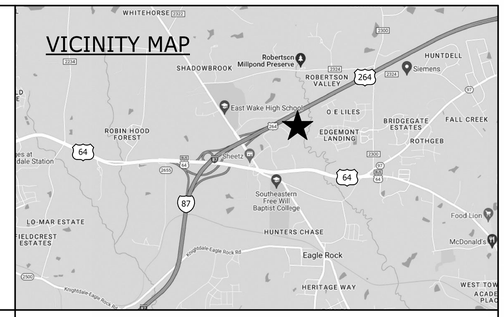
WTCC EWS - FIRE & RESCUE TRAINING CENTER

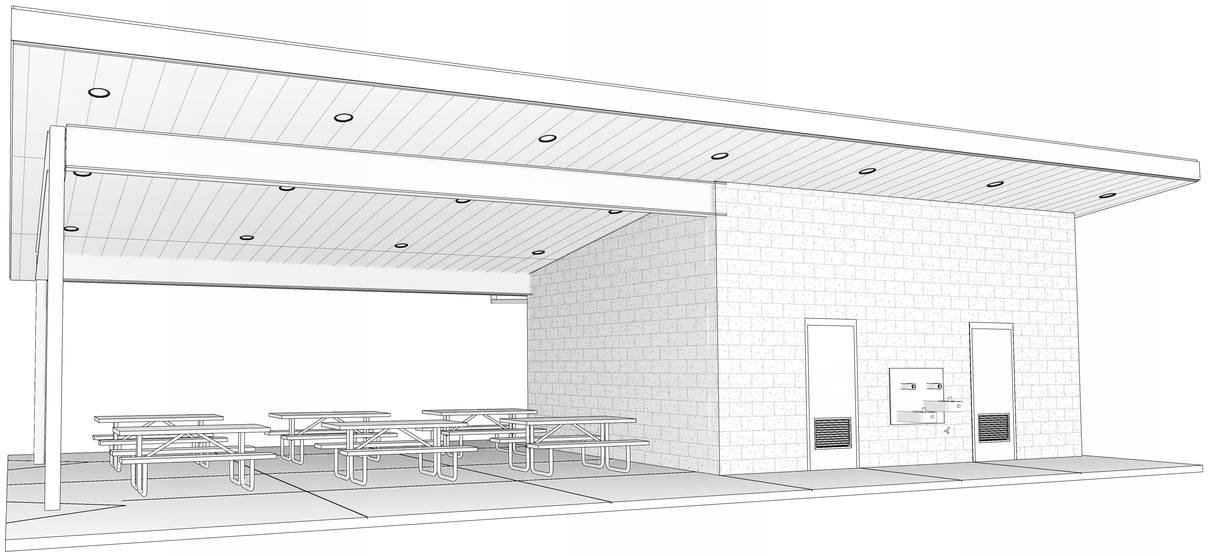
WAKE TECHNICAL COMMUNITY COLLEGE

5345 ROLESVILLE RD, WENDELL, NC 27591

NCCCS NO. 2303

WAKE TECH COMMUNITY COLLEGE





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TT301	TRAINING TOWER - EAST & NORTH ELEVATIONS
TT302	TRAINING TOWER - WEST & SOUTH ELEVATIONS
TT303	TRAINING TOWER - PERSPECTIVES
TT304	TRAINING TOWER - PERSPECTIVES
TT401	TRAINING TOWER - FOUNDATION & SECOND FLOOR FRAMING PLAN
TT402	TRAINING TOWER - THIRD & FOURTH FLOOR FRAMING PLAN
TT403	TRAINING TOWER - FIFTH FLOOR & HIGH ROOF FRAMING PLAN
TT501	TRAINING TOWER - TYPICAL CONCRETE DETAILS
TT502	NOT USED
TT503	TRAINING TOWER - CONCRETE SLAB SECTIONS
TT504	NOT USED
TT505	TRAINING TOWER - CONCRETE STAIR SECTIONS
TT601	TRAINING TOWER - TYPICAL MASONRY DETAILS
TT602	TRAINING TOWER - TYPICAL SCUPPER DETAILS
TT603	TRAINING TOWER - HOLLOW METAL DOOR DETAILS & SCHEDULE
TT604	TRAINING TOWER - TYPICAL WINDOW SHUTTER DETAILS
TT605	TRAINING TOWER - TYPICAL RAILING DETAILS
TT606	NOT USED
TT607	TRAINING TOWER - MISCELLANEOUS DETAILS

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PROJECT NARRATIVE

WAKE TECHNICAL COMMUNITY COLLEGE (WTCC) IS UNDERTAKING THE CREATION OF A NEW DEDICATED FIRE AND RESCUE TRAINING CENTER TO SUPPORT THE SPECIALIZED TRAINING REQUIREMENT OF THE FIRE AND RESCUE COMMUNITY OF WAKE COUNTY AND THE SURROUNDING REGION. THE NEW CENTER WILL BE LOCATED ON THE RECENTLY CONSTRUCTED EASTERN WAKE SITE (EWS) IN WENDELL, NC. THIS NEW FACILITY EXPANDS AND ENHANCES THE COLLEGE'S PUBLIC SAFETY EDUCATIONAL PROGRAMS.

THE PRIMARY FOCUS OF THE NEW FIRE AND RESCUE TRAINING CENTER IS TO PROVIDE SPECIALIZED TRAINING FACILITIES WHICH CAN BE USED TO PREPARE STUDENTS AND RECRUITS FOR REAL-WORLD EMERGENCY SCENARIOS. THE CENTER WILL ALSO BE USED TO SUPPORT ACTIVE FIRST RESPONDERS IN MAINTAINING CERTIFICATIONS AND UPDATED TRAINING AS THE RESPONSE TO VARIOUS EMERGENCY SITUATIONS EVOLVES.

DEVELOPMENT OF THE TRAINING GROUNDS WILL PROVIDE AREAS THAT SUPPORT THE VARIOUS TRAINING PROPS. THE PRIORITY OF THE PROJECT WILL BEGIN WITH THE BURN BUILDING (LIVE FIRE TRAINING STRUCTURE) AND THE TRAINING TOWER. THESE ARE MULTI-STORY STRUCTURES BUILT TO PROVIDE VARIABLE TRAINING CONDITIONS UNDER LIVE BURN CONDITIONS AND TO SIMULATE ELEVATED TECHNICAL RESCUE CIRCUMSTANCES.

ANCILLARY STRUCTURES TO SUPPORT THE TRAINING FUNCTIONS INCLUDE A SHADE STRUCTURE/SHOWER & TOILET ROOMS, AND A STORAGE STRUCTURE FOR BURN MATERIALS.

NOTE:
Samet team is issuing this set and the associated specs to the Trade Partner market in January, 2025 for 100% CD budgeting process.

The hard bid stage will be issued separately later this spring (likely March or April) after project prequalification period is complete and all scopes of work are written.

ISSUE FOR BID
01/10/2025

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Raleigh, NC 27609
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WTCC EWS - FIRE & RESCUE TRAINING CENTER
WAKE TECHNICAL COMMUNITY COLLEGE
5345 ROLESVILLE RD, WENDELL, NC 27591
NCCCS NO. 2303

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SAMET
Rec'd 1.16.2025

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NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
COVER SHEET

G000

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ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR	F.E.	FIRE EXTINGUISHER	MECH	MECHANICAL	SQ. FT.	SQUARE FEET
A.R.A.	AREA OF RESCUE ASSISTANCE	F.F.E.	FURNITURE, FIXTURES, EQUIPMENT	MFR	MANUFACTURER	SQ. IN.	SQUARE INCH
ADJ	ADJACENT	F.O.E.W.	FACE OF EXISTING WALL	MIN	MINIMUM	STD	STANDARD
ALUM	ALUMINUM	F.O.M.	FACE OF MASONRY	MISC	MISCELLANEOUS	STL	STEEL
APC	ACOUSTICAL PANEL CEILING	F.O.S.	FACE OF STUD	MTL	METAL	STRUC	STRUCTURAL
APPROX	APPROXIMATE	F.P.H.B	FREEZE-PROOF HOSE BIB				
		FACT	FACTORY FINISH	N.I.C.	NOT IN CONTRACT	T.O.S.	TOP OF STEEL
BD	BOARD	FE (SM)	SURFACE MOUNTED	N.T.S.	NOT TO SCALE	TELE	TELEPHONE
BLDG	BUILDING	FE (SR)	SEMI-RECESSED	NOM	NOMINAL	THR'LD	THRESHOLD
BOT	BOTTOM	FIN	FINISH			TYP	TYPICAL
BSMT	BASEMENT	FLR	FLOOR	O.C.	ON CENTER		
		FLUOR	FLUORESCENT	O.D.	OUTSIDE DIAMETER	U.N.O.	UNLESS NOTED OTHERWISE
C.J.	CONTROL JOINTS	FRP	FIBERGLASS REINFORCED PANELS	O.H.	OPPOSITE HAND		
C.O.	CLEAN OUT	FTG	FOOTING	OVHD	OVERHEAD	V.C.T.	VINYL COMPOSITION TILE
C.T.	CERAMIC TILE					V.W.C.	VINYL WALL COVERING
CLG	CEILING	G.C.	GENERAL CONTRACTOR	P.L.	PLASTIC LAMINATE	VERT	VERTICAL
CLR	CLEAR	G.D.S.	GUTTER DOWNSPOUT	P.S.F.	POUNDS PER SQ. FOOT		
CMU	CONCRETE MASONRY UNIT	GA	GAUGE	P.S.I.	POUNDS PER SQ. INCH	W.C.	WATER CLOSET
COL	COLUMN	GALV	GALVANIZED	PART	PARTITION	W.G.	WIRE GLASS
CONC	CONCRETE	GWB	GYPSUM WALL BOARD	PLY	PLYWOOD	W.W.F.	WELDED WIRE FABRIC
CONST	CONSTRUCTION			PROP	PROPERTY	W/	WITH
CONT	CONTINUOUS	H.D.	HEAVY DUTY	PT	PAINT	WD	WOOD
CPT	CARPET	H.M.	HOLLOW METAL	PVC	POLYVINYL CHLORIDE		
		HDW	HARDWARE				
DEPT	DEPARTMENT	HT	HEIGHT	R	RADIUS		
DIA	DIAMETER			R.D.	ROOF DRAIN		
DIM	DIMENSION	I.D.	INSIDE DIAMETER	R.D.L.	ROOF DRAIN LEADER		
DWG	DRAWING	INSUL	INSULATION	R/A	RETURN AIR		
		INT	INTERIOR	REBAR	REINFORCING BAR		
E.J.	EXPANSION JOINT			REF	REFERENCE		
E.W.C.	ELECTRIC WATER COOLER	JT	JOINT	REINF	REINFORCING		
EA	EACH			REQ'D	REQUIRED		
ELEC	ELECTRICAL	K	KIPS	REV	REVISION		
ELEV	ELEVATION			RM	ROOM		
EQ	EQUAL	LAM	LAMINATE				
EQUIP	EQUIPMENT	LAV	LAVATORY	S.C.	SOLID CORE		
EXIST	EXISTING			S.S.	STAINLESS STEEL		
EXT	EXTERIOR	M.O.	MASONRY OPENING	SHT	SHEET		
		MAT'L	MATERIAL	SIM.	SIMILAR		
F.D.	FLOOR DRAIN	MAX	MAXIMUM	SPEC	SPECIFICATION		

KEYNOTES - OVERALL

033000	CAST-IN-PLACE CONCRETE
033000.A	CAST-IN-PLACE CONCRETE, SEE STRUCTURAL
033000.B	UNDER SLAB VAPOR BARRIER
042000	UNIT MASONRY
042000.B8	CONCRETE MASONRY UNITS, 8x8x16 NOMINAL, SEE STRUCTURAL
042000.K	MASONRY JAMB ANCHOR
051200	STRUCTURAL STEEL FRAMING, SEE STRUCTURAL
052100	STEEL JOIST FRAMING, SEE STRUCTURAL
053100	STEEL DECKING, SEE STRUCTURAL
054000.M2	COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 2 1/2"
054000.M6	COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 6"
054000.M10	COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 10"
061000.B	P.T. WOOD BLOCKING
061600.C	PLYWOOD SHEATHING
072100.A.1	EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD (XPS), R-7.5
072100.B.10	FIBERGLASS BATT INSULATION, R-35
074113	STANDING SEAM METAL ROOF SYSTEM
074113.A	STANDING SEAM METAL ROOF PANELS
074113.F	PREFINISHED METAL FASCIA WITH DRIP EDGE
074213.B	SUB-FRAMING & FURRING
074213.F	ROOF PANEL METAL RIDGE CAP
074293.A	METAL SOFFIT PANELS
074293.B	METAL SOFFIT PANEL FLASHING & TRIM
076200.D	CONTINUOUS HEAD FLASHING
076200.M	PREFINISHED HANGING GUTTER
076200.Q	PREFINISHED DOWNSPOUT
076200.S	1x8 PREFINISHED METAL WRAPPED EXTERIOR GRADE TRIM
079200.A	JOINT SEALANTS
079200.B	BACKER ROD & JOINT SEALANT
081113	HOLLOW METAL DOORS AND FRAMES
087100.B	DOOR HARDWARE, ALUMINUM THRESHOLD
089119.A	FIXED LOUVER
092216.M3	STEEL STUD FRAMING, 3 5/8"
092216.M6	STEEL STUD FRAMING, 6"
092900.A	GYPSUM WALLBOARD, 5/8"
092900.D	GLASS-MAT BACKING BOARD, 5/8"
092900.F	SOUND ATTENUATION BLANKET
092900.K	GLASS-MAT CEILING BOARD, 5/8"
102800.01	GRAB BAR 54"x42"
102800.02	GRAB BAR 18"
102800.03	TOILET TISSUE DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.05	PAPER TOWEL DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.06	WASTE RECEPTACLE
102800.07	SOAP DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.08	SANITARY NAPKIN DISPOSAL; OWNER PROVIDED, OWNER INSTALLED
102800.09	SEAT COVER-DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.12	SHOWER CURTAIN & ROD
102800.13	FOLDING SHOWER SEAT
102800.15	CUSTODIAL MOP AND BROOM HOLDER
102800.16	MIRROR UNIT
102800.17	SHOWER SHELF
102800.18	SHOWER GRAB BAR 18"x36"
102800.19	GRAB BAR 24"
220000.C	ACCESSIBLE SHOWER STALL & ACCESSORIES.-SLOPE STALL FLOOR TO DRAIN AND FINISH WITH EPOXY PAINT SYSTEM; SEE PLUMBING
220000.D	WATER COOLER; SEE PLUMBING
220000.F	FREEZE-PROOF HOSE BIBB; SEE PLUMBING
220000.M	MOP SINK 36"X36"; SEE PLUMBING
220000.S	ACCESSIBLE SHOWER HEAD; SEE PLUMBING
233100.1	EXHAUST DUCT; SEE MECHANICAL
233713.1	EXHAUST LOUVER; SEE MECHANICAL
235543.1	WALL MOUNTED UNIT HEATER; SEE MECHANICAL
238116.N	DUCTLESS SPLIT SYSTEM INDOOR UNIT; SEE MECHANICAL
238116.O	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT; SEE MECHANICAL
265000.A	LINEAR PENDANT LIGHT FIXTURE; SEE ELECTRICAL

SYMBOLS LEGEND

ROOM NAME 101 — ROOM / AREA

101 — DOOR ID.

N — NORTH ARROW

01 / A101 — DETAIL

01 A000 — EXTERIOR ELEVATION CALLOUT

01/A000 — INTERIOR ELEVATION CALLOUT

01 / A000 — SECTION CALLOUT

12' - 0" — CEILING ELEVATION HEIGHT (SEE FINISH SCHEDULE FOR CEILING TYPE)

X' - X" — SPOT ELEVATION

A — WINDOW TYPE

MXXX — PARTITION TYPE

CW-X — CASEWORK TYPE

GENERAL ARCHITECTURAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, AND OTHER REQUIREMENTS NECESSARY FOR CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
2. SEE SITE, CIVIL, AND LANDSCAPE PLANS FOR CONTINUATION OF WORK OUTSIDE OF BUILDING.
3. PROVIDE TEMPERED GLASS AT DOOR AND WINDOW LITES.
4. ALL DIMENSIONS ARE TO THE FACE OF CMU, FACE OF EXISTING WALL, OR FACE OF STUD.
5. ALL DOOR HINGE-SIDE JAMBS TO BE 4" FROM FACE OF THE PERPENDICULAR WALL TO THE INSIDE FACE OF THE METAL JAMB, TYP., U.N.O.
6. REFERENCED FIRST FLOOR ELEVATION = 0'-0".
7. FOR FINISHES, NEW AND EXISTING, SEE FINISH PLAN SHEETS.
8. KEYNOTES ARE PROVIDED FOR REFERENCE ONLY. GENERAL CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS. KEYNOTES DO NOT EXCLUDE CONTRACTOR FROM REPAIRING AND PATCHING ALL FLOORS, WALLS AND CEILINGS AS NEEDED AS A RESULT OF DEMOLITION WORK. GENERAL CONTRACTOR TO PREPARE ALL FLOORS AND WALL SUBSTRATES AS REQUIRED TO APPLY NEW FINISH AS INDICATED IN THE FINISH PLANS AND SPECIFICATIONS.

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NCCCS NO. 2303

HH ARCHITECTURE PLLC — REGISTERED ARCHITECTS — CORPORATION — NORTH CAROLINA
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SAMET CORPORATION
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Reed 1/15/2025
APPROVED — NORTH CAROLINA

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/01/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **GENERAL ARCHITECTURAL NOTES**

G001

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

NAME OF PROJECT: WTCC, EAST WAKE SITE FIRE & RESCUE TRAINING CENTER - RESTROOM BUILDING
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OWNED BY: ☐ CITY/COUNTY ☐ PRIVATE ■ STATE
CODE ENFORCEMENT JURISDICTION: ☐ CITY - ■ COUNTY WAKE ■ STATE

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PLUMBING	SALAS O'BRIEN	KEVIN ALLEN	032567	919.783.8118	kevin.allen@salasobrien.com
MECHANICAL	SALAS O'BRIEN	KEVIN ALLEN	032567	919.783.8118	kevin.allen@salasobrien.com
SPRINKLER-STANDPIPE	SALAS O'BRIEN	-	-	-	-
STRUCTURAL	LYNCH MYKINS	JEFFREY MORRISON	027813	919.782.1833	jmorrison@lynchmykins.com
RETAINING WALLS-5' HIGH	-	-	-	-	-
PRE-CAST	-	-	-	-	-
TRUSS	-	-	-	-	-
LANDSCAPE	SURFACE 678	ERIC DAVIS	confirm	919.866.4813	edavis@surface678.com
HAZMAT	-	-	-	-	-

2018 NC BUILDING CODE: ■ NEW BUILDING ☐ ADDITION ☐ RENOVATION
☐ 1st TIME INTERIOR COMPLETION
☐ SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS
☐ PHASED CONSTRUCTION - SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS

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

CONSTRUCTED (date): - **CURRENT OCCUPANCY(S)** (Ch. 3): -
RENOVATED (date): - **PROPOSED OCCUPANCY(S)** (Ch. 3): STORAGE

RISK CATEGORY (Table 1604.5): **CURRENT:** ☐ I ☐ II ☐ III ☐ IV
PROPOSED: ☐ I ■ II ☐ III ☐ IV

BASIC BUILDING DATA

CONSTRUCTION TYPE: ☐ I-A ☐ II-A ☐ III-A ☐ IV-A ☐ V-A
(check all that apply) ☐ I-B ☐ II-B ☐ III-B ■ V-B
SPRINKLERS: ■ NO ☐ PARTIAL ☐ YES ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
STANDPIPES: ■ NO ☐ YES CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY
FIRE DISTRICT: ■ NO ☐ YES
FLOOD HAZARD AREA: ■ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: ☐ NO ■ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES AND REQUIREMENTS.)

GROSS BUILDING AREA TABLE

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd FLOOR	-	-	-
2nd FLOOR	-	-	-
MEZZANINE	-	-	-
1st FLOOR	-	1,568	1,568
BASEMENT	-	-	-
TOTAL			1,568 SF

ALLOWABLE AREA

PRIMARY OCCUPANCY CLASSIFICATION(S):
ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
BUSINESS ☐
EDUCATIONAL ☐
FACTORY ☐ F-1 MODERATE ☐ F-2 LOW
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM
INSTITUTIONAL ☐ I-1 CONDITION ☐ 1 ☐ 2
☐ I-2 CONDITION ☐ 1 ☐ 2
☐ I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
MERCANTILE ☐
RESIDENTIAL ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
STORAGE ■ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED
☐ PARKING GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE
UTILITY AND MISCELLANEOUS ☐

ACCESSORY OCCUPANCY CLASSIFICATION(S): -
INCIDENTAL USES (Table 509): -
SPECIAL USES (Chapter 4 - List Code Sections): -
SPECIAL PROVISIONS (Chapter 5 - List Code Sections): -
MIXED OCCUPANCY: ■ NO ☐ YES SEPARATION: 0 HR. EXCEPTION: -

☐ **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.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00 \qquad \text{AREA } \frac{-}{-} + \frac{-}{-} = X \leq 1.00$$

STORY NO.	DESCRIPTION AND 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	STORAGE	1,568	UNLIMITED	NA	UNLIMITED

[1] Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 169'-0" (F)
b. Total building perimeter = 169'-0" (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30' (W)
e. Percent of frontage increase formula: $I_f = 100[F/P - 0.25] \times W/30$ = 75 (%)
[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. The maximum area of air traffic control towers must comply with Table 412.3.1.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET (Table 504.3)	UNLIMITED	15'-6"	504.3
BUILDING HEIGHT IN STORIES (Table 504.4)	1	1	504.4

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (w/1HR* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GRIDERS, TRUSSES	-	0 HR	0 HR	-	-	-	-
BEARING WALLS	-			-	-	-	-
EXTERIOR							
NORTH	> 30'	0 HR	0 HR	-	-	-	-
EAST	> 30'	0 HR	0 HR	-	-	-	-
WEST	> 30'	0 HR	0 HR	-	-	-	-
SOUTH	> 30'	0 HR	0 HR	-	-	-	-
INTERIOR		0 HR	0 HR	-	-	-	-
NONBEARING WALLS AND PARTITIONS			-				
EXTERIOR WALLS							
NORTH	> 30'	0 HR	0 HR				
EAST	> 30'	0 HR	0 HR				
WEST	> 30'	0 HR	0 HR				
SOUTH	> 30'	0 HR	0 HR				
INTERIOR WALLS & PARTITIONS		0 HR	0 HR				
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS		0 HR	0 HR				
FLOOR CEILING ASSEMBLY		0 HR	0 HR				
COLUMNS SUPPORTING FLOORS		0 HR	0 HR				
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS		0 HR	0 HR				
ROOF CEILING ASSEMBLY		0 HR	0 HR				
COLUMNS SUPPORTING ROOF		0 HR	0 HR				
SHAFT ENCLOSURES - EXIT		N/A	N/A				
SHAFT ENCLOSURES - OTHER		N/A	N/A				
CORRIDOR SEPARATION		N/A	N/A				
OCCUPANCY/FIRE BARRIER SEPARATION		N/A	N/A				
PARTY/FIRE WALL SEPARATION		N/A	N/A				
SMOKE BARRIER SEPARATION		N/A	N/A				
SMOKE PARTITION		N/A	N/A				
TENANT / DWELLING UNIT / SLEEPING UNIT SEPARATION		N/A	N/A				
INCIDENTAL USE SEPARATION		N/A	N/A				

* Indicates section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
>30'	UP, NS	NO LIMIT	-

LIFE SAFETY SYSTEM REQUIREMENTS

EMERGENCY LIGHTING: ☐ NO ■ YES
EXIT SIGNS: ■ NO ☐ YES
FIRE ALARM: ■ NO ☐ YES
SMOKE DETECTION SYSTEM: ☐ NO ☐ YES ■ PARTIAL -
CARBON MONOXIDE DETECTION: ☐ NO ■ YES

LIFE SAFETY PLAN REQUIREMENTS

LIFE SAFETY PLAN SHEET #: G-112

☐ 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 USE 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 & 1006.3.2(1))
☐ DEAD END LENGTHS (1020.4)
■ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
■ MAX. CALCULATED OCC. 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
☐ 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

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)

NOT APPLICABLE

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 9' ACCESS AISLE	TOTAL # ACCESSIBLE SPACES PROVIDED
-	-	-	-	-	-	-
TOTAL:	-	-	-	-	-	-

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G										
	NEW	0	0	3	-	0	0	3	2	1	1
	REQ'D	1	1	-	-	1	1	-	-	1	1

SPECIAL APPROVALS

SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ICC, ETC., DESCRIBE BELOW)
WAKE COUNTY

ENERGY SUMMARY

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

EXISTING BUILDING COMPLIES WITH CODE: ☐ NO ☐ YES (THE REMAINDER OF THIS SECTION IS NOT APPLICABLE)
EXEMPT BUILDING: ☐ NO ■ YES (PROVIDE CODE OR STATUTORY REFERENCE): **N.C.G.S 143-138 (b18)** BUILDING IS CLASSIFIED AS GROUP-U OCCUPANCY, NO ECC PROVISIONS SHALL APPLY.
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:

NOT APPLICABLE

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

FLOORS OVER UNCONDITION 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:

STRUCTURAL SUMMARY

DESIGN LOADS:

IMPORTANCE FACTORS: SNOW (I_S) 1.0
SEISMIC (I_E) 1.0

LIVE LOADS: ROOF 20 psf
MEZZANINE N/A psf
FLOOR 100 psf

GROUND SNOW LOAD: 10 psf

WIND LOAD: ULTIMATE WIND SPEED 130 mph (ASCE-7)
EXPOSURE CATEGORY B

SEISMIC DESIGN CATEGORY: ☐ A ■ B ☐ C ☐ D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
RISK CATEGORY (Table 1604.5) ☐ I ■ II ☐ III ☐ IV
SPECTRAL RESPONSE ACCELERATION S_S 14.7 %g S_1 7.4 %g
SITE CLASSIFICATION (ASCE 7) ☐ A ☐ B ■ C ☐ D
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 geotechnical report and addendum) 4,000 psf (GROUND IMPROVEMENTS)
PRESUMPTIVE BEARING CAPACITY - psf
PILE SIZE, TYPE, AND CAPACITY -

MECHANICAL SUMMARY — SEE MECHANICAL SHEETS

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

THERMAL ZONE:
WINTER DRY BULB: 21°F
SUMMER DRY BULB: 93.7°F / 73.2°F WB

INTERIOR DESIGN CONDITIONS:
WINTER DRY BULB: 70°F
SUMMER DRY BULB: 75°F
RELATIVE HUMIDITY 50%

BUILDING HEATING LOAD: -

BUILDING COOLING LOAD: -

MECHANICAL SPACING CONDITIONING SYSTEM
UNITARY
DESCRIPTION OF UNIT: -
HEATING EFFICIENCY: -
COOLING EFFICIENCY: -
SIZE CATEGORY OF UNIT: -
(SEE PLANS AND SPECIFICATIONS)
BOILER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: SEE PLANS
CHILLER
SIZE CATEGORY. IF OVERSIZED, STATE REASON: SEE PLANS
LIST EQUIPMENT EFFICIENCIES: SEE PLANS AND SPECIFICATIONS

ELECTRICAL SUMMARY — SEE ELECTRICAL SHEETS

ELECTRICAL SYSTEMS AND EQUIPMENT:

METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ■ PRESCRIPTIVE
ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE

LIGHTING SCHEDULE: (each fixture type)
LAMP TYPE REQUIRED IN FIXTURE
NUMBER OF LAMPS IN FIXTURE
BALLAST TYPE USED IN THE FIXTURE
NUMBER OF BALLASTS IN FIXTURE
TOTAL WATTAGE PER FIXTURE
(SEE FIXTURE SCHEDULE ON DRAWING SHEET E501)
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED 0.2 VS. 0.37
(WHOLE BUILDING OR SPACE BY SPACE)
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED 0.15 VS. 0.36
ADDITIONAL EFFICIENCEY PACKAGE OPTIONS
(WHEN USING THE 2018 NCECC, NOT REQUIRED FOR ASHRAE 90.1)
☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
■ C406.3 REDUCED LIGHTING POWER DENSITY
☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
☐ C406.5 ON-SITE RENEWABLE ENERGY
☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

HH ARCHITECTURE
1100 Dresser Court
Raleigh, NC 27609
Office 919.828.2301
Email office@hh-arch.com

WTCC EWS - FIRE & RESCUE TRAINING CENTER
WAKE TECHNICAL COMMUNITY COLLEGE
5345 ROLESVILLE RD, WENDELL, NC 27591
NCCCS NO. 2303

DOCUMENT FOR REVIEW
NOT FOR CONSTRUCTION
ARCHITECTURE
51670
REGISTERED ARCHITECT
CORPORATE SEAL
NORTH CAROLINA

DOCUMENT FOR REVIEW
NOT FOR CONSTRUCTION
PRELIMINARY
Kristen M. Hess, AIA
Reg. No. 51670
Date: 1/10/2025

NO.	REVISION	DATE

JOB NUMBER
22-086
DATE ISSUED
01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
BUILDING CODE SUMMARY - RESTROOM BLDG

G002

Plot Time: 1/15/2025 4:39:55 PM
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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

NAME OF PROJECT: WTCC, EAST WAKE SITE FIRE & RESCUE TRAINING CENTER - COVERED STORAGE BUILDING
ADDRESS: 5345 ROLESVILLE RD, WENDELL, NC 27591 ZIP CODE: 27591
OWNER/AUTHORIZED AGENT: WAKE TECHNICAL COMMUNITY COLLEGE PHONE: 919.866.6152 EMAIL: WLennon@waketech.edu
OWNED BY: ☐ CITY/COUNTY ☐ PRIVATE ■ STATE
CODE ENFORCEMENT JURISDICTION: ☐ CITY - ■ COUNTY WAKE ■ STATE

CONTACT: KRISTEN M. HESS, AIA

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
ARCHITECTURAL	HH ARCHITECTURE	KRISTEN M. HESS, AIA	9290	919.828.2301	khess@hh-arch.com
CIVIL	NV5	MICHAEL ALLEN	022514	919.836.4800	michael.allen@nv5.com
ELECTRICAL	SALAS O'BRIEN	MATTHEW JOHNSON	039503	919.783.8118	matt.johnson@salasobrien.com
FIRE ALARM	-	-	-	-	-
PLUMBING	-	-	-	-	-
MECHANICAL	-	-	-	-	-
SPRINKLER-STANDPIPE	-	-	-	-	-
STRUCTURAL	LYNCH MYKINS	JEFFREY MORRISON	027813	919.782.1833	jmorrison@lynchmykins.com
RETAINING WALLS-5' HIGH	-	-	-	-	-
PRE-CAST	-	-	-	-	-
TRUSS	-	-	-	-	-
LANDSCAPE	SURFACE 678	ERIC DAVIS	confirm	919.866.4813	edavis@surface678.com
HAZMAT	-	-	-	-	-

2018 NC BUILDING CODE: ■ NEW BUILDING ☐ ADDITION ☐ RENOVATION
☐ 1st TIME INTERIOR COMPLETION
☐ SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS
☐ PHASED CONSTRUCTION - SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS

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

CONSTRUCTED (date): - **CURRENT OCCUPANCY(S)** (Ch. 3): -
RENOVATED (date): - **PROPOSED OCCUPANCY(S)** (Ch. 3): STORAGE

RISK CATEGORY (Table 1604.5): **CURRENT:** ☐ I ☐ II ☐ III ☐ IV
PROPOSED: ☐ I ■ II ☐ III ☐ IV

BASIC BUILDING DATA

CONSTRUCTION TYPE: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV-A ☐ V-A ■ V-B
SPRINKLERS: ■ NO ☐ PARTIAL ☐ YES ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
STANDPIPES: ■ NO ☐ YES CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY
FIRE DISTRICT: ■ NO ☐ YES
FLOOD HAZARD AREA: ■ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: ☐ NO ■ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES AND REQUIREMENTS.)

GROSS BUILDING AREA TABLE

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd FLOOR	-	-	-
2nd FLOOR	-	-	-
MEZZANINE	-	-	-
1st FLOOR	-	-	-
BASEMENT	-	-	-
TOTAL			-

ALLOWABLE AREA

PRIMARY OCCUPANCY CLASSIFICATION(S):
ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
BUSINESS ☐
EDUCATIONAL ☐
FACTORY ☐ F-1 MODERATE ☐ F-2 LOW
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM
INSTITUTIONAL ☐ I-1 CONDITION ☐ 1 ☐ 2
☐ I-2 CONDITION ☐ 1 ☐ 2
☐ I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
MERCANTILE ☐
RESIDENTIAL ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
STORAGE ■ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED
☐ PARKING GARAGE ■ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE
UTILITY AND MISCELLANEOUS ☐

ACCESSORY OCCUPANCY CLASSIFICATION(S): -
INCIDENTAL USES (Table 509): -
SPECIAL USES (Chapter 4 - List Code Sections): -
SPECIAL PROVISIONS (Chapter 5 - List Code Sections): -
MIXED OCCUPANCY: ■ NO ☐ YES SEPARATION: 0 HR. EXCEPTION: -

☐ **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.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00 \qquad \text{AREA } \frac{-}{-} + \frac{-}{-} = X \leq 1.00$$

STORY NO.	DESCRIPTION AND 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	STORAGE	-	UNLIMITED	NA	UNLIMITED

1 Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 169'-0" (F)
b. Total building perimeter = 169'-0" (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30' (W)
e. Percent of frontage increase formula: $I_f = 100[F/P - 0.25] \times W/30 =$ 75 (%)
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. The maximum area of air traffic control towers must comply with Table 412.3.1.
5 Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET (Table 504.3)	UNLIMITED	15'-6"	504.3
BUILDING HEIGHT IN STORIES (Table 504.4)	1	1	504.4

1 Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (w/1HR* REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GRIDERS, TRUSSES	-	0 HR	0 HR	-	-	-	-
BEARING WALLS	-			-	-	-	-
EXTERIOR							
NORTH	> 30'	0 HR	0 HR	-	-	-	-
EAST	> 30'	0 HR	0 HR	-	-	-	-
WEST	> 30'	0 HR	0 HR	-	-	-	-
SOUTH	> 30'	0 HR	0 HR	-	-	-	-
INTERIOR		0 HR	0 HR	-	-	-	-
NONBEARING WALLS AND PARTITIONS							
EXTERIOR WALLS							
NORTH	> 30'	0 HR	0 HR				
EAST	> 30'	0 HR	0 HR				
WEST	> 30'	0 HR	0 HR				
SOUTH	> 30'	0 HR	0 HR				
INTERIOR WALLS & PARTITIONS		0 HR	0 HR				
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS		0 HR	0 HR				
FLOOR CEILING ASSEMBLY		0 HR	0 HR				
COLUMNS SUPPORTING FLOORS		0 HR	0 HR				
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS		0 HR	0 HR				
ROOF CEILING ASSEMBLY		0 HR	0 HR				
COLUMNS SUPPORTING ROOF		0 HR	0 HR				
SHAFT ENCLOSURES - EXIT		N/A	N/A				
SHAFT ENCLOSURES - OTHER		N/A	N/A				
CORRIDOR SEPARATION		N/A	N/A				
OCCUPANCY/FIRE BARRIER SEPARATION		N/A	N/A				
PARTY/FIRE WALL SEPARATION		N/A	N/A				
SMOKE BARRIER SEPARATION		N/A	N/A				
SMOKE PARTITION		N/A	N/A				
TENANT / DWELLING UNIT / SLEEPING UNIT SEPARATION		N/A	N/A				
INCIDENTAL USE SEPARATION		N/A	N/A				

* Indicates section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
>30'	UP, NS	NO LIMIT	-

LIFE SAFETY SYSTEM REQUIREMENTS

EMERGENCY LIGHTING: ☐ NO ■ YES
EXIT SIGNS: ■ NO ☐ YES
FIRE ALARM: ■ NO ☐ YES
SMOKE DETECTION SYSTEM: ☐ NO ☐ YES ■ PARTIAL -
CARBON MONOXIDE DETECTION: ☐ NO ■ YES

LIFE SAFETY PLAN REQUIREMENTS

LIFE SAFETY PLAN SHEET #: -

☐ 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 USE 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 & 1006.3.2(1))
☐ DEAD END LENGTHS (1020.4)
☐ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
☐ MAX. CALCULATED OCC. 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
☐ 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

ACCESSIBLE DWELLI... (SECTION ...)

NOT APPLICABLE

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)

NOT APPLICABLE

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED REGARD WITH VAN SPACES WITH 132" ACCESS AISLE	# OF ACCESSIBLE SPACES PROVIDED REGARD WITH VAN SPACES WITH 9' ACCESS AISLE	TOTAL # ACCESSIBLE SPACES PROVIDED
-	-	-	-	-	-
TOTAL	-	-	-	-	-

PLUMBING FIXTURE REQUIR...ENTS (TABLE 2902.1)

NOT APPLICABLE

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SHOWN	EXISTING										
	NEW	0	0	-	-	0	0	3	2	1	1
	REQUIRED	1	1	-	-	1	1	-	-	1	1

SPECIAL APPROVALS

SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ICC, ETC., DESCRIBE BELOW)
WAKE COUNTY

ENERGY SUMMARY

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

EXISTING BUILDING COMPLIES WITH CODE: ☐ NO ☐ YES (THE REMAINDER OF THIS SECTION IS NOT APPLICABLE)
EXEMPT BUILDING: ☐ NO ■ YES (PROVIDE CODE OR STATUTORY REFERENCE): **N.C.G.S 143-138 (b18)** BUILDING IS CLASSIFIED AS GROUP-U OCCUPANCY, NO ECC PROVISIONS SHALL APPLY.
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:

NOT APPLICABLE

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

FLOORS OVER UNCONDITION 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:

STRUCTURAL SUMMARY

DESIGN LOADS:

IMPORTANCE FACTORS: SNOW (I_S) 1.0 SEISMIC (I_E) 1.0
LIVE LOADS: ROOF 20 psf MEZZANINE N/A psf FLOOR 100 psf
GROUND SNOW LOAD: 15 psf
WIND LOAD: ULTIMATE WIND SPEED 130 mph (ASCE-7) EXPOSURE CATEGORY C

SEISMIC DESIGN CATEGORY: ☐ A ■ B ☐ C ☐ D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
RISK CATEGORY (Table 1604.5) ☐ I ■ II ☐ III ☐ IV
SPECTRAL RESPONSE ACCELERATION S_S 14.7 %g S_1 7.4 %g
SITE CLASSIFICATION (ASCE 7) ☐ A ☐ B ☐ C ■ D
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 geotechnical report and addendum) 4,000 psf (GROUND IMPROVEMENTS)
PRESUMPTIVE BEARING CAPACITY - psf
PILE SIZE, TYPE, AND CAPACITY -

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: -
BULDING COOLING LOAD:
MECHANICAL SPACING CONDITION*
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: -

NOT APPLICABLE

ELECTRICAL SUMMARY

ELECTRICAL SYSTEMS AND EQUIPMENT:

METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ■ PRESCRIPTIVE
ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE

LIGHTING SCHEDULE: (each fixture type)
LAMP TYPE REQUIRED IN FIXTURE
NUMBER OF LAMPS IN FIXTURE
BALLAST TYPE USED IN THE FIXTURE
NUMBER OF BALLASTS IN FIXTURE
TOTAL WATTAGE PER FIXTURE
SEE FIXTURE SCHEDULE ON DRAWING SHEET E501
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED 0.2 VS. 0.37
(WHOLE BUILDING OR SPACE BY SPACE)
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED 0.15 VS. 0.36
ADDITIONAL EFFICIENCY PACKAGE OPTIONS
(WHEN USING THE 2018 NCECC, NOT REQUIRED FOR ASHRAE 90.1)
☐ C406.2 MORE EFFICIENT HVAC EQUIPMENT PERFORMANCE
■ C406.3 REDUCED LIGHTING POWER DENSITY
☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
☐ C406.5 ON-SITE RENEWABLE ENERGY
☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

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DOCUMENT
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Date: March 7, 2025

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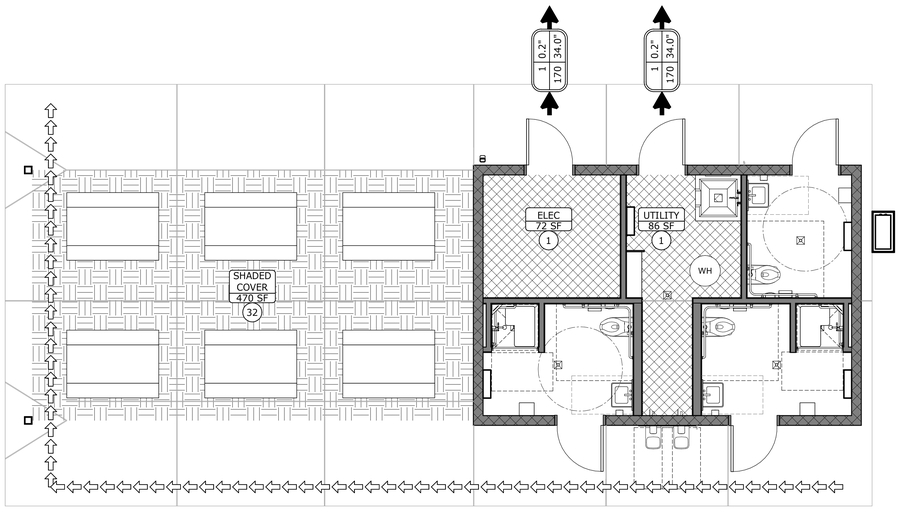
NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BUILDING CODE SUMMARY - COVERED STORAGE BLDG**

G003

Plot Time: 1/15/2025 4:39:55 PM



N

01 G111 RESTROOM BUILDING - LIFE SAFETY PLAN
1/4" = 1'-0"

GRAPHIC SCALE: 1/4" = 1' - 0"

0' 2' 4' 8' 16'

LIFE SAFETY PLAN LEGEND

WORST-CASE TRAVEL DISTANCE = 76'-8"
(MAX. ALLOWABLE 200')

WORST-CASE TO COMMON PATH OF TRAVEL = N/A
(MAX ALLOWABLE 75')

WORST-CASE DEAD END CORRIDOR = N/A
(MAX ALLOWABLE 20')

ROOM EXIT

NUMBER OF OCCUPANTS

DEDICATED EXIT

OCCUPANT LOAD (ACTUAL)
OCCUPANT WIDTH (ACTUAL)
XXX | X.X"
XXX | XX.X"
OCCUPANT LOAD (CAPACITY)
OCCUPANT WIDTH (CAPACITY)

DENOTES **A-5 OCCUPANCY**
ASSEMBLY W/ UNCONCENTRATED SEATS
(1 PERSON PER **15SF NET**)

DENOTES **S-1 OCCUPANCY**
STORAGE
(1 PERSON PER **300** SF GROSS)

DENOTES **UNOCCUPIED SPACE**
BATHROOM/CORRIDOR
(0 - OCCUPANTS CONSIDERED
PART OF PRIMARY OCCUPANCY A-5)

OCCUPANCY SCHEDULE

NAME	OCCUPIABLE	S.F.PER PERSON	OCCUPANT LOAD
ELEC	72 SF	300	1
UTILITY	86 SF	300	1
SHADED COVER	470 SF	15	32
	628 SF		34

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Reedy Creek 2025

NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
RESTROOM BUILDING - LIFE SAFETY PLAN

G111

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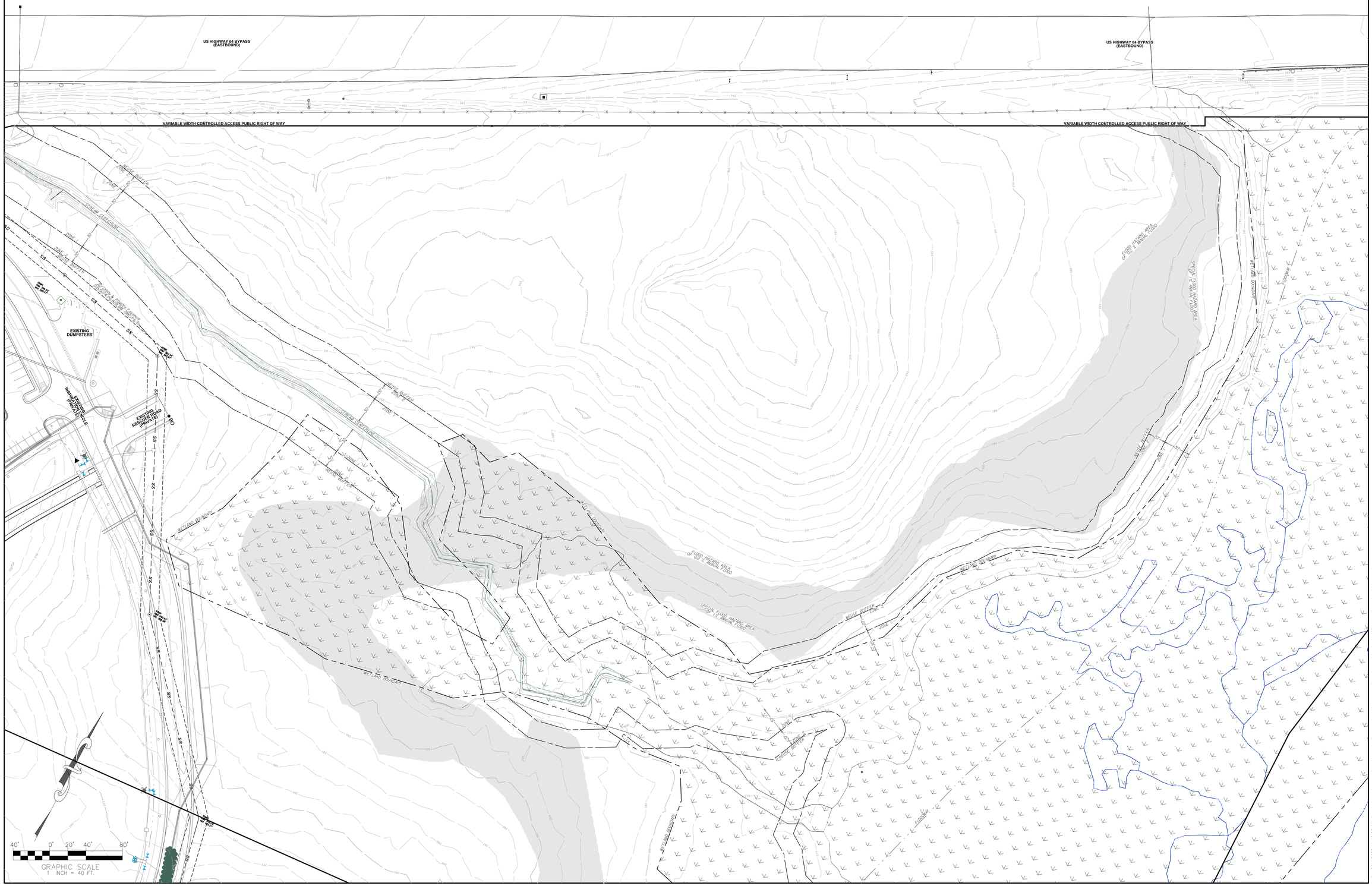
NOTES:

1. LOCATION AND SIZE OF EXISTING UTILITIES ARE SHOWN AS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR HORIZONTAL AND VERTICAL LOCATION AND THE PROTECTION OF ALL PUBLIC OR PRIVATE UTILITIES (SHOWN AND NOT SHOWN) WHICH LIE IN OR ADJACENT TO THE CONSTRUCITON SITE.
2. BOUNDARY INFORMATION TAKEN FROM OWNER SUPPLIED COPY OF AN ALTA SURVEY PREPARED BY DAVID B. JORDAN PREPARED 10-08-2020.
3. TOPOGRAPHIC, & UTILITY INFORMATION, EXCEPT AS NOTED, TAKEN FROM AN ELECTRONIC COPY OF A SURVEY PREPARED BY SEPI ENGINEERING DATED FEBRUARY, 18, 2021. DATUM NAD83/2011. ADDITIONAL CONTEXTUAL INFORMATION OBTAINED FROM WAKE COUNTY G.I.S. AND ARE SHOWN FOR REFERENCE ONLY. EXISTING CONDITIONS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR RO STARTING AND WORK.
4. ADDITIONAL INFORMATION TAKEN FROM WTCC EWS – PHASE ONE SITE INFRASTRUCTURE PLANS PROVIDED BY OWNER.
5. EXISTING TOWN OF WENDELL SEWER EASEMENTS TRANSFERRED TO RALEIGH AFTER MERGER.


US HIGHWAY 64 BYPASS (EASTBOUND)
US HIGHWAY 64 BYPASS (EASTBOUND)
VARIABLE WIDTH CONTROLLED ACCESS PUBLIC RIGHT OF WAY
VARIABLE WIDTH CONTROLLED ACCESS PUBLIC RIGHT OF WAY
EXISTING DUMPSTERS
EXISTING RESIDENTIAL DRIVE
EXISTING RESIDENTIAL DRIVE
EXISTING RESIDENTIAL DRIVE

NOTES:

1. REFER TO SHEET C-102 FOR PAVEMENT TYPES.
2. ALL PROPOSED SIGNS TO MATCH EXISTING CAMPUS SIGNAGE.

PARKING SUMMARY

BUILDING SQUARE FOOTAGE

PROPOSED RESTROOM BUILDING:	882 SF
FUTURE CLASSROOM BUILDING:	8,000 SF
FUTURE APPARATUS BAY:	3,600 SF
TOTAL BUILDING SQUARE FOOTAGE:	12,482 SF

PARKING REQUIRED: 25 SPACES
(2 SPACES PER 1,000 SF):

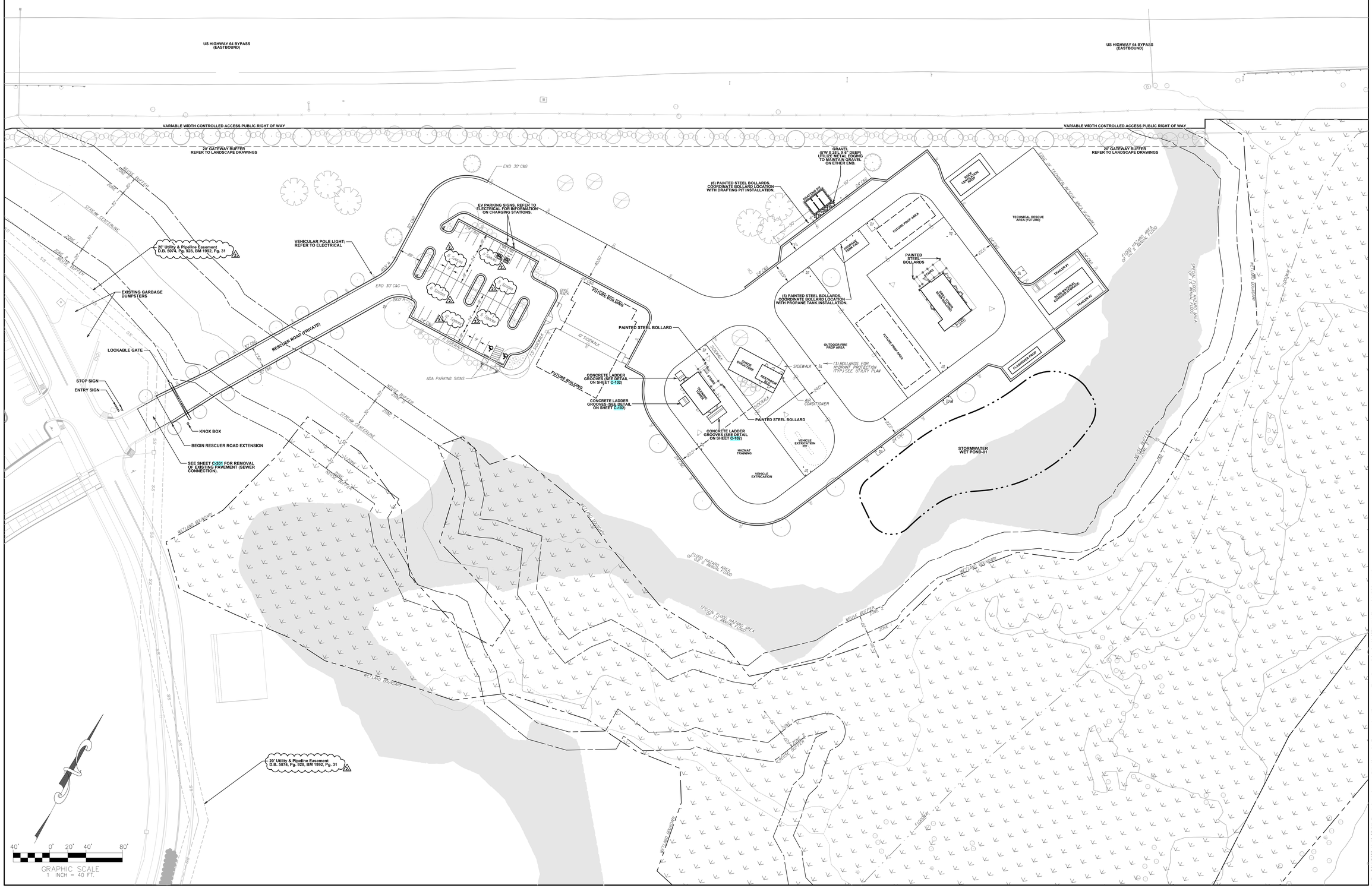
PARKING PROVIDED: 45 SPACES
(INCLUDES 2 ADA SPACES)

NOTE: ADDITIONAL PARKING PROVIDED FOR OUTDOOR PROP AREA.

BICYCLE PARKING SUMMARY

BICYCLE PARKING REQUIRED: 2.5 SPACES
(120 AUTO SPACES):

BICYCLE PARKING PROVIDED: 2 SPACES
(ADDITIONAL SPACES WILL BE PROVIDED WITH CLASSROOM BUILDING)



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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
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SHEET
SITE PLAN

C-100

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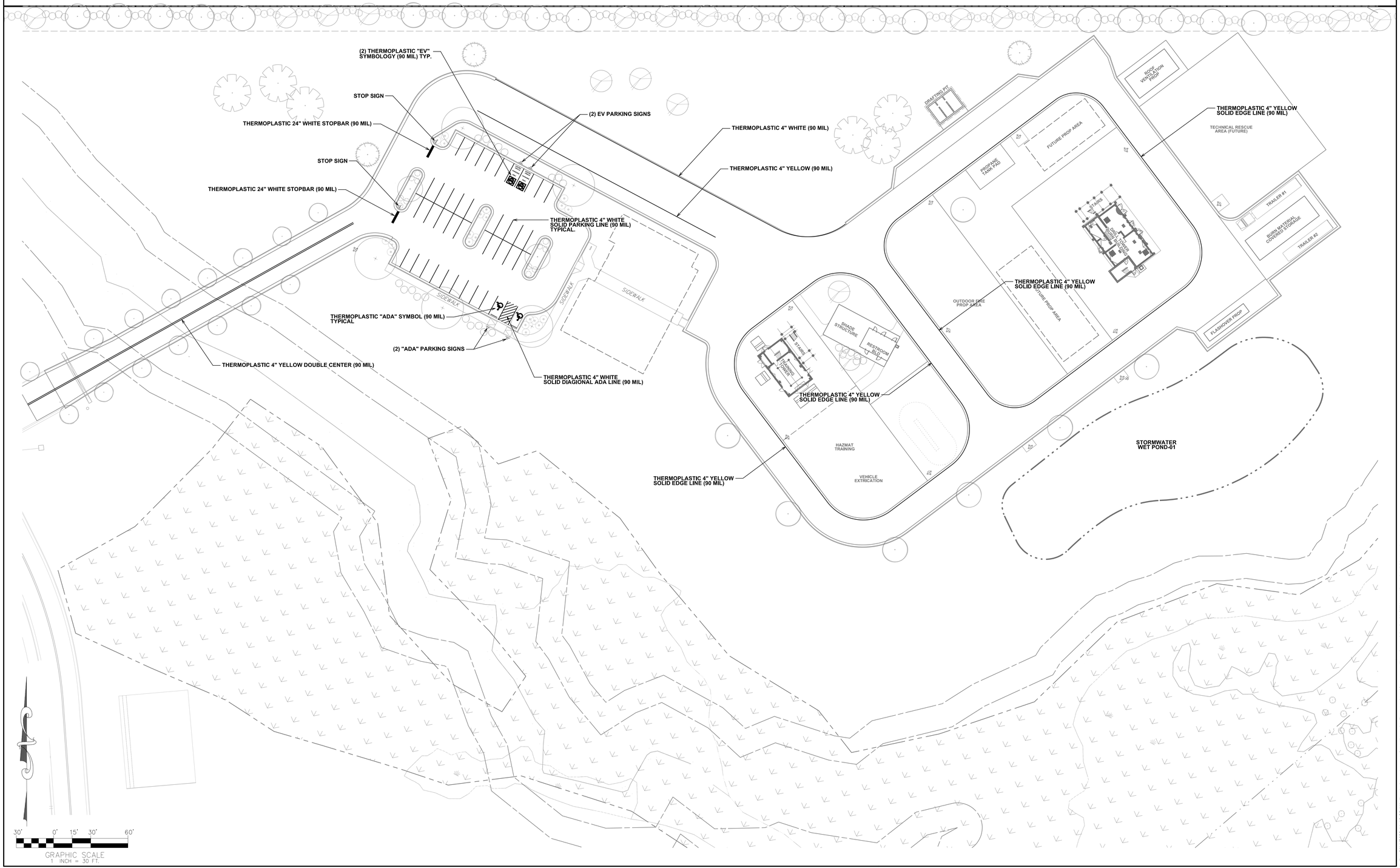

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

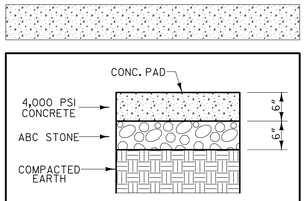
JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

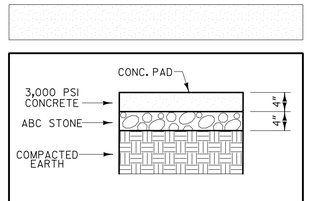
SHEET
STRIPING PLAN

C-101



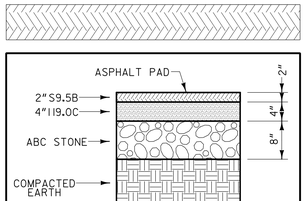
ALL COMPACTION TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

HEAVY DUTY CONCRETE



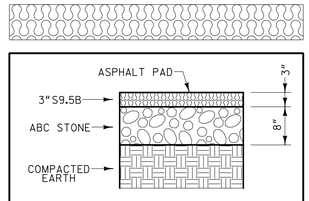
ALL COMPACTION TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

LIGHT DUTY CONCRETE



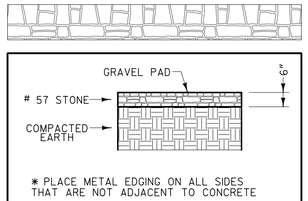
ALL COMPACTION TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

HEAVY DUTY ASPHALT



ALL COMPACTION TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

LIGHT DUTY ASPHALT

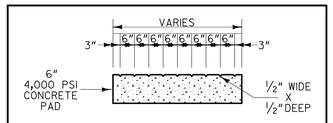


* PLACE METAL EDGING ON ALL SIDES THAT ARE NOT ADJACENT TO CONCRETE

ALL COMPACTION TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

GRAVEL

GRASS



1. SEE SHEET TT100 FOR LAYOUT DIMENSIONS

HEAVY DUTY LADDER GROOVES

NOTES:

ALL CONCRETE WITHIN DESIGNATED TRAINING AREAS TO HAVE A BROOM FINISH.

HEAVY DUTY LADDER GROOVES

GRAPHIC SCALE
1 INCH = 40 FT.
40' 0' 20' 40' 80'

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WAKE TECHNICAL COMMUNITY COLLEGE
5401 ROLESVILLE ROAD WENDELL, NC 27591
NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **PAVEMENT MATERIALS PLAN**

C-102

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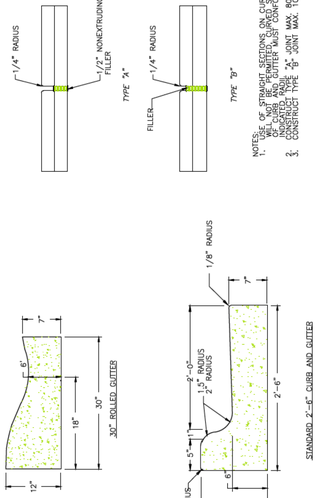
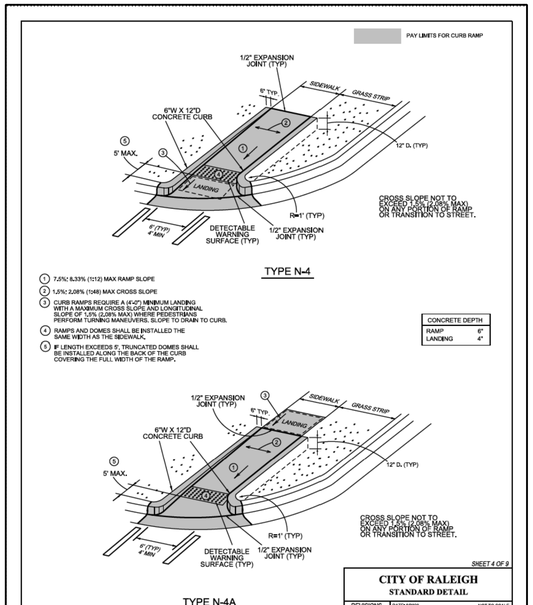
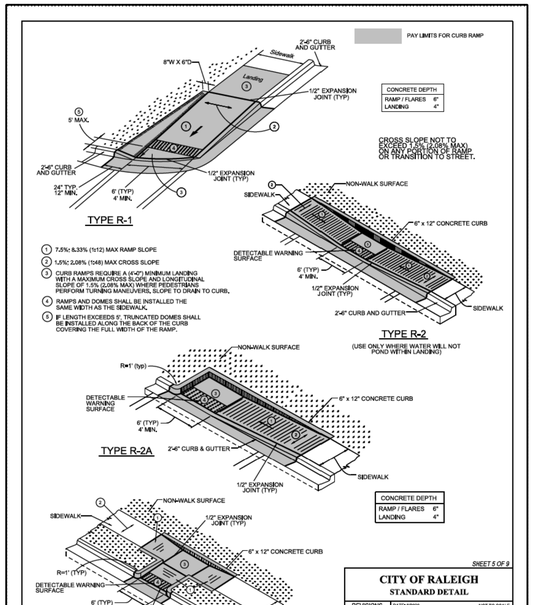


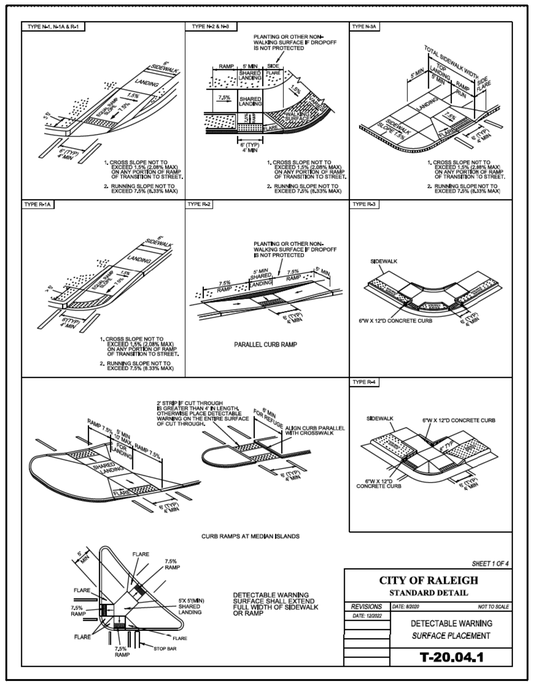


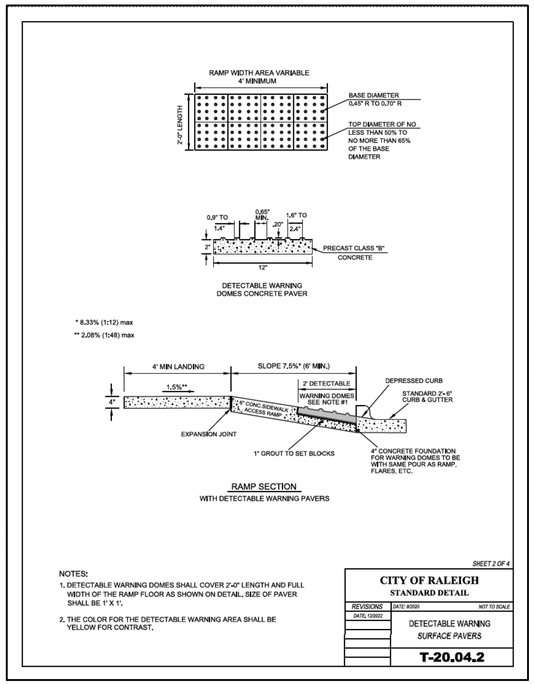


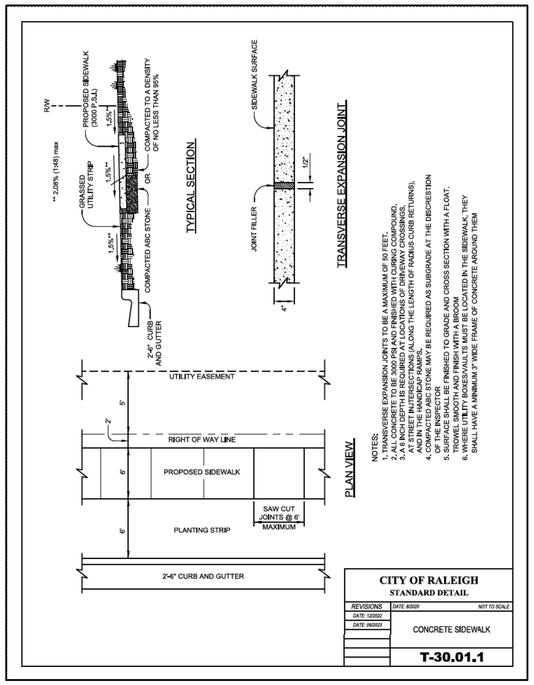
CITY OF RALEIGH
CURB RAMPS
GENERAL NOTES

1. CITY OF RALEIGH STANDARD CURB RAMPS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND PUBLIC RIGHT OF WAY ACCESS GUIDELINES (PROWAG).
2. CURB RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIDEWALK ACCESS RAMPS SHALL BE LOCATED AS INDICATED IN THE DETAIL, HOWEVER, THE LOCATION MAY BE ADJUSTED IN COORDINATION WITH THE CITY OF RALEIGH WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT.
3. DOUBLE WHEELCHAIR RAMPS ARE TO BE INSTALLED AT ALL PUBLIC STREET INTERSECTIONS WHERE SIDEWALK IS REQUIRED.
4. THE WALKING SURFACE SHALL BE SLIP RESISTANT. THE COLOR FOR THE DETECTABLE WARNING AREA SHALL BE YELLOW FOR CONTRAST.
5. NO SLOPE ON THE SIDEWALK ACCESS RAMP SHALL EXCEED 1"/FT (12:1) IN RELATIONSHIP TO THE GRADE OF THE STREET.
6. IN NO CASE SHALL THE WIDTH OF THE SIDEWALK ACCESS RAMP BE LESS THAN 48" ALL RAMPS SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
7. USE CLASS A (3000 PSI) CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NONSKID SURFACE.
8. A 1/2" EXPANSION JOINT INSTALLED FULL DEPTH WILL BE REQUIRED WHERE THE CONCRETE SIDEWALK ACCESS RAMP JOINS THE CURB AND ALSO WHERE NEW CONCRETE ABUTS EXISTING CONCRETE.
9. CURB RAMPS SHOULD BE PLACED PARALLEL TO THE DIRECTION OF TRAVEL.

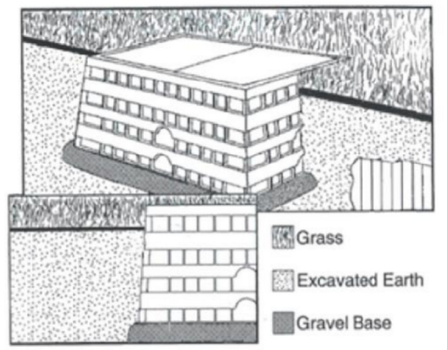
SHEET 6 OF 9
CITY OF RALEIGH
STANDARD DETAIL
REVISIONS
DATE: 12/2022
DATE: 8/2020
NOT TO SCALE
CURB RAMP NOTES
T-20.01.8







HANDHOLE INSTALLATION INSTRUCTIONS: Prepare the excavation approximately 6" deeper than the overall height of the enclosure. The length and width of the excavation should be determined by adding 4" to 6" to the overall length and width of the handhole. Place approx. 4-6" of pea gravel in the bottom of the hole and cover with ¼-inch spaced galvanized welded wire hardware cloth. Galvanized welded wire hardware cloth shall be at a minimum six-inches (6") wider and six-inches (6") longer than handhole so handholes rest on top of hardware cloth. Hardware cloth shall not be installed after handhole is in place and inside handholes. The compacted material should be leveled so the top of the handhole or pull box is flush to the grade. NOTE: Use a classified rock size of 3/4" and smaller to ensure proper drainage. Place selected backfill into the excavations and compact either by manual compacting or flooding the excavation to achieve the desired relative compaction. Install with cover in place. Winning vendor shall be responsible for providing drain(s) to handhole (s) if necessary to ensure complete drainage. Conduits shall enter handhole from the bottom and extend six-inches (6") above galvanized welded wire hardware cloth. Handholes shall not be drilled or cut to accommodate conduits.



HANDHOLE DETAIL

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **SITE DETAILS**

C-105

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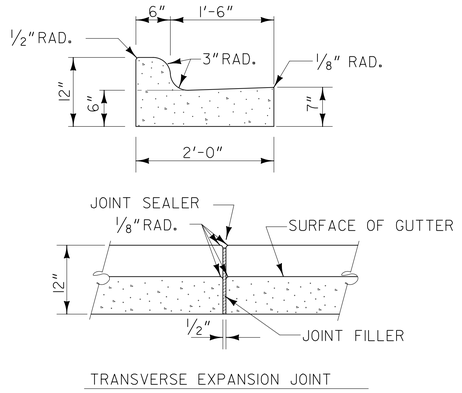
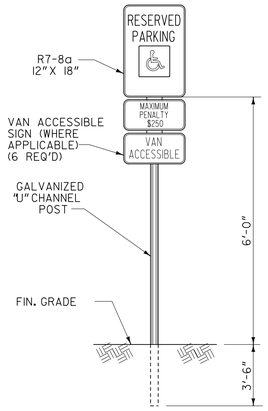


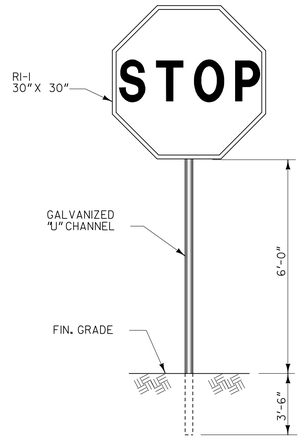
TRANSVERSE EXPANSION JOINT

24" CURB & GUTTER

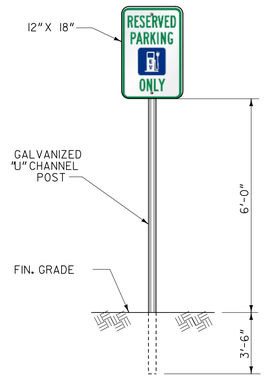
1. SEE TOWN OF WENDELL STANDARD DETAIL "CURB & GUTTER" SHEET C-105 FOR ADDITIONAL NOTES.



HANDICAP SIGN



STOP SIGN



ELECTRIC VEHICLE PARKING SIGN

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NO.	REVISION	DATE

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22-086
DATE ISSUED
01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
SITE DETAILS

C-106

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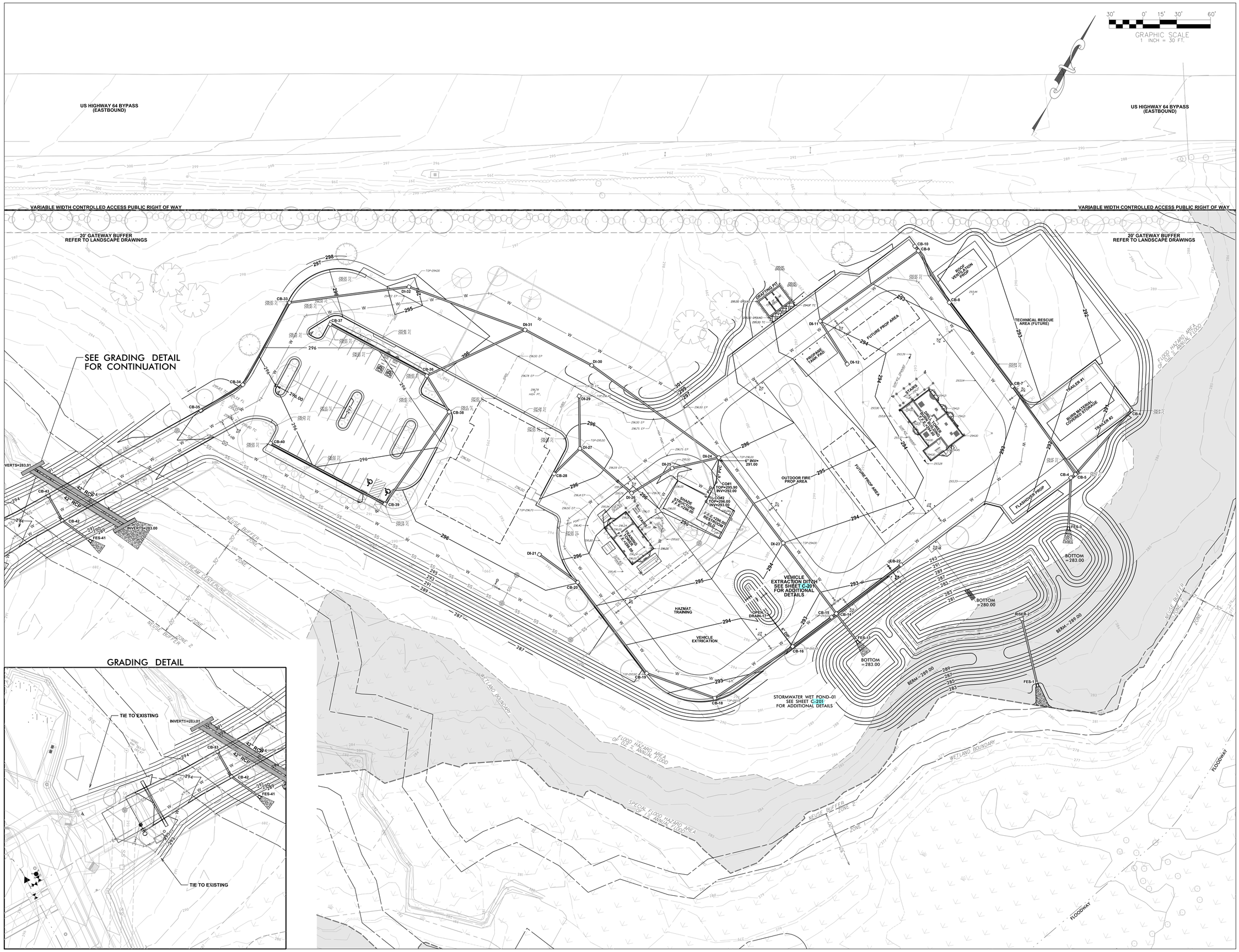

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NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
STORMWATER & GRADING PLAN

C-200

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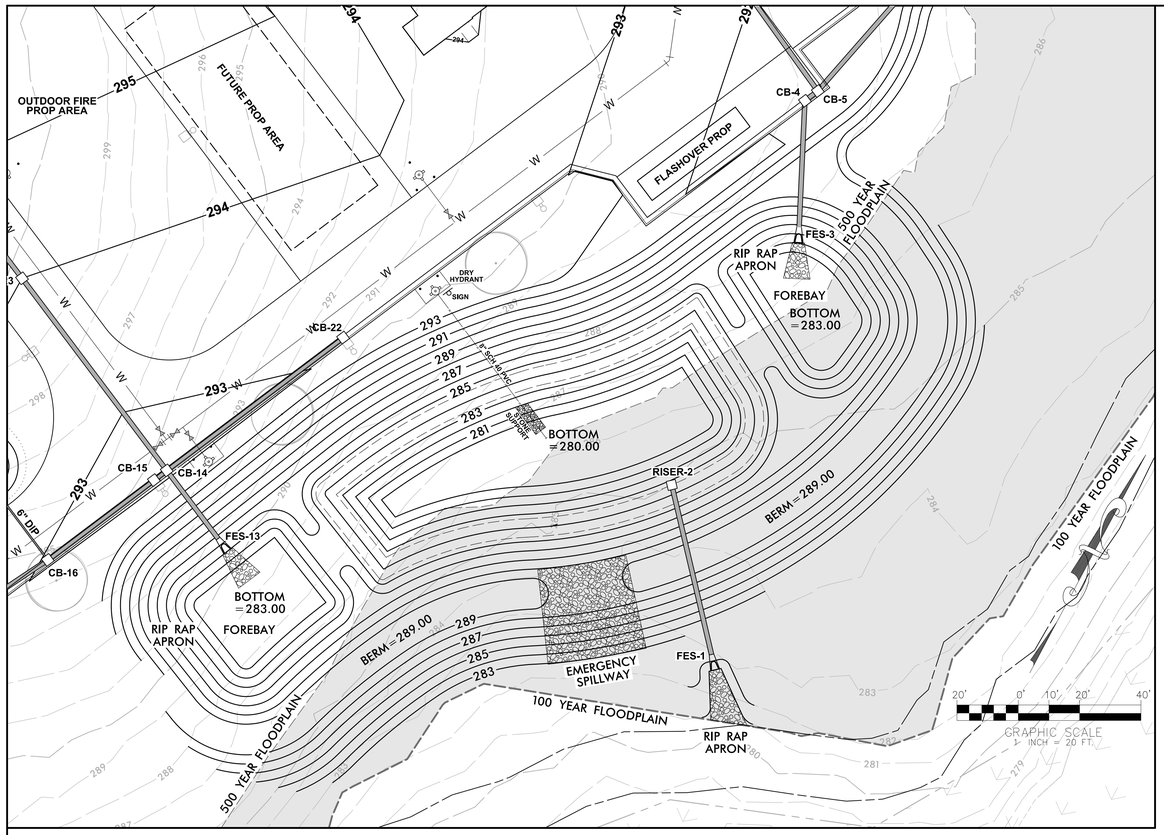


DRAINAGE TABLE

ALL DROP INLETS LOCATED WITHIN PAVEMENT OR CONCRETE SHALL BE TRAFFIC RATED.

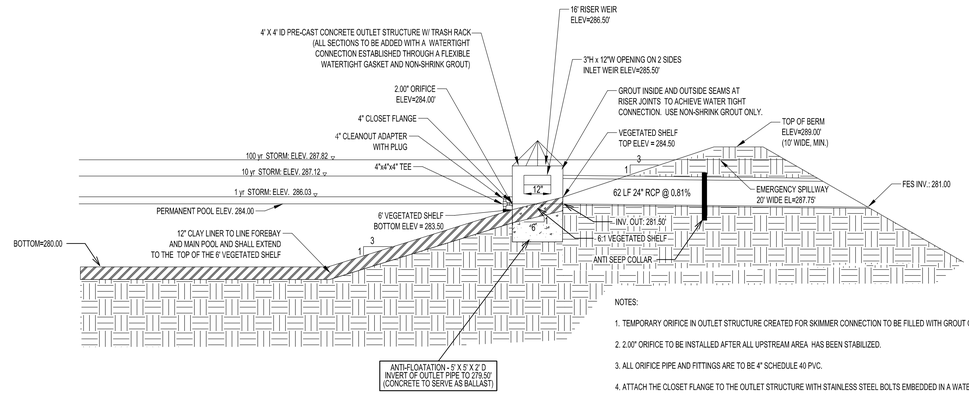
STORM STRUCTURE TABLE - STORM NETWORK 1

NAME	RIM (TOC FOR CB)	INVERT(S) IN	INVERT OUT	NEXT STRUCTURE
CB-40	296.00'		291.60'	CB-39
CB-35	295.50'		291.50'	CB-34
CB-34	296.00'	291.25' (15" RCP, CB-33)	291.05'	CB-33
CB-39	295.78'	290.90' (15" RCP, CB-40)	290.70'	CB-38
CB-33	296.00'	290.60' (15" RCP, CB-34)	290.40'	DI-32
CB-37	296.00'		290.30'	CB-36
DI-12	294.40'		290.00'	DI-9
CB-38	296.15'	290.10' (15" RCP, CB-39)	289.90'	CB-36
DI-32	294.00'	289.80' (15" RCP, CB-33)	289.60'	DI-31
DI-29	296.40'		289.60'	DI-27
CB-22	293.70'		289.50'	CB-14
DI-9	294.00'	289.70' (15" RCP, DI-12)	289.50'	CB-9
CB-36	296.00'	289.70' (15" RCP, CB-38) 289.70' (15" RCP, CB-37)	289.50'	DI-31
CB-28	296.50'		289.40'	DI-27
DI-21	296.50'		289.30'	CB-20
OPEN DRAIN-17	N/A		289.20'	CB-16
DI-27	295.50'	289.20' (15" RCP, DI-29) 289.20' (15" RCP, CB-28)	289.00'	DI-26
CB-20	296.00'	288.90' (15" RCP, DI-21)	288.70'	CB-19
CB-10	292.25'		288.64'	CB-9
DI-31	296.00'	288.75' (15" RCP, DI-32) 288.75' (15" RCP, CB-36)	288.50'	DI-30
CB-9	292.25'	288.60' (15" RCP, DI-9) 288.60' (15" RCP, CB-10)	288.40'	CB-8
DI-26	295.58'	288.50' (15" RCP, DI-27)	288.30'	DI-25
DI-30	298.50'	288.15' (18" RCP, DI-31)	287.95'	DI-24
CB-8	293.20'	288.00' (15" RCP, CB-9)	287.80'	CB-7
CB-19	293.92'	288.00' (15" RCP, CB-20)	287.80'	CB-18
DI-25	295.50'	288.00' (15" RCP, DI-26)	287.80'	DI-24
CB-18	293.19'	287.40' (15" RCP, CB-19)	287.20'	CB-16
DI-24	296.00'	287.15' (18" RCP, DI-30) 287.40' (15" RCP, DI-25)	286.95'	CB-23
CB-6	291.91'		286.60'	CB-5
CB-16	293.43'	286.70' (15" RCP, CB-18) 288.70' (6" RCP, OPEN DRAIN-17)	286.50'	CB-15
CB-7	293.60'	286.80' (15" RCP, CB-8)	286.35'	CB-5
CB-23	294.00'	286.45' (18" RCP, DI-24)	286.25'	CB-14
CB-15	293.03'	286.20' (15" RCP, CB-16)	286.00'	CB-14
CB-5	291.63'	285.85' (18" RCP, CB-7) 286.10' (15" RCP, CB-6)	285.65'	CB-4
CB-14	293.03'	285.70' (18" RCP, CB-23) 285.95' (15" RCP, CB-15) 289.00' (15" RCP, CB-22)	285.50'	FES-13
CB-4	291.63'	285.61' (18" RCP, CB-5)	285.41'	FES-3
3' x 3' Riser-2	286.50'		281.50'	FES-1
FES-13	N/A	285.00' (18" RCP, CB-14)		
FES-1	N/A	281.00' (24" RCP, 3' x 3' Riser-2)		
FES-3	N/A	285.00' (15" RCP, CB-4)		

PIPE TABLE - STORM NETWORK 1

PIPE NAME	DIAMETER	LENGTH	START INVERT	END INVERT	SLOPE	PIPE MATERIAL
CB-40 TO CB-39	15.00	108.51	291.60	290.90	0.65%	Reinforced Concrete Pipe
CB-35 TO CB-34	15.00	39.34	291.50	291.25	0.64%	Reinforced Concrete Pipe
CB-34 TO CB-33	15.00	79.47	291.05	290.60	0.57%	Reinforced Concrete Pipe
CB-39 TO CB-38	15.00	97.62	290.70	290.10	0.61%	Reinforced Concrete Pipe
CB-33 TO DI-32	15.00	104.02	290.40	289.80	0.58%	Reinforced Concrete Pipe
CB-37 TO CB-36	15.00	90.52	290.30	289.70	0.66%	Reinforced Concrete Pipe
DI-12 TO DI-9	15.00	42.09	290.00	289.70	0.71%	Reinforced Concrete Pipe
CB-38 TO CB-36	15.00	35.24	289.90	289.70	0.57%	Reinforced Concrete Pipe
DI-29 TO DI-27	15.00	43.31	289.60	289.20	0.92%	Reinforced Concrete Pipe
DI-32 TO DI-31	15.00	106.65	289.60	288.75	0.80%	Reinforced Concrete Pipe
CB-22 TO CB-14	15.00	68.02	289.50	289.00	0.74%	Reinforced Concrete Pipe
DI-9 TO CB-9	15.00	104.55	289.50	288.60	0.86%	Reinforced Concrete Pipe
CB-36 TO DI-31	15.00	91.51	289.50	288.75	0.82%	Reinforced Concrete Pipe
CB-28 TO DI-27	15.00	28.13	289.40	289.20	0.71%	Reinforced Concrete Pipe
DI-21 TO CB-20	15.00	38.02	289.30	288.90	1.05%	Reinforced Concrete Pipe
OPEN DRAIN-17 TO CB-16	6.00	35.38	289.20	288.70	1.41%	DIP
DI-27 TO DI-26	15.00	57.02	289.00	288.50	0.88%	Reinforced Concrete Pipe
CB-20 TO CB-19	15.00	97.53	288.70	288.00	0.72%	Reinforced Concrete Pipe
CB-10 TO CB-9	15.00	2.04	288.64	288.60	1.96%	Reinforced Concrete Pipe
DI-31 TO DI-30	18.00	63.99	288.50	288.15	0.55%	Reinforced Concrete Pipe
CB-9 TO CB-8	15.00	49.35	288.40	288.00	0.81%	Reinforced Concrete Pipe
DI-26 TO DI-25	15.00	39.12	288.30	288.00	0.77%	Reinforced Concrete Pipe
DI-30 TO DI-24	18.00	136.40	287.95	287.15	0.59%	Reinforced Concrete Pipe
DI-25 TO DI-24	15.00	38.85	287.80	287.40	1.03%	Reinforced Concrete Pipe
CB-8 TO CB-7	15.00	89.20	287.80	286.80	1.12%	Reinforced Concrete Pipe
CB-19 TO CB-18	15.00	60.57	287.80	287.40	0.66%	Reinforced Concrete Pipe
CB-18 TO CB-16	15.00	79.14	287.20	286.70	0.63%	Reinforced Concrete Pipe
DI-24 TO CB-23	18.00	91.85	286.95	286.45	0.54%	Reinforced Concrete Pipe
CB-6 TO CB-5	15.00	72.38	286.60	286.10	0.69%	Reinforced Concrete Pipe
CB-16 TO CB-15	15.00	38.84	286.50	286.20	0.77%	Reinforced Concrete Pipe
CB-7 TO CB-5	18.00	93.10	286.35	285.85	0.54%	Reinforced Concrete Pipe
CB-23 TO CB-14	18.00	76.87	286.25	285.70	0.72%	Reinforced Concrete Pipe
CB-15 TO CB-14	15.00	1.74	286.00	285.95	2.88%	Reinforced Concrete Pipe
CB-5 TO CB-4	18.00	1.95	285.65	285.61	2.05%	Reinforced Concrete Pipe
CB-14 TO FES-13	18.00	29.13	285.50	285.00	1.72%	Reinforced Concrete Pipe
CB-4 TO FES-3	15.00	42.70	285.41	285.00	0.96%	Reinforced Concrete Pipe
3' x 3' Riser-2 TO FES-1	24.00	60.44	281.50	281.00	0.83%	Reinforced Concrete Pipe

WET POND 1



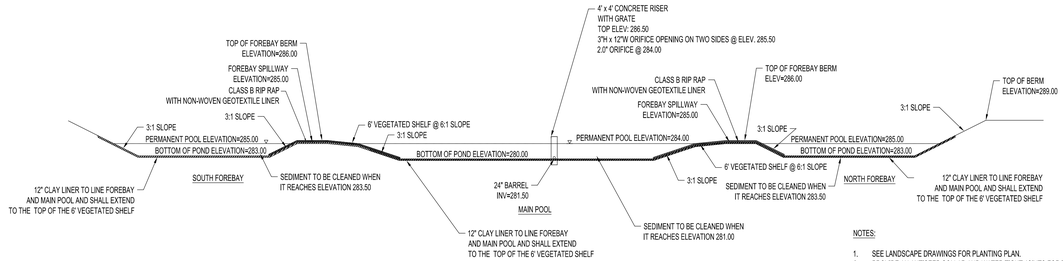
WET POND 1 OUTLET CONTROL STRUCTURE

NTS

NOTES:

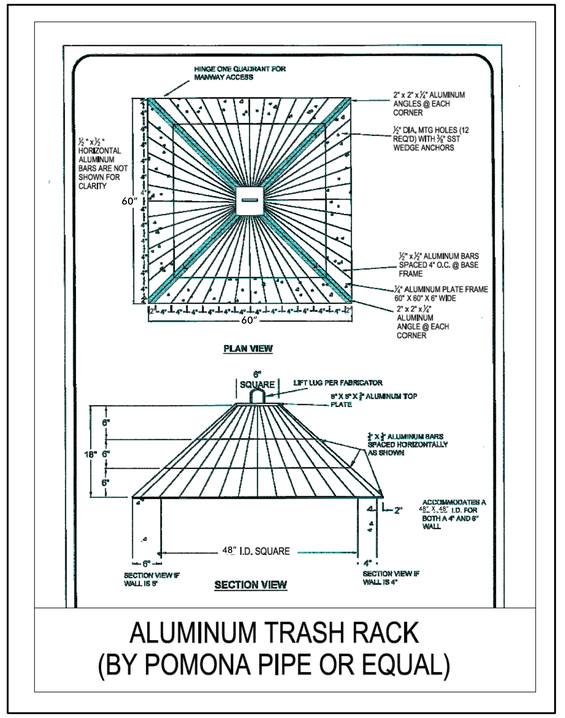
1. TEMPORARY ORIFICE IN OUTLET STRUCTURE CREATED FOR SKIMMER CONNECTION TO BE FILLED WITH GROUT ONCE SKIMMER IS REMOVED.
2. 2.00" ORIFICE TO BE INSTALLED AFTER ALL UPSTREAM AREA HAS BEEN STABILIZED.
3. ALL ORIFICE PIPE AND FITTINGS ARE TO BE 4" SCHEDULE 40 PVC.
4. ATTACH THE CLOSET FLANGE TO THE OUTLET STRUCTURE WITH STAINLESS STEEL BOLTS EMBEDDED IN A WATERPROOF EPOXY GROUT.
5. 24" RCP DISCHARGE PIPE TO HAVE O-RINGS FOR A WATER TIGHT SEAL.
6. THE CLAY LINER MUST EXTEND FROM THE POND BOTTOM TO THE TOP OF THE VEGETATED SHELF ELEVATION AND MUST COMPLETELY COVER THE SPILLWAY FROM THE FOREBAY TO THE MAIN POOL.
7. TESTING IS REQUIRED FOR ALL CLAY LINERS TO ENSURE THAT THE INFILTRATION RATE IS NOT MORE THAN 0.01 IN/HR.
8. 4" OF TOPSOIL FOR VEGETATION MUST BE PLACED ON TOP OF THE CLAY LINER.
9. ALL MATERIALS USED WITHIN THE RISER MUST BE ANTI CORROSIVE.
10. PROVIDE AN ANTISEEP COLLAR AND WATER TIGHT JOINTS FOR THE DISCHARGE BARREL.
11. PROVIDE A WATER TIGHT CONNECTION BETWEEN THE DISCHARGE BARREL AND THE OUTLET STRUCTURE.

WET POND PROFILE VIEW

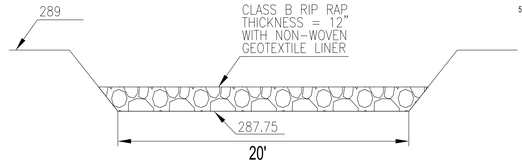


NOTES:

1. SEE LANDSCAPE DRAWINGS FOR PLANTING PLAN.
2. PROVIDE AN ANTISEEP COLLAR AND WATER TIGHT JOINTS FOR THE DISCHARGE BARREL.
3. PROVIDE A WATER TIGHT CONNECTION BETWEEN THE DISCHARGE BARREL AND THE OUTLET STRUCTURE.
4. TESTING IS REQUIRED FOR ALL CLAY LINERS TO ENSURE THAT THE INFILTRATION RATE IS NOT MORE THAN 0.01 IN/HR. TOPSOIL FOR VEGETATION MUST BE PLACED ON TOP OF THE CLAY LINER.
5. TOPSOIL FOR VEGETATION MUST BE PLACED ON TOP OF THE CLAY LINER.



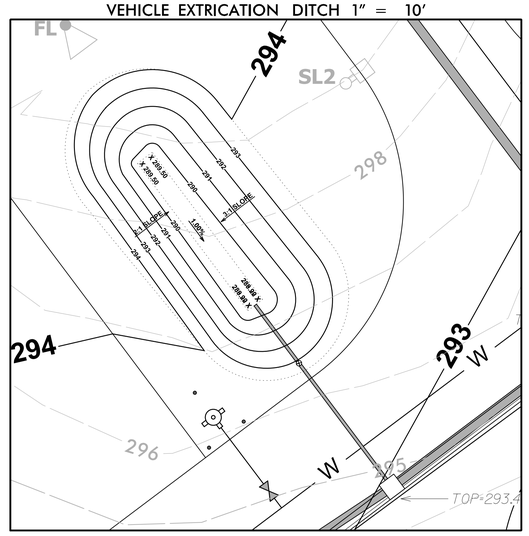
ALUMINUM TRASH RACK
(BY POMONA PIPE OR EQUAL)



EMERGENCY SPILLWAY

NOT TO SCALE

VEHICLE EXTRICATION DITCH 1" = 10'



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WAKE TECHNICAL COMMUNITY COLLEGE
5401 ROLESVILLE ROAD WENDELL, NC 27591
NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22-086
DATE ISSUED
01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
WET POND 01 DETAIL

C-201

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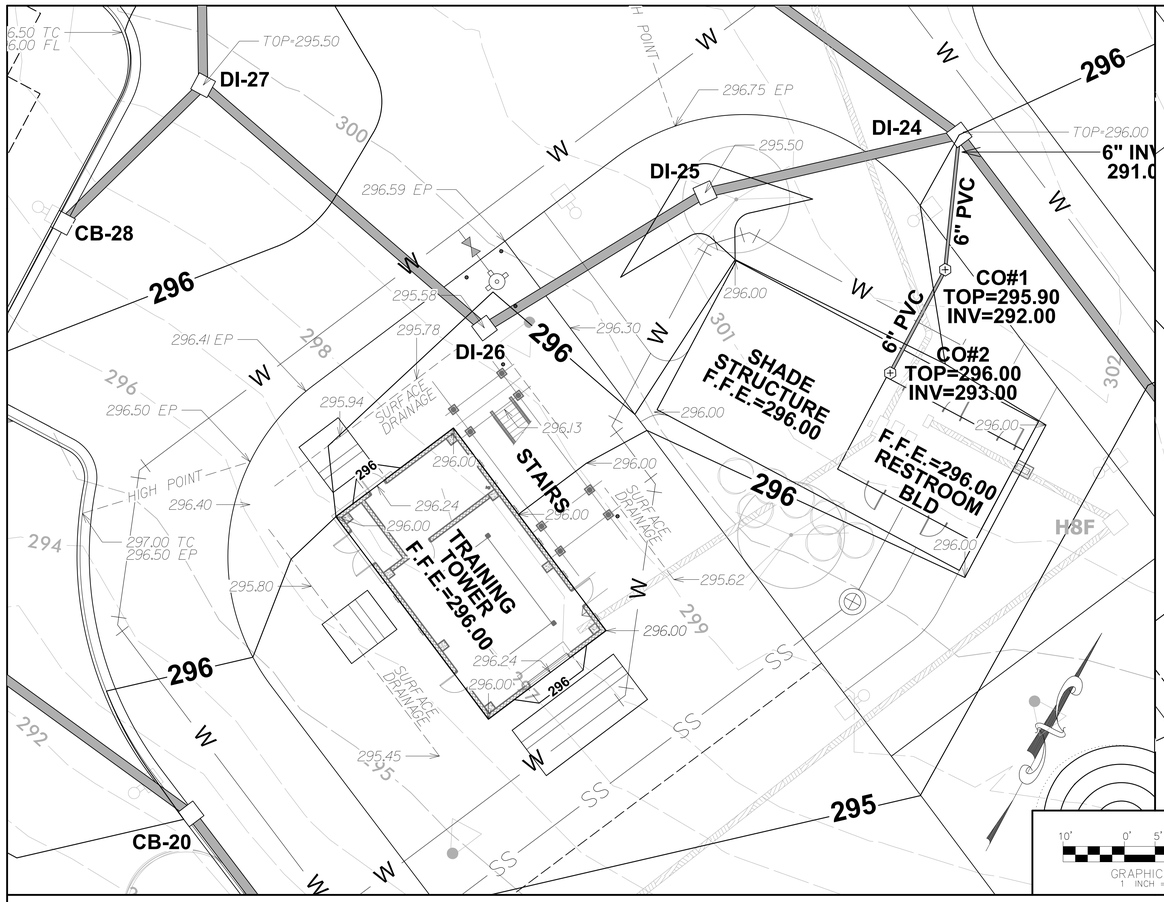
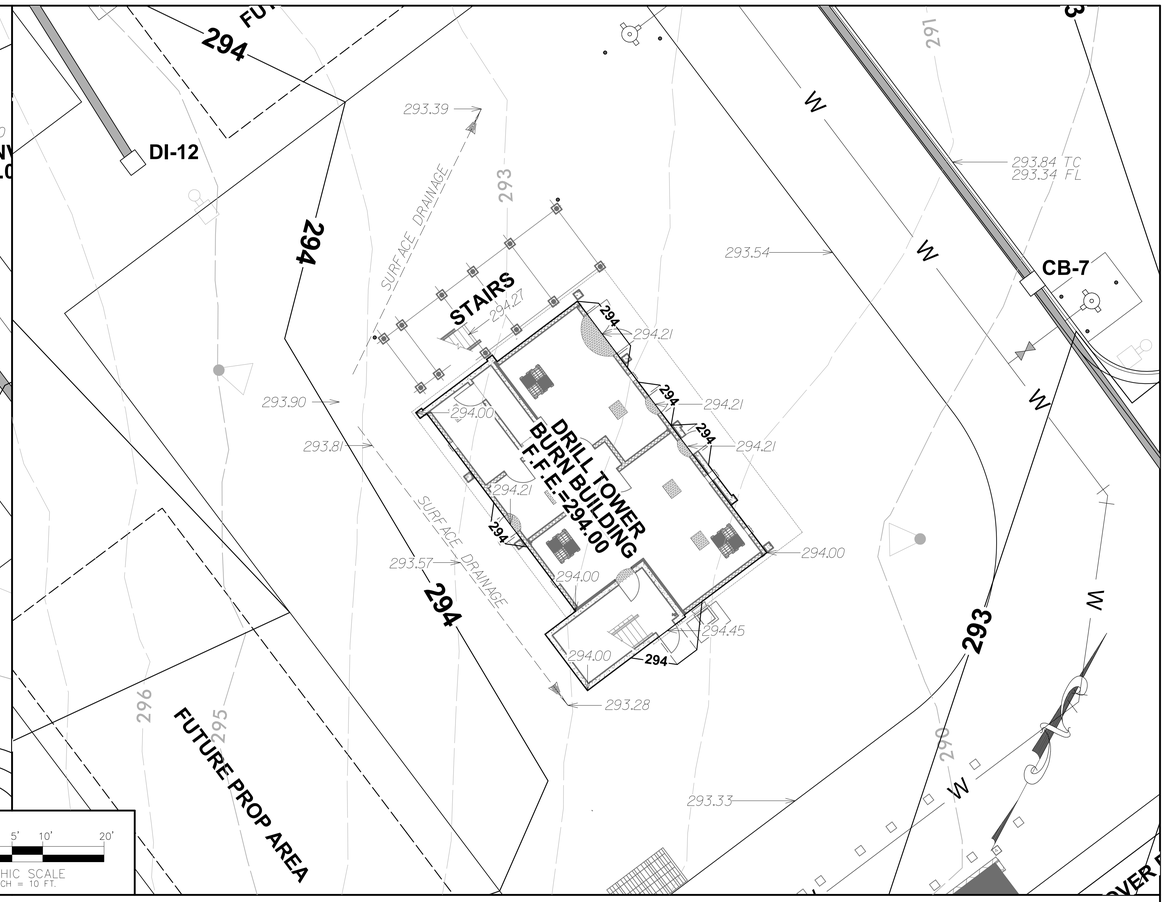
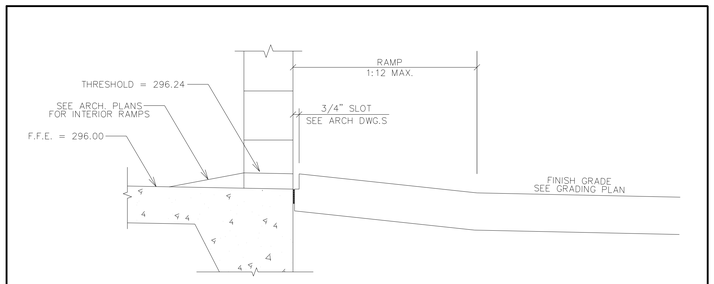


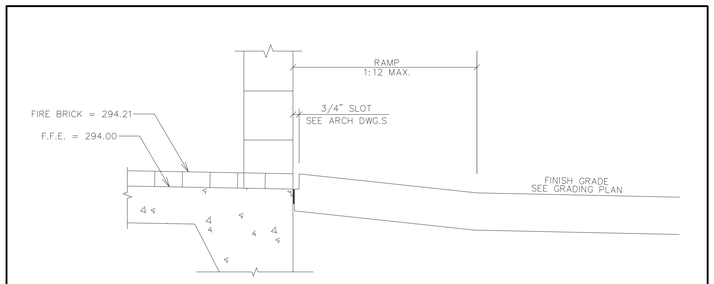


TRAINING TOWER
GRADING ENLARGEMENT



TRAINING TOWER
DOOR RAMP

DRILL TOWER
GRADING ENLARGEMENT



DRILL TOWER
DOOR RAMPS

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22-086
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01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
Grading Enlargement

C-202

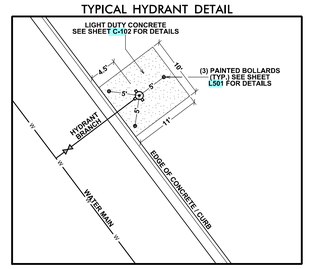
40' 0' 20' 40' 80'

GRAPHIC SCALE
1 INCH = 40 FT.

NOTES:

1. ALL FIRE HYDRANTS TO BE STANDARD CITY OF RALEIGH HYDRANTS WITH A 5" STORZ PUMPER NOZZLE UNLESS OTHERWISE NOTED. TWO (2) HYDRANTS TO HAVE A 5" NATIONAL STANDARD THREADED (NST) PUMPER NOZZLE.

TYPICAL HYDRANT DETAIL



US HIGHWAY 64 BYPASS (EASTBOUND)

VARIABLE WIDTH CONTROLLED ACCESS PUBLIC RIGHT OF WAY

20' GATEWAY BUFFER
REFER TO LANDSCAPE DRAWINGS

20' Utility & Pipeline Easement
D.B. 5074, Pg. 928, BM 1992, Pg. 31

MH#2
TOP=294.89
IN=289.24
OUT=289.04

FH (NO BOLLARDS)

6" DI FUTURE FIRE SERVICE W/ 6" BLOWOFF

16" DIP FIRE SERVICE

10" DIP FIRE SERVICE

FUTURE EV CHARGER

PROPOSED EV CHARGER

SIAMESE FDC

PROPOSED HYDRANT TO BE NATIONAL STANDARD THREADS

FUTURE PROP AREA

10' X 11' LIGHT DUTY CONCRETE PAD AROUND HYDRANTS IN GRASS.

10" X 10" CROSS W/(4) VALVES

3" DIP DOMESTIC SERVICE

REDUCE 3" WATER SERVICE TO 2" AT BUILDING ENTRANCE

OUTDOOR FIRE PROP AREA

SIGN STRUCTURE

TECHNICAL RESCUE AREA (FUTURE)

TRAILER #1

SILVA HYDRAULIC CUTTING SYSTEM

TRAILER #2

CLASSROOM PROP

FLOOD WARNING AREA OF 2' ABOVE BASE FLOOD

MH#1
TOP=295.92
EX. IN=287.71
NEW IN=287.91
EX. OUT=287.71

REMOVE EXISTING BLOWOFF

RESCUE ROAD (PRIVATE)

REMOVE 28 LF 10" DIP WATERLINE

TIE TO EXIST. 10" WATERLINE

EX. 6" DIP WL

EX. FH

EX. 10" DIP WATERLINE

EX. 16" DIP WATERLINE

INSPIRATION CIRCLE

4" DIP DOMESTIC WATER SERVICE FOR PROPOSED RESTROOM & FUTURE CLASSROOM BUILDING

10" WATER METER IN CONCRETE VAULT FOR TRAINING WATER

10" GV

10" X 4" TEE WITH 4" GV ON PROPOSED DOMESTIC SERVICE

TIE CONDUITS TO EX. HBB HANDHOLE

(3) 4" CONDUITS

10" DIP WATERLINE (PRIVATE)

4" DOMESTIC WATER SUPPLY

4" DOMESTIC BACKFLOW PREVENTER

HBC

MAINTAIN MINIMUM 18" VERTICAL SEPARATION BETWEEN WATER SERVICE AND SANITARY SEWER

326.42 LF 6" DIP @ 0.50%

(3) 4" CONDUITS

4" DIP DOMESTIC WATER SUPPLY

HANDHOLE (TYP.)

HBD

10' MIN. SEPARATION

4" WV
4" BLOWOFF

4" WV
4" X 3"
REDUCER

4" X 4" TEE

MH#3
TOP=296.50
IN=291.07
IN=291.07
OUT=290.87

MH#6
TOP=297.50
IN=291.44
OUT=291.24

4" DIP DOMESTIC SERVICE

65.71 LF 6" DIP @ 0.80%

HBE

MH#4
TOP=296.50
IN=291.69
OUT=291.49

17.40 LF 4" PVC @ 1.00%

MH#5
TOP=295.72
IN=295.75
OUT=292.55

VEHICLE EXTRACTION DITCH
SEE SHEET C-301 FOR ADDITIONAL DETAILS

HAZMAT TRAINING

VEHICLE EXTRACTION

PROPOSED HYDRANT TO BE NATIONAL STANDARD THREADS

10" X 10" TEE W/(3) VALVES

10' X 11' LIGHT DUTY CONCRETE PAD AROUND HYDRANTS IN GRASS. (NO REAR BOLLARD REQ.)

PROPOSED DRY HYDRANT SIGN REFER TO SHEET C-102 FOR DETAILS.

PROPOSED DRY HYDRANT, REFER TO SHEET C-102 FOR DETAILS.

STORMWATER WET POND-01 SEE SHEET C-301 FOR ADDITIONAL DETAILS

STREAM CENTERLINE

BUILDING SETBACK ZONE

WETLAND BOUNDARY

100-YEAR HAZARD AREA OF 2' ABOVE BASE FLOOD

SPECIAL FLOOD HAZARD AREA (SFHA) ZONE AE

FLOODWAY

FLOODFRINGE

HOUSE BUFFER ZONE 1

HOUSE BUFFER ZONE 2

1. All materials & construction methods shall be in accordance with City of Raleigh design standards, details & specifications (reference: CORPUD Handbook, current edition).

2. Utility separation requirements:

a) A distance of 100' shall be maintained between sanitary sewer & any private or public water supply source such as an impounded reservoir used as a source of drinking water. If adequate lateral separation cannot be achieved, ferrous sanitary sewer pipe shall be specified & installed to waterline specifications. However, the minimum separation shall not be less than 25' from a private well or 50' from a public well.

b) When installing water &/or sewer mains, the horizontal separation between utilities shall be 10'. If this separation cannot be maintained due to existing conditions, the variation allowed is the water main in a separate trench with the elevation of the water main at least 18" above the top of the sewer & must be approved by the Public Utilities Director. All distances are measured from outside diameter to outside diameter.

c) Where it is impossible to obtain proper separation, or anytime a sanitary sewer passes over a watermain, DIP materials or steel encasement extended 10' on each side of crossing must be specified & installed to waterline specifications.

d) 5.0' minimum horizontal separation is required between all sanitary sewer & storm sewer facilities, unless DIP material is specified for sanitary sewer.

e) Maintain 18" min. vertical separation at all watermain & RCP storm drain crossings; maintain 18"min. vertical separation at all sanitary sewer & RCP storm drain crossings. Where adequate separations cannot be achieved, specify DIP materials & a concrete cradle having 6"min. clearance (per CORPUD details W- 41 & S-49).

f) All other underground utilities shall cross water & sewer facilities with 18" min. vertical separation required.

3. Any necessary field revisions are subject to review & approval of an amended plan &/or profile by the City of Raleigh Public Utilities Department prior to construction.

4. Developer shall provide 30 days advance written notice to owner for any work required within an existing City of Raleigh Utility Easement traversing private property.

5. Contractor shall maintain continuous water & sewer service to existing residences & businesses throughout construction of project. Any necessary service interruptions shall be preceded by a 24 hour advance notice to the City of Raleigh Public Utilities Department.

6. 3.0' minimum cover is required on all water mains & sewer forcemains. 4.0' minimum cover is required on all reuse mains.

7. It is the developer's responsibility to abandon or remove existing water & sewer services not being used in redevelopment of a site unless otherwise directed by the City of Raleigh Public Utilities Department. This includes abandoning tap at main & removal of service from ROW or easement per CORPUD Handbook procedure.

8. Install water services with meters located at ROW or within a 2'x2' Waterline Easement immediately adjacent. *NOTE: it is the applicant's responsibility to properly size the water service for each connection to provide adequate flow & pressure.*

9. Install sewer services @ 1.0% minimum grade with cleanouts located at ROW or easement line & spaced every 75 linear feet maximum.

10. Pressure reducing valves are required on all water services exceeding 80 psi; backwater valves are required on all sanitary sewer services having building drains lower than 1.0' above the next upstream manhole.

11. All environmental permits applicable to the project must be obtained from NCDWQ, USACE &/or FEMA for any riparian buffer, wetland &/or floodplain impacts (respectively) prior to construction.

12. NCDOT / Railroad Encroachment Agreements are required for any utility work (including main extensions & service taps) within state or railroad ROW prior to construction.

13. Grease Interceptor / Oil Water Separator sizing calculations & installation specifications shall be approved by the RW FOG Program Coordinator prior to issuance of a UC / Bldg Permit. Contact (919) 996-4516 or fog@raleighnc.gov for more information.

14. Cross-connection control protection devices are required based on degree of health hazard involved as listed in Appendix-B of the Rules Governing Public Water Systems in North Carolina. These guidelines are the minimum requirements. The devices shall meet American Society of Sanitary Engineering (ASSE) standards or be on the University of Southern California approval list. The devices shall be installed and tested (both initial and periodic testing thereafter) in accordance with the manufacturer's recommendations or the local cross-connection control program, whichever is more stringent. A Certificate of Compliance shall also be obtained from the RW Cross-connection coordinator for each device prior to issuance of a uc/bldg permit. Contact (919) 996-5923 or cross.connection@raleighnc.gov for more information. Connection Coordinator for each device prior to issuance of a UC / Bldg Permit. Contact (919) 996-5923 or cross.connection@raleighnc.gov for more information

SITE PERMITTING APPROVAL

Water and Sewer Permits (if applicable)

The City of Raleigh consents to the connection and extension of the City's **Public Sewer System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** N/A

The City of Raleigh consents to the connection and extension of the City's **Public Water System** as shown on this plan. The material and Construction methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook. **City of Raleigh Public Utilities Department Permit #** N/A

The City of Raleigh consents to the connection to its public sewer system and extension of the **private sewer collection** system as shown on this plan. The material and constructions methods used for this project shall conform to the standards and specifications of the City's Public Utilities Handbook.

City of Raleigh Public Utilities Department Permit # S-5507 (P)

CITY OF RALEIGH - PLANS AUTHORIZED FOR CONSTRUCTION

Electronic Approval: This approval is being issued electronically. This approval is valid only upon the signature of a City of Raleigh Review Officer below. The City will retain a copy of the approved plans. Any work authorized by this approval must proceed in accordance with the plans kept on file with the City. This electronic approval may not be edited once issued. Any modification to this approval once issued will invalidate this approval.

City of Raleigh Development Approval _____

Raleigh Water Review Officer

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
UTILITY PLAN

C-300

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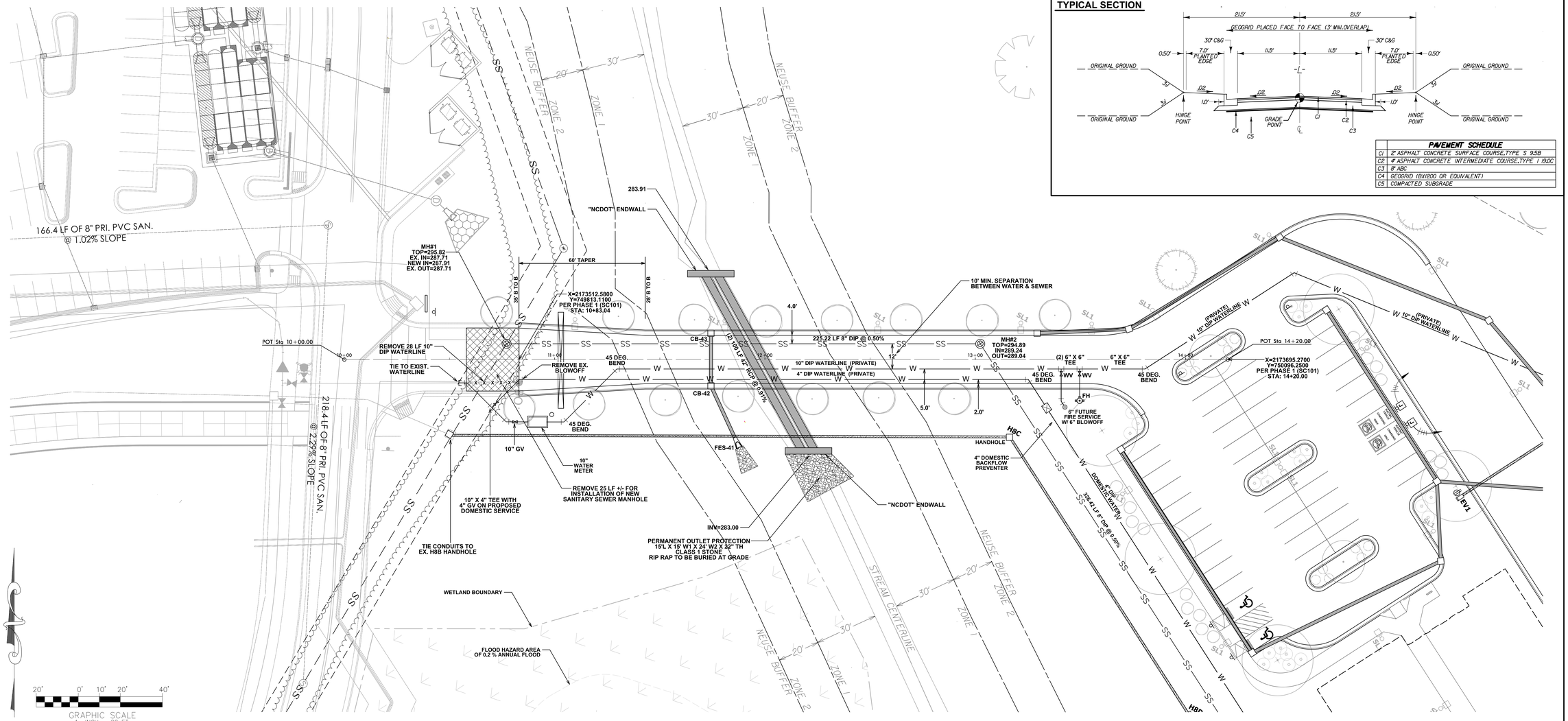
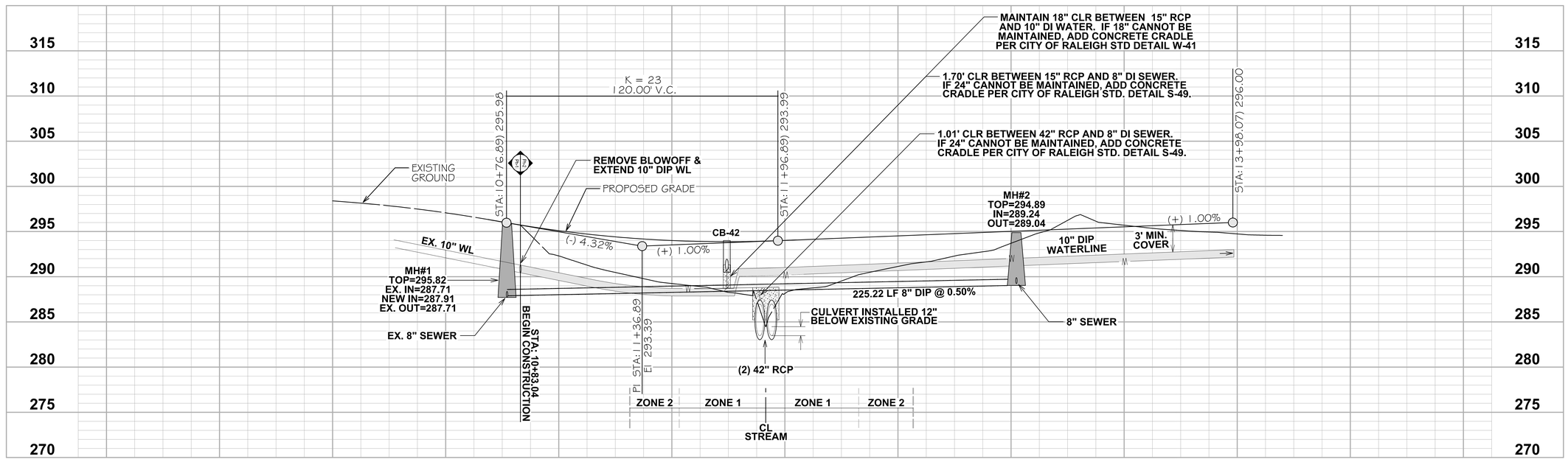
RESCUER ROAD TYPICAL SECTION

PAVEMENT SCHEDULE	
C1	2" ASPHALT CONCRETE SURFACE COURSE, TYPE S 9.5B
C2	4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I 19.0C
C3	8" ABC
C4	GEOGRID (BX1200 OR EQUIVALENT)
C5	COMPACTED SUBGRADE





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DATE ISSUED 01/10/2025
PROJECT STATUS ISSUE FOR BID
SHEET STREAM CROSSING PLAN

C-301

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PHASE I CONSTRUCTION SEQUENCE

1. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES (INCLUDING TIMBERING AND DEMOLITION) OCCUR. THE COC CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (E-NOI) FORM AT HTTPS://WWW.DEQ.NC.GOV/NCG01. PLEASE NOTE, THE E-NOI FORM MAY ONLY BE FILLED OUT ONCE THE PLANS ARE APPROVED. A COPY OF THE E&SC PERMIT, THE COC, AND A HARD COPY OF THE PLAN MUST BE KEPT ON SITE, PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTIONS.
2. CONTACT NCDEMLR RALEIGH REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO COMMENCING THE LAND-DISTURBING ACTIVITY. THE CONTACT NUMBER IS (919) 791-4200 (15A NCAC 04B .106(B)).
3. ADD GRAVEL CONSTRUCTION ENTRANCE.
4. IF CULVERTS ARE NOT INSTALLED AND ACCESS IS NEEDED ON-SITE, INSTALL TEMPORARY STREAM CROSSING PER DETAIL ON SHEET D-102. ALL TIMBER MAT CROSSINGS SHOULD HAVE SOLID DECKS WITH NO GAPS OR SPACES THAT INCLUDE SIDE BOARDS WHICH ARE AT LEAST 4 INCHES TALL. INSTALL WASHED STONE APPROACHES THAT EXTEND A MINIMUM OF 30' ON EACH SIDE OF THE CROSSING WITH BERM TO DIRECT RUN-OFF TO SILT FENCE OUTLETS.
5. INSTALL SILT FENCE, AND SILT FENCE OUTLETS CLEARING ONLY AS NECESSARY TO INSTALL THESE DEVICES.
6. INSTALL SKIMMER SEDIMENT BASIN(S) ACCORDING TO PLAN. SEED, MULCH AND ANCHOR BERM AND SOILS AROUND AND BELOW BASIN UPON CONSTRUCTION. USE RECP FOR STABILIZATION OF ALL 2:1 SLOPES. PLACE SILT FENCE ON DOWNHILL SIDE OF SOIL STOCKPILES.
7. CONTACT NCDEMLR AT (919) 791-4200 FOR INSPECTION OF THESE MEASURES. UPON APPROVAL, INSTALL TEMPORARY DIVERSION DITCHES AND THE REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLAN.
8. LIMIT DISTURBANCES TO THE LENGTH THAT CAN STABLIZED AT THE END OF THE WORKDAY (15A NCAC 04B .0106(4)).

RIPARIAN BUFFER RULES

1. DUE TO THE LOCATION OF THIS PROJECT, IT SHOULD BE NOTED THAT A RULE TO PROTECT AND MAINTAIN EXISTING BUFFERS ALONG WATERCOURSES IN THE NEUSE RIVER BASIN BECAME EFFECTIVE ON JULY 22, 1997. THE NEUSE RIVER RIPARIAN AREA PROTECTION AND MAINTENANCE RULE (15A NCAC 2B.0233) APPLIES TO ALL PERENNIAL AND INTERMITTENT STREAMS, LAKES, PONDS AND ESTUARIES IN THE NEUSE RIVER BASIN WITH FOREST VEGETATION ON THE ADJACENT LAND OR "RIPARIAN AREA".

TOTAL DISTURBED AREA = 403,349 SF / 9.260 ACRES

SKIMMER SEDIMENT BASIN SCHEDULE

BASIN #	DRAINAGE AREA	LENGTH	WIDTH	BOTTOM	TOP OF BERM	WEIR LENGTH	WEIR ELEVATION	SKIMMER SIZE	ORIFICE SIZE	SKIMMER
	(ACRES)	(FT)	(FT)	ELEVATION	ELEVATION	(FT)		(IN)	(IN)	INVERT
#1	5.21	NA	NA	284	289	20	287.75	2.0	1.75	285.00

TOTAL DISTURBED AREA = 9.260 ACRES

LOC

TD TD TD

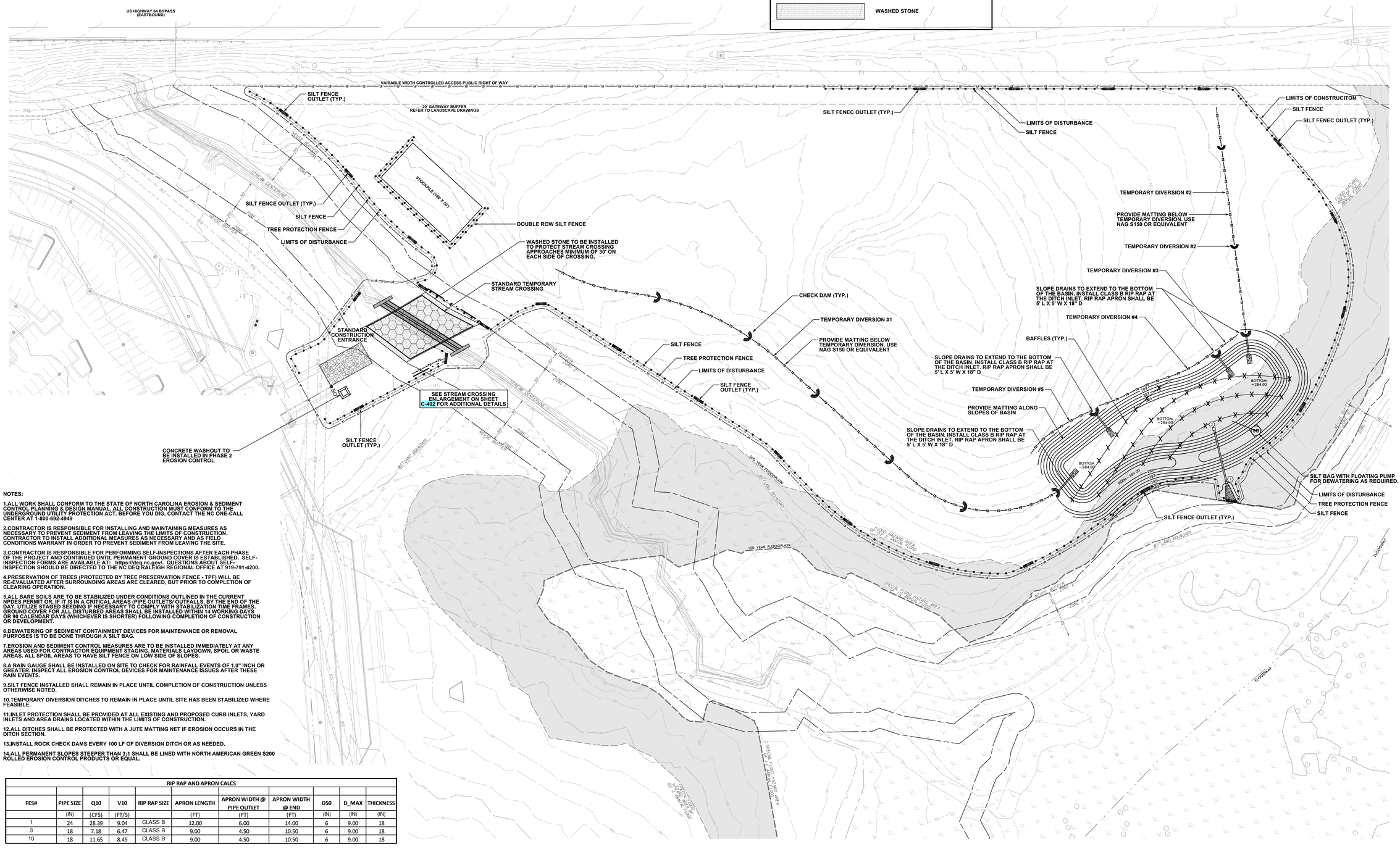
CHECK DAM
SILT FENCE
SILT FENCE OUTLET
INLET PROTECTION
LIMITS OF CONSTRUCTION/DISTURBANCE
TEMPORARY DIVERSION DITCH
TREE PROTECTION FENCE
CONSTRUCTION ENTRANCE
WASHED STONE

TEMPORARY DIVERSION SPECIFICATIONS

DITCH #	LINER TYPE	BOTTOM WIDTH	SIDE SLOPE	DEPTH
1	NAG-S150	0 FT	2:1	2 FEET
2	NAG-S150	0 FT	2:1	2 FEET
3	NAG-S150	0 FT	2:1	2 FEET
4	NAG-S150	0 FT	2:1	2 FEET
5	NAG-S150	0 FT	2:1	2 FEET

TEMPORARY DIVERSION DITCHES SHALL BE INSPECTED ONCE A WEEK AND AFTER EVERY RAINFALL EVENT IN EXCESS OF 1". IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.

40' 0' 20' 40' 80'
GRAPHIC SCALE
1 INCH = 40 FT.



NOTES:

1.ALL WORK SHALL CONFORM TO THE STATE OF NORTH CAROLINA EROSION & SEDIMENT CONTROL PLANNING & DESIGN MANUAL. ALL CONSTRUCTION MUST CONFORM TO THE UNDERGROUND UTILITY PROTECTION ACT. BEFORE YOU DIG, CONTACT THE NC ONE-CALL CENTER AT 1-800-632-4949

2.CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING MEASURES AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE LIMITS OF CONSTRUCTION. CONTRACTOR TO INSTALL ADDITIONAL MEASURES AS NECESSARY AND AS FIELD CONDITIONS WARRANT IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.

3.CONTRACTOR IS RESPONSIBLE FOR PERFORMING SELF-INSPECTIONS AFTER EACH PHASE OF THE PROJECT AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. SELF-INSPECTION FORMS ARE AVAILABLE AT: https://deq.nc.gov/. QUESTIONS ABOUT SELF-INSPECTION SHOULD BE DIRECTED TO THE NC DEQ RALEIGH REGIONAL OFFICE AT 919-791-4200.

4.PRESERVATION OF TREES (PROTECTED BY TREE PRESERVATION FENCE - TPF) WILL BE RE-EVALUATED AFTER SURROUNDING AREAS ARE CLEARED, BUT PRIOR TO COMPLETION OF CLEARING OPERATION.

5.ALL BARE SOILS ARE TO BE STABILIZED UNDER CONDITIONS OUTLINED IN THE CURRENT NPDES PERMIT OR, IF IT IS IN A CRITICAL AREAS (PIPE OUTLETS/ OUTFALLS, BY THE END OF THE DAY. UTILIZE STAGED SEEDING IF NECESSARY TO COMPLY WITH STABILIZATION TIME FRAMES. GROUND COVER FOR ALL DISTURBED AREAS SHALL BE INSTALLED WITHIN 14 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.

6.DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE OR REMOVAL PURPOSES IS TO BE DONE THROUGH A SILT BAG.

7.EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IMMEDIATELY AT ANY AREAS USED FOR CONTRACTOR EQUIPMENT STAGING, MATERIALS LAYDOWN, SPOIL OR WASTE AREAS. ALL SPOIL AREAS TO HAVE SILT FENCE ON LOW SIDE OF SLOPES.

8.A RAIN GAUGE SHALL BE INSTALLED ON SITE TO CHECK FOR RAINFALL EVENTS OF 1.0" INCH OR GREATER, INSPECT ALL EROSION CONTROL DEVICES FOR MAINTENANCE ISSUES AFTER THESE RAIN EVENTS.

9.SILT FENCE INSTALLED SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION UNLESS OTHERWISE NOTED.

10.TEMPORARY DIVERSION DITCHES TO REMAIN IN PLACE UNTIL SITE HAS BEEN STABILIZED WHERE FEASIBLE.

11.INLET PROTECTION SHALL BE PROVIDED AT ALL EXISTING AND PROPOSED CURB INLETS, YARD INLETS AND AREA DRAINS LOCATED WITHIN THE LIMITS OF CONSTRUCTION.

12.ALL DITCHES SHALL BE PROTECTED WITH A JUTE MATTING NET IF EROSION OCCURS IN THE DITCH SECTION.

13.INSTALL ROCK CHECK DAMS EVERY 100 LF OF DIVERSION DITCH OR AS NEEDED.

14.ALL PERMANENT SLOPES STEEPER THAN 3:1 SHALL BE LINED WITH NORTH AMERICAN GREEN S200 ROLLED EROSION CONTROL PRODUCTS OR EQUAL.

RIP RAP AND APRON CALCS

FES#	PIPE SIZE	Q10	V10	RIP RAP SIZE	APRON LENGTH	APRON WIDTH @ PIPE OUTLET	APRON WIDTH @ END	D50	D_MAX	THICKNESS
	(IN)	(CFS)	(FT/S)		(FT)	(FT)	(FT)	(IN)	(IN)	(IN)
1	24	28.39	9.04	CLASS B	12.00	6.00	14.00	6	9.00	18
3	18	7.18	6.47	CLASS B	9.00	4.50	10.50	6	9.00	18
10	18	11.65	8.45	CLASS B	9.00	4.50	10.50	6	9.00	18

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5401 ROLESVILLE ROAD WENDELL, NC 27591
NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **EROSION CONTROL PHASE 1**

C-400

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PHASE II CONSTRUCTION SEQUENCE

1. COMPLETE PHASE I CONSTRUCTION SEQUENCE.
2. PERFORM GRADING OPERATIONS, AS SITE IS BROUGHT TO GRADE, CONTRACTOR TO ENSURE POSITIVE DRAINAGE AND TO ENSURE THAT ALL SEDIMENT LADEN WATER IS DIRECTED INTO THE SKIMMER BASIN.
3. INSTALL EXCAVATED INLET PROTECTION DEVICES AS SOON AS INLETS ARE INSTALLED. ALL STORM DRAINAGE SHALL BE ROUTED INTO SKIMMER BASINS VIA TEMPORARY PIPES SHOWN ON PLANS.
4. CLEAN SEDIMENT BASIN AND EXCAVATED INLET PROTECTION DEVICES WHEN THEY ARE HALF-FULL AND MONITOR FOR MAINTENANCE OF ALL EROSION CONTROL DEVICES WEEKLY OR AFTER EVERY 1" OF RAIN.
5. SOIL STOCKPILES SHALL BE STABILIZED IF INACTIVE FOR MORE THAN 7 DAYS.
6. ANY OFF-SITE BORROW AND WASTE REQUIRED FOR THIS PROJECT MUST COME FROM A SITE WITH AN APPROVED EROSION CONTROL PLAN. A SITE REGULATED UNDER THE MINING ACT OF 1971, OR A LANDFILL REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT. TRASH/DEBRIS FROM DEMOLITION ACTIVITIES OR GENERATED BY ANY ACTIVITIES ON SITE MUST BE DISPOSED OF AT A FACILITY REGULATED BY THE DIVISION OF SOLID WASTE MANAGEMENT OR PER DIVISION OF SOLID WASTE MANAGEMENT OR DIVISION OF WATER RESOURCES RULES AND REGULATIONS.
7. MAINTAIN EROSION CONTROL MEASURES UNTIL ALL UPSTREAM AREA HAS BEEN STABILIZED AND PERMANENT GROUNDCOVER IS ESTABLISHED PER LANDSCAPE PLANS.
8. PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEAURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE. SEDIMENT BASINS MAY NOT BE REMOVED OR CONVERTED TO PERMENANT SCMS UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. NCDEQ SHOULD BE NOTIFIED 10-DAYS PRIOR TO THE REMOVAL OF A BASIN. (GS 113A-57(3), 15A NCAC 04B .0113).

PHASE II CONSTRUCTION SEQUENCE CONTINUED.

8. PERIMETER MEASURES MUST BE LEFT IN PLACE UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. AFTER SITE IS PERMANENTLY STABILIZED, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AND PROVIDE PERMANENT SEEDING WHERE TEMPORARY MEAURES HAVE BEEN REMOVED AND GROUND COVER IS NOT ADEQUATE. SEDIMENT BASINS MAY NOT BE REMOVED OR CONVERTED TO PERMENANT SCMS UNTIL ALL UPLAND AREAS ARE PERMANENTLY STABILIZED. NCDEQ SHOULD BE NOTIFIED 10-DAYS PRIOR TO THE REMOVAL OF A BASIN. (GS 113A-57(3), 15A NCAC 04B .0113).
9. ONCE APPROVAL IS GIVEN FOR REMOVAL OR CONVERSION OF THE SKIMMER BASINS; THE TEMPORARY DIVERSION DITCHES AND INLET PROTECTION SHALL BE REMOVED PER THE FOLLOWING:
   - A. REMOVE SEDIMENT FROM DITCHES.
   - B. REMOVE CHECK DAMS FROM DITCHES.
   - C. BRING DITCHES TO FINAL GRADE AND PERMANENTLY STABILIZE PER THE GRADING PLAN.
   - D. REMOVE SEDIMENT FROM TEMPORARY INLET PROTECTION AND REMOVE TEMPORARY INLET PROTECTIONS.
   - E. BRING AREAS AROUND DRAINAGE STRUCTURES TO PERMANENT GRADE AND STABILIZE PER GRADING PLANS.
   - F. REMOVE SLOPE DRAINS FROM SKIMMER BASINS.
10. THE SKIMMER BASINS SHALL BE DEWATERED THROUGH A SILT BAG. ONCE THE SKIMMER BASINS HAVE BEEN CLEANED OF SEDIMENT AND DRAINED, THEY SHALL BE BROUGHT TO FINAL GRADE, PERMANENTLY STABILIZED AND PLANTED IN ACCORDANCE WITH THE GRADING AND STORM PLAN.
11. WHEN THE PROJECT IS COMPLETE, AND PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION HAS BEEN ESTABLISHED, THE PERMITTEE SHALL CONTACT NCDEMLR TO CLOSE OUT THE E&SC PLAN. AFTER NCDEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHALL VISIT HTTPS://WWW.DEQ.NC.GOV/NCG01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (E-NOT). A $120 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE E-NOT HAS BEEN FILLED OUT.

RIPARIAN BUFFER RULES

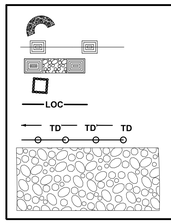
1. DUE TO THE LOCATION OF THIS PROJECT, IT SHOULD BE NOTED THAT A RULE TO PROTECT AND MAINTAIN EXISTING BUFFERS ALONG WATERCOURSES IN THE NEUSE RIVER BASIN BECAME EFFECTIVE ON JULY 22, 1997. THE NEUSE RIVER RIPARIAN AREA PROTECTION AND MAINTENANCE RULE (15A NCAC 2B.0233) APPLIES TO ALL PERENNIAL AND INTERMITTENT STREAMS, LAKES, PONDS AND ESTUARIES IN THE NEUSE RIVER BASIN WITH FOREST VEGETATION ON THE ADJACENT LAND OR "RIPARIAN AREA".

TOTAL DISTURBED AREA = 403,349 SF / 9.260 ACRES

SKIMMER SEDIMENT BASIN SCHEDULE

BASIN #	DRAINAGE AREA	LENGTH	WIDTH	BOTTOM	TOP OF BERM	WEIR LENGTH	WEIR ELEVATION	SKIMMER SIZE	ORIFICE SIZE	SKIMMER
	(ACRES)	(FT)	(FT)	ELEVATION	ELEVATION	(FT)		(IN)	(IN)	INVERT
#1	5.21	NA	NA	284	289	20	287.75	2.0	1.75	285.00

TOTAL DISTURBED AREA = 9.260 ACRES

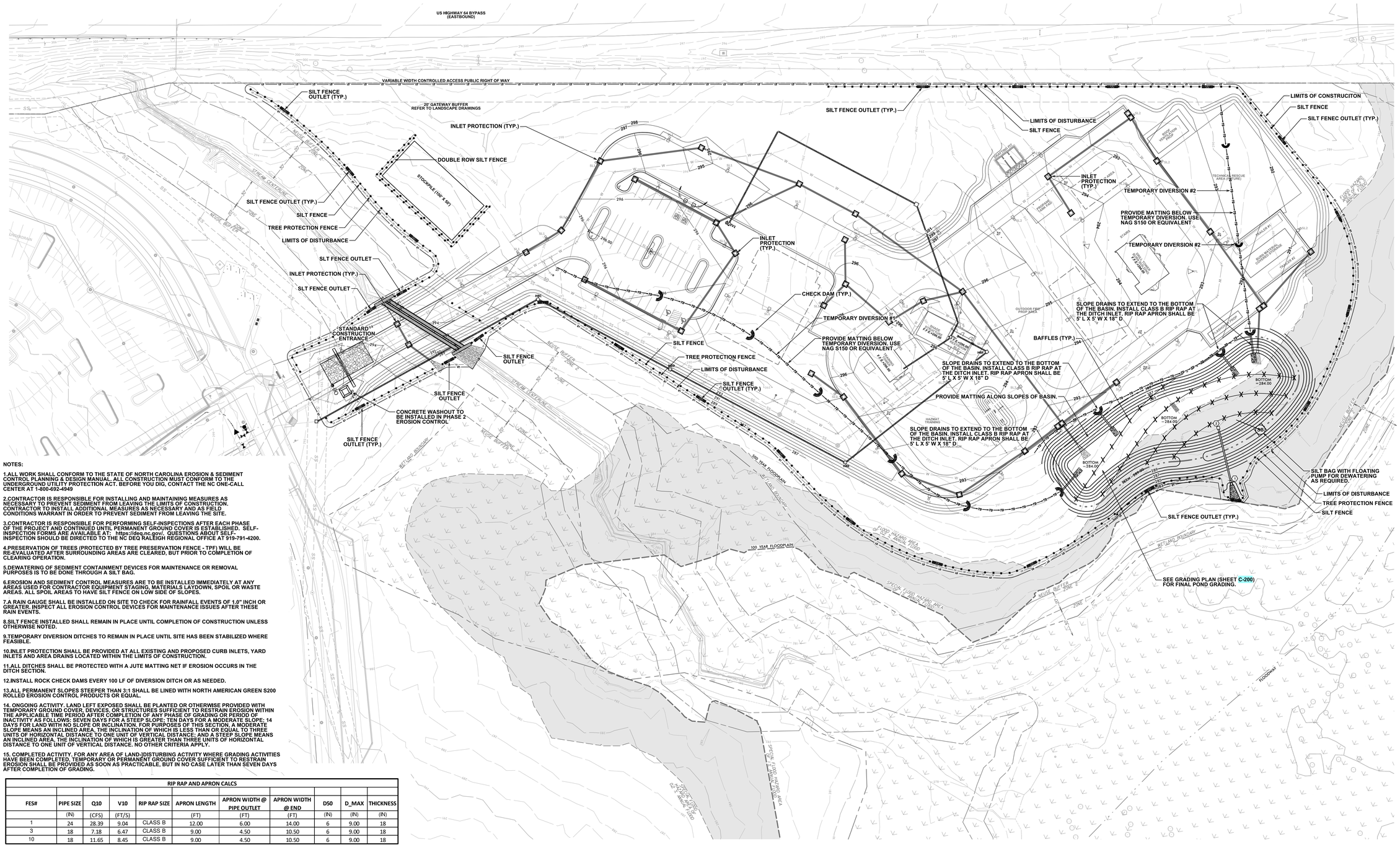


CHECK DAM
SILT FENCE
SILT FENCE OUTLET
INLET PROTECTION
LIMITS OF CONSTRUCTION/DISTURBANCE
TEMPORARY DIVERSION DITCH
TREE PROTECTION FENCE
CONSTRUCTION ENTRANCE

TEMPORARY DIVERSION SPECIFICATIONS

DITCH #	LINER TYPE	BOTTOM WIDTH	SIDE SLOPE	DEPTH
1	NAG-S150	0 FT	2:1	2 FEET
2	NAG-S150	0 FT	2:1	2 FEET
3	NAG-S150	0 FT	2:1	2 FEET
4	NAG-S150	0 FT	2:1	2 FEET
5	NAG-S150	0 FT	2:1	2 FEET

TEMPORARY DIVERSION DITCHES SHALL BE INSPECTED ONCE A WEEK AND AFTER EVERY RAINFALL EVENT IN EXCESS OF 1", IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.



NOTES:

1. ALL WORK SHALL CONFORM TO THE STATE OF NORTH CAROLINA EROSION & SEDIMENT CONTROL PLANNING & DESIGN MANUAL. ALL CONSTRUCTION MUST CONFORM TO THE UNDERGROUND UTILITY PROTECTION ACT. BEFORE YOU DIG, CONTACT THE NC ONE-CALL CENTER AT 1-800-692-4949
2. CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING MEASURES AS NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE LIMITS OF CONSTRUCTION. CONTRACTOR TO INSTALL ADDITIONAL MEASURES AS NECESSARY AND AS FIELD CONDITIONS WARRANT IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
3. CONTRACTOR IS RESPONSIBLE FOR PERFORMING SELF-INSPECTIONS AFTER EACH PHASE OF THE PROJECT AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED. SELF-INSPECTION FORMS ARE AVAILABLE AT: https://deq.nc.gov/. QUESTIONS ABOUT SELF-INSPECTION SHOULD BE DIRECTED TO THE NC DEQ RALEIGH REGIONAL OFFICE AT 919-791-4200.
4. PRESERVATION OF TREES (PROTECTED BY TREE PRESERVATION FENCE - TPF) WILL BE RE-EVALUATED AFTER SURROUNDING AREAS ARE CLEARED, BUT PRIOR TO COMPLETION OF CLEARING OPERATION.
5. DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE OR REMOVAL PURPOSES IS TO BE DONE THROUGH A SILT BAG.
6. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IMMEDIATELY AT ANY AREAS USED FOR CONTRACTOR EQUIPMENT STAGING, MATERIALS LAYDOWN, SPOIL OR WASTE AREAS. ALL SPOIL AREAS TO HAVE SILT FENCE ON LOW SIDE OF SLOPES.
7. A RAIN GAUGE SHALL BE INSTALLED ON SITE TO CHECK FOR RAINFALL EVENTS OF 1.0" INCH OR GREATER. INSPECT ALL EROSION CONTROL DEVICES FOR MAINTENANCE ISSUES AFTER THESE RAIN EVENTS.
8. SILT FENCE INSTALLED SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION UNLESS OTHERWISE NOTED.
9. TEMPORARY DIVERSION DITCHES TO REMAIN IN PLACE UNTIL SITE HAS BEEN STABILIZED WHERE FEASIBLE.
10. INLET PROTECTION SHALL BE PROVIDED AT ALL EXISTING AND PROPOSED CURB INLETS, YARD INLETS AND AREA DRAINS LOCATED WITHIN THE LIMITS OF CONSTRUCTION.
11. ALL DITCHES SHALL BE PROTECTED WITH A JUTE MATTING NET IF EROSION OCCURS IN THE DITCH SECTION.
12. INSTALL ROCK CHECK DAMS EVERY 100 LF OF DIVERSION DITCH OR AS NEEDED.
13. ALL PERMANENT SLOPES STEEPER THAN 3:1 SHALL BE LINED WITH NORTH AMERICAN GREEN S200 ROLLED EROSION CONTROL PRODUCTS OR EQUAL.
14. ONGOING ACTIVITY, LAND LEFT EXPOSED SHALL BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION WITHIN THE APPLICABLE TIME PERIOD AFTER COMPLETION OF ANY PHASE OF GRADING OR PERIOD OF INACTIVITY AS FOLLOWS: SEVEN DAYS FOR A STEEP SLOPE; TEN DAYS FOR A MODERATE SLOPE; 14 DAYS FOR LAND WITH NO SLOPE OR INCLINATION. FOR PURPOSES OF THIS SECTION, A MODERATE SLOPE MEANS AN INCLINED AREA, THE INCLINATION OF WHICH IS LESS THAN OR EQUAL TO THREE UNITS OF HORIZONTAL DISTANCE TO ONE UNIT OF VERTICAL DISTANCE; AND A STEEP SLOPE MEANS AN INCLINED AREA, THE INCLINATION OF WHICH IS GREATER THAN THREE UNITS OF HORIZONTAL DISTANCE TO ONE UNIT OF VERTICAL DISTANCE. NO OTHER CRITERIA APPLY.
15. COMPLETED ACTIVITY. FOR ANY AREA OF LAND-DISTURBING ACTIVITY WHERE GRADING ACTIVITIES HAVE BEEN COMPLETED, TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION SHALL BE PROVIDED AS SOON AS PRACTICABLE, BUT IN NO CASE LATER THAN SEVEN DAYS AFTER COMPLETION OF GRADING.

RIP RAP AND APRON CALCS

FES#	PIPE SIZE	Q10	V10	RIP RAP SIZE	APRON LENGTH	APRON WIDTH @ PIPE OUTLET	APRON WIDTH @ END	D50	D_MAX	THICKNESS
	(IN)	(CFS)	(FT/S)		(FT)	(FT)	(FT)	(IN)	(IN)	(IN)
1	24	28.39	9.04	CLASS B	12.00	6.00	14.00	6	9.00	18
3	18	7.18	6.47	CLASS B	9.00	4.50	10.50	6	9.00	18
10	18	11.65	8.45	CLASS B	9.00	4.50	10.50	6	9.00	18

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GRAPHIC SCALE
1 INCH = 40 FT.

WTCC EWS - FIRE & RESCUE TRAINING CENTER

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SAMET
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SHEET
EROSION CONTROL PHASE 2

C-401

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STREAM CROSSING CONSTRUCTION SEQUENCE

1. STREAM CROSSING TO COMPLY WITH ALL PERMITTING REQUIREMENTS IDENTIFIED IN THE APPROVED 401 PERMIT (ISSUED BY NCDEQ) AND THE 404 PERMIT (ISSUED BY USACE).
2. KEEP CLEARING AND EXCAVATION ON THE STREAM BANKS AND BED AND APPROACH SECTIONS TO A MINIMUM.
3. REMOVE TEMPORARY STREAM CROSSING IF PREVIOUSLY INSTALLED.
4. DIVERT ALL SURFACE WATER FROM THE CONSTRUCTION SITE ONTO UNDISTURBED AREAS ADJOINING THE STREAM. LINE UNSTABLE STREAM BANKS WITH RIPRAP, OR OTHERWISE APPROPRIATELY STABLIZE. INSTALL WATTLES AS IDENTIFIED ON THE DRAWINGS TO RETAIN SEDIMENT GENERATED BY THE STREAM CROSSING.
5. INSTALL STILLING BASIN/SILT BAG.
6. INSTALL TEMPORARY DIVERSION CHANNEL WITH 2:1 SLOPES AND 5' BASE WIDTH. PROTECT CHANNEL WITH LINER (GEOTEXTILE FOR SOIL STABILIZATION, TYPE 4).
7. INSTALL IMPERVIOUS DIKES AND DIVERT STREAM TO TEMPORARY DIVERSION CHANNEL.
8. INSTALL PERMANENT CULVERT, HEADWALLS, AND OUTLET PROTECTION. PUMP ANY EFFLUENT THAT COLLECTS IN THE EXCAVATION TO THE STILLING BASIN/SILT BAG.
9. REMOVE IMPERVIOUS DIKES AND DIVERT STREAM TO NEW CULVERT.
10. UPON COMPLETION OF THE CROSSING, FILL, COMPACT, AND STABLIZE THE BYPASS CHANNEL. INSTALL PROTECTIVE GROUND COVERS TO PROVIDE PERMANENT EROSION PROTECTION. PROVIDE WETLANDS VEGETATION MIX FOR STABLIZATION WITHIN STREAM CROSSING AS IDENTIFIED IN THE LANDSCAPE DRAWINGS.
11. CONSTRUCT ROADWAY OVER NEWLY CONSTRUCTED CULVERT.

CHECK DAM
SILT FENCE
SILT FENCE OUTLET
INLET PROTECTION
LIMITS OF CONSTRUCTION/DISTURBANCE
TEMPORARY DIVERSION DITCH
TREE PROTECTION FENCE
CONSTRUCTION ENTRANCE
WASHED STONE

10' 0' 5' 10' 20'
GRAPHIC SCALE
1 INCH = 10 FT.

DOUBLE ROW SILT FENCE
STOCKPILE (100' X 50')
SILT FENCE OUTLET
INSTALL WATTLES AT BASE OF SILT FENCE TO RETAIN SEDIMENT
INSTALL TEMPORARY SEDIMENT FENCE TO PROTECT STREAM DURING CULVERT CONSTRUCTION.
TEMPORARY DIVERSION #1
IMPERVIOUS DIKE
TEMPORARY DIVERSION CHANNEL
PROPOSED 42" RCP
PROPOSED 42" RCP
INSTALL WATTLES AT BASE OF SILT FENCE TO RETAIN SEDIMENTTION.
INSTALL TEMPORARY SEDIMENT FENCE TO PROTECT STREAM DURING CULVERT CONSTRUCTION.
STILLING BASIN / SILT BAG DRAIN TO SILT FENCE OUTLET
SB
IMPERVIOUS DIKE
TEMPORARY DIVERSION DITCH
INSTALL WATTLES AT BASE OF SILT FENCE TO RETAIN SEDIMENT
LIMITS OF DISTURBANCE
TREE PROTECTION FENCE
SILT FENCE
STANDARD CONSTRUCTION ENTRANCE
BO
CONCRETE WASHOUT TO BE INSTALLED IN PHASE 2 EROSION CONTROL
SILT FENCE OUTLET
SILT FENCE
TREE PROTECTION FENCE
LIMITS OF DISTURBANCE
NEUSE BUFFER ZONE 2
ZONE 1
STREAM CENTERLINE
WETLAND BOUNDARY

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IFB PLANSET
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NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **EROSION CONTROL STREAM CROSSING**

C-402

DATE: PAGE:

CONSIDERATIONS FOR CONSTRUCTION SCHEDULING

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
CONSTRUCTION ACCESS: Construction entrance, construction routes, equipment parking areas.	First land-disturbing activity- Stabilize bare areas immediately with gravel and temporary vegetation as construction takes place.
SEDIMENT TRAPS AND BARRIERS: Basin traps, sediment fences, and outlet protection.	Install principal basins after construction site is accessed. Install additional traps and barriers as needed during grading.
RUNOFF CONTROL: Diversions, perimeter dikes, water bars, and outlet protection.	Install key practices after principal sediment traps and before land grading. Install additional runoff-control measures during grading.
RUNOFF CONVEYANCE SYSTEM: Stabilize streambanks, storm drains, channels, inlet and outlet protection, and slope drains.	Where necessary, stabilize streambanks as early as possible. Install principal runoff conveyance system with runoff-control measures. Install remainder of system after grading.
LANDING CLEARING AND GRADING: Site preparation- cutting, filling and grading, sediment traps, barriers, diversions, drains, and surface roughening.	Begin major clearing and grading **AFTER** principal sediment and key runoff-control measures are installed. Clear borrow and disposal areas only as needed. Install additional control measures as grading progresses. Mark trees and buffer areas for preservation.
SURFACE STABILIZATION: Temporary and permanent seeding, mulching, sodding and riprap.	Apply temporary or permanent stabilization measures immediately on all disturbed areas where work is delayed or complete.
BUILDING CONSTRUCTION: Buildings, utilities, and paving.	Install necessary additional erosion and sedimentation control practices as work takes place.
LANDSCAPE AND FINAL STABILIZATION: Topsoiling, trees and shrubs, permanent seeding, mulching, sodding, and riprap.	Last construction phase: Stabilize all open areas, including borrow and spoil areas. Remove and stabilize all temporary control areas.

NOTE: The above are the main aspects of a typical construction sequence in general terms. A detailed Construction Sequence should be site specific based on your project and site needs. As a minimum, the construction sequence schedule should show the following:

- The erosion and sedimentation control practices to be installed,
- Principal development activities,
- What measures should be in place before other activities are begun, and
- Compatibility with the general construction schedule of the contract.

Many timely construction techniques can reduce the erosion potential of a site, such as (1) shaping earthen fills daily to prevent overflows and (2) constructing temporary diversions ahead of anticipated storms. These types of activities cannot be put on the construction sequence schedule, but should be used whenever possible.

CONSTRUCTION SEQUENCING

Effective Date: 9/1/2023
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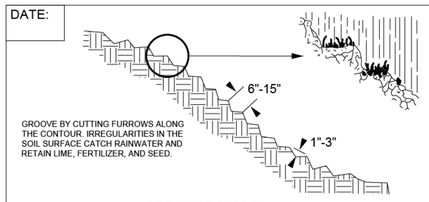
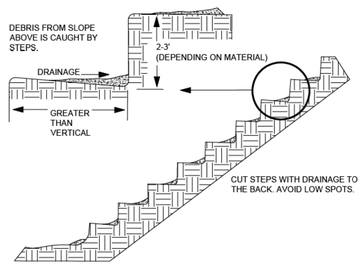
DATE: PAGE:



GROOVING SLOPES



STAIR STEPPING CUT SLOPES

CUT SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Stair-step grade or groove cut slopes with a gradient steeper than 3:1.
2. Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-stepping.
3. Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
4. Do not make individual vertical cuts more than 2 feet in soft materials or more than 3 feet in rocky materials.
5. Grooving uses machinery to create a series of ridges and depressions that run across the slope (on the contour).
6. Groove using any appropriate implement that can be safely operated on the slope. Such as disks, tillers, spring harrows, or the teeth on a front-enc loader bucket. Do not make such grooves less than 3 inches deep nor more than 15 inches apart.

FILL SLOPE ROUGHENING FOR AREAS NOT TO BE MOWED:

1. Place fill slopes with a gradient steeper than 3:1 in lifts not to exceed 9 inches, and make sure each lift is properly compacted. Ensure that the face of the slope consists of loose, uncompacted fill 4 to 6 inches deep. Use grooving, as described above, to roughen the face of the slopes, if necessary.
2. Do not blade or scrape the final slope face.

CUTS, FILLS, AND GRADED AREAS THAT WILL BE MOWED:

1. Make mowed slopes **no steeper than 3:1**
2. Roughen these areas to shallow grooves by normal tilling, disking, harrowing, or use of a cultipacker-seeder. Make the final pass of any such tillage implement on the contour.
3. Make grooves, formed by such implements, close together (less than 10 inches) and not less than 1 inch deep.
4. Excessive roughness is undesirable where mowing is planned.

ROUGHENING WITH TRACKED MACHINERY:

1. Limit roughening with tracked machinery to sandy soils to avoid undue compaction of the soil surface. Tracking is generally not as effective as the other roughening methods described.
2. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.

SEED AND MULCH ROUGHENED AREAS IMMEDIATELY TO OBTAIN OPTIMUM SEED GERMINATION AND GROWTH.

SURFACE ROUGHENING

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DATE: PAGE:

TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING

Seeding Mixture

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

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

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

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

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

TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

Seeding Mixture

Species	Rate (lb/acre)
German millet	40

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

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

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

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

TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

Seeding Mixture

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

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

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

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

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1-1½ tons/acre on coarse-textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.
FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700 - 1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.
SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. The finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. All ridges and depressions shall be removed and filled to provide the approved surface drainage. Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

TEMPORARY SEEDING

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DATE: PAGE:

SPACING GUIDE FOR SLOPE BREAKS

	SLOPE	SPACING (FT)
Steep Slopes	2:1	20
	3:1	35
	4:1	45
Long Slopes	15-25%	50
	10-15%	80
	6-10%	125
	3-6%	200
	<3%	300

Use slope breaks, such as diversions, wattles, or benches, as appropriate, to reduce the length of cut-and-fill slope to limit sheet and rill erosion and prevent gullying.

MAINTENANCE:

1. Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls.
2. Promptly remove all sediment from diversions and other water-disposal practices.
3. If washouts or breaks occur, repair immediately.
4. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

NOTES:

1. Construct and maintain all erosion and sediment control practices and measures in accordance with the approved sedimentation control plan and construction schedule.
2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.
3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.
4. Clear and grub areas to be filled by removing trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.
5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.
6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.
7. Do not incorporate frozen, soft, mucky, or highly compressible materials into fill slopes.
8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.
9. Keep diversions and other water conveyance measures free of sediment during all phases of development.
10. Handle seeps or springs encountered during construction in accordance with approved methods (subsurface drain).
11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan. Apply temporary stabilization measures on all graded areas when work is to be interrupted or delayed for 30 days or longer.
12. Show topsoil, stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

LAND GRADING

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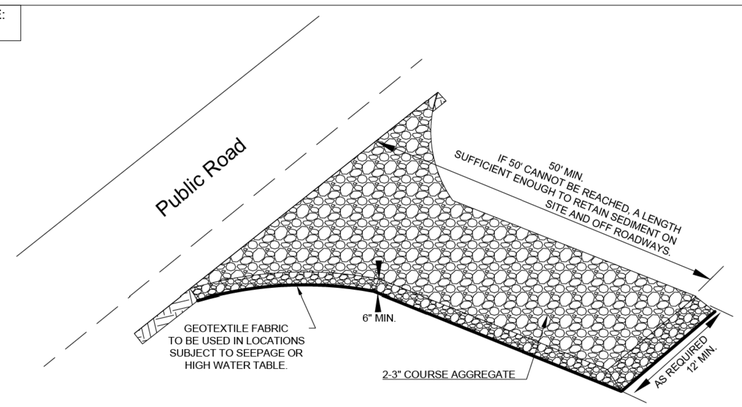

Construction:
1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any required repairs immediately.
2. Maintain *the gravel pad in a condition to prevent mud or sediment* from leaving the construction site. This may require periodic topdressing with 2-inch stone.
3. Sediment on roadways is to be removed immediately by broom and shovel, either by manual or mechanical means, and not to be washed off where it has the potential to enter a stream, drainage way or storm drain system.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

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

SEEDING MIXTURE

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

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

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

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

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR SUMMER

SEEDING MIXTURE

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

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

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

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

NON-INVASIVE PERMANENT SEEDING RECOMMENDATIONS FOR FALL

SEEDING MIXTURE

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

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

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

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

SEED BED PREPARATION:

LIMING- Apply lime according to soil test recommendations. If the pH (acidity) of the soil is not known, an application of ground agricultural limestone at the rate of 1 to 1½ tons/acre on coarse0textured soils and 2-3 tons/acre on fine-textured soils is usually sufficient. Apply limestone uniformly and incorporate into the top 4-6 inches of soil. Soils with a pH of 6 or higher need not be limed.
FERTILIZER- Base application rates on soil tests. When these are not possible, apply a 10-10-10 grade fertilizer at 700-1,000 lb/acre. Both fertilizer and lime should be incorporated into the top 4-6 inches of soil. If a hydraulic seeder is used, do not mix seed and fertilizer more than 30 minutes before application.
SURFACE ROUGHENING- If recent tillage operations have resulted in a loose surface additional roughening may not be required, except to break up large clods. If rainfall causes the surface to become sealed or crusted, loosen it just prior to seeding by raking, harrowing, or other suitable methods for fine grading. the finished grade shall be a smooth even soil surface with a loosen uniformly fine texture. all ridges and depressions shall be removed and filled to provide the approved surface drainage . Planting is to be done immediately after finished grades are obtained and seedbed preparation is completed.

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

PERMANENT SEEDING

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
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01/10/2025
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ISSUE FOR BID
SHEET
EROSION CONTROL DETAILS

D-100

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Mulching Materials and Application Rates

Material Organic Mulches	Rate Per Acre	Quality	Notes
Straw	1-2 tons	Dry, unchopped, unweathered; avoid weeds.	Should come from wheat or oats; spread by hand or machine; must be tacked down.
Wood Chips	5-6 tons	Air dry	Treat with 12 lbs nitrogen/ton. Apply with mulch blower, chip handle, or by hand. Not for use in fine turf.
Wood Fiber	0.5-1 tons		Also referred to as wood cellulose. May be hydroseeded. Do not use in hot, dry weather.
Bark	35 cubic yards	Air dry, shredded or hammer-milled, or chips.	Apply with mulch blower, chip handler, or by hand. Do not use asphalt tack.
Corn Stalks	4-6 tons	Cut or shredded in 4-6 inch lengths.	Apply with mulch blower or by hand. Not for use in fine turf.
Sericea Lespedeza seed-bearing stems	1-3 tons	Green or dry; should contain mature seed.	
Nets and Mats*			
Jute net	Cover area	Heavy, uniform; woven of single jute yarn.	Withstands waterflow. Best when used with organic mulch
Fiberglass net	Cover area		Withstands waterflow. Best when used with organic mulch
Excelsior (wood fiber net)	Cover area		Withstands waterflow.
Fiberglass roving	0.5-1 tons	Continuous fibers of drawn glass bound together with a non-toxic agent.	Apply with a compressed air ejector. Tack with emulsified asphalt at a rate of 25-35 gal/1,000 sq. ft.
Chemical Stabilizers**			
Aquatain Aerospray Curasol AK Pertroset SB Terra Tack Crust 500 Genaqua 743 M-145	Follow Manufacturer's specifications		Not beneficial to plant growth

*Refer to Practice No. 6.30, Grass Lined Channels in the NC DEQ E&SC Planning and Design Manual
**Use of trade names does not imply endorsement of product.

NOTES:
1. Select material based on site and practice requirements, availability of material, labor and equipment.
2. Before mulching, complete grading, install sediment control practices, and prepare the seedbed. Apply seed before mulching except when seed is applied as part of a hydroseeder slurry containing wood fiber mulch or a hydroseeder slurry is applied over straw.

APPLICATION OF ORGANIC MULCH
1. Spread mulch uniformly by hand, or with a mulch blower.
2. When spreading straw mulch by hand, divide the area to be mulched into sections of approximately 1,000 ft², and place 70-90 lb. of straw(1 1/2 to 2 bales) in each section to facilitate uniform distribution.
3. After Spreading, no more than 25% of the ground surface should be visible.
4. In hydroseeding operations a green dye, added to the slurry, assures a uniform application.

ANCHORING ORGANIC MULCH
1. Straw mulch must be anchored immediately after spreading.
2. A tractor-drawn implement designed to punch mulch into the soil or a mulch anchoring tool provides maximum erosion control with straw. A regular farm disk, weighted and set nearly straight, may substitute, but will not do a job comparable to the mulch anchoring tool. The disk should not be sharp enough to cut the straw. These methods are limited to slopes no steeper than 3:1, where equipment can operate safely.
3. Application of liquid mulch binders and tackifiers should be heaviest at the edges of areas and at crests of ridges and banks, to resist winds. Binder should be applied uniformly to the rest of the area. Binders may be applied after mulch is spread, or may be sprayed into the mulch as it is being blown onto the soil. Applying straw and binder together is the most effective method.
4. Emulsified asphalt should be applied at 0.10 gallons per square yard (10 gal/1,000 ft²). Heavier applications cause straw to "perch" over rills. Use Rapid setting (RS or CRS) designated asphalt in traffic areas to prevent uncured asphalt from being picked up on shoes and causing damage to rugs, clothes, etc.
5. Synthetic binders may be used as recommended by the manufacturer.
6. Lightweight plastic, cotton, jute, wire or paper nets may be stapled over the mulch according to the manufacturer's recommendations.
7. For small areas where other methods cannot be used, peg and twine anchoring can be used. Drive 8-10 inch wooden pegs to within 3 inches of the soil surface, every 4 feet in all directions. Stakes can be driven before or after straw is spread. Secure mulch by stretching twine between pegs in a criss-cross-within-a-square pattern. Turn twine two or more times around each peg.
8. Rye Grain may be used to anchor mulch in fall plantings, and German Millet in spring. Broadcast at 15 lb/acre before applying mulch.

