
BEDDING TO 1/6 OF PIPE OUTSIDE DIAMETER
ASTM D2321

PVC STORM SEWER UNDERDRAIN (4"-6")

D

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402 SURVEYED BY: TDS
SCALE: NTS DRAWN BY: MW
DATE: MARCH 28, 2025 MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL SEAL 28431 ENGINEER JOSEPH W. MCKEMEY

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N. C.

DATE:

NM REVIEW OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

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Engineers • Planners
108 East Main Street
Goldsboro, NC 27533
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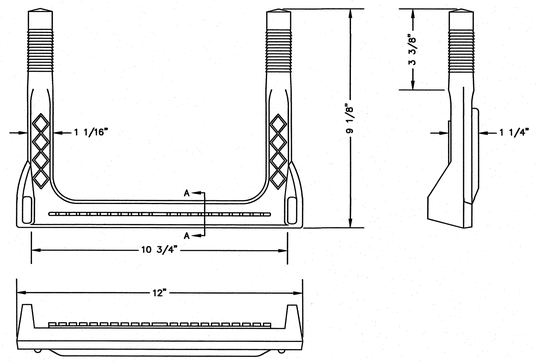
STORM DRAINAGE DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 15 OF 21

E

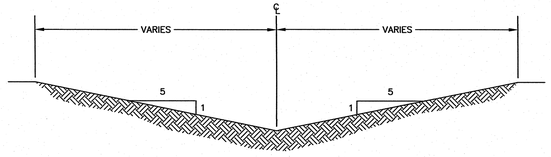
20041215 SD031001



STEPS SHALL CONFORM TO ASTM C478

MANHOLE STEP

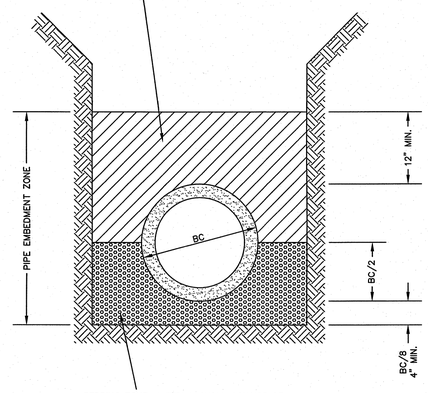
F



TYPICAL SWALE SECTION

G

HAND PLACED INITIAL BACKFILL ZONE MATERIAL SHALL CONSIST OF:
ASTM C33 NO. 57 GRADATION STONE,
ASTM C33 NO. 67 GRADATION STONE,
ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, SP, GM, GC, SM, OR SC,
OR A COMBINATION OF ANY OF THE ABOVE.



BEDDING ZONE MATERIAL SHALL CONSIST OF:
ASTM C33 NO. 57 GRADATION STONE,
ASTM C33 NO. 67 GRADATION STONE,
ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, OR SP,
OR A COMBINATION OF ANY OF THE ABOVE.

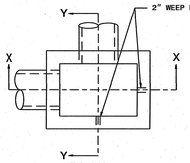
STORM SEWER REINFORCED CONCRETE PIPE
CLASS B GRANULAR BEDDING TO PIPE CENTERLINE

BEDDING AND INITIAL BACKFILL FOR REINFORCED CONCRETE PIPE STORM SEWER

BEDDING AND INITIAL BACKFILL FOR REINFORCED
CONCRETE PIPE STORM SEWER

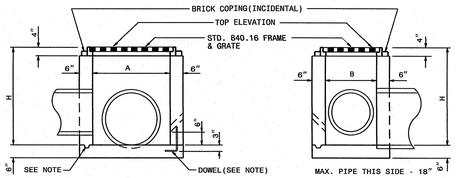
H

Drawing: W:\D8xx-gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P015-Storm Drainage Details.dwg
Layout: Storm Drainage Details
Plotted: Friday, May 16, 2025, 4:15:28pm



PLAN

WITH GRATE & FRAME REMOVED



SECTION X-X

SECTION Y-Y

DOWEL

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

CONSTRUCT WITH PIPE CROWNS MATCHING.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	MIN. HEIGHT	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	C.M.	R.C.
D	A	B	H					
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"	″	″	2'-3"	″	″	0.648	0.023	0.036
18"	″	″	2'-6"	″	″	0.703	0.033	0.049
24"	″	″	3'-0"	″	″	0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

STATE OF NORTH CAROLINA
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RALEIGH, N.C.

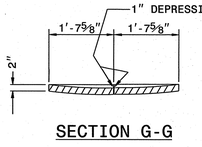
1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

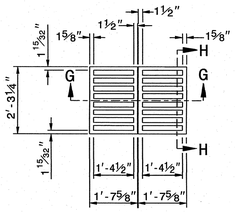
SHEET 1 OF 1
840.14

CONCRETE DROP INLET

A

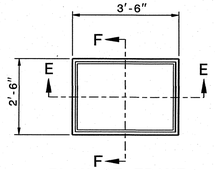


SECTION G-G



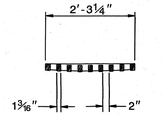
PLAN OF GRATING

CAST IRON

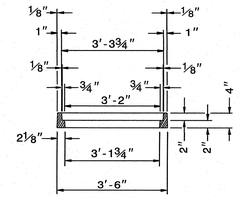


PLAN OF FRAME

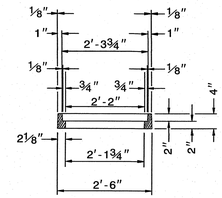
CAST IRON



SECTION H-H



SECTION E-E



SECTION F-F

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

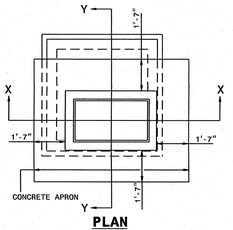
1-18

ROADWAY STANDARD DRAWING FOR
DROP INLET FRAME AND GRATES
FOR USE WITH STD. DWG.S 840.14 AND 840.15

SHEET 1 OF 1
840.16

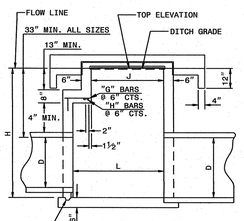
DROP INLET FRAME AND GRATES

B

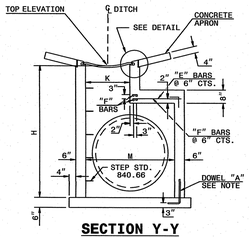


PLAN

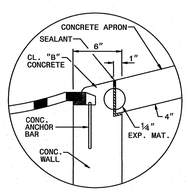
DOWEL-A



SECTION X-X

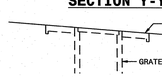


SECTION Y-Y



DETAIL

(APRON SUPPORT NOTCH)



GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL GRATED DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

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

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

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

CONSTRUCT WITH PIPE CROWNS MATCHING.

USE STANDARD FRAMES AND GRATES 840.22 (SHOWN), 840.24(SHOWN), 840.20 (NOT SHOWN) OR 840.29 (NOT SHOWN).

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

MAX. DEPTH OF THIS STRUCTURE FROM TOP OF BOTTOM SLAB TO TOP ELEVATION IS 12 FEET.

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

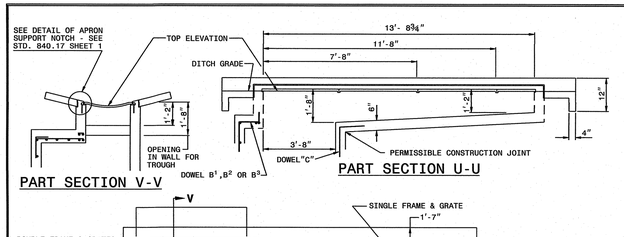
1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
12" THRU 72" PIPE

SHEET 1 OF 2
840.17

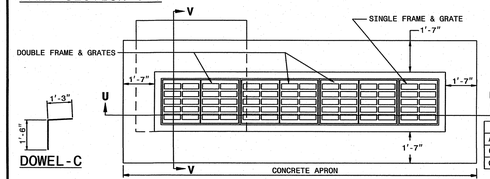
CONCRETE GRATED DROP INLET TYPE "A"

C

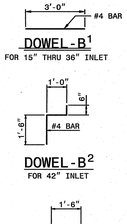


PART SECTION V-V

PART SECTION U-U



DOWEL-C



DOWEL-B¹

FOR 15" THRU 36" INLET

DOWEL-B²

FOR 42" INLET

DOWEL-B³

QUANTITY TO BE ADDED FOR EACH 2' INCREMENT INLET OPENING						
ADDITIONAL INLETS	2'-0"	4'-0"	6'-0"	8'-0"	10'-0"	12'-0"
CONCRETE CU. YDS.	0.191	0.417	0.665	0.897	1.145	1.380
CONCRETE APRON CU. YDS.	0.074	0.148	0.222	0.296	0.370	0.444

MIN. DIMENSIONS AND QUANTITIES FOR CONCRETE GRATED DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX AND PIPE						REINFORCING STEEL - NO. 4 BARS								CU YDS CONC. IN BOX					DEDUCTIONS FOR ONE PIPE	
PIPE	SPAN	WIDTH	SPAN	WIDTH	HEIGHT	BARS E		BARS F		BARS G		BARS H		TOTAL LBS.	BOTTOM SLAB	H TOTAL	H PER FT HT	APRON	TOTAL	C.S.	R.C.
D	J	K	L	M	H	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH								
12"	3'-8"	2'-0"	3'-8"	2'-0"	3'-9"	—	—	—	—	—	—	—	—	—	0.362	0.926	0.247	0.395	1.683	0.015	0.024
15"	3'-8"	2'-0"	3'-8"	2'-0"	4'-0"	—	—	—	—	—	—	—	—	—	0.362	0.988	0.247	0.395	1.745	0.023	0.036
18"	″	″	″	2'-0"	4'-3"	—	—	—	—	—	—	—	—	—	0.362	1.050	0.247	″	1.807	0.033	0.049
24"	″	″	″	2'-10"	4'-9"	8	1'-5"	6	4'-9"	—	—	—	—	27	0.444	1.362	0.278	″	2.201	0.059	0.085
30"	″	″	3'-8"	3'-5"	5'-3"	8	2'-0"	7	4'-9"	—	—	—	—	33	0.502	1.644	0.288	″	2.541	0.092	0.127
36"	″	″	4'-0"	4'-0"	5'-9"	8	2'-5"	8	4'-11"	4	0'-9"	2	4'-11"	47	0.560	1.931	0.321	″	2.920	0.132	0.178
42"	″	″	4'-10"	4'-10"	6'-3"	10	3'-1"	9	5'-7"	—	1'-5"	3	5'-7"	67	0.704	2.500	0.370	″	3.677	0.180	0.243
48"	″	″	5'-4"	5'-4"	6'-9"	11	3'-7"	10	6'-1"	—	1'-11"	4	6'-1"	87	0.823	3.013	0.407	″	4.315	0.235	0.317
54"	″	″	6'-0"	6'-0"	7'-3"	12	4'-1"	11	6'-7"	—	2'-5"	5	6'-7"	107	0.951	3.589	0.444	″	5.072	0.297	0.401
60"	″	″	6'-6"	6'-6"	7'-9"	13	4'-9"	12	7'-3"	—	3'-1"	6	7'-3"	135	1.311	4.539	0.494	″	6.170	0.367	0.495
66"	″	″	7'-2"	7'-2"	8'-3"	14	5'-4"	14	7'-10"	—	3'-7"	7	7'-10"	168	1.136	5.081	0.537	″	6.901	0.444	0.599
72"	3'-8"	2'-0"	7'-8"	7'-8"	8'-9"	15	5'-11"	15	8'-5"	4	4'-3"	8	8'-5"	199	1.500	5.860	0.580	0.395	7.868	0.528	0.713

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

1-18

ROADWAY STANDARD DRAWING FOR
CONCRETE GRATED DROP INLET TYPE 'A'
12" THRU 72" PIPE

SHEET 2 OF 2
840.17

CONCRETE GRATED DROP INLET TYPE "A"

D

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SURVEYED BY: TDS
SCALE: NTS
DRAWN BY: MW
DATE: MARCH 28, 2025
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKENNEY

DATE:

McDAVID ASSOCIATES, INC. CORPORATE SEAL 1972 FARMVILLE, N.C.

DIA REVIEW OFFICER

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Corporate License No. C-131

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STORM DRAINAGE DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY

NORTH CAROLINA

DUPLIN COUNTY

SHEET 16 OF 21

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P016-Storm Drainage Details.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:15:36pm

20080130

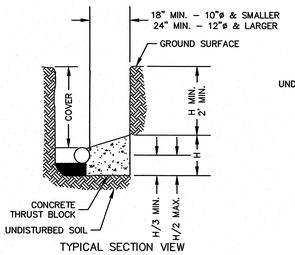
TABLE 1 – MINIMUM THRUST BLOCK AREAS AND DIMENSIONS

NOMINAL PIPE SIZE	90° BEND			45° BEND			22½° BEND			11¼° BEND			TEES, PLUGS AND VALVES		
	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)	AREA (sf)	B (in)	H (in)
2"	0.4	10	6	0.2	8	4	0.1	6	3	0.1	6	3	0.3	8	6
3"	0.8	13	9	0.4	10	6	0.2	6	5	0.1	6	4	0.6	11	8
4"	1.5	18	12	0.8	13	9	0.4	10	6	0.2	6	6	1.0	15	10
6"	3.0	24	18	1.6	20	12	0.8	13	9	0.4	8	8	2.1	21	15
8"	5.2	32	24	2.8	24	17	1.4	17	12	0.7	11	11	3.6	26	20
10"	7.7	40	28	4.2	30	20	2.1	22	14	1.1	13	13	5.5	33	24
12"	10.9	50	32	5.9	36	24	3.0	24	18	1.5	15	15	7.7	40	28

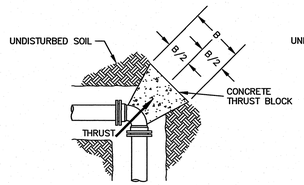
BEARING AREAS IN TABLE 1 ABOVE ARE BASED ON BEARING AGAINST SAND. FOR OTHER SOIL CONDITIONS, THE AREAS AND DIMENSIONS IN TABLE 1 ABOVE SHALL BE MULTIPLIED BY THE APPROPRIATE MULTIPLIER FROM TABLE 2 BELOW.

TABLE 2 – SOIL MULTIPLIERS

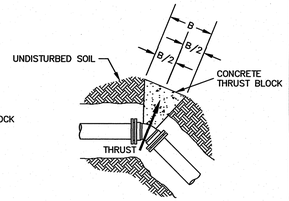
SOIL TYPE	SOIL BEARING STRENGTH (psf)	AREA MULTIPLIER	DIMENSION MULTIPLIER
SOFT CLAY	1,000	4.00	2.00
SILT	1,500	2.67	1.64
SANDY SILT	3,000	1.33	1.16
SAND	4,000	1.00	1.00
SANDY CLAY	5,000	0.80	0.90
HARD CLAY	9,000	0.45	0.67



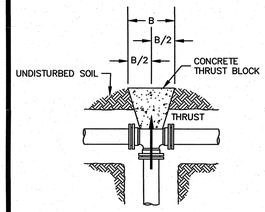
TYPICAL SECTION VIEW



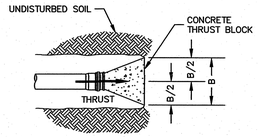
PLAN VIEW – 90° BEND



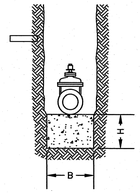
PLAN VIEW – 45°, 22½°, AND 11¼° BENDS



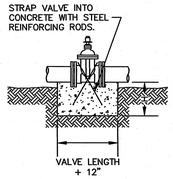
PLAN VIEW – TEE



PLAN VIEW – PLUG



SECTION VIEW – VALVE



PROFILE VIEW – VALVE

VALVE SIZE	STRAP SIZE
2"	#3
3"	#3
4"	#3
6"	#4
8"	#4
10"	#4
12"	#5

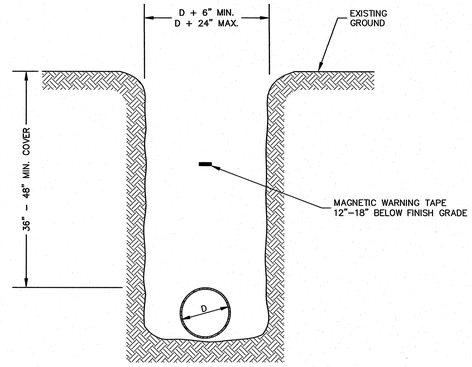
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS.
2. MINIMUM THRUST BLOCK BEARING AREAS SHALL BE AS SHOWN IN TABLE 1. THRUST BLOCK DIMENSIONS SHALL BE CHOSEN SUCH THAT THE WIDTH (B) IS BETWEEN ONE AND TWO TIMES THE BLOCK HEIGHT (H). DIMENSIONS SHOWN IN TABLE 1 ARE PREFERRED BUT MAY BE VARIED TO MEET SITE CONDITIONS.
3. THRUST BLOCKS SHALL BEAR AGAINST THE ITEM BEING BLOCKED FOR A MINIMUM OF 60° ABOVE AND BELOW THE HORIZONTAL CENTERLINE OF THE ITEM.
4. SURFACES OF ITEM BEING BLOCKED SHALL BE COVERED WITH POLYETHYLENE ENCASEMENT PRIOR TO PLACING CONCRETE TO PREVENT DIRECT CONTACT AND BONDING WITH CONCRETE.
5. ALL JOINTS SHALL BE ACCESSIBLE FOR REPAIR AND/OR FUTURE CONNECTIONS. CONCRETE SHALL NOT COVER BOLTS, NUTS, OR GLANDS.
6. FOR ALL FITTINGS, CONCRETE THRUST BLOCKING IS REQUIRED.

SD101503R

CONCRETE THRUST BLOCKING FOR 12" AND SMALLER WATER LINES

A

20041216 SD100007R

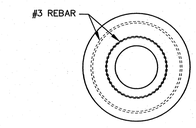


WATER LINES SHALL HAVE A MINIMUM COVER OF THREE (3) FEET IN ALL DIRECTIONS WHEN INSTALLED WITHIN TWENTY (20) FEET OF THE ROAD CENTERLINE. IF WATER LINES ARE INSTALLED IN A DITCH OR DITCH SLOPES OR BEYOND TWENTY (20) FEET FROM THE ROAD CENTERLINE, MINIMUM BURY SHALL BE INCREASED TO FOUR (4) FEET IN ALL DIRECTIONS.

TRENCH SECTION FOR WATER LINE CONSTRUCTION

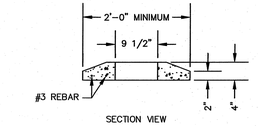
B

20080130 SD102020R

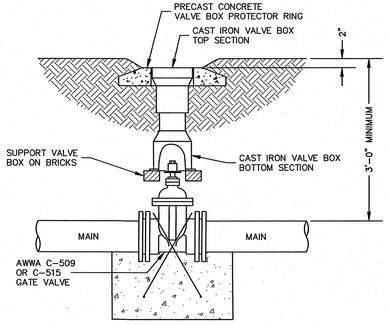


PLAN VIEW

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.



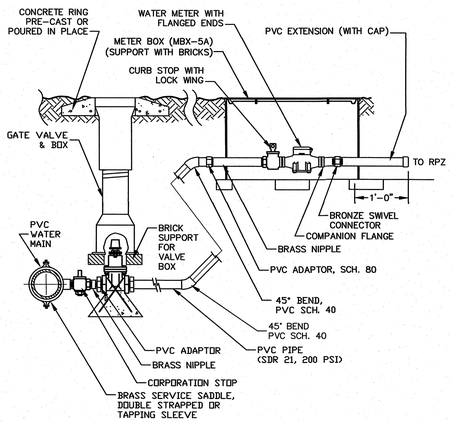
SECTION VIEW



GATE VALVE AND BOX - TYPE "B" WITH CONCRETE PROTECTOR RING

C

20250505 SD042034R



FOR 2" SERVICE INSTALL 2" METER, PIPE AND APPURTENANCES.

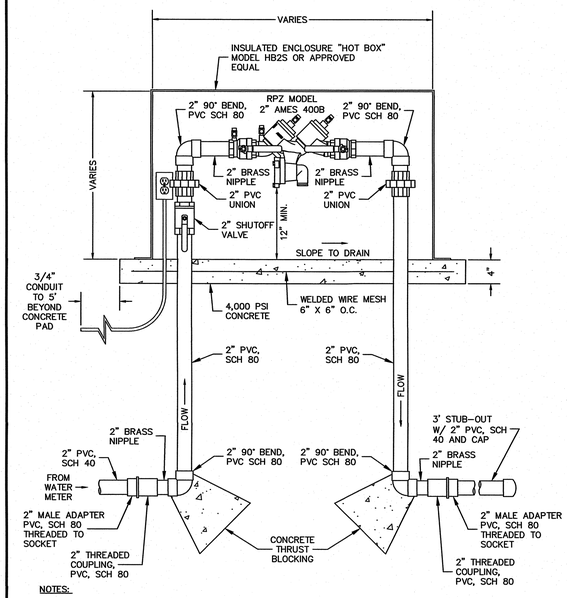
INSTALL SERVICE LINE A MINIMUM OF THREE (3) FEET BELOW FINISHED GRADE AND A MINIMUM OF THREE (3) FEET BELOW DITCH GRADE.

ENCASE SERVICE LINE IN PVC PIPE OR GALVANIZED STEEL PIPE WHEREVER SERVICE LINE IS INSTALLED UNDER PAVEMENT.

SET METER AND BOX TWO FEET BEYOND RIGHT–OF–WAY OR 3' BEHIND TOP OF DITCH BANK, WHICHEVER IS GREATER.

2" WATER SERVICE

D



NOTES:

1. HEAT TAPE AND 3/4" CONDUIT PROVIDED AND INSTALLED BY CONTRACTOR.
2. DUPLEX RECEPTACLE AND WIRING PROVIDED AND INSTALLED BY PROPERTY OWNER/DEVELOPER
3. CONTRACTOR SHALL PLACE BACKFLOW IN NON–TRAFFIC AREA ONLY.
4. AREA AROUND CONCRETE PAD TO BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM CONCRETE PAD.
5. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE LEAD FREE AND USC APPROVED.
6. BACKFLOW PREVENTER SHALL BE TESTED BY A THIRD PARTY TESTING COMPANY PRIOR TO PLACING INTO SERVICE.

2 INCH REDUCER PRESSURE BACKFLOW PREVENTER IN ABOVE GROUND ENCLOSURE

E

F

G

SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK
PROJECT NO.: 1-25-0305-3402
SCALE: NTS
DATE: MARCH 28, 2025

REV. | DATE | DESCRIPTION

NORTH CAROLINA PROFESSIONAL SEAL 28431 ENGINEER JOSEPH W. MCKEMEY

DATE:

McDAVID ASSOCIATES CORPORATE SEAL 1972 INC. FARMVILLE, N.C.

MA INITIAL OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131

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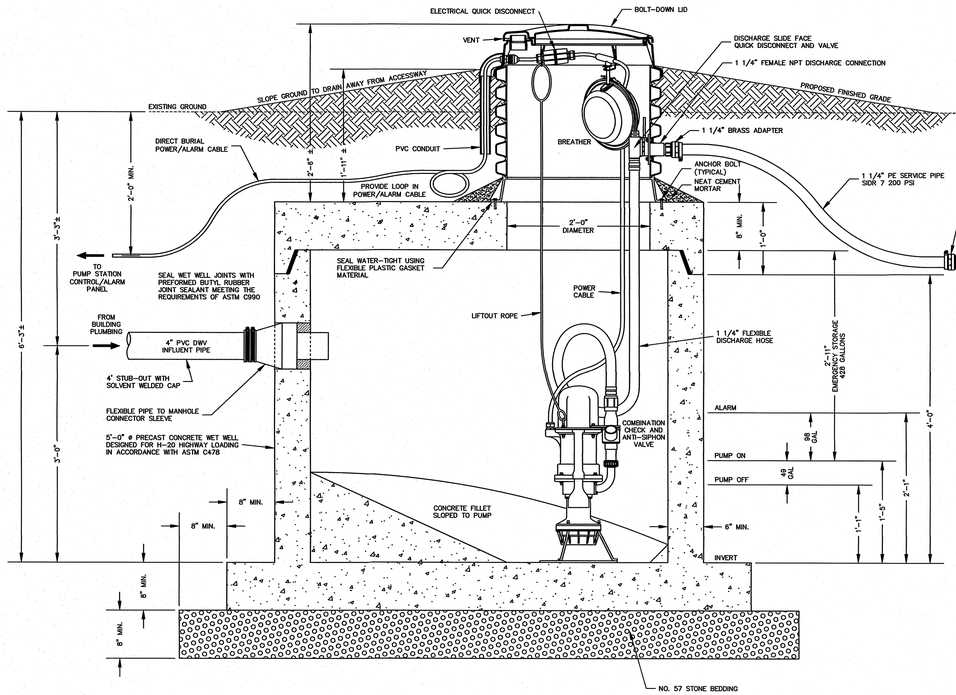
WATER CONSTRUCTION DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA

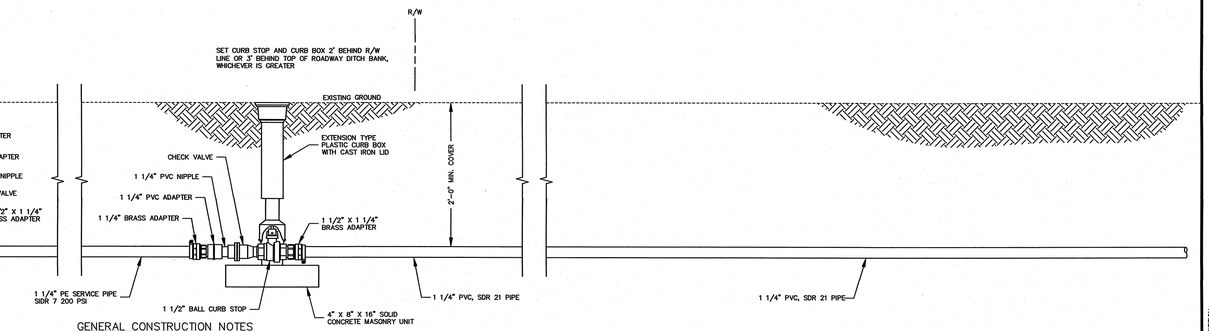
DUPLIN COUNTY

SHEET 17 OF 21

Drawing: W:\D8xx_gen\D84x_eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P017-Water Construction Details.dwg
Layout: Layout1
Plotted: Friday, May 16, 2025, 4:15:42pm



A1 SECTION
1" = 1'-0"



GENERAL CONSTRUCTION NOTES

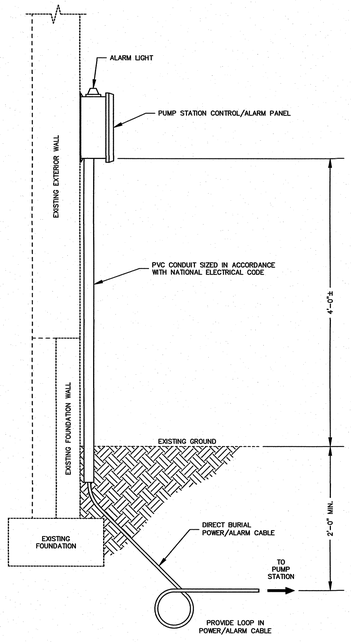
1. Provide all materials, labor, equipment, tools, devices, etc. and perform all required work and services necessary for and incidental to a complete and fully operational installation as shown on the PLANS and/or called for in the SPECIFICATIONS in complete accord with the CONTRACT DOCUMENTS.
2. The location of septic tanks are approximate. The wet well and low pressure service line cannot be installed within 100 foot radius of an existing well. Coordinate with the OWNER, ENGINEER, and property owner to determine the location of existing electrical, water, gas, and telephone lines and location of septic tank and drain field lines for the optimum location for the pump station. Location shall minimize impact on appearance of existing property and structures.
3. The wet well shall consist of precast concrete manhole sections in accordance with Section 11317 of the SPECIFICATIONS. Provide 1" thick neat cement mortar for all concrete joints and at interface of wet well with pump housing.
4. The wet well accessway shall be in accordance with Section 11317 of the SPECIFICATIONS.
5. No. 57 stone bedding shall be provided under the wet well. Bedding shall be a minimum of 8" thick and shall extend beyond the base slab edge a minimum of 8".
6. The pump shall be a semi-positive displacement type sewage grinder pump in accordance with Section 11317 of the SPECIFICATIONS.
7. Service laterals shall be installed in accordance with Section 02739 of the SPECIFICATIONS. Service laterals shall include the service tee or saddle on the force main and all piping, valves, curb boxes, fittings, adapters, etc. between the force main and the pump station discharge connection.
8. Provide topsoil on all areas where fill is required. All disturbed areas shall be seeded and mulched within ten (10) days after completion of work.
9. Contractor shall not install pump and accessories until 1 week prior to pump station startup.

INSTALL SERVICE LINES A MINIMUM OF 3' BELOW FINISHED GRADE AND A MINIMUM OF 3' BELOW DITCH INVERTS

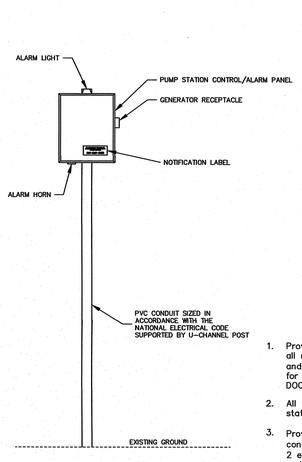
ENCASE SERVICE LINE IN PVC PIPE WHEREVER SERVICE LINE IS INSTALLED UNDER PAVEMENT

LPSS SIMPLEX GRINDER PUMP STATION AND SERVICE LATERAL

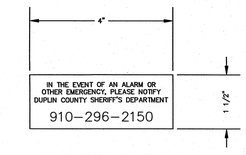
A



B1 SIDE ELEVATION
1" = 1'-0"



B2 FRONT ELEVATION
1" = 1'-0"



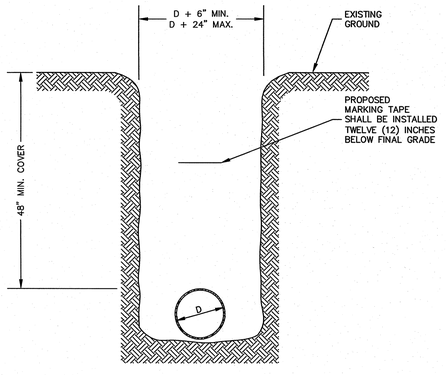
LABELS SHALL BE PRINTED ON SELF-STICKING VINYL SUITABLE FOR OUTDOOR INSTALLATION. LETTERS SHALL BE RED ON A WHITE BACKGROUND.

B3 NOTIFICATION LABEL
HALF SCALE

ELECTRICAL CONSTRUCTION NOTES

1. Provide all materials, labor, equipment, tools, devices, etc. and perform all required work and services necessary for and incidental to a complete and fully operational installation as shown on the PLANS and/or called for in the SPECIFICATIONS in complete accord with the CONTRACT DOCUMENTS.
2. All work shall comply with the National Electrical Code and all Federal, state, and local codes, laws, rules, regulations, and ordinances.
3. Provide and install the pump station control/alarm panel. Pump station control/alarm panel shall be mounted to an aluminum plate supported by 2 each 2 lb/ft U-channel posts. Coordinate with the OWNER, ENGINEER, and property owner to determine the optimum location for the panel. Location shall be within sight of the pump station. Alarm panel shall be installed in a location visible from the road. Location shall minimize impact on appearance of existing property and structures.
4. Provide and install a 30 Amp, 2 Pole circuit breaker in the property owner's existing electrical panel to provide 120/240 VAC, single phase electric power to the pump station control/alarm panel.
5. Provide and install feeder conductors between the property owner's existing electrical panel and the pump station control/alarm panel. The feeder shall consist of two (2) phase conductors, one (1) neutral conductor, and one (1) grounding conductor. All conductors shall be No. 10 minimum and shall be run in cable or conduit.
6. Provide and install power/alarm cable and conduit to connect the pump station to the control/alarm panel.

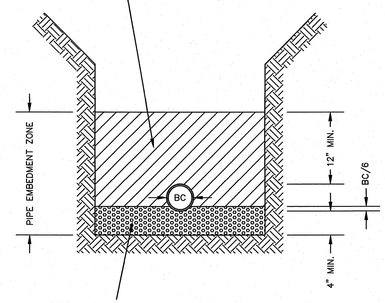
20160621 SD100008R



FORCE MAINS SHALL HAVE A MINIMUM COVER OF THREE (3) FEET IN ALL DIRECTIONS WHEN INSTALLED WITHIN TWENTY (20) FEET OF THE ROAD CENTERLINE. IF FORCE MAINS ARE INSTALLED IN A DITCH OR DITCH SLOPES OR BEYOND TWENTY (20) FEET FROM THE ROAD CENTERLINE, MINIMUM BURY SHALL BE INCREASED TO FOUR (4) FEET IN ALL DIRECTIONS.

20200407 SD100544

HAND PLACED INITIAL BACKFILL ZONE MATERIAL SHALL CONSIST OF:
CLASS I – ASTM D2321, ASTM C33 NO. 57 GRADATION STONE,
CLASS II – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, OR SP,
CLASS III – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GM, GC, SM, OR SC,
OR A COMBINATION OF ANY OF THE ABOVE.
(MINIMUM COMPACTION 90% STANDARD PROCTOR)



BEDDING ZONE MATERIAL SHALL CONSIST OF:
CLASS I – ASTM D2321, ASTM C33 NO. 57 GRADATION STONE,
CLASS II – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GW, GP, SW, OR SP,
CLASS III – ASTM D2321, ASTM D2487 U.S.C.S. SOIL TYPE GM, GC, SM, OR SC,
OR A COMBINATION OF ANY OF THE ABOVE.
(MINIMUM COMPACTION 90% STANDARD PROCTOR)

PVC SANITARY SEWER SERVICE
CLASS I, II, OR III NATIVE SOIL OR STONE
BEDDING TO 1/6 OF PIPE OUTSIDE DIAMETER
ASTM D2321

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SCALE: NTS
DATE: MARCH 28, 2025
SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKENZIE

DAVID ASSOCIATES, INC. CORPORATE SEAL 1972 FARMVILLE, N.C.

DATE:

MAP REVIEW OFFICER:

McDAVID ASSOCIATES, INC.
Corporate License No. C-131
Engineers • Planners • Land Surveyors
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SANITARY SEWER DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 18 OF 21

LPSS SIMPLEX GRINDER PUMP STATION CONTROL PANEL MOUNTING B

TRENCH SECTION FOR FORCE MAIN CONSTRUCTION C

BEDDING AND INITIAL BACKFILL FOR PVC SANITARY SEWER SERVICE D

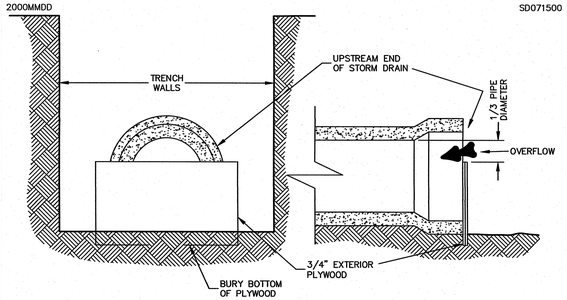
Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P018-Sanitary Sewer Details.dwg
Layout: Sanitary Sewer Details
Plotted: Friday, May 16, 2025, 4:15:48pm

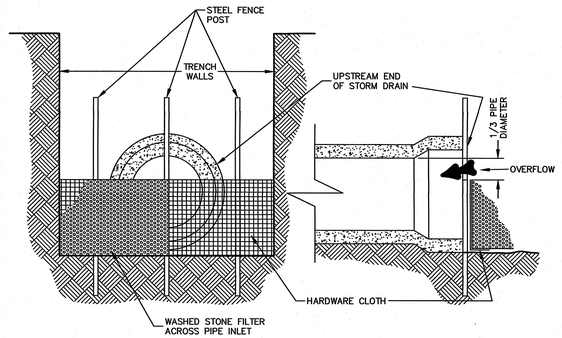
A

B

2000MMDD

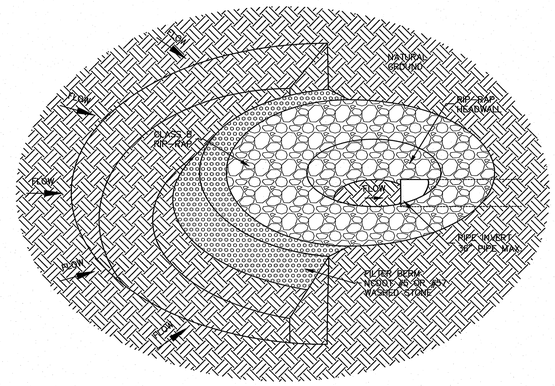
SD071500

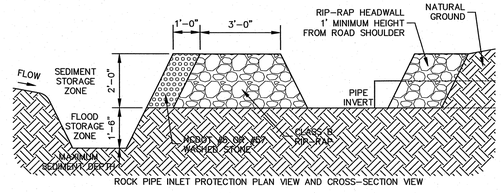




TEMPORARY INLET PROTECTION FOR STORM DRAIN UNDER CONSTRUCTION

C





ROCK PIPE INLET PROTECTION PLAN VIEW AND CROSS-SECTION VIEW

ROCK PIPE INLET PROTECTION

TEMPORARY ROCK PIPE INLET PROTECTION

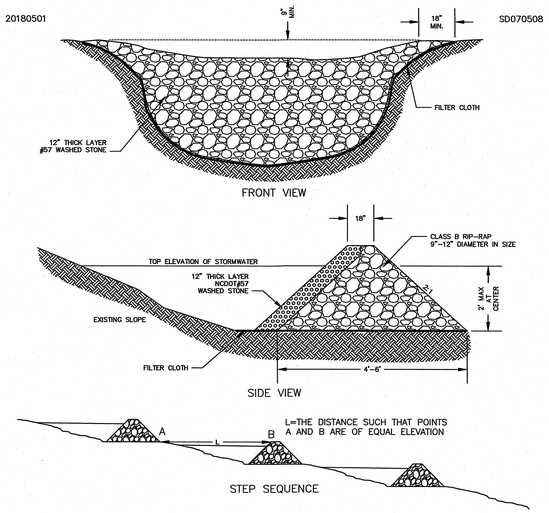
D

E

F

20180501

SD070508



CONSTRUCTION NOTES:

1. PLACE STRUCTURAL STONE (CLASS B) ON A FILTER FABRIC FOUNDATION. THE CREST WIDTH OF THE DAM SHOULD BE A MINIMUM OF 2 FEET.
2. CONSTRUCT SPILLWAY A MINIMUM OF 12 INCHES BELOW LOWEST BANK.
3. PLACE SEDIMENT CONTROL STONE (#57) ON THE UPSTREAM SIDE OF THE DAM A MINIMUM 1 FOOT THICK.
4. PROVIDE AN APRON 3 TIMES THE HEIGHT OF THE DAM. THE APRON WIDTH SHALL BE AT LEAST 4 FEET LONG. UNDERCUT THE APRON SO THAT THE TOP OF THE APRON IS FLUSH WITH THE SURROUNDING GRADE.
5. EXTEND THE STONE AT LEAST 1.5 FEET BEYOND THE DITCH BANK TO KEEP WATER FROM CUTTING AROUND THE ENDS OF THE CHECK DAM.
6. EXCAVATE SEDIMENT STORAGE AREA.

MAINTENANCE NOTES:

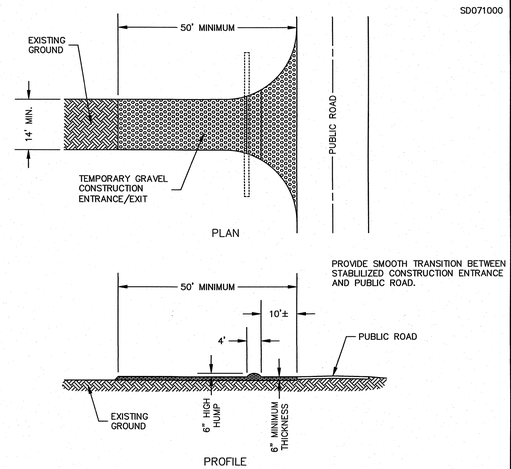
1. INSPECT AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
2. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY.
3. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONES TO DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.

RIP-RAP GRAVEL FILTER CHECK DAM

G

20041215

SD071000



CONSTRUCTION SPECIFICATIONS

STONE SIZE – USE WASHED STONE 2" – 3" SIZE.

LENGTH – AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.

THICKNESS – NOT LESS THAN SIX (6) INCHES.

WIDTH – NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS, MINIMUM 14 FT.

WASHING – WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.

MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

H

REV.	DATE	DESCRIPTION

PROJECT NO.: 1-25-0305-3402
SURVEYED BY: TDS
SCALE: NTS
DRAWN BY: MW
DATE: MARCH 28, 2025
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKEMEY

McDAVID ASSOCIATES CORPORATE SEAL 1972 FARMVILLE, N.C.

DATE:

MA REVIEW OFFICER:

McDAVID ASSOCIATES, INC.

Corporate License No. C-131

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EROSION CONTROL DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA

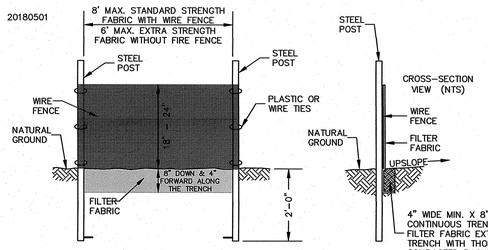
DUPLIN COUNTY

SHEET 19 OF 21

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P019-Erosion Control Details.dwg
Layout: Erosion Control Details
Plotted: Friday, May 16, 2025, 4:15:55pm

20180501

SD070004



CONSTRUCTION SPECIFICATIONS

MATERIALS

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0 TO 120° F.

2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LINEAR FT STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.

3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

CONSTRUCTION

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.

2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITHIN 4 FEET MINIMUM OVERLAP TO THE NEXT POST.

4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.

5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.

6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.

7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.

8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.

9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.

10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

INSTALLATION SPECIFICATIONS

1. THE BASE OF BOTH END POSTS SHOULD BE AT LEAST ONE FOOT HIGHER THAN THE MIDDLE OF THE FENCE. CHECK WITH A LEVEL IF NECESSARY.

2. INSTALL POSTS 4 FEET APART IN CRITICAL AREAS 6 FEET APART ON STANDARD APPLICATIONS.

3. INSTALL POSTS 2 FEET DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC, ENABLING POSTS TO SUPPORT THE FABRIC FROM UPSTREAM WATER PRESSURE.

4. INSTALL POSTS WITH THE NIPPLES FACING AWAY FROM THE SILT FABRIC.

5. ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITHIN THE TOP 8 INCHES OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART. ALSO, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENED TO PREVENT SAGGING.

6. WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.

7. NO MORE THAN 24 INCHES OF A 36 INCH FABRIC IS ALLOWED ABOVE GROUND LEVEL.

8. THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATIONS BEFORE COMPACTION.

9. COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE FABRIC WITH THE FRONT WHEEL OF THE TRACTOR, SKID STEER, OR ROLLER EXERTING AT LEAST 60 POUNDS PER SQUARE INCH. COMPACT THE UPSTREAM SIDE FIRST, AND THEN EACH SIDE TWICE FOR A TOTAL OF 4 TRIPS.

MAINTENANCE

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

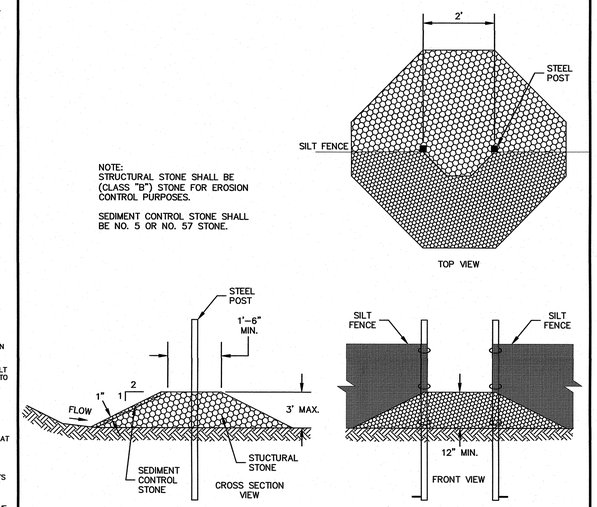
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

TEMPORARY SILT FENCE

A



NOTE:
STRUCTURAL STONE SHALL BE (CLASS "B") STONE FOR EROSION CONTROL PURPOSES.

SEDIMENT CONTROL STONE SHALL BE NO. 5 OR NO. 57 STONE.

THE CONTRACTOR SHALL INSTALL STONE OUTLETS AS ILLUSTRATED ABOVE AT ALL AREAS WHERE RUNOFF IS DETERMINED TO EXCEED SILT FENCING'S CAPABILITY TO PREVENT SEDIMENT FROM BEING RETAINED.

STONE OUTLET IN SILT FENCING

B

20130613

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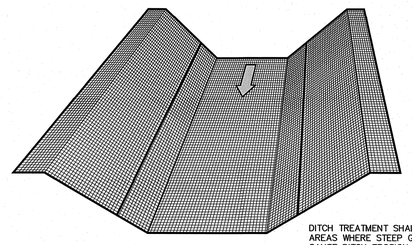
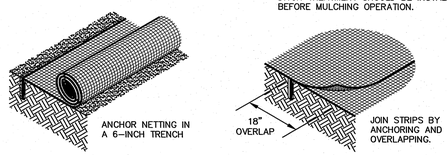


DITCH TREATMENT SHALL BE USED IN AREAS WHERE STEEP GRADES COULD CAUSE DITCH EROSION. USE OF JUTE, MESH, EXCELSIOR MATTING, OR FIBERGLASS ROVING IS ACCEPTABLE. DITCH TREATMENT SHOULD BE INSTALLED BEFORE MULCHING OPERATION.



INSTALLATION:

EXCELSIOR MATTING WITH PHOTO DEGRADABLE PLASTIC WEAVING SHALL BE USED AS AUTHORIZED BY THE ENGINEER FOR SLOPE TREATMENT IN AREAS WHERE STEEP GRADES MAY CAUSE EROSION. INSTALLATION INSTRUCTIONS AS FOLLOWS:

1. APPLY LIME, FERTILIZER AND SEED BEFORE LAYING THE MAT.
2. START LAYING THE MAT FROM TOP OF THE SLOPE AND UNROLL IT DOWN THE GRADE. ALLOW MATTING TO LAY LOOSELY ON THE SOIL OR MULCH WITHOUT WRINKLES, DO NOT STRETCH.
3. TO SECURE THE NET, BURY THE UPSLOPE END IN A SLOT OR TRENCH NO LESS THAN 6 INCHES DEEP, COVER WITH SOIL, AND TAMP FIRMLY AS SHOWN. STAPLE THE MAT EVERY 12 INCHES ACROSS THE TOP END AND EVERY 3 FT AROUND THE EDGES AND BOTTOM. WHERE 2 STRIPS OF NET ARE LAID SIDE BY SIDE, THE ADJACENT EDGES SHOULD BE OVERLAPPED 3 INCHES AND STAPLED TOGETHER. EACH STRIP OF NETTING SHOULD ALSO BE STAPLED DOWN THE CENTER, EVERY 3 FT. DO NOT STRETCH THE NET WHEN APPLYING STAPLES.
4. TO JOIN TWO STRIPS, CUT A TRENCH TO ANCHOR THE END OF THE NEW NET. OVERLAP THE END OF THE PREVIOUS ROLL 18 INCHES, AS SHOWN, AND STAPLE EVERY 12 INCHES JUST BELOW THE ANCHOR SLOT.

MAINTENANCE:

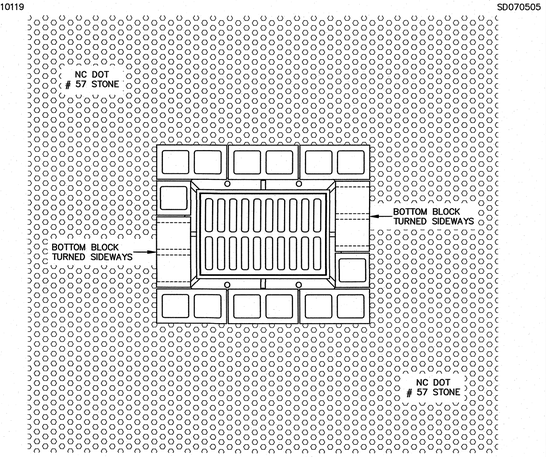
INSPECT ALL MATTING PERIODICALLY, AND AFTER RAINSTORMS TO CHECK FOR RILL EROSION, DISLOCATION OR FAILURE. WHERE EROSION IS OBSERVED, APPLY ADDITIONAL MATTING. IF WASHOUT OCCURS, REPAIR THE SLOPE GRADE, RESEED, AND REINSTALL MATTING. CONTINUE INSPECTIONS UNTIL VEGETATION IS FIRMLY ESTABLISHED.

EXCELSOIR MATTING

C

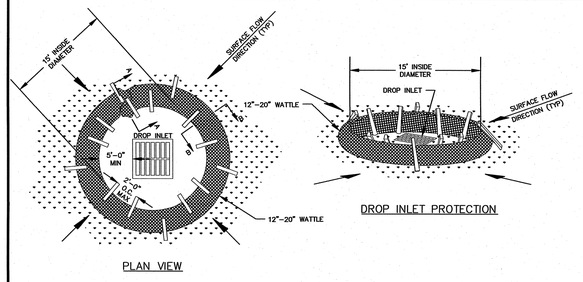
20110119

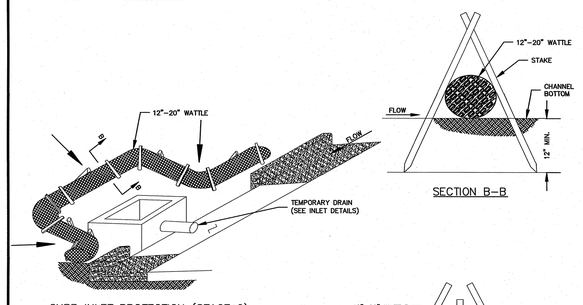
SD070505



BLOCK AND GRAVEL FILTER FOR DROP INLET

D





NOTES:
1. ANCHORING STAKES SHALL BE SIZED, SPACED, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE WATTLE. STAKE SPACING SHALL BE A MAXIMUM OF TWO FEET.
2. OVERLAP ENDS OF WATTLES PER MANUFACTURES RECOMMENDATIONS (1" MIN, 3" MAX).
3. INLET PROTECTION FOR GUTTER FLOW AS DIRECTED BY THE ENGINEER.

INSTALLATION:

1. Compost socks (wattles) should be located as shown on the erosion and sedimentation control plan.
2. Prior to installation, clear all obstructions including rocks, clods, and other debris greater than one inch that may interfere with proper function of the compost sock.
3. Compost socks should be installed parallel to the toe of a graded slope, a minimum of 10 feet beyond the toe of the slope. Socks located below flat areas should be located at the edge of the land-disturbance. The ends of the socks should be turned slightly up slope to prevent runoff from going around the end of the socks.
4. Compost socks (wattles) installed around drop inlets shall overlap 1'-3" as shown on the detail.
5. Fill sock netting uniformly with compost to the desired length such that logs do not deform.
6. Oak or other durable hardwood stakes shall be 2" X 2" in cross section.
7. In the event staking is not possible (i.e., when socks are used on pavement) heavy concrete blocks shall be used behind the sock to hold it in place during runoff events.
8. If the compost sock (wattle) is to be left as part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation using the seeding specification in the erosion and sedimentation control plan.
9. Compost socks are not to be used in perennial or intermittent streams.

MAINTENANCE:

Inspection compost socks (wattles) weekly and after each significant rainfall event (1/2 inch or greater). Remove accumulated sediment and any debris. Accumulated sediment shall not exceed 1/2 the diameter of the wattle. The compost sock must be replaced if clogged or torn. If ponding becomes excessive, the sock may need to be replaced with a larger diameter or a different measure. The sock needs to be reinstalled if undermined or dislodged. The compost sock shall be inspected until land disturbance is complete and the area above the measure has been permanently stabilized

TEMPORARY WATTLES

G

E

F

REV. | DATE | DESCRIPTION

PROJECT NO.: 1-25-0305-3402 | SURVEYED BY: TDS
SCALE: NTS | DRAWN BY: MW
DATE: MARCH 28, 2025 | MAP FILE REFERENCE: D-1213 PINK

JOSEPH W. MCKENCY — NORTH CAROLINA PROFESSIONAL ENGINEER — SEAL 28431 — 03/28/25 — DATE:

McDAVID ASSOCIATES, INC. — Corporate License No. C-131 — SEAL 1972 — FARMVILLE, N.C.

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MA DESIGN OFFICER:

EROSION CONTROL DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 20 OF 21

Drawing: W:\D8xx_gen\D84x_eng\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P020-Erosion Control Details.dwg
Layout: Erosion Control Details
Plotted: Friday, May 16, 2025, 4:16:00pm

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to *prevent discharge of fluids.*
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless *no other alternatives* are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

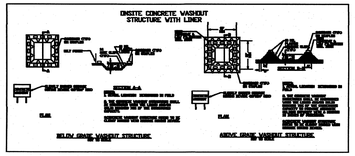
PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.

NORTH CAROLINA *Environmental Quality*



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (enc this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(e) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes [After Discovery] and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours,*** an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours,*** an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NORTH CAROLINA *Environmental Quality*

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

GENERAL PERMIT NCG01 GUIDELINES

A

GENERAL PERMIT NCG01 GUIDELINES

B

20090211

SD071900

1. PRODUCTS

A. Topsoil shall be capable of sustaining vigorous plant growth, not in frozen or muddy condition, containing not less than six (6) percent organic matter, and corrected to pH of 5.9 to 7.0.

B. Lime shall be dolomitic agricultural–ground limestone containing not less than ten (10) percent magnesium oxide.

C. Fertilizer shall be commercial type 10–20–20 with fifty (50) percent of the elements derived from organic sources.

D. Seed.

1. Seed shall be certified seed or equivalent based on North Carolina Seed Improvement Association requirements for certification. All seed shall be furnished in sealed standard containers. Seed which has become wet, moldy, or otherwise damaged prior to seeding, will not be acceptable.

2. One (1) percent maximum weed seed content permitted.

3. Seasonal mixtures for NC DOT right–of–ways:

a. From September 1 to February 28 :

Fifty (50) pounds per acre of Kentucky 31 Fescue, thirty–five (35) pounds per acre of Bermudagrass (unhulled), and five (5) pounds per acre of Centipede.

b. From March 1 to August 31:

Fifty (50) pounds per acre of Kentucky 31 Fescue, twenty–five (25) pounds per acre of Bermudagrass (hulled), and five (5) pounds per acre of Centipede.

4. Alternative seasonal mixtures outside NC DOT right–of–ways:

a. From November 16 to February 28:

Twenty–five (25) pounds per acre of Rye Grain, seventy–five (75) pounds per acre of Tall Fescue, Kentucky 31 or Alta Tall Fescue and fifty (50) pounds per acre of Bermudagrass (unhulled).

b. From March 1 to May 15:

Seventy–five (75) pounds per acre of Tall Fescue, Kentucky 31 or Alta Tall Fescue and thirty–five (35) pounds per acre of Bermudagrass (hulled).

c. From May 16 to September 15:

Fifty (50) pounds per acre of Bermudagrass (hulled) and forty (40) pounds per acre of Annual Lespedeza (Kobe or Korean).

d. From September 16 to November 15:

Seventy–five (75) pounds per acre of Tall Fescue, Kentucky 31 or Alta Tall Fescue and fifty (50) pounds per acre of Bermudagrass (unhulled).

E. Mulching material shall be oat or wheat straw, in dry condition, reasonably free from weeds and foreign matter detrimental to plant life.

2. GENERAL CONDITIONS

A. When conditions are such by reason of drought, high winds, excessive moisture or other factors where satisfactory results will not be obtained, the WORK shall be stopped, and resumed only when conditions are favorable.

3. SEEDBED PREPARATION

A. Protect existing underground improvements from damage.

B. Clear the ground surface of stumps, stones, roots, cables, wire, grade stakes, and other materials that might hinder proper grading, tillage, seeding or subsequent maintenance operations.

C. Remove contaminated subsoil.

D. Grade to eliminate rough spots and low area where ponding may occur. Maintain smooth, uniform grade.

E. Assure positive drainage away from buildings.

F. Finish ground level firm and sufficient to prevent sinkage pockets when irrigation is applied.

G. Grades on the area to be seeded shall be maintained to a true and even condition. Maintenance shall include any necessary repairs to previously graded areas.

H. Uniformly apply lime at a rate of 4000 pounds per acre prior to preparation of seedbed.

I. Thoroughly till all graded areas to a depth of at least five (5) inches by plowing, disking, harrowing, or other approved methods until the condition of the soil is acceptable. On sites where soil conditions are such that high clay content and excessive compaction cause difficulty in getting clods and lumps effectively pulverized, use rotary tillage machinery until soil mixture is acceptable and no clods or clumps larger than one–half (1/2) inch in diameter remain.

J. Remove from site foreign materials collected during tilling.

K. Uniformly apply fertilizer at a rate of 500 pounds per acre of 10–20–20 analysis.

L. Incorporate the fertilizer into the upper three (3) or four (4) inches of prepared seedbed just prior to the last tillage operation. However, never apply fertilizer more than (3) days prior to seeding. Use fertilizer immediately after delivery or store it in a manner that will not permit it to harden or destroy its effectiveness.

M. The seedbed should be firm and compact. Prior to seeding, grade the seedbed and lightly compact it with a land roller, such as a cultipacker.

4. SEEDING

A. Do not sow seed immediately following rain, when ground is too dry, or during windy periods. Do not apply grass seed and fertilizer at the same time in the same machine.

B. Apply seed at specified seasonal rate.

C. Rake seed in lightly.

D. Roll seeded area with roller not exceeding 112 pounds (50 kg).

E. Apply water with fine spray immediately after each area has been sown.

5. MULCHING PRACTICES

A. Apply one (1) to two (2) tons of mulching material per acre to seeded areas. Apply mulching material with mechanical type equipment and obtain a uniform distribution which permits sunlight to penetrate to the ground surface. Bare areas and areas with thick clumps of straw are not acceptable.

B. Anchor mulching material.

1. In areas with gentle slopes, crimp mulching material into soil.

2. On steeper slopes such as the sides of swales, anchor mulch with netting or asphalt tack.

3. On road shoulders, anchor mulch with asphalt tack if crimping is unsuccessful.

4. Use asphalt tack in lieu of crimping when required by regulatory agencies or if directed by the ENGINEER. Typically, asphalt tack in lieu of crimping will be required in areas with high traffic because of wind generated by the traffic.

5. On slopes steeper than 2:1, jute, excelsior, or synthetic matting may be required to protect the slope from erosion. They should be installed before mulch is applied to surrounding areas.

6. WATERING

A. Lightly water to aid breakdown of fertilizer and to provide moist soil for seed.

7. MAINTENANCE PERIOD

A. Maintenance Period: until final acceptance.

8. MAINTENANCE

A. Maintain surfaces and supply additional topsoil where necessary, including areas affected by erosion.

B. Water to ensure uniform seed germination and to keep surface of soil damp.

C. Apply water slowly so that surface of soil will not puddle and crust.

D. Except for rye grain, cut grass first time when it reaches height of two and one–half (2 1/2) inches (60 mm) and maintain to minimum of two (2) inches (50 mm). Do not cut more than 1/3 of blade at any one mowing.

E. If rye grain is planted mow to maintain grass height between three (3) and six (6) inches until Fescue matures enough to provide ground cover.

F. After first mowing water grass sufficient to moisten soil from three (3) inches to five (5) inches (76 to 127 mm) deep.

G. Apply weed killer when weeds start developing, during calm weather when air temperature is above fifty (50) degrees Fahrenheit [ten (10) degrees Celsius].

H. Replant damaged grass areas showing root growth failure, deterioration, bare or thin spots, and eroded areas.

9. RESTORATION

A. Restore grassed areas until accepted.

10. ACCEPTANCE

A. Seeded areas will be accepted at end of maintenance period when seeded areas are properly established and otherwise acceptable.

SEEDING CONSTRUCTION NOTES

C

D

E

McDAVID ASSOCIATES, INC.
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P. O. Drawer 49
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BRANCH OFFICE
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1609 Spring Forest Road
P. O. Box 1778
Goldsboro, NC 27533
Telephone: (919) 735-0300
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REV.	DATE	DESCRIPTION

PROJECT NO.: I-25-0305-3402
SCALE: NTS
DATE: MARCH 28, 2025
SURVEYED BY: TDS
DRAWN BY: MW
MAP FILE REFERENCE: D-1213 PINK

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 28431 JOSEPH W. MCKENZIE
DATE:

McDAVID ASSOCIATES, INC. CORPORATE SEAL 1972 FARMVILLE, N.C.

MAJ. BOWER OFFICERS:

EROSION CONTROL DETAILS
CONTRACT NO. 3 - SITE IMPROVEMENTS
2025 AIRPORT HANGER PROJECT
DUPLIN COUNTY
NORTH CAROLINA
DUPLIN COUNTY

SHEET 21 OF 21

Drawing: W:\D8xx_gen\D847_LD\2025-0305-3402 Duplin Co 25-EDC-Hanger Site Wat SS-TS - Planning & Design\DWG\P021-Erosion Control Details.dwg
Layout: Erosion Control Details
Plotted: Friday, May 16, 2025, 4:16:09pm

GENERAL

1. THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE SPECIFICATIONS (IF PROVIDED). SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THE GENERAL NOTES.
2. DO NOT SCALE DIMENSIONS FROM DRAWINGS. THE CONTRACTOR SHALL REQUEST NECESSARY DIMENSIONS NOT SHOWN ON THE DRAWINGS.
3. WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS EVEN THOUGH NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
4. WHERE A CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS OCCURS THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. IF ANY BIDDER IS IN DOUBT AS TO THE INTENT OF THE DRAWINGS OR SPECIFICATIONS, THEY SHALL REQUEST AN INTERPRETATION IN WRITING PRIOR TO THE SCHEDULED BID DATE.
6. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND GRADE CONDITIONS (BOTH NEW AND EXISTING), REPORTING ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR PROCEEDING WITH STRUCTURAL WORK.
7. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS, AND REPORT ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR PROCEEDING WITH STRUCTURAL WORK.
8. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, FLOOR SLOPES, AND THE LOCATION OF DEPRESSED FLOOR AREAS.

CONTRACTOR RESPONSIBILITY

1. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS (IF PROVIDED) REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE. ALL APPLICABLE SAFETY REGULATIONS TO BE FOLLOWED STRICTLY.
2. THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATIONS OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING ERECTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS UNTIL THE STRUCTURAL WORK IS COMPLETE.
3. ALL INTERIOR HANGING COMPONENTS (CEILING, DUCTWORK, PIPING, EQUIPMENT, ETC.) SHALL BE COORDINATED BY THE CONTRACTOR TO ENSURE LOADS APPLIED TO THE STRUCTURE DO NOT EXCEED THE LIMITS SHOWN IN THE DESIGN CRITERIA OR ELSEWHERE IN THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY OF THE CONNECTIONS TO THE SUPPORTING STRUCTURAL ELEMENTS AND THE ADEQUACY OF THE HANGING SYSTEM TO SUPPORT THE COMPONENTS.
4. ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT FRAME TO THE UNDERSIDE OF STRUCTURE ABOVE, SHALL BE DETAILED AND FRAMED BY THE CONTRACTOR TO ALLOW FOR DEFLECTION OF THE STRUCTURAL FRAMING. SEE THE DESIGN CRITERIA FOR THE LIMITS USED IN THE DESIGN.
5. PRINCIPAL OPENINGS IN THE STRUCTURE ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ALL REQUIRED OPENINGS. SUPPORT FRAMING FOR ALL OPENINGS SHALL BE PROVIDED AND INSTALLED PER TYPICAL DETAILS HEREIN WHETHER SHOWN ON THESE DRAWINGS OR NOT. THE CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH ALL SUBCONTRACTORS AND THEIR APPROVED SHOP DRAWINGS PRIOR TO CONSTRUCTION.
6. ALL EXTERIOR WALL AND ROOF COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR COMPONENTS AND CLADDING WIND LOADS NOTED IN THE DESIGN CRITERIA.
7. ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS ARE TO BE ATTACHED AS REQUIRED BY ASCE/SEI 7 CHAPTER 13, "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". EACH INDIVIDUAL CONTRACTOR RESPONSIBLE FOR THE COMPONENT MUST PROVIDE PROJECT SPECIFIC DESIGN AND DOCUMENTATION PREPARED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. CHAPTER 13 DEFINES THE FORCE REQUIRED TO SUPPORT THE COMPONENT FOR THE ANCHORAGE AND BRACING. THE COST OF PREPARING THIS INFORMATION AND DESIGN SHALL BE INCLUDED IN EACH CONTRACTOR’S BID THAT IS PROVIDING THE COMPONENT.
8. SEVERAL ITEMS NOTED HEREIN (WHERE CHECKED) AND IN THE SPECIFICATIONS REQUIRE THE CONTRACTOR TO ENGAGE A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED, TO PROVIDE DESIGN AND/OR DETAILING OF STRUCTURAL ELEMENTS. SEE INDIVIDUAL NOTES AND SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. DELEGATED DESIGN ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO:
   - ☐ SPECIALTY FOUNDATION SYSTEM
   - ☐ POST-TENSIONED CONCRETE (LAYOUT AND STRESSING)
   - ☐ STRUCTURAL PRECAST CONCRETE
   - ☐ ARCHITECTURAL PRECAST CONCRETE
   - ☒ STRUCTURAL STEEL (CONNECTIONS)
   - ☒ PREFABRICATED METAL BUILDING
   - ☐ STEEL STAIRS AND RAILINGS
   - ☐ STEEL JOISTS AND STEEL JOIST GIRDERS
   - ☐ ROOF ANCHORS
   - ☐ NON-LOAD BEARING COLD-FORMED STEEL
   - ☐ LOAD BEARING COLD-FORMED STEEL
   - ☐ LIGHT GAUGE COLD-FORMED STEEL TRUSSES
   - ☐ PREFABRICATED WOOD TRUSSES
   - ☐ ANCHOR TIE-DOWN SYSTEM FOR WOOD SHEAR WALLS

DESIGN CRITERIA

1. PROJECT LOCATION: 222 AIRPORT ROAD | KENANSVILLE, NC 28349
2. APPLICABLE CODES:
   2018 NORTH CAROLINA BUILDING CODE (2015 INTERNATIONAL BUILDING CODE WITH REVISIONS)
   MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-10)
   BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
   BUILDING CODE REQUIREMENTS|SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530|530.1-13)
   SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-10)
   NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (ANSI/AWC NDS-2015)
   NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (AISI S100-12)
3. RISK CATEGORY: II
4. DEFLECTION:
   ROOF FRAMING — L/120 FOR TOTAL LOADING (3.00" FOR 30' SPAN), L/180 FOR LIVE LOADING (2.00" FOR 30' SPAN)
   STRUCTURAL DRIFT LIMITS — WIND, H/60 (MEAN RECURRENCE INTERVAL BY BUILDING SUPPLIER)
   SEISMIC, PER ASCE 7 12.12
5. LIVE LOADS:

	UNIFORM (PSF)	CONCENTRATED (LB)
CORRIDORS (GROUND)	100	2,000
MECHANICAL	150	NA
OFFICE	65*	2,000
PUBLIC AREAS, LOBBIES	100	2,000
ROOF	20	300
STORAGE	125	NA

   * ADDITIONAL 15 PSF PARTITION LOAD INCLUDED
6. SNOW LOAD:
   GROUND SNOW LOAD — p_g = 10 PSF
   IMPORTANCE FACTOR — I_s = 1.00
   SNOW EXPOSURE FACTOR — C_e = 1.00
   THERMAL FACTOR — C_t = 1.20
   FLAT SNOW ROOF LOAD — p_f = 14 PSF
7. WIND LOAD:
   BASIC DESIGN WIND SPEED — V = 129 MPH (ALLOWABLE STRESS DESIGN WIND SPEED, V_{asd} = 100 MPH)
   EXPOSURE CATEGORY — C
   INTERNAL PRESSURE COEFFICIENTS — ±0.18
   MAIN WIND FORCE RESISTING SYSTEM AND LOADING PER BUILDING MANUFACTURER
   COMPONENTS AND CLADDING -
   ALL EXTERIOR WALL AND ROOF COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR COMPONENTS AND CLADDING WIND LOADS AS DETERMINED PER THE GOVERNING BUILDING CODE FOR THE ULTIMATE DESIGN WIND SPEED AND EXPOSURE CATEGORY LISTED ABOVE. ALTERNATIVELY, THE COMPONENT MANUFACTURER MAY USE THE WORST-CASE PRESSURES (PSF) BELOW:

ZONE		EFFECTIVE WIND AREA (SF)			
		10	50	100	500
ROOF	1	+18 -70	+16 -59	+16 -55	+16 -44
	2	+18 -93	+16 -78	+16 -72	+16 -59
	3	+18 -126	+16 -98	+16 -85	+16 -59
WALL	4	+40 -43	+36 -40	+33 -36	+30 -33
	5	+40 -53	+36 -45	+33 -41	+30 -33

8. SEISMIC LOAD:
   DESIGN METHOD - EQUIVALENT LATERAL FORCE PROCEDURE
   S_S — 17.1 %g
   S_1 — 7.9 %g
   S_{DS} — 18.2 %g
   S_{D1} — 12.7 %g
   IMPORTANCE FACTOR — I_e = 1.00
   SITE CLASS — D
   SEISMIC DESIGN CATEGORY — B
   SEISMIC FORCE-RESISTING SYSTEM AND LOADING PER BUILDING MANUFACTURER
9. FUTURE LOADS:
   UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOORS, ROOFS, OR OTHER LOADS.

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT BY:
   S&ME, DATED APRIL 24, 2025 (PROJECT # 25060014)
2. THE DESIGN NET ALLOWABLE SOIL BEARING PRESSURE IS 2,000 PSF BASED PENDING REPORT.
3. ALL RECOMMENDATIONS AS OUTLINED IN THE GEOTECHNICAL INVESTIGATION REPORT AND AS NOTED ON THE DRAWINGS MUST BE FOLLOWED IN PREPARATION OF THE SUBGRADE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL OBTAIN THE REPORT FROM THE OWNER AND BE FAMILIAR WITH THE RECOMMENDATIONS CONTAINED THEREIN PRIOR TO THE START OF CONSTRUCTION. IF CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFER FROM THOSE DESCRIBED IN THE REPORT, THE OWNER SHALL NOTIFY THE GEOTECHNICAL ENGINEER OF RECORD SO THE RECOMMENDATIONS CAN BE REEVALUATED.
4. GROUNDWATER IS ASSUMED TO POSE AN ISSUE DURING CONSTRUCTION BASED ON THE INFORMATION NOTED IN THE GEOTECHNICAL INVESTIGATION REPORT. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ALL COSTS ASSOCIATED WITH DEWATERING DURING CONSTRUCTION AS REQUIRED TO PERFORM THEIR WORK.
5. FOOTINGS SHALL BE CARRIED TO LOWER ELEVATIONS THAN THOSE SHOWN ON THE DRAWINGS IF REQUIRED BY THE GEOTECHNICAL ENGINEER OR TESTING LAB TO REACH SOIL CAPABLE OF PROVIDING THE DESIGN NET ALLOWABLE SOIL BEARING PRESSURE. ALL EXPANSIVE AND/OR LOOSE SOILS BELOW STRUCTURAL FOUNDATIONS SHALL BE REMOVED AND REPLACED AS DIRECTED HEREIN.
6. MINIMUM SUBGRADE PREPARATION REQUIREMENTS ARE AS FOLLOWS:
   1. PREPARE SUBGRADE AND UNDERFLOOR FILL TO A POINT THAT EXTENDS 5'-0" (MINIMUM) BEYOND THE LIMITS OF THE FOUNDATIONS.
   2. COMPACT ALL FILL UNDER BUILDING TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 AND 98% WITHIN THE TOP 12 INCHES.
   3. PLACE IN LIFTS OF 8" (MAXIMUM) LOOSE THICKNESS WHEN USING LARGE RIDING COMPACTORS (REDUCE THICKNESS AS NECESSARY FOR SMALLER EQUIPMENT).
   4. SLABS ON GRADE SHALL BE SUPPORTED ON A BASE LAYER OF POROUS FILL (WASHED STONE OR CLEAN SAND) WITH A MINIMUM THICKNESS OF 4".
7. FIELD COMPACTION SHALL BE VERIFIED WITH AT LEAST ONE TEST PER 2,000 SQUARE FEET PER LIFT (AT LEAST ONE PER LIFT), IN ACCORDANCE WITH ASTM D1556 (SAND-CONE METHOD), ASTM D6938 (NUCLEAR METHODS, SHALLOW DEPTH), ASTM D2167 (RUBBER BALLOON METHOD), AND/OR ASTM D2937 (DRIVE-CYLINDER METHOD). SEE SPECIFICATIONS FOR OTHER TESTING REQUIREMENTS.
8. WALLS RETAINING SOIL SHALL BE TEMPORARILY BRACED DURING BACKFILLING AND UNTIL ALL SUPPORTING SOIL AND SLABS ARE IN PLACE AND ARE AT DESIGN STRENGTH UNLESS NOTED OTHERWISE ON PLANS AND DETAILS.
9. WALLS RETAINING SOIL HAVE BEEN DESIGNED UTILIZING THE FOLLOWING PARAMETERS:

MOIST SOIL UNIT WEIGHT	120 PCF
ACTIVE PRESSURE COEFFICIENT	0.33
AT-REST PRESSURE COEFFICIENT	0.55
PASSIVE PRESSURE COEFFICIENT	2.50
COEFFICIENT OF FRICTION	0.35

10. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS OF ALL SUCH CONDITIONS PRIOR TO CONSTRUCTION.

CONCRETE | REINFORCING STEEL

1. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REFERENCED EDITION OF THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318).
2. CONCRETE MIXTURES AS REQUIRED (BASED ON CLASS DESIGNATION):

CLASS A - FOOTINGS, GRADE/TIE BEAMS	NWC	3,000 PSI
CLASS B - FOUNDATION WALLS, PEDESTALS	NWC	4,500 PSI
CLASS C - INTERIOR SLABS ON GRADE	NWC	3,000 PSI
CLASS F - EXTERIOR SLABS ON GRADE, PADS, TOPPINGS	NWC	4,500 PSI

   REINFORCING:
   TYPICAL - ASTM A615, GRADE 60
   REINFORCING TO BE WELDED - ASTM A706
   DEFORMED BAR ANCHORS - ASTM A496
   WELDED WIRE FABRIC - ASTM A1064 (FLAT SHEETS ONLY)
3. GROUT UNDER BASE PLATES TO BE HIGH STRENGTH (5,000 PSI), NON-SHRINK.
4. REFER TO THE DRAWINGS FOR REINFORCING LAP REQUIREMENTS. WHERE LAP SPLICES ARE NOT SHOWN, LAP PER ACI 318 OR CRSI STANDARDS.
5. LAP WELDED WIRE FABRIC SHEETS 8" MINIMUM.
6. CLEAR COVER FROM FACE OF CONCRETE:
   CAST IN PLACE CONCRETE (MEASURE TO OUTERMOST REINFORCING) -
   CONCRETE CAST AGAINST AND EXPOSED TO EARTH — 3"
   CONCRETE EXPOSED TO EARTH/WEATHER — 2" FOR #6 BARS AND LARGER, 1 1/2" ELSE
   CONCRETE NOT EXPOSED TO EARTH/WEATHER — 3/4" FOR SLABS AND WALLS, 1 1/2" (TO TIES) FOR BEAMS AND COLUMNS
   POST-TENSIONED CONCRETE (MEASURE TO OUTERMOST REINFORCING) -
   CONCRETE CAST AGAINST AND EXPOSED TO EARTH — 3"
   CONCRETE EXPOSED TO EARTH/WEATHER — 1" FOR SLABS AND WALLS, 1 1/2" ELSE
   CONCRETE NOT EXPOSED TO EARTH/WEATHER — 3/4" FOR SLABS AND WALLS
   1" (TO TIES) AND 1 1/2" (TO MAIN BARS) FOR BEAMS AND COLUMNS
7. WHERE SCHEDULED BARS ARE NOT PRESENT, PROVIDE CONTINUOUS #5 TOP AND BOTTOM BARS TO SUPPORT STIRRUPS AS REQUIRED FOR THE LENGTH OF THE STIRRUP SPACING IN ALL BEAMS.
8. WALL FOOTING REINFORCING SHALL BE CONTINUOUS THROUGH ADJACENT COLUMN FOOTINGS.
9. PROVIDE VERTICAL DOVETAIL SLOTS AT 24"OC WITH TIES AT 16"OC VERTICALLY IN ALL CONCRETE WALLS BACKING-UP MASONRY VENEER.
10. BAR SUPPORTS FOR CONCRETE EXPOSED TO VIEW SHALL HAVE PLASTIC COATED LEGS OR BE HOT-DIP GALVANIZED AFTER FABRICATION.
11. MECHANICAL AND ELECTRICAL CONDUIT IN SLABS ON GRADE SHALL RUN UNDER TOP LAYER OF SLAB REINFORCING. PROVIDE A MINIMUM OF 1-1/2" CLEAR BETWEEN INDIVIDUAL CONDUITS AND REINFORCING. IF MAXIMUM SIZE OF CONDUIT EXCEEDS ONE THIRD OF THE SLAB DEPTH, ADDITIONAL FRAMING OR REINFORCING MAY BE NECESSARY AT ENGINEER'S DISCRETION.
12. MECHANICAL AND ELECTRICAL CONDUIT IN ELEVATED SLABS IS NOT ALLOWED UNLESS SPECIFICALLY REVIEWED AND APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT.
13. HEADED CONCRETE ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A108, GRADES 1010, 1015, 1017, OR 1020. STUDS SHALL BE AUTOMATICALLY END WELDED IN THE SHOP OR FIELD IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
14. EMBED PLATES MUST BE SET IN THE FORM BEFORE POURING CONCRETE, NOT PLACED INTO TOP OF WET CONCRETE. THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR CORRECTIVE DETAILS FOR ANY EMBED PLATES LEFT OUT OF CONCRETE POURS.
15. FOR SLABS ON GRADE, SLAB AND FOOTING REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS WITH SAND PLATES, OR PRECAST CONCRETE BAR SUPPORTS AS DESCRIBED IN CHAPTER 3 OF THE CRSI MANUAL OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED AT A MAXIMUM OF 4'-0"OC BOTH WAYS. ROCKS, CMU, OR CLAY BRICK WILL NOT BE USED AS SUPPORTS.
16. THE CONTRACTOR SHALL ASSUME CONCRETE OVERAGES IN ELEVATED DECK POURS DUE TO MEMBER AND DECK DEFLECTIONS. UNLESS SHOWN ON PLANS, BEAMS ARE NOT CAMBERED. CONCRETE OVERAGES MAY BE CALCULATED BY THE CONTRACTOR FOR BEAM DEFLECTIONS EQUALING L/300 INCLUDING ADDITIONAL DEFLECTIONS DUE TO PONDING AND DECK DEFLECTIONS PER SDI.
17. REBAR SHALL NOT BE HEATED WITH A TORCH IN THE FIELD.
18. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER FAR ENOUGH IN ADVANCE (48 HOURS) OF EACH CONCRETE POUR TO ALLOW AMPLE TIME TO CHECK THE LAYOUT OF THE STEEL BEFORE THE BEGINNING OF THE ACTUAL POUR, BUT NOT PRIOR TO 90% OF THE STEEL HAVING BEEN PLACED.

CONCRETE CONSTRUCTION JOINTS

1. CONTRACTOR SHALL PROVIDE NECESSARY CONSTRUCTION JOINTS IN MONOLITHIC CONCRETE POURS SO THAT THE QUALITY OF PLACEMENT AND FINISH MEETS THE REQUIREMENTS OF PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL SUBMIT A PLAN SHOWING THE LOCATION OF ALL CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER FOR APPROVAL.
2. THERE SHALL BE NO HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS. ALL VERTICAL CONSTRUCTION JOINTS IN SLABS AND BEAMS SHALL BE MADE WITH BULKHEADS. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE AS SPECIFIED BY THE STRUCTURAL ENGINEER. SEE TYPICAL CONSTRUCTION JOINT DETAILS.

STRUCTURAL STEEL

1. DESIGN, FABRICATION, AND ERECTION SHALL BE PER THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (ANSI/AISC 360).
2. STRUCTURAL STEEL MATERIALS:
   WIDE FLANGE SHAPES (W SECTIONS) - ASTM A992, GRADE 50 (FY=50 KSI)
   CHANNELS AND ANGLES - ASTM A36 (FY=36 KSI)
   PLATES AND BARS - ASTM A36 (FY=36 KSI) OR ASTM A572, GRADE 50 (FY=50 KSI) AS INDICATED ON THE DRAWINGS.
   SQUARE AND RECTANGULAR TUBES - ASTM A500, GRADE B (FY=46 KSI)
   PIPES OR ROUND TUBES - ASTM A53, GRADE B (FY=35 KSI) OR ASTM A500, GRADE B (FY=42 KSI)
3. A QUALIFIED FABRICATOR SHALL HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE IN FABRICATING STRUCTURAL STEEL LIKE THAT INDICATED FOR THIS PROJECT AND SUFFICIENT CAPACITY TO FABRICATE THE STRUCTURAL STEEL WITHOUT DELAYING THE WORK, AND SHALL MEET ONE OF THE FOLLOWING:
   A. FABRICATOR PARTICIPATES IN THE AISC QUALITY CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC-CERTIFIED PLANT, CATEGORY (BU) OR IS ACCREDITED BY THE IAS FABRICATOR INSPECTION PROGRAM FOR STRUCTURAL STEEL (ACCREDITATION CRITERIA 172).
   B. FABRICATOR HAS AN ESTABLISHED AND MAINTAINED QUALITY CONTROL PROGRAM TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS IN ANSI/AISC 303, ANSI/AISC 360, AND THE CONTRACT DOCUMENTS. PROGRAM SHALL AT A MINIMUM ADDRESS INSPECTION OF THE ITEMS NOTED IN ANSI/AISC 360 N2.
4. A QUALIFIED ERECTOR SHALL HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE IN ERECTING STRUCTURAL STEEL LIKE THAT INDICATED FOR THIS PROJECT AND SUFFICIENT CAPACITY TO ERECT THE STRUCTURAL STEEL WITHOUT DELAYING THE WORK, AND SHALL MEET ONE OF THE FOLLOWING:
   A. ERECTOR PARTICIPATES IN THE AISC QUALITY CERTIFICATION PROGRAM AND IS DESIGNATED AN AISC-CERTIFIED ERECTOR, CATEGORY (CSE).
   B. ERECTOR HAS AN ESTABLISHED AND MAINTAINED QUALITY CONTROL PROGRAM TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS IN ANSI/AISC 303, ANSI/AISC 360, AND THE CONTRACT DOCUMENTS. PROGRAM SHALL AT A MINIMUM ADDRESS INSPECTION OF THE ITEMS NOTED IN ANSI/AISC 360 N2.
5. BEAM SIMPLE SHEAR, BRACED FRAME, AND ALL MOMENT CONNECTIONS NOT DETAILED ON STRUCTURAL DRAWINGS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER RETAINED BY THE STEEL SUPPLIER AND REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED. THE CONNECTION ENGINEER SHALL SUBMIT A SIGNED AND SEALED LETTER STATING THEY HAVE REVIEWED THE STEEL SHOP DRAWINGS AND THE CONNECTIONS ARE CONSISTENT WITH THEIR CALCULATIONS AND INTENT.
6. THE CONNECTIONS FOR NON-COMPOSITE BEAMS SHALL BE DESIGNED FOR REACTIONS SHOWN ON DRAWINGS OR FOR REACTIONS DETERMINED BY USING THE MAXIMUM TOTAL UNIFORM LOAD TABULATED IN PART 3 OF THE AISC STEEL CONSTRUCTION MANUAL FOR THE SECTION, SPAN, AND STRENGTH OF STEEL SPECIFIED. THE CONNECTIONS FOR COMPOSITE BEAMS SHALL BE DESIGNED FOR REACTIONS SHOWN ON DRAWINGS OR AS DICTATED BY THE TYPICAL COMPOSITE SLAB DETAIL.
7. SIMPLE SHEAR CONNECTIONS SHALL BE MADE WITH ASTM A325 3/4"Ø BOLTS (MINIMUM), TIGHTENED TO A SNUG-TIGHT CONDITION PER AISC REQUIREMENTS.
8. ALL WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY CODE. USE E70 SERIES ELECTRODES FOR ALL STRUCTURAL STEEL WELDS. WHERE STEEL MEMBERS ARE WELDED AND NO SIZE IS SPECIFIED, PROVIDE FULL LENGTH FILLET WELDS BOTH SIDES OF MEMBER. SIZE OF FILLETS SHALL BE 3/16" FOR MEMBER THICKNESS UP TO 5/16", AND THE MEMBER THICKNESS MINUS 3/16" FOR ALL THICKER MATERIALS.
9. ANCHOR AND THREADED RODS SHALL CONFORM TO ASTM F1554, GRADE 36, 55, OR 105 AS INDICATED ON THE DRAWINGS. CONTRACTOR TO COORDINATE INSTALLATION OF ITEMS TO BE EMBEDDED IN OR ATTACHED TO OTHER CONSTRUCTION WITHOUT DELAYING THE WORK.
10. STEEL SHALL BE PRIMED WITH FABRICATOR'S STANDARD LEAD- AND CHROMATE-FREE, NON-ASPHALTIC, RUST-INHIBITING PRIMER COMPLYING WITH MPI#79 (MINIMUM COAT OF 3 MILS, MAXIMUM OF 5 MILS). CONTRACTOR TO COORDINATE SELECTION OF PRIMER WITH TOPCOATS TO BE APPLIED TO ENSURE THE TWO ARE COMPATIBLE. MEMBERS TO RECEIVE FIREPROOFING OR TO BE ENCASED IN CONCRETE SHALL NOT BE PRIMED.
11. SEE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL ITEMS REQUIRED TO BE HOT-DIP GALVANIZED AFTER FABRICATION.
12. STRUCTURAL STEEL SHALL BE PUNCHED FOR WOOD BLOCKING, NAILERS, CLIPS AND TIES IN ACCORDANCE WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
13. CAP ALL OPEN HSS OR PIPE MEMBERS OUTSIDE THE BUILDING ENVELOPE WITH A 1/4" (MINIMUM) FITTED PLATE, UNO.
14. ERECTOR SHALL SET STRUCTURAL STEEL IN LOCATIONS AND TO ELEVATIONS IN ACCORDANCE WITH ANSI/AISC 303 AND 360. MAINTAIN THE FRAME WITHIN ERECTION TOLERANCES PER ANSI/AISC 303.
15. PROMPTLY PACK SHRINKAGE-RESISTANT GROUT SOLIDLY BETWEEN BEARING SURFACES AND PLATES SO NO VOIDS REMAIN.
16. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER AS TO LOCATION AND TYPE OF SPLICE TO BE MADE. ANY MEMBER HAVING A SPLICE NOT SHOWN AND DETAILED ON SHOP DRAWINGS WILL BE REJECTED. THERMAL CUTTING MAY NOT BE USED IN THE FIELD DURING ERECTION.
17. QUALITY CONTROL INSPECTION TASKS SHALL BE PERFORMED BY BOTH THE FABRICATOR AND ERECTOR IN ACCORDANCE WITH ANSI/AISC 360 N5. NON-DESTRUCTIVE TESTING (NDT) OF WELDED JOINTS PROVIDED DURING FABRICATION SHALL BE IN ACCORDANCE WITH N5.5 AND PERFORMED BY AN INDEPENDENT AND QUALIFIED TESTING AGENCY OR THE FABRICATOR'S QCI. ALL TESTING REPORTS SHALL BE SUBMITTED TO THE OWNER FOR REVIEW.
18. AT THE COMPLETION OF FABRICATION AND ERECTION, THE FABRICATOR AND ERECTOR SHALL EACH SUBMIT A CERTIFICATE OF COMPLIANCE TO THE OWNER STATING THE MATERIALS SUPPLIED AND WORK PERFORMED ARE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
19. NON-DESTRUCTIVE TESTING (NDT) OF WELDED JOINTS PROVIDED DURING ERECTION SHALL BE IN ACCORDANCE WITH N5.5 AND PERFORMED BY AN INDEPENDENT AND QUALIFIED TESTING AGENCY. ALL TESTING REPORTS SHALL BE SUBMITTED TO THE OWNER FOR REVIEW.
20. ALL STEEL EXPOSED TO VIEW SHALL BE CLASSIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS) AS DEFINED BY ANSI/AISC 303 AND SHALL BE TREATED AS SUCH.