CHEMICAL MULCHES
1. May be effective for soil stabilization if used between May 1 and June 15, or Sept. 15 and Oct. 15, provided that they are used on slopes **no steeper** than 4:1, and that proper seedbed preparation has been accomplished, including surface roughening where required.
2. Chemical mulches cannot be used to bind other mulches, or with wood fiber in a hydroseeded slurry at any time. Follow the manufacturer's recommendations for application.

FIBERGLASS ROVING
1. Spread roving uniformly over the area at a rate of 0.25 to 0.35 lb/yd². Anchor with asphalt immediately after application, at a rate of 0.25-0.35 gal/yd²
2. As a channel lining, and at other sites of concentrated flow, the roving mat must be further anchored to prevent undermining.
3. It may be secured with stakes placed at intervals no greater than 10 feet along the drainageway, and randomly throughout its width, but not more than 10 feet apart.
4. As an option to staking, the roving can be buried to a depth of 5 inches at the upgrade end and at intervals of 50 feet along the length of the channel.

NETS AND MATS
1. Nests alone generally provide little moisture conservation benefits and only limited erosion protection. Therefore, typically use in conjunction with an organic mulch such as straw.
2. Except when wood fiber slurry is used, netting should always be installed over the mulch. Wood fiber may be sprayed on top of an installed net.
3. Mats, including "excelsior" (wood fiber) blankets, are considered protective mulches and may be used alone.
4. Place the matting in firm contact with the soil, and staple securely.

MULCHING

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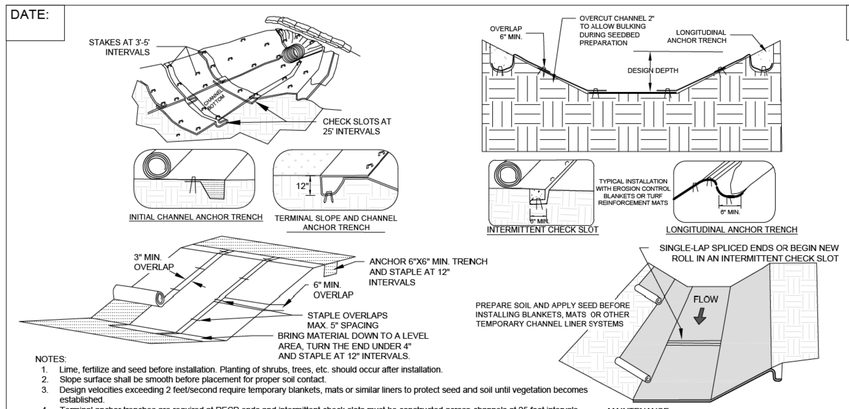

NOTES:
1. Lime, fertilize and seed before installation. Planting of shrubs, trees, etc. should occur after installation.
2. Slope surface shall be smooth before placement for proper soil contact.
3. Design velocities exceeding 2 feet/second require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established.
4. Terminal anchor trenches are required at RECP ends and intermittent check slots must be constructed across channels at 25 foot intervals.
5. Terminal anchor trenches should be a minimum of 12 inches in depth and 6 inches in width. Intermittent check slots should be 6 inches deep and 6 inches wide.
6. For installation on a slope, place RECP 2-3 feet over the top of the slope and into an excavated end trench measuring approximately 12 inches deep by 6 inches wide. Pin the RECP at 1 foot intervals along the bottom of the trench, backfill and compact. Unroll the RECP down the slope maintaining direct contact between the soil and RECP. Secure using staples or pins in a 3 foot center-to-center pattern.
7. 11 gauge, at least 6 inch by 1 inch staples or 12 inch minimum length wooden stakes are recommended for anchoring.
8. Grass-lined channels with design velocities exceeding 6 feet/second should include turf reinforcement mats
9. Check slots to be constructed per manufacturers specifications.
10. Staking or stapling layout per manufacturers specification.
11. If there is a berm at the top of slope, anchor up-slope of the berm.
12. Do not stretch blankets/matting tight, allow the rolls to conform to any irregularities.
13. For slopes less than 3H:1V, rolls may be placed in horizontal strips.

MAINTENANCE:
1. Inspect Rolled Erosion Control Products at least weekly and after each rainfall of 1.0 inch or greater; repair immediately.
2. Good contact with the ground must be maintained, and erosion must not occur beneath the RECP.
3. Any areas of the RECP that are damaged or not in close contact with the ground shall be repaired and stapled.
4. If erosion occurs due to poorly controlled drainage, the problem shall be fixed and the eroded area protected.
5. Monitor and repair the RECP as necessary until ground cover is established.

ROLLED EROSION CONTROL PRODUCTS

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Temporary Seeding Recommendations

Common Name	Scientific Name	Rate per Acre	Optimal Planting Date
Rye Grain	Secale Cereale	30 lbs	Aug. 15 - May 15
Wheat	Triticum Aestivum	30 lbs	Aug. 15 - May 15
German Millet	Setaria Italica	10 lbs	May 15 - Aug. 15
Browntop Millet	Urochloa Ramosa	10 lbs	May 15 - Aug. 15

Temporary Seeding Recommendations:
- Temporary annual seed selection should be based on season of project installation.
- A single species selection for temporary cover is acceptable.
- In some cases where seasons overlap, a mixture of two or more temporary species may be necessary; however, application rates should not exceed the total recommended rate per acre.
- Temporary seed should be mixed and applied simultaneously with the permanent seed mix if optimal planting dates allow.

Permanent Seeding Recommendations Type: Cold Season

Common Name	Scientific Name	Optimal Planting Dates	% of Mix	Soil Drainage Adaptation	Shade Tolerance	Height
Indian Woodoats	Chasmanthium latifolium	Feb. 15 - Apr. 1, Aug. 15 - Oct. 15	1-10%	Well-drained to Droughty	Moderate	4
Virginia Wildrye	Elymus virginicus	Feb. 15 - Apr. 1, Aug. 15 - Oct. 15	5-25%	Well-drained to Droughty	Moderate	3
Eastern Bottle-brush Grass	Elymus hystrix	Feb. 15 - Apr. 1, Aug. 15 - Oct. 15	5-10%	Well-drained to Droughty	Moderate	3
Rough Bentgrass	Argostis scabra	Feb. 15 - Apr. 1, Aug. 15 - Oct. 15	10-20%	Poorly-drained	Poor	2.5
Winter Bentgrass	Agrostis hyemalis	Feb. 15 - Apr. 1, Aug. 15 - Oct. 15	2-5%	Well-drained	Moderate	3.5

Permanent Seeding Recommendations Type: Wetland

Common Name	Scientific Name	Optimal Planting Dates	% of Mix	Soil Drainage Adaptation	Shade Tolerance	Height
Soft Rush	Juncus effusus	Dec. 1 - May 1, Sep. 1 - Nov. 1	1-10%	Poorly-drained	Poor	4
Shallow Sedge	Carex lurida	Dec. 1 - May 1, Sep. 1 - Nov. 1	1-10%	Poorly-drained	Poor	3
Fox Sedge	Carex vulpinoidea	Dec. 1 - May 1, Sep. 1 - Nov. 1	1-10%	Poorly-drained	Poor	3
Leathery Rush	Junucus coriaceus	Dec. 1 - May 1, Sep. 1 - Nov. 1	2-5%	Poorly-drained	Poor	2

Permanent Seeding Recommendations Type: Warm Season

Common Name	Scientific Name	Cultivars	Optimal Planting Dates	% of Mix	Soil Drainage Adaptation	Shade Tolerance	Height
Switchgrass	Panicum virgatum	Cave-in-rock -- well drained Blackwell -- well drained Shelter -- well drained Kanlow -- poorly drained Carthage -- well drained	Dec. 1 - Apr. 1	10-15%	Cultivar Dependent	Poor	6
Switchgrass	Panicum virgatum	Alamo -- poorly drained	Dec. 1 - May 1	10-15%	Cultivar Dependent	Poor	6
Indiangrass	Sorghastrum nutans	Rumsey, Osage, Cheyenne	Dec. 1 - Apr. 1	10-30%	Well-drained to Droughty	Poor	6
Indiangrass	Sorghastrum nutans	Lometa	Dec. 1 - May 1	10-30%	Well-drained to Droughty	Poor	6
Deertounge	Dichanthelium clandestinum	Tioga	Dec. 1 - Apr. 1	5-25%	Poorly-drained to Droughty	Moderate	2
Big Bluestem	Andropogon gerardii	Roundtree, Kaw, Earl	Dec. 1 - Apr. 1	10-30%	Well-drained to Droughty	Poor	6
Little Bluestem	Schizachyrium scoparium	Cimarron	Dec. 1 - Apr. 1	10-30%	Well-drained to Droughty	Poor	4
Sweet Woodreed	Cinna arundinacea		Dec. 1 - Apr. 1	1-10%	Poorly-drained to Well-drained	Moderate	5
Rice Cutgrass	Leersia oryzoides		Dec. 1 - Apr. 1	5-25%	Poorly-drained	Poor	5
Redtop Panicgrass	Panicum rigidulum		Dec. 1 - Apr. 1	10-20%	Well-drained	Poor	3.5
Baked Panicgrass	Panicum anceps		Dec. 1 - Apr. 1	10-20%	Poorly-drained	Moderate	3.5
Purple Top	Tridens flavus		Dec. 1 - Apr. 1	5-10%	Well-drained to Droughty	Poor	2.5
Eastern Gammagrass	Tripsacum dactyloides		Dec. 1 - Apr. 1	5-10%	Well-drained to Poorly-drained	Poor	4.5

Permanent Seeding:
- Soil analysis should be performed to determine nutrient and lime needs of each site.
- Riparian buffers regulated for nutrient management may be limited to a single application of fertilizer.
- Apply seed uniformly with a cyclone seeder, drop-type spreader, drill or hydroseeder on a firm, friable seedbed.
- When using a drill, equipment should be calibrated in the field for the desired seeding rate.
- Mulch all plantings immediately after seeding (see 6.14, Mulching).If planting on stream banks steeper than 10% or areas subject to flooding, a biodegradable RECP (6.17, Rolled Erosion Control Products) is recommended to hold seed and soil in place.

Maintenance:
- Many of the recommended permanent grass species may require two years of establishment, depending on site conditions.
- Inspect seeded areas for failure and make necessary repairs, soil amendments, and reseedings.
- If weedy exotic species have overtaken the area after the first growing season, the invading species must be eradicated to allow native species to grow.
- Monitor the site until long term stability has been established.

- No specific seeding rate is given in order to allow for custom seed mixes based on site characteristics and season. However, permanent seed inclusion in the mix should total 15 pounds of pure live seed (PLS) per acre drilled or 15-20 pounds PLS per acre broadcast applied.
- At least 4 species should be selected for the mixture, including one species from each type(warm and cold season and wetland); selection of more than four species is recommended for increasing chances of successful vegetation establishment.
- If other species such as wildflowers are added to the mix, they should not be counted in the minimum seeding rate for grasses.

RIPARIAN AREA SEEDING (PIEDMONT REGION)

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Subgrade Preparation:
1. Prepare the subgrade for riprap and filter to the required lines and grades shown on the plans.
2. Compact any fill required in the subgrade to a density approximating that of the surrounding undisturbed material or overfill depressions with riprap.
3. Remove brush, trees, stumps, and other objectionable material.

Sand and Gravel Filter Blanket:
1. Place the filter blanket immediately after the ground foundation is prepared.
2. When using gravel, spread filter stone in a uniform layer to the specified depth.
3. When more than one layer of filter material is used, spread the layers with minimal mixing.

Synthetic Filter Fabric:
1. Place the cloth filter directly on the prepared foundation.
2. Overlap the edges by at least 12 inches, and space anchor pins every 3 feet along the overlap.
3. Bury the upstream end of the cloth a minimum of 12 inches below ground and bury the lower end of the cloth or over lap with the next section as required.
4. If damage occurs while placing riprap, remove the riprap, and repair the sheet by adding another layer of filter material with a minimum overlap of 12 inches around the damaged area. If damage is extensive, remove and replace the entire sheet.
5. If placing large stones or machine placing is difficult, a 4 inch layer of fine gravel or sand may be needed to protect the filter cloth.

Maintenance:
In general, once a riprap installation has been properly designed and installed it requires very little maintenance. Riprap should be inspected periodically for scour or dislodged stones. Control of weed and brush growth may be needed in some locations.

Size of Riprap stones

Weight (lb)	Mean Spherical Diameter (ft)	Length (ft)	Rectangular Shape Width/Height (ft)
50	0.8	1.4	0.5
100	1.1	1.8	0.6
150	1.3	2.0	0.7
300	1.6	2.6	0.9
500	1.9	3.0	1.0
1000	2.2	3.7	1.3
1500	2.6	4.7	1.5
2000	2.8	5.4	1.8
4000	3.6	6.0	2.0
6000	4.0	6.9	2.3
8000	4.5	7.6	2.5
20,000	6.1	10.0	3.3

Sizes for Riprap and Erosion Control Stone Specified by NCDOT

Riprap		Erosion Control	
Class 1	Class 2	Class A	Class B
5-200 lb	25-250 lb	2"-6"	5"-15"
30% shall weigh a minimum of 60 lbs each	60% shall weigh a minimum of 100 lbs each		
No more than 10% shall weigh less than 15 lbs each	No more than 5% shall weigh less than 50 lbs each	10% tolerance top and bottom sizes	
		Equally distributed, no gradation specified	Equally distributed, no gradation specified

Riprap should be a well-graded mixture with 50% by weight larger than the specified design size.
Diameter of the largest stone size in the mix should be 1.5 times the d_{50} size with smaller sizes grading down to 1 inch.

Stone Placement:
1. Placement of riprap should follow immediately after placement of the filter.
2. Place so that riprap forms a dense, well-graded mass of stone with a minimum of voids.
3. Place to its full thickness in one operation.
4. Do not place by dumping through chutes or other methods that cause segregation of stone sizes.
5. Take care not to dislodge underlying base or filter when placing stone.
6. The toe of the riprap slope should be keyed to a stable foundation at its base.
7. The toe should be excavated to a depth about 1.5 times the design thickness of the riprap and extend horizontally from the slope, as shown above.
8. Hand placing may be necessary to achieve the proper distribution of stone sizes to produce a relatively smooth, uniform surface.

RIP RAP

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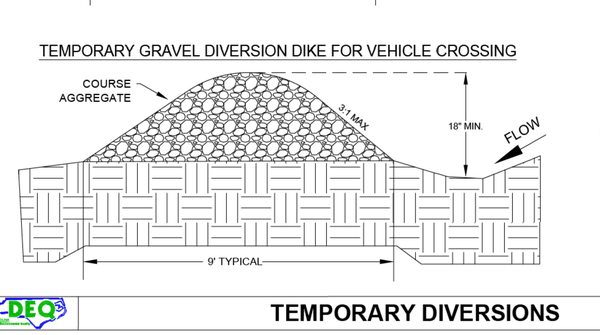
TEMPORARY EARTHEN DIVERSION DIKE



NOTES:
1. Remove and properly dispose of all tree, brush, stumps, and other objectionable material.
2. Temporary diversions are to only be used for drainage areas of 5 acres or less.
3. Ridges will have a 2 feet minimum top width, 2:1 or flatter side slopes and a minimum of 0.3 feet freeboard.
4. Channels will have a parabolic, trapezoidal, or V shape with side slopes of 2:1 or flatter.
5. Any point where vehicles will be crossing should have 3:1 or flatter side slopes.
6. Ensure the top of the dike is not lower at any point than the design elevation plus the specified settlement.
7. Provide sufficient room around diversions to permit machine re-grading and cleanout.
8. Vegetate the ridge immediately after construction unless it will remain in place less than 30 working days.

MAINTENANCE:
1. Inspect all measures at least weekly and after every rainfall of 1.0 inch or greater.
2. Make all repairs immediately.
3. Immediately remove any sediment from the flow area and repair the diversion ridge.
4. Check outlets and make timely repairs as needed.

TEMPORARY GRAVEL DIVERSION DIKE FOR VEHICLE CROSSING

TEMPORARY DIVERSIONS

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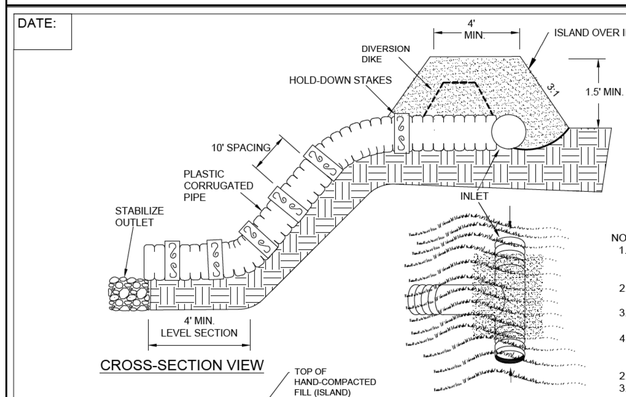

Size of Slope Drain

Max. Drainage Area per Pipe (Acres)	Pipe Diameter (Inches)
0.50	12
0.75	15
1.00	18
>1.00*	as designed
* Inlet design becomes more complex beyond this size.	

NOTES:
1. Place slope drains on undisturbed soil or well compacted fill at locations and elevations shown on the plan.
2. Slightly slope the section of pipe under the dike toward its outlet.
3. Hand tamp the soil under and around the entrance section in lifts not to exceed 6 inches.
4. Fill over the drain at the top of the slope to a minimum of 1.5 feet depth, 4 feet top width and 3:1 side slopes.
5. Ensure all slope drain connections are watertight.
6. Compact fill material and securely fasten the exposed section of the drain with grommets or stakes spaced no more than 10 feet apart.
7. Extend the drain beyond the toe of the slope, and adequately protect the outlet from erosion.
8. Make the compacted, settled dike ridge no less than 1 foot above the top of the pipe at every point.
9. *Immediately stabilize all disturbed* areas following construction.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater; repair immediately.

TEMPORARY SLOPE DRAINS

Effective Date: 9/1/2023

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**

SHEET
EROSION CONTROL DETAILS

D-101

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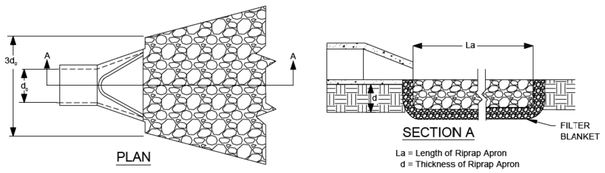
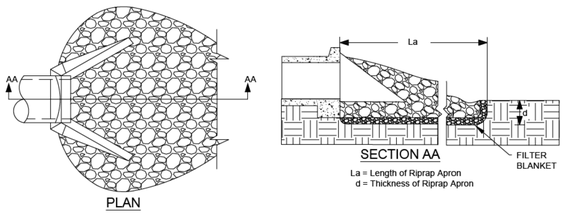
PIPE OUTLET TO FLAT AREA NO WELL-DEFINED CHANNEL



La = Length of Riprap Apron
d = Thickness of Riprap Apron

PIPE OUTLET TO WELL-DEFINED CHANNEL



La = Length of Riprap Apron
d = Thickness of Riprap Apron

NOTES:
1. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.
2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.
3. Filter cloth, when used, must meet design requirements, and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece over the damaged area. If the damage is extensive, replace the entire filter cloth.
4. All connecting joints should overlap so the top layer is above the downstream layer a minimum of 1 foot.
5. The minimum thickness of the riprap should be 1.5 times the maximum stone diameter but not less than 6".
6. Riprap may be field stone or rough quarry stone. It should be hard, angular highly weather-resistant and well graded.
7. Construct the apron on zero grade with no overfill at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.
8. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed, place in the upper section of the apron.

MAINTENANCE:
1. Inspect outlet structures at least weekly and after each rainfall of 1.0 inch or greater.
2. Check outlets for erosion around or below riprap *and for if stones have been dislodged.* Make repairs immediately to prevent further damage.

DEQ

OUTLET STABILIZATION STRUCTURE

Effective Date: 9/1/2023
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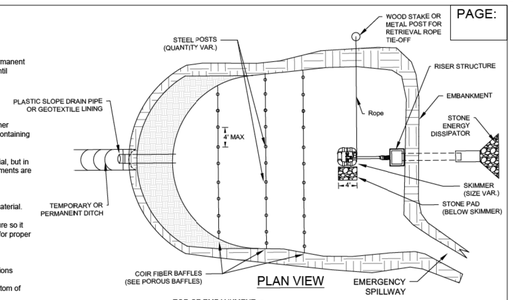
NOTES:
1. Install temporary sediment basins to the approved design. If the basin will eventually be converted to a permanent SCM device, the basin must function as a temporary sediment basin and meet the following parameters until completion of the project:
   - Maximum Drainage Area: 100 acres
   - Minimum Sediment Storage Volume: 1800 cubic feet per acre of disturbed area
   - Minimum Surface Area: 435 square feet per cfs of Q_{10} peak inflow
   - Minimum dewatering time: 48 hours
2. Clear, grub, and strip topsoil from areas under the embankment to remove trees, vegetation, roots, and other objectionable material. Delay clearing the pool area until the dam is complete. Stockpile all topsoil or soil containing organic matter for use on the outer shell of the embankment to facilitate vegetative establishment.
3. Place temporary sediment control measures below the basin and stockpile as needed.
4. Excavate a cut-off trench along the center line of the earth fill embankment. Cut trench to stable soil material, but in no case make it less than 2 feet deep with maximum side slopes no steeper than 1:1. Compaction requirements are the same as those for the embankment.
5. Extend the cut-off trench into both abutments to at least the elevation of the riser crest.
6. Keep the trench dry during backfilling and compaction operations.
7. Fill material should be clean mineral soil, free of roots, woody vegetation, rocks, and other objectionable material. Areas of approved fill should be shown on the plans.
8. Scarify areas on which fill is to be placed prior to placing. Ensure that fill material contains sufficient moisture so it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction.
9. Place fill material in 6 to 8 inch continuous layers over the entire length of fill area and compact.
10. Construct the embankment to an elevation 10% higher than the design height to allow for settling.
11. Securely attach the riser to the barrel or barrel stub to make a watertight structural connection. All connections should be made using approved watertight assemblies.
12. If no riser structure is to be used, couple the skimmer arm directly into the embankment 1 foot from the bottom of the basin.
13. The arm pipe connecting the skimmer to the riser shall have a minimum length of 6 feet.
14. Place barrel and riser on a firm, smooth foundation of impervious soil.
15. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe or anti-seep collars.
16. Place fill material around the pipe spillway in 4-inch layers, and compact it under and around the pipe to at least the same density as the adjacent embankment.
17. Place a minimum depth of 2 feet of compacted backfill over the pipe spillway before crossing it with any construction equipment.
18. Anchor riser in place by concrete or other satisfactory means to prevent floatation.
19. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.
20. Install the emergency spillway in undisturbed soil.
21. Discharge water into the basin in a manner to prevent erosion.
22. Construct basin so that the disturbed area is minimized, divert surface water from bare areas and complete the embankment before the area is cleared.
23. Stabilize the emergency spillway embankment and all other disturbed area above the crest of the principal spillway immediately after construction.
24. Seed and place matting for erosion control on interior and exterior side slopes.
25. Install Porous Baffles as specified on following sheets.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. Make any repairs immediately.
2. Remove sediment and restore basin to its original dimensions when it accumulates to one-half the design depth.
3. Place removed sediment in an area with sediment control measures to ensure no loss of sediment off-site.
4. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement.
5. Remove all trash and other debris form the riser and pool area.



Acceptable Dimensions for Basin Embankment

Fill Height	Minimum Top Width
Less than 10.0 ft	8.0 ft
10.0 ft to 15.0 ft	10.0 ft

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SEDIMENT BASIN

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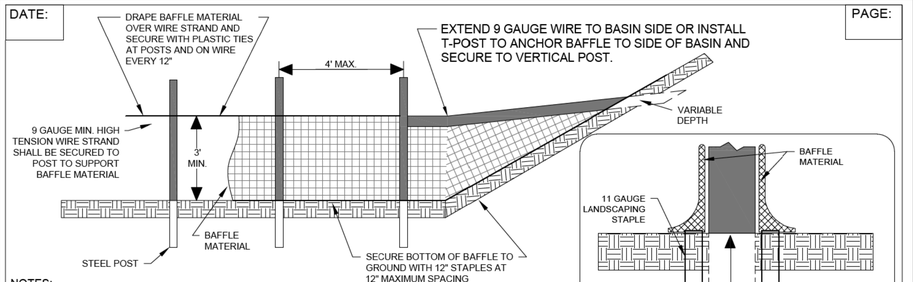

NOTES:
1. Use matting made of 100% coconut fiber(coir) twine woven into high strength matrix.
2. Staples should be made of 0.125 inch diameter, new steel wire formed into a 'U' shape not less than 12 inches in length with a throat of 1 inch in width. The staples anchor the porous baffles into the sides and bottom of the basin.
3. Grade the basin so that the bottom is level front to back and side to side.
4. Install the coir fiber baffles immediately upon excavation of the basins.
5. Install posts across the width of the sediment trap.
6. Steel posts should be driven to a depth of 24 inches and spaced in a maximum of 4 feet apart. The top of the fabric should be a minimum of 6 inches higher than the invert of the spillway. Tops of the baffles should be a minimum of 2 inches lower than the top of the earthen embankment.
7. Install 3 coir fiber baffles in basins at drainage outlets with a spacing of 1/4 the basin length. 2 coir fiber baffles can be installed in the basins less than 20 feet in length with a spacing of 1/3 the basin length.
8. Attach a 9-gauge high tension wire strand to the steel posts at a height of 6 inches above the spillway elevation with plastic ties or wire fasteners to prevent sagging. If the temporary sediment basin will be converted to a permanent stormwater basin of a greater depth, the baffle height should be based on the pool depth during use as a temporary sediment basin.

MAINTENANCE:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater and repair immediately.
2. Maintain access to baffles. If the fabric collapses, tears, decomposes, or becomes ineffective, replace immediately.
3. Remove sediment deposits when it reaches half full. Replace if baffle fabric is damaged during clean-out operations. Sediment depth should never exceed half the designed storage depth.

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POROUS BAFFLES

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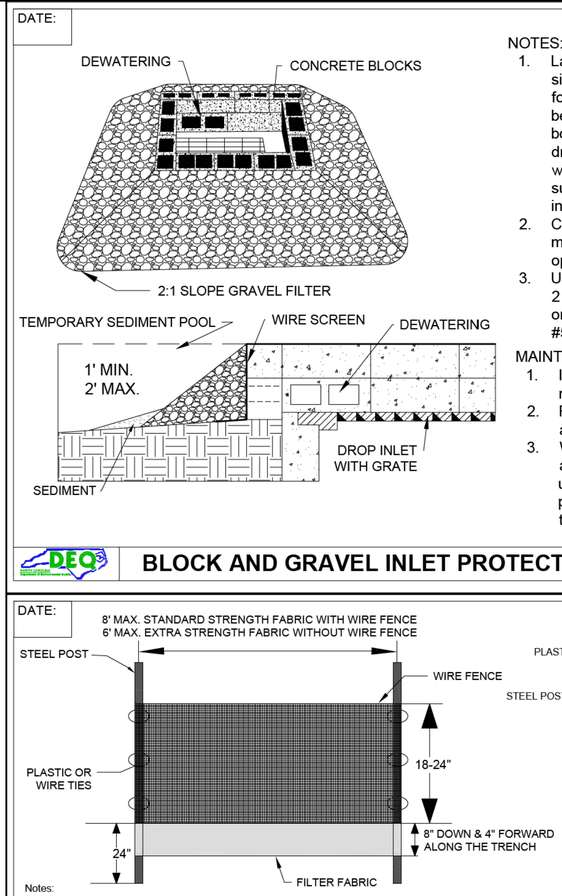

NOTES:
1. Lay one block, on each side of the structure, on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. Place the bottom row of blocks against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, give lateral support to subsequent rows by placing 2 inch x 4 inch wood studs through block openings.
2. Carefully fit hardware cloth or comparable wire mesh with 1/2-inch openings over all block openings to hold gravel in place.
3. Use clean gravel 1/2 to 3/4 inch in diameter, placed 2 inches below the top of the block on a 2:1 slope or flatter and smooth it to an even grade. NCDOT #57 washed stone is recommended.

MAINTENANCE:
1. Inspect all measures at least weekly and after every rainfall of 1.0 inch or greater; repair immediately.
2. Remove sediment as necessary to provide adequate storage volume for subsequent rains.
3. When the contributing drainage area has been adequately stabilized, remove all materials and any unstable soil, and either salvage or dispose of it properly. Bring the disturbed area to proper grade, then smooth and compact before stabilizing.

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BLOCK AND GRAVEL INLET PROTECTION (TEMPORARY)

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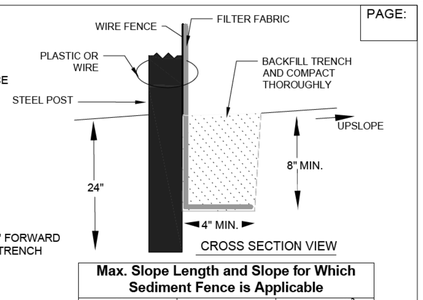

Notes:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct 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 with 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 a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches. Wire mesh should be a minimum 14-gauge with 6 inch mesh spacing.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of 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.
11. Do not place across ditches, streams, or any other areas of concentrated flow.

Max. Slope Length and Slope for Which Sediment Fence is Applicable

Slope	Slope Length (ft)	Max. Area (ft²)
<2%	100	10,000
2 to 5%	75	7,500
5 to 10%	50	5,000
10 to 20%	25	2,500
>20%	15	1,500

Maintenance:
1. Inspect all measures at least weekly and after each rainfall of 1.0 inch or greater. 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 reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
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.

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SEDIMENT FENCE

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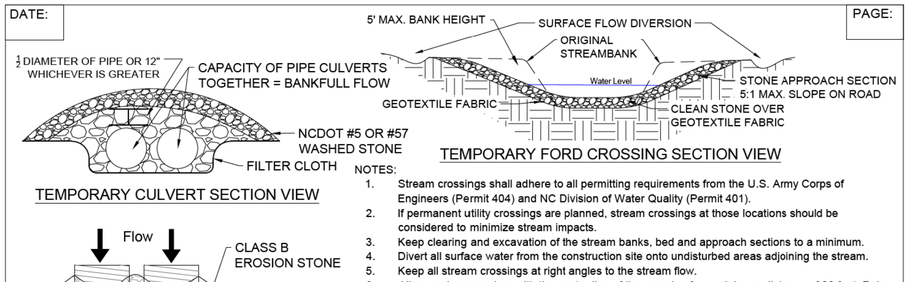

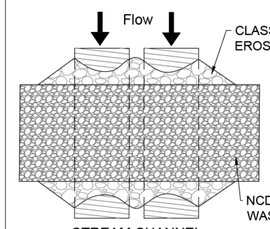

NOTES:
1. Stream crossings shall adhere to all permitting requirements from the U.S. Army Corps of Engineers (Permit 404) and NC Division of Water Quality (Permit 401).
2. If permanent utility crossings are planned, stream crossings at those locations should be considered to minimize stream impacts.
3. Keep clearing and excavation of the stream banks, bed and approach sections to a minimum.
4. Divert all surface water from the construction site onto undisturbed areas adjoining the stream.
5. Keep all stream crossings at right angles to the stream flow.
6. Align road approaches with the center line of the crossing for a minimum distance of 30 feet. Raise bridge abutments and culvert fills a minimum of 1 foot above the adjoining approach sections to prevent erosion from surface runoff and to allow flood flows to pass around the structure.
7. Ford approaches shall not exceed a slope of 5:1.
8. Bank heights at ford crossings shall not exceed 5 feet at any point.
9. Stabilize all disturbed areas subject to flowing water, including planned overflow areas, with riprap or other suitable means if design velocity exceed the allowable for in-place soil.
10. Ensure that bypass channels necessary to dewater the crossing site are stable before diverting the stream. Upon completion of the crossing; fill, compact, and stabilize all disturbed areas.
11. Remove temporary stream crossings immediately when they are no longer needed. Restore channel to its original cross-section, smooth and appropriately stabilize all disturbed area.

MAINTENANCE:
1. Inspect temporary stream crossings at least weekly and after each rainfall of 1.0 inch or greater.
2. Check for blockage in the channel, erosion of abutments, channel scour, riprap displacement, or piping.
3. Make all repairs immediately to prevent further damage to the installation.

DEQ

TEMPORARY STREAM CROSSING

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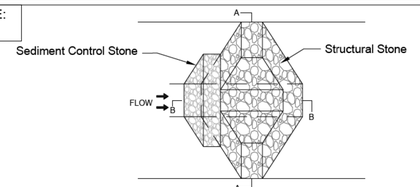
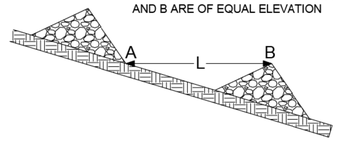
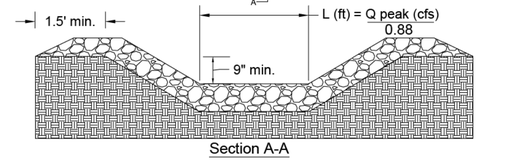
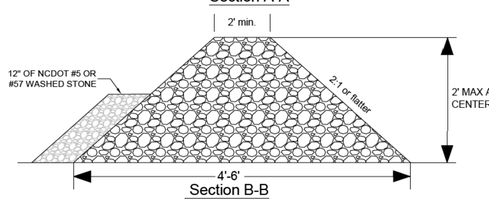






Section A-A



Section B-B

NOTES:
1. Place stone on a filter fabric foundation.
2. The center stone section must be at least 9 inches below natural ground level where the dam abuts the channel banks.
3. Place sediment control stone (NCDOT #5 or $57) on the upstream side of the dam that is a minimum of 1 foot thick.
4. Extend stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
5. Provide an apron that is 3 times the height of the dam. The apron width is at least 4 feet long. Undercut the apron so that the top of the apron is flush with the surrounding grade.
6. Extend the stone at least 1.5 feet beyond the ditch bank to keep water from cutting around the ends of the check dam.
7. Excavate sediment storage area to the dimensions shown on the plan.
8. Protect the channel after the lowest check dam from heavy flow that could cause erosion.
9. Riprap and filter fabric should be keyed in to prevent under cutting.
10. Do not place check dams in intermittent or perennial streams.

MAINTENANCE:
1. Inspect check dams and channels at least weekly and after each rainfall of 1.0 inch or greater. 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. If *significant erosion occurs between dams*, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel.
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 the dams as needed to maintain design height and cross section.

CHECK DAM WITH WEIR

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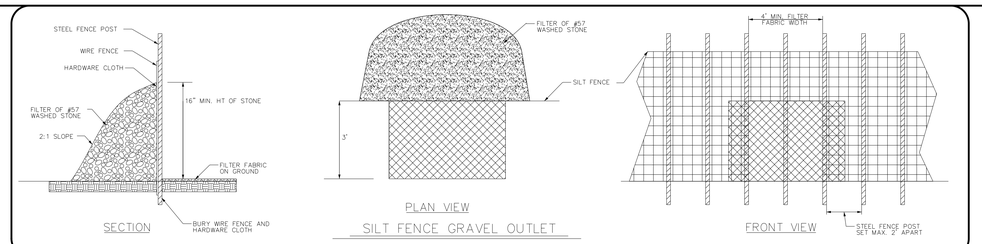
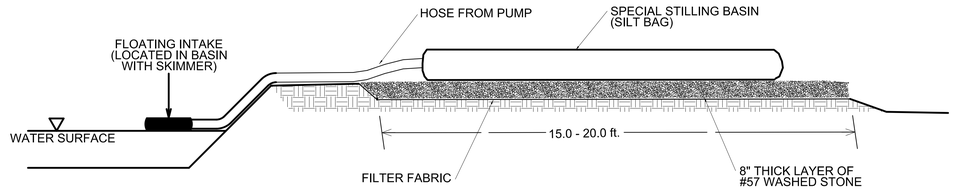


NOTE:
-SPECIAL STILLING BASIN SHOULD BE CONSTRUCTED SUCH THAT IT IS PORTABLE AND CAN BE REMOVED AFTER EACH USE.
-BASIN SHOULD BE CONSTRUCTED LEVEL EACH WAY.
-SILT BAG TO BE NON-WOVEN, POLYETHYLENE GEOTEXTILE WITH A MINIMUM FILTER EFFICIENCY OF 99%.
-PUMPING RATE SHOULD NOT EXCEED 90 GPM.



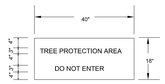
MAINTENANCE:

-THE SPECIAL STILLING BASIN SHALL BE DISPOSED OF AND REPLACED WHEN IT IS 3/4 OF SEDIMENT OR WHEN IT IS IMPRACTICAL FOR THE BAG TO FILTER THE SEDIMENT OUT A A REASONABLE FLOW RATE. CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF SEDIMENT/BAG IN ACCORDANCE WITH ALL STATE AND LOCAL LAWS, AT NO COST TO THE OWNER.

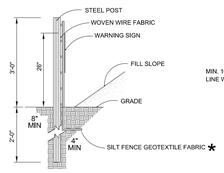
-THE INLET OF THE BAG SHOULD BE INSPECTED PERIODICALLY FOR DAMAGE AND/OR BLOCKAGE.

-SEDIMENT CONTROL STONE SHALL BE REPLACED IF DAMAGED BY HIGHT FLOWS OR BAG FAILURE.

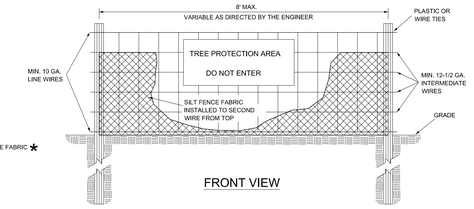
SPECIAL STILLING BASIN (SILT BAG)
NTS



WARNING SIGN DETAIL



SIDE VIEW



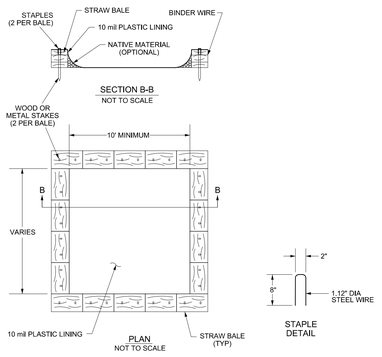
FRONT VIEW

MAINTENANCE: CLEAN OUT AT 50% CAPACITY
LIFE OF FENCING: 6-9 MONTHS
DO NOT DISTURB TREE CONSERVATION AREAS

PLAN VIEW

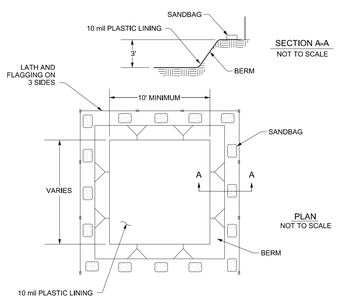
NOTES:
1. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
2. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
4. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
5. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
6. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
7. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
8. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
9. SEE N.C. STATE DEQ PRACTICE STANDARDS & SPECIFICATIONS SEDIMENT FENCE SET FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS & DESIGN CRITERIA. (HOWEVER FLOW SHALL NOT RUN PARALELL WITH THE TOE OF THE FENCE).

SILT / TREE PROTECTION FENCE



TYPE "ABOVE GRADE" WITH STRAW BALES

STAPLE DETAIL



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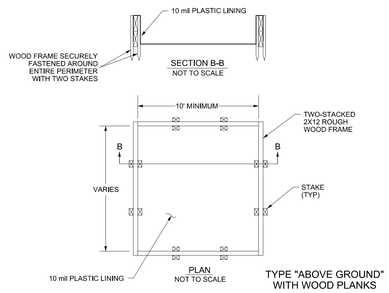
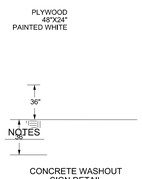


TYPE "ABOVE GROUND" WITH WOOD PLANKS



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

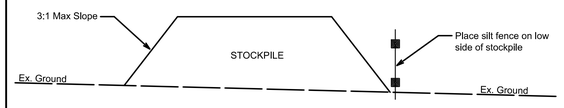
CONCRETE WASHOUT DETAIL (NTS)

STOCKPILE DETAIL

1. Soil stabilization shall be achieved on any area of a site where land-disturbing activities have temporarily of permanently ceases 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 7 calendar days from the last land-disturbing activity.

   B. All other disturbed areas shall be provided temporary of permanent stabilization with ground cover as soon as practicable but in any event within 14 calendar days from the last land-disturbing activity.



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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
EROSION CONTROL DETAILS

D-103

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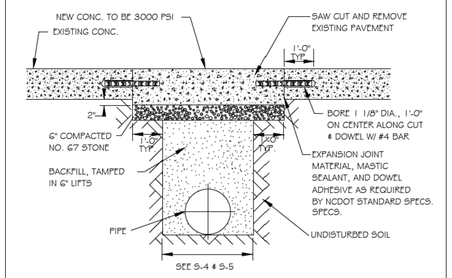
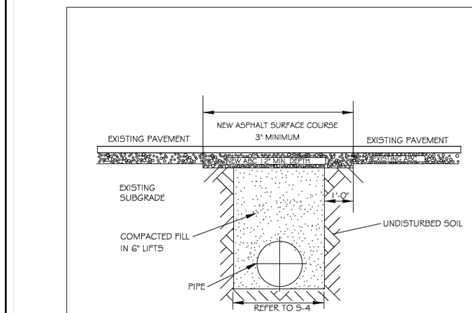


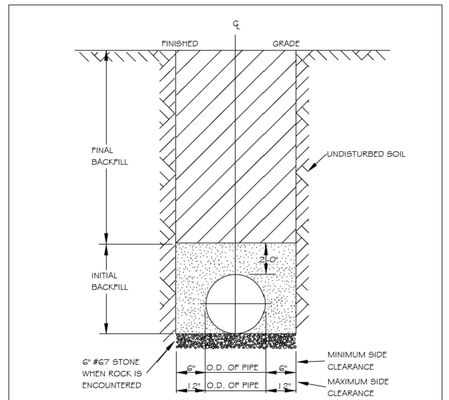
NOTES:
1. See City of Raleigh standards for trenches and pipe bedding (S-4 & S-5) for additional details.
2. Pavement cuts over 5'-0" in width shall be reinforced to N.C.D.O.T. standards.
3. Pavement cuts shall be made with an appropriate saw cut machine.
4. Pavement cuts within NCDOT ROW shall conform to the approved on site encroachment permit.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD CONCRETE PAVEMENT PATCH DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-2	D.W.C.	6-23-99	A.B.B.	4-19-04
	RRH	3-30-00	J.P.S.	10-8-10



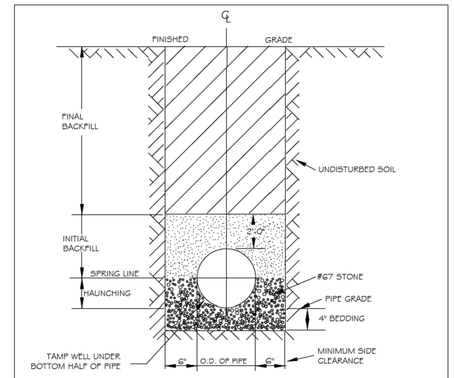
NOTES:
1. IN NCDOT MAINTAINED ROADWAYS ENCROACHMENT PAVEMENT PATCH REQUIREMENTS SHALL TAKE PRECEDENCE.
2. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAWCUT MACHINE.
3. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
4. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT.
5. THE ENTIRE THICKNESS AND VERTICAL EDGE OF CUT SHALL BE TACKED.
6. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
7. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
8. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING (S-4 & S-5) FOR ADDITIONAL DETAILS.
9. NO HAND PATCHING ALLOWED.
10. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD ASPHALT PAVEMENT PATCH DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-3	D.W.C.	11-1-99	A.B.B.	4-19-04
	RRH	3-30-00	J.P.S.	10-8-10



NOTES:
1. TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
2. NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
3. ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL
4. BACKFILL SHALL BE TAMPED IN 6" LIFTS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.
5. ACHIEVE 80% COMPACTION IN NON-TRAFFIC AREAS, AND 95% COMPACTION IN TRAFFIC AREAS.
6. IF IN EASEMENT 4" TOPSOIL, AND 12" CLEAN SELECT FILL MAY BE REQUIRED.
7. NO BOULDERS 8" IN DIAMETER OR GREATER ALLOWED IN FINAL BACKFILL.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-4	D.W.C.	9-3-99		
	RRH	3-30-00		



TYPICAL TRENCH BOTTOM DIMENSIONS FOR SDR 35 PVC GRAVITY PIPE

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

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TRENCH BOTTOM DIMENSIONS AND BACKFILLING REQUIREMENTS FOR PVC GRAVITY SEWER MAIN				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-5	TO NOTES	3-1-87	D.W.C.	9-3-99
		7-2-82	RRH	3-30-00

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD PRECAST SANITARY SEWER MANHOLE				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-20	Y.C.A.	12-31-92	ABB	2-21-06
	RRH	3-30-00	D.H.L.	6-16-08

BILL OF MATERIAL FOR 4' MANHOLE				
BAR	SIZE	LENGTH	NO.	WT. LBS.
T2	#6	6'-6"	18	103
CL. "A" CONCRETE TOTAL CU. YDS. .000				

BILL OF MATERIAL FOR 4' MANHOLE				
BAR	SIZE	LENGTH	NO.	WT. LBS.
T1	#6	6'-6"	20	136
CL. "A" CONCRETE TOTAL CU. YDS. .361				

BILL OF MATERIAL FOR 4' MANHOLE				
BAR	SIZE	LENGTH	NO.	WT. LBS.
T2	#6	7'-6"	24	165
CL. "A" CONCRETE TOTAL CU. YDS. .778				

* ALL BASES ARE MINIMUM 5" THICK.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
EXTENDED BASE OR CAST-IN-PLACE REINFORCED CONCRETE BASE				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-21		3-1-87	ABB	2-3-06
	RRH	3-30-00		

NOTES:
1. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
2. THIS DETAIL TO BE USED WHEN A 6" OR LARGER LATERAL NECESSITATES CONSTRUCTION OF A NEW MANHOLE.
3. SEE STANDARD DETAIL S-20, FOR PRECAST MANHOLES.
4. THE CONTRACTOR SHALL PROVIDE A MINIMUM 9" COMPACTED #67 STONE BASE.
5. FOR USE ON DIP, CONCRETE, AND PVC ONLY. (NOT ALLOWED ON VCP)
6. SEE DETAIL S-21 FOR REINFORCING OF POURED IN-PLACE BASE

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD MANHOLE INSTALLATION OVER EXISTING SEWER MAIN				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-22	Y.C.A.	12-31-91	A.B.B.	1-19-06
	RRH	3-30-00	D.H.L.	6/16/08

NOTES:
1) ALL MANHOLE FRAMES SHALL BE DOMESTICALLY CAST.
2) FRAME SHALL BE A MINIMUM WEIGHT OF 102 LBS. WITHIN PUBLIC ROW AND 160 LBS. WITHIN EASEMENTS.
3) COVER SHALL WEIGH A MIN. OF 120 LBS.
4) ALL MANHOLE FRAMES OUTSIDE OF PAVED SURFACES SHALL BE BOLTED TO THE CONE SECTION OR RING WITH A MINIMUM OF 4 BOLTS PER FRAME.

5/8"X3" LAGSHIELD IN HOLE DRILLED INTO CONE OR RING WITH ANCHOR BUNK TO DESIGN DEPTH, AND 3/8"X3" HOT DIPPED GALVANIZED LAG BOLT AND WASHER.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD MANHOLE COVER				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-25	3-1-87	3-1-87	A.B.B.	2-9-05
	RRH	3-30-00	D.H.L.	6-18-08

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NCCCS NO. 2303

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NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **SANITARY SEWER DETAILS**

D-104

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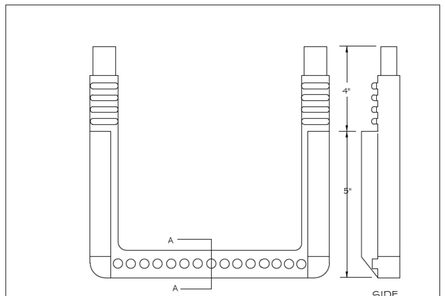
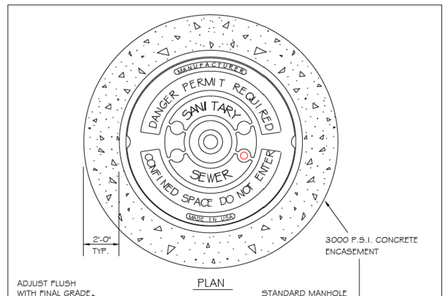
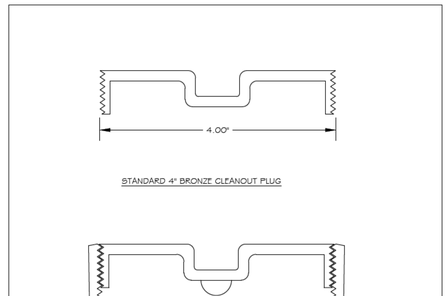


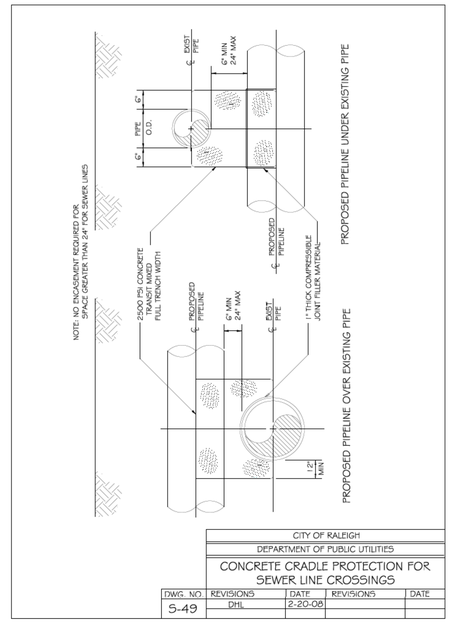
CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD SLIP RESISTANT MANHOLE STEP DETAIL				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-28	RRH	3-30-00		



CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
STANDARD MANHOLE FRAME AND COVER DETAIL WITHIN PAVED SURFACES				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-29	Y.C.A.	12-31-91	ABB	9-20-04
	RRH	3-30-00	DHL	11-29-07



CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
4" CLEANOUT PLUG				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-34	D.W.C.	3-1-87	RRH	3-30-00
		3-27-98		



CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
CONCRETE CRADLE PROTECTION FOR SEWER LINE CROSSINGS				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
S-49	DHL	2-20-08		

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01/10/2025
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ISSUE FOR BID
SHEET
SANITARY SEWER DETAILS

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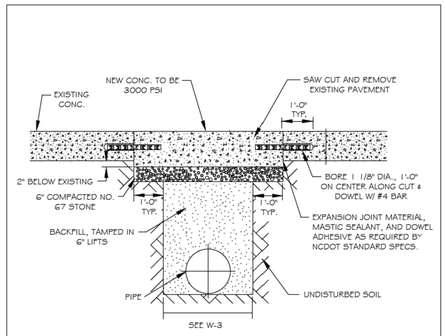
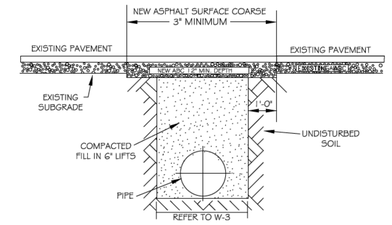


NOTES:
1. SEE CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING W-3 FOR ADDITIONAL DETAILS
2. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.
3. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROVED SAW CUT MACHINE.
4. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT. 5. THE FINAL 6" OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-180 AS MODIFIED BY NCDOT .

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD CONCRETE PAVEMENT PATCH DETAIL

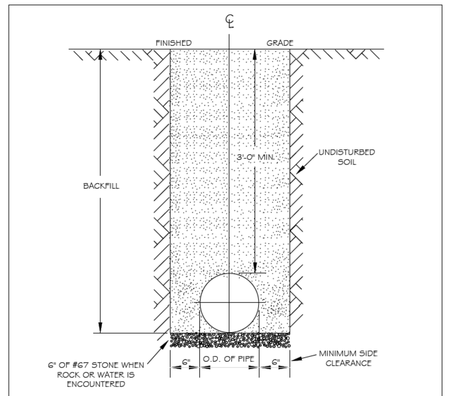
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-1	RRH	3-31-00	A.B.B.	10-29-10
	A.B.B.	2-8-05	MAB	10-31-13



NOTES:
1. THE PAVEMENT CUT SHALL BE DEFINED BY A STRAIGHT EDGE AND CUT WITH AN APPROPRIATE SAW CUT MACHINE.
2. THE TRENCH SUBGRADE MATERIAL SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO A DENSITY OF AT LEAST 95% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY NCDOT.
3. THE FINAL 1' OF FILL SHALL CONSIST OF ABC MATERIAL COMPACTED TO A DENSITY EQUAL TO 100% OF THAT OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH AASHTO T-80 AS MODIFIED BY NCDOT.
4. THE ENTIRE THICKNESS/ VERTICAL EDGE OF CUT SHALL BE TACKED.
5. THE SAME DEPTH OF PAVEMENT MATERIAL WHICH EXISTS SHALL BE REINSTALLED, BUT IN NO CASE SHALL THE ASPHALT BE LESS THAN 3" THICK.
6. THE ASPHALT PAVEMENT MATERIAL SHALL BE INSTALLED AND COMPACTED THOROUGHLY WITH A SMOOTH DRUM ROLLER TO ACHIEVE A SMOOTH LEVEL PATCH.
7. REFER TO CITY OF RALEIGH STANDARDS FOR TRENCHES AND PIPE BEDDING, W-3. FOR ADDITIONAL DETAILS.
8. NO HAND PATCHING ALLOWED.
9. PAVEMENT CUTS WITHIN NCDOT ROW SHALL CONFORM TO THE APPROVED ON SITE ENCROACHMENT PERMIT.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD ASPHALT PAVEMENT PATCH DETAIL

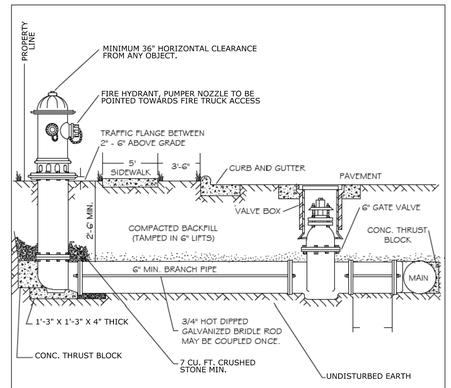
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-2	RRH	3-31-00	A.B.B.	4-16-04
	D.W.C.	11-1-99	J.P.S.	10-29-10



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

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
TRENCH BOTTOM DIMENSIONS & BACKFILLING REQUIREMENTS FOR DUCTILE IRON

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-3	D.W.C.	9-3-99	ABB	2-15-05
	RRH	3-31-00	J.P.S.	10-29-10



NOTES:
1. FIRE HYDRANT SHALL BE AS MANUFACTURED: MUELLER, AMERICAN DARLING, KENNEDY, M&H, WATEROUS, CLOW, EAST JORDAN IRON WORKS, OR US PIPE.
2. BRANCH PIPE SHALL BE DUCTILE IRON AWWA C150-96
3. 6" GATE VALVE SHALL BE AWWA C500-96 OPEN LEFT
4. STEEL RODS AND BOLTS SHALL BE ¾" HOT DIPPED GALVANIZED
5. FIRE HYDRANTS WILL BE INSTALLED IN TRUE VERTICAL POSITION
   RODS SHALL NOT BE COUPLED MORE THAN ONCE. IF THE LENGTH FROM THE VALVE TO THE HYDRANT EXCEEDS 20' THEN A MECHANICAL RESTRAINING GLAND WITH A REBAR CAGE SHALL BE INSTALLED NO MORE THAN 10' FROM HYDRANT AND POURED IN CONCRETE.
   FIRE HYDRANTS TO BE LOCATED IN ROW OR 2 FOOT EASEMENT ADJACENT TO ROW

ANYTIME SITE WORK, CONSTRUCTION, ROAD WORK, OR ANY OTHER WORK CHANGES THE GRADE OF THE FIRE HYDRANT, THE PERSON RESPONSIBLE FOR THE WORK IS RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANT TO STAY WITHIN COMPLIANCE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
STANDARD FIRE HYDRANT INSTALLATION DETAIL

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-4a	ABB	4-6-04		

NOTES:
1. ALL PUBLIC FIRE HYDRANTS IN THE CITY OF RALEIGH AND THE MERGER TOWNS OF GARNER, ROLESVILLE, WAKE FOREST, KNIGHTDALE, WENDELL AND ZEBULON SHALL BE PAINTED CHROME YELLOW WITH HIGH REFLECTIVE ALUMINUM SILVER CAPS, BONNETS AND OPERATING NUTS.
2. ALL PRIVATE FIRE HYDRANTS SHALL BE RED.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
RALEIGH, GARNER, KNIGHTDALE, ROLESVILLE, WAKE FOREST, WENDELL & ZEBULON
STANDARD FIRE HYDRANT WITH 5" STORZ PUMPER NOZZLE

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-5	MAB	6-30-16		
	KAT	9-15-17		

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
HYDRANT OPERATING NUT AND 2 1/2" OUTLET THREADS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-6	RRH	3-31-00	DTL	2-18-08
	A.B.B.	4-13-04	J.P.S.	11-1-10

REINFORCING REQUIREMENTS

I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & greater	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

THRUST COLLAR, AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C"	"D"
6" - 16"	1'-4"	1'-7"	2"	3/8"
20" - 24"	1'-4"	1'-7"	3"	1/2"
30" - 36"	1'-4"	1'-7"	4"	5/8"
42" & greater	1'-5"	1'-9"	6"	7/8"

NOTES:
1. SEE STANDARD DETAIL W-9 FOR THRUST BLOCK LOCATIONS.
2. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
3. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
4. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD DETAIL W-3.
5. BACKFILL TAMPED IN 6" LIFTS PER STANDARD DETAIL W-3.
6. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

CITY OF RALEIGH
DEPARTMENT OF PUBLIC UTILITIES
THRUST BLOCKING DESIGN DATA FOR WATER MAINS

DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-7	RRH	3-21-00	J.P.S.	11-1-10
	D.H.L.	6-16-06		

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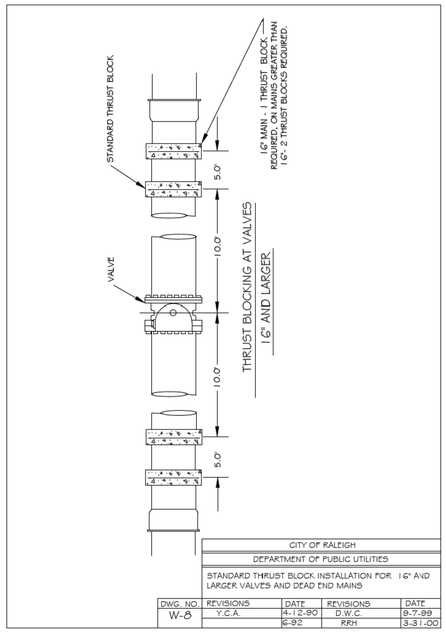
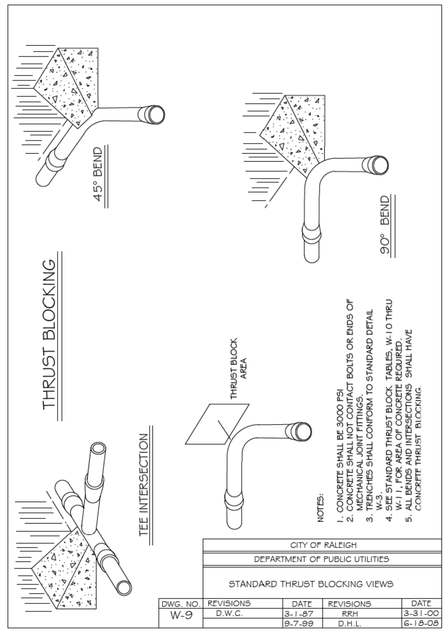
JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **WATER DETAILS**

D-106



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
STANDARD THRUST BLOCK INSTALLATION FOR 16" AND LARGER VALVES AND DEAD END MAINS			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-8	Y.C.A.	4-12-90	D.W.C.	9-7-99
		6-92	RRH	3-31-00



CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
STANDARD THRUST BLOCKING VIEWS			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-9	D.W.C.	3-1-87	RRH	3-31-00
		9-7-99	D.H.L.	6-18-08

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200 P.S.I.

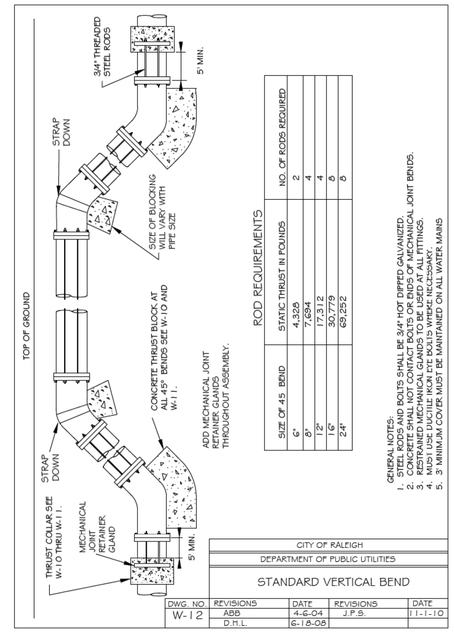
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4000 LBS/FT²	SOFT CLAY 2000 LBS/FT²	LOOSE WET GRAVEL / CONCRETE SAND 1000 LBS/FT²	LOOSE WET DRY CLAY - ALWAYS DRY 3000 LBS/FT²	SAND, COMPACT FIRM 4000 LBS/FT²	SAND, CLEAN DRY 2000 LBS/FT²	SOIL LOOSE 1000 LBS/FT² QUICKSAND, VERY POOR	ROCK, HORSE 10,000 LBS/FT²
6"									
11 1/4°	1,108	1	1	1	1	1	1	2	1
22 1/2°	2,207	1	2	2	1	1	1	3	1
45°	4,328	2	3	3	1	1	2	5	1
90°	7,996	2	4	5	1	1	2	8	1
PLUG	5,655	2	3	4	1	1	2	6	1
8"									
11 1/4°	1,970	1	1	2	1	1	1	2	1
22 1/2°	3,922	1	2	3	1	1	1	4	1
45°	7,694	2	4	5	1	1	2	8	1
90°	14,215	4	8	9	2	2	4	15	2
PLUG	10,053	3	5	6	2	2	3	10	1
12"									
11 1/4°	4,433	2	3	3	1	1	2	5	1
22 1/2°	8,826	3	5	6	2	2	3	9	1
45°	17,312	5	9	11	3	3	5	18	2
90°	31,983	8	16	19	4	4	8	32	4
PLUG	22,619	6	12	14	3	3	6	23	3
16"									
11 1/4°	7,881	2	4	5	1	1	2	8	1
22 1/2°	15,691	4	8	10	2	2	4	16	2
45°	30,779	8	16	19	4	4	8	31	4
90°	56,861	15	29	35	8	8	15	57	6
PLUG	40,213	10	21	25	5	5	10	41	5

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.

USE 6" - 90° BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
THRUST BLOCKING DESIGN QUANTITY TABLE			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-10	D.W.C.	6-23-99		



ROD REQUIREMENTS

SIZE OF 45 BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	2
8"	7,694	4
12"	17,312	4
16"	30,779	6
24°	69,252	8

GENERAL NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.
3. RESTRAINED MECHANICAL GLANDS TO BE USED AT ALL FITTINGS.
4. ALL BOLTS AND NUTS SHALL BE STAINLESS STEEL.
5. 3' MINIMUM COVER MUST BE MAINTAINED ON ALL WATER MAINS

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
STANDARD VERTICAL BEND			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-12	ABB	4-6-04	J.P.S.	11-1-10
	D.H.L.	6-18-08		

ROD REQUIREMENTS	
NO. OF RODS	BRANCH SIZE
4°	2
6°	2
8°	4
12°	4
16°	6
24°	6
30°	8
36°	8

NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. SEE STANDARD THRUST BLOCK, TABLES W-10 AND W-11 FOR CONCRETE.
3. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
4. THIS RODDING REQUIREMENT DOES NOT APPLY TO FIRE HYDRANTS.

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
VALVE RESTRAINT AT TEES AND CROSSES FOR LINES (4"-24")			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-15	RRH	3-31-00	D.H.L.	6-18-08
	A.B.B.	4-19-04	J.P.S.	11-1-10

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
VALVE BOX INSTALLATION AND EXTENSION DETAIL			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-17	D.W.C.	9-7-99	A.B.B.	4-15-04
	RRH	3-31-00	DHL	8-16-07

NOTE 1 - "WATER" LETTERING MUST BE 1" RAISED (RECESSED FLUSH)
NOTE 2 - VALVE COVER SHALL BE DOMESTICALLY CAST.
NOTE 3 - COVER MUST HAVE A MINIMUM WEIGHT OF 25 POUNDS.
NOTE 4 - COVER MUST BE CLASS 35 OR GREATER.
NOTE 5 - COVER MUST MEET OR EXCEED AASHTO H-20 LOAD REQUIREMENTS.

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
5 1/4" VALVE BOX DROP LID WITH 4" SKIRT			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-18				

CITY OF RALEIGH			
DEPARTMENT OF PUBLIC UTILITIES			
TYPICAL 4"- 8" DOMESTIC WATER METER BYPASS INSTALLATION			
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-29	D.W.C.	11-15-99	D.H.L.	6/18/08
	A.B.B.	8-30-04	J.P.S.	11-4-10

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D-107

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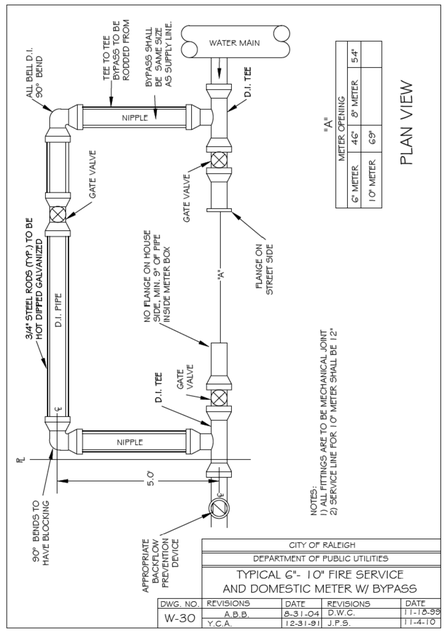
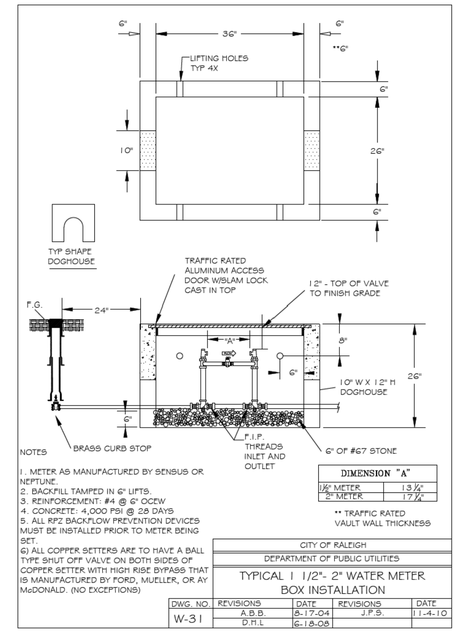


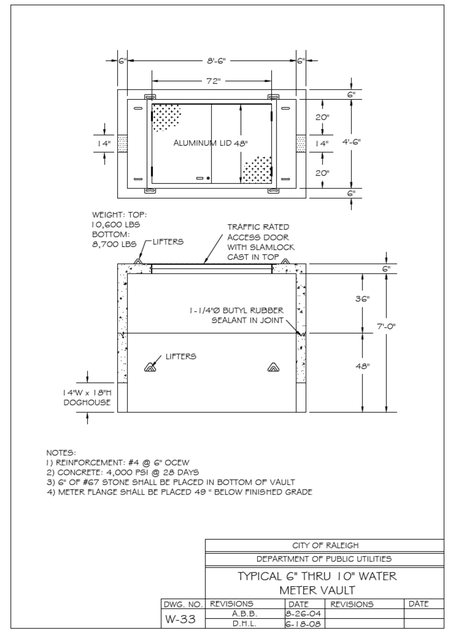
CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TYPICAL 6"- 10" FIRE SERVICE AND DOMESTIC METER W/ BYPASS				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-30	A.B.B.	8-31-04	D.W.C.	11-18-99
	Y.C.A.	12-31-91	J.P.S.	11-4-10



DIMENSION "A"	
5/8" METER	13 3/4"
2" METER	17 3/4"

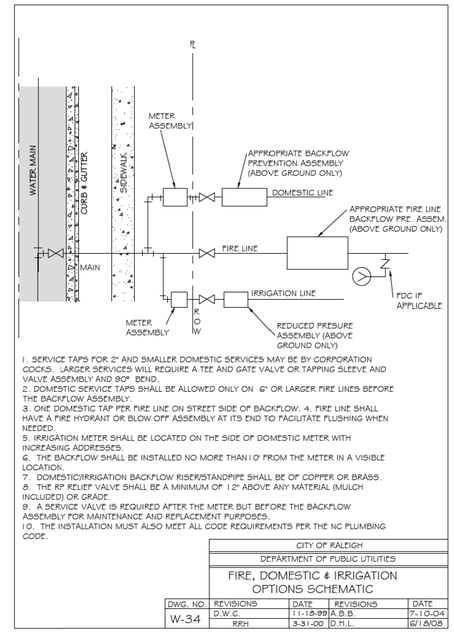
** TRAFFIC RATED VAULT WALL THICKNESS

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TYPICAL 1 1/2"- 2" WATER METER BOX INSTALLATION				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-31	A.B.B.	8-17-04	J.P.S.	11-4-10
	D.H.L	6-18-08		



NOTES:
1) REINFORCEMENT: #4 @ 6" OCEW
2) CONCRETE: 4,000 PSI @ 28 DAYS
3) 6" OF #67 STONE SHALL BE PLACED IN BOTTOM OF VAULT
4) METER FLANGE SHALL BE PLACED 49 " BELOW FINISHED GRADE

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TYPICAL 6" THRU 10" WATER METER VAULT				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-33	A.B.B.	8-26-04		
	D.H.L.	6-18-08		

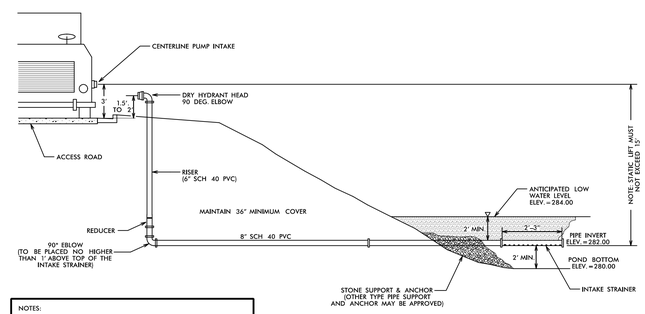


1. SERVICE TAPS FOR 2" AND SMALLER DOMESTIC SERVICES MAY BE BY CORPORATION COCKS. LARGER SERVICES WILL REQUIRE A TEE AND GATE VALVE OR TAPPING SLEEVE AND VALVE ASSEMBLY AND 90° BEND.
2. DOMESTIC SERVICE TAPS SHALL BE ALLOWED ONLY ON 6" OR LARGER FIRE LINES BEFORE THE BACKFLOW ASSEMBLY.
3. ONE DOMESTIC TAP PER FIRE LINE ON STREET SIDE OF BACKFLOW. 4. FIRE LINE SHALL HAVE A FIRE HYDRANT OR BLOW OFF ASSEMBLY AT ITS END TO FACILITATE FLUSHING WHEN NEEDED.
5. IRRIGATION METER SHALL BE LOCATED ON THE SIDE OF DOMESTIC METER WITH INCREASING ADDRESSES.
6. THE BACKFLOW SHALL BE INSTALLED NO MORE THAN 10' FROM THE METER IN A VISIBLE LOCATION.
7. DOMESTIC/IRRIGATION BACKFLOW RISER/STANDPIPE SHALL BE OF COPPER OR BRASS.
8. THE RP RELIEF VALVE SHALL BE A MINIMUM OF 12" ABOVE ANY MATERIAL (MULCH INCLUDED) OR GRADE.
9. A SERVICE VALVE IS REQUIRED AFTER THE METER BUT BEFORE THE BACKFLOW ASSEMBLY FOR MAINTENANCE AND REPLACEMENT PURPOSES.
10. THE INSTALLATION MUST ALSO MEET ALL CODE REQUIREMENTS PER THE NC PLUMBING CODE.

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
FIRE, DOMESTIC & IRRIGATION OPTIONS SCHEMATIC				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-34	D.W.C.	11-18-99	A.B.B.	7-10-04
	RRH	3-31-00	D.H.L.	6/18/08

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
TYPICAL FIRE MAIN DOUBLE DETECTOR CHECK VALVE ASSEMBLY				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-37	Y.C.A.	6-92	ABB	10-4-04
	D.W.C.	11-3-99	D.H.L.	6/18/08

CITY OF RALEIGH				
DEPARTMENT OF PUBLIC UTILITIES				
CONCRETE CRADLE PROTECTION FOR WATER LINE CROSSINGS				
DWG. NO.	REVISIONS	DATE	REVISIONS	DATE
W-41	DHL	2-20-06		



NOTES:

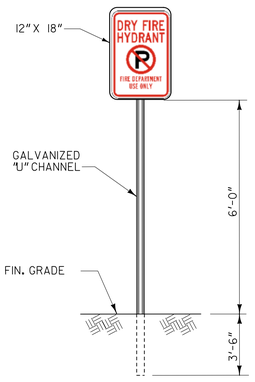
1. FABRICATE A STRAINER OF MATERIAL COMPATIBLE WITH THE PIPE OR USE CORROSION-RESISTANT MANUFACTURED WELL SCREENS. USE NONCORROSIVE MATERIALS FOR ALL COMPONENTS, INCLUDING PINS. SCREENS AND STRAINERS MUST HAVE A MINIMUM OPEN AREA OF 4 TIMES THE PIPE CROSS-SECTIONAL AREA WITH INDIVIDUAL INLET HOLES NO GREATER THAN 3/8" DIAMETER.

2. IF THE STRAINER DOES NOT HAVE AN END CAP, INSTALL A PERFORATED END CAP THAT IS EASILY REMOVED WITHOUT SPECIAL TOOLS TO ALLOW CLEANOUT BY BACKWASHING.

3. INSTALL A DRY HYDRANT HEAD ON THE STANDPIPE. ENSURE THAT THE SELECTED HYDRANT HEAD IS STORZ COMPATIBLE. DO NOT USE CONVENTIONAL DRY BARREL HYDRANT.

4. INCLUDE A CAP THAT IS REMOVABLE WITHOUT SPECIAL TOOLS AND JOINED PERMANENTLY TO THE DRY HYDRANT HEAD WITH A STEEL CABLE OR CHAIN.

DRY HYDRANT DETAIL



DRY HYDRANT SIGN DETAIL

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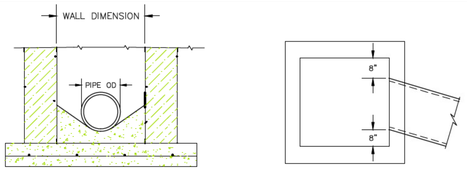


PIPE DIAMETER	MINIMUM WALL DIMENSION
15"	3'-0"
18"	3'-3"
24"	3'-10"
30"	4'-5"
36"	5'-1"
42"	5'-8"
48"	6'-4"
54"	6'-10"
60"	7'-6"

NOTE: THE ABOVE DIMENSIONS ARE APPLICABLE ONLY FOR PIPE INSTALLED AT RIGHT ANGLES TO BOX. FOR PIPES ENTERING AT AN ANGLE, THE INSIDE DIMENSION OF THE WALL SHALL BE THE DISTANCE ACROSS THE PIPE (OUTSIDE TO OUTSIDE) PLUS 8" ON EACH SIDE. SEE SKETCH ABOVE.

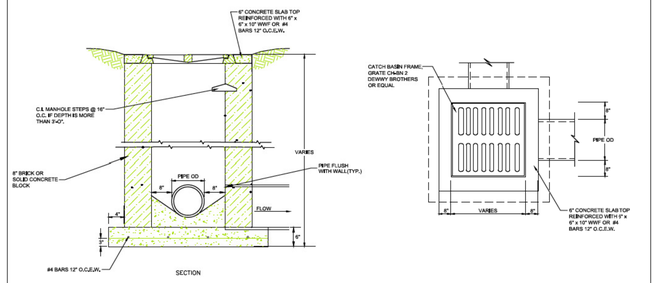
REVISIONS

DATE	DESCRIPTION

TOWN OF WENDELL
Effective Date: 7/23/2018
STANDARD DETAIL #: N/A
Supersedes Detail: N/A
Policy Number: 120

INSIDE DIMENSIONS FOR CATCH BASINS, JUNCTION BOXES AND DROP INLETS

17



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DATE	DESCRIPTION

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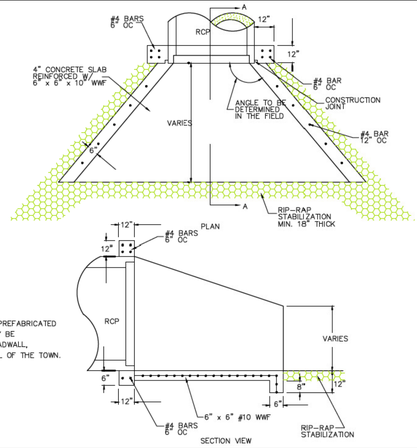
Supersedes Detail: N/A
Policy Number: 120

DROP INLET DETAIL

18



NOTE: FOR SOME INSTALLATIONS PREFABRICATED FLARED END SECTIONS MAY BE ALLOWED IN LIEU OF A HEADWALL, SUBJECT TO THE APPROVAL OF THE TOWN.

REVISIONS

DATE	DESCRIPTION

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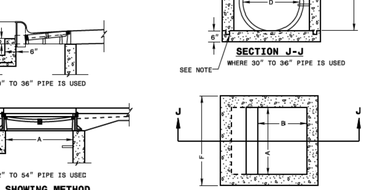
Effective Date: 7/23/2018
STANDARD DETAIL #: N/A
Supersedes Detail: N/A
Policy Number: 120

STORMDRAIN FLARED ENDS

21



REVISIONS

DATE	DESCRIPTION

TOWN OF WENDELL
Effective Date: 7/23/2018
STANDARD DETAIL #: N/A
Supersedes Detail: N/A
Policy Number: 120

CAST IRON BLOCK BASIN STEP DETAIL

20

REVISIONS

DATE	DESCRIPTION

TOWN OF WENDELL
Effective Date: 7/23/2018
STANDARD DETAIL #: N/A
Supersedes Detail: N/A
Policy Number: 120

STORM SEWER CROSSING DETAIL

23

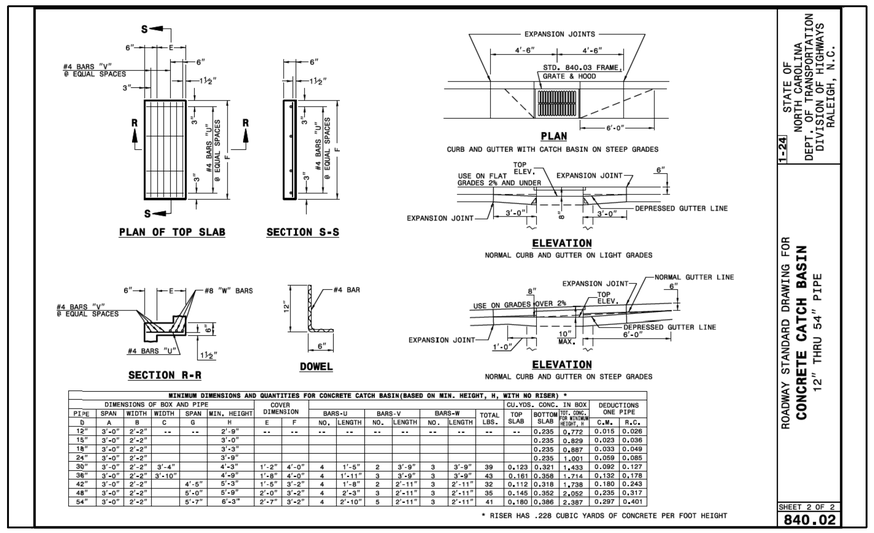
REVISIONS

DATE	DESCRIPTION

TOWN OF WENDELL
Effective Date: 7/23/2018
STANDARD DETAIL #: N/A
Supersedes Detail: N/A
Policy Number: 120

STANDARD 24" x 24" DROP INLET CASTING

19



MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W			CU.YDS. CONC. IN BOX		DEDUCTIONS ONE PIPE	
PIPE	SPAN	WIDTH	WIDTH	SPAN	MIN. HEIGHT			NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.	TOP SLAB	BOTTOM SLAB	CU. CONC. IN BOTTOM SLAB*	C.M.	R.C.
D	A	B	C	G	H	E	F												
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.181	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

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

1-24

ROADWAY STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

SHEET 2 OF 2

840.02

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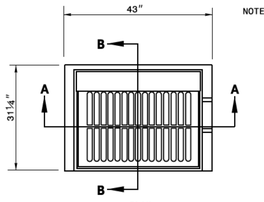
SHEET
STORM WATER DETAILS

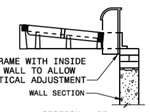
D-109

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.



PLAN

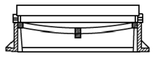
FRAME,GRATE, & HOOD ASS'Y



SECTION - BB

SECTION - LL

SECTION - MM



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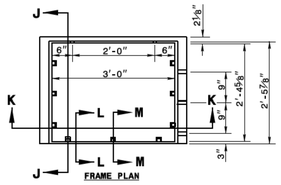
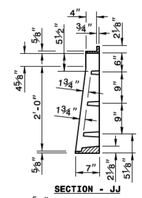


FRAME PLAN



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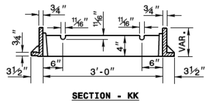

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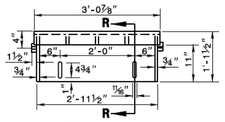
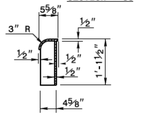


HOOD ELEVATION



SECTION - RR

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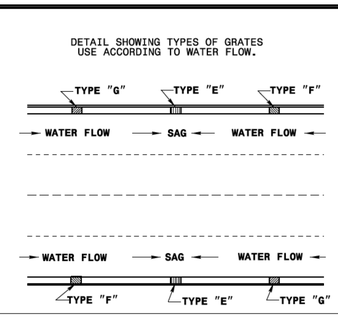
RALEIGH, N.C.

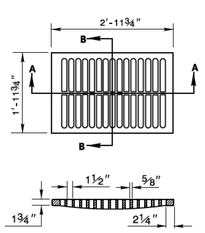
1-24

ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 1 OF 2
840.03

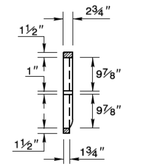
DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.





SECTION A-A

TYPE - E



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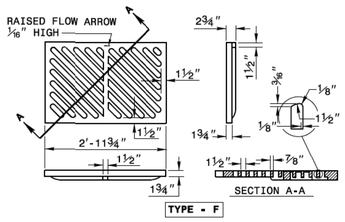

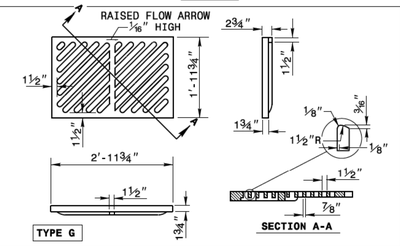

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RALEIGH, N.C.

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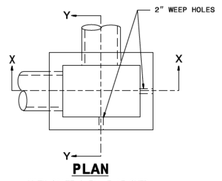
ROADWAY STANDARD DRAWING FOR
FRAME, GRATES, AND HOOD
FOR USE ON STANDARD CATCH BASIN

SHEET 2 OF 2
840.03



PLAN

WITH GRATE & FRAME REMOVED

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" CENTERED 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.

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

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.

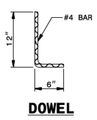
INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

SECTION X-X

SECTION Y-Y



DOWEL

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			TOTAL CONCRETE FOR MINIMUM HEIGHT, H		
D	A	B	H	BOTTOM SLAB	WALL PER FT. HT.		C.M.	R.C.
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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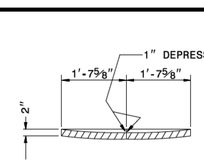
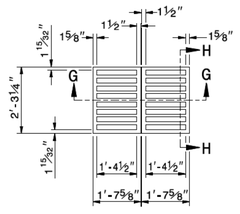
ROADWAY STANDARD DRAWING FOR
CONCRETE DROP INLET
12" THRU 30" PIPE

SHEET 1 OF 1
840.14

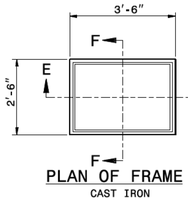


SECTION G-G



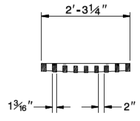
PLAN OF GRATING

CAST IRON

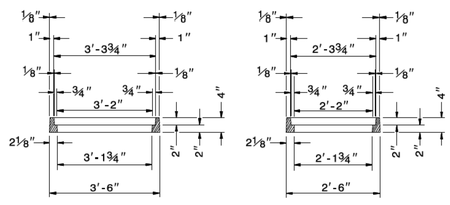


PLAN OF FRAME

CAST IRON



SECTION H-H



SECTION E-E

SECTION F-F

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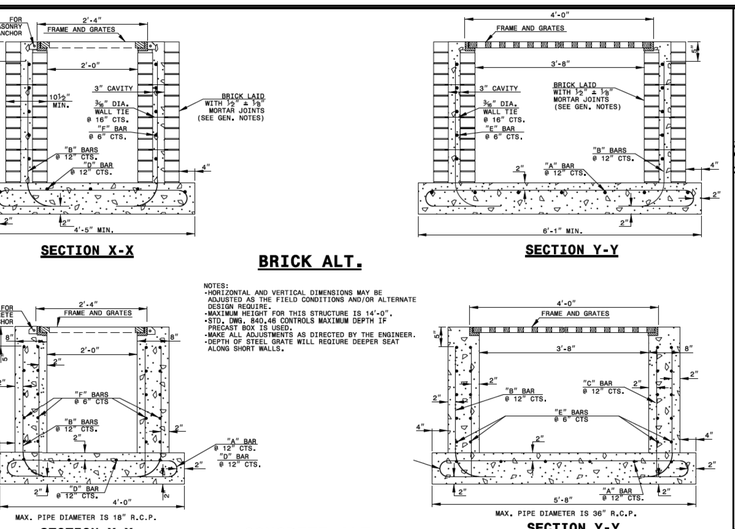
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-24

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



SECTION X-X

BRICK ALT.

SECTION Y-Y

NOTES:
- HORIZONTAL AND VERTICAL DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGN REQUIRE.
- MAXIMUM HEIGHT FOR THIS STRUCTURE IS 14'-0".
- STD. DWG. 840.46 CONTROLS MAXIMUM DEPTH IF PRECAST BOX IS USED.
- MAKE ALL ADJUSTMENTS AS DIRECTED BY THE ENGINEER.
- DEPTH OF STEEL GRATE WILL REQUIRE DEEPER SEAT ALONG SHORT WALLS.

SECTION X-X

CONCRETE ALT.

SECTION Y-Y

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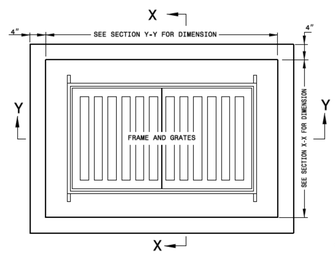
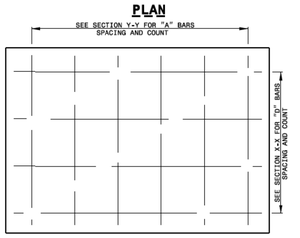
ROADWAY STANDARD DRAWING FOR
TRAFFIC BEARING GRATED DROP INLET
FOR DOUBLE FRAME AND GRATES

SHEET 1 OF 2
840.35



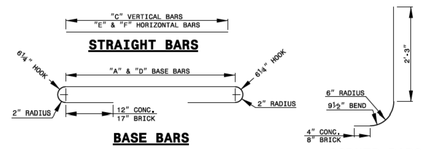
PLAN



PLAN OF BASE

BILL OF MATERIALS

	COMMON			BRICK ALT.		
BAR	SIZE	LENGTH	QUANTITY	WEIGHT	LENGTH	QUANTITY	WEIGHT
A	#5	6'-4½"	8	39.8	7'-7½"	6	47.7
B	#5	3'-4½"	16	56.3	3'-4½"	16	56.3
C	#5	2'-8"	14	38.8	-0-	-0-	-0-
D	#5	8'-0½"	4	33.6	9'-3½"	4	38.8
E	#5	3'-0"	20	62.6	3'-0"	10	31.3
F	#5	4'-8"	20	97.3	4'-8"	10	48.7
REINF. STEEL (TOTAL WEIGHT LBS.)				328.6			222.8
CONCRETE IN BASE CLASS 'AA' (CUBIC YARDS)				0.56			0.66
CONCRETE IN WALLS CLASS 'AA' (CUBIC YARDS)				0.92			-0-
CONCRETE IN WALLS CLASS 'B' (CUBIC YARDS)				-0-			0.36
BRICK IN WALLS (CUBIC YARDS)				-0-			0.91
CONCRETE TOTAL (CUBIC YARDS)				1.48			1.02
BRICK & CONCRETE TOTAL (CUBIC YARDS)				1.48			1.93
CONC. CUBIC YARDS IN WALL/FOOT OF HEIGHT				0.35			0.14
BRICK CUBIC YARDS IN WALL/FOOT OF HEIGHT				-0-			0.34
LBS. OF REINF. STEEL IN WALL/FOOT OF HEIGHT				94.9			47.6



GENERAL NOTES:
- USE CLASS 'AA' CONCRETE FOR CAST IN PLACE CONCRETE BOX.
- USE CLASS 'B' CONCRETE IN THE WALL CAVITY FOR REINFORCED BRICK CONSTRUCTION AND CLASS 'AA' FOR THE FOOTING BASE.
- CHAMFER ALL EXPOSED CONCRETE CORNERS 1".
- USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
- IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
- PRECAST UNITS MADE OF CLASS 'AA' CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION.
- INCLUDE REINFORCING STEEL COST IN THE UNIT OR LINEAR FOOT BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".
- REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.
- CONCRETE BRICK, JUMBO BRICK AND 4" SOLID CONCRETE BLOCK WILL BE PERMITTED.
- CONCRETE FOR BRICK BOX REFER TO SECTION 832 OF THE STANDARD SPECIFICATIONS.
- PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.66.
- FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

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ROADWAY STANDARD DRAWING FOR
TRAFFIC BEARING GRATED DROP INLET
FOR DOUBLE FRAME AND GRATES

SHEET 2 OF 2
840.35

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NCCCS NO. 2303

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NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
STORM WATER DETAILS

D-110

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LEGEND

7 DAY GROUND COVER

40' 0' 20' 40' 80'

GRAPHIC SCALE
1 INCH = 40 FT.

NPDES Stormwater Discharge Permit for Construction Activities (NCGO1) — NCDENR/Division of Energy, Mineral and Land Resources

STABILIZATION TIMEFRAMES
(Effective Aug. 3, 2011)

Site Area Description	Stabilization	Timeframe Exceptions
Perimeter dikes, swales, ditches, slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed.
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50' in length.
All other areas with slopes flatter than 4:1	14 days	None, except for perimeters and HQW Zones.

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IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22-086
DATE ISSUED
01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
NPDES STABILIZATION PLAN

NCGO1-1

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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 Stabilization	Permanent Stabilization
• 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

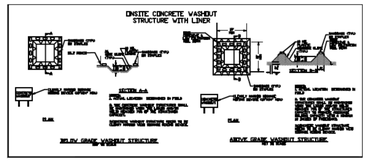
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, 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.



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 (and 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 II, Section C, item (2)(a) 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.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

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NCCCS NO. 2303

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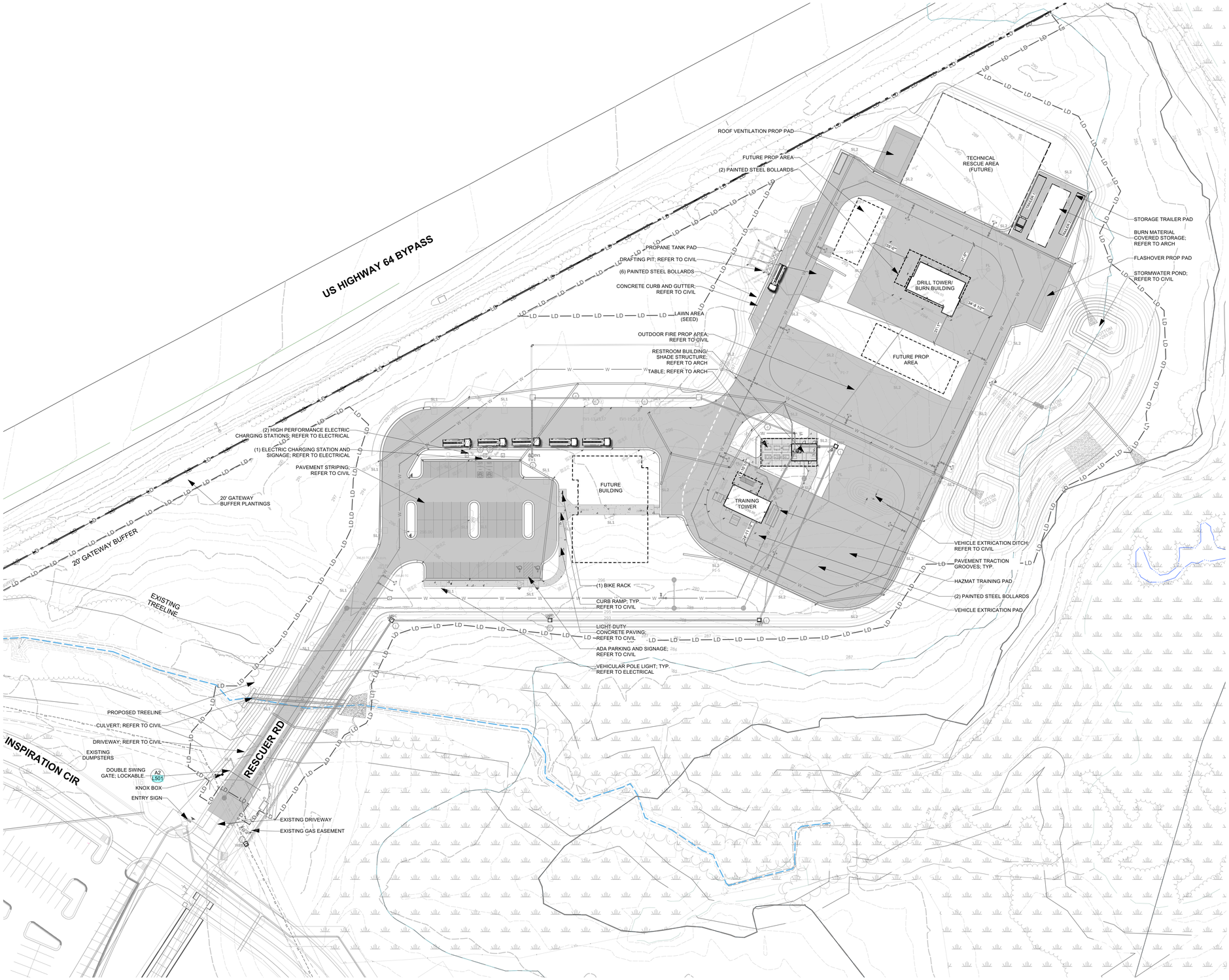
SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22-086
DATE ISSUED
01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
NPDES DETAIL SHEET

NCG01-2



SITE PLANNING NOTES

1. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION AS AMENDED, AND ARE THE CONTRACTOR'S RESPONSIBILITY.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ZONE TRAFFIC CONTROL IN OR ADJACENT TO NCDOT OR CITY RIGHT-OF-WAY. ALL METHODS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND NCDOT STANDARDS.

3. CONTRACTOR SHALL PROVIDE SAW CUTS AT THE UNION BETWEEN EXISTING CONDITIONS AND PROPOSED CONSTRUCTION UNLESS OTHERWISE NOTED. REFER TO PLANS FOR ADDITIONAL INFORMATION.

4. UNLESS NOTED ON THE DRAWINGS ALL BUFFERS, WETLANDS, STREAM CHANNELS, SETBACKS AND TREE PROTECTION AREAS SHALL BE PROTECTED WITH NO CONSTRUCTION ACCESS, STORAGE OR USE OF ANY KIND. THE CONTRACTOR SHALL KEEP CONSTRUCTION ACTIVITIES WITHIN THE "PROJECT LIMITS" SHOWN ON THE DRAWINGS.

5.ALL DIMENSIONS INDICATING "VERIFY" SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO STARTING CONSTRUCTION - REPORT ANY DISCREPANCIES IMMEDIATELY TO THE LANDSCAPE ARCHITECT.

6. ALL DIMENSIONS LABELED "EQ" ARE TO INDICATE EQUAL MEASUREMENTS BETWEEN THE DIMENSIONS END POINTS ON THE DRAWING.

7. REFER TO CIVIL DRAWINGS FOR ALL STREET DIMENSIONS.

8. THE CONTRACTOR SHALL STAKE THE LAYOUT AND ALIGNMENT OF ALL PAVEMENTS, WALLS, AND OTHER SITE FEATURES IN THE FIELD FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO START OF CONSTRUCTION.

9. THE CONTRACTOR SHALL PROVIDE SMOOTH LAYOUT ALIGNMENTS BETWEEN EXISTING CONDITIONS AND PROPOSED SITE IMPROVEMENTS.

10. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED ON THE DRAWINGS.

11. UNLESS OTHERWISE NOTED, CONCRETE SCORE AND EXPANSION JOINTS SHALL BE ALIGNED WITH BUILDING FEATURES AND WITH CORNERS OF PAVEMENT. SPACE THE ADDITIONAL JOINTS BETWEEN THESE POINTS EQUALLY.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL EXISTING JOB CONDITIONS. ANY ADVERSE EXISTING CONDITIONS AFFECTING THE WORK SHOWN ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR POSSIBLE CLARIFICATION OR RECONCILIATION.

13. ITEMS LABELED AS "BY OTHERS" OR "NIC" ARE FOR COORDINATION ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE INSTALLATION OF ANY SUCH ITEMS WITH THE OWNER'S REPRESENTATIVE.

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DOCUMENT FOR REVIEW
NOT FOR CONSTRUCTION

DOCUMENT FOR REVIEW
NOT FOR CONSTRUCTION

NO.	REVISION	DATE

JOB NUMBER
22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
ISSUE FOR BID

SHEET
LANDSCAPE MATERIAL PLAN

L131

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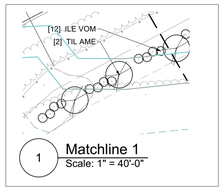
PLANT SCHEDULE - CONTRACTOR SHALL SATISFY ALL MEASUREMENTS NOTED - EXCEED SIZES UPON APPROVAL

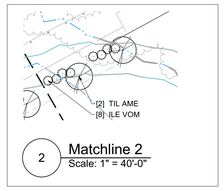
KEY	QTY	LATIN NAME	COMMON NAME	CONTAINER | SIZE | HT | W | SPACING	COMMENTS
TREES					
ACE RUB	6	ACER RUBRUM	RED MAPLE	B&B | 3" CAL. | 16' HT. | 8' W. | AS SHOWN	STRONG CENTRAL LEADER; EVENLY BRANCHED; FULL
LIR TUL	7	LIRIODENDRON TULIPIFERA	TULIP POPLAR	B&B | 3" CAL. | 16' HT. | 8' W. | AS SHOWN	STRONG CENTRAL LEADER; EVENLY BRANCHED; FULL
QUE PHE	27	QUERCUS PHELLOS 'RT3'	UPPERTON WILLOW OAK	B&B | 3" CAL. | 12' HT | 14' W | AS SHOWN	STRONG CENTRAL LEADER; EVENLY BRANCHED; FULL
QUE PAN	15	QUERCUS SHUMARDII 'PANACHE'	PANACHE SHUMARD OAK	B&B | 3" CAL. | 12' HT | 14' W | AS SHOWN	STRONG CENTRAL LEADER; EVENLY BRANCHED; FULL
TAX DIS	3	TAXODIUM DISTICHUM 'SOFINE'	AUTUMN GOLD BALD CYPRESS	B&B | 3" CAL. | 9' HT | 4' W | AS SHOWN	STRONG CENTRAL LEADER; EVENLY BRANCHED; FULL
TIL AME	23	TILIA AMERICANA	AMERICAN BASSWOOD	B&B | 3" CAL. | 12' HT | 30' W | AS SHOWN	STRONG CENTRAL LEADER; EVENLY BRANCHED; FULL
SHRUBS					
DIS BLU	12	DISTYLIUM 'BLUE CASCADE'	BLUE CASCADE DISTYLIUM	CONT. | 7 GAL. | 3' HT. | 4' W. | AS SHOWN	FULL; DENSE
ILE VOM	108	ILEX VOMITORIA	YAUPON HOLLY	CONT. | --- | 3' HT | 36" W | 3' O.C.	N/A
ILE SHI	21	ILEX VOMITORIA 'SCHILLINGS DWARF'	DWARF YAUPON HOLLY	CONTAINER / 24" / 18" / AS SHOWN	FULL, DENSE, MATCHING
MYR CER	73	MYRICA CERIFERA 'DON'S DWARF'	WAX MYRTLE DON'S DWARF	CONT. | 7 GAL. | 3' HT. | 4' W. | AS SHOWN	FULL; DENSE; MATCHING
PERENNIALS, ORNAMENTAL GRASSES, AND GROUNDCOVERS					
CHA LAT	50	CHASMANTHIUM LATIFOLIUM	NORTHERN SEA OATS	CONT. | 1 GAL. | -- | -- | 24" O.C.	
COR LAN	94	COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS	CONT. | 1 GAL | -- | -- | 12" O.C.	CONT. | 1 GAL | -- | -- | 12" O.C.
ECH CON	53	ECHINACEA PURPUREA	PURPLE CONEFLOWER	CONT. | 1 GAL | -- | -- | AS SHOWN	
IRI VIR	100	IRIS VIRGINICA	BLUE FLAG IRIS	1 GAL. / 12" / 8" / 12" O.C.	
JUN EFF	46	JUNCUS EFFUSUS	COMMON RUSH	CONT. | 1 GAL. | 12" HT | 6 W | 24" O.C.	
LIA SPI	63	LIATRIS SPICATA	GAYFEATHER	CONT | 1 GAL | -- | -- | 18" O.C.	FULL
MUH CAP	52	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	CONT. | 1 GAL. | 12" HT | 8" W | 30" O.C.	
PAN SHE	504	PANICUM VIRGATUM 'SHENANDOAH'	SHENANDOAH SWITCH GRASS	CONT. | 1 GAL. | 12" HT | 6" W | 24" O.C.	
PON COR	91	PONTEDERIA CORDATA	PICKEREL WEED	1 GAL. / 12" / 8" / 18" O.C.	
SAU CER	95	SAURURUS CERNUUS	LIZARD'S TAIL	1 GAL. / 8" / 12" / 12" O.C.	
SCI CYP	34	SCIRPUS CYPERINUS	WOOLGRASS	CONT. | 1 GAL. | 12" HT | 6" W | AS SHOWN	
TURF AND MEADOW					

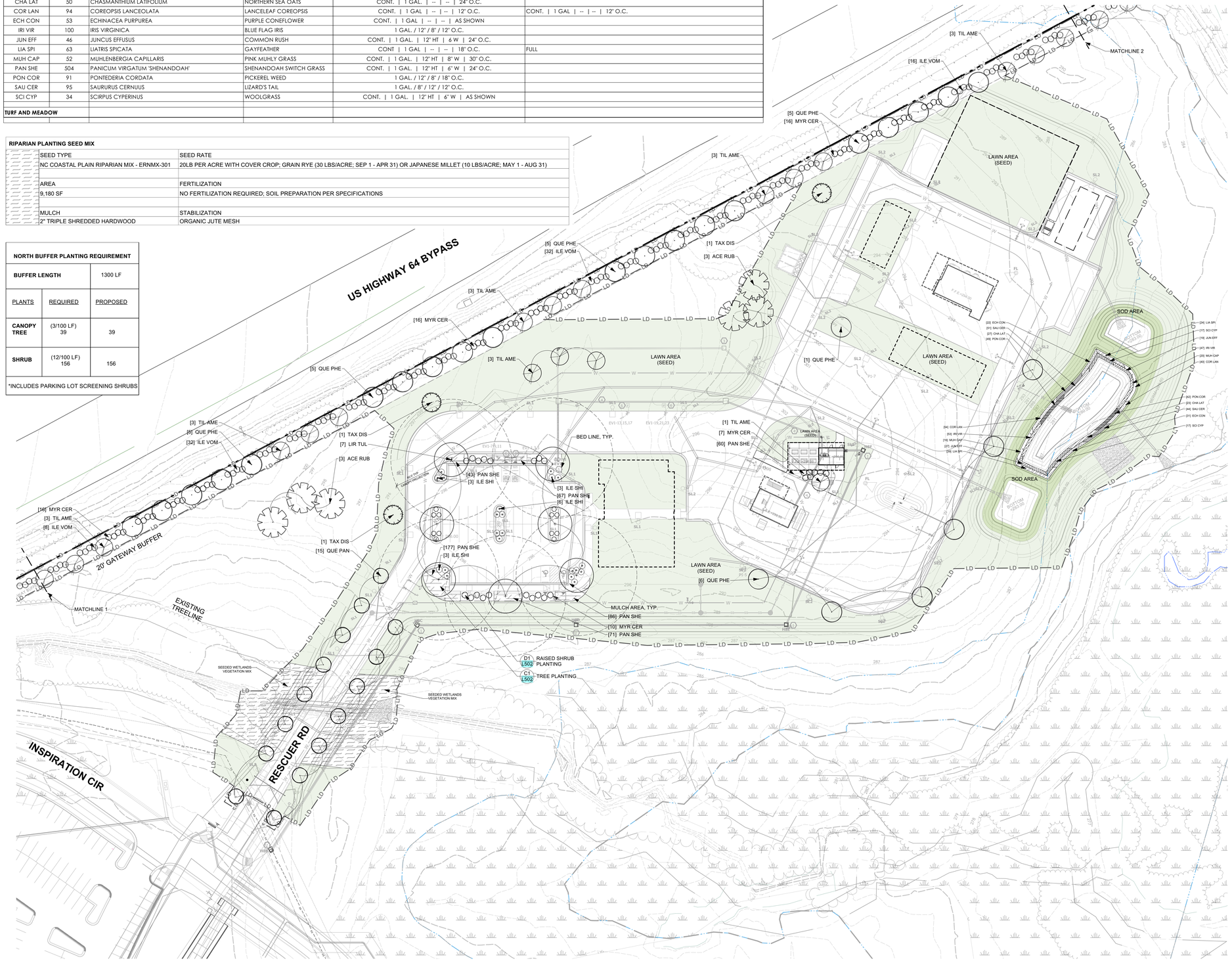
RIPARIAN PLANTING SEED MIX

SEED TYPE	SEED RATE
NC COASTAL PLAIN RIPARIAN MIX - ERNMX-301	20LB PER ACRE WITH COVER CROP; GRAIN RYE (30 LBS/ACRE; SEP 1 - APR 31) OR JAPANESE MILLET (10 LBS/ACRE; MAY 1 - AUG 31)
AREA	FERTILIZATION
9,180 SF	NO FERTILIZATION REQUIRED; SOIL PREPARATION PER SPECIFICATIONS
MULCH	STABILIZATION
2" TRIPLE SHREDDED HARDWOOD	ORGANIC JUTE MESH

NORTH BUFFER PLANTING REQUIREMENT		
BUFFER LENGTH		1300 LF
PLANTS	REQUIRED	PROPOSED
CANOPY TREE	(3/100 LF) 39	39
SHRUB	(12/100 LF) 156	156
*INCLUDES PARKING LOT SCREENING SHRUBS		







PLANTING NOTES:

1. EXISTING UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD PRIOR TO BEGINNING WORK. IDENTIFY LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING AROUND EXISTING UTILITIES TO REMAIN.

2. PLANT LIST IS PROVIDED FOR CONVENIENCE ONLY. IN THE CASE OF DISCREPANCIES BETWEEN THE PLAN AND PLANT LIST QUANTITIES, THE PLAN SHALL TAKE PRECEDENCE.

3. AFTER THE SITE IS STABILIZED AND FREE OF SEDIMENTATION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES, SILT, RIP RAP AND TEMPORARY STONE STAGING AREAS FOR REPLACEMENT WITH PLANTING SOIL. PROVIDE PLANTING ACCORDING TO THE LANDSCAPE PLAN.

4. TEMPORARY EROSION CONTROL SEED MUST BE FULLY REMOVED PRIOR TO PREPARATION OF PERMANENT SEED, SOD OR LANDSCAPE BEDS.

5. UNLESS OTHERWISE NOTED IN THE PLANT LIST, OWNER SHALL OBTAIN AND INSTALL ONLY PLANT MATERIAL THAT IS GROWN ON ITS OWN ROOT - GRAFTED OR BUDDED PLANT MATERIAL WILL BE REJECTED.

6. ALL TREES SHALL BE OBTAINED FROM THE NURSERY WITH EXPOSED ROOT CROWNS. B&B MATERIAL DELIVERED TO SITE WITH BURIED OR RECENTLY BURIED ROOT CROWNS WILL BE REJECTED.

7. OWNER WILL NOTIFY LANDSCAPE ARCHITECT OF PLANT SUBSTITUTIONS IN ANY MEASUREMENT OR SPECIES INDICATED. SEE SPECIFICATIONS FOR FULL NOTIFICATION REQUIREMENTS.

8. CONTRACTOR SHALL STAKE ALL PLANT LOCATIONS IN THE FIELD. OBTAIN APPROVAL FROM LANDSCAPE ARCHITECT PRIOR TO STARTING PLANT INSTALLATIONS

8. DO NOT PLANT IN STORM WATER CONVEYANCE SWALES OR PROVIDE FINE GRADING THAT DISRUPTS FLOW OR CHANGES LONGITUDINAL SLOPES.

9. PLANT THE OUTER EDGES OF EACH PLANTING GROUP FOLLOWING THE BED OUTLINE ACCORDING TO THE PLAN. ONCE A SATISFACTORY MATCHED OUTER SHAPE IS OBTAINED, FILL THE CENTER OF EACH AREA WITH PLANTS ACCORDING TO THE PLAN AND SPACING NOTES.

10. THE PLANTING LAYOUT WITHIN PLANTING BEDS SHOULD BE SHIFTED TO MINIMIZE CONFLICTS WITH EXISTING TREE ROOTS AND OTHER STRUCTURES.

11. DISTURBED EARTH AREAS BEYOND PROJECT LIMITS THAT ARE DIRECTLY CAUSED BY CONTRACTOR MEANS AND METHODS SHALL BE RESTORED WITH FESCUE SOD UNLESS OTHERWISE NOTED.

12. ALL LANDSCAPING SHALL BE MAINTAINED IN PERPETUITY.

13. ALL HOTBOXES AND OTHER ON GROUND/FREESTANDING MECHANICAL SHALL BE SCREENED WITH VEGETATION PRIOR TO THE ISSUANCE OF CERTIFICATE OF A COMPLIANCE/OCCUPANCY.

PLANTING PROCUREMENT REQUIREMENTS

1. DURING INITIAL CONTRACT BIDDING, LANDSCAPE CONTRACTOR SHALL REVIEW THE PLANT SCHEDULE AND INQUIRE WITH NURSERIES ABOUT AVAILABILITY OF SPECIFIED PLANTS AT THE ANTICIPATED FUTURE TIME OF INSTALLATION TO REASONABLY DETERMINE SUBMITTED BID ADEQUATELY REFLECTS THE PROPOSED PLANTING PLAN. AT THE TIME OF PLANT INSTALLATION, REQUESTS FOR PLANT SUBSTITIONS DUE TO UNAVAILABILITY WILL NOT BE ACCEPTED WHEN PLANTS ARE DETERMINED TO BE AVAILABLE FROM OTHER REPUTABLE NURSERY SOURCES. NURSERY SOURCES SHALL NOT BE LIMITED TO THE LOCAL VICINITY OF THE PROJECT.
2. LANDSCAPE CONTRACTOR IS REQUIRED TO COORDINATE WITH GENERAL CONTRACTOR ALL ANTICIPATED PROJECT SCHEDULING REQUIREMENTS FOR THE LANDSCAPE TO ENSURE ADEQUATE TIME IS GIVEN FOR LANDSCAPE RELATED SUBMITTALS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
3. LANDSCAPE CONTRACTOR SHALL SOURCE ALL PLANT MATERIAL EARLY IN THE CONSTRUCTION PROCESS TO ALLOW ADEQUATE TIME FOR PLANT PRE-APPROVAL PROCEDURES, INCLUDING ANY SUBSTITUTION REQUESTS DUE TO SPECIFICATION ALLOWED REASONS.
4. SEE SPECIFICTIONS FOR PLANT PRE-APPROVAL REQUIREMENTS INCLUDING SUBMISSION OF NURSERY STOCK PHOTOS VERIFYING PLANTS TO BE USED ON THE PROJECT MEET SPECIFICATION REQUIREMENTS IN SIZE, SHAPE, AND FORM. ALL SUBMITTAL PHOTOS SHALL ONLY BE ACCEPTABLE IF PHOTOS REPRESENT THE ACTUAL NURSERY AND NURSERY STOCK INTENDED TO BE USED ON THE PROJECT.
5. REFER TO PLANTING NOTES AND SPECIFICATIONS FOR FULL REQUIREMENTS RELATED TO SUBSTITUTIONS. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ENVIRONMENTAL CONDITIONS OR PLANT AVAILABILITY ISSUES IN WRITING AND PROPOSING SUBSTITUTIONS IN WRITING FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT.
6. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DELIVERING HEALTHY PLANT MATERIAL SATISFYING ALL SPECIFICATION REQUIREMENTS. OWNER SHALL NOT BE FINANCIALLY RESPONSIBLE FOR ANY REJECTED PLANT MATERIAL NOT MEETING PROJECT SPECIFICATIONS.

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SAMET C-078 LANE SURFACE 678
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01/10/2025
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ISSUE FOR BID
SHEET
PLANTING PLAN

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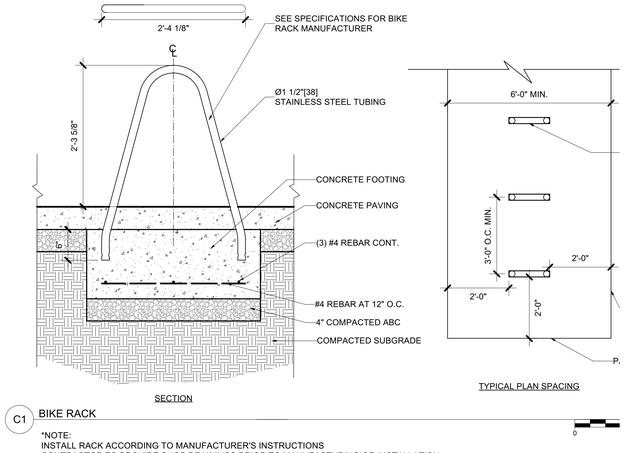


SECTION

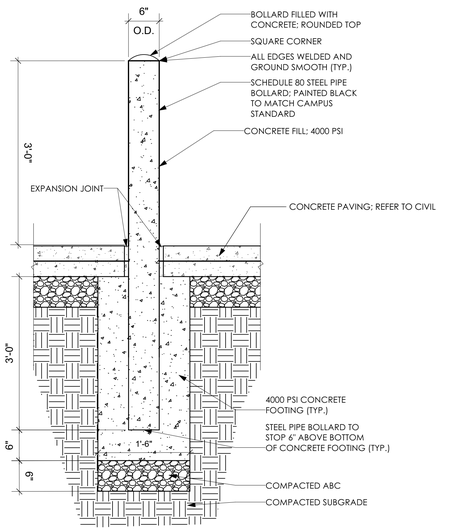
TYPICAL PLAN SPACING

C1 BIKE RACK

0

*NOTE:
INSTALL RACK ACCORDING TO MANUFACTURER'S INSTRUCTIONS
CONTRACTOR TO PROVIDE SHOP DRAWINGS PRIOR TO MANUFACTURING OR INSTALLATION

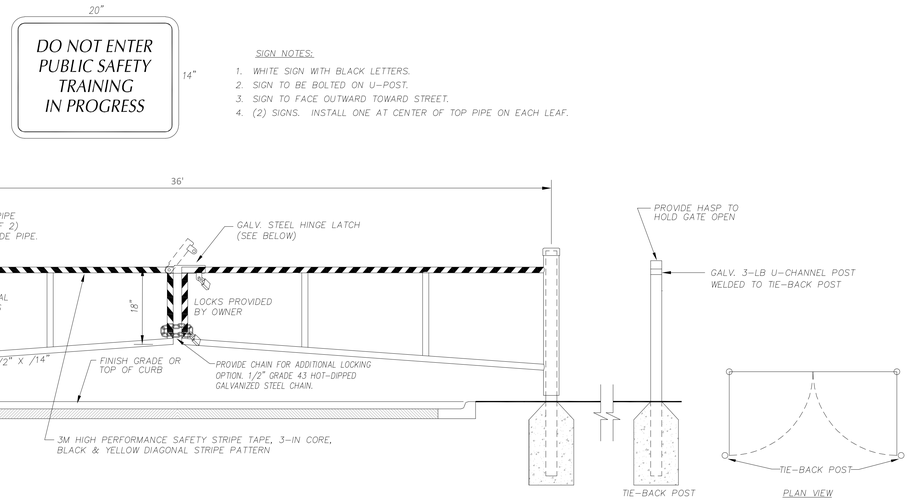
MANUFACTURER SHALL SUBMIT PRODUCT FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.



A1 PAINTED STEEL BOLLARD

0 1' 2'

* CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR REVIEW & APPROVAL PRIOR TO FABRICATION

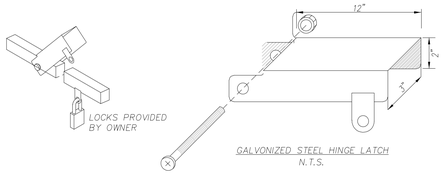


SIGN NOTES:

1. WHITE SIGN WITH BLACK LETTERS.
2. SIGN TO BE BOLTED ON U-POST.
3. SIGN TO FACE OUTWARD TOWARD STREET.
4. (2) SIGNS. INSTALL ONE AT CENTER OF TOP PIPE ON EACH LEAF.

NOTES:

1. ALL STEEL SHALL BE HOT-DIPPED GALVANIZED
2. SUBMIT SHOP DRAWING FOR REVIEW AND APPROVAL PRIOR TO FABRICATION AND ASSEMBLY.
3. ENSURE GATE LEAFS ARE PROPERLY SPACED SO LOCKING FLANGES ON HINGE LATCH ASSEMBLY ALIGN.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE REQUIRED GATE LENGTHS BASED ON EXISTING CONDITIONS.



GALVONIZED STEEL HINGE LATCH
N.T.S.

PAINTING SPECIFICATIONS:

1. MANUFACTURER: TNEMEC COMPANY, INC.; CARY, NC (919-859-3737)
2. SYSTEM TYPE: EPOXY-POLYURETHANE
3. SURFACE PREPARATION: SSPV-SPI AND BRUSH OFF BLAST CLEAN
4. PRIMER: SERIES 27 (FIELD-COATED) TYPOXY OR 69 HI-BUILD EPOXOLINE
5. FINISH PAINT: SERIES 73 ENDURA-SHIELD, SEMI-GLOSS, COLOR = SAFETY YELLOW
6. CONTRACTOR TO COORDINATE WITH LOCAL FIRE MARSHAL TO DETERMINE IF KNOX BOX/KNOX LOCK IS REQUIRED. INSTALL AS DIRECTED.

A2 VEHICULAR ENTRANCE GATE

1/2"=1'-0"

0 1' 2' 4'

NOTE: CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION

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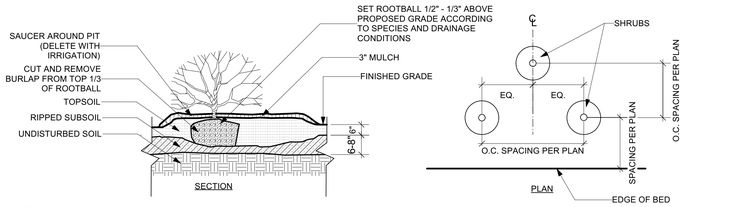
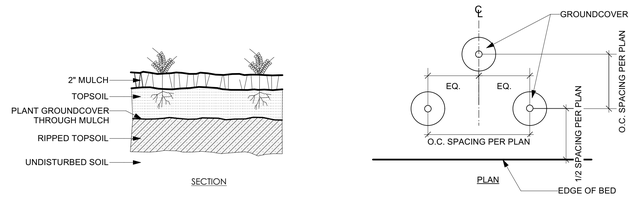


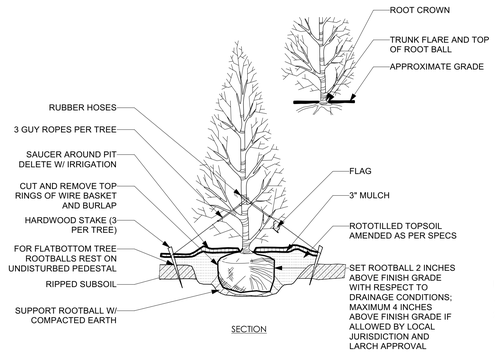
D1 RAISED SHRUB PLANTING

SCALE: NTS



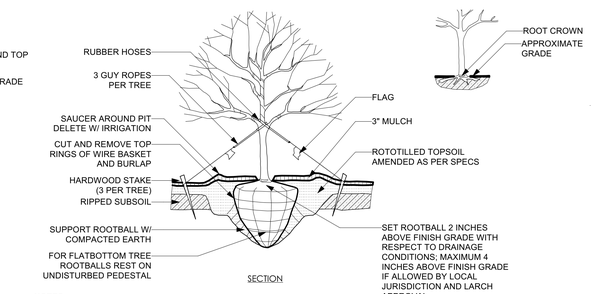
D3 GROUNDCOVER PLANTING

SCALE: NTS



C1 EVERGREEN TREE PLANTING

SCALE: NTS

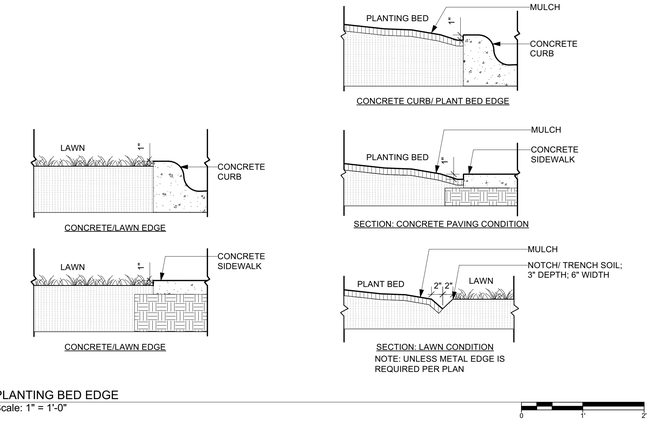


NOTES

1. CONTRACTOR SHALL PROVIDE SAMPLE TREE PLANTING FOR REVIEW AND APPROVAL BY LARCH PRIOR TO INSTALLATION
2. PER SPECIFICATIONS, CONTRACTOR SHALL NOTIFY LARCH IN WRITING OF ENVIRONMENTAL OR DETRIMENTAL SITE CONDITIONS AFFECTING THE SURVIVAL OF PROPOSED PLANTING MATERIAL PRIOR TO THE INSTALLATION OF PLANT MATERIAL, PROCEEDING WITH PLANTING INSTALLATIONS AT THE DETRIMENT OF PLANTING SURVIVABILITY WITHOUT NOTIFYING LARCH OF HARMFUL SITE CONDITIONS MAY RESULT IN REJECTION OF PLANT MATERIAL AT THE DISCRETION OF LARCH. CONTRACTOR SHALL REPLACE ANY REJECTIONS AT NO COST TO OWNER

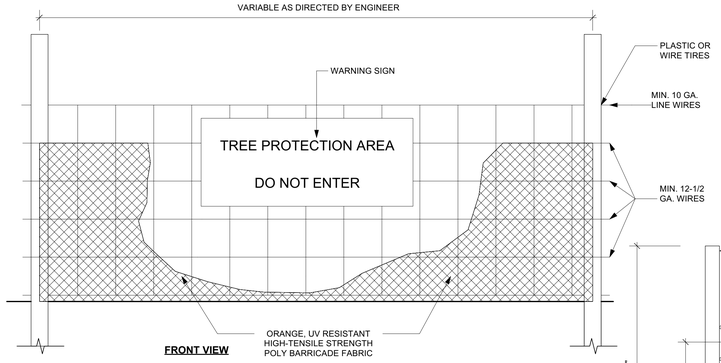
C2 RAISED TREE PLANTING

SCALE: NTS



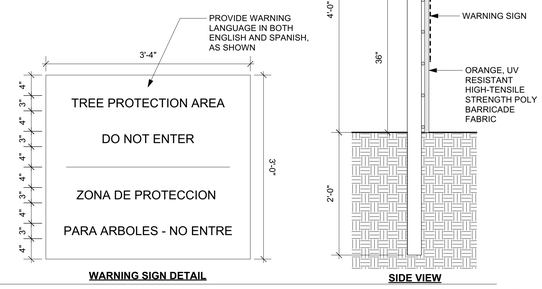
C4 PLANTING BED EDGE

Scale: 1" = 1'-0"



NOTES

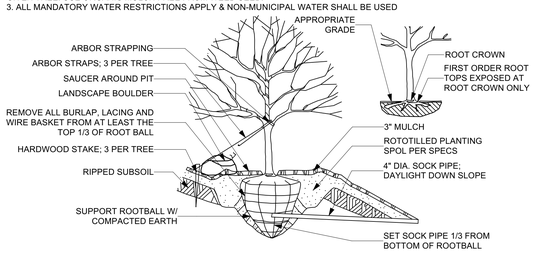
1. TREE PROTECTION FENCING MUST BE INSTALLED AT A MINIMUM RADIUS OF THE CRITICAL ROOT ZONE. MINIMUM RADIUS (FT) = DBH (IN)x1.25
2. THE TREE PROTECTION FENCING MUST REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNLESS OTHERWISE APPROVED BY URBAN FORESTRY STAFF
3. APPROVED IMPACT PROTECTION DEVICES MUST BE REMOVED AFTER CONSTRUCTION WHEN APPLICABLE.
4. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER FOR THE REMAINDER
5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTED AREA
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. ADDITIONAL SIGNS MAY BE REQUIRED BY DURHAM, NC. BASED ON ACTUAL FIELD CONDITIONS.
8. SIGNS ARE TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL WITH LETTERS A MINIMUM OF 3" HIGH, CLEARLY LEGIBLE AND SPACED AS SHOWN.



A1 TREE PLANTING PROTECTION FENCE

SCALE: NTS

NOTES:
1. THE ROOT COLLAR SHALL BE APPARENT AT SURFACE OF BALL, OR CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING EXCESS SOIL FROM THE TOP OF THE ROOTBALL IN ORDER TO ESTABLISH THE CORRECT GRADE. TREES SHALL BE PLANTED AT OR NO MORE THAN 2" ABOVE GRADE.
2. MULCH SHALL NOT EXCEED 4 INCHES IN DEPTH AND WILL REMAIN A MINIMUM OF 6" AWAY FROM THE BASE OF ANY GIVEN TREE. USE ORGANIC MULCH FREE FROM WEED SEED.
3. ALL MANDATORY WATER RESTRICTIONS APPLY & NON-MUNICIPAL WATER SHALL BE USED



B3 TREE PLANTING ON SLOPE

SCALE: NTS

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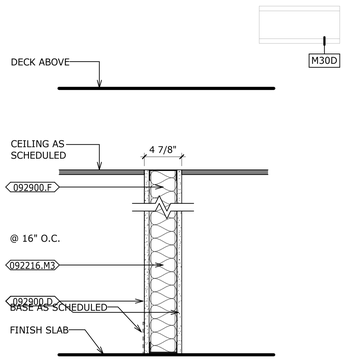
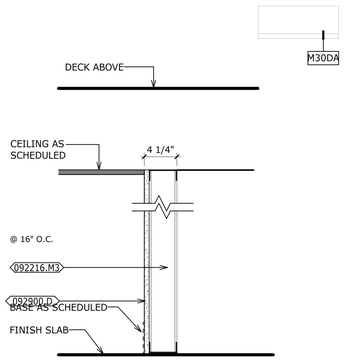
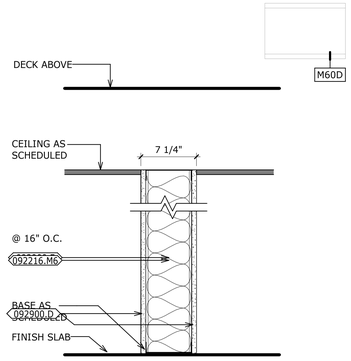
INTERIOR ASSEMBLIES - WALLS



M30D — 3-5/8" METAL STUDS TO DECK, 5/8" GLASS-MAT BACKING BOARD BOTH SIDES

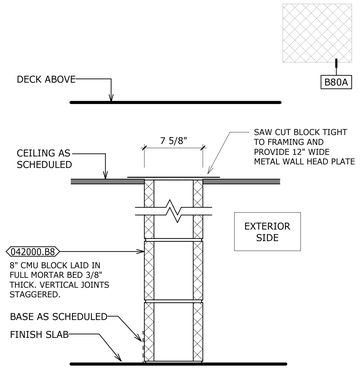


M30DA — 3-5/8" METAL STUDS TO DECK, 5/8" GLASS-MAT BACKING BOARD ONE SIDE



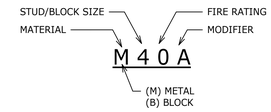
M60D — 6" METAL STUDS TO DECK, 5/8" GLASS-MAT BACKING BOARD BOTH SIDES

EXTERIOR WALL ASSEMBLY



B80A — 8" CMU, WALL TO EXTEND TO UNDERSIDE OF DECK, U.N.O.

INTERIOR PARTITION NAMING LEGEND



EXTERIOR WALL ASSEMBLIES NAMING LEGEND

BACK UP MATERIALS
(B) BLOCK
(M) CFMF

EXTERIOR CLADDING
(B) BLOCK

KEYNOTES

042000.B8	CONCRETE MASONRY UNITS, 8x8x16 NOMINAL, SEE STRUCTURAL
092216.M3	STEEL STUD FRAMING, 3 5/8"
092216.M6	STEEL STUD FRAMING, 6"
092900.D	GLASS-MAT BACKING BOARD, 5/8"
092900.F	SOUND ATTENUATION BLANKET

PARTITION NOTES:

1. U.N.O. ALL INTERIOR PARTITIONS TO BE TYPE '**M30A**'; SEE PLANS FOR PARTITION TYPES.
2. ALL RATED WALL ARE TO BE STENCIL PAINTED IN RED WITH THE APPLICABLE RATING NOTED, PER PLANS. LETTERS TO BE 6" HIGH. STENCILS TO BE 12" ABOVE CEILING AND SPACED AT 48" O.C. MAX. BOTH SIDES OF WALL. EXAMPLE:

   1-HR WALL
   SEAL ALL PENETRATIONS

   ALL SMOKE-RESISTIVE WALLS TO HAVE:

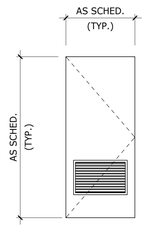
   SMOKE RESISTIVE CONSTRUCTION
   SEAL ALL PENETRATIONS

3. COORDINATE ADJACENT WALLS OF DIFFERENT TYPES SO THAT GYPSUM BOARD WALL FACES ALIGN.
4. SEAL PERIMETER OF ALL WALLS, TYP.
5. NEW WALLS NOTED TO BE "SMOKE-TIGHT CONSTRUCTION WALLS" SHALL BE FULLY SEALED AGAINST PASSAGE OF SMOKE, ALL AREAS AND PENETRATIONS, BOTH SIDES FLOOR TO DECK ABOVE.
6. PROVIDE FIRE SEALANT AT BASE OF ALL WALLS REQUIRING FIRE RATING.
7. USE 5/8" CEMENTITIOUS TILE BACKING SHEETS IN LIEU OF 5/8" GWB BEHIND ALL WALL TILE, TYPICAL.
8. SEE FINISH SCHEDULE AND FINISH PLANS FOR WALL TILE AND WALL FINISHES.
9. ALL RATED WALLS TO BE CONTINUOUS SYSTEMS. CONTRACTOR TO COORDINATE CORRECT SEQUENCING OF RATED WALL CONSTRUCTION.
10. APC CEILING INSTALLATION MUST CONFORM TO **ASTM C636** AND **E580** TO MEET **SEISMIC DESIGN CATEGORY C**. ALL CEILINGS SHOWN IN PARTITION SCHEDULE ARE GRAPHIC IN NATURE. COORDINATE WITH MANUFACTURER'S DETAILS.
11. INTERIOR WALLS AND PARTITION FRAMING SHALL EXTEND OR BE BRACED TO THE DECK ABOVE WITH 45-DEGREE KICKERS AT A MINIMUM OF 4'-0" O.C. TO PROVIDE ADEQUATE STRENGTH AND STIFFNESS TO RESIST THE LOADS TO WHICH THEY ARE TO BE SUBJECTED BUT NO LESS THAN A HORIZ. LOAD OF 5 PSF.
12. PROVIDE CONTINUOUS DEFLECTION TRACK AT ALL PARTITIONS THAT EXTEND TO UNDERSIDE OF DECKING OR STRUCTURE ABOVE.

DOOR SCHEDULE

DOOR #	ROOM	DOOR						FRAME			THR'LD	HARDWARE SET	COMMENTS
		ELEV.	WIDTH	HEIGHT	THICK	MAT'L	FINISH	ELEV.	MAT'L	FINISH			
101	SHOWER ROOM	L	3' - 0"	7' - 0"	1 3/4"	HM	PT	I	HM	PT	ALUM	004	SEE 4 & 7/A601 FOR DOOR DETAILS
102	SHOWER ROOM	L	3' - 0"	7' - 0"	1 3/4"	HM	PT	I	HM	PT	ALUM	004	SEE 4 & 7/A601 FOR DOOR DETAILS
103	TOILET ROOM	L	3' - 0"	7' - 0"	1 3/4"	HM	PT	I	HM	PT	ALUM	004	SEE 4 & 7/A601 FOR DOOR DETAILS
104	UTILITY ROOM	L	3' - 0"	7' - 0"	1 3/4"	HM	PT	I	HM	PT	ALUM	005	SEE 4 & 7/A601 FOR DOOR DETAILS
105	ELEC/ IT	L	3' - 0"	7' - 0"	1 3/4"	HM	PT	I	HM	PT	ALUM	005	SEE 4 & 7/A601 FOR DOOR DETAILS

DOOR ELEVATIONS



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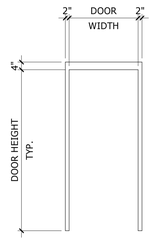
FRAME ELEVATIONS



I

DOOR & FRAME NOTES

1. SEE DETAILS FOR HEAD, JAMB, AND THRESHOLD CONDITIONS AT DOORS.
2. ALL HOLLOW METAL FRAMES TO BE 2" WIDE FACE FRAME, U.N.O.
3. AT RATED DOORS WITH GLAZING, PROVIDE FIRE-RATED IMPACT-SAFETY GLAZING IN ACCORDANCE WITH REQUIRED RATING; SEE SPECIFICATIONS.
4. ALL GLAZING TO BE TEMPERED SAFETY GLAZING, U.N.O.
5. ALL FRAMES AT MASONRY WALLS 6" DEEP, TYPICAL, U.N.O.
6. EXTERIOR DOORS ARE TO BE RECESSED 1-1/2" FROM FACE OF EXTERIOR MASONRY, TYP. U.N.O.
7. VERIFY FRAME DEPTH AT ALL WALL CONDITIONS.

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JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **WALL, DOOR, & LOUVER TYPES**

A001

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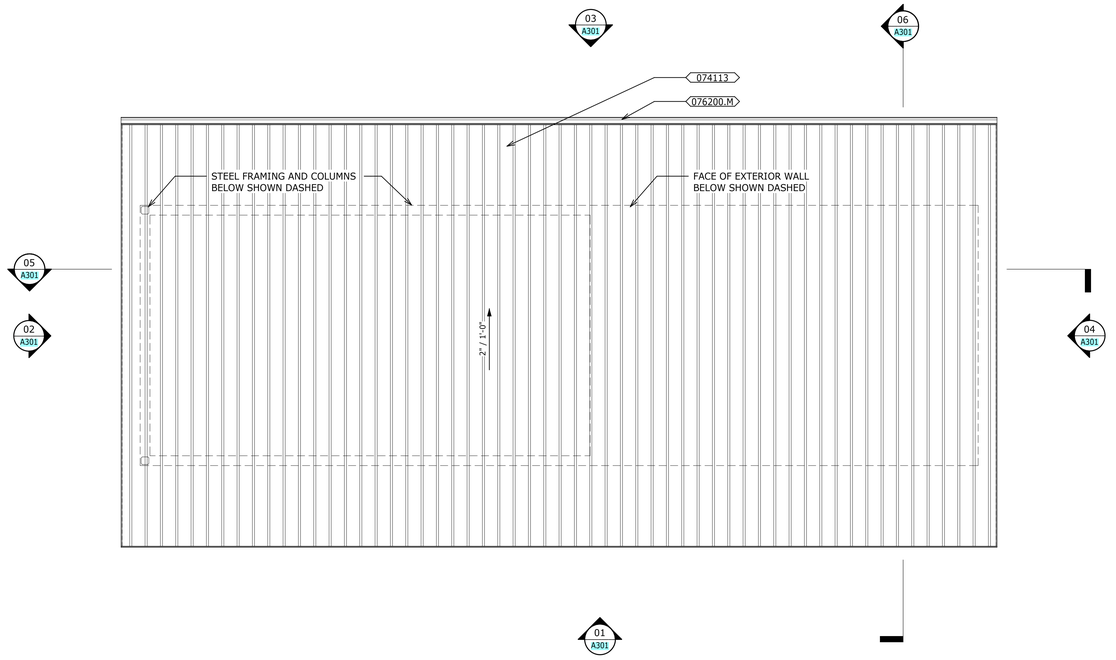
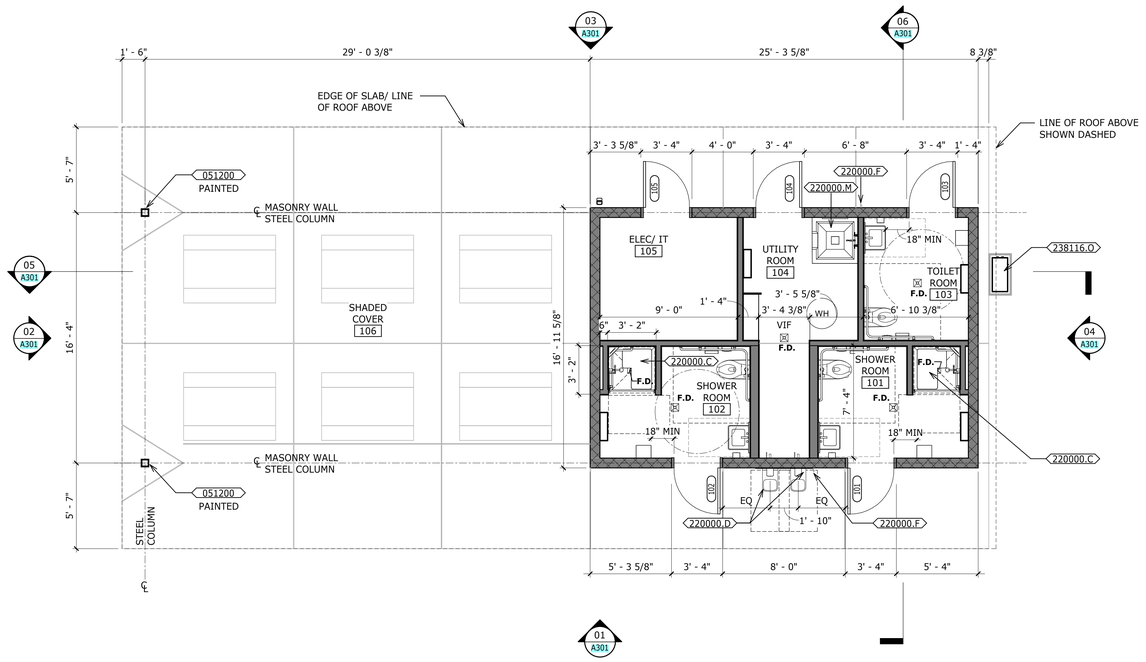


N
01 A111 ROOF PLAN - RESTROOM/SHADE STRUCTURE
1/4" = 1'-0"



N
02 A111 FLOOR PLAN - RESTROOM/SHADE STRUCTURE
1/4" = 1'-0"

GRAPHIC SCALE: 1/4" = 1' - 0"

0' 2' 4' 8' 16'

KEYNOTES

051200	STRUCTURAL STEEL FRAMING, SEE STRUCTURAL
074113	STANDING SEAM METAL ROOF SYSTEM
076200.M	PREFINISHED HANGING GUTTER
220000.C	ACCESSIBLE SHOWER STALL & ACCESSORIES.-SLOPE STALL FLOOR TO DRAIN AND FINISH WITH EPOXY PAINT SYSTEM; SEE PLUMBING
220000.D	WATER COOLER; SEE PLUMBING
220000.F	FREEZE-PROOF HOSE BIBB; SEE PLUMBING
220000.M	MOP SINK 36"X36"; SEE PLUMBING
238116.O	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT; SEE MECHANICAL

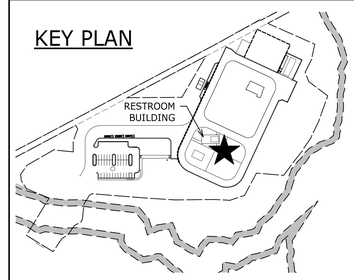
PLAN LEGEND

NEW WALL CONSTRUCTION

AREA SCHEDULE

RESTROOM/SHADE STRUCTURE (GROSS ENCLOSED): 429 SQ. FT.
ROOF: 1,722 SQ. FT.

KEY PLAN



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PROJECT STATUS
ISSUE FOR BID
SHEET
PLANS - RESTROOM BUILDING

A111

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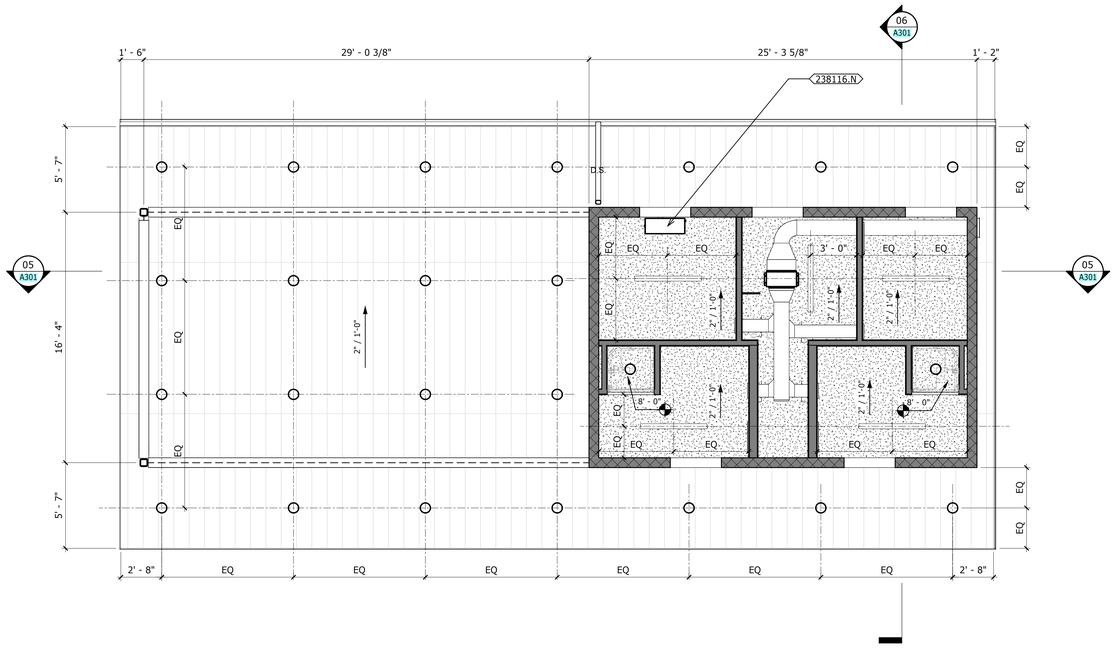
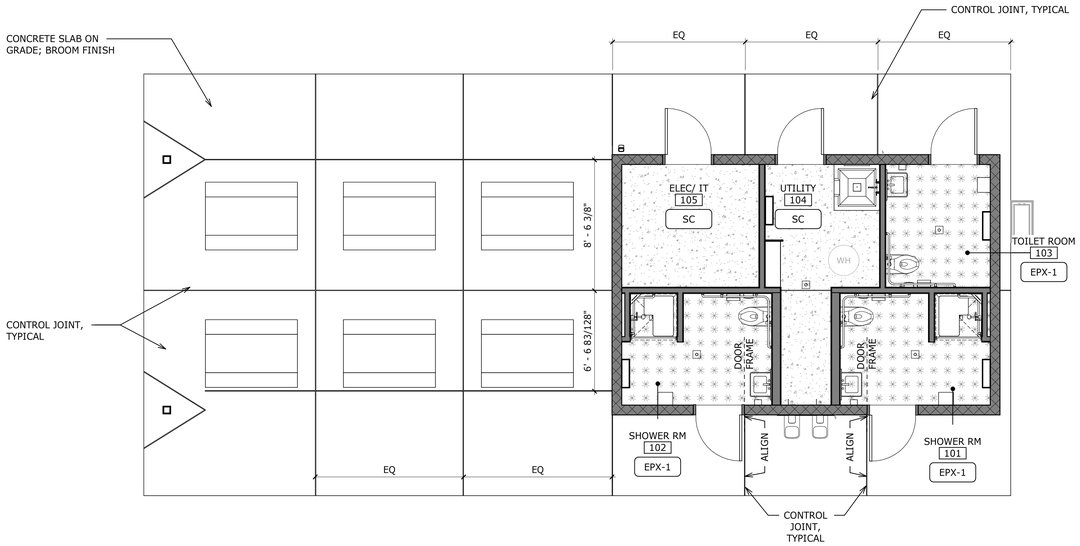


N 01 A112 REFLECTED CEILING PLAN - RESTROOM/SHADE STRUCTURE
1/4" = 1'-0"



N 02 A112 FINISH PLAN - RESTROOM/SHADE STRUCTURE
1/4" = 1'-0"

GRAPHIC SCALE: 1/4" = 1' - 0"
0' 2' 4' 8' 16'

RCP GENERAL NOTES

1. GC IS REQUIRED TO PROVIDE COORDINATION DRAWINGS FOR ALL MEP SYSTEMS OVERHEAD AND IN CEILINGS.
2. SEE MEP SHEETS FOR ADDITIONAL CEILING NOTES.

KEYNOTES

238116.N DUCTLESS SPLIT SYSTEM INDOOR UNIT; SEE MECHANICAL

RCP LEGEND

- NEW GFRB CEILING; PAINT PT-4
- PRE-FINISHED METAL SOFFIT PANEL
- NEW RECESSED LIGHT FIXTURE INSTALLED BETWEEN JOISTS; SEE ELECTRICAL
- NEW LINEAR PENDANT LIGHT FIXTURE; SEE ELECTRICAL

FINISH PLAN GENERAL NOTES

1. ALL MATERIALS TO BE FIELD VERIFIED PRIOR TO ORDERING. DO NOT SCALE FROM DRAWINGS.
2. ALL MATERIALS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS WITH APPROVED ADHESIVES.
3. IF THERE ARE QUESTIONS ABOUT THE DESIGN INTENT OF ANY PATTERN OR MATERIAL TO BE INSTALLED, THE GC SHALL SUBMIT A REQUEST FOR INFORMATION TO THE DESIGNER FOR CLARIFICATION PRIOR TO ORDERING THE MATERIALS.
4. THE GC SHALL PROVIDE ALL FINISHING PIECES AND TRANSITIONS WHERE DIFFERENT FLOORING THICKNESSES MEET, U.N.O. THE GC SHALL SUBMIT A SAMPLE OF THE COLOR/FINISH TO THE DESIGNER FOR APPROVAL.
5. ALL WALLS TO BE FIELD PAINT, PT-1, U.N.O. ALL GYP. BD. PARTITIONS TO RECEIVE A LEVEL 4 FINISH.
6. ALL INTERIOR DOOR FRAMES TO RECEIVE PAINT IN GLOSS FINISH, PT-2, U.N.O.
7. GC TO PROVIDE SHOP DRAWINGS FOR ALL FLOOR PATTERN TYPES FOR APPROVAL, PRIOR TO ORDERING MATERIALS.
8. ALL INTERIOR GYP. BD. PARTITIONS TO RECEIVE RUBBER BASE, RB-1, U.N.O.
9. GENERAL CONTRACTOR TO SUPPLY 10% ADDITIONAL STOCK OF ACOUSTIC CEILING TILE, CARPET TILE AND VINYL TILE TO OWNER.

FINISH PLAN KEY

- **EPX-1** EPOXY FLOOR SYSTEM WITH 45 DEGREE WALL BASE COVE
- **SC** SEALED CONCRETE

FINISH SCHEDULE

ROOM #	ROOM NAME	BASE	FLOOR	WALL	CEILING
101	SHOWER ROOM	EB-1	EPX-1	CMU; GYP	PREFIN
102	SHOWER ROOM	EB-1	EPX-1	CMU; GYP	PREFIN
103	TOILET ROOM	EB-1	EPX-1	CMU; GYP	PREFIN
104	UTILITY ROOM	NONE	SC	CMU; GYP	PREFIN
105	ELEC/ IT	NONE	SC	CMU; GYP	PREFIN
106	SHADED COVER	NONE	SC	CMU	PREFIN
121	BAY 1	NONE	SC	-	OPEN
122	BAY 2	NONE	SC	-	OPEN
123	BAY 3	NONE	SC	CORG. MTL	OPEN

FINISH PLAN LEGEND

- ACCENT PAINT CALLOUT
- WALL TILE

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SHEET **RCP & FINISH PLAN - RESTROOM BUILDING**

A112

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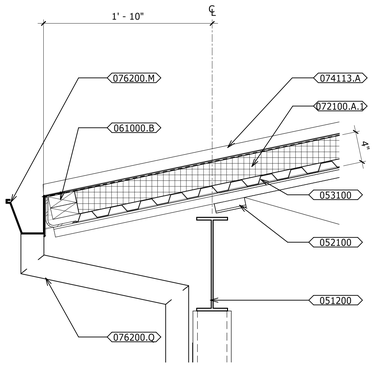
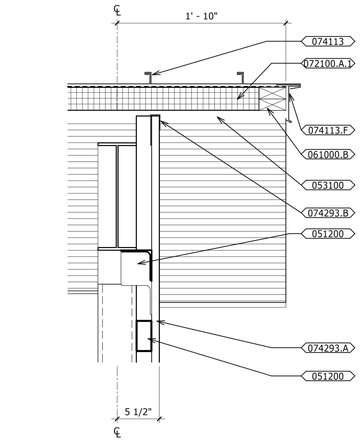
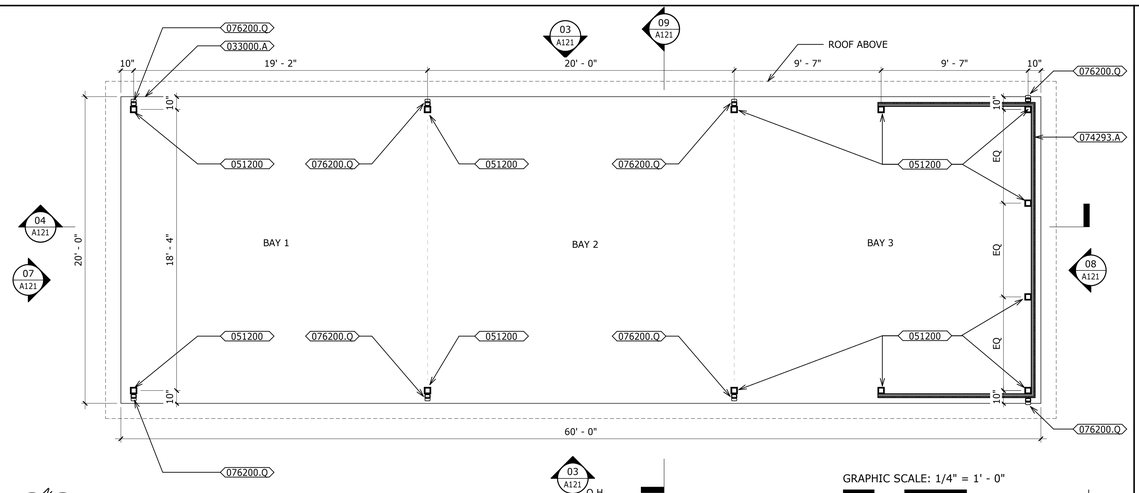


05 A121 ROOF EDGE AT EAVE
1 1/2" = 1'-0"



06 A121 ROOF EDGE AT RAKE
1 1/2" = 1'-0"



01 A121 COVERED STORAGE - FLOOR PLAN
1/4" = 1'-0"

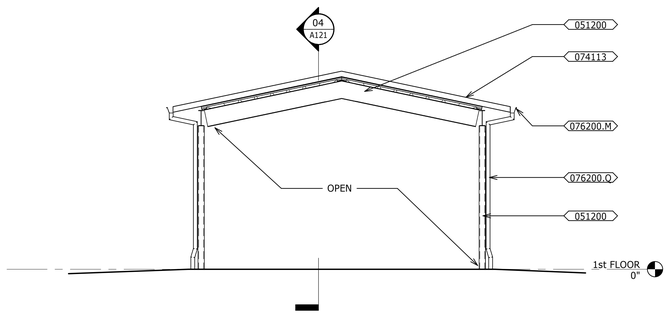
GRAPHIC SCALE: 1/4" = 1' - 0"
0' 2' 4' 8' 16'

KEYNOTES

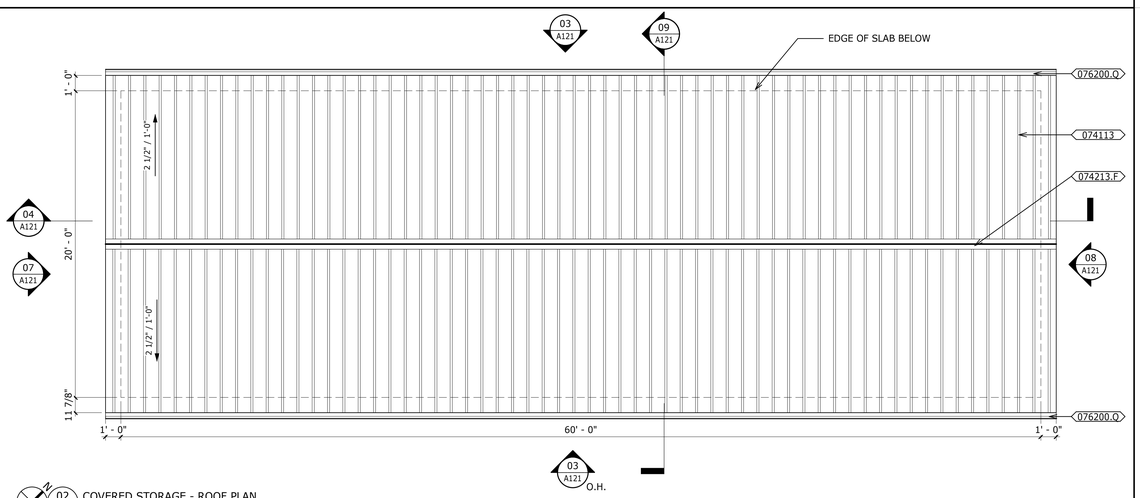
033000	CAST-IN-PLACE CONCRETE
033000.A	CAST-IN-PLACE CONCRETE, SEE STRUCTURAL
051200	STRUCTURAL STEEL FRAMING, SEE STRUCTURAL
052100	STEEL JOIST FRAMING, SEE STRUCTURAL
053100	STEEL DECKING, SEE STRUCTURAL
054000.M2	COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 2 1/2"
061000.B	P.T. WOOD BLOCKING
072100.A.1	EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD (XPS), R-7.5
074113	STANDING SEAM METAL ROOF SYSTEM
074113.A	STANDING SEAM METAL ROOF PANELS
074113.F	PREFINISHED METAL FASCIA WITH DRIP EDGE
074213.B	SUB-FRAMING & FURRING
074213.F	ROOF PANEL METAL RIDGE CAP
074293.A	METAL SOFFIT PANELS
074293.B	METAL SOFFIT PANEL FLASHING & TRIM
076200.M	PREFINISHED HANGING GUTTER
076200.Q	PREFINISHED DOWNSPOUT

PLAN LEGEND

NEW WALL CONSTRUCTION



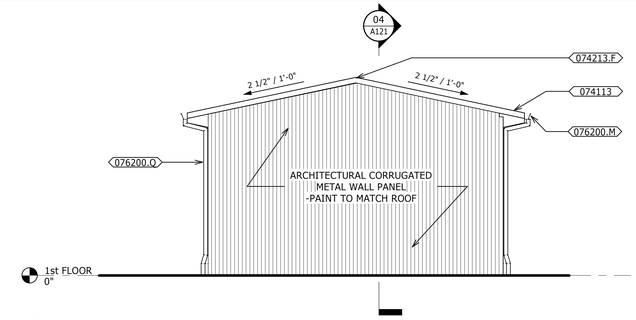
07 A121 COVERED STORAGE - WEST ELEVATION
1/4" = 1'-0"



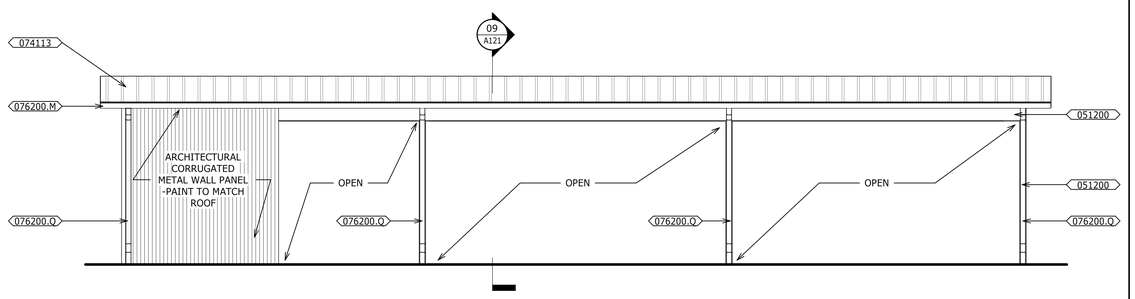
02 A121 COVERED STORAGE - ROOF PLAN
1/4" = 1'-0"

AREA SCHEDULE

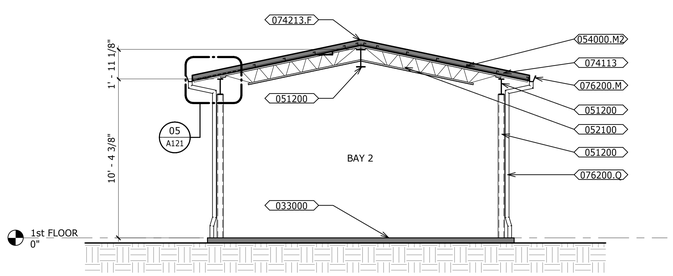
BURN BUILDING STORAGE: 1,200 SQ. FT.
ROOF: 1,393 SQ. FT.