PREFABRICATED METAL BUILDING

1. DESIGN, FABRICATION, AND ERECTION SHALL BE PER THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). DESIGN AND CONSTRUCTION OF THE PREFABRICATED METAL BUILDING IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
2. DESIGN CRITERIA:
   MAXIMUM HORIZONTAL DRIFT - H/180 (H = MEAN HEIGHT OF STRUCTURE)
   MINIMUM COLLATERAL LOAD - 10 PSF PLUS ROOF TOP MECHANICAL UNITS, HANGING EQUIPMENT, STAGE CURTAINS, BASKETBALL GOALS, ETC.
3. A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PREFABRICATED METAL BUILDING MEMBERS AND THEIR CONNECTIONS. THIS WORK SHALL ALSO INCLUDE ALL MEMBERS AND BRACES REQUIRED TO BRACE EXTERIOR WALLS.
4. ALL SHOP DRAWINGS SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED AND SHALL BE SUBMITTED FOR RECORD PURPOSES UPON REQUEST.
5. ALL ANCHOR BOLTS SHALL BE DESIGNED BY THE METAL BUILDING SUPPLIER AND SUPPLIED BY THE CONTRACTOR. ALL ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36 AS A MINIMUM. SUBMIT SHOP DRAWINGS FOR ALL ANCHOR BOLTS INDICATING THE REACTIONS IMPOSED ON THE FOUNDATION.
6. FOUNDATION DESIGN ASSUMES PINNED BASE CONNECTIONS FROM THE METAL BUILDING COLUMNS TO THE FOUNDATION.
7. FOUNDATIONS HAVE BEEN DESIGNED FOR REACTIONS INDICATED ON THE DRAWINGS. SUBMIT BASE REACTIONS FOR FOUNDATION DESIGN VERIFICATION AND POSSIBLE FOUNDATION RE-DESIGN. CONTRACTOR SHALL PROVIDE UNIT COSTS FOR POSSIBLE FOUNDATION REVISION.

ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS

1. ANCHOR BOLTS, REINFORCING STEEL, THREADED RODS, STAIR HANDRAILS, AND OTHER EMBEDDED STEEL ITEMS SHALL BE SET INTO HARDENED CONCRETE WITH ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS ONLY WHERE DETAILED ON THE DRAWINGS OR WHERE APPROVED BY THE ENGINEER OF RECORD.
2. PRE-APPROVED MANUFACTURERS ARE HILTI, SIMPSON STRONG-TIE, AND DEWALT. WHERE DETAILS INDICATE SPECIFIC ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS, IT IS ACCEPTABLE AT THE CONTRACTOR'S OPTION TO SUBMIT AN ALTERNATE SIMILAR PRODUCT PROVIDED BY A DIFFERENT MANUFACTURER AS LONG AS THE MANUFACTURER'S DATA PROVIDES EQUIVALENT LOAD CAPACITY TO THE ANCHOR SPECIFIED. THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED CALCULATIONS THAT DEMONSTRATE THE ALTERNATE PRODUCT IS CAPABLE OF MEETING THE PERFORMANCE OF THE SPECIFIED ANCHOR. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC-ESR SHOWING COMPLIANCE WITH THE GOVERNING BUILDING CODE FOR SEISMIC USE, LOAD RESISTANCE, INSTALLATION CATEGORY, AND THE AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.
3. BASIS OF DESIGN FOR ADHESIVE ANCHORS DETAILED ON THE DRAWINGS INCLUDES THE FOLLOWING PARAMETERS: CRACKED CONCRETE; WATER-SATURATED CONCRETE; BASE MATERIAL BETWEEN 25 AND 100 DEGREES FAHRENHEIT; AND HOLES MADE BY HAMMER DRILL, HOLLOW DRILL BIT SYSTEM, OR CORE-DRILLING.
4. INSTALL ANCHORS PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING. HEED ALL LABEL WARNINGS. INSTALL IN ACCORDANCE WITH APPLICABLE SAFETY LAWS. ALL HOLES SHALL BE DRILLED WITH A DIAMETER NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE ANCHOR BEING INSTALLED. ALL HOLES SHALL BE CLEANED WITH COMPRESSED AIR AND SHALL BE DRY PRIOR TO INSTALLATION OF ADHESIVE. HOLES SHALL BE FREE OF ALL DELETERIOUS MATERIAL SUCH AS LAITANCE, DUST, DIRT, AND OIL.
5. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
6. WHERE ADHESIVE ANCHORS ARE TO BE INSTALLED IN HOLLOW MATERIAL WITH UNKNOWN CAPACITY, THE CONTRACTOR SHALL INSTALL THE ANCHOR IN STRICT ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS. THE ADHESIVE SHALL BE INSTALLED IN THE HOLLOW BASE MATERIAL USING SCREEN TUBES SUPPLIED BY THE MANUFACTURER. THE ADHESIVE SHALL BE CAPABLE OF SUSTAINING MINIMUM TENSION AND SHEAR LOAD CAPACITIES NOTED ON THE DRAWINGS MULTIPLIED BY A FACTOR OF SAFETY OF 4. ALL HARDWARE AND MATERIAL SHALL BE SUPPLIED BY THE ANCHOR MANUFACTURER.
7. CONTRACTOR PERFORMING ADHESIVE WORK SHALL BE AN APPROVED CONTRACTOR BY THE MANUFACTURER FURNISHING THE ADHESIVE MATERIALS, AND SHALL HAVE NO LESS THAN FIVE YEARS EXPERIENCE IN THE VARIOUS TYPES OF ADHESIVE RELATED WORK REQUIRED IN THIS PROJECT. ALTERNATIVELY, THE CONTRACTOR SHALL ARRANGE FOR A REPRESENTATIVE OF THE ANCHOR MANUFACTURER TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHOR PRODUCTS SPECIFIED. DOCUMENTATION THAT ALL PERSONNEL INSTALLING ANCHORS ARE TRAINED SHALL BE SUBMITTED TO THE ENGINEER OF RECORD PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.
8. THE ULTIMATE TENSION AND SHEAR CAPACITIES SHALL BE DETERMINED BY A JOB SITE TEST PERFORMED ON A MINIMUM OF FIVE INSTALLED SAMPLES WHICH ARE REPRESENTATIVE OF THE ACTUAL INSTALLATIONS. TESTING SHALL BE PERFORMED BY THE ADHESIVE ANCHOR MANUFACTURER OR HIS APPROVED REPRESENTATIVE AND SHALL BE DOCUMENTED FOR THE DESIGN PROFESSIONAL.

REPRODUCTION

1. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HERE ON.

SYMBOL LEGEND

SYMBOL	MEANING
⊕—	SPOT ELEVATION. ELEVATION RELATIVE TO REFERENCE ELEVATION.
<No>	TOP OF FOOTING, GRADE BEAM, PILE CAP, OR DRILLED PIER. ELEVATION RELATIVE TO REFERENCE ELEVATION.
<No> <No>	STEP IN TOP OF FOOTING ELEVATION, SEE "TYPICAL STEP IN WALL FOOTING" DETAIL. ELEVATION RELATIVE TO REFERENCE ELEVATION.
No	DEPRESSED OR RAISED SLAB ELEVATION, SEE "TYPICAL STEP IN SLAB ON GRADE" DETAIL. ELEVATION RELATIVE TO REFERENCE ELEVATION.
[No]	TOP OF WALL OR PEDESTAL. ELEVATION RELATIVE TO REFERENCE ELEVATION.
(No) | [+No]	TOP OF STEEL/JOIST BEARING ELEVATION | TOP OF STEEL ABOVE STEEL/JOIST BEARING ELEVATION.
	SLOPED | STEPPED SLAB.
F#	SPREAD FOOTING TYPE, SEE SCHEDULE.
P#	CONCRETE PEDESTAL TYPE, SEE SCHEDULE.

ABBREVIATIONS

@	AT
&	AND
Ø	DIAMETER
AB	ANCHOR BOLTS
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADH	ADHESIVE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE
ARCH	ARCHITECT'S / ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/ or BOT	BOTTOM
BCX	BOTTOM CHORD EXTENSION
BFB	BOTTOM FLANGE BRACE
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BM	BEAM
BOS	BOTTOM OF STEEL
BRG	BEARING
BTWN	BETWEEN
CANT	CANTILEVER
CJ	CONTROL JOINT
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CTRD	CENTERED
d	NAILS (PENNY)
DBA	DEFORMED BAR ANCHOR
DEFL	DEFLECTION
DEPR	DEPRESSION / DEPRESSED
DET	DETAIL
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
EMBED	EMBEDDED / EMBEDMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FOM	FACE OF MASONRY
FOW	FACE OF WALL
FS	FAR SIDE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GT	GIRDER TRUSS
HD	HEADED
HI	HIGH
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
INT	INTERIOR
JT	JOINT
K	KIP(S)
KB	KNEE BRACE
KSI	KIPS PER SQUARE INCH
LB	LONG BAR
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO	LOW
LOC	LOCATION
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MC	MOMENT CONNECTION
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOW	MIDDLE OF WALL
MP	MASONRY PILASTER
NA or N/A	NOT APPLICABLE
No or #	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE HAND
PAF	POWDER ACTUATED FASTENER
PED	PEDESTAL
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
P-T	POST-TENSIONED
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
SB	SHORT BAR
SCHD	SCHEDULE
SIM	SIMILAR
SOG	SLAB ON GRADE
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
STIRR	STIRRUP(S)
STL	STEEL
STR	STRUCTURAL
T/	TOP
TCX	TOP CHORD EXTENSION
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
WWF	WELDED WIRE FABRIC
WP	WORK POINT

DUPLIN COUNTY
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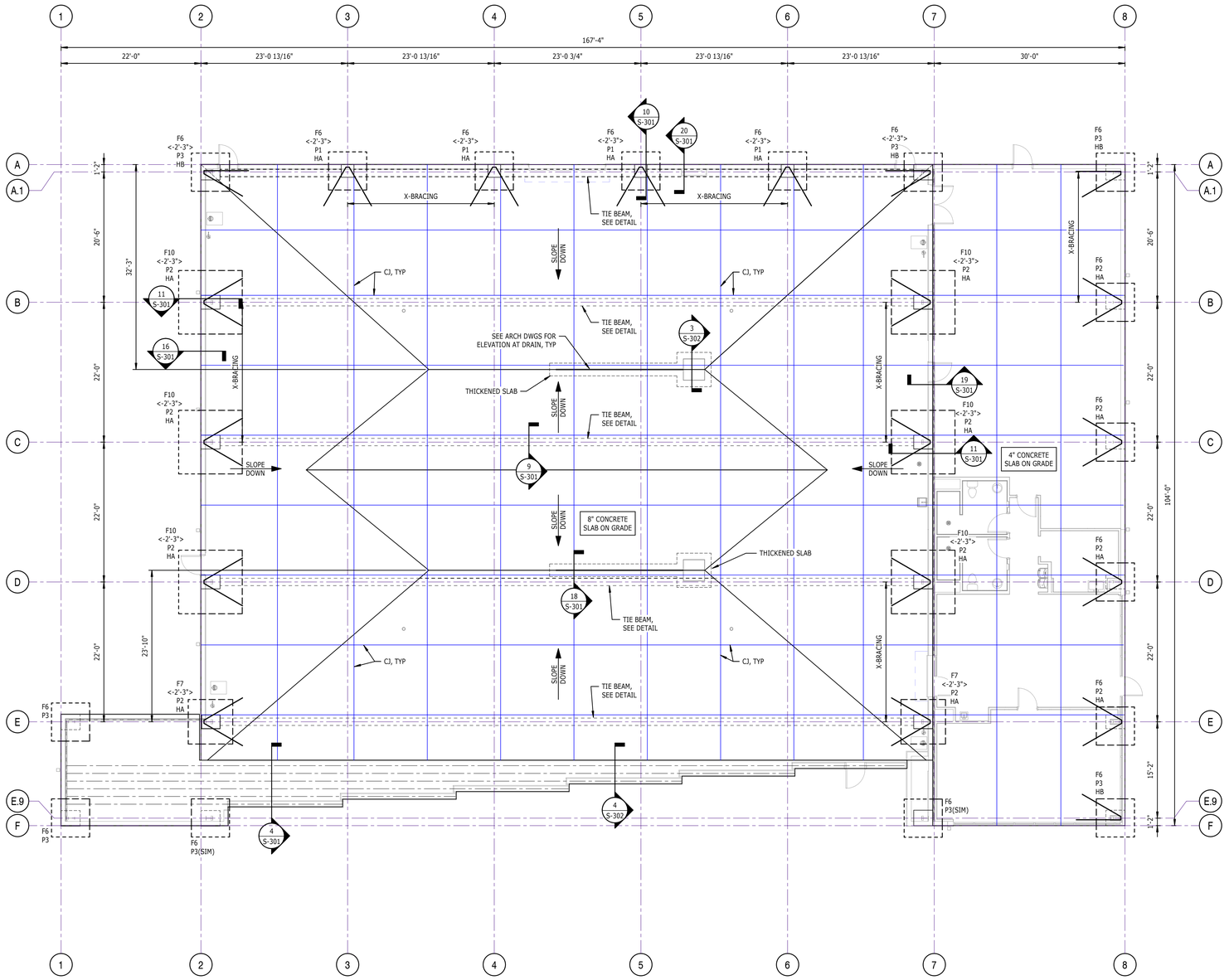
REVISIONS

DATE 03/28/25
PROJECT NUMBER 2418-000
SHEET TITLE

GENERAL NOTES AND ABBREVATIONS

SHEET NUMBER
S-001



1 S-101 FOUNDATION PLAN

1/8" = 1'-0"

FOUNDATION PLAN NOTES:

1. SEE S-001 SERIES FOR GENERAL NOTES, ABBREVIATIONS, AND SYMBOL LEGEND.
2. REFERENCE FINISHED FLOOR ELEVATION 0'-0". SEE CIVIL FOR SITE FINISHED FLOOR ELEVATION.
3. TOP OF FOOTING ELEVATION 2'-0" BELOW FINISHED FLOOR ELEVATION, UNO.
4. TOP OF PEDESTAL ELEVATION AT 0'-0", UNO.
5. FOR TYPICAL SLAB CONSTRUCTION DETAILS, SEE TYPICAL DETAILS.
6. FOOTING SIZES ARE BASED ON PRELIMINARY REACTIONS. FINAL FOOTING SIZES WILL BE PROVIDED BASED ON THE SUBMITTED PEMB SHOP DRAWINGS. CONTRACTOR TO PROVIDE A UNIT PRICE AT BID FOR A BLENDED COST PER CUBIC YARD OF CONCRETE FOOTING ADDED OR REDUCED. BLENDED RATE TO INCLUDE ALL COST ASSOCIATED WITH THE CHANGE IN FOOTING SIZE INCLUDING CONCRETE, REINFORCING, AND EXCAVATION.
7. REINFORCING SHOP DRAWINGS TO BE COMPLETED AFTER REVISED FOOTING SIZES ARE PROVIDED BASED ON FINALIZED PEMB SHOP DRAWINGS.
8. SLOPE EXTERIOR SLABS, SIDEWALKS, AND PAVING AS INDICATED ON THE ARCHITECTURAL DRAWINGS.
9. LATERAL BRACING AND CONNECTIONS BY PEMB SUPPLIER, TYP. COORDINATE BRACING GEOMETRY WITH ARCHITECTURAL DRAWINGS TO AVOID EXPOSED MEMBERS.

SPREAD FOOTING SCHEDULE

MARK	SIZE			REINFORCEMENT (EACH WAY)	
	WIDTH	LENGTH	DEPTH	TOP	BOTTOM
F6	6'-0"	6'-0"	1'-3"	(5)#6	(5)#6
F7	7'-0"	7'-0"	1'-3"	(6)#6	(6)#6
F10	10'-0"	10'-0"	2'-0"	(9)#7	(9)#7

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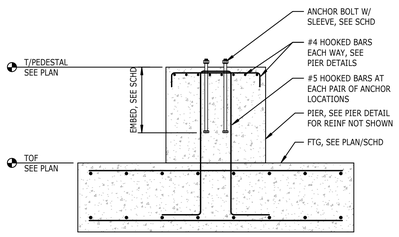
REVISIONS

DATE 02/17/25
PROJECT NUMBER 2418-000
SHEET TITLE

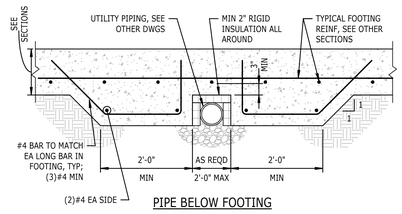
FOUNDATION PLAN

SHEET NUMBER

S-101

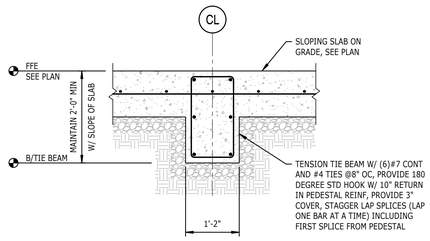


17 S-301 ANCHOR BOLT REINFORCING
3/4" = 1'-0"

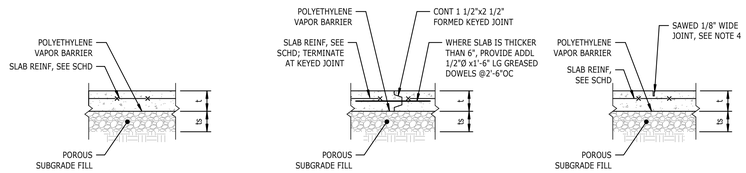


PIPE BELOW FOOTING

13 S-301 TYPICAL UTILITY BELOW FOOTING
3/4" = 1'-0"



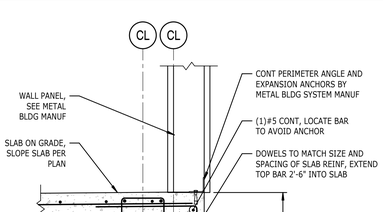
9 S-301 TYPICAL TENSION TIE BEAM
3/4" = 1'-0"



NOTES:
1. 't' DENOTES SLAB THICKNESS, SEE PLANS. 'ts' DENOTES POROUS SUBGRADE FILL THICKNESS, SEE "FOUNDATION" GENERAL NOTES.
2. LOCATION OF SLAB ON GRADE CONSTRUCTION JOINTS SHALL BE DETERMINED BY THE CONTRACTOR. JOINT LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. SEE PLANS FOR LOCATION OF CONTROL JOINTS. WHERE NOT SHOWN ON PLAN, CONTACT THE ENGINEER.
4. SAW CUT CONTROL JOINTS WITHIN 8 HOURS OF SLAB POUR. SEE SCHEDULE FOR DEPTH OF CONTROL JOINTS.
5. 15 MIL-THICK POLYETHYLENE VAPOR BARRIER TO BE PLACED UNDER ALL SLABS, TURNDOWNS, TRENCHES, TRENCH DRAINS, GRADE BEAMS, ETC.

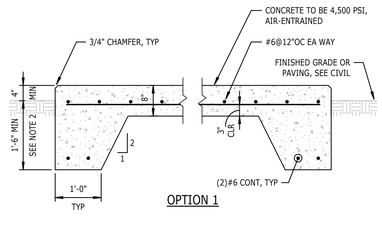
TYPICAL SLAB ON GRADE REINFORCING (UNO)			
t	REINFORCING	CLEAR COVER FROM TOP OF SLAB	SAWED CJ DEPTH
4"	6x6-W2.1xW2.1	1 1/2"	1"
8"	#4@12"OC EW	2 1/2"	2"

1 S-301 TYPICAL SLAB ON GRADE
1" = 1'-0"

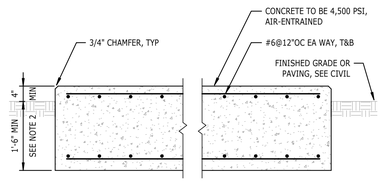


NOTES:
1. COORDINATE TRENCH LOCATIONS AND EXTENTS WITH MEP DRAWINGS.
2. SEE PLUMBING DRAWINGS FOR TRENCH COVER.

18 S-301 SECTION AT TRENCH DRAIN
3/4" = 1'-0"



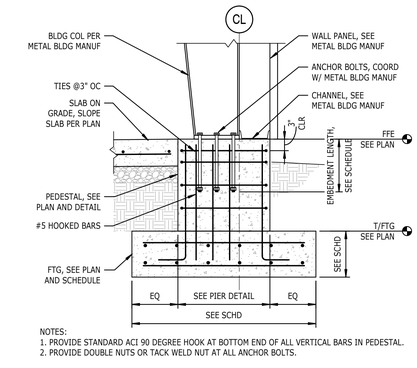
OPTION 1



OPTION 2

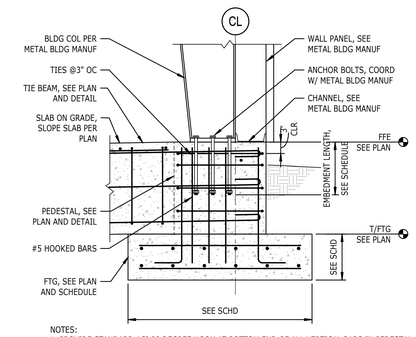
NOTES:
1. THE EXACT SIZE, SHAPE, AND LOCATION OF EQUIPMENT PADS SHALL BE DETERMINED BY THE CONTRACTOR AFTER APPROVAL OF EQUIPMENT SHOP DRAWINGS. ANCHOR BOLTS WHERE REQUIRED SHALL BE SIZED AND LOCATED ACCORDING TO MANUFACTURER'S REQUIREMENTS.
2. INCREASE DEPTH AS REQUIRED BY THE GEOTECHNICAL REPORT FOR AREA-SPECIFIC FREEZE-THAW DEPTHS.

14 S-301 TYPICAL EXTERIOR EQUIPMENT PAD
3/4" = 1'-0"



NOTES:
1. PROVIDE STANDARD ACI 90 DEGREE HOOK AT BOTTOM END OF ALL VERTICAL BARS IN PEDESTAL.
2. PROVIDE DOUBLE NUTS OR TACK WELD NUT AT ALL ANCHOR BOLTS.

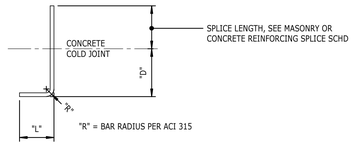
10 S-301 SECTION
TYPICAL COLUMN FTG AT STEEL COLUMN WITH PEDESTAL
NTS



NOTES:
1. PROVIDE STANDARD ACI 90 DEGREE HOOK AT BOTTOM END OF ALL VERTICAL BARS IN PEDESTAL.
2. PROVIDE DOUBLE NUTS OR TACK WELD NUT AT ALL ANCHOR BOLTS.

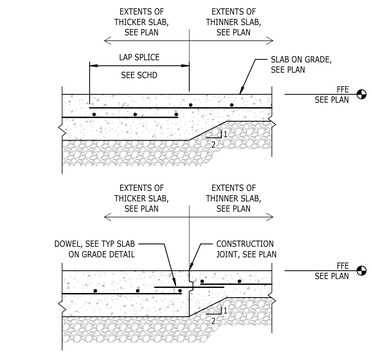
11 S-301 SECTION
TYPICAL COLUMN FTG AT STEEL COLUMN WITH PEDESTAL AND TIE BEAM
NTS

CONCRETE REINFORCING DOWEL EMBEDMENT				
BAR SIZE	LEG DIM, "L"	EMBEDMENT, "D"		
		f'c = 3,000 PSI	f'c = 4,000 PSI	f'c = 5,000 PSI
#3	6"	6"	6"	6"
#4	8"	8"	7"	6"
#5	10"	10"	9"	8"
#6	12"	12"	10"	9"
#7	14"	14"	12"	11"
#8	16"	16"	14"	12"
#9	19"	18"	15"	14"
#10	22"	20"	17"	15"
#11	24"	22"	19"	17"



NOTES:
1. FOR CONCRETE STRENGTHS NOT PROVIDED, USE THE EMBEDMENT LENGTH FOR THE LOWER CONCRETE STRENGTH AS SHOWN IN THE TABLE.
2. DOWEL LENGTHS BASED ON NORMAL WEIGHT CONCRETE. FOR LIGHT WEIGHT, INCREASE DOWEL LENGTH "D" BY 30%.
3. SIDE COVER ON BARS MUST BE GREATER THAN 2 1/2". END COVER ON 90° HOOKED BARS MUST BE GREATER THAN 2".
4. FOR EPOXY-COATED BARS, INCREASE THE DOWEL LENGTH "D" BY 20%.

2 S-301 DOWEL EMBEDMENT LENGTH SCHEDULE
3/4" = 1'-0"



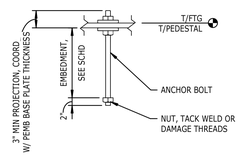
19 S-301 AT SLAB ON GRADE TRANSITION
3/4" = 1'-0"

NOTES:
1. PROVIDE STANDARD ACI 90 DEGREE HOOK AT BOTTOM END OF ALL VERTICAL BARS IN PEDESTAL.
2. PROVIDE DOUBLE NUTS OR TACK WELD NUT AT ALL ANCHOR BOLTS.

11 S-301 SECTION
TYPICAL COLUMN FTG AT STEEL COLUMN WITH PEDESTAL AND TIE BEAM
NTS

ANCHOR BOLT EMBEDMENT SCHEDULE	
ANCHOR BOLT DIAMETER	FTG/PEDESTAL EMBEDMENT DEPTH (MIN)
5/8" DIA	12"
3/4" DIA	18"
1" DIA	20"
1 1/4" DIA	20"

NOTE:
1. ANCHOR BOLT DIA, GRADE, LOCATION, AND PROJECTION BY BLDG MANUF.



7 S-301 STEEL COLUMN BASE PLATE SCHEDULE
NTS

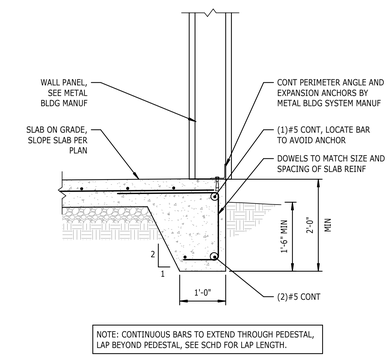
CONCRETE REINFORCING SPLICES			
BAR SIZE	f'c = 3,000 PSI	f'c = 4,000 PSI	f'c = 5,000 PSI
#3	1'-10"	1'-7"	1'-5"
#4	2'-4"	2'-1"	1'-10"
#5	3'-0"	2'-7"	2'-4"
#6	3'-7"	3'-1"	2'-9"
#7	5'-2"	4'-6"	4'-1"
#8	5'-11"	5'-2"	4'-8"
#9	6'-6"	5'-10"	5'-3"
#10	7'-6"	6'-6"	5'-10"
#11	8'-4"	7'-3"	6'-6"

NOTES:
1. FOR CLASS B LAP SPLICE, SPLICE LENGTH = 1.3 x DEVELOPMENT LENGTH.
2. APPLIES TO BOTTOM BARS ONLY (LESS THAN 12" OF FRESH CONCRETE BELOW BAR).
3. APPLIES WHERE THE CLEAR COVER IS GREATER THAN THE BAR DIAMETER.
4. WHEN MORE THAN 12" OF FRESH CONCRETE BELOW SPLICE, THEN INCREASE SPLICE TO 1.3 x SPLICE LENGTH.

3 S-301 CONCRETE REINFORCING SPLICE SCHEDULE
3/4" = 1'-0"

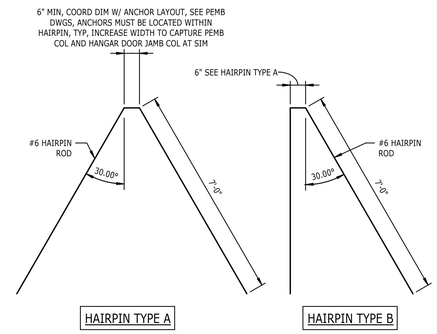
NOTE: CONTINUOUS BARS TO EXTEND THROUGH PEDESTAL, LAP BEYOND PEDESTAL, SEE SCHD FOR LAP LENGTH.

20 S-301 SECTION AT EXTERIOR WALL
3/4" = 1'-0"



NOTE: CONTINUOUS BARS TO EXTEND THROUGH PEDESTAL, LAP BEYOND PEDESTAL, SEE SCHD FOR LAP LENGTH.

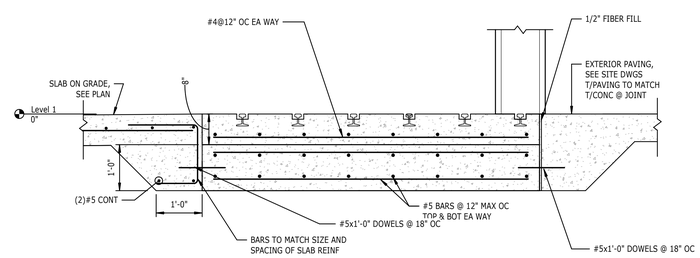
16 S-301 SECTION
SECTION AT EXTERIOR WALL
NTS



HAIRPIN TYPE A

HAIRPIN TYPE B

12 S-301 HAIRPIN DETAILS
NTS



4 S-301 SECTION
3/4" = 1'-0"

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NORTH CAROLINA

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FIRM LICENSE #F-1536
PROJECT #S25041

NORTH CAROLINA PROFESSIONAL SEAL 037387 ENGINEER CHRISTOPHER T. MCDAVID
03/28/2025

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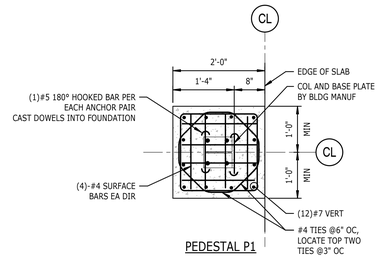
Charlotte, NC 28262

REVISIONS

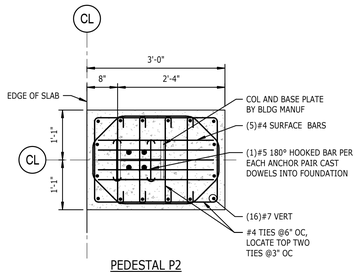
DATE 12/16/2022
PROJECT NUMBER 2418-000
SHEET TITLE

PEMB SECTIONS AND DETAILS

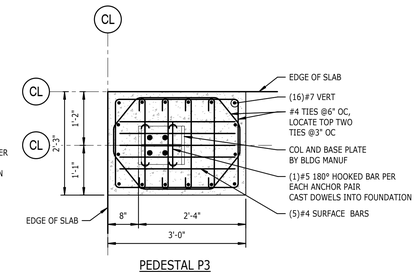
SHEET NUMBER
S-301



PEDESTAL P1



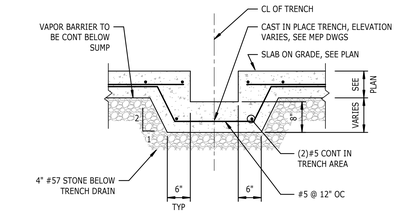
PEDESTAL P2



PEDESTAL P3

1 S-302 TYPICAL PEDESTAL PLANS

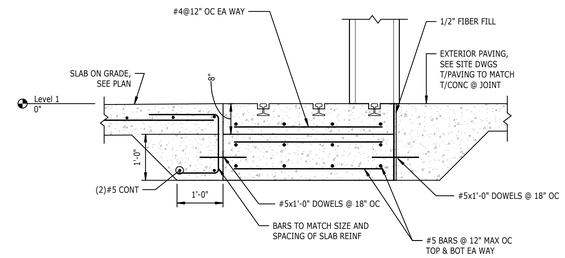
3/4" = 1'-0"



NOTES:
1. COORDINATE TRENCH LOCATIONS AND EXTENTS WITH MEP DRAWINGS.
2. SEE PLUMBING DRAWINGS FOR TRENCH COVER.

3 S-302 SECTION AT TRENCH DRAIN

3/4" = 1'-0"



4 S-302 SECTION

3/4" = 1'-0"

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NORTH CAROLINA

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NORTH CAROLINA PROFESSIONAL SEAL 043736 ENGINEER CHRISTOPHER HOPE

03/28/2025

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REVISIONS

DATE 03/30/23
PROJECT NUMBER 2418-000
SHEET TITLE

PEMB SECTIONS AND DETAILS

SHEET NUMBER

S-302

PARTITION NOTES

1. ALL GYPSUM WALL BOARD TO BE 5/8" TYPE 'X' U.N.O.
2. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TO COLUMN CENTER LINE, FACE OF GWB/STUD PARTITIONS, FACE OF MASONRY AND CONCRETE WALLS AND FACE OF EXISTING WALLS.
3. HOLD TOP OF PARTITION DOWN 1/2" FROM TOP RUNNER WHERE PARTITION EXTENDS TO STRUCTURE ABOVE.
4. ALL CAULK AND SEALANT SHALL BE CONTINUOUS.
5. ALL CMU WALLS AND SOUND RATED PARTITIONS SHALL EXTEND FROM FINISHED FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF STRUCTURE OR DECK AND BE ENTIRELY SEALED OFF U.N.O. ALL PENETRATIONS SUCH AS PIPING, CONDUITS, DUCTS, ETC. IN SUCH SEALED OFF WALLS OR PARTITIONS SHALL IN THEMSELVES BE PACKED AND SEALED OFF ALONG THE PERIMETER OF PENETRATION.
6. ALL FIRE AND/OR SMOKE PARTITIONS SHALL EXTEND FROM FINISH FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF THE STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH SAFEING MATERIAL ONLY. SAFEING MATERIAL SHALL BE HELD IN PLACE WITH A FIRE STOPPING MATERIAL ON BOTH SIDES, SUCH AS GYPSUM WALL BOARD OR UL LISTED FIRE PROOFING MATERIAL AND ASSEMBLY.
7. ALL SOUND RATED (STC) WALLS OR PARTITIONS SHALL HAVE CLOSURE GASKETS AT TOP, BOTTOM, AND SIDES WHERE A SOUND LEAK WOULD OTHERWISE EXIST.
8. STRUCTURAL STUDS (20 GA. MINIMUM) SHALL BE USED WHERE ANY NON-SELF-SUPPORTING WALL HUNG FIXTURES, EQUIPMENT, OR CABINETRY OCCUR AND SHALL EXTEND FROM FLOOR TO STRUCTURE ABOVE. SEE TYPICAL SUPPORT DETAILS FOR WALL MOUNTED ITEMS.
9. ALL METAL STUD FRAMED PARTITIONS SHALL BE BRACED ABOVE FINISHED CEILINGS. BRACING SHALL BE AS FOLLOWS:
   ATTACH A 3 5/8" OR 6" METAL STUD HORIZONTALLY AND CONTINUOUSLY TO PARTITION 8" MAXIMUM ABOVE FINISHED CEILING. PROVIDE 3 5/8" OR 6" METAL STUD KICKERS AT 45 DEGREE ANGLE TO STRUCTURE AT 4'-0" O.C.
10. KICKERS SHALL HAVE CLIP ANGLES (14 GA MIN.) WITH TWO 1/4" ANCHORS. ALL KICKER LOCATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES PERFORMING WORK ABOVE CEILING.
11. DO NOT FASTEN TOP RUNNER TO STUDS; CRIMP RUNNER ON BOTH SIDES OF STUD TO STABILIZE STUD.
12. SEE ROOM FINISH SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR FINISH MATERIALS SUCH AS TILE, PANELING, ETC. WHICH ARE NOT SHOWN OR INCLUDED IN THESE PARTITION TYPES.
13. WHERE PARTITION TYPES CHANGE IN A STRAIGHT RUN, THE EXPOSED OR MOST IMPORTANT EXPOSED FINISHED FACE, AND NOT NECESSARILY THE CENTERLINE OF STUDS, SHALL ALIGN. REVIEW CASES WHICH ARE UNCLEAR WITH THE ARCHITECT PRIOR TO CONSTRUCTION OF SUCH PARTITIONS.
14. WHERE ITEMS ARE RECESSED INTO RATED PARTITIONS, PROVIDE BOXING, INSULATION, ETC. AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING.
15. PURSUANT TO NCSBC 603 ALL WOOD PRODUCTS SHALL BE FIRE-RETARDANT TREATED (FRT), INCLUDING BUT NOT LIMITED TO WOOD BLOCKING, CABINETRY AND MILLWORK SUBSTRATES, AND EXPOSED PLYWOOD PANELS
16. WHERE SPECIALTY WALL PANEL SYSTEMS ARE TO BE APPLIED TO PARTITIONS, SHIMMING MAY BE REQUIRED TO ENSURE A FLUSH AND PLUMB INSTALLATION.
17. ELECTRICAL AND TELECOM ROOMS: IN ADDITION TO GWB AS SCHEDULED, WRAP ENTIRE ROOM IN 3/4" VIRGIN, VOID-FREE, FIRE-RATED PLYWOOD, FROM 0'-4" AFF TO 8'-0" AFF, LAG-BOLTED TO WALLS AT METAL STUD LOCATIONS. PAINT ALL WALL SURFACES AS SCHEDULED.
18. ALL CLOSETS ARE TO RECEIVE WOOD SHELVING AND ROD U.N.O.
19. PROVIDE FR SOLID WOOD BLOCKING IN WALL AS REQUIRED FOR MOUNTING OF CABINETS, GRAB BARS, TV'S, TOILET PARTITIONS AND ACCESSORIES, ETC. SEE PLANS AND ELEVATIONS FOR LOCATIONS OF WALL-MOUNTED BUILT-INS AND EQUIPMENT.
20. USE MOISTURE RESISTANT GWB AT ALL WET AREAS.
21. SEE STRUCTURAL FOR SHEAR WALL LOCATIONS AND INFORMATION. GC TO COORDINATE SHEATHING SIDE AND EXTENTS WITH ARCHITECTURAL AND STRUCTURAL.

METAL STUD GAUGES:	LOCATION	LENGTH	GAUGE
	PARTITION	UP TO 8'-0"	20 GAUGE
	PARTITION	UP TO 10'-0"	18 GAUGE
	PARTITION	UP TO 12'-0"	16 GAUGE
	PARTITION	GREATER THAN 12'-0"	SEE STRUCTURAL DRAWINGS.
	BULKHEAD	UP TO 8'-0"	25 GAUGE
	BULKHEAD	UP TO 8'-0"	20 GAUGE
	BULKHEAD	GREATER THAN 8'-0"	SEE SPECIFIC DETAILS AND/OR STRUCT. DRWGS.
	SOFFIT	UP TO 4'-0"	25 GAUGE
	SOFFIT	UP TO 8'-0"	25 GAUGE, SEE SPECIFIC DETAILS FOR SUPPORT
	SOFFIT	GREATER THAN 8'-0"	SUSPENDED SYSTEM MUST BE USED
	DOOR / WINDOW HEAD AND JAMB	U.N.O.	16 GA (2 STUDS AT ALL LOCATIONS)

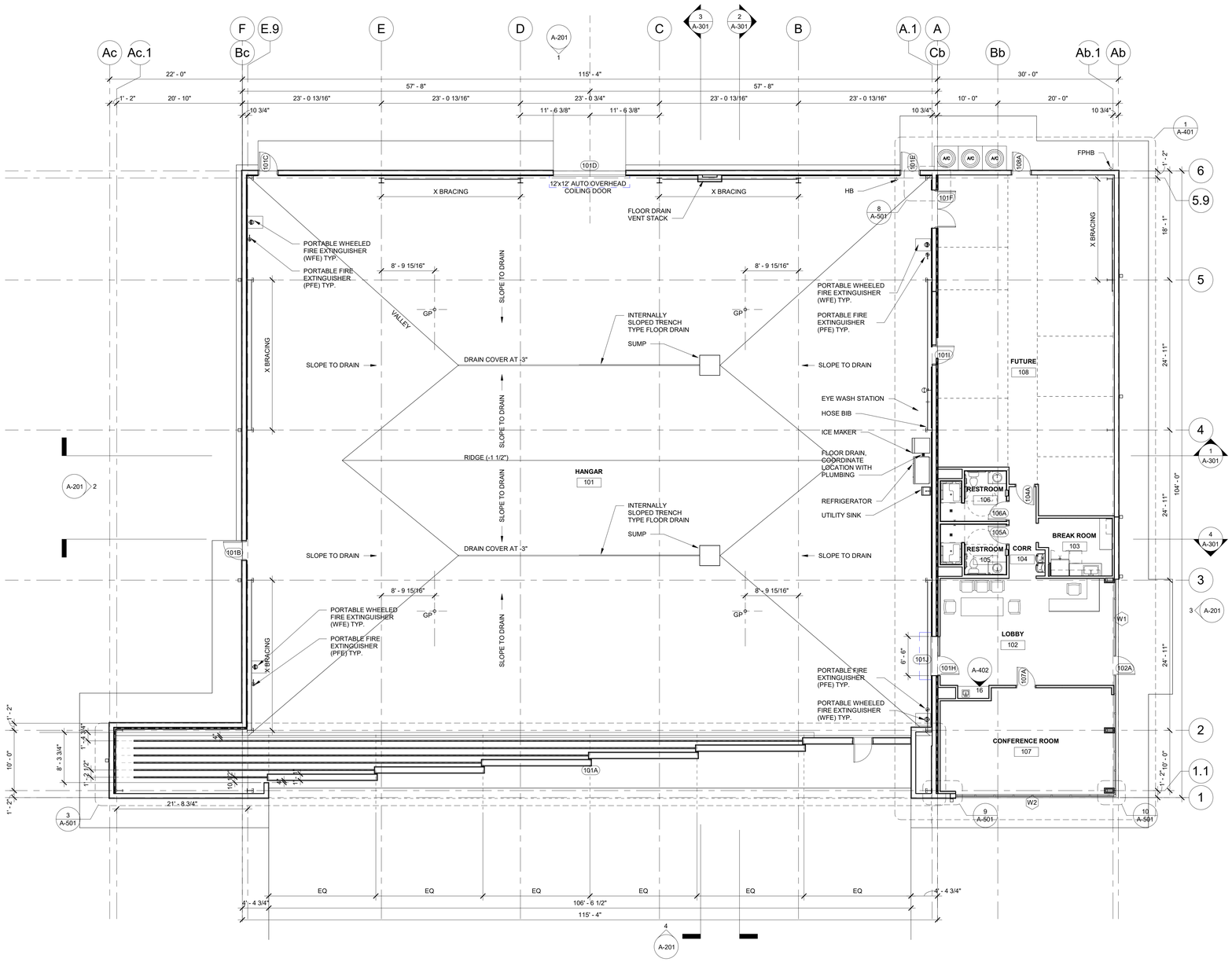
NOTE: U.L. AND STRUCTURAL REQUIREMENTS TAKE PRECEDENCE OVER THE ABOVE SPECIFICATIONS.

GENERAL NOTES - FLOOR PLAN

1. UNLESS NOTED OTHERWISE ALL INTERIOR DIMENSIONS ARE TO COLUMN CENTER LINE OR FACE OF GWB/STUD PARTITIONS.
2. SEE ENLARGED PLANS FOR PARTITION TAGS NOT IDENTIFIED ON THIS SHEET.
3. SEE SHEET xxxx FOR PARTITION TYPES AND ASSOCIATED PARTITION ITEMS..
4. EDGE OF SLAB AT BUILDING PERIMETER TO ALIGN WITH OUTSIDE FACE OF STUD/ CMU U.N.O.
5. SEE STRUCTURAL DRAWINGS FOR ALL E.O.S. DETAILS AND CONDITIONS.
6. PROVIDE FR BLOCKING AS REQUIRED AT LOCATIONS WITH WALL-MOUNTED EQUIPMENT. (TVs, MONITORS, CASEWORK, ETC.)

FLOOR PLAN LEGEND

- NON RATED WALL- SEE PARTITION TYPES
- 1 HOUR RATED WALL- SEE PARTITION TYPES
- 2 HOUR RATED WALL- SEE PARTITION TYPES
- THICKENED SLAB (SEE STRUCTURAL)
- SIDEWALK (SEE STRUCTURAL)



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

PLAN NORTH N

TRUE NORTH

DUPLIN COUNTY NORTH CAROLINA

Air Field Hangar Building

222 Airport Road,
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THE WILSON GROUP ARCHITECTS REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 51140 NORTH CAROLINA CHARLOTTE, N.C.

LEWIS WALKER PENCE REGISTERED ARCHITECT 9272 NORTH CAROLINA CHARLOTTE, N.C.

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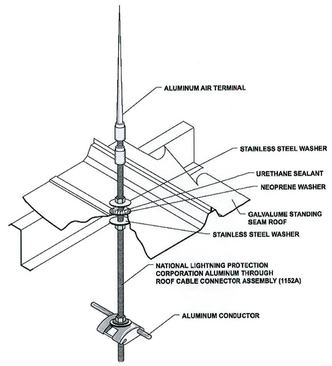
REVISIONS

DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

FIRST FLOOR PLAN

SHEET NUMBER
A-101



2 LIGHTNING ARREST
1" = 1'-0"

GENERAL NOTES - ROOF PLAN

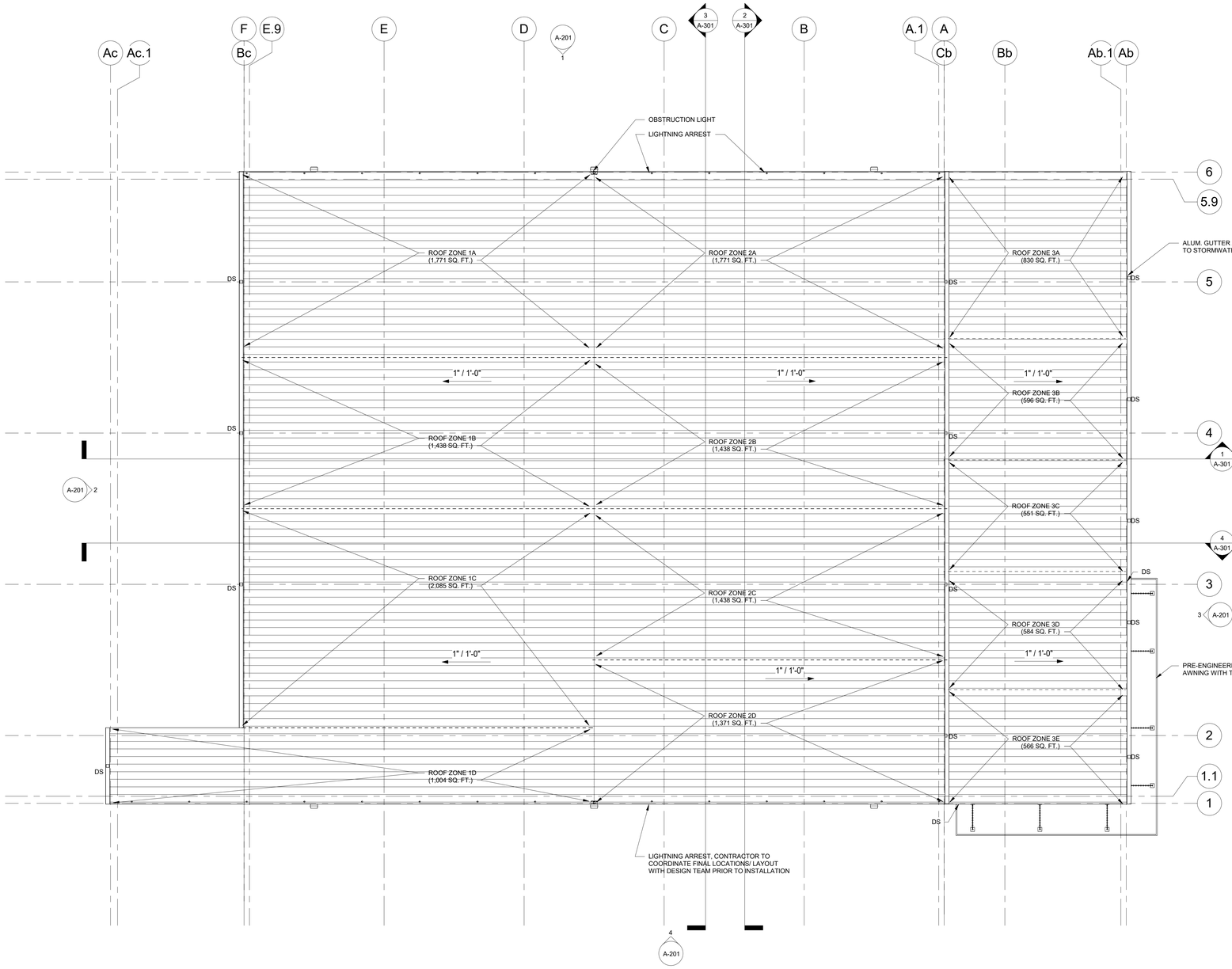
1. ROOF INSULATION SHALL MEET THE REQUIREMENTS OF SECTION 1508.1 OF THE NCSBC (2012).
2. ROOFTOP EQUIPMENT IS SHOWN FOR INTENT ONLY. SEE MECHANICAL DRAWINGS FOR SIZE, TYPE AND LOCATIONS.
3. CONTRACTOR TO PROVIDE SOUND/ VIBRATION ISOLATION BASE FOR ALL ROOFTOP EQUIPMENT.
4. SEE DETAIL 2/A-102 FOR LIGHTNING ARREST MOUNTING DETAILS
5. ALL ROOF PENETRATIONS TO MATCH COLOR OF ROOF PANELS

ROOF DRAINAGE CALCULATIONS

(X) DRAINAGE AREA		GUTTER SIZE REQUIRED	GUTTER SIZE PROVIDED	DOWNSPOUT SIZE REQUIRED	DOWNSPOUT SIZE PROVIDED
1A (2A)	1,771 SQ. F.T.	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	2.75"x4.75"	6"x6"
1B (2B) 2C	1,438 SQ. F.T.	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	2.75"x4.75"	6"x6"
1C	2,085 SQ. F.T.	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	2.75"x4.75"	6"x6"
1D	1,004 SQ. F.T.	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	2.75"x4.75"	6"x6"
2D	1,371 SQ. F.T.	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	2.75"x4.75"	6"x6"
3A	830 SQ. F.T. (+2A ABOVE)	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	3.75"x5.0"	6"x6"
3B	596 SQ. F.T. (+2B ABOVE)	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	3.75"x5.0"	6"x6"
3C	551 SQ. F.T. (+2C ABOVE)	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	3.75"x5.0"	6"x6"
3D	584 SQ. F.T. (+2D ABOVE)	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	3.75"x5.0"	6"x6"
3E	566 SQ. F.T. (+2E ABOVE)	7"Wx5.5"D (20'-0")	8"Wx8"D (20'-0")	3.75"x5.0"	6"x6"

1. PRIMARY ROOF DRAIN 4"/HR PER P1106.1
2. SEE PLUMBING DRAWINGS FOR MORE INFORMATION.

DSP- ALUM DOWNSPOUT



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

PLAN NORTH N

TRUE NORTH N

SHEET NUMBER
A-102

DUPLIN COUNTY
NORTH CAROLINA

Air Field Hangar Building

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DATE 03-28-2025
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SHEET TITLE

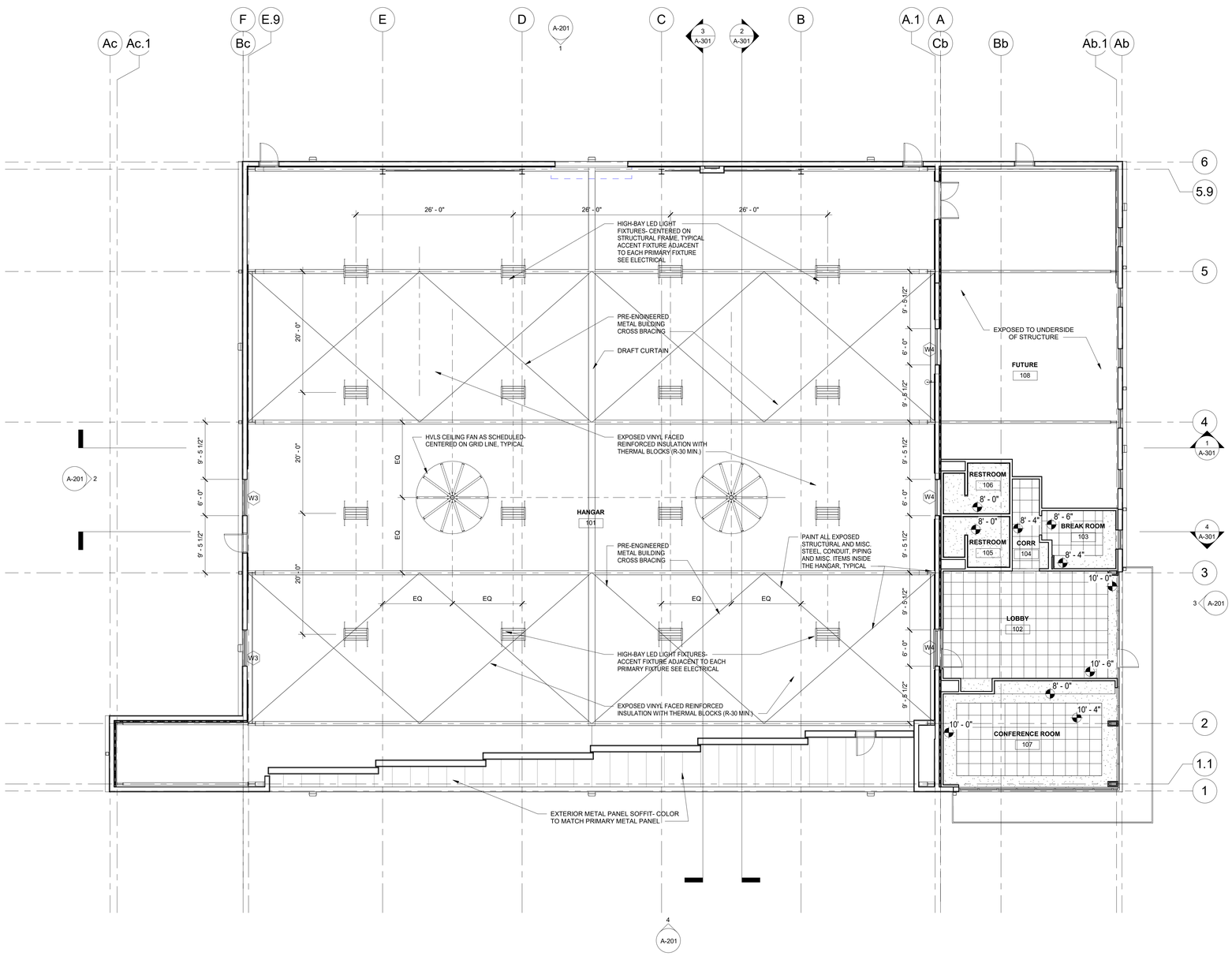
ROOF PLAN

GENERAL NOTES - CEILING

1. SEE MECHANICAL DRAWINGS FOR DIFFUSER LOCATIONS AND OTHER MECHANICAL CEILING DEVISES.
2. SEE ELECTRICAL DRAWINGS FOR LIGHTING LOCATIONS AND OTHER ELECTRICAL CEILING DEVISES.
3. ALL CEILING HEIGHTS ARE AT 10'-0" A.F.F. UNLESS NOTED OTHERWISE.
4. ALL CEILING DEVICES, INCLUDING DOWNLIGHTS, HVAC GRILLES SMALLER THAN 2x2 FEET, ARE TO BE CENTERED IN CEILING TILE UNLESS NOTED OTHERWISE. CONTRACTOR TO REVIEW ALL CONFLICTS WITH ARCHITECT PRIOR TO INSTALLATION.
5. CENTER EXIT SIGNS OVER DOORS UNLESS NOTED OTHERWISE.
6. CONTRACTOR SHALL COORDINATE WITH ALL TRADES INVOLVED, INCLUDING PREPARATION OF COORDINATION DRAWINGS, TO ENSURE CLEARANCES FOR FIXTURES, DUCTWORK, CEILINGS, ETC. AS NECESSARY TO MAINTAIN THE INDICATED FINISHED CEILING / FIXTURE MOUNTING HEIGHT.
7. DIMENSIONS ARE TO CENTER LINE OF FIXTURES U.N.O.
8. PERIMETER CEILING GRID ANGLE, WHERE IT OCCURS, SHALL BE TIGHT TO FINISHED FACE OF PARTITION SURFACES, FREE FROM CURVES, GAPS, BREAKS, AND OTHER IRREGULARITIES..
9. SUSPENDED CEILING PANEL SIZE: NO SMALLER THAN 4 INCHES. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS PRIOR TO INSTALLATION.
10. CENTER CEILING SYSTEMS IN ROOMS BOTH DIRECTIONS UNLESS OTHERWISE NOTED.

CEILING PLAN LEGEND

- LIGHT FIXTURE
- HIGH-BAY LED LIGHT FIXTURE
- EXHAUST/SUPPLY FAN
- WALL-MOUNTED LIGHT
- GYPSUM WALL BOARD CEILING- SEE FINISH SCHEDULE
- GAS-FIRED INFRARED HEATER
- HVLS CEILING FAN
- APC CEILING - SEE FINISH SCHEDULE
- STRIP DOWNLIGHT- 48"



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

PLAN NORTH N

TRUE NORTH

SHEET NUMBER
A-111

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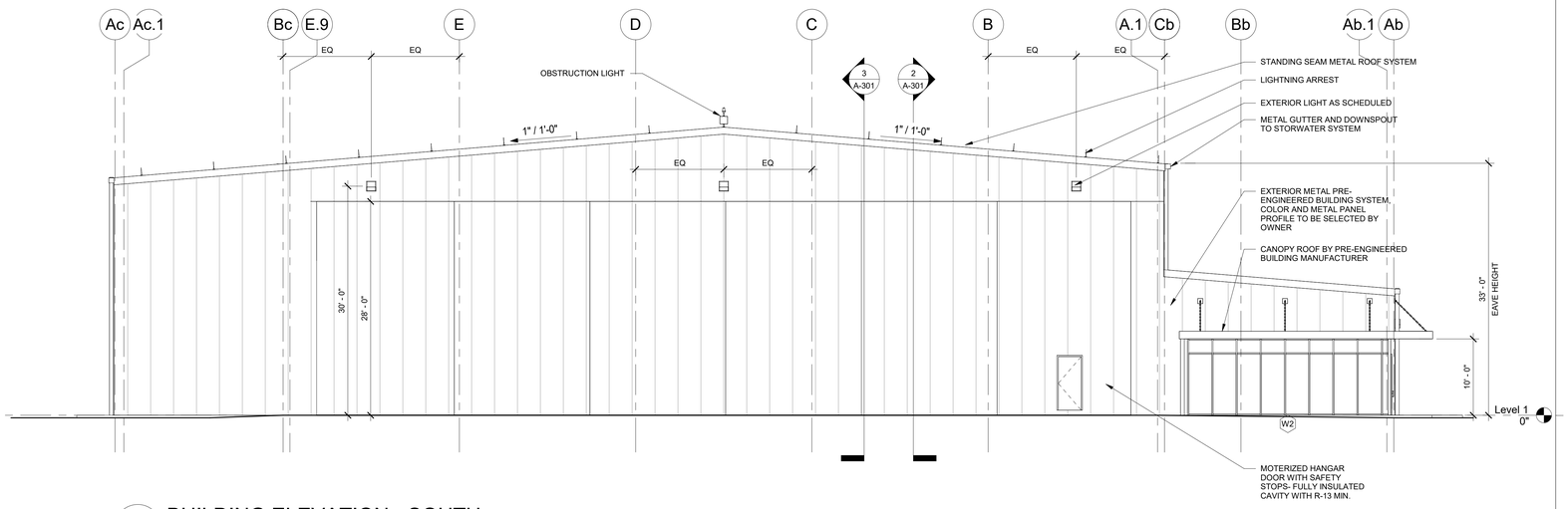
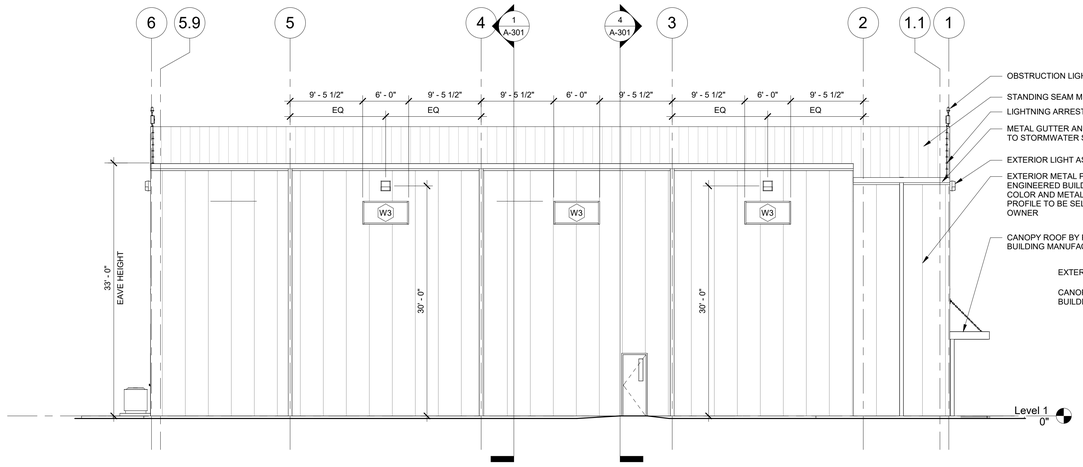
FIRST FLOOR CEILING PLAN



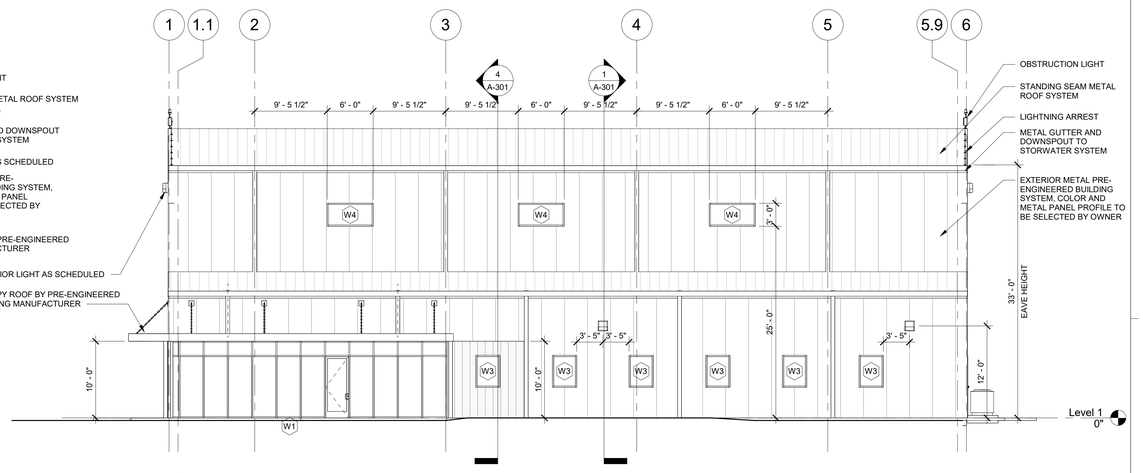
4 BUILDING ELEVATION - SOUTH

1/8" = 1'-0"



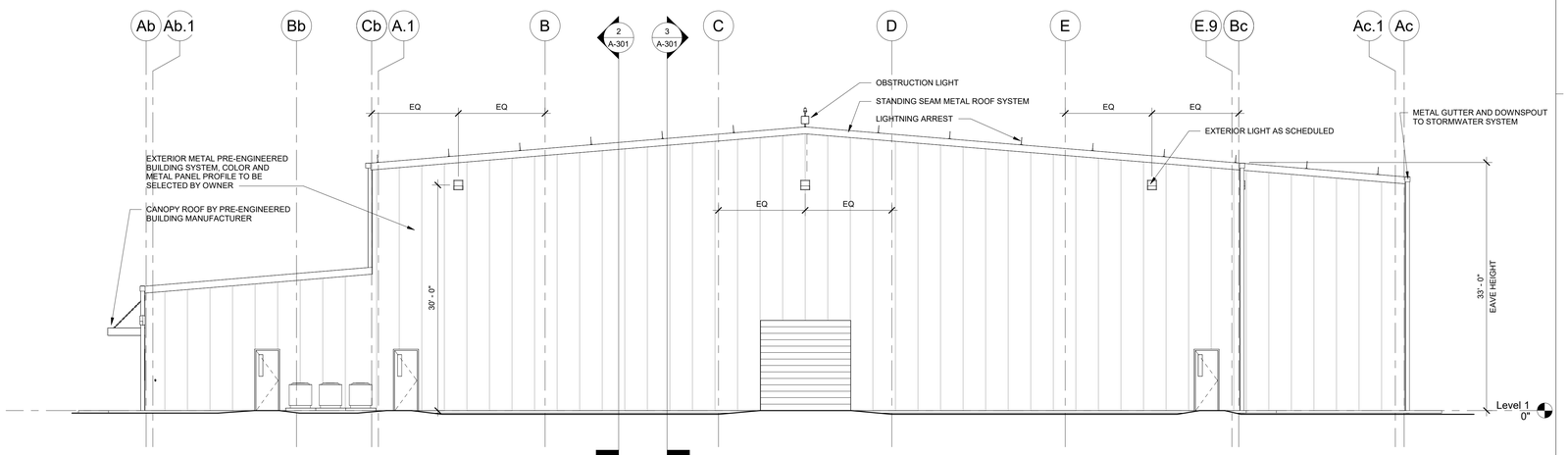
2 BUILDING ELEVATION - WEST

1/8" = 1'-0"



3 BUILDING ELEVATION - EAST

1/8" = 1'-0"



1 BUILDING ELEVATION - NORTH

1/8" = 1'-0"

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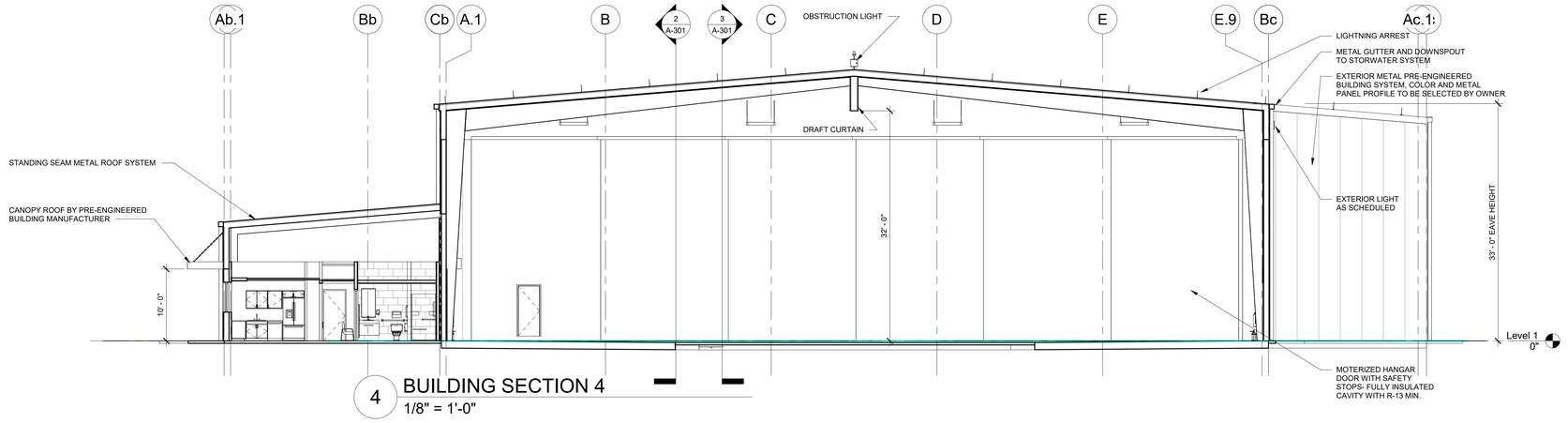
SHEET TITLE

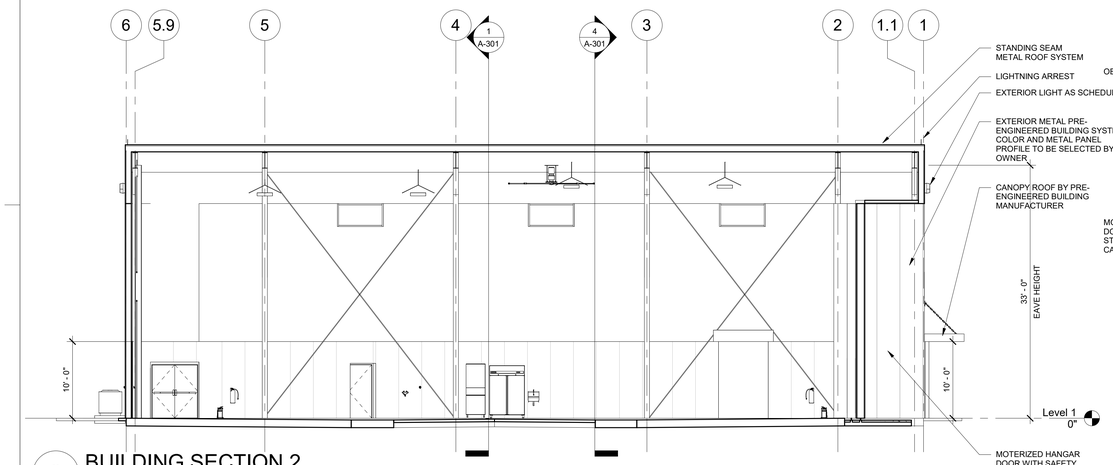
BUILDING ELEVATIONS

SHEET NUMBER

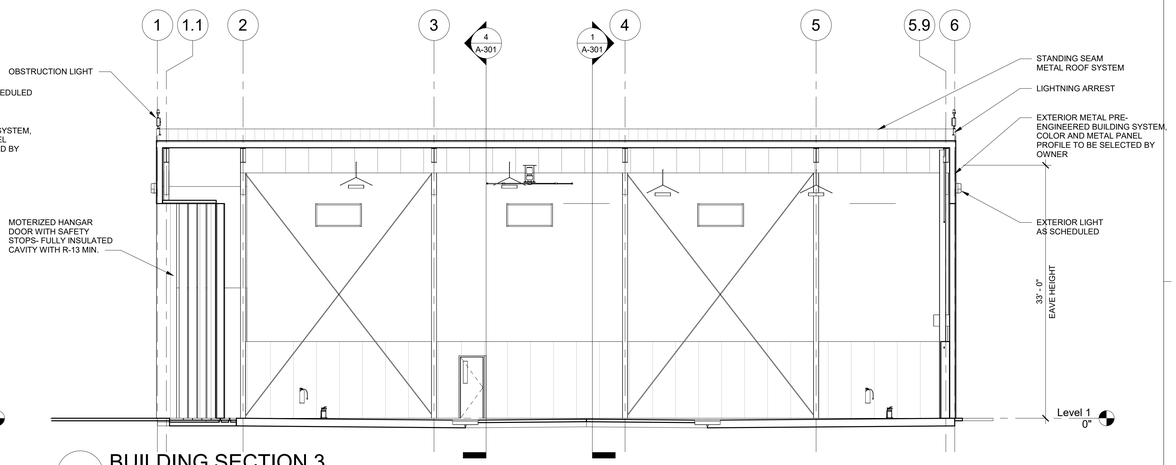
A-201



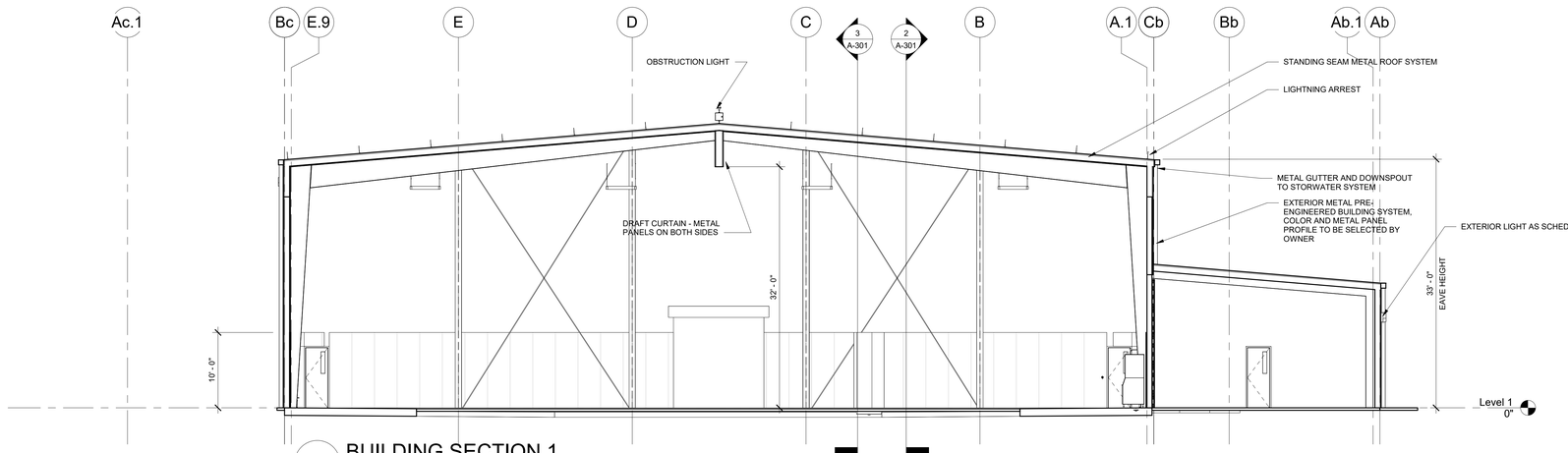
4 BUILDING SECTION 4
1/8" = 1'-0"



2 BUILDING SECTION 2
1/8" = 1'-0"



3 BUILDING SECTION 3
1/8" = 1'-0"



1 BUILDING SECTION 1
1/8" = 1'-0"

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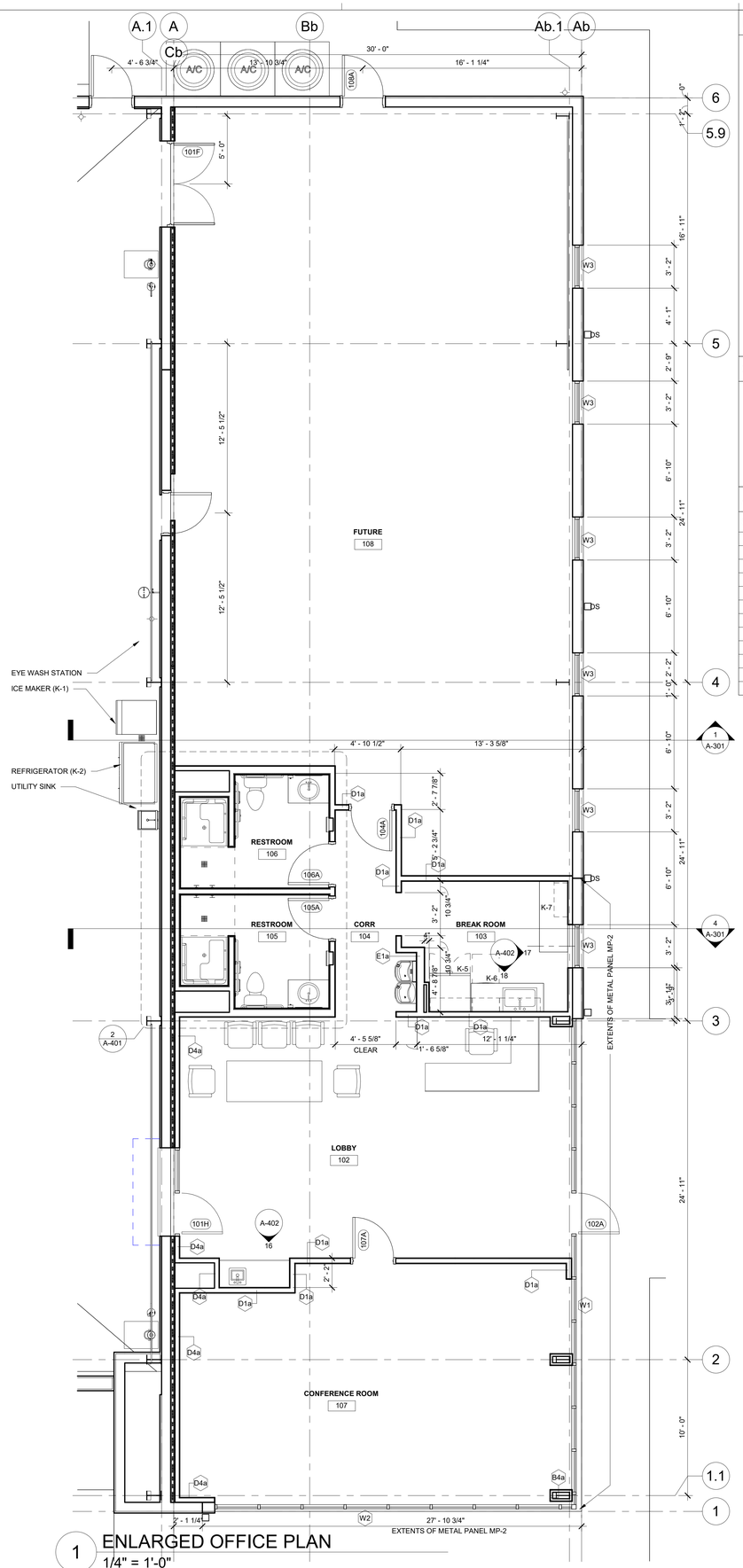
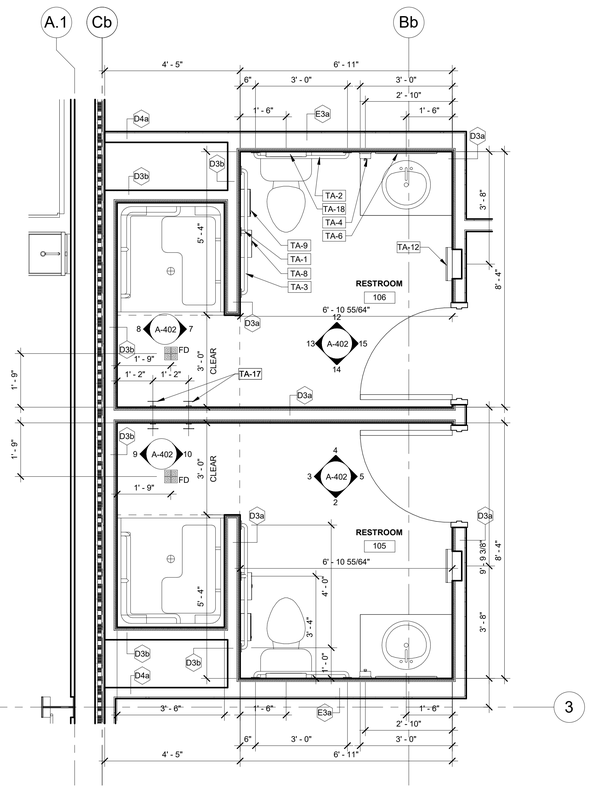
BUILDING SECTIONS

SHEET NUMBER

A-301



1 ENLARGED OFFICE PLAN
1/4" = 1'-0"



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

PARTITION NOTES

1. ALL GYPSUM WALL BOARD TO BE 5/8" TYPE 'X' U.N.O.
2. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TO COLUMN CENTER LINE, FACE OF GWB/STUD PARTITIONS, FACE OF MASONRY AND CONCRETE WALLS AND FACE OF EXISTING WALLS.
3. HOLD TOP OF PARTITION DOWN 1/2" FROM TOP RUNNER WHERE PARTITION EXTENDS TO STRUCTURE ABOVE.
4. ALL CAULK AND SEALANT SHALL BE CONTINUOUS.
5. ALL CMU WALLS AND SOUND RATED PARTITIONS SHALL EXTEND FROM FINISHED FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF STRUCTURE OR DECK AND BE ENTIRELY SEALED OFF U.N.O. ALL PENETRATIONS SUCH AS PIPING, CONDUITS, DUCTS, ETC. IN SUCH SEALED OFF WALLS OR PARTITIONS SHALL IN THEMSELVES BE PACKED AND SEALED OFF ALONG THE PERIMETER OF PENETRATION.
6. ALL FIRE AND/OR SMOKE PARTITIONS SHALL EXTEND FROM FINISH FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF THE STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH SAFEING MATERIAL ONLY. SAFEING MATERIAL SHALL BE HELD IN PLACE WITH A FIRE STOPPING MATERIAL ON BOTH SIDES, SUCH AS GYPSUM WALL BOARD OR UL LISTED FIRE PROOFING MATERIAL AND ASSEMBLY.
7. ALL SOUND RATED (STC) WALLS OR PARTITIONS SHALL HAVE CLOSURE GASKETS AT TOP, BOTTOM, AND SIDES WHERE A SOUND LEAK WOULD OTHERWISE EXIST.
8. STRUCTURAL STUDS (20 GA. MINIMUM) SHALL BE USED WHERE ANY NON-SELF-SUPPORTING WALL HUNG FIXTURES, EQUIPMENT, OR CABINETRY OCCUR AND SHALL EXTEND FROM FLOOR TO STRUCTURE ABOVE. SEE TYPICAL SUPPORT DETAILS FOR WALL MOUNTED ITEMS.
9. ALL METAL STUD FRAMED PARTITIONS SHALL BE BRACED ABOVE FINISHED CEILINGS. BRACING SHALL BE AS FOLLOWS:
   ATTACH A 3 5/8" OR 6" METAL STUD HORIZONTALLY AND CONTINUOUSLY TO PARTITION 8" MAXIMUM ABOVE FINISHED CEILING. PROVIDE 3 5/8" OR 6" METAL STUD KICKERS AT 45 DEGREE ANGLE TO STRUCTURE AT 4'-0" O.C.
10. KICKERS SHALL HAVE CLIP ANGLES (14 GA MIN.) WITH TWO 1/4" ANCHORS. ALL KICKER LOCATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES PERFORMING WORK ABOVE CEILING.
11. DO NOT FASTEN TOP RUNNER TO STUDS; CRIMP RUNNER ON BOTH SIDES OF STUD TO STABILIZE STUD.
12. SEE ROOM FINISH SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR FINISH MATERIALS SUCH AS TILE, PANELING, ETC. WHICH ARE NOT SHOWN OR INCLUDED IN THESE PARTITION TYPES.
13. WHERE PARTITION TYPES CHANGE IN A STRAIGHT RUN, THE EXPOSED OR MOST IMPORTANT EXPOSED FINISHED FACE, AND NOT NECESSARILY THE CENTERLINE OF STUDS, SHALL ALIGN. REVIEW CASES WHICH ARE UNCLEAR WITH THE ARCHITECT PRIOR TO CONSTRUCTION OF SUCH PARTITIONS.
14. WHERE ITEMS ARE RECESSED INTO RATED PARTITIONS, PROVIDE BOXING, INSULATION, ETC. AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING.
15. PURSUANT TO NCSBC 603 ALL WOOD PRODUCTS SHALL BE FIRE-RETARDANT TREATED (FRT), INCLUDING BUT NOT LIMITED TO WOOD BLOCKING, CABINETRY AND MILLWORK SUBSTRATES, AND EXPOSED PLYWOOD PANELS
16. WHERE SPECIALTY WALL PANEL SYSTEMS ARE TO BE APPLIED TO PARTITIONS, SHIMMING MAY BE REQUIRED TO ENSURE A FLUSH AND PLUMB INSTALLATION.
17. ELECTRICAL AND TELECOM ROOMS: IN ADDITION TO GWB AS SCHEDULED, WRAP ENTIRE ROOM IN 3/4" VIRGIN, VOID-FREE, FIRE-RATED PLYWOOD, FROM 0'-4" AFF TO 8'-0" AFF, LAG-BOLTED TO WALLS AT METAL STUD LOCATIONS. PAINT ALL WALL SURFACES AS SCHEDULED.
18. ALL CLOSETS ARE TO RECEIVE WOOD SHELVING AND ROD U.N.O.
19. PROVIDE FR SOLID WOOD BLOCKING IN WALL AS REQUIRED FOR MOUNTING OF CABINETS, GRAB BARS, TV'S, TOILET PARTITIONS AND ACCESSORIES, ETC. SEE PLANS AND ELEVATIONS FOR LOCATIONS OF WALL-MOUNTED BUILT-INS AND EQUIPMENT.
20. USE MOISTURE RESISTANT GWB AT ALL WET AREAS.
21. SEE STRUCTURAL FOR SHEAR WALL LOCATIONS AND INFORMATION. GC TO COORDINATE SHEATHING SIDE AND EXTENTS WITH ARCHITECTURAL AND STRUCTURAL.