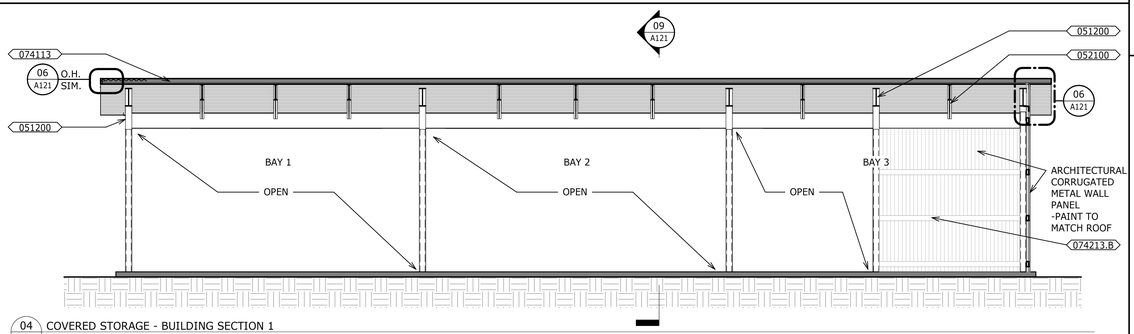
08 A121 COVERED STORAGE - EAST ELEVATION
1/4" = 1'-0"



03 A121 COVERED STORAGE - NORTH ELEVATION
1/4" = 1'-0"

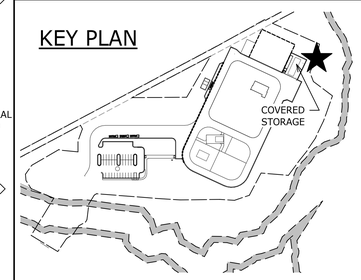


09 A121 COVERED STORAGE - BUILDING SECTION 2
1/4" = 1'-0"



04 A121 COVERED STORAGE - BUILDING SECTION 1
1/4" = 1'-0"

KEY PLAN



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22-086
DATE ISSUED
01/10/2025
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PLANS, ELEVATIONS & SECTIONS - COVERED STORAGE

A121

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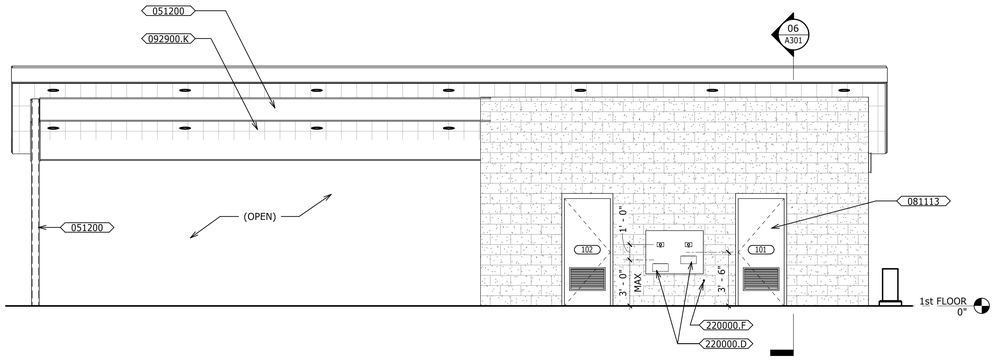
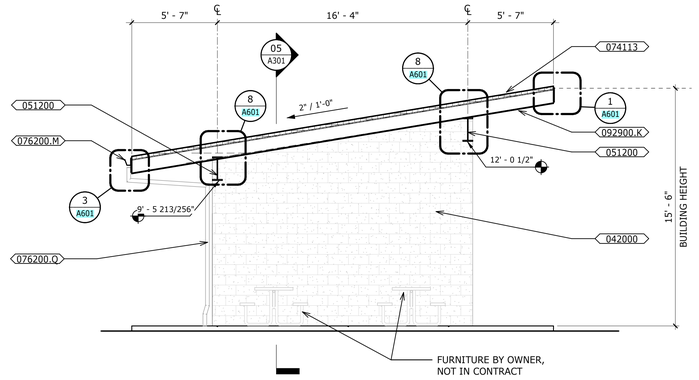


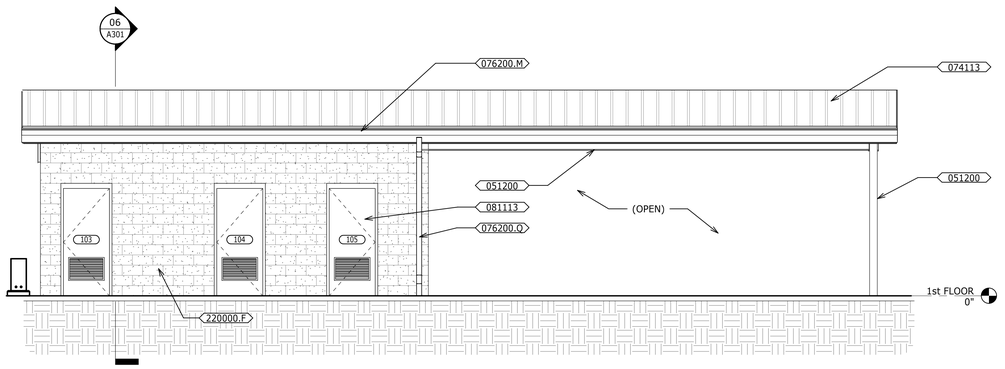
01 A301 ELEVATION - NORTH
1/4" = 1'-0"



02 A301 ELEVATION - EAST
1/4" = 1'-0"

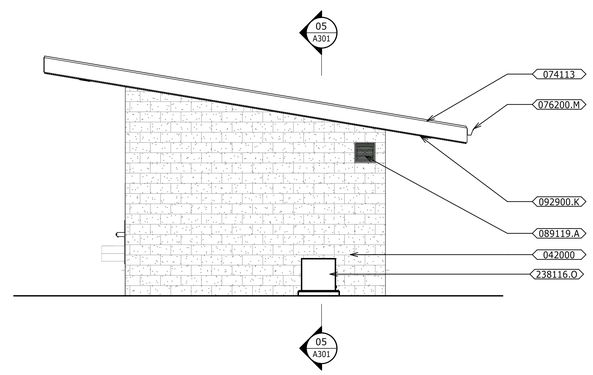
KEYNOTES

042000	UNIT MASONRY
051200	STRUCTURAL STEEL FRAMING, SEE STRUCTURAL
074113	STANDING SEAM METAL ROOF SYSTEM
076200.M	PREFINISHED HANGING GUTTER
076200.Q	PREFINISHED DOWNSPOUT
081113	HOLLOW METAL DOORS AND FRAMES
089119.A	FIXED LOUVER
092900.K	GLASS-MAT CEILING BOARD, 5/8"
102800.07	SOAP DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.16	MIRROR UNIT
220000.D	WATER COOLER; SEE PLUMBING
220000.F	FREEZE-PROOF HOSE BIBB; SEE PLUMBING
233100.1	EXHAUST DUCT; SEE MECHANICAL
233713.1	EXHAUST LOUVER; SEE MECHANICAL
238116.O	DUCTLESS SPLIT SYSTEM OUTDOOR UNIT; SEE MECHANICAL
265000.A	LINEAR PENDANT LIGHT FIXTURE; SEE ELECTRICAL



03 A301 ELEVATION - SOUTH
1/4" = 1'-0"

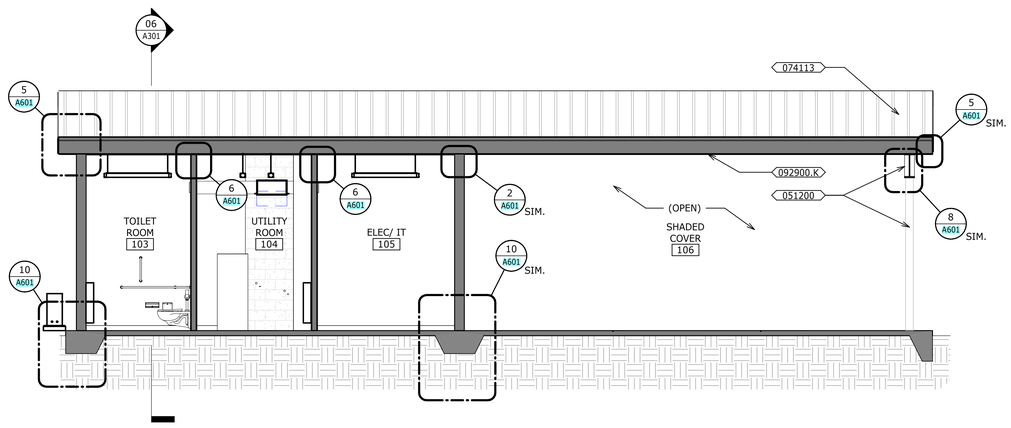
NOTE: SIZE LOUVER TO FIT BLOCK MODULE AS SHOWN



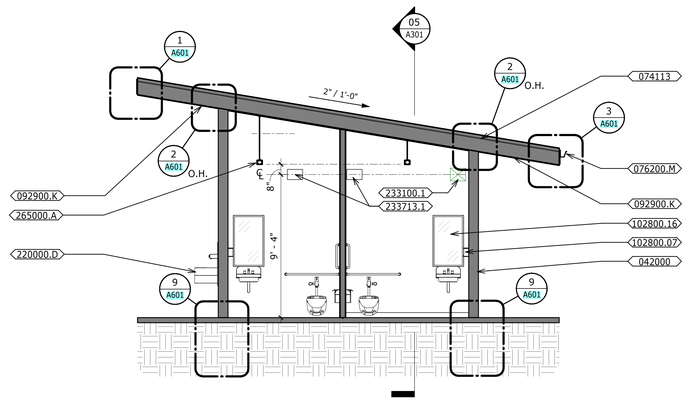
04 A301 ELEVATION - WEST
1/4" = 1'-0"

ELEVATION LEGEND

MASONRY UNIT WALL
COLOR: INTEGRAL DARK GRAY
(CONFIRM SELECTION WITH OWNER)

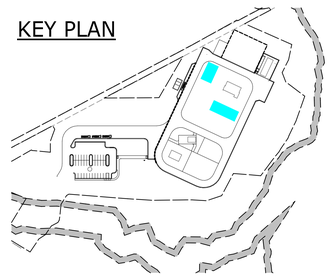


05 A301 EAST-WEST BUILDING SECTION
1/4" = 1'-0"



06 A301 NORTH-SOUTH BUILDING SECTION
1/4" = 1'-0"

KEY PLAN



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Reviewed for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Jan 13, 2025

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JOB NUMBER
22-086
DATE ISSUED
01/10/2025
PROJECT STATUS
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SHEET
BUILDING ELEVATIONS & SECTIONS - RESTROOM BLDG

A301

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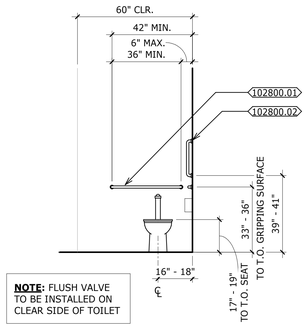
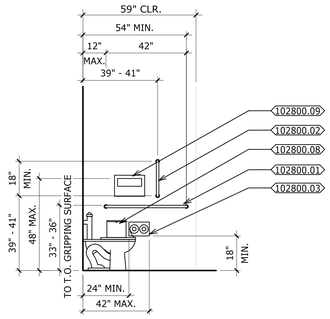


NOTE: FLUSH VALVE TO BE INSTALLED ON CLEAR SIDE OF TOILET

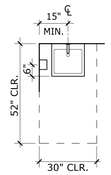
A
ADA TOILET,
FRONT ELEVATION



A
ADA TOILET,
SIDE ELEVATION

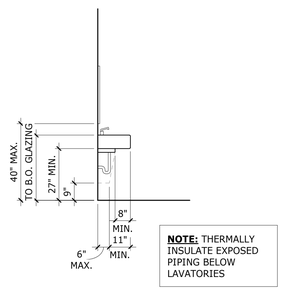
KEYNOTES

102800.01 GRAB BAR 54"x42"
102800.02 GRAB BAR 18"
102800.03 TOILET TISSUE DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.06 WASTE RECEPTACLE
102800.08 SANITARY NAPKIN DISPOSAL; OWNER PROVIDED, OWNER INSTALLED
102800.09 SEAT COVER-DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.12 SHOWER CURTAIN & ROD
102800.13 FOLDING SHOWER SEAT
102800.15 CUSTODIAL MOP AND BROOM HOLDER
102800.17 SHOWER SHELF
102800.18 SHOWER GRAB BAR 18"x36"
220000.S ACCESSIBLE SHOWER HEAD; SEE PLUMBING



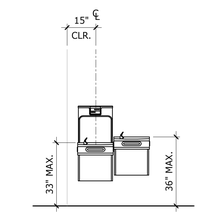
NOTE: CLEARANCE TO BE CENTERED ON FAUCET

H
LAVATORY CLEARANCES,
PLAN

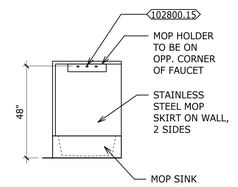


NOTE: THERMALLY INSULATE EXPOSED PIPING BELOW LAVATORIES

LAVATORY,
SIDE ELEVATION



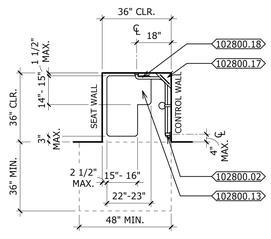
J
BI-LEVEL DRINKING FOUNTAIN WITH BOTTLE FILLER,
FRONT ELEVATION



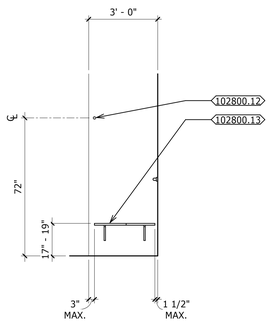
K
MOP SINK,
FRONT ELEVATION

TOILET ACCESSORIES GENERAL NOTES

1. COORDINATE BLOCKING FOR ALL WALL-MOUNTED ACCESSORIES.
2. PROVIDE TOILET ACCESSORIES NOTED AT EACH PLAN LOCATION OF CORRESPONDING TYPICAL KEYED FIXTURE ELEVATION, AND AS NOTED OTHERWISE.
3. ALL ACCESSIBLE DETAILS TO COMPLY WITH CURRENT **NC ACCESSIBILITY CODE**.
4. FOR ALL PLUMBING FIXTURES, SEE PLUMBING.
5. COORDINATE THERMAL INSULATION AT ALL EXPOSED PIPING BELOW SINKS / LAVATORIES.



O
ADA TRANSFER SHOWER,
PLAN VIEW



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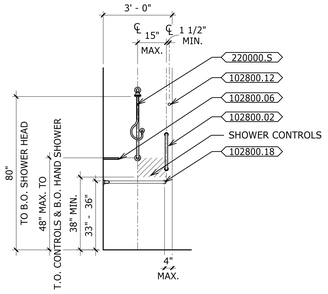
BENCH ELEVATION



O
ADA TRANSFER SHOWER,
CONTROL ELEVATION

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NORTH CAROLINA
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ISSUE FOR BID
SHEET
TYPICAL TOILET AND BATH ACCESSORIES

A510

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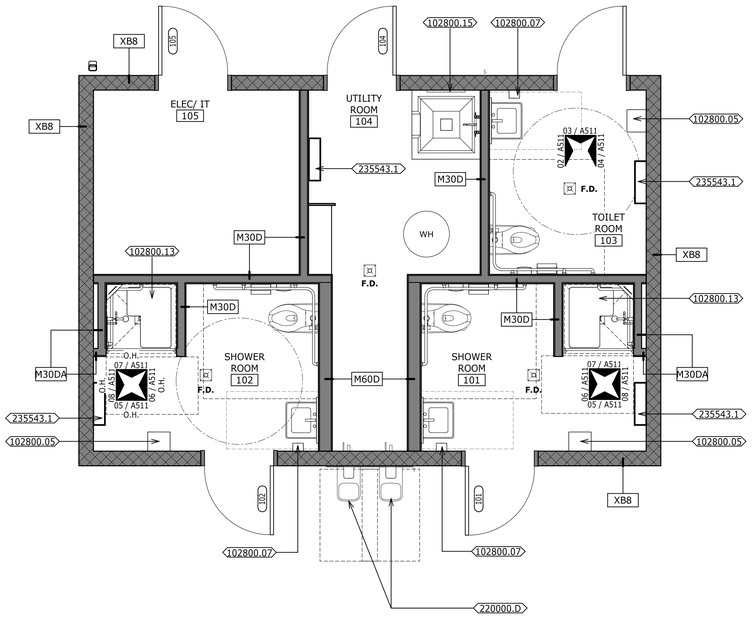
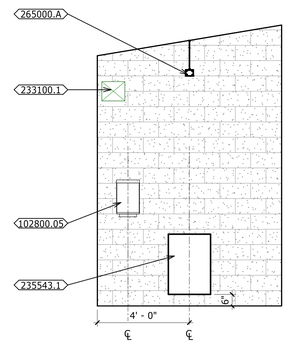
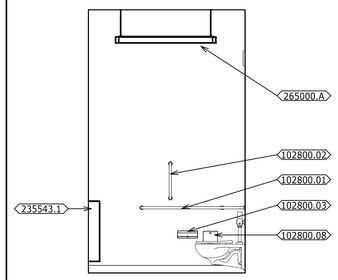


N

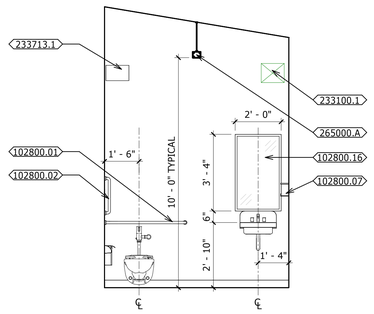
01 A511 ENLARGED RESTROOMS PLAN
3/8" = 1'-0"



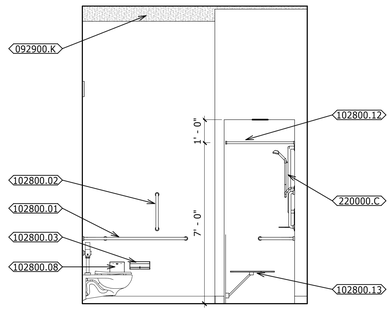
02 A511 102 TOILET ROOM - EAST ELEVATION
3/8" = 1'-0"



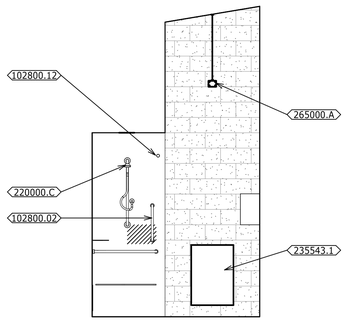
03 A511 102 TOILET ROOM - SOUTH ELEVATION
3/8" = 1'-0"



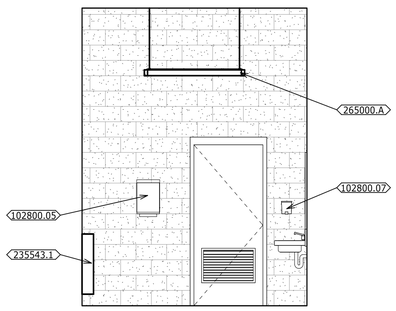
04 A511 102 TOILET ROOM - WEST ELEVATION
3/8" = 1'-0"



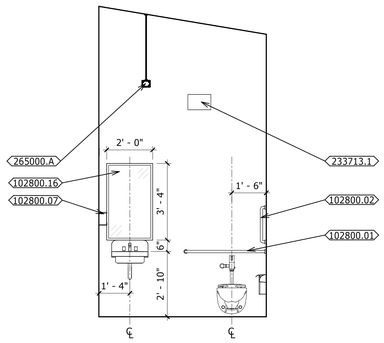
05 A511 103 TOILET ROOM NORTH ELEVATION
3/8" = 1'-0"



06 A511 101 SHOWER ROOM - EAST ELEVATION
3/8" = 1'-0"



07 A511 101 SHOWER ROOM - SOUTH ELEVATION
3/8" = 1'-0"



08 A511 101 SHOWER ROOM - WEST ELEVATION
3/8" = 1'-0"

KEYNOTES

092900.K	GLASS-MAT CEILING BOARD, 5/8"
102800.01	GRAB BAR 54"x42"
102800.02	GRAB BAR 18"
102800.03	TOILET TISSUE DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.05	PAPER TOWEL DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.07	SOAP DISPENSER; OWNER PROVIDED, OWNER INSTALLED
102800.08	SANITARY NAPKIN DISPOSAL; OWNER PROVIDED, OWNER INSTALLED
102800.12	SHOWER CURTAIN & ROD
102800.13	FOLDING SHOWER SEAT
102800.15	CUSTODIAL MOP AND BROOM HOLDER
102800.16	MIRROR UNIT
220000.C	ACCESSIBLE SHOWER STALL & ACCESSORIES.-SLOPE STALL FLOOR TO DRAIN AND FINISH WITH EPOXY PAINT SYSTEM; SEE PLUMBING
220000.D	WATER COOLER; SEE PLUMBING
233100.1	EXHAUST DUCT; SEE MECHANICAL
233713.1	EXHAUST LOUVER; SEE MECHANICAL
235543.1	WALL MOUNTED UNIT HEATER; SEE MECHANICAL
265000.A	LINEAR PENDANT LIGHT FIXTURE; SEE ELECTRICAL

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22-086
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SHEET
TOILET ELEVATIONS - RESTROOM BUILDING

A511

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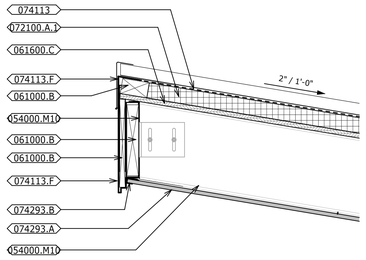
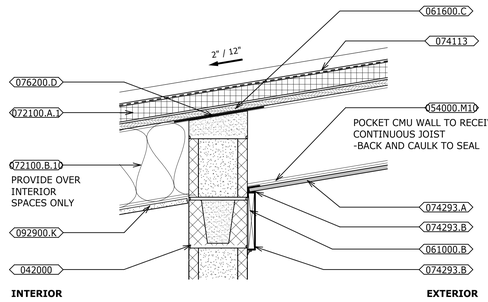
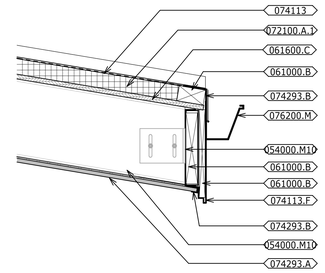


1 A601 DETAIL - ROOF EDGE AT HIGH EAVE
1 1/2" = 1'-0"



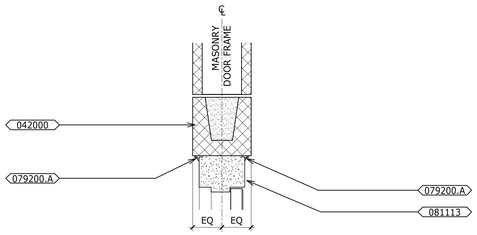
2 A601 DETAIL - ROOF AT OVERHANG
1 1/2" = 1'-0"



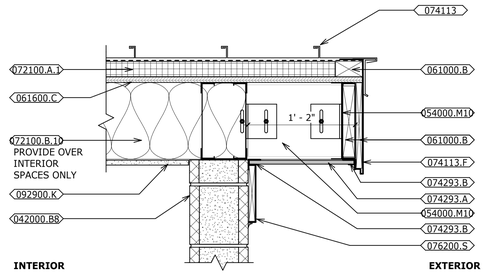
3 A601 DETAIL - ROOF EDGE AT LOW EAVE & GUTTER
1 1/2" = 1'-0"

KEYNOTES

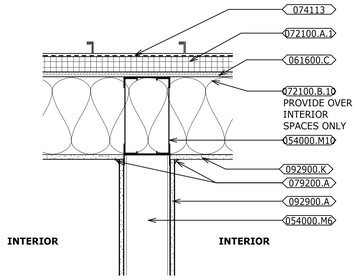
033000.A	CAST-IN-PLACE CONCRETE, SEE STRUCTURAL
033000.B	UNDER SLAB VAPOR BARRIER
042000	UNIT MASONRY
042000.B8	CONCRETE MASONRY UNITS, 8x8x16 NOMINAL, SEE STRUCTURAL
054000.M6	COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 6"
054000.M10	COLD-FORMED METAL FRAMING, C-SHAPED STUDS, 10"
061000.B	P.T. WOOD BLOCKING
061600.C	PLYWOOD SHEATHING
072100.A.1	EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD (XPS), R-7.5
072100.B.10	FIBERGLASS BATT INSULATION, R-35
074113	STANDING SEAM METAL ROOF SYSTEM
074113.F	PREFINISHED METAL FASCIA WITH DRIP EDGE
074293.A	METAL SOFFIT PANELS
074293.B	METAL SOFFIT PANEL FLASHING & TRIM
076200.D	CONTINUOUS HEAD FLASHING
076200.M	PREFINISHED HANGING GUTTER
076200.S	1x8 PREFINISHED METAL WRAPPED EXTERIOR GRADE TRIM
079200.A	JOINT SEALANTS
081113	HOLLOW METAL DOORS AND FRAMES
092900.A	GYPSUM WALLBOARD, 5/8"
092900.K	GLASS-MAT CEILING BOARD, 5/8"



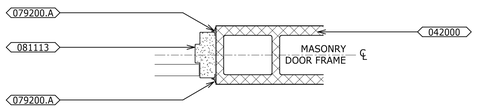
4 A601 DETAIL - EXTERIOR H.M. DOOR HEAD
1 1/2" = 1'-0"



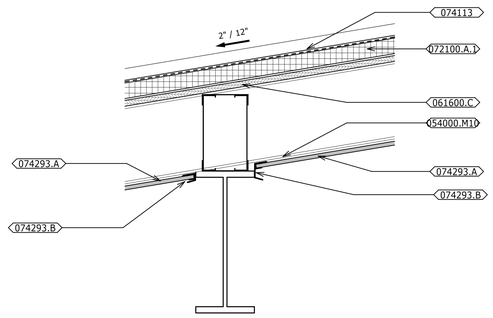
5 A601 DETAIL - ROOF RAKE
1 1/2" = 1'-0"



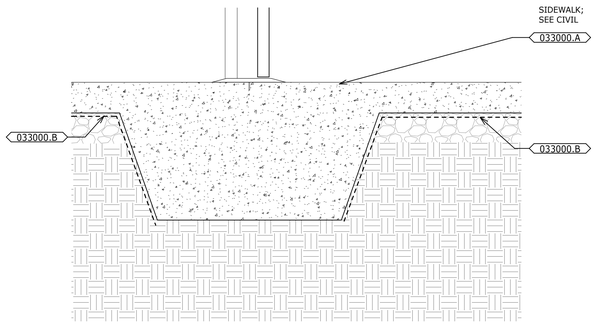
6 A601 DETAIL - ROOF AT INTERIOR WALL
1 1/2" = 1'-0"



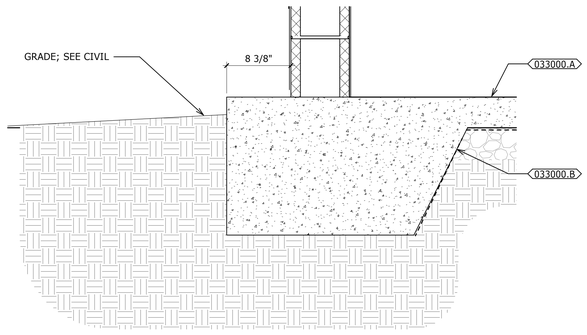
7 A601 DETAIL - EXTERIOR H.M. DOOR JAMB
1 1/2" = 1'-0"



8 A601 SOFFIT AT STEEL BEAM DETAIL
1 1/2" = 1'-0"



9 A601 DETAIL - FOUNDATION AT H.M. DOOR THRESHOLD
1 1/2" = 1'-0"



10 A601 DETAIL - FOUNDATION AT NORTH EXTERIOR WALL
1 1/2" = 1'-0"

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REGISTERED SAMET
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Ryan J. Samet 12/2025

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JOB NUMBER
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DATE ISSUED
01/10/2025
PROJECT STATUS
ISSUE FOR BID
SHEET
RESTROOM BUILDING - DETAILS

A601

Plot Time: 1/15/2025 4:40:03 PM
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GENERAL NOTES:

1. THE STRUCTURAL DRAWINGS MUST BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS, AND THE SPECIFICATIONS. THE CONTRACTOR MUST VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES, AND ADDITIONAL ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.

2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION.

3. THE CONTRACTOR MUST PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE.

4. DISCREPANCIES WITHIN DRAWINGS, BETWEEN THE SPECIFICATIONS AND THE DRAWINGS, OR WITHIN THE SPECIFICATIONS, MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER DURING THE BIDDING PROCESS IN TIME TO PERMIT CLARIFICATION BY ADDENDUM. IF INCONSISTENCIES, DISCREPANCIES OR CONTRADICTIONS IN THE CONTRACT DOCUMENTS ARE DISCOVERED AFTER THE CLOSE OF BIDDING QUESTIONS, THE CONTRACTOR MUST BE DEEMED BY SUBMITTAL OF THEIR BID, TO HAVE BID THE MOST COSTLY AS TO LABOR, MATERIALS, DURATION, SEQUENCE AND METHOD OF CONSTRUCTION TO PROVIDE THE WORK.

5. THESE STRUCTURAL DRAWINGS ARE ISSUED ON THE DATE INDICATED FOR THE PURPOSE DESIGNATED. THESE DRAWINGS MUST NOT BE ISSUED OR RELEASED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN AUTHORIZATION OF THE STRUCTURAL ENGINEER OF RECORD.

6. DETAILS LABELED "TYPICAL DETAIL" WITHIN THE DOCUMENTS APPLY TO SITUATIONS ON THE PROJECT THAT MAY OCCUR THROUGHOUT THE PROJECT. SUCH DETAILS APPLY WHETHER OR NOT THE DETAIL IS SPECIFICALLY REFERENCED AT EACH INSTANCE. NOTIFY ENGINEER IF CLARIFICATIONS ARE REQUIRED REGARDING THE APPLICABILITY OF THE "TYPICAL DETAIL".

7. DESIGN CRITERIA:

CLASSIFICATION OF BUILDING
- RISK CATEGORY ... II

SUPERIMPOSED ROOF DEAD LOADS - UNIFORM:
- 1 1/2" INSULATION AND ROOF MEMBRANE ... 3 PSF
- CEILING ... 2 PSF
- SPRINKLERS ... 3 PSF
- DUCTS, LIGHTS, MISC. MECHANICAL ... 3 PSF

LIVE LOADS - UNIFORM:
- SLAB ON GRADE ... 100 PSF
- ROOF ... 20 PSF

LIVE LOADS - CONCENTRATED:
- FLOOR ... 1,000#
- ROOFS ... 300#

UNLESS OTHERWISE NOTED, CONCENTRATED LOADS ARE APPLIED UNIFORMLY OVER 2'-6" x 2'-6" AREA.

SPECIAL LOADS:
- MAXIMUM CONSTRUCTION LOADS ON STEEL DECK ... 20 PSF

RAIN LOADS:
- RAIN INTENSITY (15 MINUTE) ... 6.2 IN/HR

SNOW LOADS:
- GROUND SNOW LOAD (Pg) ... 15 PSF
- FLAT ROOF LOAD (Pf) ... 15 PSF
- IMPORTANCE FACTOR (Is) ... 1.0
- THERMAL FACTOR (Ct) ... 1.2
- EXPOSURE FACTOR (Ce) ... 1.2

WIND LOADS:
- BASIC WIND SPEED (Vult) ... 115 MPH
- EXPOSURE CATEGORY ... C
- INTERNAL PRESSURE COEFFICIENT ... ±0.18

COMPONENT AND CLADDING PRESSURES:
- WALLS, ZONE 5 (10 SF) ... 39 PSF
- ROOF, ZONE 3 (10 SF) ... 82 PSF

COVERED STORAGE
- VE-W ... 2.5 KIPS
- VN-S ... 10.7 KIPS

RESTROOM AND SHADE STRUCUTRE:
- VE-W ... 3.6 KIPS
- VN-S ... 11.5 KIPS

SEISMIC LOADS:
- SITE CLASSIFICATION ... D
- SEISMIC DESIGN CATEGORY ... B
- IMPORTANCE FACTOR (IE) ... 1.0

SPECTRAL RESPONSE ACCELERATIONS:
- S_S ... 0.147 S_1 ... 0.074
- S_{MS} ... 0.236 S_{M1} ... 0.178
- S_{DS} ... 0.157 S_{D1} ... 0.118

ANALYSIS PROCEDURE ... EQUIVALENT LATERAL FORCE

COVERED STORAGE:
- LATERAL FORCE RESISTING SYSTEM ... STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
- RESPONSE MODIFICATION FACTOR ... 3.0
- SEISMIC RESPONSE COEFFICIENT (Cs) ... 0.052
- ULTIMATE SEISMIC BASE SHEAR ... 2.0K

RESTROOM AND SHADE STRUCUTRE:
- LATERAL FORCE RESISTING SYSTEM ... INTERMEDIATE REINFORCED MASONRY WALLS
- RESPONSE MODIFICATION FACTOR ... 3.5
- SEISMIC RESPONSE COEFFICIENT (Cs) ... 0.045
- ULTIMATE SEISMIC BASE SHEAR ... 5.0K

CONTROLLING LATERAL LOADS:

COVERED STORAGE:
- VE-W ... WIND
- VN-S ... WIND

RESTROOM AND SHADE STRUCTURE:
- VE-W ... SEISMIC
- VN-S ... WIND

FOUNDATION NOTES:

1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING REPORT PREPARED BY NV5 ENGINEERS AND CONSULTANTS, INC., DATED JANUARY 11, 2024.

2. FOUNDATIONS HAVE BEEN DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF 2500 PSF.

3. TOP OF FOOTING ELEVATIONS MUST BE A MINIMUM DEPTH OF 2'-0" BELOW LOWEST ADJACENT SOIL GRADE.

4. PRIOR TO PLACING FOUNDATION CONCRETE, ALL FOUNDATION EXCAVATIONS MUST BE INSPECTED BY THE OWNER'S GEOTECHNICAL TESTING AGENCY TO EXPLORE THE EXTENT OF LOOSE, SOFT, EXPANSIVE, OR OTHERWISE UNSATISFACTORY SOIL MATERIAL AND TO VERIFY DESIGN BEARING PRESSURE. DIRECTION FOR CORRECTIVE ACTION WILL BE PROVIDED BY THE OWNER'S GEOTECHNICAL TESTING AGENCY WHERE UNSATISFACTORY SOILS ARE PRESENT.

5. CONTROL GROUNDWATER AND SURFACE RUNOFF THROUGHOUT THE CONSTRUCTION PROCESS. INUNDATION AND LONG TERM EXPOSURE OF BEARING SURFACES WHICH RESULT IN DETERIORATION OF BEARING MUST BE PREVENTED.

CAST-IN-PLACE CONCRETE NOTES:

1. CONCRETE MUST BE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301 AND 318.

2. CONCRETE MUST BE NORMAL WEIGHT AND MUST OBTAIN 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:
   A. SLAB-ON-GRADE ... 3,500 PSI
   B. CONCRETE NOT OTHERWISE NOTED ... 3,000 PSI

3. REINFORCING MATERIALS MUST BE AS FOLLOWS:
   A. REINFORCING BARS - ASTM A615, GRADE 60, DEFORMED.
   B. WELDED WIRE REINFORCEMENT - ASTM A1064, WELDED STEEL WIRE REINFORCEMENT; PROVIDE SHEET TYPE, ROLL TYPE IS NOT ACCEPTABLE.

4. ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHOR RODS AND WELD PLATES MUST BE ACCURATELY PLACED AND ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.

5. CONCRETE COVER TO REINFORCING STEEL MUST CONFORM TO THE MINIMUM COVER RECOMMENDATIONS IN ACI 318, UNLESS THE DRAWINGS SHOW GREATER COVER REQUIREMENTS.

6. LAP CONTINUOUS REINFORCING STEEL 57 X BAR DIAMETER, TYPICAL UNLESS OTHERWISE NOTED.

CONCRETE MASONRY NOTES:

1. CONCRETE MASONRY MATERIALS AND CONSTRUCTION MUST CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) 530.

2. CONCRETE MASONRY UNITS MUST CONFORM TO ASTM C90 AND MUST BE MADE WITH NORMAL WEIGHT AGGREGATE. MINIMUM NET AREA COMPRESSIVE STRENGTH OF MASONRY UNITS MUST BE 2,000 PSI AT 28 DAYS.

3. COMPRESSIVE STRENGTH OF MASONRY MUST BE DETERMINED BY THE UNIT STRENGTH METHOD AS SET FORTH IN ACI 530.1. THE NET AREA COMPRESSIVE STRENGTH OF MASONRY, f'm, MUST BE 2,000 PSI AT 28 DAYS.

4. MORTAR MUST BE TYPE 'M' OR 'S' AND MUST COMPLY WITH ASTM C270, PROPORTIONS OR PROPERTIES SPECIFICATION.

5. GROUT MUST COMPLY WITH EITHER THE PROPORTIONS OR PROPERTIES SPECIFICATION OF ASTM C476 AND AS FOLLOWS:
   A. PROPORTIONS SPECIFICATION: THIS MIX CANNOT CONTAIN ADMIXTURES. WATER MUST BE ADDED IN THE FIELD IN ORDER TO ACHIEVE A SLUMP OF 8-11 INCHES WHEN PLACED IN THE CONCRETE MASONRY UNITS. MORTAR, PEA-GRAVEL CONCRETE, OR "CHAT" MIXES ARE NOT ACCEPTABLE SUBSTITUTES FOR THE SPECIFIED GROUT.
   B. PROPERTIES SPECIFICATION: THIS MIX MUST BE PROPORTIONED TO OBTAIN A DOCUMENTED 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI, WITH AN 8-11 INCH SLUMP WHEN PLACED IN THE CONCRETE MASONRY UNITS.

6. GROUT MUST COMPLY WITH EITHER THE PROPORTIONS OR PROPERTIES SPECIFICATION OF ASTM C476 AND THIS MIX MUST BE PROPORTIONED TO OBTAIN A DOCUMENTED 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI, WITH AN 8-11 INCH SLUMP WHEN PLACED IN THE CONCRETE MASONRY UNITS.

7. REINFORCING STEEL MUST COMPLY WITH ASTM A615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.

8. ALL BOND BEAMS, REINFORCED CELLS AND CELLS WITH EXPANSION BOLTS, EMBED PLATES OR OTHER ANCHORS AND ALL CELLS BELOW GRADE MUST BE GROUTED SOLID. GROUT PROCEDURE MUST COMPLY WITH ACI 530.1.

9. ALL CMU WALLS MUST BE REINFORCED CONTINUOUSLY FROM FOUNDATION TO TOP OF WALL. WHERE REINFORCING IS INTERRUPTED, OFFSET AND LAP ADDITIONAL BARS PER THE "TYPICAL OFFSET SPLICE AT MASONRY WALL DETAILS."

10. LAP ALL REINFORCING PER SCHEDULE BELOW, TYPICAL UNLESS OTHERWISE NOTED:

MASONRY LAP SCHEDULE	
REINF SIZE	52 x BAR DIAMETER
#5	33"

11. ALL WALLS MUST BE REINFORCED WITH #5 VERTICAL BARS AT 24 INCHES ON CENTER, TYPICAL UNLESS OTHERWISE NOTED.

12. PROVIDE REINFORCING STEEL DOWELS OF THE SAME SIZE AND SPACING AS VERTICAL REINFORCING FROM THE SUPPORTING STRUCTURE. DOWELS MUST HAVE STANDARD ACI HOOKS. DOWELS MAY BE POST-INSTALLED AT THE CONTRACTOR'S OPTION.

13. PROVIDE STANDARD 9 GAGE LADDER TYPE HORIZONTAL JOINT REINFORCING IN CMU WALLS AT 16 INCHES ON CENTER AND IN TWO JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS, EXTENDING A MINIMUM OF 2 FEET BEYOND THE JAMB ON EACH SIDE OF THE OPENING, EXCEPT AT CONTROL JOINTS.

14. PROVIDE HORIZONTAL BOND BEAMS WITH CONTINUOUS REINFORCING AS SHOWN IN THE SECTIONS AND DETAILS. DISCONTINUE ALL HORIZONTAL REINFORCING AT CONTROL JOINTS.

15. DO NOT LOCATE CONTROL JOINTS WITHIN TWO FEET OF STEEL BEAM BEARING LOCATIONS.

CONCRETE MIX DESIGN NOTES:

1. MIX DESIGNS COMPRESSIVE STRENGTHS (f'c) BASED ON 28 DAY DESIGN STRENGTH, UNLESS OTHERWISE NOTED.

2. CONCRETE NOT OTHERWISE NOTED:
   A. MINIMUM COMPRESSIVE STRENGTH (f'c) = 4000 PSI

3. FOUNDATIONS (SPREAD FOOTINGS, MAT FOOTINGS):
   A. EXPOSURE CLASS = ACI 318 F0, S0, W0, C1
   B. MINIMUM COMPRESSIVE STRENGTH (f'c) = 3,000PSI
   C. MAXIMUM W/CM = 0.5
   D. BLENDED HYDRAULIC CEMENT = ASTM C595 TYPE 1L
   E. SLUMP = 5" MAX PLUS OR MINUS 1", OR 8" MAX, PLUS OR MINUS 1" FOR CONCRETE WITH A VERIFIED SLUMP OF 3" PLUS OR MINUS 1" BEFORE ADDING HIGH-RANGE WATER-REDUCING OR PLASTICIZING ADMIXURE
   F. AIR CONTENT = NO REQUIREMENTS
   G. AGGREGATE = NORMAL WEIGHT, ¾" NOMINAL
   H. LIMIT WATER-SOLUBLE, CHLORIDE-ION CONTENT IN HARDENED CONCRETE TO 0.30 PERCENT BY WEIGHT OF CEMENT

4. SLAB-ON-GRADE:
   A. EXPOSURE CLASS = ACI 318 F1, S0, W0, C2
   B. MINIMUM COMPRESSIVE STRENGTH (f'c) = 5,000PSI
   C. MAXIMUM W/CM = 0.4
   D. BLENDED HYDRAULIC CEMENT = ASTM C595 TYPE 1L
   E. SLUMP = 5" MAX PLUS OR MINUS 1", OR 8" MAX, PLUS OR MINUS 1" FOR CONCRETE WITH A VERIFIED SLUMP OF 3" PLUS OR MINUS 1" BEFORE ADDING HIGH-RANGE WATER-REDUCING OR PLASTICIZING ADMIXURE
   F. AIR CONTENT = 0.15
   G. AGGREGATE = NORMAL WEIGHT, ¾" NOMINAL
   H. LIMIT WATER-SOLUBLE, CHLORIDE-ION CONTENT IN HARDENED CONCRETE TO 1.00 PERCENT BY WEIGHT OF CEMENT

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL MUST BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 360.

2. STRUCTURAL STEEL FABRICATOR MUST PARTICIPATE IN THE AISC QUALITY CERTIFICATION PROGRAM AND BE A DESIGNATED AISC-CERTIFIED PLANT.

3. STRUCTURAL STEEL INSTALLER MUST PARTICIPATE IN THE AISC QUALITY CERTIFICATION PROGRAM AND BE A DESIGNATED AISC-CERTIFIED ERECTOR.

4. STRUCTURAL STEEL MUST COMPLY WITH THE FOLLOWING SPECIFICATIONS:
   A. STRUCTURAL STEEL SHAPES, PLATES AND BARS UNLESS OTHERWISE NOTED - ASTM A572, Fy = 50 KSI
   B. STRUCTURAL STEEL W-SHAPES - ASTM A992, Fy = 50 KSI
   C. HOLLOW STRUCTURAL SECTIONS (HSS):
      a. SQUARE & RECTANGULAR - ASTM A500, GRADE C, Fy = 50 KSI
      b. ROUND - ASTM A500, GRADE C, Fy = 46 KSI
   D. ANCHOR RODS - ASTM F1554, GRADE 36
   E. HIGH STRENGTH BOLTS - ASTM A325 (TYPICAL UON)
   F. WASHERS - ASTM F436
   G. NUTS - ASTM A563
   H. HEADED STUDS - ASTM A29, GRADE 1010 THROUGH 1020

5. UNLESS OTHERWISE NOTED, ALL REQUIRED DESIGN STRENGTHS AND REACTIONS INDICATED ARE BASED ON THE "LOADING COMBINATIONS USING STRENGTH DESIGN OR LOAD AND RESISTANCE FACTOR DESIGN" PER SECTION 1605.2 OF THE BUILDING CODE.

6. STRUCTURAL STEEL FRAME IS CONSIDERED AS UNRESTRAINED FOR FIRE PROTECTION PURPOSES.

7. ALL STEEL CONNECTIONS AND MEMBER REINFORCEMENT MUST BE DESIGNED BY FABRICATOR'S QUALIFIED PROFESSIONAL ENGINEER FOR LOADS INDICATED ON THE DRAWINGS, PER OPTION 3B OF ANSI/AISC 303 AND COMPLETE THE FOLLOWING:
   A. SUBMIT STRUCTURAL CALCULATIONS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA RESPONSIBLE FOR THEIR PREPARATION.
   B. THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN MUST REVIEW THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO VERIFY THAT THE CONNECTIONS AS DETAILED ON THE SHOP DRAWINGS COMPLY WITH THE CONNECTION DESIGN REQUIREMENTS OF THE FINAL CALCULATIONS.
   C. A REVIEW LETTER, SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER RESPONSIBLE FOR CONNECTION DESIGN MUST BE PROVIDED WITH THE SHOP DRAWINGS AND CALCULATION SUBMITTAL STATING THAT THIS REVIEW AND VERIFICATION HAS BEEN COMPLETED.

8. HIGH STRENGTH BOLTS MAY BE TIGHTENED TO THE "SNUG TIGHT" CONDITION, UNLESS OTHERWISE NOTED.

9. BOLTED CONNECTIONS MAY USE NON-STANDARD HOLES, EXCEPT IN THE FOLLOWING LOCATIONS:
   ALL FRAMING CONNECTIONS AT MOMENT FRAMES.

10. PROVIDE ANGLE FRAMING AROUND OPENINGS LARGER THAN 6 INCHES IN ANY DIMENSION (INCLUDING ROOF DRAINS) TO SUPPORT STEEL DECK. REFERENCE PLANS AND TYPICAL DETAILS FOR SIZING REQUIREMENTS.

11. WELDING MUST BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL." WELD ELECTRODES MUST BE E70XX LOW HYDROGEN. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE REQUIRED BY TABLE J2.4 AISC 360.

12. SHOP PRIME STEEL SURFACES, EXCEPT THE FOLLOWING:
   A. SURFACES EMBEDDED IN CONCRETE OR MORTAR. EXTEND PRIMING OF PARTIALLY EMBEDDED MEMBERS TO A DEPTH OF 2 INCHES.
   B. SURFACES TO BE WELDED.
   C. SURFACES TO RECEIVE SPRAYED FIRE-RESISTIVE MATERIALS.
   D. GALVANIZED SURFACES.
   E. SURFACES ENCLOSED IN INTERIOR CONSTRUCTION.

13. CLEAN ALL STEEL SURFACES TO BE PAINTED. REMOVE LOOSE RUST, MILL SCALE, SPATTER, SLAG, OR FLUX DEPOSITS. PREPARE SURFACES IN ACCORDANCE WITH SSPC-SP3 SPECIFICATION AND STANDARD.

14. HOT-DIP GALVANIZE AFTER FABRICATION THE FOLLOWING:
   A. ANGLES AND PLATES SUPPORTING MASONRY IN EXTERIOR WALLS.
   B. LINTELS AND LINTEL ASSEMBLIES SUPPORTING MASONRY IN EXTERIOR WALLS.
   C. ALL STEEL EXPOSED TO WEATHER IN THE FINAL CONSTRUCTION.
   D. ITEMS IDENTIFIED AS GALVANIZED ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.

15. STEEL MEMBERS MUST BE SPLICED ONLY WHERE INDICATED.

STEEL JOIST NOTES:

1. STEEL JOISTS MUST BE IN ACCORDANCE WITH THE STEEL JOIST INSTITUTE (SJI) STANDARD SPECIFICATIONS.

2. JOIST BRIDGING MUST CONFORM TO SJI SPECIFICATIONS, INCLUDING BRIDGING REQUIRED FOR JOISTS SUBJECTED TO UPLIFT LOADS. PROVIDE CROSS-BRIDGING AT ENDS OF BRIDGING LINES AND CHANGES IN JOIST DEPTHS AND AT ROLLED STEEL SHAPES RUNNING PARALLEL TO JOISTS. BRIDGING SHOWN MUST BE PROVIDED, IN ADDITION TO THE REQUIRED STANDARD BRIDGING. ENDS OF ALL BRIDGING LINES MUST BE ANCHORED TO WALLS OR BEAMS.

3. ROOF JOISTS MUST BE DESIGNED FOR A NET UPLIFT LOAD (LRFD) OR (ULTIMATE) OF 42 PSF.

4. ALL JOISTS MUST BE DESIGNED FOR A CONCENTRATED LOAD OF 300 LBS. HUNG FROM THE JOIST TOP OR BOTTOM CHORD AT ANY POINT ALONG THE SPAN.

5. PERMANENT SUSPENDED LOADS MUST NOT BE SUPPORTED BY JOIST BRIDGING.

6. COMPLY WITH OSHA SAFETY STANDARDS FOR THE ERECTION OF STEEL JOISTS.

STEEL DECK NOTES:

1. STEEL DECK MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND THE STEEL DECK INSTITUTE (SDI), "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."

2. STEEL DECK INSTALLATION MUST COMPLY WITH THE FOLLOWING: ROOF DECK: 1 1/2" x 20 GAGE TYPE 'B' GALVANIZED. UNLESS OTHERWISE NOTED, ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS IN ALL RIBS WHERE END LAPS OCCUR AND AT 16 INCHES ON CENTER ALONG SUPPORTS WITH A 36/4 PATTERN. FASTEN SIDE LAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/3 POINTS BETWEEN SUPPORTS. FASTEN EDGEMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS.

3. STEEL DECK MUST BE INSTALLED PERPENDICULAR TO SUPPORTS AND MUST HAVE A MINIMUM OF THREE CONTINUOUS SPANS. ENDLAPS MUST ONLY OCCUR AT SUPPORTS.

4. WELDING MUST BE IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL".

5. PERMANENT SUSPENDED LOADS MUST NOT BE SUPPORTED BY STEEL ROOF DECK.

COLD-FORMED METAL FRAMING NOTES:

1. COLD-FORMED METAL FRAMING MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS".

2. SUBMITTED SHOP DRAWINGS MUST INCLUDE PLACING DRAWINGS FOR FRAMING MEMBERS SHOWING SIZE AND GAGE DESIGNATIONS, NUMBER, TYPE, LOCATION AND SPACING. INDICATE CONNECTIONS, SUPPLEMENTAL STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS AND CONSTRUCTION SEQUENCE REQUIRED FOR PROPER AND SAFE INSTALLATION.

3. WELDING MUST BE IN ACCORDANCE WITH AWS D1.3, "STRUCTURAL WELDING CODE - SHEET STEEL". TOUCH UP ALL WELDS WITH SPECIFIED COATING SYSTEMS.

4. COLD-FORMED METAL FRAMING MEMBERS MUST CONFORM TO ASTM C955, AND BE FORMED OF CORROSION-RESISTANT STEEL CONFORMING TO ASTM A653 AND ASTM C955 WITH A MINIMUM YIELD STRENGTH OF 33 KSI FOR 43 MIL AND THINNER MEMBERS AND 50 KSI FOR ALL OTHER MEMBERS.

5. MEMBER SECTION PROPERTIES MUST CONFORM TO PART 'I' OF THE "COLD-FORMED STEEL DESIGN MANUAL."

ROUGH CARPENTRY NOTES:

1. ROUGH CARPENTRY MUST BE IN ACCORDANCE WITH THE AMERICAN WOOD COUNCIL (AWC) "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION."

2. WOOD STRUCTURAL PANELS (WSP) MUST COMPLY WITH PS 1 "U.S. PRODUCT STANDARD FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD" FOR PLYWOOD CONSTRUCTION PANELS AND THE FOLLOWING REQUIREMENTS:
   A. ROOF SHEATHING: 9/16" INCH, APA RATED SHEATHING, EXTERIOR EXPOSURE DURABILITY CLASSIFICATION. PROVIDE TONGUE-AND-GROOVE EDGES OR USE "PLY-CLIPS" AT MID-SPAN BETWEEN EACH SUPPORT.

3. UNLESS OTHERWISE NOTED, ATTACH BLOCKING AND NAILERS TO STEEL FRAMING USING 3/16 INCH DIAMETER POWDER ACTUATED FASTENERS AT 24 INCHES ON CENTER OR 1/2 INCH DIAMETER BOLTS AT 48 INCHES ON CENTER. STAGGER FASTENERS TO ALTERNATE SIDES OF BEAM WEB.

4. ALL CONNECTION HARDWARE IN CONTACT WITH PRESERVATIVE TREATED WOOD MUST BE HOT-DIP GALVANIZED COATED.

5. POWDER ACTUATED FASTENERS (PAF) MUST HAVE A MINIMUM ALLOWABLE CAPACITY INTO THE BASE MATERIAL AS FOLLOWS UNLESS OTHERWISE NOTED:
   A. STEEL: SHEAR = 600 LBS
      TENSION = 250 LBS

POST-INSTALLED ANCHOR NOTES:

1. ALL POST INSTALLED ANCHORS INDICATED ON THE DRAWINGS ARE BY HILTI, INC, AND MUST BE CONSIDERED THE BASIS OF DESIGN PRODUCT. WHERE NOT EXPLICITLY INDICATED IN THE DRAWINGS, THE FOLLOWING ANCHORS/ADHESIVES MUST BE USED:
   A. ANCHORAGE TO CONCRETE
      1. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC40U) WITH STEEL THREADED ROD PER ICC ESR-3187.
      2. SCREW ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027.
   B. REBAR DOWELING INTO CONCRETE
      1. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC 40-U) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187.
   C. ANCHORAGE TO SOLID GROUTED MASONRY
      1. ADHESIVE ANCHORS USE:
         a. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING).
         b. STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD.
      2. MECHANICAL ANCHORS USE:
         a. HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR 3056.

2. ALTERNATE POST INSTALLED ANCHOR PRODUCTS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW AND POSSIBLE APPROVAL. ALL SUBSTITUTION REQUESTS MUST BE ACCOMPANIED BY AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE. ALTERNATE PRODUCTS MAY REQUIRE MODIFICATIONS TO ANCHOR DIAMETER, SPACING, AND EMBEDMENT.

3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

4. THE CONTRACTOR MUST ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.

5. ANCHOR CAPACITY IS DEPENDANT 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. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR MUST LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN OR GPR.

7. ALL POST INSTALLED ANCHORS REQUIRE CONTINUOUS INSPECTIONS BY THE OWNER'S MATERIALS TESTING AGENCY TO VERIFY INSTALLATION HAS BEEN PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

SHOP DRAWINGS AND SUBMITTALS:

1. THESE DRAWINGS SHALL BE CHECKED AND COORDINATED WITH OTHER MATERIALS AND CONTRACTS BY THE GENERAL CONTRACTOR. SHOP DRAWINGS AND SUBMITTALS MUST BEAR THE CONTRACTOR'S REVIEW STAMP WITH CHECKER'S INITIALS BEFORE BEING SUBMITTED TO THE ARCHITECT FOR APPROVAL.

2. WHEN THE FABRICATOR HAS BEEN AUTHORIZED TO USE THE ARCHITECT'S AND / OR ENGINEER'S DRAWINGS AS ERECTION DRAWINGS, THE FABRICATOR MUST REMOVE ALL TITLE BLOCKS, PROFESSIONAL SEALS, AND ANY OTHER REFERENCE TO THE ARCHITECT AND / OR ENGINEER FROM THAT ERECTION DRAWING.

3. WHERE DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION COULD AFFECT THE NEW CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE FIELD MEASUREMENTS REQUIRED FOR INCORPORATION IN THE SHOP DRAWING AND PRIOR TO FABRICATION.

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 049766 MITCHELL WAYNE STRICKLAND
DOCUMENT FOR REVIEW ONLY
NOT FOR CONSTRUCTION

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 2020 JAMES T. SAMET
DOCUMENT FOR REVIEW ONLY
NOT FOR CONSTRUCTION
Rev 01/06/2025

NO.	REVISION	DATE

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SHEET **GENERAL NOTES**

S001

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- ☐ PRELIMINARY BUDGET PRICING
- ☐ EARLY FOUNDATION PACKAGE
- ☐ MILL ORDER PACKAGE
- ☐ EARLY STEEL PACKAGE
- ☐ SCHEMATIC DESIGN
- ☐ CONSTRUCTION SET

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ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	KCJ	KEYED CONSTRUCTION JOINT
ARCH	ARCHITECT	Ld	REBAR TENSION DEVELOPMENT LENGTH
BD	BAR DIAMETER	Ldc	REBAR COMPRESSION DEVELOPMENT LENGTH
BF	BRACED FRAME	Ldh	HOOKED REBAR TENSION DEVELOPMENT LENGTH
BEJ	BUILDING EXPANSION JOINT	Ls	REBAR TENSION SPLICE LENGTH
BLDG	BUILDING	Lsc	REBAR COMPRESSION SPLICE LENGTH
BM	BEAM	L	LOW
BOD	BOTTOM OF DECK	LLH	LONG LEG HORIZONTAL
BOS	BOTTOM OF STEEL	LLV	LONG LEG VERTICAL
BOT, B	BOTTOM	LSH	LONG SIDE HORIZONTAL
BRG	BEARING	LSV	LONG SIDE VERTICAL
BTWN	BETWEEN	LTWT	LIGHTWEIGHT
C TO C	CENTER TO CENTER	LWC	LIGHTWEIGHT CONCRETE
CFMF	COLD-FORMED METAL FRAMING	MAS	MASONRY
CJ	CONTROL JOINT	MATL	MATERIAL
CL	CENTERLINE	MAX	MAXIMUM
CLR	CLEAR	MECH	MECHANICAL
CMU	CONCRETE MASONRY UNIT	MF	MOMENT FRAME
COL	COLUMN	MFR	MANUFACTURER
CONC	CONCRETE	MID	MIDDLE
CONN	CONNECTION	MIN	MINIMUM
CONSTR	CONSTRUCTION	MOD	MODIFY
CONT	CONTINUOUS	MOS	MIDDEPTH OF SLAB
COORD	COORDINATE	NOM	NOMINAL
CTR	CENTER	NS	NEAR SIDE
CTRD	CENTERED	NTS	NOT TO SCALE
DBA	DEFORMED BAR ANCHOR	OC	ON CENTER
DBL	DOUBLE	OPH	OPPOSITE HAND
DC	DIAPHRAGM CHORD	OPNG	OPENING
DCJ	DOWELED CONSTRUCTION JOINT	PAF	POWDER ACTUATED FASTENER
DIA, Ø	DIAMETER	PAR	PARALLEL
DIST	DISTANCE	PC	PIECE
DJ	DOUBLE JOIST	PEMB	PRE-ENGINEERED METAL BUILDING
DWGS	DRAWINGS	PEN	PENETRATE, PENETRATION
EA	EACH	PERP	PERPENDICULAR
EF	EACH FACE	PL	PLATE
EJ	EXPANSION JOINT	PT	POST-TENSIONED (CONC) PRESSURE TREATED (WOOD)
EL	ELEVATION	R	RADIUS
ELEV	ELEVATOR	REF	REFERENCE, REFER TO
EMBED	EMBEDMENT	REINF	REINFORCE, REINFORCED, REINFORCING
EOD	EDGE OF DECK	REQD	REQUIRED
EOS	EDGE OF SLAB	REQMTS	REQUIREMENTS
EQ	EQUAL	SCHED	SCHEDULE
EW	EACH WAY	SF	STEPPED FOOTING
EXIST	EXISTING	SGB	STEPPED GRADE BEAM
EXP	EXPANSION	SIM	SIMILAR
EXT	EXTERIOR	SJ	SAWED JOINT
FD	FLOOR DRAIN	SL	SLOPE
FDN	FOUNDATION	SOG	SLAB-ON-GRADE
FO	FACE OF	SPF	SIDEPLATE FRAME
FF EL	FINISHED FLOOR ELEVATION	STD	STANDARD
FIN	FINISH	STIFF	STIFFENER
FIN FLR	FINISHED FLOOR	SIM	SIMILAR
FOB	FACE OF BUILDING	TBE	TRUSS BEARING ELEVATION
FOC	FACE OF CONCRETE	T&B	TOP & BOTTOM
FOM	FACE OF MASONRY	T&G	TONGUE AND GROOVE
FOS	FACE OF SLAB/ STUD	THK	THICKNESS
FRMG	FRAMING	TOC	TOP OF CONCRETE
FTG	FOOTING	TOF	TOP OF FOOTING
FS	FAR SIDE	TOM	TOP OF MASONRY
FV, ±	FIELD VERIFY	TOCP	TOP OF CONCRETE PEDESTAL
GALV	GALVANIZED	TOS	TOP OF STEEL
GC	GENERAL CONTRACTOR	TS	THICKENED SLAB
GEN	GENERAL	TS/STR	THICKENED SLAB AT STAIR SECTION
GR BM	GRADE BEAM	TYP	TYPICAL
H	HIGH	UON	UNLESS OTHERWISE NOTED
HK	HOOK	VERT	VERTICAL
HORIZ	HORIZONTAL	W/	WITH
HSS	HOLLOW STRUCTURAL SECTION	WP	WORKING POINT
HSA	HEADED STUD ANCHOR	WSP	WOOD STRUCTURAL PANEL(S)
HT	HEIGHT	WWR	WELDED WIRE REINFORCING
HVY	HEAVY		
INT	INTERIOR		
JBE	JOIST BEARING ELEVATION		
JT	JOINT		
KCJ	KEYED CONSTRUCTION JOINT		

DRAWINGS LEGEND

GENERAL ANNOTATIONS

SECTIONS

X / SX — SECTION/DETAIL NUMBER/LETTER

= SECTION/DETAIL MARK

SHEET NUMBER WHERE SECTION/DETAIL MARK IS DRAWN

COLUMNS

GRID = COLUMN GRID MARK

GENERAL PLANS

X = PLAN KEY NOTE MARK

± = FIELD VERIFY

SL = DIRECTION OF SLOPE

= CHANGE IN ELEVATION

= CHANGE IN SLOPE

SHALLOW FOUNDATIONS

= SLAB-ON-GRADE JOINT

WFX = WALL FOOTING MARK

CFX = COLUMN FOOTING MARK

ELEVATIONS

FOUNDATIONS

(-X'-X") = TOP OF FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

X'-X" = TOP OF SLAB ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

FLOORS AND ROOF

BOD = +X'-X" = BOTTOM OF DECK ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

TOS = +X'-X" = TOP OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

BOS = +X'-X" = BOTTOM OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

TOM = +X'-X" = TOP OF MASONRY ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

TBE = +X'-X" = TRUSS BEARING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"

STEEL

CONNECTIONS

= MOMENT CONNECTION

KB = KNUCKLED BEAM

MASONRY

WALLS

= BEARING WALL EXTENDING ABOVE FLOOR / ROOF

= BEARING WALL TERMINATING BELOW FLOOR / ROOF

= NON-BEARING WALL BEARING ON FLOOR BELOW

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22-086

DATE ISSUED
01/10/2025

PROJECT STATUS
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SHEET
ABBREVIATIONS / DRAWINGS LEGENDS

S002

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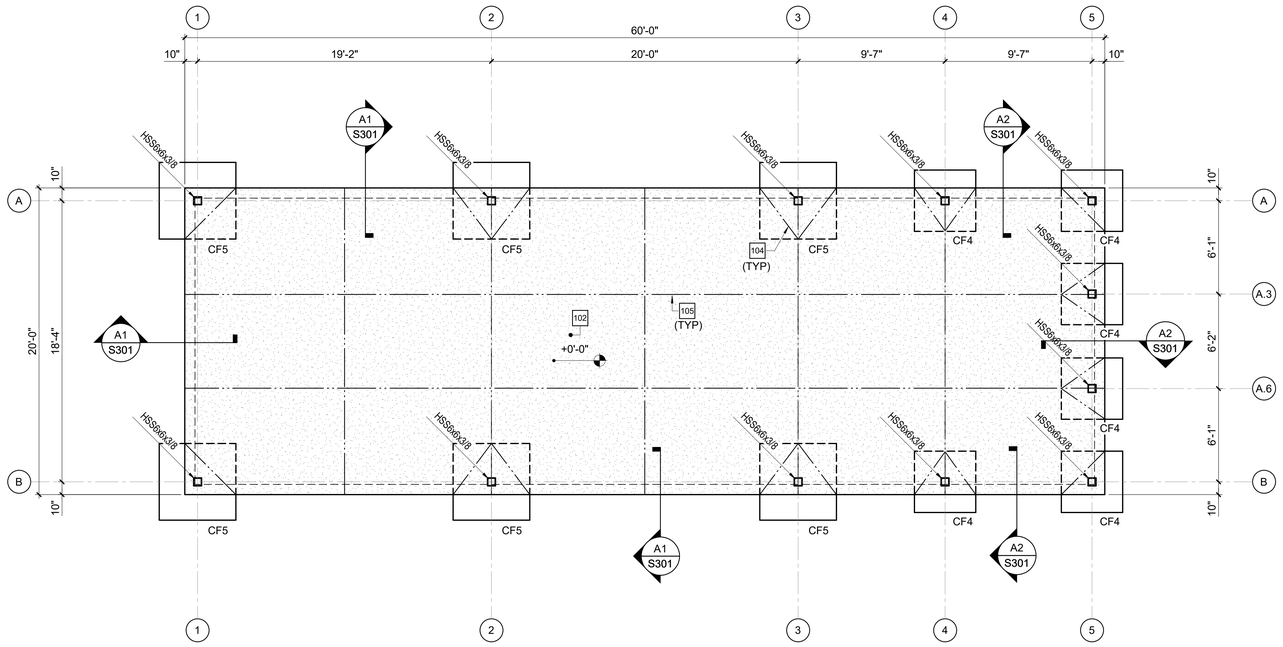
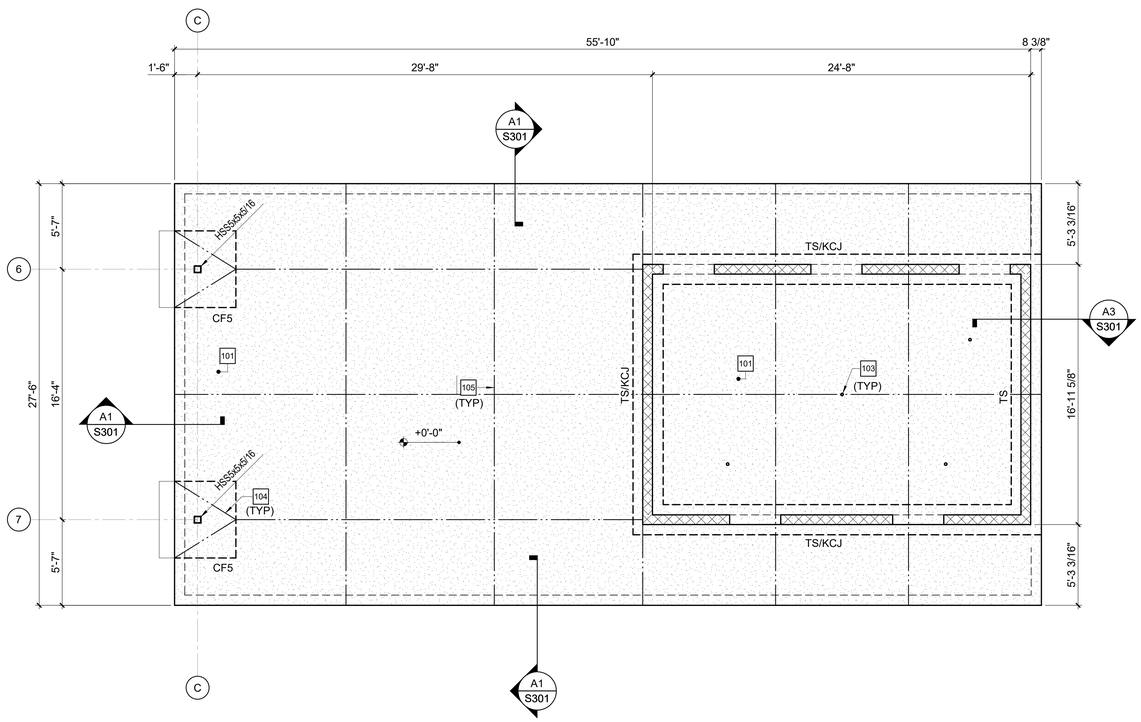
Corporation No. C-4360

COLUMN FOOTING SCHEDULE

MARK	SIZE			REINFORCING		REMARKS
	LENGTH	WIDTH	DEPTH	BOTTOM	TOP	
CF4	4' - 0"	4' - 0"	1'-6"	(5) #5 EW	(5) #5 EW	-
CF5	5' - 0"	5' - 0"	1'-6"	(6) #5 EW	(6) #5 EW	-



N B1 FOUNDATION AND SLAB PLAN - BURN BUILDING STORAGE
1/4" = 1'-0"



N A1 FOUNDATION AND SLAB PLAN - RESTROOM AND SHADE STRUCTURE
1/4" = 1'-0"

FOUNDATION AND SLAB PLAN NOTES

A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.

B. UNLESS OTHERWISE NOTED, ALL ELEVATIONS ARE BASED ON A FINISHED FIRST FLOOR REFERENCE OF 0'-0". ACTUAL FINISHED FLOOR ELEVATION IS +288'-0" FOR THE COVERED STORAGE STRUCTURE AND +296'-0" FOR THE RESTROOM AND SHADE STRUCTURE. FINISHED FLOOR ELEVATIONS AT EACH LEVEL ARE INDICATED ON SLAB PLANS. REFERENCE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIALS.

C. TOP OF ALL FOOTINGS MUST BE AT ELEVATION -2'-0" UNLESS OTHERWISE NOTED.

D. NO UTILITY LOCATIONS ARE SHOWN ON PLAN. THE CONTRACTOR MUST COORDINATE THE LOCATIONS, SIZES, AND INVERTS OF UTILITIES. AT LOCATIONS WHERE UTILITIES PASS BELOW THE TOP OF FOOTING ELEVATION, STEP THE TOP OF FOOTING DOWN ON EACH SIDE PER THE "TYPICAL STEPPED FOOTING DETAIL" AND SLEEVE THE UTILITY THROUGH THE FOUNDATION WALL. THE CONTRACTOR MAY, AT HIS/HER OPTION, SLEEVE THE UTILITY THROUGH THE FOUNDATION PER THE "TYPICAL PIPE SLEEVE AT WALL FOOTING DETAILS."

E. DIMENSIONS SHOWN ON FOUNDATION PLAN ARE TO COLUMN GRIDLINES AND OUTSIDE FACE OF FOUNDATION WALLS, UNLESS OTHERWISE NOTED.

F. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.

G. REFERENCE ARCHITECTURAL DRAWINGS FOR EXACT LIMITS OF SLAB DEPRESSIONS AND OMITTED SLABS.

H. NOT ALL FLOOR SINKS AND DRAINS ARE NOT SHOWN ON PLAN. REFERENCE PME DRAWINGS FOR LOCATIONS.

I. REFERENCE CIVIL AND LANDSCAPE DRAWINGS FOR EXTERIOR CONCRETE SLABS AND PAVING.

J. SLAB-ON-GRADE JOINTS MUST BE SAWED JOINTS OR KEYED CONSTRUCTION JOINTS, UNLESS OTHERWISE NOTED. CONTRACTOR MUST COORDINATE ALL SLAB JOINTS WITH JOINTS IN BONDED FLOOR FINISHES. REFERENCE ARCHITECTURAL DRAWINGS FOR FLOOR FINISH JOINT LOCATIONS.

KEY NOTES

101 4" CONCRETE SLAB-ON-GRADE. OVER VAPOR RETARBER AND 4" DEPTH OF POROUS FILL UNLESS OTHERWISE INDICATED. REINFORCE SLAB WITH 6x6-W2.9xW2.9 PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT.

102 5" CONCRETE SLAB-ON-GRADE. OVER VAPOR RETARBER AND 4" DEPTH OF POROUS FILL UNLESS OTHERWISE INDICATED. REINFORCE SLAB WITH 6x6-W2.9xW2.9 PLACED 1 1/2" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT.

103 FLOOR DRAINS. REFERENCE ARCHITECTURAL DRAWINGS.

104 DENOTES DIAMOND ISOLATION POUR. REFERENCE "TYPICAL COLUMN ISOLATION JOINT DETAILS." B4/S501.

105 DENOTES SAWCUT CONTROL JOINTS. REFERENCE "TYPICAL CONTROL JOINT DEATAIL." C1/S501

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PROJECT STATUS **ISSUE FOR BID**
SHEET **FOUNDATION AND SLAB PLANS**

S111

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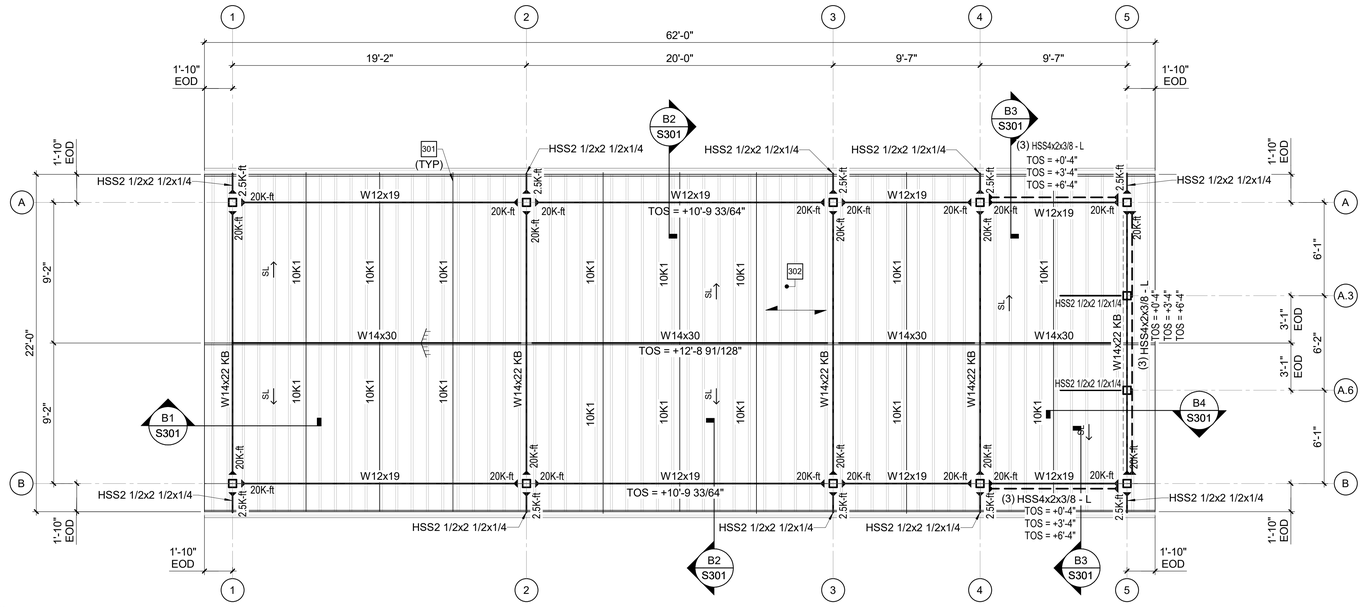
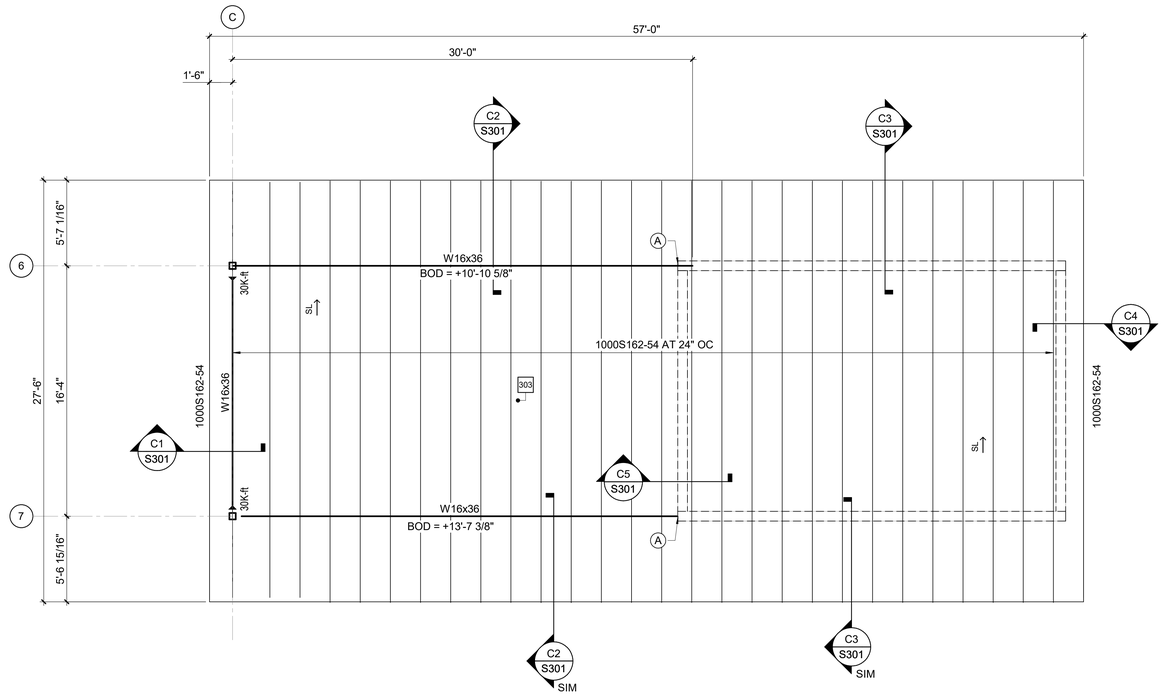


N B1 ROOF FRAMING AND DECK PLAN - COVERED STORAGE BUILDING

1/4" = 1'-0"



N A1 ROOF FRAMING AND DECK PLAN - RESTROOM AND SHADE STRUCTURE

1/4" = 1'-0"

FRAMING PLAN NOTES

A. REFERENCE FOUNDATION PLAN AND ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.

B. STEEL ROOF FRAMING SUPPORTING 1 1/2" STEEL ROOF DECK MUST BE EQUALLY SPACED BETWEEN POINTS OF KNOWN DIMENSIONS (NOT TO EXCEED 5'-0" ON-CENTER).

C. AT STEEL ROOF FRAMING, BOTTOM OF DECK ELEVATIONS ARE SHOWN ON PLAN. INTERMEDIATE ELEVATIONS MUST BE STRAIGHT LINES BETWEEN GIVEN ELEVATIONS. INTERPOLATE AS REQUIRED FOR INTERMEDIATE BEARING ELEVATIONS, UNLESS OTHERWISE NOTED.

D. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.

KEY NOTES

301	R1 TOP CHORD EXTENSION.
302	1" x 20 GAGE ROOF DECK. REFERENCE "STEEL DECK NOTES" ON SHEET S-001 OF THE GENERAL NOTES.
303	PLYWOOD SHEATHING. REFERENCE "ROUGH CARPENTRY NOTES" ON SHEET S-001 OF THE GENERAL NOTES.

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SHEET **ROOF FRAMING AND DECK PLANS**

S131

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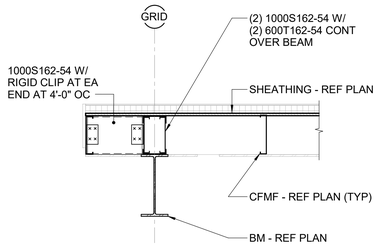
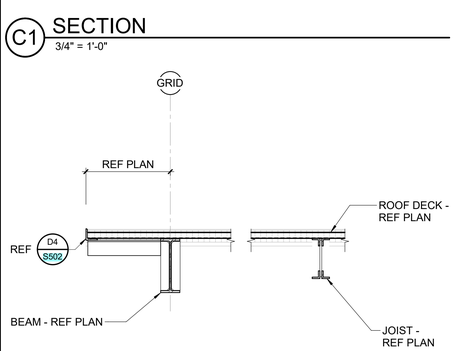
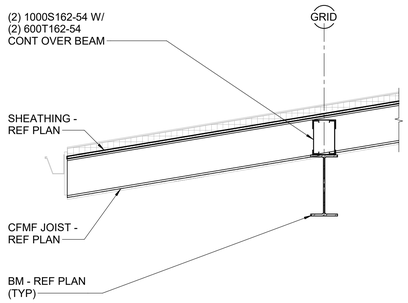
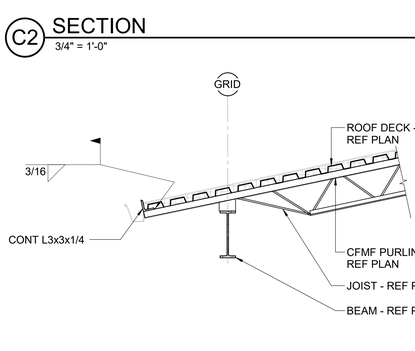


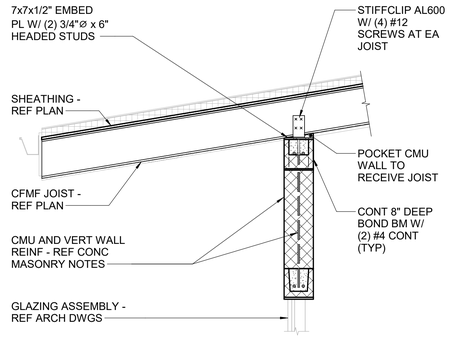
C1 SECTION
3/4" = 1'-0"



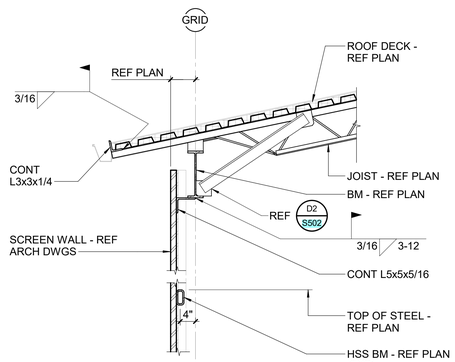


C2 SECTION
3/4" = 1'-0"

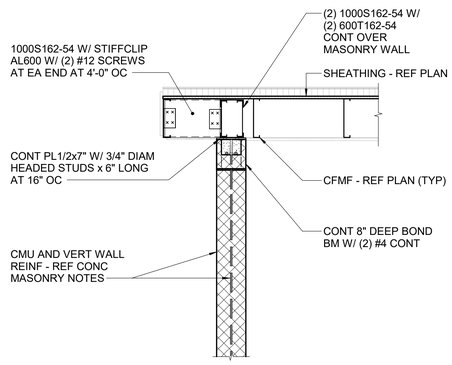




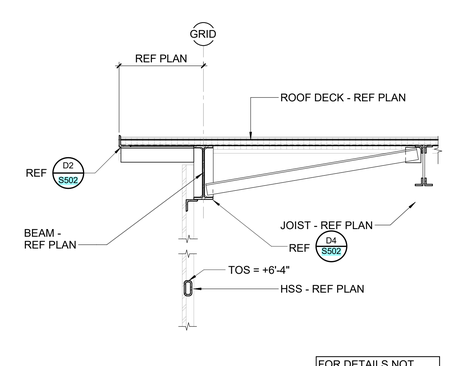
C3 SECTION
3/4" = 1'-0"



B3 SECTION
3/4" = 1'-0"

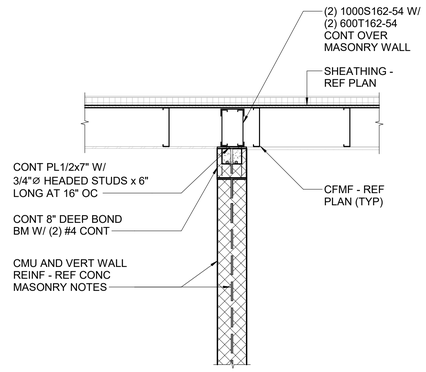


C4 SECTION
3/4" = 1'-0"



FOR DETAILS NOT
NOTED REF B3/S301

B4 SECTION
3/4" = 1'-0"



C5 SECTION
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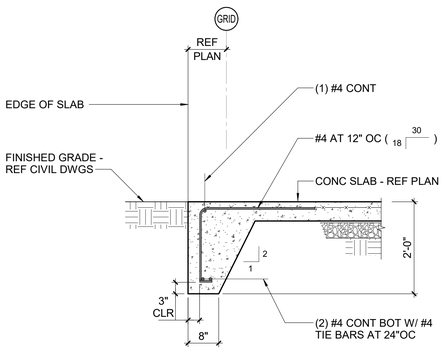
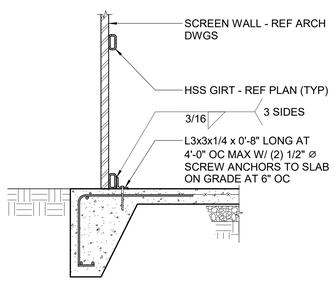


B1 SECTION
3/4" = 1'-0"



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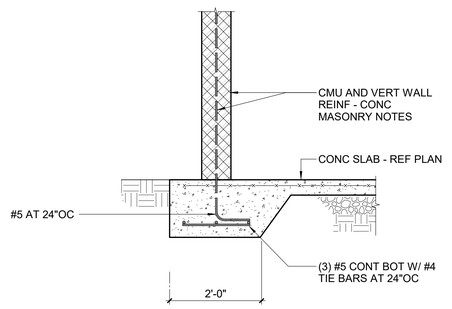
NOT NOTED REF
A1 / S301

B2 SECTION
3/4" = 1'-0"



B3 SECTION
3/4" = 1'-0"

A1 SECTION
3/4" = 1'-0"

A2 SECTION
3/4" = 1'-0"

A3 SECTION
3/4" = 1'-0"

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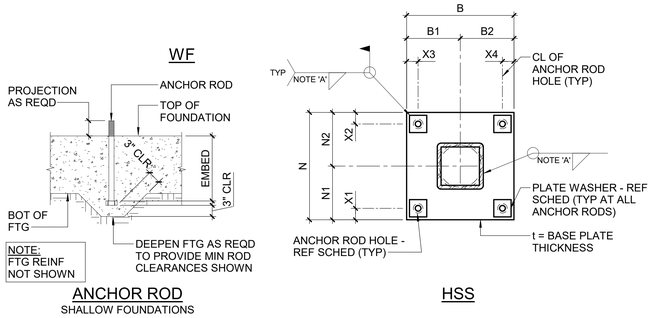


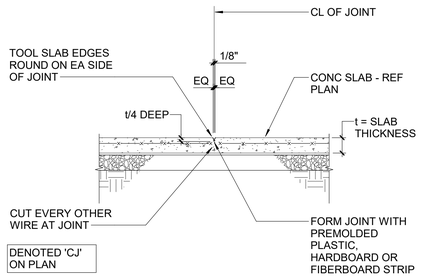
ANCHOR ROD HOLES AND WASHER SCHEDULE

ANCHOR ROD	OVERSIZED HOLE WITH PLATE WASHER				STANDARD HOLE	
	BASE PLATE HOLE	WASHER SIZE	WASHER HOLE	WASHER THICKNESS	BASE PLATE HOLE	WASHER
3/4"Ø	1 5/16"Ø	2" SQ	13/16"Ø	1/4"	1 1/16"Ø	ASTM F844
7/8"Ø	1 9/16"Ø	2 1/2" SQ	15/16"Ø	5/16"	1 3/16"Ø	ASTM F844
1"Ø	1 13/16"Ø	3" SQ	1 1/16"Ø	3/8"	1 1/2"Ø	ASTM F844
1 1/4"Ø	2 1/16"Ø	3 1/2" SQ	1 5/16"Ø	1/2"	1 3/4"Ø	ASTM F844
1 1/2"Ø	2 5/16"Ø	4" SQ	1 9/16"Ø	1/2"	2"Ø	ASTM F844

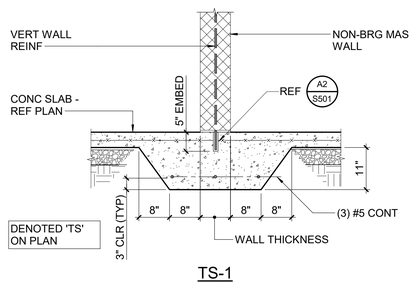
NOTE:
A. PROVIDE MINIMUM SIZE WELD PER AISC TABLE J2.4.

B. GENERAL CONTRACTOR'S OPTION TO USE STANDARD OR OVERSIZED HOLES IN GRAVITY COLUMN BASE PLATES. NO WELDING REQUIRED AT PLATE WASHERS USED WITH OVERSIZED HOLES.

D1 GRAVITY COLUMN BASE PLATE AND ANCHOR ROD DETAILS
NTS



C1 TYPICAL CONTROL JOINT DETAIL
NTS



C2 TYPICAL THICKENED SLAB DETAIL
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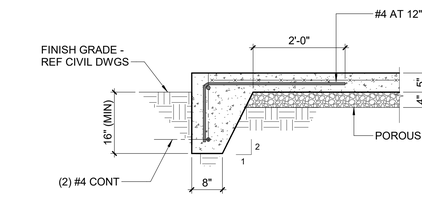
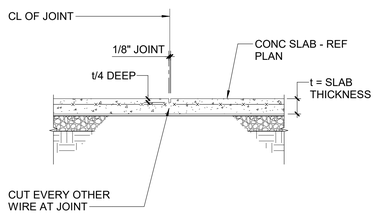
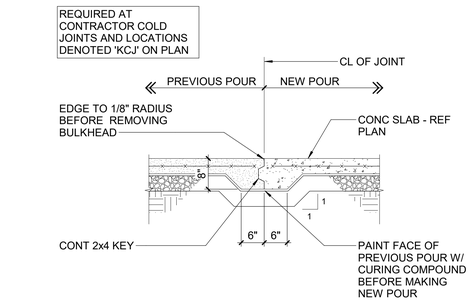


C3 TYPICAL EXTERIOR SLAB TURNDOWN DETAIL
NTS



B1 TYPICAL SAWED JOINT DETAIL
NTS



B2 TYPICAL KEYED CONSTRUCTION JOINT DETAIL
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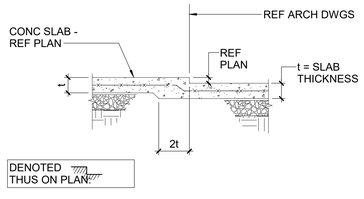
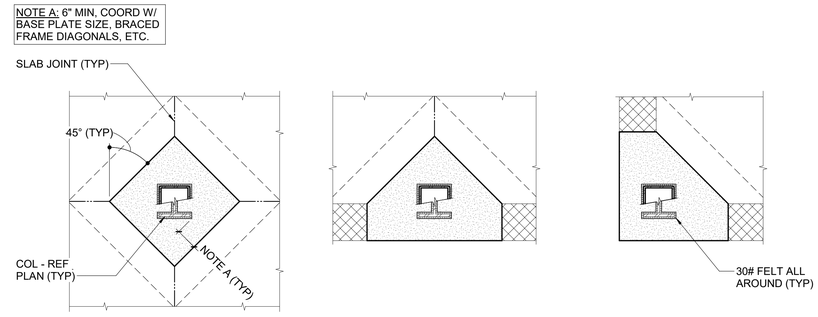
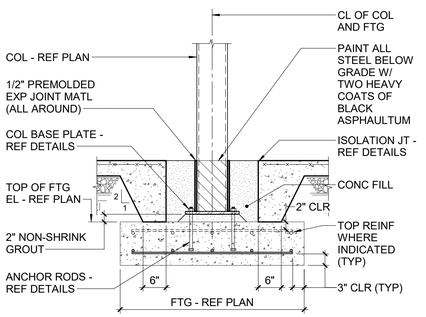


B3 TYPICAL DEPRESSED SLAB DETAIL
NTS

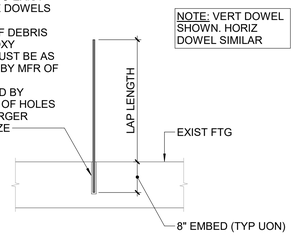


B4 TYPICAL COLUMN ISOLATION JOINT DETAIL
NTS

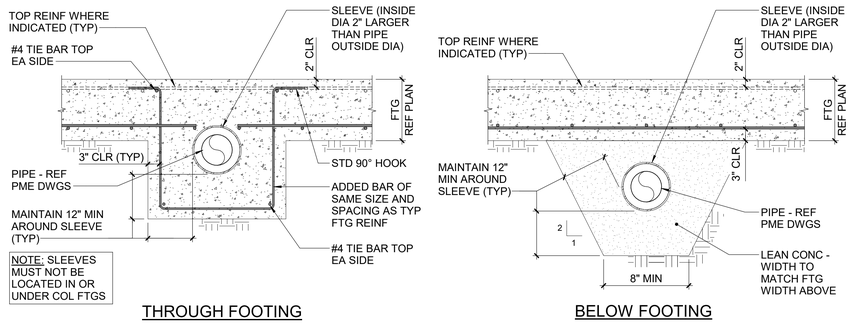


A1 TYPICAL COLUMN & FOOTING DETAIL
NTS

- DRILL HOLES INTO EXIST FTG TO RECEIVE DOWELS
- CLEAN HOLES THOROUGHLY OF DEBRIS AND FILL W/ EPOXY
- DIA OF HOLES MUST BE AS RECOMMENDED BY MFR OF EPOXY MATL
- IF NOT SPECIFIED BY EPOXY MFR, DIA OF HOLES MUST BE 1/8" LARGER THAN DOWEL SIZE



A2 TYPICAL EPOXY DOWEL DETAIL
NTS



A3 TYPICAL PIPE SLEEVE AT WALL FOOTING DETAILS
NTS

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NORTH CAROLINA ENGINEERING CORPORATION C-4360 SEAL 049121 WILLIAM MICHAEL LYNCH
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DOCUMENT FOR CONSTRUCTION
NOT FOR CONSTRUCTION
PCNC Rec'd 01.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TYPICAL DETAILS**

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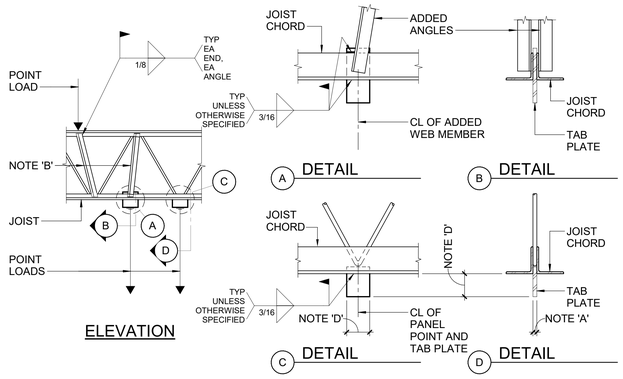


NOTES :

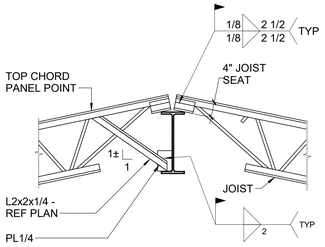
A. POSITION HANGER RODS ON JOIST CENTERLINES BETWEEN CHORD JOIST MEMBERS. DO NOT USE C-CLAMPS TO CHORD ANGLE LEGS.

B. WHERE CONCENTRATED LOADS EXCEEDING 300 LBS ARE APPLIED TO TOP CHORDS OR HUNG FROM BOTTOM CHORDS BETWEEN PANEL POINTS, ADD (2) L1x1x1/8 TO PANEL POINT AS SHOWN FOR K SERIES JOISTS.

C. DETAIL APPLIES TO NEW AND EXISTING JOISTS.

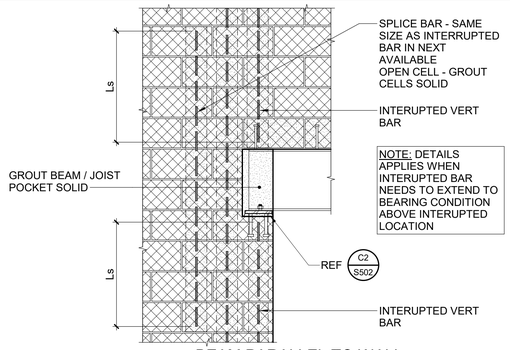
D. DIMENSION AS REQUIRED TO SUIT CONNECTED ITEM.

D1 TYPICAL DETAIL AT CONCENTRATED LOADS ON JOISTS
NTS



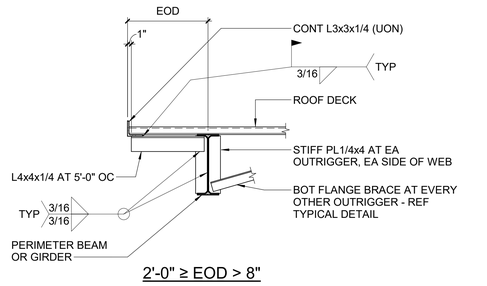
NOTE: OFFSET JOISTS TO PROVIDE MINIMUM BEARING WHEREVER POSSIBLE. OTHERWISE, BUTT JOIST ENDS TOGETHER OVER BEAM CENTERLINE AND PROVIDE SPECIAL JOIST END PER SJI REQUIREMENTS.

D2 TYPICAL K-SERIES JOIST TO BEAM CONNECTION DETAILS
NTS



BEAM PARALLEL TO WALL

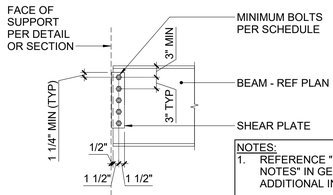
D3 TYPICAL OFFSET SPLICE AT MASONRY WALL DETAIL
NTS



2'-0" ≥ EOD > 8"

D4 TYPICAL EDGE OF ROOF DECK DETAILS
NTS

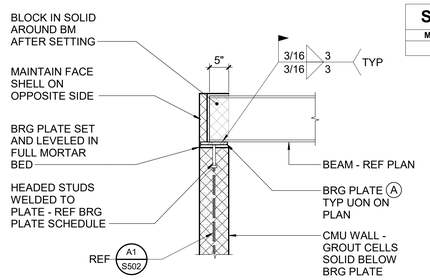
MINIMUM BEAM REACTION SCHEDULE		
BEAM SIZE	DESIGN REACTION (LRFD)	MIN # OF BOLTS
W12 & W14	35 KIPS	3
W16	50 KIPS	4



TYPICAL SHEAR PLATE

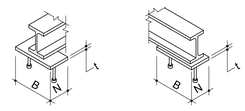
NOTES:
1. REFERENCE "STRUCTURAL STEEL NOTES" IN GENERAL NOTES FOR ADDITIONAL INFORMATION.
2. DESIGN CONNECTIONS FOR THE REACTIONS SHOWN ON PLAN. FOR REACTIONS NOT SHOWN ON PLAN, DESIGN CONNECTIONS FOR THE MINIMUM LOADS AND BOLTS INDICATED IN THE SCHEDULE ABOVE.

C1 TYPICAL SHEAR PLATE CONNECTION DETAIL
NTS



PERPENDICULAR TO WALL SECTION (TYPICAL)

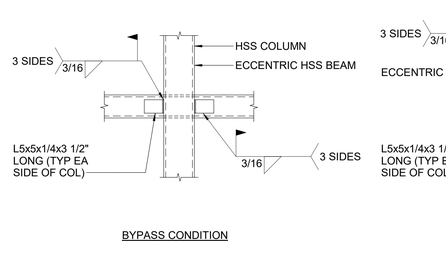
STEEL BEAM BEARING PLATE SCHEDULE				
MARK	LENGTH (B)	WIDTH (N)	THICKNESS (t)	HEADED STUDS
A	7"	7"	3/4"	(2) 3/4"Ø x 6" LONG



PERP TO WALL PARALLEL TO WALL

ISOMETRIC VIEW BEARING PLATES

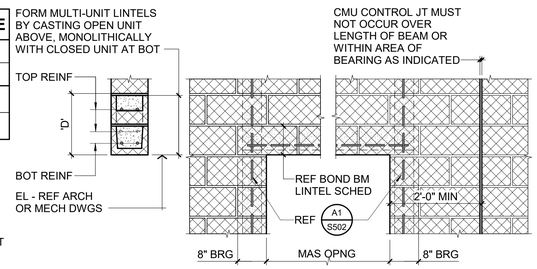
C2 TYPICAL STEEL BEAM BEARING ON MASONRY DETAILS
NTS



C3 TYPICAL ECCENTRIC HSS FRAMING DETAILS
3/4" = 1'-0"

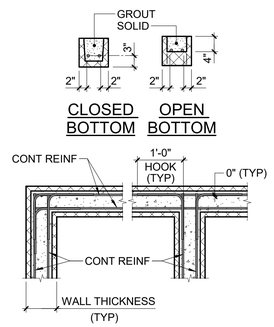
BOND BEAM LINTEL SCHEDULE		
CLEAR SPAN	DEPTH 'D'	REINFORCING
		8" CMU
0" TO 3'-4"	8"	(2) #4 BOT
3'-5" TO 5'-4"	8"	(2) #5 BOT

NOTES:
1. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS; FOR DUCT OPENINGS REFER TO MECHANICAL DRAWINGS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR WIDTH OF LINTEL.
3. SCHEDULE APPLIES ONLY TO LINTELS NOT OTHERWISE SHOWN ON THE DRAWINGS.



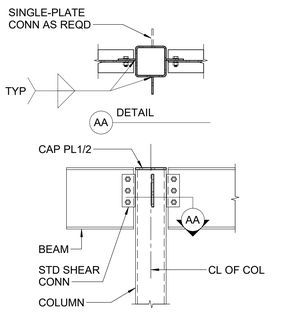
TYPICAL SECTION TYPICAL JAMB JAMB AT CONTROL JOINT

B1 BOND BEAM LINTEL DETAILS
NTS

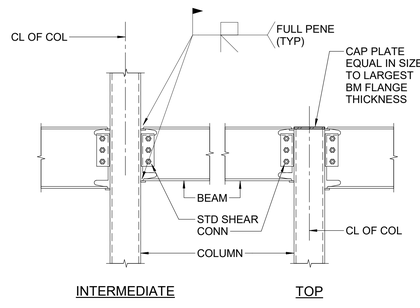


CORNER INTERSECTION

B2 TYPICAL BOND BEAM REINFORCING DETAILS
NTS

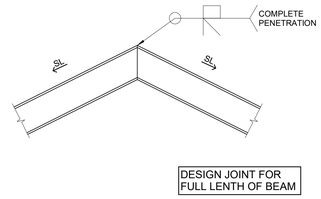


B3 TYPICAL WIDE FLANGE BEAM TO HSS SQUARE COLUMN CONNECTION DETAILS
NTS

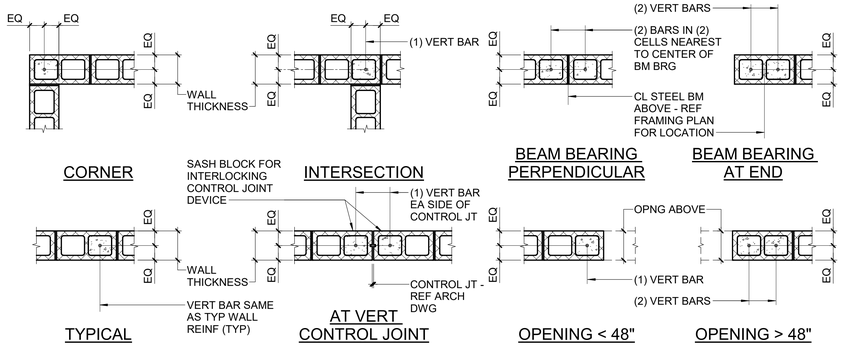


INTERMEDIATE TOP

B4 TYPICAL WIDE FLANGE BEAM TO HSS COLUMN MOMENT CONNECTION DETAILS
NTS

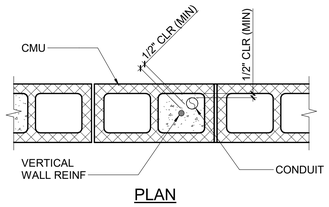


B5 TYPICAL KNUCKLED BEAM DETAILS
NTS



A1 TYPICAL CONCRETE MASONRY REINFORCING DETAILS
NTS

NOTES:
1. LOCATE CONDUIT IN UNREINFORCED CELLS TO EXTENT POSSIBLE.
2. DO NOT PLACE CONDUIT PASSING HORIZONTALLY THROUGH PLANE OF WALL WITHOUT WRITTEN APPROVAL.
3. CONDUIT SIZES GREATER THAN OR EQUAL TO 1 1/2" DIAMETER MUST BE PLACED IN UNREINFORCED CELLS.



PLAN

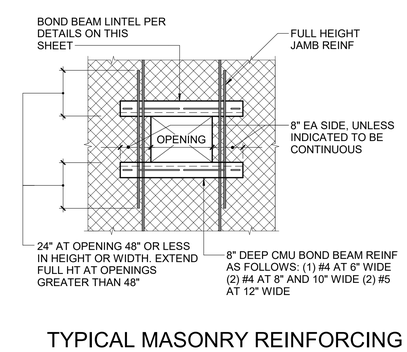
CONDUIT SIZE	AREA OF DISPLACEMENT (SINGLE CONDUIT)
1/2"Ø	0.196 in²
3/4"Ø	0.442 in²
1"Ø	0.785 in²
1 1/4"Ø	1.227 in²

TOTAL DISPLACEMENT CALC
1/2"Ø + 3/4"Ø CONDUIT IN SAME CELL = 0.196 in² + 0.442 in² = 0.638 in²

NOMINAL CMU SIZE	MAXIMUM AREA OF GROUT DISPLACEMENT*
8"	0.646 in²

NOTE *: PER ACI 530.1

A2 TYPICAL EMBEDDED CONDUIT IN MASONRY DETAIL
NTS



A3 TYPICAL MASONRY REINFORCING AT WALL OPENING DETAIL
NTS

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NO.	REVISION	DATE

JOB NUMBER **22-086**
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PROJECT STATUS **ISSUE FOR BID**
SHEET **TYPICAL DETAILS**

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PLUMBING ABBREVIATIONS

#	POUNDS; NUMBER
A	COMPRESSED AIR
AAV	AIR ADMITTANCE VALVE
ACFM	ACTUAL CUBIC FEET PER MINUTE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AFH	ANTI-FREEZE HYDRANT
ALT	ALTERNATE
ARCH	ARCHITECTURAL; ARCHITECT
AUTO	AUTOMATIC
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CELSIUS
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CI	CAST IRON
CLG	CEILING
CO	CLEAN OUT
CO2	CARBON DIOXIDE
CONC	CONCRETE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CTR	CENTER
CU	COPPER
CUFT	CUBIC FOOT; CUBIC FEET
CUYD	CUBIC YARD
CW	COLD WATER
DDC	DIRECT DIGITAL CONTROLS
DI	DUCTILE IRON
DIA	DIAMETER
DIV	DIVISION
DIW	DEIONIZED WATER
DN	DOWN
DWG	DRAWING
EA	EACH
EFF	EFFICIENCY
ELEC	ELECTRICAL
ELEV	ELEVATION
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
EXP	EXPANSION
F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FL,FLR	FLOOR
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FS	FLOOR SINK
FT	FOOT; FEET
G	NATURAL GAS
GA	GAGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HD	HUB DRAIN; HEAT DETECTOR
HORIZ	HORIZONTAL
HP	HIGH PRESSURE OR HORSEPOWER
HT	HEIGHT
HTG	HEATING
HW	HOT WATER
HWR	HOT WATER RETURN
HX	HEAT EXCHANGER
ID	INDIRECT DRAIN OR INSIDE DIAMETER
IN	INCH
INV	INVERT
KW	KILOWATT
LP	LOW PRESSURE
LPG	LIQUID PETROLEUM GAS
MA	MEDICAL AIR
MAX	MAXIMUM

PLUMBING ABBREVIATIONS

MBH	1000 BRITISH THERMAL UNITS PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFG	MANUFACTURING
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MOCP	MAXIMUM OVER CURRENT PROTECTION
MP	MEDIUM PRESSURE
MRT	MOTOR RATED TOGGLE SWITCH
MS	MOTOR STARTER
MSD	COMBINATION MOTOR STARTER & DISCONNECT
MTD	MOUNTED
N	NITROGEN
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NIC	NOT IN CONTRACT
NO	NITROUS OXIDE
NTS	NOT TO SCALE
O	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW (EMERGENCY) DRAIN
ODL	OVERFLOW (EMERGENCY) DRAIN LEADER
OSD	OPEN SIGHT DRAIN
P	PUMP
PD	PRESSURE DROP; PUMPED DISCHARGE
PRV	PRESSURE REDUCING VALVE; PRESSURE RELIEF VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RD	ROUND; ROOF DRAIN
RDL	ROOF DRAIN LEADER
RECIRC	RECIRCULATING
REINF	REINFORCING
REV	REVISION
RL	ROOF LEADER
RM	ROOM
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SECT	SECTION
SF	SQUARE FEET
SM	SMOKE PIPE
SPEC	SPECIFICATION
SRV	SAFETY RELIEF VALVE
SS	SERVICE SINK; STAINLESS STEEL; SANITARY SEWER
ST	STORM
TD	TRENCH DRAIN
TMV	THERMOSTATIC MIXING VALVE
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TWH	TANKLESS WATER HEATER
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
V	VENT
VAC	VACUUM (SUCTION)
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET/WATER COLUMN
WCO	WALL CLEANOUT
WH	WATER HEATER
WPD	WORKING PRESSURE DROP
XT	THERMAL EXPANSION TANK
Ø	ROUND; DIAMETER; PHASE

PLUMBING PIPING SYMBOLS

#" SYSTEM / #" SYSTEM	PIPE SIZE AND SYSTEM IDENTIFICATION (SEE ABBREVIATIONS FOR SYSTEM TYPES)
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER SUPPLY
	DOMESTIC HOT WATER RETURN
	SANITARY, SOIL OR WASTE
	SANITARY, SOIL OR WASTE VENT
	EXISTING DOMESTIC COLD WATER
	EXISTING DOMESTIC HOT WATER SUPPLY
	EXISTING DOMESTIC HOT WATER RETURN
	EXISTING SANITARY, SOIL OR WASTE
	EXISTING SANITARY, SOIL OR WASTE VENT
	VALVE (REFER TO SPECIFICATIONS)
	BALANCING VALVE (REFER TO SPECIFICATIONS)
	CALIBRATED BALANCING VALVE
	BUTTERFLY VALVE
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	PLUG VALVE
	BALL VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	GAS COCK
	Y-TYPE STRAINER
	BASKET STRAINER
	BACKFLOW PREVENTER
	PIPE TURNING UP
	PIPE TURNING DOWN
	PIPE CONNECTION AT BOTTOM OF MAIN
	PIPE CAP
	PIPE UNION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	PIPE ALIGNMENT GUIDE
	PIPE ANCHOR
	FLEXIBLE PIPE CONNECTION
	PRESSURE GAUGE
	THERMOMETER
	STEAM TRAP
	DIRECTION OF FLOW IN PIPE
	SLOPE PIPE IN DIRECTION OF ARROW
	WATER HAMMER ARRESTER OR SHOCK ABSORBER
	AIR ADMITTANCE VALVE
	FLOOR DRAIN
	ROOF DRAIN
	FLOOR CLEANOUT
	WALL CLEANOUT
	GRADE CLEANOUT
	FLOOR SINK
	HUB DRAIN
	HOSE BIBB/WALL HYDRANT
P-#	PLUMBING FIXTURE DESIGNATION
	PUMP
	PETES PLUG (P & T PORT)
	EXISTING PIPING
	PIPING TO BE DEMOLISHED
	NEW PIPING

ELECTRICAL SYMBOLS

VFD	VARIABLE FREQUENCY DRIVE
	MOTOR STARTER
	COMBINATION MOTOR STARTER/DISCONNECT
	FUSED DISCONNECT
NF	NON-FUSED DISCONNECT
	DISCONNECT, EXISTING OR BY OTHERS
PN L	POWER PANEL, EXISTING OR BY OTHERS
S	TOGGLE SWITCH
S_M	MOTOR RATED TOGGLE SWITCH

GENERAL SYMBOLS

PLAN OR DETAIL NUMBER / SHEET NUMBER	COLUMN NUMBER OR LETTER
ELEVATION LETTER / SHOWN ON SHEET NUMBER	DRAWING REVISION NUMBER
SECTION NUMBER / SHOWN ON SHEET NUMBER	KEYED NOTE NUMBER
DIMENSION LINE	CONNECT TO EXISTING
	REMOVE TO THIS POINT
DETAIL NUMBER WITH SHEET NO.	NORTH ARROW

PLUMBING GENERAL NOTES

1. COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF ANY PIPING, OR EQUIPMENT. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.
2. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
3. ALL PIPING LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC AND DO NOT INDICATE ALL FITTINGS REQUIRED TO COMPLETE WORK. COORDINATE THE PIPING LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION, INCLUDING CONDUITS AND CABLE TRAYS. PROVIDE ALL PIPING OFFSETS REQUIRED FOR THE COMPLETE INSTALLATION OF THE SYSTEM WHETHER OR NOT THE OFFSETS ARE INDICATED ON THE PLANS. INSTALL PIPING HIGH ENOUGH TO AVOID LIGHTS, CONDUIT AND MISCELLANEOUS PIPING, BUT LOW ENOUGH TO ALLOW FOR EASY ACCESS TO SYSTEM BALANCING DEVICES. DO NOT BLOCK ACCESS TO DEVICES.
4. LOCATE PIPING AND EQUIPMENT SUCH THAT ACCESS PANELS MAY BE FULLY OPENED (VIA TILE CEILING) FOR SERVICING VALVES. COORDINATE LOCATION WITH LIGHTING FIXTURES OR ANY OTHER EQUIPMENT.
5. COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF EQUIPMENT AND MATERIALS. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.
6. INSTALL ALL EQUIPMENT WITH THE MANUFACTURER'S RECOMMENDATION AND CODE REQUIRED CLEARANCES. INSURE ALL ITEMS FURNISHED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS AND FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO PURCHASE AND INSTALLATION.
7. COORDINATE EXACT SIZE AND LOCATION OF ALL PENETRATIONS THROUGH THE ROOF WITH ALL TRADES.
8. COORDINATE LOCATIONS AND ELEVATIONS OF ALL EXPOSED ITEMS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: SENSORS, WALL DEVICES, CONTROL PANELS, AND ALARMS.
9. FURNISH 24"x24" ACCESS DOORS (UNLESS OTHERWISE INDICATED) AT ALL MAINTENANCE ITEMS THAT ARE CONCEALED; SUCH AS EQUIPMENT, VALVES, SENSORS, ETC. COORDINATE EXACT LOCATIONS WITH ARCHITECT/ENGINEER PRIOR TO INSTALLATION.
10. THE SIZE OF COLD AND HOT WATER PIPE RUNOUTS TO FIXTURES SHALL BE THE SAME AS THE POTABLE WATER CONNECTIONS LISTED IN THE PLUMBING FIXTURE SCHEDULE, UNLESS NOTED OTHERWISE.
11. THE SIZE OF SANITARY WASTE AND VENT PIPING TO FIXTURE SHALL BE THE SAME AS WASTE AND VENT CONNECTIONS LISTED IN THE PLUMBING FIXTURE SCHEDULE, UNLESS NOTED OTHERWISE.

WATER & SANITARY LOAD SUMMARY

SANITARY (FIXTURE UNITS)	WATER (FIXTURE UNITS)	WATER DEMAND (GPM)
22	47.5	49.0

PLUMBING DRAWING LIST

NO.	TITLE
P001	STANDARDS, SYMBOLS & ABBREVIATIONS
P111	PLANS - RESTROOM BUILDING
P112	PLANS - TRAINING TOWER
P113	PLANS - TRAINING TOWER
P301	DETAILS
P401	SCHEDULES

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SHEET **STANDARDS, SYMBOLS & ABBREVIATIONS**

P001

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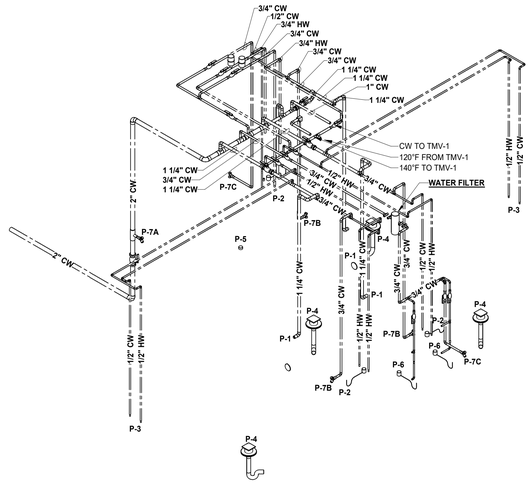
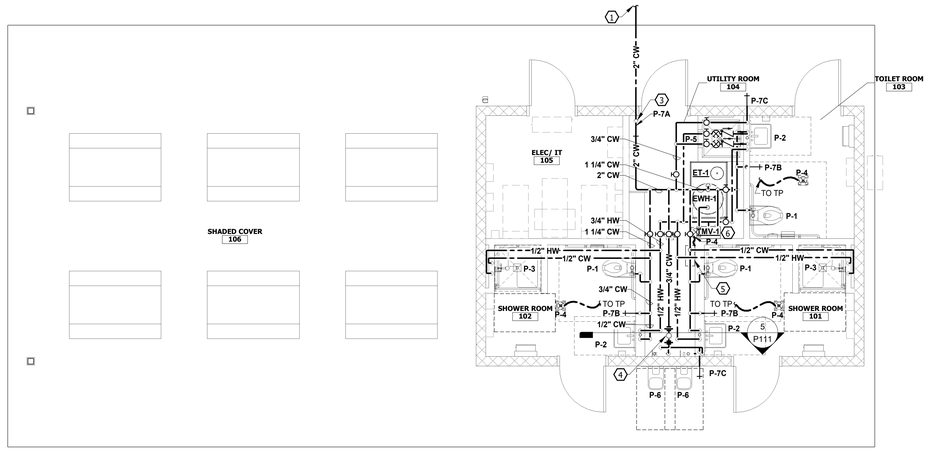
KEY NOTES TO P111

1. CONNECT TO DOMESTIC WATER SERVICE AT BUILDING 10' LINE. COORDINATE WITH UTILITY CONTRACTOR.
2. CONNECT TO SANITARY WASTE SERVICE AT BUILDING 10' LINE. COORDINATE WITH UTILITY CONTRACTOR.
3. PROVIDE MAIN SHUTOFF VALVE 18" AFF.
4. ZURN MODEL PWDWHCUC1 WATER FILTER OR EQUIVALENT. PROVIDE UNIONS ON EACH SIDE OF WATER FILTER.
5. ELECTRONIC TRAP PRIMER (TP). MOUNT AT 60" AFF.
6. THERMOSTATIC MIXING VALVE.

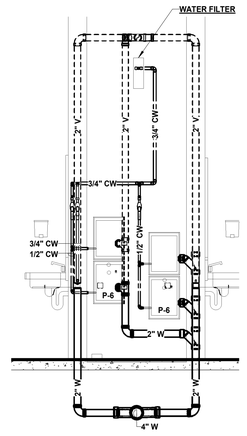


3 P111 **DOMESTIC WATER RISER**
SCALE: NTS



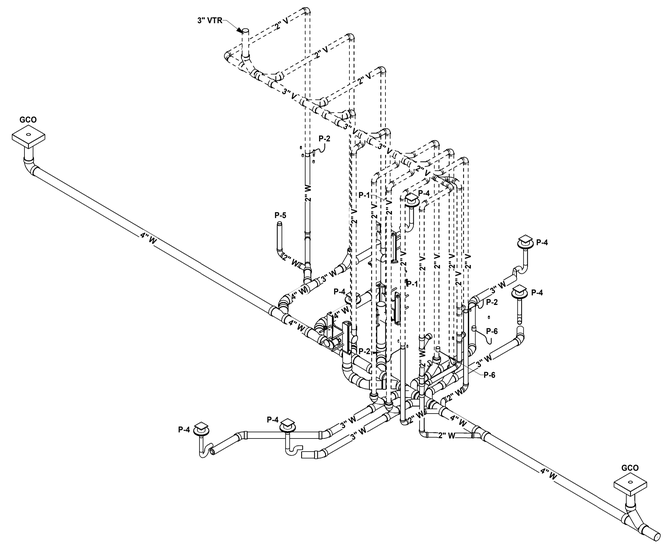
1 P111 **FLOOR PLAN - RESTROOM/SHADE STRUCTURE - DOMESTIC WATER**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

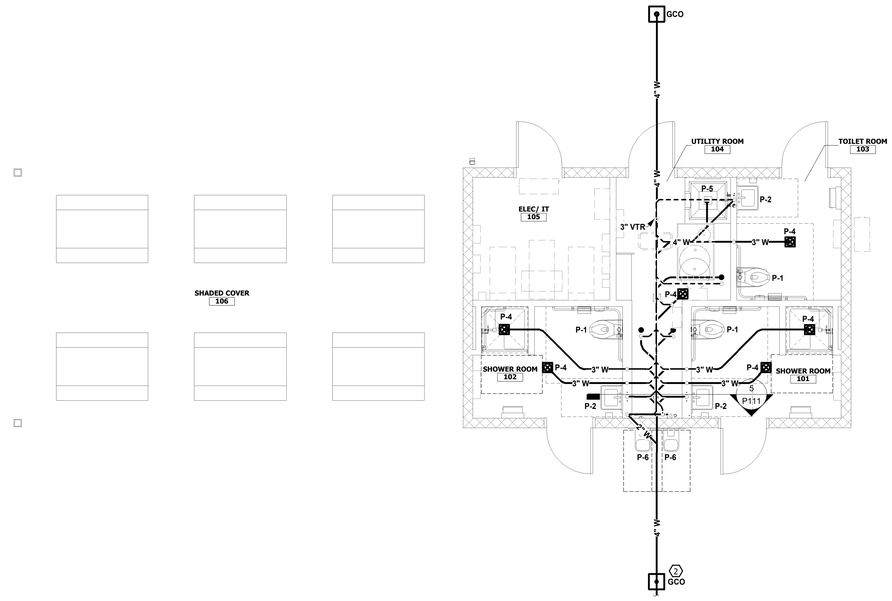


5 P111 **UTILITY ROOM - SECTION VIEW**
SCALE: 1/2" = 1'-0"

1' 0 1' 2' 3' 4' 5'



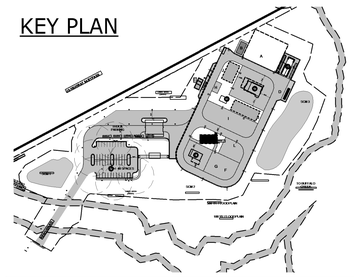
4 P111 **SANITARY WASTE RISER**
SCALE: NTS



2 P111 **FLOOR PLAN - RESTROOM/SHADE STRUCTURE - SANITARY WASTE & VENT**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

KEY PLAN



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P111

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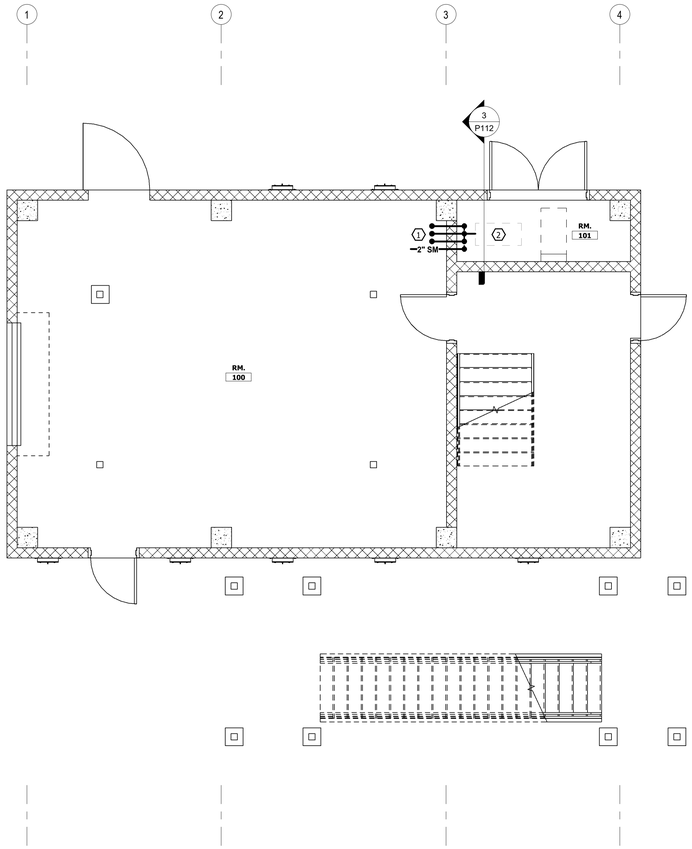
KEY NOTES TO P112

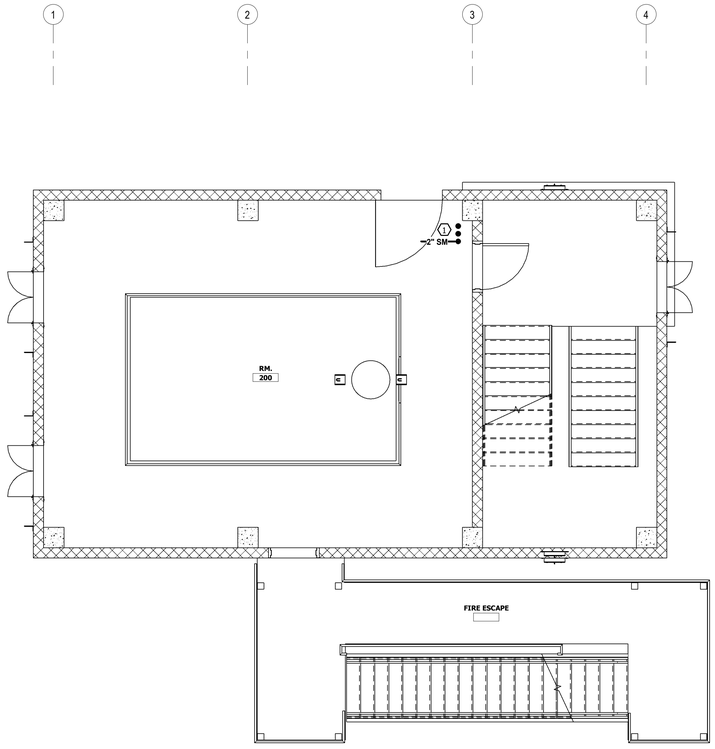
1 PVC SMOKE MACHINE PIPING TO EACH FLOOR.

2 SMOKE MACHINE PROVIDED BY OWNER.

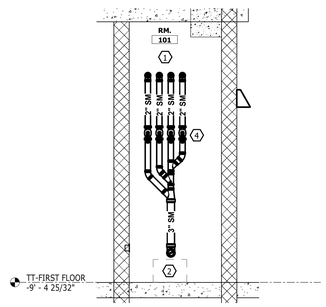
4 PROVIDE BALL VALVE TO ISOLATE EACH FLOOR.



1 P112 **FIRST FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



2 P112 **SECOND FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



3 P112 **SMOKE PIPING RISER**
SCALE: 3/8" = 1'-0"
2' 0 2' 4' 6'

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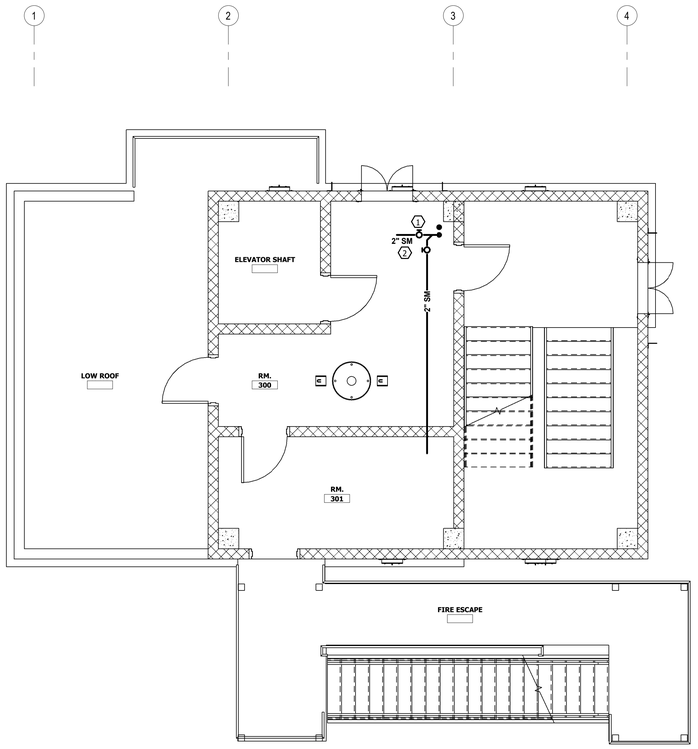
KEY NOTES TO P113

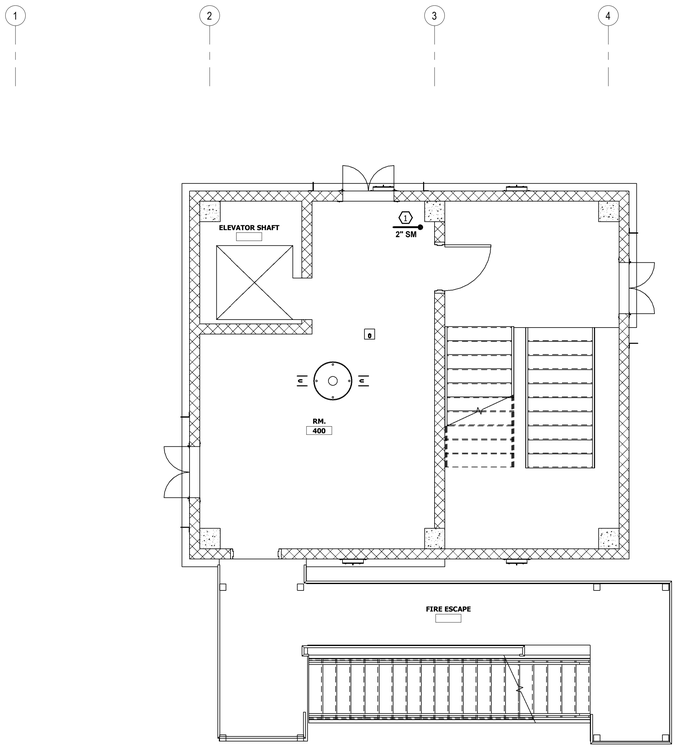
1 PVC SMOKE MACHINE PIPING TO EACH FLOOR.

2 PROVIDE BALL VALVE TO ISOLATE EACH ROOM ON FLOOR.



1 P113 THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"

4' 0 4' 8'



2 P113 FOURTH FLOOR PLAN
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

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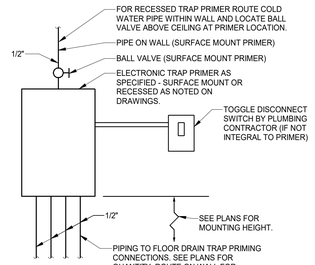
HAMMER ARRESTOR SCHEDULE			
SIZE	FIXTURE UNIT	REF. PDI STANDARD	MANUFACTURER
1/2"	1-11	A	JOSAM OR EQUIVALENT ZURN, SMITH, WATTS
3/4"	12-32	B	JOSAM OR EQUIVALENT ZURN, SMITH, WATTS
1"	33-60	C	JOSAM OR EQUIVALENT ZURN, SMITH, WATTS
1-1/4"	61-113	D	JOSAM OR EQUIVALENT ZURN, SMITH, WATTS
1-1/2"	114-154	E	JOSAM OR EQUIVALENT ZURN, SMITH, WATTS
2"	155-330	F	JOSAM OR EQUIVALENT ZURN, SMITH, WATTS

NOTES:

1. ARRESTOR SHALL BE APPROVED BY THE MANUFACTURER TO BE INSTALLED WITH NO ACCESS PANEL REQUIRED.
2. ARRESTORS SHALL BE OF COPPER OR STAINLESS STEEL WITH MANUFACTURERS LIMITED LIFETIME WARRANTY. WARRANTY SHALL COVER THE LIFE OF THE INSTALLED PLUMBING SYSTEM.
3. PROVIDE A NORMALLY OPEN BALL VALVE AT CONNECTION TO THE DOMESTIC SUPPLY LINE.
4. THE ARRESTOR DOES NOT REQUIRE MAINTENANCE AND THE WARRANTY ELIMINATES THE NEED FOR ACCESS TO THE UNIT.

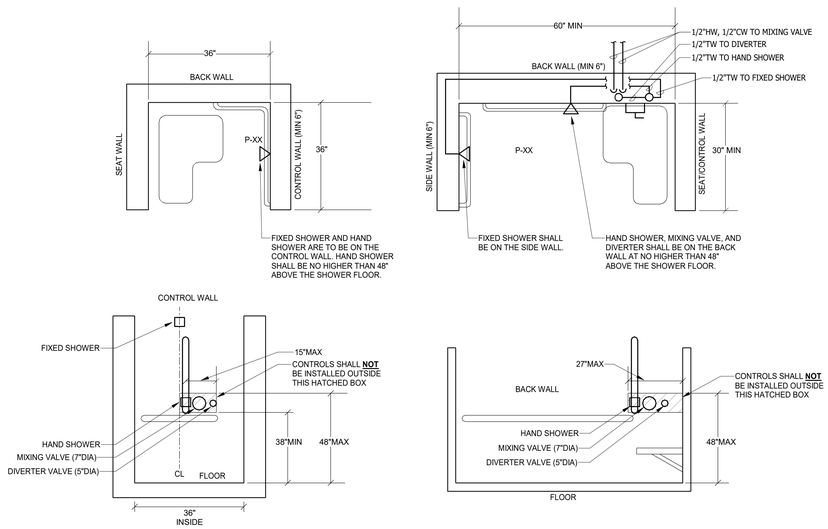
SO DETAIL: PB14

7 P301 DOMESTIC WATER HAMMER ARRESTOR SCHEDULE
SCALE: NTS



SW DETAIL: PB13

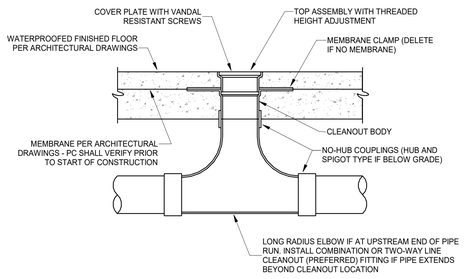
8 P301 ELECTRONIC TRAP PRIMER
SCALE: NTS



NOTES:

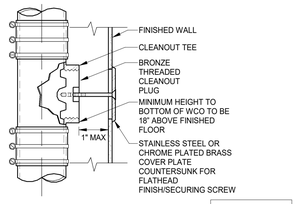
1. DIAGRAMS ABOVE ARE FROM THE ADA STANDARDS, CHAPTER 6, PLUMBING ELEMENTS AND FACILITIES. DIAGRAMS ARE DIAGRAMATIC AND THE CONTRACTOR SHALL FIELD VERIFY ALL ROUGH-INS.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHTS FOR CONTROLS AND GRAB BARS.
3. THE HAND SHOWER SHALL BE SET AT A MAXIMUM OF 48" ABOVE THE SHOWER FLOOR.
4. IF THERE IS NO SEAT FOR THE ROLL-IN SHOWER, THE CONTROLS AND HAND SHOWER CAN BE SET ON EITHER THE BACK WALL OR SIDE WALLS, NOT EXCEEDING 48" FROM THE SHOWER FLOOR.

9 P301 ADA SHOWER DETAIL
SCALE: NTS



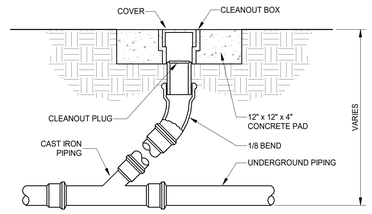
SO DETAIL: PB07

3 P301 FLOOR CLEANOUT DETAIL
SCALE: NTS



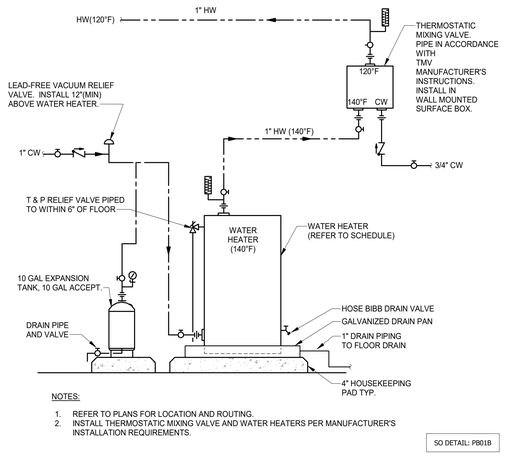
SO DETAIL: PB10

4 P301 WALL CLEANOUT DETAIL
SCALE: NTS



SO DETAIL: PB04

5 P301 YARD CLEANOUT
SCALE: NTS

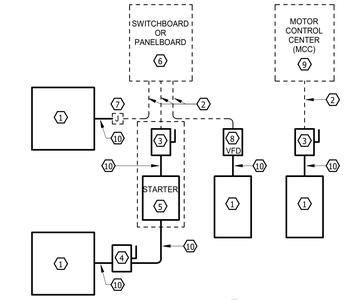


NOTES:

1. REFER TO PLANS FOR LOCATION AND ROUTING.
2. INSTALL THERMOSTATIC MIXING VALVE AND WATER HEATERS PER MANUFACTURER'S INSTALLATION REQUIREMENTS.

SO DETAIL: PB01B

6 P301 SINGLE 140° WATER HEATER PIPING DETAIL
SCALE: NTS



KEYED NOTES:

1. EQUIPMENT FURNISHED AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS.
2. CONDUIT & WIRING BY DIVISION 26 CONTRACTOR.
3. PROVIDE DISCONNECT AND FUSING.
4. PROVIDE ADDITIONAL DISCONNECT IF REQUIRED BY NEC.
5. A COMBINATION STARTER MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER.
6. POWER DISTRIBUTION EQUIPMENT BY DIVISION 26 CONTRACTOR.
7. JUNCTION BOX REQUIRED BY THE DIVISION 26 CONTRACTOR FOR EQUIPMENT IF NO STARTER IS REQUIRED. PROVIDE MOTOR-RATED DISCONNECT SWITCH WHERE REQUIRED BY CODE. THE DIVISION 26 CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE DISCONNECT. PROVIDE LOAD SIDE WIRING.
8. PROVIDE VARIABLE FREQUENCY DRIVE (VFD) WHERE NECESSARY.
9. FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER OR VFD IN THE MCC SHALL BE PROVIDED BY THE DIVISION 26 CONTRACTOR.
10. PROVIDE RACEWAY & WIRING IN ACCORDANCE WITH REQUIREMENTS FOR RACEWAYS AND WIRING METHODS IN DIVISION 26 SPECIFICATIONS.

SO DETAIL: MR01

1 P301 ELECTRICAL CONNECTIONS TO EQUIPMENT
SCALE: NTS

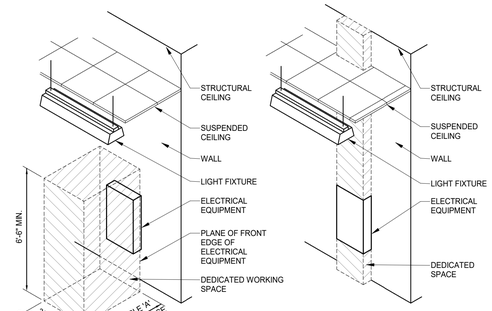


FIGURE 1 FIGURE 2

TABLE A - WORKING CLEARANCES				
VOLTAGE TO GROUND NOMINAL	CONDITION	MINIMUM CLEAR DISTANCE (FEET) 1	2	3
0-150		3	3	3
151-600		3	3 1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR UNGROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1), WITH THE OPERATOR BETWEEN.

NOTES:

1. THESE FIGURES ILLUSTRATE THE WORKING CLEARANCE AND DEDICATED SPACE AROUND ELECTRICAL EQUIPMENT AS REQUIRED BY NEC SECTION 110-26.
2. DEDICATED SPACE RUNS TO A HEIGHT OF 6'-0" ABOVE EQUIPMENT. DEDICATED SPACE CONTINUES THROUGH SUSPENDED CEILING OR UP TO STRUCTURAL CEILING. ANY FOREIGN SYSTEMS TO THE ELECTRICAL EQUIPMENT SHALL NOT RUN WITHIN THIS SPACE. (FIGURE 2)

SO DETAIL: MR03

2 P301 CLEARANCES FOR ELECTRICAL EQUIPMENT
SCALE: NTS

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PLUMBING-FIXTURE SCHEDULE

TAG	ADA	FIXTURE DESCRIPTION	BASIS OF DESIGN	CW	HW	WASTE	VENT	MOUNTING HEIGHT	REMARKS	IMAGE #1	IMAGE #2
P-1	Yes	WATER CLOSET	BOWL: KOHLER KINGSTON K-84325, ELONGATED BOWL, WALL MOUNTED, VITREOUS CHINA, WHITE. FLUSH VALVE: SLOAN WES 111, MANUAL DUAL FLUSH, POLISHED CHROME FINISH, 1.6/1.1 GPF. CARRIER: ZURN SIPHON JET CARRIER SYSTEM. SEAT: KOHLER K-4670-SC, ELONGATED, OPEN-FRONT, SELF-SUSTAINING CHECK HINGES.	1-1/4"	-	4"	2"	RIM 17" AFF			
P-2	Yes	LAVATORY	SINK: KOHLER HUDSON K-2867, WALL MOUNTED, 4" CENTERED FAUCET HOLES, 20" WIDE x 18" FRONT TO BACK. FAUCET: AMERICAN STANDARD SELECTRONIC 605B.105, SENSOR OPERATED, HARD WIRED, DECK MOUNTED, 5-7/16" SPOUT LENGTH, CHROME FINISH, 0.5 GPM, 605XTMV1070 ASSE 1070 THERMOSTATIC MIXING VALVE, 605P.400 4" BRASS DECK PLATE. DRAIN/TAILPIECE: MCGUIRE 155A, OPEN GRID CHROME PLATED PO PLUG, 1-1/4" x 6" TAILPIECE. P-TRAP: MCGUIRE 8902DF, 1-1/4" x 1-1/2", ADJUSTABLE, CLEANOUT PLUG, 11-1/2" CENTER TO END LENGTH. SUPPLIES: MCGUIRE LFH2165, WHEEL HANDLE SUPPLY KIT, 1/2" IPS x 3/8" OD ANGLE STOP VALVE, 12" FLEXIBLE COPPER RISERS. PIPING COVERS: TRUEBRO LAV GUARD 2 102-EZ, P-TRAP COVER AND TWO ANGLE VALVE COVERS, PAINTABLE WHITE FINISH, REUSABLE FASTENERS.	1/2"	1/2"	2"	2"	34" AFF			
P-3	Yes	SHOWER	SHOWER TRIM: SYMMONS IDENTITY S6798TRM, FIXED SHOWER HEAD, HAND SHOWER, CONTROL VALVE WITH INTEGRAL DIVERTER, WALL HOOK FOR HAND SHOWER, 60" METAL HOSE, 2.0 GPM FLOW. SHOWER VALVE: SYMMONS TEMPTROL PRESSURE BALANCING SHOWER VALVE.	1/2"	1/2"	2"	2"				
P-4		FLOOR DRAIN	ZURN MODEL ZN415B, 6" DIAMETER FLOOR/SHOWER DRAIN, DURA-COATED CAST IRON BODY, MEMBRANE CLAMP WITH ADJUSTABLE COLLAR "TYPE B" POLISHED NICKEL BRONZE, LIGHT-DUTY STRAINER WITH TRAP PRIMER CONNECTION.	-	-	2"/3"/4"	2"				
P-5		MOP RECEPTOR	SINK: FIAT MODEL TSB-3001, 32" x 32" x 12" WITH 6" DROP FRONT, STAINLESS STEEL CAPS ON ALL CURBS, 3" INTEGRAL STAINLESS STEEL DRAIN BODY FOR CAULKED CONNNECTION, STAINLESS STEEL STRAINER, POLISHED TERRAZZO OF BLACK AND WHITE CHIPS CAST IN GRAY PORTLAND CEMENT. FAUCET: FIAT MODEL 830AA FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, WALL BRACE, PAIL HOOK AND 3/4" HOSE THREAD SPOUT. ACCESSORIES: FIAT MODEL 832-AA HOSE AND STAINLESS STEEL BRACKET; FIAT MODEL 889-CC STAINLESS STEEL MOP HANGER; FIAT MSG3232 STAINLESS STEEL WALL GUARDS. SUPPLIES: INSTALL CHECK AND BALL VALVES IN WATER SUPPLY PIPES IN ACCESSIBLE LOCATIONS.	3/4"	3/4"	3"	2"	FAUCET 36" AFF			
P-6	Yes	OUTDOOR DRINKING FOUNTAIN / BOTTLE FILLER	DRINKING FOUNTAIN AND BOTTLE FILLER: HAWS 1109FRP, WALL MOUNTED DRINKING FOUNTAIN, NON-REFRIGERATED, NON-FILTERED, STAINLESS STEEL, FREEZE RESISTANT, BOTTLE FILLER, FREEZE-RESISTANT, STAINLESS STEEL, FREEZE RESISTANT VALVES, MOUNTED IN CABINET, INSTALLED ON INSIDE OF ROOM, PNEUMATIC OPERATED, SURFACE MOUNTED. POLISHED CHROME-PLATED BRASS BUBBLER HEAD, VADAL RESISTANT.	1/2"	-	2"	2"	AS RECOMMENDED BY MANUFACTURER FOR ADA COMPLIANCE			
P-7A		HOSE BIBB - MECHANICAL	WOODFORD MODEL 24, ANTI-SIPHON, VACUUM BREAKER PROTECTED, METAL WHEEL HANDLE, 3/4" MALE HOSE THREAD OUTLET.	3/4"	-	-	-	18" AFF			
P-7B		HOSE BIBB - RESTROOM	CHICAGO FAUCETS MODEL 387-E27CP, POLISHED CHROME PLATED, SOLID BRASS BODY CONSTRUCTION, 2-1/4" TEE HANDLE, IN-LINE VACUUM BREAKER, 3/4" MALE HOSE THREAD OUTLET.	1/2"	-	-	-	WALL MOUNT. 18" AFF			
P-7C		NON-FREEZE WALL HYDRANT	ZURN MODEL Z1300, "ANTI-SIPHON" AUTOMATIC DRAINING, NON-FREEZE WALL HYDRANT FOR FLUSH INSTALLATION; INTEGRAL BACKFLOW PREVENTER, BRONZE CASING, NICKEL BRONZE BOX AND HINGED COVER WITH OPERATING KEY LOCK AND "WATER" CAST ON COVER.	3/4"	-	-	-	24" AFG	PROVIDE ADEQUATE LENGTH SO THAT VALVE IS ON HEATED SIDE OF WALL.		

ELECTRIC WATER HEATER SCHEDULE

DESIGNATION	SERVICE	TYPE	TEMPERATURE SETTING (F)	STORAGE CAPACITY (GAL)	RECOVERY (GPH)	No. OF ELEMENTS	SIMULTANEOUS OPERATION	CAPACITY PER ELEMENT (W)	VOLTAGE/PHASE
EWH-1	RESTROOM BUILDING	ELECTRIC TANK	140	80	81 @ 60°F	2	YES	6100	480/3

NOTES:
1 PROVIDE EXTERNAL DISCONNECT SWITCH FOR SINGLE POINT OF CONNECTION.

EXPANSION TANK SCHEDULE

DESIGNATION	SERVICE	TYPE	TOTAL VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	DIMENSIONS (DIA X HT)
ET-1	RESTROOM BUILDING	PARTIAL ACCEPTANCE BLADDER	10	10.00	10" X 37"

NOTES:
1 -

THERMOSTATIC MIXING VALVE SCHEDULE

DESIGNATION	SERVICE	TYPE	CAPACITY (GPM)	MIN. FLOW (GPM)	WPD (PSI)	CW EWT (F)	HW EWT (F)	HW LWT (F)
TMV-1	RESTROOM BUILDING	ASSE 1017	20	0.5	5.5	40	140	120

NOTES:
1 WPD IS BASED ON DESIGN FLOW CAPACITY.

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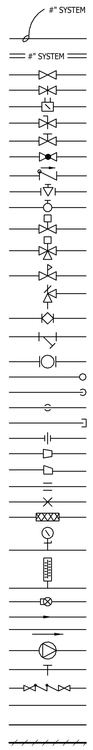
HVAC ABBREVIATIONS

#	POUNDS; NUMBER
A	COMPRESSED AIR
ACFM	ACTUAL CUBIC FEET PER MINUTE
ACH	AIR CHANGES PER HOUR
AD	ACCESS DOOR
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ARCH	ARCHITECTURAL; ARCHITECT
AS	AIR SEPERATOR
AUTO	AUTOMATIC
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BBD	BOILER BLOWDOWN
BFF	BELOW FINISHED FLOOR
BFW	BOILER FEED WATER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BP	BACKFLOW PREVENTER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CELSIUS; COMMON PORT
CD	CONDENSATE DRAIN
CDWP	CONDENSER WATER PUMP
CDWR	CONDENSER WATER RETURN
CDWS	CONDENSER WATER SUPPLY
CF	CHEMICAL FEED
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CHWP	CHILLED WATER PUMP
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CI	CAST IRON
CLG	CEILING
CO	CLEAN OUT; CARBON MONOXIDE
CO2	CARBON DIOXIDE
CONC	CONCRETE
COP	COEFFICIENT OF PERFORMANCE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CT	COOLING TOWER
CTR	CENTER
CU	COPPER; CONDENSING UNIT
CUFT	CUBIC FOOT; CUBIC FEET
CUH	CABINET UNIT HEATER
CUYD	CUBIC YARD
CW	COLD WATER
DB	DRY BULB
DD	DUCT MOUNTED SMOKE DETECTOR
DDC	DIRECT DIGITAL CONTROLS
DI	DUCTILE IRON
DIA	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DTWR	DUAL TEMPERATURE WATER RETURN
DTWS	DUAL TEMPERATURE WATER SUPPLY
DWG	DRAWING
DX	DIRECT EXPANSION
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
EL	ELEVATION
ELEC	ELECTRICAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ESS	EMERGENCY STOP SWITCH
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST; EXHAUST AIR; EXHAUST FAN
EXIST	EXISTING
EXP	EXPANSION
F	FAHRENHEIT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FFE	FINISHED FLOOR ELEVATION
FL	FLOOR
FLEX	FLEXIBLE
FOB	FLAT ON BOTTOM
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FSD	FIRE/SMOKE DAMPER
FT	FEET; FOOT
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GEX	GREASE EXHAUST AIR
GPH	GALLON PER HOUR
GPM	GALLON PER MINUTE
HD	HUB DRAIN; HEAT DETECTOR
HEX	HAZARDOUS EXHAUST
HOA	HANDS-OFF-AUTOMATIC
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
HSTAT	HUMIDISTAT
HT	HEIGHT
HTG	HEATING
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HWR	HEATING WATER RETURN

HVAC ABBREVIATIONS

HWS	HEATING WATER SUPPLY
HX	HEAT EXCHANGER
ID	INDIRECT DRAIN; INSIDE DIAMETER
IN	INCH
INV	INVERT
ISP	INTERNAL STATIC PRESSURE
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBHR	POUNDS PER HOUR
LP	LOW PRESSURE
LPG	LIQUID PETROLEUM GAS
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE CONDENSATE SUPPLY
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS PER HOUR
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MP	MEDIUM PRESSURE
MRT	MOTOR RATED TOGGLE SWITCH
MS	MOTOR STARTER
MS/D	COMBINATION MOTOR STARTER AND DISCONNECT
MTD	MOUNTED
MUA	MAKE UP AIR
MVD	MANUAL VOLUME DAMPER
N	NITROGEN
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NIC	NOT IN CONTRACT
NO	NITROUS OXIDE; NUMBER
NPSH	NET POSITIVE SUCTION HEAD
NTS	NOT TO SCALE
O	OXYGEN
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMTER
P	PUMP
PC	PLUMBING CONTRACTOR
PCHWP	PRIMARY CHILLED WATER PUMP
PCV	POLYVINYL CHLORIDE
PD	PRESSURE DROP
PHWP	PRIMARY HOT WATER PUMP
PI	PRESSURE INDEPENDENT
PICV	PRESSURE INDEPENDENT CONTROL VALVE
PNL	PANEL
PPH	POUNDS PER HOUR
PR	PUMPED CONDENSATE RETURN
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT
QTY	QUANTITY
RA	RETURN AIR
RD	ROUND
RECIR C	RECIRCULATING
REINF	REINFORCING
REL	RELIEF; RELIEF AIR
REV	REVISION
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RL	REFRIGERANT LIQUID
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SCFM	STANDARD CUBIC FEET PER MINUTE
SCHWP	SECONDARY CHILLED WATER PUMP
SD	SMOKE DAMPER
SECT	SECTION
SF	SUPPLY FAN; SQUARE FEET
SHWP	SECONDARY HOT WATER PUMP
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SPL	STATIC PRESSURE LOSS
SS	STAINLESS STEEL
STM	STEAM
TA	TRANSFER AIR
TAB	TEST AND BALANCE
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TU	TERMINAL UNIT
TYP	TYPICAL
UH	UNIT HEATER
UL	UNDERWRITERS LABORITORIES INC.
V	VENT
VA	VENTILATION AIR
VAC	VACCUUM (SUCTION)
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
W/	WITH
W/O	WITHOUT
WB	WET BULB
WG	WATER GAUGE
XT	EXPANSION TANK
Ø	ROUND; DIAMETER; PHASE

PIPING SYMBOLS



- PIPE SIZE AND SYSTEM IDENTIFICATION (SEE ABBREVIATIONS FOR SYSTEM TYPES)
- VALVE (REFER TO SPECIFICATIONS)
- BALANCING VALVE (REFER TO SPECIFICATIONS)
- CALIBRATED BALANCING VALVE
- BUTTERFLY VALVE
- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- PLUG VALVE
- BALL VALVE
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- MAKE UP AIR
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- GAS COCK
- Y-TYPE STRAINER
- BASKET STRAINER
- PIPE TURNING UP
- PIPE TURNING DOWN
- PIPE CONNECTION AT BOTTOM OF MAIN
- PIPE CAP
- PIPE UNION
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- PIPE ALIGNMENT GUIDE
- PIPE ANCHOR
- FLEXIBLE PIPE CONNECTION
- PRESSURE GAUGE
- THERMOMETER
- STEAM TRAP
- DIRECTION OF FLOW IN PIPE
- SLOPE PIPE IN DIRECTION OF ARROW
- PUMP
- PETES PLUG (P & T PORT)
- BACKFLOW PREVENTER
- EXISTING PIPING
- NEW PIPING
- PIPING TO BE DEMOLISHED

DUCTWORK SYMBOLS

- SUPPLY, VENTILATION, OUTSIDE AIR DUCT SECTION
- RETURN AIR DUCT SECTION
- EXHAUST OR RELIEF AIR DUCT SECTION
- 24x24 — RECTANGULAR DUCT DIMENSIONS (IN PLAN WIDTH x HEIGHT INCHES)
- 24/12 — FLAT OVAL DUCT DIMENSIONS
- 24Ø — ROUND DUCT DIMENSIONS
- EXISTING DUCT
- DUCT TO BE DEMOLISHED
- NEW DUCT
- #/1'-0" — SLOPE DUCT IN DIRECTION OF ARROW
- BELL MOUTH TAP FOR MEDIUM PRESSURE
- CONICAL TAP WITH BALANCING DAMPER WITH LOCKING QUADRANT OPERATOR FOR LOW PRESSURE TAKEOFFS
- 45° TAP WITH BALANCING DAMPER WITH LOCKING QUADRANT OPERATOR
- SUPPLY DIFFUSER
- RETURN GRILLE
- EXHAUST GRILLE
- MITERED ELBOW
- RADIUS ELBOW
- FLEXIBLE DUCT
- VOLUME DAMPER WITH MANUAL OPERATOR AND LOCKING QUADRANT
- D — DUCT MOUNTED MOTORIZED DAMPER
- H — DUCT MOUNTED STEAM HUMIDIFIER
- DD — DUCT MOUNTED SMOKE DETECTOR
- FD — FIRE DAMPER, DAMPER TO MATCH RATING
- SD — SMOKE DAMPER, DAMPER TO MATCH RATING
- FSD — COMBINATION FIRE/SMOKE DAMPER, DAMPER TO MATCH RATING
- R — CEILING RADIATION DAMPER, DAMPER TO MATCH RATING
- A | 100 — AIR DISTRIBUTION SYMBOL, LETTER(S) DENOTES TYPE, NUMBER INDICATES CFM
- T — THERMOSTAT OR ROOM SENSOR
- H — HUMIDISTAT OR ROOM SENSOR
- DDC — DIRECT DIGITAL CONTROLS CABINET
- T — EXISTING THERMOSTAT OR ROOM SENSOR

ELECTRICAL SYMBOLS

- VFD — VARIABLE FREQUENCY DRIVE
- MOTOR STARTER
- COMBINATION MOTOR STARTER/DISCONNECT
- FUSED DISCONNECT
- NF — NON-FUSED DISCONNECT
- DISCONNECT, EXISTING OR BY OTHERS
- PN — POWER PANEL, EXISTING OR BY OTHERS
- S — TOGGLE SWITCH
- S_M — MOTOR RATED TOGGLE SWITCH

GENERAL SYMBOLS

- PLAN OR DETAIL NUMBER / SHEET NUMBER
- ELEVATION LETTER / SHOWN ON SHEET NUMBER
- SECTION NUMBER / SHOWN ON SHEET NUMBER
- DIMENSION LINE
- DETAIL NUMBER WITH SHEET NO.
- A — COLUMN NUMBER OR LETTER
- 1 — DRAWING REVISION NUMBER
- KEYED NOTE NUMBER
- CONNECT TO EXISTING
- REMOVE TO THIS POINT
- NORTH ARROW

HVAC GENERAL NOTES

1. COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF ANY PIPING, DUCTWORK OR EQUIPMENT. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.
2. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
3. ALL DUCT AND PIPING LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC AND DO NOT INDICATE ALL FITTINGS REQUIRED TO COMPLETE WORK. COORDINATE THE DUCT AND PIPING LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION, INCLUDING CONDUITS AND CABLE TRAYS. PROVIDE ALL DUCT AND/OR PIPING OFFSETS REQUIRED FOR THE COMPLETE INSTALLATION OF THE SYSTEM WHETHER OR NOT THE OFFSETS ARE INDICATED ON THE PLANS. INSTALL DUCTWORK AND PIPING HIGH ENOUGH TO AVOID LIGHTS, CONDUIT AND MISCELLANEOUS PIPING, BUT LOW ENOUGH TO ALLOW FOR EASY ACCESS TO SYSTEM BALANCING DEVICES. DO NOT BLOCK ACCESS TO DEVICES.
4. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL DETAILS FOR EXACT LOCATION OF ALL CEILING AND SIDEWALL AIR DISTRIBUTION AND DEVICES.
5. LOCATE UNITS SUCH THAT ACCESS PANELS MAY BE FULLY OPENED (VIA TILE CEILING) FOR SERVICING UNIT. COORDINATE LOCATION WITH LIGHTING FIXTURES OR ANY OTHER EQUIPMENT.
6. ROUND DUCT RUN-OUTS TO DIFFUSERS SHALL BE SAME SIZE AS INLET DIAMETER SCHEDULED, UNLESS NOTED OTHERWISE.
7. ALL DUCT DIMENSIONS ARE INSIDE CLEAR. SEE DETAILS AND SPECIFICATIONS FOR INSULATION REQUIREMENTS.
8. PROVIDE BALANCING DAMPERS WHERE INDICATED ON THE PLANS AND WHERE REQUIRED FOR SYSTEM BALANCING.
9. INSTALL ALL EQUIPMENT WITH THE MANUFACTURER'S RECOMMENDATION AND CODE REQUIRED CLEARANCES. INSURE ALL ITEMS FURNISHED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS AND FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO PURCHASE AND INSTALLATION.
10. COORDINATE LOCATIONS AND ELEVATIONS OF ALL EXPOSED MECHANICAL ITEMS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: SENSORS, WALL DEVICES, SIDEWALL GRILLES, CONTROL PANELS, AND ALARMS.
11. FURNISH 24"x24" ACCESS DOORS (UNLESS OTHERWISE INDICATED) AT ALL MAINTENANCE ITEMS THAT ARE CONCEALED; SUCH AS EQUIPMENT, VALVES, DAMPERS, SENSORS, ETC. COORDINATE EXACT LOCATIONS WITH ARCHITECT/ENGINEER PRIOR TO INSTALLATION.

APPENDIX B
2018 BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone: 2021 ASHRAE FUNDAMENTALS, RALEIGH-DURHAM, NC, 3A
- winter dry bulb: 20°F
- summer dry bulb: 95°F

Interior design conditions
- winter dry bulb: 70°F
- summer dry bulb: -
- relative humidity: N/A

Building heating load: N/A

Building cooling load: N/A

Mechanical Spacing Conditioning System
- Unitary
  - description of unit: -
  - heating efficiency: -
  - cooling efficiency: -
  - size category of unit: -
  - SEE PLANS AND SPECIFICATIONS
- Boiler
  - Size category. If oversized, state reason: N/A
- Chiller
  - Size category. If oversized, state reason: N/A

List equipment efficiencies: SEE PLANS AND SPECIFICATIONS

HVAC DRAWING LIST

NO.	TITLE
H001	STANDARDS, SYMBOLS & ABBREVIATIONS
H111	PLANS - RESTROOM BUILDING
H301	DETAILS
H401	CONTROLS & SCHEDULES

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DATE ISSUED **01/10/2025**
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SHEET **STANDARDS, SYMBOLS & ABBREVIATIONS**

H001

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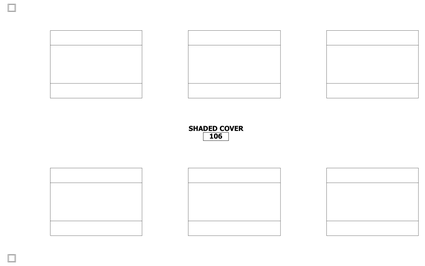
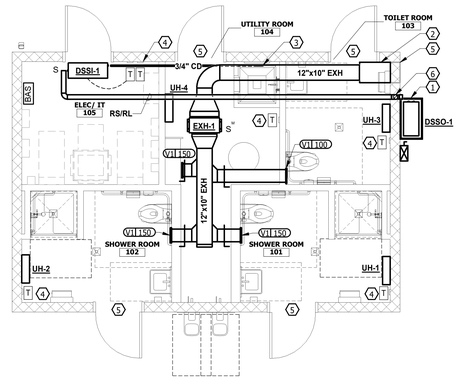




1 H111 **FLOOR PLAN - RESTROOM/SHADE STRUCTURE**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

KEY NOTES TO H111

1 PROVIDE 4" HOUSE KEEPING PAD FOR MECHANICAL EQUIPMENT.

2 PROVIDE 2'-0" PLENUM BOX BEHIND LOUVER AND SEAL WEATHERTIGHT.

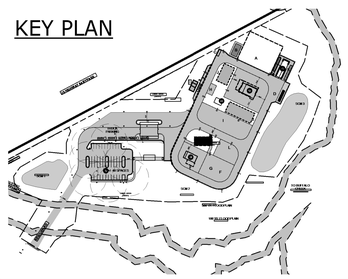
3 ROUTE CONDENSATE TO MOP SINK. TERMINATE 6" ABOVE SINK LIP.

4 PROVIDE THERMOSTAT FOR BAS MONITORING.

5 LOUVER BY ARCHITECT.

6 ROUTE REFRIGERENT SUPPLY & RETURN PIPING DOWN WALL CAVITY TO DSSO-1.

KEY PLAN



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SHEET
PLANS - RESTROOM BUILDING

H111

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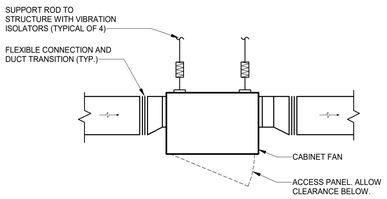
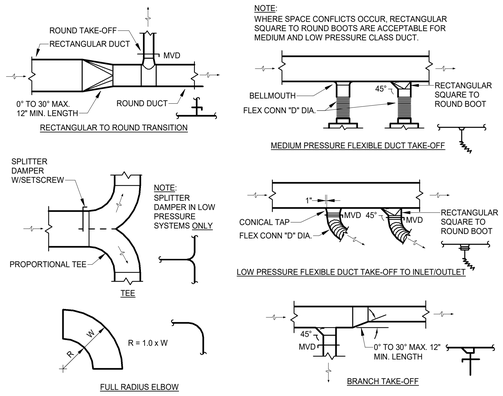


NOTE:
1. REFER TO PLANS FOR EXACT DUCT ARRANGEMENT.

SO DETAIL: F06A

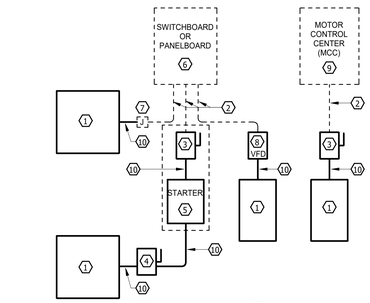
6 H301 IN-LINE CABINET FAN DETAIL
SCALE: NTS



NOTE:
UNLESS NOTED OTHERWISE ALL MITERED 90 DEGREE ELBOWS SHALL HAVE TURNING VANES. 45 DEGREE ELBOWS SHALL NOT HAVE TURNING VANES.

SO DETAIL: D01

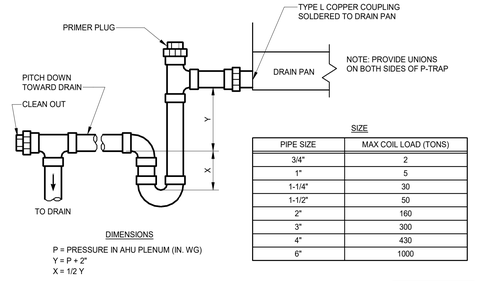
3 H301 STANDARD DUCT CONSTRUCTION
SCALE: NTS



KEYED NOTES:
1. EQUIPMENT FURNISHED AND INSTALLED BY CONTRACTOR. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS.
2. CONDUIT & WIRING BY DIVISION 26 CONTRACTOR.
3. PROVIDE DISCONNECT AND FUSING.
4. PROVIDE ADDITIONAL DISCONNECT IF REQUIRED BY NEC.
5. A COMBINATION STARTER MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER.
6. POWER DISTRIBUTION EQUIPMENT BY DIVISION 26 CONTRACTOR.
7. JUNCTION BOX REQUIRED BY THE DIVISION 26 CONTRACTOR FOR EQUIPMENT IF NO STARTER IS REQUIRED. PROVIDE MOTOR-RATED DISCONNECT SWITCH WHERE REQUIRED BY CODE. THE DIVISION 26 CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE DISCONNECT. PROVIDE LOAD SIDE WIRING.
8. PROVIDE VARIABLE FREQUENCY DRIVE (VFD) WHERE NECESSARY.
9. FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER OR VFD IN THE MCC SHALL BE PROVIDED BY THE DIVISION 26 CONTRACTOR.
10. PROVIDE RACEWAY & WIRING IN ACCORDANCE WITH REQUIREMENTS FOR RACEWAYS AND WIRING METHODS IN DIVISION 26 SPECIFICATIONS.

SO DETAIL: MR01

1 H301 ELECTRICAL CONNECTIONS TO EQUIPMENT
SCALE: NTS



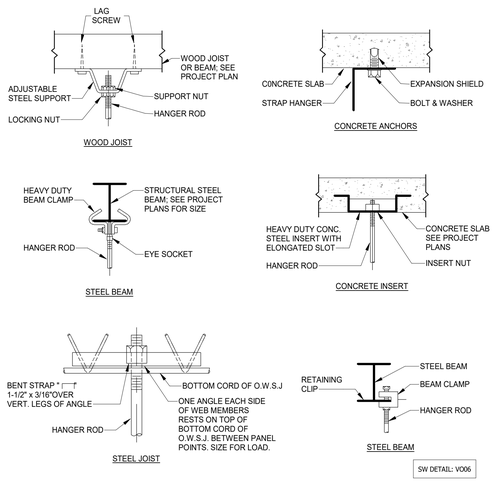
DIMENSIONS
P = PRESSURE IN AHU PLENUM (IN. WG)
Y = P + 2"
X = 1/2 Y

SIZE

PIPE SIZE	MAX COIL LOAD (TONS)
3/4"	2
1"	5
1-1/4"	30
1-1/2"	50
2"	160
3"	300
4"	430
6"	1000

SO DETAIL: C02

4 H301 COOLING COIL DRAIN PIPING
SCALE: NTS



SW DETAIL: V006

5 H301 HANGER SUPPORT DETAILS
SCALE: NTS

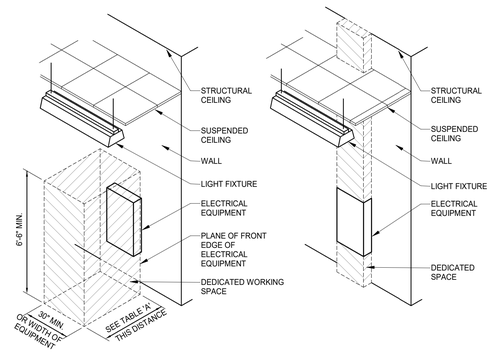


FIGURE 1 FIGURE 2

TABLE A - WORKING CLEARANCES				
VOLTAGE TO GROUND NOMINAL	MINIMUM CLEAR DISTANCE (FEET) CONDITION	1	2	3
0-150		3	3	3
151-600		3	3 1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:
1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR UNGROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1), WITH THE OPERATOR BETWEEN.

NOTES:
1. THESE FIGURES ILLUSTRATE THE WORKING CLEARANCE AND DEDICATED SPACE AROUND ELECTRICAL EQUIPMENT AS REQUIRED BY NEC SECTION 110-26.
2. DEDICATED SPACE RUNS TO A HEIGHT OF 6'-0" ABOVE EQUIPMENT. DEDICATED SPACE CONTINUES THROUGH SUSPENDED CEILING OR UP TO STRUCTURAL CEILING. ANY FOREIGN SYSTEMS TO THE ELECTRICAL EQUIPMENT SHALL NOT RUN WITHIN THIS SPACE. (FIGURE 2)

SO DETAIL: MR03

2 H301 CLEARANCES FOR ELECTRICAL EQUIPMENT
SCALE: NTS

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DETAILS

H301

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STANDARD CONTROL SYMBOLS

CONTROLLERS / SENSORS

- T — SPACE THERMOSTAT OR TEMPERATURE SENSOR
- T — THERMOSTAT OR TEMPERATURE SENSOR WITH AIRFLOW AVERAGING ELEMENT
- T — THERMOSTAT OR TEMPERATURE SENSOR WITH SENSING BULB IN HYDRONIC PIPE WELL
- T — THERMOSTAT OR TEMPERATURE SENSOR WITH SENSING BULB AND PROTECTIVE SHIELD
- H — SPACE HUMIDISTAT OR HUMIDITY SENSOR
- H — DUCT-MOUNTED HUMIDISTAT OR HUMIDITY SENSOR
- P — PRESSURE SENSOR
- DP — DIFFERENTIAL PRESSURE SENSOR
- SP — AIR STATIC PRESSURE SENSOR
- VP — AIR VELOCITY PRESSURE SENSOR
- O — SPACE OCCUPANCY/VACANCY SENSOR
- CO_2 — CARBON DIOXIDE CONCENTRATION SENSOR
- CL — DRAIN PAN CONDENSATE LEVEL SENSOR
- DD — DUCT SMOKE DETECTOR
- R — REFRIGERANT CONCENTRATION SENSOR
- FM — FLOW METER
- DPT — DEW POINT
- S — SWITCH

DDC I/O SYMBOLS

- DI — DIGITAL (BINARY) INPUT POINT
- AI — ANALOG INPUT POINT
- DO — DIGITAL (BINARY) OUTPUT POINT
- AO — ANALOG OUTPUT POINT

SWITCHES

- DS — DAMPER END SWITCH
- ES — EMERGENCY START OR STOP SWITCH
- M — MOTOR STARTER HOLDING COIL
- C — CONTACTOR HOLDING COIL
- R — CONTROL RELAY HOLDING COIL
- CT — CURRENT SWITCH

FINAL CONTROL ELEMENTS

- TWO-WAY CONTROL VALVE, HYDRONIC OR STEAM
- THREE-WAY CONTROL VALVE, HYDRONIC
- M — ELECTRIC MOTOR
- M — FAN AND MOTOR
- M — PUMP AND MOTOR
- D — ELECTRIC / ELECTRONIC DAMPER ACTUATOR
- V — ELECTRIC / ELECTRONIC VALVE ACTUATOR
- VFD — VARIABLE FREQUENCY DRIVE
- AFMS — AIR FLOW MONITORING STATION

PNEUMATIC COMPONENTS

- AS 20 — MAIN AIR SUPPLY, 20 PSIG
- AS 80 — MAIN AIR SUPPLY, 80 PSIG
- P D — DAMPER VALVE ACTUATOR WITH PILOT POSITIONER
- P V — CONTROL VALVE OPERATOR WITH PILOT POSITIONER
- E/P — ELECTRONIC-TO-PNEUMATIC TRANSDUCER

DESCRIPTION

TEMPERATURE SENSOR FOR MONITORING IT ROOM SPACE TEMPERATURE

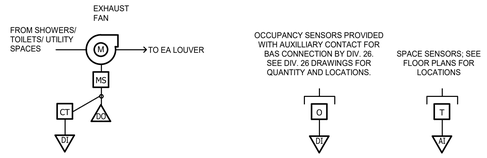
SEQUENCE OF OPERATIONS:

IF SPACE TEMPERATURE EXCEEDS 85°F (ADJ.) AN ALARM SHALL BE INITIATED.

2/H401 **IT ROOM MONITORING**

DESCRIPTION

BAS CONTROLLED EXHAUST FAN



SEQUENCE OF OPERATIONS:

UPON ANY OF THE ASSOCIATED TEMPERATURE SENSORS RISING ABOVE 80°F (ADJ.) OR AN ASSOCIATED OCCUPANCY SENSOR BECOMING OCCUPIED THE EXHAUST FAN SHALL BE ENABLED. THE FAN SHALL HAVE A MINIMUM ENABLE TIME OF 20 MIN (ADJ.).

1/H401 **RESTROOM/UTILITY EXHAUST SYSTEM**

DUCTLESS SPLIT SYSTEM INDOOR UNIT SCHEDULE

DESIGNATION	SERVICE	TYPE	SOURCE	MOUNTING	AIRFLOW (CFM)	CAPACITY COOLING (MBH)	CAPACITY HEATING (MBH)
DSSI-1	ELEC/ IT	SINGLE ZONE	DSSO-1	WALL	300	12	13.5

DUCTLESS SPLIT SYSTEM OUTDOOR UNIT SCHEDULE

DESIGNATION	COOLING TOTAL CAPACITY (MBH)	COOLING EFFICIENCY (SEER2)	COOLING AMBIENT TEMPERATURE (F)	HEATING TOTAL CAPACITY (MBH)	HEATING EFFICIENCY (COP)	HEATING AMBIENT TEMPERATURE (F)	ELEC MCA	ELEC MOCP	ELEC VOLTAGE/PHASE
DSSO-1	12	21	95	13.5	3.8	5	9	15	208/1

NOTES:
1. SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE EXTERNAL DISCONNECT SWITCH AT OUTDOOR UNIT.
3. PROVIDE EXTERNAL MOTOR RATED TOGGLE SWITCH AT INDOOR UNIT.
4. INDOOR UNIT SHALL BE POWERED BY THE OUTDOOR UNIT.

FAN SCHEDULE

DESIGNATION	SERVICE	TYPE	AIRFLOW (CFM)	ESP (IN)	DRIVE TYPE	FAN SPEED (RPM)	BRAKE MOTOR SIZE (BHP)	FAN MOTOR SIZE (HP)	VOLTAGE/ PHASE	EXT START/DISCONNECT MEANS	MAX SOUND LEVEL (dBA)	CONTROL
EXH-1	RESTROOM BLD	INLINE CABINET	550	1.00	DIRECT	1035	0.14	1/2	120/1	MRT	38	DDC

NOTES:
1. PROVIDE EXTERNAL STARTER/DISCONNECTING MEANS AS SCHEDULED. (C/P, MRT/ MS/D, VFD)

UNIT HEATER SCHEDULE

DESIGNATION	SERVICE	TYPE	ELEC CAPACITY (kW)	ELEC VOLTAGE/ PHASE
UH-1	SHOWER ROOM	CABINET	5.0	208/1
UH-2	SHOWER ROOM	CABINET	5.0	208/1
UH-3	TOILET ROOM	CABINET	4.0	208/1
UH-4	UTILITY ROOM	CABINET	5.0	208/1

NOTES:
1. PROVIDE ELECTRICAL UNIT HEATER WITH INTEGRAL THERMOSTAT.

AIR DISTRIBUTION SCHEDULE

DESIGNATION	SERVICE	TYPE	MAX. AIRFLOW (CFM)	FACE SIZE (INxIN, ø IN)	NECK SIZE (INxIN, ø IN)	APD (IN)	MAX. NC	VOL. CONTROL DAMPER (Y/N)
V1	EXHAUST	STD BLADE SIDEWALL	150	12x8	10x6	0.1	20	No

NOTES:
1. VERIFY MOUNTING FRAME STYLE WITH ARCHITECTURAL FINISH SCHEDULE.

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H401

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ELECTRICAL ABBREVIATIONS

A	AMPERES OR AMP METER
AC	ALTERNATING CURRENT
AF	AMP FRAME
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECTURAL
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAGE
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
C	CELSIUS; COIL
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION SYSTEM
CD/Cd	CANDELA
CLG	CEILING
COAX	COAXIAL CABLE
CONTR	CONTRACTOR
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
ETR	EXISTNG TO REMAIN
EWC	ELECTRIC WATER COOLER
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINATION CABINET
FFE	FINISHED FLOOR ELEVATION
FL	FLOOR
FLA	FULL LOAD AMPS
FLC	FLEXIBLE LIQUIDTIGHT CONDUIT
FLEX	FLEXIBLE
FMC	FLEXIBLE METAL CONDUIT
FT	FEET; FOOT
FU	FUSE
GA	GAUGE; GAGE
GB	GROUND BUS
GC	GENERAL CONTRACTOR
GEC	GROUNDING ELECTRODE CONDUCTOR
GFI, GFCI	GROUND FAULT (CIRCUIT) INTERRUPTER
GND	GROUND
HD	HEAVY DUTY
HOA	HANDS-OFF-AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HZ	HERTZ
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LED	LIGHT EMMITING DIODE
LRA	LOCKED ROTOR AMPS
LS	LIFE SAFETY
LTG	LIGHTING
M	MOTOR; METERING
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PROTECTOR
MCS	MOLDED CASE SWITCH
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUG ONLY
N, NEU	NEUTRAL
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NF	NON-FUSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN; NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OL	OVERLOAD
P	POLE
PB	PULL BOX
PC	PHOTOCELL
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PT	POINT; POTENTIAL TRANSFORMER
PUN	PER UNIT NAMEPLATE
PVC	POLYVINYL CHLORIDE (CONDUIT)
RD	ROUND

ELECTRICAL ABBREVIATIONS

REV	REVISION
RLA	RATED LOAD AMPS
RMC	RIDGID METAL CONDUIT
SN	SOLID NEUTRAL
SNAC	SIGNAL NOTIFICATION APPLIANCE CIRCUIT
SP	SURGE PROTECTED
SPD	SURGE PROTECTED DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPST	SINGLE POLE SINGLE THROW
SQ	SQUARE
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TBB	TELEPHONE BACK BOARD
TELECOM	TELECOMMUNICATIONS
TEMP	TEMPERATURE
THD	TOTAL HARMONIC DISTORTION
TV	TELEVISION
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES INC.
UNO	UNLESS NOTED OTHERWISE
V	VOLTAGE; VOLT
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
W	WIRE
W/	WITH
WG	WIREGUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Z	IMPEDANCE
ø	ROUND; DIAMETER; PHASE

ELECTRICAL SYMBOLS

WALL MTD LIGHTING FIXTURE AND OUTLET

PENDANT LIGHTING FIXTURE AND OUTLET

DOWNLIGHT LIGHTING FIXTURE AND OUTLET

WALL MTD LIGHTING FIXTURE AND OUTLET

PENDENT MOUNTED STRIP FIXTURE

CEILING MTD LIGHTING FIXTURE AND OUTLET

WALL MTD EXIT SIGN AND OUTLET, SINGLE FACE. ARROW INDICATES DIRECTION.

CEILING MTD EXIT SIGN AND OUTLET, DUAL FACE. ARROWS INDICATE DIRECTION.

EMERGENCY LIGHT BATTERY PACK - TWO HEAD UNIT.

CEILING MOUNTED EMERGENCY BATTERY LIGHT

EMERGENCY LIGHT REMOTE HEAD

GROUND MOUNTED FLOODLIGHT AND OUTLET

AREA LUMINAIR AND STANDARD

FLUSH MTD TOGGLE SWITCH, SPST, 20A, 120/277V

FLUSH MTD TOGGLE SWITCH, DPST, 20A, 120/277V

FLUSH MTD 3-WAY TOGGLE SWITCH, 20A, 120/277V

FLUSH MTD 4-WAY TOGGLE SWITCH, 20A, 120/277V

FLUSH MTD DIMMER SWITCH, 20A, 120/277V

FLUSH MTD KEY SWITCH, 20A, 120/277V

FLUSH MOUNTED OCCUPANCY SENSOR SWITCH, 20A, 120/277V

FLUSH MTD LIGHTED HANDLE TOGGLE SWITCH, SPST, 20A, 120V. LIGHT ON WITH OPEN SWITCH

FLUSH MTD TOGGLE SWITCH WITH PILOT LIGHT. LIGHT ON WITH CLOSED SWITCH.

TIMED SWITCH

CEILING MTD INFRA-RED OCCUPANCY SENSOR SWITCH

CEILING MTD ULTRASONIC OCCUPANCY SENSOR SWITCH

CEILING MTD DUAL TECHNOLOGY (IR, U) OCCUPANCY SENSOR SWITCH

PHOTOCELL

FLUSH MTD DUPLEX RECEPTACLE, 20A, 125V, 3W

FLUSH MTD DUPLEX GFCI RECEPTACLE, 20A, 125V, 3W

FLUSH MTD DUPLEX RECEPTACLE WITH DUPLEX USB OUTLETS, 20A, 125V, 3W

FLUSH MTD SINGLE RECEPTACLE, 20A, 125V, 3W

FLUSH MTD QUADRUPLEX RECEPTACLE, 20A, 125V, 3W

FLUSH MTD DUPLEX RECEPTACLE, 20A, 125V, 3W, SPLIT WIRED WITH TOP OUTLET SWITCHED.

FLUSH MTD DUPLEX RECEPTACLE, 20A, 125V, 3W, INSTALLED VERTICALLY 4" ABOVE BACKSPLASH OR COUNTERTOP IF NO BACKSPLASH EXISTS.

FLUSH MTD QUADRUPLEX RECEPTACLE, 20A, 125V, 3W, INSTALLED VERTICALLY 4" ABOVE BACKSPLASH OR COUNTERTOP IF NO BACKSPLASH EXISTS.

WALL MOUNTED POWER DEVICE

FLOOR BOX WITH DEVICE(S). REFER TO SCHEDULES FOR MARK

WALL MTD TELECOM OUTLET, REFER TO SCHEDULES FOR MARK

CEILING MTD RECEPTACLE AND OUTLET, 20A, 125V

CEILING MTD TELECOM OUTLET, REFER TO SCHEDULES FOR MARK

CEILING MTD DUPLEX RECEPTACLE & TELECOM OUTLET, REFER TO SCHEDULES FOR MARK

CEILING MTD PUBLIC ADDRESS SPEAKER

FLUSH MTD VOLUME CONTROL FOR SPEAKER

WALL MTD TELEVISION ANTENNA/ELECTRICAL OUTLET, REFER TO SCHEDULES FOR MARK

(WIFI) WIRELESS ACCESS POINT.

PANELBOARD, 250V LEVEL

PANELBOARD, 600V LEVEL

HOMERUN; ARROW HEADS INDICATE NUMBER OF CIRCUITS, LETTERS AND NUMBERS DESIGNATE PANEL AND CIRCUITS. SHORT TICK MARKS INDICATE NUMBER OF CURRENT CARRYING PHASE CONDUCTORS. LONG TICK MARK(S) INDICATE NEUTRAL(S). GROUNDING CONDUCTORS REQUIRED BY SPECIFICATIONS ARE NOT SHOWN. CONDUCTOR SIZES SPECIFIED ON THE PANEL SCHEDULES ARE MANDATORY FOR THE ENTIRE CIRCUIT EXCEPT WHERE SPECIFICATIONS REQUIRE A SIZE INCREASE FOR VOLTAGE DROP.

SURFACE METAL RACEWAY WITH DEVICES, LETTER DESIGNATES TYPE

PENDANT MTD, PLUG-IN BUS DUCT WITH PLUG-IN CIRCUIT BREAKER OR FUSIBLE SWITCH AND TAP BOX. DUCT AND SWITCH RATING AS NOTED.

TOP # - DEVICE MAXIMUM RATING OR FRAME SIZE
BOTTOM # - FUSE SIZE OR DEVICE SETTING

DISCONNECT SWITCH.

COMBINATION DISCONNECT SWITCH AND MAGNETIC MOTOR STARTER. SEE SCHEDULE OR NOTE.

FLUSH MTD MANUAL MOTOR STARTER SWITCH WITHOUT OVERLOAD HEATERS

MAGNETIC MOTOR STARTER

3 POLE CIRCUIT BREAKER IN ENCLOSURE. # INDICATES CB RATING.

VARIABLE FREQUENCY DRIVE CONTROLLER, 40" AFF, PROVIDED BY HVAC OR PLUMBING CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR

MAGNETIC CONTACTOR, SIZE PER SCHEDULE

JUNCTION, PULL, TAP OR OUTLET BOX (CODE SIZE)

TIME CLOCK

MAGNETIC RELAY, SIZE PER SCHEDULE

FLUSH MOUNTED MUSHROOM HEAD PUSH BUTTON

FLUSH MOUNTED PUSH BUTTON

SUPPLEMENTAL GROUND BAR

GROUND PER NEC

ELECTRICAL DEMAND METER

SURGE PROTECTION DEVICE

WALL MTD FIRE ALARM PULL STATION

SMOKE DETECTOR, CEILING MTD

SMOKE DETECTOR FOR ELEVATOR RECALL, CEILING MTD

SMOKE DETECTOR WITH SOUNDER BASE, CEILING MTD

SMOKE DETECTOR, CEILING MTD, MULTI SENSOR

CEILING MTD REMOTE ALARM INDICATOR LAMP

CARBON MONOXIDE DETECTOR

SMOKE DETECTOR, DUCT MTD (WITH RAIL)

HEAT DETECTOR, CEILING MTD

SMOKE DETECTOR, WALL MTD

SMOKE DETECTOR WITH SOUNDER BASE, WALL MTD

WALL MTD HEAT DETECTOR

WALL MTD REMOTE ALARM INDICATOR LAMP (RAIL)

WALL MTD HORN TYPE AUDIO/VISUAL APPLIANCE

WALL MTD SPEAKER TYPE AUDIO/VISUAL APPLIANCE

WALL MTD CHIME TYPE AUDIO/VISUAL APPLIANCE

WALL MTD VISUAL ALARM APPLIANCE

CEILING MTD HORN TYPE AUDIO/VISUAL ALARM APPLIANCE

CEILING MTD SPEAKER TYPE AUDIO/VISUAL ALARM APPLIANCE

CEILING MTD CHIME TYPE AUDIO/VISUAL ALARM APPLIANCE

CEILING MTD FIRE ALARM VISUAL DEVICE

DOOR HOLDER

FIRE ALARM MONITOR MODULE

FLOW SWITCH FIRE ALARM CONNECTION, SWITCH PROVIDED BY OTHERS

TAMPER SWITCH FIRE ALARM CONNECTION, SWITCH PROVIDED BY OTHERS

POST INDICATOR VALVE FIRE ALARM CONNECTION, VALVE PROVIDED BY OTHERS

FIRE ALARM TEMPERATURE SENSOR

FIRE ALARM CONTROL MODULE OR RELAY

CEILING MTD FIRE ALARM SPEAKER

CLOCK

FIRE ALARM BELL; # INDICATED DIAMETER IN INCHES

LINEAR BEAM TRANSMITTER

LINEAR BEAM RECEIVER

FIRE ALARM WALL MTD SPEAKER

FIREMAN'S 2-WAY TELEPHONE

FIRE ALARM ISOLATION MODULE

FIRE ALARM ASPIRATION SMOKE DETECTOR

DIGITAL ALARM COMMUNICATIONS TRANSMITTER

FIRE ALARM ANNUNCIATOR PANEL

FIRE ALARM CONTROL PANEL

FIRE ALARM TERMINAL CABINET

SUPPLEMENTAL NOTIFICATION APPLIANCE CABINET

DOOR CONTROL ID TAG

SECURITY SYSTEM KEYPAD, 42" AFF

ACCESS CONTROL CARD READER

SECURITY PANIC BUTTON

CCTV SECURITY CAMERA WITH FIXED MOUNT

CCTV SECURITY CAMERA WITH PTZ FEATURES

CCTV DOME SECURITY CAMERA WITH 360 FEATURES

EMERGENCY TELEPHONE

MASTER RESCUE ASSISTANCE STATION

RESCUE ASSISTANCE STATION

RESCUE ASSISTANCE LIGHT

CORD REEL

NEW WORK

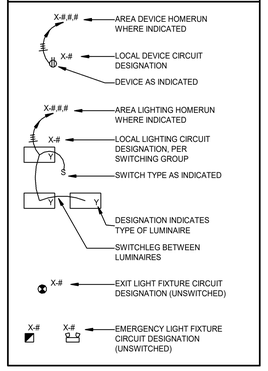
EXISTING TO REMAIN

EXISTING TO BE DEMOLISHED

ELECTRICAL GENERAL NOTES

1. ALL SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED FOR THIS PROJECT.
2. SYMBOLS NOT SHOWN ON THIS ELECTRICAL SYMBOL LEGEND ARE IDENTIFIED ON THE DRAWINGS WHERE THEY OCCUR.
3. UNLESS OTHERWISE INDICATED IN THE SPECIFICATIONS OR ON THE DRAWINGS, MOUNTING HEIGHT OF DEVICES IS TO BE THE CENTERLINE OF THE DEVICE.
4. UNLESS OTHERWISE INDICATED, SWITCHES AND SIMILAR DEVICES ARE TO BE LOCATED 42" AFF; RECEPTACLES ARE TO BE VERTICALLY MOUNTED AT 18" AFF WITH THE GROUNDING TERMINAL ON THE BOTTOM.
5. TELEPHONE & DATA OUTLETS ARE TO BE MOUNTED AT 18" AFF UNLESS OTHERWISEINDICATED. "W" INDICATES MOUNTING AT 42" AFF; "C" INDICATES MOUNTING ABOVECOUNTERTOP WITH ALIGNMENT AND HEIGHT AS INDICATED FOR RECEPTACLES SIMILARLY MOUNTED.
6. FIRE ALARM PULL STATIONS ARE TO BE VERTICALLY MOUNTED AT 42" AFF.
7. FIRE ALARM INDICATING APPLIANCES SHALL BE 15 Cd RATING, UNLESS NOTED OTHERWISE ON THE PLANS.
8. FIRE ALARM INDICATING APPLIANCES ARE TO BE MOUNTED WITH THE LOWER EDGE OF THE VISUAL ELEMENT AT 6'-8" AFF OR 6" BFC, WHICHEVER IS LOWER. WHERE DUCTWORK, CONDUIT, OR OTHER OBSTRUCTIONS BLOCK DIRECT VIEW OF APPLIANCE, MOUNT 6" BELOW SUCH OBSTRUCTIONS.
9. CEILING MOUNTED SMOKE DETECTORS ARE SHOWN IN APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH CEILING FEATURES. WALL MOUNTED SMOKE DETECTECTORS ARE TO BE MOUNTED 10" BELOW FINISHED CEILING TO THE CENTER OF DEVICE AND A MINIMUM OF 12" FROM ADJACENT WALLS OR OTHER OBSTRUCTIONS.
10. COORDINATE SMOKE DETECTOR AND HEAT DETECTOR LOCATIONS WITH HVAC SUPPLY AND RETURN GRILLES. MAINTAIN 3'-0" CLEARANCE BETWEEN EDGE OF SUPPLY GRILL AND EDGE OF SMOKE DETECTOR.
11. UPPER CASE LETTER (OR LETTER/NUMBER COMBINATION) ADJACENT TO FIXTURE OR SWITCH DESIGNATES TYPE. SEE FIXTURE SCHEDULE FOR DETAILS.
12. LOWER CASE LETTER ADJACENT TO FIXTURE OR SWITCH DESIGNATES CONTROL RELATIONSHIP.
13. NUMBER ADJACENT TO FIXTURE, SWITCH, OR RECEPTACLE DESIGNATES CIRCUIT CONNECTION.
14. SINGLE DIAGONAL LINE ACROSS A FIXTURE INDICATES FIXTURE IS UNSWITCHED FOR 24 HOUR OPERATION.

ELECTRICAL CIRCUITING KEY



ELECTRICAL DRAWING LIST

NO.	TITLE
E001	STANDARDS, SYMBOLS & ABBREVIATIONS
E002	SITE PLAN
E003	SITE PLAN PHOTOMETRICS
E111	PLANS - RESTROOM BUILDING
E112	PLANS - TRAINING TOWER
E113	PLANS - TRAINING TOWER
E114	PLANS - TRAINING TOWER
E301	ELECTRICAL DETAILS
E401	PANEL SCHEDULES
E501	LIGHTING FIXTURE SCHEDULE
E511	TELECOMMUNICATIONS SYSTEMS
E601	ELECTRICAL DISTRIBUTION SYSTEM

GENERAL SYMBOLS

PLAN OR DETAIL NUMBER
SHEET NUMBER

ELEVATION LETTER
SHOWN ON SHEET NUMBER

SECTION NUMBER
SHOWN ON SHEET NUMBER

DIMENSION LINE

DETAIL NUMBER
WITH SHEET NO.

COLUMN NUMBER
OR LETTER

DRAWING REVISION NUMBER

KEYED NOTE NUMBER

CONNECT TO EXISTING

REMOVE TO THIS POINT

NORTH ARROW

APPENDIX B
2018 BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN

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
} See fixture Schedule on Drawing Sheet

total interior wattage specified vs. allowed: vs.
(whole building or space by space)

total exterior wattage specified vs. allowed: vs.

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

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JOB NUMBER
22-086

DATE ISSUED
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PROJECT STATUS
ISSUE FOR BID

SHEET
STANDARDS, SYMBOLS & ABBREVIATIONS

E001

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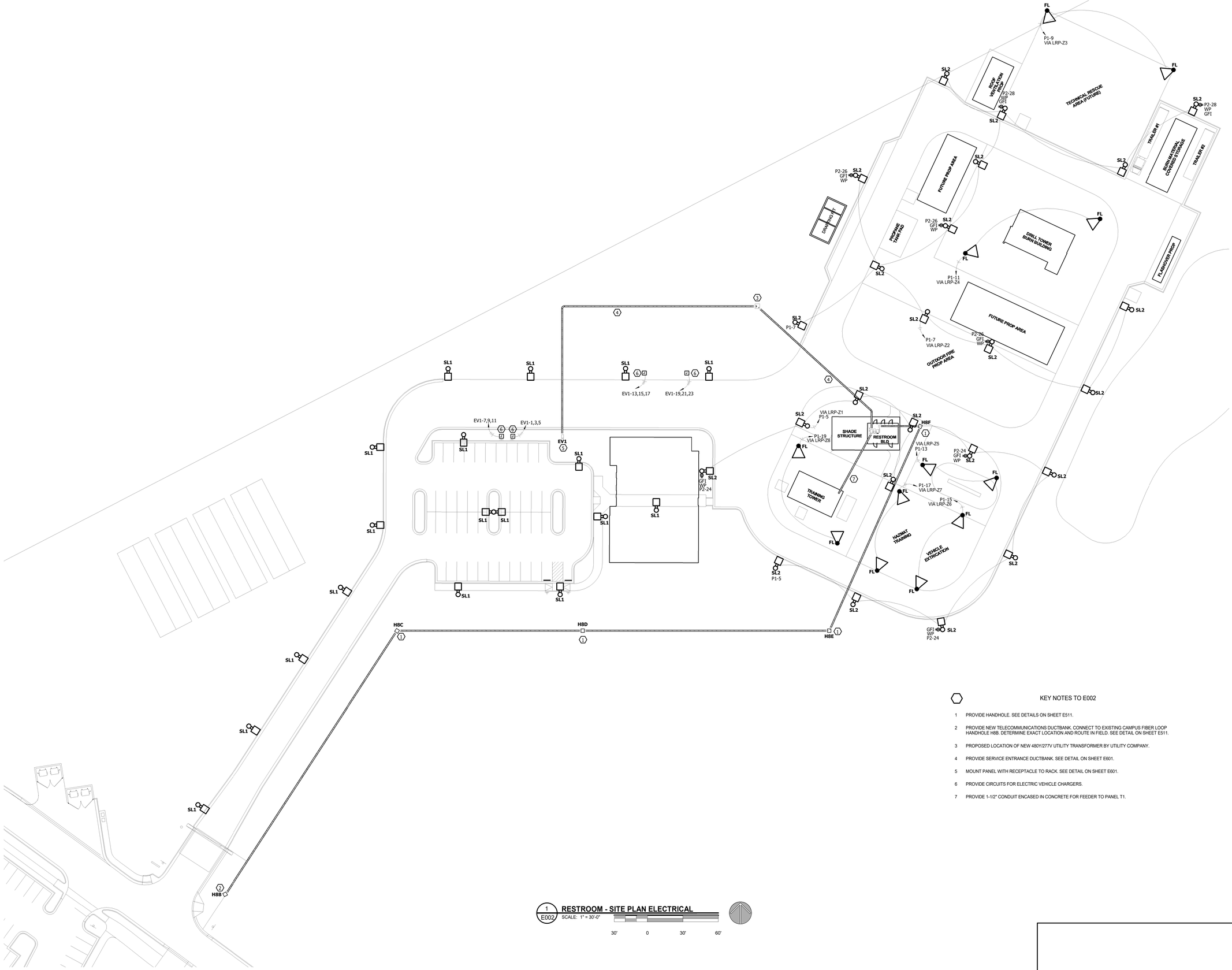

1 E002 **RESTROOM - SITE PLAN ELECTRICAL**
SCALE: 1" = 30'-0"

30' 0 30' 60'

KEY NOTES TO E002

1. PROVIDE HANDHOLE. SEE DETAILS ON SHEET E511.
2. PROVIDE NEW TELECOMMUNICATIONS DUCTBANK. CONNECT TO EXISTING CAMPUS FIBER LOOP HANDHOLE H8B. DETERMINE EXACT LOCATION AND ROUTE IN FIELD. SEE DETAIL ON SHEET E511.
3. PROPOSED LOCATION OF NEW 480Y/277V UTILITY TRANSFORMER BY UTILITY COMPANY.
4. PROVIDE SERVICE ENTRANCE DUCTBANK. SEE DETAIL ON SHEET E601.
5. MOUNT PANEL WITH RECEPTACLE TO RACK. SEE DETAIL ON SHEET E601.
6. PROVIDE CIRCUITS FOR ELECTRIC VEHICLE CHARGERS.
7. PROVIDE 1-1/2" CONDUIT ENCASED IN CONCRETE FOR FEEDER TO PANEL T1.

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PROJECT STATUS **ISSUE FOR BID**
SHEET **SITE PLAN**

E002

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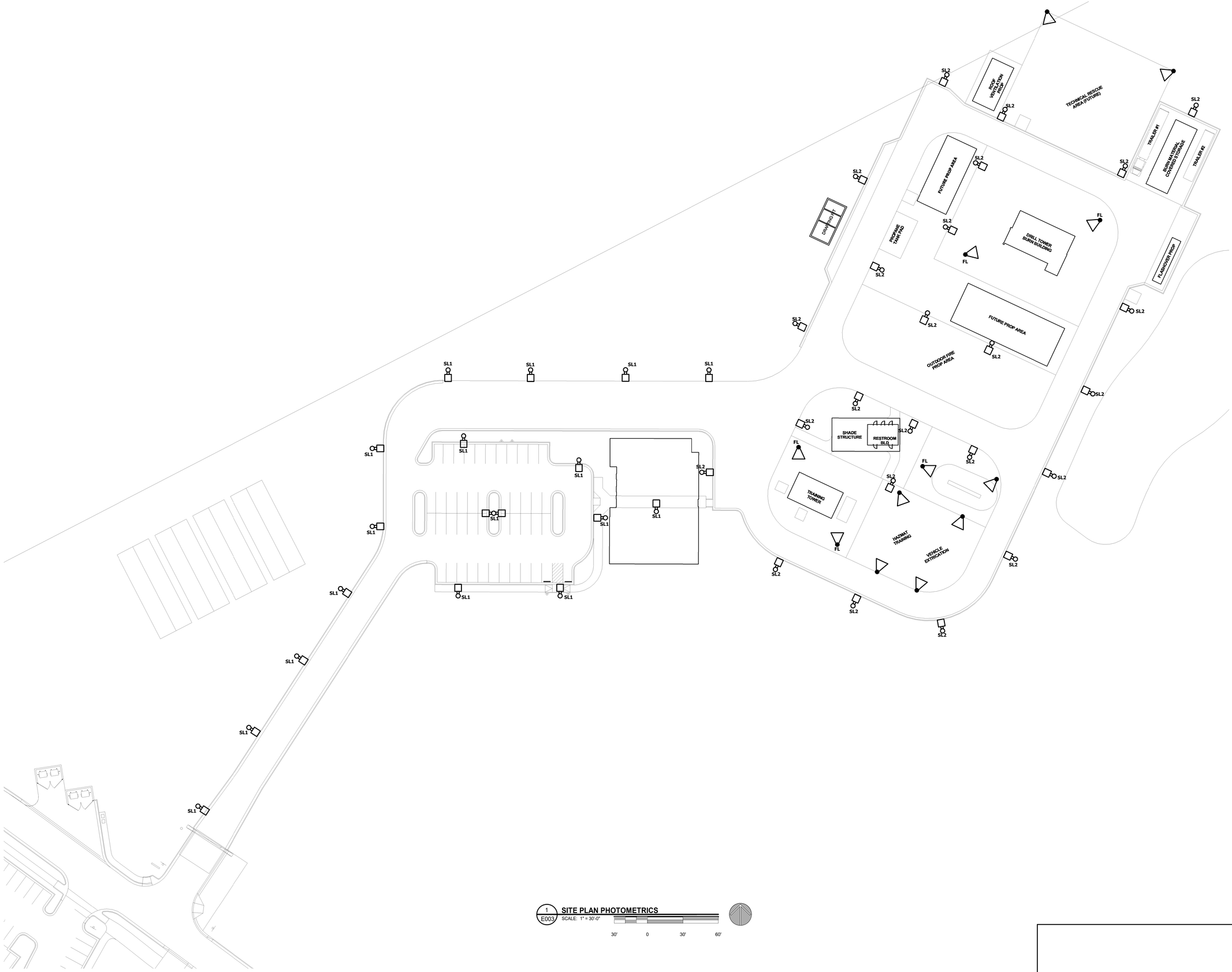

1 E003 **SITE PLAN PHOTOMETRICS**
SCALE: 1" = 30'-0"

30' 0 30' 60'

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PROJECT STATUS **ISSUE FOR BID**
SHEET **SITE PLAN PHOTOMETRICS**

E003

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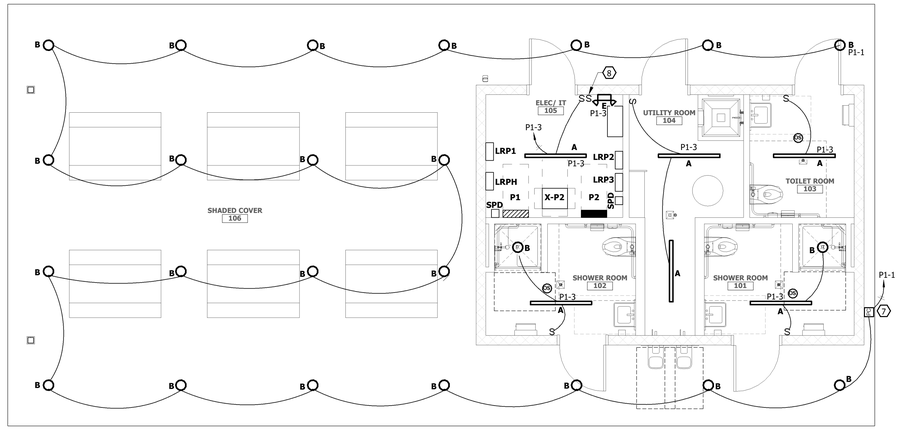


2 E111 **FLOOR PLAN - RESTROOM/SHADE STRUCTURE - LIGHTING**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

KEY NOTES TO E111

1 CONNECT CIRCUIT TO DISCONNECTING MEANS OF EQUIPMENT PROVIDED BY OTHER TRADES.

2 PROVIDE WALL MOUNTED TELECOMMUNICATIONS EQUIPMENT RACK. SEE DETAILS ON SHEET E511.

3 PROVIDE WALL MOUNTED GROUND BUS. SEE DETAIL ON SHEET E601.

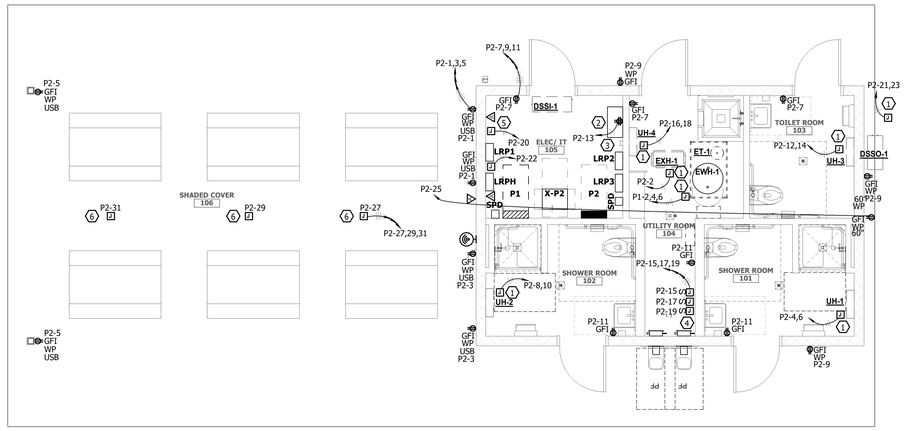
4 PROVIDE LINE SIDE WIRING AND CONDUIT TO WALL MOUNTED SWITCHES FOR PLUMBING VALVE TRANSFORMERS. COORDINATE EXACT LOCATIONS AND CONNECTIONS WITH DIVISION 22.

5 PROVIDE CIRCUIT AND DATA FOR BAS PANEL. CONFIRM EXACT LOCATION WITH MECHANICAL CONTRACTOR.

6 PROVIDE CIRCUIT FOR CEILING FANS BY OWNER. COORDINATE EXACT LOCATION AND CONNECTIONS WITH OWNER.

7 PROVIDE 2000 WATT, WEATHERPROOF PHOTOCELL FOR OUTDOOR LIGHTING CONTROL. MOUNT AT 10' AFG AWAY FROM ARTIFICIAL LIGHT SOURCES.

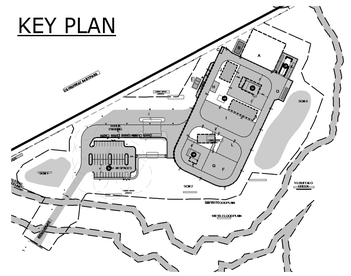
8 PROVIDE 3 GANG, 12 BUTTON WALL SWITCHES FOR MANUAL CONTROL ZONES Z1-Z12, SHOWN ON SITE PLAN. SWITCHES SHALL COMMUNICATE WIRELESSLY WITH LIGHTING RELAY PANELS. SEE LIGHTING CONTROL DETAIL ON SHEET E501.



1 E111 **FLOOR PLAN - RESTROOM/SHADE STRUCTURE - POWER**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

KEY PLAN



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SHEET **PLANS - RESTROOM BUILDING**

E111

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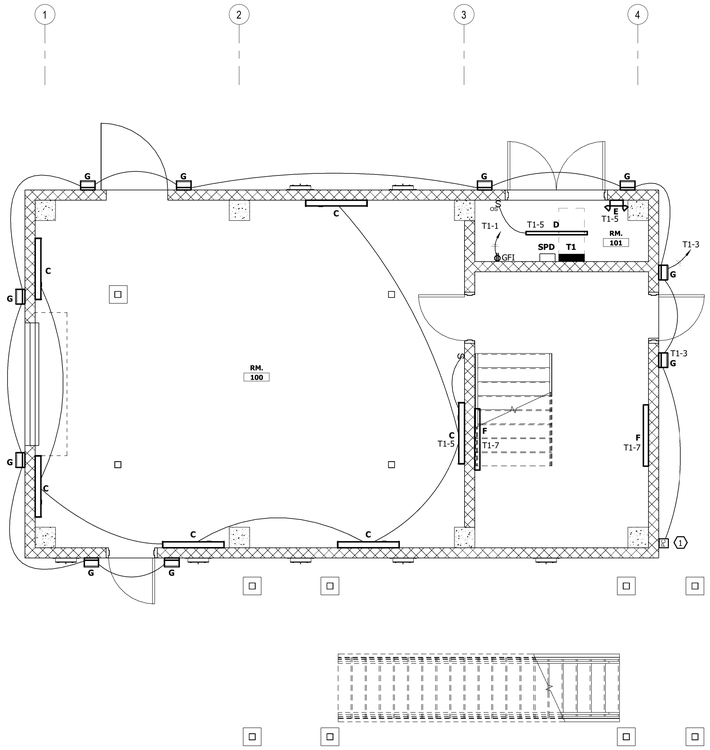
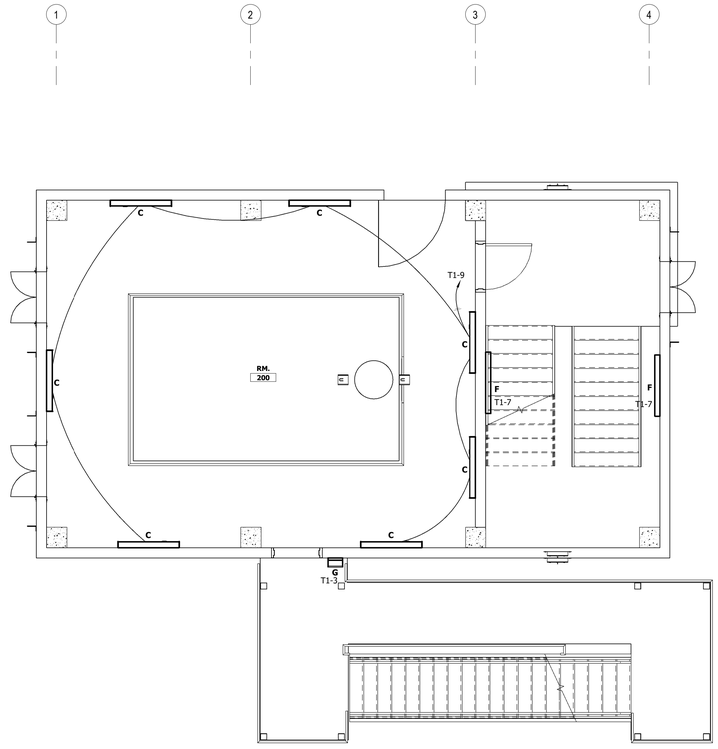


1 E112 **FIRST FLOOR PLAN**
SCALE: 1/4" = 1'-0"



2 E112 **SECOND FLOOR PLAN**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

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PLANS - TRAINING TOWER

E112

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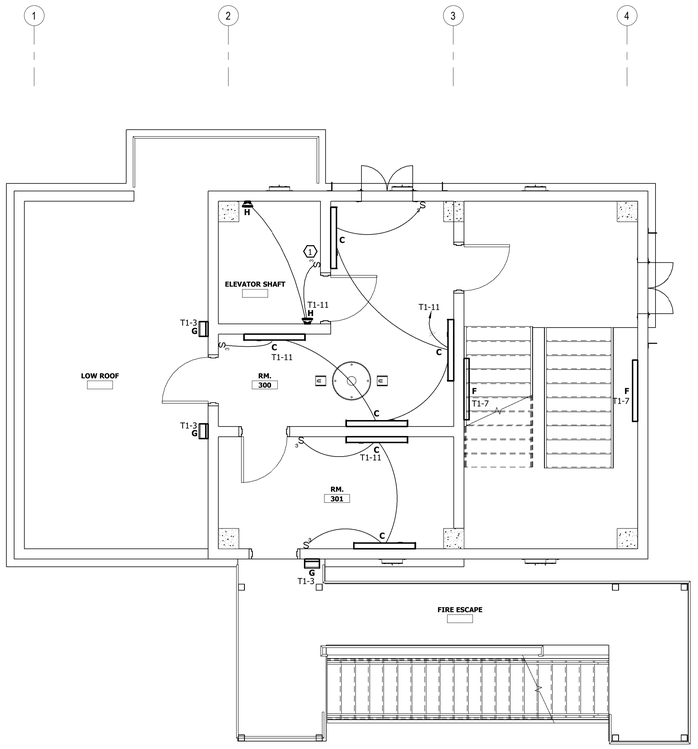
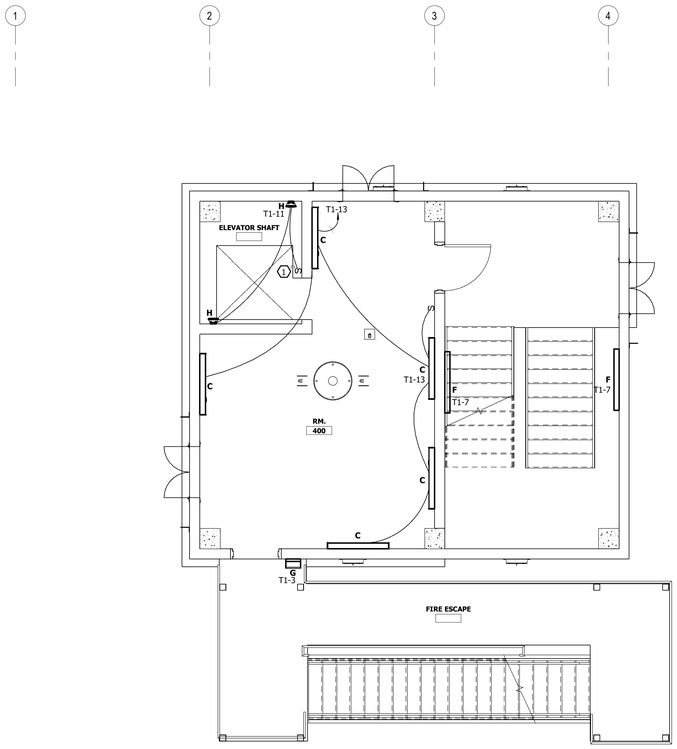
KEY NOTES TO E113

1 SHAFT LIGHT FIXTURES SHALL BE CONTROLLED TOGETHER BY THREE WAY SWITCHES ON EITHER LEVEL.



1 E113 THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



2 E113 FOURTH FLOOR PLAN
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

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E113

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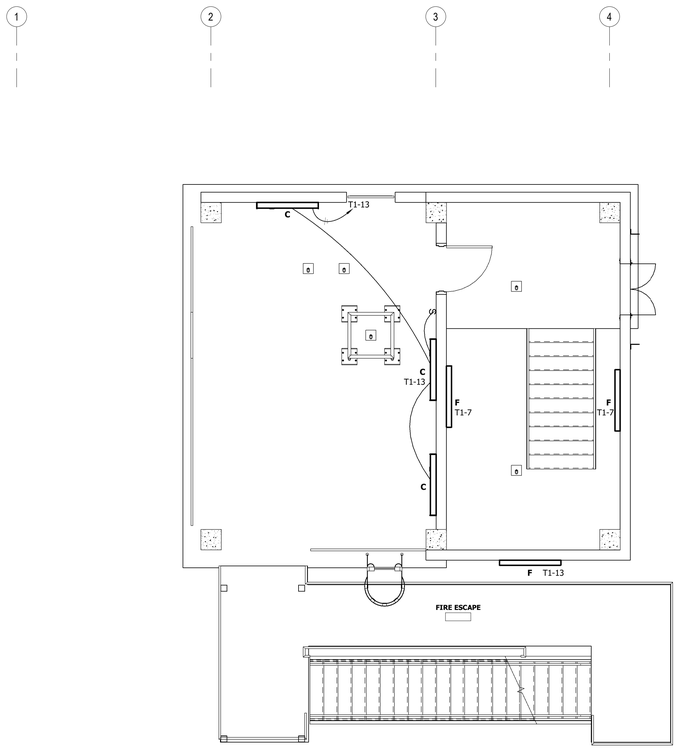
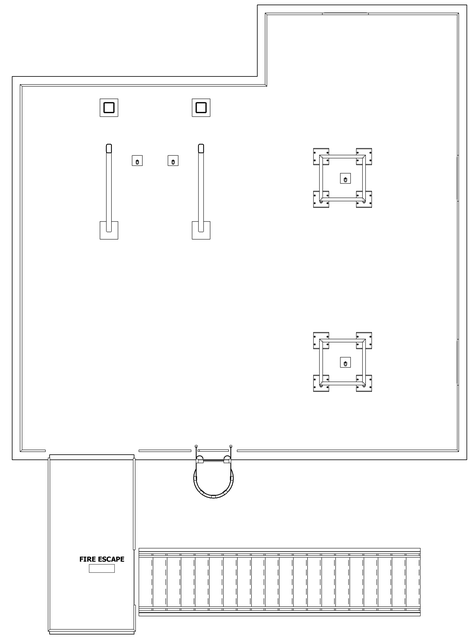


1 E114 **FIFTH FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



2 E114 **HIGH ROOF PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

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PROJECT STATUS
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PLANS - TRAINING TOWER

E114

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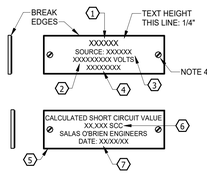
GENERAL NOTES :

1. INSTALL NEW LABELS ON ALL PROJECT EQUIPMENT (PANELBOARDS, ENCLOSED BREAKERS, DISCONNECTS, TRANSFORMERS).
2. CONSTRUCT LABELS FROM 2 COLOR PLASTIC LAMINATE. DIMENSIONS ARE 5" WIDE X 1 1/2" HIGH. TEXT HEIGHT IS 3/16", EXCEPT AS NOTED OTHERWISE.
3. LABEL COLORS ARE TO BE SELECTED FROM THE FOLLOWING CHOICES:

   NORMAL SYSTEM: BLACK BACKGROUND/WHITE LETTERS
4. SECURE TO TOP CENTER OF EQUIPMENT COVER WITH #4-40 STAINLESS STEEL SCREWS WITH MATCHING NUTS AND LOCKWASHERS. USE OF ADHESIVES TO SECURE LABEL TO EQUIPMENT IS NOT ACCEPTABLE.



KEYED NOTES :

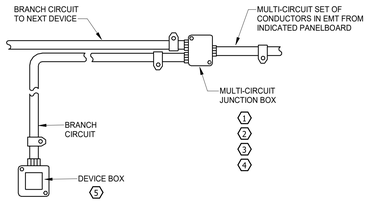
1. INSERT EQUIPMENT DESIGNATION WHERE X'S ARE INDICATED.
2. INSERT VOLTAGE WHERE X'S ARE INDICATED. POSSIBLE VOLTAGES ARE:

   "480Y/277"
   "208Y/120"
   "480: 208Y/120"
3. INSERT SUPPLY SOURCE DESIGNATION HERE.
4. INSERT SUPPLY SYSTEM WHERE X'S ARE INDICATED POSSIBLE CHOICES ARE:

   "NORMAL POWER"
5. ADD THIS LABEL AT SERVICE EQUIPMENT, PANELBOARDS, MECHANICAL SYSTEM MOTOR CONTROLLERS (VARIABLE DRIVE UNITS).
6. INSERT VALUE INDICATED ON PROJECT ELECTRICAL DRAWINGS.
7. INSERT DATE OF PROJECT DRAWING BID SET.

SO DETAIL: LA0003 R2

8 E301 EQUIPMENT LABEL
SCALE: NTS

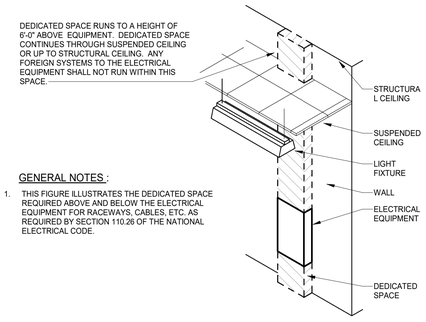


KEYED NOTES:

1. PROVIDE DEDICATED NEUTRAL CONDUCTOR WITH EACH PHASE CONDUCTOR.
2. LABEL EACH PHASE CONDUCTOR AND MATING NEUTRAL CONDUCTOR AT ALL BOX LOCATIONS FOR IDENTIFICATION.
3. BOND GROUND CONDUCTOR TO ALL BOXES.
4. MULTI-CIRCUIT JUNCTION BOXES SHALL NOT BE USED FOR DEVICE LOCATIONS.
5. DEVICE BOX SHALL NOT BE USED FOR MULTI-CIRCUIT DISTRIBUTION.

SO DETAIL: GE0042

9 E301 MULTI-CIRCUIT HOMERUN WIRING DETAIL
SCALE: NTS



GENERAL NOTES :

1. THIS FIGURE ILLUSTRATES THE DEDICATED SPACE REQUIRED ABOVE AND BELOW THE ELECTRICAL EQUIPMENT FOR RACEWAYS, CABLES, ETC. AS REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.

SO DETAIL: GE0030

5 E301 DEDICATED SPACE FOR ELECTRICAL EQUIPMENT
SCALE: NTS

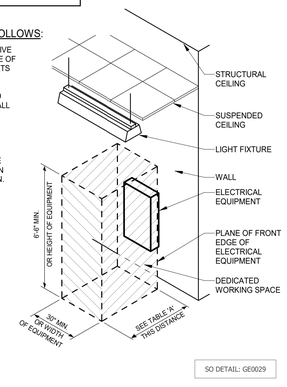
TABLE A - WORKING CLEARANCES			
NOMINAL VOLTAGE TO GROUND	MINIMUM CLEAR DISTANCE (FEET) CONDITION 1	CONDITION 2	CONDITION 3
0-150	3	3	3
151-600	3	3 1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:

1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR UNGROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

GENERAL NOTES :

1. THIS FIGURE ILLUSTRATES THE WORKING SPACE IN FRONT OF ELECTRICAL EQUIPMENT AS REQUIRED BY SECTION 110.26 OF THE NATIONAL ELECTRICAL CODE.



SO DETAIL: GE0029

6 E301 WORKING CLEARANCES FOR ELECTRICAL EQUIPMENT
SCALE: NTS

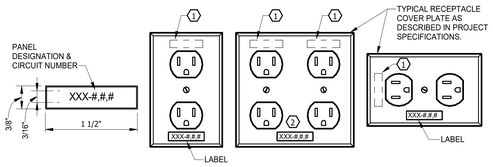


FIG. 1 - LABEL DIMENSIONS

FIG. 2 - LABEL LOCATION ON DEVICE PLATE

KEYED NOTES :

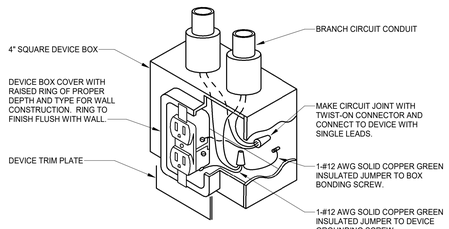
1. WRITE PANEL DESIGNATION NUMBER ON DEVICE YOKE WITH A FINE TIP, PERMANENT MARKER AS AN AID TO PROPER FACEPLATE LOCATION. ALL MARKING ON DEVICES MUST BE COVERED BY FACEPLATE.
2. FOR DUPLEX RECEPTACLES CENTER LABEL IF BOTH DEVICES ARE SUPPLIED BY THE SAME CIRCUIT. IF DEVICES ARE SUPPLIED BY DIFFERENT CIRCUITS PROVIDE A LABEL BELOW EACH RECEPTACLE.

GENERAL NOTES :

1. LABELS ARE TO BE MACHINE PRODUCED USING A THERMAL TRANSFER PROCESS WITH DIMENSIONS AS SHOWN ABOVE. LABELS ARE TO BE SUITABLE FOR EITHER INDOOR OR OUTDOOR USE.
2. LABEL COLOR TO BE CLEAR WITH BLACK LETTERING.
3. LABELS ARE TO BE ATTACHED AS INDICATED ABOVE TO ALL PROJECT RECEPTACLE COVER PLATES.

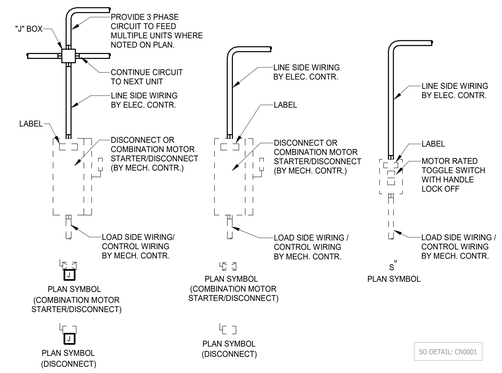
SO DETAIL: LA0002

7 E301 DEVICE LABELS
SCALE: NTS



SO DETAIL: GE0033

4 E301 RECEPTACLE GROUNDING DETAIL
SCALE: NTS

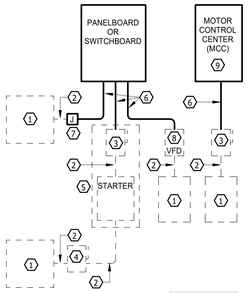


SO DETAIL: CN0001

1 E301 MECHANICAL UNIT WIRING DETAILS
SCALE: NTS

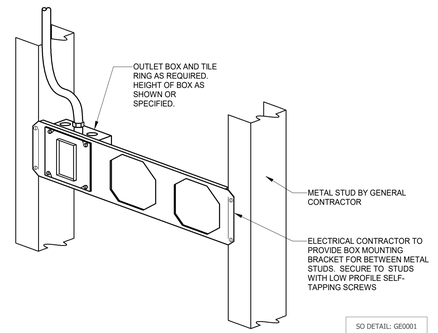
KEYED NOTES :

1. EQUIPMENT PROVIDED AND INSTALLED BY OTHER CONTRACTOR. CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.
2. CONDUIT & WIRING BY OTHER CONTRACTOR PROVIDING EQUIPMENT.
3. DISCONNECT PROVIDED AND INSTALLED BY CONTRACTOR PROVIDING EQUIPMENT.
4. IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR PROVIDING EQUIPMENT.
5. A COMBINATION STARTER MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. A COMBINATION STARTER SHALL BE PROVIDED AND INSTALLED BY THE OTHER CONTRACTOR PROVIDING THE EQUIPMENT.
6. FEEDER AND CONDUIT BY ELECTRICAL CONTRACTOR. SEE PANELBOARD SCHEDULES FOR WIRE AND BREAKER SIZES TO OTHER EQUIPMENT. TERMINATE FEEDER AT LINE SIDE OF DISCONNECTING MEANS.
7. JUNCTION BOX MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT IF NO STARTER IS REQUIRED. INSTALL JUNCTION BOX ADJACENT TO THE EQUIPMENT AND PROVIDE LINE SIDE WIRING TO THE JUNCTION BOX. MOTOR RATED DISCONNECT SHALL BE PROVIDED BY CONTRACTOR PROVIDING EQUIPMENT WHERE REQUIRED BY CODE.
8. VARIABLE FREQUENCY DRIVE (VFD) PROVIDED AND INSTALLED BY OTHER CONTRACTOR PROVIDING EQUIPMENT. VFD IS SUPPLIED WITH INTEGRAL DISCONNECTING MEANS.
9. FOR PROJECTS UTILIZING A MOTOR CONTROL CENTER (MCC), THE STARTER, CIRCUIT BREAKER OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.



SO DETAIL: CN0002

2 E301 MECHANICAL UNIT WIRING DETAILS
SCALE: NTS



SO DETAIL: GE0001

3 E301 OUTLET BOX SUPPORT
SCALE: NTS

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NORTH CAROLINA PROFESSIONAL SEAL 039503 ENGINEER MATTHEW J. DIXON

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**

SHEET
ELECTRICAL DETAILS

E301

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Plot Time: 1/16/2025 5:54:16 PM

PANEL ID: EV1

VOLTAGE: 480Y/277 **SERVICE EQUIP:** Yes **MOUNTING:** RACK MOUNTED
SOURCE: UTILITY **AMPS:** 400 **PANEL AIC:** 10,000 **TYPE:** BOLT ON - NEMA 3R
LOCATION: SITE **MAIN:** MCB **CALC SCC:** 5,379 **APPROX. DIM:** 20"W X 5.75"D X 50"H

LOAD	NOTE	COND	Phase, Neu, Grd Size	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	Phase, Neu, Grd Size	COND	NOTE	LOAD
						1	5540 --			2	--	1	--	--		SPACE
EV CHARGER		1	3-#8, 1-#8, 1-#10	3	40	3		5540 --		4	--	1	--	--		SPACE
						5			5540 --	6	--	1	--	--		SPACE
EV CHARGER		1	3-#8, 1-#8, 1-#10	3	40	7	5540 --			8	--	1	--	--		SPACE
						9		5540 --		10	--	1	--	--		SPACE
						11			5540 --	12	--	1	--	--		SPACE
EV APPARATUS CHARGER		3	3-#250, 1-#250, 1-#4	3	250	13	55400 --			14	--	1	--	--		SPACE
						15		55400 --		16	--	1	--	--		SPACE
						17			55400 --	18	--	1	--	--		SPACE
EV APPARATUS CHARGER		3	3-#250, 1-#250, 1-#4	3	250	19	55400 --			20	--	1	--	--		SPACE
						21		55400 --		22	--	1	--	--		SPACE
						23			55400 --	24	--	1	--	--		SPACE
SPACE		--	--	1	--	25	-- --			26	--	1	--	--		SPACE
SPACE		--	--	1	--	27		-- --		28	--	1	--	--		SPACE
SPACE		--	--	1	--	29			-- --	30	--	1	--	--		SPACE
SPACE		--	--	1	--	31	-- --			32	--	1	--	--		SPACE
SPACE		--	--	1	--	33		-- --		34	--	1	--	--		SPACE
SPACE		--	--	1	--	35			-- --	36	--	1	--	--		SPACE
SPACE		--	--	1	--	37	-- 0			38						
SPACE		--	--	1	--	39		-- 0		40	60	3	3-#6, 1-#6, 1-#10	--		SPD
SPACE		--	--	1	--	41			-- 0	42						
							121880 VA	121880 VA	121880 VA							
							440 A	440 A	440 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	365640 VA	100.00%	365640 VA		
				CONNECTED LOAD	365640 VA
				DEMAND LOAD	365640 VA
				AVG. CONNECTED CURRENT	440 A
				AVG. DEMAND CURRENT	440 A

NOTES:

PANEL ID: P1

VOLTAGE: 480Y/277 **SERVICE EQUIP:** Yes **MOUNTING:** SURFACE
SOURCE: UTILITY **AMPS:** 225 **PANEL AIC:** 22,000 **TYPE:** BOLT ON
LOCATION: ELEC/ IT 105 **MAIN:** MCB **CALC SCC:** 10,837 **APPROX. DIM:** 20"W X 5.75"D X 50"H

LOAD	NOTE	COND	Phase, Neu, Grd Size	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	Phase, Neu, Grd Size	COND	NOTE	LOAD
LIGHTING EXTERIOR		3/4	1-#12, 1-#12, 1-#12	1	20	1	616 4067			2						
LIGHTING INTERIOR		3/4	1-#12, 1-#12, 1-#12	1	20	3		272 4067		4	25	3	3-#10, 1-#10, 1-#10	3/4		WH-1
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	5			1144 4067	6						
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	7	1248 --			8	--	1	--	--		SPACE
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	9		124 --		10	--	1	--	--		SPACE
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	11			124 --	12	--	1	--	--		SPACE
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	13	124 --			14	--	1	--	--		SPACE
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	15		124 --		16	--	1	--	--		SPACE
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	17			124 --	18	--	1	--	--		SPACE
SITE LIGHTING		1	1-#12, 1-#12, 1-#12	1	20	19	124 --			20	--	1	--	--		SPACE
SPARE		--	--	1	20	21		0 --		22	--	1	--	--		SPACE
SPARE		--	--	1	20	23			0 --	24	--	1	--	--		SPACE
SPARE		--	--	1	20	25	0 --			26	--	1	--	--		SPACE
SPARE		--	--	1	20	27		0 --		28	--	1	--	--		SPACE
SPARE		--	--	1	20	29			0 --	30	--	1	--	--		SPACE
SPARE		--	--	1	20	31	0 --			32	--	1	--	--		SPACE
SPARE		--	--	1	20	33		0 --		34	--	1	--	--		SPACE
SPARE		--	--	1	20	35			0 --	36	--	1	--	--		SPACE
						37	7009 0			38						
X-P2				3	45	39		8439 0		40	30	3	3-#10, 1-#10, 1-#10	--		SPD
						41			7830 0	42						
							13176 VA	13013 VA	13276 VA							
							48 A	47 A	48 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	120 VA	100.00%	120 VA		
Power	29464 VA	100.00%	29464 VA	CONNECTED LOAD	39466 VA
REC	4680 VA	100.00%	4680 VA	DEMAND LOAD	40767 VA
Lighting	4495 VA	125.00%	5618 VA	AVG. CONNECTED CURRENT	47 A
Lighting - Exterior	744 VA	125.00%	930 VA	AVG. DEMAND CURRENT	49 A

NOTES:

PANEL ID: P2

VOLTAGE: 208Y/120 **SERVICE EQUIP:** No **MOUNTING:** Surface
SOURCE: X-P2 **AMPS:** 100 **PANEL AIC:** 10,000 **TYPE:** BOLT ON
LOCATION: ELEC/ IT 105 **MAIN:** MCB **CALC SCC:** 2,265 **APPROX. DIM:** 20"W X 5.75"D X 50"H

LOAD	NOTE	COND	Phase, Neu, Grd Size	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	Phase, Neu, Grd Size	COND	NOTE	LOAD
REC 106		3/4	1-#12, 1-#12, 1-#12	1	20	1	360 1176			2	20	1	1-#12, 1-#12, 1-#12	3/4		EXH-1
REC 106		--	1-#12, 1-#12, 1-#12	1	20	3		360 1500		4	25	2	2-#10, 1-#10, 1-#10	3/4		UH-1
REC 106		--	1-#12, 1-#12, 1-#12	1	20	5			360 1500	6						
REC 103, 104, 105		3/4	1-#12, 1-#12, 1-#12	1	20	7	540 1500			8	25	2	2-#10, 1-#10, 1-#10	3/4		UH-2
REC EXT		--	1-#12, 1-#12, 1-#12	1	20	9		540 1500		10						
REC 101, 102, 104		--	1-#12, 1-#12, 1-#12	1	20	11			540 1000	12	20	2	2-#12, 1-#12, 1-#12	3/4		UH-3
REC ELEC/ IT 105		3/4	1-#12, 1-#12, 1-#12	1	20	13	180 1000			14						
RESTROOM VALVES		3/4	1-#12, 1-#12, 1-#12	1	20	15		200 1650		16	25	2	2-#10, 1-#10, 1-#10	3/4		UH-4
RESTROOM VALVES		--	1-#12, 1-#12, 1-#12	1	20	17			200 1650	18						
RESTROOM VALVES		--	1-#12, 1-#12, 1-#12	1	20	19	200 200			20	20	1	1-#12, 1-#12, 1-#12	3/4		BAS ELEC/ IT 105
						21		1144 200		22	20	1	1-#12, 1-#12, 1-#12	3/4		LIGHTING RELAY PANEL 105
DSSO-1		3/4	2-#10, 1-#10, 1-#10	2	30	23			1144 540	24	20	1	1-#12, 1-#12, 1-#12	1		SITE REC
REC - FUTURE TV		3/4	1-#12, 1-#12, 1-#12	1	20	25	180 540			26	20	1	1-#12, 1-#12, 1-#12	1		SITE REC
CEILING FAN		3/4	1-#12, 1-#12, 1-#12	1	20	27		500 360		28	20	1	1-#10, 1-#10, 1-#10	1		SITE REC
CEILING FAN		--	1-#12, 1-#12, 1-#12	1	20	29			500 0	30	20	1	--	--		SPARE
CEILING FAN		--	1-#12, 1-#12, 1-#12	1	20	31	500 0			32	20	1	--	--		SPARE
SPARE		--	--	1	20	33		0 0		34	20	1	--	--		SPARE
SPARE		--	--	1	20	35			0 0	36	20	1	--	--		SPARE
						37	640 0			38						
T1	1	1-1/2	3-#1, 1-#1, 1-#8	3	100	39		485 0		40	30	3	3-#10, 1-#10, 1-#10	--		SPD
						41			396 0	42						
							7009 VA	8439 VA	7830 VA							
							58 A	71 A	66 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	120 VA	100.00%	120 VA		
Power	17264 VA	100.00%	17264 VA	CONNECTED LOAD	23278 VA
REC	4680 VA	100.00%	4680 VA	DEMAND LOAD	23581 VA
Lighting	1217 VA	125.00%	1522 VA	AVG. CONNECTED CURRENT	65 A
				AVG. DEMAND CURRENT	65 A

NOTES:
1. PROVIDE SUBFEED CIRCUIT BREAKER.

PANEL ID: T1

VOLTAGE: 208Y/120 **SERVICE EQUIP:** No **MOUNTING:** Surface
SOURCE: P2 **AMPS:** 100 **PANEL AIC:** 10,000 **TYPE:** BOLT ON
LOCATION: TRAINING TOWER **MAIN:** MCB **CALC SCC:** 1,850 **APPROX. DIM:** 20"W X 5.75"D X 50"H

LOAD	NOTE	COND	Phase, Neu, Grd Size	POLE	BKR	CKT	A	B	C	CKT	BKR	POLE	Phase, Neu, Grd Size	COND	NOTE	LOAD
SMOKE SYSTEM - TOWER		3/4	1-#12, 1-#12, 1-#12	1	20	1	180 --			2	--	1	--	--		SPACE
EXTERIOR LIGHTING		3/4	1-#12, 1-#12, 1-#12	1	20	3		345 --		4	--	1	--	--		SPACE
LIGHTING 1ST FLOOR		3/4	1-#12, 1-#12, 1-#12	1	20	5			156 --	6	--	1	--	--		SPACE
LIGHTING STAIRS		3/4	1-#12, 1-#12, 1-#12	1	20	7	280 --			8	--	1	--	--		SPACE
LIGHTING 2ND FLOOR		3/4	1-#12, 1-#12, 1-#12	1	20	9		140 --		10	--	1	--	--		SPACE
LIGHTING 3RD FLOOR		3/4	1-#12, 1-#12, 1-#12	1	20	11			240 --	12	--	1	--	--		SPACE
LIGHTING 4TH AND 5TH...		3/4	1-#12, 1-#12, 1-#12	1	20	13	187 --			14	--	1	--	--		SPACE
SPARE		--	--	1	20	15		0 --		16	--	1	--	--		SPACE
SPARE		--	--	1	20	17			0 --	18	--	1	--	--		SPACE
SPARE		--	--	1	20	19	0 --			20	--	1	--	--		SPACE
SPARE		--	--	1	20	21		0 --		22	--	1	--	--		SPACE
SPARE		--	--	1	20	23			0 --	24	--	1	--	--		SPACE
SPARE		--	--	1	20	25	0 --			26	--	1	--	--		SPACE
SPARE		--	--	1	20	27		0 --		28	--	1	--	--		SPACE
SPARE		--	--	1	20	29			0 --	30	--	1	--	--		SPACE
SPARE		--	--	1	20	31	0 --			32	--	1	--	--		SPACE
SPARE		--	--	1	20	33		0 --		34	--	1	--	--		SPACE
SPARE		--	--	1	20	35			0 --	36	--	1	--	--		SPACE
SPARE		--	--	1	20	37	0 0			38						
SPARE		--	--	1	20	39		0 0		40	30	3	3-#10, 1-#10, 1-#10	--		SPD
SPARE		--	--	1	20	41			0 0	42						
							640 VA	485 VA	396 VA							
							5 A	4 A	3 A							

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	120 VA	100.00%	120 VA		
REC	180 VA	100.00%	180 VA	CONNECTED LOAD	1517 VA
Lighting	1217 VA	125.00%	1522 VA	DEMAND LOAD	1821 VA
				AVG. CONNECTED CURRENT	4 A
				AVG. DEMAND CURRENT	5 A

NOTES:

PANEL KEY	
EV1	P1
--	P2
--	T1

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IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **PANEL SCHEDULES**

E401

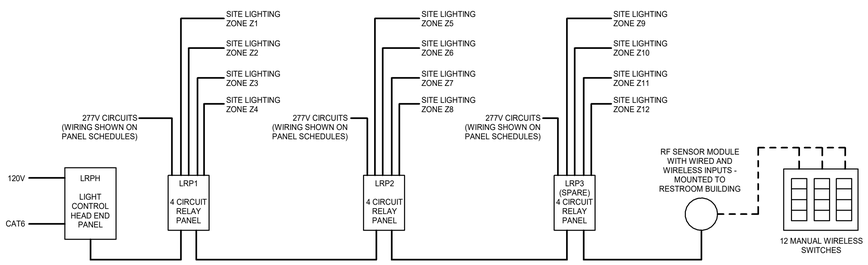
LIGHTING FIXTURE SCHEDULE

TYPE MARK	DESCRIPTION	MOUNTING	LUMENS	VOLTAGE	WATTAGE	CONTROL	FIXTURE MEETING SPECIFICATION	COMMENTS	IMAGE
A	LINEAR NARROW APERTURE PENDANT	PENDANT	500 LM/FT	120/277	9 VA/FOOT	0-10V	FINELITE HP4	COLOR AS SELECTED BY ARCHITECT	
B	6" RECESSED DOWNLIGHT	RECESSED	2000	120/277	23 VA	0-10 V	HE WILLIAMS 6DR	CLEAR DIFFUSE	
C	4' LONG CORNER MOUNTED LED	SURFACE, CORNER MOUNT	8000	120/277	80 VA	0-10V	ADVANTAGE LIGHTING LCF-4-40-8L-SH16-TG-J1	PROVIDE IP65 RATED FIXTURE WITH STAINLESS STEEL HOUSING AND TWO TEMPERED GLASS LENSES	
D	LED LINEAR STRIP	PENDANT	5000	120/277	40 VA	0-10V	JADEMAR JSTRE	COLOR AS SELECTED BY ARCHITECT	
E	WALL MOUNT EMERGENCY LIGHTING UNIT	WALL	1100	120/277	5 VA	N/A	LITHONIA ELM6L CHLORIDE CLU MULE SQ-80 COMPASS CU2		
F	WALL MOUNTED STAIR LIGHT	SURFACE, WALL	5000	120/277	40 VA	0-10V	JADEMAR JSTRE		
FL	EXTERIOR GROUND MOUNT WIDE FLOOD LIGHT	SURFACE	6754	120/277	62 VA	ON/OFF	Kim Lighting #AFL10 WF 54 4K Lithonia		
G	EXTERIOR ARCHITECTURAL WALL SCONCE	SURFACE, WALL	3000	120/277	23 VA	PHOTOCELL	LITHONIA WDGE	COLOR AS SELECTED BY ARCHITECT.	
H	ROUGH SERVICE VAPOR PROOF LED	SURFACE, WALL	4000	120/277	33 VA	0-10V	LITHONIA VAP 4000LM FST WD MVOLT GZ10 40K 80CRI DAY-BRITE COLUMBIA LSI INDUSTRIES CORONET		
SL1	HIGH OUTPUT SOLAR ASSEMBLY SITE LIGHT POLE	POLE	11,135	SOLAR	N/A	PHOTOCELL	SONARAY SR-3080-D	25' ALUMINUM POLE, 4000K COLOR. FIXTURE SHALL BE UL LISTED AND LABELED. CONFIGURE FOR 4 HOURS @ 100%	
SL2	ARCHITECTURAL OUTDOOR AREA LIGHT	POLE	11,336	277	104 VA	PHOTOCELL	NLS NV-1	25' ALUMINUM POLE, 4000K COLOR. FIXTURE SHALL BE UL LISTED AND LABELED.	

FIXTURE SCHEDULE NOTES:

1. THIS FIXTURE SCHEDULE IDENTIFIES A FIXTURE THAT MEETS THE SPECIFIED PERFORMANCE REQUIREMENTS AND A LEVEL OF QUALITY REQUIRED FOR THE PROJECT. **MANUFACTURER'S NAMES AND FIXTURE SERIES/MODELS IN SCHEDULE ARE NOT A BRAND NAME SPECIFICATION.** EQUIVALENT FIXTURES BY MANUFACTURERS OTHER THAN THOSE LISTED MAY BE SUBMITTED FOR THIS PROJECT.
2. PROVIDE LED DRIVERS SUITABLE FOR FULL RANGE DIMMING, INTEGRAL SURGE PROTECTION, CURRENT TOTAL HARMONIC DISTORTION (THD) OF <20% AND A POWER FACTOR >0.90. IN ADDITION, DRIVERS MUST BE RF SUPPRESSED FOR MINIMUM INJECTION OF FEEDBACK INTO SUPPLY LINES. MAXIMUM CURRENT THD AND MINIMUM POWER FACTOR MUST BE SUBMITTED AS A PART OF THE FIXTURE SUBMITTAL DATA.
3. UNLESS OTHERWISE INDICATED, PROVIDE SINGLE DRIVER PER FIXTURE.
4. PROVIDE MOUNTING FRAME AND RELATED ACCESSORIES FOR ALL FIXTURES AS REQUIRED TO MATCH CEILING CONSTRUCTION. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT CEILING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR MODIFICATION OF FIXTURE SCHEDULE MANUFACTURER'S PART NUMBERS FOR PURPOSES OF MATCHING CEILING CONSTRUCTION.
5. PROVIDE DIMMING DRIVERS WHERE DIMMING CONTROLS ARE INDICATED ON THE PLANS.
6. ALL FIXTURES TO HAVE A COLOR TEMPERATURE OF 4000K UNLESS NOTED OTHERWISE.
7. UNLESS NOTED OTHERWISE, ALL FIXTURES SHALL INCLUDE INTEGRAL DRIVER.
8. ALL FIXTURES SHALL BE UL OR THIRD PARTY LISTED AS COMPLETE ASSEMBLY.
9. FOR LIGHT FIXTURES HAVING LINEAR VISUAL FEATURES (IE: CENTER BASKET, LOUVERS, ETC), COORDINATE AND ALIGN COMPONENTS IN A SIMILAR DIRECTION CONSISTENTLY ACROSS THE BUILDING SPACES.

SO DETAIL: IN0011 LED



PROVIDE A LIGHTING CONTROL RELAY SYSTEM, LUTRON ATHENA OR APPROVED EQUAL.

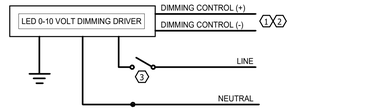
PROVIDE ALL WIRING AS REQUIRED BY MANUFACTURER. SEE RESTROOM BUILDING FLOOR PLAN FOR EQUIPMENT LOCATIONS. SEE SITE PLAN FOR LIGHTING FIXTURE LOCATIONS AND CONTROL ZONES. SEE PANEL SCHEDULES FOR CIRCUIT WIRING AND CONDUIT SIZES.

SYSTEM SHALL BE CAPABLE OF CONTROLLING UP TO 12 LIGHTING CIRCUITS. HEAD END PANEL SHALL BE PROGRAMMABLE FOR TIME OF DAY SETTINGS, OWNER SELECTED SCENE CONTROLS, AND AUTOMATIC SHUTOFF.

SYSTEM SHALL HAVE WIRELESS SWITCHES FOR MANUAL CONTROL OF EACH ZONE. SWITCHES WILL BE LOCATED IN RESTROOM BUILDING ELECTRICAL ROOM.

SYSTEM SHALL HAVE PHONE APP CAPABILITY FOR OWNER TO MANUALLY CONTROL THE LIGHTING REMOTELY.

1 E501 LIGHTING CONTROL RELAY PANEL
SCALE: NTS

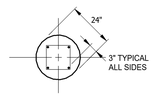


KEYED NOTES :

1. CAP DIMMING CONTROL LEADS WHERE FIXTURES ARE NOT REQUIRED TO BE DIMMED, AND ROVIDE LINE SIDE SWITCHLEG (NOT SHOWN).
2. PROVIDE 0-10 VOLT STANDARD CURRENT SINK 0-10 VOLT CONTROL DIMMER (IEC 60929) WHERE INDICATED (COMPATIBLE WITH LIGHT FIXTURES). PROVIDE 600 VOLT RATED CONTROL CONDUCTORS ROUTED WITH POWER CIRCUIT TO EACH FIXTURE DRIVER.
3. INTEGRAL DRIVER DISCONNECT.

SO DETAIL: CN0046

2 E501 0-10 VOLT DIMMING WIRING DETAIL
SCALE: NTS



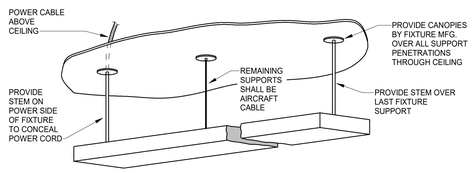
SECTION A-A

KEYED NOTES :

1. TYPICAL CONDUIT RUN(S) AS DETAILED ON SITE PLAN. PROVIDE ONE SPARE STUB-OUT PER POLE.
2. BOND GROUNDING ELECTRODE CONDUCTOR TO ROD USING CLAMP LISTED FOR DIRECT BURIAL.
3. BOND GROUNDING ELECTRODE CONDUCTOR & CIRCUIT GROUNDING CONDUCTOR TO POLE BASE.
4. GROUT AROUND POLE BASE. PROVIDE BOLT/NUT COVERS TO MATCH POLE COLOR & CONSTRUCTION.
5. PROVIDE TEMPORARY FORM TO MATCH INDICATED DIAMETER. AFTER FORM REMOVAL FINISH TO LEAVE SURFACE WITHOUT VOIDS OR BLEMISH.
6. CENTER POLE ON CONCRETE BASE. BOLT PATTERN IS TO MATCH POLE BASE.
7. HAND HOLE. ORIENT HAND HOLE AWAY FROM CURB WHERE SUCH IS POSSIBLE WITH OUT DISTURBING LUMINAIRE LOCATION(S) AS SHOWN ON THE PLANS.

SO DETAIL: OL0001

3 E501 SL2 LIGHT POLE BASE DETAIL
SCALE: NTS



GENERAL NOTES :

1. FIXTURE STYLE AND NUMBER OF REQUIRED SUPPORTS WILL VARY BY FIXTURE TYPE.
2. REFER TO MANUFACTURER'S SUPPLIED MOUNTING INSTRUCTIONS FOR EXACT REQUIRMENTS.

SO DETAIL: GE0022

4 E501 TYPICAL LINEAR FIXTURE INSTALLATION
SCALE: NTS

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Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **LIGHTING FIXTURE SCHEDULE**

E501

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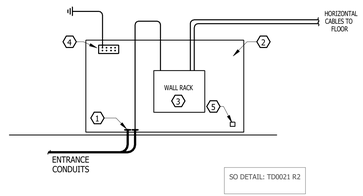
GENERAL NOTES :

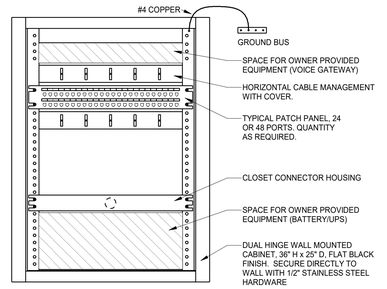
1. ACTIVE ELECTRONICS AND PATCH CORDS ARE PROVIDED AND INSTALLED BY OWNER.
2. FIRE SEAL ALL FLOOR PENETRATIONS.

KEYED NOTES :

1. TELECOM SERVICE ENTRANCE CONDUITS, STUB CONDUITS UP 4" AFF AND BUSH. PROVIDE CAP DURING CONSTRUCTION. SEAL ENDS OF ALL CONDUITS AFTER INSTALLATION OF CABLES.
2. PROVIDE 3/4" THICK FIRE RETARDANT PLYWOOD BACKBOARD FROM FLOOR TO 8'-0" AFF ON WALL. PAINT PLYWOOD WHITE, LEAVING RATING LABELS VISIBLE FOR INSPECTIONS.
3. WALL MOUNTED TELECOMMUNICATIONS EQUIPMENT RACK. FIBER HOUSING AND CABLE MANAGEMENT BY ELECTRICAL CONTRACTOR, ELECTRONIC COMPONENTS BY OWNER.
4. WALL MOUNTED GROUND BUS PER PROJECT DETAIL WITH #3 GROUND TO EFFECTIVELY GROUNDED STRUCTURAL STEEL.
5. PROVIDE QUADRUPLEX RECEPTACLES AT 24" AFF. REFER TO FLOOR PLANS FOR CIRCUITRY.



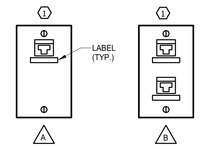
1 E511 **TELECOMMUNICATIONS RISER**
SCALE: NTS



GENERAL NOTES :

1. INDICATED ARRANGEMENT IS TYPICAL FOR NEW WALL MOUNTED RACK.
2. ALL CONNECTIONS BY CONTRACTOR TO 110 BLOCKS AT BACK OF PATCH PANELS. PATCH CORDS AND ACTIVE COMPONENTS PROVIDED AND INSTALLED BY THE OWNER.

5 E511 **WALL MOUNTED DISTIBUTION RACK ELEVATION**
SCALE: NTS



KEYED NOTES :

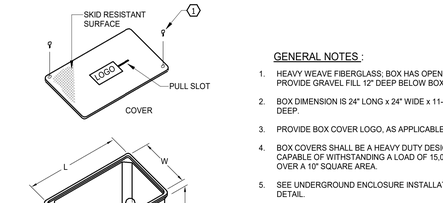
1. ROUTE SPECIFIED CABLE(S) TO DISTRIBUTION EQUIPMENT AND TERMINATE.
2. PROVIDE SPECIFIED CABLES TO LOCATION OF WIRELESS ACCESS POINT INDICATED ON PLANS. TERMINATE EACH CABLE AT ACCESS POINT END WITH RJ45 FITTING AND LEAVE 20' OF SERVICE LOOP IN CABLE SUPPORTED ABOVE CEILING LEVEL.
3. PROVIDE SPECIFIED CABLES TO LOCATION OF SECURITY CAMERA INDICATED ON PLANS. TERMINATE EACH CABLE AT CAMERA END WITH RJ45 FITTING AND LEAVE 20' OF SERVICE LOOP IN CABLE SUPPORTED OVERHEAD AND ACCESSIBLE FOR OWNER CONNECTIONS.

GENERAL NOTES :

1. ALL CAT. 6 CABLES TO BE TERMINATED ON DEDICATED CAT. 6A MODULAR PATCH PANEL.

TELECOMMUNICATIONS OUTLET SCHEDULE				
SYMBOL	PORTS	FUNCTION	CABLE	
A	1	DATA	(1) CAT. 6	1
B	2	DATA/DATA	(2) CAT. 6	1
2	2	DATA/DATA	(2) CAT. 6A	2
	2	DATA/DATA	(2) CAT. 6	3

2 E511 **TYPICAL TELECOM OUTLET SCHEDULE**
SCALE: NTS



GENERAL NOTES :

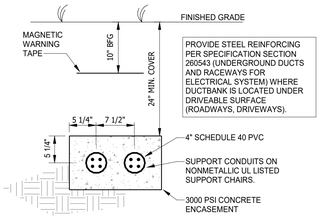
1. HEAVY WEAVE FIBERGLASS; BOX HAS OPEN BASE. PROVIDE GRAVEL FILL 12" DEEP BELOW BOX.
2. BOX DIMENSION IS 24" LONG x 24" WIDE x 11-1/4" DEEP.
3. PROVIDE BOX COVER LOGO, AS APPLICABLE.
4. BOX COVERS SHALL BE A HEAVY DUTY DESIGN, CAPABLE OF WITHSTANDING A LOAD OF 15,000 LBS. OVER A 10" SQUARE AREA.
5. SEE UNDERGROUND ENCLOSURE INSTALLATION DETAIL.

KEYED NOTES :

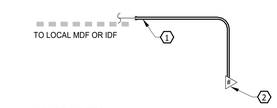
1. PROVIDE TAMPER RESISTANT STAINLESS STEEL COVER HOLD-DOWN BOLTS.
2. TYPICAL CONDUIT ENTRY. CONDUIT SHALL ENTER BOX FROM THE BOTTOM AND EXTEND UP 6" INTO BOX.

SO DETAIL: OC0012

6 E511 **TYPICAL UNDERGROUND ENCLOSURE**
SCALE: NTS



3 E511 **TELECOM DUCT BANK SECTION**
SCALE: NTS

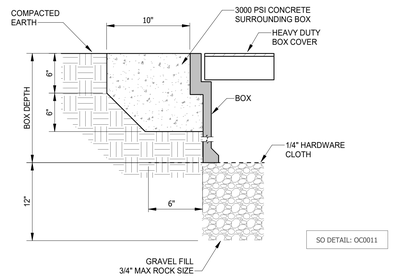


KEYED NOTES :

1. 1" CONDUIT TO ELECTRICAL ROOM ABOVE WALL MOUNTED DISTRIBUTION RACK. BUSH ENDS OF PIPE.
2. REFER TO TELECOMMUNICATIONS OUTLET SCHEDULE.

SW DETAIL: TD0003 R1

4 E511 **TYPICAL TELECOM OUTLET**
SCALE: NTS



7 E511 **UNDERGROUND ENCLOSURE INSTALLATION**
SCALE: NTS

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JOB NUMBER **22-086**
DATE ISSUED **01/10/2025**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TELECOMMUNICATIONS SYSTEMS**

E511

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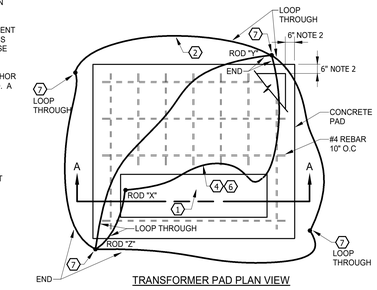
GENERAL NOTES :

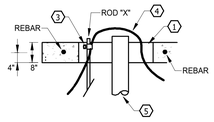
1. CONSTRUCT MOUNTING PAD FROM 3,000 PSI CONCRETE, FORMED IN PLACE.
2. PAD DIMENSIONS ARE 6" LARGER IN EACH DIRECTION THAN EQUIPMENT TO BE SUPPORTED. COORDINATE EQUIPMENT AND PAD DIMENSIONS WITH THE UTILITY CO. PADS ARE TO BE 8" THICK UNLESS OTHERWISE SPECIFIED.
3. SECURE EQUIPMENT TO PAD USING DRILLED IN PLACE 5/8" DIA. ANCHOR BOLTS. PROVIDE MOUNTING AS RECOMMENDED BY THE UTILITY CO. A MINIMUM OF 4 ANCHORS ARE REQUIRED FOR PAD MOUNTED EQUIPMENT.
4. GROUND ROD CLAMP DETAIL IS TYPICAL FOR ALL GROUND RODS.

KEY NOTES :

1. TYPICAL OPENING IN PAD FOR CONDUIT ENTRY. COORDINATE EXACT SIZE AND LOCATION WITH EQUIPMENT TO BE SUPPORTED AND UNDERGROUND CONDUIT REQUIRED.
2. #4 SOLID BARE COPPER CONTINUOUS GROUNDING LOOP.
3. GROUND ROD CLAMP LISTED FOR DIRECT BURIAL.
4. TYPICAL EXPOSED LOOP FOR CABLE & EQUIPMENT CONNECTIONS.
5. CONDUIT ENTRY. TOP END OF CONDUIT SHOULD EXTEND 2" ABOVE EQUIPMENT PAD.
6. #3/0 BARE COPPER GROUND CONDUCTOR. THIS CONDUCTOR IS CONTINUOUS FROM ROD "Y" THROUGH ROD "X", THEN ROD "Z" THEN BACK TO ROD "Y".
7. TOP OF ROD IS TO BE A MINIMUM OF 24" BELOW FINISHED GRADE. LOOP TO BE BURIED WITH 30" COVER.



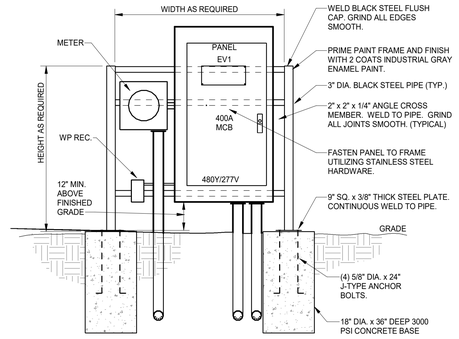
TRANSFORMER PAD PLAN VIEW



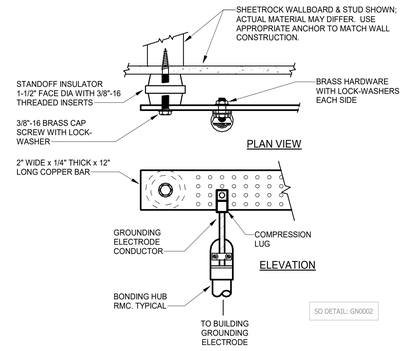
SECTION A-A

SO DETAIL: GN0003 R1

9 E601 **TRANSFORMER PAD AND GROUNDING SYSTEM**
SCALE: NTS



5 E601 **PANEL RACK DETAIL**
SCALE: NTS



SO DETAIL: GN0002

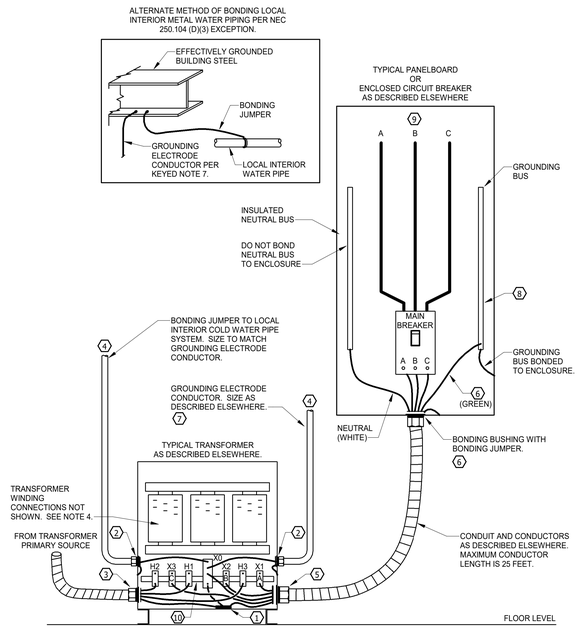
1 E601 **GROUNDING BUS DETAIL**
SCALE: NTS

GENERAL NOTES :

1. ADJUST TRANSFORMER TAPS TO PROVIDE NOMINAL SECONDARY VOLTAGE UNDER NORMAL TRANSFORMER LOAD CONDITIONS.
2. CONNECT TRANSFORMER SECONDARY TERMINALS TO OBTAIN A-B-C CLOCKWISE ROTATION AT THE PANELBOARD BUS. TRANSFORMER TERMINAL CONNECTIONS ARE TYPICAL; EXACT TERMINAL LOCATION MAY VARY WITH TRANSFORMER STYLE OR MANUFACTURER.
3. ALL CONNECTIONS TO TRANSFORMER OR PANELBOARD ENCLOSURES SHALL BE MADE WITH LISTED 75° C. TERMINALS. ALL TERMINALS SHALL BE BOLTED TO THE ENCLOSURE WITH SCREWS, LOCK WASHERS, AND NUTS. REMOVE ALL PAINT FROM ENCLOSURE SURFACES PRIOR TO MAKING TERMINATIONS. FURNISHED TERMINALS MAY BE USED IN LIEU OF CONTRACTOR INSTALLED LUGS.
4. THREE PHASE TRANSFORMER IS SHOWN. GROUNDING FOR SINGLE PHASE TRANSFORMERS IS IDENTICAL.
5. HOUSEKEEPING PAD BELOW TRANSFORMER NOT SHOWN.

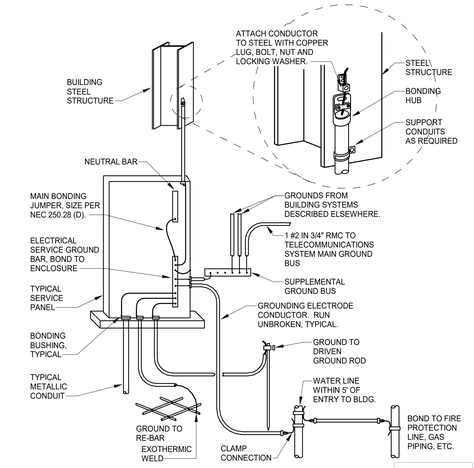
KEYED NOTES :

1. PROVIDE BONDING JUMPER TO PANELBOARD BY PASSING JUMPER THROUGH GROUND BAR SECURED TO TRANSFORMER ENCLOSURE. BAR SHALL NOT CONCEAL VENTILATION PROVISIONS IN ENCLOSURE.
2. USE A BONDING BUSHING AND JUMPER AT THIS CONDUIT TERMINATION. JUMPER SHOULD BE THE SAME SIZE AS THE GROUNDING CONDUCTOR CONTAINED IN THE CONDUIT.
3. CONDUCTORS TO TRANSFORMER PRIMARY ARE PHASE CONDUCTORS AND A GROUNDING CONDUCTOR. THESE CONDUCTORS ARE DESCRIBED ELSEWHERE. NO BONDING BUSHING IS REQUIRED AT THIS CONDUIT TERMINATION.
4. USE A BONDING HUB AT THE TERMINATION OF THIS GROUNDING CONDUCTOR CONDUIT RUN TO PHYSICALLY AND ELECTRICALLY CONNECT THE RACEWAY AND GROUND TO THE ELECTRODE. ELECTRICAL CONNECTION ALONE IS NOT ACCEPTABLE.
5. NO BONDING BUSHING IS REQUIRED AT THIS END OF PANELBOARD FEEDER.
6. DETERMINE THE SIZE OF THIS BONDING JUMPER FROM NEC TABLE 250.66 WITH TABLE ENTRY BASED ON THE SIZE OF THE CONDUCTORS SUPPLYING THE PANELBOARD.
7. EXTEND GROUNDING ELECTRODE CONDUCTOR TO EFFECTIVELY GROUNDED BUILDING STEEL OR METAL WATER PIPE WITHIN 5 FEET FROM POINT OF ENTRANCE INTO BUILDING.
8. GROUNDING BUS IS GENERALLY ATTACHED DIRECTLY TO PANELBOARD ENCLOSURE. IN THE ABSENCE OF SUCH A LISTED ATTACHMENT SIZE BONDING JUMPER AS DESCRIBED IN KEYED NOTE 6 ABOVE.
9. PANELBOARD OR ENCLOSED CIRCUIT BREAKER.
10. PROVIDE OVERSIZED NEUTRAL TERMINAL AS REQUIRED TO ACCOMMODATE BONDING CONNECTIONS.



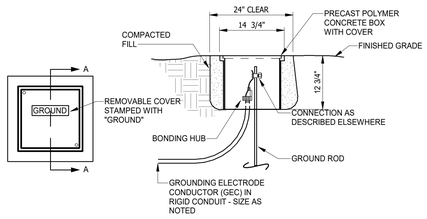
SO DETAIL: GN0005 R1

10 E601 **TYPICAL TRANSFORMER BONDING**
SCALE: NTS



SO DETAIL: GN0010-R1

6 E601 **SERVICE GROUNDING AND BONDING**
SCALE: NTS

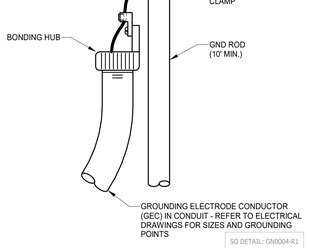


SO DETAIL: GN0006

2 E601 **GROUND ROD ENCLOSURE**
SCALE: NTS

WARNING

1. FIELD VERIFY EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE DRIVING GROUND RODS.
2. DO NOT USE POWER ASSISTED TOOLS TO DRIVE GROUND RODS.



SO DETAIL: GN0004-R1

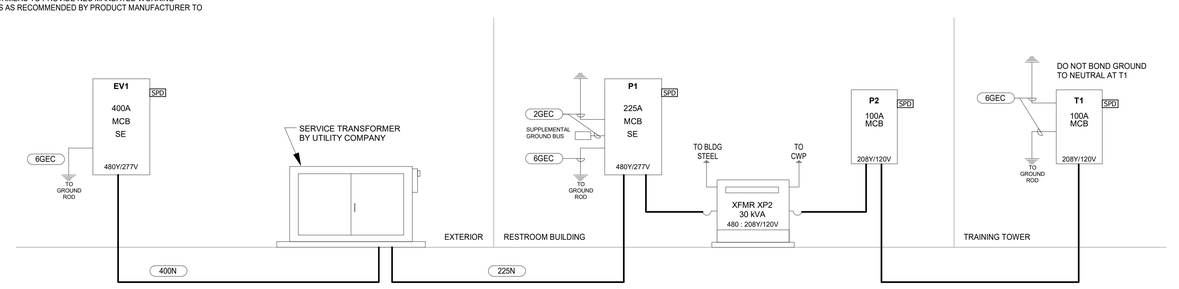
3 E601 **GROUND ROD CONNECTIONS**
SCALE: NTS

ELECTRICAL TRANSFORMER SCHEDULE

NAME	SIZE	SUPPLY FROM	VOLTAGE	Primary Feeder Size	SECONDARY FEEDER	Grounding Electrode	IMPEDANCE	ROOM NAME	ROOM NUMBER
X-P2	30 KVA	P1	480:208Y/120	3-#6 PHASE & 1-#10 GND IN 1" C.	3-#3 PHASE, 1-#3 NEU, & 1-#6 BONDING JUMPER IN 1 1/4" C.	1-#6 IN 1/2" RMC	3.5%-5.8%	ELEC/ IT	105

GENERAL NOTES TO POWER RISERS:

1. PROVIDE 4" (NOMINAL) THICK, 3000 PSI CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED GEAR AND TRANSFORMERS. FNIISH SMOOTH AND CHAMFER EDGES.
2. COORDINATE LOCAITIONS FOR ALL DRY TYPE TRANSFORMERS TO PROVIDE NEC MANDATED WORKING CLEARANCES AND PROVIDE CLEARANCES FROM WALLS AS RECOMMENDED BY PRODUCT MANUFACTURER TO PROMOTE AIR CIRCULATION (6" MIN.)



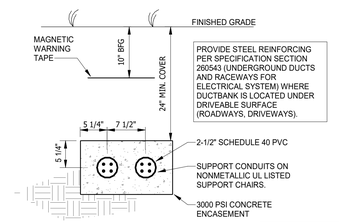
11 E601 **ELECTRICAL DISTIBUTION RISER**
SCALE: NTS

ELECTRICAL FEEDER SCHEDULE

Mark	Ampacity	Description
225N	230A	3-#4/0 PHASE & 1-#4/0 NEU IN 2 1/2" C.
400N	400A	2 PARALLEL RUNS, EACH OF 3-#3/0 PHASE & 1-#3/0 NEU IN 2 1/2" C.
6GEC	N/A	GROUNDING ELECTRODE CONDUCTOR. 1-#6 IN 1/2" RMC. SEE NOTE 3.
2GEC	N/A	GROUNDING ELECTRODE CONDUCTOR. 1-#2 IN 1/2" RMC. SEE NOTE 3.

NOTES TO FEEDER SCHEDULE:

1. ALL AMPACITIES ARE BASED ON 75° C. RATING. CONTRACTOR IS RESPONSIBLE FOR THE MODIFICATION OF CONDUCTOR SIZES AS NECESSARY TO MEET THE REQUIREMENTS OF NEC 110-14(C) WHERE TERMINATIONS ARE NOT LISTED AND LABELED FOR USE AT 75° C. THIS REQUIREMENT APPLIES TO TERMINATIONS IN BOTH NEW EQUIPMENT AND IN EXISTING EQUIPMENT TO WHICH TERMINATIONS ARE MADE AS A PART OF THIS PROJECT.
2. DESIGNATION "C" IN THE ABOVE TABLE REFERS TO "CONDUIT". SEE SPECIFICATIONS FOR EXACT TYPE OF RACEWAY REQUIRED. TYPE OF RACEWAY, UNLESS INDICATED IN TABLE OR ELSEWHERE IN THE DRAWINGS, IS TO BE DETERMINED BY USE CONDITIONS.
3. PROVIDE A BONDING BUSHING AT THE EQUIPMENT END OF THIS CONDUIT RUN AND A BONDING HUB AT THE CONNECTION TO THE GROUNDING ELECTRODE.



SO DETAIL: OC0001 R1

4 E601 **FEEDER DUCT BANK SECTION**
SCALE: NTS

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SHEET **ELECTRICAL DISTRIBUTION SYSTEM**

E601

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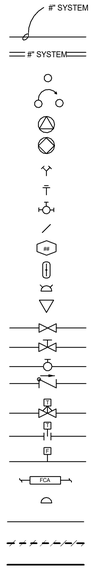
FIRE PROTECTION ABBREVIATIONS

#	POUNDS; NUMBER
ACV	ALARM CHECK VALVE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISTICTION
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECTURAL; ARCHITECT
AUTO	AUTOMATIC
BAS	BUILDING AUTOMATION SYSTEM
BOP	BOTTOM OF PIPE
CAP	CAPACITY
CLG	CEILING
COL	COLUMN
CONC	CONCRETE
CTR	CENTER
CUFT	CUBIC FOOT; CUBIC FEET
CUYD	CUBIC YARD
CV	CHECK VALVE
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DI	DUCTILE IRON
DIA	DIAMETER
DIV	DIVISION
DN	DOWN
DPV	DRY PIPE VALVE
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQUIP	EQUIPMENT
EXIST	EXISTING
FCV	FLOOR CONTROL VALVE
FDC	FIRE DEPARTMENT CONNECTION
FDV	FIRE DEPARTMENT VALVE
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHVC	FIRE HOSE VALVE CABINET
FL	FLOOR
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FM	FACTORY MUTUAL
FP	FIRE PROTECTION OR FIRE PUMP
FPC	FIRE PUMP CONTROLLER
FS	FLOW SWITCH
FT	FOOT; FEET
FTG	FOOTING
GAL	GALLONS
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HORIZ	HORIZONTAL
HP	HORSE POWER
HT	HEIGHT
ID	INSIDE DIAMETER
IN	INCH
JP	JOCKEY PUMP
JPC	JOCKEY PUMP CONTROLLER
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPS
MFG	MANUFACTURING
MFR	MANUFACTURER
MIN	MINIMUM
MOCP	MAXIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OSY	OUTSIDE SCREW AND YOKE
PIV	POST INDICATOR VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
QTY	QUANTITY
RCV	RISER CHECK VALVE
REINF	REINFORCING
REV	REVISION
RM	ROOM
RPDA	REDUCED PRESSURE DETECTOR ASSEMBLY
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SP	STANDPIPE
SPCV	SUCTION PRESSURE CONTROL VALVE
SPEC	SPECIFICATION
SPRK	SPRINKLER SPRINKLER
SYM	SYMBOL OR SYMMETRICAL
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TS	TAMPER SWITCH
TYP	TYPICAL
UF	UNDER FLOOR
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WMA	WATER MOTOR ALARM
Ø	ROUND; DIAMETER; PHASE

FIRE PROTECTION PIPING SYMBOLS



PIPE SIZE AND SYSTEM IDENTIFICATION (SEE ABBREVIATIONS FOR SYSTEM TYPES)

EXISTING PENDENT SPRINKLER HEAD TO REMAIN

NEW HEAD LOCATION

ALARM CHECK OR PREACTION VALVE

DRY PIPE VALVE

SIAMESE FIRE DEPT. CONNECTION

STORZ FIRE DEPT. CONNECTION

FIRE HYDRANT LOCATION

TYPICAL HANGER LOCATION

HYDRAULIC CALCULATION NODE

ROADWAY VALVE AND BOX

TEST HEADER

THRUST BLOCK

VALVE (REFER TO SPECIFICATIONS)

GATE VALVE

BALL VALVE

CHECK VALVE

OSY GATE VALVE W/ TAMPER SWITCH

BUTTERFLY VALVE W/ TAMPER SWITCH

FLOW SWITCH

SPRINKLER ZONE CONTROL VALVE ASSEMBLY

WATER MOTOR ALARM

EXISTING PIPING

PIPING TO BE DEMOLISHED

NEW PIPING

SPRINKLER DESIGN DATA

Project Name: WTCC EWS - FIRE & RESCUE TRAINING CENTER			System: .
Project Street Address: WTCC, 5345 ROLESVILLE RD, WENDELL, NC 27591			Sys. Sq. Ft.: .
Suite: NA	Floors:	TRAINING TOWER 5 BURN BUILDING 6	Ceiling Height: .
Designed By: SALAS O'BRIEN	Phone:	919-832-8118	Total Bldg. Hgt.: .
Occupancy: NA	Hazard:	NA	

DESIGN SUMMARY

	Zone #	Zone #	Zone #	Zone #	Zone #
Design Method	.	.	.	.	.
Design Area #	.	.	.	.	.
Location	.	.	.	.	.
Type of System	.	.	.	.	.
Hazard Class	.	.	.	.	.
Criteria From	.	.	.	.	.
Design Area	.	.	.	.	.
Protection Area	.	.	.	.	.
Sprinkler Spacing	.	.	.	.	.
Density	.	.	.	.	.
K-factor	.	.	.	.	.
Hose Allowance	.	.	.	.	.
G.P.M. Req'd	.	.	.	.	.
P.S.I. Req'd	.	.	.	.	.

NA

FIRE PROTECTION GENERAL NOTES

1 COORDINATE WORK WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF ANY PIPING, DUCTWORK OR EQUIPMENT. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.

2 REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS. DO NOT SCALE THESE DRAWINGS.

3 ALL PIPING LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC AND DO NOT INDICATE ALL FITTINGS REQUIRED TO COMPLETE WORK. COORDINATE THE PIPING LAYOUT WITH ALL CONTRACTORS PRIOR TO INSTALLATION, INCLUDING CONDUITS AND CABLE TRAYS. PROVIDE ALL PIPING OFFSETS REQUIRED FOR THE COMPLETE INSTALLATION OF THE SYSTEM WHETHER OR NOT THE OFFSETS ARE INDICATED ON THE PLANS. INSTALL PIPING HIGH ENOUGH TO AVOID LIGHTS, CONDUIT AND MISCELLANEOUS PIPING. DO NOT BLOCK ACCESS TO DEVICES.

4 INSTALL ALL EQUIPMENT WITH THE MANUFACTURER'S RECOMMENDATION AND CODE REQUIRED CLEARANCES. INSURE ALL ITEMS FURNISHED WILL FIT IN THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS AND FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE INTENT AND MEANING OF THE PLANS AND SPECIFICATIONS. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO PURCHASE AND INSTALLATION.

5 COORDINATE LOCATIONS AND ELEVATIONS OF ALL EXPOSED ITEMS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS.

6 THE ENTIRE FIRE PROTECTION SYSTEM SHALL BE INSTALLED IN A MANNER THAT IS COMPLIANT WITH ALL APPLICABLE CITY, COUNTY, AND NORTH CAROLINA STATE BUILDING CODE REQUIREMENTS, LOCAL BUILDING INSPECTOR REQUIREMENTS, ALL APPLICABLE NFPA STANDARDS, AS WELL AS THE STANDARDS OF THE UNDERWRITER WHERE REQUIRED. THE HAZARD CLASSIFICATION SHALL BE PER PLANS AND SPECIFICATIONS.

7 VERIFY LATEST ARCHITECTURAL ROOM, WALL, AND CEILING LAYOUTS PRIOR TO DESIGN OF SYSTEM.

8 IDENTIFYING SIGNAGE, TAGS, AND LABELS CONFORMING TO THE FIRE PROTECTION INDUSTRY STANDARDS SHALL BE SECURELY AFFIXED TO THE SYSTEM.

9 CONTACT THE LOCAL FIRE DEPARTMENT AND VERIFY HOSE THREAD SIZE TO BE USED PRIOR TO START OF CONSTRUCTION.

10 SPRINKLERS INSTALLED IN AREAS WITHOUT CEILINGS, OR CEILING TILES, SHALL BE OF THE UPRIGHT TYPE.

11 INSTALL A DRAIN AT ALL RISER LOCATIONS AS WELL AS ALL LOW POINTS IN THE SYSTEM. AN INSPECTORS TEST DRAIN SHALL BE INSTALLED ON THE SYSTEM. SPRINKLER PIPING SHALL SLOPE DOWN TO DRAIN LOCATIONS.

12 PROVIDE SIGNAGE FOR RISER ROOM, FDC, AND PIV IN ADDITION TO SIGNAGE AS REQUIRED BY NFPA 13. SEE SECTION 6.10 FOR SUMMARY OF SIGNAGE REQUIRED. ALL SIGNAGE SHALL BE SUBMITTED FOR REVIEW.

13 SUBMIT DESIGN AND INSTALLATION DRAWINGS PRIOR TO THE START OF CONSTRUCTION, TO THE OWNER'S UNDERWRITER WHERE APPLICABLE, THE LOCAL FIRE MARSHAL, AND ANY OTHER AUTHORITIES HAVING JURISDICTION FOR REVIEW AND APPROVAL. DESIGN, AND INSTALLATION DRAWINGS SHALL BE STAMPED OR SEALED BY A NICET III DESIGNER OR A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA.

14 SPRINKLER SYSTEMS INSTALLED IN THE TRAINING TOWER AND BURN BUILDING ARE FOR FIRE FIGHTING TRAINING PURPOSES ONLY.

FIRE PROTECTION DRAWING LIST

NO.	TITLE
FP001	STANDARDS, SYMBOLS & ABBREVIATIONS
FP112	PLANS - TRAINING TOWER
FP113	PLANS - TRAINING TOWER
FP114	PLANS - TRAINING TOWER
FP115	PLANS - BURN BUILDING
FP116	PLANS - BURN BUILDING
FP117	PLANS - BURN BUILDING
FP118	PLANS - BURN BUILDING
FP200	DETAILS

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SHEET
STANDARDS, SYMBOLS & ABBREVIATIONS

FP001

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GENERAL NOTES TO FP112

1 SYSTEM DESCRIPTION: THE SYSTEM IS COMPROMISED OF A 6" STANDPIPE WITH 2-1/2" HOSE VALVES AT EACH LEVEL. A BRANCH LINE WHICH FEEDS OPEN ELEMENT SPRINKLERS IS PROVIDED ON LEVEL 4. THE SYSTEM IS CHARGED BY FIRE TRUCK AT FDC PROVIDED ON WALL. SPRINKLERS SHALL BE CONTROLLED BY BALL VALVE LOCATED AT AN ACCESSIBLE HEIGHT NEXT TO STANDPIPE. SYSTEM TO BE INSTALLED SO THAT IT IS FULLY CAPABLE OF BEING DRAINED AFTER USE. BRANCH LINES SHALL BE PITCHED TO DRAIN AND DRAINS SHALL BE PROVIDED AT LOW POINTS.

2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

⬡ KEY NOTES TO 1,2,&4/FP112

1 6" DRY TRAINING STANDPIPE.

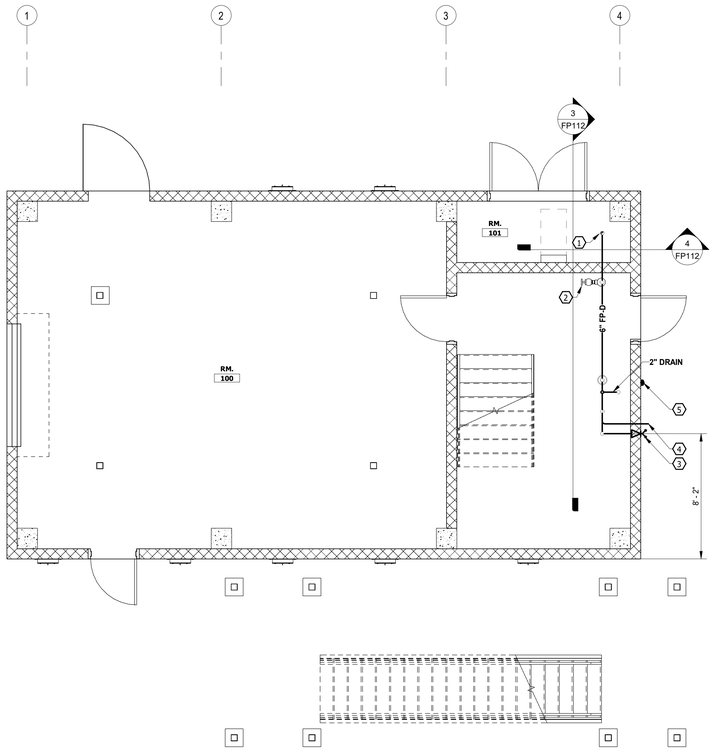
2 2-1/2" HOSE VALVE 48" AFF.

3 SIAMESE FIRE DEPARTMENT CONNECTION.

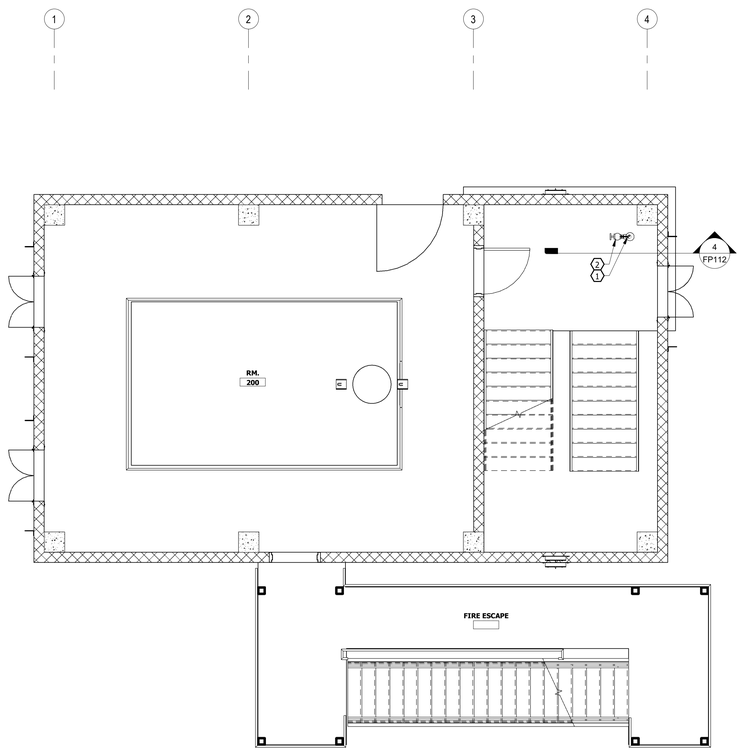
4 2" MAIN DRAIN TO EXTERIOR.

5 WATER MOTOR ALARM.

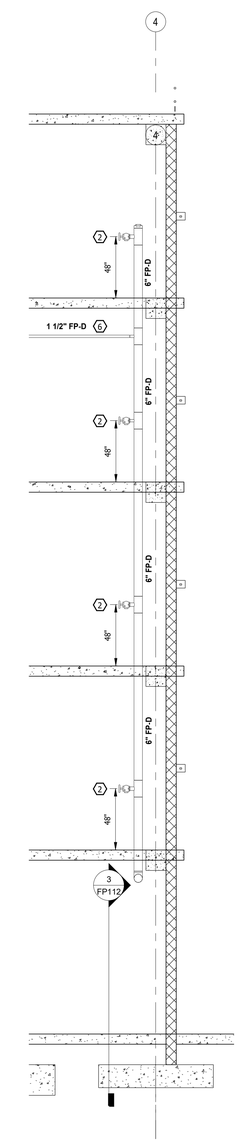
6 BRANCH PIPING TO TRAINING ROOM SPRINKLER HEADS.



1 FP112 **FIRST FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



2 FP112 **SECOND FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



4 FP112 **TRAINING TOWER - STANDPIPE RISER**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

⬡ KEY NOTES TO 3/FP112

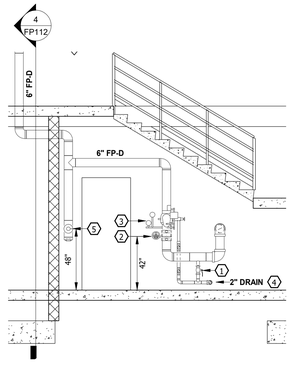
1 BALL VALVE FOR LOW POINT DRAIN.

2 CONTROL VALVE.

3 6" ALARM CHECK VALVE.

4 2" MAIN DRAIN TO EXTERIOR.

5 2-1/2" HOSE VALVE 48" AFF.



3 FP112 **TRAINING TOWER - FIRE RISER SECTION**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

ALL FIRE PROTECTION SYSTEMS FOR THE TRAINING TOWER ARE PROVIDED FOR TRAINING PURPOSES ONLY.

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FP112

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GENERAL NOTES TO FP113

1 SYSTEM DESCRIPTION: THE SYSTEM IS COMPROMISED OF A 6" STANDPIPE WITH 2-1/2" HOSE VALVES AT EACH LEVEL. A BRANCH LINE WHICH FEEDS OPEN ELEMENT SPRINKLERS IS PROVIDED ON LEVEL 4. THE SYSTEM IS CHARGED BY FIRE TRUCK AT FDC PROVIDED ON WALL. SPRINKLERS SHALL BE CONTROLLED BY BALL VALVE LOCATED AT AN ACCESSIBLE HEIGHT NEXT TO STANDPIPE. SYSTEM TO BE INSTALLED SO THAT IT IS FULLY CAPABLE OF BEING DRAINED AFTER USE. BRANCH LINES SHALL BE PITCHED TO DRAIN AND DRAINS SHALL BE PROVIDED AT LOW POINTS.

2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

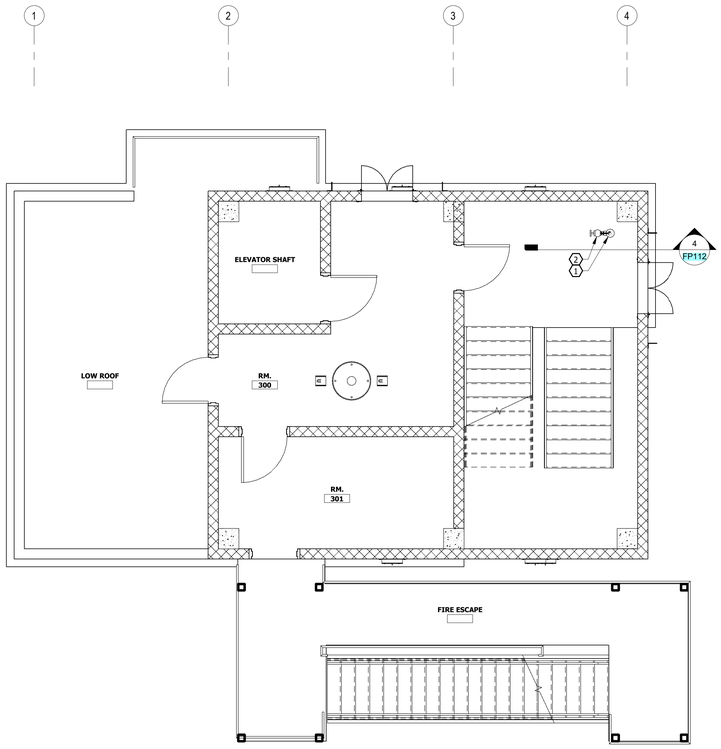
⬡ KEY NOTES TO FP113

1 6" DRY TRAINING STANDPIPE.

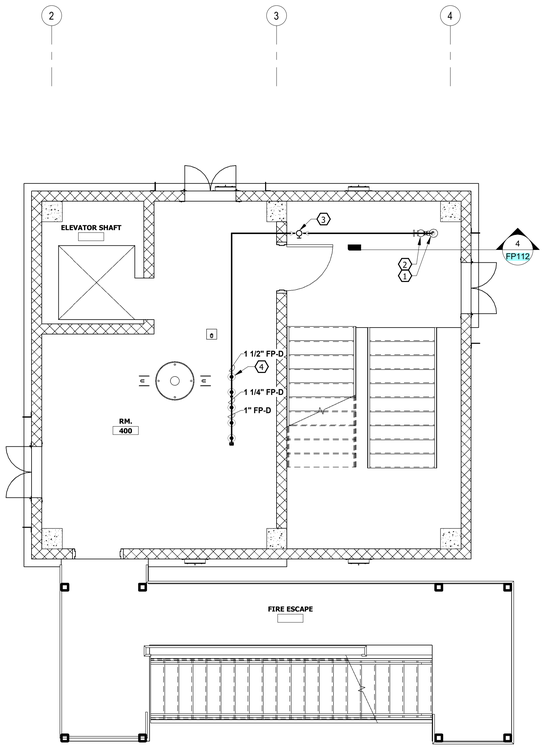
2 2-1/2" HOSE VALVE 48" AFF.

3 BALL VALVE FOR CONTROL OF SPRINKLERS. VALVE TO BE IN ACCESSIBLE LOCATION AT 66" AFF.

4 PENDENT SPRINKLER HEAD. TYPICAL OF 5. REMOVE ELEMENT.



1 FP113 **THIRD FLOOR PLAN**
SCALE: 1/4" = 1'-0"



2 FP113 **FOURTH FLOOR PLAN**
SCALE: 1/4" = 1'-0"

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FP113

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GENERAL NOTES TO FP114

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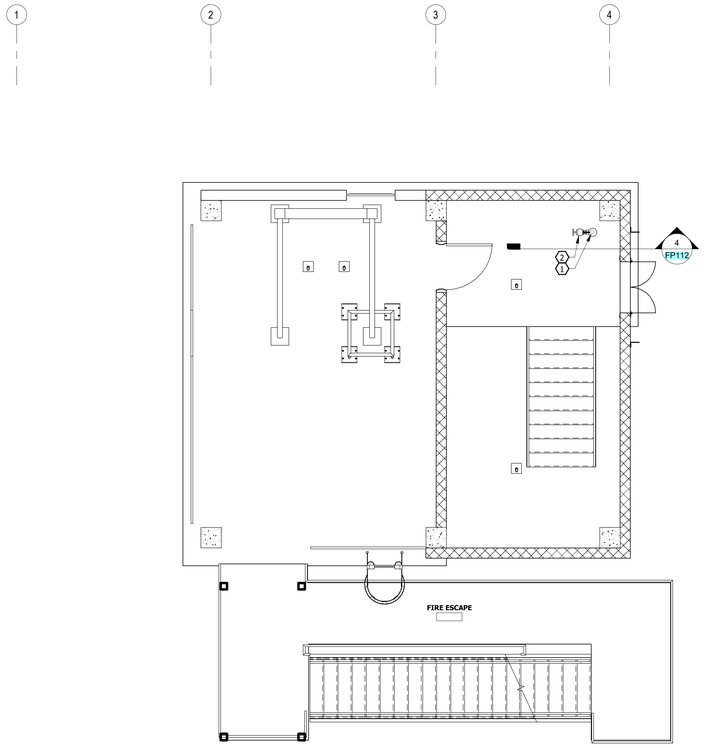
2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

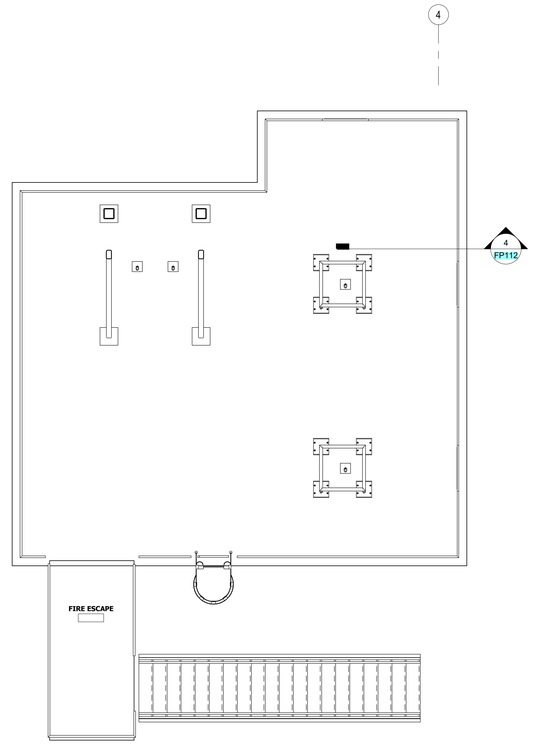
⬡ KEY NOTES TO FP114

1 6" DRY TRAINING STANDPIPE.

2 2-1/2" HOSE VALVE 48" AFF.



1 FP114 FIFTH FLOOR PLAN
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



2 FP114 HIGH ROOF PLAN
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

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FP114

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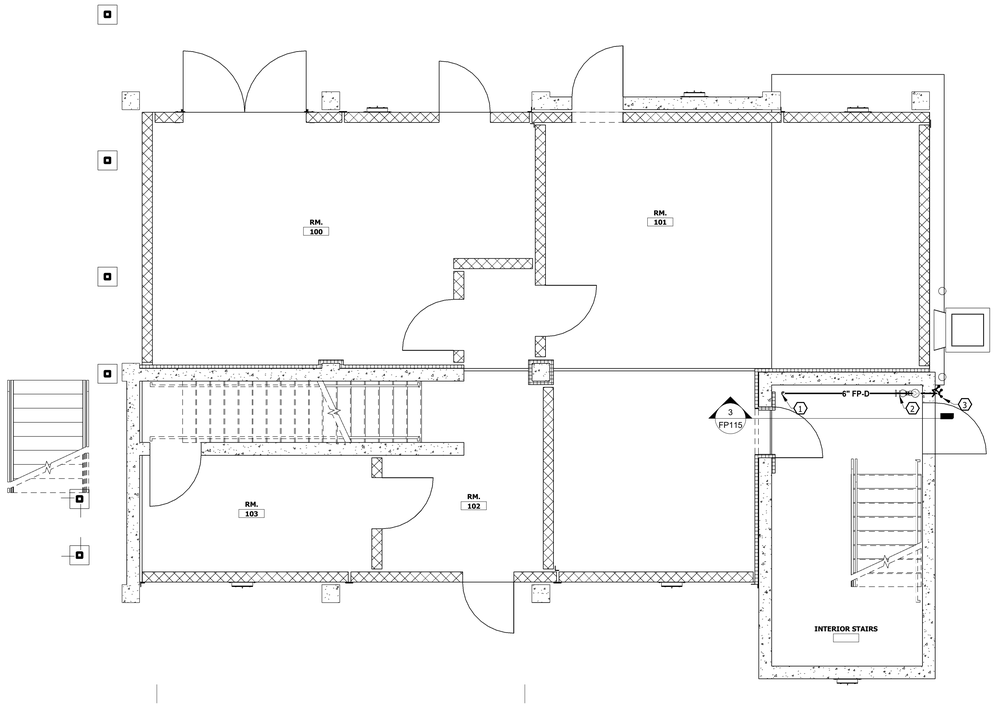
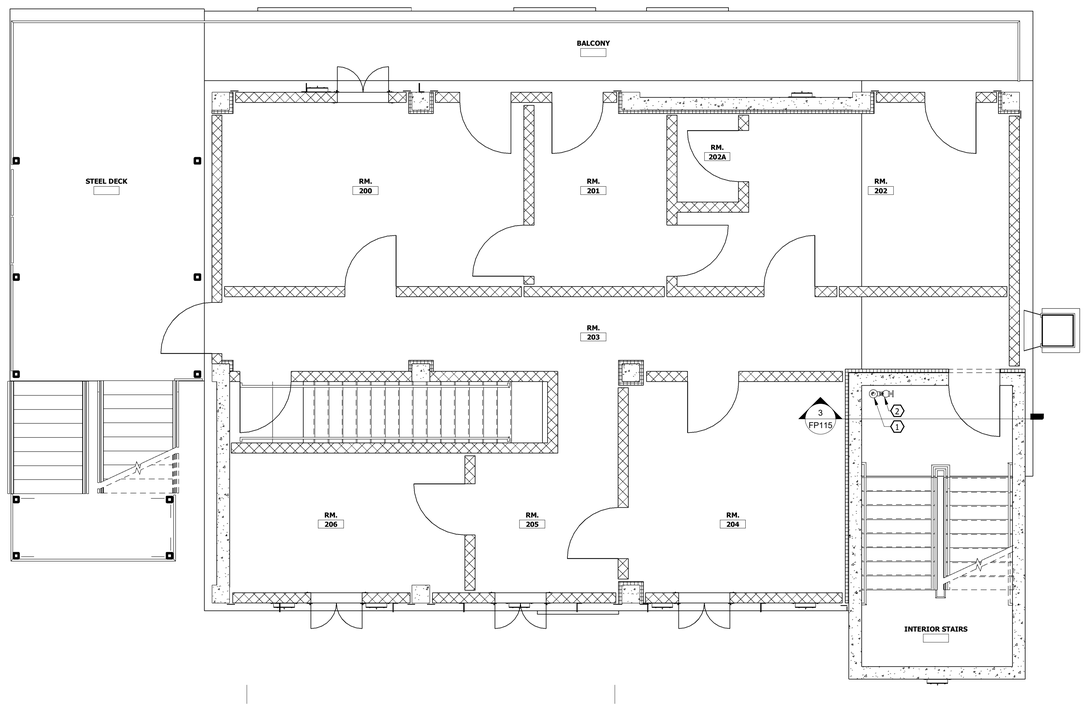
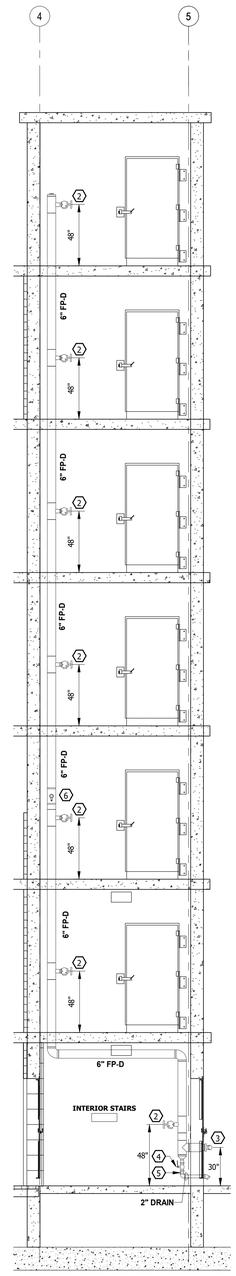


1 FP115 **FIRST FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



2 FP115 **SECOND FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'



3 FP115 **BURN BUILDING - STANDPIPE RISER**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

ALL FIRE PROTECTION SYSTEMS FOR THE BURN BUILDING ARE PROVIDED FOR TRAINING PURPOSES ONLY.

GENERAL NOTES TO FP115

1 SYSTEM DESCRIPTION: THE SYSTEM IS COMPROMISED OF A 6" STANDPIPE WITH 2-1/2" HOSE VALVES AT EACH LEVEL. A BRANCH LINE WHICH FEEDS OPEN ELEMENT SPRINKLERS IS PROVIDED ON LEVEL 3. THE SYSTEM IS CHARGED BY FIRE TRUCK AT FDC PROVIDED ON WALL. SPRINKLERS SHALL BE CONTROLLED BY BALL VALVE LOCATED AT AN ACCESSIBLE HEIGHT NEXT TO STANDPIPE. SYSTEM TO BE INSTALLED SO THAT IT IS FULLY CAPABLE OF BEING DRAINED AFTER USE. BRANCH LINES SHALL BE PITCHED TO DRAIN AND DRAINS SHALL BE PROVIDED AT LOW POINTS.

2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

KEY NOTES TO FP115

1 6" DRY TRAINING STANDPIPE.

2 2-1/2" HOSE VALVE 48" AFF.

3 SIAMESE FIRE DEPARTMENT CONNECTION.

4 BALL VALVE FOR LOW POINT DRAIN.

5 2" MAIN DRAIN TO EXTERIOR.

6 BRANCH PIPING TO TRAINING ROOM SPRINKLER HEADS.

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SAMET
IFB PLANSET
Rec'd 1.16.2025

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FP115

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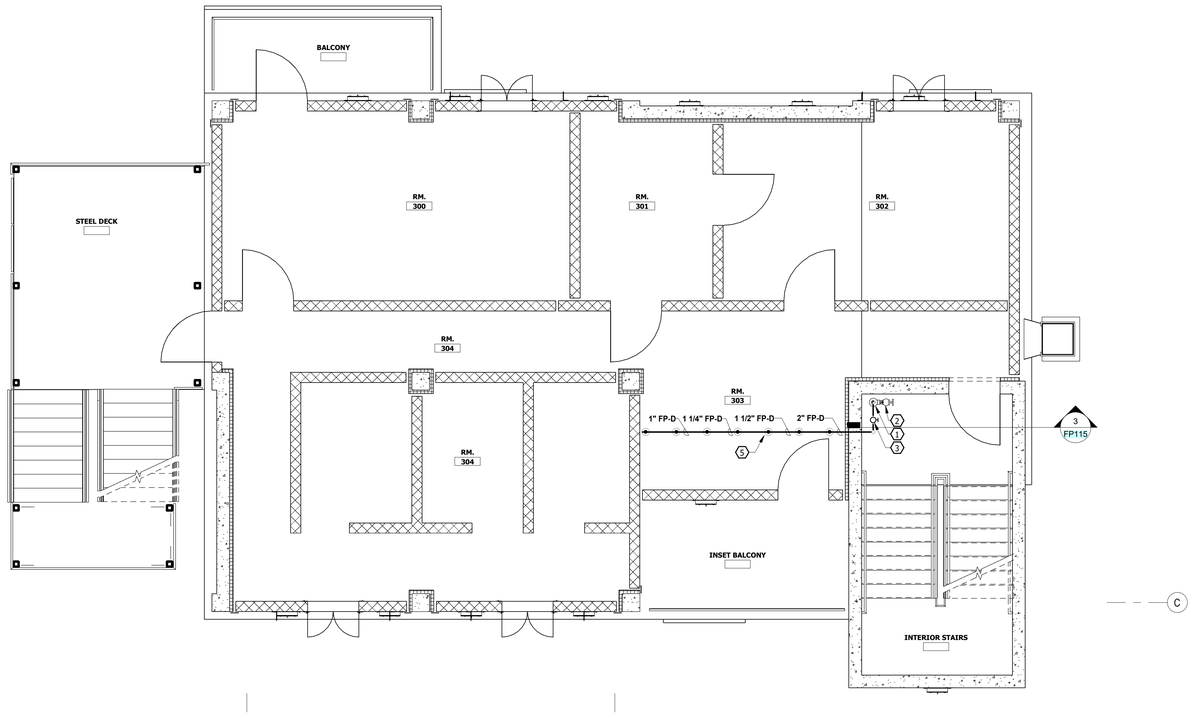
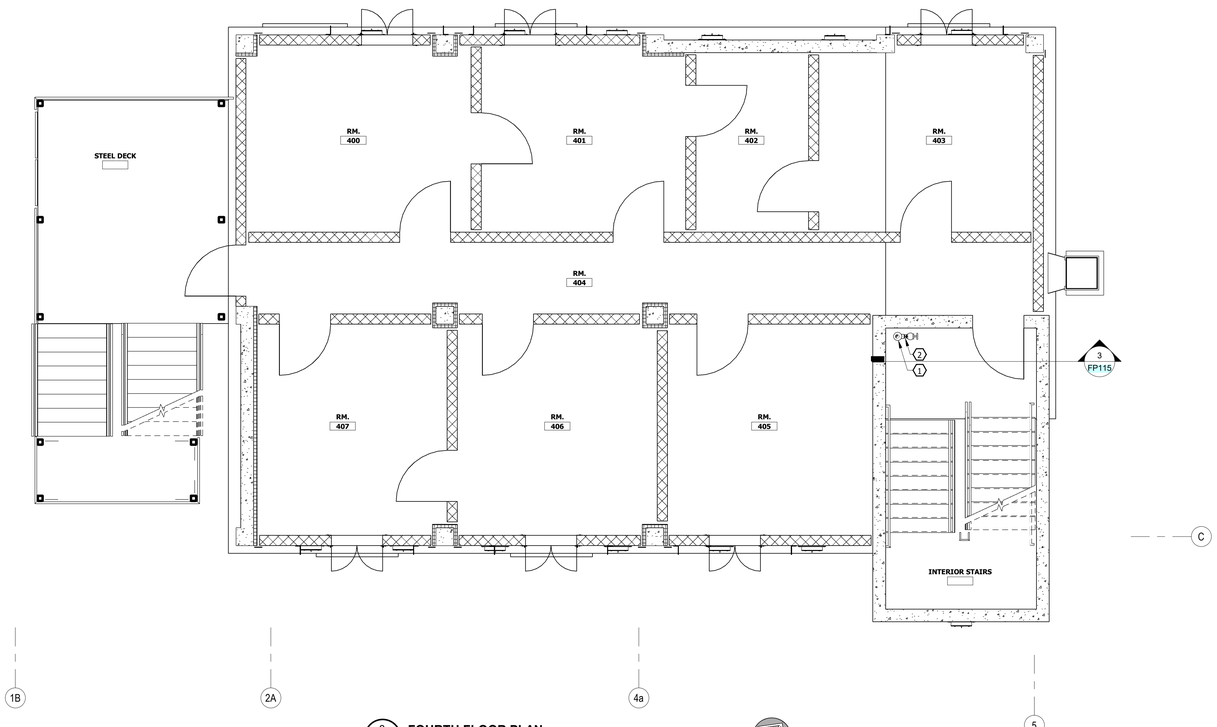


1 FP116 **THIRD FLOOR PLAN**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'



2 FP116 **FOURTH FLOOR PLAN**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

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GENERAL NOTES TO FP116

1 SYSTEM DESCRIPTION: THE SYSTEM IS COMPROMISED OF A 6" STANDPIPE WITH 2-1/2" HOSE VALVES AT EACH LEVEL. A BRANCH LINE WHICH FEEDS OPEN ELEMENT SPRINKLERS IS PROVIDED ON LEVEL 3. THE SYSTEM IS CHARGED BY FIRE TRUCK AT FDC PROVIDED ON WALL. SPRINKLERS SHALL BE CONTROLLED BY BALL VALVE LOCATED AT AN ACCESSIBLE HEIGHT NEXT TO STANDPIPE. SYSTEM TO BE INSTALLED SO THAT IT IS FULLY CAPABLE OF BEING DRAINED AFTER USE. BRANCH LINES SHALL BE PITCHED TO DRAIN AND DRAINS SHALL BE PROVIDED AT LOW POINTS.

2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

KEY NOTES TO FP116

1 6" DRY TRAINING STANDPIPE.

2 2-1/2" HOSE VALVE 48" AFF.

3 BALL VALVE FOR CONTROL OF SPRINKLERS. VALVE TO BE IN ACCESSIBLE LOCATION AT 66" AFF.

5 PENDENT SPRINKLER HEAD. TYPICAL OF 7. REMOVE ELEMENT.

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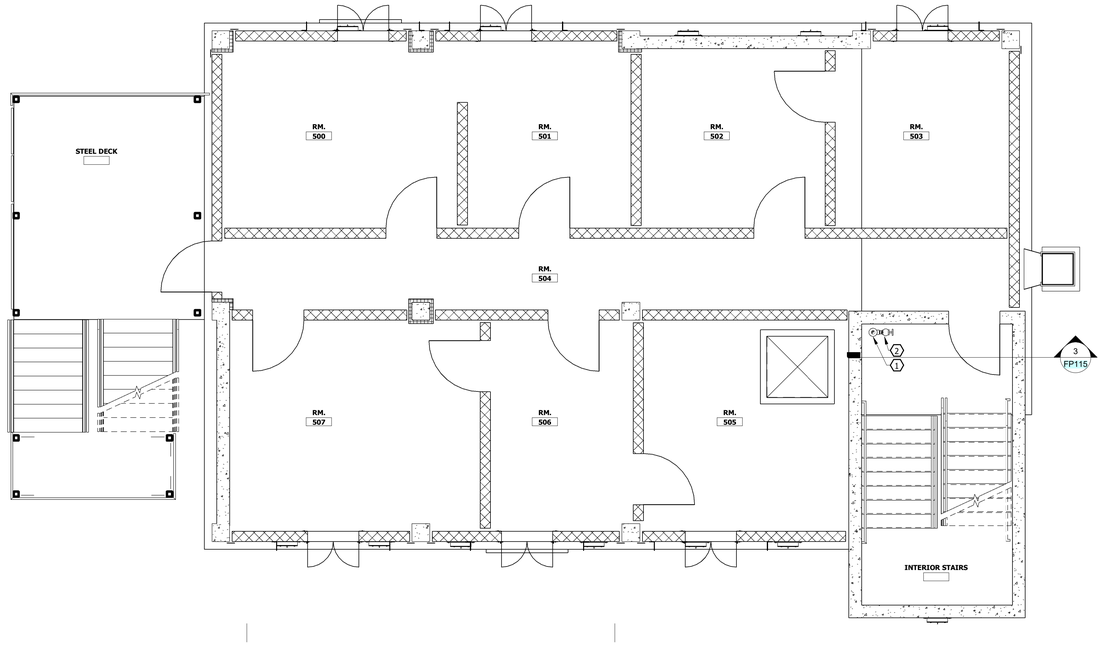
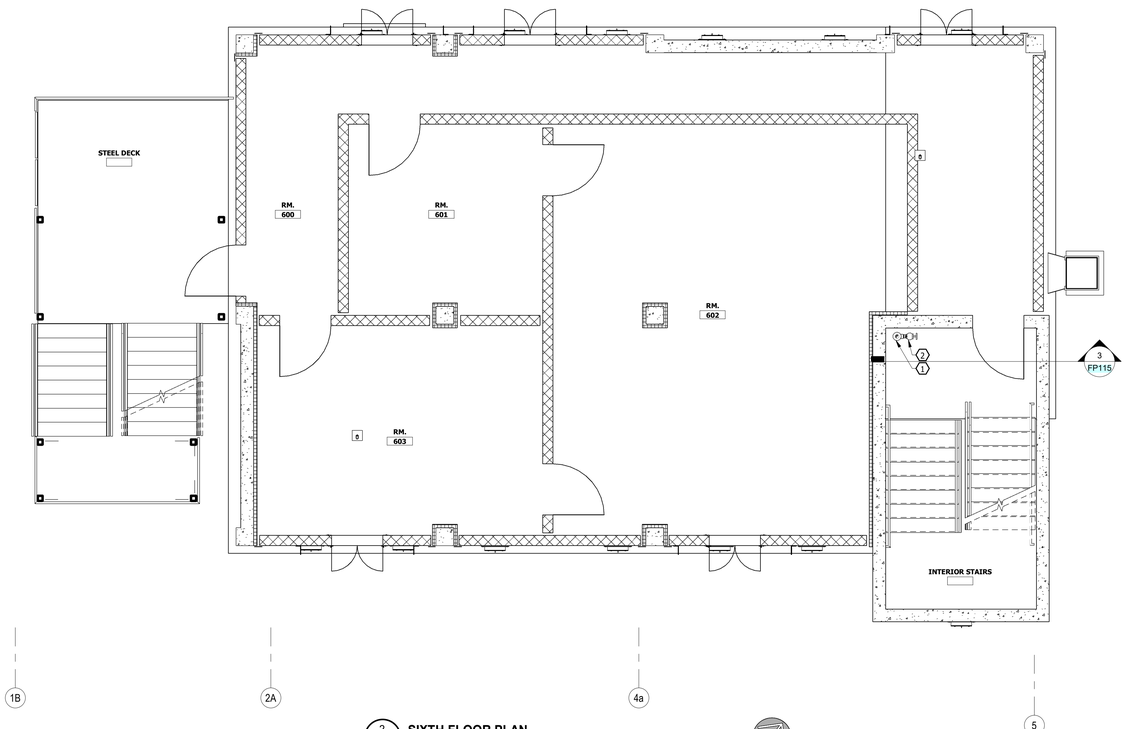


1 FP117 **FIFTH FLOOR PLAN**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'



2 FP117 **SIXTH FLOOR PLAN**
SCALE: 1/4" = 1'-0"

4' 0 4' 8'

GENERAL NOTES TO FP117

1 SYSTEM DESCRIPTION: THE SYSTEM IS COMPROMISED OF A 6" STANDPIPE WITH 2-1/2" HOSE VALVES AT EACH LEVEL. A BRANCH LINE WHICH FEEDS OPEN ELEMENT SPRINKLERS IS PROVIDED ON LEVEL 3. THE SYSTEM IS CHARGED BY FIRE TRUCK AT FDC PROVIDED ON WALL SPRINKLERS SHALL BE CONTROLLED BY BALL VALVE LOCATED AT AN ACCESSIBLE HEIGHT NEXT TO STANDPIPE. SYSTEM TO BE INSTALLED SO THAT IT IS FULLY CAPABLE OF BEING DRAINED AFTER USE. BRANCH LINES SHALL BE PITCHED TO DRAIN AND DRAINS SHALL BE PROVIDED AT LOW POINTS.

2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

KEY NOTES TO FP117

1 6" DRY TRAINING STANDPIPE.

2 2-1/2" HOSE VALVE 48" AFF.

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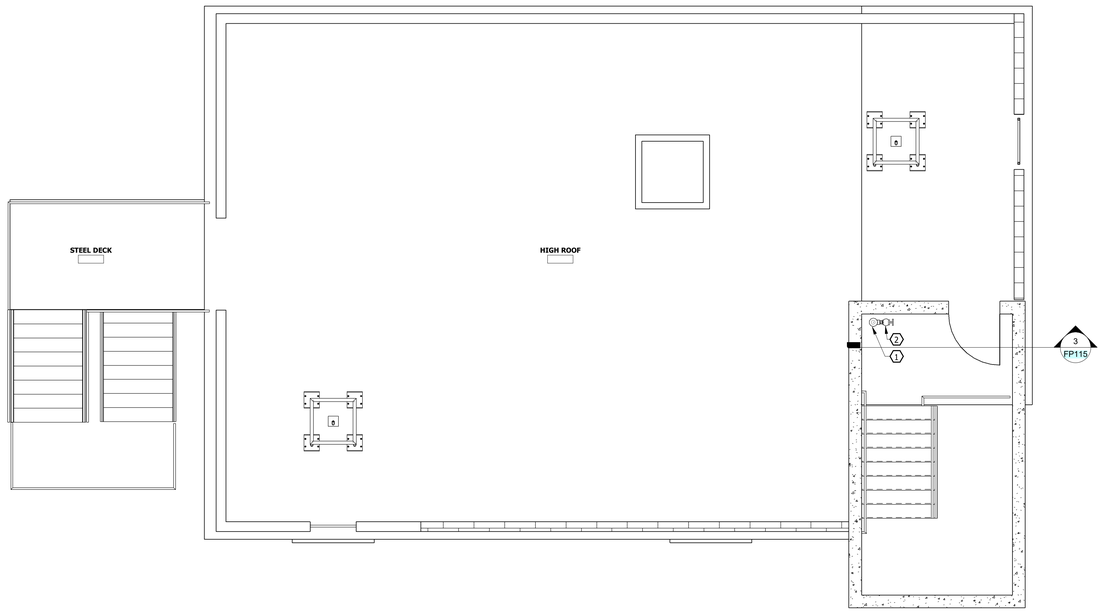

2 FP118 **HIGH ROOF PLAN**
SCALE: 1/4" = 1'-0"
4' 0 4' 8'

GENERAL NOTES TO FP118

1 SYSTEM DESCRIPTION: THE SYSTEM IS COMPROMISED OF A 6" STANDPIPE WITH 2-1/2" HOSE VALVES AT EACH LEVEL. A BRANCH LINE WHICH FEEDS OPEN ELEMENT SPRINKLERS IS PROVIDED ON LEVEL 3. THE SYSTEM IS CHARGED BY FIRE TRUCK AT FDC PROVIDED ON WALL. SPRINKLERS SHALL BE CONTROLLED BY BALL VALVE LOCATED AT AN ACCESSIBLE HEIGHT NEXT TO STANDPIPE. SYSTEM TO BE INSTALLED SO THAT IT IS FULLY CAPABLE OF BEING DRAINED AFTER USE. BRANCH LINES SHALL BE PITCHED TO DRAIN AND DRAINS SHALL BE PROVIDED AT LOW POINTS.

2 PIPING AND FITTINGS TO BE GALVANIZED STEEL.

KEY NOTES TO FP118

1 6" DRY TRAINING STANDPIPE.

2 2-1/2" HOSE VALVE 48" AFF.

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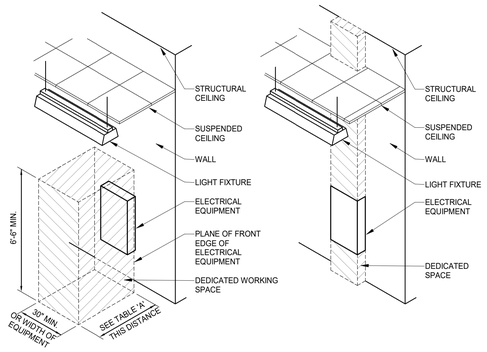


FIGURE 1

FIGURE 2

TABLE A - WORKING CLEARANCES				
VOLTAGE TO GROUND NOMINAL	CONDITION	MINIMUM CLEAR DISTANCE (FEET) 1	2	3
0-150		3	3	3
151-600		3	3 1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:

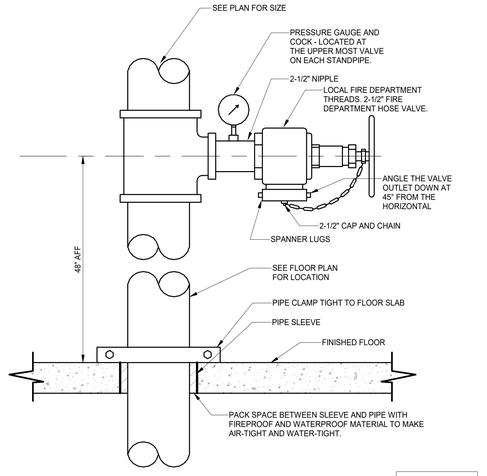
1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR UNGROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300V SHALL NOT BE CONSIDERED LIVE PARTS.
2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1), WITH THE OPERATOR BETWEEN.

NOTES:

1. THESE FIGURES ILLUSTRATE THE WORKING CLEARANCE AND DEDICATED SPACE AROUND ELECTRICAL EQUIPMENT AS REQUIRED BY NEC SECTION 110-26.
2. DEDICATED SPACE RUNS TO A HEIGHT OF 6'-0" ABOVE EQUIPMENT. DEDICATED SPACE CONTINUES THROUGH SUSPENDED CEILING OR UP TO STRUCTURAL CEILING. ANY FOREIGN SYSTEMS TO THE ELECTRICAL EQUIPMENT SHALL NOT RUN WITHIN THIS SPACE. (FIGURE 2)

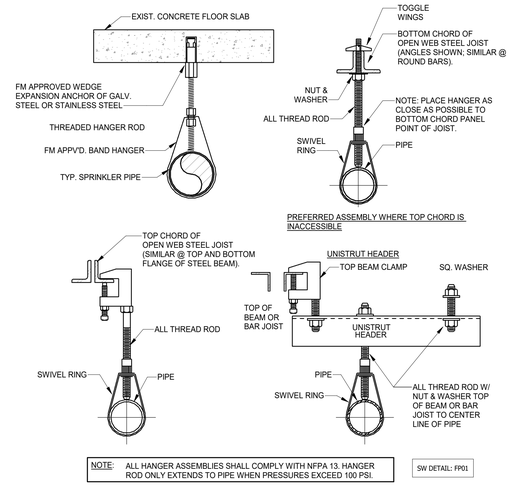
SO DETAIL: MR03

7 FP200 CLEARANCES FOR ELECTRICAL EQUIPMENT
SCALE: NTS



SO DETAIL: FP17

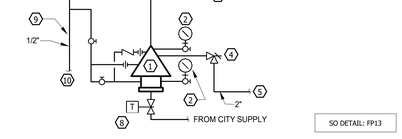
4 FP200 FIRE DEPARTMENT HOSE VALVE DETAIL
SCALE: NTS



NOTE: ALL HANGER ASSEMBLIES SHALL COMPLY WITH NFPA 13. HANGER ROD ONLY EXTENDS TO PIPE WHEN PRESSURES EXCEED 100 PSI.

SW DETAIL: FP01

1 FP200 TYPICAL FIRE PROTECTION HANGER
SCALE: NTS



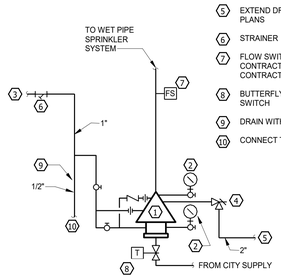
HANGER INSTALLATION REQUIREMENTS									
MAXIMUM DISTANCE BETWEEN HANGERS									
NOMINAL PIPE SIZE	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
BLAZEMASTER CPVC	5' 6"	6' 0"	6' 6"	7' 0"	8' 0"	9' 0"	10' 0"	N/A	N/A
THREADABLE LIGHTWALL	7'	10' 0"	10' 0"	12' 0"	12' 0"	12' 0"	12' 0"	N/A	N/A
STEEL PIPE (10/ 40)	7'	12' 0"	12' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"	15' 0"

1. 100 PSI STATIC PRESSURE ON SYSTEM REQUIRES UP-LIFT RESTRAINT WITHIN 12 INCHES HORIZONTALLY OF HEAD FOR ARM-OVERS AND END OF BRANCH LINE.
2. THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" PIPE OR LARGER.
3. THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24".

TRAPEZE INSTALLATION REQUIREMENTS								
SPAN OF TRAPEZE (Schedule 10)	NOMINAL PIPE SIZE SUPPORTED 1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
1 FT. 6 IN.	1"	1"	1"	1"	1"	1"	1-1/4"	1-1/4"
2 FT. 0 IN.	1"	1"	1"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"
2 FT. 6 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	2"
3 FT. 0 IN.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	2"
4 FT. 0 IN.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	2"	2"	2-1/2"
5 FT. 0 IN.	2"	2"	2"	2"	2"	2"	2-1/2"	2-1/2"
6 FT. 0 IN.	2"	2"	2"	2"	2"	2-1/2"	2-1/2"	3"
7 FT. 0 IN.	2"	2"	2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"
8 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"
9 FT. O IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	4"
10 FT. 0 IN.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	3"	3"	4"

SO DETAIL: FP19

5 FP200 SPRINKLER HEAD INSTALLATION
SCALE: NTS

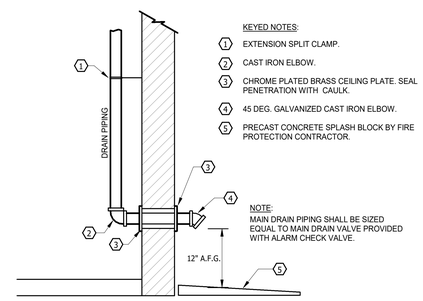


KEYED NOTES:

1. ALARM CHECK VALVE
2. PRESSURE GAUGE AND VALVE
3. TO WATER MOTOR ALARM
4. MAIN DRAIN VALVE
5. EXTEND DRAIN TO EXTERIOR. SEE PLANS
6. STRAINER
7. FLOW SWITCH BY FIRE PROTECTION CONTRACTOR, WIRED BY FA CONTRACTOR
8. BUTTERFLY VALVE WITH TAMPER SWITCH
9. DRAIN WITH ORIFICE RESTRICTION
10. CONNECT TO MAIN DRAIN

SO DETAIL: FP13

6 FP200 ALARM CHECK VALVE SCHEMATIC
SCALE: NTS



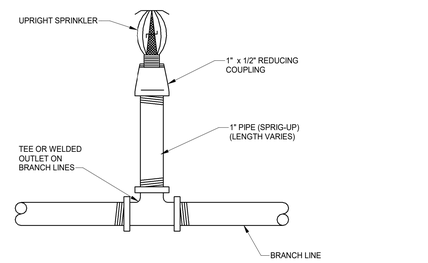
KEYED NOTES:

1. EXTENSION SPLIT CLAMP.
2. CAST IRON ELBOW.
3. CHROME PLATED BRASS CEILING PLATE. SEAL PENETRATION WITH CAULK.
4. 45 DEG. GALVANIZED CAST IRON ELBOW.
5. PRECAST CONCRETE SPLASH BLOCK BY FIRE PROTECTION CONTRACTOR.

NOTE: MAIN DRAIN PIPING SHALL BE SIZED EQUAL TO MAIN DRAIN VALVE PROVIDED WITH ALARM CHECK VALVE.

SW DETAIL: FP16

2 FP200 TYPICAL MAIN DRAIN DETAIL
SCALE: NTS



SW DETAIL: FP05

3 FP200 TYPICAL SPRIG-UP DETAIL
SCALE: NTS

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A. STRUCTURE CLASSIFICATION

1. THE DRAFTING PIT IS CLASSIFIED AS MISCELLANEOUS USE GROUP (USE GROUP U).

B. CODES AND STANDARDS

THE FOLLOWING CODES AND STANDARDS GOVERN THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF STRUCTURAL WORK PERFORMED ON THIS PROJECT:

1. 2018 NORTH CAROLINA STATE BUILDING CODE (BASED ON INTERNATIONAL BUILDING CODE (IBC-2015), INTERNATIONAL CODE COUNCIL (ICC).
2. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10), AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE).
3. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - AISC 360-10, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, EXCEPT AS MODIFIED BY IBC.
4. STRUCTURAL WELDING CODE - STEEL (AWS D1.4-2011), AMERICAN WELDING SOCIETY (AWS), EXCEPT AS MODIFIED BY IBC.
5. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318-14), AMERICAN CONCRETE INSTITUTE (ACI), EXCEPT AS MODIFIED BY IBC.
6. SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-16), AMERICAN CONCRETE INSTITUTE (ACI).
7. MANUAL OF STANDARD PRACTICE (CRSI), CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
8. BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES, THE MASONRY SOCIETY (TMS) TMS 402-13/TMS 602-13, AND BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, AMERICAN CONCRETE INSTITUTE (ACI) ACI 530-13, EXCEPT AS MODIFIED BY IBC.
9. STANDARD ON FACILITIES FOR FIRE TRAINING AND ASSOCIATED PROPS (NFPA 1402-2019), NATIONAL FIRE PROTECTION ASSOCIATION.

C. DESIGN LIVE LOADS

1. DRAFTING PIT TOP SLAB = 100 PSF

D. DESIGN SNOW LOADS

1. GROUND SNOW LOAD (Pg) = 15 PSF
2. FLAT ROOF SNOW LOAD (Pf) = 12.6 PSF
3. SNOW EXPOSURE FACTOR (Ce) = 1.0
4. THERMAL FACTOR (Ct) = 1.2
5. SNOW LOAD IMPORTANCE FACTOR (Is) = 1.0

E. SOILS INFORMATION

1. THE FOLLOWING INFORMATION IS BASED ON THE GEOTECHNICAL REPORT ("SOILS REPORT") PREPARED BY NV5 ENGINEERS AND CONSULTANTS, INC. DATED JANUARY 11, 2024.
2. ACCORDING TO THE SOILS REPORT, SOFT/LOOSE NEAR SURFACE SOILS (APPROXIMATELY 3 FEET DEEP) OVERLAY PARTIALLY WEATHERED ROCK AND ROCK (3 TO 25 FEET).
3. ALLOWABLE SOIL BEARING VALUE FOR THE BURN BUILDING IS 2,500 PSF.
4. ACCORDING TO THE SOILS REPORT, GROUND WATER WAS NOT OBSERVED WITHIN THE BORING AT THE DRAFTING PIT (B-10). SEE SOILS REPORT FOR DRAINAGE CONSIDERATIONS.
5. SEE SPECIFICATIONS FOR EARTHWORK REQUIREMENTS, INCLUDING REPLACEMENT OF UNSUITABLE SOILS, MEASURES TO PREVENT INFILTRATION OF RUNOFF AND PRECIPITATION INTO UNDERLYING SOILS AND DEWATERING REQUIREMENTS IF GROUNDWATER IS ENCOUNTERED.

F. BACKFILL COMPACTION

1. EXCAVATE, PROOFROLL, BACKFILL, AND COMPACT FOUNDATION AND SLAB-ON-GRADE SUBGRADES PER THE EARTHWORK SPECIFICATION SECTIONS 312000.
2. ALL PROOFROLLING AND ENGINEERED OR IMPORTED FILL MATERIALS AND PLACEMENT SHALL BE OBSERVED AND APPROVED BY THE TESTING AGENCY GEOTECHNICAL ENGINEER.
3. PROVIDE FILL MATERIALS THAT ARE FREE OF DEBRIS, ORGANIC, AND DELETERIOUS MATERIALS AND THAT MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
4. PLACE ENGINEERED FILL MATERIAL IN MAXIMUM LEVEL LOOSE LIFTS OF 6 INCHES AND COMPACT TO 95% OF THE MODIFIED PROCTOR TEST MAXIMUM DRY DENSITY (ASTM D-698).

G. CAST-IN-PLACE CONCRETE CONSTRUCTION

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 318, ACI 301, AND THE ACI DETAILING MANUAL.
2. PROVIDE CONCRETE WITH PROPERTIES THAT CONFORM TO THE CRITERIA SPECIFIED IN TABLE 1 ON SHEET DP002.
3. PROVIDE NORMAL WEIGHT CONCRETE.
4. TESTING AGENCY SHALL TAKE CONCRETE TEST CYLINDERS IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318, CHAPTER 5 AND THE CONTRACT SPECIFICATIONS.
5. SEE THE CONTRACT SPECIFICATIONS FOR ADDITIONAL CONCRETE TESTING REQUIREMENTS (AIR CONTENT, SLUMP, ETC.).
6. TESTING AGENCY SHALL PERFORM REBAR INSPECTIONS OF ALL REINFORCING STEEL BEFORE ALL CONCRETE POURS.

H. CONCRETE REINFORCEMENT

1. PROVIDE HIGH STRENGTH, NEW BILLET DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 FOR STEEL REINFORCEMENT IN CONCRETE.
2. PROVIDE STEEL REINFORCEMENT DETAILS IN ACCORDANCE WITH ACI 318 AND CRSI STANDARDS.
3. PROVIDE CONCRETE PROTECTION FOR STEEL REINFORCEMENT OF CAST-IN-PLACE CONCRETE AS SPECIFIED IN TABLE 2 ON SHEET DP002. PLACE THE OUTERMOST LAYERS OF REINFORCING, AS CLOSE TO THE CONCRETE SURFACES AS POSSIBLE WITHOUT VIOLATING THE REQUIREMENTS SHOWN IN THE TABLE.

I. STEEL SHAPES AND PLATES

1. PROVIDE STEEL WITH PROPERTIES LISTED IN TABLE 3 ON DP002.
2. SEE SPECIFICATIONS FOR REQUIREMENTS OF STAINLESS STEEL ANGLES AND PLATES.
3. PROVIDE WELDED SHOP CONNECTIONS UNLESS OTHERWISE NOTED.
4. PERFORM ALL WELDING WITH WELDERS QUALIFIED IN ACCORDANCE WITH AWS PROCEDURES FOR WELDER QUALIFICATION.
5. PROVIDE GALVANIZED STEEL MEMBERS, UNLESS OTHERWISE NOTED ON THE DRAWINGS AS "PAINTED" OR "STAINLESS STEEL".
6. AT GALVANIZING VENT HOLES IN PIPES AND TUBES, LOCATE VENT HOLES AT BOTTOM OF PIPE OR TUBE AND PLUG ALL VENT HOLES AFTER GALVANIZING WITH A BLACK NYLON BUMPER PANEL RETAINER BY AU-VE-CO PRODUCTS (PART NO. 10831) AND SUPPLIED BY FASTENAL (FASTENAL PART NO. 0162595, WWW.FASTENAL.COM), OR AN APPROVED EQUIVALENT. PROVIDE DIFFERENT SIZE PLUG IF GALVANIZING HOLE IS DIFFERENT THAN THE SPECIFIED PLUG. AN ACCEPTABLE ALTERNATIVE IS TO PLUG WELD THE GALVANZING VENT HOLES, GRIND THE WELDS SMOOTH, AND TOUCH UP WITH GALVANIZING REPAIR PAINT.
7. WHERE INDICATED IN THE DRAWINGS, PROVIDE STAINLESS STEEL OF TYPE INDICATED IN SPECIFICATIONS.
8. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR GALVANIZED AND STAINLESS STEEL.
9. SEE THE CONTRACT SPECIFICATIONS FOR STEEL TESTING AND INSPECTIONS REQUIRED.

J. FIXED ACCESS LADDER

1. PROVIDE HEAVY-DUTY, FIXED, WALL-MOUNTED, VERTICAL, GALV. STEEL ACCESS LADDER. NOMINAL HEIGHT OF LADDER IS 9'-0".
2. PROVIDE CONTINUOUS CHANNEL OR RECTANGULAR TUBING SIDE RAILS, SPACED 18 INCHES APART, AND CAST-ALUMINUM LADDER RUNGS, WITH CORRUGATED SURFACES, SPACED AT 12 INCHES O.C. EACH LADDER RUNG SHALL BE CAPABLE OF CARRYING 1,000 POUNDS LOAD AND SHALL BE ATTACHED AT CENTERLINE OF SIDE RAILS BY WELDING OR CAST-ALUMINUM CONNECTORS.
3. PROVIDE ACCESS LADDER, CERTIFIED TO MEET OSHA/ANSI A14.3 STANDARDS, BY ACL INDUSTRIES, INC., ALACO LADDER COMPANY, O'KEEFE'S, INC., OR AN EQUIVALENT APPROVED BY THE ENGINEER.
4. SUBMIT SHOP DRAWINGS SHOWING ALL COMPONENTS, SIZES, LENGTHS, AND ATTACHMENTS TO THE STRUCTURE FOR APPROVAL BY THE ENGINEER.