METAL STUD GAUGES:	LOCATION	LENGTH	GAUGE
	PARTITION	UP TO 8'-0"	20 GAUGE
	PARTITION	UP TO 10'-0"	18 GAUGE
	PARTITION	UP TO 12'-0"	16 GAUGE
	PARTITION	GREATER THAN 12'-0"	SEE STRUCTURAL DRAWINGS.
	BULKHEAD	UP TO 8'-0"	25 GAUGE
	BULKHEAD	UP TO 8'-0"	20 GAUGE
	BULKHEAD	GREATER THAN 8'-0"	SEE SPECIFIC DETAILS AND/OR STRUCT. DRWGS.
	SOFFIT	UP TO 4'-0"	25 GAUGE
	SOFFIT	UP TO 8'-0"	25 GAUGE, SEE SPECIFIC DETAILS FOR SUPPORT
	SOFFIT	GREATER THAN 8'-0"	SUSPENDED SYSTEM MUST BE USED
	DOOR / WINDOW HEAD AND JAMB	U.N.O.	16 GA (2 STUDS AT ALL LOCATIONS)

NOTE: U.L. AND STRUCTURAL REQUIREMENTS TAKE PRECEDENCE OVER THE ABOVE SPECIFICATIONS.

GENERAL NOTES - FLOOR PLAN

1. UNLESS NOTED OTHERWISE ALL INTERIOR DIMENSIONS ARE TO COLUMN CENTER LINE OR FACE OF GWB/STUD PARTITIONS.
2. SEE ENLARGED PLANS FOR PARTITION TAGS NOT IDENTIFIED ON THIS SHEET.
3. SEE SHEET xxxx FOR PARTITION TYPES AND ASSOCIATED PARTITION ITEMS..
4. EDGE OF SLAB AT BUILDING PERIMETER TO ALIGN WITH OUTSIDE FACE OF STUD/ CMU U.N.O.
5. SEE STRUCTURAL DRAWINGS FOR ALL E.O.S. DETAILS AND CONDITIONS.
6. PROVIDE FR BLOCKING AS REQUIRED AT LOCATIONS WITH WALL-MOUNTED EQUIPMENT. (TVs, MONITORS, CASEWORK, ETC.)

APPLIANCE LEGEND

SYMBOL	DESCRIPTION	BASIS OF DESIGN
K-1	ICE MAKER	SCOTSMAN C0530SA-1D PRODIGY- STAINLESS STEEL
K-2	REFRIGERATOR/ FREEZER	TURBO AIR M3RF45-2-N 50"
K-5	REFRIGERATOR/ FREEZER	SAMSUNG 4 DOOR RF28R7201SF/AA- STAINLESS STEEL
K-6	DISHWASHER	SAMSUNG 24" DW80R2031US- STAINLESS STEEL
K-7	COUNTERTOP MICROWAVE	SAMSUNG 1000W MG11H2020CT- STAINLESS STEEL
K-8	TELEVISION DISPLAYS	LG 60" LED 2160P SMART 4K UHD W/ HDR 60UM6900PUA- BLACK

TOILET ACCESSORY LEGEND AND NOTES

SYMBOL	DESCRIPTION	MODEL
TA-1	18" GRAB BAR	BOBRICK B-5806.99X18
TA-2	36" GRAB BAR	BOBRICK B-5806.99X36
TA-3	42" GRAB BAR	BOBRICK B-5806.99X42
TA-4	SURFACE-MOUNTED HAND SOAP DISPENSER	BOBRICK B-2111
TA-6	24" X 48" SIDE EDGE LIGHTED MIRROR- SEE ELECTRICAL	MATRIX MIRRORS- L4 (2700K)
TA-8	SURFACE-MOUNTED TOILET TISSUE DISPENSER	BOBRICK B-2890
TA-9	SURFACE-MOUNTED SANITARY NAPKIN DISPOSAL	BOBRICK B-254
TA-12	SEMI RECESSED PAPER TOWEL DISPENSER/ DISPOSAL	BOBRICK B-38032
TA-14	SHOWER CURTAIN AND ROD	BOBRICK B-204
TA-15	PREFABRICATED ADA SHOWER WITH GRAB BARS, FOLDING SEAT AND ACCESSIBLE CONTROLS	COMFORT DESIGN SSS 3637BF 3P RRF
TA-17	DOUBLE ROBE HOOK	BOBRICK B-672
TA-21	MOP/ BROOM HOLDER	BOBRICK B-223

1. ALL MODELS ARE BASIS OF DESIGN
2. ALL WALLS/ PARTITIONS WITHIN 2'-0" FROM SINKS, URINALS AND WATER CLOSETS SHALL MEET THE REQUIREMENTS OF NCSBC SECTION 1210.2

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ENLARGED PLANS

PLAN NORTH
TRUE NORTH

SHEET NUMBER
A-401

TOILET ACCESSORY LEGEND AND NOTES

SYMBOL	DESCRIPTION	MODEL
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TA-3	42" GRAB BAR	BOBRICK B-5806.99X42
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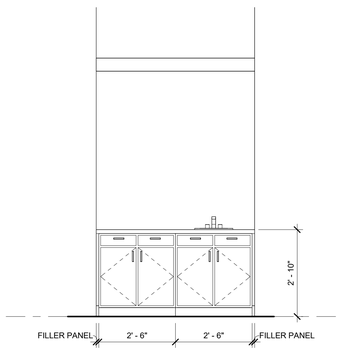
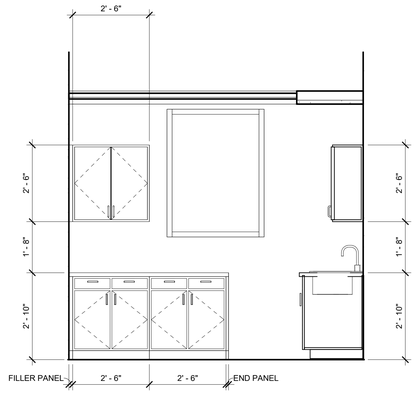
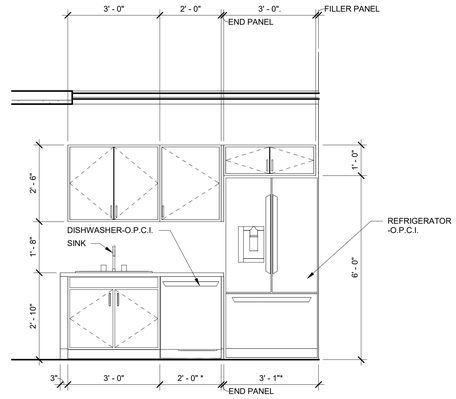
1. ALL MODELS ARE BASIS OF DESIGN
2. ALL WALLS/ PARTITIONS WITHIN 2'-0" FROM SINKS, URINALS AND WATER CLOSETS SHALL MEET THE REQUIREMENTS OF NCSBC SECTION 1210.2



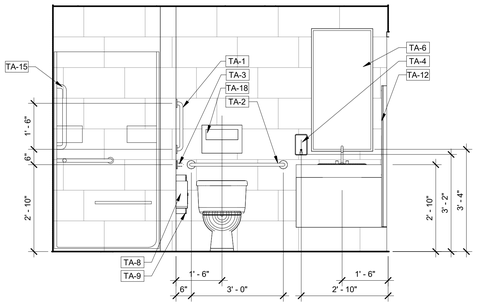
16 ROOM 102
1/2" = 1'-0"



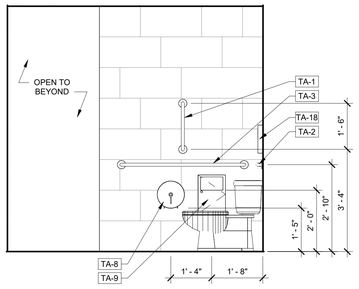
17 ROOM 103 - EAST
1/2" = 1'-0"



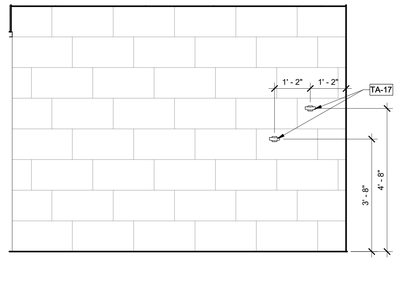
18 ROOM 103 - SOUTH
1/2" = 1'-0"



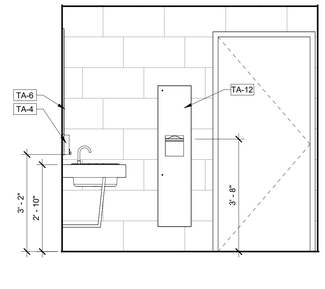
12 ROOM 106 - NORTH
1/2" = 1'-0"



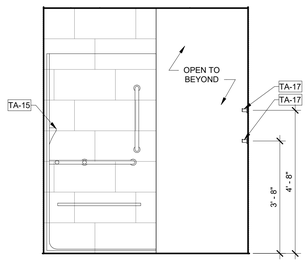
13 ROOM 106 - WEST
1/2" = 1'-0"



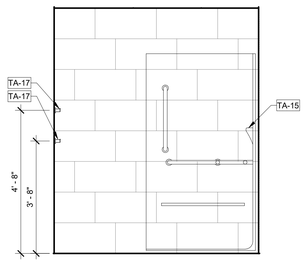
14 ROOM 106 - SOUTH
1/2" = 1'-0"



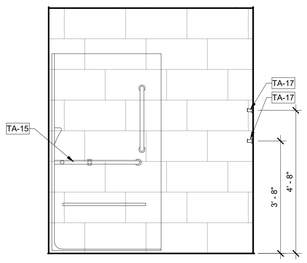
15 ROOM 106 - EAST
1/2" = 1'-0"



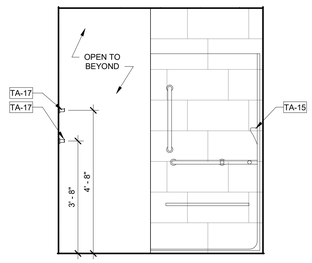
7 ROOM 106 - EAST 2
1/2" = 1'-0"



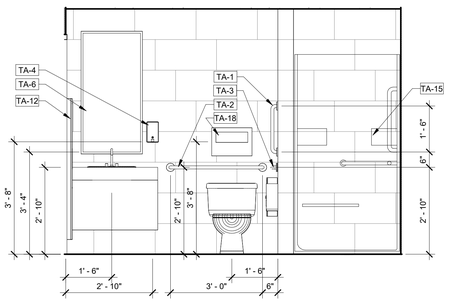
8 ROOM 106 - WEST 2
1/2" = 1'-0"



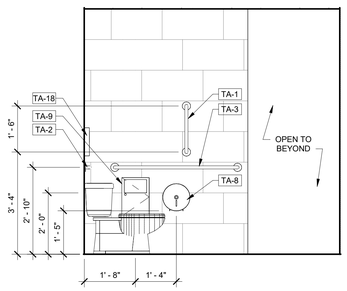
9 ROOM 105 - WEST 2
1/2" = 1'-0"



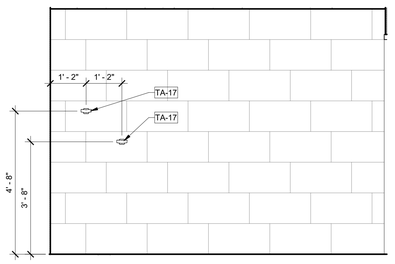
10 ROOM 105 - EAST 2
1/2" = 1'-0"



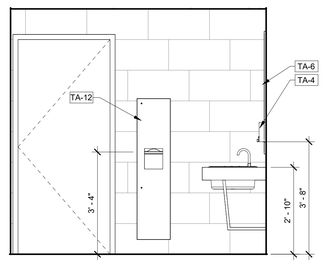
2 ROOM 105 - SOUTH
1/2" = 1'-0"



3 ROOM 105 - WEST
1/2" = 1'-0"



4 ROOM 105 - NORTH
1/2" = 1'-0"



5 ROOM 105 - EAST
1/2" = 1'-0"

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REVISIONS

DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

INTERIOR ELEVATIONS

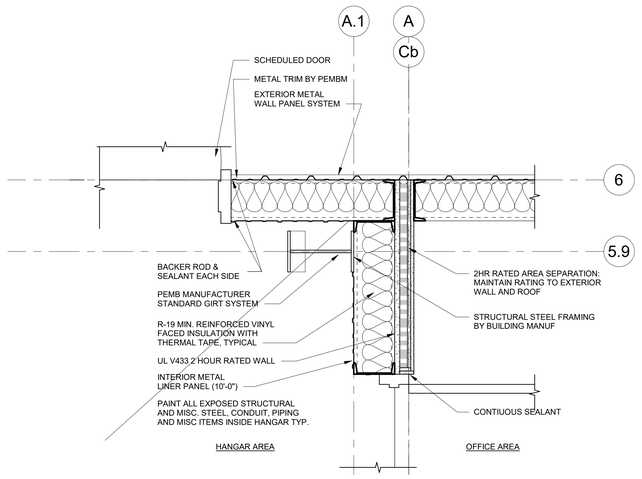
SHEET NUMBER
A-402

PARTITION NOTES

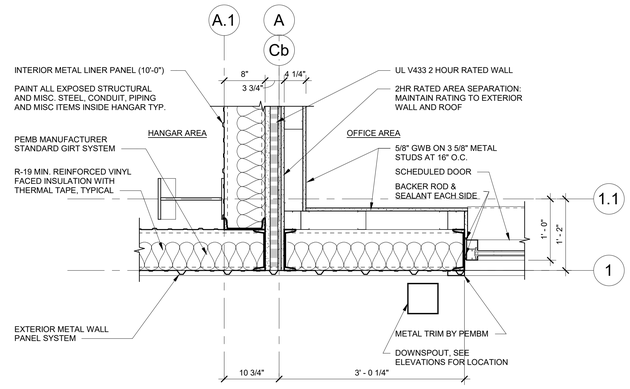
1. ALL GYPSUM WALL BOARD TO BE 5/8" TYPE 'X' U.N.O.
2. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TO COLUMN CENTER LINE, FACE OF GWB/STUD PARTITIONS, FACE OF MASONRY AND CONCRETE WALLS AND FACE OF EXISTING WALLS.
3. HOLD TOP OF PARTITION DOWN 1/2" FROM TOP RUNNER WHERE PARTITION EXTENDS TO STRUCTURE ABOVE.
4. ALL CAULK AND SEALANT SHALL BE CONTINUOUS.
5. ALL CMU WALLS AND SOUND RATED PARTITIONS SHALL EXTEND FROM FINISHED FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF STRUCTURE OR DECK AND BE ENTIRELY SEALED OFF U.N.O. ALL PENETRATIONS SUCH AS PIPING, CONDUITS, DUCTS, ETC. IN SUCH SEALED OFF WALLS OR PARTITIONS SHALL IN THEMSELVES BE PACKED AND SEALED OFF ALONG THE PERIMETER OF PENETRATION.
6. ALL FIRE AND/OR SMOKE PARTITIONS SHALL EXTEND FROM FINISH FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF THE STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH SAFEING MATERIAL ONLY. SAFEING MATERIAL SHALL BE HELD IN PLACE WITH A FIRE STOPPING MATERIAL ON BOTH SIDES, SUCH AS GYPSUM WALL BOARD OR UL LISTED FIRE PROOFING MATERIAL AND ASSEMBLY.
7. ALL SOUND RATED (STC) WALLS OR PARTITIONS SHALL HAVE CLOSURE GASKETS AT TOP, BOTTOM, AND SIDES WHERE A SOUND LEAK WOULD OTHERWISE EXIST.
8. STRUCTURAL STUDS (20 GA. MINIMUM) SHALL BE USED WHERE ANY NON-SELF-SUPPORTING WALL HUNG FIXTURES, EQUIPMENT, OR CABINETRY OCCUR AND SHALL EXTEND FROM FLOOR TO STRUCTURE ABOVE. SEE TYPICAL SUPPORT DETAILS FOR WALL MOUNTED ITEMS.
9. ALL METAL STUD FRAMED PARTITIONS SHALL BE BRACED ABOVE FINISHED CEILINGS. BRACING SHALL BE AS FOLLOWS:
   ATTACH A 3 5/8" OR 6" METAL STUD HORIZONTALLY AND CONTINUOUSLY TO PARTITION 8" MAXIMUM ABOVE FINISHED CEILING. PROVIDE 3 5/8" OR 6" METAL STUD KICKERS AT 45 DEGREE ANGLE TO STRUCTURE AT 4'-0" O.C.
10. KICKERS SHALL HAVE CLIP ANGLES (14 GA MIN.) WITH TWO 1/4" ANCHORS. ALL KICKER LOCATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES PERFORMING WORK ABOVE CEILING.
11. DO NOT FASTEN TOP RUNNER TO STUDS; CRIMP RUNNER ON BOTH SIDES OF STUD TO STABILIZE STUD.
12. SEE ROOM FINISH SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR FINISH MATERIALS SUCH AS TILE, PANELING, ETC. WHICH ARE NOT SHOWN OR INCLUDED IN THESE PARTITION TYPES.
13. WHERE PARTITION TYPES CHANGE IN A STRAIGHT RUN, THE EXPOSED OR MOST IMPORTANT EXPOSED FINISHED FACE, AND NOT NECESSARILY THE CENTERLINE OF STUDS, SHALL ALIGN. REVIEW CASES WHICH ARE UNCLEAR WITH THE ARCHITECT PRIOR TO CONSTRUCTION OF SUCH PARTITIONS.
14. WHERE ITEMS ARE RECESSED INTO RATED PARTITIONS, PROVIDE BOXING, INSULATION, ETC. AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING.
15. PURSUANT TO NCSBC 603 ALL WOOD PRODUCTS SHALL BE FIRE-RETARDANT TREATED (FRT), INCLUDING BUT NOT LIMITED TO WOOD BLOCKING, CABINETRY AND MILLWORK SUBSTRATES, AND EXPOSED PLYWOOD PANELS
16. WHERE SPECIALTY WALL PANEL SYSTEMS ARE TO BE APPLIED TO PARTITIONS, SHIMMING MAY BE REQUIRED TO ENSURE A FLUSH AND PLUMB INSTALLATION.
17. ELECTRICAL AND TELECOM ROOMS: IN ADDITION TO GWB AS SCHEDULED, WRAP ENTIRE ROOM IN 3/4" VIRGIN, VOID-FREE, FIRE-RATED PLYWOOD, FROM 0'-4" AFF TO 6'-6" AFF, LAG-BOLTED TO WALLS AT METAL STUD LOCATIONS. PAINT ALL WALL SURFACES AS SCHEDULED.
18. ALL CLOSETS ARE TO RECEIVE WOOD SHELVING AND ROD U.N.O.
19. PROVIDE FR SOLID WOOD BLOCKING IN WALL AS REQUIRED FOR MOUNTING OF CABINETS, GRAB BARS, TVS, TOILET PARTITIONS AND ACCESSORIES, ETC. SEE PLANS AND ELEVATIONS FOR LOCATIONS OF WALL-MOUNTED BUILT-INS AND EQUIPMENT.
20. USE MOISTURE RESISTANT GWB AT ALL WET AREAS.
21. SEE STRUCTURAL FOR SHEAR WALL LOCATIONS AND INFORMATION. GC TO COORDINATE SHEATHING SIDE AND EXTENTS WITH ARCHITECTURAL AND STRUCTURAL.

METAL STUD GAUGES:	LOCATION	LENGTH	GAUGE
	PARTITION	UP TO 8'-0"	20 GAUGE
	PARTITION	UP TO 10'-0"	18 GAUGE
	PARTITION	UP TO 12'-0"	16 GAUGE
	PARTITION	GREATER THAN 12'-0"	SEE STRUCTURAL DRAWINGS.
	BULKHEAD	UP TO 8'-0"	25 GAUGE
	BULKHEAD	UP TO 8'-0"	20 GAUGE
	BULKHEAD	GREATER THAN 8'-0"	SEE SPECIFIC DETAILS AND/OR STRUCT. DRWGS.
	SOFFIT	UP TO 4'-0"	25 GAUGE
	SOFFIT	UP TO 8'-0"	25 GAUGE, SEE SPECIFIC DETAILS FOR SUPPORT
	SOFFIT	GREATER THAN 8'-0"	SUSPENDED SYSTEM MUST BE USED
	DOOR / WINDOW HEAD AND JAMB	U.N.O.	16 GA (2 STUDS AT ALL LOCATIONS)

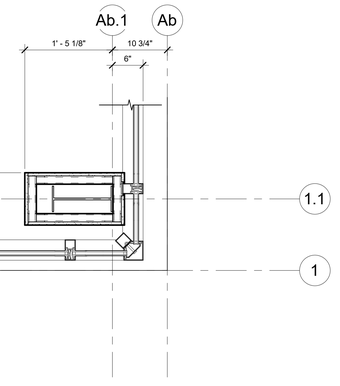
NOTE: U.L. AND STRUCTURAL REQUIREMENTS TAKE PRECEDENCE OVER THE ABOVE SPECIFICATIONS.



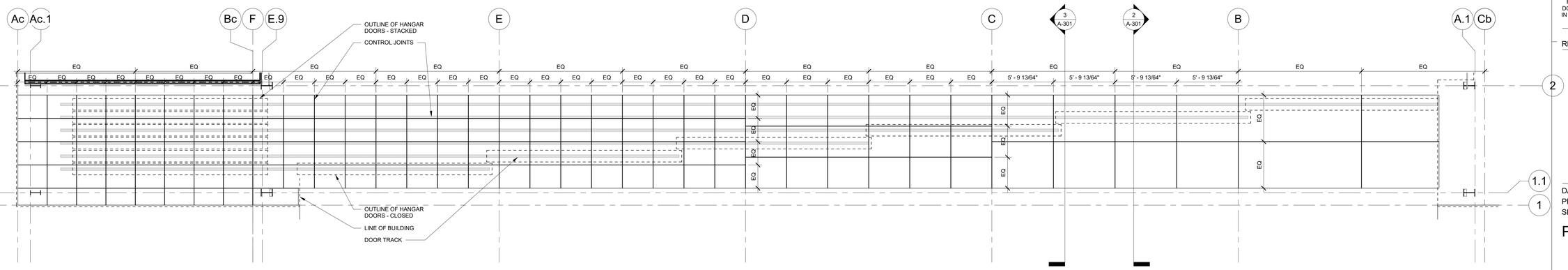
8 PLAN DETAIL
1" = 1'-0"



9 PLAN DETAIL
1" = 1'-0"



10 PLAN DETAIL
1" = 1'-0"



3 CONTROL JOINT PLAN
1/4" = 1'-0"

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REVISIONS

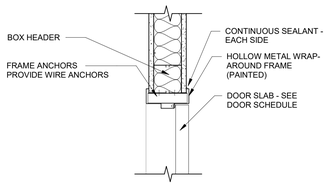
DATE 03-28-2025
PROJECT NUMBER Project Number
SHEET TITLE

PLAN DETAILS

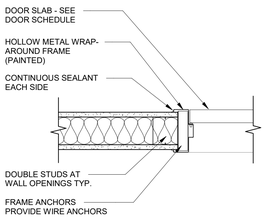
SHEET NUMBER
A-501

DOOR SCHEDULE

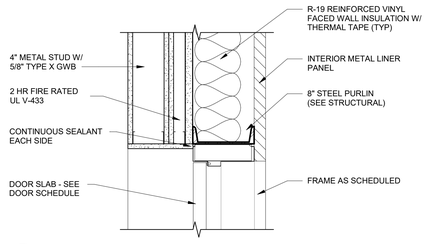
DOOR NUMBER	ROOM NAME	ROOM NUMBER	DOOR					FRAME				HARDWARE SET	COMMENTS
			DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FIRE RATING		
101A	HANGAR	101		3' - 0"	7' - 0"						0 HR		
101B	HANGAR	101	A	3' - 0"	8' - 0"	HM	PAINT	F1	HM	PAINT	0 HR		
101C	HANGAR	101	A	3' - 0"	8' - 0"	HM	PAINT	F1	HM	PAINT	0 HR		
101D	HANGAR	101	D	12' - 0"	12' - 0"	ALUM	MANUF	-	-	MANUF			MOTORIZED OPENING
101E	HANGAR	101	A	3' - 0"	8' - 0"	HM	PAINT	F1	HM	PAINT	0 HR		
101F	HANGAR	101	C	6' - 0"	7' - 0"	HM	PAINT	F1	HM	PAINT	2 HR		
101H	LOBBY	102	B	3' - 0"	8' - 0"	ALUM	MANUF	-	-	MANUF	0 HR		
101I	HANGAR	101	C	3' - 0"	7' - 0"	HM	PAINT	F1	HM	PAINT	2 HR		PROVIDE CLOSER
101J	LOBBY	102	D	6' - 6"	10' - 0"	ALUM	MANUF	-	-	MANUF	2 HR		ON MAGNETIC HOLD OPEN
102A	LOBBY	102	D	3' - 0"	8' - 0"	ALUM	MANUF	-	-	MANUF	0 HR		
104A	FUTURE	108	C	3' - 0"	7' - 0"	WOOD	STAIN	F1	HM	PAINT	0 HR		
105A	RESTROOM	105	C	3' - 0"	7' - 0"	WOOD	STAIN	F1	HM	PAINT	0 HR		
106A	RESTROOM	106	C	3' - 0"	7' - 0"	WOOD	STAIN	F1	HM	PAINT	0 HR		
107A	CONFERENCE ROOM	107	C	3' - 0"	7' - 0"	WOOD	STAIN	F1	HM	PAINT	0 HR		
108A	FUTURE	108	A	3' - 0"	8' - 0"	HM	PAINT	F1	HM	PAINT	0 HR		



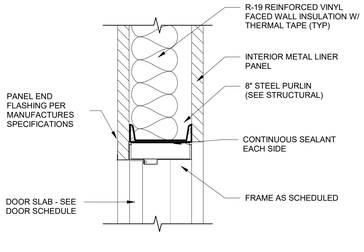
H1 HEADER H1
1 1/2" = 1'-0"



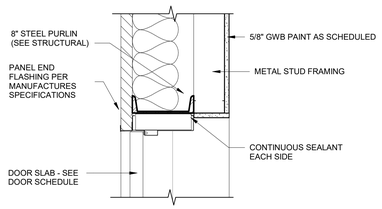
J1 JAMB J1
1 1/2" = 1'-0"



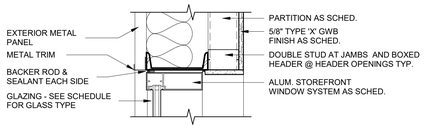
JH2 JAMB/HEAD J2/H2
1 1/2" = 1'-0"



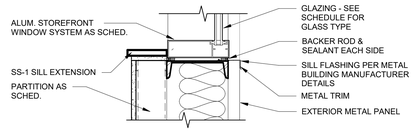
JH3 JAMB/HEAD J3/H3
1 1/2" = 1'-0"



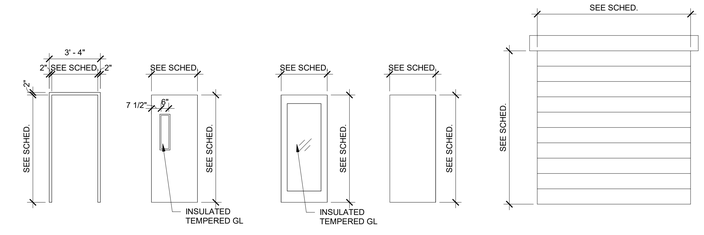
JH4 JAMB/HEAD J4/H4
1 1/2" = 1'-0"



JH5 JAMB/HEAD J5/H5
1 1/2" = 1'-0"



S5 SILL S5
1 1/2" = 1'-0"

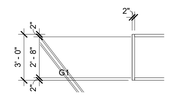


DOOR LEGEND
1/4" = 1'-0"

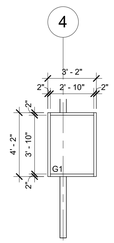
GLAZING LEGEND AND NOTES

G1	INSULATED LOW E GLAZING - CLEAR
G2	INSULATED LOW E FULLY TEMPERED GLAZING - CLEAR
G4	TEMPERED GLAZING - CLEAR

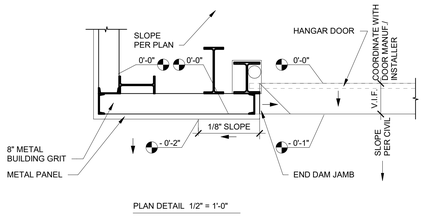
NOTES:
1. ALL DIMENSIONS ARE NOMINAL OF ROUGH OPENING AND ARE THE OVERALL SIZE. VERIFY IN FIELD PRIOR TO FABRICATION.
2. SEE WINDOW ELEVATIONS FOR GLAZING TYPE(S).
3. SEE WINDOW ELEVATIONS FOR DIMENSIONS/ LOCATIONS OF MULLIONS.
4. ALL EXTERIOR WINDOWS ARE TO RECEIVE WINDOW ROLLER SHADES AS SPECIFIED UNLESS NOTED OTHERWISE.



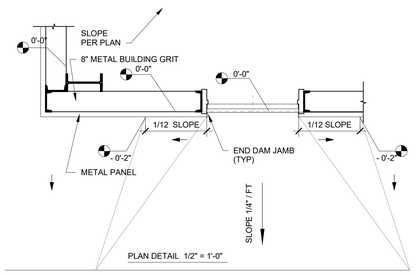
W4 WINDOW TYPE W4
1/4" = 1'-0"



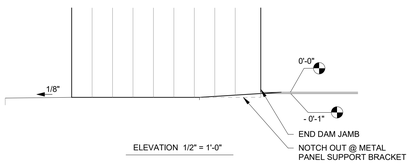
W3 WINDOW TYPE W3
1/4" = 1'-0"



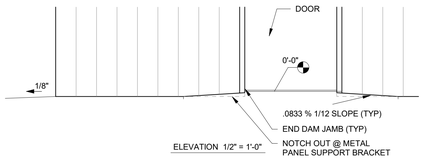
PLAN DETAIL 1/2" = 1'-0"



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



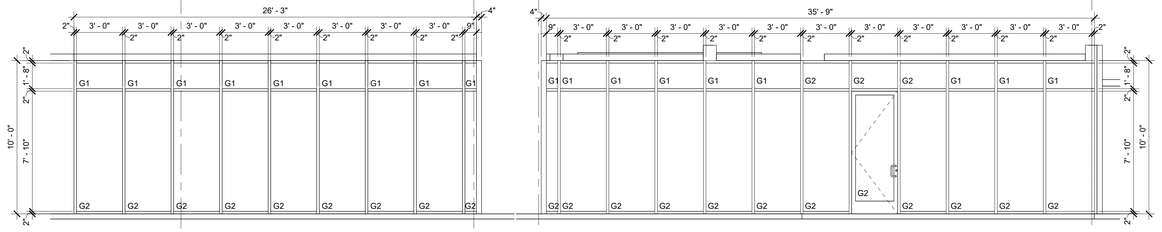
ELEVATION 1/2" = 1'-0"



ELEVATION 1/2" = 1'-0"

2 HANGAR DOOR - SLAB DETAIL
1/2" = 1'-0"

1 DOOR - SLAB DETAIL
1/2" = 1'-0"



W2 WINDOW TYPE W2
1/4" = 1'-0"

W1 WINDOW TYPE W1
1/4" = 1'-0"

DUPLIN COUNTY NORTH CAROLINA

Air Field Hangar Building
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REVISIONS

DATE 03-28-2025
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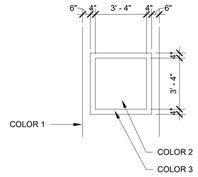
DOOR SCHEDULE AND WINDOOW TYPES

SHEET NUMBER
A-601



2 W.F.E. FLOOR MARKING DETAIL
1/4" = 1'-0"

FINISH LEGEND

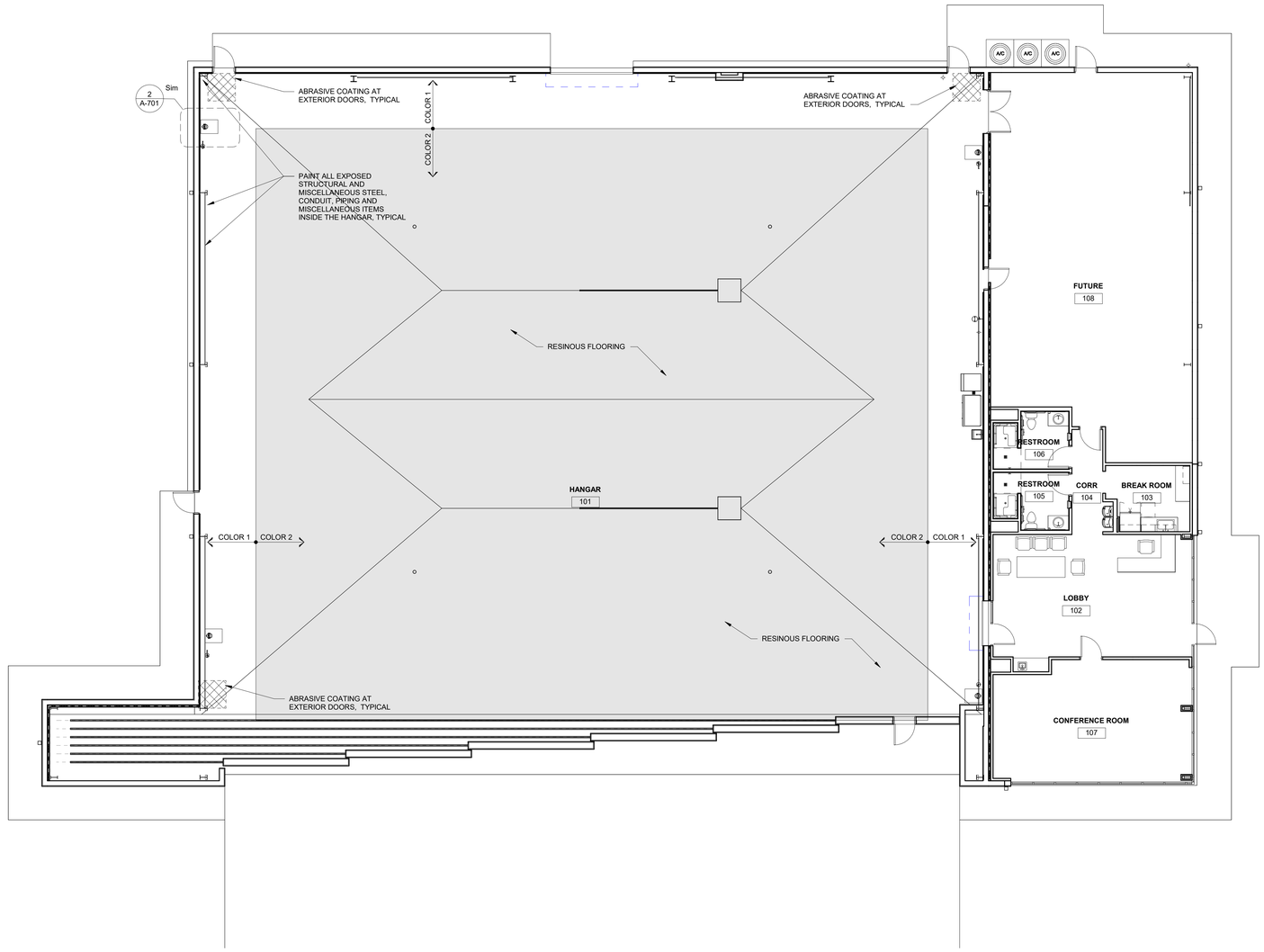
FLOORING		
CPT-1 SDT-1 RF-1 PT-1	CARPET STATIC DISSIPATIVE TILE LIQUID FLOOR TREATMENT RESINOUS FLOORING PORCELAIN FLOOR TILE	SHAW CONTRACT GROUP; AMPLIFY 5A176; MOONLIT 27505 ARMSTRING; EXCELON, 51959 FOSSIL GRAY, 12" x 12" 3 COLOR RESINOUS FLOORING DALTILE; DELEGATE DARK GREY DL27; 24" x 24"; STACKED PATTEN
BASE		
RB-1 WB-1	RUBBER BASE PORCELAIN TILE BASE	FLEXCO: 4" COVED VINYL WALL BASE; COLOR: 093 GRAPHITE. DALTILE: DELEGATE LIGHT GREY DL26; 12"x24"
WALL TILE		
WT-1	PORCELAIN WALL TILE	DALTILE; DELEGATE LIGHT GREY DL26: 12"X24"; STACKED PATTERN
COUNTERTOPS		
SS-1	QUARTZ COUNTERS	HANSTONE QUARTZ; SPECCHIO WHTE CT402; FOR COUNTERTOPS, BACKSPLASHED AND SIDESPLASHES
PAINT		
P-1	PAINT	ALL EXPOSED STRUCTURAL AND MISC. STEEL, CONDUIT, PIPING AND MISC. ITEMS INSIDE HANGAR; SHERWIN-WILLIAMS ALL-SURFACE ACRYLIC, SW7006, EXTRA WHITE, SEMI GLOSS
P-2	PAINT	SHERWIN-WILLIAMS, SW7015, REPOSE GRAY, EGGSHELL FINISH; AT ALL INTERIOR WALLS AT OFFICE U.N.O.
P-3	PAINT	SHERWIN-WILLIAMS, SW7017, DORIAN GRAY, SEMI GLOSS FINISH; AT ALL INTERIOR H.M. DOOR FRAMES U.N.O.
P-4	PAINT	ALL EXTERIOR H.M. DOORS AND H.M. DOOR FRAMES; SEMI GLOSS FINISH; COLOR TO MATCH EXTERIOR METAL WALL PANEL
P-5	PAINT	ALL GWB CEILINGS AND SOFFITS; FLAT FINISH; PPG 1002-1 SILVER FEATHER
ST-1	STAIN	ALL INTERIOR FLUSH WOODS U.N.O.; MASONITE ASPIRO SERIES; STAIN COLOR: CANE
CEILINGS		
APC-1	ACOUSTICAL CEILING TILE	USG CEILINGS; MARS CLIMAPLUS ACOUSTICAL PANELS; 24"X24" SQUARE EDGE IN WHITE WITH USG DONN DX/DXL 15/16" ACOUSTICAL SUSPENSION IN WHITE.
MISCELLANEOUS		
PLAM-1	PLASTIC LAMINATE	WILSONART SILVER OAK PLY 8203K-28; ORIENT GRAIN IN SAME DIRECTION, TYPICAL

GENERAL NOTES - FINISH PLAN

1. GC TO PROVIDE COMPLIANCE DATA THAT INTERIOR WALL AND CEILING FINISHES COMPLY WITH CLASSIFICATION B: FLAME SPREAD 26-75 AND SMOKE DEVELOPED 0-450 FOR VERTICAL EXITS, EXIT PASSAGEWAYS, EXIT ACCESS CORRIDORS AND OTHER EXITWAYS.
2. GC TO PROVIDE COMPLIANCE DATA THAT INTERIOR WALL AND CEILING FINISHES COMPLY WITH CLASSIFICATION C: FLAME SPREAD 76-200 AND SMOKE DEVELOPED 0-450 FOR ROOMS AND ENCLOSED SPACES.
3. GC TO PROVIDE COMPLIANCE DATA FOR INTERIOR FLOOR FINISHES THAT SHOWS COMPLIANCE WITH NC 804.
4. FLOOR FINISHES MUST MEET SLIP RESISTANCE REQUIREMENT OF 0.60 WET, AND BE A MINIMUM OF CLASS II PER NFPA 253.
5. TRANSITION OF DIFFERING FLOORING MATERIALS BETWEEN ROOMS TO OCCUR AT THE CENTER OF THE DOOR LEAF.
6. SEALANTS AND CAULKING ARE TO MATCH THE DOMINANT SURFACE IN WHICH THEY OCCUR U.N.O., SAMPLE OF SEALANTS ARE TO BE SUBMITTED TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
7. GC TO VERIFY ALL FINISHED WITH OWNER AND ARCHITECT PRIOR TO PROCUREMENT.
8. IN AREAS WITH ANY PORTION OF EXPOSED STRUCTURAL ABOVE, THE WALL FINISHES SHALL EXTEND TO UNDERSIDE OF STRUCTURE.
9. ALL UNIDENTIFIED COLORS AND FINISHES SHALL BE SELECTED AND APPROVED BY ARCHITECT THROUGH THE SUBMITTAL PROCESS.
10. RECESSED WIREWAYS, ACCESS PANELS, GRILLES, ELECTRICAL PANELS, AND ALL OTHER SUCH ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DEVICES SHALL BE FINISHED TO MATCH ADJACENT WALL OR CEILING SURFACE, U.N.O.