K. POLYMER-MODIFIED CEMENT WATERPROOFING

1. AT INTERIOR CONCRETE SURFACES OF DRAFTING PIT. PROVIDE MANUFACTURER'S PROPRIETARY BLEND OF DRY CEMENTITIOUS AND OTHER INGREDIENTS FOR MIXING WITH POTABLE WATER OR POLYMER ADMIXTURE TO PRODUCE A WATERPROOF COATING THAT IS SUITABLE FOR VERTICAL AND HORIZONTAL APPLICATIONS BELOW GRADE, IS BREATHABLE, RESISTS HYDROSTATIC PRESSURE, AND MEETS OR EXCEEDS THE BELOW CRITERIA:
   - WATER PERMEABILITY: 0 (MAX. @ 30 FEET) CE CRD-C 48
   - COMPRESSIVE STRENGTH: 4,000 PSI (MIN. @ 28 DAYS) ASTM C 109
   - FLEXURAL STRENGTH: 710 PSI (MIN. @ 28 DAYS) ASTM C 348
   - BOND STRENGTH: 220 PSI (MIN. @ 28 DAYS) ASTM C 321
   - NSF 61 APPROVED FOR POTABLE WATER
   - COLOR: GRAY
   - VOC CONTENT: NOT EXCEEDING 400 g/L 40 CFR 59, SUBPART D
2. AVAILABLE PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PRODUCTS THAT MAY BE INCORPORATED IN THE WORK INCLUDE: THOROSEAL, BASF BUILDING SYSTEMS, HEY'DI K-11, EUCLID CHEMICAL COMPANY, OR AN APPROVED EQUIVALENT.
3. PREP SURFACE AND APPLY WATERPROOFING PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. PROVIDE A SMOOTH TROWEL FINISH FOR FINAL COAT.

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SHEET
DRAFTING PIT - GENERAL NOTES

DP001

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TABLE 1 - CONCRETE PROPERTIES			
STRUCTURE TYPE	f'c (MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS) (psi)	MAXIMUM WATER/CEMENT RATIO	AIR RANGE (%)
SLABS & WALLS	5,000	0.40	6% ± 1 1/2% (ENTRAINED)

TABLE 2 - CONCRETE PROTECTION FOR STEEL REINFORCEMENT	
STRUCTURE TYPE	MINIMUM CLEAR COVER (UNLESS OTHERWISE NOTED ON DRAWINGS)
SLABS	1 1/2" TO BOTTOM BARS. 2" SIDE COVER FOR ALL BARS 2" TO TOP BARS
WALLS	FOR SINGLE LAYER, CENTER BARS IN WALLS. FOR DOUBLE LAYER, 2" TO OUTERMOST BARS.
EARTH FORMED CONCRETE	3"

TABLE 3 - STRUCTURAL STEEL PROPERTIES			
SHAPE	ASTM DESIGNATION	GRADE	MIN. YIELD STRENGTH (Fy)
PLATES & ANGLES	A-36	---	36 KSI
WIDE FLANGES	A-992	---	50 KSI
CHANNELS	A-572	---	50 KSI
HSS RECT.	A-500	C	50 KSI
HSS ROUND	A-53*	B	35 KSI

* A-500, GRADE C, 46 KSI IS AN ACCEPTABLE ALTERNATE FOR A-53 AS LONG AS PIPE SIZES MEET REQUIREMENTS SHOWN ON DRAWINGS.

LEGEND

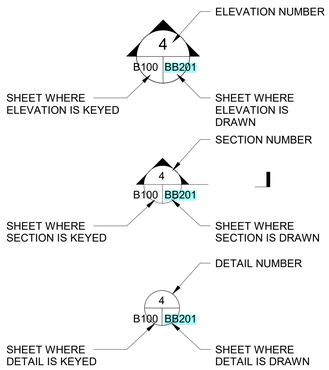
CONCRETE

EARTH

GRAVEL

STEEL

NORTH



DETAIL KEY

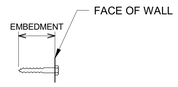
(R) ADDITIONAL REINFORCING

1 REVISION

ABBREVIATIONS

&	AND
L	ANGLE
@	AT
#	NUMBER
ø	DIAMETER
(E)	EXISTING
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
B	BOTTOM BAR(S)
BM	BOTTOMMOST BAR(S)
BLDG.	BUILDING
BM.	BEAM(S)
BOT.	BOTTOM
BRG.	BEARING
BSMT.	BASEMENT
BTWN.	BETWEEN
CS	COLUMN STRIP
C.	COURSE(S)
C.C.	CENTER TO CENTER
C.E.	CONTINUOUS END
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
CL	CENTERLINE
CLG.	CEILING
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
C.O.	CLEAR OPENING
COMP.	COMPOSITE
COL.	COLUMN
CONC.	CONCRETE
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CTR.	CENTER
C.Y.	CUBIC YARD
D.E.	DISCONTINUOUS END
DBL.	DOUBLE
DEMO.	DEMOLISH, DEMOLITION
DIA.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
D.P.	DRILLED PIER
DTL.	DETAIL
DWG.	DRAWING(S)
EA.	EACH
E.E.	EACH END
E.F.	EACH FACE
E.F.P.	EQUIVALENT FLUID PRESSURE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
ENGR.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EQUIV.	EQUIVALENT
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FINISH FLOOR
FDN.	FOUNDATION(S)
FLR.	FLOOR
F.O.	FACE OF
FT.	FOOT OR FEET
FTG.	FOOTING(S)
FUT.	FUTURE
G.B.	GRADE BEAM
GA.	GAUGE
GALV.	GALVANIZED
GEN.	GENERAL
H.A.S.	HEADED ANCHOR STUD
HDR.	HEADER
HORIZ.	HORIZONTAL
HI.	HIGH
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
IN.	INCH
INT.	INTERMEDIATE
JT.	JOINT
K.S.F.	KIPS PER SQUARE FOOT
K.S.I.	KIPS PER SQUARE INCH
L.E.	LEFT END
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG.	LONGITUDINAL
LW	LIGHTWEIGHT
LO.	LOW
MS	MIDDLE STRIP
M.O.	MASONRY OPENING
MAS.	MASONRY
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO. OR #	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OPNG.	OPENING
OPP.	OPPOSITE
P.C.	PRE-CAST
PL.	PLATE
PREFAB.	PREFABRICATED
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	POST-TENSIONED
PVC.	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
RAD.	RADIUS
R.E.	RIGHT END
REINF.	REINFORCING / REINFORCEMENT
REV.	REVISION
SCHED.	SCHEDULE
SECT.	SECTION
S.F.	SQUARE FEET
SIM.	SIMILAR
S.O.G.	SLAB-ON-GRADE
SPECS.	SPECIFICATION(S)
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
SYM.	SYMMETRICAL
T	TOP BAR(S)
TM	TOPMOST BAR(S)
T.&B.	TOP AND BOTTOM
T.&G.	TONGUE AND GROOVE
T.L.	THERMAL LINING
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TRANS.	TRANSVERSE
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
W/	WITH
W/O	WITHOUT
W.P.	WORK POINT
WT.	WEIGHT
W.W.R.	WELDED WIRE REINFORCEMENT

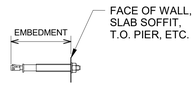
CONCRETE ANCHOR SCREW SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN 4,000 PSI CONCRETE	
		TENSION (lbs)	SHEAR (lbs)
1/4"	1 3/4"	255	540



CONCRETE SCREW ANCHOR

NOTES:

1. UNLESS SHOWN AS STAINLESS STEEL, PROVIDE CONCRETE ANCHOR SCREWS THAT ARE MANUFACTURED FROM AISI 1022 STEEL WITH AN EXTENDED CORROSION RESISTANT COATING THAT IS COMPATIBLE WITH GALVANIZED STEEL.
2. PROVIDE CONCRETE ANCHOR SCREWS MANUFACTURED BY ITW RAMSET/REDHEAD, OR AN APPROVED EQUIVALENT BY HILTI FASTENING SYSTEMS OR POWERS FASTENERS, INC. (FORMERLY RAWL).



EXPANSION ANCHOR

EXPANSION ANCHOR SCHEDULE					
ANCHOR DIAMETER	NOMINAL EMBEDMENT DEPTH	MIN. DESIGN STRENGTHS IN 4,000 PSI CRACKED CONCRETE BEFORE REDUCTIONS			
		TENSION (lbs) NON-SEISMIC LOADING	TENSION (lbs) SEISMIC LOADING	SHEAR (lbs) CONCRETE	SHEAR (lbs) STEEL STRENGTH ONLY, NON-SEISMIC LOADING
3/8"	3"	2,765	2,075	5,950	3,175
1/2"	3 3/4"	4,095	3,070	8,820	5,425
5/8"	4 1/2"	5,590	4,190	12,040	8,030
3/4"	5 1/2"	7,230	5,420	19,250	10,765

NOTES:

1. THIS TABLE APPLIES TO ALL EXPANSION ANCHORS, EXCEPT FOR THOSE USED IN THE THERMAL LINING SYSTEM.
2. PROVIDE STUD TYPE EXPANSION ANCHORS TESTED AND RATED FOR USE IN CRACKED CONCRETE AND LISTED IN ICC-ES EVALUATION REPORTS.
3. PROVIDE HILTI KWIK BOLT TZ2, MANUFACTURED BY HILTI FASTENING SYSTEMS, SIMPSON STRONG-BOLT 2, MANUFACTURED BY SIMPSON STRONG-TIE, OR POWER-STUD+ SD4, MANUFACTURED BY DEWALT.
4. PROVIDE 304 STAINLESS STEEL ANCHORS, U.O.N.
5. FOR ALLOWABLE LOADS, MULTIPLY LISTED VALUES BY A FACTOR OF 0.65.

TYPICAL REINFORCING LAP SPLICE SCHEDULE											
BAR SIZE	NORMAL WEIGHT CONCRETE									MASONRY	
	FOUNDATION		BEAM		SLAB		WALL		COL.	WALL	
	BOT.	TOP	BOT.	TOP	INT.	EXT.	VERT.	HORIZ.	VERT.	(1) BAR PER CELL	
										VERT.	HORIZ.
#3	1'-10"	2'-4"	1'-7"	2'-1"	1'-7"	1'-7"	1'-7"	1'-7"	1'-3"	1'-7"	1'-7"
#4	2'-5"	3'-2"	2'-1"	2'-8"	2'-1"	2'-1"	2'-1"	2'-1"	1'-7"	2'-1"	2'-1"
#5	3'-0"	3-11"	2'-7"	3'-5"	2'-7"	2'-7"	2'-7"	2'-7"	2'-0"	2'-7"	2'-7"
#6	3'-7"	4'-8"	3'-1"	4'-1"	3'-1"	3'-1"	3'-1"	3'-1"	2'-5"	4'-9"	4'-9"
#7	5'-3"	6'-9"	4'-6"	5'-11"	---	---	4'-6"	4'-6"	3'-6"	6'-7"	6'-7"
#8	6'-0"	7'-9"	5'-2"	6'-9"	---	---	5'-2"	5'-2"	4'-0"	---	---
#9	6'-9"	8'-9"	5'-10"	7'-7"	---	---	5'-9"	5'-9"	4'-6"	---	---
#10	7'-7"	9'-10"	6'-9"	8'-6"	---	---	---	---	---	---	---
#11	---	---	7'-3"	9'-5"	---	---	---	---	---	---	---

NOTES:

1. VALUES SHOWN ARE MIN. LAP SPLICE LENGTHS IN NORMAL WEIGHT CONC. OR GROUT FILLED MAS.
2. TOP BARS ARE DEFINED AS BARS WITH MORE THAN 12" OF FRESH CONC. BELOW.
3. FOR MIN. BAR DEVELOPMENT LENGTH, DIVIDE VALUES SHOWN IN LAP SPLICE SCHED. BY 1.3.
4. WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE LAP SPLICE DIMENSION OF THE SMALLER BAR OR THE DEVELOPMENT LENGTH OF THE LARGER BAR, WHICHEVER IS LARGER.
5. FOR BEAMS AND COLUMNS, VALUES SHOWN APPLY WHERE ALL PROVISIONS OF EITHER ONE OF THE FOLLOWING TWO CASES APPLY:

CASE 1

1. MIN. CLR. SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN ONE BAR DIAMETER, AND
2. CLR. COVER NOT LESS THAN ONE BAR DIAMETER, AND
3. STIRRUPS OR TIES ARE PROVIDED THROUGHOUT REQUIRED LENGTH OF LAP SPLICE OR DEVELOPMENT LENGTH.

OR

CASE 2

1. MIN. CLR. SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN TWO BAR DIAMETERS.
2. CLR. COVER NOT LESS THAN ONE BAR DIAMETER.
3. STIRRUPS OR TIES ARE NOT PROVIDED THROUGHOUT REQUIRED LENGTH OF LAP SPLICE OR DEVELOPMENT LENGTH.

WHERE ANY OF THESE PROVISIONS WITHIN THE APPLICABLE CASE ARE NOT MET, MULTIPLY VALUES SHOWN IN LAP SPLICE SCHEDULE BY 1.5.

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SHEET
DRAFTING PIT - TABLES, LEGEND & ABBREVIATIONS

DP002

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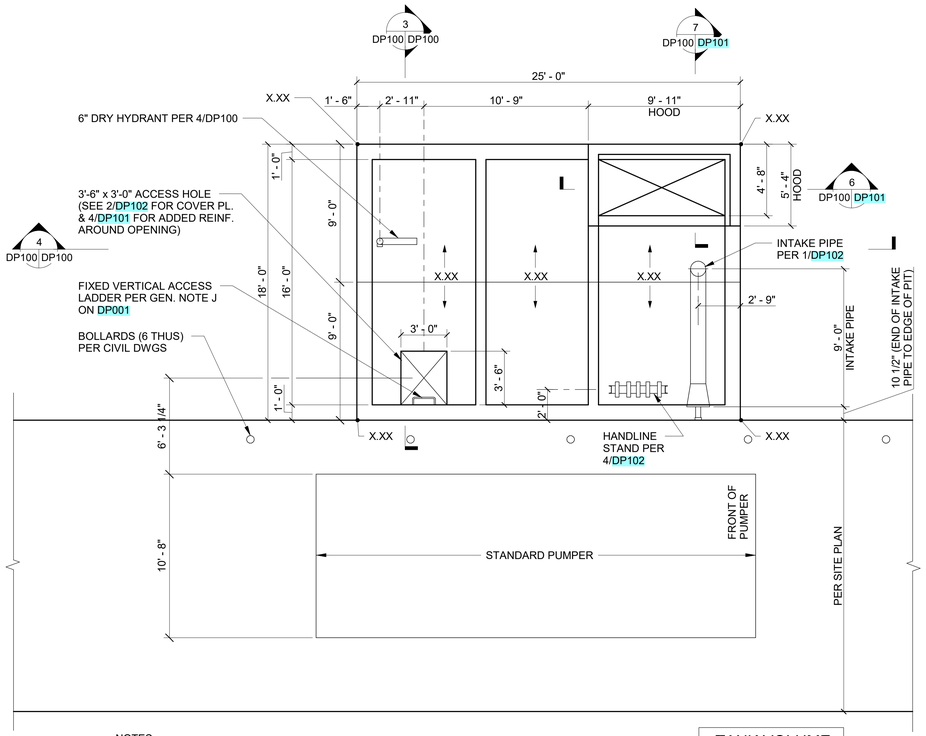


NOTES:

1. DISPOSE OF ANY EXCESS, EXCAVATED SOILS THAT ARE NOT USED AS STRUCTURAL FILL ON SITE.
2. T.O. PIT ELEVATION = XX.XX' AT NORTH & SOUTH EDGES OF PIT COORD. W/CIVIL DWGS.

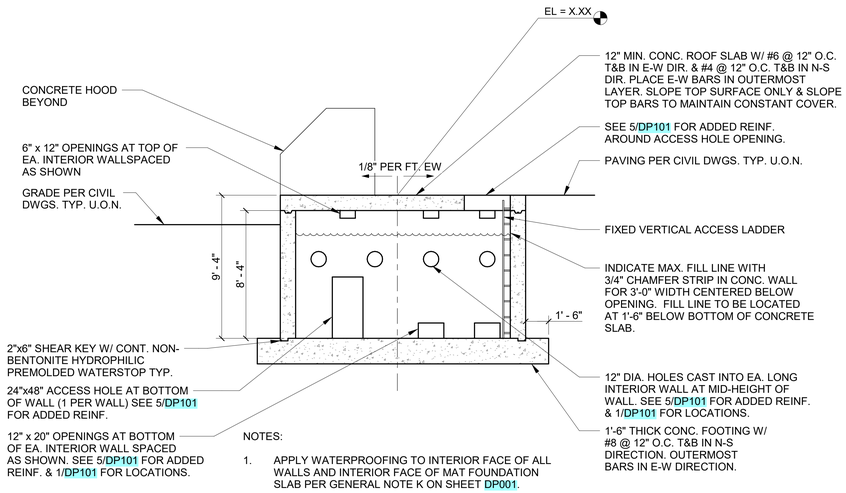
TANK VOLUME
~ 2,770 CU. FT. ~ 20,750 GALLONS

PLAN NORTH

NORTH

6 DRAFTING PIT - PLAN

DP100 DP100 SCALE 1/4" = 1'-0"

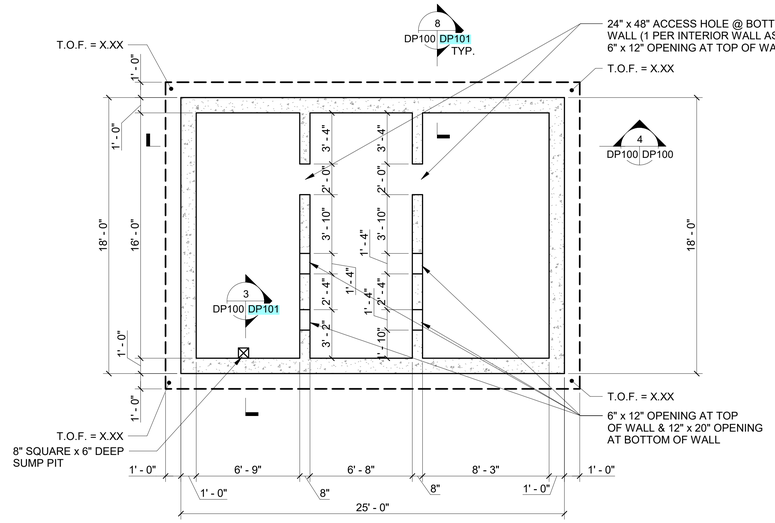


NOTES:

1. APPLY WATERPROOFING TO INTERIOR FACE OF ALL WALLS AND INTERIOR FACE OF MAT FOUNDATION SLAB PER GENERAL NOTE K ON SHEET DP001.

3 DRAFTING PIT - SECTION

DP100 DP100 SCALE 1/4" = 1'-0"



NOTES:

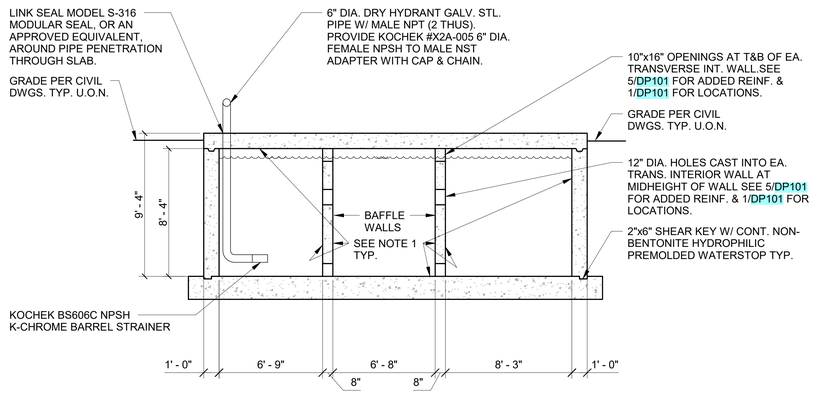
1. SEE 1/DP101 FOR ELEVATIONS OF WALLS MARKED THUS ON PLAN (X).

PLAN NORTH

NORTH

5 DRAFTING PIT - FOUNDATION PLAN

DP100 DP100 SCALE 1/4" = 1'-0"



NOTES:

1. APPLY WATERPROOFING TO INTERIOR FACE OF ALL WALLS AND INTERIOR FACE OF MAT FOUNDATION SLAB PER GENERAL NOTE K ON SHEET BB001.

4 DRAFTING PIT - SECTION

DP100 DP100 SCALE 1/4" = 1'-0"

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SHEET **DRAFTING PIT - PLANS & SECTIONS**

DP100

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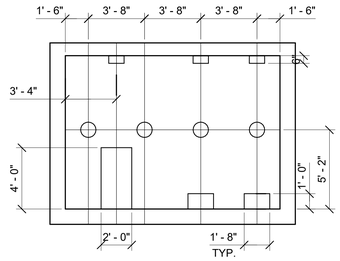


1 WALL ELEVATIONS
DP100 DP101 SCALE 1/4" = 1'-0"

CONCRETE WALL (CW) SCHEDULE

MARK	WALL THICKNES	REINFORCEMENT VERTICAL	REINFORCEMENT HORIZONTAL	
CW1	12"	#6 @ 12" O.C. E.F.	#6 @ 12" O.C. E.F.	1
CW2	8"	#5 @ 12" O.C. E.F.	#5 @ 12" O.C. E.F.	2

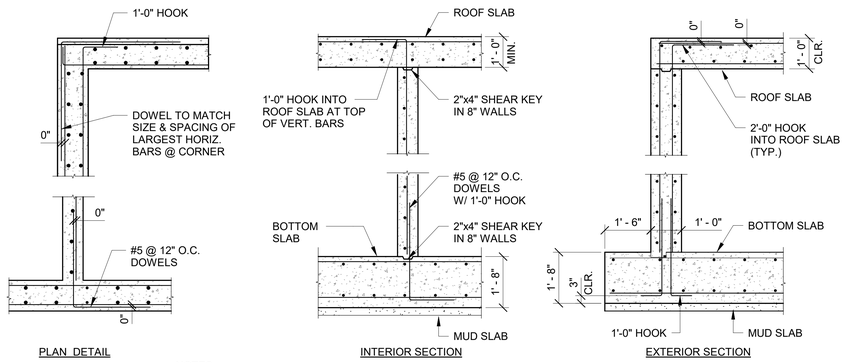
NOTES:

1. WHERE WALL IS SINGLE REINFORCED, CENTER REINFORCEMENT IN WALL, U.O.N.
2. SEE TABLE 2/BB002 FOR COVER REQUIREMENTS.
3. SEE DETAIL 2/DP101 FOR REINFORCING PLACEMENT.

REMARKS:

1 ALL EXTERIOR WALLS ARE CW1. PLACE HORIZ. BARS IN OUTERMOST LAYER.

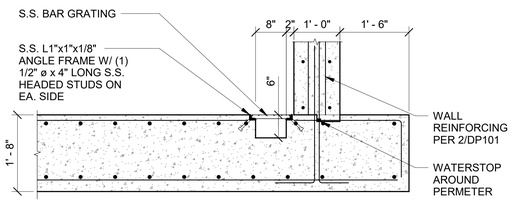
2 ALL INTERIOR WALLS ARE CW2.



NOTES:

1. SEE PLANS AND SECTIONS ON DP100 AND DP101 FOR WALL, SLAB, AND FOOTING REINFORCEMENT.
2. PROVIDE LAP LENGTHS PER LAP SPLICE SCHEDULE ON BB002.

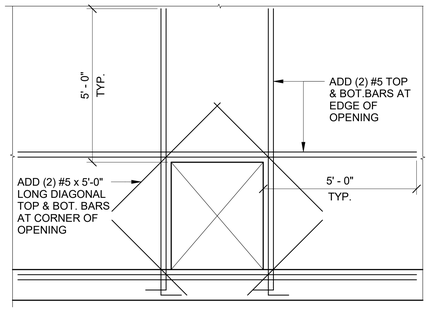
2 WALL DOWEL REINF. DETAILS
DP100 DP101 SCALE 1/2" = 1'-0"



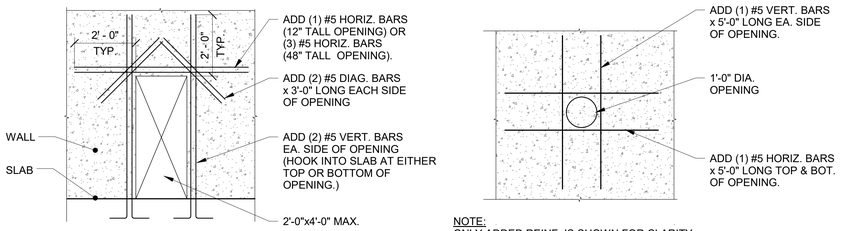
NOTES:

1. LOCATE SUMP PIT AT LOCATION SHOWN IN 4/DP100.
2. CENTER SUMP PIT BETWEEN TOP BARS IN FOUNDATION SLAB, SO THAT NO BARS ARE INTERRUPTED & ALL BARS HAVE MIN. 1 1/2" CLEAR COVER TO EDGES OF SUMP PIT.

3 SUMP PIT SECTION DETAILS
DP100 DP101 SCALE 3/4" = 1'-0"



4 ADDED REINF. TO ROOF SLAB OPNG. DETAILS
DP100 DP101 SCALE 1/2" = 1'-0"



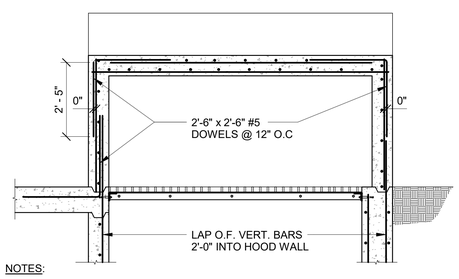
NOTES:
1. ONLY ADDED REINF. IS SHOWN FOR CLARITY. SEE WALL SCHEDULE FOR WALL REINF.
2. FOR OPENINGS AT TOPS OF WALLS, TURN DETAIL 180°.

RECTANGULAR OPENINGS @ WALLS

NOTE:
ONLY ADDED REINF. IS SHOWN FOR CLARITY. SEE WALL SCHEDULE FOR WALL REINF.

ROUND OPENINGS @ WALLS

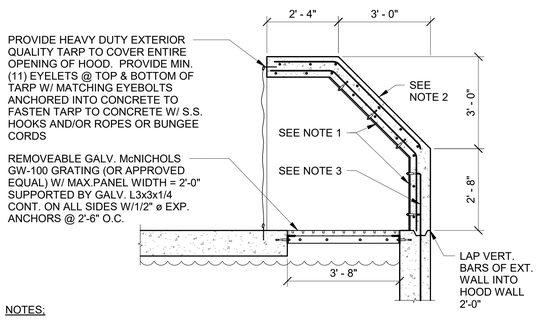
5 ADDED REINF @ WALL OPENING DETAILS
DP100 DP101 SCALE 1/2" = 1'-0"



NOTES:

1. SEE 1/DP100 FOR SLAB REINFORCING.
2. SEE 6/DP101 FOR ADDITIONAL INFORMATION.

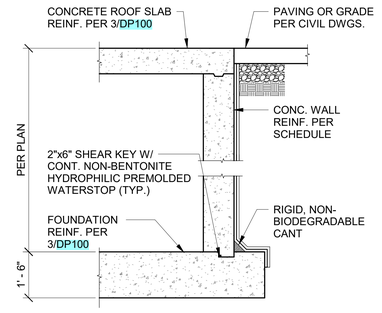
6 SECTION
DP100 DP101 SCALE 1/2" = 1'-0"



NOTES:

1. 3/16" GALV. PL. FASTENED TO CONC. HOOD W/ 1/2" ø EXP. ANCHORS @ 2'-6" O.C. EACH WAY.
2. 8" CONC. HOOD SLAB W/ #5 @ 12" O.C. E.W. BOT. (BOTTOM MOST BARS SPAN E-W.) AND #3 @ 12" O.C. E.W. TOP
3. LAP VERT. BARS OF EXT. WALL INTO HOOD WALL 2'-0".

7 SECTION
DP100 DP101 SCALE 1/2" = 1'-0"



NOTES:

1. PROVIDE BITUTHENE 3000 WATERPROOFING SYSTEM, BY GRACE CONSTRUCTION PRODUCTS, OR AN EQUIVALENT APPROVED BY THE ENGINEER.

8 TYPICAL FOUNDATION SECTION AT DRAFTING PIT WALL
DP100 DP101 SCALE 1/2" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056

DATE ISSUED
01/10/25

PROJECT STATUS
ISSUE FOR BID

SHEET
DRAFTING PIT - DETAILS

DP101

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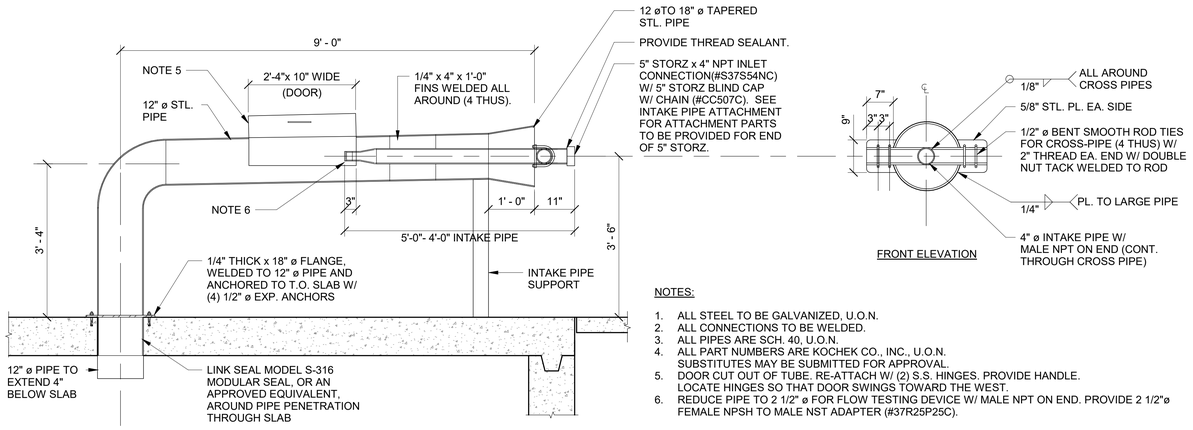


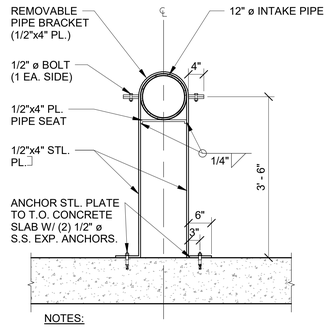
FRONT ELEVATION

NOTES:

1. ALL STEEL TO BE GALVANIZED, U.O.N.
2. ALL CONNECTIONS TO BE WELDED.
3. ALL PIPES ARE SCH. 40, U.O.N.
4. ALL PART NUMBERS ARE KOCHEK CO., INC., U.O.N. SUBSTITUTES MAY BE SUBMITTED FOR APPROVAL.
5. DOOR CUT OUT OF TUBE. RE-ATTACH W/ (2) S.S. HINGES. PROVIDE HANDLE. LOCATE HINGES SO THAT DOOR SWINGS TOWARD THE WEST.
6. REDUCE PIPE TO 2 1/2" ø FOR FLOW TESTING DEVICE W/ MALE NPT ON END. PROVIDE 2 1/2"ø FEMALE NPSH TO MALE NST ADAPTER (#37R25P25C).

1 INTAKE SUPPORT DETAILS

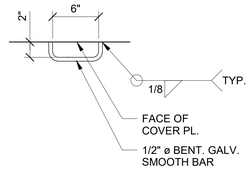
DP100 | DP102 SCALE 3/4" = 1'-0"



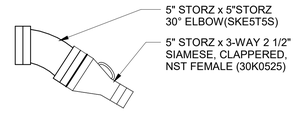
NOTES:

1. GALVANIZE ALL ITEMS, EXCEPT S.S. ITEMS.

INTAKE PIPE SUPPORT DETAIL



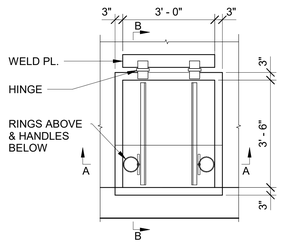
COVER PULL DETAIL
SCALE 1 1/2" = 1'-0"



NOTES:

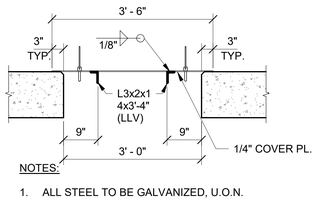
1. ALL PART NUMBERS ARE KOCHEK CO., INC. SUBSTITUTES MAY BE SUBMITTED FOR APPROVAL.

INTAKE PIPE LINE ATTACHMENT
SCALE 1 1/2" = 1'-0"



2 MANHOLE PLAN DETAIL

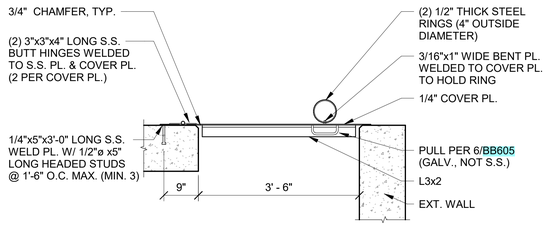
DP100 | DP102 SCALE 1/2" = 1'-0"



NOTES:

1. ALL STEEL TO BE GALVANIZED, U.O.N.

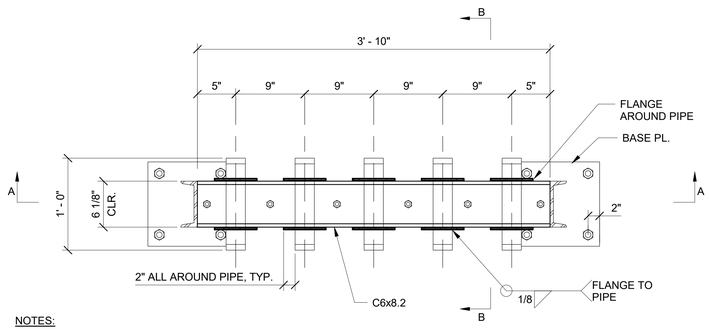
SECTION A-A



SECTION B-B

3 MANHOLE SECTION DETAILS

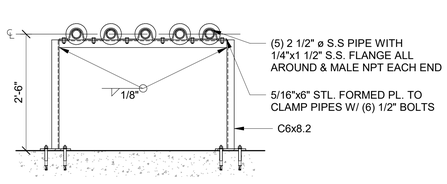
DP100 | DP102 SCALE 3/4" = 1'-0"



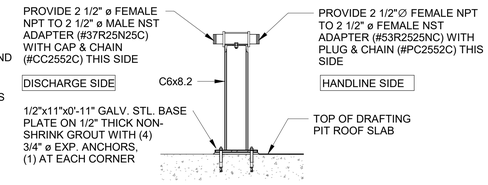
NOTES:

1. ALL STEEL TO BE GALVANIZED, UNLESS LABELED AS STAINLESS STEEL.
2. ALL PART NUMBERS ARE KOCHEK CO., INC. SUBSTITUTES MAY BE USED WITH APPROVAL.

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



SECTION A-A



SECTION B-B

4 HANDLINE STAND DETAILS

DP100 | DP102 SCALE 3/4" = 1'-0"

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SAMET
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Rec'd 1.16.2025

NO.	REVISION	DATE

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DRAFTING PIT - DETAILS

DP102

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CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CRITERIA UNLESS OTHERWISE NOTED ON THE DRAWINGS. DO NOT USE THESE DRAWINGS WITHOUT THE ACCOMPANYING SPECIFICATIONS AND RELATED CIVIL AND M/E/P DRAWINGS. FOR ALL ITEMS, SEE THE SPECIFICATIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS. THE MOST STRINGENT REQUIREMENTS GOVERN CONDITIONS COVERED BY BOTH THE DRAWINGS AND THE PROJECT SPECIFICATIONS OR BY CONFLICTING ITEMS.

A. STRUCTURE CLASSIFICATION

1. THE BURN BUILDING WILL BE A TRAINING PROP USED BY THE OWNER TO TRAIN ABLE-BODIED FIREFIGHTERS UNDER LIVE FIRE AND OTHER TRAINING SCENARIOS.
2. THE BURN BUILDING WILL NOT BE AN OCCUPIED STRUCTURE, EXCEPT DURING TRAINING EXERCISES.
3. THE BURN BUILDING IS CLASSIFIED AS MISCELLANEOUS USE GROUP (USE GROUP U).

B. LIVE FIRE & COLD TRAINING DESIGN CRITERIA

THE BURN BUILDING HAS BEEN DESIGNED FOR THE FOLLOWING CRITERIA. THE OWNER/USER SHALL IMPLEMENT ADDITIONAL RESTRICTIONS TO ENSURE PERSONNEL SAFETY.

1. MAXIMUM SUSTAINED TEMPERATURE DURING LIVE FIRE TRAINING IN BURN ROOMS = 1,000 DEGREES F AT CEILING.
2. MAXIMUM TEMPERATURE SPIKE DURING LIVE FIRE TRAINING IN BURN ROOMS = 1,200 DEGREES F AT CEILING.
3. ONLY CLEAN "CLASS A" FUEL MATERIALS SHALL BE USED FOR LIVE FIRE TRAINING IN THE BURN BUILDING.
4. LIVE FIRE TRAINING SHALL OCCUR IN BURN ROOMS ONLY. NO FIRES ARE ALLOWED ON THE INTEROR OR EXTERIOR STAIRS AND LANDINGS, ON THE ROOFS, OR IN OTHER AREAS DESIGNATED AS "NO BURN" IN THE DRAWINGS.
5. LIVE FIRE TRAINING SHALL BE IN ACCORDANCE WITH NFPA 1403.
6. TRAINING THAT INCLUDES EXPLOSIVES, FIREARMS, OR TEAR GAS SHALL NOT BE PERMITTED WITHIN OR NEAR THE BURN BUILDING.
7. ONCE ALL CONCRETE AND MASONRY WORK HAVE BEEN COMPLETED, THE BURN BUILDING SHALL STAND FOR A 2 MONTH MINIMUM CURING PERIOD BEFORE CONDUCTING THE FIRST LIVE FIRE TRAINING EVOLUTION. INSTALLATION OF OTHER TRADES MAY OCCUR DURING THE 2 MONTH CONCRETE AND MASONRY CURING PERIOD.
8. THE STRUCTURAL ELEMENTS HAVE BEEN PROTECTED FROM HEAT AND THERMAL SHOCK WITH THERMAL LININGS. NON-BEARING MASONRY WALLS AND OTHER NON-STRUCTURAL ITEMS ARE NOT PROTECTED WITH THERMAL LININGS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
9. ITEMS NOT PROTECTED WITH THERMAL LININGS, BUT EXPOSED TO TEMPERATURES GREATER THAN 150 DEGREES F, ARE EXPECTED TO GRADUALLY DETERIORATE WITH EVERY EVOLUTION. MAINTENANCE WILL BE REQUIRED ON ALL COMPONENTS AND SHOULD BE INCLUDED IN ANNUAL BUDGETS.
10. FIRES SHOULD BE PLACED AWAY FROM DOORS, SHUTTERS, AND ROOF OPENINGS TO REDUCE DETERIORATION OF THOSE ITEMS.
11. FIRES SHOULD BE PLACED ON BURN RACKS, AS SHOWN IN DETAIL X/BB6XX. THE INTENT IS TO MINIMIZE THE HEAT AT THE FLOOR LEVEL AND TO MINIMIZE THE AMOUNT OF FIRE AND COALS THAT SIT DIRECTLY ON THE FLOOR.
12. THE TEMPERATURES AND HEAT ENERGY WITHIN THE BURN BUILDING DURING LIVE FIRE TRAINING EVOLUTIONS ARE EXPECTED TO BE HIGHER THAN THOSE FROM OTHER BUILDING FIRES. THE OWNER/USER SHALL ESTABLISH AND ENFORCE STANDARD OPERATING PROCEDURES THAT ADDRESS FUEL LOADS AND HEAT ENERGY, MAINTAIN A SAFE TRAINING ENVIRONMENT FOR PERSONNEL, AND PROMOTE DURABILITY OF THE BURN BUILDING AND ITS COMPONENTS.
13. IT IS ASSUMED THAT OWNNER WILL TEST ROPE TIE-OFF POINTS PER OSHA REQUIREMENTS AND WILL VISUALLY CONFIRM THAT NUTS AND BOLTS ARE TIGHT AT ALL ROPE TIE-OFF ASSEMBLIES ON EACH TRAINING DAY THAT USES THOSE TIE-OFF POINTS.

C. CODES AND STANDARDS

THE FOLLOWING CODES AND STANDARDS GOVERN THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF STRUCTURAL WORK PERFORMED ON THIS PROJECT:

1. 2018 NORTH CAROLINA STATE BUILDING CODE (BASED ON INTERNATIONAL BUILDING CODE (IBC-2015), INTERNATIONAL CODE COUNCIL (ICC).
2. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10), AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE).
3. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - AISC 360-10, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, EXCEPT AS MODIFIED BY IBC.
4. STRUCTURAL WELDING CODE - STEEL (AWS D1.4-2011), AMERICAN WELDING SOCIETY (AWS), EXCEPT AS MODIFIED BY IBC.
5. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318-14), AMERICAN CONCRETE INSTITUTE (ACI), EXCEPT AS MODIFIED BY IBC.
6. SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-16), AMERICAN CONCRETE INSTITUTE (ACI).
7. MANUAL OF STANDARD PRACTICE (CRSI), CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
8. BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES, THE MASONRY SOCIETY (TMS) TMS 402-13/TMS 602-13, AND BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, AMERICAN CONCRETE INSTITUTE (ACI) ACI 530-13, EXCEPT AS MODIFIED BY IBC.
9. STANDARD ON FACILITIES FOR FIRE TRAINING AND ASSOCIATED PROPS (NFPA 1402-2019), NATIONAL FIRE PROTECTION ASSOCIATION.

D. DESIGN GRAVITY LOADS

LIVE LOADS:

1. FLOORS: 50 PSF
2. STAIRS: 100 PSF
3. ROOFS: 50 PSF PLUS DEAD WEIGHT OF THERMAL LININGS
4. SLAB EDGES AND EAVES: NON-CONCURRENT POINT LOADS OF 750 POUNDS.
5. NO LIVE LOAD REDUCTIONS TAKEN.

DEAD LOADS:

1. CMU PARTITIONS: 80 PSF
2. FIRE BRICK: 25 PSF
3. THERMAL LININGS: 30 PSF

E. DESIGN SNOW LOADS

1. GROUND SNOW LOAD (Pg) = 15 PSF
2. FLAT ROOF SNOW LOAD (Pf) = 12.6 PSF
3. SNOW DRIFT LOAD (Ps) = 34.2 PSF
4. SNOW EXPOSURE FACTOR (Ce) = 1.0
5. THERMAL FACTOR (Ct) = 1.2
6. SNOW LOAD IMPORTANCE FACTOR (Is) = 1.0

F. DESIGN WIND LOADS

1. RISK CATEGORY II
2. BASIC WIND SPEED = 115 MPH
3. WIND LOAD IMPORTANCE FACTOR (Iw) = 1.0
4. INTERNAL PRESSURE COEFFICIENT = +0.55 / -0.55
5. WIND EXPOSURE CATEGORY = C
6. WIND DESIGN PRESSURE (P) FOR THE MAIN WIND RESISTING SYSTEM = 41.4 PSF (WINDWARD & LEEWARED COMBINED) AT HIGHEST POINT.
7. WIND DESIGN PRESSURE (P) FOR BUILDING COMPONENTS AND CLADDING = 71.5 PSF ON CMU INFILL WALLS.

G. SEISMIC DESIGN DATA

1. RISK CATEGORY II
2. SEISMIC IMPORTANCE FACTOR (Ie) = 1.0
3. SITE CLASS = D
4. SPECTRAL RESPONSE ACCELERATIONS: Ss 0.147, S1 = 0.074
5. SPECTRAL RESPONSE COEFFICIENTS: Sds 0.157, S1 = 0.118
6. SEISMIC DESIGN CATEGORY = B
7. BASIC SEISMIC FORCE-RESISTING SYSTEM: BEARING WALL SYSTEM - ORDINARY REINFORCED CONCRETE SHEAR WALLS (A.2)
8. RESPONSE MODIFICATION COEFFICIENT (R) = 4.0
9. DEFLECTION AMPLIFICATION FACTOR (Cd) = 4.0
10. OVERSTRENGTH FACTOR (Ω_0) = 2.5
11. DESIGN BASE SHEAR (V) =0.0392 x W

H. DATUM AND BUILDING ELEVATIONS

1. THE DATUM FOR THE BURN BUILDING IS THE TOP OF THE FIRST FLOOR CONCRETE SLAB AT THE EXTERIOR FACE OF THE EXTERIOR WALLS AT THE LOWEST POINT AND IS DESIGNATED ON THE DRAWINGS AS 0.00 FEET.
2. THE DATUM ELEVATION IS 294.00 FEET.
3. ALL TOP OF SLAB ELEVATIONS ARE SHOWN IN THE PLANS AS +XX.XX OR -XX.XX IN FEET RELATIVE TO THE DATUM.

I. SOILS INFORMATION

1. THE FOLLOWING INFORMATION IS BASED ON THE GEOTECHNICAL REPORT ("SOILS REPORT") PREPARED BY NV5 ENGINEERS AND CONSULTANTS, INC. DATED JANUARY 11, 2024.
2. ACCORDING TO THE SOILS REPORT, SOFT/LOOSE NEAR SURFACE SOILS (APPROXIMATELY 3 FEET DEEP) OVERLAY PARTIALLY WEATHERED ROCK AND ROCK (3 TO 25 FEET).
3. ALLOWABLE SOIL BEARING VALUE FOR THE BURN BUILDING IS 2,500 PSF.
4. ACCORDING TO THE SOILS REPORT, GROUND WATER WAS NOT OBSERVED WITHIN THE BORINGS AT THE BURN BUILDING (B-8 & B-9). SEE SOILS REPORT FOR DRAINAGE CONSIDERATIONS.
5. SEE SPECIFICATIONS FOR EARTHWORK REQUIREMENTS, INCLUDING REPLACEMENT OF UNSUITABLE SOILS, MEASURES TO PREVENT INFILTRATION OF RUNOFF AND PRECIPITATION INTO UNDERLYING SOILS AND DEWATERING REQUIREMENTS IF GROUNDWATER IS ENCOUNTERED.

J. FOOTINGS

1. EXTEND TOPS OF ALL FOOTINGS TO A MINIMUM OF 1'-6" BELOW EXTERIOR FINISHED GRADE, U.O.N.
2. FOOTINGS SHALL BE SUPPORTED ON UNDISTURBED, NATURAL, ACCEPTABLE SOILS OR ON COMPACTED ENGINEERED FILL PLACED OVER THE NATURAL, ACCEPTABLE SOILS.
3. ACCORDING TO THE SOILS REPORT, AS MUCH AS 3'-0" OF COMPACTED ENGINEERED FILL OR ABC STONE COULD BE REQUIRED BELOW FOUNDATIONS TO REPLACE SOFT/LOOSE NEAR SURFACE SOILS.
4. FOOTING SUBGRADES AND ENGINEERED FILL SHALL BE APPROVED BY THE TESTING AGENCY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE FOOTINGS AND ENGINEERED FILL.

K. BACKFILL COMPACTION

1. EXCAVATE, PROOFROLL, BACKFILL, AND COMPACT FOUNDATION AND SLAB-ON-GRADE SUBGRADES PER THE EARTHWORK SPECIFICATION SECTIONS 312000.
2. ALL PROOFROLLING AND ENGINEERED OR IMPORTED FILL MATERIALS AND PLACEMENT SHALL BE OBSERVED AND APPROVED BY THE TESTING AGENCY GEOTECHNICAL ENGINEER.
3. PROVIDE FILL MATERIALS THAT ARE FREE OF DEBRIS, ORGANIC, AND DELETERIOUS MATERIALS AND THAT MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
4. PLACE ENGINEERED FILL MATERIAL IN MAXIMUM LEVEL LOOSE LIFTS OF 6 INCHES AND COMPACT TO 95% OF THE MODIFIED PROCTOR TEST MAXIMUM DRY DENSITY (ASTM D-698).

L. CAST-IN-PLACE CONCRETE CONSTRUCTION

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 318, ACI 301, AND THE ACI DETAILING MANUAL.
2. PROVIDE CONCRETE WITH PROPERTIES THAT CONFORM TO THE CRITERIA SPECIFIED IN TABLE 1 ON SHEET BB002.
3. PROVIDE NORMAL WEIGHT CONCRETE.
4. TESTING AGENCY SHALL TAKE CONCRETE TEST CYLINDERS IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318, CHAPTER 26 AND THE CONTRACT SPECIFICATIONS.
5. SEE THE CONTRACT SPECIFICATIONS FOR ADDITIONAL CONCRETE TESTING REQUIREMENTS (AIR CONTENT, SLUMP, ETC.).
6. TESTING AGENCY SHALL PERFORM REBAR INSPECTIONS OF ALL REINFORCING STEEL BEFORE ALL CONCRETE POURS.
7. WHEN PLACING CONCRETE ON SLOPING FORMS AT CONCRETE STAIRS, PLACE CONCRETE AT LOWEST ELEVATION OF FORMS FIRST AND WORK UP TOWARD THE HIGHEST ELEVATION.
8. APPLY (1) COAT OF BASF MASTERPROTECT H1000, BY BASF, OR APPROVED EQUAL BY EUCLID CHEMICAL COMPANY OR SIKA USA, TO TOP SURFACE OF INTERIOR ELEVATED FLOOR SLABS AFTER SLABS HAVE CURED FOR A MINIMUM OF 28 DAYS. PREPARE SURFACE AND APPLY COATING IN ACCORDANCE WITH REQUIREMENTS OF THE MANUFACTURER.
9. PROVIDE CONTINUOUS DRIP ALONG EDGES OF ELEVATED CONCRETE SLABS AS SHOWN IN THE DRAWINGS.
10. CHAMFER ALL EXPOSED CORNERS OF COLUMNS AND WALLS WITH 3/4" CHAMFER UNLESS OTHERWISE NOTED.
11. AT LOCATIONS SHOWN ON THE DRAWINGS, CAST DOVETAIL ANCHOR SLOTS INTO CONCRETE. SEE GENERAL NOTE 0.15 FOR ADDITIONAL INFORMATION.
12. FOR CAST-IN-PLACE CAPS ON MASONRY PARAPETS, CUBICLE WALLS, AND SCREEN WALLS, PROVIDE EITHER:
    a. 5,000 PSI, AIR-ENTRAINED, READY-MIX CONCRETE FROM THE CONCRETE SPECIFICATION, FOR WHICH PUMPING WOULD BE ALLOWED AS WELL AS OTHER MEANS & METHODS, AS LONG AS THE CONCRETE AND FINISH MEET THE REQUIREMENTS OF THE SPECIFICATIONS, OR
    b. AIR-ENTRAINED QUICKRETE (QUIKRETE Q-MAX PRO), MIXED IN A MIXER ON SITE (NOT IN A WHEELBARROW), WITH THE FIBERS THAT PROJECT FROM THE SURFACE RUBBED OFF AFTER THE FINAL CURE AND WITH FINISH THAT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS.

M. CONCRETE REINFORCEMENT

1. PROVIDE HIGH STRENGTH, NEW BILLET DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 FOR STEEL REINFORCEMENT IN CONCRETE.
2. PROVIDE STEEL REINFORCEMENT DETAILS IN ACCORDANCE WITH ACI 318 AND CRSI STANDARDS.
3. PROVIDE CONCRETE PROTECTION FOR STEEL REINFORCEMENT OF CAST-IN-PLACE CONCRETE AS SPECIFIED IN TABLE 2 ON SHEET BB002. PLACE THE OUTERMOST LAYERS OF REINFORCING AS CLOSE TO THE CONCRETE SURFACES AS POSSIBLE WITHOUT VIOLATING THE REQUIREMENTS SHOWN IN THE TABLE.
4. COORDINATE REINFORCING PLACEMENT WITH ALL POST-INSTALLED ANCHORS AT GUARDRAILS, DOORS, SHUTTERS, SCUPPERS, ROPE TIE-OFF ANCHORS, ETC.

N. SLABS-ON-GRADE

1. FOR ALL SLABS-ON-GRADE, PROVIDE A 6" MIN. THICK POURED CONCRETE SLAB-ON-GRADE, REINFORCED WITH WWR6x6-W2.9xW2.9 LOCATED IN THE UPPER THIRD PORTION OF SLAB THICKNESS.
2. FOLLOW WRI STANDARDS FOR WELDED WIRE REINFORCEMENT PLACING, LAP, ETC.
3. PROVIDE A MINIMUM OF 4" OF AGGREGATE BASE COURSE (ABC STONE) AS A BASE BELOW THE SLABS-ON-GRADE.
4. PROVIDE A 15 MIL VAPOR BARRIER BELOW THE SLABS-ON-GRADE PER THE SPECIFICATIONS
5. PROVIDE A CONTINUOUS MANUFACTURED CRACK CONTROL JOINT (PREMOLDED PLASTIC STRIP) OR EARLY ENTRY SAW-CUT CONTROL JOINT IN THE TOP OF SLAB AT LOCATIONS SHOWN ON THE FOUNDATION PLANS. SEE SPECS. FOR REQUIREMENTS OF SAW-CUTTING.

O. MASONRY

1. PROVIDE 2-CELL NORMAL WEIGHT CONCRETE BLOCK CONFORMING TO ASTM C-90.
2. PROVIDE UNIT MASONRY THAT DEVELOPS INSTALLED COMPRESSIVE STRENGTHS (f'm) AT 28 DAYS, BASED ON NET AREA, OF 2,000 PSI.
3. PROVIDE MORTAR THAT CONFORMS TO ASTM C-270, TYPE S.
4. ADD INTEGRAL WATER REPELLENT ADMIXTURE TO BLOCK AND MORTAR IN ALL MASONRY WALLS IN ACCORDANCE WITH THE SPECIFICATIONS.
5. UNLESS OTHERWISE NOTED, PROVIDE HORIZONTAL JOINT REINFORCING AT 16" ON CENTER VERTICALLY IN ALL MASONRY WALLS.
6. UNLESS OTHERWISE NOTED ON DRAWINGS, PROVIDE (1) #5 VERTICAL BAR AT ENDS OF WALLS, AT WALL CORNERS AND INTERSECTIONS, AT JAMBS OF OPENINGS, AND AT 24" O.C. MAXIMUM IN ALL MASONRY WALLS. SEE DRAWINGS FOR ADDITIONAL REINFORCING DETAILS, INCLUDING AT JOINTS.
7. PROVIDE VERTICAL REINFORCING BARS FOR FULL HEIGHT OF WALL. DO NOT DOWEL BARS INTO CONCRETE SLABS AT TOPS OR BOTTOMS OF WALLS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
8. SEE DRAWINGS FOR ADDITIONAL DETAILS RELATING TO VERTICAL REINFORCING BARS, INCLUDING BARS AT DOOR, WINDOW, AND SCUPPER OPENINGS, AT OPEN VERTICAL JOINTS IN WALLS, AND AT OTHER LOCATIONS.
9. KEEP CELLS TO RECEIVE BARS CLEAN OF MORTAR DROPPINGS.
10. SECURE VERTICAL BARS WITH WIRE TIES AND SPACERS AT TOP AND BOTTOM TO ASSURE THAT BARS REMAIN IN POSITION DURING GROUTING.
11. FILL ALL CELLS FULL HEIGHT WITH 3,000 PSI MASONRY GROUT PER ASTM C-476 AND THE SPECS.
12. CLOSE CLEANOUTS AFTER GROUT FLOWS FULLY TO BOTTOM OF WALL. VIBRATE GROUT DURING PLACEMENT TO ELIMINATE AIR POCKETS.
13. PROVIDE LOOSE-LAID FIRE BRICK ON FLOORS, WHERE INDICATED, THAT CONFORMS TO ASTM C-27, CLASSIFICATION: MEDIUM-DUTY.
14. SEE THE CONTRACT SPECIFICATIONS FOR MASONRY TESTING AND INSPECTIONS REQUIRED, INCLUDING REINFORCING AND GROUTING INSPECTIONS.
15. AT LOCATIONS INDICATED ON DRAWINGS, ANCHOR MASONRY TO CONCRETE WITH DOVETAIL ANCHORS AT 16" ON CENTER, UNLESS OTHERWISE NOTED, AND MORTAR MASONRY TIGHT TO FACE OF CONCRETE. PROVIDE S.S. 4" LONG NO. 103-C DOVETAIL TRIANGLE ANCHOR, EACH WITH 12 GA. DOVETAIL ANCHOR AND 3/16" DIA. WIRE TRIANGLE TIE, AND S.S., 22 GA., NO. 100 STANDARD DOVETAIL SLOTS BY HECKMAN BUILDING PRODUCTS, INC., OR AN EQUIVALENT BY HOHMANN & BARNARD OR DUR-O-WAL, APPROVED BY THE ENGINEER. SPACE ANCHORS AT 16" O.C. VERTICALLY AND, IF APPLICABLE, 24" O.C. HORIZONTALLY U.O.N. DO NOT ANCHOR MASONRY TO CONCRETE WHERE OPEN JOINTS ARE SHOWN NOR WHERE THERMAL LININGS SEPARATE CONCRETE FROM MASONRY.
16. ALL MASONRY WALLS SHALL BE STANDARD GRAY COLOR WITH 8"(THICK) x 16"(LONG) x 8"(TALL) NOMINAL BLOCKS. ALL BLOCKS SHALL BE STANDARD SMOOTH FACE BLOCK.
17. PROVIDE (2) COATS OF WATER REPELLENT SEALER, AS INDICATED IN SPECIFICATION SECTION 04 20 00, TO THE EXTERIOR FACE OF CMU WALLS WHERE INDICATED IN PLAN.

P. ANCHORS

1. INSTALL ADHESIVE ANCHORS, EXPANSION ANCHORS, SLEEVE ANCHORS, AND CONCRETE ANCHOR SCREWS PER THE TYPICAL ANCHOR SCHEDULES ON SHEET BB002.
2. PROVIDE ANCHORS WITH MINIMUM EMBEDMENT AND ALLOWABLE CAPACITIES SHOWN IN THE SCHEDULES, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. IF MINIMUM REQUIREMENTS FOR ANCHORS CAN NOT BE ACHIEVED DUE TO FIELD CONDITIONS, NOTIFY THE ENGINEER.
4. INSTALL ALL ANCHORS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
5. DRILL HOLES FOR ANCHORS TO BE INSTALLED IN MASONRY WITH A ROTARY DRILL ONLY, NOT A ROTARY-HAMMER DRILL. DO NOT DAMAGE FACES OF WALLS, CEILINGS, SLABS, OR OTHER SUBSTRATES WHILE DRILLING.
6. SUBMIT PROPOSED ANCHORS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK.
7. DO NOT DAMAGE REINFORCING STEEL WHILE INSTALLING ANCHORS. COORDINATE REINFORCING PLACEMENT WITH ALL POST-INSTALLED ANCHORS AT GUARDRAILS, DOORS, SHUTTERS, SCUPPERS, ROPE TIE-OFF ANCHORS, ETC.
8. ANCHORS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR RESPONSIBLE FOR THE SCOPE OF WORK BEING ANCHORED.

Q. STEEL SHAPES AND PLATES

1. PROVIDE STEEL WITH PROPERTIES LISTED IN TABLE 3 ON SHEET BB002.
2. SEE SPECIFICATIONS FOR REQUIREMENTS OF STAINLESS STEEL ANGLES AND PLATES.
3. PROVIDE WELDED SHOP CONNECTIONS UNLESS OTHERWISE NOTED.
4. MAKE FIELD CONNECTIONS WITH ASTM A-325N HIGH STRENGTH BOLTS TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS OTHERWISE NOTED.
5. PERFORM ALL WELDING WITH WELDERS QUALIFIED IN ACCORDANCE WITH AWS PROCEDURES FOR WELDER QUALIFICATION.
6. PROVIDE GALVANIZED STEEL MEMBERS, UNLESS OTHERWISE NOTED ON THE DRAWINGS AS "PAINTED" OR "STAINLESS STEEL".
7. AT GALVANIZING VENT HOLES IN PIPES AND TUBES IN RAILINGS, EXTERIOR STAIRS, ROPE FRAMES AND OTHER NOTED ITEMS, LOCATE VENT HOLES AT BOTTOM OF PIPE OR TUBE. PLUG ALL VENT HOLES AFTER GALVANIZING IN ONE OF THE FOLLOWING WAYS: HAMMER IN A ZINC GALVANIZING VENT HOLE PLUG, GRIND IT SMOOTH, AND TOUCH UP WITH GALVANIZING REPAIR PAINT. A SECOND OPTION IS TO PLUG WELD THE GALVANIZING VENT HOLES, GRIND THE WELDS SMOOTH, AND TOUCH UP WITH GALVANIZING REPAIR PAINT PER THE SPECIFICATIONS.
8. WHERE INDICATED IN THE DRAWINGS AS "PAINTED", PROVIDE STEEL WITH ONE SHOP COAT OF RUST-INHIBITING PRIMER AND TWO FIELD COATS AS INDICATED IN THE SPECIFICATIONS.
9. WHERE INDICATED IN THE DRAWINGS, PROVIDE STAINLESS STEEL OF TYPE INDICATED IN THE SPECIFICATIONS.
10. SEE THE CONTRACT SPECIFICATIONS FOR STEEL TESTING AND INSPECTIONS REQUIRED AND TO BE PROVIDED BY OWNER.

R. STEEL GRATING AND TREADS

1. PROVIDE 2" DEEP, 13 GAUGE, GALVANIZED 'PERF-O GRIP' STEEL GRATING BY COOPER B-LINE, OR AN EQUIVALENT BY NUCOR GRATING OR METALEX, APPROVED BY THE ENGINEER. MAXIMUM PLANK WIDTH IS 12 INCHES. INSTALL GRATING IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS TO CREATE A TWO-SPAN CONDITION BY WELDING (SCREWS AND CLIPS NOT ALLOWED). PROVIDE GRATING PLANK LENGTHS THAT ARE AS LONG AS POSSIBLE TO MINIMIZE CUT PLANKS AND JOINTS WHERE CUT ENDS OF PLANKS ABUT ONE ANOTHER.
2. PROVIDE 2" DEEP, 13 GAUGE, GALVANIZED PERF-O GRIP' STAIR TREADS BY COOPER B-LINE, OR AN EQUIVALENT BY NUCOR GRATING OR METALEX, APPROVED BY THE ENGINEER. INSTALL TREADS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS USING STANDARD ZINC COATED BOLTS.
3. PROVIDE A GALVANIZED 2" TALL VERTICAL END PLATE TO CLOSE OFF THE ENDS OF ALL GRATING PLANKS TO ELIMINATE JAGGED EDGES AND TO STRENGTHEN THE ENDS OF THE PLANKS. THIS INCLUDES ENDS OF PLANKS THAT ABUT ENDS OF ADJACENT PLANKS AND THAT ABUT FACE OF THE BUILDING.
4. TOUCH UP ALL ABRASIONS AND WELDS WITH GALVANIZING REPAIR PAINT PER THE SPECIFICATIONS.

S. THERMAL LINING SYSTEM

1. THE BASIS OF DESIGN FOR THE THERMAL LINING SYSTEM IS HTL SYSTEM 203, MANUFACTURED BY HIGH TEMPERATURE LININGS, INC. OF WHITESTONE, VIRGINIA AT (800) 411-6313. SEE SPECIFICATION SECTION 070001 FOR SYSTEM COMPONENT REQUIREMENTS, PERFORMANCE REQUIREMENTS, QUALIFICATION PROCEDURE, AND SUBMITTAL REQUIREMENTS.
2. INSTALL THERMAL LININGS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER. INSTALLATION SHALL BE PERFORMED BY A MANUFACTURER-APPROVED INSTALLER.
3. THE THERMAL LINING INSTALLER REQUIRES THE FOLLOWING SEQUENCE OF CONSTRUCTION TO COORDINATE INSTALLATION OF THERMAL LININGS AND MASONRY WALLS:
    1. CONSTRUCT THE CONCRETE FRAME AND STRUCTURE.
    2. CONSTRUCT EXTERIOR MASONRY WALLS.
    3. INSTALL THERMAL LININGS ON CEILINGS.
    4. CONSTRUCT INTERIOR MASONRY WALLS.
    5. INSTALL BRACING ANGLES & BRACING ASSEMBLIES AT TOPS OF INTERIOR AND EXTERIOR WALLS FURNISHED BY MISC. METALS SUBCONTRACTOR, PLACED AT TOPS OF WALLS BY MASONRY SUBCONTRACTOR, AND FASTENED TO CEILING BY GENERAL CONTRACTOR.
4. PER THE REQUIREMENTS OF THE LINING MANUFACTURER, THE OWNER/USER WILL PERFORM A "PRE-BURN" AT LEAST ONE DAY BEFORE TRAINING BEGINS TO PROPERLY DRY OUT AND CURE THE THERMAL LININGS. THE THERMAL LINING MANUFACTURER'S RECOMMENDATIONS ARE AS FOLLOWS:
    1. BURN 2 WOOD PALLETS AND A BAIL OF STRAW IN EACH ROOM THAT CONTAINS THERMAL LINING TILES.
    2. ALLOW THE FIRE TO BURN UNTIL NEARLY EXHAUSTED.
    3. AT THIS POINT, ADD 2 MORE PALLETS AND BURN AGAIN UNTIL NEARLY EXHAUSTED.
    4. REPEAT FOR A TOTAL OF 4 TIMES (8 PALLETS).
    5. LET THE FIRE BURN OUT COMPLETELY WITHOUT THE USE OF WATER TO EXTINGUISH THE FIRE.
    6. DO NOT BURN ALL 8 PALLETS AT THE SAME TIME.
5. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION ABOUT THERMAL LININGS. SEE DRAWINGS FOR DETAILS AND HOW LINING INSTALLATION MUST BE COORDINATED WITH CONCRETE, MASONRY, AND METALS INSTALLATION.

T. TESTING AND INSPECTIONS OF ROPE TIE-OFF POINTS

1. OWNER'S TESTING AGENCY SHALL TEST EACH ROPE ANCHOR ASSEMBLY AND ROPE FRAME ASSEMBLY WITH A 5,000-POUND PULL TEST, AS FOLLOWS:
    A. SURFACE-MOUNTED ROPE ANCHOR ASSEMBLY: PULL TEST ON HOIST RING PERPENDICULAR TO THE SLAB OR WALL SURFACE ON WHICH ASSEMBLY IS ATTACHED.
    B. ROPE FRAME ASSEMBLY: PULL TEST AT TOP OF FRAME AT EACH CORNER OF FRAME PERPENDICULAR TO SLAB SURFACE, TESTING ONE CORNER AT A TIME.

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056
DATE ISSUED
01/10/25
PROJECT STATUS
ISSUE FOR BID
SHEET
BURN BUILDING - GENERAL NOTES

BB001

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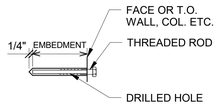
TABLE 1 - CONCRETE PROPERTIES			
STRUCTURE TYPE	f'c (MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS) (psi)	MAXIMUM WATER/CEMENT RATIO	AIR RANGE (%)
ROOF & FLOOR SLABS, SLAB-ON-GRADE, COLUMNS, WALLS, PIERS, FOOTINGS, & FOUNDATIONS	5,000	0.40	6% ± 1 1/2% (ENTRAINED)

TABLE 2 - CONCRETE PROTECTION FOR STEEL REINFORCEMENT	
STRUCTURE TYPE	MINIMUM CLEAR COVER (UNLESS OTHERWISE NOTED ON DRAWINGS)
ELEVATED SLABS & STAIRS	1 1/2" TO BOTTOM BARS, 2" SIDE COVER FOR ALL BARS 2" TO TOP BARS
WALLS	FOR SINGLE LAYER, CENTER BARS IN WALLS. FOR DOUBLE LAYER, 2" TO OUTERMOST BARS.
COLUMNS & PIERS	2" TO VERTICAL BARS 1 5/8" TO TIES
FOOTINGS AND OTHER EARTH FORMED CONCRETE	3"

TABLE 3 - STRUCTURAL STEEL PROPERTIES			
SHAPE	ASTM DESIGNATION	GRADE	MIN. YIELD STRENGTH (Fy)
PLATES & ANGLES	A-36	---	36 KSI
WIDE FLANGES	A-992	---	50 KSI
CHANNELS	A-572	---	50 KSI
HSS RECT.	A-500	C	50 KSI
HSS ROUND	A-53*	B	35 KSI

* A-500, GRADE C, 46 KSI IS AN ACCEPTABLE ALTERNATE FOR A-53 AS LONG AS PIPE SIZES MEET REQUIREMENTS SHOWN ON DRAWINGS.

ADHESIVE ANCHOR SCHEDULE/EPOXY			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN GROUT-FILLED CMU	
		TENSION (lbs)	SHEAR (lbs)
3/8" (HY70)	3 3/8"	1,240	850
1/2" (HY70)	4 1/2"	2,035	1,495
5/8" (HY70)	5 5/8"	2,840	2,615
ANCHOR DIAMETER	EMBEDMENT DEPTH	FACTORED LOADS IN 4,000 PSI CRACKED CONCRETE	
		TENSION (lbs)	SHEAR (lbs)
3/8" (HY200)	3 3/8"	4,335	2,630
1/2" (HY200)	4 1/2"	6,670	4,815
5/8" (HY200)	5 5/8"	9,325	7,670
3/4" (HY200)	6 3/4"	12,255	11,330

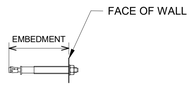


ADHESIVE ANCHOR

NOTES:

1. WHERE INSTALLED IN HOLLOW, GROUTED OR SOLID CMU, PROVIDE HILTI HIT HY70 WITH HAS RODS, MANUFACTURED BY HILTI FASTENING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
2. WHERE INSTALLED IN CONCRETE, PROVIDE HILTI HIT HY200 WITH HIT-Z RODS, MANUFACTURED BY HILTI FABRICATING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
3. PROVIDE STAINLESS STEEL ADHESIVE ANCHORS UNLESS OTHERWISE NOTED.
4. IF DRAWINGS CALL FOR EPOXYING REBAR INTO CONCRETE, USE ADHESIVE ANCHOR SCHEDULE/EPOXY TABLE.

SLEEVE ANCHOR SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN HOLLOW CMU	
		TENSION (lbs)	SHEAR (lbs)
3/8"	1 1/2"	470	890



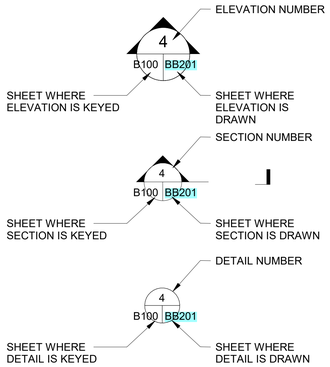
SLEEVE ANCHOR

NOTES:

1. PROVIDE HILTI HLC-HX SS 304 SLEEVE ANCHORS MANUFACTURED BY HILTI FASTENING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
2. PROVIDE 304 STAINLESS STEEL ANCHORS, U.O.N.

LEGEND

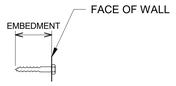
CONCRETE
PLYWOOD
EARTH
RIGID INSULATION OR THERMAL LINING SYSTEM
GRAVEL
THERMAL LINING IN PLAN OR SECTION
GROUT
STEEL
FIRE BRICK
CMU IN SECTION
WOOD FRAMING
GROUTED CMU IN SECTION
NORTH
MASONRY IN ELEVATION



DETAIL KEY

100 ROOM NUMBER
1 DOOR TYPE
R ADDITIONAL REINFORCING
1 REVISION

CONCRETE ANCHOR SCREW SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN 4,000 PSI CONCRETE	
		TENSION (lbs)	SHEAR (lbs)
1/4"	1 3/4"	255	540

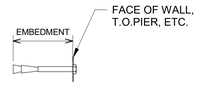


CONCRETE SCREW ANCHOR

NOTES:

1. UNLESS SHOWN AS STAINLESS STEEL, PROVIDE CONCRETE ANCHOR SCREWS THAT ARE MANUFACTURED FROM AISI 1022 STEEL WITH AN EXTENDED CORROSION RESISTANT COATING THAT IS COMPATIBLE WITH GALVANIZED STEEL.
2. PROVIDE CONCRETE ANCHOR SCREWS MANUFACTURED BY ITW RAMSET/REDHEAD, OR AN APPROVED EQUIVALENT BY HILTI FASTENING SYSTEMS OR POWERS FASTENERS, INC. (FORMERLY RAWL).

EXPANSION ANCHOR SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN 4,000 PSI CONCRETE	
		TENSION (lbs)	SHEAR (lbs)
1/4"	2"	705	805
3/8"	2 1/2"	1,575	1,590
1/2"	3 1/2"	2,510	3,045
5/8"	4"	3,340	4,650
3/4"	4 3/4"	3,870	5,645



EXPANSION ANCHOR

NOTES:

1. PROVIDE STUD TYPE EXPANSION ANCHORS WITH A SINGLE THREE PIECE SECTION WEDGE THAT MEET THE DESCRIPTION IN FEDERAL SPECIFICATION A-A-1923A, TYPE 4.
2. PROVIDE HILTI KWIK BOLT 3, MANUFACTURED BY HILTI FASTENING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
3. PROVIDE 316 STAINLESS STEEL ANCHORS, U.O.N.

ABBREVIATIONS

&	AND
L.	ANGLE
@	AT
#	NUMBER
ø	DIAMETER
(E)	EXISTING
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
B	BOTTOM BAR(S)
BM	BOTTOMMOST BAR(S)
BLDG.	BUILDING
BM.	BEAM(S)
BOT.	BOTTOM
BRG.	BEARING
BSMT.	BASEMENT
CS	COLUMN STRIP
C.	COURSE(S)
C.C.	CENTER TO CENTER
C.E.	CONTINUOUS END
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
CL	CENTERLINE
CLG.	CEILING
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
C.O.	CLEAR OPENING
COMP.	COMPOSITE
COL.	COLUMN
CONC.	CONCRETE
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CTR.	CENTER
C.Y.	CUBIC YARD
D.E.	DISCONTINUOUS END
DBL.	DOUBLE
DEMO.	DEMOLISH, DEMOLITION
DIA.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
D.P.	DRILLED PIER
DTL.	DETAIL
DWG.	DRAWING(S)
EA.	EACH
E.E.	EACH END
E.F.	EACH FACE
E.F.P.	EQUIVALENT FLUID PRESSURE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
ENGR.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EQUIV.	EQUIVALENT
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FINISH FLOOR
FDN.	FOUNDATION(S)
FLR.	FLOOR
F.O.	FACE OF
FT.	FOOT OR FEET
FTG.	FOOTING(S)
FUT.	FUTURE
G.B.	GRADE BEAM
GA.	GAUGE
GALV.	GALVANIZED
GEN.	GENERAL
H.A.S.	HEADED ANCHOR STUD
HDR.	HEADER
HORIZ.	HORIZONTAL
HI.	HIGH
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
IN.	INCH
INT.	INTERMEDIATE
JT.	JOINT
K.S.F.	KIPS PER SQUARE FOOT
K.S.I.	KIPS PER SQUARE INCH
L.E.	LEFT END
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG.	LONGITUDINAL
LW	LIGHTWEIGHT
LO.	LOW
MS	MIDDLE STRIP
M.O.	MASONRY OPENING
MAS.	MASONRY
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO. OR #	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OPNG.	OPENING
OPP.	OPPOSITE
P.C.	PRE-CAST
PL.	PLATE
PREFAB.	PREFABRICATED
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	POST-TENSIONED
PVC.	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
RAD.	RADIUS
R.E.	RIGHT END
REINF.	REINFORCING / REINFORCEMENT
REV.	REVISION
SCHED.	SCHEDULE
SECT.	SECTION
S.F.	SQUARE FEET
SIM.	SIMILAR
S.O.G.	SLAB-ON-GRADE
SPECS.	SPECIFICATION(S)
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
SYM.	SYMMETRICAL
T	TOP BAR(S)
TM	TOPMOST BAR(S)
T.&B.	TOP AND BOTTOM
T.&G.	TONGUE AND GROOVE
T.L.	THERMAL LINING
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TRANS.	TRANSVERSE
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
W/	WITH
W/O	WITHOUT
W.P.	WORK POINT
WT.	WEIGHT
W.W.R.	WELDED WIRE REINFORCEMENT

TYPICAL REINFORCING LAP SPLICE SCHEDULE												
BAR SIZE	NORMAL WEIGHT CONCRETE										MASONRY	
	FOUNDATION		BEAM		SLAB		WALL		COL.		WALL	
	BOT.	TOP	BOT.	TOP	INT.	EXT.	VERT.	HORIZ.	VERT.		(1) BAR PER CELL	
											VERT.	HORIZ.
#3	1'-10"	2'-4"	1'-7"	2'-1"	1'-7"	1'-7"	1'-7"	1'-7"	1'-3"		1'-7"	1'-7"
#4	2'-5"	3'-2"	2'-1"	2'-8"	2'-1"	2'-1"	2'-1"	2'-1"	1'-7"		2'-1"	2'-1"
#5	3'-0"	3-11"	2'-7"	3'-5"	2'-7"	2'-7"	2'-7"	2'-7"	2'-0"		2'-7"	2'-7"
#6	3'-7"	4'-8"	3'-1"	4'-1"	3'-1"	3'-1"	3'-1"	3'-1"	2'-5"		4'-9"	4'-9"
#7	5'-3"	6'-9"	4'-6"	5'-11"	---	---	4'-6"	4'-6"	3'-6"		6'-7"	6'-7"
#8	6'-0"	7'-9"	5'-2"	6'-9"	---	---	5'-2"	5'-2"	4'-0"		---	---
#9	6'-9"	8'-9"	5'-10"	7'-7"	---	---	5'-9"	5'-9"	4'-6"		---	---
#10	7'-7"	9'-10"	6'-9"	8'-6"	---	---	---	---	---		---	---
#11	---	---	7'-3"	9'-5"	---	---	---	---	---		---	---

NOTES:

1. VALUES SHOWN ARE MIN. LAP SPLICE LENGTHS IN NORMAL WEIGHT CONC. OR GROUT FILLED MAS.
2. TOP BARS ARE DEFINED AS BARS WITH MORE THAN 12" OF FRESH CONC. BELOW.
3. FOR MIN. BAR DEVELOPMENT LENGTH, DIVIDE VALUES SHOWN IN LAP SPLICE SCHED. BY 1.3.
4. WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE LAP SPLICE DIMENSION OF THE SMALLER BAR OR THE DEVELOPMENT LENGTH OF THE LARGER BAR, WHICHEVER IS LARGER.
5. FOR BEAMS AND COLUMNS, VALUES SHOWN APPLY WHERE ALL PROVISIONS OF EITHER ONE OF THE FOLLOWING TWO CASES APPLY:

CASE 1

1. MIN. CLR. SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN ONE BAR DIAMETER, AND
2. CLR. COVER NOT LESS THAN ONE BAR DIAMETER, AND
3. STIRRUPS OR TIES ARE PROVIDED THROUGHOUT REQUIRED LENGTH OF LAP SPLICE OR DEVELOPMENT LENGTH.

OR

CASE 2

1. MIN. CLR. SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN TWO BAR DIAMETERS.
2. CLR. COVER NOT LESS THAN ONE BAR DIAMETER.
3. STIRRUPS OR TIES ARE NOT PROVIDED THROUGHOUT REQUIRED LENGTH OF LAP SPLICE OR DEVELOPMENT LENGTH.

WHERE ANY OF THESE PROVISIONS WITHIN THE APPLICABLE CASE ARE NOT MET, MULTIPLY VALUES SHOWN IN LAP SPLICE SCHEDULE BY 1.5.

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EWS - FIRE & RESCUE TRAINING CENTER
WAKE TECHNICAL COMMUNITY COLLEGE
5345 ROLESVILLE RD, WENDELL, NC 27591
NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056
DATE ISSUED
01/10/25
PROJECT STATUS
ISSUE FOR BID
SHEET
BURN BUILDING - TABLES, LEGEND & ABBREVIATIONS

BB002

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

NAME OF PROJECT: EWS - FIRE & RESCUE TRAINING CENTER
ADDRESS: 5345 ROLESVILLE RD, WENDELL, NC 27591 ZIP CODE: 27603
OWNER/AUTHORIZED AGENT: WAKE TECHNICAL COMMUNITY COLLEGE PHONE: 919.866.6139 EMAIL: jfwicker@waketech.edu
OWNED BY: NCCCS NO. 2303 ☐ CITY/COUNTY ☐ PRIVATE ■ STATE
CODE ENFORCEMENT JURISDICTION: ☐ CITY - ■ COUNTY WAKE ■ STATE

CONTACT: KRISTEN M. HESS, AIA

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
ARCHITECTURAL	HH ARCHITECTURE	KRISTEN M. HESS, AIA	9290	919.828.2301	khess@hh-arch.com
CIVIL	STEWART	ROY LORENZEN	15834	919.866.4813	rlorenzen@stewartinc.com
ELECTRICAL	-	-	-	-	-
FIRE ALARM	-	-	-	-	-
PLUMBING	-	-	-	-	-
MECHANICAL	-	-	-	-	-
SPRINKLER-STANDPIPE	-	-	-	-	-
STRUCTURAL	EL&M	ROGER LEBOEUF	029858	703.321.2100	roger@elaengineers.com
RETAINING WALLS > 5' HIGH	-	-	-	-	-
PRE-CAST	-	-	-	-	-
TRUSS	-	-	-	-	-
LANDSCAPE	-	-	-	-	-
HAZMAT	-	-	-	-	-

2018 NC BUILDING CODE: ■ NEW BUILDING ☐ ADDITION ☐ RENOVATION
☐ 1st TIME INTERIOR COMPLETION
☐ SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS
☐ PHASED CONSTRUCTION - SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS

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

CONSTRUCTED (date): - **CURRENT OCCUPANCY(S)** (Ch. 3): -
RENOVATED (date): - **PROPOSED OCCUPANCY(S)** (Ch. 3): -

RISK CATEGORY (Table 1604.5): **CURRENT:** ☐ I ☐ II ☐ III ☐ IV
PROPOSED: ☐ I ■ II ☐ III ☐ IV

CONSTRUCTED (date): - ORIGINAL USE(S) (Ch. 3): - PROPOSED USE(S) (Ch. 3): -
RENOVATED (date): - CURRENT USE(S) (Ch. 3): -

BASIC BUILDING DATA

CONSTRUCTION TYPE: ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV-A ☐ V-A ☐ V-B
(check all that apply)
SPRINKLERS: ■ NO ☐ PARTIAL ☐ YES ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
STANDPIPES: ■ NO ☐ YES CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY
FIRE DISTRICT: ■ NO ☐ YES
FLOOD HAZARD AREA: ■ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: ☐ NO ■ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES AND REQUIREMENTS.)

GROSS BUILDING AREA TABLE

FLOOR	(SQ FT)	SUB-TOTAL	
6th FLOOR	1,506	1,506	-
5th FLOOR	1,506	3,012	-
4th FLOOR	1,506	4,518	-
3rd FLOOR	1,506	6,024	-
2nd FLOOR	1,506	7,530	
1st FLOOR	1,506	9,036	
TOTAL	9,036	9,036	- SF

ALLOWABLE AREA

PRIMARY OCCUPANCY CLASSIFICATION(S):
ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
BUSINESS ☐
EDUCATIONAL ☐
FACTORY ☐ F-1 MODERATE ☐ F-2 LOW
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM
INSTITUTIONAL ☐ I-1 CONDITION ☐ 1 ☐ 2
☐ I-2 CONDITION ☐ 1 ☐ 2
☐ I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
MERCANTILE ☐
RESIDENTIAL ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
STORAGE ☐ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED
☐ PARKING GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE
UTILITY AND MISCELLANEOUS ■

ACCESSORY OCCUPANCY CLASSIFICATION(S): -
INCIDENTAL USES (Table 509): -
SPECIAL USES (Chapter 4 - List Code Sections): -
SPECIAL PROVISIONS (Chapter 5 - List Code Sections): -
MIXED OCCUPANCY: ☐ NO ☐ YES SEPARATION: - HR. EXCEPTION: -

☐ **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.

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

STORY NO.	DESCRIPTION AND 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] Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (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 formula: $I_f = 100[F/P - 0.25] \times W/30 =$ _____ (%)
[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. The maximum area of air traffic control towers must comply with Table 412.3.1.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET (Table 504.3)	65	10'-0"(RA),20'-0"(AT)	IBC
BUILDING HEIGHT IN STORIES (Table 504.4)	5	1 (RA), 2 (AT)	IBC

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (w/ ____ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GIRDERS, TRUSSES	-	-		-	-	-	-
BEARING WALLS	-	-	-	-	-	-	-
- EXTERIOR							
- NORTH	-	-	-	-	-	-	-
- EAST	-	-	-	-	-	-	-
- WEST	-	-	-	-	-	-	-
- SOUTH	-	-	-	-	-	-	-
- INTERIOR	-	-	-	-	-	-	-
NONBEARING WALLS AND PARTITIONS							
- EXTERIOR WALLS							
- NORTH							
- EAST							
- WEST							
- SOUTH							
- INTERIOR WALLS & PARTITIONS							
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS							
FLOOR CEILING ASSEMBLY							
- COVERING SUPPORTING FLOORS							
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS							
ROOF CEILING ASSEMBLY							
COLUMNS SUPPORTING ROOF							
- PARTS ENCLOSING EXIT							
SHAFT ENCLOSURES - OTHER							
CORRIDOR SEPARATION							
OCCUPANCY/FIRE BARRIER SEPARATION							
SMOKE/FIRE WALL SEPARATION							
SMOKE BARRIER SEPARATION							
SMOKE PARTITION							
TENANT / DWELLING UNIT / SLEEPING UNIT SEPARATION							
INCIDENTAL USE SEPARATION							

NOT APPLICABLE

Indicates section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
-	-	-	-

LIFE SAFETY SYSTEM REQUIREMENTS

EMERGENCY LIGHTING: ☐ NO ☐ YES
EXIT SIGNS: ☐ NO ☐ YES
FIRE ALARM: ☐ NO ☐ YES
SMOKE DETECTION SYSTEM: ☐ NO ☐ YES ☐ PARTIAL _____
CARBON MONOXIDE DETECTION: ☐ NO ☐ YES

LIFE SAFETY PLAN REQUIREMENTS

LIFE SAFETY PLAN SHEET #: _____
☐ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7)
☐ ASSUMED AND REAL PROPERTY LINE LOCATIONS (IF APPLICABLE TO PLAN)
☐ EXTERIOR WALL OPENING AREA WITH RESPECT TO ASSUMED PROPERTY LINES (705.8)
☐ OCCUPANCY USE FOR EACH AREA AS IT RELATES TO TENANT LOAD CALCULATION (TABLE 1004.1.2)
☐ OCCUPANT LOADS FOR EACH AREA
☐ EXIT ACCESS TRAVEL DISTANCES (1017)
☐ COMMON PATH OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
☐ DEAD-END LENGTHS (1020.4)
☐ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
☐ MAX. CALCULATED OCC. 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
☐ 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 (1010.1.9.8)
☐ 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

NOT APPLICABLE

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 # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH VAN SPACES WITH			
			96" ACCESS AISLE	132" ACCESS AISLE	8' ACCESS AISLE	
-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-

NOT APPLICABLE

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
EXIST'G		-	-	-	-	-	-	-	-	-	-
NEW		-	-	-	-	-	-	-	-	-	-
REQ'D		-	-	-	-	-	-	-	-	-	-

SPECIAL APPROVALS

SPECIAL APPROVAL (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, OFI, CHHS, ICC, ETC., DESCRIBE BELOW)

ENERGY SUMMARY

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

EXISTING BUILDING 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: MASONRY CAVITY WALL w/ CONT. RIGID INSUL.
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 UNCONDITION 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: -

NOT APPLICABLE

STRUCTURAL SUMMARY

DESIGN LOADS:
IMPORTANCE FACTORS: SNOW (I_S) 1.0
SEISMIC (I_E) 1.0
LIVE LOADS: ROOF 50 psf
MEZZANINE - psf
FLOOR 50 psf
GROUND SNOW LOAD: 15 psf
WIND LOAD: ULTIMATE WIND SPEED 115 mph (ASCE-7)
EXPOSURE CATEGORY C

SEISMIC DESIGN CATEGORY: ☐ A ■ B ☐ C ☐ D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
RISK CATEGORY (Table 1604.5) ☐ I ■ II ☐ III ☐ IV
SPECTRAL RESPONSE ACCELERATION S_S 0.147 %g S_1 0.074 %g
SITE CLASSIFICATION (ASCE 7) ☐ A ☐ B ☐ C ■ D
DATA SOURCE: ■ Field Test ☐ Presumptive ☐ Historical Data
BASIC STRUCTURAL SYSTEM ☐ Bearing Wall ☐ Dual w/ Special Moment Frame
☐ Building Frame ☐ Dual w/ Intermediate R/C
■ Moment Frame ☐ Inverted Pendulum or Special Steel
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) 2,500 psf
PRESUMPTIVE BEARING CAPACITY - psf
PILE SIZE, TYPE, AND CAPACITY -

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: -

ELECTRICAL SUMMARY

ELECTRICAL SYSTEMS AND EQUIPMENT:
METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ☐ PRESCRIPTIVE
ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE
LIGHTING SCHEDULE: (each fixture)
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 HVAC EQUIPMENT PERFORMANCE
☐ C406.3 REDUCED LIGHTING POWER DENSITY
☐ C406.4 ENHANCED DIGITAL LIGHTING CONTROLS
☐ C406.5 ON-SITE RENEWABLE ENERGY
☐ C406.6 DEDICATED OUTDOOR AIR SYSTEM
☐ C406.7 REDUCED ENERGY USE IN SERVICE WATER HEATING

NOT APPLICABLE

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August 20, 2024

James Briglia
HH Architecture
1100 Dresser Court
Raleigh, NC 27609

RE: Wake Technical Community College Live Fire Training Prop – Class A Burn Building
EL&M No.: 22056

Dear James,

This letter is to inform you of certain code compliance issues that are unique for the referenced project. We recommend you forward this information to the appropriate Government Reviewer, Building Official, and/or Permitting Office as soon as possible to make them aware of the unique nature of the intended design. We hope this information will assist them in their review of this project.

As we have discussed throughout the project, the Wake Technical Community College (WTCC) Live Fire Training Prop – Class A Burn Building will not be a "building" but rather a prop. It will be used by WTCC training center personnel to train able-bodied firefighters under live fire and other training scenarios. It will not be an occupied structure, except during training exercises.

During routine live fire training evolutions in the "Burn Building", WTCC training center personnel will deliberately burn Class A fuel materials, consisting of straw and wood, within the prop in order to instruct students in proper techniques for extinguishing fires, hose advancement, search and rescue, and other firefighting skills. At the end of each training day, WTCC training center personnel will fully extinguish all fires and secure the props, at which point they will remain unoccupied until the next time training occurs.

Given these uses, many items usually included (and required) in building design will not be incorporated into the design of these props, such as:

- exit signage
- panic hardware on doors
- fire protection system, except for a dry standpipe and a few sprinkler heads to be used solely as training tools
- smoke detectors
- HVAC systems
- lighting, including emergency lighting
- finishes (paint, carpeting, finished ceilings)
- ADA accessibility ramps, elevators, doorways, and automatic door openers
- glazing in window openings
- fire extinguishers.

Experience has shown that these items have no practical use and fail rapidly in the harsh fire training environments of these two props. In some cases, these items can create safety problems rather than improve safety. For example, a standard fire-rated metal door with panic hardware usually expands, warps, and sticks shut during live fire training exercises because of the repetitive heating and sudden cooling associated with training. When this happens, students and instructors can be trapped within the live fire training prop. As a result, the doors and window shutters will be detailed in a unique manner. Although they will not have panic hardware, they will provide a safer design.

We intend to design the structural components of the props in accordance with the 2018 version of the North Carolina State Building Code (2015 International Building Code, with North Carolina Amendments), including those requirements for snow, wind, and seismic loads. As much as practical for a live fire training props, other items, such as guardrail heights and stair tread/riser dimensions, will also follow the 2018 version of the North Carolina State Building Code. However, we will not be able to classify the "building occupancy" or the "type of construction" in accordance with the 2018 version of the North Carolina State Building Code because the live fire training props do not come close to meeting any of the defined "building occupancies", especially considering they are not buildings.

We have provided this design concept for over 140 state/municipal live fire training props and have never been denied a permit nor required to provide "inappropriate code items", such as panic hardware, within the props. We would be happy to provide additional information or discuss this matter with the appropriate government officials, if further design concept explanations are required.

Please call us if you need further information or if you have any questions.

Sincerely,

Roger M. LeBoeuf, P.E. (NC P.E. #029858)
President

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EWS - FIRE & RESCUE TRAINING CENTER
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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER 22056
DATE ISSUED 01/10/25
PROJECT STATUS ISSUE FOR BID
SHEET **BURN BUILDING - LIFE SAFETY PLAN**

BB003

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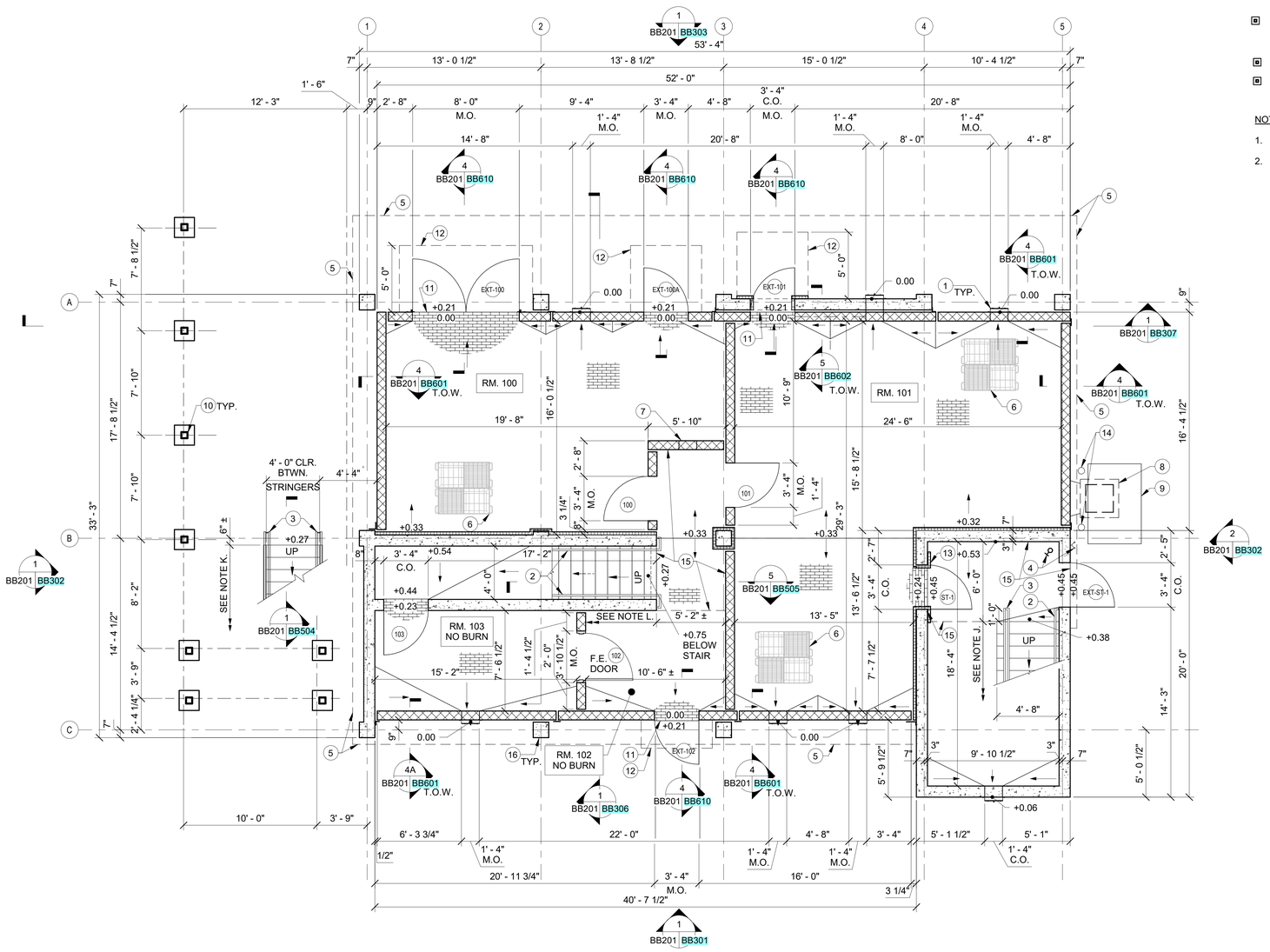

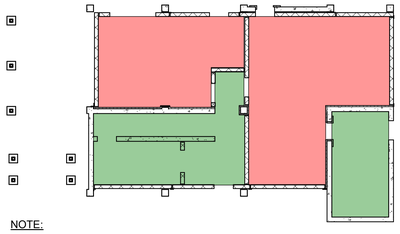

NOTE:

1. SEE 1/BB201 FOR MORE INFORMATION.
2. "NO BURN" AREAS ARE AREAS IN WHICH LIVE FIRES SHALL NOT BE BURNED BUT MIGHT HAVE SOME AMOUNT OF THERMAL PROTECTION DUE TO ANTICIPATED HEAT FROM ADJACENT BURN ROOMS. SEE FLOOR PLANS & FINISH SCHEDULE FOR EXTENTS OF THERMAL LININGS IN NO BURN AREAS.

2 BB201 FIRST FLOOR KEY PLAN

SCALE 3/32" = 1'-0"

FINISH SCHEDULE				
ROOM NOS.	CEILING FINISH	FLOOR FINISH	WALL FINISH	NOTES
100, 101	THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1 & 2.
102	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & CONC.	SEE NOTES 1 & 2.
103	CONCRETE	FIRE BRICK	CMU & CONC.	SEE NOTE 1.
200	THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1 & 3.
201, 202, 202A, 204	THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1, 2, & 3.
203	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1, 2, & 3.
205	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1, 2, & 3.
206	CONCRETE	FIRE BRICK	CMU & CONC.	SEE NOTE 1 & 3.
2ND FLOOR BALCONY	CONCRETE & THERMAL LINING ROLLOVER TILES	CONCRETE	CMU & CONC.	SEE NOTES 1 & 2.
300	THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1 & 3.
301	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1, 2, & 3.
302 & 304	THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1 & 3.
303	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & CONC.	SEE NOTES 1, 2, & 3.
INSET BALCONY	CONCRETE	CONCRETE	CMU & CONC.	SEE NOTE 1.
3RD FLOOR BALCONY	----	CONCRETE	CMU	SEE NOTE 1.
400, 406	THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1 & 3.
401, 407	THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1, 2, & 3.
402, 403, 405	CONCRETE	FIRE BRICK	CMU & CONC.	SEE NOTES 1 & 3.
404	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & CONC.	SEE NOTES 1, 2, & 3.
500	THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1 & 3.
501	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1, 2, & 3.
502, 503, 505, 507	CONCRETE	FIRE BRICK	CMU & CONC.	SEE NOTES 1 & 3.
504	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & CONC.	SEE NOTES 1, 2, & 3.
600	CONCRETE & THERMAL LINING SYSTEM	FIRE BRICK	CMU & CONC.	SEE NOTES 1, 2, & 3.
601	THERMAL LINING SYSTEM	FIRE BRICK	CMU	SEE NOTES 1 & 3.
602, 603	THERMAL LINING SYSTEM	FIRE BRICK	CMU & THERMAL LINING SYSTEM	SEE NOTES 1 & 3.
INTERIOR STAIRS	CONCRETE	CONCRETE	CONCRETE, EXCEPT CMU ABOVE 2ND FLOOR AT STRAIGHT RUN INTERIOR STAIR	SEE NOTES 1 & 4.

FINISH SCHEDULE NOTES:

1. ALL EXPOSED CONCRETE AND CMU SURFACES ARE UNPAINTED.
2. SEE PLANS FOR LOCATIONS AND EXTENTS OF THERMAL LINING SYSTEM ON CEILINGS AND WALLS.
3. SEE SPECIFICATIONS FOR CONCRETE COATING/SEALER ON TOP OF CONCRETE SLAB (BELOW LOOSE LAID FIRE BRICK AT SECOND THRU SIXTH FLOORS ONLY, NOT AT FIRST FLOOR).
4. PROVIDE THERMAL LINING SYSTEM AT CEILING AREA ABOVE MAIN LANDINGS IN STAIRWELLS.

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH ——►.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. DATUM IS AT ELEVATION 294.00'. FLOOR ELEVATIONS ARE NOTED AS +X.XX OR -X.XX IN FEET ABOVE OR BELOW DATUM.

C. SEE SITE DRAWINGS FOR TOP OF EXTERIOR FINISHED GRADE AND OTHER SITE ELEVATIONS.

D. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

E. AT DOORWAYS WITHOUT DOORS, PROVIDE FULL-HEIGHT OPENING WITH NO LINTEL AND PROVIDE BULLNOSED CORNERS AT BOTH JAMBS. ALSO PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL DOOR AND WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT CORNERS OF INTERIOR WALLS. CHAMFER CORNERS AT ENDS OF CONCRETE WALLS, AND BOTH WALL FACES AROUND PERIMETER OF ALL DOOR & WINDOW OPENINGS IN CONC. WALLS, EXCEPT WHERE THERE ARE THERMAL LININGS AT THAT WALL FACE.

F. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. XXX DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

G. AT 20 LOCATIONS IN 8" NON-BEARING CMU WALLS, PROVIDE 1/2" OPEN VERTICAL WALL JOINT AT NEAREST HEAD JOINT LOCATIONS PER DETAIL 2/BB601 U.O.N.

H. SEE GENERAL NOTES ON SHEET BB001 AND DETAILS ON SHEET BB602 FOR THERMAL LINING SYSTEM DETAILS.

J. 8T @ 11" = 7'-4", 9R @ 6 11/16±" = 5'-0"± FROM GROUND TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

K. 8T @ 11" = 7'-4", 9R @ 6 55/64±" = 5'-1 3/4" ± FROM GROUND TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

L. 17T @ 11" = 15' - 7", 1R@ 9 5/32"±, 17R @ 6 21/32"± = 10' - 0"±. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

M. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON- SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

N. LIVE FIRE TRAINING IS ALLOWED ONLY IN ROOMS 100 AND 101. NO BURNING IS ALLOWED IN ROOMS 102, 103, ON THE INTERIOR STAIRS, OR ON THE EXTERIOR STAIRS.

O. SEE 1/BB601 AND 2, 2A, 2B/BB602 FOR TOP OF WALL CONDITIONS AT INTERIOR WALLS.

1 BB201 FIRST FLOOR PLAN

SCALE 1/4" = 1'-0"

KEYED NOTES:

1. SCUPPERS PER SHEET BB603 (7 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL W/ HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
4. F.D.C. & DRY STANDPIPE PER P DRAWINGS.
5. EDGE OF SECOND FLOOR SLAB ABOVE.
6. PROVIDE (3) TOTAL BURN RACKS IN BURN ROOMS PER DETAIL 3/BB610.
7. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE PER DETAIL 6/BB603.
8. DEBRIS CHUTE ABOVE. ANGLE DEBRIS CHUTE AWAY FROM DOOR, EXT-ST-1.
9. DUMPSTER BY OWNER (N.I.C.).
10. STEEL TUBE COLUMN ON CONCRETE PIER PER FOUNDATION PLAN (12 THUS). TOPS OF ALL PIERS SHALL BE AT THE SAME ELEVATION, 3" MIN A.F.G.
11. PROVIDE HORIZ. SLOT IN TOP OF EXTERIOR PAVING AT DOORWAY PER DETAIL 4/BB610.
12. THERMAL LINING ROLLOVER TILES AT UNDERSIDE OF SLAB ABOVE FOR EXTENTS SHOWN ON PLAN.
13. THERMAL LINING ROLLOVER TILES AT DOOR JAMBS, & HEAD, INCLUDING WALL FACE ABOVE DOOR.
14. BOLLARD PER CIVIL DWGS.
15. THERMAL LINING AT CEILING FOR EXTENTS SHOWN ON PLAN.
16. CONCRETE COLUMN PER DETAIL 1/BB501 (11 THUS).

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NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - FIRST FLOOR PLAN**

BB201

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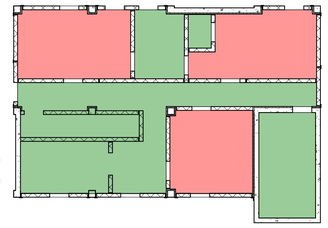
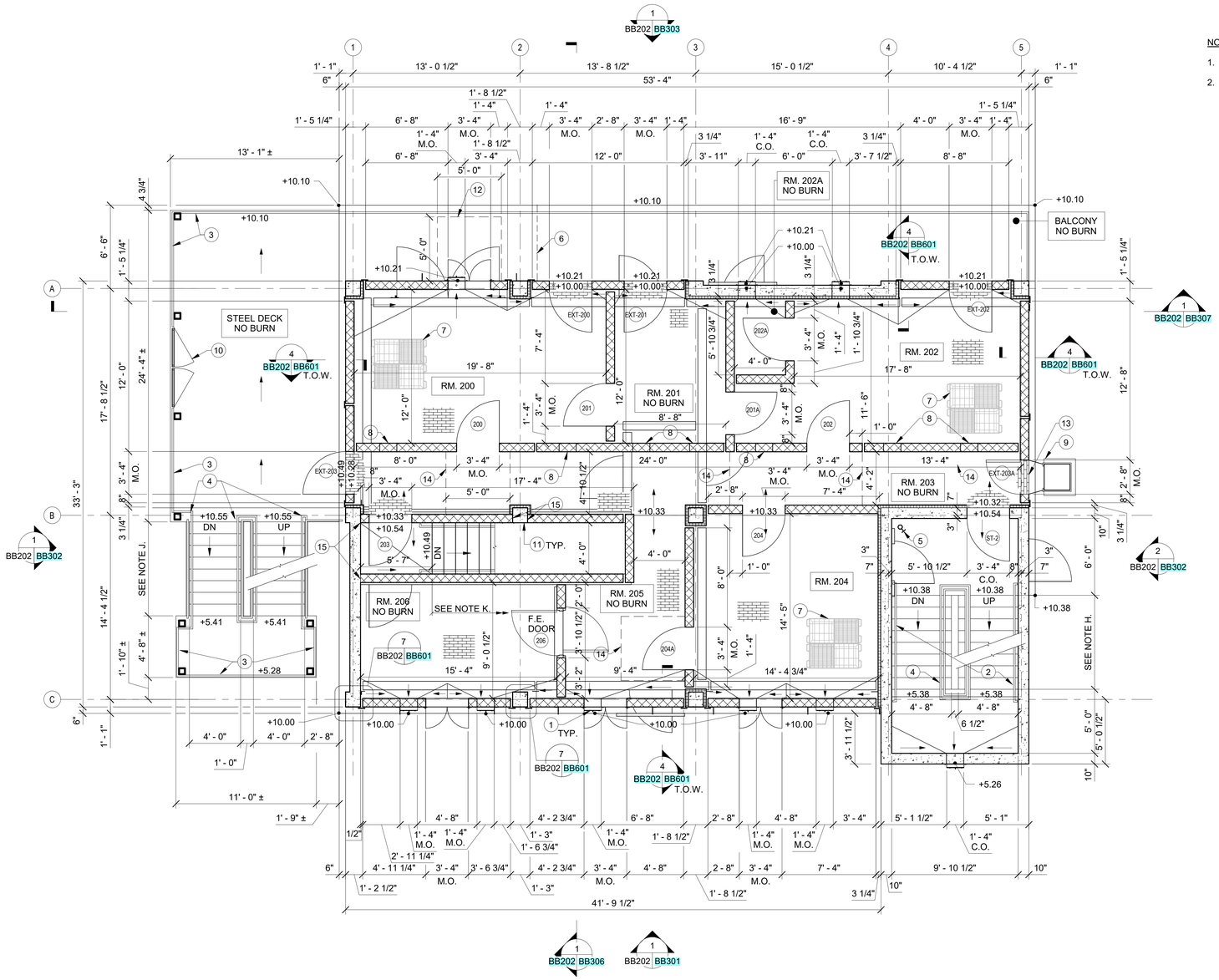


LEGEND	
	= NO BURN AREA
	= BURN AREA

NOTE:

1. SEE 1/BB202 FOR MORE INFORMATION.
2. "NO BURN" AREAS ARE AREAS IN WHICH LIVE FIRES SHALL NOT BE BURNED BUT MIGHT HAVE SOME AMOUNT OF THERMAL PROTECTION DUE TO ANTICIPATED HEAT FROM ADJACENT BURN ROOMS. SEE FLOOR PLANS & FINISH SCHEDULE FOR EXTENTS OF THERMAL LININGS IN NO BURN AREAS.

2 SECOND FLOOR KEY PLAN
BB202 BB202 SCALE 3/32" = 1'-0"



1 SECOND FLOOR PLAN
BB202 BB202 SCALE 1/4" = 1'-0"

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE AND TOP OF EXTERIOR STEEL DECK IS INDICATED WITH ——►.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

D. AT DOORWAYS WITHOUT DOORS, PROVIDE FULL-HEIGHT OPENING WITH NO LINTEL AND PROVIDE BULLNOSED CORNERS AT BOTH JAMBS. ALSO PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL DOOR AND WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT CORNERS OF INTERIOR WALLS. CHAMFER CORNERS AT ENDS OF CONCRETE WALLS, AND BOTH WALL FACES AROUND PERIMETER OF ALL DOOR & WINDOW OPENINGS IN CONC. WALLS, EXCEPT WHERE THERE ARE THERMAL LININGS AT THAT WALL FACE.

E. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. XXX DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

F. AT 37 LOCATIONS IN 8" NON-BEARING CMU WALLS, PROVIDE 1/2" OPEN VERTICAL WALL JOINT AT NEAREST HEAD JOINT LOCATIONS PER DETAIL 2/BB601 U.O.N.

G. SEE GENERAL NOTES ON SHEET BB001 AND DETAILS ON SHEET BB602 FOR THERMAL LINING SYSTEM DETAILS.

H. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM SECOND FLOOR DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM SECOND FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

J. 8T @ 11" = 7'-4", 9R @ 6 55/64±" = 5'-1 3/4" ± FROM SECOND FLOOR LANDING DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM SECOND FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

K. 17T @ 11" = 15' - 7", 18R @ 6 13/16"± = 10' - 2 5/8"± PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

L. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

M. LIVE FIRE TRAINING IS ALLOWED ONLY IN ROOMS 200, 202 AND 204. NO BURNING IS ALLOWED IN ROOMS 201, 202A, 203, 205, 206, ON THE BALCONY, ON THE INTERIOR STAIRS, OR ON THE EXTERIOR STAIRS.

N. SEE 1/BB601 AND 2, 2A, 2B/BB602 FOR TOP OF WALL CONDITIONS AT INTERIOR WALLS.

KEYED NOTES:

1. SCUPPERS PER SHEET BB603 (9 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL PER DETAIL 2/BB607.
4. FIXED GUARDRAIL W/HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
5. DRY STANDPIPE PER P DRAWINGS.
6. EDGE OF THIRD FLOOR SLAB ABOVE.
7. PROVIDE (3) TOTAL BURN RACKS IN BURN ROOMS PER DETAIL 3/BB610.
8. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE PER DETAIL 6/BB603.
9. DEBRIS CHUTE PER SHEET BB609.
10. DOUBLE-SWINGING GUARDRAIL GATE PER DETAIL 2/BB608.
11. CONCRETE COLUMN PER DETAIL 1/BB501 (11 THUS).
12. THERMAL LINING ROLLOVER TILES AT UNDERSIDE OF SLAB ABOVE FOR EXTENTS SHOWN ON PLAN.
13. FALL PROTECTION PER DETAIL 5/BB609.
14. THERMAL LINING AT CEILING FOR EXTENTS SHOWN ON PLAN.
15. CONNECT END OF CMU WALL TO CONC. COLUMN W/ DOVETAIL ANCHORS PER GEN. NOTE O.15 AND MORTAR TIGHT.

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NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**

SHEET **BURN BUILDING - SECOND FLOOR PLAN**

BB202

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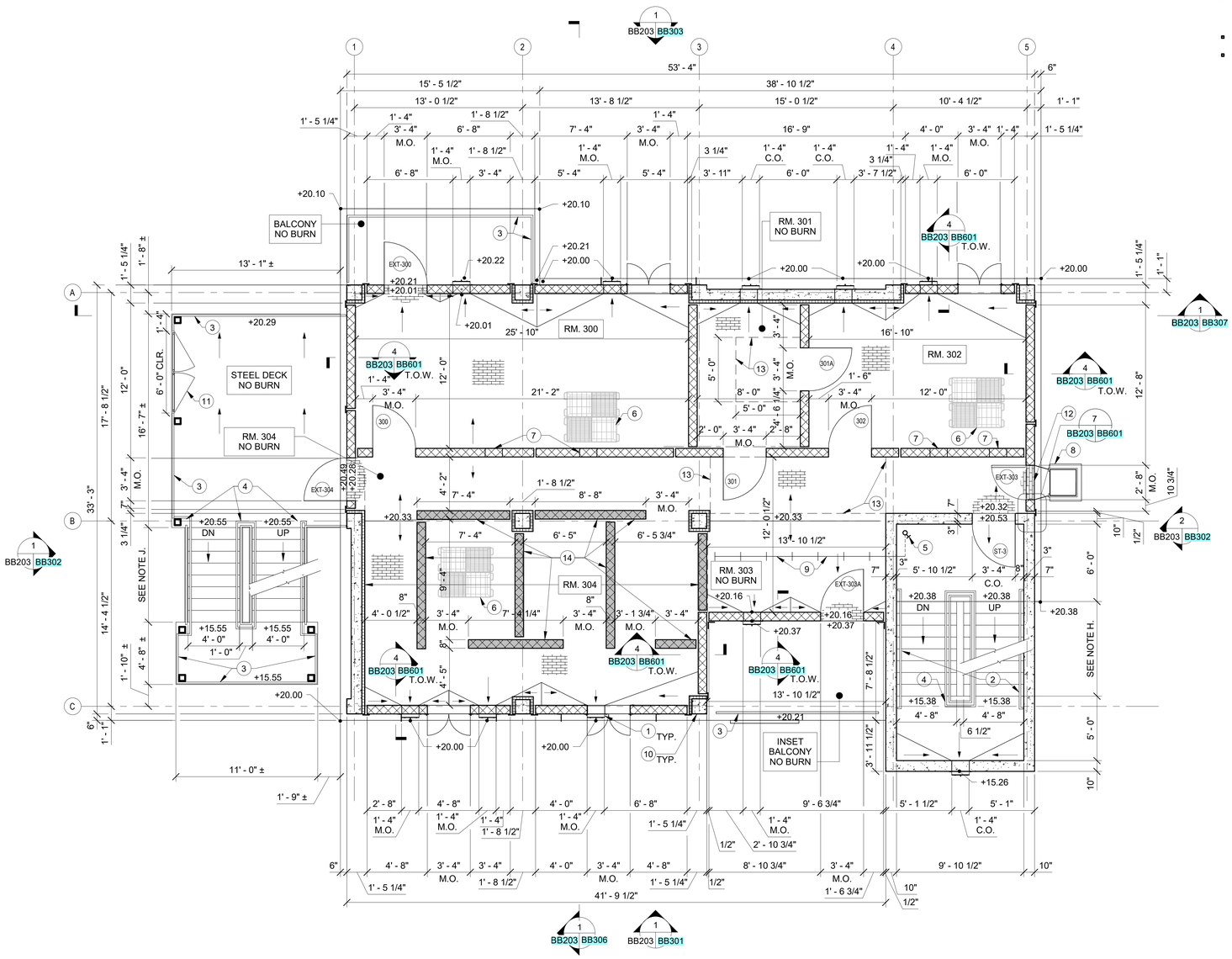

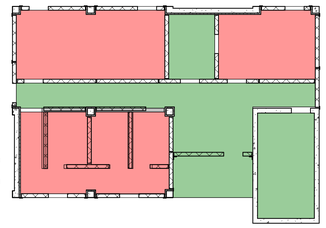

LEGEND

= NO BURN AREA

= BURN AREA

NOTE:

1. SEE 1/BB203 FOR MORE INFORMATION.
2. "NO BURN" AREAS ARE AREAS IN WHICH LIVE FIRES SHALL NOT BE BURNED BUT MIGHT HAVE SOME AMOUNT OF THERMAL PROTECTION DUE TO ANTICIPATED HEAT FROM ADJACENT BURN ROOMS. SEE FLOOR PLANS & FINISH SCHEDULE FOR EXTENTS OF THERMAL LININGS IN NO BURN AREAS.

2 THIRD FLOOR KEY PLAN
BB203 | BB203 SCALE 3/32" = 1'-0"

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE AND TOP OF EXTERIOR STEEL DECK IS INDICATED WITH ——►.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

D. AT DOORWAYS WITHOUT DOORS, PROVIDE FULL-HEIGHT OPENING WITH NO LINTEL AND PROVIDE BULLNOSED CORNERS AT BOTH JAMBS. ALSO PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL DOOR AND WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT CORNERS OF INTERIOR WALLS. CHAMFER CORNERS AT ENDS OF CONCRETE WALLS, AND BOTH WALL FACES AROUND PERIMETER OF ALL DOOR & WINDOW OPENINGS IN CONC. WALLS, EXCEPT WHERE THERE ARE THERMAL LININGS AT THAT WALL FACE.

E. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. XXX DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

F. AT 37 LOCATIONS IN 8" NON-BEARING CMU WALLS, PROVIDE 1/2" OPEN VERTICAL WALL JOINT AT NEAREST HEAD JOINT LOCATIONS PER DETAIL 2/BB601 U.O.N.

G. SEE GENERAL NOTES ON SHEET BB001 AND DETAILS ON SHEET BB602 FOR THERMAL LINING SYSTEM DETAILS.

H. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM THIRD FLOOR DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM THIRD FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

J. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0" FROM THIRD FLOOR LANDING DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0" FROM THIRD FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

K. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

L. LIVE FIRE TRAINING IS ALLOWED ONLY IN ROOMS 300, 302, AND 304. NO BURNING IS ALLOWED IN ROOMS 301, 303, ON THE BALCONY, ON THE INTERIOR STAIRS, OR ON THE EXTERIOR STAIRS.

M. SEE 1/BB601 AND 2, 2A, 2B/BB602 FOR TOP OF WALL CONDITIONS AT INTERIOR WALLS.

1 THIRD FLOOR PLAN
BB203 | BB203 SCALE 1/4" = 1'-0"

KEYED NOTES:

1. SCUPPERS PER SHEET BB603 (10 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL PER DETAIL 2/BB607.
4. FIXED GUARDRAIL W/HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
5. DRY STANDPIPE PER P DRAWINGS.
6. PROVIDE (3) TOTAL BURN RACKS IN BURN ROOMS PER DETAIL 3/BB610.
7. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE PER DETAIL 6/BB603.
8. DEBRIS CHUTE PER SHEET BB609.
9. SPRINKLER LAB PER P DRAWINGS.
10. CONCRETE COLUMN PER DETAIL 1/BB501 (11 THUS).
11. DOUBLE-SWINGING GUARDRAIL GATE PER DETAIL 2/BB608.
12. FALL PROTECTION PER DETAIL 5/BB609.
13. THERMAL LINING AT CEILING FOR EXTENTS SHOWN ON PLAN.
14. PARTIAL HEIGHT WALLS PER DETAIL 6/BB601.

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NO.	REVISION	DATE

JOB NUMBER **22056**
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PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - THIRD FLOOR PLAN**

BB203

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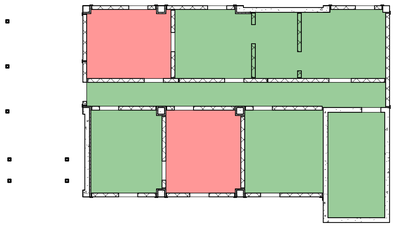


LEGEND

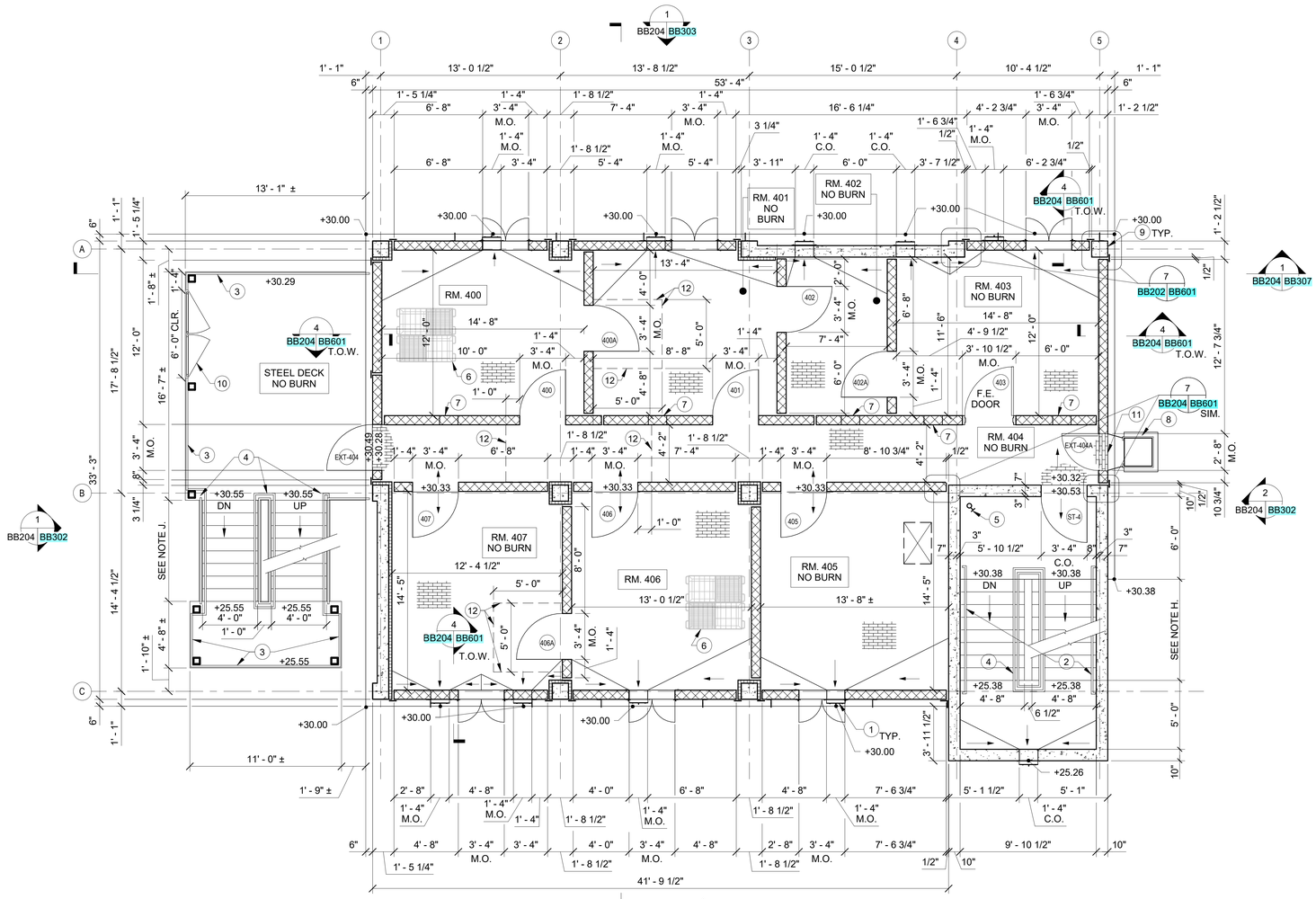
= NO BURN AREA

= BURN AREA

NOTE:

1. SEE 1/BB204 FOR MORE INFORMATION.
2. "NO BURN" AREAS ARE AREAS IN WHICH LIVE FIRES SHALL NOT BE BURNED BUT MIGHT HAVE SOME AMOUNT OF THERMAL PROTECTION DUE TO ANTICIPATED HEAT FROM ADJACENT BURN ROOMS. SEE FLOOR PLANS & FINISH SCHEDULE FOR EXTENTS OF THERMAL LININGS IN NO BURN AREAS.

2 FOURTH FLOOR KEY PLAN
BB204 BB204 SCALE 3/32" = 1'-0"



NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE AND TOP OF EXTERIOR STEEL DECK IS INDICATED WITH ⟶ .

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

D. AT DOORWAYS WITHOUT DOORS, PROVIDE FULL-HEIGHT OPENING WITH NO LINTEL AND PROVIDE BULLNOSED CORNERS AT BOTH JAMBS. ALSO PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL DOOR AND WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT CORNERS OF INTERIOR WALLS. CHAMFER CORNERS AT ENDS OF CONCRETE WALLS, AND BOTH WALL FACES AROUND PERIMETER OF ALL DOOR & WINDOW OPENINGS IN CONC. WALLS, EXCEPT WHERE THERE ARE THERMAL LININGS AT THAT WALL FACE.

E. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. XXX DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

F. AT 37 LOCATIONS IN INTERIOR 8" NON-BEARING CMU WALLS, PROVIDE 1/2" OPEN VERTICAL WALL JOINT AT NEAREST HEAD JOINT LOCATIONS PER DETAIL 2/BB601 U.O.N.

G. SEE GENERAL NOTES ON SHEET BB001 AND DETAILS ON SHEET BB602 FOR THERMAL LINING SYSTEM DETAILS.

H. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FOURTH FLOOR DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FOURTH FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

J. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FOURTH FLOOR LANDING DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0" FROM FOURTH FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

K. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

L. LIVE FIRE TRAINING IS ALLOWED ONLY IN ROOMS 400 AND 406. NO BURNING IS ALLOWED IN ROOMS 401, 402, 403, 404, 405, 407, ON THE INTERIOR STAIRS, OR ON THE EXTERIOR STAIRS.

M. SEE 1/BB601 AND 2, 2A, 2B/BB602 FOR TOP OF WALL CONDITIONS AT INTERIOR WALLS.

1 FOURTH FLOOR PLAN
BB204 BB204 SCALE 1/4" = 1'-0"

KEYED NOTES:

1. SCUPPERS PER SHEET BB603 (10 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL PER DETAIL 2/BB607.
4. FIXED GUARDRAIL W/HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
5. DRY STANDPIPE PER P DRAWINGS.
6. PROVIDE (2) TOTAL BURN RACKS IN BURN ROOMS PER DETAIL 3/BB610.
7. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE PER DETAIL 6/BB603.
8. DEBRIS CHUTE PER SHEET BB609.
9. CONCRETE COLUMN PER DETAIL 1/BB501 (11 THUS).
10. DOUBLE-SWINGING GUARDRAIL GATE PER DETAIL 2/BB608.
11. FALL PROTECTION PER DETAIL 5/BB609.
12. THERMAL LINING AT CEILING FOR EXTENTS SHOWN ON PLAN.

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JOB NUMBER **22056**
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PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - FOURTH FLOOR PLAN**

BB204

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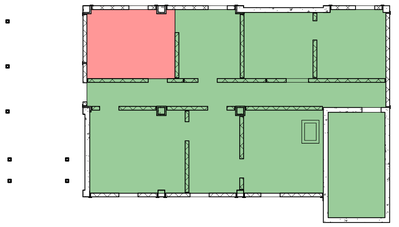


LEGEND

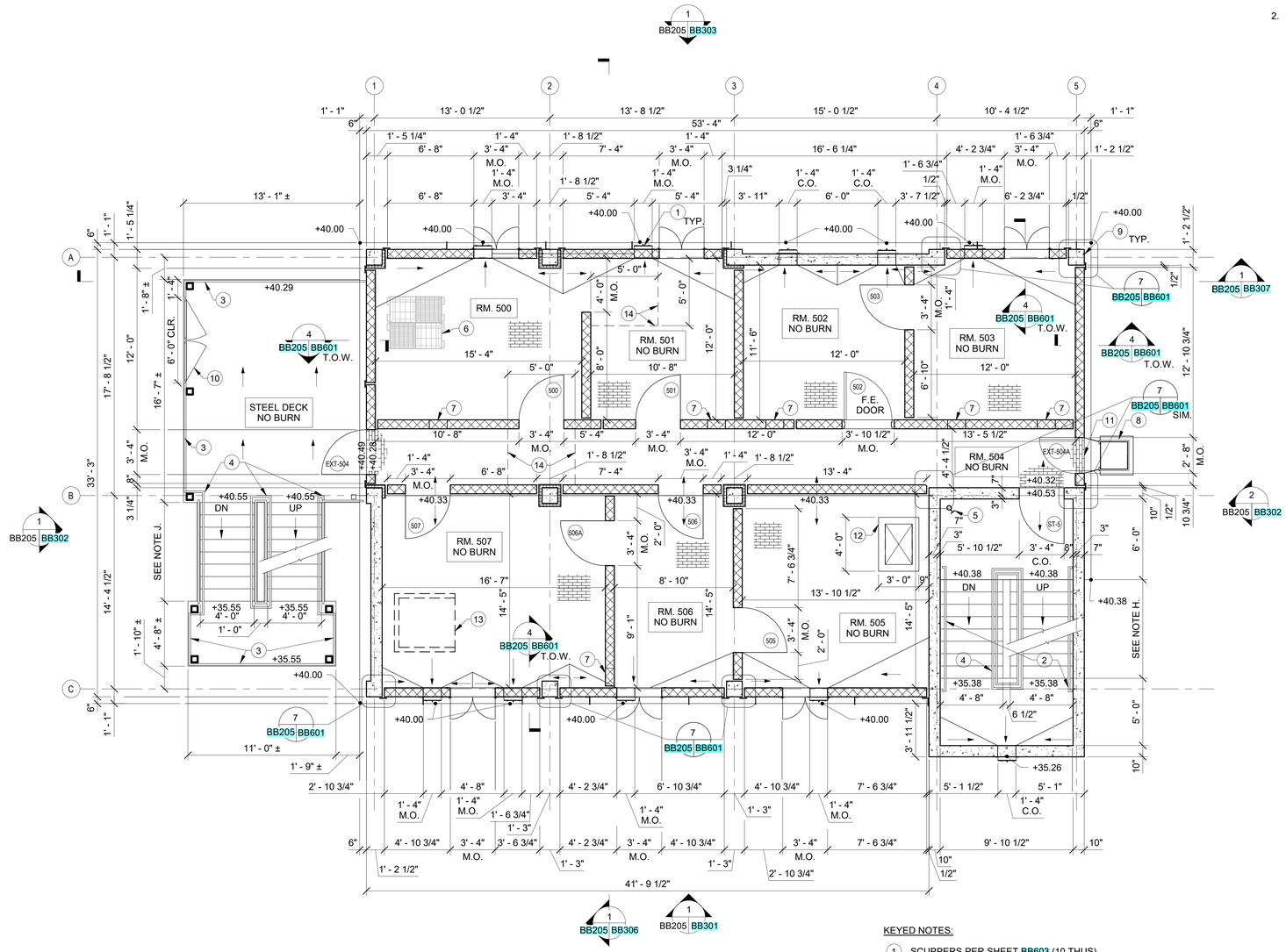
= NO BURN AREA

= BURN AREA

NOTE:

1. SEE 1/BB205 FOR MORE INFORMATION.
2. "NO BURN" AREAS ARE AREAS IN WHICH LIVE FIRES SHALL NOT BE BURNED BUT MIGHT HAVE SOME AMOUNT OF THERMAL PROTECTION DUE TO ANTICIPATED HEAT FROM ADJACENT BURN ROOMS. SEE FLOOR PLANS & FINISH SCHEDULE FOR EXTENTS OF THERMAL LININGS IN NO BURN AREAS.

2 FIFTH FLOOR KEY PLAN
BB205 BB205 SCALE 3/32" = 1'-0"



1 FIFTH FLOOR PLAN
BB205 BB205 SCALE 1/4" = 1'-0"

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE AND TOP OF EXTERIOR STEEL DECK IS INDICATED WITH ——►.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

D. AT DOORWAYS WITHOUT DOORS, PROVIDE FULL-HEIGHT OPENING WITH NO LINTEL AND PROVIDE BULLNOSED CORNERS AT BOTH JAMBS. ALSO PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL DOOR AND WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT CORNERS OF INTERIOR WALLS. CHAMFER CORNERS AT ENDS OF CONCRETE WALLS, AND BOTH WALL FACES AROUND PERIMETER OF ALL DOOR & WINDOW OPENINGS IN CONC. WALLS, EXCEPT WHERE THERE ARE THERMAL LININGS AT THAT WALL FACE.

E. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. XXX DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

F. AT 36 LOCATIONS IN INTERIOR 8" NON-BEARING CMU WALLS, PROVIDE 1/2" OPEN VERTICAL WALL JOINT AT NEAREST HEAD JOINT LOCATIONS PER DETAIL 2/BB601 U.O.N.

G. SEE GENERAL NOTES ON SHEET BB001 AND DETAILS ON SHEET BB602 FOR THERMAL LINING SYSTEM DETAILS.

H. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FIFTH FLOOR DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FIFTH FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

J. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FIFTH FLOOR LANDING DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM FIFTH FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

K. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

L. LIVE FIRE TRAINING IS ONLY ALLOWED IN ROOM 500. NO BURNING IS ALLOWED IN ROOMS 501, 502, 503, 504, 505, 506, 507, ON THE INTERIOR STAIRS, OR ON THE EXTERIOR STAIRS.

M. SEE 1/BB601 AND 2, 2A, 2B/BB602 FOR TOP OF WALL CONDITIONS AT INTERIOR WALLS.

KEYED NOTES:

1. SCUPPERS PER SHEET BB603 (10 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL PER DETAIL 2/BB607.
4. FIXED GUARDRAIL W/HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
5. DRY STANDPIPE PER P DRAWINGS.
6. PROVIDE (1) TOTAL BURN RACK IN BURN ROOM PER DETAIL 3/BB610.
7. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE PER DETAIL 6/BB603.
8. DEBRIS CHUTE PER SHEET BB609.
9. CONCRETE COLUMN PER DETAIL 1/BB501 (11 THUS).
10. DOUBLE-SWINGING GUARDRAIL GATE PER DETAIL 2/BB608.
11. FALL PROTECTION PER DETAIL 5/BB609.
12. ATTIC ACCESS HATCH PER DETAIL 7/BB501.
13. SHEET ROCK PULLDOWN PROP PER DETAIL 5/BB610.
14. THERMAL LINING AT CEILING FOR EXTENTS SHOWN ON PLAN.

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NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - FIFTH FLOOR PLAN**

BB205

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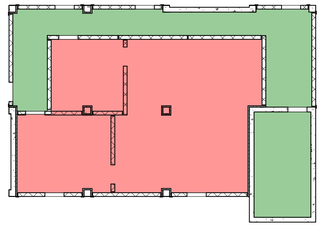
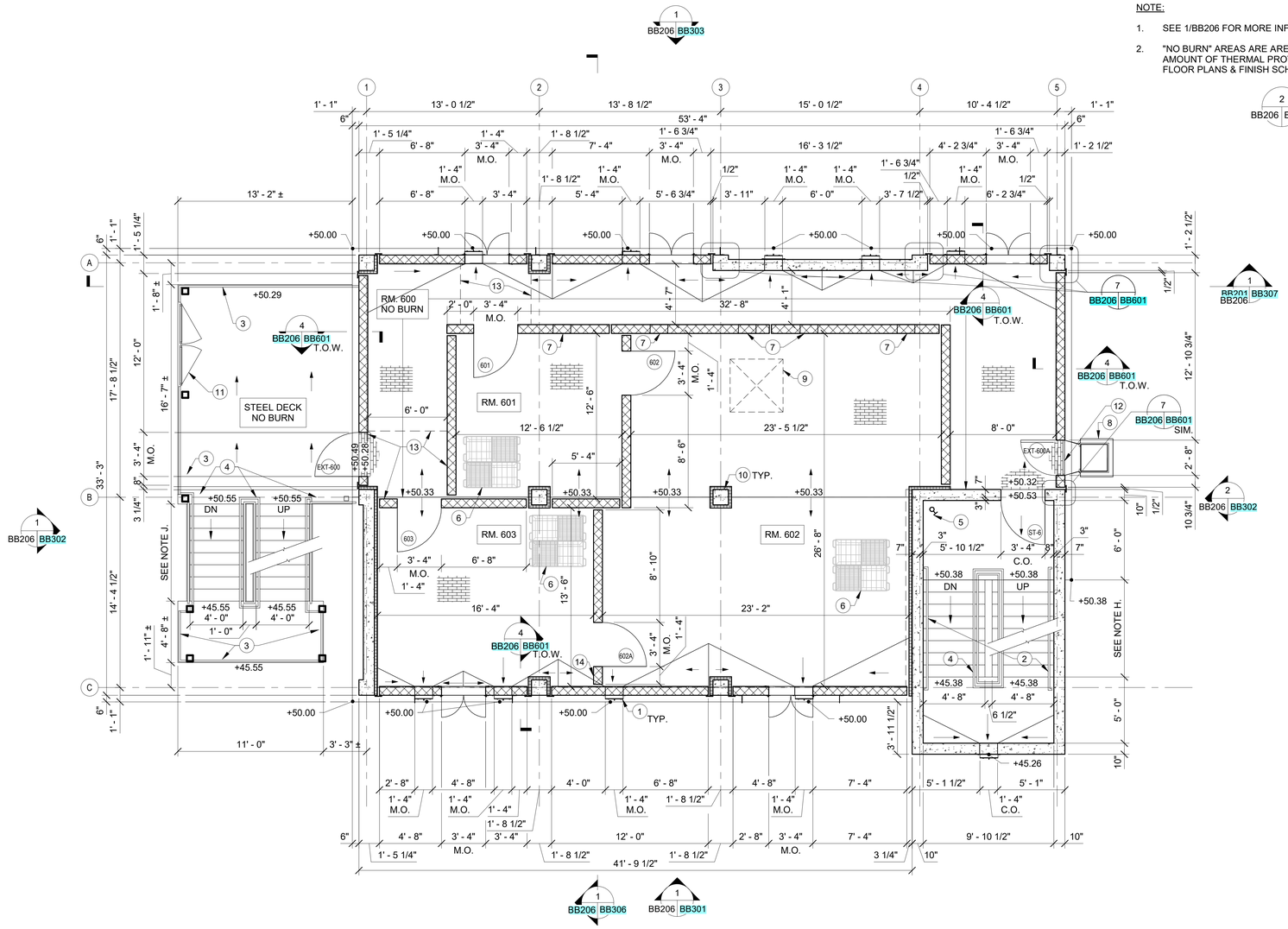


LEGEND	
	= NO BURN AREA
	= BURN AREA

NOTE:

1. SEE 1/BB206 FOR MORE INFORMATION.
2. "NO BURN" AREAS ARE AREAS IN WHICH LIVE FIRES SHALL NOT BE BURNED BUT MIGHT HAVE SOME AMOUNT OF THERMAL PROTECTION DUE TO ANTICIPATED HEAT FROM ADJACENT BURN ROOMS. SEE FLOOR PLANS & FINISH SCHEDULE FOR EXTENTS OF THERMAL LININGS IN NO BURN AREAS.

2 SIXTH FLOOR KEY PLAN
BB206 | BB206 SCALE 3/32" = 1'-0"



1 BB206 BB303 — 1 BB206 BB302 — 1 BB206 BB306 — 1 BB206 BB301

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE AND TOP OF EXTERIOR STEEL DECK IS INDICATED WITH ——►.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

D. AT DOORWAYS WITHOUT DOORS, PROVIDE FULL-HEIGHT OPENING WITH NO LINTEL AND PROVIDE BULLNOSED CORNERS AT BOTH JAMBS. ALSO PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL DOOR AND WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT CORNERS OF INTERIOR WALLS. CHAMFER CORNERS AT ENDS OF CONCRETE WALLS, AND BOTH WALL FACES AROUND PERIMETER OF ALL DOOR & WINDOW OPENINGS IN CONC. WALLS, EXCEPT WHERE THERE ARE THERMAL LININGS AT THAT WALL FACE.

E. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. XXX DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

F. AT 29 LOCATIONS IN INTERIOR 8" NON-BEARING CMU WALLS, PROVIDE 1/2" OPEN VERTICAL WALL JOINT AT NEAREST HEAD JOINT LOCATIONS PER DETAIL 2/BB601 U.O.N.

G. SEE GENERAL NOTES ON SHEET BB001 AND DETAILS ON SHEET BB602 FOR THERMAL LINING SYSTEM DETAILS.

H. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM SIXTH FLOOR DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 9/16" ± = 4'- 10 13/16"± FROM SIXTH FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

J. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM SIXTH FLOOR LANDING DOWN TO INTERMEDIATE LANDING BELOW, 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM SIXTH FLOOR LANDING UP TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

K. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

L. LIVE FIRE TRAINING IS ONLY ALLOWED IN ROOMS 601, 602, AND 603. NO BURNING IS ALLOWED IN ROOM 600, ON THE INTERIOR STAIRS, OR ON THE EXTERIOR STAIRS.

M. SEE 1/BB601 AND 2, 2A, 2B/BB602 FOR TOP OF WALL CONDITIONS AT INTERIOR WALLS.

1 SIXTH FLOOR PLAN
BB206 | BB206 SCALE 1/4" = 1'-0"

KEYED NOTES:

1. SCUPPERS PER SHEET BB603 (10 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL PER DETAIL 2/BB607.
4. FIXED GUARDRAIL W/HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
5. DRY STANDPIPE PER P DRAWINGS.
6. PROVIDE (3) TOTAL BURN RACKS IN BURN ROOMS PER DETAIL 3/BB610.
7. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE PER DETAIL 6/BB603.
8. DEBRIS CHUTE PER SHEET BB609.
9. VENTILATION OPENING ABOVE.
10. CONCRETE COLUMN PER DETAIL 1/BB501 (11 THUS).
11. DOUBLE-SWINGING GUARDRAIL GATE PER DETAIL 2/BB608.
12. FALL PROTECTION PER DETAIL 5/BB609.
13. THERMAL LINING AT CEILING FOR EXTENTS SHOWN ON PLAN.
14. PROVIDE 8"x8" OPENING AT BASE OF INTERIOR WALL FOR DRAINAGE SIM. TO DETAIL 6/BB603 BUT WITHOUT LINTEL PLATE

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NO.	REVISION	DATE

JOB NUMBER **22056**
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PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - SIXTH FLOOR PLAN**

BB206

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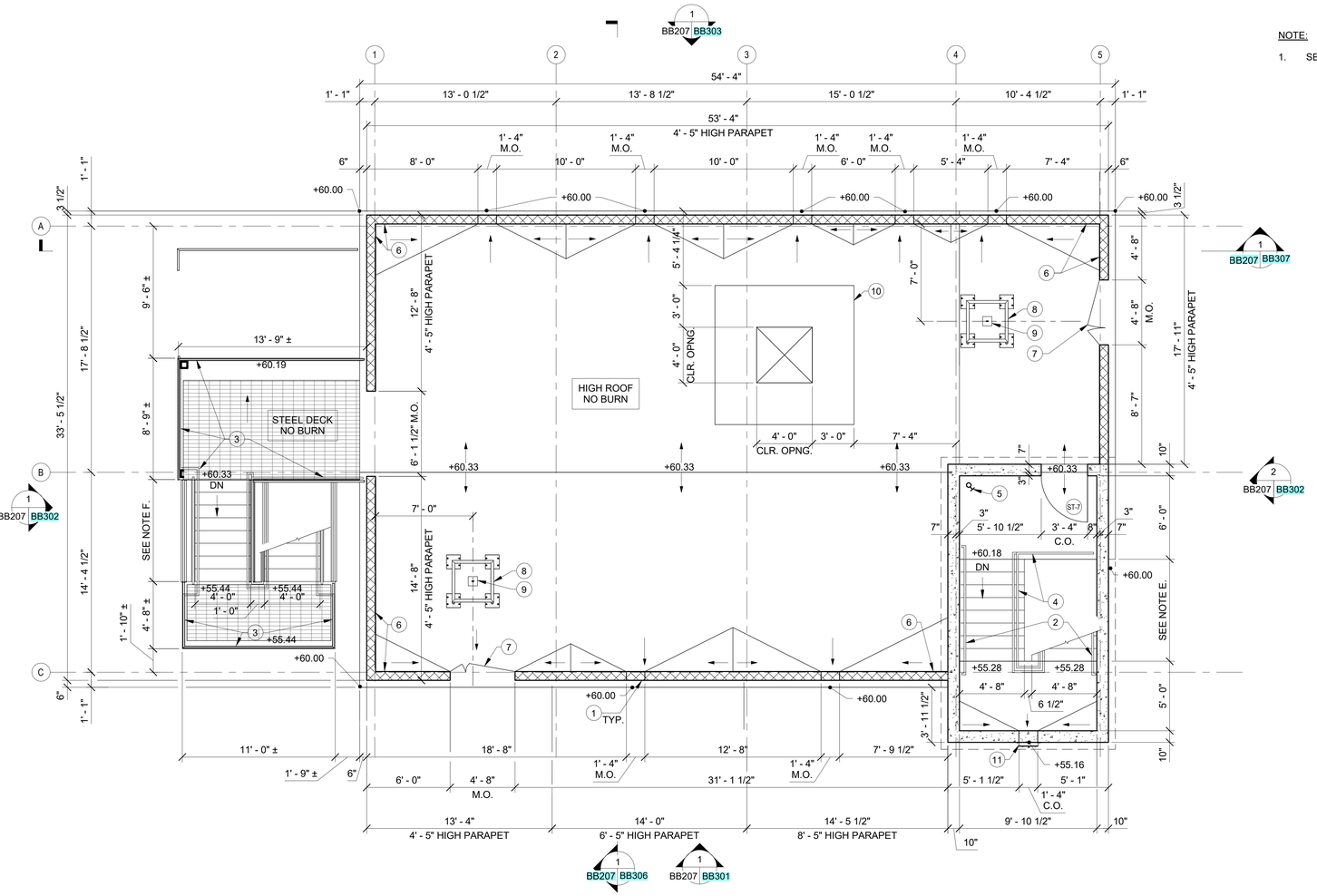


NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE AND TOP OF EXTERIOR STEEL DECK IS INDICATED WITH ⟶ .

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. ALL MASONRY WALLS SHALL BE 8" THICK (NOMINAL). ALL CONCRETE WALLS SHALL BE 10" THICK (ACTUAL).

D. SEE SHEET BB604 & BB605 FOR DOOR DETAILS & SHEET BB606 FOR WINDOW DETAILS. (XXX) DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET BB605 FOR DOORS.

E. 8T @ 11" = 7'-4", 9R @ 6 17/32" ± = 4'-10 3/4"± FROM HIGH ROOF DOWN TO INTERMEDIATE LANDING BELOW. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

F. 8T @ 11" = 7'-4", 9R @ 6 11/16" ± = 5'-0"± FROM HIGH ROOF LANDING DOWN TO INTERMEDIATE LANDING BELOW. PROVIDE EQUAL RISER HEIGHTS WITHIN EACH FLIGHT.

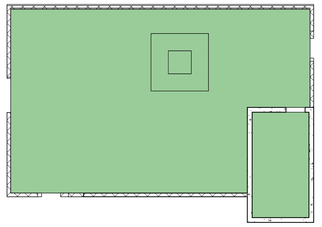
G. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT, EXCEPT 1/8" PER FOOT AT STAIRWELL.

H. NO BURNING IS ALLOWED ON THE HIGH ROOF.

KEYED NOTES:

1. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF PARAPET FOR DRAINAGE PER DETAIL 6/BB603 (7 THUS).
2. HANDRAIL PER DETAIL 1/BB607.
3. FIXED GUARDRAIL PER DETAIL 2/BB607.
4. FIXED GUARDRAIL W/HANDRAIL PER DETAILS 1/BB504 AND 4/BB607.
5. DRY STANDPIPE PER P DRAWINGS.
6. CMU PARAPET PER 3/BB601 OR 3/BB602 (8' - 5" HIGH PARAPET ONLY).
7. SINGLE-SWINGING GUARDRAIL GATE PER DETAIL 1/BB608.
8. ROPE FRAME PER DETAIL 1/BB610 (2 THUS).
9. ROPE ANCHOR PER DETAIL 2/BB610 (2 THUS).
10. VENTILATION OPENING WITH 3' - 0" CURB PER DETAIL 6/BB610.
11. SCUPPER PER SHEET BB603 (1 THUS).

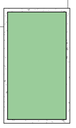
1 HIGH ROOF PLAN
BB207 BB207 SCALE 1/4" = 1'-0"



LEGEND
= NO BURN AREA
= BURN AREA

NOTE:
1. SEE 1/BB207 FOR MORE INFORMATION.

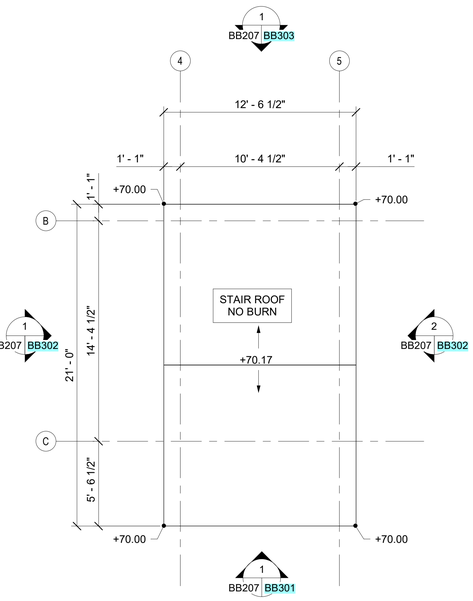
3 HIGH ROOF KEY PLAN
BB207 BB207 SCALE 3/32" = 1'-0"



LEGEND
= NO BURN AREA
= BURN AREA

NOTE:
1. SEE 2/BB207 FOR MORE INFORMATION.

4 STAIR ROOF KEY PLAN
BB207 BB207 SCALE 3/32" = 1'-0"



NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH ⟶ .

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE BURN BUILDING SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. SEE SHEET BB201 FOR DATUM.

C. NO BURNING ALLOWED ON THE STAIR ROOF.

2 STAIR ROOF PLAN
BB205 BB207 SCALE 1/4" = 1'-0"

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BURN BUILDING - HIGH ROOF & STAIR ROOF PLANS

BB207

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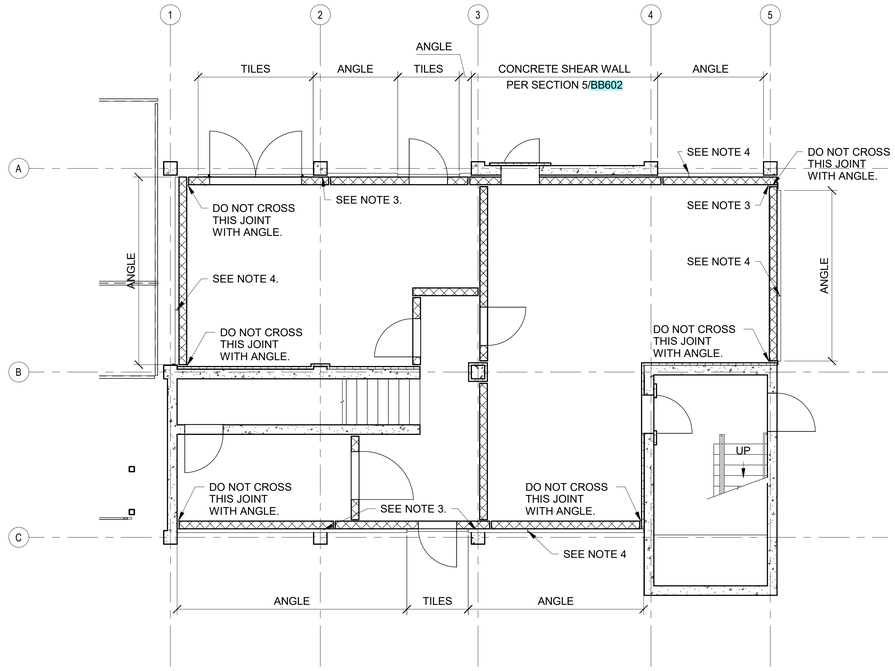
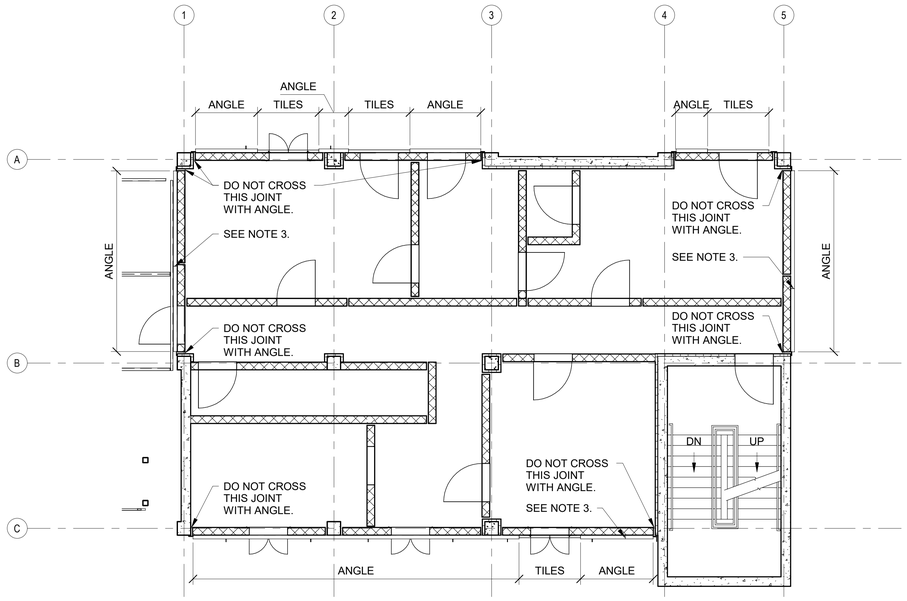


NOTES:

1. THIS PLAN SHOWS ONLY THE MEANS OF BRACING EXTERIOR FACES OF EXTERIOR MASONRY WALLS. SEE PLANS AND SECTIONS FOR ALL OTHER INFORMATION, INCLUDING SPECIFIC REQUIREMENTS FOR BRACING SHOWN ON THIS PLAN.
2. PROVIDE 1" GAP BETWEEN END OF TILE AND END OF ANGLE AT ALL ROLLOVER TILE LOCATIONS ABOVE EXTERIOR DOORS AND WINDOWS.
3. AT FOUR EXTERIOR COLUMNS (A2, A5, C2, AND C3), BRACING ANGLE IS CONTINUOUS BETWEEN COLUMN AND WALL PER DETAIL 4/BB601.
4. PROVIDE 1" GAP IN ANGLE AT NOTED LOCATIONS.

FIRST FLOOR EXTERIOR WALL BRACING PLAN

1 BB208 BB208 SCALE 3/16" = 1'-0"



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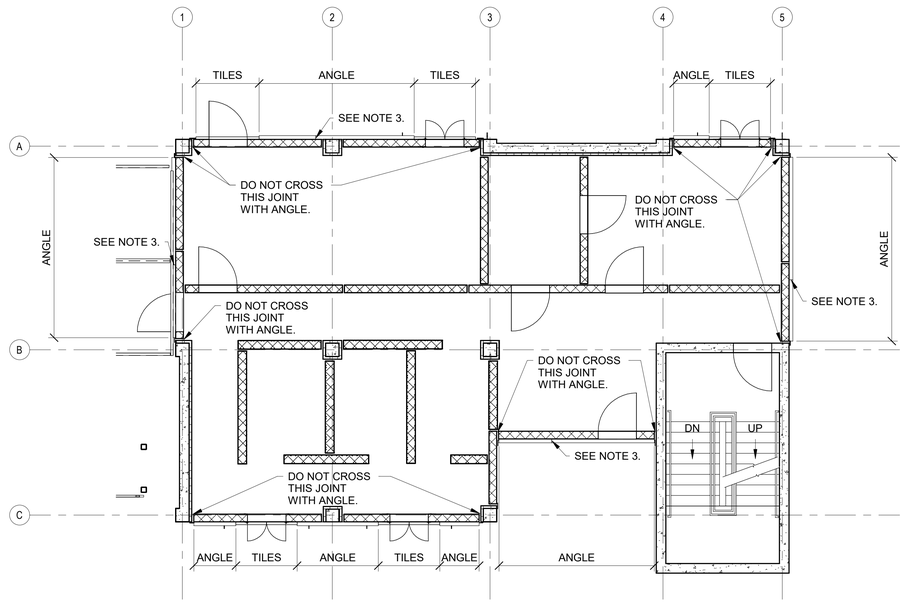
2. PROVIDE 1" GAP BETWEEN END OF TILE AND END OF ANGLE AT ALL ROLLOVER TILE LOCATIONS ABOVE EXTERIOR DOORS AND WINDOWS.
3. PROVIDE 1" GAP IN ANGLE AT NOTED LOCATIONS.

SECOND FLOOR EXTERIOR WALL BRACING PLAN

2 BB208 BB208 SCALE 3/16" = 1'-0"



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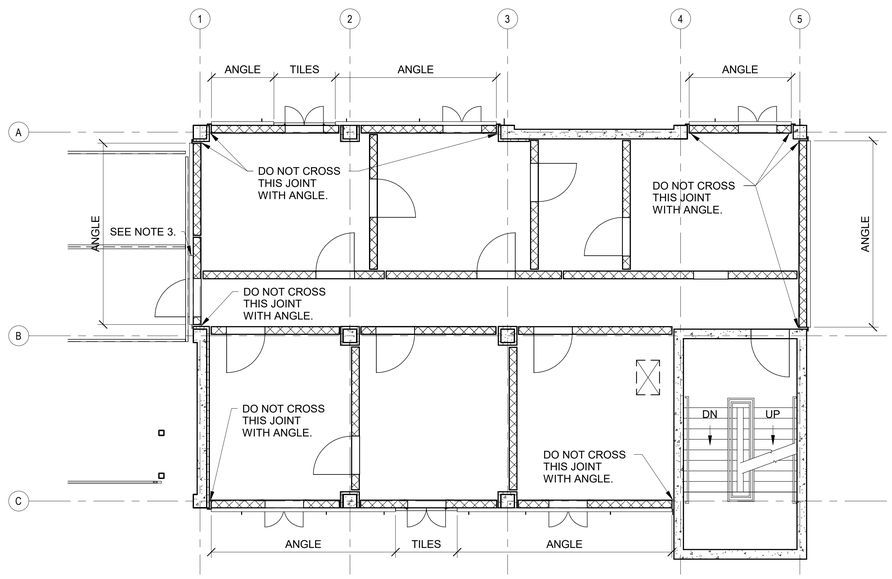
2. PROVIDE 1" GAP BETWEEN END OF TILE AND END OF ANGLE AT ALL ROLLOVER TILE LOCATIONS ABOVE EXTERIOR DOORS AND WINDOWS.
3. PROVIDE 1" GAP IN ANGLE AT NOTED LOCATIONS.

THIRD FLOOR EXTERIOR WALL BRACING PLAN

3 BB208 BB208 SCALE 3/16" = 1'-0"



NOTES:

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3. PROVIDE 1" GAP IN ANGLE AT NOTED LOCATIONS.

FOURTH FLOOR EXTERIOR WALL BRACING PLAN

4 BB208 BB208 SCALE 3/16" = 1'-0"

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BURN BUILDING - EXTERIOR WALL BRACING PLANS

BB208

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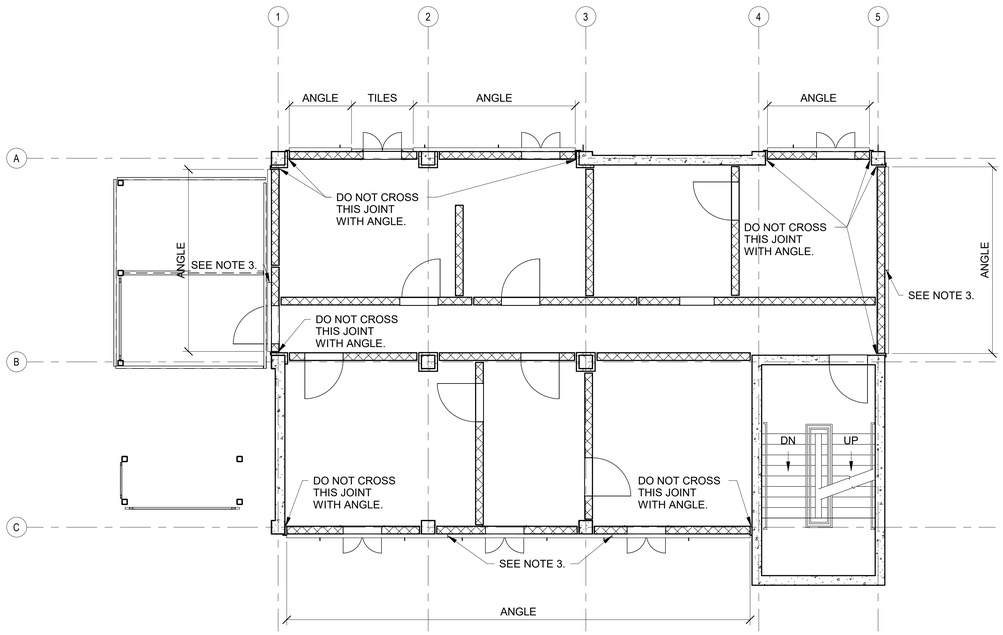

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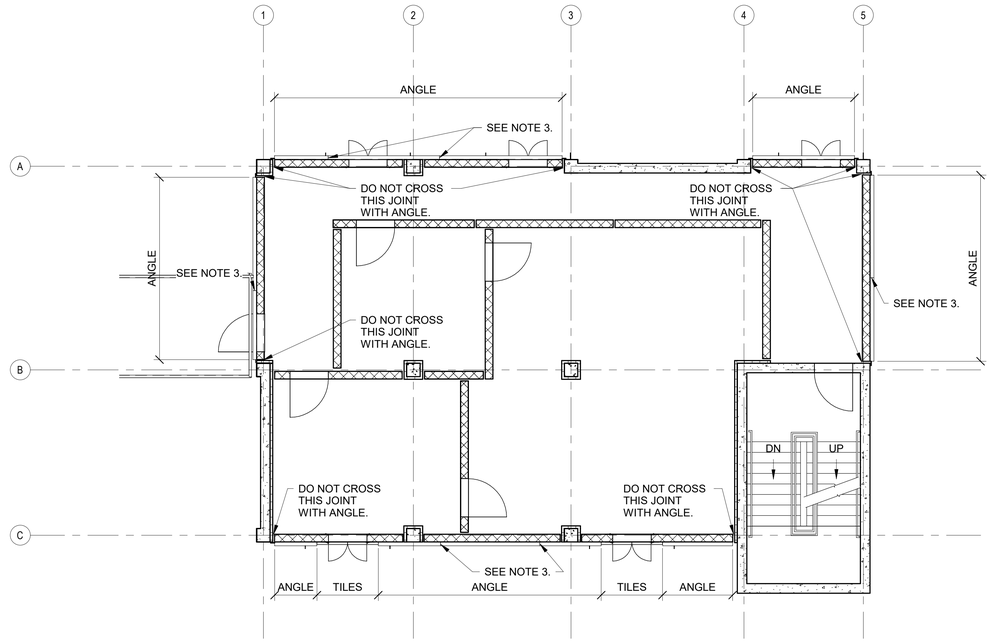
3. PROVIDE 1" GAP IN ANGLE AT NOTED LOCATIONS.

1 FIFTH FLOOR EXTERIOR WALL BRACING PLAN

BB209 BB209 SCALE 3/16" = 1'-0"



NOTES:

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2. PROVIDE 1" GAP BETWEEN END OF TILE AND END OF ANGLE AT ALL ROLLOVER TILE LOCATIONS ABOVE EXTERIOR DOORS AND WINDOWS.
3. PROVIDE 1" GAP IN ANGLE AT NOTED LOCATIONS.

2 SIXTH FLOOR EXTERIOR WALL BRACING PLAN

BB209 BB209 SCALE 3/16" = 1'-0"

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BURN BUILDING - EXTERIOR WALL BRACING PLANS

BB209

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1 SOUTH ELEVATION
BB201 - BB207 | BB301 SCALE 1/4" = 1'-0"

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SHEET **BURN BUILDING - SOUTH ELEVATION**

BB301

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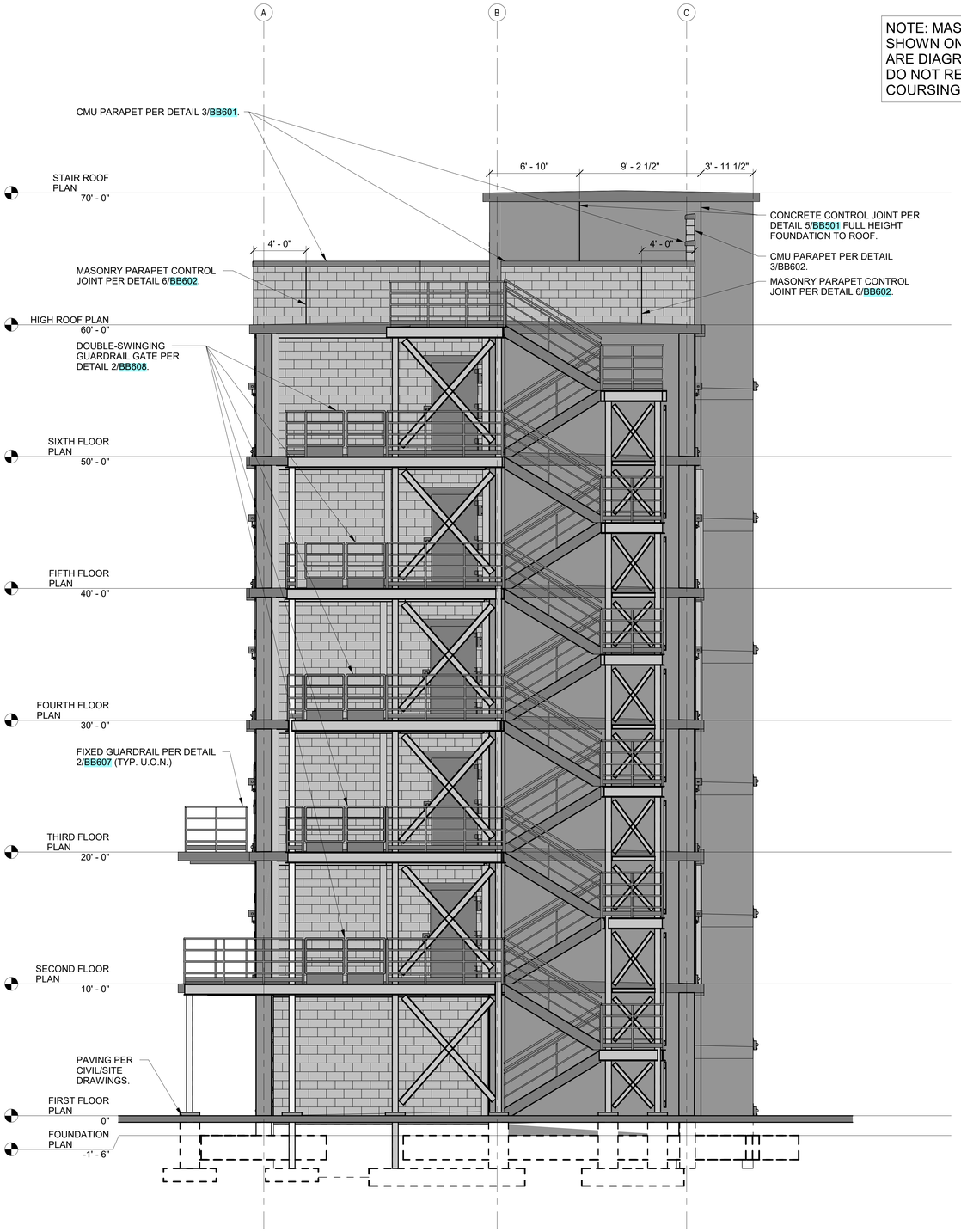
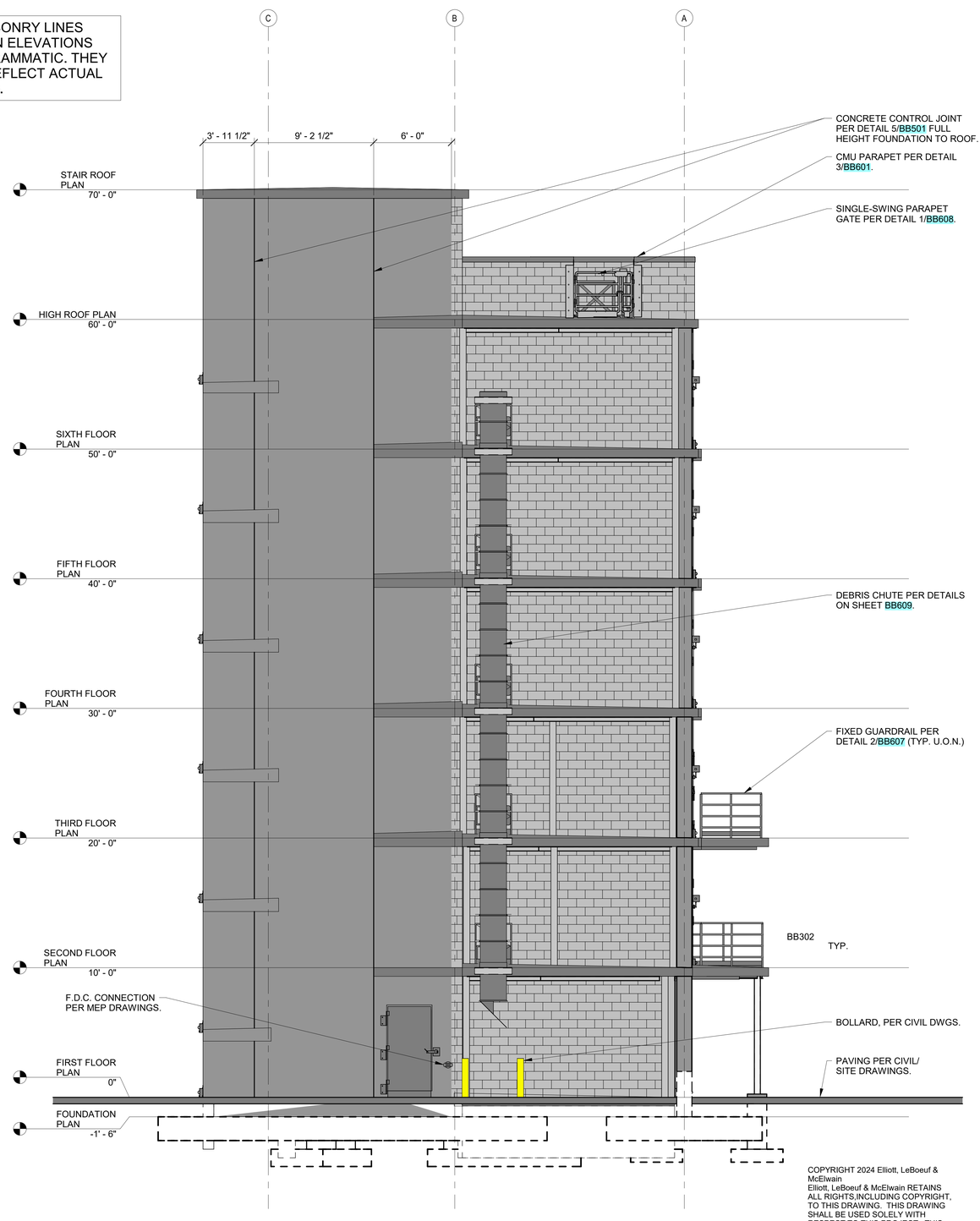


1 WEST ELEVATION

BB201 - BB302 SCALE 1/4" = 1'-0"
BB207



2 EAST ELEVATION

BB201 - BB302 SCALE 1/4" = 1'-0"
BB207

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SHEET **BURN BUILDING - WEST & EAST ELEVATIONS**

BB302

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1 NORTH ELEVATION
BB201 - BB207 BB303 SCALE 1/4" = 1'-0"

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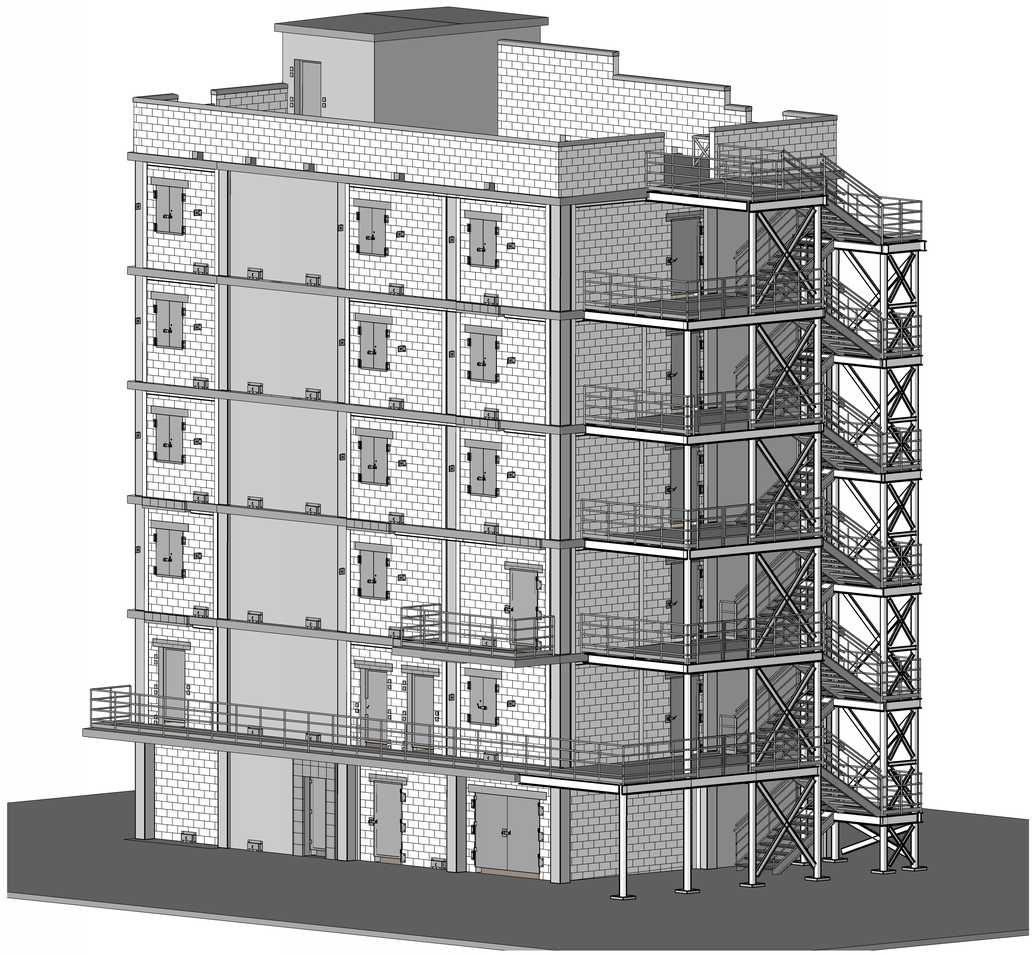
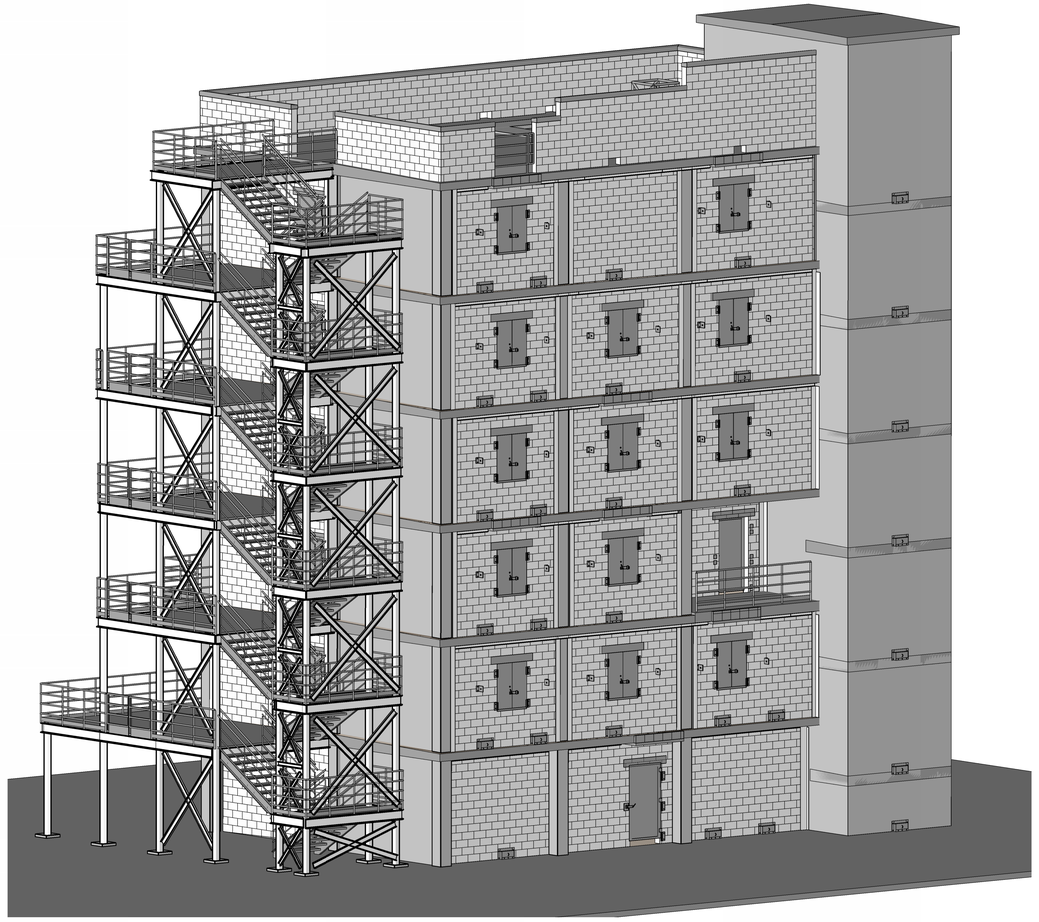


1 NORTHWEST PERSPECTIVE
BB304 BB304 SCALE



2 SOUTHWEST PERSPECTIVE
BB304 BB304 SCALE

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BURN BUILDING - NW & SW PERSPECTIVES

BB304

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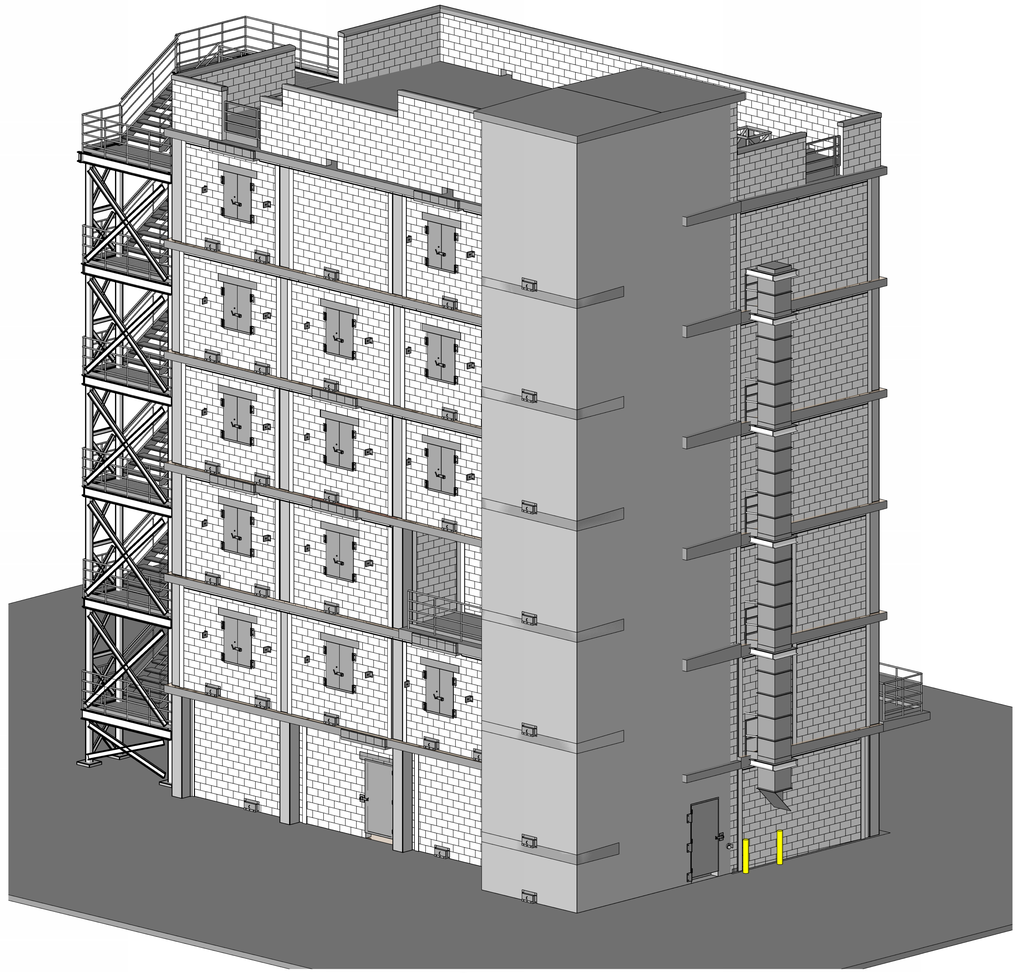
1 NORTHEAST PERSPECTIVE
BB305 BB305 SCALE



2 SOUTHEAST PERSPECTIVE
BB305 BB305 SCALE

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BURN BUILDING - NE & SE PERSPECTIVES

BB305

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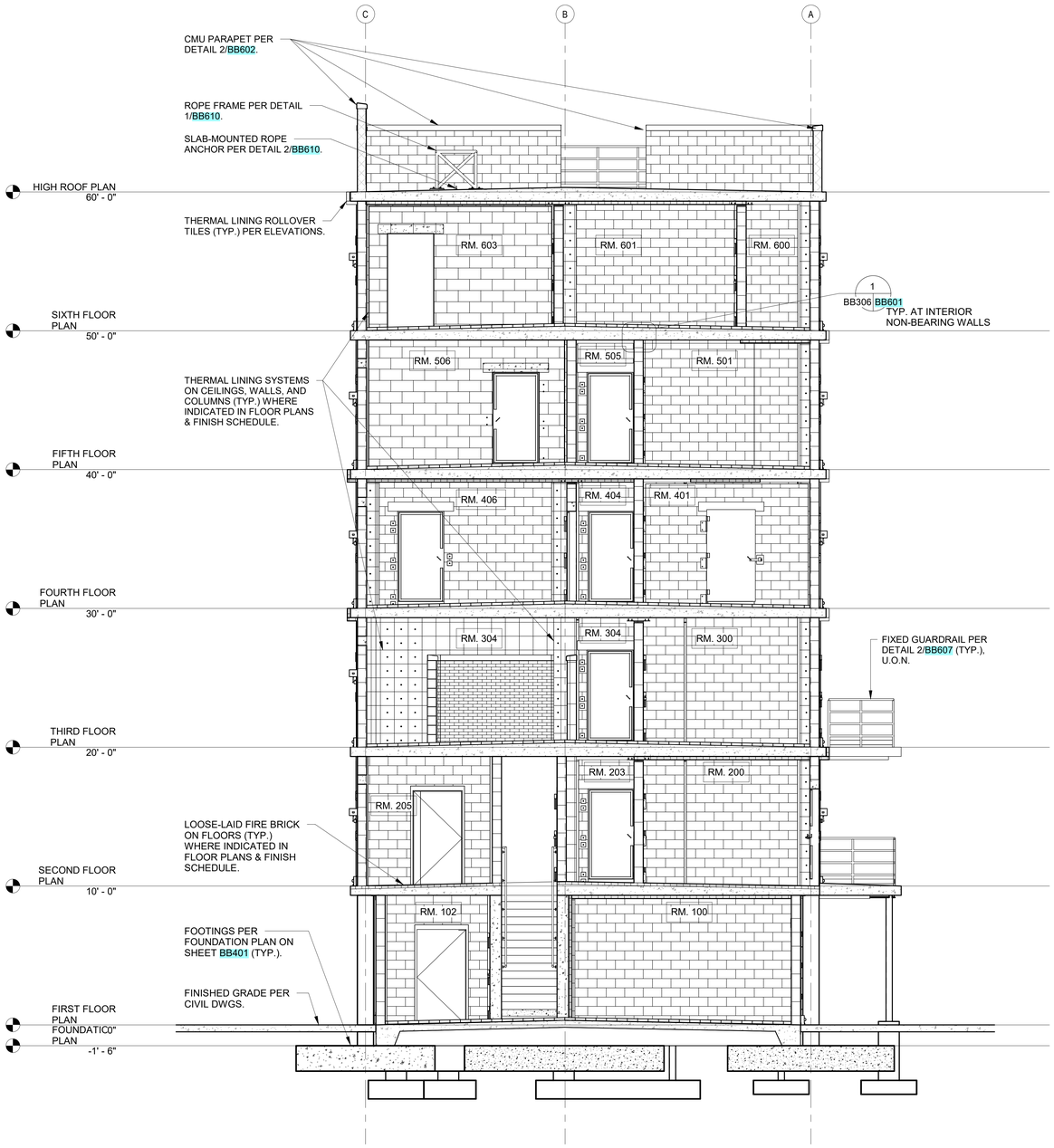

1 BB201-BB207 BB306 BUILDING SECTION 1

SCALE 1/4" = 1'-0"

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - BUILDING SECTIONS**

BB306

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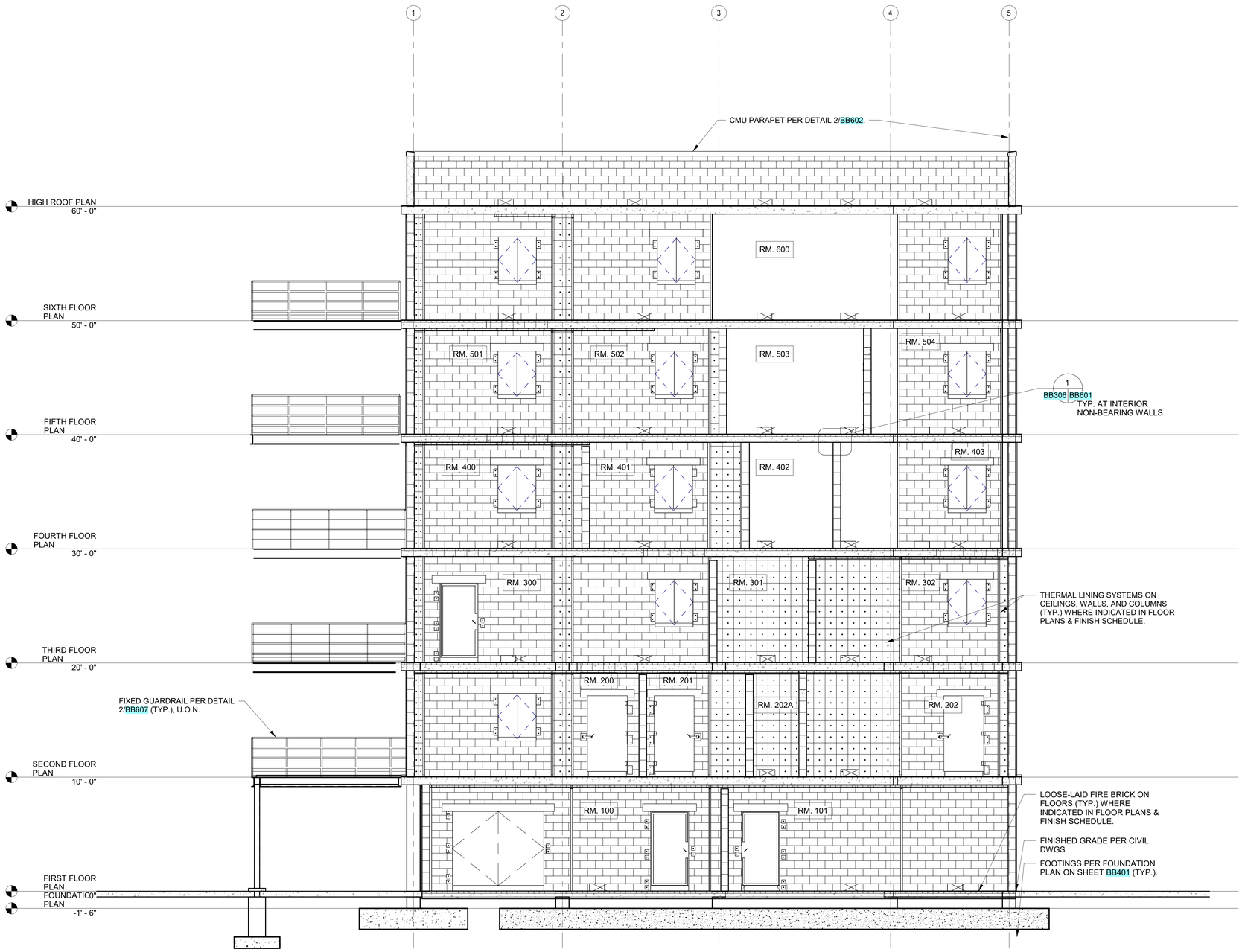

1
BB201 - BB207

BUILDING SECTION 2

BB307 SCALE 1/4" = 1'-0"

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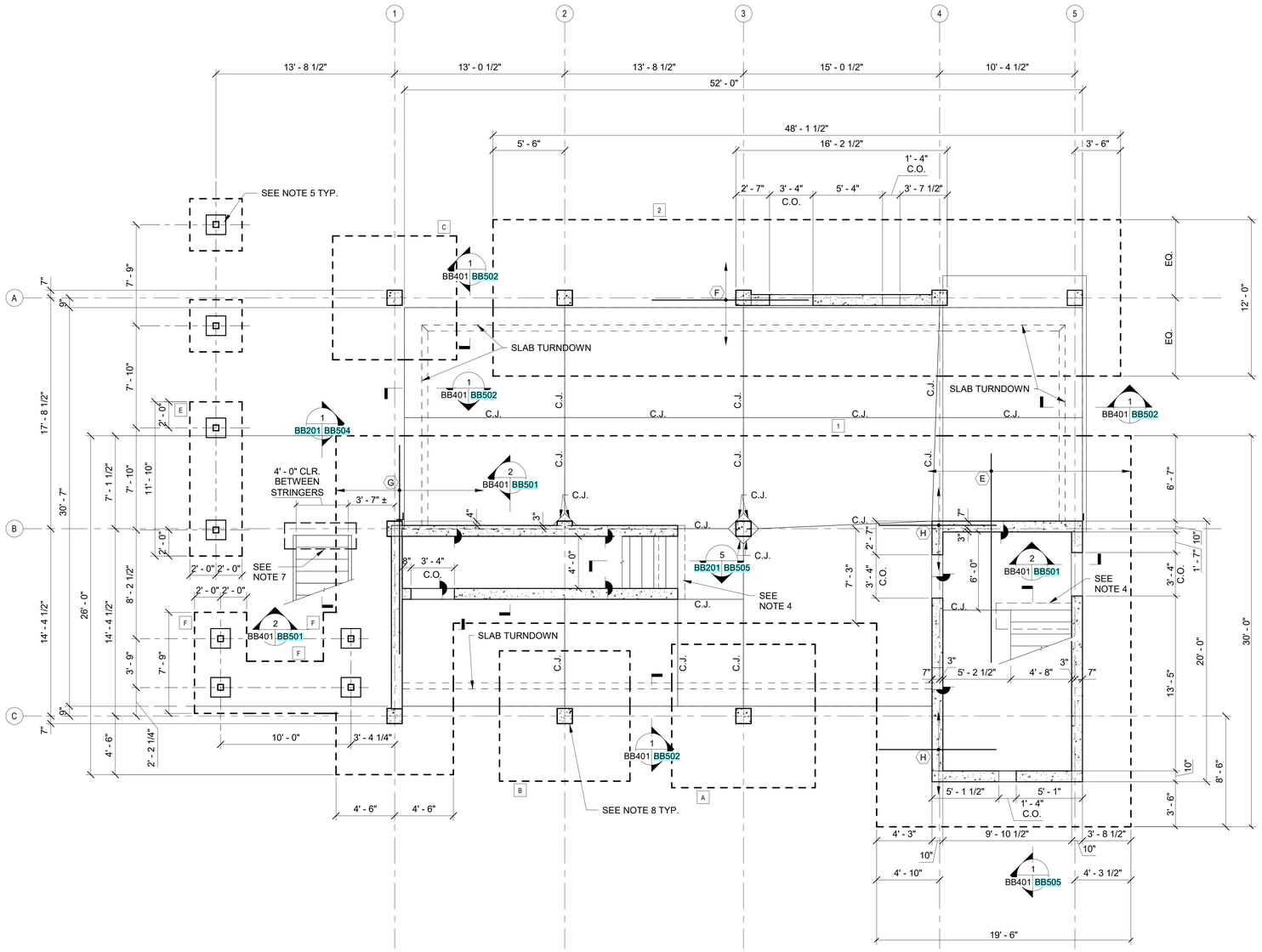

COLUMN FOOTING SCHEDULE							
				BOTTOM REINF.		TOP REINF.	
MARK	WIDTH	LENGTH	THICKNESS	CONT. (B)	SHORT DIR. (BM)	CONT. (T)	SHORT DIR. (TM)
	4' - 0"	14' - 0"	1' - 4"				
A	11' - 0"	11' - 0"	1' - 10"	(9) #7		(9) #7	
B	10' - 0"	10' - 0"	1' - 10"	(8) #7		(8) #7	
C	9' - 6"	9' - 6"	1' - 10"	(10) #6		(10) #6	
D	4' - 0"	4' - 0"	1' - 0"				
E	4' - 0"	11' - 10"	1' - 4"				
F	4' - 0"	CONT.	1' - 4"				

WALL FOOTING SCHEDULE							
				BOTTOM REINF.		TOP REINF.	
MARK	WIDTH	LENGTH	THICKNESS	CONT. (B)	SHORT DIR. (BM)	CONT. (T)	SHORT DIR. (TM)
1	---------	---------	1' - 10"	#9@10" O.C. E.W.		#9@10" O.C. E.W.	
2	12' - 0"	48' - 1 1/2"	1' - 10"	#8@12" O.C. E.W.		#7@12" O.C. E.W.	

NOTES:

1. LOCATE TOPS OF FOOTINGS AT -1'-6" BELOW DATUM AND EXTERIOR FINISHED GRADE, U.O.N. SEE FIRST FLOOR PLAN BB201 FOR DATUM.
2. SEE FOOTING SCHEDULE FOR FOOTINGS NOTED THUS X.
3. SEE FIRST FLOOR PLAN 1/BB201 FOR ALL SLAB ELEVATIONS AND SLOPES. SEE SECTION N OF THE GENERAL NOTES ON SHEET BB001 FOR SLAB THICKNESS AND REINFORCING.
4. PROVIDE A 2'-0" WIDE x 5'-6" LONG THICKENED SLAB AT BASE OF STAIR PER SECTION 1/BB505.
5. HSS 6x6x1/4 COLUMN ON 15" SQ. CONCRETE PIER PER 2/BB504.
6. CJ = CONTROL JOINT PER SPECIFICATIONS & GENERAL NOTES.
7. PROVIDE A 2'-0" WIDE x 6'-0" LONG THICKENED SLAB AT BASE OF STAIR PER SECTION 1/BB504.
8. 14" SQ. CONCRETE COLUMN PER 1/BB501.
9. A 2 1/2" STEP IN TOP OF CONCRETE IS DESIGNATED WITH .
10. SEE PLAN FOR ADDITIONAL REINFORCING:
    - (E) = (16) #9 x 16' - 0" ADDITIONAL BOTTOM BARS AT 10" O.C.
    - (F) = (6) #8 x 12' - 0" ADDITIONAL BOTTOM BARS AT 12" O.C.
    - (G) = (7) #9 x 16' - 0" ADDITIONAL BOTTOM BARS AT 10" O.C.
    - (H) = (6) #9 x 9' - 0" ADDITIONAL BOTTOM BARS AT 10" O.C.

NORTH

1 BB401 BB401 FOUNDATION PLAN
SCALE 1/4" = 1'-0"

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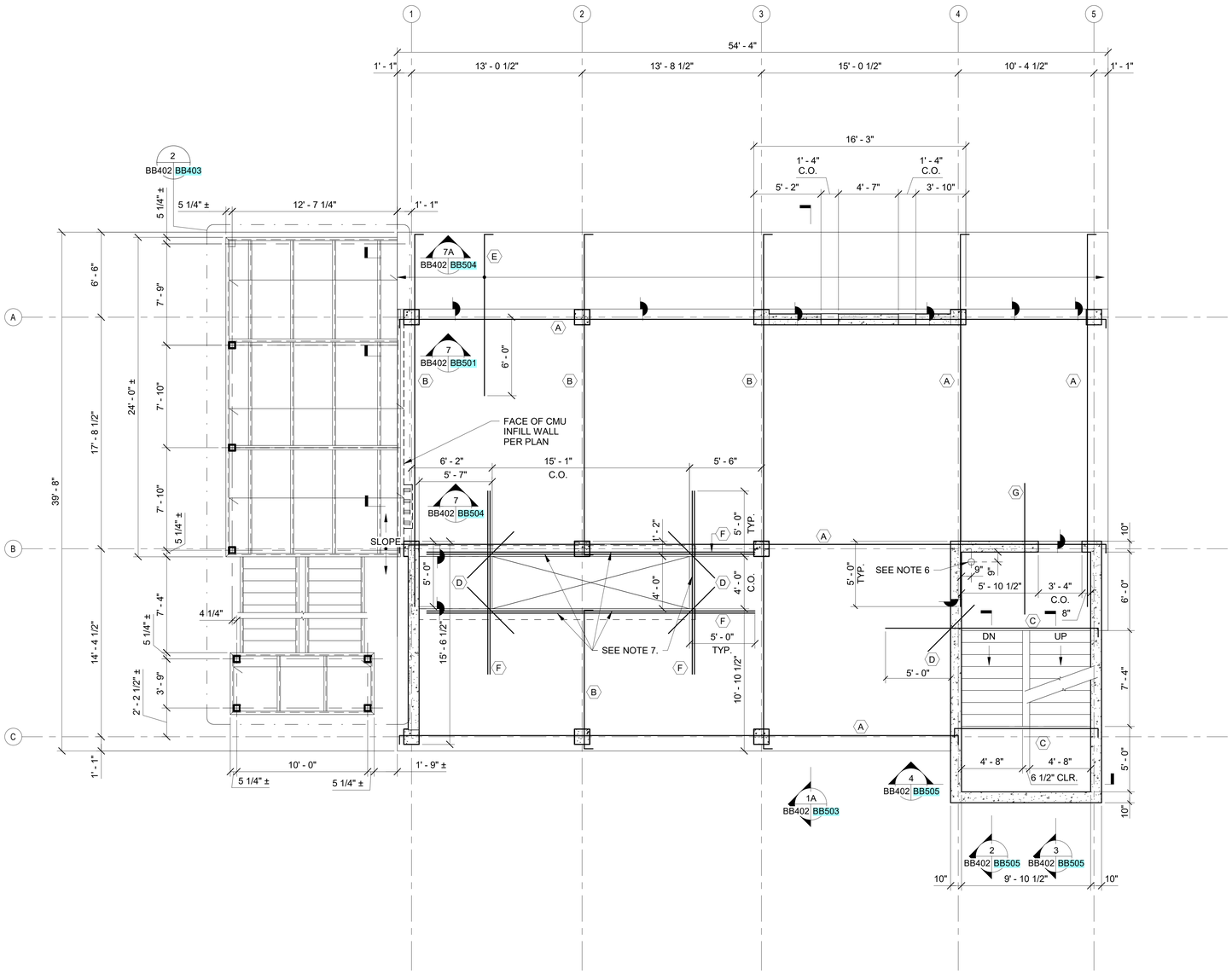
BB401



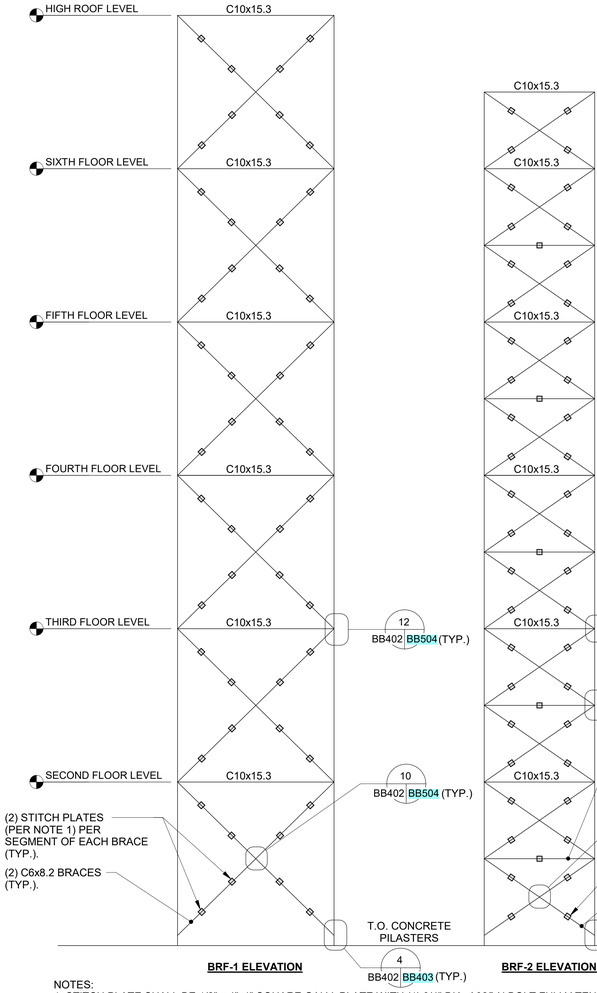
NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE SECOND FLOOR PLAN FPR CONCRETE SLAB ELEVATIONS AND SLOPES. BOTTOM OF MAIN SLAB AT +9.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ⇥ ⇤ IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (5) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (B) = (8) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (C) = (3) #8 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (D) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (E) = #5 @ 12" O.C. ADDITIONAL TOP BARS CENTERED BETWEEN MAIN TOP BARS. (E) BARS DO NOT HAVE TO BE ADDED WHERE A OR B BARS HAVE ALREADY BEEN ADDED.
   - (F) = (2) EACH, #5 ADDITIONAL TOP & BOTTOM BARS AT EDGE OF OPENING.
   - (G) = (3) #5 x 10' - 0" LONG ADDITIONAL TOP BARS AT 12" O.C. CENTERED ON GRIDLINE B.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT 6" DIA. PVC PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. PROVIDE WALL DOWELS PER DETAIL 1/BB601 ONLY FOR CMU WALLS ABOVE SECOND FLOOR SLAB AROUND INTERIOR STRAIGHT RUN STAIRS.
8. A 2 1/2" STEP IN TOP OF CONCRETE IS DESIGNATED WITH ◥ .

NORTH

1 BB402 — SECOND FLOOR FRAMING PLAN

SCALE 1/4" = 1'-0"



NOTES:
1. STITCH PLATE SHALL BE 1/2" x 4"x4" SQUARE GALV. PLATE WITH (1) 3/4" DIA. A325-N BOLT FULLY TENSIONED.

2 BB504 BB402 — EXTERIOR STEEL STAIR BRACED FRAMES

SCALE 1/2" = 1'-0"

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BB402

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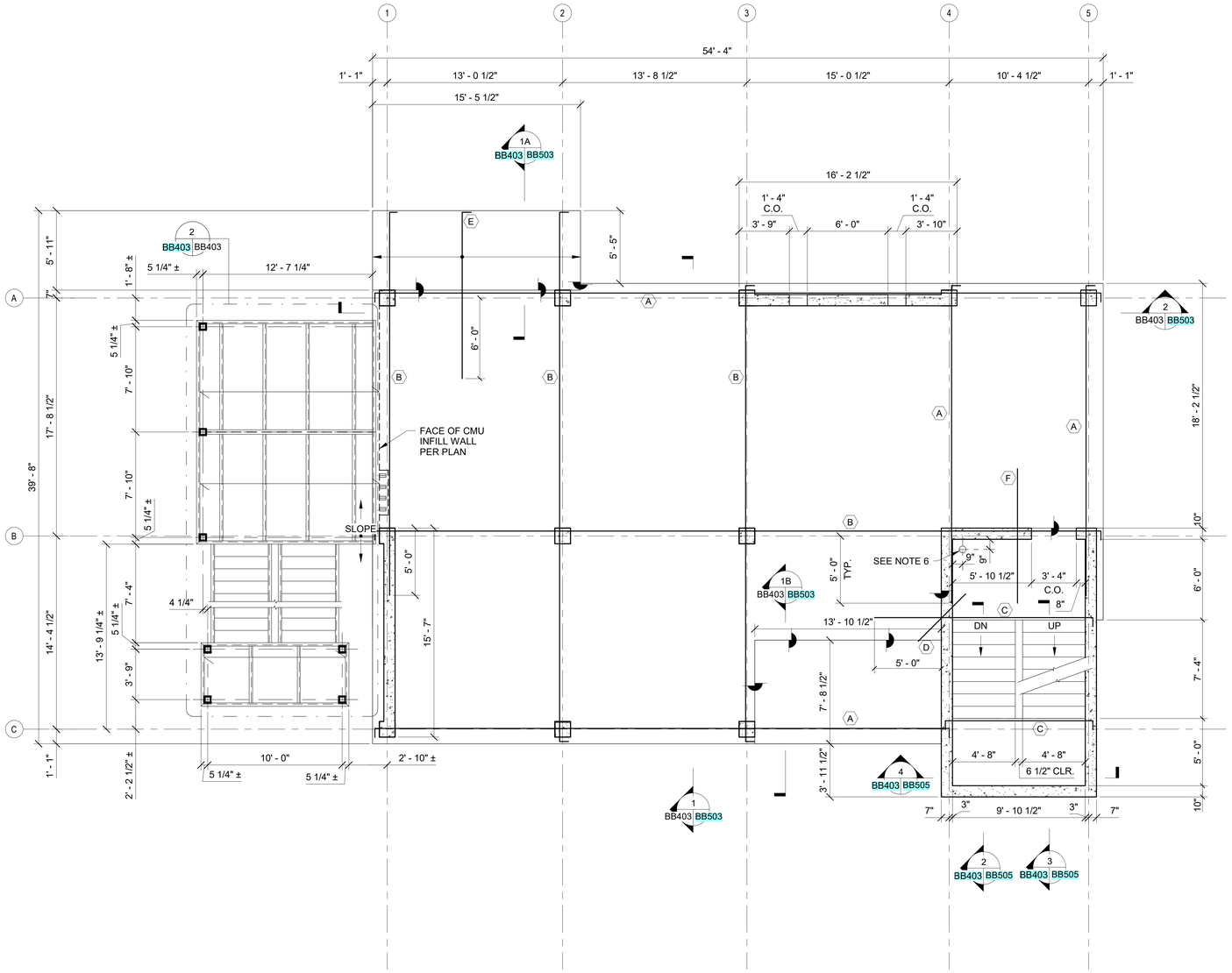


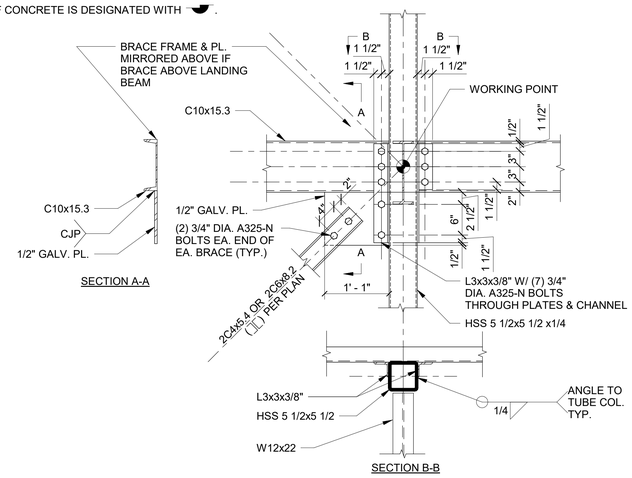
NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE THIRD FLOOR PLAN FOR CONCRETE SLAB ELEVATIONS AND SLOPES. BOTTOM OF MAIN SLAB AT +19.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ↔ IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (5) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (B) = (8) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (C) = (3) #8 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (D) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (E) = #5 @ 12" O.C. ADDITIONAL TOP BARS CENTERED BETWEEN MAIN TOP BARS. (E) BARS DO NOT HAVE TO BE ADDED WHERE A OR B BARS HAVE ALREADY BEEN ADDED.
   - (F) = (3) #5 x 10' - 0" LONG ADDITIONAL TOP BARS AT 12" O.C. CENTERED ON GRIDLINE B.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT 6" DIA. PVC PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. A 2 1/2" STEP IN TOP OF CONCRETE IS DESIGNATED WITH .

NORTH

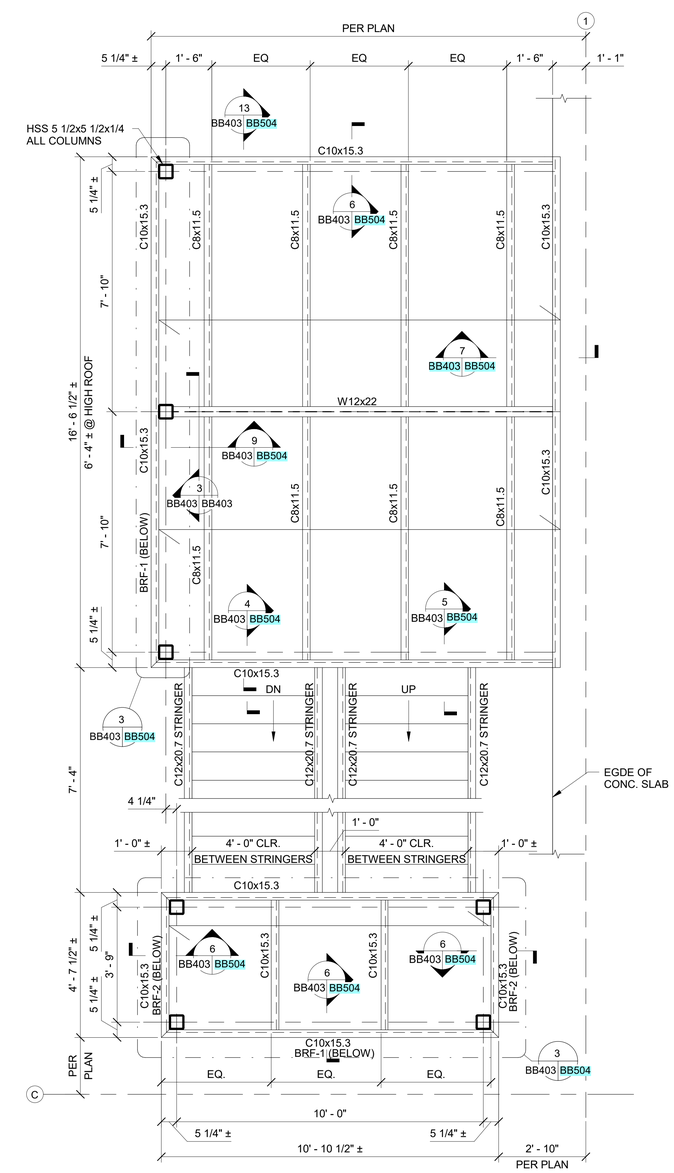
1 BB403 BB403 SCALE 1/4" = 1'-0"

THIRD FLOOR FRAMING PLAN



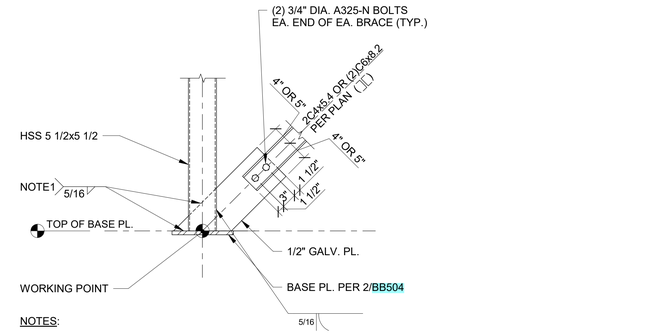
3 BB403 BB403 SCALE 1" = 1'-0"

TYPICAL BRACED FRAME CONNECTION



2 BB403- BB406 BB403 SCALE 1/2" = 1'-0"

EXTERIOR STAIRS



NOTES:

1. WELD GALV. 1/2" PL. TO FACE OF HSS5 1/2x5 1/2 COLUMN AND COLUMN BASE PL.

4 BB402 BB403 SCALE 1" = 1'-0"

TYPICAL BRACE CONNECTION AT COLUMN BASE PL.

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BURN BUILDING - THIRD FLOOR FRAMING PLAN

BB403

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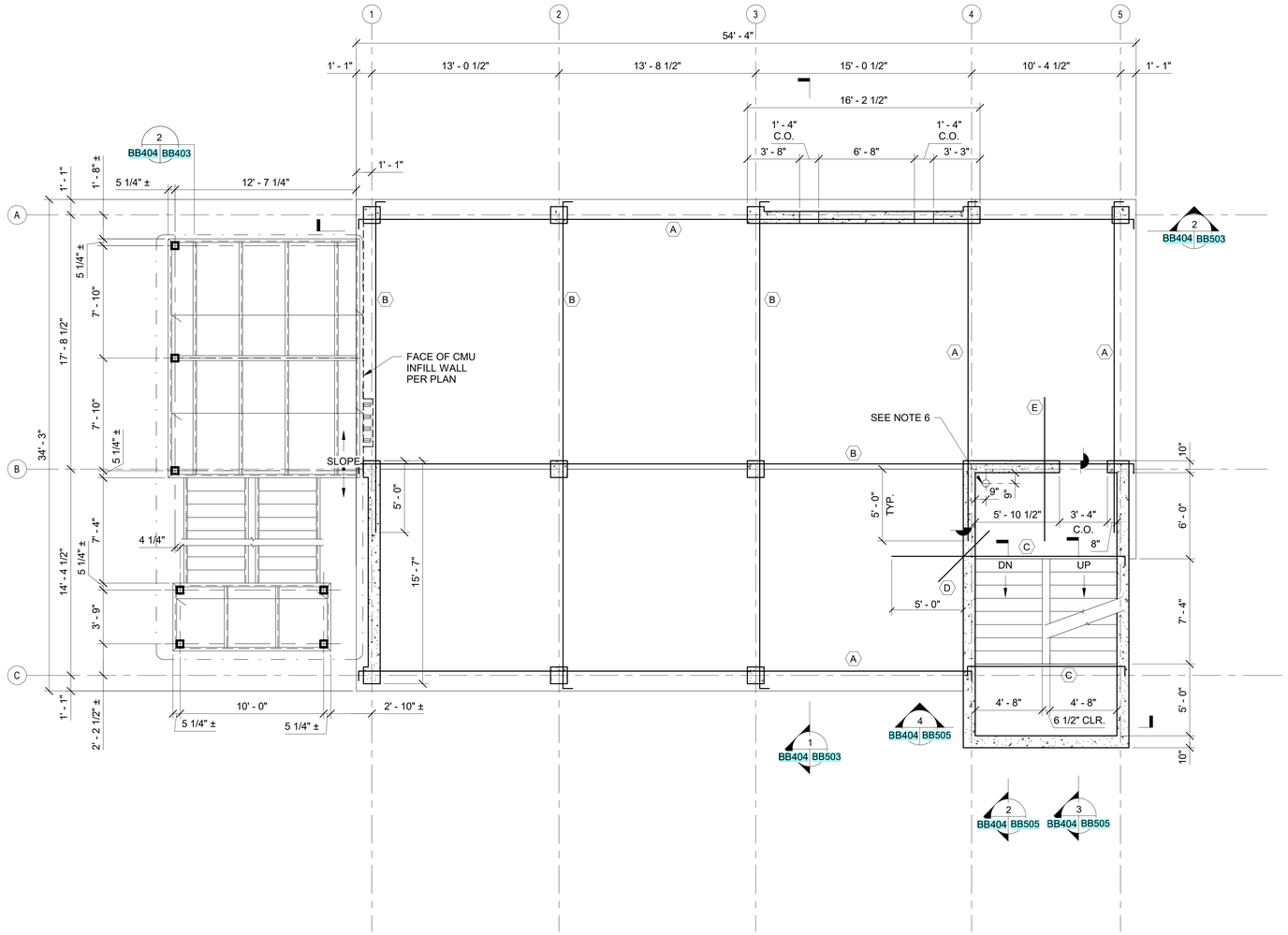

NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE FOURTH FLOOR/LOW ROOF PLAN FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +29.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄ ► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (5) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
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   - (C) = (3) #8 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (D) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (E) = (3) #5 x 10' - 0" LONG ADDITIONAL TOP BARS AT 12" O.C. CENTERED ON GRIDLINE B.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT 6" DIA. PVC PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. A 2 1/2" STEP IN TOP OF CONCRETE IS DESIGNATED WITH ⌐‾.

NORTH

1 BB404 BB404 FOURTH FLOOR FRAMING PLAN

SCALE 1/4" = 1'-0"

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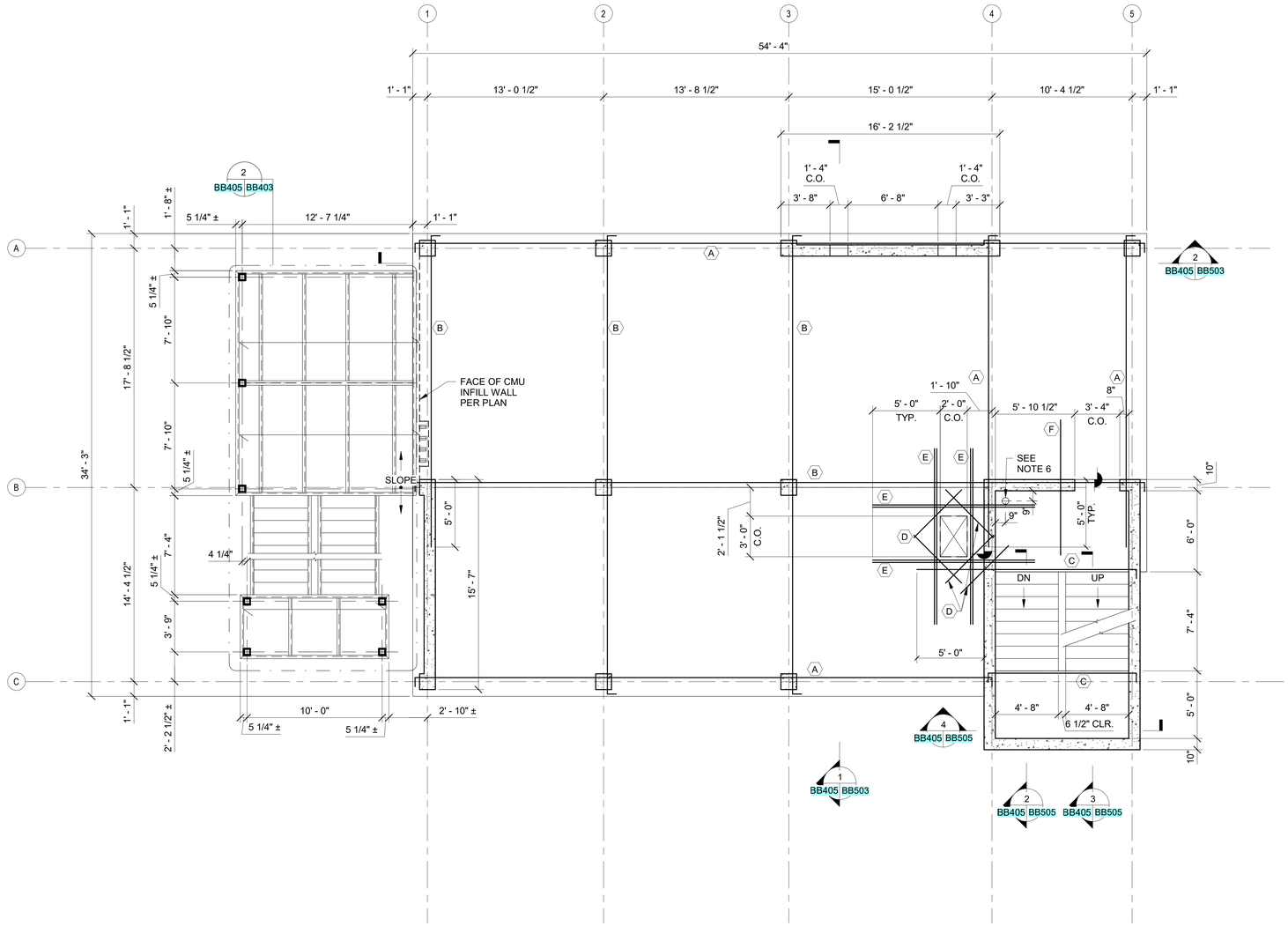

NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE FIFTH FLOOR 1/BB205 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +39.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
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   - (C) = (3) #8 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (D) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (E) = (2) EACH, #5 ADDITIONAL TOP & BOTTOM BARS AT EDGE OF OPENING.
   - (F) = (3) #5 x 10' - 0" LONG ADDITIONAL TOP BARS AT 12" O.C. CENTERED ON GRIDLINE B.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT 6" DIA. PVC PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. A 2 1/2" STEP IN TOP OF CONCRETE IS DESIGNATED WITH ◡.

NORTH

1 FIFTH FLOOR FRAMING PLAN
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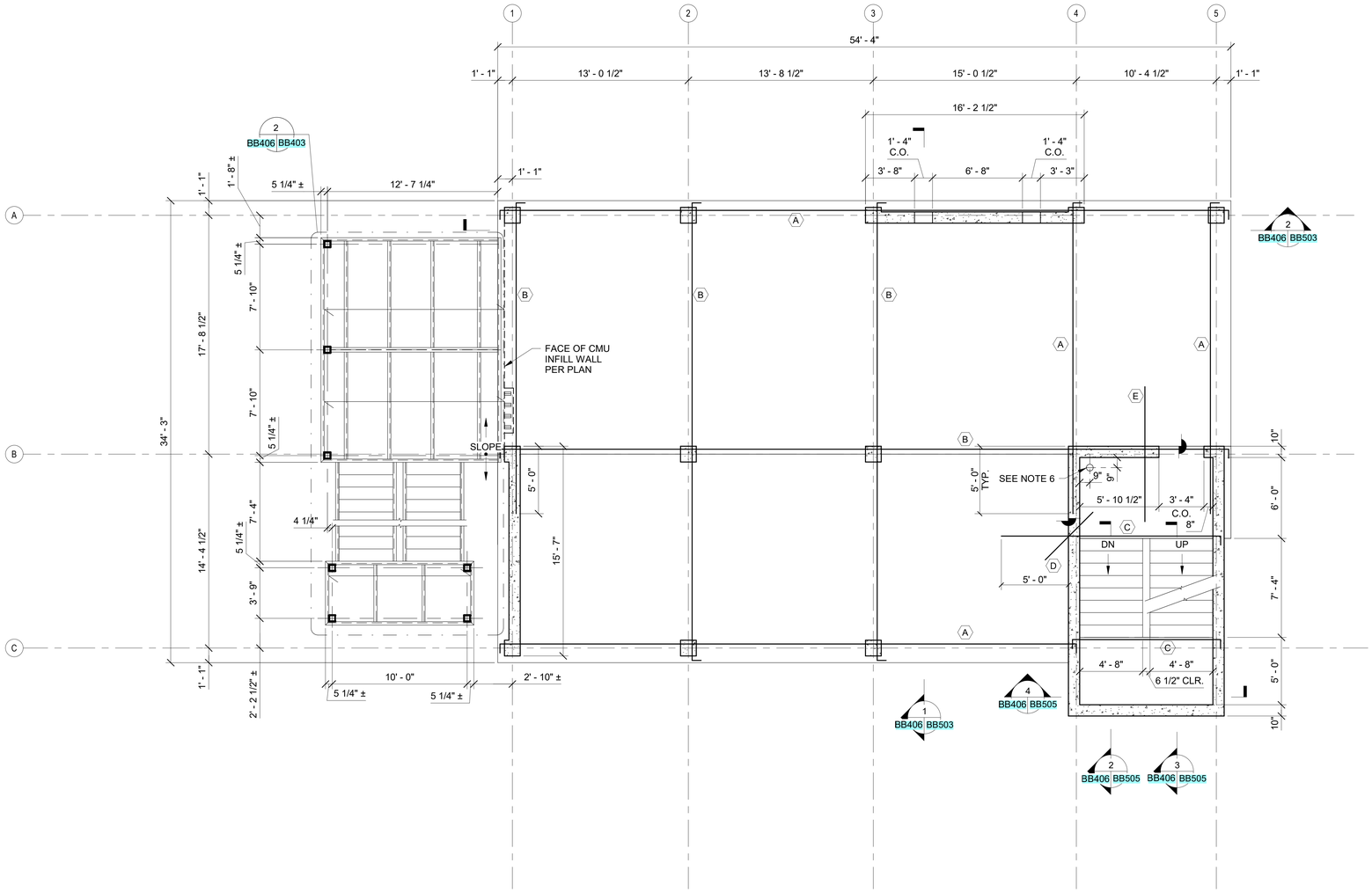

NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE SIXTH FLOOR 1/BB206 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +49.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (5) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (B) = (8) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (C) = (3) #8 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (D) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (E) = (3) #5 x 10' - 0" LONG ADDITIONAL TOP BARS AT 12" O.C. CENTERED ON GRIDLINE B.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT 6" DIA. PVC PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. A 2 1/2" STEP IN TOP OF CONCRETE IS DESIGNATED WITH ◡.

NORTH

1 BB406 BB406 SIXTH FLOOR FRAMING PLAN

SCALE 1/4" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - SIXTH FLOOR FRAMING PLAN**

BB406

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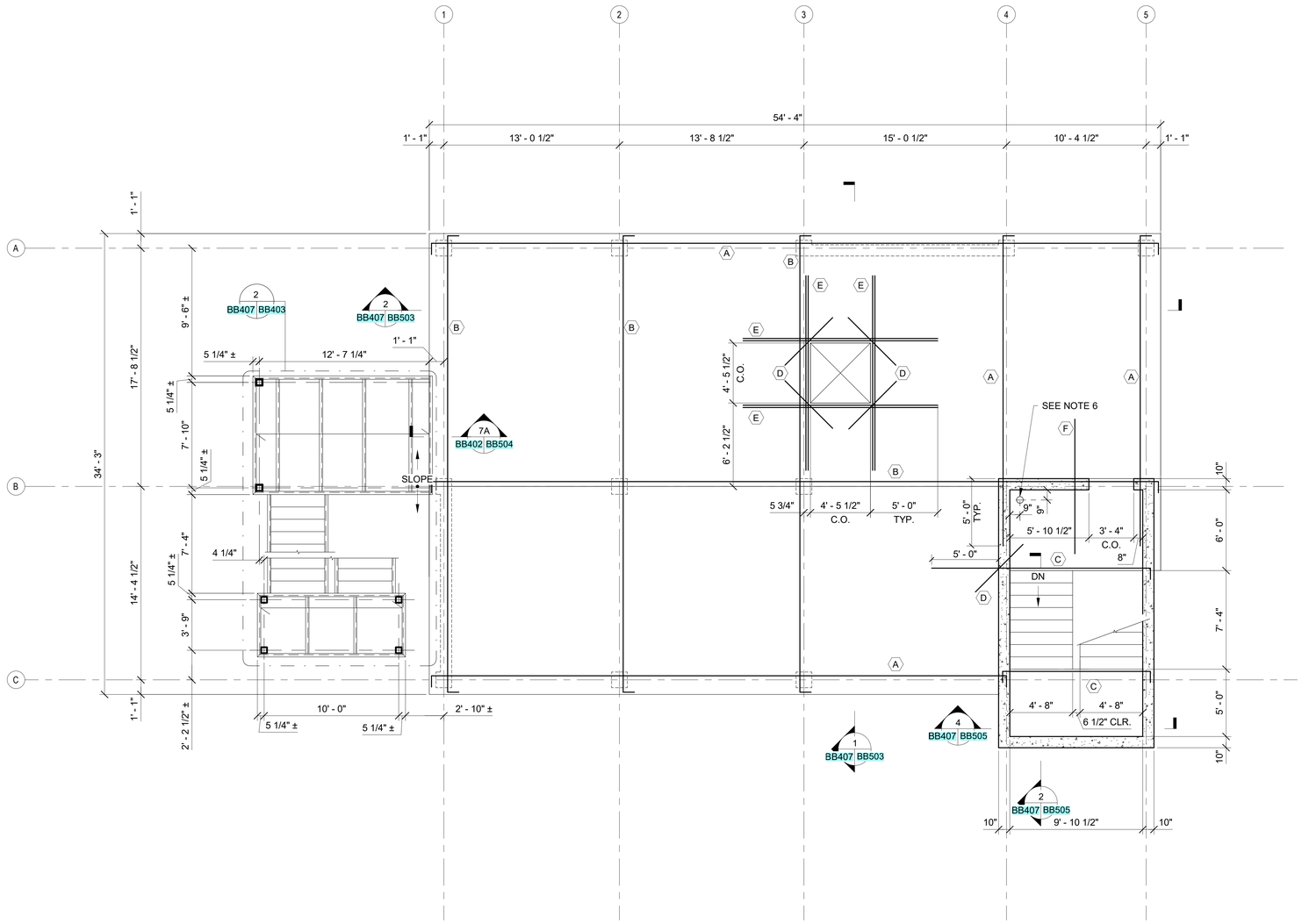


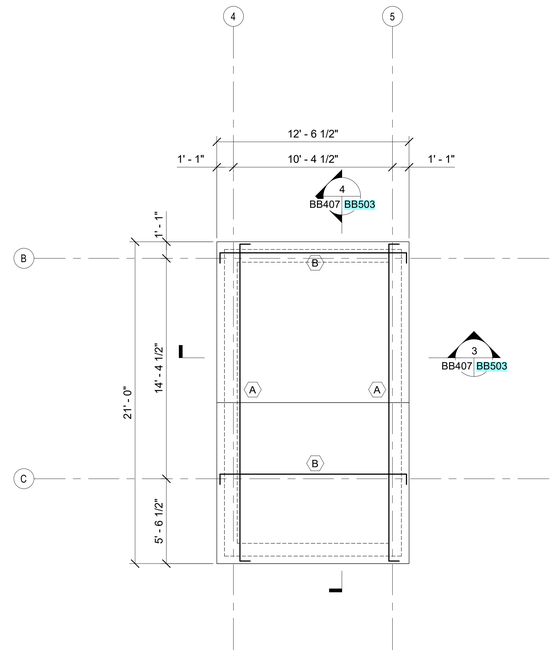
NOTES:

1. SLAB THICKNESS OVER STAIRS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE HIGH ROOF PLAN 1/BB207 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +59.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (5) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (B) = #5 @ 12" O.C. ADDITIONAL TOP BARS CENTERED BETWEEN MAIN TOP BARS.
   - (C) = (2) EACH, #5 ADDITIONAL TOP & BOTTOM BARS AT EDGE OF OPENING.
   - (D) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (E) = (2) EACH, #5 ADDITIONAL TOP & BOTTOM BARS AT EDGE OF OPENING.
   - (F) = (3) #5 x 10' - 0" LONG ADDITIONAL TOP BARS AT 12" O.C. CENTERED ON GRIDLINE B.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.

NORTH

1 BB407 HIGH ROOF FRAMING PLAN

SCALE 1/4" = 1'-0"



NOTES:

1. SLAB THICKNESS OVER STAIRS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE STAIR ROOF PLAN 2/BB207 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +69.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (5) #5 ADDITIONAL TOP BARS AT 12" O.C. AND (4) #5 ADDITIONAL BOTTOM BARS AT 12" O.C., CENTERED BETWEEN MAIN TOP BARS AND MAIN BOTTOM BARS, RESPECTIVELY, AND CENTERED ON COLUMN LINE.
   - (B) = #5 @ 12" O.C. ADDITIONAL TOP BARS CENTERED BETWEEN MAIN TOP BARS.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.

NORTH

2 BB407 STAIR ROOF FRAMING PLAN

SCALE 1/4" = 1'-0"

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JOB NUMBER **22056**
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PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - HIGH ROOF & STAIR ROOF FRAMING PLAN**

BB407

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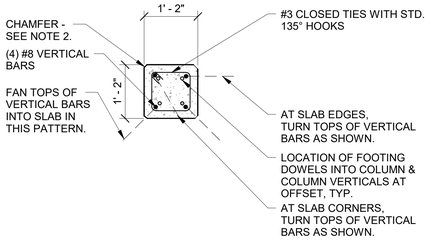
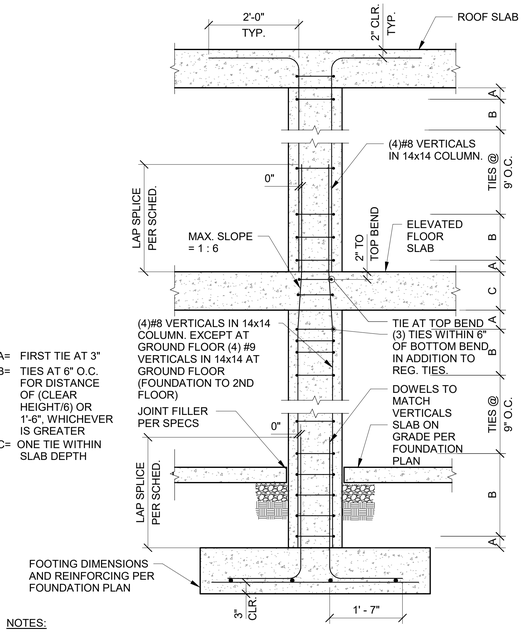


14X14 COLUMN PLAN

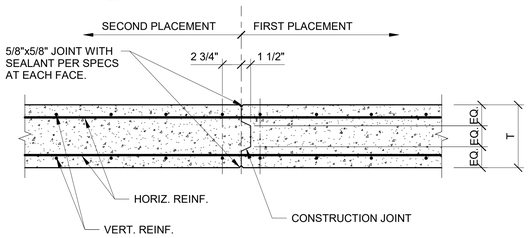


NOTES:

1. THIS DETAIL APPLIES TO ALL COLUMNS. NO TOLERANCES ARE ALLOWED IN DIMENSIONS FOR COLUMNS THAT WILL BE COVERED BY THERMAL LININGS. DIMENSIONS OF THERMAL LININGS ARE EXACT AND VARIATIONS IN COLUMN SIZES MAY RESULT IN ADDITIONAL COST DUE TO THE NEED FOR ADDITIONAL THERMAL LININGS AND CUSTOM CUTTING.
2. NO CHAMFER AT COLUMNS WITH THERMAL LINING.

1 TYPICAL COLUMN DETAIL

BB201 - BB204, BB501 | BB501 SCALE 3/4" = 1'-0"

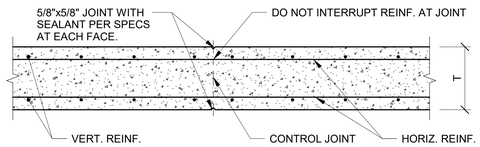


NOTES:

1. LOCATE CONSTRUCTION AND CONTROL JOINTS PER BUILDING ELEVATIONS, OR IF NOT SHOWN ON ELEVATIONS, PROVIDE CONSTRUCTION JOINT OR CONTROL JOINT AT 30'-0" O.C. MAX. SPACING AND LOCATE FIRST JOINT NO FARTHER THAN 15'-0" O.C. FROM CORNER.
2. AT CONSTRUCTION JOINTS, PREPARE JOINT FACE OF FIRST SECTION OF WALL PRIOR TO PLACEMENT OF SECOND SECTION OF WALL.

4 TYPICAL CONCRETE WALL CONSTRUCTION JOINT PLAN DETAIL

BB501 | BB501 SCALE 3/4" = 1'-0"

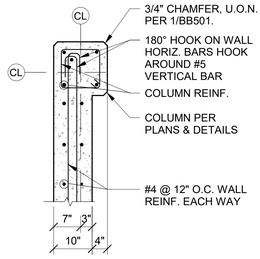


NOTES:

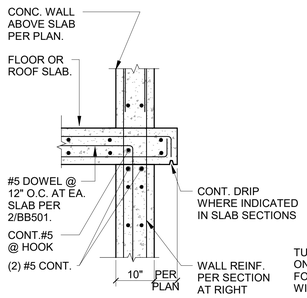
1. LOCATE CONSTRUCTION AND CONTROL JOINTS PER BUILDING ELEVATIONS, OR IF NOT SHOWN ON ELEVATIONS, PROVIDE CONSTRUCTION JOINT OR CONTROL JOINT AT 30'-0" O.C. MAX. SPACING AND LOCATE FIRST JOINT NO FARTHER THAN 15'-0" O.C. FROM CORNER.

5 TYPICAL CONCRETE WALL CONTROL JOINT PLAN DETAIL

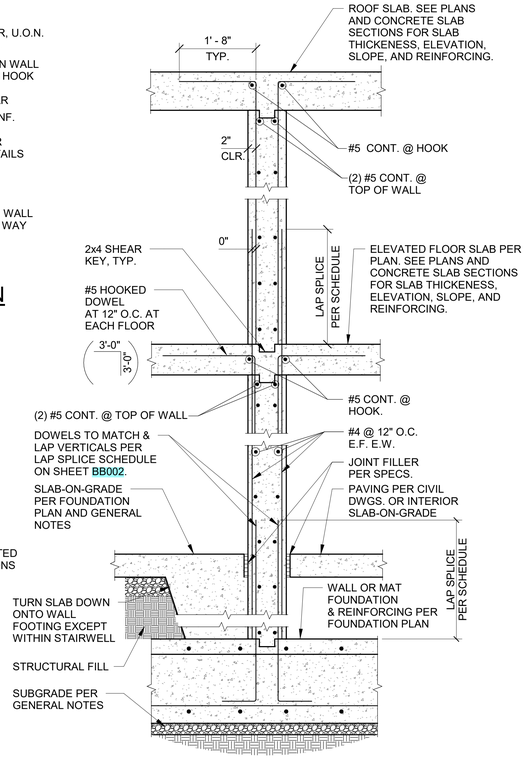
BB501 | BB501 SCALE 3/4" = 1'-0"



PLAN DETAIL @ COLUMN



EXTERIOR WALL SECTION



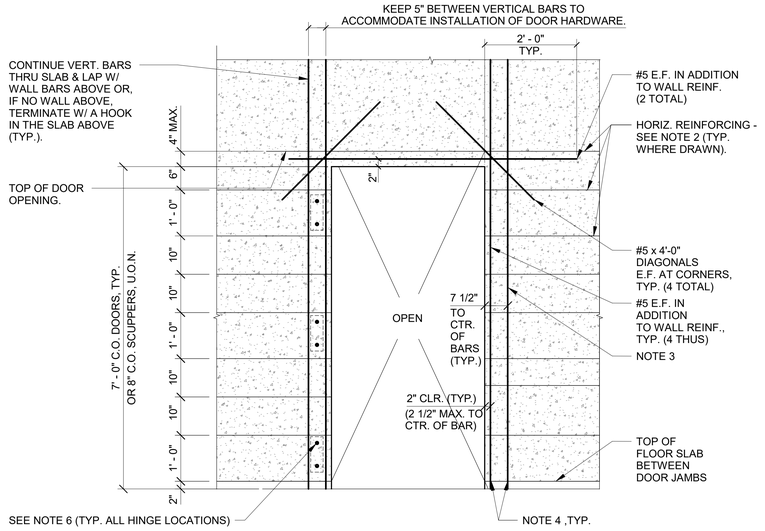
SECTION

NOTES:

1. SEE PLANS FOR THERMAL LINING LOCATIONS AND X/BB601 FOR LINING DETAILS.

2 TYPICAL CONCRETE WALL DETAIL

BB201 - BB204, BB501 | BB501 SCALE 3/4" = 1'-0"

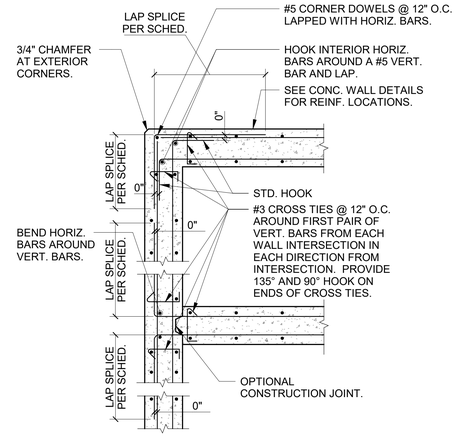


NOTES:

1. THIS DETAIL APPLIES TO ALL OPENINGS IN CONCRETE WALLS THAT EXTEND DOWN TO FLOOR LEVEL.
2. ADDED BARS SHOWN AS HEAVY LINES. TYPICAL WALL REINFORCING NOT SHOWN EXCEPT FOR HORZ. BARS INTERRUPTED BY OPENINGS FOR STEEL PLATE DOORS SHOWN AS LIGHT LINES, TO CLARIFY PLACEMENT, TO AVOID CONFLICT WITH DOOR HINGE BOLT INSTALLATION.
3. ADD 1/2 OF INTERRUPTED VERTICAL WALL REINFORCING AT EACH SIDE OF OPENING.
4. PROVIDE FOUNDATION DOWELS TO MATCH & LAP ADDITIONAL REINFORCING.
5. DO NOT PROVIDE CHAMFER AT EDGES LINED WITH THERMAL LINING SYSTEM OR WHERE THERMAL LINING TERMINATES AT EDGE OF DOOR OPENING.
6. PLACE THRU-BOLTS FOR DOOR HINGES IN WALL FORMS BEFORE CASTING CONCRETE. DO NOT DRILL BOLT HOLES AFTER CASTING CONCRETE.
7. USE TOP OF CONCRETE FLOOR AT CENTER OF DOORWAY/SCUPPER AS POINT OF REFERENCE FOR OPENING HEIGHT. IF THERE IS A CONCRETE STEP IN FLOOR SLAB AT ONE FACE OF THE WALL, USE TOP OF CONCRETE SLAB BETWEEN JAMBS AS POINT OF REFERENCE.

6 TYPICAL DOOR OR SCUPPER OPENING IN CONCRETE WALL DETAIL

BB201-BB204 | BB501 SCALE 3/4" = 1'-0"



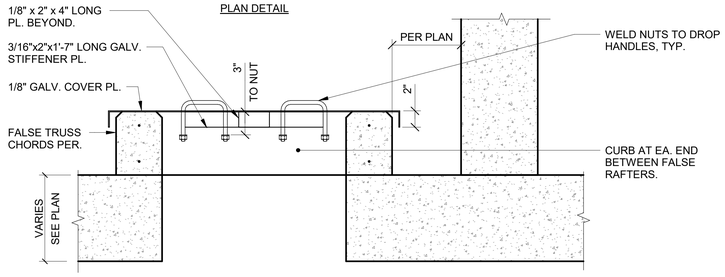
NOTES:

1. LAP REINFORCING IN ACCORDANCE WITH TYPICAL REINFORCING LAP SPLICE SCHEDULE ON SHEET BB002.

TYPICAL CONCRETE REINFORCEMENT PLAN DETAIL

3 | BB501 | BB501 SCALE 3/4" = 1'-0"

PLAN DETAIL



SECTION A-A

NOTES:

1. ALL METAL PIECES IN THIS DETAIL SHALL BE GALVANIZED, U.O.N.
2. SEE FRAMING PLAN & SLAB SECTIONS FOR SLAB REINFORCING.

7 ATTIC ACCESS OPENING @ CONCRETE FALSE TRUSS CHORDS

BB205 | BB501 SCALE 1 1/2" = 1'-0"

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SHEET **BURN BUILDING - TYPICAL CONCRETE DETAILS**

BB501

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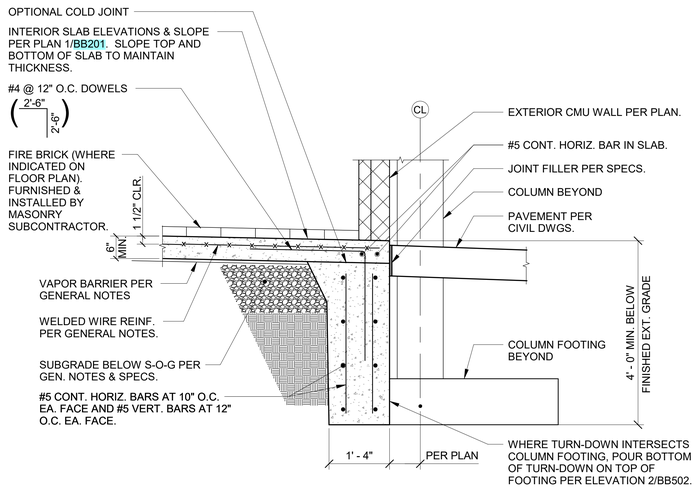
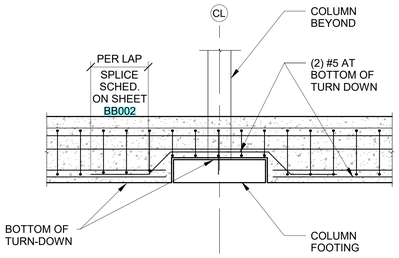


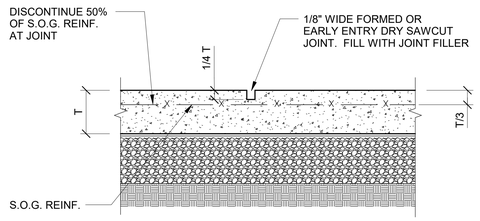
TYPICAL SLAB TURNDOWN SECTION AT BUILDING EXTERIOR1

1 BB401 BB502 SCALE 3/4" = 1'-0"



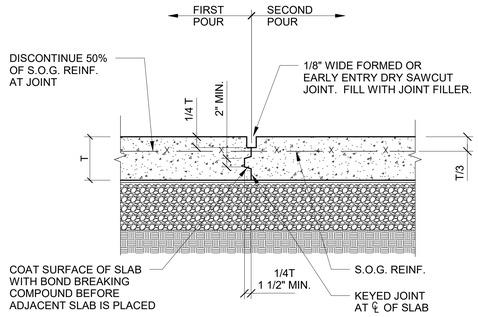
TYPICAL ELEVATION TURN-DOWN SLAB STEP

2 BB401 BB502 SCALE 3/8" = 1'-0"



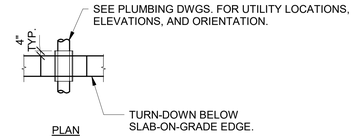
TYPICAL S.O.G. CONTROL JOINT DETAIL

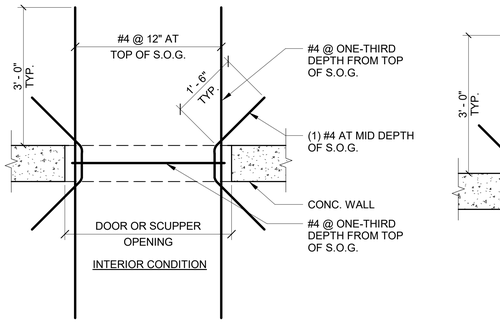
3 BB502 BB502 SCALE 3/4" = 1'-0"

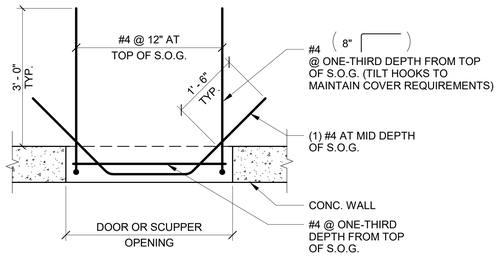


TYPICAL S.O.G. CONSTRUCTION JOINT DETAIL

4 BB502 BB502 SCALE 3/4" = 1'-0"

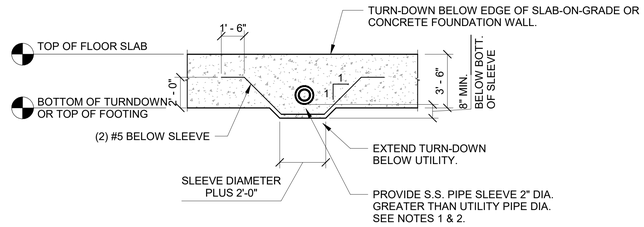






TYPICAL PLAN-REINF. IN S.O.G. AT WALL OPENING DETAIL

5 BB401 BB502 SCALE 3/4" = 1'-0"



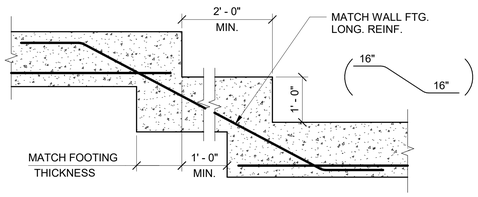
ELEVATION AT SHALLOW UTILITY (LESS THAN 4'-0" BELOW SLAB)

NOTES:

1. FILL SPACE BETWEEN PIPE AND PIPE SLEEVE WITH EXPANDED POLYSTYRENE INSULATION.
2. SLEEVE FOUNDATION ABOVE BOTTOM OF TURNDOWN OR TOP OF WALL FOOTING.
3. IF UTILITY IS BELOW BOTTOM OF TURNDOWN, NOTIFY ENGINEER FOR DIRECTION.
4. IF UTILITY PASSES THROUGH A CONC. WALL, SLEEVE WALL SIM. TO THIS DETAIL. IF UTILITY IS WITHIN OR BELOW WALL FOOTING, STEP FOOTING DOWN (BELOW UTILITY PER DETAIL 7/BB502) OR LOWER ENTIRE LENGTH OF FOOTING TO PASS BELOW UTILITY AND SLEEVE WALL. NOTIFY ENGINEER IF THIS CONDITION EXISTS.

TURNDOWN FOOTING AT UTILITY CROSSING DETAIL

6 BB401 BB502 SCALE 1/4" = 1'-0"

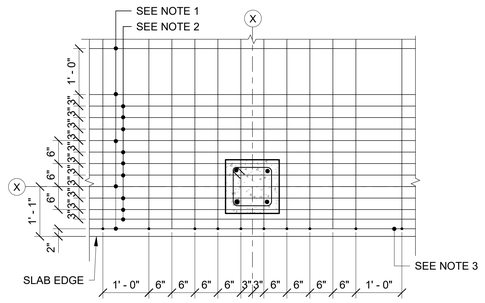


NOTES:

1. DETAIL SHOWS BOTTOM LONGITUDINAL BARS ONLY. WHERE TOP LONGITUDINAL BARS ARE REQUIRED, PROVIDE DIAGONAL BARS AT TOP (THRU STEP).
2. CONTINUE TRANSVERSE BARS (NOT SHOWN) THRU STEP.

TYPICAL CONCRETE WALL FOOTING STEP DETAIL

7 BB502 BB502 SCALE 3/4" = 1'-0"



PLAN DETAIL

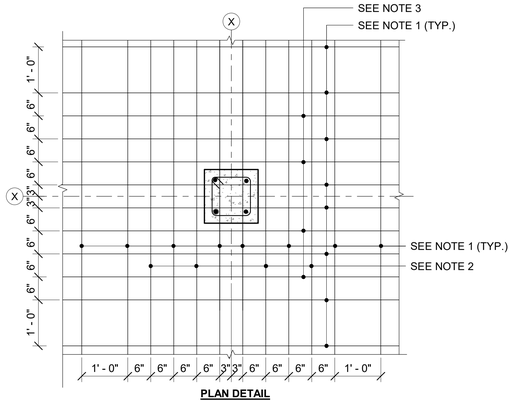
NOTES:

1. (5) #5 TYPICAL T&B REINFORCING PER FRAMING PLAN.
2. (9) #5 ADDITIONAL T&B BARS IN THE E-W DIRECTION PER FRAMING PLAN.
3. SEE DETAIL 9/BB502 FOR ADDITIONAL REINFORCING IN N-S DIRECTION.
4. ALONG COLUMN LINE 1, ROTATE DETAIL 90 DEGREES.

PLAN DETAIL - TYPICAL SLAB REINFORCING THROUGH EXTERIOR COLUMN

NORTH

8 BB502 BB502 SCALE 3/4" = 1'-0"



PLAN DETAIL

NOTES:

1. (6) #5 TYPICAL T&B REINFORCING BOTH WAYS PER FRAMING PLAN.
2. (4) #5 ADDITIONAL TOP AND BOTTOM BARS IN THE N-S DIRECTION PER FRAMING PLAN.
3. (4) #5 ADDITIONAL TOP AND BOTTOM BARS IN THE E-W DIRECTION PER FRAMING PLAN.

PLAN DETAIL - TYPICAL SLAB REINFORCING THROUGH INTERIOR COLUMN

NORTH

9 BB502 BB502 SCALE 3/4" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - FOUNDATION DETAILS**

BB502

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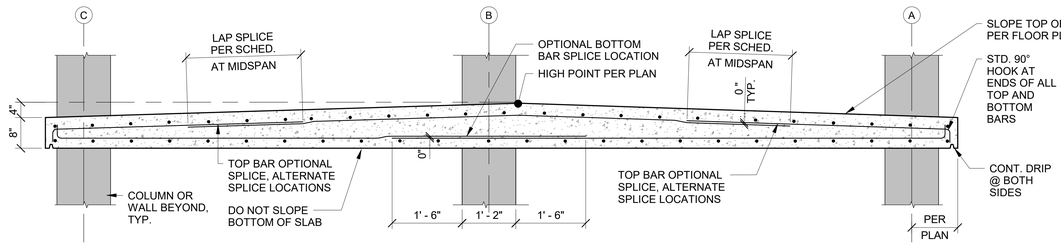
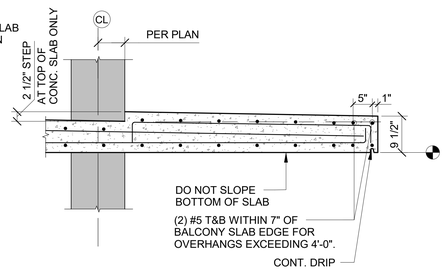
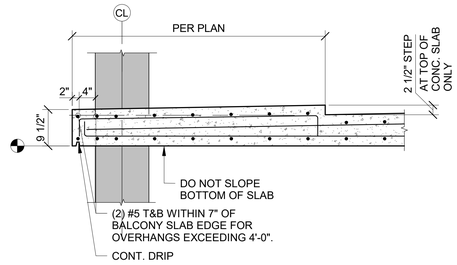


NOTES:

1. SLOPE TOP BARS IN THIS ←→ DIRECTION WITH TOP OF SLAB SO THAT PROPER COVER IS MAINTAINED OVER THE ENTIRE LENGTH OF THE BAR.
2. STD. 90° END HOOKS MAY BE TURNED IN ANY DIRECTION SO THAT BARS FIT WITHIN SLAB DEPTHS AND MAINTAIN PROPER COVER. HOOKS ARE NOT REQUIRED TO BE VERTICAL.
3. SEE SECTION 1/BB501 FOR TYPICAL CONCRETE COLUMN REINFORCING.
4. SEE SECTION 2/BB501 FOR TYPICAL CONCRETE WALL REINFORCING.



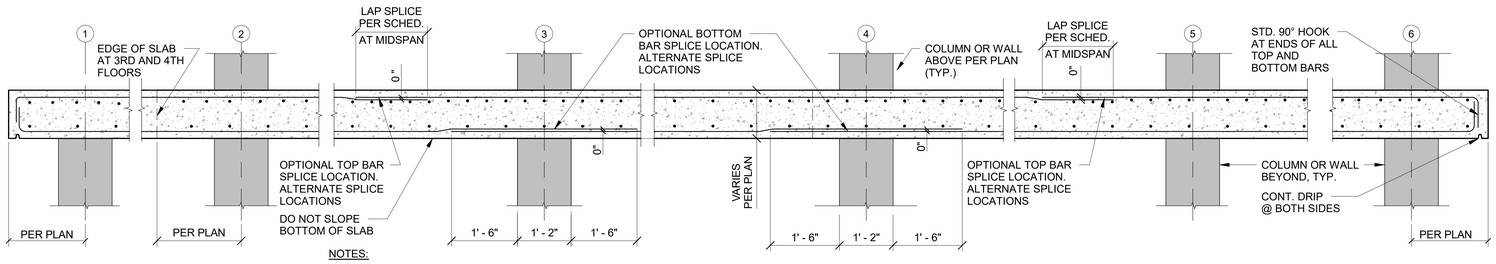
SECTION 1A - BALCONY CONDITION AT 2ND & 3RD FLOOR



SECTION 1B - INSET BALCONY CONDITION @ 3RD FLOOR

1B BB403 | 1A BB402, BB403 | 1 BB402 - BB404 — CONCRETE SLAB SECTION

BB503 SCALE 3/4" = 1'-0"

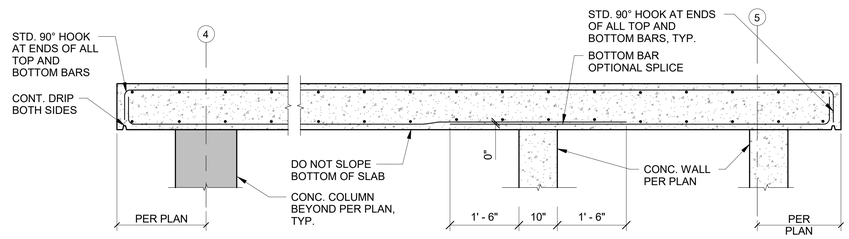


NOTES:

1. IN SLAB, SLOPE TOP BARS IN ORTHOGONAL DIRECTION PARALLEL WITH TOP OF SLAB SO THAT PROPER COVER IS MAINTAINED OVER THE ENTIRE LENGTH OF THE BAR.
2. STD. 90° END HOOKS MAY BE TURNED IN ANY DIRECTION SO THAT BARS FIT WITHIN SLAB DEPTHS AND MAINTAIN PROPER COVER. HOOKS ARE NOT REQUIRED TO BE VERTICAL.
3. SEE SECTION 1/BB501 FOR TYPICAL CONCRETE COLUMN REINFORCING.
4. SEE SECTION 2/BB501 FOR TYPICAL CONCRETE WALL REINFORCING.

2 BB402 - BB404 | BB503 — CONCRETE SLAB SECTION

SCALE 3/4" = 1'-0"

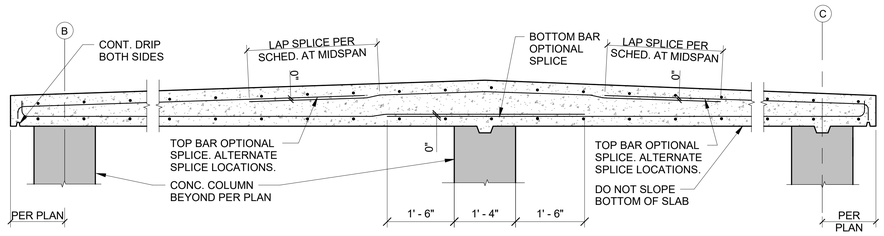


NOTES:

1. STD. 90° END HOOKS MAY BE TURNED IN ANY DIRECTION SO THAT BARS FIT WITHIN SLAB DEPTHS AND MAINTAIN PROPER COVER. HOOKS ARE NOT REQUIRED TO BE VERTICAL.
2. SEE SECTION 1/BB501 FOR TYPICAL CONCRETE COLUMN REINFORCING.
3. SEE SECTION 2/BB501 FOR TYPICAL CONCRETE WALL REINFORCING.

3 BB407 | BB503 — STAIR ROOF CONCRETE SLAB SECTION

SCALE 3/4" = 1'-0"



NOTES:

1. STD. 90° END HOOKS MAY BE TURNED IN ANY DIRECTION SO THAT BARS FIT WITHIN SLAB DEPTHS AND MAINTAIN PROPER COVER. HOOKS ARE NOT REQUIRED TO BE VERTICAL.
2. SEE SECTION 1/BB501 FOR TYPICAL CONCRETE COLUMN REINFORCING.
3. SEE SECTION 2/BB501 FOR TYPICAL CONCRETE WALL REINFORCING.

4 BB407 | BB503 — STAIR ROOF CONCRETE SLAB SECTION

SCALE 3/4" = 1'-0"

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NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - CONCRETE SLAB SECTIONS**

BB503

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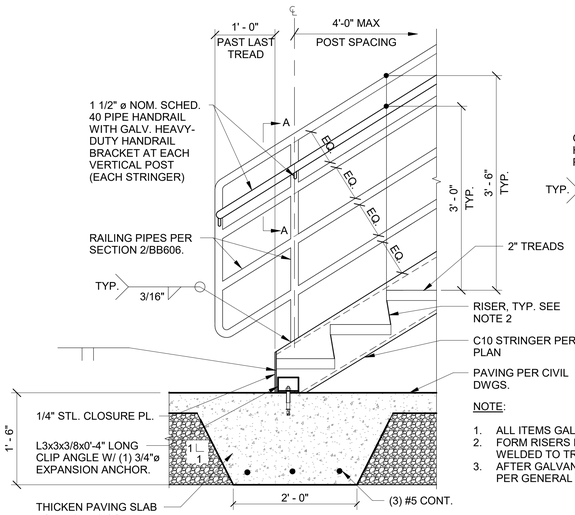
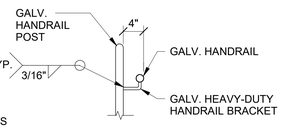


NOTE:

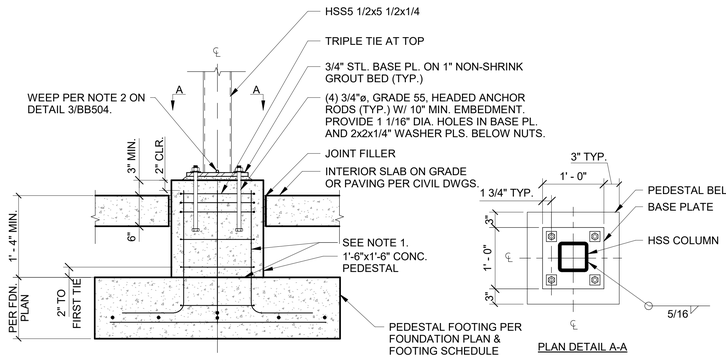
1. ALL ITEMS GALVANIZED, U.O.N.
2. FORM RISERS FROM GALV. STEEL SHEET NOT LESS THAN 0.097" THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.
3. AFTER GALVANIZING, PLUG VENT HOLES IN PIPES AND TUBES OF RAILINGS PER GENERAL NOTE Q.7.

1 SECTION

BB201 BB401 BB504 SCALE 1" = 1'-0"



SECTION A-A



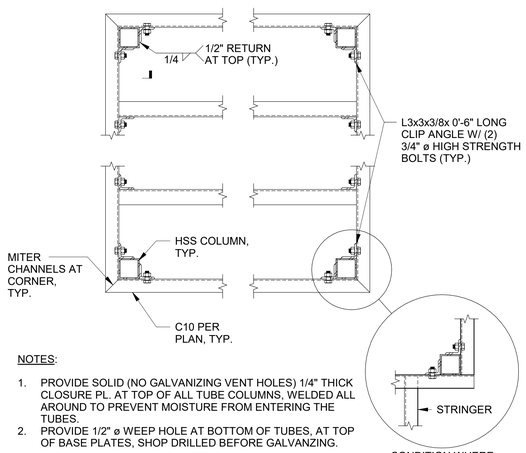
NOTES:

1. PROVIDE (8) #5 VERTICAL BARS W/ 90° END HOOKS IN FOOTINGS AND #4 CLOSED TIES AT 12" O.C. MAX. IN ALL CONCRETE PEDESTALS.
2. PROVIDE HOT-DIP GALVANIZED STEEL FOR ALL STEEL PIECES, U.O.N.

PLAN DETAIL A-A

2 CONCRETE PEDESTAL DETAIL

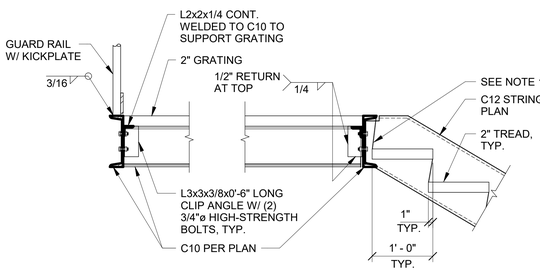
BB401 BB504 SCALE 1" = 1'-0"



NOTES:

1. PROVIDE SOLID (NO GALVANIZING VENT HOLES) 1/4" THICK CLOSURE PL. AT TOP OF ALL TUBE COLUMNS, WELDED ALL AROUND TO PREVENT MOISTURE FROM ENTERING THE TUBES.
2. PROVIDE 1/2" ø WEEP HOLE AT BOTTOM OF TUBES, AT TOP OF BASE PLATES, SHOP DRILLED BEFORE GALVANIZING.

CONDITION WHERE STRINGER CONNECTS TO FRAMING

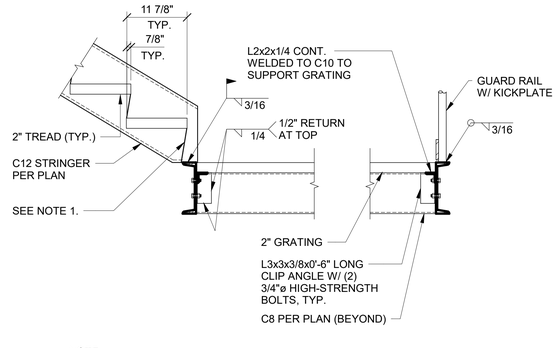


NOTE:

1. FORM RISERS FROM GALV. STEEL SHEET NOT LESS THAN 0.097" THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.
2. CONNECT (C10 OR C12) STAIR STRINGER TO C10 LANDING BEAM WITH L3x3x3/8x0'-6" LONG SHOP WELDED TO STRINGER AND BOLTED TO LANDING BEAM WITH (2) 3/4" DIA. HIGH-STRENGTH BOLTS (TYP.).

4 SECTION

BB402 - BB407 BB504 SCALE 1" = 1'-0"

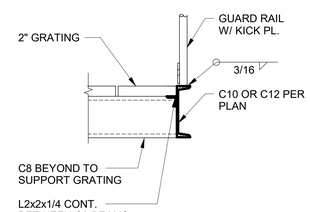


NOTE:

1. FORM RISERS FROM GALV. STEEL SHEET NOT LESS THAN 0.097" THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.

5 SECTION

BB402 - BB407 BB504 SCALE 1" = 1'-0"

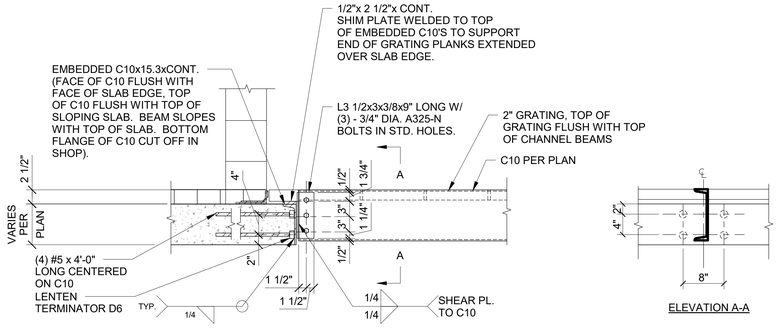


6 SECTION

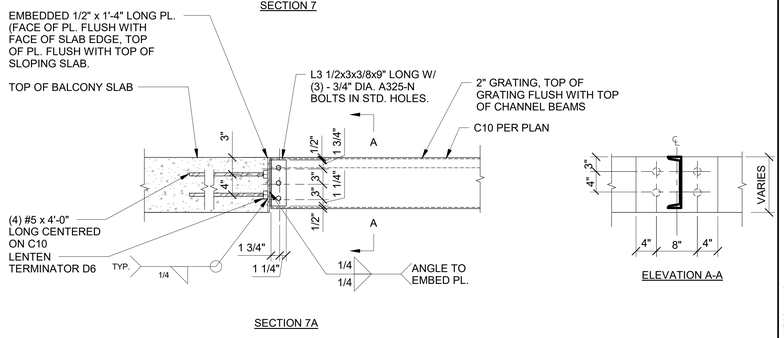
BB402 - BB407 BB504 SCALE 1" = 1'-0"

PLAN DETAIL - LANDING BEAMS TO COLUMNS

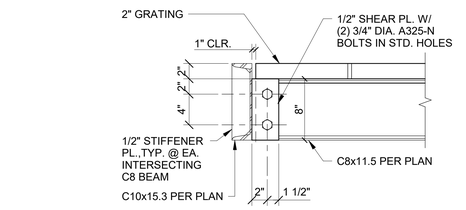
3 BB402 BB504 SCALE 1" = 1'-0"



SECTION 7

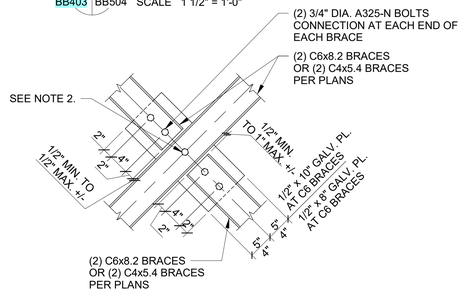


SECTION 7A



8 C8 CONNECTION AT LANDING CHANNELS

BB403 BB504 SCALE 1 1/2" = 1'-0"

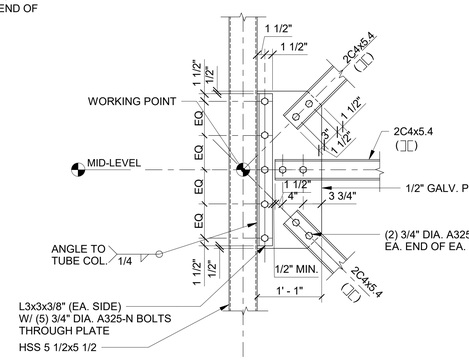


NOTES:

1. THIS DETAIL APPLIES AT EACH BRACE INTERSECTION AT BRF-1 & BRF-2.
2. (1) 3/4" DIA. A325-N BOLT CONNECTION AT CENTER OF INTERSECTION.

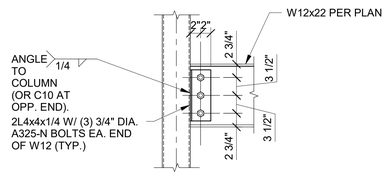
10 TYPICAL VERTICAL BRACING INTERSECTION DETAIL

BB402 BB504 SCALE 1" = 1'-0"



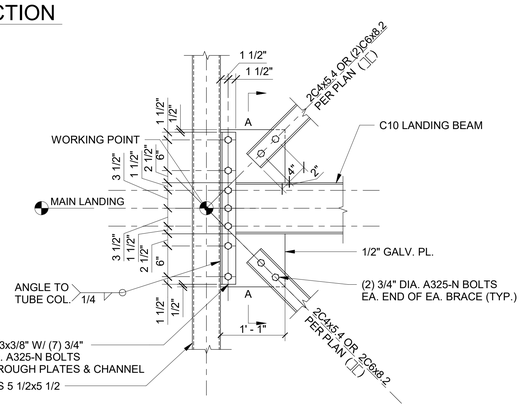
11 TYPICAL BRF-2 CONNECTION AT MID-STORY LEVEL OF FRAME

BB402 BB504 SCALE 1" = 1'-0"



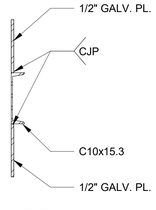
9 W12 CONNECTION

BB403 BB504 SCALE 1" = 1'-0"



12 TYPICAL BRACED FRAME CONNECTION AT MAIN LANDING

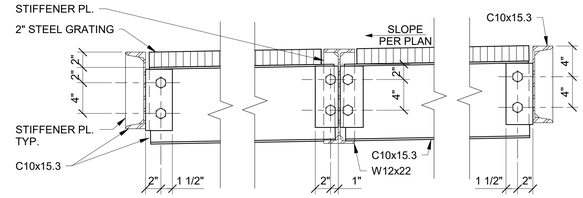
BB402 BB504 SCALE 1" = 1'-0"



SECTION A-A

7 EXTERIOR PLATFORM CONNECTION TO SLAB EDGE

BB402 - BB406 BB504 SCALE 1" = 1'-0"



13 SECTION

BB403 BB504 SCALE 1 1/2" = 1'-0"

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DATE ISSUED
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BURN BUILDING - EXTERIOR STEEL STAIR DETAILS

BB504

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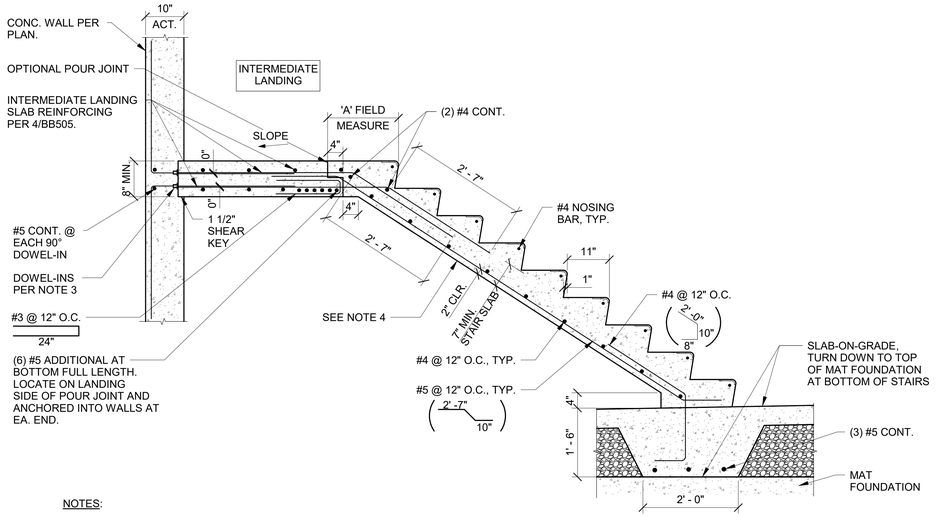
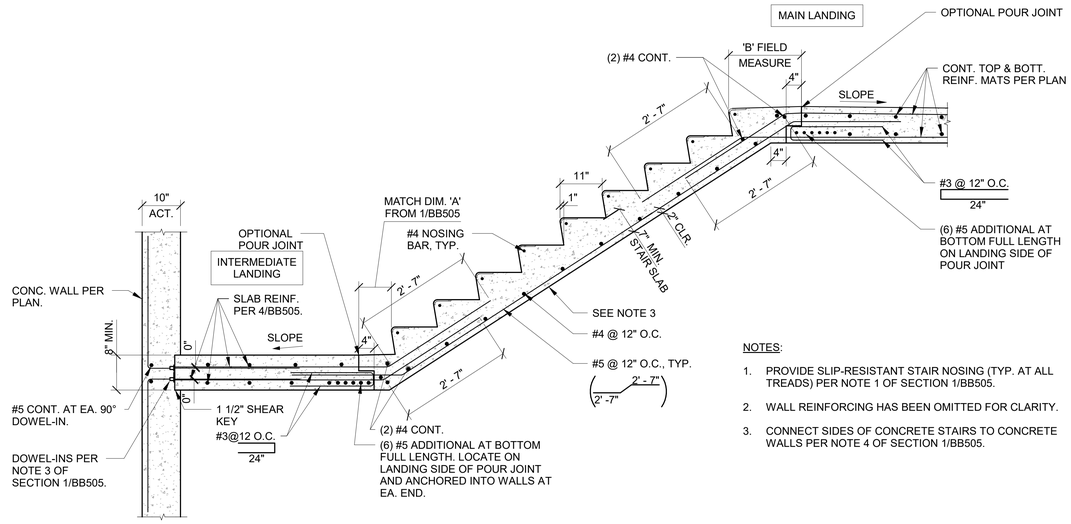


NOTES:

1. PROVIDE GALVANIZED, SLIP-RESISTANT STAIR NOSING (TYP. AT ALL TREADS). PROVIDE 1/4" MIN. THICK, GRADE 2, ROUNDED-EDGE STAIR NOSING, 1 1/2" DEEP x 3" WIDE x 3'-4" LONG, TIGHT TO CONCRETE WALL TO AVOID GUARDRAIL BASE PLATE AT OPPOSITE END OF TREAD. PROVIDE SLIPNOT STAIR NOSING WITH J-HOOKS, AS MANUFACTURED BY SLIPNOT METAL SAFETY FLOORING AT (800) 754-7668 OR WWW.SLIPNOT.COM, OR AN EQUIVALENT APPROVED BY THE ENGINEER. INSTALL STAIR NOSINGS IN ACCORDANCE WITH REQUIREMENTS OF THE MANUFACTURER.
2. WALL REINFORCING HAS BEEN OMITTED FOR CLARITY.
3. CONNECT INTERMEDIATE LANDING SLAB TO CONCRETE WALLS USING DOWEL-IN SYSTEM BY DAYTON SUPERIOR, OR AN APPROVED EQUIVALENTBY ERICO OR BARSPLICE PRODUCTS, INC. FOR EACH REINFORCING BAR THAT PASSES FROM THE LANDING SLAB INTO WALL, PROVIDE A #5 D102A 90° HOOKED DOWEL BAR SPLICER CAST INTO WALL, WITH DIMENSIONS A=5" & B=2' - 7", PLUS A #5 D-101 2' - 10" LONG DOWEL-IN DOWEL SCREWED INTO THE SPLICER AND LAPPING THE SLAB REINFORCING WITH A 2' - 7" MIN. LAP LENGTH.
4. WHERE CONCRETE STAIR SIDES INTERSECT CONCRETE WALLS, CONNECT STAIR SLABS TO CONCRETE WALLS USING DOWEL-IN SYSTEM DESCRIBED IN NOTE 3.

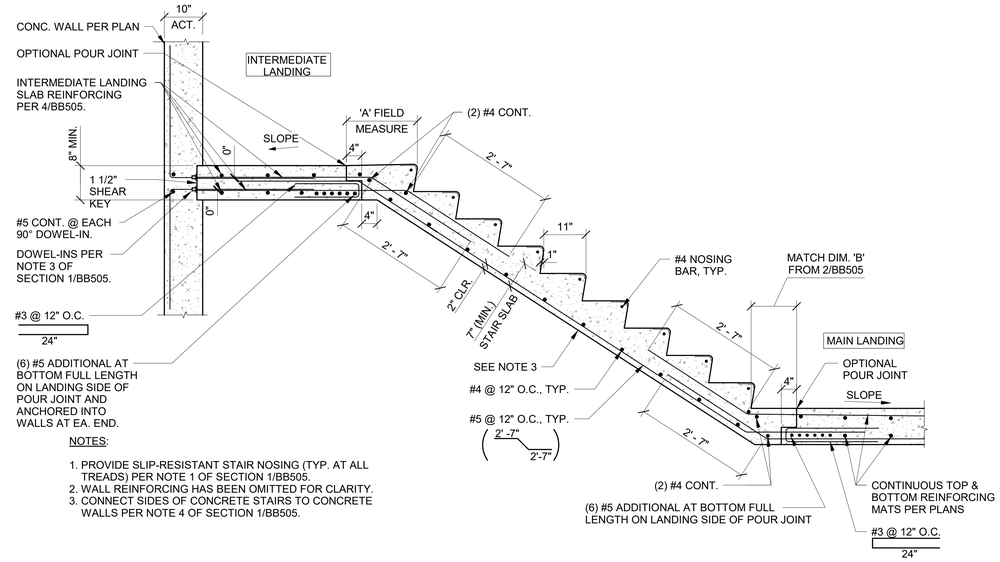
1 CONCRETE STAIR SECTION
BB201, BB401 BB505 SCALE 3/4" = 1'-0"



NOTES:

1. PROVIDE SLIP-RESISTANT STAIR NOSING (TYP. AT ALL TREADS) PER NOTE 1 OF SECTION 1/BB505.
2. WALL REINFORCING HAS BEEN OMITTED FOR CLARITY.
3. CONNECT SIDES OF CONCRETE STAIRS TO CONCRETE WALLS PER NOTE 4 OF SECTION 1/BB505.

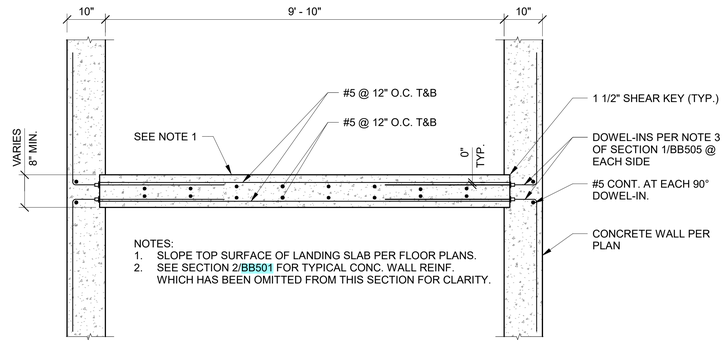
2 CONCRETE STAIR SECTION
BB202 - BB204 BB505 SCALE 3/4" = 1'-0"



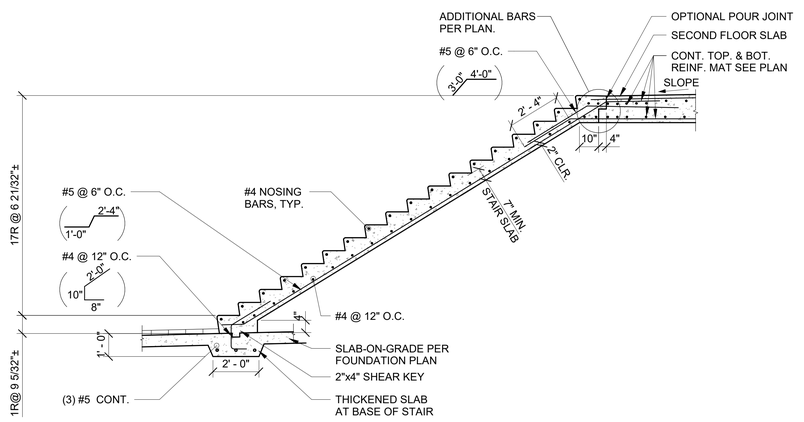
NOTES:

1. PROVIDE SLIP-RESISTANT STAIR NOSING (TYP. AT ALL TREADS). PROVIDE 1/4" MIN. THICK, GRADE 2, ROUNDED-EDGE STAIR NOSINGS.
2. WALL REINFORCING HAS BEEN OMITTED FOR CLARITY.
3. CONNECT SIDES OF CONCRETE STAIRS TO CONCRETE WALLS NOTE 4 OF SECTION 1/BB505.

3 CONCRETE STAIR SECTION
BB202 - BB204 BB505 SCALE 3/4" = 1'-0"



4 INTERMEDIATE STAIR LANDING SECTION
BB402 - BB404 BB505 SCALE 3/4" = 1'-0"



NOTES:

1. PROVIDE GALVANIZED, SLIP-RESISTANT STAIR NOSING CAST IN SLAB (TYP. AT ALL TREADS). PROVIDE 1/4" MIN. THICK, GRADE 2, ROUNDED-EDGE STAIR NOSINGS, 4" WIDE x 3'-8" LONG. PROVIDE SLIPNOT STAIR NOSING WITH J-HOOKS, AS MANUFACTURED BY SLIPNOT METAL SAFETY FLOORING, OR AN EQUIVALENT APPROVED BY THE ENGINEER. INSTALL STAIR NOSING IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER.
2. WHERE CONCRETE STAIR SIDES INTERSECT CONCRETE WALLS, CONNECT STAIR SLABS TO CONCRETE WALLS USING DOWEL-IN SYSTEM DESCRIBED IN NOTE 3 OF 1/BB505.

FIRST FLOOR STAIR

5 CONCRETE STAIR SECTION
BB201, BB401 BB505 SCALE 3/8" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056

DATE ISSUED
01/10/25

PROJECT STATUS
ISSUE FOR BID

SHEET
BURN BUILDING - CONCRETE STAIR SECTIONS

BB505

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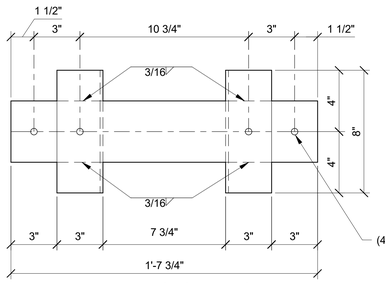
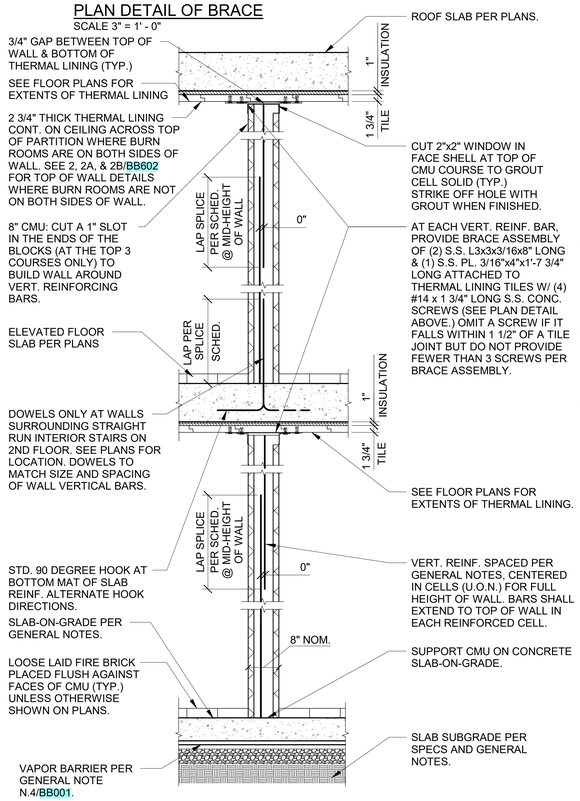


PLAN DETAIL OF BRACE

SCALE 3" = 1' - 0"

NOTES:

1. ENTIRE ASSEMBLY SHALL BE ON SITE PRIOR TO CONSTRUCTION OF MASONRY WALLS. SET ASSEMBLY ON BLOCK ADJACENT TO BLOCK THAT WILL BE REINFORCED AND GROUTED. ONCE REINFORCED BLOCK IS IN PLACE, SLIDE ASSEMBLY INTO PLACE, LIFT, AND ATTACH TO THERMAL LINING TILES ABOVE.

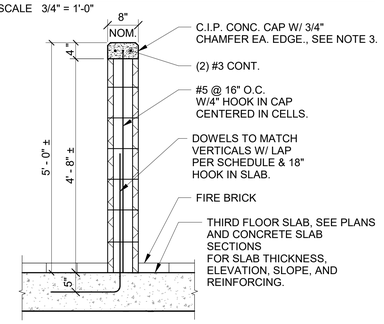


NOTES:

1. SEE 8/BB601 FOR TYPICAL LINTEL DETAILS.
2. INSTALL THERMAL LININGS AT CEILING PRIOR TO CONSTRUCTING INTERIOR WALLS. ONLY FOR WALLS WHERE A BURN ROOM IS ON BOTH SIDES OF THE WALL. SEE DETAILS 2, 2A, & 2B/BB602 FOR TOP OF WALL DETAILS WHERE BURN ROOMS ARE NOT ON BOTH SIDES OF WALL.
3. CUT BOTTOM COURSE TO ACCOUNT FOR SLAB SLOPE AND PROVIDE FULL 8" TALL COURSE AT TOPS OF ALL WALLS. IF WALL DOES NOT COURSE HORIZONTALLY, PROVIDE SHORT COURSE WITHIN WALL LENGTH AT ANY LOCATION OTHER THAN AT ENDS OF WALL OR AT DOOR OR WINDOW JAMBS.
4. PROVIDE HORIZONTAL JOINT REINFORCING AT 16" O.C. MAX.
5. GROUT ALL CELLS SOLID FULL HEIGHT.

TYPICAL INTERIOR NON-BEARING MASONRY WALL REINFORCING AND BRACING DETAILS

1 — BB201 - BB206 | BB601 SCALE 3/4" = 1'-0"

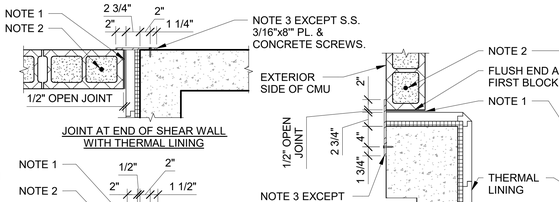


NOTES:

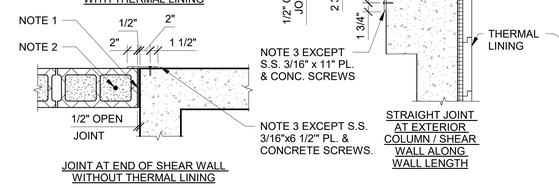
1. PROVIDE HORIZ. JOINT REINFORCING @ 16" O.C. MAX. PER GENERAL NOTES & SPECIFICATIONS.
2. GROUT ALL CELLS SOLID.
3. CONC. CAP SHALL BE C.I.P., AIR-ENTRAINED CONCRETE PER GENERAL NOTE L.12 ON SHEET BB001.

CUBICLE WALL SECTION

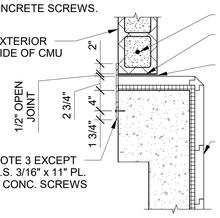
6 — BB203 | BB601 SCALE 3/4" = 1'-0"



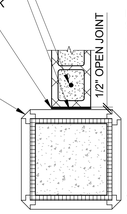
JOINT AT END OF SHEAR WALL WITH THERMAL LINING



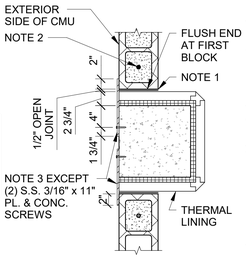
JOINT AT END OF SHEAR WALL WITHOUT THERMAL LINING



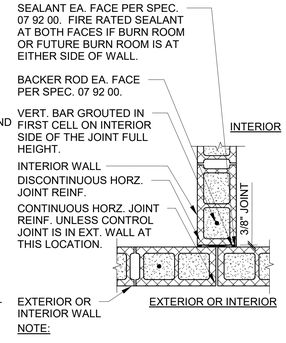
STRAIGHT JOINT AT EXTERIOR COLUMN / SHEAR WALL ALONG WALL LENGTH



STRAIGHT JOINT AT INTERIOR COLUMN



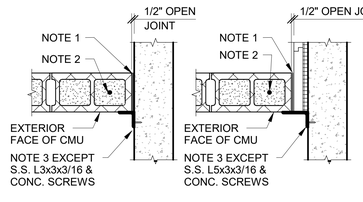
STRAIGHT JOINT AT EXTERIOR COLUMN ALONG WALL LENGTH



NOTE:

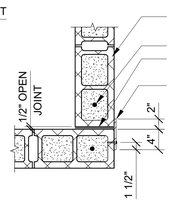
1. THIS DETAIL APPLIES ONLY WHERE SHOWN IN PLAN ON SHEETS BB201 THROUGH BB206.

T-INTERSECTION WALL PLAN DETAIL

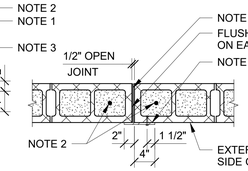


JOINT AT TEE INTERSECTION WITH SHEAR WALL WITHOUT THERMAL LINING

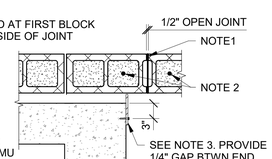
JOINT AT TEE INTERSECTION WITH SHEAR WALL WITH THERMAL LINING



STRAIGHT JOINT AT CORNER INTERSECTION



STRAIGHT JOINT ALONG WALL LENGTH



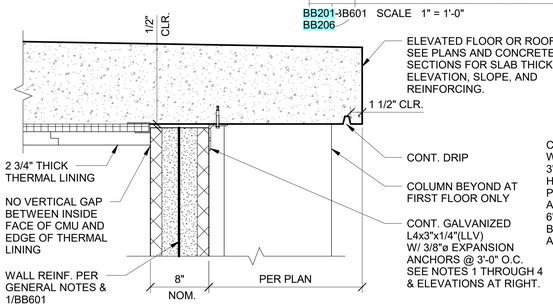
STRAIGHT JOINT AT FIRST FLOOR SHEAR WALL & EXTERIOR CMU WALL

NOTES:

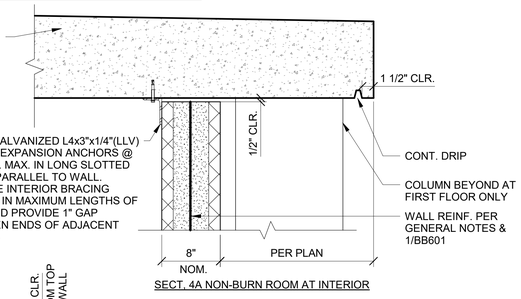
1. FORM JOINT WITH 1/2" PLYWOOD OR COMPRESSIBLE STYROFOAM. STRIP AFTER WALL IS COMPLETED.
2. REINFORCE & GROUT FIRST CELL SOLID FULL HEIGHT ON EACH SIDE OF JOINT.
3. AT EXTERIOR WALL JOINTS, PROVIDE S.S. 3/16"x6" PL. TO COVER JOINT FOR FULL HEIGHT OF WALL FROM 1" BELOW TOP OF WALL TO 1" ABOVE BOTTOM OF WALL. PROVIDE 1/4" DIA. x 2 3/4" LONG AGGRE-GATOR 300 SERIES S.S. CONCRETE SCREWS BY ELCO CONSTRUCTION, WITH HEX WASHER HEAD AND OVERSIZED S.S. WASHER AT 2'-0" O.C. MAX. IN 5/16"x1 1/2" VERTICAL SLOTTED HOLES (MIN. 5 PER PLATE). FOR TOP TWO FASTENERS, PLACE FASTENER AT TOP OF SLOT. FOR BOTTOM TWO FASTENERS, PLACE FASTENER AT BOTTOM OF SLOT. FOR ALL OTHER FASTENERS, PLACE FASTENER IN MIDDLE OF SLOT. INSTALL FASTENERS UNTIL THEY ARE SNUG, BUT NOT OVER-TIGHTENED.
4. SEE SECTION 4/BB601 FOR COORDINATING COVER PLATES AROUND WALL BRACING ANGLES

PLAN DETAILS - OPEN JOINTS IN WALLS

2 — BB201-BB601 BB206 SCALE 1" = 1'-0"



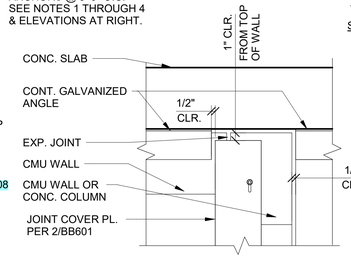
SECT, 4 BURN ROOM AT INTERIOR



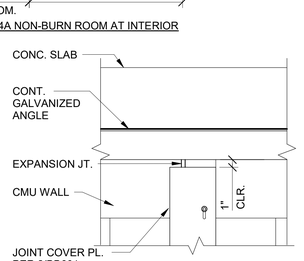
SECT, 4A NON-BURN ROOM AT INTERIOR

NOTES:

1. WHERE BRACING ANGLE TERMINATES AT AN EXPANSION JOINT, STOP BRACING ANGLES 1/2" FROM THE EDGE OF THE JOINT COVER PLATE. WHERE BRACING ANGLE IS CONTINOUS AT EXPANSION JOINT, RUN BRACING ANGLE OVER TOP OF JOINT COVER PLATE. SEE ELEVATION VIEWS TO RIGHT OF SECTION VIEW. ACCOUNT FOR THIS WHEN SHOP CUTTING ANGLES TO LENGTHS INDICATED IN PLANS ON SHEETS BB208 & BB209.
2. PROVIDE 1" GAP BETWEEN ENDS OF BRACING ANGLES AND EDGE OF TILES AT ALL ROLLOVER TILE LOCATIONS ABOVE EXTERIOR DOORS AND WINDOWS, AS INDICATED IN PLANS ON SHEETS BB208 & BB209.
3. PROVIDE 1" GAP IN BRACING ANGLES AT LOCATIONS INDICATED IN PLANS ON BB208 & BB209.
4. AT FIRST FLOOR, WHERE BRACING ANGLES PASS CONTINUOUSLY BETWEEN WALL AND COLUMN, TRIM THE HORIZONTAL LEG OF THE ANGLE TO 1 1/2" BETWEEN THE WALL AND COLUMN.



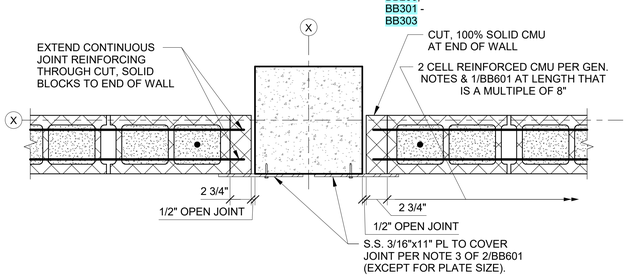
ELEVATION - CONDITION WHEN NOTE "DO NOT CROSS THIS JOINT" APPLIES ON SHEETS BB208 & BB209.



ELEVATION - CONDITION WHERE BRACING ANGLE IS CONTINUOUS ACROSS EXPANSION JOINT

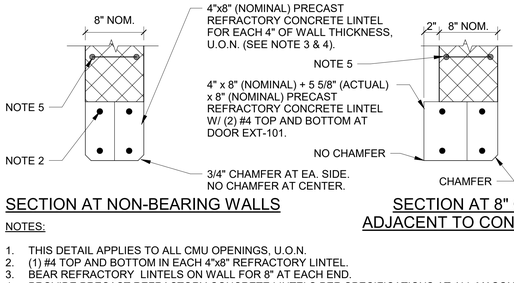
TYPICAL SECTION - TOP OF NON-BEARING WALL, EXTERIOR CONDITION

4A — BB201 BB601 | 4 — BB201 - BB206, BB301 - BB303 BB601 SCALE 1 1/2" = 1'-0"



PLAN DETAIL - END OF WALL AND OPEN JOINT AT EXT. COLUMNS WITH NO THERMAL LININGS

7 — BB204 - BB206, BB601 SCALE 1 1/2" = 1'-0"



SECTION AT NON-BEARING WALLS

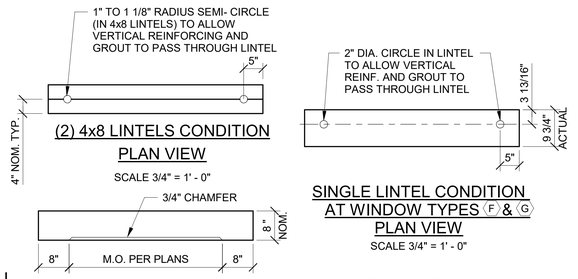
SECTION AT 8" CMU ADJACENT TO CONC. WALL

NOTES:

1. THIS DETAIL APPLIES TO ALL CMU OPENINGS, U.O.N.
2. (1) #4 TOP AND BOTTOM IN EACH 4"x8" REFRACTORY LINTEL.
3. BEAR REFRACTORY LINTELS ON WALL FOR 8" AT EACH END.
4. PROVIDE PRECAST REFRACTORY CONCRETE LINTELS PER SPECIFICATIONS AT ALL MASONRY WALL OPENINGS. THERMAL LINING SUBCONTRACTOR SHALL FURNISH PRECAST REFRACTORY CONCRETE LINTELS TO MASONRY SUBCONTRACTOR FOR INSTALLATION.
5. PROVIDE HORIZ. JOINT REINF. IN FIRST BED JOINT IN CMU ABOVE REFRACTORY CONCRETE LINTELS.

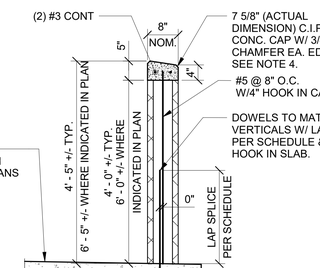
TYP. LINTEL DETAILS

8 — BB601 BB601 SCALE 1 1/2" = 1'-0"



NOT USED

5 — NOT USED — BB601 SCALE 3/4" = 1'-0"



NOTES:

1. PROVIDE HORIZ. JOINT REINFORCING @ 16" O.C. MAX. PER GENERAL NOTES & SPECIFICATIONS.
2. TOPS OF ALL PARAPET WALLS SHALL BE THE SAME HEIGHT. CUT BOTTOM COURSE AS NECESSARY ALONG SLAB SLOPE.
3. GROUT ALL CELLS SOLID.
4. CONC. CAP SHALL BE C.I.P., 4,500 PSI, AIR-ENTRAINED CONCRETE PER GENERAL NOTE P.18 ON SHEET BB001.

CMU PARAPET SECTION

3 — BB207 | BB601 SCALE 3/4" = 1'-0"

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SAMET
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Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - TYPICAL MASONRY DETAILS**

BB601

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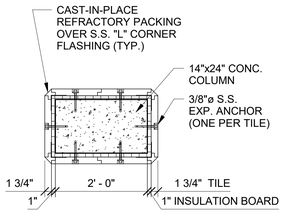
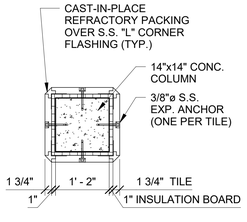
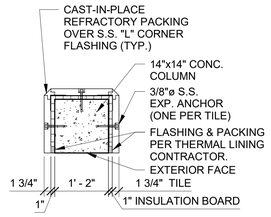


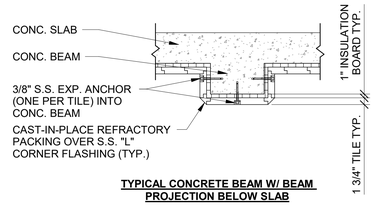
PLAN DETAIL - INTERIOR COLUMN



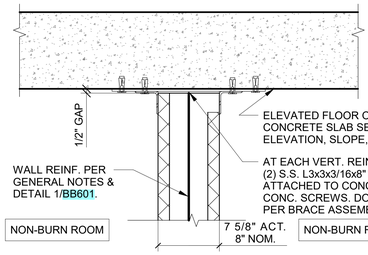
PLAN DETAIL - INTERIOR COLUMN

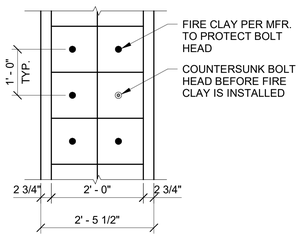


PLAN DETAIL - UPPER LEVEL EXTERIOR COLUMN

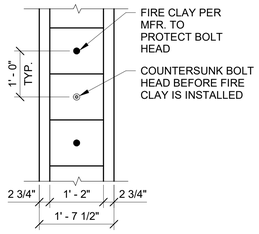


TYPICAL CONCRETE BEAM W/ BEAM PROJECTION BELOW SLAB

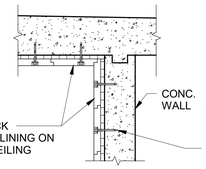




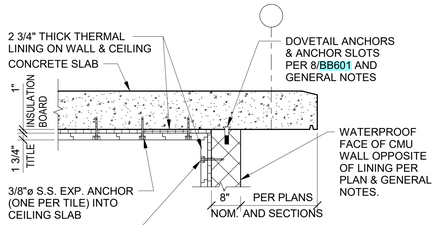
ELEVATION



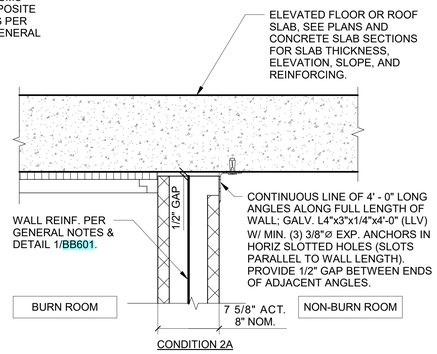
ELEVATION



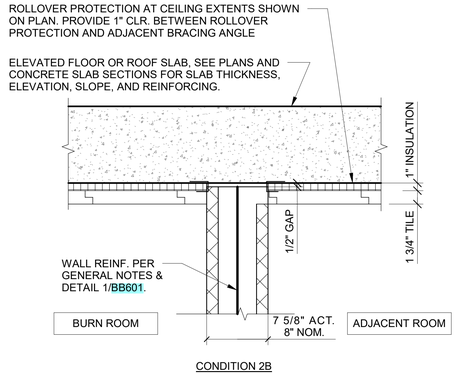
SECTION - CONCRETE STRUCTURAL WALL W/ LINING ON 1 SIDE



SECTION - EXTERIOR NON-STRUCTURAL WALL W/ LINING ON INSIDE

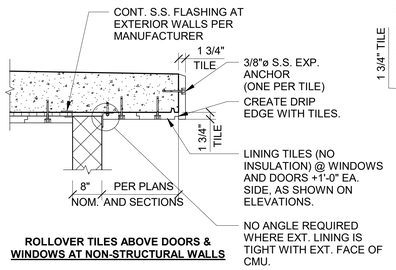


CONDITION 2A



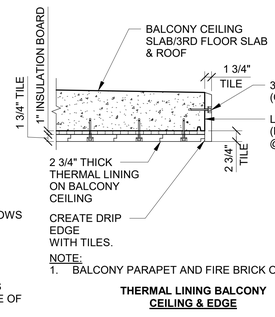
CONDITION 2B

THERMAL LINING 14"x24" COLUMN INSTALLATION



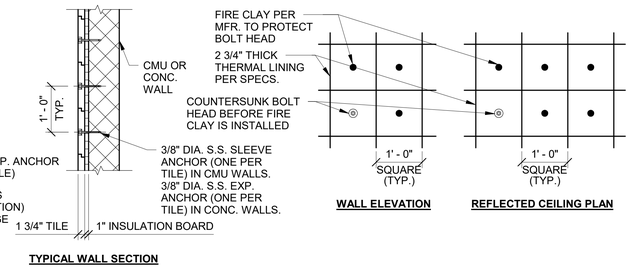
ROLLOVER TILES ABOVE DOORS & WINDOWS AT NON-STRUCTURAL WALLS

THERMAL LINING 14"x14" COLUMN INSTALLATION



NOTE:
1. BALCONY PARAPET AND FIRE BRICK ON SLAB NOT SHOWN.

THERMAL LINING BALCONY CEILING & EDGE



TYPICAL WALL SECTION

WALL ELEVATION

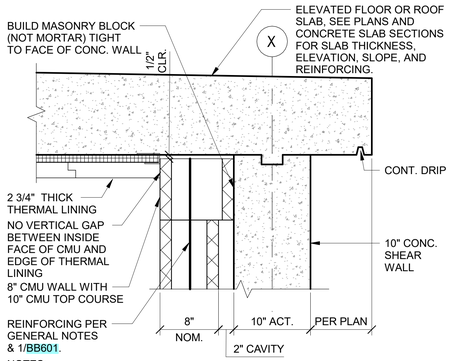
REFLECTED CEILING PLAN

TYPICAL SECTION - TOP OF NON-BEARING MASONRY WALL, INTERIOR CONDITIONS

2B BB201 - BB206 | BB602 — 2A BB201 - BB206 | BB602 — 2 BB201 - BB206 | BB602 SCALE 1 1/2" = 1'-0"

THERMAL LINING EXTERIOR ROLLOVER INSTALLATION

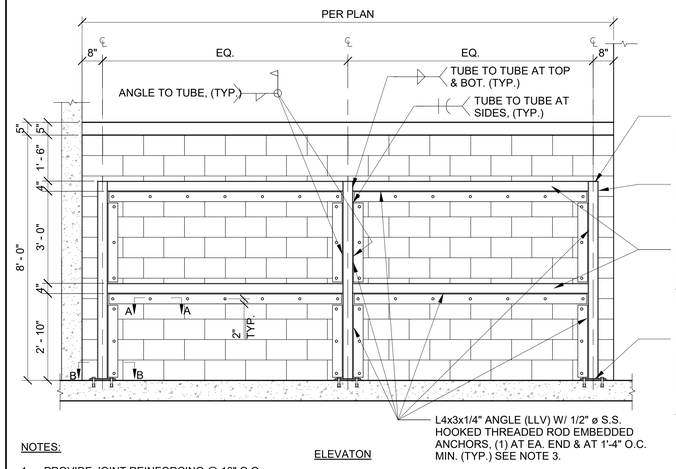
THERMAL LINING WALL & CEILING INSTALLATION



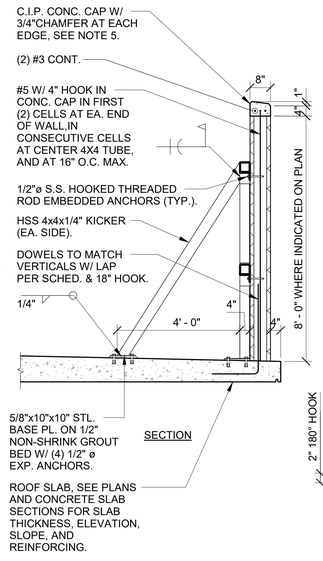
NOTES:
1. SEE SECTION 1/BB601 FOR INFORMATION NOT SHOWN.

TYPICAL SECTION - TOP OF CMU PARTITION AT CONCRETE SHEAR WALL

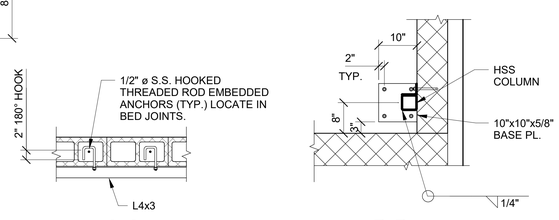
5 BB201 | BB602 SCALE 1 1/2" = 1'-0"



ELEVATON



SECTION



TYPICAL THERMAL LINING DETAILS

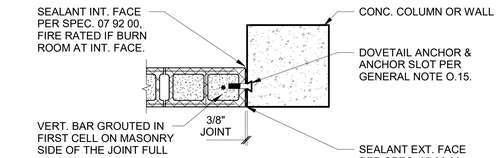
1 BB201 - BB206 | BB602 SCALE 3/4" = 1'-0"

8' - 5" PARAPET WALL DETAIL

3 BB207 | BB602 SCALE 1/2" = 1'-0"

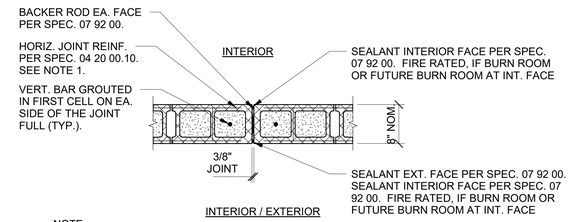
8' - 5" PARAPET WALL PLAN DETAILS

4 BB602 | BB602 SCALE 3/4" = 1'-0"



NOTE:
1. THIS DETAIL APPLIES TO ALL LOCATIONS WHERE CMU INTERSECTS CONCRETE, U.O.N. THIS SEALANT/JOINT IS NOT SHOWN ON PLANS OR ELEVATIONS BECAUSE IT OCCURS AT ALL SUCH INTERSECTIONS, U.O.N.

CMU PARAPET INTERSECTING CONCRETE COLUMN OR CONCRETE WALL



INTERIOR / EXTERIOR

NOTE:
1. THIS DETAIL APPLIES ONLY WHERE SHOWN IN ELEVATION.

STRAIGHT PARAPET PLAN DETAIL

NOTES FOR ALL CONDITIONS:
1. STOP HORIZONTAL JOINT REINF. 2" FROM JOINT AT EA. SIDE OF JOINT.
2. PLACE CONTROL JOINTS SO THEY ALTERNATE BETWEEN BEING IN A HEAD JOINT AND AT THE CENTER OF THE 16" LONG BLOCK FROM ONE COURSE TO THE NEXT. IGNORE THE DIAGRAMMATIC COURSING LINES ON THE ELEVATIONS BUT DO LOCATE THE JOINTS AT THE LOCATIONS SHOWN ON THOSE SHEETS, INCLUDING WHERE THE JOINT IS SHOWN AT THE CORNER OF A WALL OPENING. NOTIFY ENGINEER IF THERE IS ANY CONFLICT BETWEEN JOINT LOCATION AND REQUIREMENT FOR LOCATING JOINTS IN HEAD JOINTS.

MASONRY PARAPET CONTROL JOINT PLAN DETAILS

6 BB301 - BB303 | BB602 SCALE 1" = 1'-0"

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SAMET
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Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - THERMAL LINING AND CMU PARAPET DETAILS**

BB602

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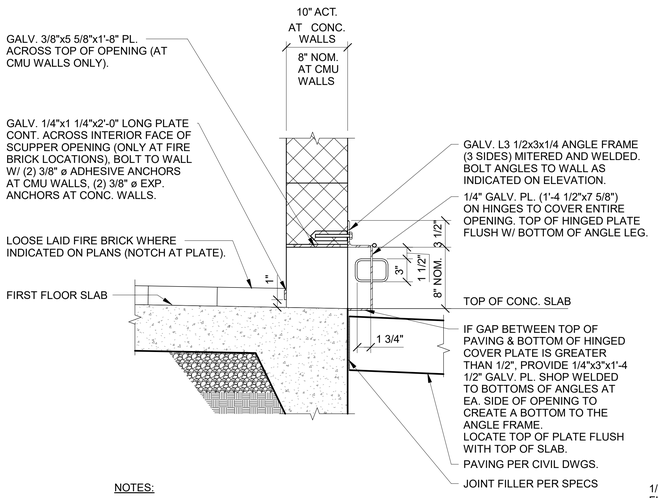
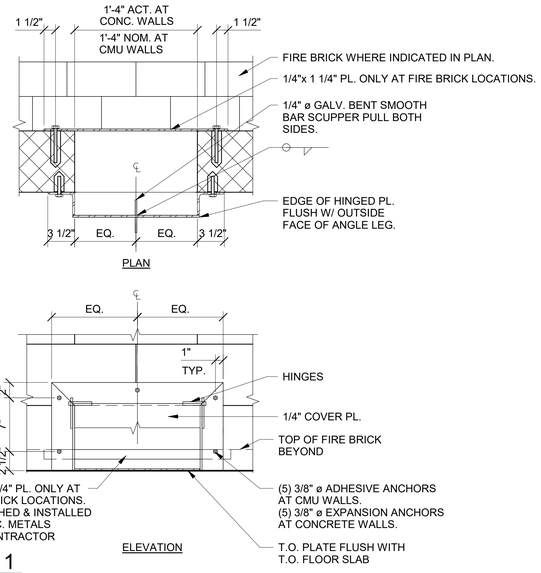


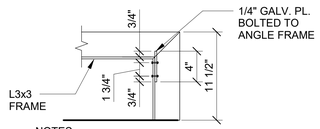
NOTES:

1. SEE DETAILS 2, 3, & 4 ON THIS SHEET FOR HINGES.



1 SCUPPER DETAILS - TYPE 1

BB201 BB603 SCALE 1 1/2" = 1'-0"

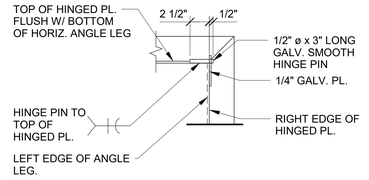


NOTES:

1. HINGE PIN NOT SHOWN IN THIS ELEVATION FOR CLARITY.

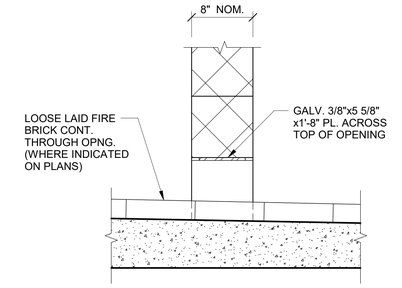
2 ELEVATION - SCUPPER HINGE PLATE

BB603 BB603 SCALE 1 1/2" = 1'-0"

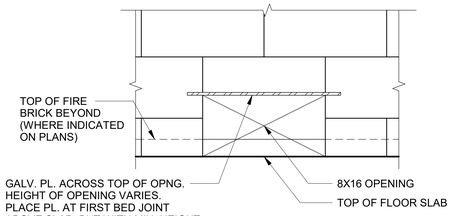


3 ELEVATION - SCUPPER HINGE PIN

BB603 BB603 SCALE 1 1/2" = 1'-0"

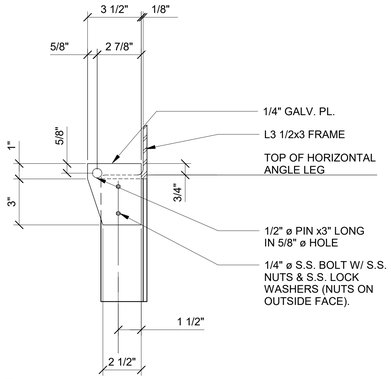


SECTION



GALV. PL. ACROSS TOP OF OPNG. HEIGHT OF OPENING VARIES. PLACE PL. AT FIRST BED JOINT ABOVE SLAB, BUT WITH MIN. HEIGHT OF OPENING = 5 1/2" ABOVE TOP OF CONCRETE. IF FIRST BED JOINT IS LESS THAN 5 1/2" ABOVE TOP OF CONCRETE, THEN PLACE PLATE AT 8" ABOVE TOP OF CONCRETE AND SAW CUT SLOT INTO ADJACENT BLOCKS TO RECEIVE PLATE.

ELEVATION

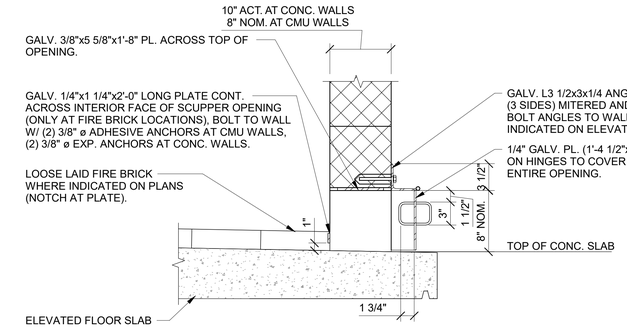


5 SECTION - SCUPPER HINGE

BB603 BB603 SCALE 3" = 1'-0"

OPENING AT BASE OF INTERIOR & PARAPET WALLS

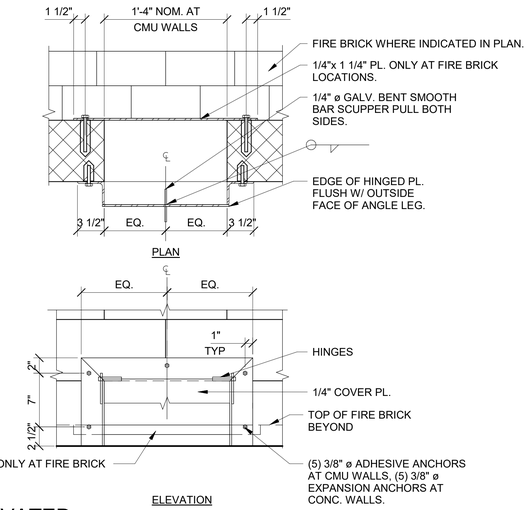
6 BB201 - BB206 BB603 SCALE 1 1/2" = 1'-0"



SECTION

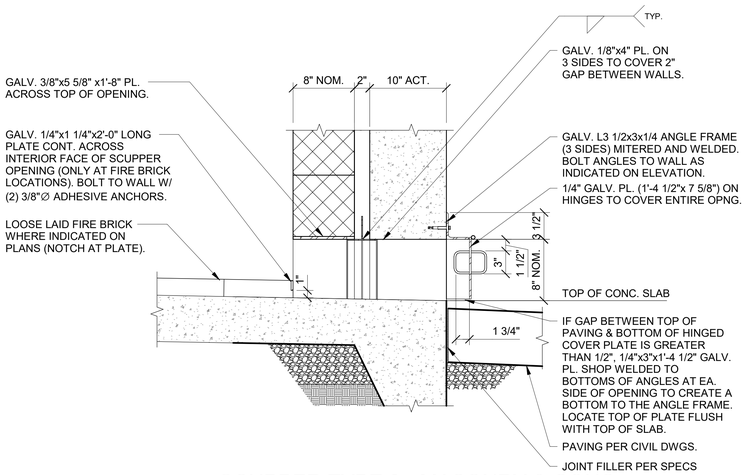
NOTES:

1. SEE DETAILS 2, 3, & 4 ON THIS SHEET FOR HINGES.



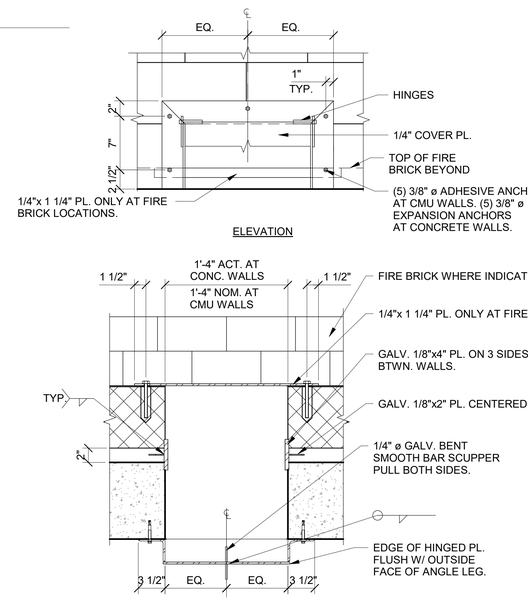
SCUPPER DETAILS - TYPE 2 (ELEVATED FLOORS)

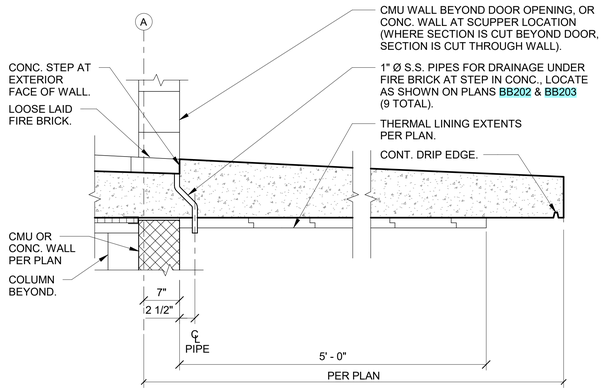
4 BB202 - BB206 BB603 SCALE 1 1/2" = 1'-0"



SCUPPER TYPE 3 - MASONRY & CONC. SHEAR WALL

7 BB201 BB603 SCALE 1 1/2" = 1'-0"





8 WEEP HOLE DETAIL

BB202, BB203 BB603 SCALE 1" = 1'-0"

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BURN BUILDING - TYPICAL SCUPPER DETAILS

BB603

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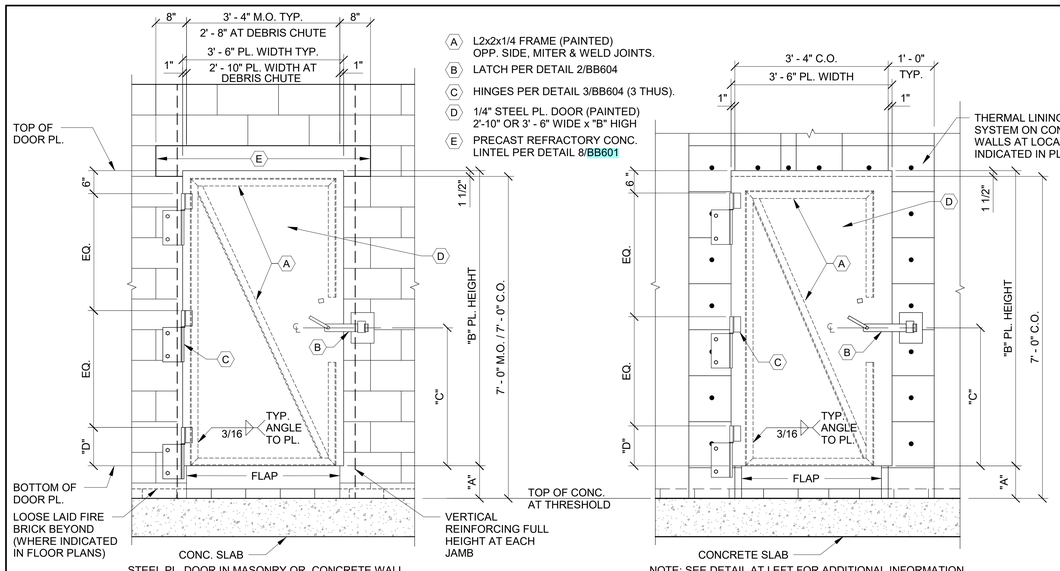


STEEL PL. DOOR IN MASONRY OR CONCRETE WALL WITHOUT THERMAL LINING ROLLOVER TILES

NOTE: SEE DETAIL AT LEFT FOR ADDITIONAL INFORMATION.

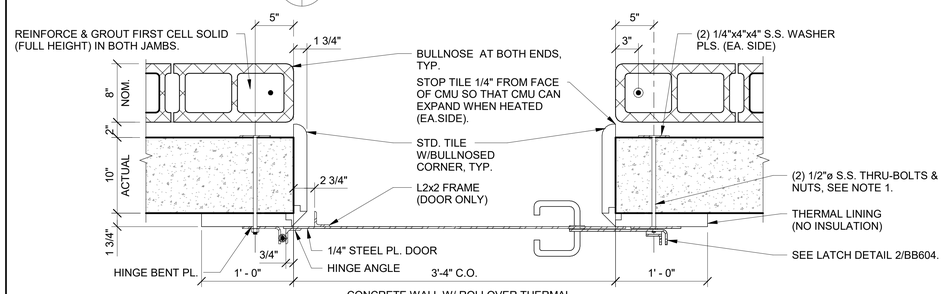
STEEL PL. DOOR IN CONCRETE WALL W/ THERMAL LINING ROLLOVER TILES

NOTES:

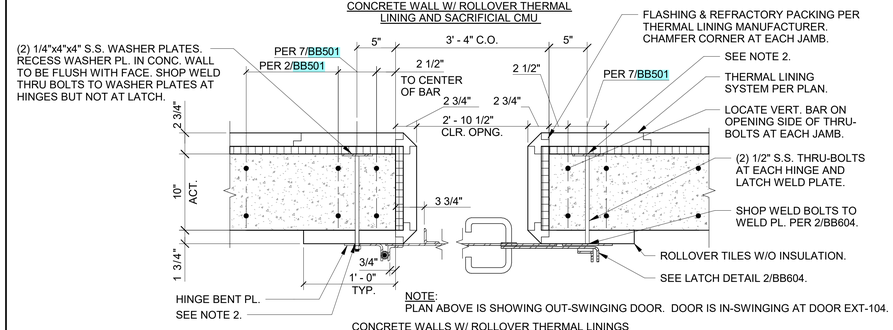
1. SEE FLOOR PLANS FOR DOOR SWING DIRECTION.
2. SEE DETAILS 4 & 5 ON THIS SHEET AND 3/BB606 FOR JAMB, SILL & HEAD DETAILS.
3. SEE DOOR SCHEDULE ON SHEET BB605 FOR DIMENSIONS "A", "B", "C" AND "D".
4. USE TOP OF CONCRETE FLOOR ELEVATION AT CENTER OF DOORWAY AS POINT OF REFERENCE FOR DOOR DIMENSIONS, INCLUDING OPENING HEIGHT. IF THERE IS A CONCRETE STEP IN THE FLOOR SLAB AT ONE FACE OF THE WALL AT DOORWAY, USE TOP OF CONCRETE BETWEEN JAMBS AS POINT OF REFERENCE.
5. ALL DETAILS ON THIS SHEET SHOW THE CONDITIONS AT MASONRY WALLS. ALL DETAILS ARE THE SAME (RELATIONSHIPS OF DOOR COMPONENTS TO WALL) AT CONCRETE WALLS. NO PRECAST LINTEL REQUIRED AT CONCRETE WALLS. SEE DETAIL 6/BB501 FOR ADDED REINFORCING AT DOOR HEAD, AND JAMBS.

ELEVATION - STANDARD STEEL PLATE DOOR

1 BB604 BB604 SCALE 3/4" = 1'-0"

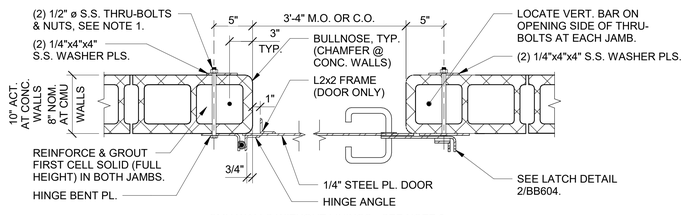


CONCRETE WALL W/ ROLLOVER THERMAL LINING AND SACRIFICIAL CMU



NOTE:
PLAN ABOVE IS SHOWING OUT-SWINGING DOOR. DOOR IS IN-SWINGING AT DOOR EXT-104.

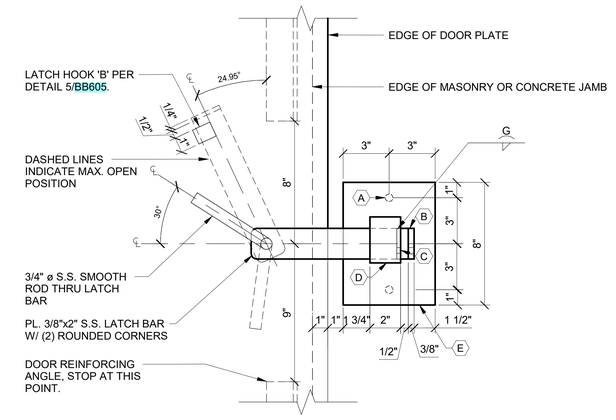
CONCRETE WALLS W/ ROLLOVER THERMAL LININGS



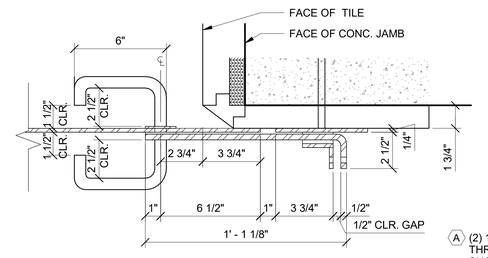
CMU WALLS WITHOUT LININGS - SEE NOTE 3

NOTES:

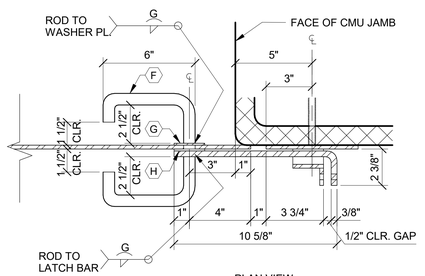
1. INSTALL THRU-BOLTS BEFORE PLACING VERTICAL REINFORCING BAR AND GROUT IN JAMB CELLS (IF CMU WALL). TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF END OF NUT AND GRIND END OF BOLT SMOOTH (CONC. & CMU WALLS).
2. AT NOTED LOCATIONS, FIELD DRILL PLATE TO ACCEPT BOLT, PASS BOLT THRU PLATE, CUT FLUSH W/ EXPOSED FACE OF PLATE, PLUG WELD, AND GRIND SMOOTH. AS AN ALTERNATE METHOD AT HINGES BUT NOT AT LATCH, IT IS ACCEPTABLE TO ALLOW THRU-BOLTS TO PASS THRU HINGE BENT PLATE AND PROVIDE S.S. NUTS AND LOCK WASHERS AT HINGE BENT PL. IF THIS METHOD IS CHOSEN, THEN TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF ENDS OF NUTS AND GRIND SMOOTH.
3. FOR CONDITION AT CONCRETE WALLS, PROVIDE DOOR OVERLAP PER THIS DETAIL AND JAMB REINFORCING PER DETAIL 7/BB501.
4. SEE PLANS FOR DOOR SWING.