ROOM FINISH SCHEDULE

NUMBER	NAME	BASE	FLOORING	WALL FINISH NORTH WALL	WALL FINISH EAST WALL	WALL FINISH SOUTH WALL	WALL FINISH WEST WALL	CEILING	REMARKS
101	HANGAR		RF-1	P-1	P-1	P-1	P-1	P-1	SEE CEILING PLAN, FINISH PLAN AND SECTIONS FOR EXTENTS
102	LOBBY	PB-1	PT-1	P-2	P-2	P-2	P-2	ACT-1	
103	BREAK ROOM	PB-1	PT-1	P-2	P-2	P-2	P-2	ACT-1	
104	CORR	PB-1	PT-1	P-2	P-2	P-2	P-2	ACT-1	
105	RESTROOM	PB-1	PT-1	SEE ELEVATIONS	SEE ELEVATIONS	SEE ELEVATIONS	SEE ELEVATIONS	P-5	
106	RESTROOM	PB-1	PT-1	SEE ELEVATIONS	SEE ELEVATIONS	SEE ELEVATIONS	SEE ELEVATIONS	P-5	
107	CONFERENCE ROOM	RB-1	CPT-1	P-2	P-2	P-2	P-2	ACT-1	
108	FUTURE	--	-	-	-	-	-	-	UNFINISHED SPACE



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

PLAN NORTH
TRUE NORTH

SHEET NUMBER
A-701

DUPLIN COUNTY
NORTH CAROLINA

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FINISH PLAN

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NORTH CAROLINA

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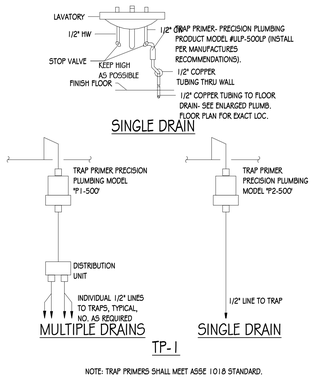
RENDERINGS

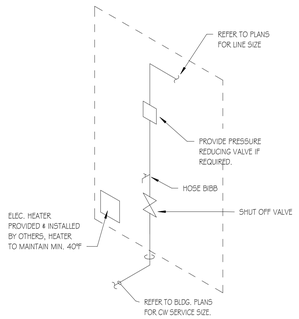
SHEET NUMBER

A-801

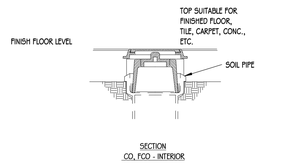


NOTE: TRAP PRIMERS SHALL MEET ASSE 1018 STANDARD.

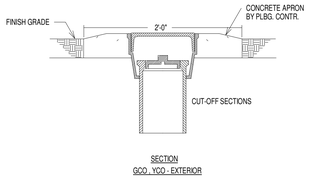
1 TRAP PRIMERS DETAIL
NOT TO SCALE



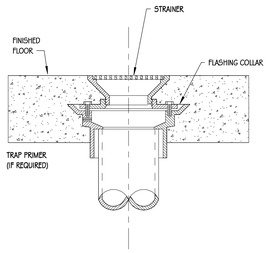
2 WATER ENTRY RISER DIAGRAM
NOT TO SCALE



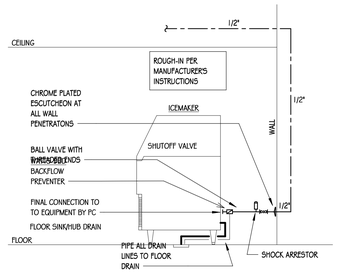
3 INTERIOR CLEANOUT DETAIL (FCO)
NOT TO SCALE



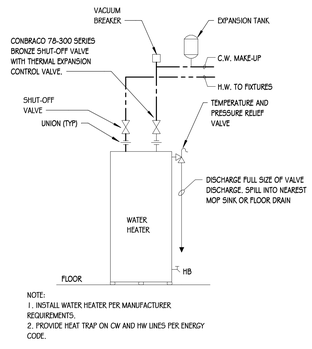
4 EXTERIOR CLEANOUT DETAIL
NOT TO SCALE



5 FLOOR DRAIN DETAIL (FD)
NOT TO SCALE

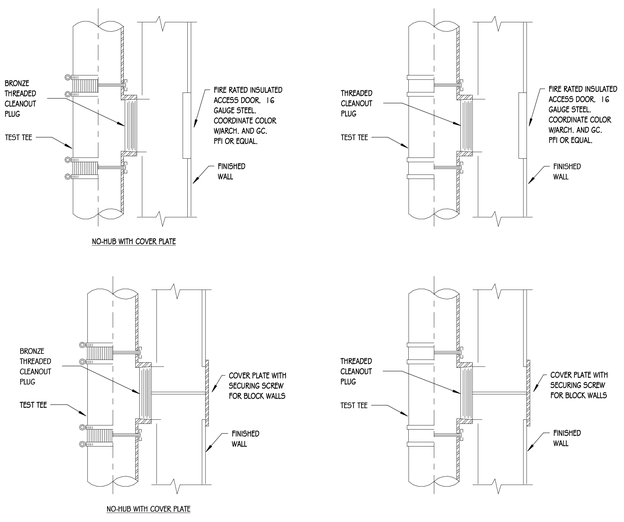


6 ICEMAKER PIPING SCHEMATIC
NOT TO SCALE



NOTE:
1. INSTALL WATER HEATER PER MANUFACTURER REQUIREMENTS.
2. PROVIDE HEAT TRAP ON CW AND HW LINES PER ENERGY CODE.

7 WATER HEATER DETAIL
NOT TO SCALE



8 WALL CLEAN-OUT (WCO)
NOT TO SCALE

PLUMBING LEGEND

	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
110°F	DOMESTIC 110°F HOT WATER PIPING
140°F	DOMESTIC 140°F HOT WATER PIPING
	VENT PIPING
	WASTE (SANITARY SEWER)
GW	WASTE (GREASE)
G	GAS PIPING
RL	ROOF LEADER
ERL	EMERGENCY ROOF LEADER
SD	STORM PIPING UNDERSLAB
	FULL PORT VALVE
	CHECK VALVE
	PIPE UP
	PIPE DOWN
	FLOOR DRAIN
	FLOOR SINK
	CONNECT TO EXISTING
	FIRE SPRINKLER RISER

AAV	AIR ADMITTANCE VALVE
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
CW	COLD WATER
DN	DOWN
E.C.	ELECTRICAL SUB-CONTRACTOR
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FR	FROM
FS	FLOOR SINK
G.C.	GENERAL CONTRACTOR
HB	HOSE BIBB
HD	HUB DRAIN
HW	HOT WATER
M.C.	MECHANICAL SUB-CONTRACTOR
P.C.	PLUMBING SUB-CONTRACTOR
V	VENT
W	WASTE

PLUMBING GENERAL NOTES

GENERAL REQUIREMENTS

1. DRAWINGS AND RISERS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW REQUIRED FITTINGS AND OFFSETS REQUIRED FOR ACTUAL INSTALLATION.

2. FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES.

3. ALL PLUMBING FIXTURES AND PLUMBING SYSTEM EQUIPMENT SHALL BE PROVIDED COMPLETE WITH ALL ACCESSORIES, HANGERS, VALVES, STOPS, TAILPIECES, TRAPS, FAUCETS, STRAINERS, ETC. SEE FIXTURE SCHEDULE.

4. FURNISH AND INSTALL COMPLETE SYSTEMS OF SOIL, WASTE, VENT, HOT AND COLD WATER PIPING FROM ALL PLUMBING FIXTURES, AND/OR OTHER EQUIPMENT.

5. STERILIZE THE DOMESTIC WATER SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.

6. HOT AND COLD WATER SUPPLY PIPING AND DRAIN PIPING UNDER HANDICAPPED LAVATORIES SHALL BE INSULATED PER AMERICANS WITH DISABILITIES ACT, WITH FACTORY FABRICATED MICROBIAL PVC RESIN INSULATION.

7. CEILING AREA HAS LIMITED SPACE. CONTRACTOR MUST COORDINATE WITH OTHER TRADES FOR ALL STRUCTURES, PIPING, CONDUIT, DUCTWORK, LIGHTING, ETC. TO PROPERLY BE INSTALLED AND AVOID CONFLICT WITH OTHER TRADES.

8. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF PLUMBING FIXTURES.

9. PROVIDE ACCESS DOORS FOR ALL VALVES AND DEVICES REQUIRING ACCESS WHEN LOCATED IN WALLS OR ABOVE INACCESSIBLE CEILING CONSTRUCTION.

10. PROVIDE A U.L. LISTED ASSEMBLY FOR ALL PENETRATIONS THRU FIRE RATED WALLS AND FLOORS. PROVIDE A DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING.

11. FIELD VERIFY EXISTING CONDITIONS BEFORE STARTING CONSTRUCTION. NOTIFY THE ARCHITECT/ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS AND/OR ANY POTENTIAL PROBLEMS OBSERVED BEFORE CONTINUING WORK IN THE EFFECTED AREAS.

12. PERFORM ALL EXCAVATION AND BACKFILL WORK NECESSARY TO ACCOMPLISH INDICATED PLUMBING SYSTEMS' INSTALLATION. VERIFY THE LOCATIONS OF ANY WATER, DRAINAGE, GAS, SEWER, ELECTRIC, AND TELEPHONE LINES WHICH MAY BE ENCOUNTERED IN THE EXCAVATION. UNDERPIN AND SUPPORT ALL LINES.

13. PIPING IN A PLUMBING SYSTEM SHALL BE INSTALLED SO AS TO PREVENT STRAINS AND STRESSES THAT EXCEED THE STRUCTURAL STRENGTH OF THE PIPE. WHERE NECESSARY, PROVISIONS SHALL BE MADE TO PROTECT PIPING FROM DAMAGE.

14. ANY PIPE THAT PASSES THROUGH A FOUNDATION WALL SHALL BE PROVIDED WITH A RELIEVING ARCH, OR A PIPE SLEEVE PIPE SHALL BE BUILT INTO THE FOUNDATION WALL.

15. PLUMBING PIPING, VENTS, ETC. EXTENDING THROUGH EXTERIOR WALLS, AND/OR THE ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WATERPROOF MANNER. COORDINATE FLASHING WITH THE GENERAL CONTRACTOR.

16. DOMESTIC WATER PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OF LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD AND SHALL BE PLENUM RATED.

PIPING MATERIALS

17. DOMESTIC WATER PIPING SHALL BE AS FOLLOWS:
BELOW SLAB: TYPE "K" COPPER.
ABOVE SLAB: CPVC "FLOWGUARD GOLD".
ABOVE SLAB: TYPE "L" COPPER MUST BE USED IN MECHANICAL/WATER HEATER ROOMS.
ALTERNATE: PEX-A "UPONOR" (OR EQUAL) WITH "UPONOR, PROPEX" (OR EQUAL) FITTINGS WITHIN GUESTROOMS.

18. WASTE AND VENT PIPING SHALL BE AS FOLLOWS:
BELOW SLAB: SCHEDULE 40, PVC SOLID WALL PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED FITTINGS.
ABOVE SLAB: SCHEDULE 40, PVC SOLID WALL PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED FITTINGS.
1/2" INSULATION IS REQUIRED ON ALL HORIZONTAL RUNS ABOVE NOISE SENSITIVE AREAS.

19. STORM PIPING SHALL BE AS FOLLOWS:
BELOW SLAB: SCHEDULE 40, PVC SOLID WALL PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED FITTINGS.
ABOVE SLAB: SERVICE WEIGHT NO-HUB CAST IRON PIPING WITH HEAVY DUTY COUPLINGS. INSULATION IS REQUIRED ON ALL ROOF DRAIN BODIES AND HORIZONTAL RUNS (ABOVE SLAB). INSULATE WITH 1/2" CLOSED-CELL ELASTOMERIC MATERIAL.
ALTERNATE ABOVE SLAB: SCHEDULE 40, PVC SOLID WALL PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED FITTINGS. INSULATION IS REQUIRED ON ALL ROOF DRAIN BODIES AND HORIZONTAL RUNS (ABOVE SLAB). INSULATE WITH 1" CLOSED-CELL ELASTOMERIC MATERIAL.

PIPE IDENTIFICATION

20. PIPE IDENTIFICATION SHALL MATCH THE FACILITY'S EXISTING STANDARD. IF NO STANDARD EXISTS, THEN THE PIPE IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI A13.1.

21. PROVIDE PIPING LABELS FOR ALL PLUMBING PIPING. PIPING LABELS SHALL BE ACRYLIC FACED, WRAP-AROUND TYPE. EACH LABEL SHALL INDICATE THE PIPING CONTENTS, DIRECTION OF FLOW AND SHALL BEAR THE MANUFACTURER'S STANDARD COLOR FOR THE SERVICE INDICATED.

PLUMBING INSULATION

22. INSULATION IS REQUIRED ON HOT WATER RECIRC SYSTEM PIPING. PROVIDE IN ACCORDANCE WITH STATE ENERGY CODE OR PER LOCAL JURISDICTION. INSULATE WITH CLOSED-CELL ELASTOMERIC MATERIAL.

23. INSULATE ROOF DRAIN BODIES AND HORIZONTAL PRIMARY AND SECONDARY STORM DRAIN PIPING ABOVE GRADE WITH 1" THICK GLASS FIBER INSULATION WITH VAPOR BARRIER AND JACKET.

24. ALL PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH FLOORS, WALLS, AND PARTITIONS.

25. INSTALL PLUMBING PIPING SHOWN IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.

PLUMBING SYSTEMS

26. PLUMBING PIPING SHALL BE LOCATED CONCEALED IN WALLS, PARTITIONS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE. PLUMBING PIPING IN EXPOSED AREAS SHALL BE RUN TIGHT TO UNDERSIDE OF STRUCTURE.

27. PIPING IN UNHEATED AREAS SUBJECT TO FREEZING SHALL BE PROTECTED. PROVIDE INSULATION PER TABLE OR HEAT TRACE WHERE ALLOWED.

28. DOMESTIC WATER PIPING SHALL BE SLOPED FOR DRAINAGE WITH DRAIN VALVES INSTALLED AT LOW POINTS TO ALLOW FOR COMPLETE DRAINAGE.

29. ALL HAND SINKS AND LAVATORIES SHALL BE PROVIDED WITH TEMPERED WATER AND TEMPERATURE SET TO 110°F MAXIMUM.

30. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.

31. ALL HOT WATER RECIRCULATING SYSTEM BALANCING VALVES SHALL BE THERMOSTATIC BALANCING TYPE. VERIFY EACH RISER AND/OR LOOP HAS A THERMOSTATIC BALANCING VALVE.

32. PROVIDE PRESSURE REDUCING VALVE SET AT 80 PSI.

33. VACUUM BREAKERS SHALL BE PROVIDED FOR ALL FIXTURES TO WHICH HOSES MAY BE ATTACHED. VACUUM BREAKERS SHALL BE PERMANENTLY ATTACHED.

34. THE PLUMBING CONTRACTOR SHALL PROVIDE WATER HAMMER PROTECTION ON ALL WATER DISTRIBUTION PIPING WHERE QUICK-CLOSING VALVES ARE UTILIZED. INSTALLATION OF AIR CHAMBERS OR SHOCK ARRESTORS SHALL BE IN ACCORDANCE WITH PDI-WH201. SEE SHOCK ARRESTOR SCHEDULE (IF PROVIDED).

35. PROVIDE FULL PORT VALVES IN ALL BRANCH LINES OF THE HOT AND COLD WATER DISTRIBUTION SYSTEM ON 3/4" AND LARGER CW & HW AND AS SHOWN ON PLANS, RISERS, AND SCHEMATIC DETAILS.

36. PROVIDE DEEP SEAL TRAPS FOR ALL FLOOR DRAINS.

37. INVERT ELEVATIONS SHALL BE ESTABLISHED AND VERIFIED BEFORE WASTE PIPING IS INSTALLED SO THAT PROPER SLOPES WILL BE MAINTAINED.

38. SLOPE SANITARY WASTE AND STORM DRAIN PIPING AT 1/4" PER FOOT MINIMUM FOR PIPING 2 1/2" AND SMALLER AND 1/8" PER FOOT MINIMUM FOR PIPING 3" AND LARGER UNLESS NOTED OTHERWISE.

39. CLEANOUT PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING CODE REQUIREMENTS. PROVIDE CLEANOUTS AT THE BASE OF ALL SANITARY WASTE STACKS AND RAIN LEADERS/STORM DRAINS, AT EVERY FOUR 45 DEGREE TURNS, AND AT EVERY 100 FEET. CLEANOUTS SHALL BE PLACED IN READILY ACCESSIBLE LOCATIONS.

SUPPORTS AND HANGING REQUIREMENTS

40. ALL SUSPENDED MATERIALS AND EQUIPMENT SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR ITS SUPPORT SYSTEM.

41. PROPERLY SUPPORT AND BRACE VERTICALLY AND HORIZONTALLY ALL PIPING, APPARATUS, EQUIPMENT, ETC. IN ACCORDANCE WITH APPLICABLE CODES TO PREVENT EXCESSIVE MOVEMENT DURING SEISMIC CONDITIONS.

42. PVC DRAINAGE WASTE/VENT (DWV) & STORM STACKS OVER TWO(2) STORIES IN HEIGHT SHALL BE PROVIDED WITH RISER CLAMPS (ABV 4 BLW FL), ANCHORS & CODE APPROVED EXPANSION FITTINGS AS RECOMMENDED PER THE MANUFACTURER'S INSTRUCTIONS AND/OR DESIGN GUIDES. PIPE PENETRATIONS SHALL BE 1/2" LARGER THAN THE OUTSIDE PIPE DIAMETER OR AS OTHERWISE RECOMMENDED PER MANUFACTURER. CONSULT PIPING MANUFACTURER FOR CLARIFICATION PRIOR TO ANY INSTALLATION.

43. REFER TO APPENDIX B FOR SITE SEISMIC CLASSIFICATION. A COMPLETE SYSTEM OF SEISMIC RESTRAINTS SHALL BE DESIGNED BY MASON INDUSTRIES (OR EQUAL) & SEALED BY THEIR REGISTERED ENGR & INSTALLED BY THIS CONTR. AS REQD BY APPLICABLE CODES FOR THE LOCALE OF THIS PROJECT. SEISMIC RESTRAINTS FOR SEISMIC CLASSES D, E, AND F SHALL BE SUBMITTED TO THE DESIGN PROFESSIONAL FOR REVIEW PRIOR TO INSTALLATION.

PROPANE GAS PIPING NOTES

1. WORK TO INCLUDE PIPING FROM GAS REGULATOR TO ALL GAS FIRED EQUIPMENT.

2. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODE REQUIREMENTS AND THE PROVISIONS OF NFPA-54 AND NFPA-58.

3. THE CONTRACTOR SHALL SUPPLY ALL PERMITS AND LICENSES REQUIRED FOR THE WORK AND FOR ALL INSPECTIONS REQUIRED.

4. PIPE 3" AND SMALLER SHALL BE SCHEDULE 40 STEEL WITH THREADED MALLEABLE FITTINGS.

5. VALVES SHALL BE GAS COCKS MANUFACTURED BY NIBCO.

6. ALL GAS PIPING LOCATED UNDER THE FLOOR SLABS SHALL BE INSTALLED IN CONDUIT OR AS REQUIRED BY CODE.

7. ALL PIPING EXPOSED TO THE OUTDOORS OR RUN IN UNCONDITIONED SPACES SHALL BE PAINTED WITH TWO COATS OF ENAMEL.

BUILDING PROPANE GAS DEMAND

DESCRIPTION	CFH
UH-1	75
UH-2	75
UH-3	75
UH-4	75
TOTAL MBH	300

PIPE SIZING BASED ON A 200 FT DEVELOPED LENGTH @ 10.0 INLET PSI PRESSURE, 1.0 PSI PRESSURE DROP @ 1.50 SPECIFIC GRAVITY PER TABLE 402.4(25), 2018 INTERNATIONAL FUEL GAS CODE.

PLUMBING SHEET INDEX

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CONSULTANT DISCIPLINE
CONSULTANT NAME

REVISIONS

DATE 03/14/25
PROJECT NUMBER Project Number
SHEET TITLE

PLUMBING GENERAL NOTES, DETAILS, & LEGEND

SHEET NUMBER
P-001

PLUMBING FIXTURE SPECIFICATIONS AND CONNECTION SCHEDULE

MARK	FIXTURE	TYPE	MANUFACTURER	MODEL NO.	MATERIAL	STYLE	FACET/VALVE				FACET/VALVE		SUPPLIES AND STOPS	PIPE SIZES				MOUNTING	REMARKS
							MANUFACT. MODEL NO.	SPOUT	HANDLES	CENTERS	TYPE	SIZE		WASTE	VENT	CW	HW		
L-1	LAVATORY	SINGLE COMPT	NAMEEKS	037000-U	VITREOUS CHINA	WALL MOUNTED RECTANGLE	DELTA 591TF1220	CENTERSET	HANDS FREE	4"	GRID	1 1/2"	McQUIRE 175 WITH FW2125	2"	1 1/2"	1/2"	1/2"	COUNTER TOP	MOUNT AT ADA HEIGHT
S-1	KITCHEN SINK	SINGLE COMPT	ELKAY	LRAD-222260	STAINLESS STEEL	6" DEEP 3-HOLE HANDICAPPED	DELTA 440-WF	9" SWING	SINGLE LEVER	8"	K	1 1/2"	McQUIRE 165	1 1/2"	1 1/2"	1/2"	1/2"	COUNTER TOP	PROVIDE WITH ELKAY LK-35 AND IN-SINK-ERATOR MODEL 333 DISPOSAL 1/3HP, 120V
MS-1	MOP SINK	FLOOR MOUNTED	ULINE	H-10304	STAINLESS STEEL	-	ULINE H-10305	THREADED	TWO HANDLES	8"	-	-	-	3"	1 1/2"	3/4"	3/4"	FLOOR	
WC-1	WATER CLOSET	FLUSH TANK	AMERICAN STANDARD	2111AA	VITREOUS CHINA	ADA ELONGATED	-	-	-	-	-	-	McQUIRE 185	3"	2"	1/2"	-	FLOOR	PROVIDE WITH OPEN FRONT SEAT WITH NO LID
SH-1	SHOWER	PREFAB	FLORESTONE	40-40H	FIBERGLASS	ADA 40" x 40"	SYMMONS PRESS. BALANCE	-	SINGLE LEVER	-	INTEGRAL	2"	-	2"	1 1/2"	1/2"	1/2"	FLOOR	SEAT, GRAB BAR, PRESS. BAL. VALVE, HAND SPRAY, HOSE, SLIDE BAR, & DRAIN.
RB-1	REFRIGERATOR BOX	TOP SUPPLY	OATEY	38574	PVC	RECESSED BOX	-	-	-	-	-	-	-	-	-	1/2"	-	WALL	SHUT-OFF VALVE AND THREADED CW CONNECTION.
FD	FLOOR DRAIN	SQUARE TOP	J.R. SMITH	2010	CAST IRON	NIKALOY TOP	-	-	-	-	-	-	-	-	-	-	-	FLOOR	PROVIDE WITH TRAP PRIMER CONNECTION WHERE INDICATED.
WCO	WALL CLEAN-OUT	SQUARE TOP	J.R. SMITH	4472	CAST IRON	S.S. COVER	-	-	-	-	-	-	-	-	-	-	-	WALL	
FCO	FLOOR CLEAN-OUT	SQUARE TOP	J.R. SMITH	4040	CAST IRON	NICKEL BRONZE TOP	-	-	-	-	-	-	-	-	-	-	-	FLOOR	
ES-1	EYE WASH	FLOOR MOUNTED	GUARDIAN	H-5795	-	-	GUARDIAN G6020	-	-	-	-	-	-	1 1/2"	1 1/2"	1/2"	1/2"	COUNTER TOP	CONNECT TO A TEPID CLEAN WATER SOURCE
HB	HOSE BIBB	STANDARD	WOODFORD	24P	CAST BRASS	WALL FAUCET	-	-	LOOSE KEY	-	-	-	-	-	-	1/2"	-	WALL	
FPHB	HOSE BIBB	FREEZE PROOF	WOODFORD	B67	CAST BRASS	RECESSED BOX	-	-	-	-	-	-	-	-	-	3/4"	-	WALL	
GCO	ROUND TOP	DOME TOP	J.R. SMITH	4240	CAST IRON	CAST IRON TOP	-	-	-	-	-	-	-	-	-	-	-	GRADE	PROVIDE WITH 24"x24"x8" THICK CONCRETE PAD AT GRADE.
EWC-1	WATER COOLER	DOUBLE STATION W/ BOTTLE FILLER	ELKAY	LZSTL8WSSP	STAINLESS STEEL	ADA COMPLIANT	-	-	-	-	-	1 1/2"	McQUIRE 165	2"	1 1/2"	1/2"	-	WALL	MOUNT AT ADA HEIGHT

NOTES:
1. CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF FIXTURE DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY FIXTURES. INFORMATION ON ALTERNATE FIXTURES PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/DEDUCT ASSOCIATED WITH ACCEPTANCE OF THAT FIXTURE (OR THE ALTERNATE PACKAGE AS A WHOLE).

WATER HEATER SCHEDULE

MARK	FIXTURE	TYPE	LOCATION	MANUFACTURER	MODEL NO.	SIZE (GAL)	RECOVERY (GPH)	TEMPERATURE RISE (°F)	INPUT (BTUH)	EFFICIENCY (%)	WATER TEMPERATURE (°F)	ELECTRICAL			MOUNTING	REMARKS
												VOLTS	PHASE	KW		
WH-1	WATER HEATER	ELECTRIC	-	BRADFORD WHITE	E32-50S-3	50	56	100°F	-	-	140°F	208	3ø	13.5	FLOOR	3/4" NPT FEED CONNECTIONS, PROVIDE DRAIN PAN & CONVERSION KIT #415-43942-43

NOTES:
1. CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF FIXTURE DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY FIXTURES. INFORMATION ON ALTERNATE FIXTURES PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/DEDUCT ASSOCIATED WITH ACCEPTANCE OF THAT FIXTURE (OR THE ALTERNATE PACKAGE AS A WHOLE).

SHOCK ARRESTOR SCHEDULE

P.D.I. SIZE	FIXTURE UNITS	MANUFACTURER OR EQUAL
SA'A'	1 - 11	ZURN, SMITH, FPI, SIOUX-CHIEF
SA'B'	12 - 32	"
SA'C'	33 - 60	"
SA'D'	61 - 113	"
SA'E'	114 - 154	"
SA'F'	155 - 330	"

LOCATE SHOCK ARRESTORS IN AN ACCESSIBLE LOCATION, OR PROVIDE SIOUX-CHIEF SHOCK ARRESTORS ONLY.
PROVIDE SHOCK ARRESTORS AS INDICATED PER SCHEDULE.
SHOCK ARRESTORS SHALL BE SAME SIZE AS PIPE INSTALLED ON, MINIMUM.

INSULATION SCHEDULE

SERVICE TYPE	PIPE SIZES	INSULATION THICKNESS
DOMESTIC HW & CIRCULATION	1/2" - 1 1/4"	1"
DOMESTIC HW & CIRCULATION	1 1/2" - 4"	1 1/2"
DOMESTIC COLD WATER	1/2" - 1 1/4"	1/2"
DOMESTIC COLD WATER	1 1/2" - 4"	1"

INSULATE DOMESTIC WATER PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH GLASS FIBER INSULATION HAVING A VAPOR BARRIER AND JACKET. PIPE INSULATION SHALL HAVE A CONDUCTIVITY NOT EXCEEDING 0.27 BTUH x SQ. FT.

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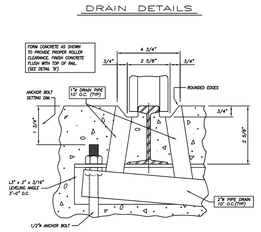
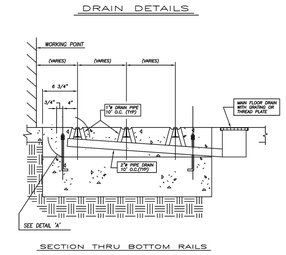
SHEET TITLE

PLUMBING SCHEDULES

SHEET NUMBER

P-002

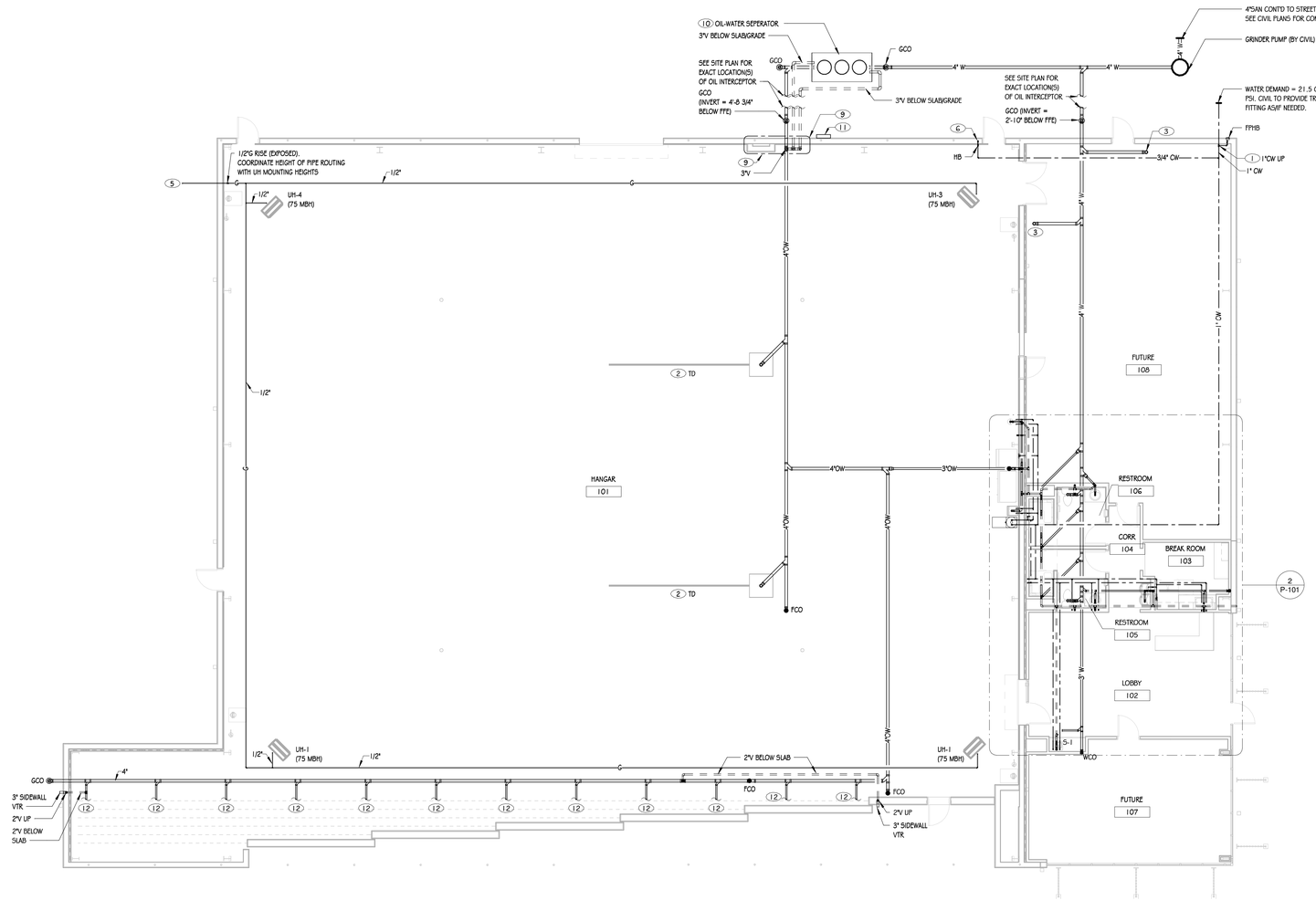




3 TRACK DRAIN DETAIL

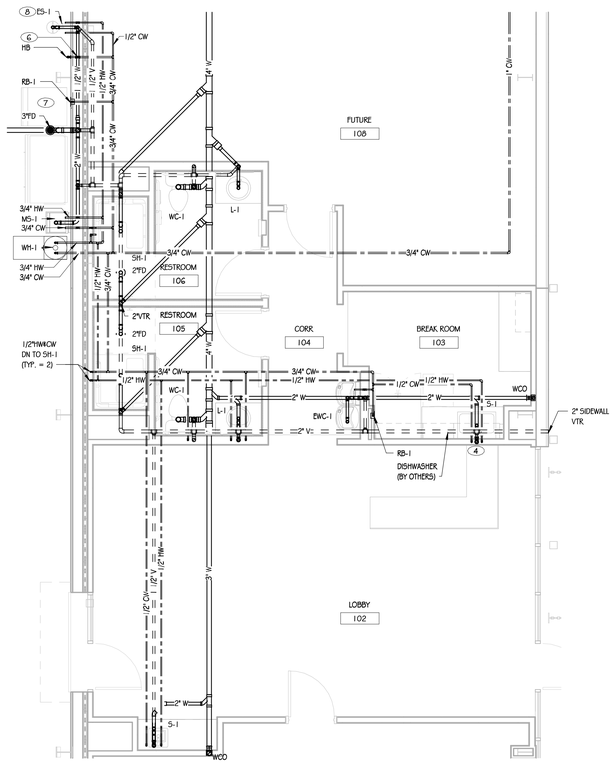
NOT TO SCALE

TAGGED NOTES - THIS SHEET	
Number	Note
1	EXPOSED 1"CW UP. PROVIDE BLDG. MAIN SHUT-OFF VALVE IN THE VERTICAL. SEE DETAIL 2/P-001.
2	HEAVY TRAFFIC RATED TRENCH DRAIN. NORSTAR INDUSTRIES U-DRAIN AND U-DRAIN SUMP OR APPROVED EQUAL. COORDINATE WITH GC EXACT LENGTH AND SIZE.
3	4"W STUB-UP FOR FUTURE TENANT CONNECTION.
4	1/2"HW/CW DROPS. EXTEND PIPING TO S-1, BELOW COUNTERTOP AS NEEDED.
5	1/2"G PIPING BELOW GROUND CONT'D TO PROPANE TANK (BY OTHERS). COORDINATE REGULATOR LOCATION WITH LOCAL UTILITY COMPANY PRIOR TO WORK COMMENCEMENT.
6	3/4"CW DN TO HB.
7	ICE MAKER (BY OTHERS). SEE DETAIL G/P-001.
8	ROUTE 1/2"HW & 1/2"CW TO MIXING VALVE TO DELIVER TEPID WATER AT ES-1. PROVIDE SHUT-OFF VALVE UPSTREAM OF ES-1 FOR MAINTENANCE PURPOSES. IDENTIFY EYE/FACE WASH LOCATION WITH HIGHLY VISIBLE SIGN.
9	3"VENT FROM BELOW FINISHED FLOOR FOR COMBINATION WASTE AND VENT ROUTED AGAINST EXTERIOR WALL UP TO 4" SIDEWALL VTR. COORDINATE BUMP OUT LOCATION WITH GC TO CONCEAL PIPE RISES.
10	OIL INTERCEPTOR, INSTALLED BELOW GRADE ON SITE. SEE CIVIL FOR EXACT LOCATION. INSTALL AS INDICATED BY MANUFACTURER INSTRUCTIONS. MODEL: STRIEM OS-100-55 W/ SLICK STICK ALARM.
11	SLICK STICK ALARM TO BE INSTALLED ON EXTERIOR WALL. COORDINATE EXACT LOCATION WITH E.C.
12	2"CW FROM HANGAR DOOR TRACK DRAINS. HANGAR DOOR TRACK DRAIN SYSTEM PROVIDED BY HANGAR DOOR CONSULTANT. SEE TRACK DRAIN DETAIL ON THIS SHEET. FIELD COORDINATE/VERIFY EXACT DRAIN CONNECTIONS WITH CONSULTANT.



1 PLUMBING FLOOR PLAN

1/8" = 1'-0"



2 ENLARGED PLUMBING PLAN

1/4" = 1'-0"

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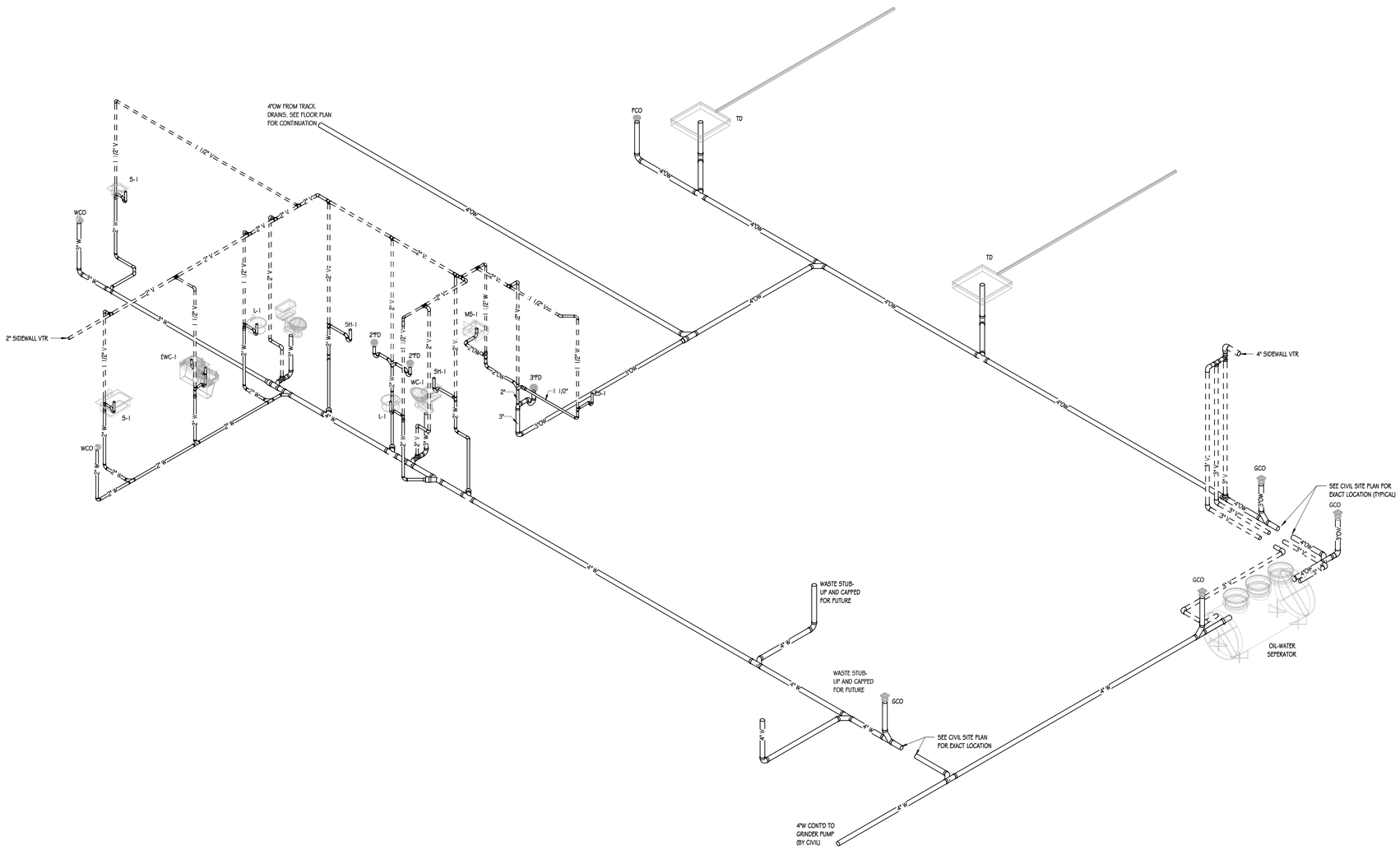
PLUMBING FLOOR PLAN

SHEET NUMBER

P-101



1 **PLUMBING RISER DIAGRAM - WASTE & VENT**

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PLUMBING RISER DIAGRAM - WASTE & VENT

SHEET NUMBER
P-102

HVAC GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT IN STRICT ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, AND PER MANUFACTURER'S DIRECTIONS.

2. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS, LICENSE, INSPECTIONS, APPROVALS, AND FEES.

3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES BEFORE INSTALLATION OF ANY MATERIALS OR EQUIPMENT.

4. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.

5. DO NOT SCALE DRAWINGS FOR MEASUREMENTS.

6. ALL DUCT DIMENSIONS SHOWN ARE INTERIOR DUCT DIMENSIONS.

7. ALL PENETRATIONS THROUGH EXTERIOR WALLS & ROOF SHALL BE FLASHED & COUNTERFLASHED IN A WATERPROOF MANNER. (COLOR TO MATCH EXTERIOR).

8. SEAL ALL PENETRATIONS OF RATED WALLS WITH FIRE DAMPER, SEALANT MATERIAL APPROVED BY LOCAL CODE.

9. ALL SUSPENDED MATERIALS AND EQUIPMENT SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR ITS SUPPORT SYSTEM.

10. INSTALL ALL CONTROL DEVICES, INCLUDING THERMOSTATS AND SWITCHES, 4'-0" ABOVE FINISHED FLOOR. PROVIDE THE REQUIRED DEVICE(S) FOR ALL SYSTEMS WHETHER LOCATED ON THE PLANS OR NOT.

11. LOCATE CEILING DIFFUSERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS (IF PROVIDED).

12. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND MECHANICAL UNITS FOR MAINTENANCE AND FILTER REMOVAL.

13. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED W/ WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.

14. ALL SUPPLY AND RETURN DUCT SHALL BE INSULATED. CONCEALED SHEET METAL DUCT MAY BE EXTERNALLY INSULATED WITH MINERAL FIBER BOARD OR BLANKET OR MAY BE INTERNALLY INSULATED WITH DUCT LINER (R-VALUE = 5). THE FIRST 15' FROM THE AIR HANDLER SHALL BE INTERNALLY LINED. INTERNALLY LINED INSULATION SHALL MEET BACTERIOLOGICAL STANDARD ASTM C 665.

15. CERTIFIED TEST AND BALANCE CONTRACTOR SHALL BALANCE SYSTEM TO AIR QUANTITIES INDICATED ON PLANS AND PROVIDE OWNER'S REPRESENTATIVE WITH COMPLETE BALANCE REPORT. IF BALANCING DAMPERS ARE NOT PROVIDED IN RETURN DUCTWORK, CONTRACTOR SHALL BALANCE SUPPLY SIDE TO AIR QUANTITIES INDICATED ON PLANS AND SHALL BALANCE OUTSIDE AIR AND RETURN AIR FLOWS AT THE AIR HANDLER TO AIR QUANTITIES INDICATED IN THE SCHEDULE. PROVIDE NEW AIR FILTERS FOR EACH UNIT.

16. AS REQUIRED BY LOCAL CODES, MECHANICAL CONTRACTOR SHALL PROVIDE U.L. LISTED FIRE DAMPERS WHERE REQUIRED FOR FIRE PROTECTION REQUIREMENTS OF THE HVAC SYSTEM & THE UL ASSEMBLY.

17. PROVIDE 1 YEAR WARRANTY ON ALL EQUIPMENT AND 5 YEAR WARRANTY ON ALL COMPRESSORS.

18. ALL INTAKE OPENINGS SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ALL EXHAUST LOCATIONS.

19. ALL ACTUACTORS ON MOTORIZED DAMPERS, SMOKE DAMPERS, AND FIRE-SMOKE DAMPERS ARE TO BE LOW VOLTAGE UNLESS OTHERWISE NOTED.

20. REFER TO APPENDIX B FOR SITE SEISMIC CLASSIFICATION. A COMPLETE SYSTEM OF SEISMIC RESTRAINTS SHALL BE DESIGNED BY MASON INDUSTRIES (OR EQUAL) & SEALED BY THEIR REGISTERED ENGR & INSTALLED BY THIS CONTR. AS REQ'D BY APPLICABLE CODES FOR THE LOCALE OF THIS PROJECT. SEISMIC RESTRAINTS FOR SEISMIC CLASSES D, E, AND F SHALL BE SUBMITTED TO THE DESIGN PROFESSIONAL FOR REVIEW PRIOR TO INSTALLATION.

21. CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS. DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED.

22. ALL MAIN DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. RUNOUTS FROM MAIN/BRANCH DUCTS MAY BE FLEXIBLE DUCT CONFORMING TO THE REQUIREMENTS OF UL 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAX 10' FLEX PER RUNOUT.

23. THE MECHANICAL CONTRACTOR SHALL PROVIDE REFRIGERANT AND LOW VOLTAGE CONTROL LINES FROM THE CONDENSER TO THE AIR HANDLING UNIT. COORDINATE ROUTING AND INSTALLATION WITH THE GENERAL CONTRACTOR. SIZE REFRIGERANT LINES PER MANUFACTURER'S REQUIREMENTS.

24. ELECTRICAL CONTRACTOR TO PROVIDE ALL HIGH VOLTAGE ELECTRICAL WIRING, CONDUIT, DISCONNECT SWITCHES, FUSES, ECT. TO SPLIT SYSTEM UNITS. ALL FINAL ELECTRICAL CONNECTIONS ARE BY ELECTRICAL CONTRACTOR.

25. OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 1½" FIBERGLASS DUCT WRAP WITH VAPOR BARRIER.

26. REFRIGERANT PIPING, NOT SHOWN ON PLANS, SHALL BE SIZED & INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTALLATION INSTRUCTIONS AND LOCAL CODES.

27. MECHANICAL CONTRACTOR SHALL VERIFY LOCATION OF ALL PENETRATIONS FOR RELIEF HOODS, OUTSIDE AIR HOODS, LOUVERS, AND WALL CAPS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.

28. MECHANICAL CONTRACTOR SHALL PAINT ALL RELIEF HOODS, INTAKE HOODS, LOUVERS, AND VENT CAPS. CONFIRM COLOR WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.

29. ALL SUPPLY, RETURN, AND OUTSIDE AIR DUCTWORK IN ATTIC TO BE INSULATED WITH A MINIMUM OF R-8 PER NCECC SECTION C403.2.9.

30. PENETRATIONS OF RATED WALLS, PARTITIONS AND FLOORS OF NON- COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH NONCOMBUSTIBLE MATERIALS. PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOOR OF COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH MATERIALS EQUIVALENT TO TWO INCHES OF WOOD. FIRESTOPPING SHALL COMPLY WITH ASTM E-814.

31. MC SHALL PREPARE ALL EXPOSED DUCT, GRILLES, PIPING, AND UNITS FOR PAINTING. GC WILL BE RESPONSIBLE FOR PAINTING.

32. ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR MECHANICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

ENERGY REQUIREMENTS:

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

METHOD OF COMPLIANCE

PRESCRIPTIVE ☒ PERFORMANCE ☐ ENERGY COST BUDGET ☐

CLIMATE ZONE	3
THERMAL ZONE	
WINTER DRY BULB	23
SUMMER DRY BULB	91
INTERIOR DESIGN CONDITIONS	
WINTER DRY BULB	70
SUMMER DRY BULB	75
RELATIVE HUMIDITY	50
BUILDING HEATING LOAD (MBH)	-
BUILDING COOLING LOAD (MBH)	-
MECHANICAL SPACING CONDITIONING SYSTEM	
UNITARY	
DESCRIPTION OF UNIT	SEE SCHEDULES
HEATING EFFICIENCY	SEE SCHEDULES
COOLING EFFICIENCY	SEE SCHEDULES
HEAT OUTPUT OF UNIT	SEE SCHEDULES
COOLING OUTPUT OF UNIT	SEE SCHEDULES
BOILER	
TOTAL BOILER OUTPUT. IF OVERSIZED, STATE REASON.	NA
CHILLER	
TOTAL CHILLER OUTPUT. IF OVERSIZED, STATE REASON.	NA
LIST EQUIPMENT EFFICIENCIES	SEE SCHEDULES
EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)	
MOTOR HORSEPOWER	SEE SCHEDULES
NUMBER OF PHASES	SEE SCHEDULES
MINIMUM EFFICIENCY	SEE SCHEDULES
MOTOR TYPE	SEE SCHEDULES
NUMBER OF POLES	SEE SCHEDULES

DESIGNERS 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 N.C.S. ENERGY CODE.

SIGNED: H. Wayne King III

NAME: H. WAYNE KING III, P.E.

TITLE: MECHANICAL ENGINEER

MECHANICAL LEGEND

18x14	RECTANGULAR DUCT
6"Ø	ROUND METAL DUCT
6"Ø	FLEXRIGID ROUND DUCT
	ELBOW WITH TURNING VANES
	VOLUME DAMPER
	SUPPLY TAP WITH VOLUME DAMPER
	SUPPLY DIFFUSER/GRILLE
	RETURN REGISTER/GRILLE
	EXHAUST REGISTER/GRILLE
	VERTICAL SUPPLY DUCT
XX-1	MECHANICAL EQUIPMENT TYPE XX
	CEILING EXHAUST FAN
T	T-STAT
	LOUVERED DOOR (SEE ARCHITECTURAL DRAWINGS)
	3/4" DOOR UNDER CUT
FD	U.L. FIRE DAMPER
RD	U.L. CEILING RADIATION DAMPER
FSD	U.L. FIRE-SMOKE DAMPER

UNIT HEATER SCHEDULE

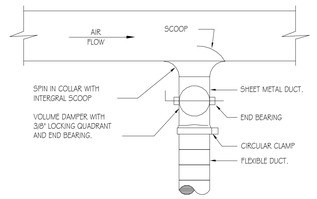
TAG	LOCATION	MOUNTING	CAPACITY MBH I/O	V	PH	HZ	MANUFACTURER & MODEL NO.	NOTES
UH-1	HANGAR	SUSPEND	75/60	120	1	60	REZNOR X-75	1,2,3,4
UH-2	HANGAR	SUSPEND	75/60	120	1	60	REZNOR X-75	1,2,3,4
UH-3	HANGAR	SUSPEND	75/60	120	1	60	REZNOR X-75	1,2,3,4
UH-4	HANGAR	SUSPEND	75/60	120	1	60	REZNOR X-75	1,2,3,4

NOTES:
1. INTERNAL THERMOSTAT
2. MOUNT HEATER @ 12" A.F.F.
3. UNIT DISCONNECT
4. U.L. LISTED

VENTILATION CALCULATIONS

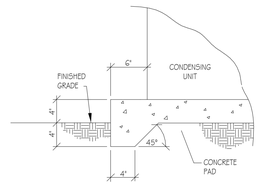
BASED ON 2018 NCMC TABLE 403.3

	Floor Area	Area Outdoor Air Rate cfm/sqft	People Outdoor Air Rate cfm/person	Occupant Density #/1000 S.F	Occupancy	Outdoor Air Required	Ventilation Effectiveness (Ez)	Total Outdoor Air Required
AH-1								
Corridor	354	0.06	0	0	0	21	0.8	27
Office	607	0.06	5	5	3	52	0.8	64
Lobbies/Prefunction	524	0.06	7.5	30	16	149	0.8	187
							AH-1 TOTAL OUTSIDE AIR REQUIRED	187
							AH-1 TOTAL OUTSIDE AIR PROVIDED	200



NOTES:
1. SEE FLOOR PLANS AND SPECIFICATIONS FOR DUCT INSULATION REQUIREMENTS.
2. TAP OFF TOP/SIDE/BOTTOM OF DUCT AS REQUIRED

1 BRANCH TAKEOFF TO SINGLE OUTLET
NOT TO SCALE



2 CONDENSING UNIT PAD DETAIL
NOT TO SCALE

FAN SCHEDULE

UNIT NO.	SERVICE	AREA SERVED	CFM	S.P.	RPM	TYPE & ARRANGEMENT	MIN. MOTOR HP & VOLTAGE	MANUFACTURER & MODEL NO.	DRIVE	CONTROL SCHEME	NOTES
EF-1	EXHAUST	TOILET	75	0.25"	808	CEILING	0.04 HP 120/1PH	COOK GC-146	DIRECT	A	1-4
EF-2	EXHAUST	TOILET	75	0.25"	808	CEILING	0.04 HP 120/1PH	COOK GC-146	DIRECT	A	1-4
EF-3	EXHAUST	HANGAR	2000	0.25"	865	WALL	0.25 HP 120/1PH	COOK GC-146	DIRECT	C	1-9

NOTES:
1. SCREEN
2. BACKDRAFT DAMPER
3. COLOR BY ARCHITECT
4. INTEGRAL DISCONNECT SWITCH
5. SPEED CONTROLLER NEAR FAN
6. PROVIDE STARTER AS REQUIRED
7. PROVIDE WITH CURVED BLADES
8. PROVIDE WEATHERHOOD WITH FILTERS
9. PROVIDE WITH OSHA MOTOR SIDE GUARD.

CONTROL OPTIONS:
A. CONTROL W/ ROOM LIGHTS
B. CONTROL W/ THERMOSTAT
C. CONTROL W/ SWITCH
D. CONTINUOUS OPERATION

DIFFUSER SCHEDULE

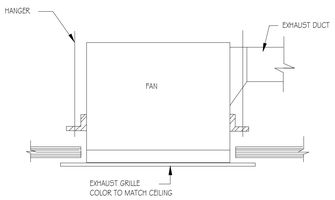
SYMBOL	CFM	NECK SIZE	MODULE SIZE	FRAME TYPE	PATTERN	DAMPER	MATERIAL	SERVICE	FINISH	MANUFACTURER & MODEL NO.	NOTES
A	AS NOTED	AS NOTED	24x24	LAY-IN	4-WAY	YES	STEEL	SUPPLY	NOTE 2	PRICE SMD	1
B	AS NOTED	AS NOTED	12x12	SURFACE	4-WAY	YES	STEEL	SUPPLY	NOTE 2	PRICE SMD	1
C	AS NOTED	AS NOTED	24x24	LAY-IN	-	YES	STEEL	RETURN	NOTE 2	PRICE PDDR	1

NOTES:
1. DIFFUSER DESIGNATIONS ON PLANS AS FOLLOWED:

DIFFUSER OR NECK SIZE — DIFFUSER TYPE AS NOTED ABOVE

AIR QUANTITY — 8x4 / 75 — A

2. FINISH TO MATCH/ BE ABLE MATCH CEILING OR WALL OR DOOR
3. PROVIDE WITH U.L. LISTED RADIATION DAMPER.

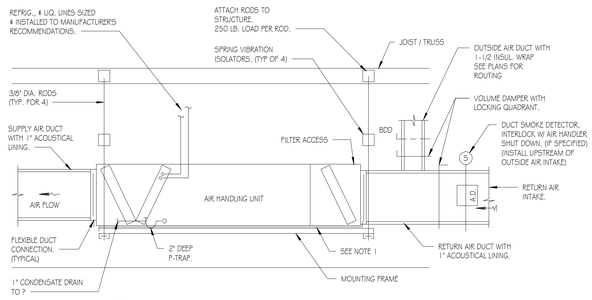


3 EXHAUST FAN DETAIL
NOT TO SCALE

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

			AIR HANDLING UNIT DATA											HEAT PUMP									
			FAN DATA				COOLING		HEAT	AUX.	ELECTRICAL DATA			GENERAL DATA				ELECTRICAL DATA					
UNIT TAG	AREA SERVED	MANUF. MODEL	FAN CFM	ESP (WG)	MOTOR HP	OA (CFM)	TOTAL (MBH)	SENS. (MBH)	TOTAL (MBH)	HEAT (KW)	VOLTAGE (V/PH)	MCA (A)	MOCP (A)	UNIT TAG	MANUF. MODEL	TONNAGE	EFF. (SEER2)	HSPF	VOLTAGE (V/PH)	MCA (A)	MOCP (A)	WEIGHT (LBS) AH/HP	NOTES
AH-1	OFFICE	CARRIER FJ4DNXC42	1400	0.5"	1/2	200	40.6	31.27	42.7	7.5	208/1	53.8	60	HP-1	CARRIER 25SCA542	3.5	15	7.5	208/1	24.7	40	166/221	1-11 13
AH-2	HANGER	CARRIER FJ4DNXDGO	1800	0.5"	3/4	NA	57.2	42.39	57.2	7.5	208/1	53.8	60	HP-2	CARRIER 25SCA560	5	15	7.5	208/1	33.2	50	210/260	1-10 12 13
AH-3	HANGER	CARRIER FJ4DNXDGO	1800	0.5"	3/4	NA	57.2	42.39	57.2	7.5	208/1	53.8	60	HP-3	CARRIER 25SCA560	5	15	7.5	208/1	33.2	50	210/260	1-10 12 13

NOTES:
1. COOLING CAPACITIES ARE RATED IN ACCORDANCE WITH ARI STANDARD 210/ 290 AT 95 DEGREE FAHRENHEIT AMBIENT OUTDOOR AIR TEMPERATURE, 80 DEGREE FAHRENHEIT DRY BULB, AND 67 DEGREE FAHRENHEIT WET BULB ENTERING AIR TEMPERATURE, AND NORMAL AIR QUANTITY LISTED.
2. REFRIGERANT PIPING TO BE SIZED PER TOTAL INSTALLATION EQUIVALENT LENGTH. LONG-LINE APPLICATION TO BE PROVIDED WHENEVER MANUFACTURER RECOMMENDED LENGTHS ARE EXCEEDED, INCLUDING LIQUID LINE SOLENOID VALVES, ACCUMULATOR, ETC. MAXIMUM T.E.L. IS 100'.
3. PROVIDE SINGLE POINT ELECTRICAL CONNECTION FOR AIR HANDLING UNIT.
4. PROVIDE NEW FILTER IN EACH UNIT AT TURNOVER TO OWNER.
5. OUTDOOR UNITS SHALL HAVE A MINIMUM 14.0 SEER RATING.
6. PROVIDE MANUFACTURERS 7-DAY PROGRAMMABLE AUTOMATIC CHANGEOVER HEAT/ COOL THERMOSTAT. PROVIDE WITH OUTSIDE AIR TEMPERATURE SENSOR TO LOCKOUT ELECTRIC HEAT WHEN OUTSIDE AIR TEMPERATURE IS ABOVE 40 DEGREES.
7. PROVIDE HEAT PUMP KITWITH AIR HANDLER (IF REQUIRED).
8. PROVIDE A 24V MOTORIZED DAMPER ON FRESH AIR RUN-OUT TO UNIT. DAMPER IS TO OPEN WHEN FAN IS ENERGIZED.
9. ALL ACCESSORIES AND OPTIONS ARE TO BE FACTORY INSTALLED.
10. AHU TO USE HORIZONTAL APPLICATION.
11. DRAIN CONDENSATE TO HUB DRAIN.
12. DRAIN CONDENSATE TO BUILDING EXT.
13. CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF UNIT DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY UNITS. INFORMATION ON ALTERNATE UNITS PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/ DEDUCT ASSOCIATED WITH ACCEPTANCE OF THAT UNIT (OR THE ALTERNATE PACKAGE AS A WHOLE).



NOTES:
1. AUXILIARY DRAIN PAN WITH MICROFLOAT SWITCH. INTERLOCK FLOAT SWITCH WITH FURNACE. INSTALL FLOAT SWITCH IN ONE CORNER OF PAN AND TILT PAN TO THAT CORNER.

4 AIR HANDLING UNIT DETAIL
NOT TO SCALE

Sheet List

Sheet Name	Sheet Number
MECHANICAL GENERAL NOTES, LEGEND, AND SCHEDULES	M-001
MECHANICAL FLOOR PLAN	M-101

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MECHANICAL ELECTRICAL PLUMBING

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL H. Wayne King III 030005 REGISTERED PROFESSIONAL ENGINEER SYNE KING

Project Issue Date

FIRM NUMBER = C-2130

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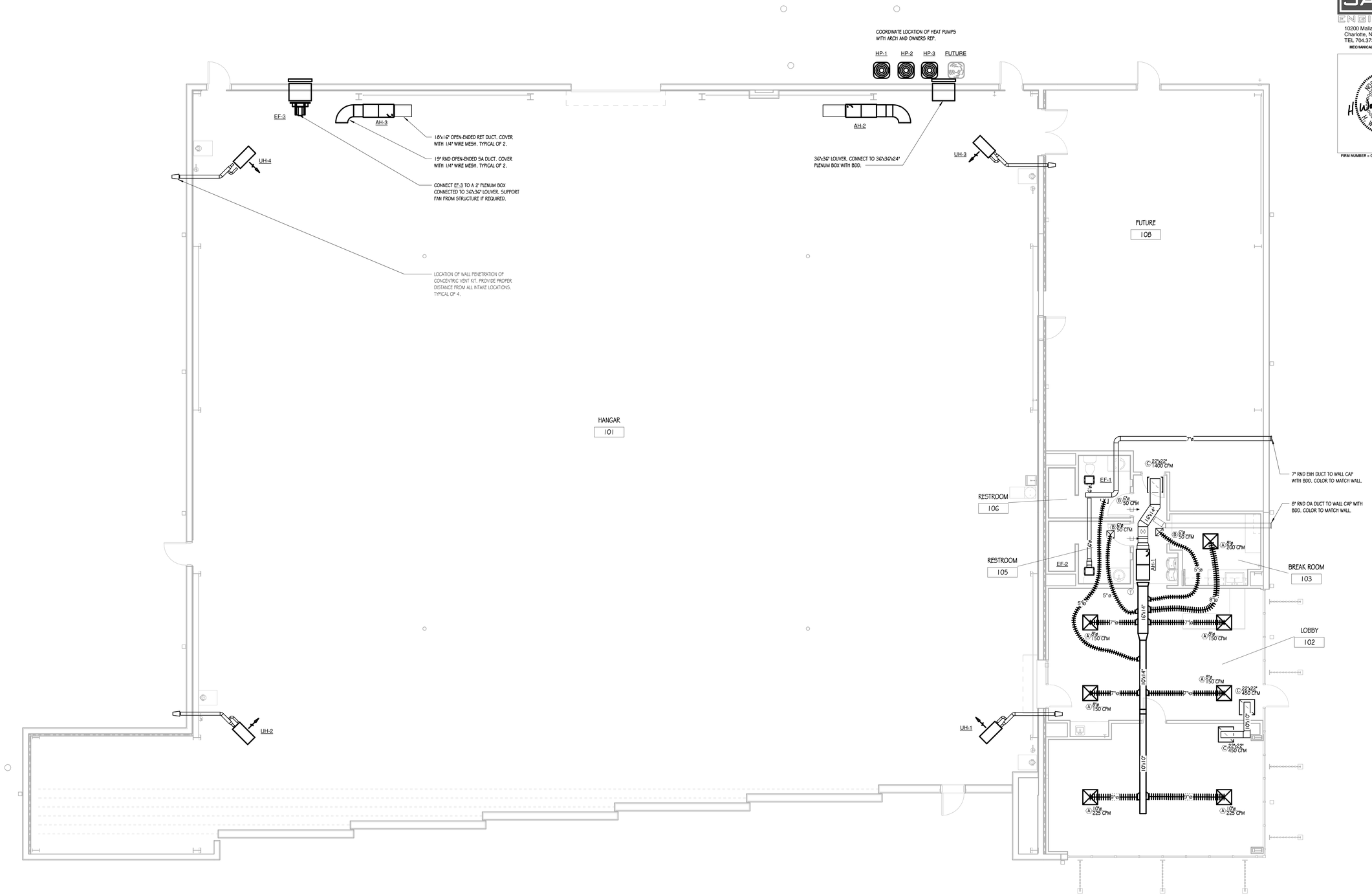
CONSULTANT DISCIPLINE
CONSULTANT NAME

REVISIONS

DATE 03/14/25
PROJECT NUMBER Project Number
SHEET TITLE

MECHANICAL GENERAL NOTES, LEGEND, AND SCHEDULES

SHEET NUMBER
M-001



1 MECHANICAL FLOOR PLAN

3/16" = 1'-0"

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MECHANICAL ELECTRICAL PLUMBING

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING PROFESSIONAL ENGINEER SEAL 040005 HILLARY WYNNE KING III

03/26/25

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MECHANICAL FLOOR PLAN

SHEET NUMBER

M-101

LIGHTING FIXTURE SCHEDULE

MARK	MANUF.	CATALOG NUMBER	LAMP DATA NO.	LAMP DATA TYPE	VOLTS	BALLAST DATA NO.	BALLAST DATA TYPE	INPUT WATTS	MOUNTING	DESCRIPTION
A2	RENOVA	RVN 22 N L040 UNV DM1 C35 AF	-	LED	UNV	-	-	32	LAY-IN	LED 2X2 LAYIN, DIRECT/INDIRECT, 4000K, 3700 LUMEN NOMINAL OUTPUT
A2E	RENOVA	RVN 22 N L040 UNV DM1 C35 AF EM	-	LED	UNV	-	-	32	LAY-IN	AS ABOVE WITH 90 MINUTE BATTERY BACKUP
C	LITHONIA	LDN6 AL02 SWW1 L06 WR L55 MVOLT UGZ WL	1	LED	MULTI	1	ELECTRONIC	26	RECESSED	6" RECESSED CAN LIGHT, SHOWER RATED
D	JADEMAR	JWP-FC-CPS 80W D VW	1	LED	MULTI	1	ELECTRONIC	80	WALL	FULL CUTOFF MEDIUM WALL PACK WITH TEMPERED GLASS LENS AND CAST ALUMINUM HOUSING. DARK SKY. MEDIUM DISTRIBUTION.
E	JADEMAR	JWP-FC-CPS 150W D VW	1	LED	MULTI	1	ELECTRONIC	181	WALL	FULL CUTOFF WALL PACK WITH TEMPERED GLASS LENS AND CAST ALUMINUM HOUSING. DARK SKY. FORWARD THROW
M	LUX	L 3 D A 850 4 U10		LED	UNV		ELECTRONIC	466	SUSPENDED	LED HIGH BAY FIXTURE, 5000K, 70,498 LUMEN NOMINAL OUTPUT, 0-10V DIM
ME	LUMAX	L 3 D A 850 4 U10 E20	-	LED	UNV	-	ELECTRONIC	466	SUSPENDED	AS ABOVE WITH 90 MINUTE 20W BATTERY BACKUP
OL	FARLIGHT	NV-L810LED DUAL.	1	LED	120	1		6	POLE	BUILDING OBSTRUCTION BEACON LIGHT. PROVIDE FAA APPROVED PHOTOCELL ON NORTH FACE OF BUILDING.
S	LITHONIA	MNSL 96 MV M6	1	LED	MULTI	1	ELECTRONIC	48	SURFACE / SUSPENDED	96" LED STRIP
S4	LITHONIA	MNSL 48 MV M6	1	LED	MULTI	1	ELECTRONIC	24	SURFACE / SUSPENDED	48" LED STRIP
	LITHONIA	6ELMT	2	LED	120	-	-	24	UNIVERSAL	SURFACE MOUNTED EMERGENCY LIGHT. MOUNT AT 96" AFF TO BOTTOM. PROVIDE WITH 90 MINUTE BATTERY BACKUP.
	LITHONIA	LQMW SW - R 120/277 EL N	-	LED	120	-	-	1	UNIVERSAL	THERMOPLASTIC LED EXIT SIGN WITH RED LETTERS AND WHITE HOUSING. PROVIDE 90 MINUTE BATTERY BACKUP.
	LITHONIA	LQM SW - R 120/277 EL N	-	LED	120	-	-	1	UNIVERSAL	THERMOPLASTIC LED EXIT SIGN WITH RED LETTERS AND WHITE HOUSING. PROVIDE 90 MINUTE BATTERY BACKUP.
	LITHONIA	AFN DB EXT	2	6W	120	-	-	12	WALL	SURFACE MOUNTED EXTERIOR EMERGENCY LIGHT MOUNT AT 96" AFF. CONNECT TO UNSWITCHED LEG OF EXTERIOR LIGHTING CIRCUIT.

NOTES:
1. CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF FIXTURE DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY FIXTURES. INFORMATION ON ALTERNATE FIXTURES PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/DEDUCT ASSOCIATED WITH ACCEPTANCE OF THAT FIXTURE (OR THE ALTERNATE PACKAGE AS A WHOLE).
2. MASTER SLAVE WIRING CONFIGURATIONS SHALL BE USED FOR MULTI-LAMP FLUORESCENT FIXTURES WHERE POSSIBLE. THE CONTRACTOR SHALL VERIFY THE QUANTITY AND TYPE OF BALLASTS REQUIRED TO PERMIT BI-LEVEL SWITCHING WHERE INDICATED. WHERE BI-LEVEL LIGHTING IS INDICATED INBOARD AND OUTBOARD LAMPS SHALL BE SWITCHED SEPARATELY.
3. EXIT AND EMERGENCY LIGHTING FIXTURES SHALL BE CIRCUITED TO AN UNSWITCHED LEG OF THE LOCAL LIGHTING CIRCUIT, UNLESS NOTED OTHERWISE.

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.
2. ALL MATERIAL, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC., AND THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.
3. ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE ELECTRICAL CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC ONLY AND INDICATE ONLY THE GENERAL ARRANGEMENT. SEE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.
4. ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR ONE YEAR EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER.
5. ELECTRICAL CONTRACTOR SHALL MAKE ALL ELECTRICAL POWER CONNECTIONS TO HVAC, PLUMBING AND OTHER EQUIPMENT AS REQUIRED.
6. A COMPLETE GROUNDING SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH ARTICLE 250 OF THE NEC, AND AS SHOWN ON THE DRAWINGS.
7. PROVIDE GROUND RING AND AIRCRAFT GROUNDING SYSTEM. COORDINATE TIE DOWN & GROUNDING POINTS WITH ARCHITECTURAL PLANS. SEE ALTERNATES FOR EXTENT OF SYSTEM.
8. ALL BRANCH CIRCUIT CONDUITS OR CABLE ASSEMBLIES SHALL CONTAIN AN INSULATED GREEN GROUNDING CONDUCTOR SIZED PER NEC 250-122.
9. ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
10. CONDUCTORS SHALL BE COPPER RATED AT NOT LESS THAN 600 VOLTS. MINIMUM SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL WIRE #8 AWG AND LARGER SHALL BE STRANDED. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID, UNLESS OTHERWISE NOTED. BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE THHN OR THWN AS REQ'D.
11. ALL WIRING SHALL BE INSTALLED IN GALVANIZED RIGID CONDUIT, INTERMEDIATE METAL CONDUIT, OR EMT. EMT SHALL NOT BE USED IN OR UNDER CONCRETE SLABS, OR IN MASONRY WALLS. USE SCHEDULE 40 PVC OUTDOORS WHERE NOT SUBJECT TO PHYSICAL DAMAGE OR BELOW FLOOR SLAB. MINIMUM CONDUIT SIZE TO BE 1/2". USE IMC WHERE REQUIRED BY CODE OR WHERE SUBJECT TO PHYSICAL DAMAGE. EMT FITTINGS SHALL BE COMPRESSION TYPE.
12. MC CABLE ASSEMBLIES MAY BE USED FOR WIRING TO LIGHTING FIXTURES. MAXIMUM WHIP LENGTH SHALL BE 6 FEET.
13. PROVIDE A PULLWIRE IN ALL EMPTY CONDUITS.
14. PROVIDE APPROVED SEALS IN HAZARDOUS LOCATIONS AS REQUIRED BY THE NEC.
15. PROVIDE A TYPED DIRECTORY IN ALL PANELBOARDS CLEARLY DESCRIBING THE LOCATION OF AND TYPE OF LOAD BEING SERVED FOR ALL CIRCUITS. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL PANELBOARDS AND DISCONNECT SWITCHES, WHITE LETTERS ON BLACK BACKGROUND.
16. FUSES 0 - 600 AMPS SHALL BE UL CLASS "RK-1" LOW PEAK DUAL ELEMENT TIME DELAY WITH 200,000 AMPERE INTERRUPTING RATING AS MANUFACTURED BY BUSSMANN, UNLESS NOTED OTHERWISE.
17. ALL TERMINALS/LUGS SHALL BE 60/75° RATED. ALL TERMINALS, SPLICING CONNECTORS, LUGS, ETC SHALL BE IDENTIFIED FOR USE WITH THE MATERIAL (CU/AL) OF THE CONDUCTOR AND SHALL BE PROPERLY INSTALLED.
18. VERIFY ALL REQUIREMENTS AND COORDINATE EXACT LOCATION OF INCOMING ELECTRICAL SERVICE WITH LOCAL POWER COMPANY PRIOR TO PROJECT START-UP. NOTIFY ENGINEER OF ANY CHANGES AS MAY BE REQUIRED.
19. E.C. TO VERIFY DEVICE PLATE COLOR AND MATERIAL WITH ARCHITECT PRIOR TO PURCHASE.
20. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL ELECTRICAL EQUIPMENT FROM FOREIGN MATERIAL DURING CONSTRUCTION (PAINT, SPACKLE, ETC.).
21. PENETRATIONS OF REQUIRED SMOKE PARTITIONS SHALL BE SEALED USING METHODS APPROVED UNDER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS SMOKE STOPPING IS ACCOMPLISHED.
22. WHERE PENETRATIONS ARE MADE THROUGH A REQUIRED FIRE-RESISTIVE WALL, FLOOR, OR PARTITION FOR THE PURPOSE OF RUNNING RACEWAY CARRYING ELECTRICAL, TELEPHONE, TELEVISION, OR LOCAL COMMUNICATION AND/OR SIGNALING CIRCUITS, THE OPENING AROUND THE RACEWAY SHALL BE FIRE STOPPED PER THE STATE BUILDING CODE. COORDINATION WITH THE GENERAL CONTRACTOR SHALL BE MAINTAINED TO INSURE THAT THIS FIRE STOPPING IS ACCOMPLISHED. USE APPROVED U.L. OR EQUIVALENT ASSEMBLIES.
23. IN REQUIRED FIRE RATED WALLS AND PARTITIONS, OPENINGS FOR INSTALLATION OF BOXES THAT ARE GREATER THAN 16 SQUARE INCHES SHALL BE PROTECTED AS REQUIRED BY U.L. COORDINATE CLOSELY WITH THE GENERAL CONTRACTOR TO INSURE THAT THE INTEGRITY OF THE U.L. RATING IS MAINTAINED.
24. WHERE A HOME RUN IS SHOWN THE CIRCUIT SHALL BE INSTALLED IN A DEDICATED CONDUIT, DO NOT COMBINE WITH OTHER CIRCUITS. WHERE A CIRCUIT HOMERUN IS NOT SHOWN, THE CONTRACTOR SHALL COMBINE CIRCUITS AS FOLLOWS: A MAXIMUM OF THREE 20A BRANCH CIRCUITS MAY BE COMBINED IN A COMMON HOMERUN WITH SEPARATE NEUTRALS FOR A MAXIMUM TOTAL OF SIX CURRENT CARRYING CONDUCTORS. ALL BRANCH CIRCUITS LARGER THAN 20A SHALL BE SEPARATELY HOMERUN TO THE PANEL.
25. COORDINATE WITH THE CABLE TV AND TELEPHONE UTILITIES AS REQUIRED FOR SERVICE ENTRANCE REQUIREMENTS. INSTALLATION MUST COMPLY WITH THEIR RESPECTIVE REGULATIONS AND REQUIREMENTS.
26. RECEPTACLES SHALL BE SPECIFICATION GRADE EQUAL TO HUBBELL 5300 SERIES, GROUND FAULT RECEPTACLES SHALL BE HUBBELL GF-5362. LIGHTING SWITCHES SHALL BE SPECIFICATION GRADE EQUAL TO HUBBELL 1200 SERIES.
27. ALL EXTERIOR FIXTURES AND DEVICES SHALL BE RATED FOR OPERATION AT 0° F AND SHALL BE DAMP OR WET LABELED AS REQUIRED.
28. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL ELECTRICAL EQUIPMENT, DEVICES, ETC. IN ACCORDANCE WITH LOCAL SEISMIC CODE REQUIREMENTS. PROVIDE SEISMIC RESTRAINTS, ACCESSORIES AND INSTALLATION DETAIL AS REQUIRED.
29. ELECTRICAL CONTRACTOR TO COORDINATE THE EXACT MCA/MOCP REQUIREMENTS OF ALL EQUIPMENT WITH ALL OTHER TRADES PRIOR TO PRICING, ORDERING, OR INSTALLING ANY ELECTRICAL GEAR. THIS SHALL INCLUDE BUT NOT LIMITED TO ALL HVAC, PLUMBING, KITCHEN, OWNER PROVIDED EQUIPMENT, ETC.

ELECTRICAL SYMBOL LEGEND

	CIRCUIT CONDUCTORS CONCEALED IN FLOOR, WALL OR CEILING.
	ARROWHEAD INDICATES HOMERUN TO PANEL NOTED.
	INDICATES HOT LEG OF CIRCUIT TO BE CARRIED OVER TO NEXT DEVICE. SEE PLANS FOR CONTROL SCHEME.
	JUNCTION BOX CEILING MOUNTED.
	JUNCTION BOX FLOOR MOUNTED.
	JUNCTION BOX WALL MOUNTED AT HEIGHT INDICATED ON DRAWINGS.
S	SINGLE POLE SWITCH, 20A, 120/277 VOLT, 48" A.F.F. TO CENTER. "3" INDICATES 3-WAY SWITCH. "4" INDICATES 4-WAY SWITCH. "D" INDICATES DIMMER SWITCH OF TYPE TO SUIT LOAD. "K" INDICATES KEY OPERATED SWITCH. "M" INDICATES 120V, 20A MOTOR RATED TOGGLE SWITCH.
S^S	INDICATES FLUORESCENT FIXTURES DUAL SWITCHED, INBOARD/OUTBOARD SWITCHED SEPARATELY.
	DUPLEX RECEPTACLE, 15 AMP, 120 VOLT, 24" A.F.F. TO BOTTOM UNLESS NOTED OTHERWISE "GFI" INDICATES GROUND FAULT CIRCUIT INTERRUPTER TYPE "WP" INDICATES WEATHERPROOF "EWC" INDICATES GFI TYPE RECEPTACLE MOUNT INSIDE ENCLOSURE OF ELECTRIC WATER COOLER.
	QUADRUPLEX RECEPTACLE, AS ABOVE, 24" A.F.F. TO BOTTOM UNLESS NOTED OTHERWISE
	DUPLEX RECEPTACLE, AS ABOVE, MOUNTED 6" ABOVE COUNTER TOP OR 4" ABOVE BACKSPLASH, AS APPROPRIATE, OR AT HEIGHT INDICATED, WITH GFI PROTECTION.
30/3/FPN	HEAVY DUTY FUSIBLE/NON-FUSIBLE DISCONNECT SWITCH, NUMBERS INDICATE FRAME SIZE, NUMBER OF POLES AND FUSING. PROVIDE NEMA 1 ENCLOSURE INSIDE. PROVIDE NEMA 3 ENCLOSURE FOR ALL SWITCHES LOCATED OUTSIDE. "FPN" INDICATES FUSE PER EQUIPMENT NAMEPLATE "NF" INDICATES NON-FUSED.
	208Y/120V PANEL, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.
	480Y/277V PANEL, SURFACE OR RECESS MOUNTED, SEE SCHEDULE FOR DETAILS.
	FAN, PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR. PROVIDE DISCONNECTING MEANS AS REQUIRED.
WH	WATER HEATER, PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR. PROVIDE DISCONNECTING MEANS AS REQUIRED.
	RECESSED MOUNTED 2x4 FLUORESCENT TROFFER, SEE FIXTURE SCHEDULE FOR DETAILS.
	TRACK LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	SURFACE MOUNTED FLUORESCENT STRIP, SEE FIXTURE SCHEDULE FOR DETAILS.
	WALL MOUNTED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	SURFACE, RECESSED OR GROUND MOUNTED LIGHTING FIXTURE, SEE FIXTURE SCHEDULE FOR DETAILS.
	ELECTRIC UTILITY METER LOCATION.
	EXIT LIGHT, CEILING AND WALL MOUNTED RESPECTIVELY, SHADING INDICATES FACE. PROVIDE RED LETTERS WITH BLACK HOUSING AND EMERGENCY BATTERY PACK RATED FOR 90 MINUTE DURATION. WIRE TO HOT LEG OF LOCAL LIGHTING CIRCUIT.
	EMERGENCY LIGHT, WALL MOUNTED WITH EMERGENCY BATTERY PACK RATED FOR FOR 90 MINUTE DURATION. WIRE TO HOT LEG OF LOCAL LIGHTING CIRCUIT.
	REMOTE MOUNTED LAMP HEAD, WALL MOUNTED WITH EMERGENCY BATTERY PACK RATED FOR 90 MINUTE DURATION. WIRE TO HOT LEG OF LOCAL LIGHTING CIRCUIT.
	SPRINKLER MONITORING PANEL, SURFACE MOUNTED.
	AIRCRAFT GROUNDING POINT. SEE ARCHITECTURE PLANS FOR EXACT LOCATIONS. EQUAL TO ROBBINS LIGHTNING MODEL 68OA ON 3/4" EXTENSION ROD. PROVIDE #2 GND CONNECTION TO GROUND RING.
CLG	CEILING MOUNTED OCCUPANCY SENSOR SET FOR 30 MINUTES.
	WALL MOUNTED AT 46"AFF OCCUPANCY SENSOR SET FOR 30 MINUTES.
	WALL MOUNTED AT 46"AFF OCCUPANCY/VACANCY SENSOR WITH DIMMING CONTROLS.
	LIGHTING CONTROL STATION
	TELEPHONE/DATA OUTLET, 18" A.F.F. TO CENTER, UNLESS OTHERWISE NOTED. PROVIDE DOUBLE GANG BOX AND SINGLE GANG MUD-RING. PROVIDE 1" CONDUIT TO ACCESSIBLE CEILING IN FINISHED AREAS. PROVIDE TWO RJ-45 CAT6 JACKS PER OUTLET, ONE BLUE ONE YELLOW. PROVIDE TWO CAT6E HOMERUNS BACK TO PATCH PANEL IN RACK IN IT ROOM. STAINLESS COVER PLATES
	TV/DATA OUTLET,60" A.F.F. TO CENTER, UNLESS OTHERWISE NOTED. PROVIDE DOUBLE GANG BOX AND SINGLE GANG MUD-RING. PROVIDE 1" CONDUIT TO ACCESSIBLE CEILING IN FINISHED AREAS. PROVIDE TWO RJ-45 CAT6 JACKS PER OUTLET, ONE ORANGE, ONE BLUE. PROVIDE TWO CAT6E HOMERUNS BACK TO PATCH PANEL IN RACK IN IT ROOM. STAINLESS COVER PLATES
	(2) GANG RECESSED IN SLAB FLOOR BOX WITH COVER PLATE AND RECEPTACLES AND TELE/DATA OUTLETS AS INDICATED.

ELECTRICAL ABBREVIATIONS

18"	DIMENSION INDICATES HEIGHT ABOVE FINISHED FLOOR AT WHICH CENTER OF DEVICE IS TO BE MOUNTED.
AFF	ABOVE FINISHED FLOOR.
AFG	ABOVE FINISHED GRADE.
EC	ELECTRICAL CONTRACTOR.
FPN	FUSE PER EQUIPMENT NAMEPLATE REQUIREMENTS.
GC	GENERAL CONTRACTOR.
MC	MECHANICAL CONTRACTOR.
PC	PLUMBING CONTRACTOR.
WP	INDICATES DEVICE TO HAVE WEATHERPROOF COVER.
UON	UNLESS OTHERWISE NOTED.
FACP	FIRE ALARM CONTROL PANEL.

LIGHTNING PROTECTION NOTES

1. A COMPLETE LIGHTNING PROTECTION SYSTEM SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH NFPA 780.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL LOCAL AND STATE CODES.
3. ALL MATERIAL, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF THE UNDERWRITER'S LABORATORIES, INC., AND THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION.
4. ALL ELECTRICAL PERMITS AND INSPECTION FEES SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. SHOP DRAWINGS OF THE PROPOSED INSTALLATION SHALL BE PREPARED BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER, THE OWNER'S INSURANCE COMPANY AND THE AUTHORITY HAVING JURISDICTION FOR REVIEW. SEE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS.
5. THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR TEN YEARS EFFECTIVE THE DAY THE PROJECT IS ACCEPTED BY THE OWNER.
6. ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR ELECTRICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. CONDUCTORS SHALL BE COPPER OR ALUMINUM AND SHALL BE SELECTED SUCH THAT THEY ARE NOT BE PLACED IN CONTACT WITH DISSIMILAR BUILDING MATERIALS. ALL CONNECTIONS SHALL BE MADE WITH DEVICES LISTED FOR USE WITH THE CONDUCTOR MATERIALS TO BE JOINED.
8. BUILDING STRUCTURAL STEEL MAY BE USED AS THE DOWN CONDUCTOR FOR THE SYSTEM BUT MUST BE BONDED TO THE SYSTEM IN ALL CASES.
9. THE ELECTRICAL SERVICE AND THE EMERGENCY POWER DISTRIBUTION SYSTEM SHALL BE PROVIDED THE TRANSIENT VOLTAGE SURGE SUPPRESSION DEVICES.