ELEVATION



PLAN VIEW OF LATCH WITH THERMAL LINING AT JAMBS



PLAN VIEW

SEQUENCE NOTES:

1. PASS ROD THROUGH 7/8"∅ HOLE IN LATCH BAR.
2. PASS ROD THROUGH 7/8"∅ HOLE IN DOOR PLATE WITH WASHER BETWEEN LATCH BAR AND DOOR PLATE
3. WELD ROD TO LATCH BAR.
4. HOLD ASSEMBLY FIRMLY IN PLACE AND WELD ROD TO WASHER AT INTERIOR FACE OF DOOR. FINISHED ASSEMBLY SHALL NOT WOBBLE AND SHALL ROTATE EASILY WITHOUT SIGNIFICANT EFFORT.

(A) (2) 1/2"ø S.S. THREADED RODS SHOP WELDED TO BACK OF WELD PL.

(B) LATCH BAR, BEND END TO MATCH LATCH PLATE. DRILL & GRIND TO MATCH LATCH PLATE.

(C) LATCH PLATE PER DETAIL 5/BB605.

(D) LATCH HOOK 'A' PER DETAIL 3/BB605.

(E) 1/4x6x8 S.S. WELD PL.

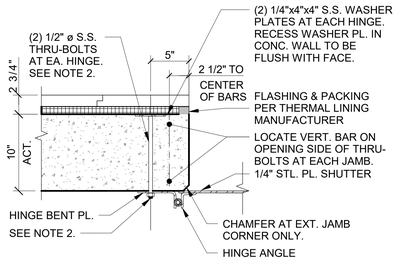
(F) 3/4" ø S.S. BENT SMOOTH ROD (ALL ONE PIECE)

(G) 1/8" THICK x 2" ø S.S. WASHER PL.

(H) 1/8" THICK x 2" ø S.S. WASHER BETWEEN LATCH BAR AND DOOR (DO NOT WELD WASHER TO ANY ITEM).

STANDARD STEEL PLATE DOOR LATCH DETAILS

2 BB604 BB604 SCALE 3" = 1'-0"



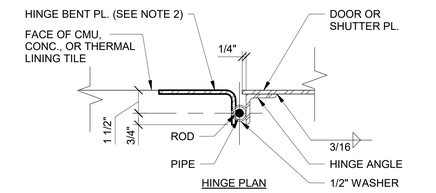
CONDTION WITH THERMAL LINING AT JAMB

NOTES:

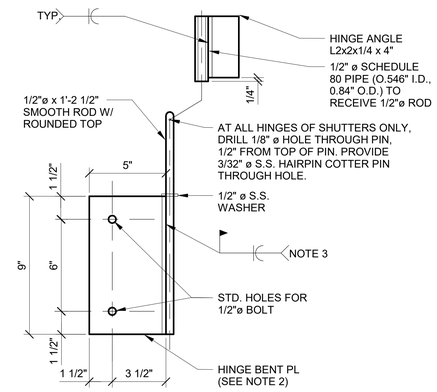
1. SEE TYPICAL CONDITION FOR ADDITIONAL INFORMATION.
2. AT NOTED LOCATIONS, SHOP WELD THRU BOLTS TO BACK OF WASHER PLATES AND PROVIDE S.S. NUTS AND LOCK WASHERS AT HINGE BENT PLATES. TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF END OF NUT AND GRIND END OF BOLT SMOOTH.

STANDARD STEEL PLATE DOOR JAMB PLAN DETAILS

4 BB202-BB206, BB604 BB604 SCALE 1 1/2" = 1'-0"



HINGE PLAN



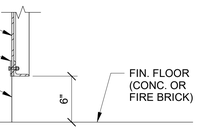
TYPICAL DOOR & SHUTTER HINGE ELEVATION

NOTES:

1. ALL PIECES SHALL BE S.S.
2. BENT PL. 1/4x5x2 1/4x9 @ ALL STEEL PL. DOORS AND WINDOWS.
3. HOLD SHUTTER OR DOOR IN PLACE WHILE FIELD WELDING ROD TO ASSURE PROPER FIT AND OPERATION OF HUNG SHUTTER OR DOOR.
4. DRILL HOLES THROUGH WALLS FOR HINGE BOLTS W/ NON-IMPACT ROTARY DRILL. DO NOT DAMAGE FACES OF MASONRY WALLS WHILE DRILLING HOLES.

TYPICAL STEEL PL. DOOR & SHUTTER HINGE DETAILS

3 BB604-BB606 BB604 SCALE 3" = 1'-0"



NOTE:

1. PROVIDE EPDM HIGH TEMPERATURE CONVEYOR BELT, 3/8" GAUGE WITH POLYNYLON FABRIC TYPE AND A WORKING TEMPERATURE OF 0°-600°, WITH A PEAK TEMPERATURE OF 750° (2/220 3/16x1/16 EPDM HIGH TEMP BELT BY CONVERYORBELT.COM OR AN APPROVED EQUIVALENT). INSTALL SO TOP COVER OF BELT FACES INSIDE FACE OF DOOR.

STEEL PLATE DOOR SILL DETAIL

5 BB604, BB605 BB604 SCALE 1 1/2" = 1'-0"

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IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - TYPICAL STEEL PLATE DOOR DETAILS**

BB604

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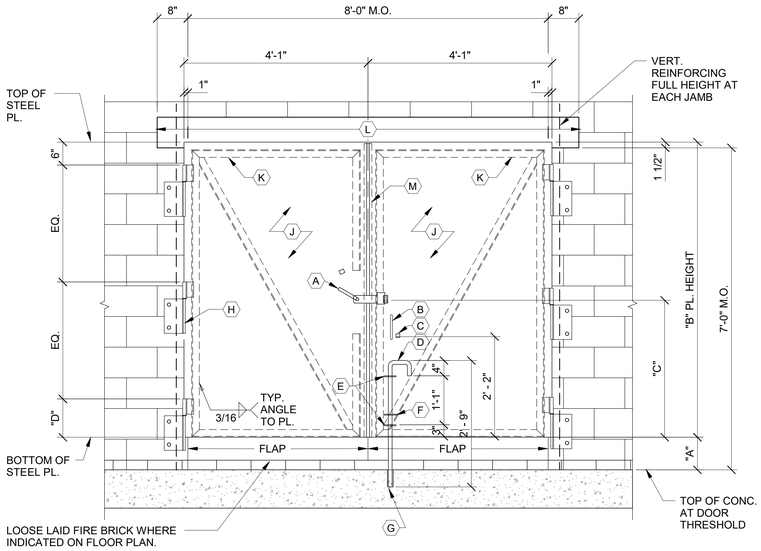


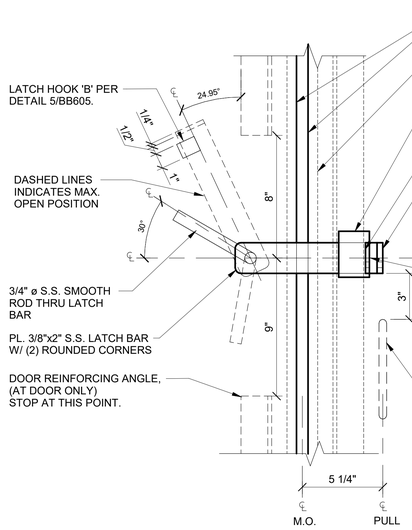
- (A) LATCH PER DETAIL 2/BB605
- (B) DOOR PULL (FAR SIDE) PER 6/BB605
- (C) 1" HIGH x 2 1/2" LONG (OUT FROM DOOR PL.) x 1" WIDE U-SHAPED BENT PL. WELDED TO DOOR PL. TO CATCH HOOKED ROD & HOLD IN OPEN POSITION
- (D) 1" ø GALV. ROD ATTACHED TO DOOR SO THAT IT CAN SLIDE VERTICALLY BUT NOT HORIZONTALLY.
- (E) (2) 1/4"x2 1/2" SQUARE PLATES WITH ROUNDED CORNERS AND 1 1/8" ø HOLE. WELDED TO DOOR PL. AND ALIGNED WITH HOOKED ROD, TO ACT AS VERTICAL GUIDES (ROD PASSES THROUGH HOLE IN PLATES).
- (F) 1/4"x1 1/2" ø ROUND PL. WELDED ALL AROUND TO HOOKED ROD AT 1'-4 1/2" BELOW TOP OF ROD (ROD PASSES THROUGH ROUND PLATE).
- (G) 4" LONG, 1 1/4" ø, SCHED. 40 S.S. PIPE TO CATCH HOOKED ROD. EMBED PIPE INTO CONCRETE AND ALIGN WITH HOOKED ROD.
- (H) HINGES PER 3/BB604 (6 THUS)
- (J) 1/4" STEEL PL. DOOR (PAINTED)
- (K) L2x2x1/4 FRAME (PAINTED) OPP. SIDE, MITER & WELD JOINTS.
- (L) PRECAST REFRACTORY CONCRETE LINTEL PER DETAIL 8/BB601.
- (M) ASTRAGAL PLATE (FAR SIDE) PER 2/BB605.

NOTES:

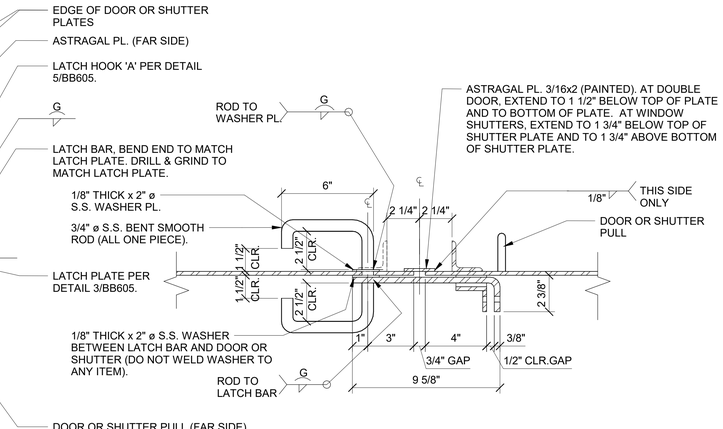
1. SEE FLOOR PLANS FOR DOOR SWING DIRECTION.
2. SEE DETAIL 4 ON THIS SHEET, DETAIL 5/BB604, AND 3/BB606 FOR JAMB, SILL, AND HEAD DETAILS.
3. SEE DOOR SCHEDULE ON SHEET XXX FOR DIMENSIONS "A", "B", "C", AND "D".
4. USE TOP OF CONCRETE FLOOR ELEVATION AT CENTER OF DOORWAY AS POINT OF REFERENCE FOR DOOR DIMENSIONS, INCLUDING OPENING HEIGHT.

1 ELEVATION - DOUBLE STEEL PLATE DOOR

BB201 | BB605 SCALE 3/4" = 1'-0"



ELEVATION



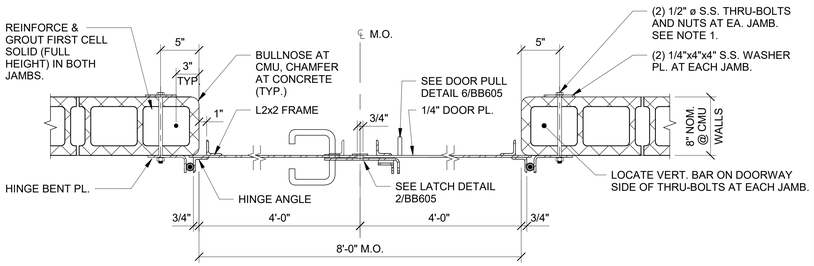
PLAN VIEW

SEQUENCE NOTES:

1. PASS ROD THROUGH 7/8" ø HOLE IN LATCH BAR.
2. PASS ROD THROUGH 7/8" ø HOLE IN DOOR OR SHUTTER PLATE WITH WASHER BETWEEN LATCH BAR AND DOOR OR SHUTTER PLATE.
3. WELD ROD TO LATCH BAR.
4. HOLD ASSEMBLY FIRMLY IN PLACE AND WELD ROD TO WASHER AT INTERIOR FACE OF DOOR OR SHUTTER. FINISHED ASSEMBLY SHALL NOT WOBBLE AND SHALL ROTATE EASILY WITHOUT SIGNIFICANT EFFORT.

2 DOUBLE STEEL PLATE DOOR & SHUTTER LATCH DETAILS

BB605 | BB605 SCALE 3" = 1'-0"



NOTES:

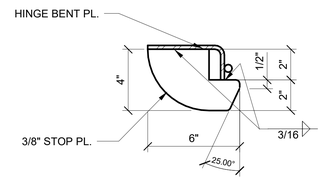
1. INSTALL THRU-BOLTS BEFORE PLACING VERTICAL REINFORCING BAR AND GROUT IN JAMB CELLS.

3 LATCH PLATE SECTION

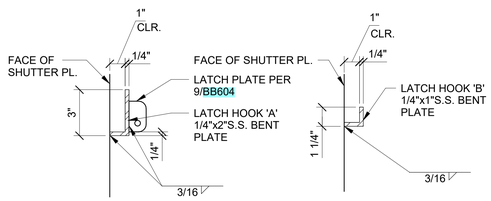
BB604, BB605 | BB605 SCALE 3" = 1'-0"

4 DOUBLE STEEL PLATE DOOR - JAMB DETAIL

BB605 | BB605 SCALE 1 1/2" = 1'-0"



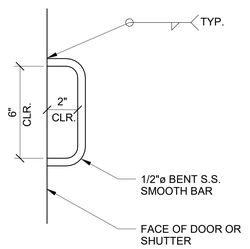
PLAN



LATCH HOOK 'A' LATCH HOOK 'B'

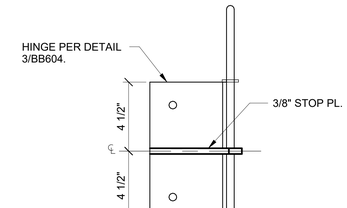
5 SHUTTER LATCH HOOK DETAILS

BB604 - BB606 | BB605 SCALE 3" = 1'-0"



6 PULL HANDLE SECTION

BB604 - BB606 | BB605 SCALE 3" = 1'-0"



ELEVATION

NOTES:

1. SEE DETAIL 3/BB604 FOR INFORMATION NOT SHOWN ON HINGE.
2. THIS DETAIL APPLIES TO THE HINGES ON DOORS EXT-100 AND EXT-102 AT ROOMS 100 AND 102

7 STEEL PL. DOOR SILL DETAILS

BB605 | BB605 SCALE 3" = 1'-0"

DOOR SCHEDULE

DOOR MARK	DIMENSION MARK "A"	"B"	"C"	"D"	DOOR TYPE	NOTES	PRIMARY DETAIL
EXT-100	8 1/2"	6' - 5"	3' - 0"	10"	DOUBLE STEEL PL.	------	1/BB605
EXT-100A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
100	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
101	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-101	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
102	-	-	-	-	FORCED ENTRY DOOR	R.O.: 3'-10 1/2" WIDE x 6'-10 1/2" TALL	SEE NOTE 1.
EXT-102	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
103	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
ST-1	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-ST-1	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-200	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
200	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
201	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
201A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-201	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
202	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
202A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-202	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
203	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-203	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-203A	8 1/2"	6' - 5"	3' - 0"	10"	DEBRIS CHUTE DOOR	------	1/BB604
204	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
204A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
206	-	-	-	-	FORCED ENTRY DOOR	R.O.: 3'-10 1/2" WIDE x 6'-10 1/2" TALL	SEE NOTE 1.
ST-2	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-300	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
300	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
301	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
301A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
302	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-303	8 1/2"	6' - 5"	3' - 0"	10"	DEBRIS CHUTE DOOR	------	1/BB604
EXT-303A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-304	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
ST-3	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604

DOOR SCHEDULE CONTINUED

DOOR MARK	DIMENSION MARK "A"	"B"	"C"	"D"	DOOR TYPE	NOTES	PRIMARY DETAIL
400	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
400A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
401	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
402	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
402A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
403	-	-	-	-	FORCED ENTRY DOOR	R.O.: 3'-10 1/2" WIDE x 6'-10 1/2" TALL	SEE NOTE 1.
EXT-404	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-404A	8 1/2"	6' - 5"	3' - 0"	10"	DEBRIS CHUTE DOOR	------	1/BB604
405	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
406	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
406A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
407	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
ST-4	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
500	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
501	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
502	-	-	-	-	FORCED ENTRY DOOR	R.O.: 3'-10 1/2" WIDE x 6'-10 1/2" TALL	SEE NOTE 1.
503	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-504	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-504A	8 1/2"	6' - 5"	3' - 0"	10"	DEBRIS CHUTE DOOR	------	1/BB604
505	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
506	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
506A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
507	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
ST-5	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-600	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
EXT-600A	8 1/2"	6' - 5"	3' - 0"	10"	DEBRIS CHUTE DOOR	------	1/BB604
601	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
602	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
602A	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
603	8 1/2"	6' - 5"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
ST-6	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604
ST-7	6"	6' - 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	1/BB604

NOTES:

1. THE FORCED-ENTRY DOOR: BASIS OF DESIGN: CATALYST FORCE ENTRY DOOR (DIRECT MOUNT) BY FORCIBLE ENTRY, INC., RANCHO CORDOVA, CA, (916) 337-5705.

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - DOUBLE STEEL PLATE DOOR DETAILS**

BB605

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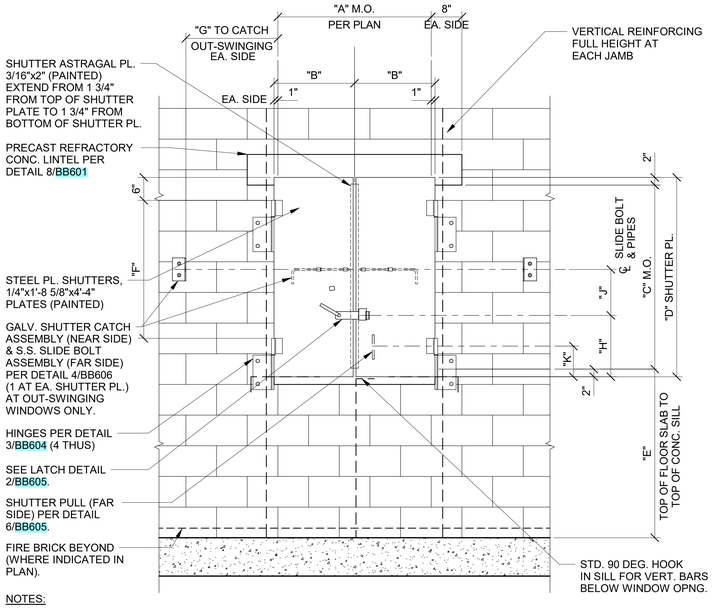
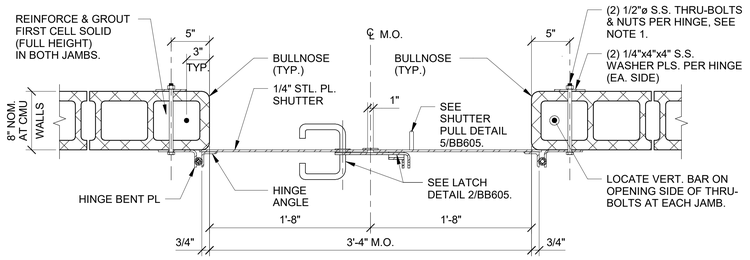


NOTES:

1. SEE DETAIL 5 ON SHEET BB604 AND DETAILS 2 AND 3 ON THIS SHEET FOR HEAD, JAMB AND SILL DETAILS. SEE DETAIL 4 ON THIS SHEET FOR WINDOW SHUTTER CATCH DETAIL FOR OUT-SWINGING SHUTTERS.
2. USE TOP OF CONCRETE FLOOR ELEVATION AT CENTER OF WINDOW OPENING AS POINT OF REFERENCE FOR WINDOW DIMENSIONS, INCLUDING OPENING DIMENSIONS.
3. SEE FLOOR PLANS FOR WINDOW SHUTTER SWING DIRECTION.
4. ALL DETAILS ON THIS SHEET SHOW THE CONDITIONS AT MASONRY WALLS.

TYPICAL WINDOW EXTERIOR ELEVATION FOR OUT-SWINGING SHUTTERS

1 | BB606 | BB606 SCALE 3/4" = 1'-0"

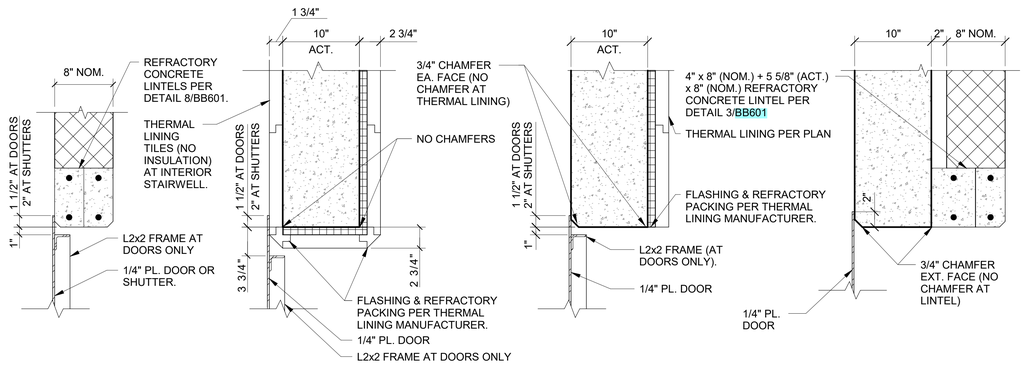


NOTES:

1. INSTALL THRU-BOLTS BEFORE PLACING VERTICAL REINFORCING BAR AND GROUT IN JAMB CELLS. TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF ENDS OF NUTS. GRIND SMOOTH AND TACK WELD NUTS TO BOLTS AFTER TIGHTENING.
2. SEE FLOOR PLANS FOR WINDOW SHUTTER SWING DIRECTION.
3. PASS THRU-BOLTS THRU HINGE BENT PLATE AND PROVIDE S.S. NUTS AND LOCK WASHERS AT HINGE BENT PL. THEN TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF ENDS OF NUTS AND GRIND SMOOTH.

WINDOW JAMB PLAN DETAILS

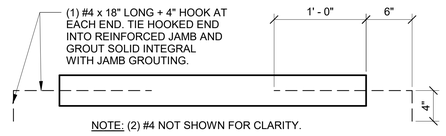
2 | BB606 | BB606 SCALE 1 1/2" = 1'-0"



DOORS & SHUTTERS AT CMU WALLS | DOOR ST-1 | EXT-ST1, ST-2, ST-3, ST-4, ST-5, ST-6 | DOOR EXT-101

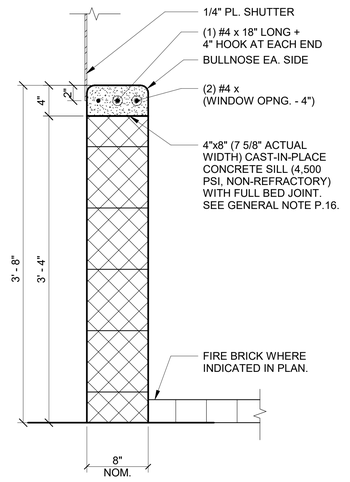
DOOR & WINDOW HEAD SECTIONS

3 | BB604 - BB606 | BB606 SCALE 1 1/2" = 1'-0"



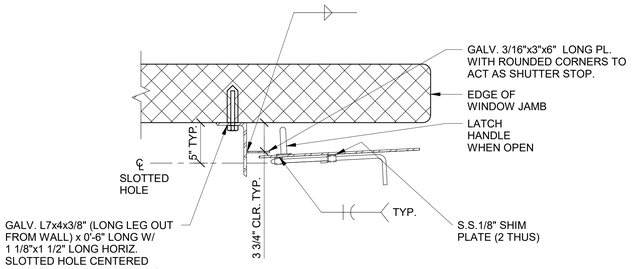
NOTE: (2) #4 NOT SHOWN FOR CLARITY.

ELEVATION VIEW - SILL



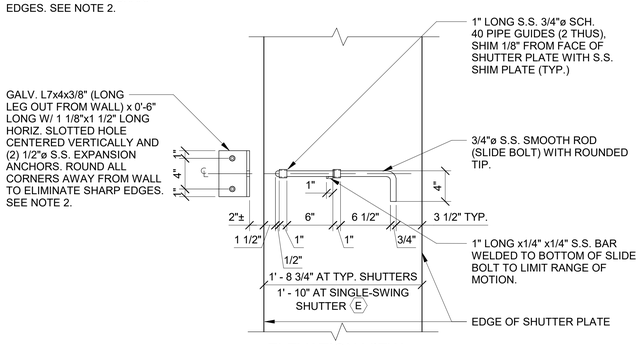
WINDOW SILL SECTIONS

4 | BB606 | BB606 SCALE 1 1/2" = 1'-0"



NOTE: HINGES NOT SHOWN.

PLAN VIEW



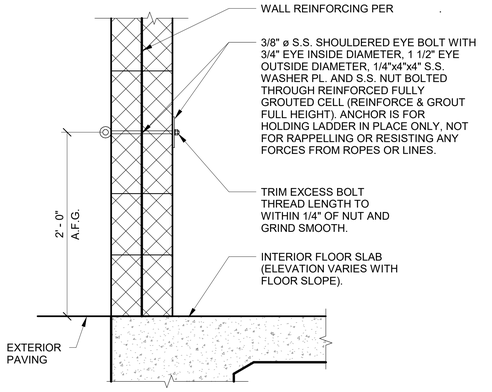
ELEVATION VIEW

NOTES:

1. SHUTTER PLATE IS SHOWN IN OPEN POSITION FROM EXTERIOR ELEVATION. LATCH BAR HAS BEEN OMITTED FROM THIS DETAIL.
2. AFTER HANGING SHUTTERS, OPEN SHUTTERS AND LAY BACK AGAINST WALL. FIELD LOCATE AND INSTALL CATCH ANGLES ON BOTH SIDES SO THAT SLIDE BOLTS ALIGN WITH SLOTTED HOLES AND OPERATE SMOOTHLY.

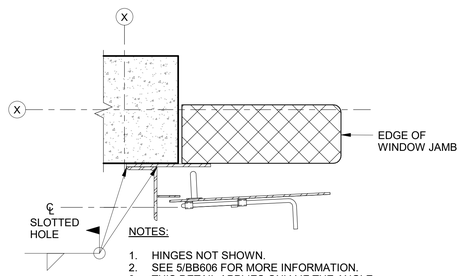
WINDOW SHUTTER CATCH ASSEMBLY DETAILS - OUT-SWINGING WINDOWS

5 | BB606 | BB606 SCALE 1 1/2" = 1'-0"



LADDER TIE OFF DETAIL

6 | BB301 | BB606 SCALE 1 1/2" = 1'-0"



NOTES:

1. HINGES NOT SHOWN.
2. SEE 5/BB606 FOR MORE INFORMATION.
3. THIS DETAIL APPLIES ONLY IF THE ANGLE OVERLAPS A JOINT COVER PLATE.

PLAN VIEW

WINDOW SHUTTER CATCH ASSEMBLY DETAIL - ANGLE ON JOINT COVER PL.

7 | BB303 | BB606 SCALE 1 1/2" = 1'-0"

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JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - TYPICAL STEEL PLATE SHUTTER DETAILS**

BB606

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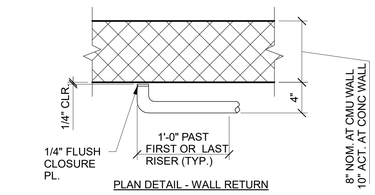
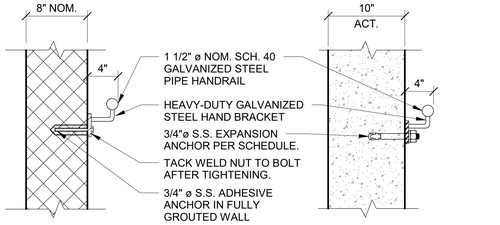


PLAN DETAIL - WALL RETURN



SECTION - CMU WALL CONNECTION

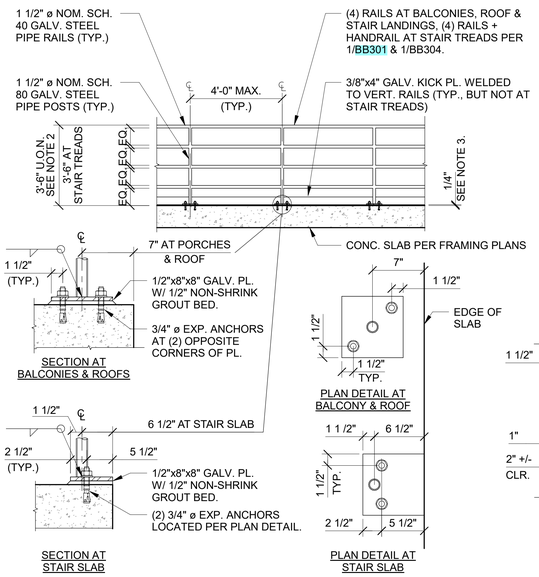
SECTION - CONC. WALL CONNECTION

NOTES:

1. PROVIDE BRACKETS AT 3'-0" O.C. MAX.
2. PROVIDE DISTANCE OF 36" FROM TOP OF STAIR TREAD AT NOSINGS TO TOP OF HANDRAIL (TYP.).
3. SEAL GALVANIZING VENT HOLES PER GENERAL NOTE Q.7 IN PIPES OF HANDRAIL.
4. SHOP WELD THRU BOLTS TO BACK OF WASHER PLATE AND PROVIDE S.S. NUTS AT HANDRAIL BRACKETS. TACK WELD NUTS TO BOLTS AFTER TIGHTENING.

1 HANDRAIL DETAILS FOR INTERIOR STAIRS

BB201 - BB204 | BB607 SCALE 1 1/2" = 1'-0"

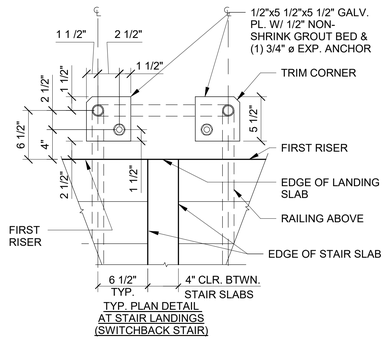


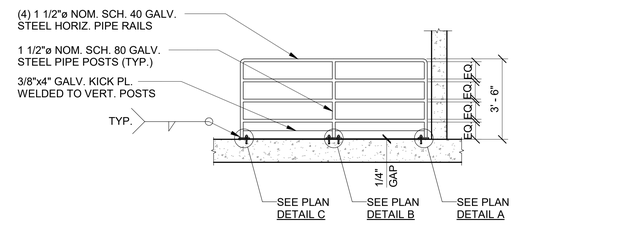
NOTES:

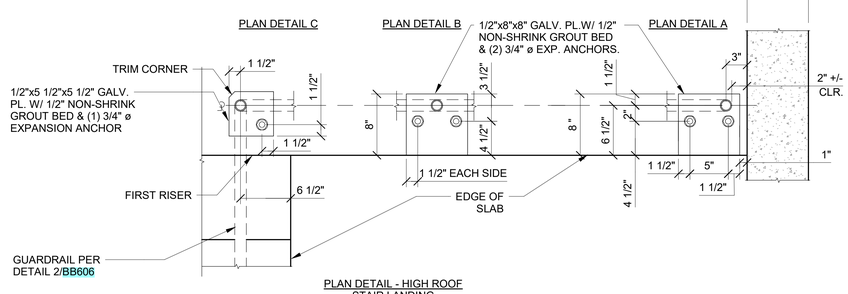
1. SEE DETAILS ON SHEET BB504 FOR RAILING CONNECTION AT EXTERIOR STEEL STAIRS AND FOR HANDRAIL THAT IS WELDED TO GUARDRAIL AT BOTH INTERIOR AND EXTERIOR STAIRS.
2. SLOPE HORIZONTAL RAILS WITH SLOPE OF SLAB TO MAINTAIN 3'-6" HEIGHT FROM TOP OF SLAB TO TOP OF TOP RAIL.
3. SLOPE KICK PLATE WITH SLOPE OF SLAB TO MAINTAIN 1/4" GAP BETWEEN TOP OF SLAB AND BOTTOM OF PL.
4. SEAL GALVANIZING VENT HOLES PER GENERAL NOTE Q.7 ON BB001 AT ALL RAILINGS AND GATES.

2 TYPICAL FIXED RAILING DETAILS

BB201 - BB204, BB607 | BB607 SCALE 3/8" = 1'-0"

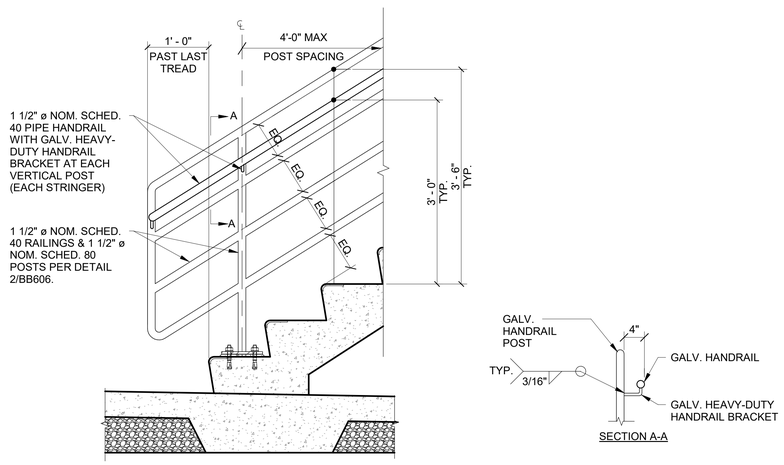






3 FIXED GUARDRAIL @ LANDING SLAB

BB204 | BB607 SCALE 3/8" = 1'-0"



4 GUARDRAIL + HANDRAIL AT CONCRETE STAIR SECTION

BB606 | BB607 SCALE 1" = 1'-0"

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NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - RAILING DETAILS**

BB607

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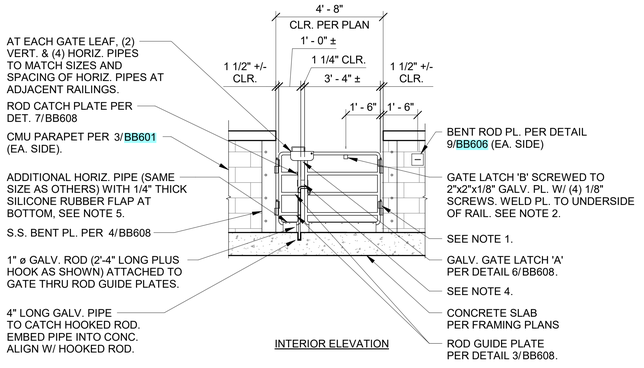


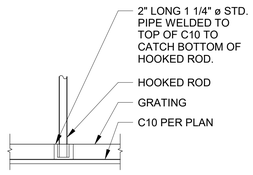
INTERIOR ELEVATION

SINGLE-SWINGING GATE GUARDRAIL AT CMU PARAPET DETAILS

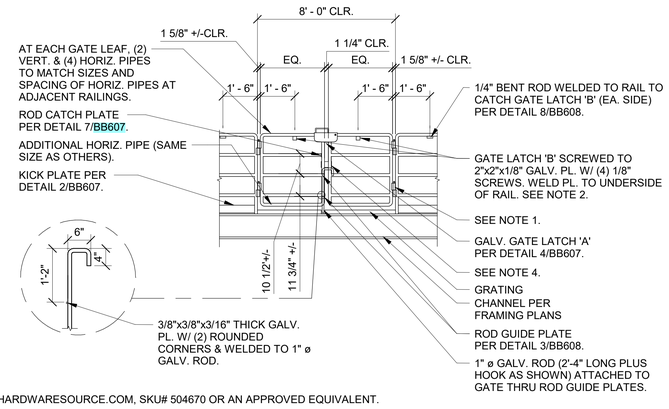
1 BB207 | BB608 SCALE 3/8" = 1'-0"

NOTES:

1. PROVIDE (4) HINGES PER DETAIL 4/BB608.
2. PROVIDE A GATE LATCH, STRAIGHT ARM FROM HARDWARESOURCE.COM, SKU# 504670 OR AN APPROVED EQUIVALENT.
3. SEE PLANS FOR SWING DIRECTIONS OF GATES.
4. 3/16"x4" HIGH GALV. PL. WELDED TO FAR SIDE OF GATE THAT HAS VERTICAL SLIDING LATCH ROD TO PREVENT OTHER GATE FROM SWINGING IN OPPOSITE DIRECTION.
5. AT EACH GATE LEAF, ATTACH RUBBER FLAP TO BOTTOM HORIZONTAL PIPE WITH (4) 1/4" DIA. ZINC-PLATED THRU-BOLTS WITH NUTS & WASHERS AT 1'-0" O.C. MAX.



DETAIL AT HOOKED ROD BASE

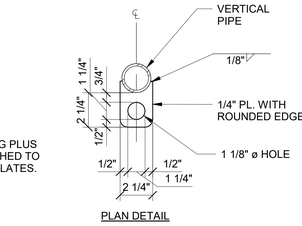


NOTES:

1. PROVIDE (4) HINGES PER DETAIL 5/BB608.
2. PROVIDE A GATE LATCH, STRAIGHT ARM FROM HARDWARESOURCE.COM, SKU# 504670 OR AN APPROVED EQUIVALENT.
3. SEE PLANS FOR SWING DIRECTIONS OF GATES.
4. 3/16"x4" HIGH GALV. PL. WELDED TO FAR SIDE OF GATE THAT HAS VERTICAL SLIDING LATCH ROD TO PREVENT GATE FROM SWINGING IN OPPOSITE DIRECTION.

DOUBLE-SWINGING GATE GUARDRAIL DETAILS

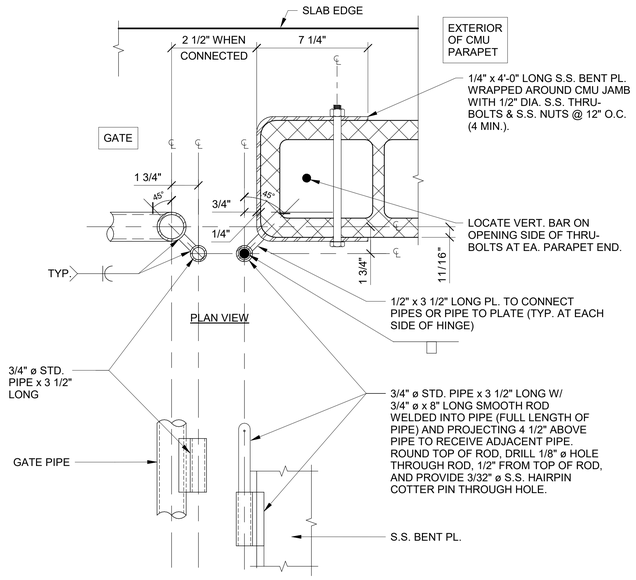
2 BB202 | BB608 SCALE 3/8" = 1'-0"



PLAN DETAIL

PLAN DETAIL - ROD GUIDE PLATE

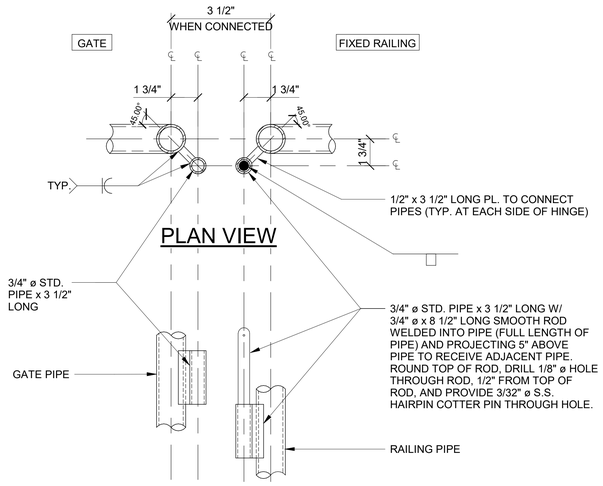
3 BB608 | BB608 SCALE 3" = 1'-0"



ELEVATION

GUARDRAIL GATE HINGE AT PARAPET DETAIL

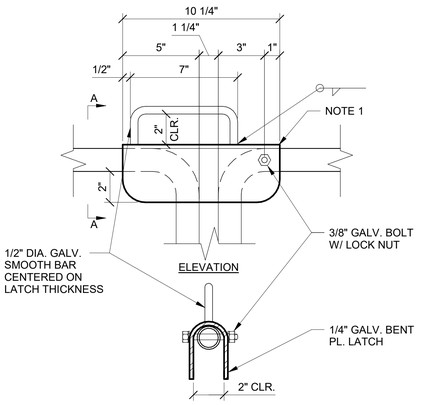
4 BB608 | BB608 SCALE 3" = 1'-0"



ELEVATION

GUARDRAIL HINGE DETAIL

5 BB608 | BB608 SCALE 3" = 1'-0"



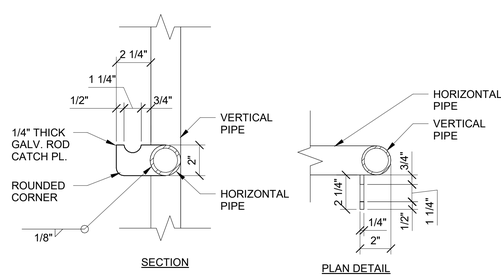
ELEVATION

NOTES: SECTION A-A

1. PROVIDE CURVED NOTCH IN TOP OF BENT PL. LATCH AT THIS END TO ALLOW PLATE TO PIVOT (KEEP NOTCH AS SMALL AS POSSIBLE).

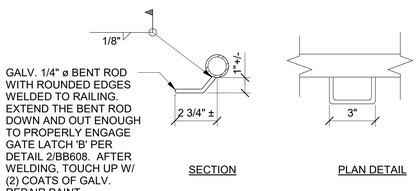
DETAIL - GATE LATCH 'A'

6 BB608 | BB608 SCALE 3" = 1'-0"



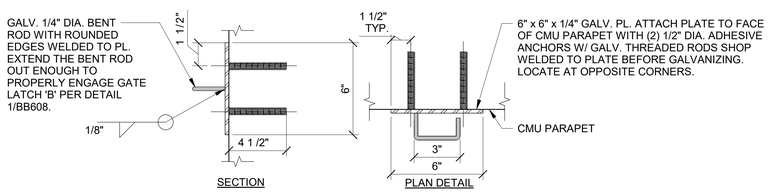
ROD CATCH PLATE DETAILS

7 BB608 | BB608 SCALE 3" = 1'-0"



BENT ROD DETAILS

8 BB608 | BB608 SCALE 3" = 1'-0"



NOTE: SHOP WELD ALL COMPONENTS AND THEN HOT DIP GALVANIZE ENTIRE ASSEMBLY.

BENT ROD AT PARAPET DETAILS

9 BB608 | BB608 SCALE 3" = 1'-0"

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PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - GUARDRAIL GATE AT PARAPET**

BB608

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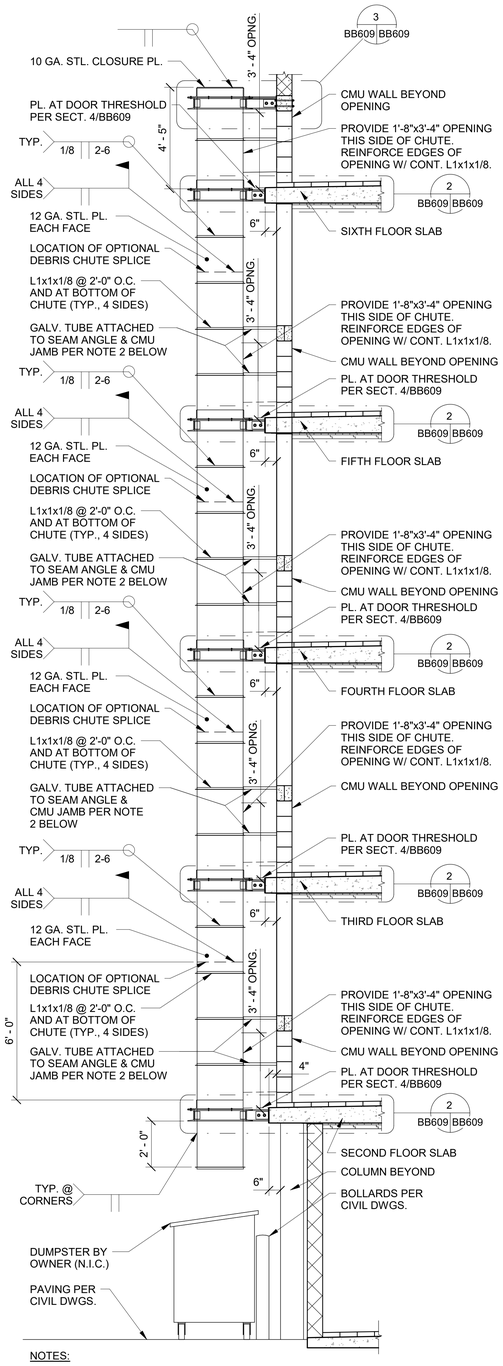
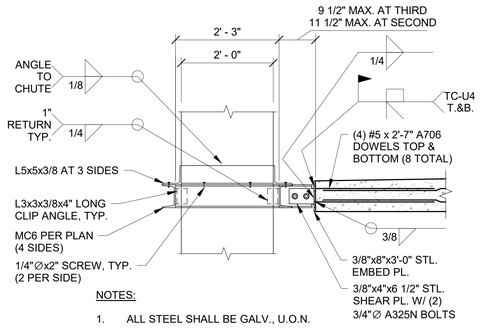


NOTES:

1. ALL PIECES SHALL BE GALV. U.O.N.
2. ATTACH TUBES TO FIRST AND SECOND SEAM ANGLES ABOVE DOOR AND THIRD FLOOR LEVELS PER SECTION 5/BB609.

1 DEBRIS CHUTE SECTION

BB202 - BB609 BB206, BB609 SCALE 3/8" = 1'-0"

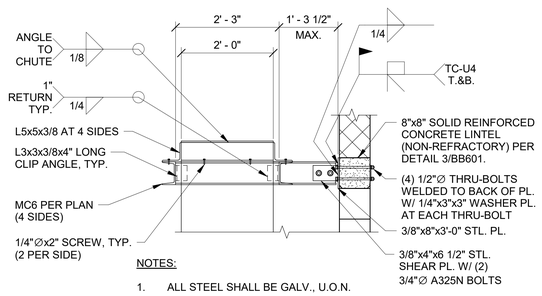


NOTES:

1. ALL STEEL SHALL BE GALV., U.O.N.

2 DEBRIS CHUTE DETAIL

BB202 - BB609 BB206, BB609 SCALE 3/4" = 1'-0"

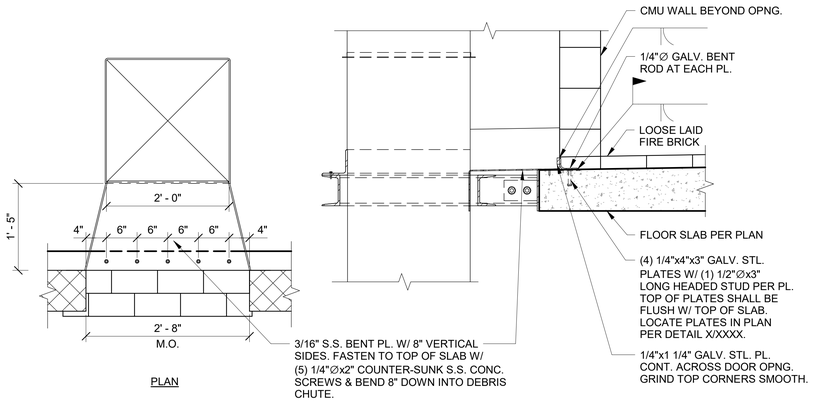


NOTES:

1. ALL STEEL SHALL BE GALV., U.O.N.

3 TOP OF DEBRIS CHUTE DETAIL

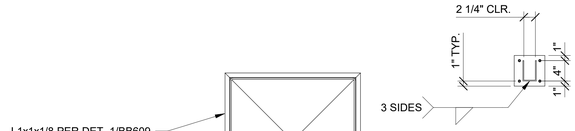
BB202 - BB609 BB206, BB609 SCALE 3/4" = 1'-0"



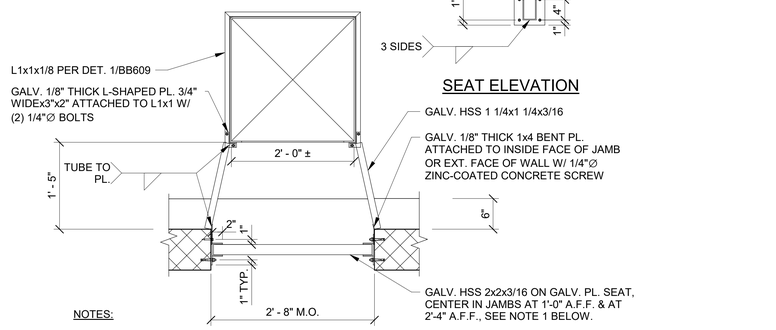
PLAN

4 DEBRIS CHUTE CONNECTION TO CONC.

BB202 - BB609 BB206, BB609 SCALE 1" = 1'-0"



SEAT ELEVATION

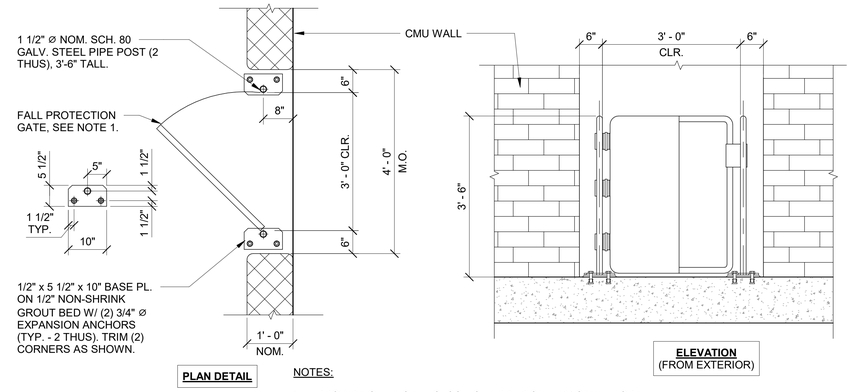


NOTES:

1. PL. SEAT CONSISTS OF 1/4"x6"x6" PL. ANCHORED TO JAMBS W/ (4) 1/4"∅ZINC-COATED CONCRETE SCREWS AND 3/16" BENT PL. WELDED TO 6"x6" PL. (SEE ELEVATION VIEW OF SEAT ABOVE) TO RECEIVE HSS 2x2 BAR
2. PROVIDE S.S. 3/16"∅x4" LONG SMOOTH PIN WITH HEAD THROUGH 3/8"∅ DRILLED HOLE AT 1" FROM TOP AT CENTER OF SIDE PLATES AT EACH SEAT. ATTACH PIN TO S.S. 3/16", GRADE 30 CHAIN WELDED TO ONE SIDE PL.

5 DEBRIS CHUTE PLAN DETAIL

BB202 - BB609 BB206, BB609 SCALE 1" = 1'-0"



PLAN DETAIL

ELEVATION (FROM EXTERIOR)

NOTES:

1. PROVIDE GALV. SELF-CLOSING LADDER SAFETY GATE, MODEL #LSGF-36-GAL-KICK, BY PS DOORS (877) 446-1519 OR WWW.PSDOORS.COM OR AN APPROVED EQUAL.

6 SELF-CLOSING GATE AT DEBRIS CHUTE

BB202 - BB609 BB206, SCALE 3/4" = 1'-0"

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PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - DEBRIS CHUTE DETAILS**

BB609

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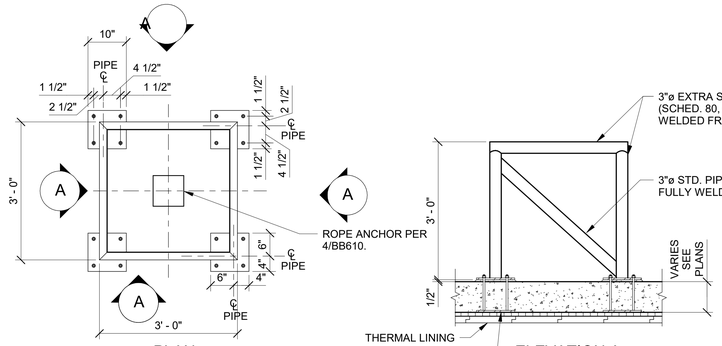


PLAN

ELEVATION A

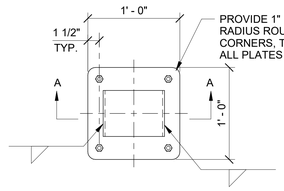
1/2"x10"x10" GALV. BASE PL. ON 1/2" NON-SHRINK GROUT BED W/ (4) 1/2"ø S.S. THREADED ROD THRU-BOLTS SHOP WELDED TO S.S. WASHER PL., WITH S.S. NUTS AND SMOOTH WASHERS AT TOP. PROVIDE NEOPRENE WASHER BTWN. EACH S.S. WASHER & TOP OF GALV. BASE PLATE. CAST 1/2"x10"x10" S.S. WASHER PLATE IN SLAB WITH BOTTOM OF PLATE FLUSH WITH BOTTOM OF SLAB WITH SUFFICIENT ROD LENGTH FOR INSTALLATION TOLERANCE. AFTER INSTALLING AND TIGHTENING NUTS, TRIM EXCESS BOLT LENGTHS TO WITHIN 1/2" OF NUTS AND GRIND SMOOTH. WRAP THREADED RODS IN HEAVY DUTY ELECTRICAL TAPE AT ALL LOCATIONS WHERE A REINFORCING BAR GETS WITHIN 1/2" OF THE ROD.

NOTES:

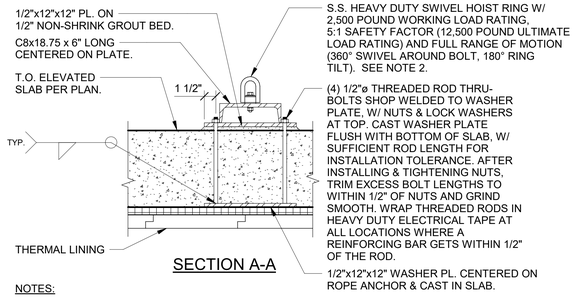
1. ALL PIECES SHALL BE GALVANIZED, U.O.N. STAINLESS STEEL ITEMS SHALL BE 316.
2. FRAME CONSISTS OF (4) HORIZONTALS, (4) VERTICALS AND (4) DIAGONALS TOTAL.
3. DO NOT USE POST-INSTALLED ANCHORS.
4. SEAL GALVANIZING VENT HOLES PER GENERAL NOTE Q.7 ON SHEET BB001.

1 SLAB-MOUNTED ROPE FRAME DETAIL

BB207, BB306 | BB610 SCALE 3/4" = 1'-0"



PLAN VIEW



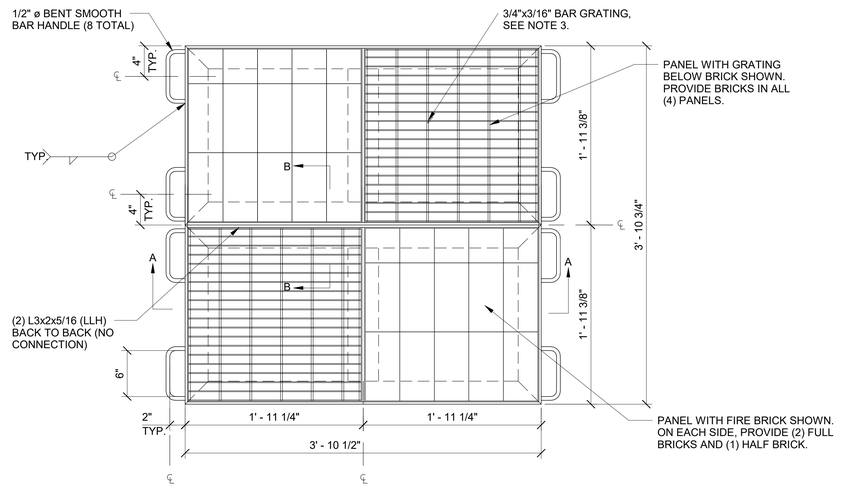
SECTION A-A

NOTES:

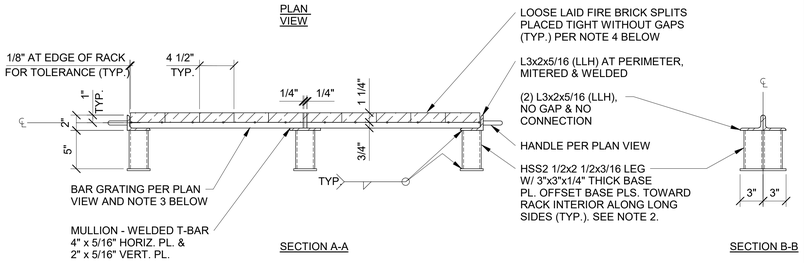
1. ALL PIECES SHALL BE 316 STAINLESS STEEL, U.O.N.
2. PROVIDE PART #29009 BY AMERICAN DRILL BUSHING CO., OR AN EQUIVALENT APPROVED BY THE ENGINEER.
3. SLAB REINFORCING NOT SHOWN FOR CLARITY.
4. DO NOT USE POST-INSTALLED ANCHORS.
5. GRIND ALL CHANNEL AND PLATE EDGES AND CORNERS SMOOTH.

2 SLAB-MOUNTED ROPE ANCHOR DETAIL

BB207, BB306 | BB610 SCALE 1 1/2" = 1'-0"



PLAN VIEW



SECTION A-A

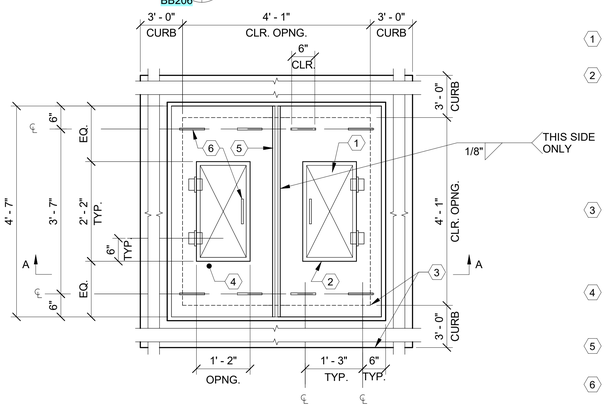
SECTION B-B

NOTES:

1. PROVIDE GALV. STEEL FOR ALL BURN RACK PIECES AND COMPONENTS.
2. PROVIDE VERTICAL LEG AT EACH CORNER AND AT CENTER OF EACH LONG SIDE (12 TOTAL LOCATIONS). PROVIDE A 1/2" ø HOLE IN ONE SIDE OF EACH TUBE LEG, JUST ABOVE THE BASE PL.
3. PROVIDE ITEM NO. GW-75A (SMOOTH, GALV. FINISH), BY McNICHOLS CO. OR APPROVED EQUAL (1'-10 1/4" ◄► x 1'-10" ▲▼). SUPPORTED LOOSE ON PERIMETER ANGLES AND MULLIONS (NO CONNECTION) TYP. AT ALL FOUR PANELS.
4. PLACE FIRE BRICK SPLITS (ASTM C-27, CLASSIFICATION: MEDIUM-DUTY) LOOSE LAID OVER BAR GRATING, TYP. AT ALL FOUR PANELS. TYPICAL BRICK SIZE IS 9" x 4 1/2" x 1 1/4".
5. PROVIDE (X) TOTAL BURN RACKS.

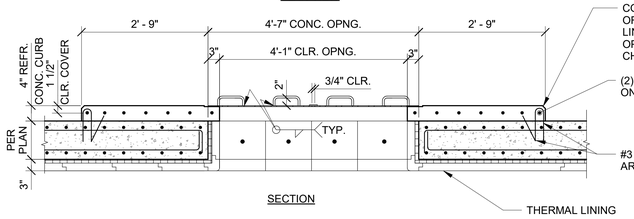
3 BURN RACK PLAN & SECTION DETAILS

BB201 - BB206 | BB610 SCALE 1 1/2" = 1'-0"



PLAN VIEW

1. 1'-0" x 2'-0" OPENING IN VENT COVER PL., TYP.
2. 1/4"x1'-2"x2'-2" GALV. PL. W/ (2) 1 1/2"x1 1/2"x3" HEAVY DUTY S.S. BUTT HINGES AND ONE HANDLE (2 THUS). PROVIDE 1/4"x1 1/2"x3" SHIM PL. WELDED TO T.O. VENT COVER AND B.O. BUTT HINGE TO ALLOW PROPER ALIGNMENT OF EA. HINGE AT EACH VENT COVER
3. REFRACTORY CONC. CAP BY THERMAL LINING MFR. ON FOUR SIDES OF OPNG.PROVIDE 3/4" CHAMFER AT OUTSIDE EDGE & 4" WIDE x 1/4" DEEP NOTCH AT INSIDE EDGE
4. (2) 4'-7"x2'-3 1/8"x1/4" GALV. PL. VENT COVERS (TOP OF PLATES FLUSH W/ TOP OF REFRACTORY CURB)
5. 3/16"x2"x4'-7" LONG ASTRAGAL PL.
6. (4) GALV. HANDLES PER PLATE (1/2" ø BENT SMOOTH BAR) AT 6" FROM EACH END OF EACH PLATE



SECTION

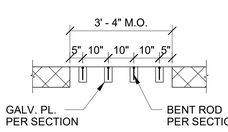
6 VENTILATION OPENING DETAILS

BB207 | BB610 SCALE 3/4" = 1'-0"

NOTE:

1. THIS PLAN APPLIES TO EXTERIOR DOUBLE DOORS IN ROOM 100.

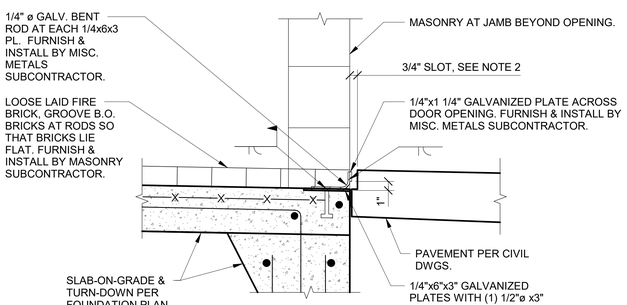
PLAN VIEW



NOTE:

1. THIS PLAN APPLIES TO EXTERIOR SINGLE DOOR IN ROOM 102.

PLAN VIEW



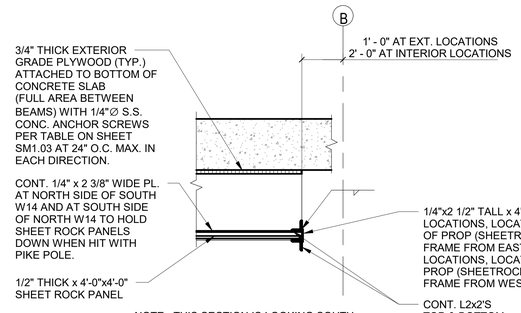
SECTION

NOTES:

1. SLOT AT TOP OF PAVEMENT ALONG FACE OF BUILDING AT DOOR ONLY. BOTTOM OF SLOT SHALL BE HORIZONTAL SO THAT SLOT DEPTH VARIES WITH PAVEMENT SLOPE ALONG WALL, FROM 2 1/2" AT DOOR TO 0" WHERE BOTTOM OF HOT INTERSECTS TOP OF PAVEMENT.

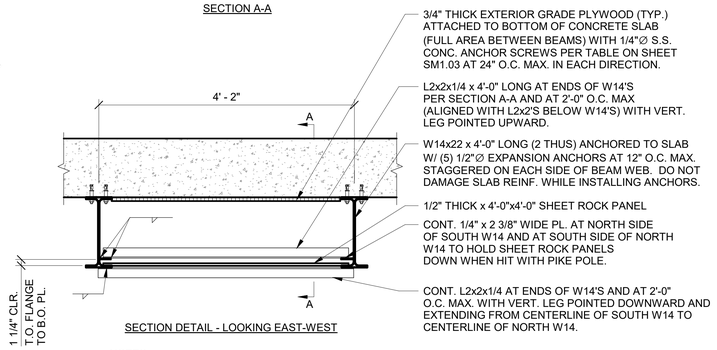
4 EXTERIOR DOOR THRESHOLD DETAILS

BB201 | BB610 SCALE 1 1/2" = 1'-0"



NOTE: THIS SECTION IS LOOKING SOUTH FOR INTERIOR LOCATION AND NORTH FOR EXTERIOR LOCATIONS.

SECTION A-A



SECTION DETAIL - LOOKING EAST-WEST

NOTES:

1. ENTIRE ASSEMBLY (W14'S, L2x2'S AND 1/4" PLATES) SHALL BE SHOP WELDED AND HOT-DIP GALVANIZED AS A COMPLETE ASSEMBLY, WITHOUT WARPING.

5 SHEETROCK PULLDOWN PROP SECTION DETAILS

BB205 | BB610 SCALE 1" = 1'-0"

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **BURN BUILDING - MISCELLANEOUS DETAILS**

BB610

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CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING CRITERIA UNLESS OTHERWISE NOTED ON THE DRAWINGS. DO NOT USE THESE DRAWINGS WITHOUT THE ACCOMPANYING SPECIFICATIONS AND RELATED CIVIL DRAWINGS. FOR ALL ITEMS, SEE THE SPECIFICATIONS
FOR ADDITIONAL DETAILS AND REQUIREMENTS. THE MOST STRINGENT REQUIREMENTS GOVERN CONDITIONS COVERED BY BOTH THE DRAWINGS AND THE PROJECT SPECIFICATIONS OR BY CONFLICTING ITEMS.

A. STRUCTURE CLASSIFICATION

1. THE TRAINING TOWER WILL BE A TRAINING PROP USED BY THE OWNER TO TRAIN ABLE-BODIED FIREFIGHTERS IN A VARIETY OF TRAINING SCENARIOS.
2. THE TRAINING TOWER WILL NOT BE AN OCCUPIED STRUCTURE, EXCEPT DURING TRAINING EXERCISES.
3. THE TRAINING TOWER IS CLASSIFIED AS MISCELLANEOUS USE GROUP (USE GROUP U).

B. COLD TRAINING CRITERIA

1. LIVE FIRE TRAINING IS NOT ALLOWED ANYWHERE WITHIN, ON OR NEAR THE TRAINING TOWER.
2. ALL COLD TRAINING SHALL BE IN ACCORDANCE WITH NFPA REQUIREMENTS.
3. TRAINING THAT INCLUDES TEAR GAS, EXPLOSIVES, FLASH BANGS OR FIREARMS SHALL NOT BE PERMITTED WITHIN OR NEAR THE COLD TRAINING PROP.

C. CODES AND STANDARDS

THE FOLLOWING CODES AND STANDARDS GOVERN THE DESIGN, CONSTRUCTION, QUALITY CONTROL AND SAFETY OF STRUCTURAL WORK PERFORMED ON THIS PROJECT:

1. 2018 NORTH CAROLINA STATE BUILDING CODE (BASED ON INTERNATIONAL BUILDING CODE (IBC-2015), INTERNATIONAL CODE COUNCIL (ICC)).
2. MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10), AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE).
3. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - AISC 360-10, AMERICAN INSTITUTE OF STEEL CONSTRUCTION, EXCEPT AS MODIFIED BY IBC.
4. STRUCTURAL WELDING CODE - STEEL (AWS D1.4-2011), AMERICAN WELDING SOCIETY (AWS), EXCEPT AS MODIFIED BY IBC.
5. BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI-318-14), AMERICAN CONCRETE INSTITUTE (ACI), EXCEPT AS MODIFIED BY IBC.
6. SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301-16), AMERICAN CONCRETE INSTITUTE (ACI).
7. MANUAL OF STANDARD PRACTICE (CRSI), CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
8. BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES, THE MASONRY SOCIETY (TMS) TMS 402-13/TMS 602-13, AND BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, AMERICAN CONCRETE INSTITUTE (ACI) ACI 530-13, EXCEPT AS MODIFIED BY IBC.
9. STANDARD ON FACILITIES FOR FIRE TRAINING AND ASSOCIATED PROPS (NFPA 1402-2019), NATIONAL FIRE PROTECTION ASSOCIATION.

D. DESIGN GRAVITY LOADS

LIVE LOADS:

1. FLOORS: 50 PSF
2. STAIRS: 100 PSF
3. ROOFS: 50 PSF
4. SLAB EDGES AND EAVES: NON-CONCURRENT POINT LOADS OF 750 POUNDS

DEAD LOADS:

1. CMU PARTITIONS: 80 PSF

E. DESIGN SNOW LOADS

1. GROUND SNOW LOAD (Pg) = 15 PSF
2. FLAT ROOF SNOW LOAD (Pf) = 15 PSF
3. SNOW DRIFT LOAD (Ps) = 30.2 PSF
4. SNOW EXPOSURE FACTOR (Ce) = 1.0
5. THERMAL FACTOR (Ct) = 1.2
6. SNOW LOAD IMPORTANCE FACTOR (Is) = 1.0

F. DESIGN WIND LOADS

1. RISK CATEGORY II
2. BASIC WIND SPEED = 115 MPH
3. WIND LOAD IMPORTANCE FACTOR (Iw) = 1.0
4. INTERNAL PRESSURE COEFFICIENT = +0.55 / -0.55
5. WIND EXPOSURE CATEGORY = C
6. WIND DESIGN PRESSURE (P) FOR THE MAIN WIND RESISTING SYSTEM = 32.5 PSF (WINDWARD & LEEWARED COMBINED) AT HIGHEST POINT.
7. WIND DESIGN PRESSURE (P) FOR BUILDING COMPONENTS AND CLADDING = XX PSF ON CMU INFILL WALLS.

G. SEISMIC DESIGN DATA

1. RISK CATEGORY II.
2. SEISMIC IMPORTANCE FACTOR (Ie) = 1.0
3. SITE CLASS = D
4. SPECTRAL RESPONSE ACCELERATIONS: Ss 0.147, S1 = 0.074
5. SPECTRAL RESPONSE COEFFICIENTS: Sds 0.157, S1 = 0.118
6. SEISMIC DESIGN CATEGORY = B
7. BASIC SEISMIC FORCE-RESISTING SYSTEM: ORDINARY REINFORCED CONCRETE MOMENT FRAMES (C.7)
8. RESPONSE MODIFICATION COEFFICIENT (R) = 3.0
9. DEFLECTION AMPLIFICATION FACTOR (Cd) = XX
10. OVERSTRENGTH FACTOR (Ω_0) = 2.5
11. DESIGN BASE SHEAR (V) =0.0523 x W

H. DATUM AND BUILDING ELEVATIONS

1. THE DATUM IS THE TOP OF THE FIRST FLOOR CONCRETE SLAB AT THE EXTERIOR FACE OF THE EXTERIOR WALLS AT THE LOWEST POINT, AND IS DESIGNATED ON THE DRAWINGS AS 0.00 FEET.
2. THE DATUM ELEVATION OF THE TRAINING TOWER IS 296.00 FEET.
3. ALL TOP OF SLAB ELEVATIONS ARE SHOWN IN THE PLANS AS +XX.XX OR -XX.XX INFEET RELATIVE TO THE DATUM.

I. SOILS INFORMATION

1. THE FOLLOWING INFORMATION IS BASED ON THE GEOTECHNICAL REPORT ("SOILS REPORT") PREPARED BY NV5 ENGINEERS AND CONSULTANTS, INC. LETTER DATED JANUARY 11th, 2024.
2. ACCORDING TO THE SOILS REPORT, SOFT/LOOSE NEAR SURFACE SOILS (APPROXIMATELY 3 FEET DEEP) OVERLAY PARTIALLY WEATHERED ROCK AND ROCK (3 TO 25 FEET).
3. ALLOWABLE SOIL BEARING VALUE FOR THE BURN BUILDING IS 2,500 PSF.
4. ACCORDING TO THE SOILS REPORT, GROUND WATER WAS NOT OBSERVED WITHIN THE BORINGS AT THE TRAINING TOWER (B-6 & B-7). SEE SOILS REPORT FOR DRAINAGE CONSIDERATIONS.
5. SEE SPECIFICATIONS FOR EARTHWORK REQUIREMENTS, INCLUDING REPLACEMENT OF UNSUITABLE SOILS, MEASURES TO PREVENT INFILTRATION OF RUNOFF AND PRECIPITATION INTO UNDERLYING SOILS AND DEWATERING REQUIREMENTS IF GROUNDWATER IS ENCOUNTERED.

J. FOOTINGS

1. EXTEND TOPS OF ALL FOOTINGS TO A MINIMUM OF 1'-6" BELOW EXTERIOR FINISHED GRADE, U.O.N.
2. FOOTINGS SHALL BE SUPPORTED ON UNDISTURBED, NATURAL, ACCEPTABLE SOILS OR ON COMPACTED ENGINEERED FILL PLACED OVER THE NATURAL, ACCEPTABLE SOILS. PROVIDE 3" OF COMPACTED 3/4" CRUSHED STONE BELOW ALL FOOTING AND MAT FOUNDATIONS.
3. ACCORDING TO THE SOILS REPORT, AS MUCH AS 3'-0" OF COMPACTED ENGINEERED FILL OR ABC STONE COULD BE REQUIRED BELOW FOUNDATIONS TO REPLACE SOFT/LOOSE NEAR SURFACE SOILS.
4. FOOTING SUBGRADES AND ENGINEERED FILL SHALL BE APPROVED BY THE TESTING AGENCY GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE FOOTINGS AND ENGINEERED FILL.

K. BACKFILL COMPACTION

1. EXCAVATE, PROOFROLL, BACKFILL, AND COMPACT FOUNDATION AND SLAB-ON-GRADE SUBGRADES PER THE EARTHWORK SPECIFICATION SECTIONS 312000.
2. ALL PROOFROLLING AND ENGINEERED OR IMPORTED FILL MATERIALS AND PLACEMENT SHALL BE OBSERVED AND APPROVED BY THE TESTING AGENCY GEOTECHNICAL ENGINEER.
3. PROVIDE FILL MATERIALS THAT ARE FREE OF DEBRIS, ORGANIC, AND DELETERIOUS MATERIALS AND THAT MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
4. PLACE ENGINEERED FILL MATERIAL IN MAXIMUM LEVEL LOOSE LIFTS OF 6 INCHES AND COMPACT TO 95% OF THE MODIFIED PROCTOR TEST MAXIMUM DRY DENSITY (ASTM D-698).

L. CAST-IN-PLACE CONCRETE CONSTRUCTION

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 318, ACI 301, AND THE ACI DETAILING MANUAL.
2. PROVIDE CONCRETE WITH PROPERTIES THAT CONFORM TO THE CRITERIA SPECIFIED IN TABLE 1 ON SHEET TT002.
3. PROVIDE NORMAL WEIGHT CONCRETE.
4. TESTING AGENCY SHALL TAKE CONCRETE TEST CYLINDERS IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318, CHAPTER 5 AND THE CONTRACT SPECIFICATIONS.
5. SEE THE CONTRACT SPECIFICATIONS FOR ADDITIONAL CONCRETE TESTING REQUIREMENTS (AIR CONTENT, SLUMP, ETC.).
6. TESTING AGENCY SHALL PERFORM REBAR INSPECTIONS OF ALL REINFORCING STEEL BEFORE ALL CONCRETE POURS.
7. WHEN PLACING CONCRETE ON SLOPING FORMS AT CONCRETE STAIRS, PLACE CONCRETE AT LOWEST ELEVATION OF FORMS FIRST AND WORK UP TOWARD THE HIGHEST ELEVATION.
8. PROVIDE CONTINUOUS DRIP ALONG EDGES OF ELEVATED CONCRETE SLABS AS SHOWN IN THE DRAWINGS.
9. CHAMFER ALL EXPOSED CORNERS OF COLUMNS AND WALLS WITH 3/4" CHAMFER UNLESS OTHERWISE NOTED.
10. AT LOCATIONS SHOWN ON THE DRAWINGS, CAST DOVETAIL ANCHOR SLOTS INTO CONCRETE. SEE GENERAL NOTE 0.15 FOR ADDITIONAL INFORMATION.
12. FOR CAST-IN-PLACE CAPS ON MASONRY PARAPETS, CUBICLE WALLS, AND SCREEN WALLS, PROVIDE EITHER:
    a. 5,000 PSI, AIR-ENTRAINED, READY-MIX CONCRETE FROM THE CONCRETE SPECIFICATION, FOR WHICH PUMPING WOULD BE ALLOWED AS WELL AS OTHER MEANS & METHODS, AS LONG AS THE CONCRETE AND FINISH MEET THE REQUIREMENTS OF THE SPECIFICATIONS, OR
    b. AIR-ENTRAINED QUICKRETE (QUIKRETE Q-MAX PRO), MIXED IN A MIXER ON SITE (NOT IN A WHEELBARROW), WITH THE FIBERS THAT PROJECT FROM THE SURFACE RUBBED OFF AFTER THE FINAL CURE AND WITH FINISH THAT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS.

M. CONCRETE REINFORCEMENT

1. PROVIDE HIGH STRENGTH, NEW BILLET DEFORMED BARS CONFORMING TO ASTM A615, GRADE 60 FOR STEEL REINFORCEMENT IN CONCRETE.
2. PROVIDE STEEL REINFORCEMENT DETAILS IN ACCORDANCE WITH ACI 318 AND CRSI STANDARDS.
3. PROVIDE CONCRETE PROTECTION FOR STEEL REINFORCEMENT OF CAST-IN-PLACE CONCRETE AS SPECIFIED IN TABLE 2 ON SHEET TT002. PLACE THE OUTERMOST LAYERS OF REINFORCING AS CLOSE TO THE CONCRETE SURFACES AS POSSIBLE WITHOUT VIOLATING THE REQUIREMENTS SHOWN IN THE TABLE.
4. COORDINATE REINFORCING PLACEMENT WITH ALL POST-INSTALLED ANCHORS AT GUARDRAILS, DOORS, SHUTTERS, SCUPPERS, ROPE TIE-OFF ANCHORS, ETC.

N. SLABS-ON-GRADE

1. FOR ALL SLABS-ON-GRADE, PROVIDE A 6" MIN. THICK POURED CONCRETE SLAB-ON-GRADE, REINFORCED WITH WWR6x6-W2.9xW2.9 LOCATED IN THE UPPER THIRD PORTION OF SLAB THICKNESS.
2. FOLLOW WRI STANDARDS FOR WELDED WIRE REINFORCEMENT PLACING, LAP, ETC.
3. PROVIDE A MINIMUM OF 4" OF AGGREGATE BASE COURSE (ABC STONE) AS A BASE BELOW THE SLABS-ON-GRADE.
4. PROVIDE A 15 MIL VAPOR BARRIER BELOW THE SLABS-ON-GRADE PER THE SPECIFICATIONS.
5. PROVIDE A CONTINUOUS MANUFACTURED CRACK CONTROL JOINT (PREMOLDED PLASTIC STRIP) OR EARLY ENTRY SAW-CUT CONTROL JOINT IN THE TOP OF SLAB AT LOCATIONS SHOWN ON THE FOUNDATION PLANS. SEE SPECS. FOR REQUIREMENTS OF SAW-CUTTING.

O. MASONRY

1. PROVIDE 2-CELL NORMAL WEIGHT CONCRETE BLOCK CONFORMING TO ASTM C-90.
2. PROVIDE UNIT MASONRY THAT DEVELOPS INSTALLED COMPRESSIVE STRENGTHS (f'm) AT 28 DAYS, BASED ON NET AREA, OF 2,000 PSI.
3. PROVIDE MORTAR THAT CONFORMS TO ASTM C-270, TYPE S.
4. ADD INTEGRAL WATER REPELLENT ADMIXTURE TO BLOCK AND MORTAR IN ALL MASONRY WALLS IN ACCORDANCE WITH THE SPECIFICATIONS.
5. UNLESS OTHERWISE NOTED, PROVIDE HORIZONTAL JOINT REINFORCING AT 16" ON CENTER VERTICALLY IN ALL MASONRY WALLS.
6. UNLESS OTHERWISE NOTED ON DRAWINGS, PROVIDE (1) #5 VERTICAL BAR AT ENDS OF WALLS, AT WALL CORNERS AND INTERSECTIONS, AT JAMBS OF OPENINGS, AND AT 24" O.C. MAXIMUM IN ALL MASONRY WALLS. SEE DRAWINGS FOR ADDITIONAL REINFORCING DETAILS, INCLUDING AT JOINTS.
7. PROVIDE VERTICAL REINFORCING BARS FOR FULL HEIGHT OF WALL. DOWEL BARS INTO TOPS OF SLABS AT BOTTOMS OF WALLS BUT DO NOT DOWEL BARS INTO CONCRETE SLABS AT TOPS OF WALLS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
8. SEE DRAWINGS FOR ADDITIONAL DETAILS RELATING TO VERTICAL REINFORCING BARS, INCLUDING BARS AT DOOR, WINDOW, AND SCUPPER OPENINGS, AT OPEN VERTICAL JOINTS IN WALLS, AND AT OTHER LOCATIONS.
9. KEEP CELLS TO RECEIVE BARS CLEAN OF MORTAR DROPPINGS.
10. SECURE VERTICAL BARS WITH WIRE TIES AND SPACERS AT TOP AND BOTTOM TO ASSURE THAT BARS REMAIN IN POSITION DURING GROUTING.
11. FILL ALL CELLS FULL HEIGHT WITH 3,000 PSI MASONRY GROUT PER ASTM C-476 AND THE SPECS.
12. CLOSE CLEANOUTS AFTER GROUT FLOWS FULLY TO BOTTOM OF WALL. VIBRATE GROUT DURING PLACEMENT TO ELIMINATE AIR POCKETS.
13. SEE THE CONTRACT SPECIFICATIONS FOR MASONRY TESTING AND INSPECTIONS REQUIRED, INCLUDING REINFORCING AND GROUTING INSPECTIONS.
14. AT LOCATIONS INDICATED ON DRAWINGS, ANCHOR MASONRY TO CONCRETE WITH DOVETAIL ANCHORS AT 16" ON CENTER, UNLESS OTHERWISE NOTED, AND MORTAR MASONRY TIGHT TO FACE OF CONCRETE. PROVIDE S.S. 4" LONG NO.103-C DOVETAIL TRIANGLE ANCHORS, EACH WITH 12 GA. DOVETAIL ANCHOR AND 3/16" DIA. WIRE TRIANGLE TIE, AND S.S., 22 GA., NO. 100 STANDARD DOVETAIL SLOTS BY HECKMAN BUILDING PRODUCTS, INC., OR AN EQUIVALENT BY HOHMANN & BARNARD OR DUR-O-WAL, APPROVED BY THE ENGINEER. SPACE ANCHORS AT 16" O.C. VERTICALLY AND, IF APPLICABLE, 24" O.C. HORIZONTALLY U.O.N.
15. ALL MASONRY WALLS SHALL BE STANDARD GRAY COLOR WITH 8"(THICK) x 16"(LONG) x 8"(TALL) NOMINAL BLOCKS. ALL BLOCKS SHALL BE STANDARD SMOOTH FACE BLOCK.
16. PROVIDE (2) COATS OF WATER REPELLENT SEALER, AS INDICATED IN SPECIFICATION SECTION 04 20 00, TO THE EXTERIOR FACE OF CMU WALLS WHERE INDICATED IN PLAN.

P. ANCHORS

1. INSTALL ADHESIVE ANCHORS, EXPANSION ANCHORS, SLEEVE ANCHORS, AND CONCRETE ANCHOR SCREWS PER THE TYPICAL ANCHOR SCHEDULES ON SHEET TT002.
2. PROVIDE ANCHORS WITH MINIMUM EMBEDMENT AND ALLOWABLE CAPACITIES SHOWN IN THE SCHEDULES, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. IF MINIMUM REQUIREMENTS FOR ANCHORS CAN NOT BE ACHIEVED DUE TO FIELD CONDITIONS, NOTIFY THE ENGINEER.
4. INSTALL ALL ANCHORS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.
5. DRILL HOLES FOR ANCHORS TO BE INSTALLED IN MASONRY WITH A ROTARY DRILL ONLY, NOT A ROTARY-HAMMER DRILL. DO NOT DAMAGE FACES OF WALLS, CEILINGS, SLABS, OR OTHER SUBSTRATES WHILE DRILLING.
6. SUBMIT PROPOSED ANCHORS TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING WORK.
7. DO NOT DAMAGE REINFORCING STEEL WHILE INSTALLING ANCHORS. COORDINATE REINFORCING PLACEMENT WITH ALL POST-INSTALLED ANCHORS AT GUARDRAILS, DOORS, SHUTTERS, SCUPPERS, ROPE TIE-OFF ANCHORS, ETC.
8. ANCHORS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR RESPONSIBLE FOR THE SCOPE OF WORK BEING ANCHORED.

Q. STEEL SHAPES AND PLATES

1. PROVIDE STEEL WITH PROPERTIES LISTED IN TABLE 3 ON SHEET BB002.
2. SEE SPECIFICATIONS FOR REQUIREMENTS OF STAINLESS STEEL ANGLES AND PLATES.
3. PROVIDE WELDED SHOP CONNECTIONS UNLESS OTHERWISE NOTED.
4. MAKE FIELD CONNECTIONS WITH ASTM A-325N HIGH STRENGTH BOLTS TIGHTENED TO A SNUG TIGHT CONDITION, UNLESS OTHERWISE NOTED.
5. PERFORM ALL WELDING WITH WELDERS QUALIFIED IN ACCORDANCE WITH AWS PROCEDURES FOR WELDER QUALIFICATION.
6. PROVIDE GALVANIZED STEEL MEMBERS, UNLESS OTHERWISE NOTED ON THE DRAWINGS AS "PAINTED" OR "STAINLESS STEEL".
7. AT GALVANIZING VENT HOLES IN PIPES AND TUBES IN RAILINGS, EXTERIOR STAIRS, ROPE FRAMES AND OTHER NOTED ITEMS, LOCATE VENT HOLES AT BOTTOM OF PIPE OR TUBE. PLUG ALL VENT HOLES AFTER GALVANIZING IN ONE OF THE FOLLOWING WAYS: HAMMER IN A ZINC GALVANIZING VENT HOLE PLUG, GRIND IT SMOOTH, AND TOUCH UP WITH GALVANIZING REPAIR PAINT. A SECOND OPTION IS TO PLUG WELD THE GALVANIZING VENT HOLES, GRIND THE WELDS SMOOTH, AND TOUCH UP WITH GALVANIZING REPAIR PAINT PER THE SPECIFICATIONS.
8. WHERE INDICATED IN THE DRAWINGS AS "PAINTED", PROVIDE STEEL WITH ONE SHOP COAT OF RUST-INHIBITING PRIMER AND TWO FIELD COATS AS INDICATED IN THE SPECIFICATIONS.
9. WHERE INDICATED IN THE DRAWINGS, PROVIDE STAINLESS STEEL OF TYPE INDICATED IN THE SPECIFICATIONS.
10. SEE THE CONTRACT SPECIFICATIONS FOR STEEL TESTING AND INSPECTIONS REQUIRED AND TO BE PROVIDED BY OWNER.

R. STEEL GRATING AND TREADS

1. PROVIDE 2" DEEP, 13 GAUGE, GALVANIZED 'PERF-O GRIP' STEEL GRATING BY COOPER B-LINE, OR AN EQUIVALENT BY NUCOR GRATING OR METALEX, APPROVED BY THE ENGINEER. MAXIMUM PLANK WIDTH IS 12 INCHES. INSTALL GRATING IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS TO CREATE A TWO-SPAN CONDITION BY WELDING (SCREWS AND CLIPS NOT ALLOWED). PROVIDE GRATING PLANK LENGTHS THAT ARE AS LONG AS POSSIBLE TO MINIMIZE CUT PLANKS AND JOINTS WHERE CUT ENDS OF PLANKS ABUT ONE ANOTHER.
2. PROVIDE 2" DEEP, 13 GAUGE, GALVANIZED PERF-O GRIP' STAIR TREADS BY COOPER B-LINE, OR AN EQUIVALENT BY NUCOR GRATING OR METALEX, APPROVED BY THE ENGINEER. INSTALL TREADS IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS USING STANDARD ZINC COATED BOLTS.
3. PROVIDE A GALVANIZED 2" TALL VERTICAL END PLATE TO CLOSE OFF THE ENDS OF ALL GRATING PLANKS TO ELIMINATE JAGGED EDGES AND TO STRENGTHEN THE ENDS OF THE PLANKS. THIS INCLUDES ENDS OF PLANKS THAT ABUT ENDS OF ADJACENT PLANKS AND THAT ABUT FACE OF THE BUILDING.
4. TOUCH UP ALL ABRASIONS AND WELDS WITH GALVANIZING REPAIR PAINT PER THE SPECIFICATIONS.

S. FIXED ACCESS LADDER

1. PROVIDE A HEAVY-DUTY, FIXED, WALL-MOUNTED, GALVANIZED STEEL CAGED VERTICAL ACCESS LADDER. NOMINAL HEIGHT OF LADDER IS 15'-6"± FROM FIFTH FLOOR FIRE ESCAPE TO TOP OF THE SIDE RAILS EXTENDING 3'-6" ABOVE THE ROOF FOR FALL PROTECTION.
2. PROVIDE CONTINUOUS CHANNEL OR RECTANGULAR TUBING SIDE RAILS, SPACED 20 INCHES APART AND SIZED TO SUPPORT LOADS WITHIN CODE REQUIRED LIMITS FOR DEFLECTION. PROVIDE CAST ALUMINUM LADDER RUNGS, WITH CORRUGATED S SURFACES, SPACED AT 12" O.C. EACH LADDER RUNG SHALL BE CAPABLE OF CARRYING 1,000 POUNDS LOAD AND SHALL BE ATTACHED AT CENTERLINE OF SIDE RAILS BY WELDING OR WITH GALVANIZED CONNECTORS.
3. FOR CAGED LADDER, CLEARANCE BETWEEN TOP OF FIRE ESCAPE GRATING AND BOTTOM OF CAGE SHALL BE 7'-4". PROVIDE CAGE THAT IS 2'-6" FROM CENTERLINE OF LADDER RUNG, WITH FLARED BOTTOM.
4. PROVIDE ACCESS LADDER, CERTIFIED TO MEET OSHA/ANSI A14.3 STANDARDS.
5. SUBMIT SHOP DRAWINGS SHOWING ALL COMPONENTS, SIZES, LENGTHS, AND ATTACHMENTS TO THE STRUCTURE FOR APPROVAL BY THE ENGINEER.

T. TESTING AND INSPECTIONS OF ROPE TIE-OFF POINTS

1. OWNER'S TESTING AGENCY SHALL TEST EACH ROPE ANCHOR ASSEMBLY AND ROPE FRAME ASSEMBLY WITH A 5,000-POUND PULL TEST, AS FOLLOWS:
    A. SURFACE-MOUNTED ROPE ANCHOR ASSEMBLY: PULL TEST ON HOIST RING PERPENDICULAR TO THE SLAB OR WALL SURFACE ON WHICH ASSEMBLY IS ATTACHED.
    B. ROPE FRAME ASSEMBLY: PULL TEST AT TOP OF FRAME AT EACH CORNER OF FRAME PERPENDICULAR TO SLAB SURFACE, TESTING ONE CORNER AT A TIME.

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056
DATE ISSUED
01/10/25
PROJECT STATUS
ISSUE FOR BID
SHEET
TRAINING TOWER - GENERAL NOTES

TT001

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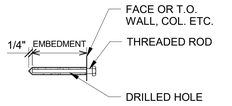
TABLE 1 - CONCRETE PROPERTIES			
STRUCTURE TYPE	f'c (MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS) (psi)	MAXIMUM WATER/CEMENT RATIO	AIR RANGE (%)
ROOF & FLOOR SLABS, SLAB-ON-GRADE, COLUMNS, WALLS & PIERS	5,000	0.45	6% ± 1 1/2% (ENTRAINED)
FOOTING & FOUNDATIONS	4,000	0.55	3% ± 1 1/2% (ENTRAPPED)

TABLE 2 - CONCRETE PROTECTION FOR STEEL REINFORCEMENT	
STRUCTURE TYPE	MINIMUM CLEAR COVER (UNLESS OTHERWISE NOTED ON DRAWINGS)
ELEVATED SLABS & STAIRS	1 1/2" TO BOTTOM BARS, 2" SIDE COVER FOR ALL BARS 2" TO TOP BARS
WALLS	FOR SINGLE LAYER, CENTER BARS IN WALLS. FOR DOUBLE LAYER, 2" TO OUTERMOST BARS.
BEAMS	2" TO BOTTOM BARS 2" TO TOP BARS 2" SIDE COVER TO LONGITUDINAL BARS
COLUMNS	2" TO VERTICAL BARS 1 5/8" TO TIES
FOOTINGS AND OTHER EARTH FORMED CONCRETE	3"

TABLE 3 - STRUCTURAL STEEL PROPERTIES			
SHAPE	ASTM DESIGNATION	GRADE	MIN. YIELD STRENGTH (Fy)
PLATES & ANGLES	A-36	---	36 KSI
WIDE FLANGES	A-992	---	50 KSI
CHANNELS	A-572	---	50 KSI
TUBES	A-500	B	46 KSI
PIPES	A-53, TYPE E	B	35 KSI

ADHESIVE ANCHOR SCHEDULE/EPOXY			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN GROUT-FILLED CMU	
		TENSION (lbs)	SHEAR (lbs)
3/8" (HY70)	3 3/8"	1,240	850
1/2" (HY70)	4 1/2"	2,035	1,495
5/8" (HY70)	5 5/8"	2,840	2,615
ANCHOR DIAMETER	EMBEDMENT DEPTH	FACTORED LOADS IN 4,000 PSI CRACKED CONCRETE	
		TENSION (lbs)	SHEAR (lbs)
3/8" (HY200)	3 3/8"	4,335	2,630
1/2" (HY200)	4 1/2"	6,670	4,815
5/8" (HY200)	5 5/8"	9,325	7,670
3/4" (HY200)	6 3/4"	12,255	11,330



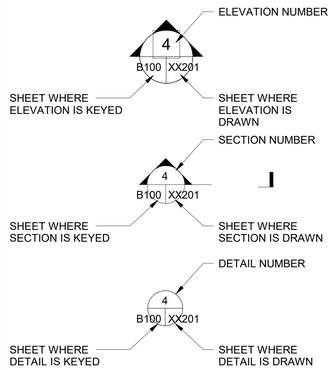
ADHESIVE ANCHOR

NOTES:

1. WHERE INSTALLED IN HOLLOW, GROUTED OR SOLID CMU, PROVIDE HILTI HIT HY70 WITH HAS RODS, MANUFACTURED BY HILTI FASTENING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
2. WHERE INSTALLED IN CONCRETE, PROVIDE HILTI HIT HY200 WITH HIT-Z RODS, MANUFACTURED BY HILTI FABRICATING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
3. PROVIDE STAINLESS STEEL ADHESIVE ANCHORS UNLESS OTHERWISE NOTED.
4. IF DRAWINGS CALL FOR EPOXYING REBAR INTO CONCRETE, USE ADHESIVE ANCHOR SCHEDULE/EPOXY TABLE.

LEGEND

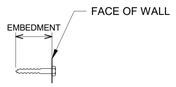
CONCRETE
EARTH
GRAVEL
GROUT
FIRE BRICK
WOOD FRAMING
NORTH
PLYWOOD
RIGID INSULATION OR THERMAL LINING SYSTEM
THERMAL LINING IN PLAN OR SECTION
STEEL
CMU IN SECTION
GROUTED CMU IN SECTION
MASONRY IN ELEVATION



DETAIL KEY

100 ROOM NUMBER
(1) DOOR TYPE
(R) ADDITIONAL REINFORCING
1 REVISION

CONCRETE ANCHOR SCREW SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN 4,000 PSI CONCRETE	
		TENSION N (lbs)	SHEAR (lbs)
1/4"	1 3/4"	255	540



CONCRETE ANCHOR SCREW

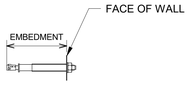
NOTES:

1. UNLESS SHOWN AS STAINLESS STEEL, PROVIDE CONCRETE ANCHOR SCREWS THAT ARE MANUFACTURED FROM AISI 1022 STEEL WITH AN EXTENDED CORROSION RESISTANT COATING THAT IS COMPATIBLE WITH GALVANIZED STEEL.
2. PROVIDE CONCRETE ANCHOR SCREWS MANUFACTURED BY ITW RAMSET/REDHEAD, OR AN APPROVED EQUIVALENT BY HILTI FASTENING SYSTEMS OR POWERS FASTENERS, INC. (FORMERLY RAWL).

ABBREVIATIONS

&	AND
L	ANGLE
@	AT
#	NUMBER
ø	DIAMETER
(E)	EXISTING
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
ALT.	ALTERNATE
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
B	BOTTOM BAR(S)
BM	BOTTOMMOST BAR(S)
BLDG.	BUILDING
BM.	BEAM(S)
BOT.	BOTTOM
BRG.	BEARING
BSMT.	BASEMENT
CS	COLUMN STRIP
C.	COURSE(S)
C.C.	CENTER TO CENTER
C.E.	CONTINUOUS END
C.I.P.	CAST IN PLACE
C.J.	CONTROL JOINT
CL	CENTERLINE
CLG.	CEILING
CLR.	CLEAR
CMU	CONCRETE MASONRY UNIT
C.O.	CLEAR OPENING
COMP.	COMPOSITE
COL.	COLUMN
CONC.	CONCRETE
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CTR.	CENTER
C.Y.	CUBIC YARD
D.E.	DISCONTINUOUS END
DBL.	DOUBLE
DEMO.	DEMOLISH, DEMOLITION
DIA.	DIAMETER
DIM.	DIMENSION
DN.	DOWN
D.P.	DRILLED PIER
DTL.	DETAIL
DWG.	DRAWING(S)
EA.	EACH
E.E.	EACH END
E.F.	EACH FACE
E.F.P.	EQUIVALENT FLUID PRESSURE
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
ENGR.	ENGINEER
EQ.	EQUAL
EQUIP.	EQUIPMENT
EQUIV.	EQUIVALENT
E.W.	EACH WAY
EXIST.	EXISTING
EXP.	EXPANSION
F.F.	FINISH FLOOR
FDN.	FOUNDATION(S)
FLR.	FLOOR
F.O.	FACE OF
FT.	FOOT OR FEET
FTG.	FOOTING(S)
FUT.	FUTURE
G.B.	GRADE BEAM
GA.	GAUGE
GALV.	GALVANIZED
GEN.	GENERAL
H.A.S.	HEADED ANCHOR STUD
HDR.	HEADER
HORIZ.	HORIZONTAL
HI.	HIGH
I.D.	INSIDE DIAMETER
I.F.	INSIDE FACE
IN.	INCH
INT.	INTERMEDIATE
JT.	JOINT
K.S.F.	KIPS PER SQUARE FOOT
K.S.I.	KIPS PER SQUARE INCH
L.E.	LEFT END
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LONG.	LONGITUDINAL
LW	LIGHTWEIGHT
LO.	LOW
MS	MIDDLE STRIP
M.O.	MASONRY OPENING
MAS.	MASONRY
MAX.	MAXIMUM
MECH.	MECHANICAL
MTL.	METAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO. OR #	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.	OUTSIDE FACE
OPNG.	OPENING
OPP.	OPPOSITE
P.C.	PRE-CAST
PL.	PLATE
PREFAB.	PREFABRICATED
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	POST-TENSIONED
PVC.	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
RAD.	RADIUS
R.E.	RIGHT END
REINF.	REINFORCING / REINFORCEMENT
REV.	REVISION
SCHED.	SCHEDULE
SECT.	SECTION
S.F.	SQUARE FEET
SIM.	SIMILAR
S.O.G.	SLAB-ON-GRADE
SPECS.	SPECIFICATION(S)
S.S.	STAINLESS STEEL
STD.	STANDARD
STL.	STEEL
STRUC.	STRUCTURAL
SYM.	SYMMETRICAL
T	TOP BAR(S)
TM	TOPMOST BAR(S)
T.&B.	TOP AND BOTTOM
T.&G.	TONGUE AND GROOVE
T.L.	THERMAL LINING
T.O.	TOP OF
T.O.C.	TOP OF CONCRETE
T.O.F.	TOP OF FOOTING
T.O.P.	TOP OF PARAPET
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TRANS.	TRANSVERSE
TYP.	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
VERT.	VERTICAL
W/	WITH
W/O	WITHOUT
W.P.	WORK POINT
WT.	WEIGHT
W.W.F.	WELDED WIRE FABRIC

SLEEVE ANCHOR SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN HOLLOW CMU	
		TENSION (lbs)	SHEAR (lbs)
3/8"	1 1/2"	470	890

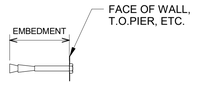


SLEEVE ANCHOR

NOTES:

1. PROVIDE HILTI HLC-HX SS 304 SLEEVE ANCHORS MANUFACTURED BY HILTI FASTENING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
2. PROVIDE 304 STAINLESS STEEL ANCHORS, U.O.N.

EXPANSION ANCHOR SCHEDULE			
ANCHOR DIAMETER	EMBEDMENT DEPTH	MIN. ALLOWABLE LOADS IN 4,000 PSI CONCRETE	
		TENSION (lbs)	SHEAR (lbs)
1/4"	2"	705	805
3/8"	2 1/2"	1,575	1,590
1/2"	3 1/2"	2,510	3,045
5/8"	4"	3,340	4,650
3/4"	4 3/4"	3,870	5,645



EXPANSION ANCHOR

NOTES:

1. PROVIDE STUD TYPE EXPANSION ANCHORS WITH A SINGLE THREE PIECE SECTION WEDGE THAT MEET THE DESCRIPTION IN FEDERAL SPECIFICATION A-A-1923A, TYPE 4.
2. PROVIDE HILTI KWIK BOLT III, MANUFACTURED BY HILTI FASTENING SYSTEMS, OR AN APPROVED EQUIVALENT BY ITW RAMSET/REDHEAD OR POWERS FASTENERS, INC. (FORMERLY RAWL).
3. PROVIDE 316 STAINLESS STEEL ANCHORS, U.O.N.

TYPICAL REINFORCING LAP SPLICE SCHEDULE												
BAR SIZE	NORMAL WEIGHT CONCRETE										MASONRY	
	FOUNDATION		BEAM		SLAB		WALL		COL.		WALL	
	BOT.	TOP	BOT.	TOP	INT.	EXT.	VERT.	HORIZ.	VERT.		(1) BAR PER CELL	
											VERT.	HORIZ.
#3	1'-10"	2'-4"	1'-7"	2'-1"	1'-7"	1'-7"	1'-7"	1'-7"	1'-3"		1'-7"	1'-7"
#4	2'-5"	3'-2"	2'-1"	2'-4"	2'-1"	2'-1"	2'-1"	2'-1"	1'-6"		2'-1"	2'-1"
#5	3'-0"	3-11"	2'-7"	3'-5"	2'-7"	2'-7"	2'-7"	2'-7"	1'-8"		2'-7"	2'-7"
#6	3'-7"	4'-8"	3'-1"	4'-1"	3'-1"	3'-1"	3'-1"	3'-1"	2'-0"		4'-9"	4'-9"
#7	5'-3"	6'-9"	4'-6"	5'-11"	---	---	4'-6"	4'-6"	2'-4"		6'-7"	---
#8	6'-0"	7'-9"	5'-2"	6'-9"	---	---	5'-2"	5'-2"	2'-8"		---	---
#9	6'-9"	8'-9"	5'-10"	7'-7"	---	---	5'-9"	5'-9"	3'-0		---	---
#10	7'-7"	9'-10"	6'-9"	8'-6"	---	---	---	---	---		---	---
#11	---	---	---	---	---	---	---	---	---		---	---

NOTES:

1. VALUES SHOWN ARE MIN. LAP SPLICE LENGTHS IN NORMAL WEIGHT CONC. OR GROUT FILLED MAS.
2. TOP BARS ARE DEFINED AS BARS WITH MORE THAN 12" OF FRESH CONC. BELOW.
3. FOR MIN. BAR DEVELOPMENT LENGTH, DIVIDE VALUES SHOWN IN LAP SPLICE SCHED. BY 1.3.
4. WHEN LAPPING TWO DIFFERENT SIZE BARS, USE THE LAP SPLICE DIMENSION OF THE SMALLER BAR OR THE DEVELOPMENT LENGTH OF THE LARGER BAR, WHICHEVER IS LARGER.
5. FOR BEAMS AND COLUMNS, VALUES SHOWN APPLY WHERE ALL PROVISIONS OF EITHER ONE OF THE FOLLOWING TWO CASES APPLY:

CASE 1

1. MIN. CLR. SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN ONE BAR DIAMETER, AND
2. CLR. COVER NOT LESS THAN ONE BAR DIAMETER, AND
3. STIRRUPS OR TIES ARE PROVIDED THROUGHOUT REQUIRED LENGTH OF LAP SPLICE OR DEVELOPMENT LENGTH.

OR

CASE 2

1. MIN. CLR. SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN TWO BAR DIAMETERS.
2. CLR. COVER NOT LESS THAN ONE BAR DIAMETER.
3. STIRRUPS OR TIES ARE NOT PROVIDED THROUGHOUT REQUIRED LENGTH OF LAP SPLICE OR DEVELOPMENT LENGTH.

WHERE ANY OF THESE PROVISIONS WITHIN THE APPLICABLE CASE ARE NOT MET, MULTIPLY VALUES SHOWN IN LAP SPLICE SCHEDULE BY 1.5.

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5345 ROLESVILLE RD, WENDELL, NC 27591
NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - TABLES, LEGENDS, & ABBREVIATIONS**

TT002

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2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

NAME OF PROJECT: EWS - FIRE & RESCUE TRAINING CENTER
ADDRESS: 5345 ROLESVILLE RD, WENDELL, NC 27591 ZIP CODE: 27603
OWNER/AUTHORIZED AGENT: WAKE TECHNICAL COMMUNITY COLLEGE PHONE: 919.866.6139 EMAIL: jfwicker@waketech.edu
OWNED BY: NCCCS NO. 2303 ☐ CITY/COUNTY ☐ PRIVATE ■ STATE
CODE ENFORCEMENT JURISDICTION: ☐ CITY - ■ COUNTY WAKE ■ STATE

CONTACT: KRISTEN M. HESS, AIA

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
ARCHITECTURAL	HH ARCHITECTURE	KRISTEN M. HESS, AIA	9290	919.828.2301	khess@hh-arch.com
CIVIL	STEWART	ROY LORENZEN	15834	919.866.4813	rlorenzen@stewartinc.com
ELECTRICAL	-	-	-	-	-
FIRE ALARM	-	-	-	-	-
PLUMBING	-	-	-	-	-
MECHANICAL	-	-	-	-	-
SPRINKLER-STANDPIPE	-	-	-	-	-
STRUCTURAL	EL&M	ROGER LEBOEUF	029858	703.321.2100	roger@elaengineers.com
RETAINING WALLS >5' HIGH	-	-	-	-	-
PRE-CAST	-	-	-	-	-
TRUSS	-	-	-	-	-
LANDSCAPE	-	-	-	-	-
HAZMAT	-	-	-	-	-

2018 NC BUILDING CODE: ■ NEW BUILDING ☐ ADDITION ☐ RENOVATION
☐ 1st TIME INTERIOR COMPLETION
☐ SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS
☐ PHASED CONSTRUCTION - SHELL/CORE - CONTACT THE LOCAL INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES AND REQUIREMENTS

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

CONSTRUCTED (date): - **CURRENT OCCUPANCY(S)** (Ch. 3): -
RENOVATED (date): - **PROPOSED OCCUPANCY(S)** (Ch. 3): -

RISK CATEGORY (Table 1604.5): **CURRENT:** ☐ I ☐ II ☐ III ☐ IV
PROPOSED: ☐ I ■ II ☐ III ☐ IV

CONSTRUCTED (date): - ORIGINAL USE(S) (Ch. 3): - PROPOSED USE(S) (Ch. 3): -
RENOVATED (date): - CURRENT USE(S) (Ch. 3): -

BASIC BUILDING DATA

CONSTRUCTION TYPE: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☑ III-A ☐ III-B ☐ IV-A ☐ V-A ☑ V-B
SPRINKLERS: ■ NO ☐ PARTIAL ☐ YES ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
STANDPIPES: ■ NO ☐ YES CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY
FIRE DISTRICT: ■ NO ☐ YES
FLOOD HAZARD AREA: ■ NO ☐ YES
SPECIAL INSPECTIONS REQUIRED: ☐ NO ■ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES AND REQUIREMENTS.)

GROSS BUILDING AREA TABLE

FLOOR	(SQ FT)	SUB-TOTAL	
5th FLOOR	257	257	-
4th FLOOR	620	877	-
3rd FLOOR	620	1,497	-
2nd FLOOR	907	2,404	-
1st FLOOR	907	3,311	
TOTAL	3,311	3,311	- SF

ALLOWABLE AREA

PRIMARY OCCUPANCY CLASSIFICATION(S):
ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
BUSINESS ☐
EDUCATIONAL ☐
FACTORY ☐ F-1 MODERATE ☐ F-2 LOW
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM
INSTITUTIONAL ☐ I-1 CONDITION ☐ 1 ☐ 2
☐ I-2 CONDITION ☐ 1 ☐ 2
☐ I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
MERCANTILE ☐
RESIDENTIAL ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
STORAGE ☐ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED
☐ PARKING GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE
UTILITY AND MISCELLANEOUS ■

ACCESSORY OCCUPANCY CLASSIFICATION(S): -
INCIDENTAL USES (Table 509): -
SPECIAL USES (Chapter 4 - List Code Sections): -
SPECIAL PROVISIONS (Chapter 5 - List Code Sections): -
MIXED OCCUPANCY: ☐ NO ☐ YES SEPARATION: - HR. EXCEPTION: -

☐ **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.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00 \qquad AREA \frac{-}{-} + \frac{-}{-} = X \leq 1.00$$

STORY NO.	DESCRIPTION AND 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 Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = - (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 formula: $I_f = 100[F/P - 0.25] \times W/30$ = - (%)
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. The maximum area of air traffic control towers must comply with Table 412.3.1.
5 Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
BUILDING HEIGHT IN FEET (Table 504.3)	65	10'-0"(RA),20'-0"(AT)	IBC
BUILDING HEIGHT IN STORIES (Table 504.4)	5	1 (RA), 2 (AT)	IBC

1 Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (w/_____ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
STRUCTURAL FRAME, INCLUDING COLUMNS, GRIDERS, TRUSSES	-	-	-	-	-	-	-
BEARING WALLS	-	-	-	-	-	-	-
EXTERIOR							
NORTH	-	-	-	-	-	-	-
EAST	-	-	-	-	-	-	-
WEST	-	-	-	-	-	-	-
SOUTH	-	-	-	-	-	-	-
INTERIOR	-	-	-	-	-	-	-
NONBEARING WALLS AND PARTITIONS							
EXTERIOR WALLS	-		-		-	-	
NORTH							
EAST							
WEST							
SOUTH							
INTERIOR WALLS & PARTITIONS							
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS							
FLOOR CEILING ASSEMBLY							
COLUMNS SUPPORTING FLOORS							
ROOF CONSTRUCTION, INCLUDING SUPPORTING BEAMS AND JOISTS							
ROOF CEILING ASSEMBLY							
COLUMNS SUPPORTING ROOF							
SHAFT ENCLOSURES - EXIT							
SHAFT ENCLOSURES - OTHER							
CORRIDOR SEPARATION							
OCCUPANCY/FIRE BARRIER SEPARATION							
PARTY/FIRE WALL SEPARATION							
SMOKE BARRIER SEPARATION							
SMOKE PARTITION							
TENANT / DWELLING UNIT / SLEEPING UNIT SEPARATION							
INCIDENTAL USE SEPARATION							

NOT APPLICABLE

* Indicates section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
-	-	-	-

LIFE SAFETY SYSTEM REQUIREMENTS

EMERGENCY LIGHTING: ☐ NO ☐ YES
EXIT SIGNS: ☐ NO ☐ YES
FIRE ALARM: ☐ NO ☐ YES
SMOKE DETECTION SYSTEM: ☐ NO ☐ YES ☐ PARTIAL -
CARBON MONOXIDE DETECTION: ☐ NO ☐ YES

LIFE SAFETY PLAN REQUIREMENTS

LIFE SAFETY PLAN SHEET #: -

☐ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7)
☐ ASSUMED AND REAL PROPERTY LINE LOCATIONS (IF NOT ON SITE PLAN)
☐ EXTERIOR WALL OPENING AREA WITH RESPECT TO ASSUMED PROPERTY LINES (705.8)
☐ OCCUPANCY USE 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 PATHS OF TRAVEL DISTANCES (1006.2.1 & 1006.3.2(1))
☐ DEAD END LENGTHS (1020.4)
☐ CLEAR EXIT WIDTHS FOR EACH EXIT DOOR
☐ MAX. CALCULATED OCC. 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
☐ 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

NOT APPLICABLE

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 # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR W/ 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	
-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-

NOT APPLICABLE

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXISTG	-	-	-	-	-	-	-	-	-	-
	NEW	-	-	-	-	-	-	-	-	-	-
	REQ'D	-	-	-	-	-	-	-	-	-	-

SPECIAL APPROVALS

SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DFI, DHHS, ICC, ETC., DESCRIBE BELOW)
-

ENERGY SUMMARY

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

EXISTING BUILDING 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 F[illegible]: -

EXTERIOR WALLS (EACH ASSEMBLY)
DESCRIPTION OF ASSEMBLY: MASONRY CAVITY WALL w/ CONT. RIGID INSUL.
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 UNCONDITION 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: -

STRUCTURAL SUMMARY

DESIGN LOADS:

IMPORTANCE FACTORS: SNOW (I_S) 1.0
SEISMIC (I_E) 1.0

LIVE LOADS: ROOF 50 psf
MEZZANINE - psf
FLOOR 50 psf

GROUND SNOW LOAD: 15 psf

WIND LOAD: ULTIMATE WIND SPEED 115 mph (ASCE-7)
EXPOSURE CATEGORY C

SEISMIC DESIGN CATEGORY: ☐ A ■ B ☐ C ☐ D
PROVIDE THE FOLLOWING SEISMIC DESIGN PARAMETERS:
RISK CATEGORY (Table 1604.5) ☐ I ■ II ☐ III ☐ IV
SPECTRAL RESPONSE ACCELERATION S_S 0.147 %g S_1 0.074 %g
SITE CLASSIFICATION (ASCE 7) ☐ A ☐ B ☐ C ■ D
DATA SOURCE: ■ Field Test ☐ Presumptive ☐ Historical Data
BASIC STRUCTURAL SYSTEM ☐ Bearing Wall ☐ Dual w/ Special Moment Frame
☐ Building Frame ☐ Dual w/ Intermediate R/C
■ Moment Frame ☐ Inverted Pendulum or Special Steel
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) 2,500 psf
PRESUMPTIVE BEARING CAPACITY - psf
PILE SIZE, TYPE, AND CAPACITY -

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: -

BULDING 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: -

ELECTRICAL SUMMARY

ELECTRICAL SYSTEMS AND EQUIPMENT:

METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ☐ PRESCRIPTIVE
ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE

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

NOT APPLICABLE

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056
DATE ISSUED
01/10/25
PROJECT STATUS
ISSUE FOR BID
SHEET
TRAINING TOWER - LIFE SAFETY PLAN

TT003

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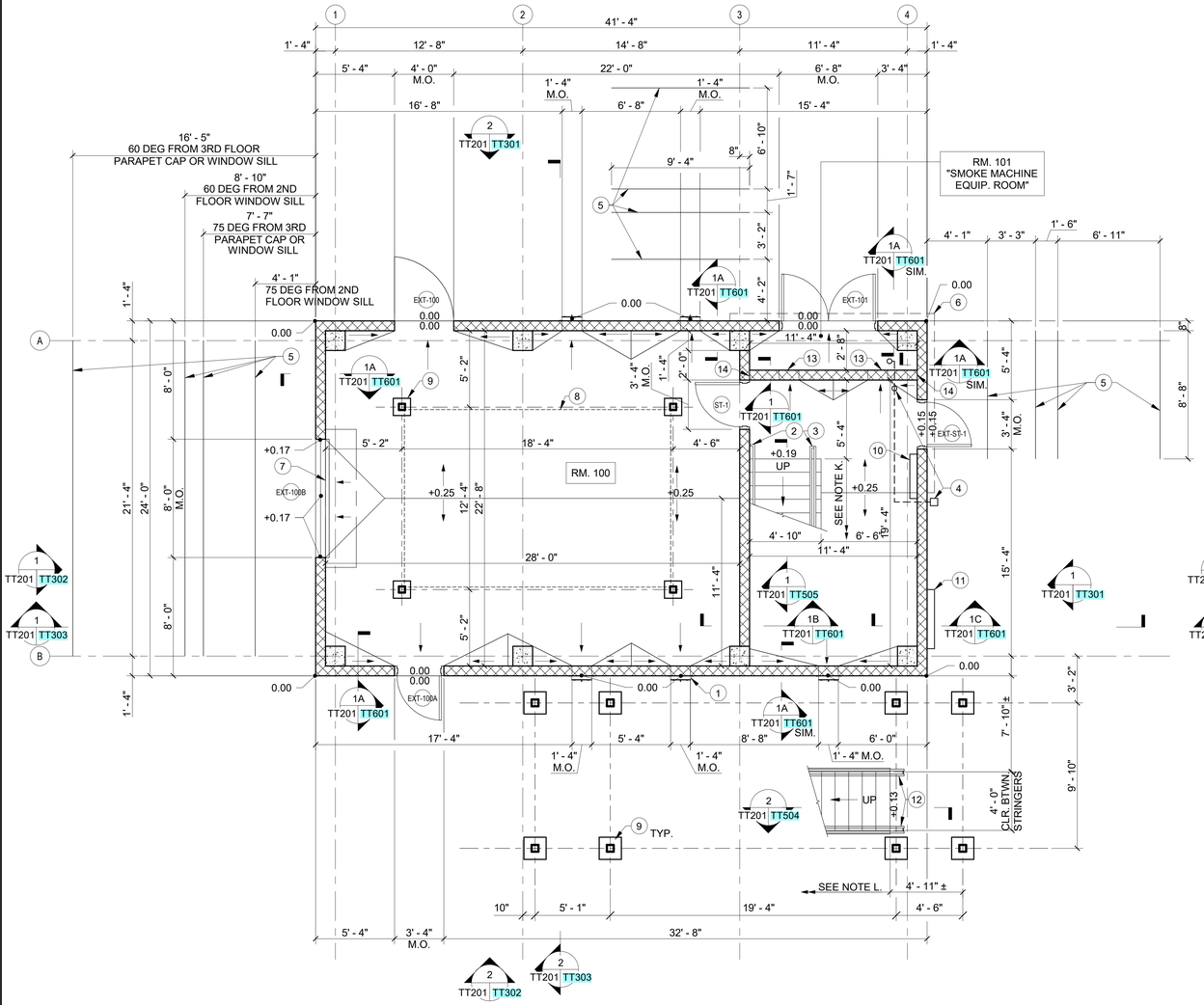


NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH .

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE TRAINING TOWER SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM. DATUM IS AT ELEVATION +296.00. FLOOR ELEVATIONS ARE NOTED AS +X.XX OR -X.XX IN FEET ABOVE OR BELOW DATUM.

C. SEE SITE DRAWINGS FOR TOP OF EXTERIOR FINISHED GRADE AND OTHER SITE ELEVATIONS.

D. ALL SINGLE-WYTHE MASONRY WALLS SHALL BE 8" THICK (NOMINAL).

E. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE COLUMN FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". CONNECT MASONRY TO CONCRETE PER GENERAL NOTE O.14 ON SHEET TT001.

F. PROVIDE (2) COATS OF MASONRY SEALER ON EXTERIOR FACES OF ALL EXTERIOR WALLS PER GENERAL NOTES & SPECS.

G. PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL WINDOW, STEEL PLATE DOOR, AND OVERHEAD DOOR OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT INTERIOR WALL CORNERS. DO NOT BULLNOSE CORNERS AT HOLLOW METAL DOOR OPENINGS OR WHERE CMU WALLS INTERSECT COLUMNS. SEE CMU OPENING DETAILS, INCLUDING DOOR, WINDOW, AND SCUPPER DETAILS FOR DIRECTION ON BULLNOSING.

H. SEE SHEET TT603 FOR DOOR DETAILS & SHEET TT604 FOR WINDOW DETAILS. (X) DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET TT603 FOR DOORS.

J. NO LIVE FIRE TRAINING IS ALLOWED IN THE TOWER.

K. 10T @ 11" = 9'-2", 11R@ 6 9/16"± = 6'-0" FROM GROUND TO INTERMEDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

L. 20T @ 11" = 18'-4", 21R @ 6 7/8"± = 12'-0 3/4"± FROM FIRST FLOOR TO SECOND FLOOR. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

M. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: . MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT AND MINIMUM SLOPE = 1/8 INCH PER FOOT.

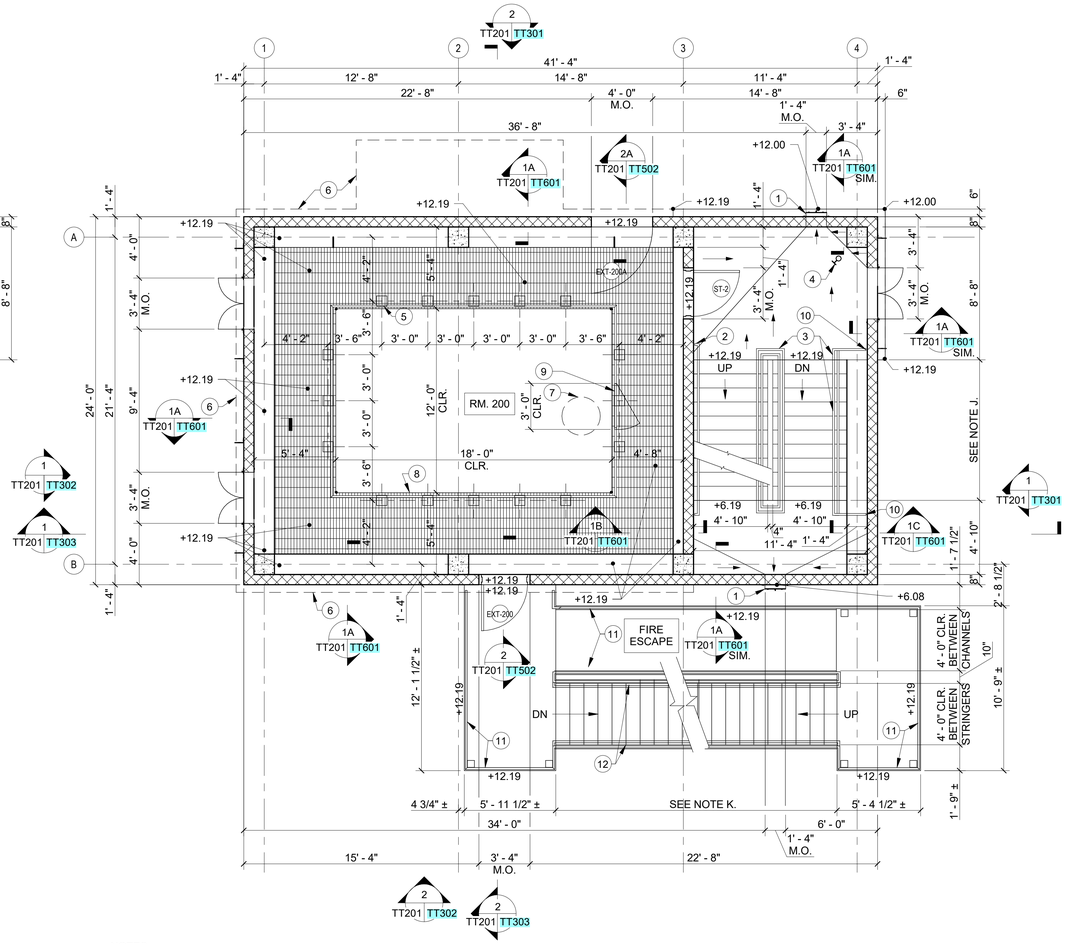
FIRST FLOOR PLAN KEYED NOTES:

1. SCUPPERS PER SHEET TT602 (5 THUS).
2. HANDRAIL PER DETAIL 1/TT605.
3. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 5/TT605.
4. 5" STORZ DRY TRAINING STANDPIPE WITH 2 1/2" VALVE PER FP DRAWINGS.
5. GROOVES IN PAVEMENT FOR LADDER BASE
6. EDGE OF SECOND FLOOR SLAB ABOVE.
7. OVERHEAD COILING (ROLL-UP) DOOR PER DOOR SCHEDULE ON SHEET TT603.
8. OPENING IN MEZZANINE ABOVE.
9. STEEL TUBE COLUMN ON CONCRETE PIER PER FOUNDATION PLAN (4 INT., 8 EXT.). TOPS OF ALL PIERS SHALL BE AT THE SAME ELEVATION, 3" MIN A.F.G./A.F.F.
10. SPRINKLER CONTROL ROOM MOCKUP PER FP DRAWINGS.
11. SIMULATED UTILITY METERS BY OWNER.
12. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 2/TT504.
13. PROVIDE 16" (W)x8" (H) OPENING AT BASE OF WALL FOR DRAINAGE PER DETAIL 6/TT602.
14. MASONRY CONTROL JOINT AT NOTED LOCATIONS.

FINISH SCHEDULE				
ROOM NOS.	CEILING FINISH	FLOOR FINISH	WALL FINISH	NOTES
ALL ROOMS EXCEPT ROOMS 100 & 200	CONCRETE	CONCRETE	CMU	---
100	CONCRETE & GRATING	CONCRETE	CMU	---
200	CONCRETE	CONCRETE & GRATING	CMU	---
STAIRS	CONCRETE	CONCRETE	CMU	---

FINISH SCHEDULE NOTES:
1. ALL EXPOSED CONCRETE AND CMU SURFACES ARE UNPAINTED.

1 TT201 TT201 FIRST FLOOR PLAN SCALE 1/4" = 1'-0"



NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH .

B. TOP OF FINISHED CONCRETE AND GRATING ELEVATION FOR THE TRAINING TOWER SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM SEE 1/TT201 FOR DATUM.

C. ALL SINGLE-WYTHE MASONRY WALLS SHALL BE 8" THICK (NOMINAL).

D. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE COLUMN AND BEAM FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". CONNECT MASONRY TO CONCRETE PER GENERAL NOTE O.14 ON SHEET TT001.

E. PROVIDE (2) COATS OF MASONRY SEALER ON EXTERIOR FACES OF ALL EXTERIOR WALLS PER GENERAL NOTES & SPECS.

F. PROVIDE BULLNOSED CORNERS AT JAMBS OF ALL WINDOW AND STEEL PLATE DOOR OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT INTERIOR WALL CORNERS. DO NOT BULLNOSE CORNERS AT HOLLOW METAL DOOR OPENINGS OR WHERE CMU WALLS INTERSECT COLUMNS. SEE CMU OPENING DETAILS, INCLUDING DOOR, WINDOW, AND SCUPPER DETAILS FOR DIRECTION ON BULLNOSING.

G. SEE SHEET TT603 FOR DOOR DETAILS & SHEETS TT604 FOR WINDOW DETAILS. (X) DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET TT603 FOR DOORS.

H. NO LIVE FIRE TRAINING IS ALLOWED IN THE TOWER.

J. 10T @ 11" = 9'-2", 11R@ 6 9/16"± = 6'-0" FROM FIRST INTERMEDIATE LANDING TO SECOND FLOOR ABOVE & FROM SECOND FLOOR TO SECOND INTERMDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

K. 20T @ 11" = 18'-4", 21R @ 6 3/4"± = 11'-9 3/4"± FROM SECOND FLOOR TO THIRD FLOOR. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

L. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: . MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT AND MINIMUM SLOPE = 1/8 INCH PER FOOT.

SECOND FLOOR PLAN KEYED NOTES:

1. SCUPPER PER SHEET TT602.
2. HANDRAIL PER DETAIL 1/TT605.
3. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 5/TT605.
4. DRY TRAINING STANDPIPE WITH 2 1/2" VALVE PER FP DRAWINGS.
5. CEILING MOUNTED ROPE ANCHORS PER DETAIL 3/TT607 SPACED PER PLAN (16 TOTAL).
6. EDGE OF THIRD FLOOR SLAB ABOVE.
7. MANHOLE OPENING ABOVE.
8. GUARDRAIL AROUND OPENING PER DETAIL 2/TT605.
9. SINGLE-SWING GATE PER DETAIL 4/TT605.
10. RETURN GUARDRAIL & HANDRAIL TO FACE OF EXTERIOR WALL AT NOTED LOCATIONS.
11. FIXED GUARDRAIL PER DETAIL 2/TT605.
12. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 2/TT504.

2 TT201 TT201 SECOND FLOOR PLAN SCALE 1/4" = 1'-0"

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EWS - FIRE & RESCUE TRAINING CENTER

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ISSUE FOR BID

SHEET
TRAINING TOWER - FIRST & SECOND FLOOR PLANS

TT201

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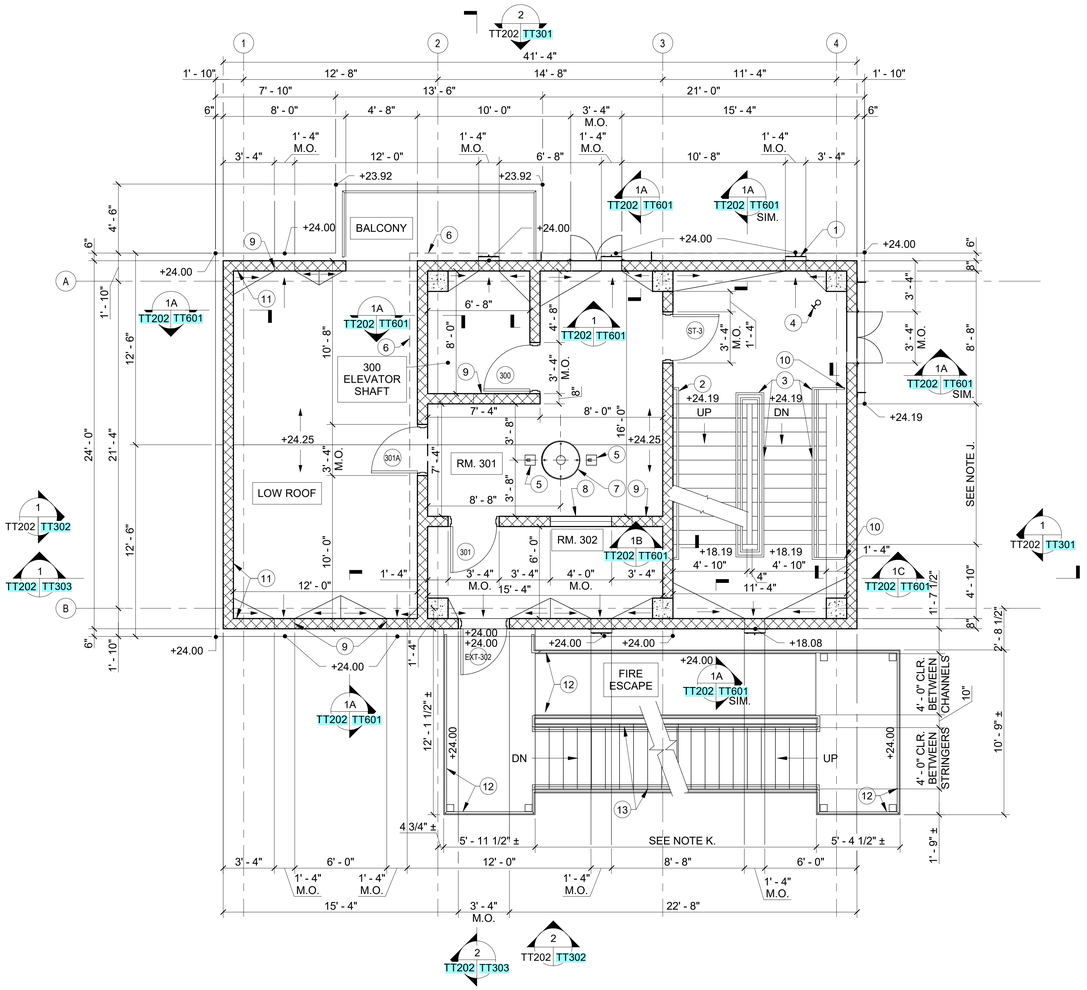
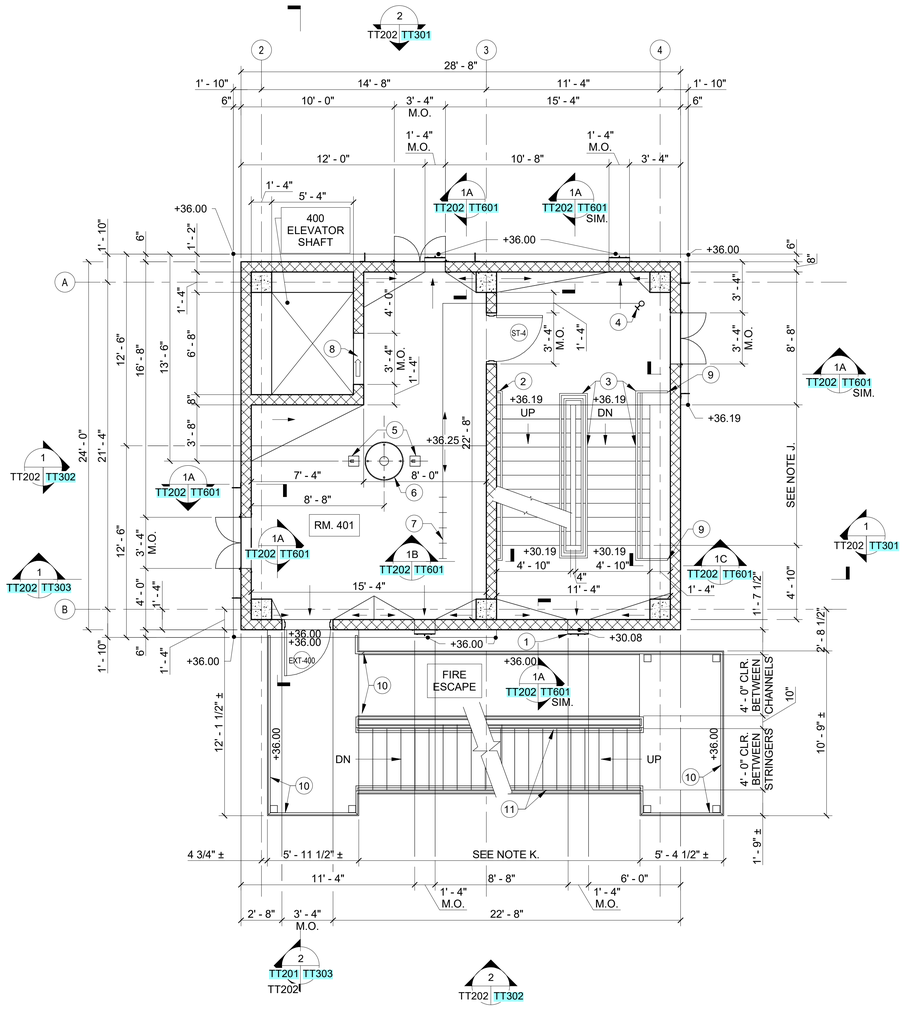




NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH ⟶.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE TRAINING TOWER SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM SEE 1/TT201 FOR DATUM.

C. ALL SINGLE-WYTHE MASONRY WALLS SHALL BE 8" THICK (NOMINAL).

D. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE COLUMN AND BEAM FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". CONNECT MASONRY TO CONCRETE PER GENERAL NOTE O.14 ON SHEET TT001.

E. PROVIDE (2) COATS OF MASONRY SEALER ON EXTERIOR FACES OF ALL EXTERIOR WALLS PER GENERAL NOTES & SPECS.

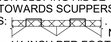
F. PROVIDE BULLNOSED AT JAMBS OF ALL WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT INTERIOR WALL CORNERS. DO NOT BULLNOSE CORNERS AT HOLLOW METAL DOOR OPENINGS OR WHERE CMU WALLS INTERSECT COLUMNS. SEE CMU OPENING DETAILS, INCLUDING DOOR, WINDOW, AND SCUPPER DETAILS FOR DIRECTION ON BULLNOSING.

G. SEE SHEET TT603 FOR DOOR DETAILS & SHEETS TT604 FOR WINDOW DETAILS. (X) DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET TT603 FOR DOORS.

H. NO LIVE FIRE TRAINING IS ALLOWED IN THE TOWER.

J. 10T @ 11" = 9'-2", 11R@ 6 9/16"± = 6'-0" FROM SECOND INTERMEDIATE LANDING TO THIRD FLOOR ABOVE & FROM THIRD FLOOR TO THIRD INTERMDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

K. 20T @ 11" = 18'-4", 21R @ 6 7/8"± = 12'-0" FROM THIRD FLOOR TO FOURTH FLOOR. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

L. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS:  . MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT AND MINIMUM SLOPE = 1/8 INCH PER FOOT.

THIRD FLOOR PLAN KEYED NOTES:

1. SCUPPERS PER SHEET TT602 (5 THUS).
2. HANDRAIL PER DETAIL 1/TT605.
3. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 5/TT605.
4. DRY TRAINING STANDPIPE WITH 2 1/2" VALVE PER FP DRAWINGS.
5. CEILING MOUNTED ROPE ANCHORS PER DETAIL 3/TT607.
6. EDGE OF FOURTH FLOOR SLAB ABOVE.
7. MANHOLE PER DETAIL 4/TT607.
8. BREACH WALL PROP PER DETAIL 7/TT601.
9. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF PARAPET FOR DRAINAGE PER DETAIL 6/TT602.
10. RETURN GUARDRAIL & HANDRAIL TO FACE OF EXTERIOR WALL AT NOTED LOCATIONS.
11. PARAPET PER DETAIL 3/TT601.
12. FIXED GUARDRAIL PER DETAIL 2/TT605.
13. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 2/TT504.

1 TT202 TT202 THIRD FLOOR/LOW ROOF PLAN
SCALE 1/4" = 1'-0"

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH ⟶.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE TRAINING TOWER SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM SEE 1/TT201 FOR DATUM.

C. ALL SINGLE-WYTHE MASONRY WALLS SHALL BE 8" THICK (NOMINAL).

D. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE COLUMN AND BEAM FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". CONNECT MASONRY TO CONCRETE PER GENERAL NOTE O.14 ON SHEET TT001.

E. PROVIDE (2) COATS OF MASONRY SEALER ON EXTERIOR FACES OF ALL EXTERIOR WALLS PER GENERAL NOTES & SPECS.

F. PROVIDE BULLNOSED AT JAMBS OF ALL WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT INTERIOR WALL CORNERS. DO NOT BULLNOSE CORNERS AT HOLLOW METAL DOOR OPENINGS OR WHERE CMU WALLS INTERSECT COLUMNS. SEE CMU OPENING DETAILS, INCLUDING DOOR, WINDOW, AND SCUPPER DETAILS FOR DIRECTION ON BULLNOSING.

G. SEE SHEET TT603 FOR DOOR DETAILS & SHEETS TT604 FOR WINDOW DETAILS. (X) DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET TT603 FOR DOORS.

H. NO LIVE FIRE TRAINING IS ALLOWED IN THE TOWER.

J. 10T @ 11" = 9'-2", 11R@ 6 9/16"± = 6'-0" FROM THIRD INTERMEDIATE LANDING TO FOURTH FLOOR ABOVE & FROM FOURTH FLOOR TO FOURTH INTERMDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

K. 20T @ 11" = 18'-4", 21R @ 6 7/8"± = 12'-0" FROM FOURTH FLOOR TO FIFTH FLOOR. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

L. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: . MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT AND MINIMUM SLOPE = 1/8 INCH PER FOOT.

FOURTH FLOOR PLAN KEYED NOTES:

1. SCUPPERS PER TT602 (4 THUS).
2. HANDRAIL PER DETAIL 1/TT605.
3. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 5/TT605.
4. DRY TRAINING STANDPIPE WITH 2 1/2" VALVE PER FP DRAWINGS.
5. CEILING MOUNTED ROPE ANCHORS PER DETAIL 3/TT607.
6. MANHOLE PER DETAIL 4/TT607.
7. SPRINKLER LAB PER P DRAWINGS.
8. ELEVATOR DOOR PER DETAIL 5/TT606.
9. RETURN GUARDRAIL & HANDRAIL TO FACE OF EXTERIOR WALL AT NOTED LOCATIONS.
10. FIXED GUARDRAIL PER DETAIL 2/TT605.
11. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 2/TT504.

2 TT202 TT202 FOURTH FLOOR PLAN
SCALE 1/4" = 1'-0"

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

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JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - THIRD & FOURTH PLANS**

TT202

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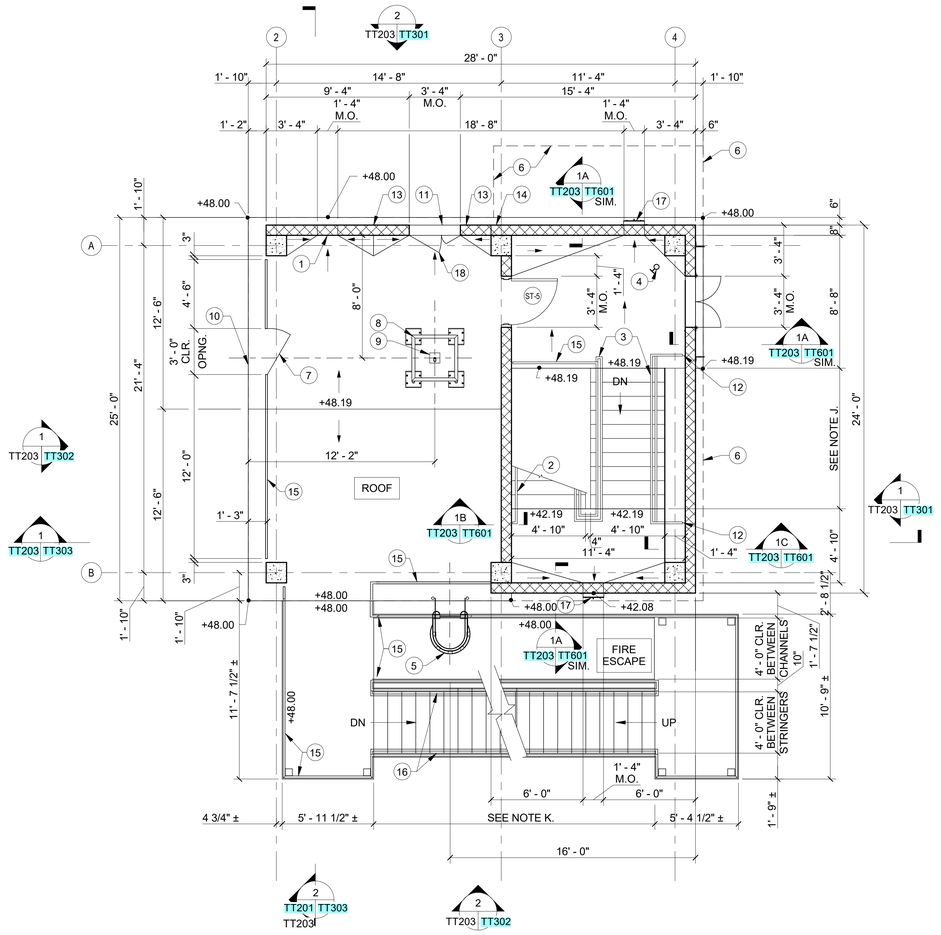

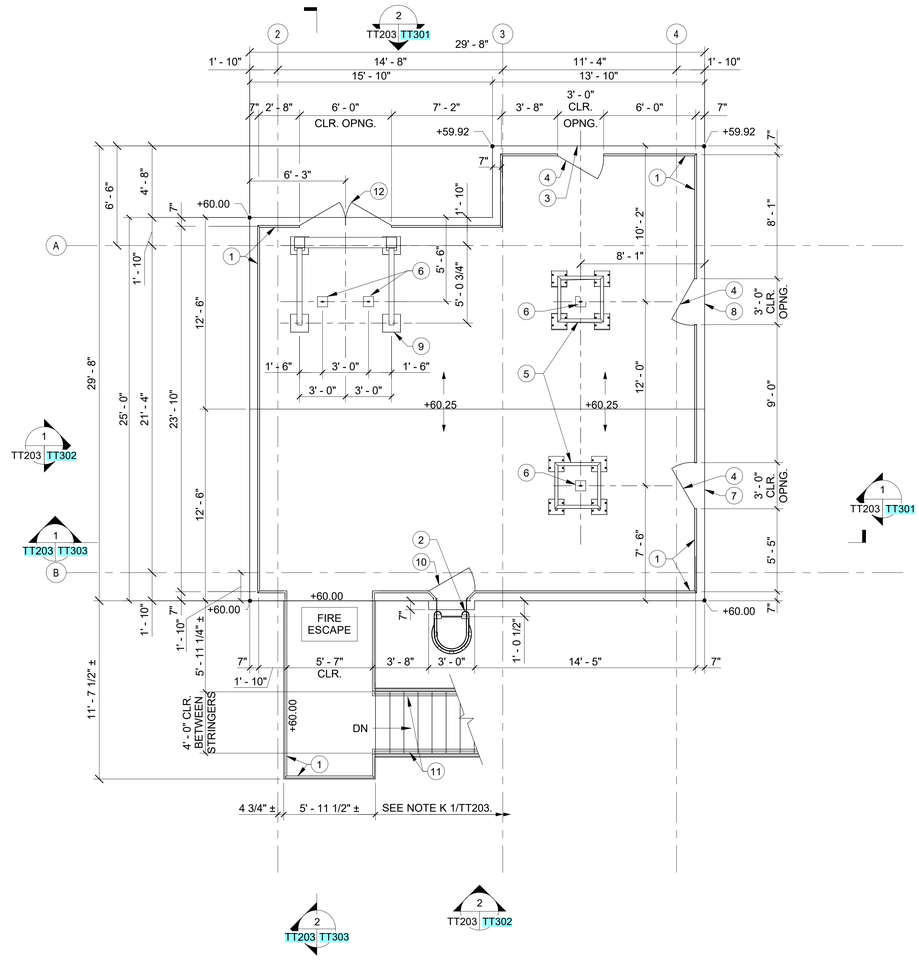

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH ⟶.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE TRAINING TOWER SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM SEE 1/TT201 FOR DATUM.

C. ALL SINGLE-WYTHE MASONRY WALLS SHALL BE 8" THICK (NOMINAL).

D. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE COLUMN AND BEAM FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". CONNECT MASONRY TO CONCRETE PER GENERAL NOTE O.14 ON SHEET TT001.

E. PROVIDE (2) COATS OF MASONRY SEALER ON EXTERIOR FACES OF ALL EXTERIOR WALLS PER GENERAL NOTES & SPECS.

F. PROVIDE BULLNOSED AT JAMBS OF ALL WINDOW OPENINGS, AT ENDS OF WALLS THAT DO NOT INTERSECT OTHER WALLS, AND AT INTERIOR WALL CORNERS. DO NOT BULLNOSE CORNERS AT HOLLOW METAL DOOR OPENINGS OR WHERE CMU WALLS INTERSECT COLUMNS. SEE CMU OPENING DETAILS, INCLUDING DOOR, WINDOW, AND SCUPPER DETAILS FOR DIRECTION ON BULLNOSING.

G. SEE SHEET TT603 FOR DOOR DETAILS & SHEETS TT604 FOR WINDOW DETAILS. (X) DENOTES DOOR MARK ON PLAN. SEE DOOR SCHEDULE ON SHEET TT603 FOR DOORS.

H. NO LIVE FIRE TRAINING IS ALLOWED IN THE TOWER.

J. 10T @ 11" = 9'-2", 11R@ 6 9/16"± = 6'-0" FROM FOURTH INTERMEDIATE LANDING TO FIFTH FLOOR ABOVE & FROM FIFTH FLOOR TO FIFTH INTERMDIATE LANDING ABOVE. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

K. 20T @ 11" = 18'-4", 21R @ 6 7/8"± = 12'-0" FROM FIFTH FLOOR TO HIGH ROOF. PROVIDE EQUAL RISER HEIGHTS WITHIN FLIGHT.

L. PROVIDE "CRICKETS" IN TOP SURFACE OF SLAB, INTEGRAL WITH SLAB (NOT A TOPPING) WITH A NON-SLOPING RIDGE TO ACHIEVE GRADUAL, POSITIVE DRAINAGE TOWARDS SCUPPERS AND DOORS AT LOCATIONS SHOWN IN PLANS AS: . MAXIMUM SLOPE OF CRICKETS BETWEEN NON-SLOPING RIDGE AND SCUPPER OR DOOR = 1/4 INCH PER FOOT AND MINIMUM SLOPE = 1/8 INCH PER FOOT.

FIFTH FLOOR PLAN KEYED NOTES:

1. PROVIDE 16" (W) x 8" (H) OPENING AT BASE OF PARAPET FOR DRAINAGE PER DETAIL 6/TT602.
2. HANDRAIL PER DETAIL 1/TT605.
3. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 5/TT605.
4. DRY TRAINING STANDPIPE WITH 2 1/2" VALVE PER FP DRAWINGS.
5. FIXED VERTICAL ACCESS LADDER PER GENERAL NOTE S ON TT001 UP FROM FIFTH FLOOR FIRE ESCAPE TO HIGH ROOF.
6. EDGE OF HIGH ROOF SLAB ABOVE.
7. SINGLE-SWINGING GATE PER DETAIL 3/TT605.
8. ROPE FRAME PER DETAIL 5/TT607.
9. ROPE ANCHOR PER DETAIL 3/TT607.
10. RAPPEL OVER BLANK WALL TO LOW ROOF.
11. RAPPEL DOWN A LINE OF WINDOWS.
12. RETURN GUARDRAIL & HANDRAIL TO FACE OF EXTERIOR WALL AT NOTED LOCATIONS.
13. PARAPET PER DETAIL 3/TT601.
14. FULL HEIGHT CMU WALL PER WALL SECTIONS.
15. FIXED GUARDRAIL PER DETAIL 2/TT605.
16. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 2/TT504.
17. SCUPPER PER SHEET TT602.
18. SINGLE-SWINGING GATE PER DETAIL 4/TT606.

1 TT203 TT203 FIFTH FLOOR/MAIN ROOF PLAN
SCALE 1/4" = 1'-0"

NOTES:

A. DIRECTION OF DOWNWARD SLOPE OF TOP OF CONCRETE IS INDICATED WITH ⟶.

B. TOP OF FINISHED CONCRETE ELEVATION FOR THE TRAINING TOWER SLAB IS INDICATED AS "X.XX" IN FEET ABOVE DATUM SEE 1/TT201 FOR DATUM.

HIGH ROOF PLAN KEYED NOTES:

1. FIXED GUARDRAIL PER DETAIL 2/TT605.
2. FIXED VERTICAL ACCESS LADDER PER GENERAL NOTES UP FROM FIFTH FLOOR FIRE ESCAPE. TURN ROOF GUARDRAIL OUT TO EDGE OF SLAB BY CANTILEVERING ALL HORIZONTAL RAILS FROM VERTICAL POSTS LOCATED ON EITHER SIDE OF THE SAFTEY GATE. CONNECT ENDS OF CANTILEVERED HORIZONTAL RAILS WITH A VERTICAL PIPE TO CREATE A FINISHED END TO THE CANTILEVER. CONNECT TOP OF EACH LADDER SIDE RAIL TO TOP RAIL OF GUARDRAIL. SEE GENERAL NOTE S ON TT001.
3. CANTILEVERED ROOF SLAB FOR FREE RAPPELL
4. SINGLE-SWINGING GATE PER DETAIL 4/TT605.
5. ROPE FRAME PER DETAIL 5/TT607.
6. ROPE ANCHOR PER DETAIL 3/TT607.
7. RAPPEL OVER BLANK WALL.
8. RAPPEL DOWN A LINE OF WINDOWS.
9. ROPE GANTRY FRAME PER DETAIL 1/TT607.
10. PROVIDE GALVANIZED, HINGED, SELF-CLOSING LADDER SAFETY GATE, MODEL EDGEHALT FULL HEIGHT # LSGF-36-GAL, BY PS SAFETY ACCESS AT WWW.PSSAFETYACCESS.COM, OR AN APPROVED EQUIVALENT PER DETAIL 3/TT605.
11. FIXED GUARDRAIL WITH HANDRAIL PER DETAIL 2/TT504.
12. RAPPEL DOWN OVER HANGING BALCONY AND HIGH ANGLE RESCUE OPENING.