ELECTRICAL SHEET INDEX

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MECHANICAL ELECTRICAL PLUMBING

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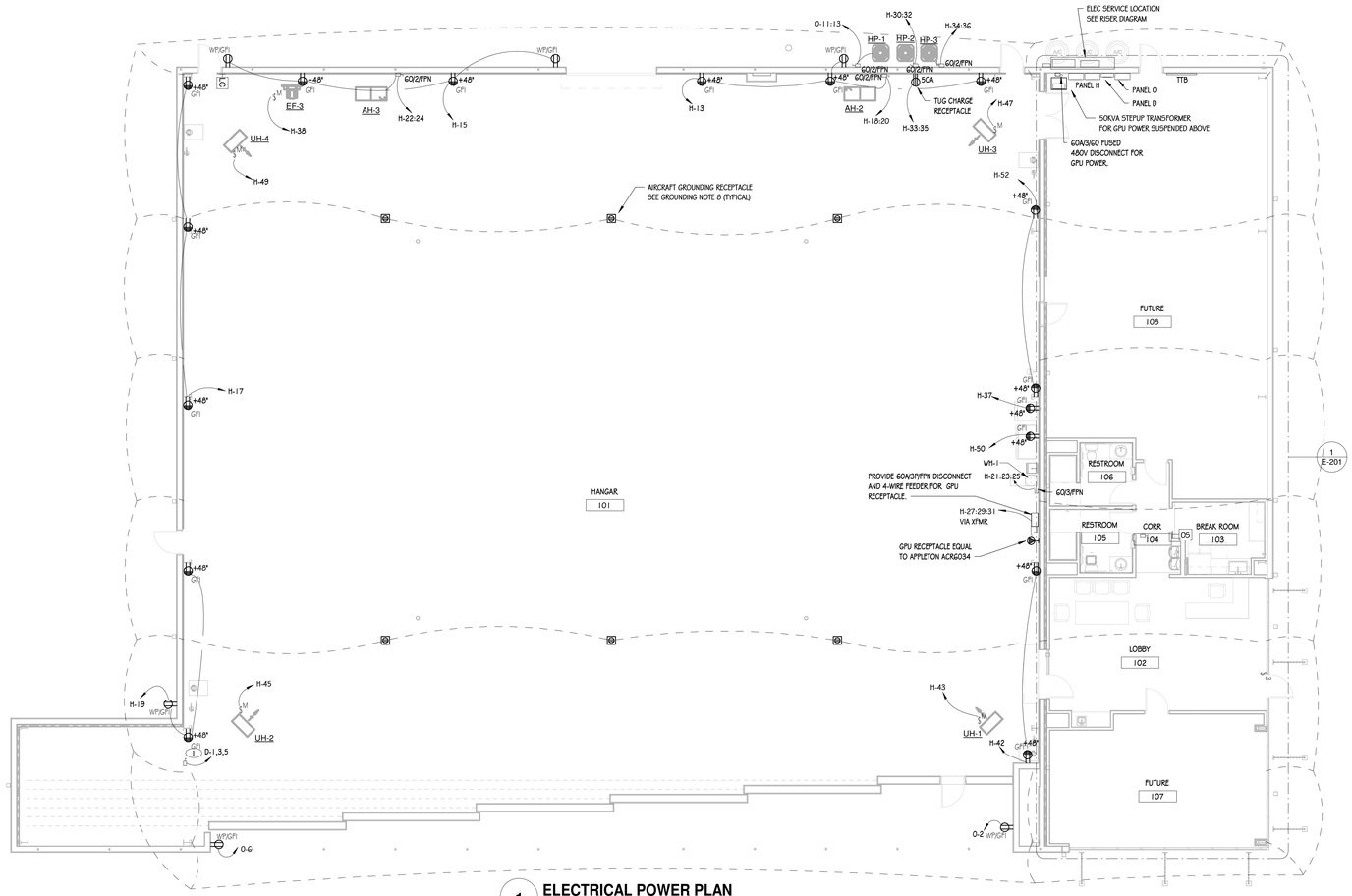
CONSULTANT DISCIPLINE
CONSULTANT NAME

REVISIONS

DATE 03/28/25
PROJECT NUMBER Project Number
SHEET TITLE

ELECTRICAL NOTES, LEGEND AND SCHEDULES

SHEET NUMBER
E-001



1 **ELECTRICAL POWER PLAN**

1/8" = 1'-0"

AIRCRAFT GROUND/GROUND RING NOTES:

1. COORDINATE WITH CIVIL DRAWINGS PRIOR TO BEGINNING WORK.
2. 3/4" DIAMETER X 10-0" SECTIONAL COPPER CLAD GROUND RODS. PROVIDE WITH APPROPRIATE LISTED COUPLING TO ACHIEVE A DEPTH OF 12-0" OR POINT OF REFUSAL. CONNECTION TO BE MADE USING CADWELD OR COMPRESSION COUPLING IF APPROVED BY OWNER.
3. THE EARTH SHALL BE COMPACTED AND MADE TIGHT AGAINST ALL GROUND RODS, GROUND WIRING, CONDUCTORS, ETC.
4. CUTTING AND PATCHING OF ASPHALT AND CONCRETE, AND LANDSCAPE REPAIR SHALL BE INCLUDED. COORDINATE WITH THE OWNER, CIVIL AND GENERAL CONTRACTOR AS REQUIRED. ALL MATERIAL SHALL BE OF SIMILAR STRENGTH, COLOR, ETC.
5. THE GROUND RING SHALL BE 1#3/0 BARE TINNED COPPER CONDUCTOR BURIED A MINIMUM OF 30" BELOW FINISHED GRADE.
6. THE GROUND RING SHALL REMAIN A MINIMUM OF 3'-0" FROM THE STRUCTURE.
7. BOND ALL AIRCRAFT GROUND RECEPTACLES TO THE GROUND RING UTILIZING #2 BARE TINNED COPPER BETWEEN RECEPTACLES AND TO BUILDING COLUMN GROUND RING CONNECTION POINT. SEE ARCHITECTURAL PLANS FOR TIE DOWN AND GROUND POINTS.
8. AIRCRAFT GROUNDING RECEPTACLE. SEE ARCHITECTURAL PLANS FOR EXACT LOCATIONS. SEE SYMBOL LEGEND FOR SPECIFICATION.
9. PROVIDE CADWELD CONNECTION TO COLUMN ABOVE FINISH FLOOR. CONNECT 3/0 BARE TINNED COPPER CONDUCTOR OUT TO GROUND RING.

NEC 513 NOTES:

1. THE AREA BELOW 18" ABOVE FINISHED FLOOR (AFF) IS A CLASS I, DIVISION 2 AREA. ANY CONDUIT PASSING THROUGH THIS AREA MUST HAVE SEALS IN ACCORDANCE WITH 501.15 OR 505.16 AS APPLICABLE. ALL DEVICES / PANELS TO BE INSTALLED A MINIMUM OF 24" ABOVE FINISHED FLOOR.
2. THE AREA WITHIN 5 FEET HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS IS CLASSIFIED AS A CLASS I, DIVISION 2 LOCATION THAT EXTENDS UPWARD FROM THE FLOOR TO A LEVEL 5 FEET ABOVE THE UPPER SURFACE OF THE WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL DEVICES ARE TO BE INSTALLED OUTSIDE OF THIS AREA. SEE ARCHITECTURAL PLANS FOR DETAILS OF ANTICIPATED AIRCRAFT SIZES.
3. DOORS TO OFFICE AND SHOP AREAS ARE TO HAVE AUTOMATIC BOTTOM SEALS SUCH THAT THESE AREAS ARE SUITIBLY CUT-OFF FROM THE HANGAR AREAS.

POWER PLAN NOTES:

(1) COORDINATE WITH G.C. TO PROVIDE 208V, 3P CONNECTION FOR HANGAR DOOR VIA 30A/3P/FFN DISCONNECT SWITCH.

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ELECTRICAL POWER PLAN

SHEET NUMBER

E-101

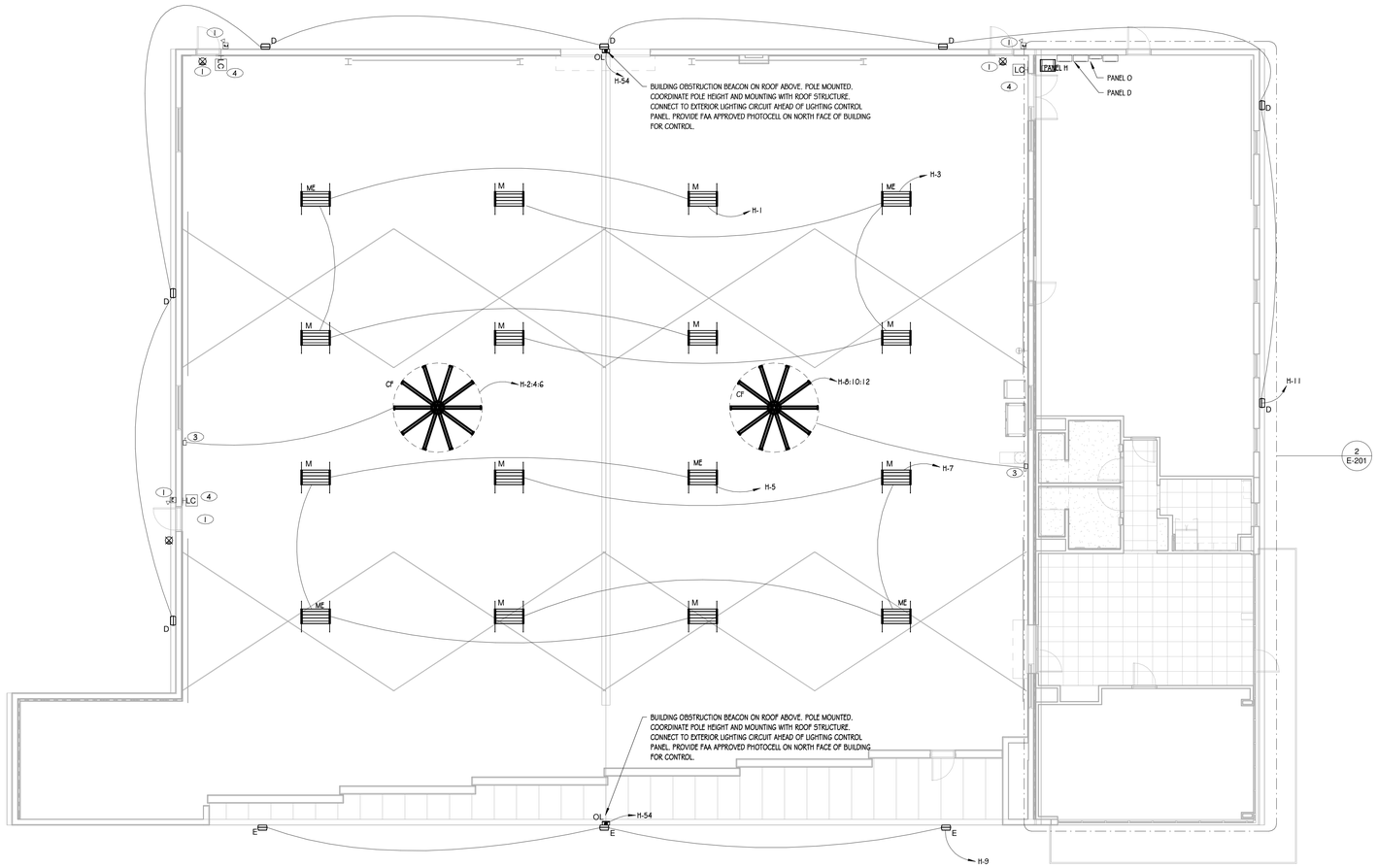
50% HIGH BAY (H-1, H-7)

50% HIGH BAY (H-3, H-5)

ALL LIGHTS ON/OFF

HANGAR LIGHTING CONTROL STATION DETAIL

NOTES:
1. VERIFY FACEPLATE REQUIREMENTS WITH ARCHITECT.
2. PROVIDE (1) LIGHTING CONTROL STATION AT EACH OF THE HANGAR ENTRANCE DOORS. SEE PLANS FOR LOCATIONS.



1 ELECTRICAL LIGHTING PLAN

1/8" = 1'-0"

NOTES:

1. CONNECT ALL EMERGENCY LIGHTS TO NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ANY LOCAL SWITCHING, TYPICAL FOR EACH.
2. ROUTE EXTERIOR LIGHTING THROUGH TIMECLOCK/PHOTOCELL FOR OPERATION. TIMECLOCK = OFF, PHOTOCELL = ON.
3. COORDINATE WITH G.C. TO PROVIDE 208V, 3P CONNECTION FOR CEILING FAN VIA 30A/3P/FPN DISCONNECT SWITCH MOUNTED AT 48" AFF.
4. HANGAR LIGHTING CONTROL STATION. SEE DETAIL THIS SHEET.

LIGHTING GENERAL NOTES:

1. CONNECT ALL EMERGENCY FIXTURE BATTERY TO UNSWITCHED LEG OF LIGHTING CIRCUIT AHEAD OF ALL CONTROLS. AND CIRCUIT PRIMARY DRIVER TO SWITCHED LEG OF LIGHTING CIRCUIT. (FIXTURE TO SWITCH ON/OFF UNLESS NORMAL POWER IS LOST)
2. VERIFY ALL MOUNTING HEIGHTS, REQUIREMENTS AND LOCATIONS WITH OWNER PRIOR TO COMMENCING WORK.
3. ALL LIGHTING FIXTURES ARE TO BE CIRCUITED VIA LIGHTING CONTROL PANEL. RELAYS WILL THEN BE CONNECTED TO LIGHTING CONTROL STATIONS AS SHOWN IN LIGHTING CONTROL STATION DETAIL.

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SHEET TITLE

ELECTRICAL LIGHTING PLAN

SHEET NUMBER

E-102

NEC 513 NOTES:

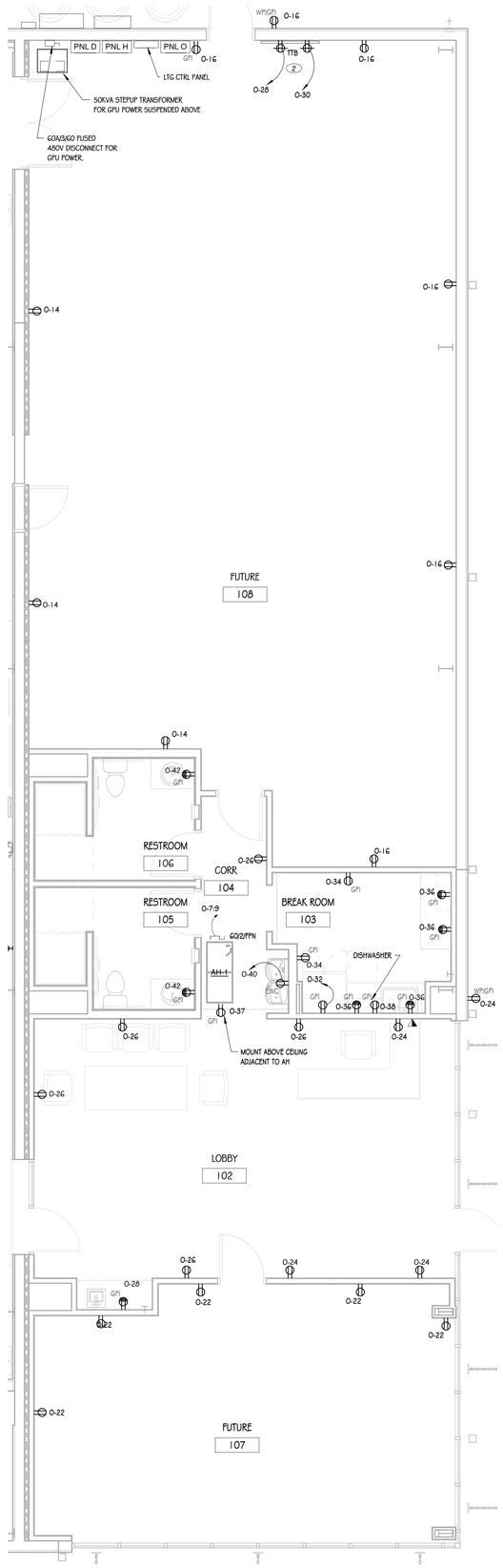
1. THE AREA BELOW 18" ABOVE FINISHED FLOOR (AFF) IS A CLASS I, DIVISION 2 AREA. ANY CONDUIT PASSING THROUGH THIS AREA MUST HAVE SEALS IN ACCORDANCE WITH 501.15 OR 505.16 AS APPLICABLE. ALL DEVICES / PANELS TO BE INSTALLED A MINIMUM OF 24" ABOVE FINISHED FLOOR.

2. THE AREA WITHIN 5 FEET HORIZONTALLY FROM AIRCRAFT POWER PLANTS OR AIRCRAFT FUEL TANKS IS CLASSIFIED AS A CLASS 1, DIVISION 2 LOCATION THAT EXTENDS UPWARD FROM THE FLOOR TO A LEVEL 5 FEET ABOVE THE UPPER SURFACE OF THE WINGS AND OF ENGINE ENCLOSURES. ALL ELECTRICAL DEVICES ARE TO BE INSTALLED OUTSIDE OF THIS AREA. SEE ARCHITECTURAL PLANS FOR DETAILS OF ANTICIPATED AIRCRAFT SIZES.

3. DOORS TO OFFICE AND SHOP AREAS ARE TO HAVE AUTOMATIC BOTTOM SEALS SUCH THAT THESE AREAS ARE SUITIBLY CUT-OFF FROM THE HANGAR AREAS.

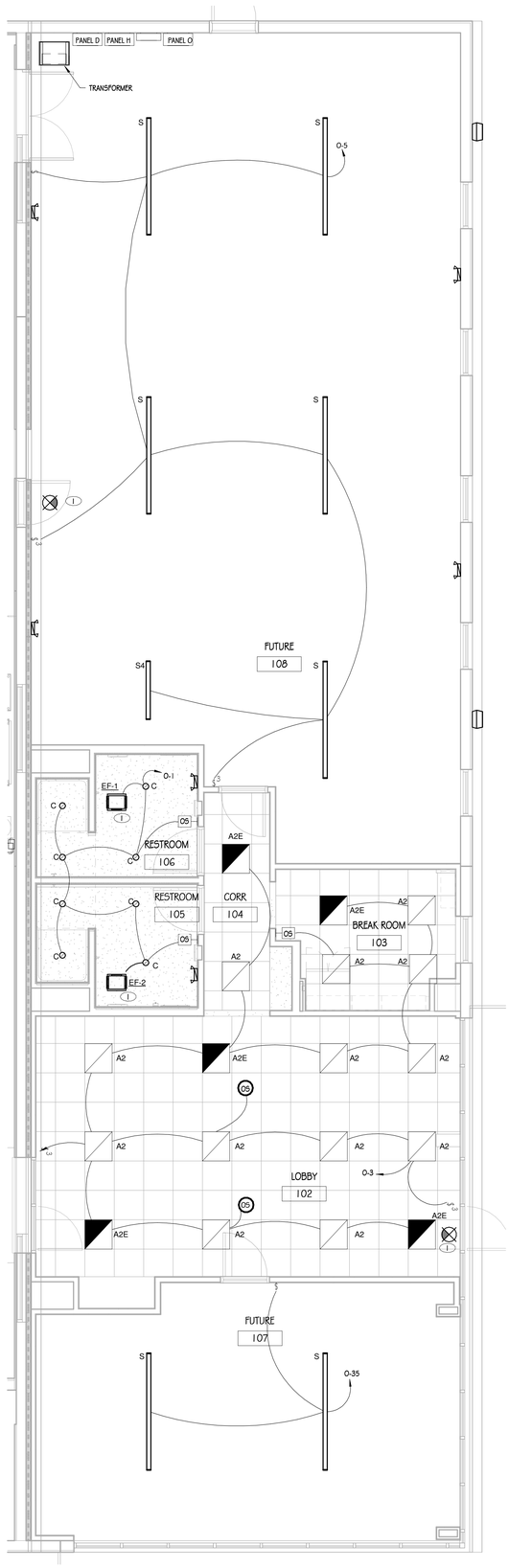
LIGHTING GENERAL NOTES:

1. CONNECT ALL EMERGENCY FIXTURE BATTERY TO UNSWITCHED LEG OF LIGHTING CIRCUIT AHEAD OF ALL CONTROLS, AND CIRCUIT PRIMARY DRIVER TO SWITCHED LEG OF LIGHTING CIRCUIT. (FIXTURE TO SWITCH ON/OFF UNLESS NORMAL POWER IS LOST)
2. VERIFY ALL MOUNTING HEIGHTS, REQUIREMENTS AND LOCATIONS WITH OWNER PRIOR TO COMMENCING WORK.
3. ALL LIGHTING FIXTURES ARE TO BE CIRCUITED VIA LIGHTING CONTROL PANEL. RELAYS WILL THEN BE CONNECTED TO LIGHTING CONTROL STATIONS AS SHOWN IN LIGHTING CONTROL STATION DETAIL.



1 ENLARGED OFFICE POWER PLAN

1/4" = 1'-0"



2 ENLARGED OFFICE LIGHTING PLAN

1/4" = 1'-0"

NOTES:

1. CONNECT ALL EMERGENCY LIGHTS TO NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ANY LOCAL SWITCHING, TYPICAL FOR EACH.
2. PROVIDE 4'x8'x3/4" PLYWOOD TELEPHONE TERMINAL BOARD (TTB). VERIFY LOCATION PRIOR TO INSTALLATION.

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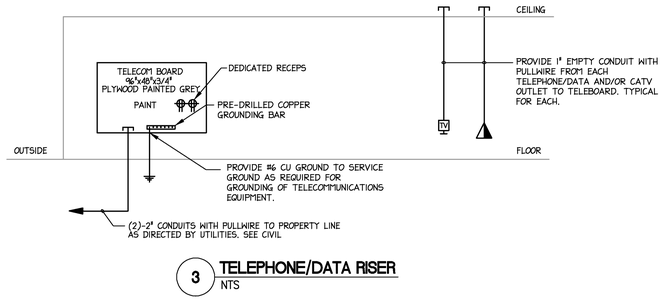
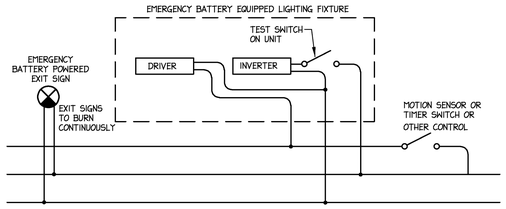
ELECTRICAL ENLARGED PLANS

SHEET NUMBER

E-201



3 TELEPHONE/DATA RISER
NTS



4 EMERGENCY FIXTURE WIRING
DIAGRAMMATIC ONLY

NOTES:

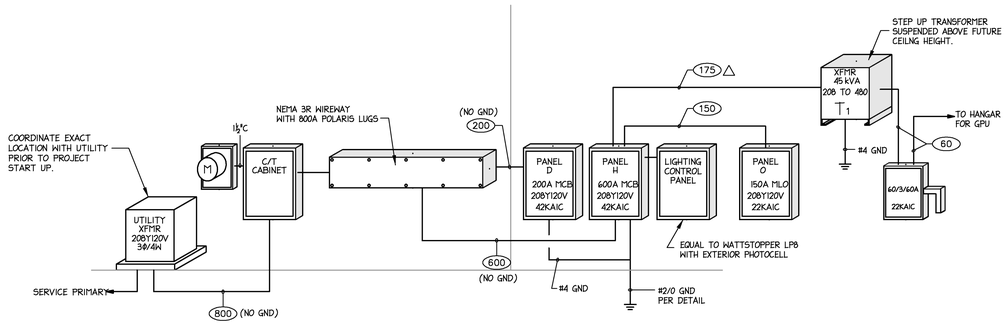
1. COORDINATE EXACT TELEPHONE AND DATA WIRING REQUIREMENTS WITH OWNER PRIOR TO PROJECT START UP.
2. COORDINATE ALL DATA/TELEPHONE SERVICE WORK WITH LOCAL UTILITY PRIOR TO PROJECT START UP.

FEEDER SCHEDULE - CU

STD. FUSE OR C/B TRIP SIZE	# OF SETS	BUILDING WIRE QUANTITY & SIZE TYPE THWN - DRY TYPE THHN - WET	MINIMUM CONDUIT SIZE
30	1	4 #10, #10 G	1/2"
35	1	4 #8, #10 G	3/4"
40	1	4 #8, #10 G	3/4"
45	1	4 #6, #10 G	1"
50	1	4 #6, #10 G	1"
60	1	4 #6, #10 G	1"
70	1	4 #4, #8 G	1 1/4"
80	1	4 #3, #8 G	1 1/4"
90	1	4 #2, #8 G	1 1/4"
100	1	4 #2, #8 G	1 1/4"
110	1	4 #2, #6 G	1 1/2"
125	1	4 #1, #6 G	1 1/2"
150	1	4 #1/0, #6 G	2"
175	1	4 #2/0, #6 G	2"
200	1	4 #3/0, #6 G	2"
225	1	4 #4/0, #4 G	2 1/2"
250	1	4 - 250MCM, #4 G	2 1/2"
300	1	4 - 350MCM, #4 G	2 1/2"
350	2	4 #2/0, #3 G	2"
400	1	4 - 600MCM, #3 G	4"
450	2	4 #4/0, #2 G	2 1/2"
500	2	4 - 250MCM, #2 G	2 1/2"
600	2	4 - 350MCM, #1 G	3"

NOTES:

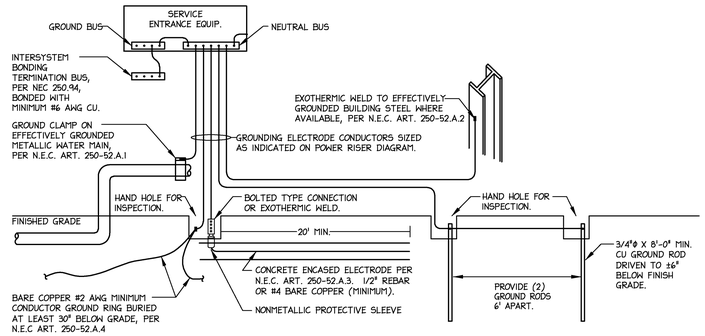
1. ALL FEEDER SIZES LISTED MAY NOT BE USED IN PROJECT RISER DIAGRAM.
2. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT SIZE REQUIRED IF WIRE TYPES OTHER THAN THOSE LISTED ABOVE ARE USED.
3. REFER TO LATEST EDITION OF NEC FOR CONDUIT TYPES REQUIRED PER THEIR LOCATION. IF CONDUIT OTHER THAN 'EMT' IS REQUIRED USE SIZE PER MAXIMUM FILL TABLES.
4. FEEDER SIZES SHOWN IN PROJECT RISER WITH A DELTA SYMBOL 'Δ' ARE 3Ø, 3 WIRE FEEDERS, A NEUTRAL WIRE IS NOT REQUIRED.
5. FEEDER SIZES SHOWN IN PROJECT RISER WITH A DELTA SYMBOL 'Ø' ARE 1Ø, 3 WIRE FEEDERS.
6. IG - PROVIDE ISOLATED GROUND CONDUCTOR FOR ISOLATED GROUND BUS IN PANEL.
7. FEEDERS ARE SIZED FOR NEC DEMAND ONLY. EC TO ADJUST FEEDER SIZES AS REQUIRED TO MAINTAIN 3% MAX VOLTAGE DROP FROM SERVICE ENTRANCE



NOTES:

1. COORDINATE ALL ELECTRICAL SERVICE WORK WITH LOCAL UTILITY PRIOR TO PROJECT START UP. ALL WORK MUST CONFORM TO LOCAL UTILITY RULES AND REGULATIONS.
2. ALL ELECTRICAL EQUIPMENT SIZES ARE BASED ON SQUARE D. IF OTHER MANUFACTURER IS SELECTED IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL EQUIPMENT FITS IN SPACE PROVIDED.

1 POWER RISER DIAGRAM
DIAGRAMMATIC ONLY



2 GROUNDING DETAIL
NTS

GROUNDING ELECTRODES SHALL BE PROVIDED IN ACCORDANCE WITH NEC SECTION 250. ALL GROUNDING ELECTRODE CONDUCTORS SIZED AS INDICATED ON POWER RISER DIAGRAM. **ALL METHODS OF CREATING THE GROUNDING SYSTEM MAY NOT BE REQUIRED OR AVAILABLE.**

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ELECTRICAL RISERS AND DETAILS

SHEET NUMBER
E-301

PANELBOARD SCHEDULE - 'H'

MAIN: 600A MCB | VOLTAGE: 208/120 | PHASE: 3 | WIRE: 4 | MOUNTING: SURFACE | AIC: 42,000 | NOTES:

CKT #	BKR TRIP	POLE	WIRE SIZE	COND SIZE	DESCRIPTION	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	PHASE A	PHASE B	PHASE C	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	DESCRIPTION	COND SIZE	WIRE SIZE	POLE	BKR TRIP	CKT #
1	20	1	10	1/2"	LTG-HANGAR (LCP)	1.9							■					1.0					HANGAR CEILING FAN	1/2"	12	3	20	2
3	20	1	10	1/2"	LTG-HANGAR (LCP)	1.9								■				1.0										4
5	20	1	10	1/2"	LTG-HANGAR (LCP)	1.9									■			1.0										6
7	20	1	10	1/2"	LTG-HANGAR (LCP)	1.9							■					1.0					HANGAR CEILING FAN	1/2"	12	3	20	8
9	20	1	10	1/2"	LTG-EXTERIOR (LCP)	0.5								■				1.0										10
11	20	1	10	1/2"	LTG-EXTERIOR (LCP)	0.5									■			1.0										12
13	20	1	12	1/2"	RECEPTACLES		0.7						■										SPACE					14
15	20	1	12	1/2"	RECEPTACLES		0.7							■									SPACE					16
17	20	1	12	1/2"	RECEPTACLES		0.5								■				5.6				AH-2	1 1/4"	4	2	60	18
19	20	1	12	1/2"	RECEPTACLES		0.5						■						5.6									20
21	50	3	6	1"	WATER HEATER WH-1							4.5		■					5.6				AH-3	1 1/4"	4	2	60	22
23												4.5			■				5.9									24
25												4.5	■										SPACE					26
27	175	3	2/0	2"	GPU POWER							14.0		■									SPACE					28
29					VIA STEP UP TRANSFORMER							14.0			■					3.4			HP-2	1"	6	2	50	30
31					(SEE RISER DIAGRAM)							14.0	■							3.4								32
33	50	2	6	1"	TUG RECEPT							4.2		■						3.4			HP-3	1"	6	2	50	34
35												4.2			■					3.4								36
37	20	1	12	1/2"	REFRIGERATOR		0.7						■					0.7					EF-3	1/2"	12	1	20	38
39					SPACE									■														40
41					SPACE										■			0.7					RECEPTACLES	1/2"	12	1	20	42
43	20	1	12	1/2"	UH-1					1.5			■			0.7	1.4	0.5	5.6	2.1	0.0	2.0	PANEL 'O'	2"	1/0	3	150	44
45	20	1	12	1/2"	UH-2					1.5				■		1.3	3.1	0.5	11.2	0.0	0.0	0.0						46
47	20	1	12	1/2"	UH-3					1.5					■	1.5	2.4	0.0	5.6	2.1	0.0	0.2						48
49	20	1	12	1/2"	UH-4					1.5			■				0.7						RECEPTACLES	1/2"	12	1	20	50
51					SPACE									■			0.7						RECEPTACLES	1/2"	12	1	20	52
53					SPACE										■	0.2							BLDG OBSTRUCTION LGT	1/2"	12	1	20	54
LIGHTING (KVA):					12.2	8.5	3.1	0.0	0.0	6.0	0.0	63.9				3.7	9.0	7.7	45.1	17.8	0.0	2.2	CONNECTED LOAD (KVA):					167.0
RECEPTACLES (KVA):					12.1																		DEMAND LOAD (KVA):					168.9
MOTORS (KVA):					7.7	51.8		0.0				PHASE A	52			431.9												
A/C (KVA):					45.1	55.1		0.0				PHASE B	55			459.1							CONNECTED LOAD (AMPS):					463.4
HEATING (KVA):					23.8	60.0		0.0				PHASE C	60			500.4							DEMAND LOAD (AMPS):					468.9
KITCHEN (KVA):					0.0	SECTS 1+2		SECT 3+4					KVA			AMPS												
MISCELLANEOUS (KVA):					66.1																							

NOTES:
1. PANEL SHALL BE SERVICE ENTRANCE RATED.
2. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT.
3. AFI - PROVIDE ARC FAULT CIRCUIT INTERRUPTER BREAKER FOR CIRCUIT.
4. L - INDICATES LOCK-ON ATTACHMENT REQUIRED.
5. PROVIDE SWD/HID RATED BREAKERS FOR LIGHTING CIRCUITS.
6. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.
7. PC/TC - CIRCUIT THROUGH 120V 2000W PHOTOCELL AND 7-DAY TIMECLOCK FOR PHOTOCELL ON, TIMECLOCK OFF CONTROL. LOCATE TIMECLOCK ADJACENT TO PANEL AND LOCATE PHOTOCELL ON NORTH SIDE OF BUILDING.

PANEL H DEMAND CALCS

LIGHTING		12.16	KVA	X	125	%	=	**15.2 KVA**
RECEPTACLE	TOTAL	12.10	KVA					
	1ST	10.00	KVA	X	100	%	=	**10.0 KVA**
	REMAIN	2.10	KVA	X	50	%	=	**1.0 KVA**
MOTORS		7.70	KVA	X	100	%	=	**7.7 KVA**
A/C		45.10	KVA	X	100	%	=	**45.1 KVA**
HEATING		23.80	KVA	X	100	%	=	**23.8 KVA**
FUTURE			KVA	X	100	%	=	**0.0 KVA**
KITCHEN		0.00	KVA	X	65	%	=	**0.0 KVA**
MISCELLANEOUS		66.10	KVA	X	100	%	=	**66.1 KVA**
TOTAL	=	**468.9**	amps				=	**168.9 KVA**

PANELBOARD SCHEDULE - 'O'

MAIN: 150A MLO | VOLTAGE: 208/120 | PHASE: 3 | WIRE: 4 | MOUNTING: SURFACE | AIC: 22,000 | NOTES:

CKT #	BKR TRIP	POLE	WIRE SIZE	COND SIZE	DESCRIPTION	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	PHASE A	PHASE B	PHASE C	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	DESCRIPTION	COND SIZE	WIRE SIZE	POLE	BKR TRIP	CKT #
1	20	1	12	1/2"	LIGHTING	0.7							■				0.2						RECEPTACLES	1/2"	12	1	20	2
3	20	1	12	1/2"	LIGHTING	1.3								■			0.2						REFRIGERATOR	1/2"	12	1	20	4
5	20	1	12	1/2"	LIGHTING	1.0									■		0.2						RECEPTS-EXT	1/2"	12	1	20	6
7	60	2	4	1 1/4"	AH-1				5.6				■										SPACE					8
9									5.6					■									SPACE					10
11	40	2	8	3/4"	HP-1					2.1					■								SPACE					12
13										2.1			■				0.5						RECEPTACLES	1/2"	12	1	20	14
15					SPACE									■			0.7						RECEPTACLES	1/2"	12	1	20	16
17					SPACE										■								SPACE	3/4"	10	2	30	18
19					SPACE								■										SPACE					20
21					SPACE									■			0.9						RECEPTACLES	1/2"	12	1	20	22
23	20	1	12	1/2"	BACKFLOW PREVENTER							0.2			■		0.5						RECEPTACLES	1/2"	12	1	20	24
25	20	2	12	1/2"	SEPTIC LIFT PUMP/ALARM			0.5					■				0.5						RECEPTACLES	1/2"	12	1	20	26
27								0.5						■			0.4						TELE BRD	1/2"	12	1	20	28
29	20	1	12	1/2"	SERVICE RECEPTS		0.2								■		0.4						TELE BRD	1/2"	12	1	20	30
31					SPACE								■									1.0	REFRIGERATOR	1/2"	12	1	20	32
33					SPACE									■			0.4						RECEPTACLES	1/2"	12	1	20	34
35	20	1	12	1/2"	LIGHTING	0.5									■		0.7						COUNTER RECEPTS	1/2"	12	1	20	36
37	20	1	12	1/2"	RECEPT-ATTIC		0.2						■									1.0	DISHWASHER	1/2"	12	1	20	38
39	60	2	4	1 1/4"	AH-1				5.6					■			0.5						EWC	1/2"	12	1	20	40
41									5.6						■		0.4						RECEPTACLES	1/2"	12	1	20	42
LIGHTING (KVA):					3.5	3.5	0.4	1.0	22.4	4.2	0.0	0.2				0.0	6.5	0.0	0.0	0.0	0.0	2.0	CONNECTED LOAD (KVA):					40.2
RECEPTACLES (KVA):					6.9																		DEMAND LOAD (KVA):					41.1
MOTORS (KVA):					1.0	12.3		0.0				PHASE A	12			102.5												
A/C (KVA):					22.4	16.1		0.0				PHASE B	16			134.2							CONNECTED LOAD (AMPS):					111.6
HEATING (KVA):					4.2	11.8		0.0				PHASE C	12			98.3							DEMAND LOAD (AMPS):					114.0
KITCHEN (KVA):					0.0	SECTS 1+2		SECT 3+4					KVA			AMPS												
MISCELLANEOUS (KVA):					2.2																							

NOTES:
1. PANEL SHALL BE SERVICE ENTRANCE RATED.
2. GFI - PROVIDE GFCI BREAKER FOR CIRCUIT.
3. AFI - PROVIDE ARC FAULT CIRCUIT INTERRUPTER BREAKER FOR CIRCUIT.
4. L - INDICATES LOCK-ON ATTACHMENT REQUIRED.
5. PROVIDE SWD/HID RATED BREAKERS FOR LIGHTING CIRCUITS.
6. PROVIDE HACR BREAKERS FOR HVAC EQUIPMENT.
7. PC/TC - CIRCUIT THROUGH 120V 2000W PHOTOCELL AND 7-DAY TIMECLOCK FOR PHOTOCELL ON, TIMECLOCK OFF CONTROL. LOCATE TIMECLOCK ADJACENT TO PANEL AND LOCATE PHOTOCELL ON NORTH SIDE OF BUILDING.

PANEL O DEMAND CALCS

LIGHTING		3.50	KVA	X	125	%	=	**4.4 KVA**
RECEPTACLE	TOTAL	6.90	KVA					
	1ST	10.00	KVA	X	100	%	=	**6.9 KVA**
	REMAIN	0.00	KVA	X	50	%	=	**0.0 KVA**
MOTORS		1.00	KVA	X	100	%	=	**1.0 KVA**
A/C		22.40	KVA	X	100	%	=	**22.4 KVA**
HEATING		4.20	KVA	X	100	%	=	**4.2 KVA**
FUTURE			KVA	X	100	%	=	**0.0 KVA**
KITCHEN		0.00	KVA	X	65	%	=	**0.0 KVA**
MISCELLANEOUS		2.20	KVA	X	100	%	=	**2.2 KVA**
TOTAL	=	**114.0**	amps				=	**41.1 KVA**

PANELBOARD SCHEDULE - 'D'

MAIN: 200A MCB | VOLTAGE: 208/120 | PHASE: 3 | WIRE: 4 | MOUNTING: SURFACE | AIC: 42,000 | NOTES:

CKT #	BKR TRIP	POLE	WIRE SIZE	COND SIZE	DESCRIPTION	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	PHASE A	PHASE B	PHASE C	LOAD (KVA) LTG	REC	MTR	A/C	HTG	KIT	MISC	DESCRIPTION	COND SIZE	WIRE SIZE	POLE	BKR TRIP	CKT #
1	60	3	4	1 1/4"	DOOR OPERATOR			5.0					■										SPARE	3/4"	10	3	30	2
3								5.0						■														4
5								5.0							■													6
7					SPACE								■										SPD	3/4"	10	3	30	8
9					SPACE									■														10
11					SPACE										■													12
13					SPACE								■										SPACE					14
15					SPACE									■									SPACE					16
17					SPACE										■								SPACE					18
19					SPACE								■										SPACE					20
21					SPACE									■									SPACE					22
23					SPACE										■								SPACE					24
LIGHTING (KVA):					0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0	0.0	CONNECTED LOAD (KVA):					15.0
RECEPTACLES (KVA):					0.0																		DEMAND LOAD (KVA):					15.0
MOTORS (KVA):					15.0	5.0		0.0				PHASE A	5			41.7												
A/C (KVA):					0.0	5.0		0.0				PHASE B	5			41.7							CONNECTED LOAD (AMPS):					41.6
HEATING (KVA):					0.0	5.0		0.0				PHASE C	5			41.7							DEMAND LOAD (AMPS):					41.6
KITCHEN (KVA):					0.0	SECTS 1+2		SECT 3+4					KVA			AMPS												
MISCELLANEOUS (KVA):					0.0																							

NOTES:
1. PANEL SHALL BE SERVICE ENTRANCE RATED.
2. PROVIDE 30A/3P BREAKER FOR SURGE PROTECTION DEVICE.

PANEL D DEMAND CALCS

LIGHTING		0.00	KVA	X	125	%	=	**0.0 KVA**
RECEPTACLE	TOTAL	0.00	KVA					
	1ST	10.00	KVA	X	100	%	=	**0.0 KVA**
	REMAIN	0.00	KVA	X	50	%	=	**0.0 KVA**
MOTORS		15.00	KVA	X	100	%	=	**15.0 KVA**
A/C		0.00	KVA	X	100	%	=	**0.0 KVA**
HEATING		0.00	KVA	X	100	%	=	**0.0 KVA**
FUTURE			KVA	X	100	%	=	**0.0 KVA**
KITCHEN		0.00	KVA	X	65	%	=	**0.0 KVA**
MISCELLANEOUS		0.00	KVA	X	100	%	=	**0.0 KVA**
TOTAL	=	**41.6**	amps				=	**15.0 KVA**

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03/28/25

FIRM NUMBER = C-2130

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CONSULTANT NAME

REVISIONS

DATE 03/28/25
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SHEET TITLE

ELECTRICAL PANEL SCHEDULES

SHEET NUMBER

E-302