2 TT203 TT203 HIGH ROOF PLAN
SCALE 1/4" = 1'-0"

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SHEET
TRAINING TOWER - FIFTH FLOOR & HIGH ROOF PLANS

TT203

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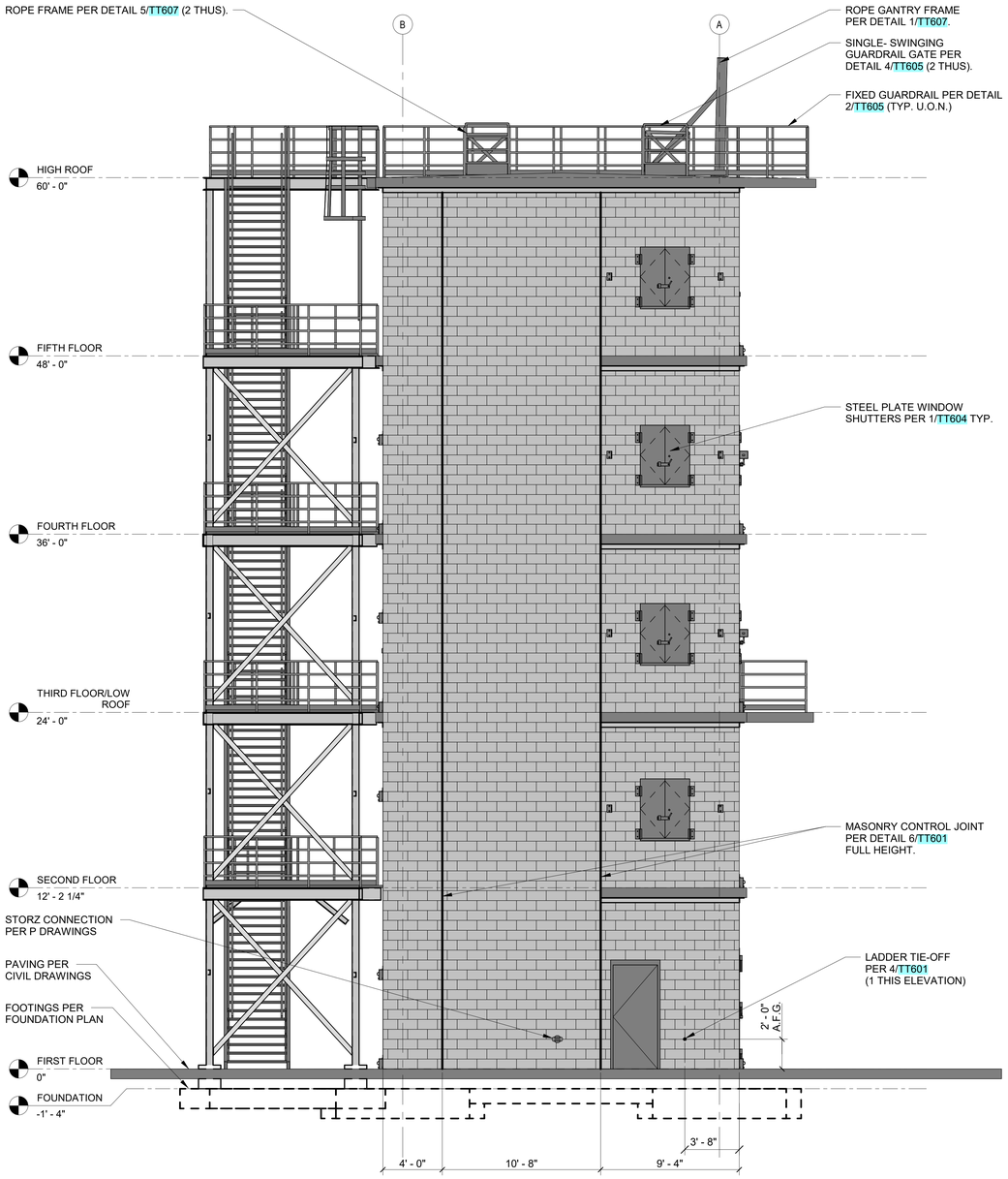
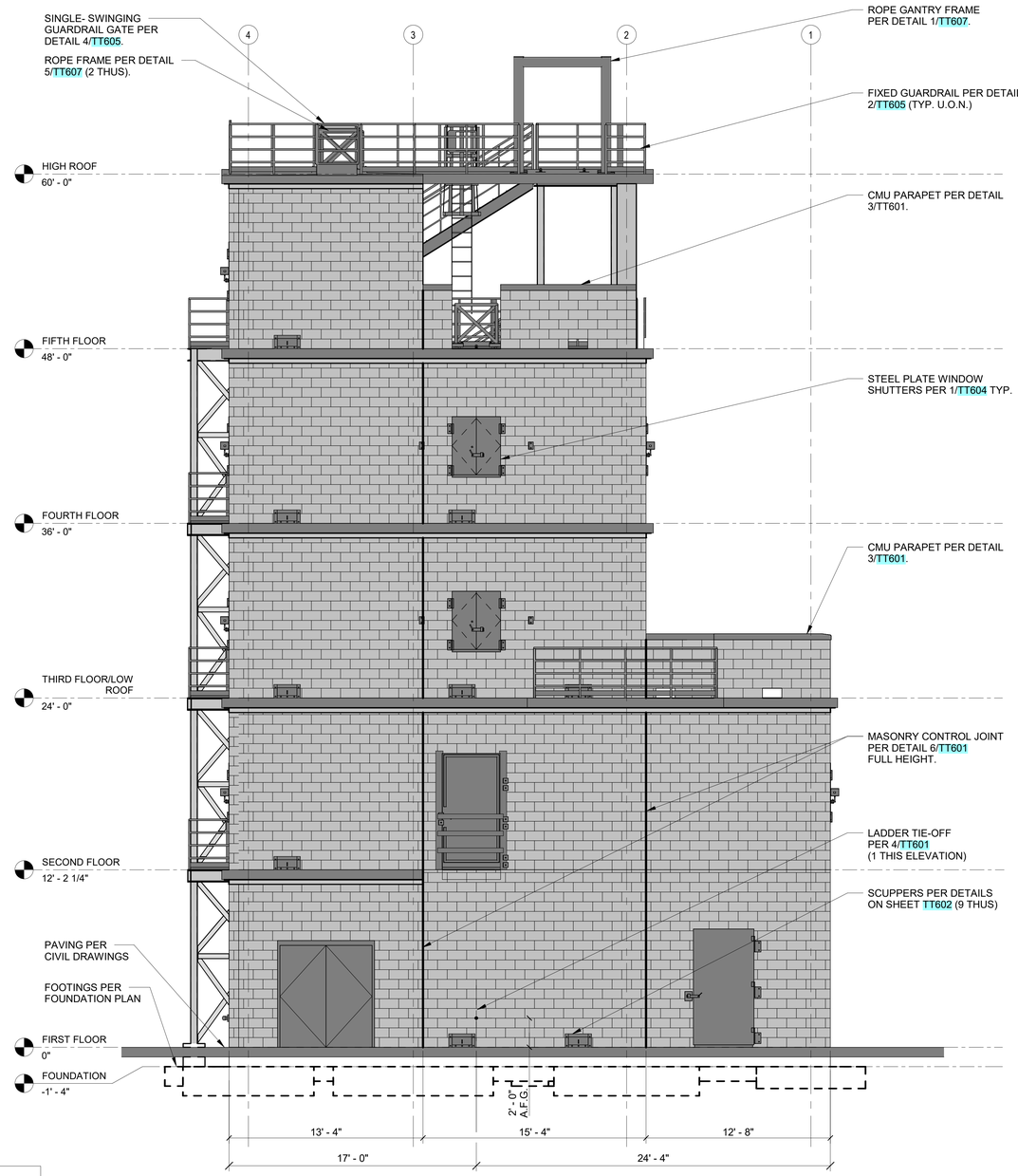


1 WEST ELEVATION
TT201-TT203 TT301 SCALE 1/4" = 1'-0"



2 SOUTH ELEVATION
TT201-TT203 TT301 SCALE 1/4" = 1'-0"

NOTE:
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TRAINING TOWER - WEST & SOUTH ELEVATIONS

TT301

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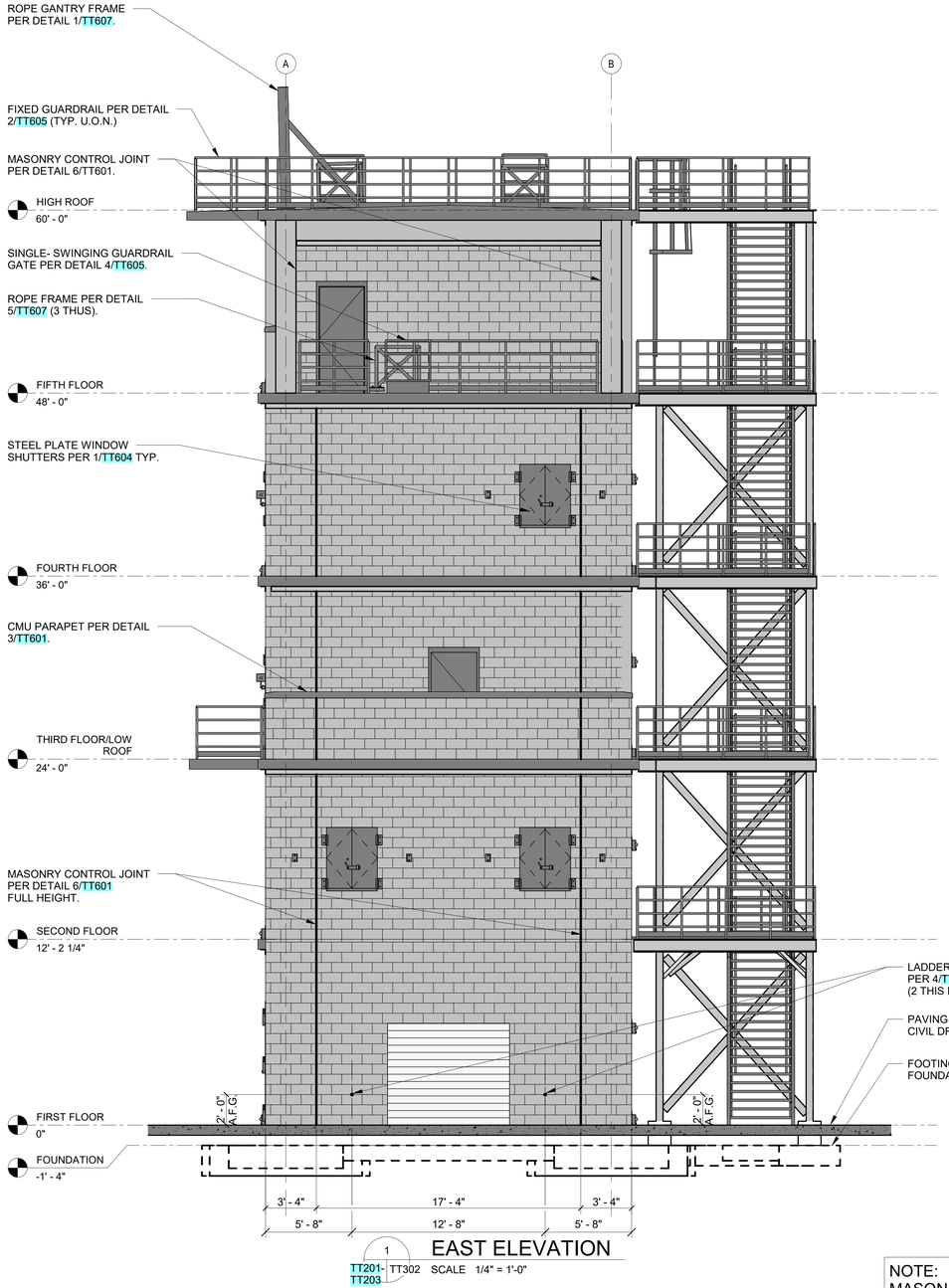

1 EAST ELEVATION

TT201-TT203 TT302 SCALE 1/4" = 1'-0"

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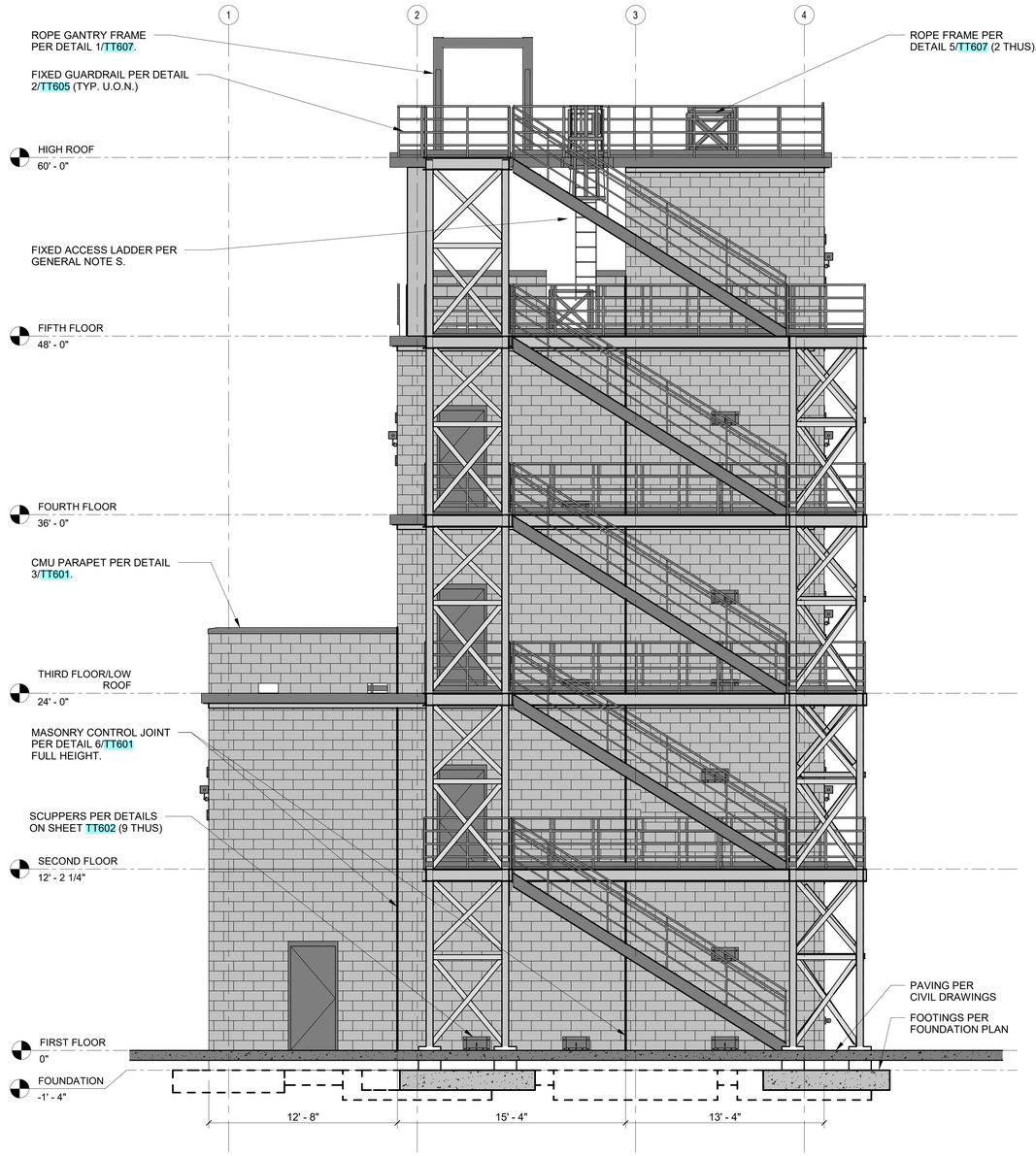

2 NORTH ELEVATION

TT201-TT203 TT302 SCALE 1/4" = 1'-0"

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SHEET **TRAINING TOWER - EAST & NORTH ELEVATIONS**

TT302

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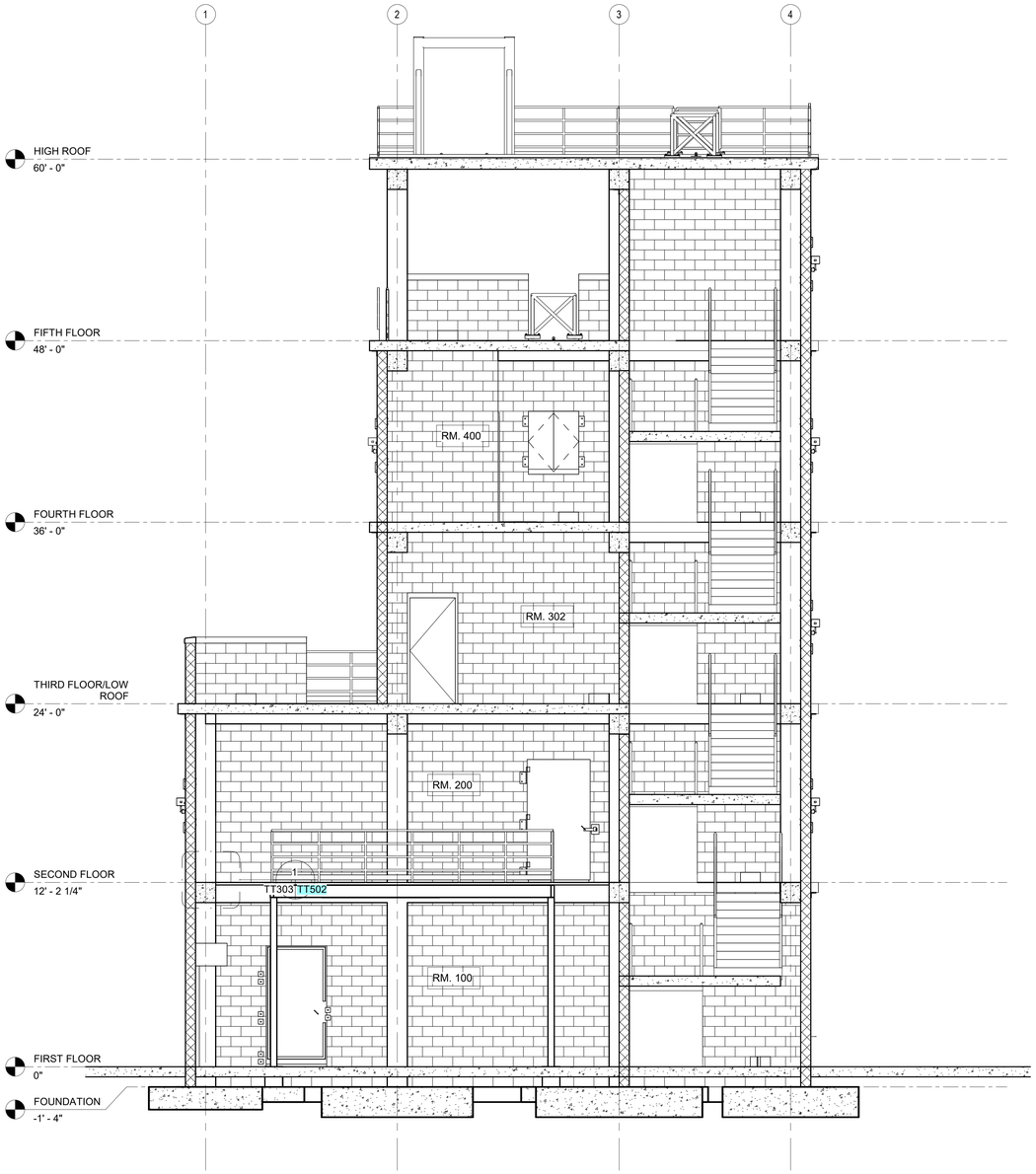
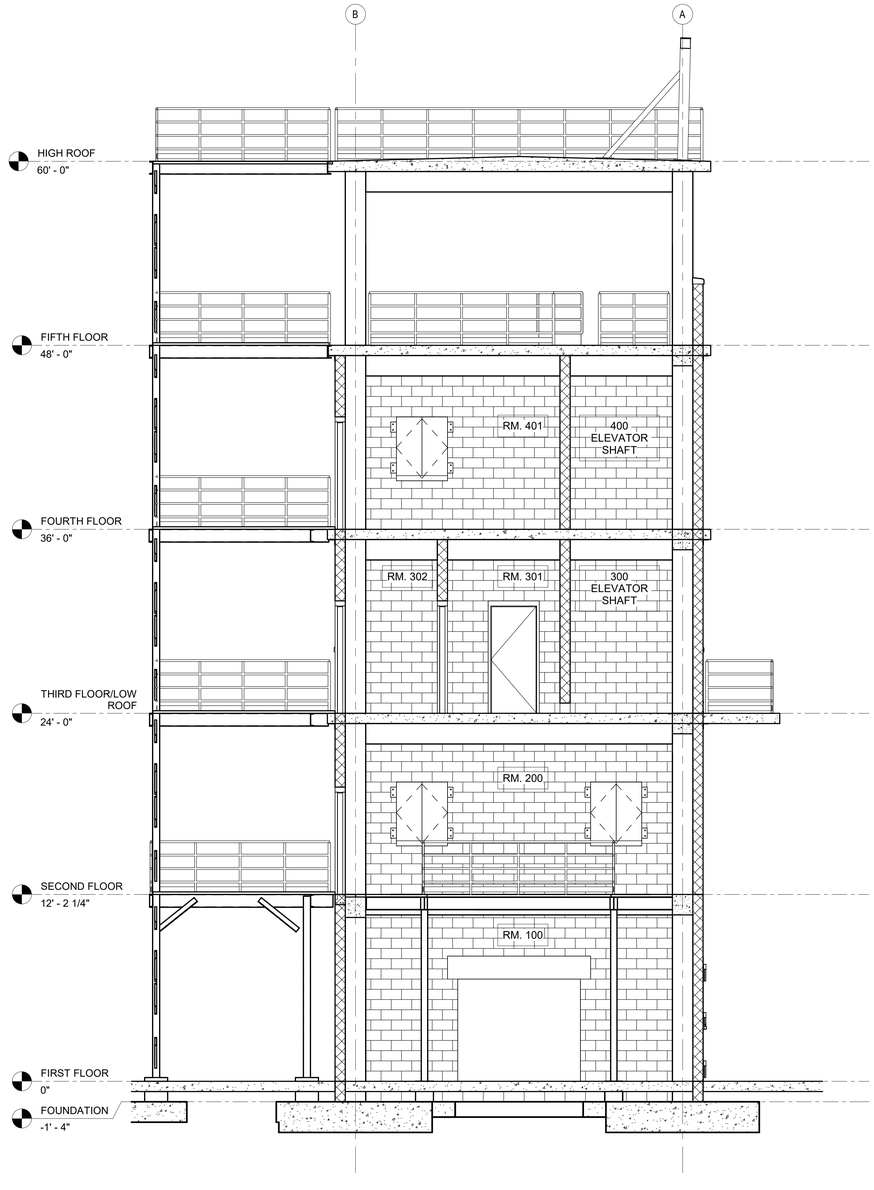


1 BUILDING SECTION 1

TT201-TT203 TT303 SCALE 1/4" = 1'-0"



2 BUILDING SECTION 2

TT201-TT203 TT303 SCALE 1/4" = 1'-0"

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TRAINING TOWER - BUILDING SECTIONS

TT303

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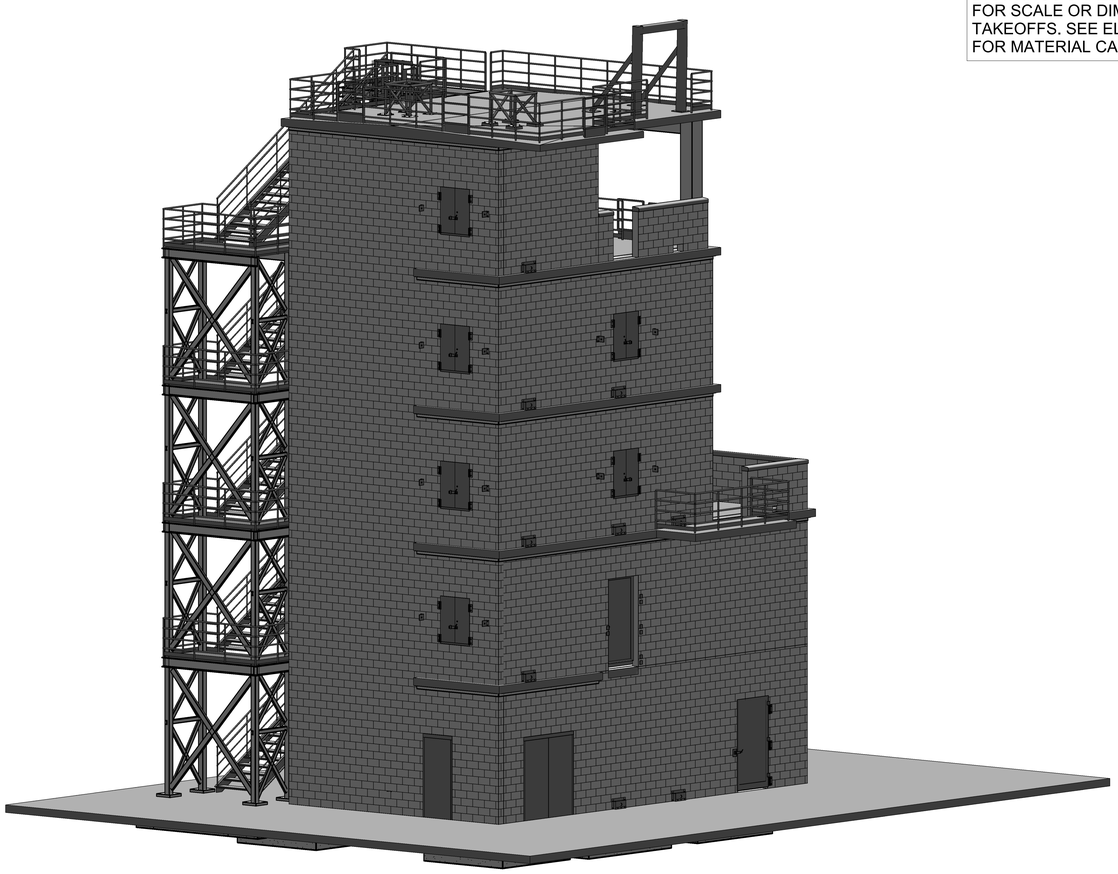
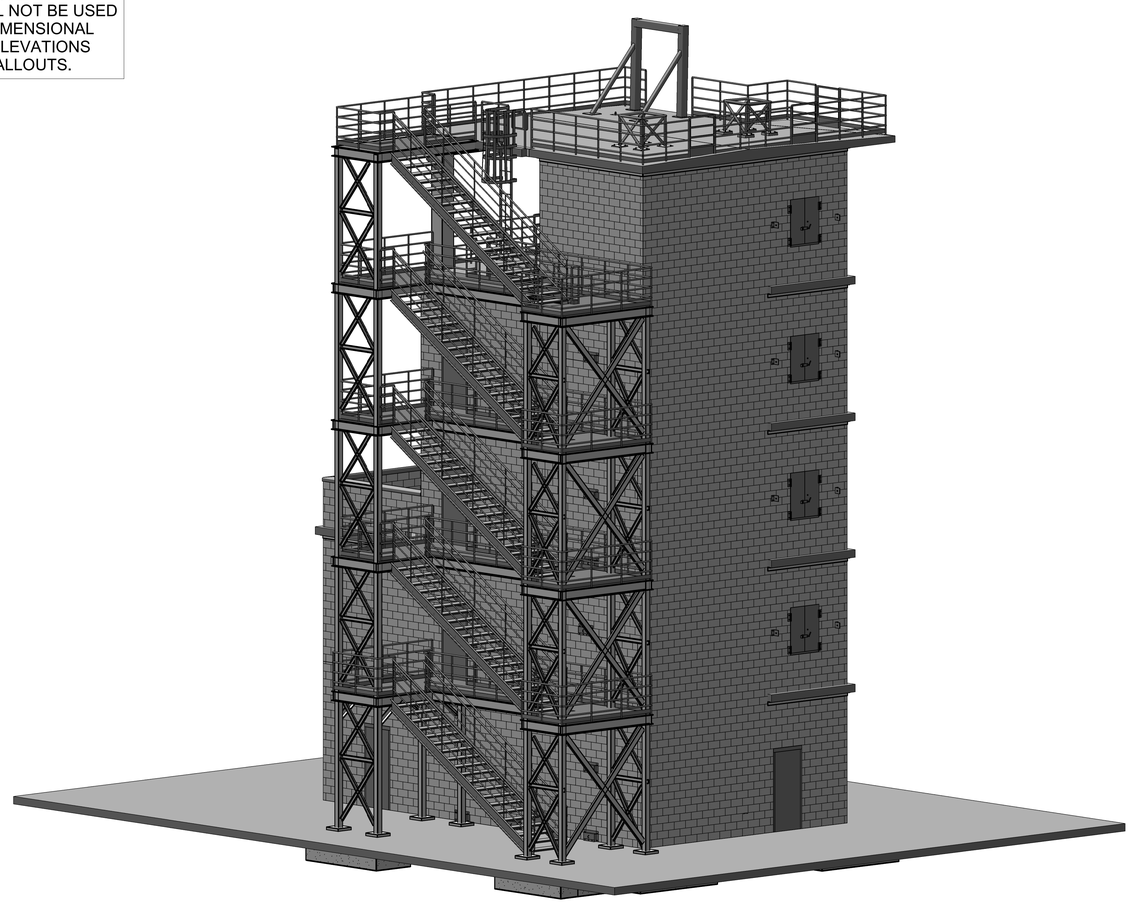


1 TT304 | TT304 SOUTHWEST PERSPECTIVE
SCALE



2 TT304 | TT304 NORTHWEST PERSPECTIVE
SCALE

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Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER
22056
DATE ISSUED
01/10/25
PROJECT STATUS
ISSUE FOR BID
SHEET
TRAINING TOWER - PERSPECTIVES

TT304

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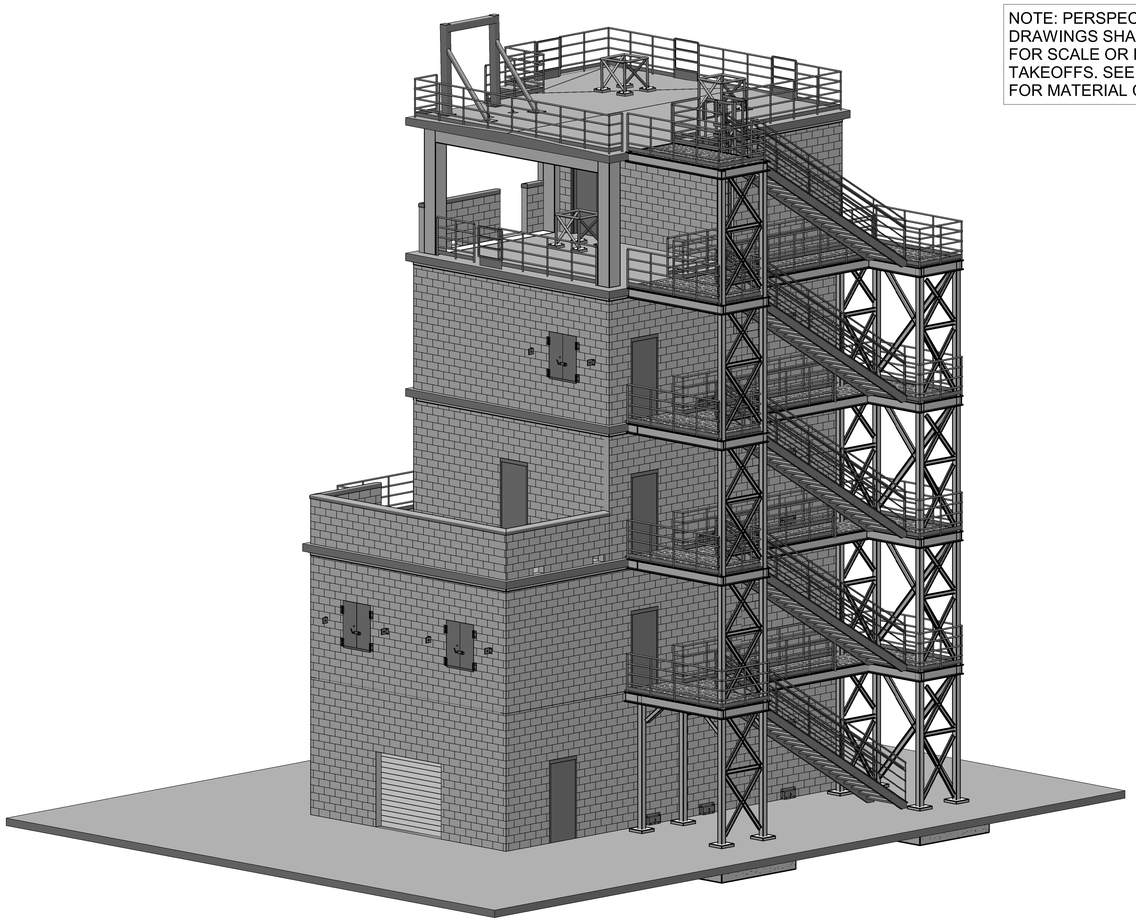
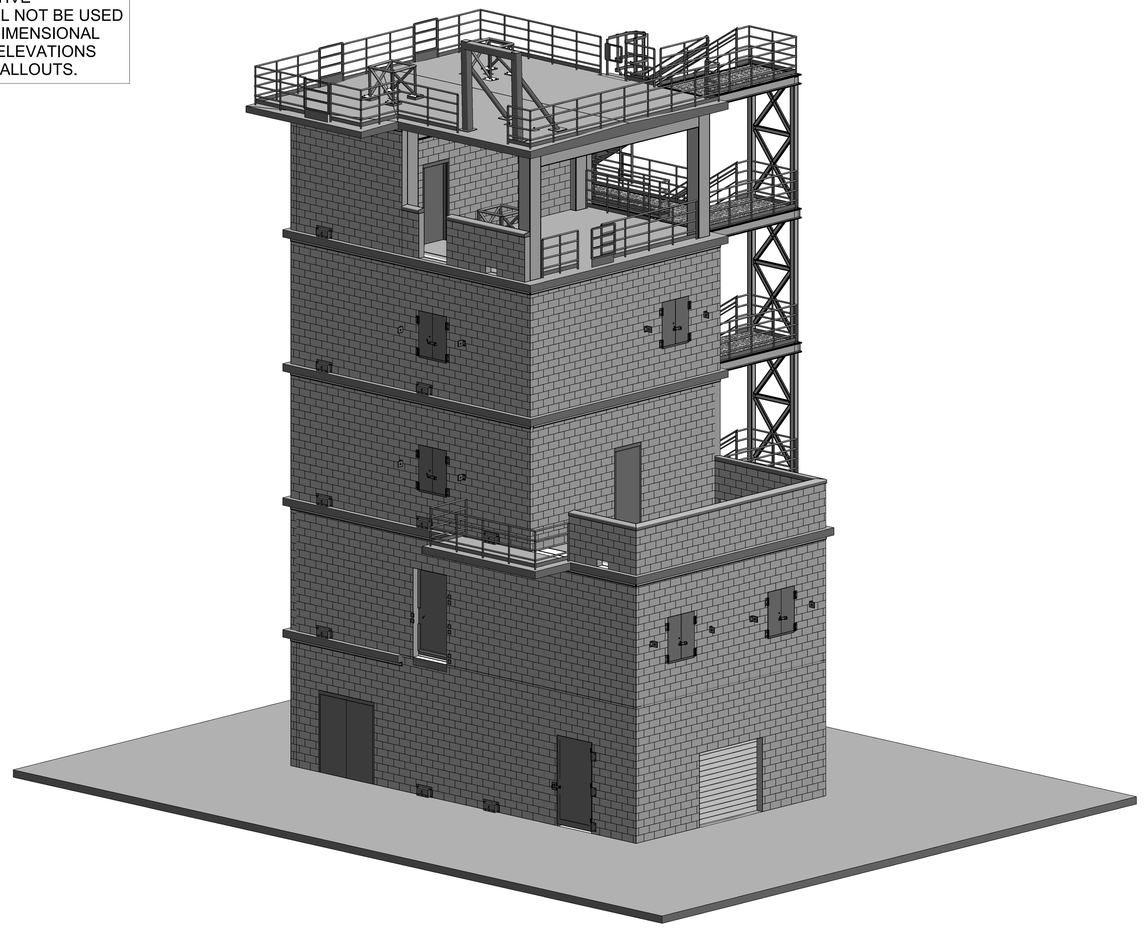


1 TT305 NORTHEAST PERSPECTIVE
TT305 SCALE



2 TT305 SOUTHEAST PERSPECTIVE
TT305 SCALE

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TT305

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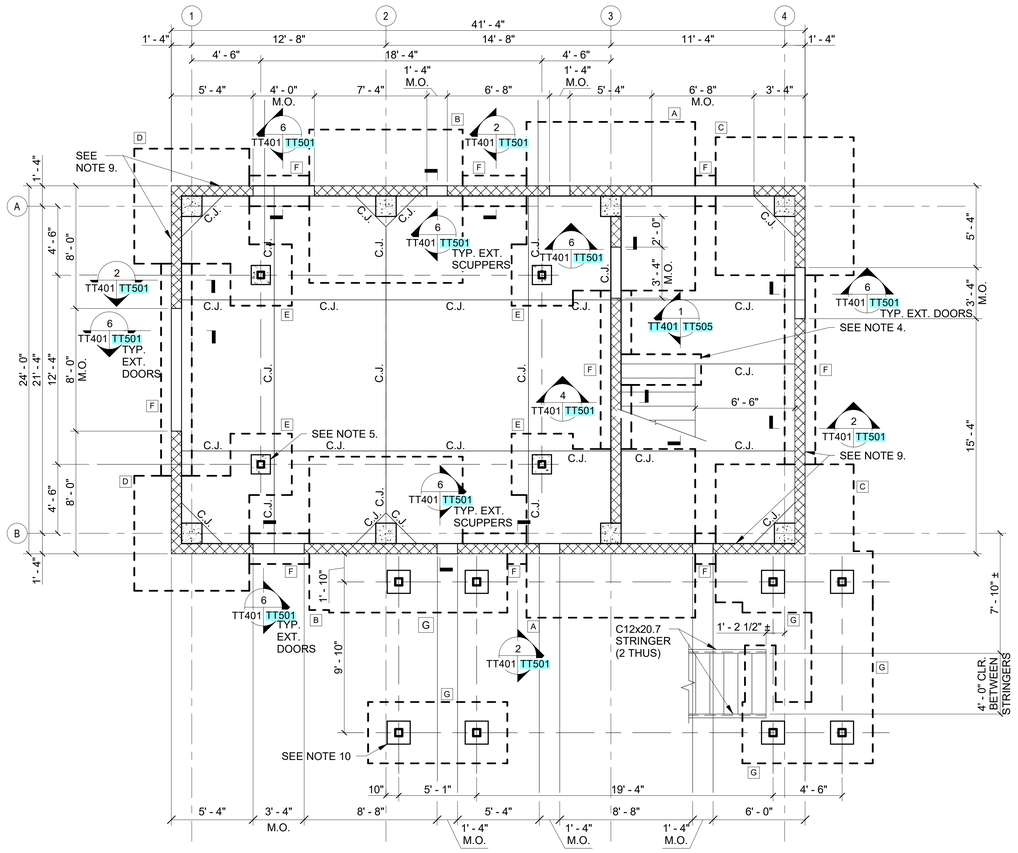

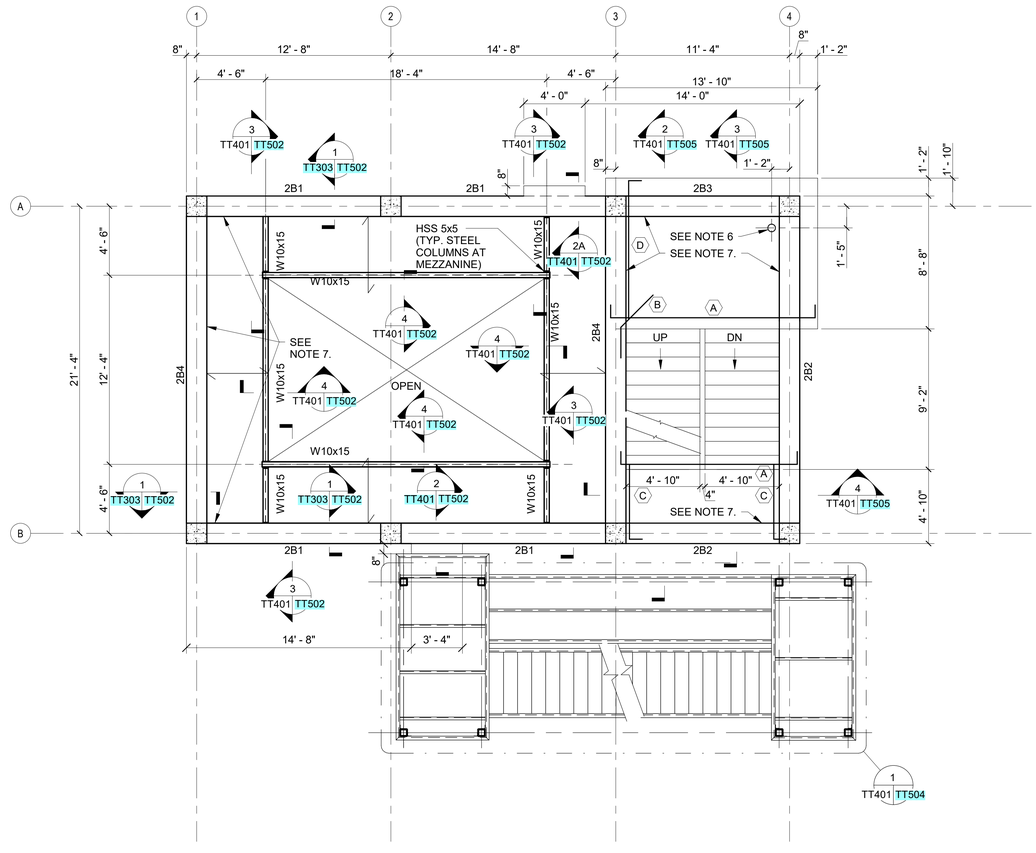

NOTES:

1. LOCATE TOPS OF FOOTINGS AT 1'-4" BELOW DATUM, U.O.N.. SEE FIRST FLOOR PLAN TT201 FOR DATUM.
2. SEE FOOTING SCHEDULE FOR FOOTINGS NOTED THUS [X].
3. SEE FIRST FLOOR PLAN 1/TT100 FOR ALL SLAB ELEVATIONS AND SLOPES. SEE SECTION N OF THE GENERAL NOTES ON SHEET TT001 FOR SLAB THICKNESS AND REINFORCING.
4. PROVIDE A 2'-0" WIDE x 5'-6" LONG THICKENED SLAB AT BASE OF STAIR PER SECTION 1/TT505.
5. HSS 5x5x1/4 COLUMN ON 18" SQ. CONCRETE PEDESTAL PER 3/TT504 AT 4 INTERIOR STEEL COLUMNS.
6. CJ = CONTROL JOINT PER SPECIFICATIONS.
7. PROVIDE A 2'-0" WIDE x 5' 0" LONG THICKENED SLAB AT BASE OF STAIR PER SECTION 2/TT504.
8. 16" SQ. CONCRETE COLUMN PER 1/TT501.
9. SUPPORT NON-STRUCTURAL CMU WALLS ON WALL FOOTINGS AND COLUMN FOOTINGS WHERE SHOWN ON PLAN. SUPPORT ALL OTHER NON-STRUCTURAL CMU WALLS ON SLAB-ON-GRADE.
10. HSS 5 1/2x5 1/2x1/4 COLUMN ON 18" SQ. CONCRETE PEDESTAL PER 3/TT504 AT 8 EXTERIOR STAIR COLUMNS.

COLUMN FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICKNESS	BOTTOM REINF.		TOP REINF.	
				CONT. (B)	SHORT DIR. (BM)	CONT. (T)	SHORT DIR. (TM)
A	11' - 0"	11' - 0"	2' - 0"	(10) #7 E.W.	(8)#7	(10) #7 E.W.	(8)#7
B	10' - 0"	10' - 0"	2' - 0"	(9)#7 E.W.	(8)#7	(9)#7 E.W.	(8)#7
C	9' - 0"	9' - 0"	2' - 0"	(7)#6	(8)#7	(7)#6	(8)#7
D	7' - 6"	7' - 6"	1' - 6"	(7)#6	(7)#6	(7)#6	(7)#6
E	4' - 0"	4' - 0"	1' - 0"	(4) #5 E.W.		(4) #5 E.W.	
G	4' - 0"	CONT.	1' - 4"	(5) #6	#6 @ 12" O.C.	(5) #6	#6 @ 12" O.C.

WALL FOOTING SCHEDULE

MARK	WIDTH	LENGTH	THICKNESS	BOTTOM REINF.		TOP F...	
				CONT. (B)	SHORT DIR. (BM)	CONT. (T)	SHORT DIR. (TM)
F	2' - 0"	CONT.	1' - 0"	(3) #6	#6@18" O.C.	(3) #6	#6@18" O.C.

1 FOUNDATION PLAN
TT401 TT401 SCALE 1/4" = 1'-0"

NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE SECOND FLOOR PLAN 2/TT201 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB SHALL BE AT +11.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN N-S DIRECTION ⇥ ⇤ IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (6) #5 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (B) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (C) = (4) #5 ADDITIONAL TOP BARS @ 6" O.C. & (2) #5 BOTTOM BARS AT EDGE OF SLAB.
   - (D) = (2) #5 ADDITIONAL TOP BARS @ 12" O.C. AT EDGE OF SLAB.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT PVC OR S.S. SCH. 40 PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. CONCRETE BEAMS PER SCHEDULE ON SHEET TT503.
8. ALL STEEL SHALL BE GALVANIZED U.O.N.
9. ⟵ DENOTES DIRECTION OF GRATING PLANK SPAN.

2 SECOND FLOOR FRAMING PLAN
TT401 TT401 SCALE 1/4" = 1'-0"

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SHEET **TRAINING TOWER - FOUNDATION & SECOND FLOOR FRAMING PLAN**

TT401

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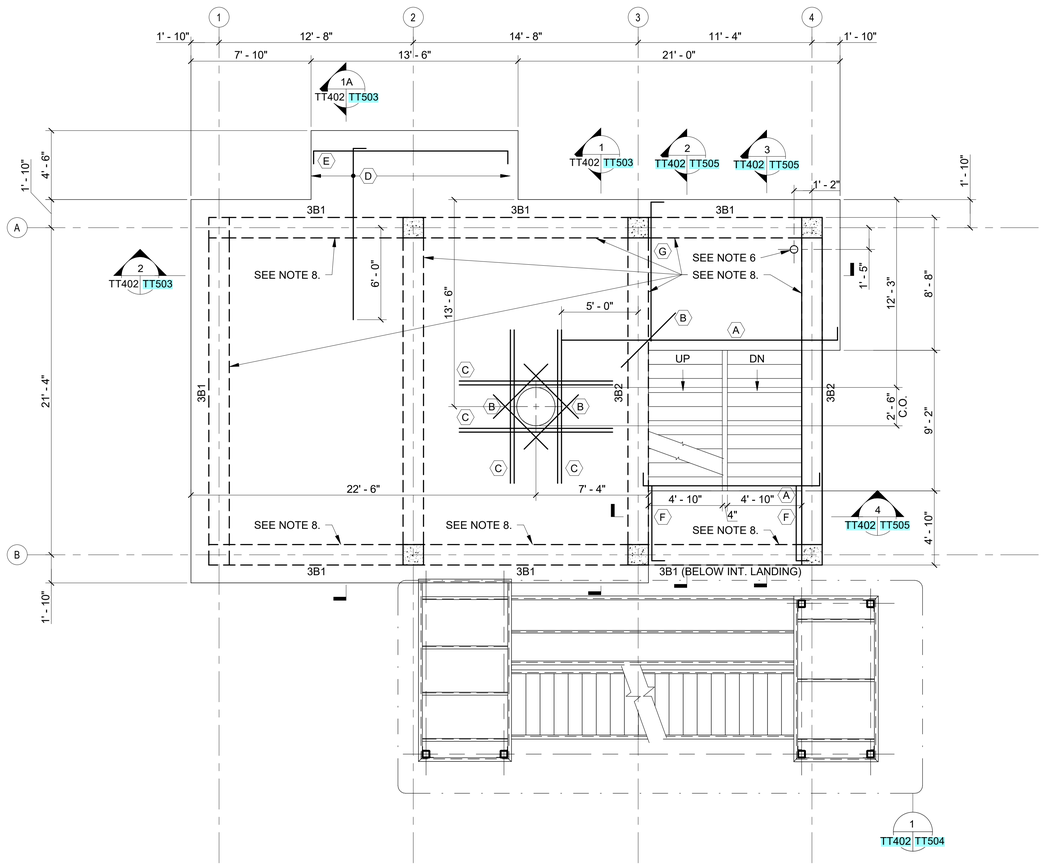
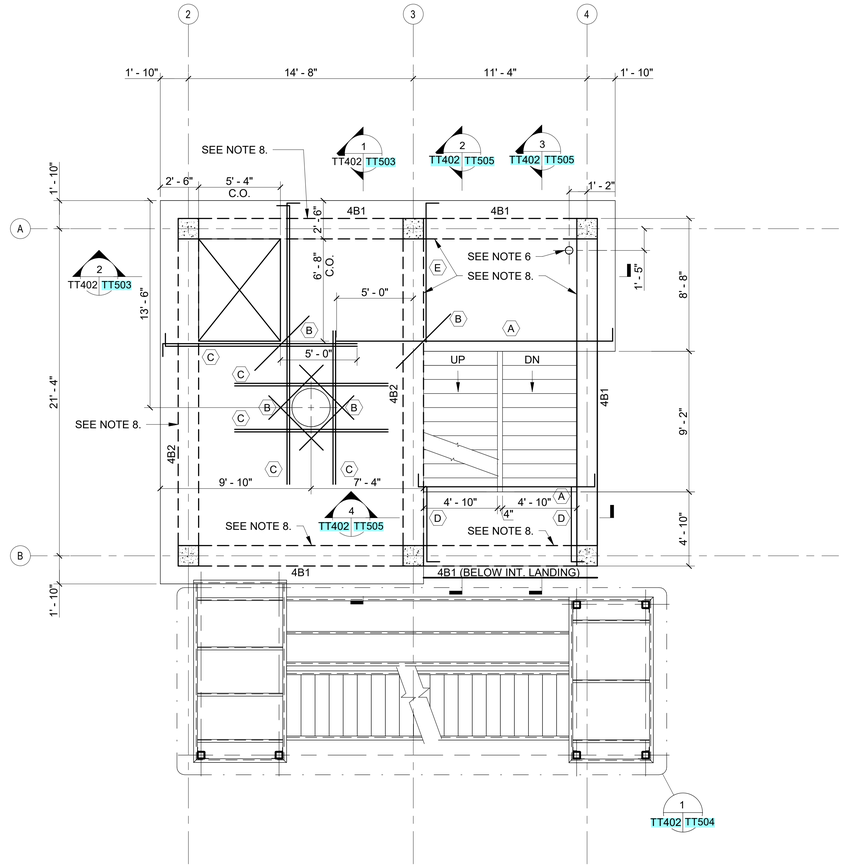


NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE THIRD FLOOR PLAN 1/TT202 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +23.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ⇥ ⇤ IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (6) #5 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (B) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (C) = (4) EACH, #5 ADDITIONAL TOP & BOTTOM BARS AT EDGE OF OPENING.
   - (D) = #5 @ 12" O.C. ADDITIONAL TOP BARS CENTERED BETWEEN MAIN TOP BARS.
   - (E) = (2) #5 TOP & BOTTOM BARS WITHIN 6" OF BALCONY SLAB EDGE.
   - (F) = (4) #5 ADDITIONAL TOP BARS @ 6" O.C. & (2) #5 BOTTOM BARS AT EDGE OF SLAB.
   - (G) = (2) #5 ADDITIONAL TOP BARS @ 12" O.C. AT EDGE OF SLAB.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT PVC OR S.S. SCH. 40 PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. 2' - 6" DIA. MANHOLE OPENING PER 4/TT607.
8. CONCRETE BEAMS PER SCHEDULE ON SHEET TT503.
9. ⟵ DENOTES DIRECTION OF GRATING PLANK SPAN.

1 THIRD FLOOR/LOW ROOF FRAMING PLAN
TT402 | TT402 SCALE 1/4" = 1'-0"



NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE FOURTH FLOOR PLAN 2/TT202 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +35.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ⇥ ⇤ IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (6) #5 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (B) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (C) = (4) EACH, #5 ADDITIONAL TOP & BOTTOM BARS AT EDGE OF OPENING.
   - (D) = (4) #5 ADDITIONAL TOP BARS @ 6" O.C. & (2) #5 BOTTOM BARS AT EDGE OF SLAB.
   - (E) = (2) #5 ADDITIONAL TOP BARS @ 12" O.C. AT EDGE OF SLAB.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT PVC OR S.S. SCH. 40 PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. 2' - 6" DIA. MANHOLE OPENING PER 4/TT607.
8. CONCRETE BEAMS PER SCHEDULE ON SHEET TT503.
9. ⟵ DENOTES DIRECTION OF GRATING PLANK SPAN.

2 FOURTH FLOOR FRAMING PLAN
TT402 | TT402 SCALE 1/4" = 1'-0"

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SHEET **TRAINING TOWER - THIRD & FOURTH FLOOR FRAMING PLAN**

TT402

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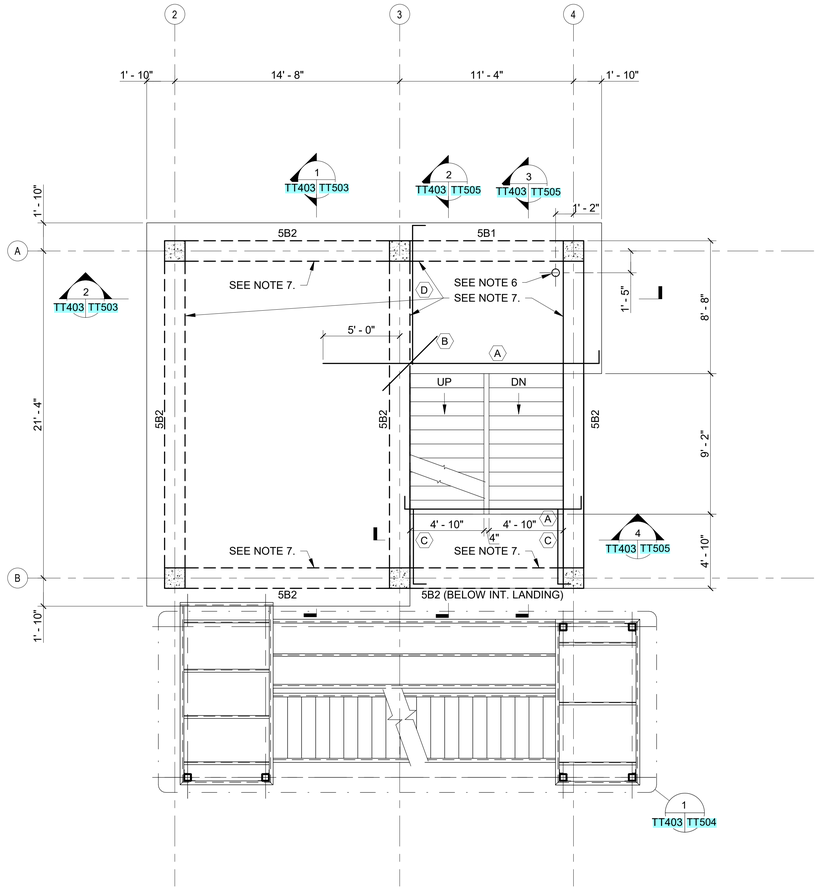
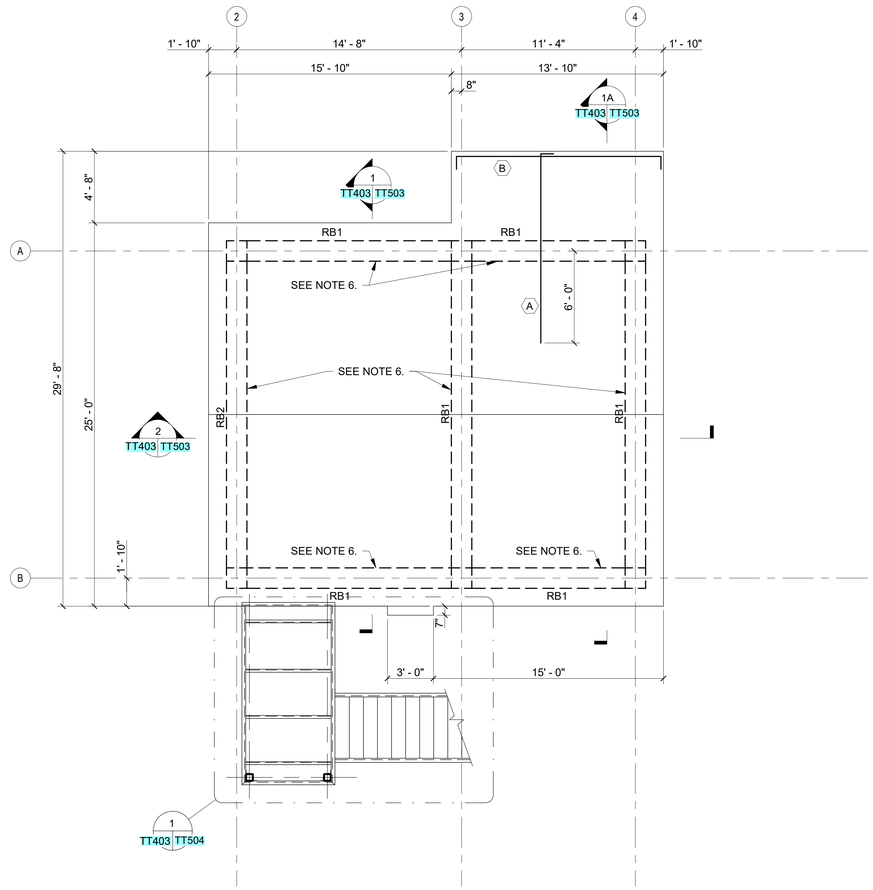


NOTES:

1. SLAB THICKNESS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE FIFTH FLOOR PLAN 1/TT203 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +47.33', U.O.N.,
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄ ► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = (6) #5 ADDITIONAL BOTTOM BARS AT EDGE OF STAIR LANDING.
   - (B) = (2) EACH, #5 x 5'-0" LONG DIAGONAL TOP & BOTTOM BARS AT CORNER OF OPENING.
   - (C) = (4) #5 ADDITIONAL TOP BARS @ 6" O.C. & (2) #5 BOTTOM BARS AT EDGE OF SLAB.
   - (D) = (2) #5 ADDITIONAL TOP BARS @ 12" O.C. AT EDGE OF SLAB.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. PROVIDE PERMANENT PVC OR S.S. SCH. 40 PIPE SLEEVE THROUGH SLAB FOR STANDPIPE CAST INTO SLAB. DO NOT CORE DRILL SLAB.
7. CONCRETE BEAMS PER SCHEDULE ON SHEET TT503.
8. ◄——► DENOTES DIRECTION OF GRATING PLANK SPAN.

1 FIFTH FLOOR/MAIN ROOF FRAMING PLAN
TT403 TT403 SCALE 1/4" = 1'-0"



NOTES:

1. SLAB THICKNESS OVER STAIRS SHALL BE 8" MINIMUM. SLOPE TOP SURFACE ONLY. SEE HIGH ROOF PLAN 2/TT203 FOR CONCRETE SLAB ELEVATIONS, AND SLOPES. BOTTOM OF MAIN SLAB AT +59.33', U.O.N.
2. SLAB REINFORCING SHALL BE #5 AT 12" O.C. CONTINUOUS BOTH WAYS TOP AND BOTTOM.
3. OUTERMOST REINFORCING LAYERS SHALL BE IN THIS DIRECTION ◄——► IN PLAN. SLOPE TOP BARS IN THIS DIRECTION WITH TOP OF SLAB TO MAINTAIN PROPER COVER OVER ENTIRE BAR LENGTH.
4. SEE PLAN FOR ADDITIONAL REINFORCING:
   - (A) = #5 @ 12" O.C. ADDITIONAL TOP BARS CENTERED BETWEEN MAIN TOP BARS.
   - (B) = (2) #5 TOP & BOTTOM BARS WITHIN 6" OF BALCONY SLAB EDGE.
5. PROVIDE STANDARD 90° END HOOKS ON ALL TOP AND BOTTOM BARS UNLESS OTHERWISE SHOWN. HOOKS DO NOT HAVE TO BE VERTICAL. HOOKS CAN BE ROTATED TO MAINTAIN PROPER COVER AT ENDS OF BARS.
6. CONCRETE BEAMS PER SCHEDULE ON SHEET TT503.
7. ◄——► DENOTES DIRECTION OF GRATING PLANK SPAN.

2 HIGH ROOF FRAMING PLAN
TT403 TT403 SCALE 1/4" = 1'-0"

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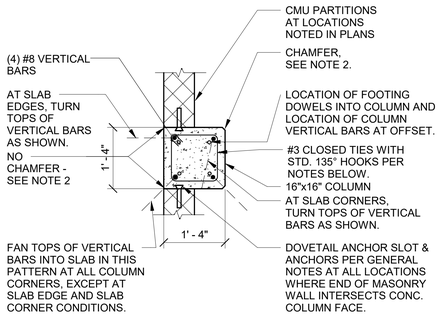
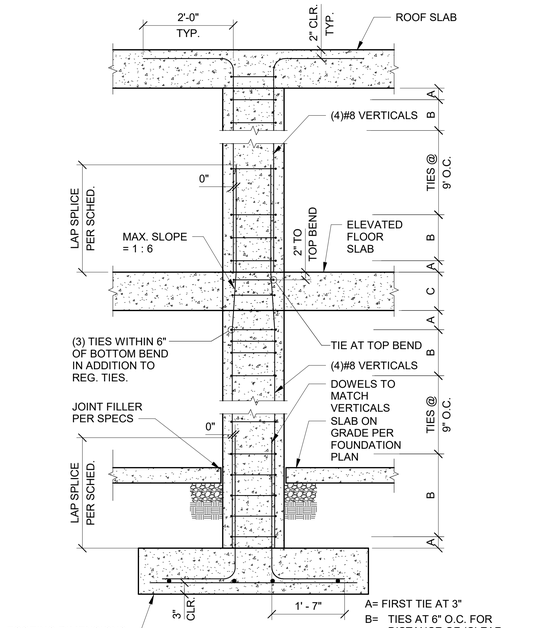


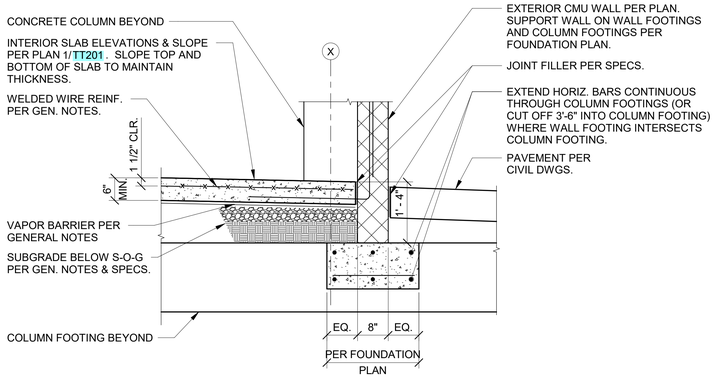
16X16 COLUMN PLAN DETAIL



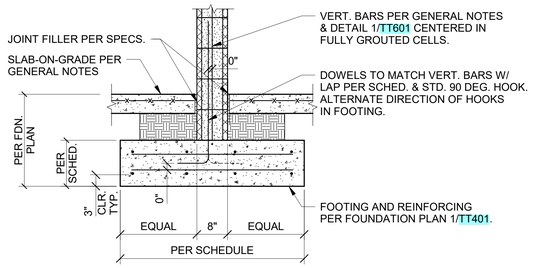
A= FIRST TIE AT 3"
B= TIES AT 6" O.C. FOR DISTANCE OF (CLEAR HEIGHT/6) OR 1'- 6", WHICHEVER IS GREATER
C= ONE TIE WITHIN SLAB DEPTH

NOTES:
1. THIS DETAIL APPLIES TO ALL COLUMNS. ALL COLUMNS SHALL BE 16"x16".
2. AT COLUMN CORNERS WITH NO INTERSECTING CMU PARTITIONS, PROVIDE 3/4" CHAMFER. AT COLUMN CORNERS WITH INTERSECTING CMU PARTITIONS, PROVIDE NO CHAMFER.

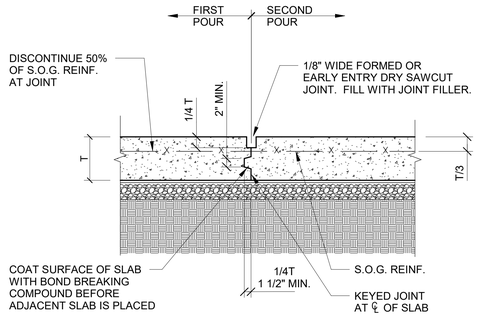
1 TYPICAL COLUMN DETAIL
TT401 | TT501 SCALE 3/4" = 1'-0"



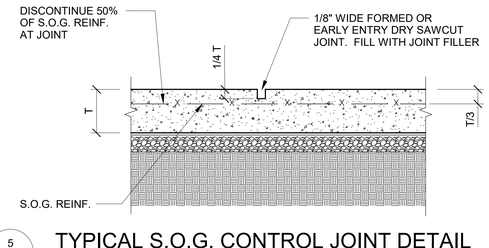
2 TYPICAL EXTERIOR WALL FOOTING
TT401 | TT501 SCALE 3/4" = 1'-0"



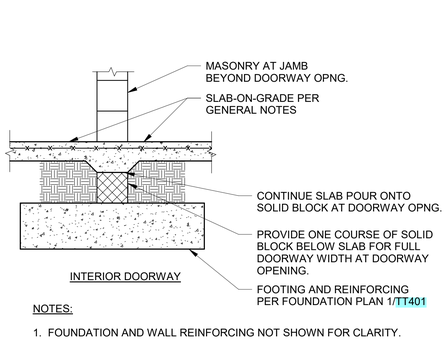
4 TYPICAL INTERIOR WALL FOOTING SECTION
TT401 | TT501 SCALE 3/4" = 1'-0"



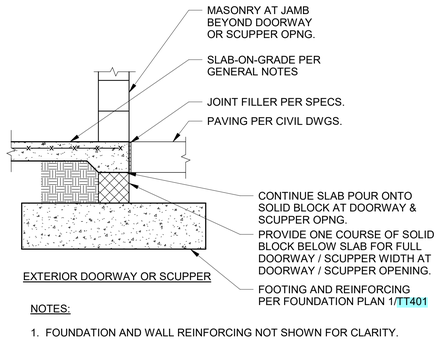
3 TYPICAL S.O.G. CONSTRUCTION JOINT DETAIL
TT401 | TT501 SCALE 3/4" = 1'-0"



5 TYPICAL S.O.G. CONTROL JOINT DETAIL
TT401 | TT501 SCALE 3/4" = 1'-0"



NOTES:
1. FOUNDATION AND WALL REINFORCING NOT SHOWN FOR CLARITY.



NOTES:
1. FOUNDATION AND WALL REINFORCING NOT SHOWN FOR CLARITY.

6 SECTION - DOOR & SCUPPER THRESHOLDS AT SLAB-ON-GRADE
TT401 | TT501 SCALE 3/4" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - TYPICAL CONCRETE DETAILS**

TT501

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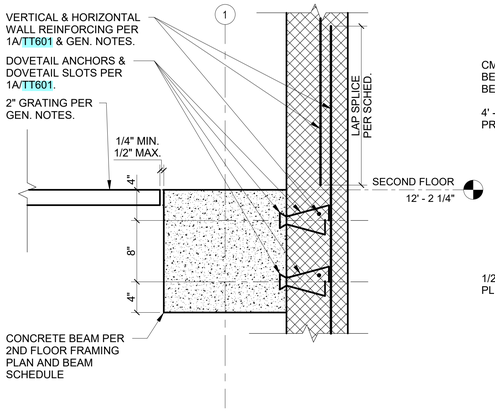
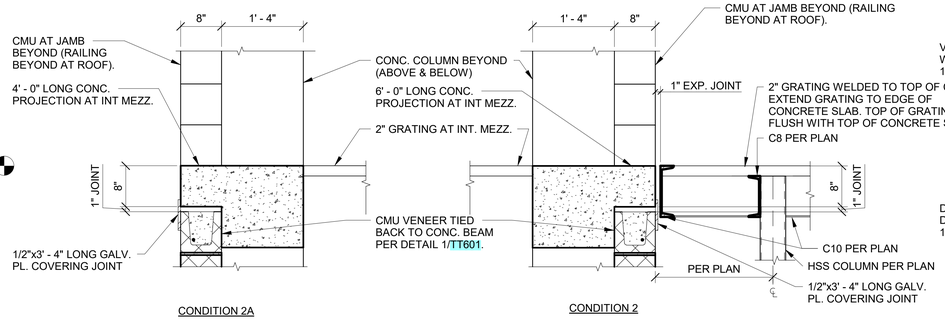
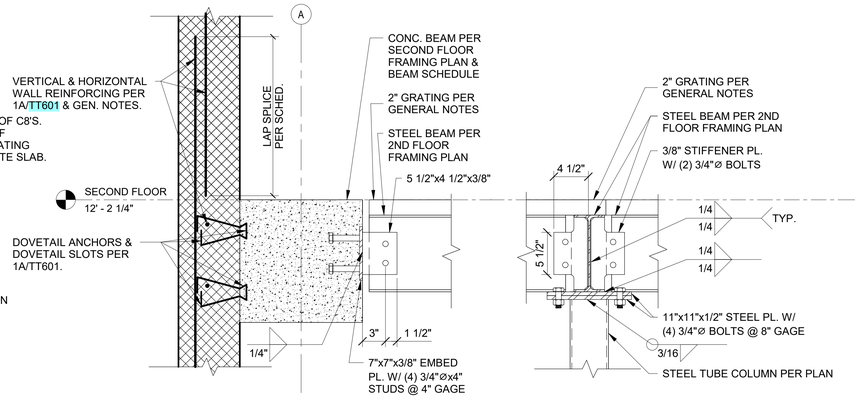


1 SECTION
TT401 | TT502 SCALE 1 1/2" = 1'-0"



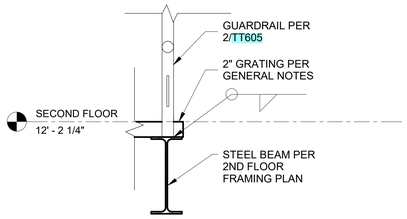
2A TT201 | TT502 2 TT201, TT401 | TT502 SECTION SCALE 1" = 1'-0"



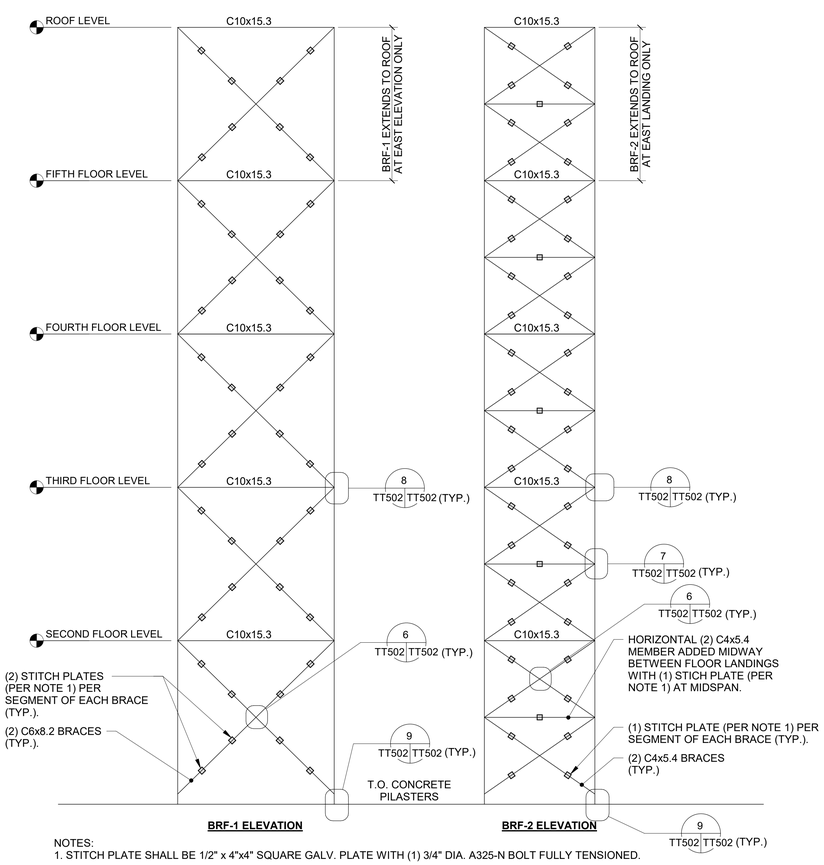
NOTES:

1. ALL STEEL SHALL BE GALVANIZED U.O.N.
2. WRAP BEAM REINFORCING BARS WITH HEAVY DUTY ELECTRICAL TAPE AT ALL LOCATIONS WHERE A REINFORCING BAR GETS WITHIN 1" OF THE EMBED PLATE HEADED STUDS.

3 SECTION
TT401 | TT502 SCALE 1 1/2" = 1'-0"

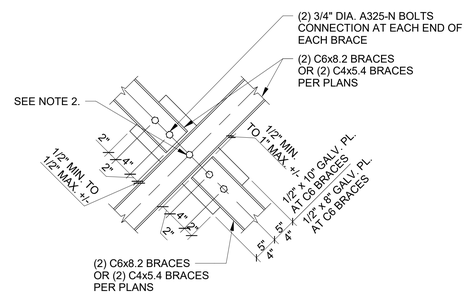


4 SECTION
TT401 | TT502 SCALE 1 1/2" = 1'-0"



NOTES:
1. STITCH PLATE SHALL BE 1/2" x 4"x4" SQUARE GALV. PLATE WITH (1) 3/4" DIA. A325-N BOLT FULLY TENSIONED.

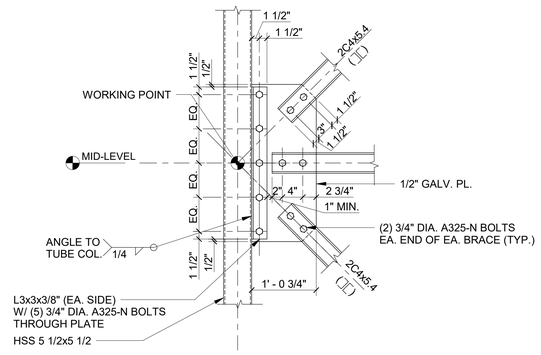
5 EXTERIOR STEEL STAIR BRACED FRAMES
TT502 | TT502 SCALE 1/2" = 1'-0"



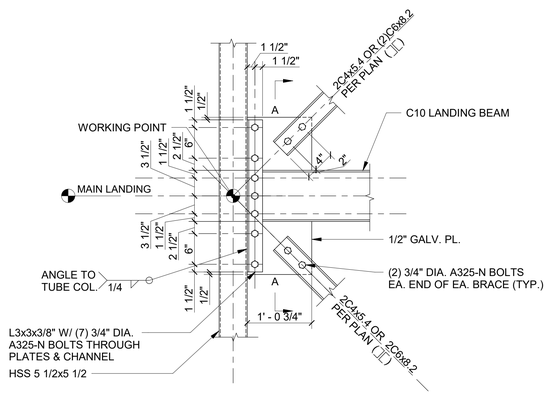
NOTES:

1. THIS DETAIL APPLIES AT EACH BRACE INTERSECTION AT BRF-1 & BRF-2.
2. (1) 3/4" DIA. A325-N BOLT CONNECTION AT CENTER OF INTERSECTION.

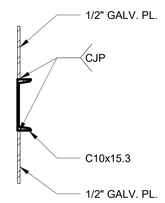
6 TYPICAL VERTICAL BRACING INTERSECTION DETAIL
TT502 | TT502 SCALE 1" = 1'-0"



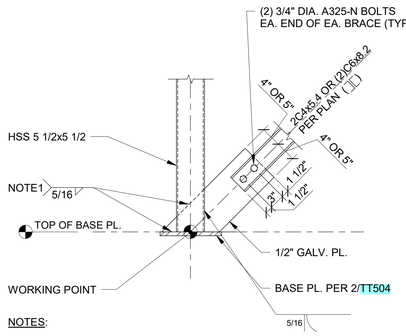
7 TYPICAL BRF-2 CONNECTION AT MID-STORY LEVEL OF FRAME
TT502 | TT502 SCALE 1" = 1'-0"



8 TYPICAL BRACED FRAME CONNECTION AT MAIN LANDING
TT502 | TT502 SCALE 1" = 1'-0"



SECTION A-A



NOTES:

1. WELD GALV. 1/2" PL. TO FACE OF HSS5 1/2x5 1/2 COLUMN AND COLUMN BASE PL.

9 TYPICAL BRACED FRAME CONNECTION AT COLUMN BASE PL.
TT502 | TT502 SCALE 1" = 1'-0"

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SHEET
TRAINING TOWER - STRUCTURAL STEEL FRAMING DETAILS

TT502

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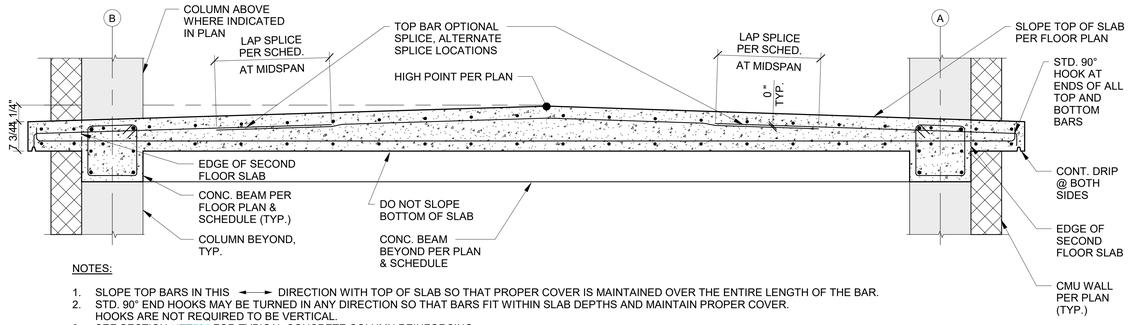
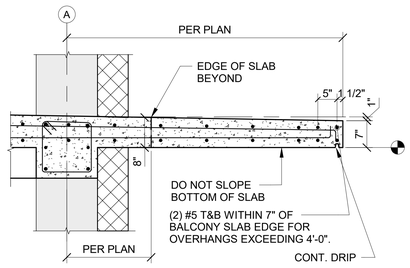


NOTES:

1. SLOPE TOP BARS IN THIS ⟵⟶ DIRECTION WITH TOP OF SLAB SO THAT PROPER COVER IS MAINTAINED OVER THE ENTIRE LENGTH OF THE BAR.
2. STD. 90° END HOOKS MAY BE TURNED IN ANY DIRECTION SO THAT BARS FIT WITHIN SLAB DEPTHS AND MAINTAIN PROPER COVER. HOOKS ARE NOT REQUIRED TO BE VERTICAL.
3. SEE SECTION 1/TT501 FOR TYPICAL CONCRETE COLUMN REINFORCING.

CONCRETE SLAB SECTION

1A / TT401-TT403 | TT503 — 1 / TT401-TT403 | TT503 SCALE 3/4" = 1'-0"



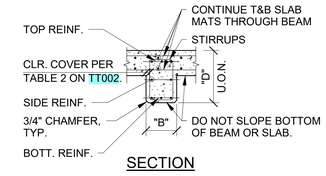
SECTION 1A - BALCONY CONDITION AT 3RD FLOOR & CANTILEVERED SLAB AT HIGH ROOF

CONCRETE BEAM SCHEDULE

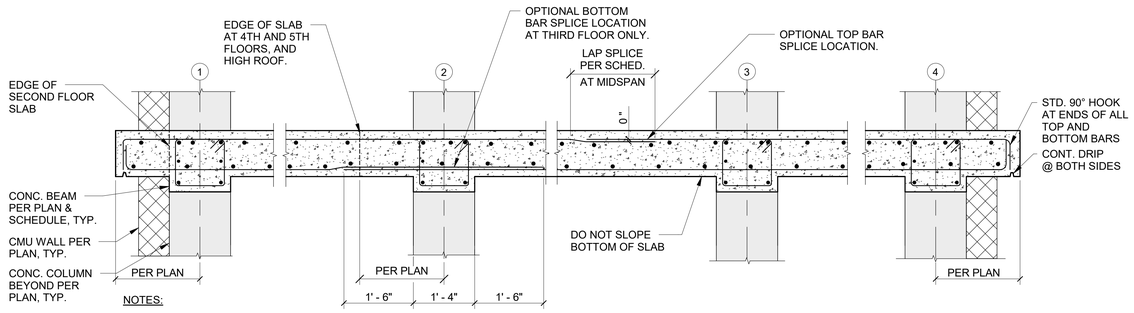
MARK	SIZE		REINFORCEMENT				STIRRUPS			REMARKS
	WIDTH (B)	DEPTH (D)	BOTTOM	TOP CONT.	TOP ADDED	SIDE E.F.	SIZE	TYPE	SPACING (in.) EACH END U.O.N.	
2B1	1' - 4"	1' - 6 1/4"	(2) #7	(2) #8	---	(2) #6	#3		1@2", R@3" O.C.	
2B2	1' - 4"	1' - 4"	(2) #8	(2) #9	---	(2) #6	#3		1@2", R@3" O.C.	
2B3	1' - 4"	VARIES FROM 1' - 4" TO 1' - 6 1/4"	(2) #8	(2) #9	---	(2) #6	#3		1@2", R@3" O.C.	SEE NOTE 2.
2B4	1' - 4"	1' - 6 1/4"	(2) #8	(2) #9	---	(2) #6	#3		1@2", R@3" O.C.	
3B1	1' - 4"	1' - 4"	(2) #7	(2) #8	---	(2) #6	#3		1@2", R@3" O.C.	
3B2	1' - 4"	1' - 4"	(2) #8	(2) #9	---	(2) #6	#3		1@2", R@3" O.C.	
4B1	1' - 4"	1' - 4"	(2) #7	(2) #8	---	(2) #6	#3		1@2", R@3" O.C.	
4B2	1' - 4"	1' - 4"	(2) #8	(2) #9	---	(2) #6	#3		1@2", R@3" O.C.	
5B1	1' - 4"	1' - 4"	(2) #7	(2) #8	---	(2) #6	#3		1@2", R@3" O.C.	
RB1	1' - 4"	1' - 4"	(2) #6	(2) #6	---	(2) #6	#3		1@2", R@3" O.C.	
RB2	1' - 4"	1' - 4"	(2) #8	(2) #9	---	(2) #6	#3		1@2", R@3" O.C.	

NOTE:

1. AT BEAM/COLUMN JOINTS, KEEP BEAM LONGITUDINAL BARS INSIDE COLUMNS VERTICALS.
2. TOP OF BEAM SLOPES PER 2/TT201 FROM COL. LINE 3 (1' - 6 1/4" DEEP) TO SCUPPER (1' - 4" DEEP), & REMAINS FLAT (1' - 4" DEEP) TO COLUMN LINE 4.



SECTION

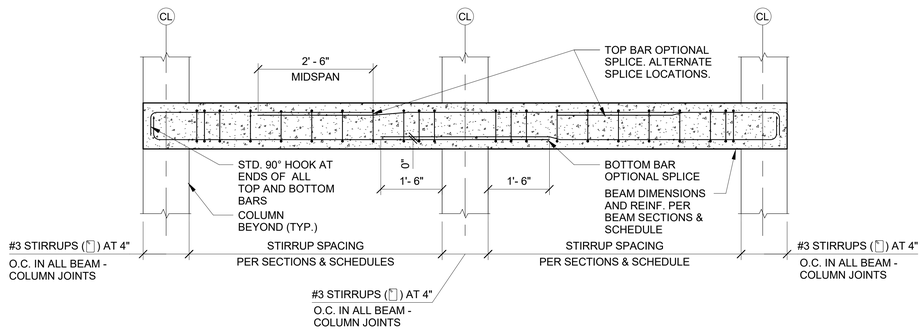


NOTES:

1. IN SLAB, SLOPE TOP BARS IN ORTHOGONAL DIRECTION PARALLEL WITH TOP OF SLAB SO THAT PROPER COVER IS MAINTAINED OVER THE ENTIRE LENGTH OF THE BAR.
2. STD. 90° END HOOKS MAY BE TURNED IN ANY DIRECTION SO THAT BARS FIT WITHIN SLAB DEPTHS AND MAINTAIN PROPER COVER. HOOKS ARE NOT REQUIRED TO BE VERTICAL.
3. SEE SECTION 1/TT501 FOR TYPICAL CONCRETE COLUMN REINFORCING.

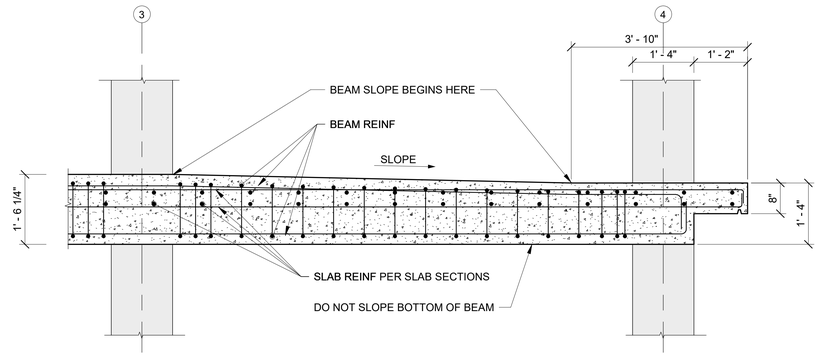
CONCRETE SLAB SECTION

2 / TT401-TT403 | TT503 SCALE 3/4" = 1'-0"



BEAM BENDING & CUTOFF DETAIL

3 / TT401-TT403 | TT503 SCALE 3/4" = 1'-0"



ELEVATION - BEAM 2B3

4 / TT503 | TT503 SCALE 3/4" = 1'-0"

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SHEET **TRAINING TOWER - CONCRETE SLAB SECTIONS**

TT503

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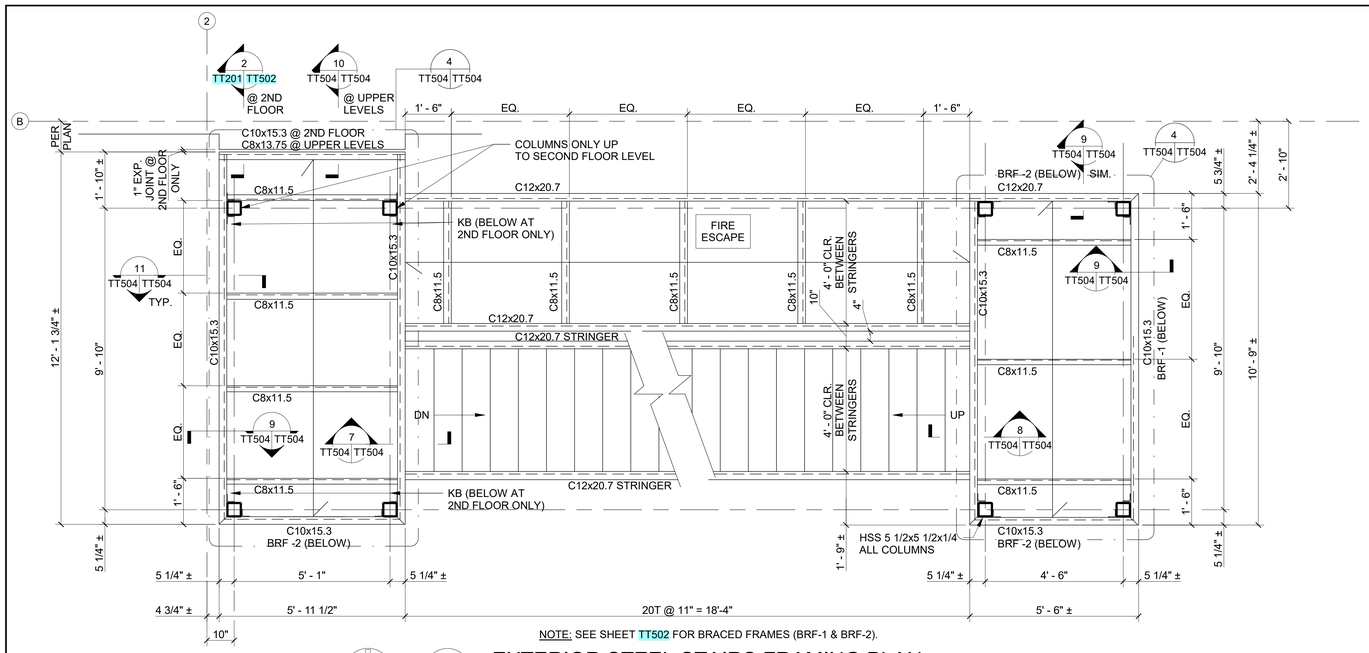
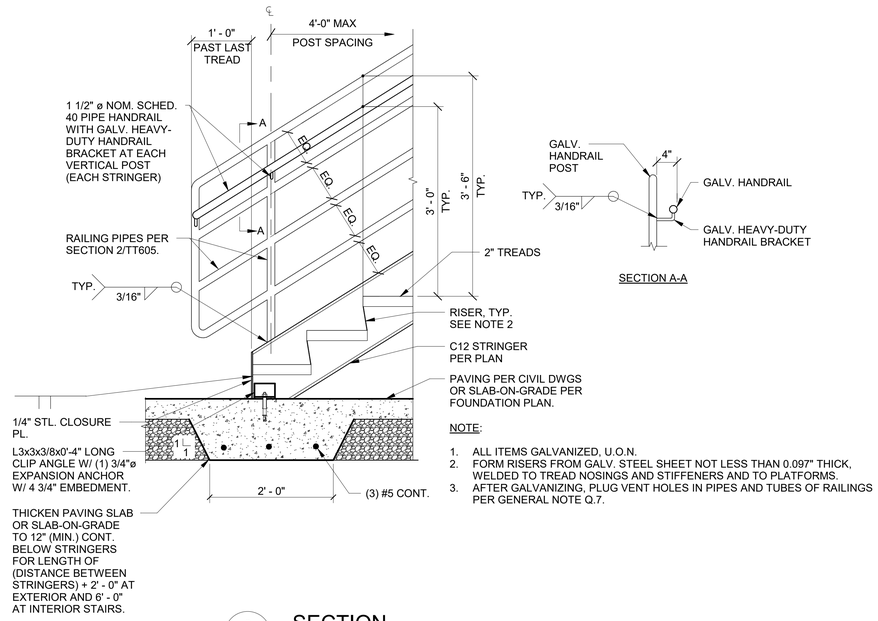


NOTE: SEE SHEET TT502 FOR BRACED FRAMES (BRF-1 & BRF-2).

1 EXTERIOR STEEL STAIRS FRAMING PLAN

TT401 - TT403 | TT504 SCALE 1/2" = 1'-0"

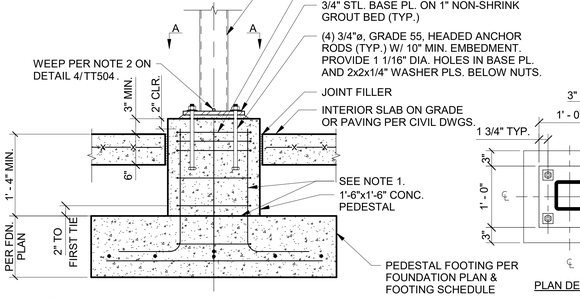


NOTE:

1. ALL ITEMS GALVANIZED, U.O.N.
2. FORM RISERS FROM GALV. STEEL SHEET NOT LESS THAN 0.097" THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.
3. AFTER GALVANIZING, PLUG VENT HOLES IN PIPES AND TUBES OF RAILINGS PER GENERAL NOTE Q.7.

2 SECTION

TT401 | TT504 SCALE 1" = 1'-0"

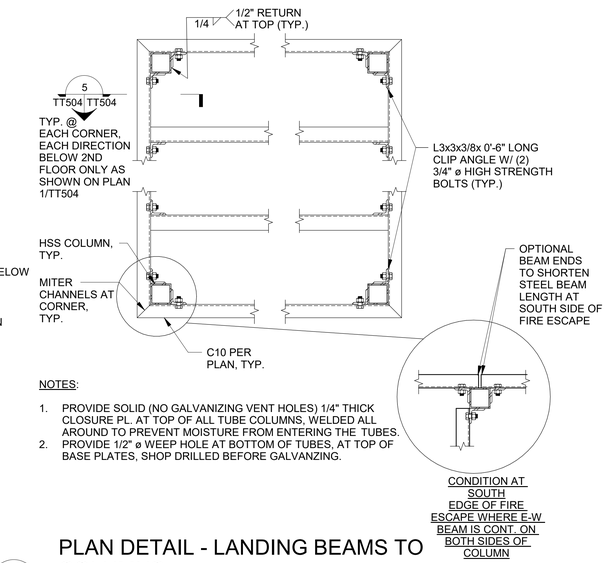


NOTES:

1. PROVIDE (8) #5 VERTICAL BARS W/ 90° END HOOKS IN FOOTINGS AND #4 CLOSED TIES AT 12" O.C. MAX. IN ALL CONCRETE PEDESTALS.
2. PROVIDE HOT-DIP GALVANIZED STEEL FOR ALL STEEL PIECES, U.O.N.

3 CONCRETE PEDESTAL DETAIL

TT401 | TT504 SCALE 1" = 1'-0"

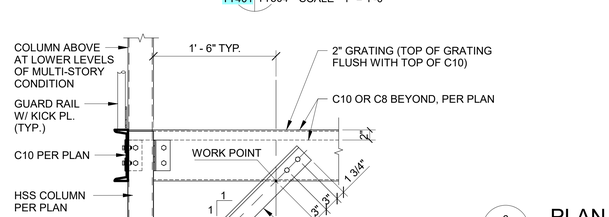


NOTES:

1. PROVIDE SOLID (NO GALVANIZING VENT HOLES) 1/4" THICK CLOSURE PL. AT TOP OF ALL TUBE COLUMNS, WELDED ALL AROUND TO PREVENT MOISTURE FROM ENTERING THE TUBES.
2. PROVIDE 1/2" ø WEEP HOLE AT BOTTOM OF TUBES, AT TOP OF BASE PLATES, SHOP DRILLED BEFORE GALVANZING.

4 PLAN DETAIL - LANDING BEAMS TO COLUMNS

TT504 | TT504 SCALE 1" = 1'-0"

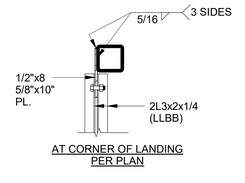


NOTES:

1. THIS DETAIL APPLIES WHERE REFERENCED IN PLAN 1/TT504 AS "KB".

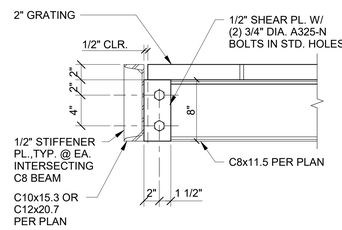
5 TYPICAL KNEE-BRACING DETAIL

TT504 | TT504 SCALE 1" = 1'-0"



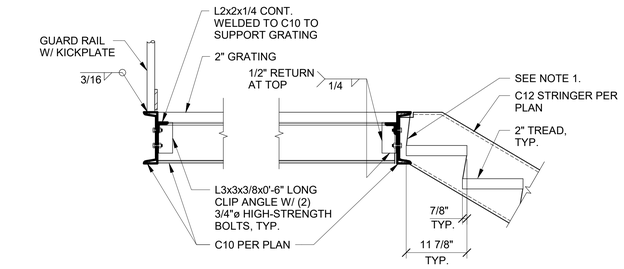
6 PLAN DETAIL AT KNEE-BRACING (KB)

TT504 | TT504 SCALE 1" = 1'-0"



11 C8 CONNECTION AT LANDING CHANNELS

TT504 | TT504 SCALE 1 1/2" = 1'-0"

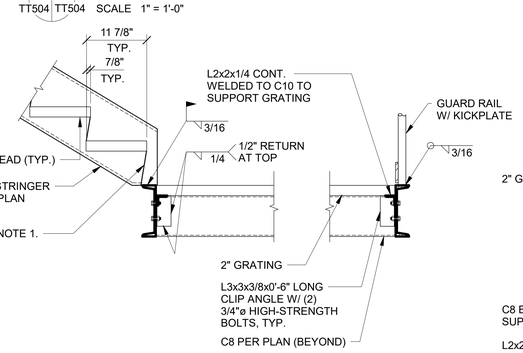


NOTE:

1. FORM RISERS FROM GALV. STEEL SHEET NOT LESS THAN 0.097" THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.
2. CONNECT (C10 OR C12) STAIR STRINGER TO C10 LANDING BEAM WITH L3x3x3/8x0'-6" LONG SHOP WELDED TO STRINGER AND BOLTED TO LANDING BEAM WITH (2) 3/4" DIA. HIGH-STRENGTH BOLTS (TYP.).

7 SECTION

TT504 | TT504 SCALE 1" = 1'-0"

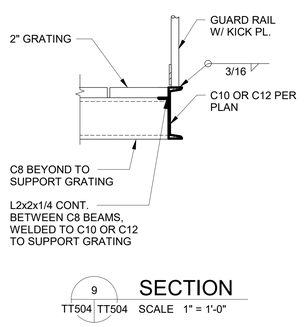


NOTE:

1. FORM RISERS FROM GALV. STEEL SHEET NOT LESS THAN 0.097" THICK, WELDED TO TREAD NOSINGS AND STIFFENERS AND TO PLATFORMS.

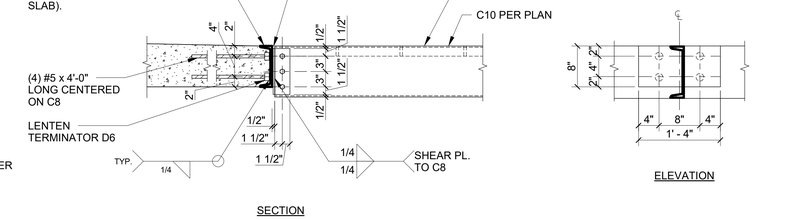
8 SECTION

TT504 | TT504 SCALE 1" = 1'-0"



9 SECTION

TT504 | TT504 SCALE 1" = 1'-0"



10 EXTERIOR STAIR TO CONC. SLAB AT ELEVATED SLABS ABOVE 2ND FLOOR

TT504 | TT504 SCALE 1" = 1'-0"

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NCCCS NO. 2303

SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - EXTERIOR STEEL STAIR DETAILS**

TT504

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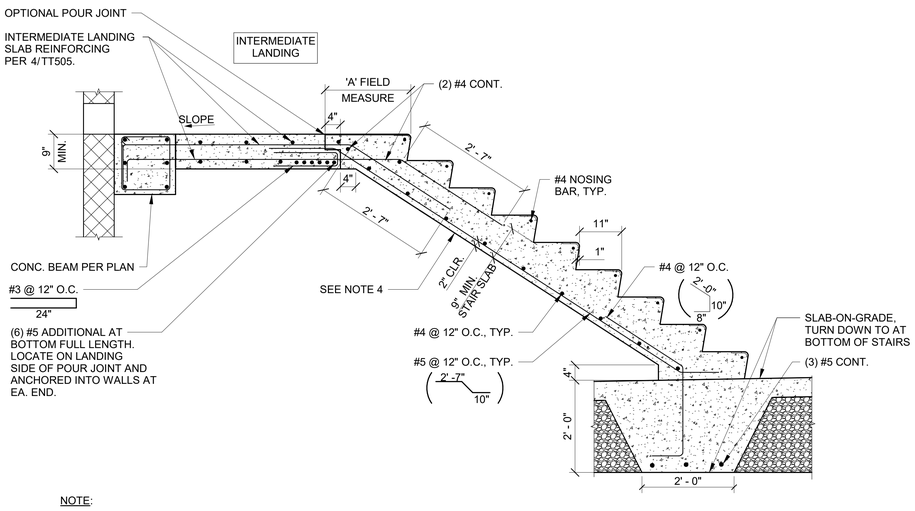
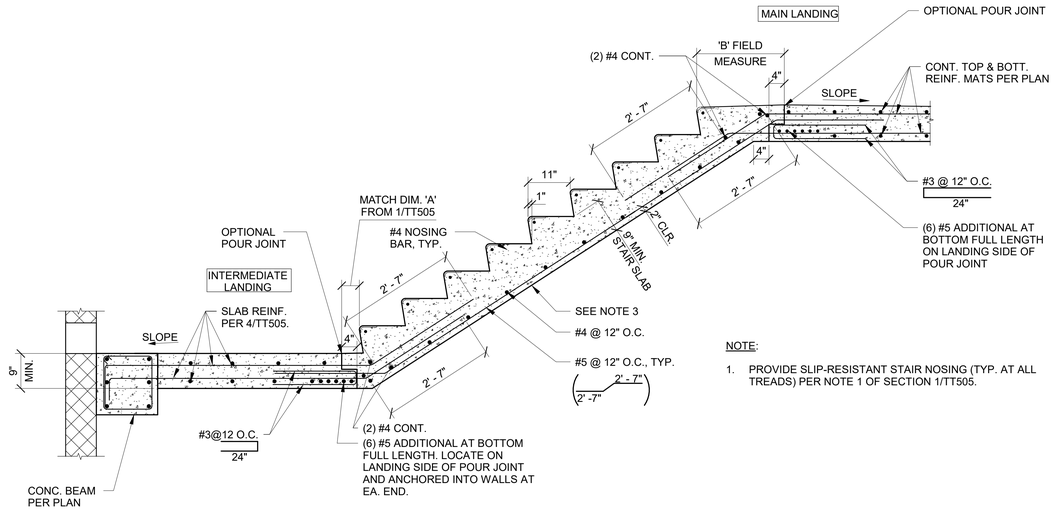


NOTE:

1. PROVIDE GALVANIZED, SLIP-RESISTANT STAIR NOSING (TYP. AT ALL TREADS). PROVIDE 1/4" MIN. THICK, GRADE 2, ROUNDED-EDGE STAIR NOSING, 1 1/2" DEEP x 3" WIDE x 3'-4" LONG, TIGHT TO CONCRETE WALL TO AVOID GUARDRAIL BASE PLATE AT OPPOSITE END OF TREAD. PROVIDE SLIPNOT STAIR NOSING WITH J-HOOKS, AS MANUFACTURED BY SLIPNOT METAL SAFETY FLOORING AT (800) 754-7668 OR WWW.SLIPNOT.COM, OR AN EQUIVALENT APPROVED BY THE ENGINEER. INSTALL STAIR NOSINGS IN ACCORDANCE WITH REQUIREMENTS OF THE MANUFACTURER.

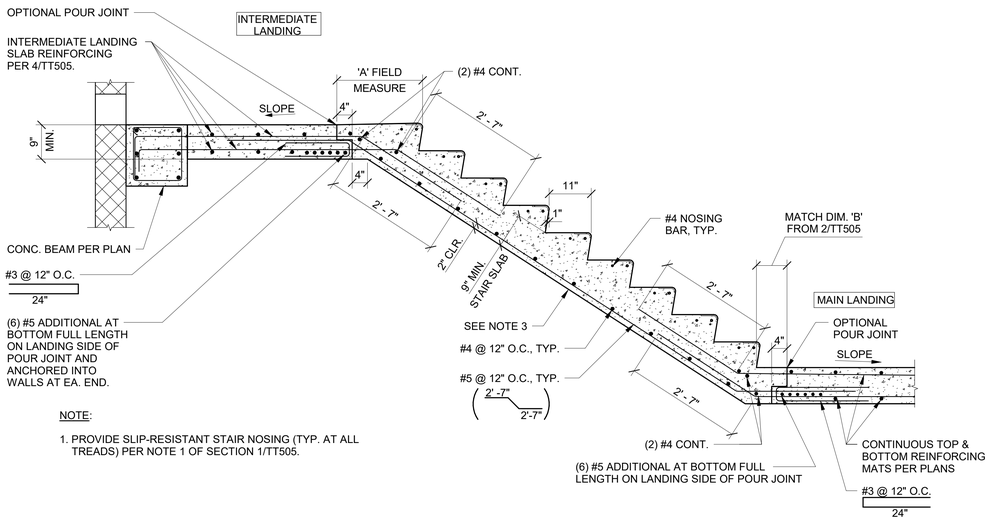
1 CONCRETE STAIR SECTION
TT201, TT401 TT505 SCALE 3/4" = 1'-0"



NOTE:

1. PROVIDE SLIP-RESISTANT STAIR NOSING (TYP. AT ALL TREADS) PER NOTE 1 OF SECTION 1/TT505.

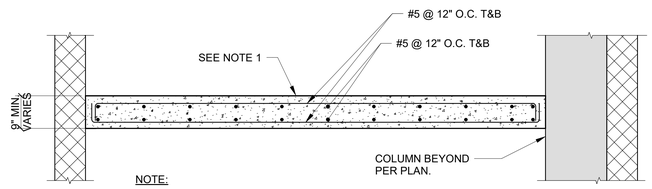
2 CONCRETE STAIR SECTION
TT401-TT403 TT505 SCALE 3/4" = 1'-0"



NOTE:

1. PROVIDE SLIP-RESISTANT STAIR NOSING (TYP. AT ALL TREADS) PER NOTE 1 OF SECTION 1/TT505.

3 CONCRETE STAIR SECTION
TT401-TT403 TT505 SCALE 3/4" = 1'-0"



NOTE:

1. SLOPE TOP SURFACE OF LANDING SLAB PER FLOOR PLANS.

4 INTERMEDIATE STAIR LANDING SECTION
TT401-TT403 TT505 SCALE 3/4" = 1'-0"

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TRAINING TOWER - CONCRETE STAIR SECTIONS

TT505

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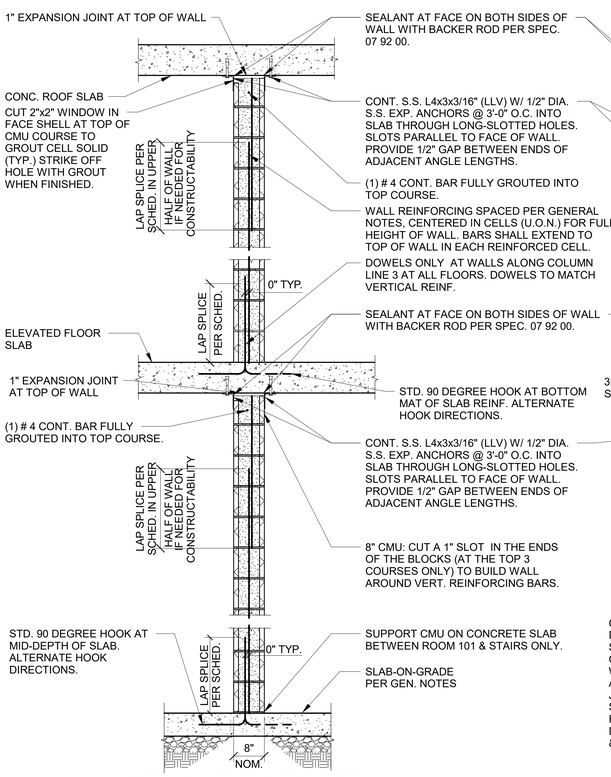
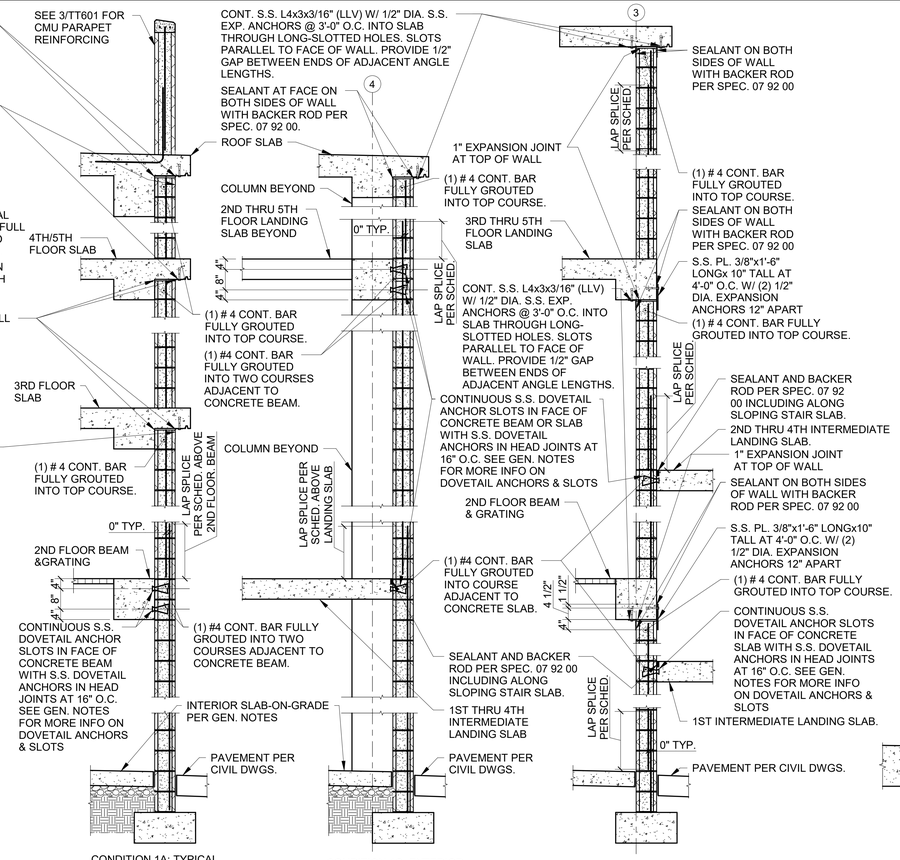


CONDITION 1: INTERIOR CONDITION EXCEPT AT STAIRS ALONG COLUMN LINE 3

NOTES:

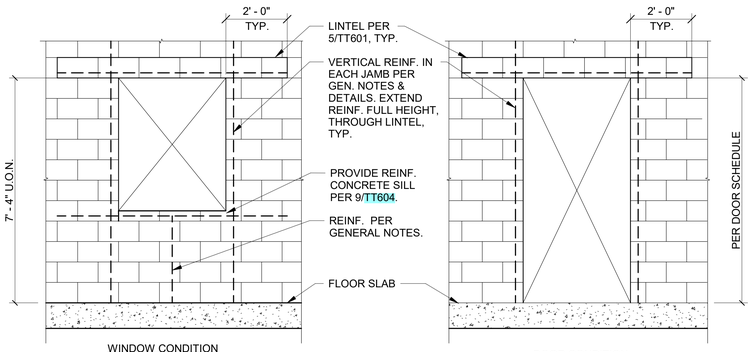
1. CONCRETE SLAB REINFORCING NOT SHOWN FOR CLARITY.
2. PROVIDE FULL 8" TALL COURSE AT TOPS OF ALL WALLS. IF WALL DOES NOT COURSE HORIZONTALLY, PROVIDE SHORT COURSE WITHIN WALL LENGTH AT ANY LOCATION OTHER THAN AT ENDS OF WALL OR AT JAMBS OF OPENINGS.
3. PROVIDE HORIZONTAL JOINT REINFORCING AT 16" O.C. MAX.
4. GROUT ALL CELLS SOLID, FULL-HEIGHT.
5. PROVIDE ADDITIONAL REINFORCING AT OPENINGS PER DETAIL 2/TT601.
6. BUILD WALL AFTER SLAB ABOVE HAS REACHED 28-DAY STRENGTH AND SHORING HAS BEEN REMOVED.
7. FOR EXTERIOR CMU WALLS THAT ARE NOT SUPPORTED ON FLOOR SLABS, LAP VERTICAL BARS ABOVE FLOOR LEVEL PER LAP SCHEDULE AT EACH LEVEL AS WALL EXTENDS TO UNDERSIDE OF ROOF SLAB.



CONDITION 1A: TYPICAL EXTERIOR CONDITION EXCEPT AT STAIRS

CONDITION 1C: EXTERIOR CONDITION AT STAIR ALONG COLUMN LINE 4

CONDITION 1B: INTERIOR CONDITION AT STAIR ALONG COLUMN LINE 3.



WINDOW CONDITION

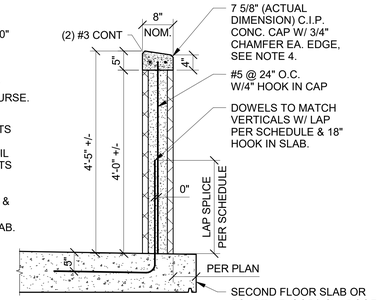
DOOR CONDITION

NOTES:

1. WHERE LINTEL INTERSECTS LINTEL FOR ADJACENT WINDOW, EXTEND REINFORCING FOR LINTELS ACROSS BOTH OPENINGS CONTINUOUSLY.

TYPICAL MASONRY WALL OPENING DETAILS

2 TT601 | TT601 SCALE 1/2" = 1'-0"

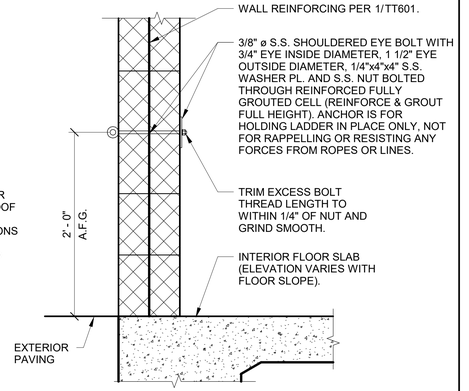


PER PLAN

SECOND FLOOR SLAB OR FOURTH FLOOR/LOW ROOF SLAB, SEE PLANS AND CONCRETE SLAB SECTIONS FOR SLAB THICKNESS, ELEVATION, SLOPE, AND REINFORCING.

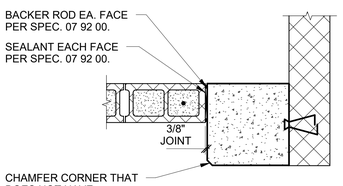
NOTES:

1. PROVIDE HORIZ. JOINT REINFORCING @ 16" O.C. MAX. PER GENERAL NOTES & SPECIFICATIONS.
2. TOPS OF ALL PARAPET WALLS SHALL BE THE SAME HEIGHT. CUT BOTTOM COURSE AS NECESSARY ALONG SLAB SLOPE.
3. GROUT ALL CELLS SOLID.
4. CONC. CAP SHALL BE C.I.P., 4,500 PSI, AIR-ENTRAINED CONCRETE PER GENERAL NOTE O.17 ON SHEET TT001.

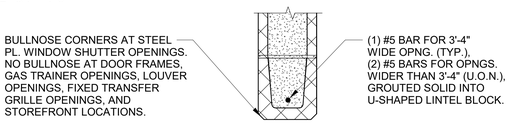


TYPICAL NON-BEARING MASONRY INFILL WALL

1A TT201-TT202 | 1C TT201-TT203 | 1B TT201-TT203 | 1 TT201-TT203 | TT601 SCALE 3/4" = 1'-0"

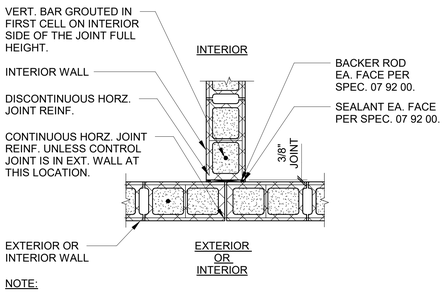


WALL INTERSECTING COLUMN - PLAN DETAIL



NOTES:

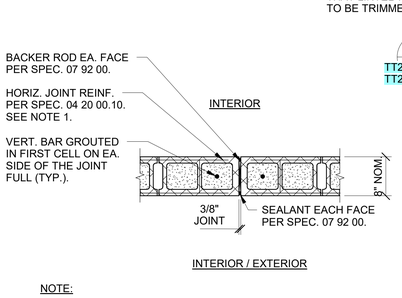
1. THIS DETAIL APPLIES TO ALL CMU DOOR, WINDOW, GAS TRAINER, LOUVER, AND FIXED TRANSFER GRILLE OPENINGS, U.O.N.
2. BEAR LINTEL ON WALL FOR 2'-0" AT EACH END.
3. WHERE TOP OF LINTEL WOULD BE AT A HIGHER ELEVATION THAN THE BOTTOM OF THE WALL'S 8" TALL TOP COURSE, TRIM UP TO 4" OFF THE TOP OF THE U-SHAPED LINTEL SO THAT LINTEL WILL FIT BELOW THE 8" TALL TOP COURSE. IF MORE THAN 4" WOULD HAVE TO BE TRIMMED FROM THE TOP OF THE LINTEL, NOTIFY ENGINEER FOR DIRECTION.



NOTE:

1. THIS DETAIL APPLIES ONLY WHERE SHOWN IN PLAN ON SHEETS TT201 THROUGH TT203.

T-INTERSECTION WALL PLAN DETAIL



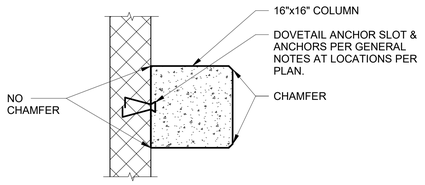
INTERIOR / EXTERIOR

NOTE:

1. THIS DETAIL APPLIES ONLY WHERE SHOWN IN ELEVATION.

STRAIGHT WALL PLAN DETAIL

5 TT201-TT203 | TT601 SCALE 1 1/2" = 1'-0"



CONC. COLUMN TIGHT TO CMU WALL

NOTES FOR ALL CONDITIONS:

1. STOP HORIZONTAL JOINT REINF. 2" FROM JOINT AT EA. SIDE OF JOINT.
2. AT BOND BEAMS AND LINTELS, PROVIDE CONTROL JOINTS AT FACES OF BLOCK, AS SHOWN. MAINTAIN CONTINUOUS BOND BEAM/LINTEL REINFORCING THROUGH THE JOINT (CUT HORIZ. JOINT REINFORCING, DO NOT CUT HORIZ. BOND BEAM/LINTEL REINFORCING).
3. PLACE CONTROL JOINTS SO THEY ALTERNATE BETWEEN BEING IN A HEAD JOINT AND AT THE CENTER OF THE 16" LONG BLOCK FROM ONE COURSE TO THE NEXT. IGNORE THE DIAGRAMMATIC COURSING LINES ON THE ELEVATIONS BUT DO LOCATE THE JOINTS AT THE LOCATIONS SHOWN ON THOSE SHEETS, INCLUDING WHERE THE JOINT IS SHOWN AT THE CORNER OF A WALL OPENING. NOTIFY ENGINEER IF THERE IS ANY CONFLICT BETWEEN JOINT LOCATION AND REQUIREMENT FOR LOCATING JOINTS IN HEAD JOINTS.

6 TT301-TT302 | TT601 SCALE 1" = 1'-0"

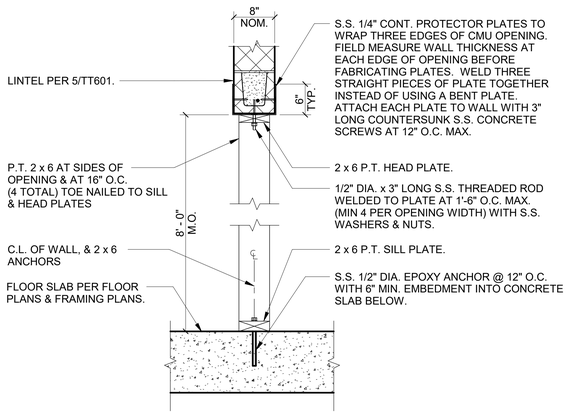
MASONRY CONTROL JOINT PLAN DETAILS

3 TT202, TT203 | TT601 SCALE 3/4" = 1'-0"

CMU PARAPET SECTION

4 TT301, TT302 | TT601 SCALE 1 1/2" = 1'-0"

LADDER TIE OFF DETAIL



NOTES:

1. REINFORCE AROUND OPENING PER 2/TT601.

7 TT202 | TT601 SCALE 1" = 1'-0"

BREACH WALL MOCKUP DETAIL

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SHEET **TRAINING TOWER - TYPICAL MASONRY DETAILS**

TT601

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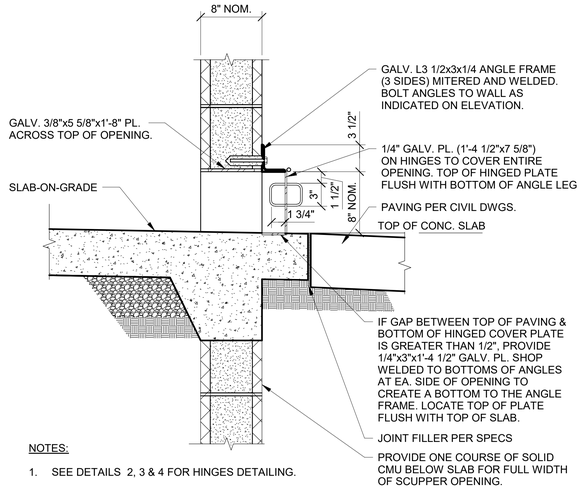
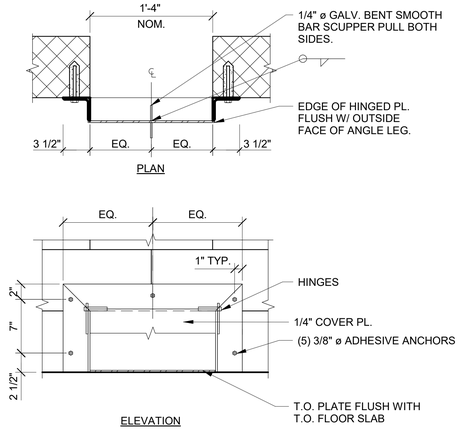


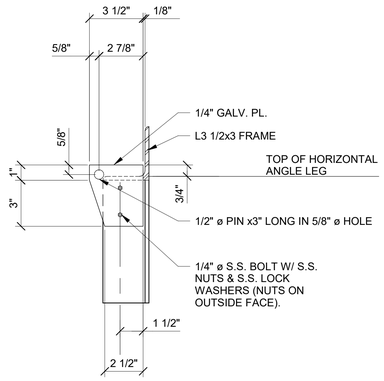
NOTES:

1. SEE DETAILS 2, 3 & 4 FOR HINGES DETAILING.

1 TT201-TT203 | TT602 SCALE 1 1/2" = 1'-0"

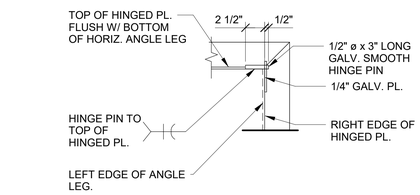
SCUPPER DETAILS - TYPE 1





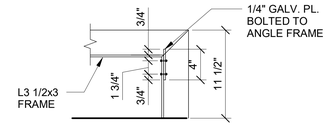
2 TT602 | TT602 SCALE 3" = 1'-0"

SECTION - SCUPPER HINGE



3 TT602 | TT602 SCALE 1 1/2" = 1'-0"

ELEVATION - SCUPPER HINGE PIN



NOTES:

1. HINGE PIN NOT SHOWN IN THIS ELEVATION FOR CLARITY.

4 TT602 | TT602 SCALE 1 1/2" = 1'-0"

ELEVATION - SCUPPER HINGE PLATE

SECTION WITHOUT OVERHANG

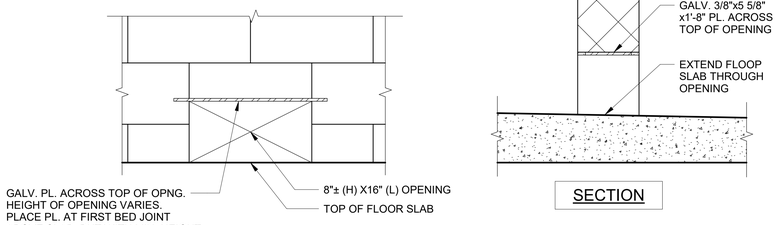
SECTION AT SLAB OVERHANG

NOTES:

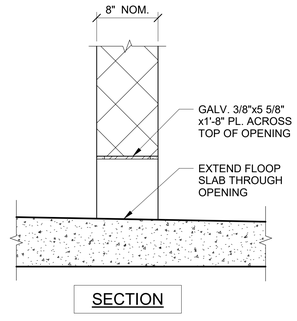
1. SEE DETAILS 2, 3 & 4 FOR HINGES DETAILING.

5 TT201-TT203 | TT602 SCALE 1 1/2" = 1'-0"

SCUPPER TYPE 2 ELEVATED FLOOR



ELEVATION



SECTION

OPENING AT BASE OF INTERIOR & PARAPET WALLS

6 TT201-TT203 | TT602 SCALE 1 1/2" = 1'-0"

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TT602

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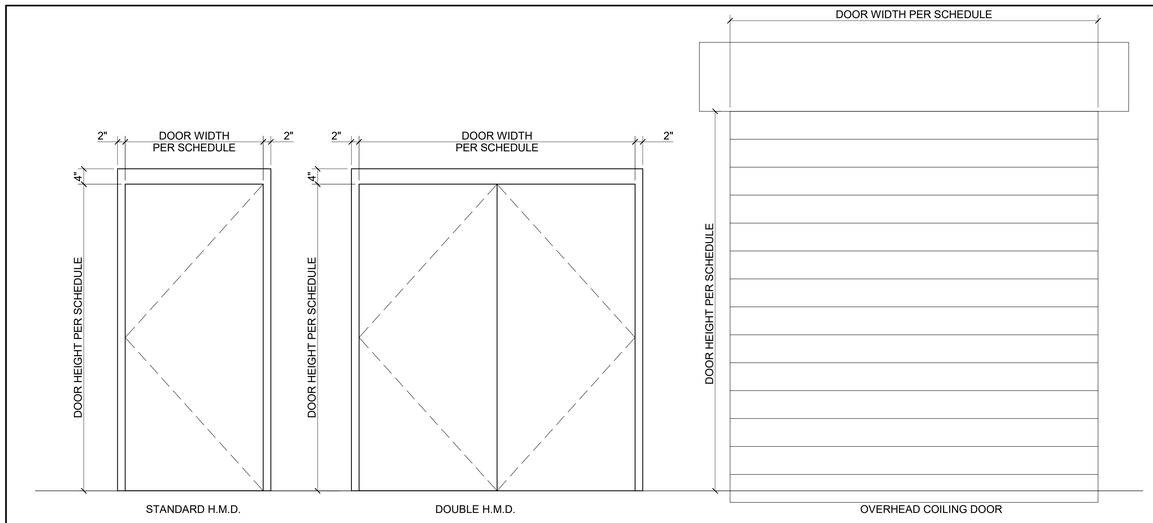


1 HOLLOW METAL DOOR ELEVATIONS

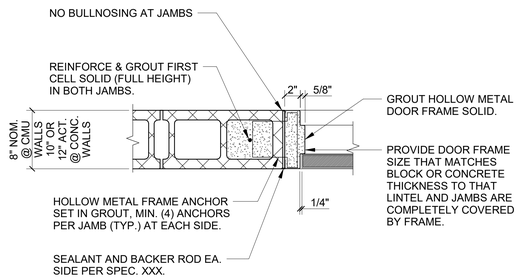
TT201-TT203 | TT603 SCALE 3/4" = 1'-0"

HOLLOW METAL DOOR SCHEDULE

DOOR NO.	INT/EXT	R.O. WIDTH	R.O. HEIGHT	DOOR DIMENSION WIDTH	DOOR DIMENSION HEIGHT	DOOR SS TYPE MARK	DOOR TYPE	DOOR FINISH	FRAME TYPE	FRAME FINISH	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	HDW	THRESHOLD	SWEEP	REMARKS
300	INT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	N	
301	INT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	N	
301A	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	Y	
EXT-100A	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	001	N	Y	
EXT-100B	EXT	8' - 0"	6' - 8"	8' - 0"	6' - 8"	OCD		PNT		PNT					N	N	SEE NOTE 8.
EXT-101	EXT	6' - 8"	7' - 4"	6' - 4"	7' - 0"	DHMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	003	N	Y	
EXT-200	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	001	N	Y	
EXT-302	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	001	N	Y	
EXT-400	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	001	N	Y	
EXT-ST-1	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	001	N	Y	
ST-1	INT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	N	
ST-2	INT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	N	
ST-3	INT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	N	
ST-4	INT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	002	N	N	
ST-5	EXT	3' - 4"	7' - 4"	3' - 0"	7' - 0"	HMD	G-90	PNT	G-90	PNT	3/TT603	2/TT603	4/TT603	001	N	Y	

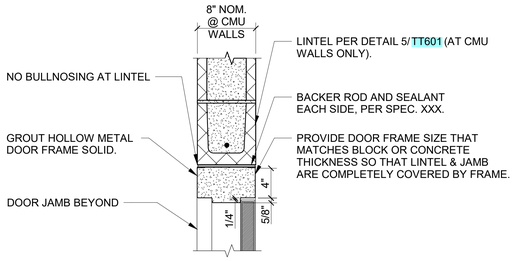
DOOR SCHEDULE NOTES:

1. REFERENCE SPEC. SECTION 08 11 13 FOR HOLLOW METAL DOORS AND FRAMES, INCLUDING MATERIALS AND FINISHES.
2. REFERENCE SPEC. SECTION 08 71 00 FOR DOOR HARDWARE INFORMATION.
3. PAINT ALL INTERIOR AND EXTERIOR HOLLOW METAL DOORS AND FRAMES PER DIVISION 09 SPECIFICATION SECTION "PAINTING".
4. ALL HOLLOW METAL DOOR FRAMES SHALL BE GROUT FILLED.
5. DOOR HEIGHT SHALL BE MEASURED FROM LOW SIDE ("TALL JAMB").
6. TRIM THE DOOR FRAME AT THE HIGH SIDE ("SHORT JAMB") SO IT WILL FIT IN OPENING SIZE. IF THE WALL IS PERPENDICULAR TO THE DIRECTION OF THE FLOOR SLOPE, BOTH JAMBS SHOULD BE THE SAME HEIGHT, AND THE DOOR FRAME SHOULD NOT REQUIRE TRIMMING TO FIT IN THE OPENING.
7. GRIND THE BOTTOM OF THE DOOR FRAME SMOOTH AT ANY CUT LOCATIONS.
8. PROVIDE 4" GAP AT BOTTOM OF DOORS PER DETAIL 5/TT603, NO GAP AT DOOR HEAD.
9. BASIS OF DESIGN FOR OVERHEAD COILING DOOR SHALL BE A MANUALLY-OPERATED GALVANIZED ROLLING SERVICE DOOR, SERIES 610, BY OVERHEAD DOOR CORPORATION. MOUNT DOOR TO EXTERIOR FACE OF CMU WALL. SIZE OF ROUGH OPENING IS APPROXIMATELY 8'-0" WIDE x 8'-0" HIGH. PROVIDE ALL COMPONENTS TO MAKE DOOR LOCKABLE WHEN IN CLOSED POSITION. SUBMIT SHOP DRAWINGS AND PRODUCT LITERATURE SHOWING COMPONENTS, SIZES AND ATTACHEMENTS TO THE STRUCTURE TO THE ENGINEER FOR REIVEW AND APPROVAL PRIOR TO FABRICATION.
10. SEE DETAIL 5/TT606 FOR ELEVATOR DOOR DETAILS.



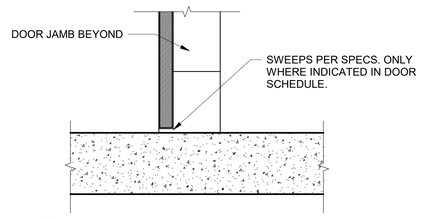
2 HOLLOW METAL DOOR JAMB DETAIL

TT603 | TT603 SCALE 1 1/2" = 1'-0"



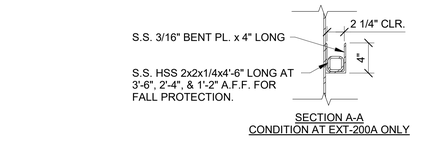
3 HOLLOW METAL DOOR HEAD DETAIL

TT603 | TT603 SCALE 1 1/2" = 1'-0"

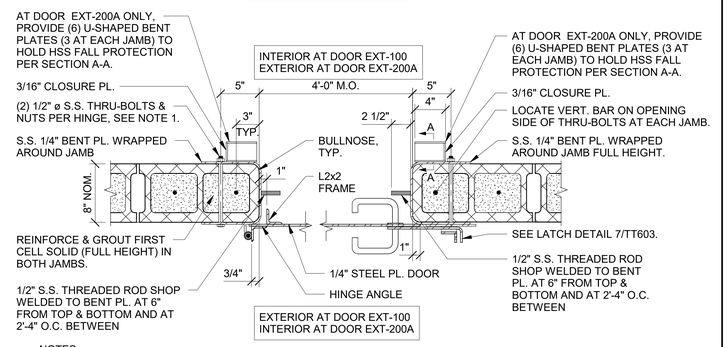


4 H.M.D. THRESHOLD DETAIL

TT603 | TT603 SCALE 1 1/2" = 1'-0"



SECTION A-A
CONDITION AT EXT-200A ONLY

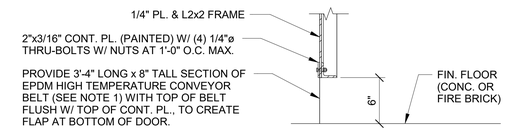


NOTES:

1. INSTALL BEFORE PLACING VERTICAL REINFORCING BAR AND GROUT IN JAMB CELLS. TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF END OF NUTS AND GRIND END OF BOLT SMOOTH.
2. AT NOTED LOCATIONS, FIELD DRILL PLATE TO ACCEPT BOLT. PASS BOLT THROUGH PLATE, CUT FLUSH W/ EXPOSED FACE OF PLATE, PLUG WELD, AND GRIND SMOOTH. AS AN ALTERNATE METHOD AT HINGES BUT NOT AT LATCH, IT IS ACCEPTABLE TO SHOP WELD THRU-BOLTS TO BACK OF PLATE AND PROVIDE S.S. NUTS AND LOCK WASHERS AT HINGE BENT PL. IF THIS METHOD IS CHOSEN, THEN TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF END OF NUTS AND GRIND SMOOTH.
3. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE WALLS & COLUMN FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". SEAL GAP AT THE DOOR JAMB WITH SEALANT PER THE SPECIFICATIONS.

STANDARD STEEL PLATE DOOR JAMB DETAIL

5 | TT603 | TT603 SCALE 1 1/2" = 1'-0"

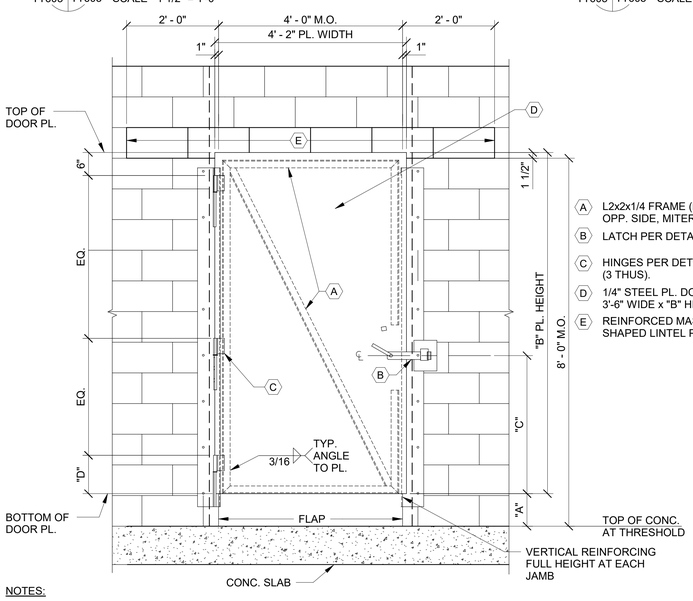


NOTE:

1. PROVIDE EPDM HIGH TEMPERATURE CONVEYOR BELT, 3/8" GAUGE WITH POLYNYLON FABRIC TYPE AND A WORKING TEMPERATURE OF 0°-600°, WITH A PEAK TEMPERATURE OF 750° (2/220 3/16x1/16 EPDM HIGH TEMP BELT BY CONVERYORBELT.COM OR AN APPROVED EQUIVALENT). INSTALL SO TOP COVER OF BELT FACES INSIDE FACE OF DOOR.

8 STEEL PLATE DOOR SILL DETAIL

TT603 | TT603 SCALE 1 1/2" = 1'-0"



A L2x2x1/4 FRAME (PAINTED) OPP. SIDE, MITER & WELD JOINTS.
B LATCH PER DETAIL 7/TT603
C HINGES PER DETAIL 3/TT604 (3 THUS).
D 1/4" STEEL PL. DOOR (PAINTED) 3'-6" WIDE x "B" HIGH
E REINFORCED MASONRY U-SHAPED LINTEL PER 6/TT604

NOTES:

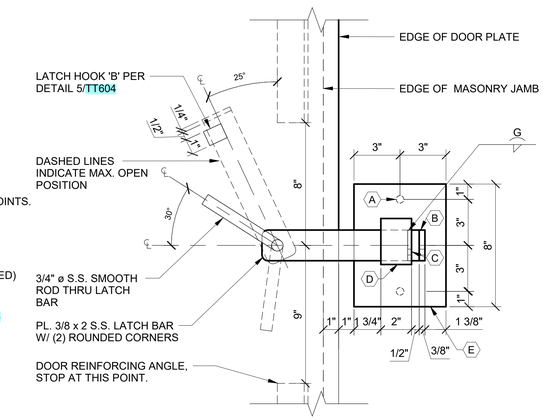
1. SEE FLOOR PLANS FOR DOOR SWING DIRECTION.
2. SEE DETAILS 5 & 8 ON THIS SHEET AND DETAIL 6/TT604 FOR JAMB, SILL & HEAD DETAILS.
3. SEE DOOR DETAIL SCHEDULE ON THIS SHEET FOR DIMENSIONS "A", "B", "C" AND "D".
4. USE TOP OF CONCRETE FLOOR ELEVATION AT CENTER OF DOORWAY AS POINT OF REFERENCE FOR DOOR DIMENSIONS. IF THERE IS A CONCRETE STEP AT ONE FACE OF THE WALL AT DOORWAY, USE TOP OF CONCRETE BETWEEN JAMBS AS POINT OF REFERENCE.

DOOR DETAIL SCHEDULE

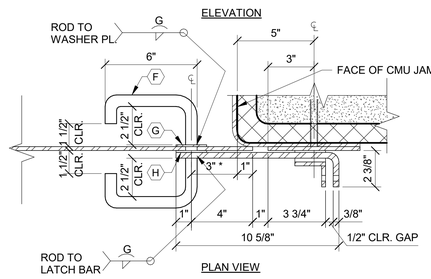
DOOR MARK	DIMENSION MARK "A"	"B"	"C"	"D"	DOOR TYPE	NOTES	PRIMARY DETAIL
EXT-100	6"	7'- 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	6/TT603
EXT-200A	6"	7'- 7 1/2"	3' - 0"	10"	STANDARD STEEL PL.	------	6/TT603

6 ELEVATION - STANDARD STEEL PLATE DOOR

TT201 | TT603 SCALE 3/4" = 1'-0"



A (2) 1/2"ø S.S. THREADED RODS SHOP WELDED TO BACK OF WELD PL.
B LATCH BAR, BEND END TO MATCH LATCH PLATE. DRILL & GRIND TO MATCH LATCH PLATE.
C LATCH PLATE PER DETAIL 4/TT604
D LATCH HOOK 'A' PER DETAIL 5/TT604
E 1/4x6x8 S.S. WELD PL.
F 3/4" ø S.S. BENT SMOOTH ROD (ALL ONE PIECE)
G 1/8" THICK x 2" ø S.S. WASHER PL.
H 1/8" THICK x 2" ø S.S. WASHER BETWEEN LATCH BAR AND DOOR (DO NOT WELD WASHER TO ANY ITEM).



SEQUENCE NOTES:

1. PASS ROD THROUGH 7/8"∅ HOLE IN LATCH BAR.
2. PASS ROD THROUGH 7/8"∅ HOLE IN DOOR PLATE WITH WASHER BETWEEN LATCH BAR AND DOOR PLATE.
3. WELD ROD TO LATCH BAR.
4. HOLD ASSEMBLY FIRMLY IN PLACE AND WELD ROD TO WASHER AT INTERIOR FACE OF DOOR. FINISHED ASSEMBLY SHALL NOT WOBBLE AND SHALL ROTATE EASILY WITHOUT SIGNIFICANT EFFORT.

STANDARD STEEL PLATE DOOR LATCH DETAILS

7 | TT603 | TT603 SCALE 3" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - DOOR DETAILS AND SCHEDULES**

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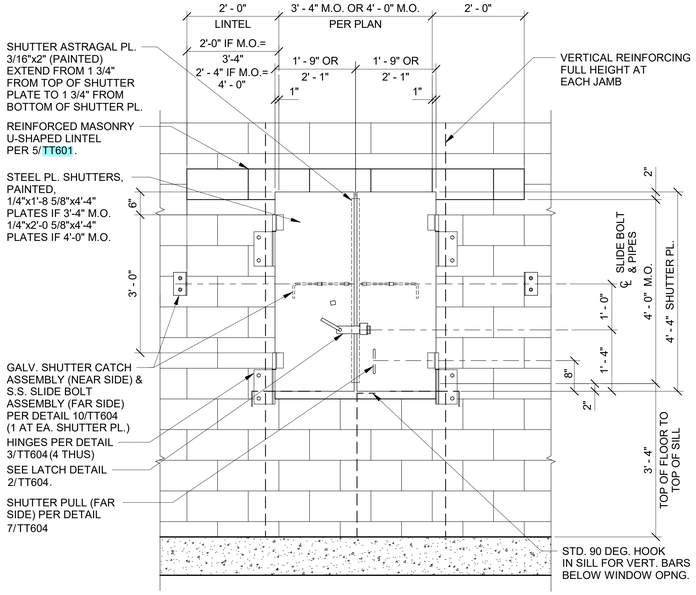
TT603

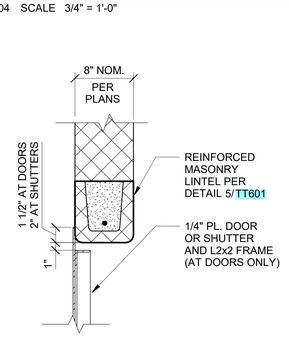


NOTES:

1. SEE DETAILS 3, 4 & 5 ON THIS SHEET FOR JAMB, HEAD, AND SILL DETAILS. PER 10/TT604 FOR WINDOW SHUTTER CATCH DETAIL.
2. USE TOP OF CONCRETE FLOOR ELEVATION AT CENTER OF WINDOW OPENING AS POINT OF REFERENCE FOR WINDOW DIMENSIONS.
3. SEE FLOOR PLANS FOR WINDOW SHUTTER SWING DIRECTION.
4. AT LOCATIONS WHERE A LADDER TIE-OFF POINT IS BELOW WINDOW, REINFORCE & GROUT EVERY CELL BELOW WINDOW SILL PER 4/TT601.

1 TYPICAL WINDOW EXTERIOR ELEVATION

TT604 TT604 SCALE 3/4" = 1'-0"



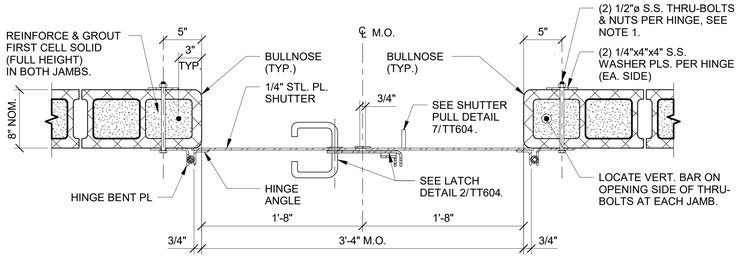
AT MASONRY WALLS

NOTES:

1. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE WALLS & COLUMN FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". SEAL GAP AT THE WINDOW HEAD WITH SEALANT (FIRE RATED AT BURN ROOMS) PER THE SPECIFICATIONS.
2. SEE TYPICAL LINTEL DETAIL 5/TT601 FOR LINTEL REINFORCING.

6 STEEL PL. DOOR AND WINDOW HEAD SECTIONS

TT603, TT604 TT604 SCALE 1 1/2" = 1'-0"

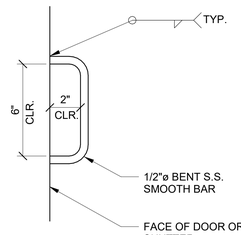


NOTES:

1. AT MASONRY WALLS, INSTALL THRU-BOLTS BEFORE PLACING VERTICAL REINFORCING BAR AND GROUT IN JAMB CELLS. TRIM EXCESS THREAD LENGTH TO WITHIN 1/4" OF ENDS OF NUTS. GRIND SMOOTH AND TACK WELD NUTS TO BOLTS AFTER TIGHTENING.

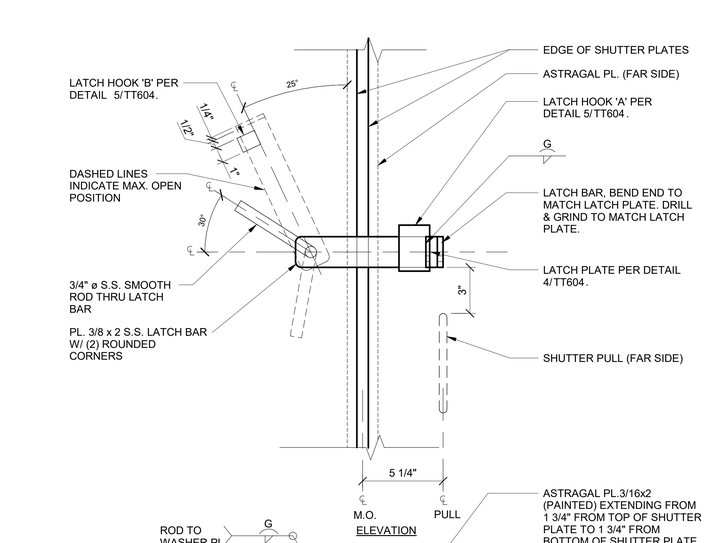
8 WINDOW JAMB PLAN DETAILS

TT604 TT604 SCALE 1 1/2" = 1'-0"



7 PULL HANDLE SECTION

TT604 TT604 SCALE 3" = 1'-0"

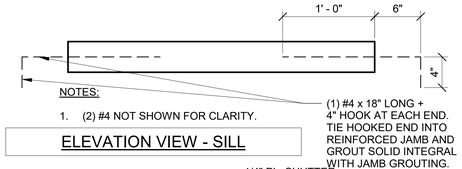


SEQUENCE NOTES:

1. PASS ROD THROUGH 7/8"Ø HOLE IN LATCH BAR.
2. PASS ROD THROUGH 7/8"Ø HOLE IN SHUTTER PL. WITH WASHER BETWEEN LATCH BAR AND SHUTTER PL.
3. WELD ROD TO LATCH BAR.
4. HOLD ASSEMBLY FIRMLY IN PLACE AND WELD ROD TO WASHER AT INTERIOR FACE OF SHUTTER. FINISHED ASSEMBLY SHALL NOT WOBBLE AND SHALL ROTATE EASILY WITHOUT SIGNIFICANT EFFORT.

2 WINDOW SHUTTER LATCH DETAILS

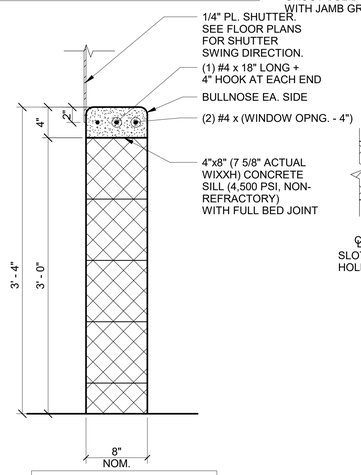
TT604 TT604 SCALE 3" = 1'-0"



NOTES:

1. (2) #4 NOT SHOWN FOR CLARITY.

ELEVATION VIEW - SILL



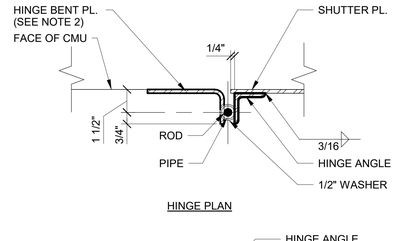
NOTES:

1. MASONRY WALLS SHALL BE TIGHT AGAINST CONCRETE WALLS & COLUMN FACES WITH A GAP BETWEEN THE TWO NOT EXCEEDING 3/8". SEAL GAP AT THE WINDOW SILL WITH SEALANT (FIRE RATED AT BURN ROOMS) PER THE SPECIFICATIONS.

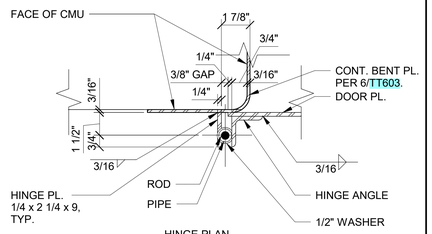
SECTION VIEW

9 WINDOW SILL SECTIONS

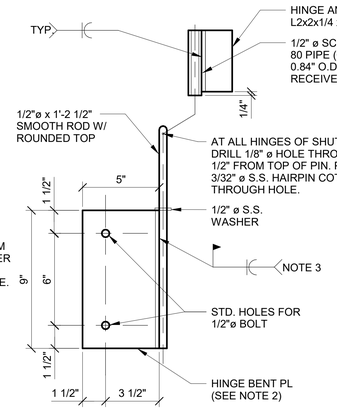
TT604 TT604 SCALE 1 1/2" = 1'-0"



HINGE PLAN



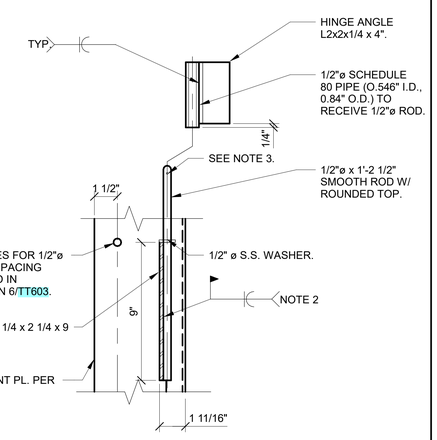
HINGE PLAN



TYPICAL SHUTTER HINGE ELEVATION

NOTES:

1. ALL PIECES SHALL BE S.S.
2. BENT PL. 1/4x5x2 1/4x9 @ ALL STEEL PL. WINDOWS.
3. HOLD SHUTTER IN PLACE WHILE FIELD WELDING ROD TO ASSURE PROPER FIT AND OPERATION OF HUNG SHUTTER.



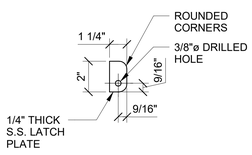
TYPICAL STEEL PL. DOOR HINGE ELEVATION

NOTES:

1. ALL PIECES SHALL BE S.S.
2. HOLD DOOR IN PLACE WHILE FIELD WELDING ROD TO ASSURE PROPER FIT AND OPERATION OF HUNG SHUTTER.
3. AT TOP OF DOOR HINGES, DRILL 1/8" ø HOLE THROUGH PIN, 1/2" FROM TOP OF PIN. PROVIDE 3/32" ø S.S HAIRPIN COTTER PIN THROUGH HOLE.

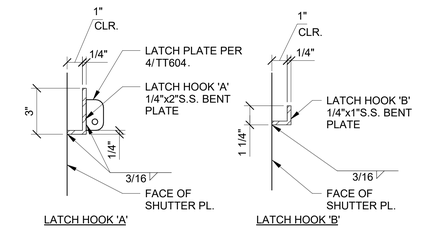
TYPICAL SHUTTER & STEEL PL. DOOR HINGE DETAILS

3 TT603, TT604 TT604 SCALE 3" = 1'-0"



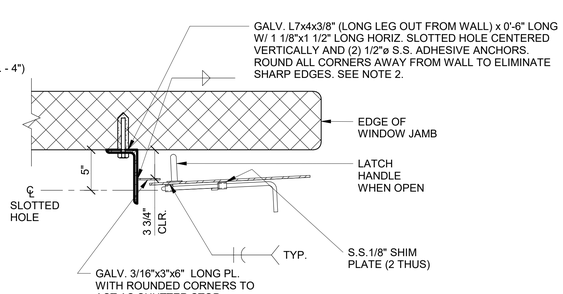
4 LATCH PLATE SECTION

TT603, TT604 TT604 SCALE 3" = 1'-0"



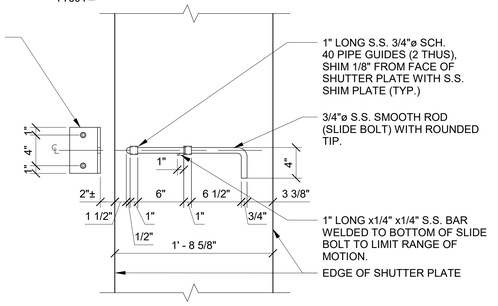
5 SHUTTER LATCH HOOK DETAILS

TT603, TT604 TT604 SCALE 3" = 1'-0"



NOTE: HINGES NOT SHOWN.

PLAN VIEW



ELEVATION VIEW

NOTES:

1. SHUTTER PLATE IS SHOWN IN OPEN POSITION FROM EXTERIOR ELEVATION. LATCH BAR HAS BEEN OMITTED FROM THIS DETAIL.
2. AFTER HANGING SHUTTERS, OPEN SHUTTERS AND LAY BACK AGAINST WALL. FIELD LOCATE AND INSTALL CATCH ANGLES ON BOTH SIDES SO THAT SLIDE BOLTS ALIGN WITH SLOTTED HOLES AND OPERATE SMOOTHLY.

10 WINDOW SHUTTER CATCH ASSEMBLY DETAILS

TT604 TT604 SCALE 1 1/2" = 1'-0"

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SAMET
IFB PLANSET
Rec'd 1.16.2025

NO.	REVISION	DATE

JOB NUMBER **22056**
DATE ISSUED **01/10/25**
PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - TYPICAL WINDOW SHUTTER DETAILS**

TT604

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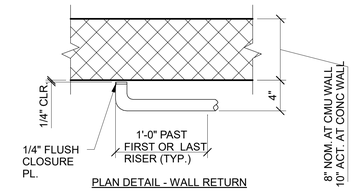
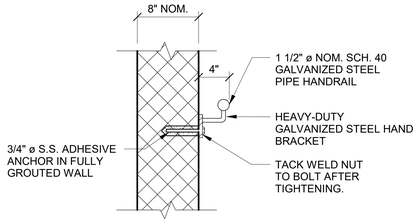


PLAN DETAIL - WALL RETURN



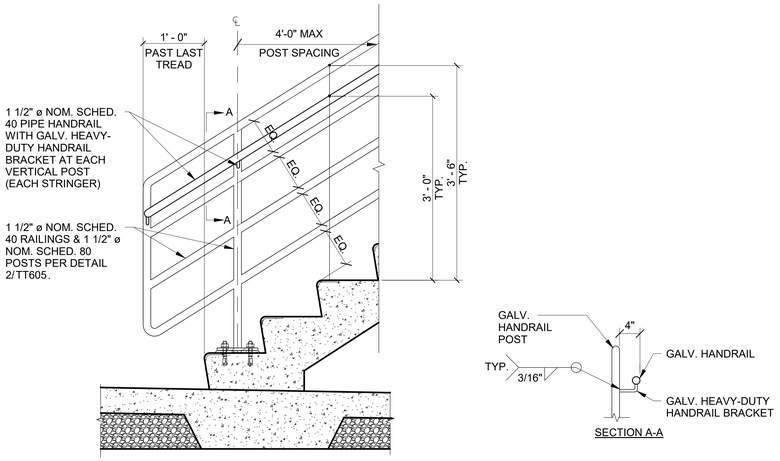
SECTION - CMU WALL CONNECTION

NOTES:

1. PROVIDE BRACKETS AT 3'-0" O.C. MAX.
2. PROVIDE DISTANCE OF 36" FROM TOP OF STAIR TREAD AT NOSINGS TO TOP OF HANDRAIL (TYP.).
3. SEAL GALVANIZING VENT HOLES PER GENERAL NOTE Q.7 IN PIPES OF HANDRAIL.
4. SHOP WELD THRU BOLTS TO BACK OF WASHER PLATE AND PROVIDE S.S. NUTS AT HANDRAIL BRACKETS. TACK WELD NUTS TO BOLTS AFTER TIGHTENING.

1 HANDRAIL DETAILS FOR INTERIOR STAIRS

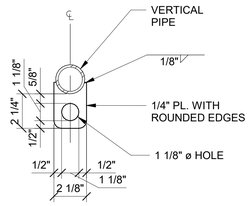
TT201-TT203 | TT605 SCALE 1 1/2" = 1'-0"



SECTION A-A

GUARDRAIL + HANDRAIL AT CONCRETE STAIR SECTION

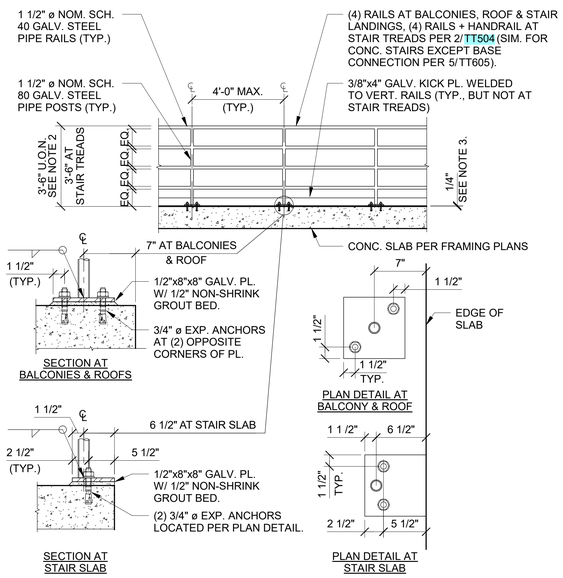
5 | TT201, TT401, TT605 | TT605 SCALE 1" = 1'-0"



PLAN DETAIL

8 PLAN DETAIL - ROD GUIDE PLATE

TT605, TT606 | TT605 SCALE 3" = 1'-0"



SECTION AT BALCONIES & ROOFS

PLAN DETAIL AT BALCONY & ROOF

SECTION AT STAIR SLAB

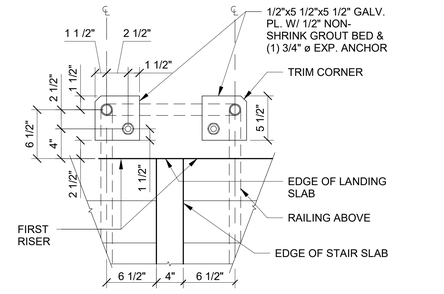
PLAN DETAIL AT STAIR SLAB

NOTES:

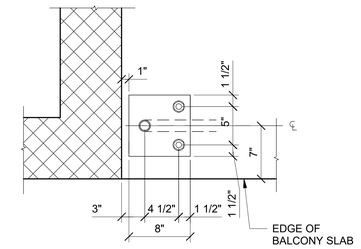
1. SEE DETAILS ON SHEET TT504 FOR RAILING CONNECTION AT EXTERIOR STEEL STAIRS, TT502 FOR RAILING CONNECTION AT MEZZANINE, AND TT504 FOR HANDRAIL THAT IS WELDED TO GUARDRAIL AT EXTERIOR STAIRS.
2. SLOPE HORIZONTAL RAILS WITH SLOPE OF SLAB TO MAINTAIN 3'-6" HEIGHT FROM TOP OF SLAB TO TOP OF TOP RAIL.
3. SLOPE KICK PLATE WITH SLOPE OF SLAB TO MAINTAIN 1/4" GAP BETWEEN TOP OF SLAB AND BOTTOM OF PL.
4. SEAL GALVANIZING VENT HOLES PER GENERAL NOTE Q.10 ON TT001 AT ALL RAILINGS AND GATES.
5. SEE DETAIL 5/TT605 FOR GUARDRAIL AND HANDRAIL AT INTERIOR CONCRETE STAIRS.

2 TYPICAL FIXED RAILING DETAILS

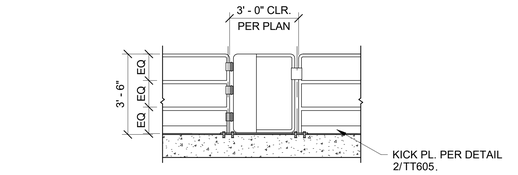
TT201-TT203, TT605 | TT605 SCALE 3/8" = 1'-0"



TYP. PLAN DETAIL AT STAIR LANDINGS (SWITCHBACK STAIR)



PLAN DETAIL-LOW ROOF PARAPET & 3RD FLOOR INSET BALCONY AGAINST EXT.WALL

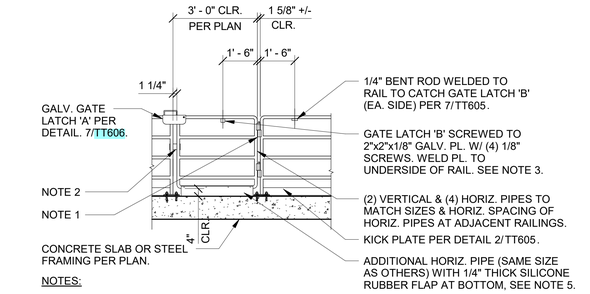


NOTES:

1. PROVIDE GALV. SELF-CLOSING LADDER SAFETY GATE, MODEL EDGEHALT FULL HEIGHT # LSGF-36-GAL, BY PS SAFETY ACCESS AT WWW.PSSAFETYACCESS.COM,OR AN EQUIVALENT APPROVED BY THE ENGINEER.
2. SEE PLANS FOR SWING DIRECTION OF GATE.
3. SEE DETAIL 2/TT605 FOR ADDITIONAL INFORMATION NOT SHOWN.

3 SELF-CLOSING GUARDRAIL GATE DETAIL

TT203 | TT605 SCALE 3/8" = 1'-0"

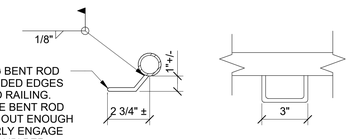


NOTES:

1. PROVIDE (2) HINGES PER DETAIL 10/TT605 .
2. 3/16"x4" HIGH GALV. PL. WELDED TO FAR SIDE OF FIXED RAIL TO PREVENT GATE FROM SWINGING IN OPPOSITE DIRECTION.
3. PROVIDE A GATE LATCH, STRAIGHT ARM FROM HARDWARESOURCE.COM, SKU# 504670, OR AN APPROVED EQUIVALENT.
4. SEE PLANS FOR SWING DIRECTION OF GATE.
5. ATTACH RUBBER FLAP TO BOTTOM HORIZONTAL PIPE WITH (4) 1/4" DIA. ZINC-PLATED THRU-BOLTS WITH NUTS AND WASHERS AT 1'-0" O.C. MAX.

4 SINGLE-SWINGING GATE GUARDRAIL DETAIL

TT201-TT203 | TT605 SCALE 3/8" = 1'-0"

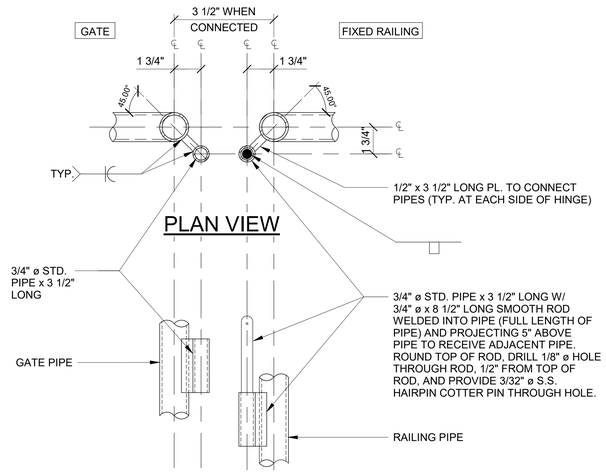


SECTION

PLAN DETAIL

7 BENT ROD DETAILS

TT605 | TT605 SCALE 3" = 1'-0"

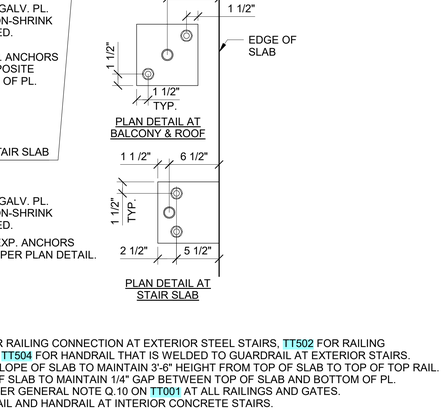


PLAN VIEW

ELEVATION

10 GUARDRAIL HINGE DETAIL

TT605 | TT605 SCALE 3" = 1'-0"



ELEVATION

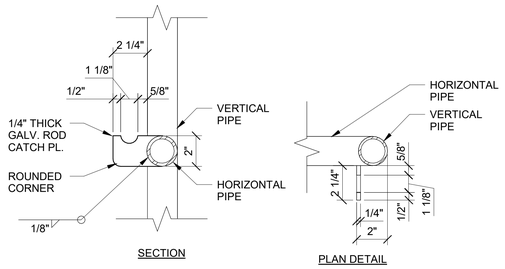
SECTION A-A

NOTES:

1. PROVIDE CURVED NOTCH IN TOP OF BENT PL. LATCH AT THIS END TO ALLOW PLATE TO PIVOT (KEEP NOTCH AS SMALL AS POSSIBLE).

9 DETAIL - GATE LATCH 'A'

TT605, TT606 | TT605 SCALE 3" = 1'-0"



SECTION

PLAN DETAIL

6 ROD CATCH PLATE DETAILS

TT605, TT606 | TT605 SCALE 3" = 1'-0"

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JOB NUMBER **22056**
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PROJECT STATUS **ISSUE FOR BID**
SHEET **TRAINING TOWER - TYPICAL RAILING DETAILS**

TT605

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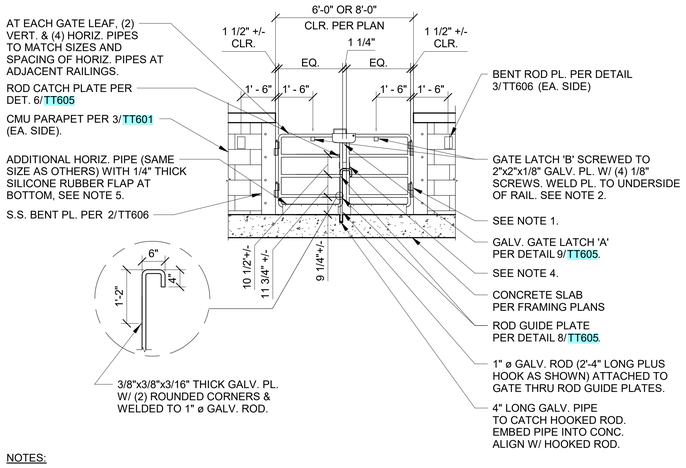
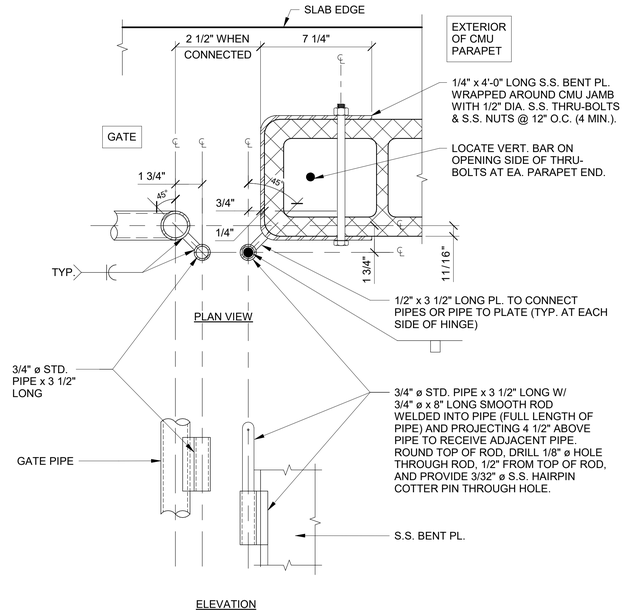


NOTES:

1. PROVIDE (4) HINGES PER DETAIL 2/TT606.
2. PROVIDE A GATE LATCH, STRAIGHT ARM FROM HARDWARESOURCE.COM, SKU# 504670 OR AN APPROVED EQUIVALENT.
3. SEE PLANS FOR SWING DIRECTIONS OF GATES.
4. 3/16"x4" HIGH GALV. PL. WELDED TO FAR SIDE OF GATE THAT HAS VERTICAL SLIDING LATCH ROD TO PREVENT OTHER GATE FROM SWINGING IN OPPOSITE DIRECTION.
5. AT EACH GATE LEAF, ATTACH RUBBER FLAP TO BOTTOM HORIZONTAL PIPE WITH (4) 1/4" DIA. ZINC- PLATED THRU-BOLTS WITH NUTS & WASHERS AT 1'-0" O.C. MAX.

1 DOUBLE-SWINGING GATE GUARDRAIL AT CMU PARAPET DETAILS

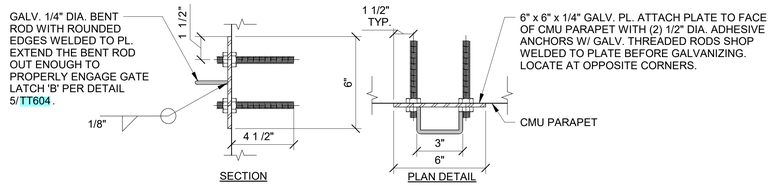
TT606 | TT606 SCALE 3/8" = 1'-0"



ELEVATION

2 GUARDRAIL GATE HINGE AT PARAPET DETAIL

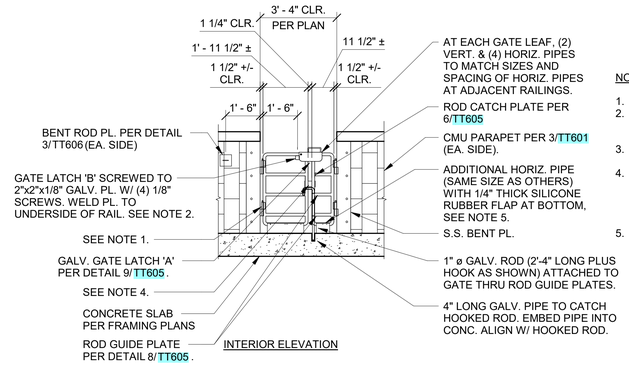
TT606 | TT606 SCALE 3" = 1'-0"



NOTE: SHOP WELD ALL COMPONENTS AND THEN HOT DIP GALVANIZE ENTIRE ASSEMBLY.

3 BENT ROD AT PARAPET DETAILS

TT606 | TT606 SCALE 3" = 1'-0"

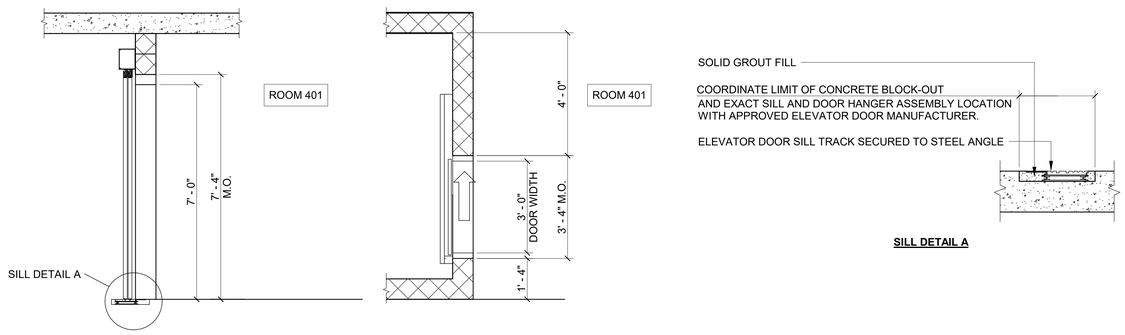


NOTES:

1. PROVIDE (4) HINGES PER DETAIL 2/TT606.
2. PROVIDE A GATE LATCH, STRAIGHT ARM FROM HARDWARESOURCE.COM, SKU# 504670 OR AN APPROVED EQUIVALENT.
3. SEE PLANS FOR SWING DIRECTIONS OF GATES.
4. 3/16"x4" HIGH GALV. PL. WELDED TO FAR SIDE OF GATE THAT HAS VERTICAL SLIDING LATCH ROD TO PREVENT OTHER GATE FROM SWINGING IN OPPOSITE DIRECTION.
5. AT EACH GATE LEAF, ATTACH RUBBER FLAP TO BOTTOM HORIZONTAL PIPE WITH (4) 1/4" DIA. ZINC-PLATED THRU-BOLTS WITH NUTS & WASHERS AT 1'-0" O.C. MAX.

4 SINGLE-SWINGING GATE GUARDRAIL AT CMU PARAPET DETAILS

BB203 | TT606 SCALE 3/8" = 1'-0"



COORDINATE ROUGH MASONRY OPENING DIMESNIONS WITH APPROVED ELEVATOR DOOR SHOP DRAWINGS.

5 ELEVATOR DOOR DETAILS

TT603 | TT606 SCALE 1/2" = 1'-0"

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SHEET **TRAINING TOWER - GUARDRAIL GATE AT PARAPET**

TT606

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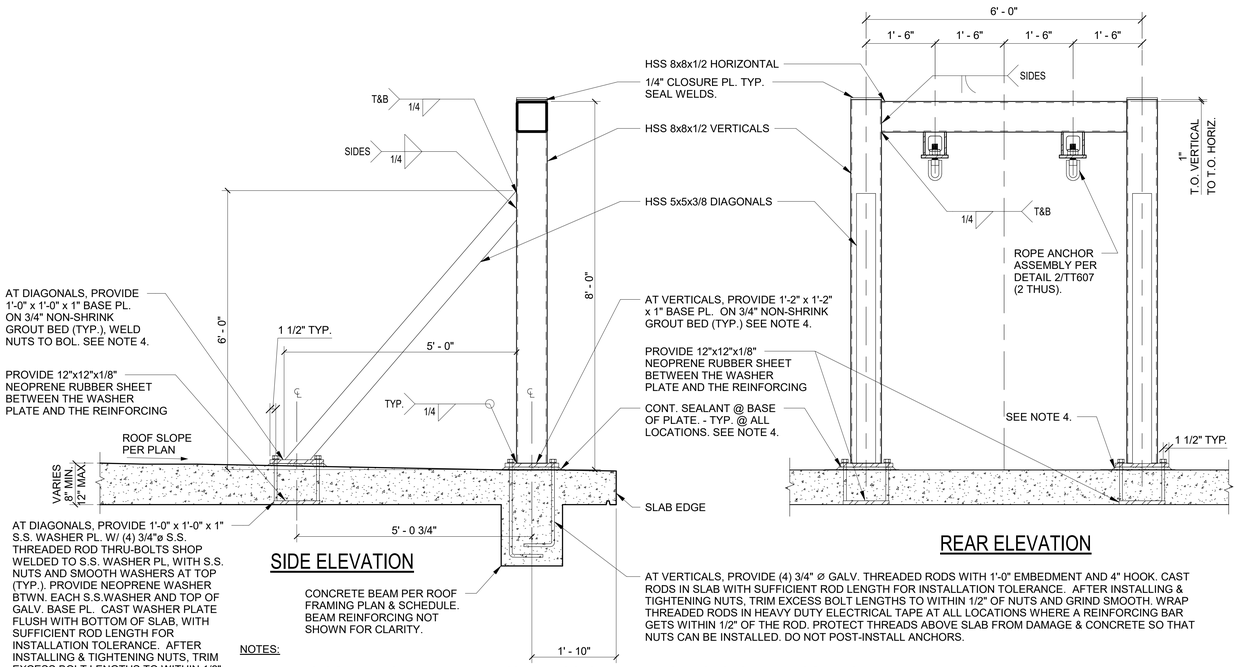
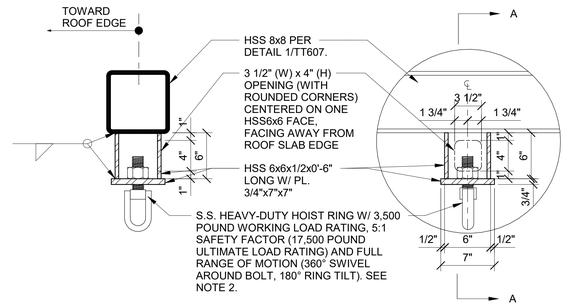


NOTES:

1. ALL PIECES SHALL BE GALVANIZED AFTER ASSEMBLY IS SHOP WELDED, U.O.N. DO NOT GALVANIZE S.S. ITEMS.
2. PLUG ANY GALVANIZING VENT HOLES IN TUBES AND CLOSURE PLATES AFTER GALVANIZING TO PREVENT MOISTURE FROM ENTERING TUBES.
3. PROVIDE (1) 1/2" DIA. WEEP HOLE AT BOTTOM OF EA. VERTICAL & DIAGONAL TUBE ON DOWNHILL FACE OF TUBE. DRILL HOLES PRIOR TO GALVANIZING. HOLE IN FACE OF HSS, NOT IN BASE PL.
4. SEAL AROUND THE BOLT HEADS/ NUTS ABOVE THE BASE PLATES AND AROUND THE BASE PLATES WITH CLEAR EPOXY AFTER TIGHTENING AND TACK WELDING.
5. DUE TO SLOPE OF ROOF SLAB, BASE PLATE AT EAST VERTICAL & DIAGONAL WILL BE APPROXIMATELY 1" HIGHER THAN BASE PLATE AT WEST VERTICAL AND DIAGONAL.

1 ROPE GANTRY FRAME DETAILS

TT203, TT301-TT302 TT607 SCALE 3/4" = 1'-0"

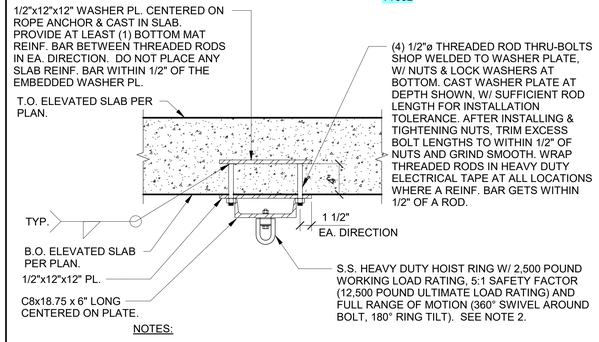


NOTES:

1. ALL PIECES SHALL BE GALVANIZED, U.O.N.
2. PROVIDE PART #29103 BY AMERICAN DRILL BUSHING CO. OR AN EQUIVALENT APPROVED BY THE ENGINEER BY ALL AMERICAN PRODUCTS GROUP OR BAIRSTOW LIFTING PRODUCTS CO.

2 GANTRY ROPE ANCHOR ASSEMBLY DETAILS

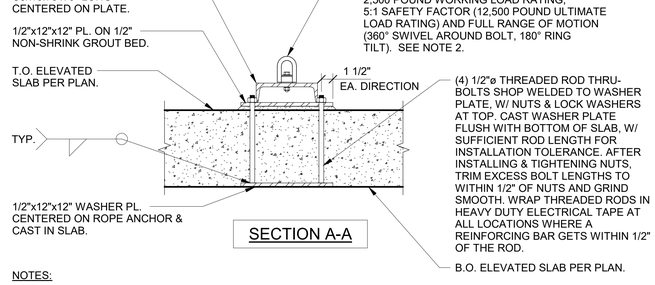
TT607 TT607 SCALE 1 1/2" = 1'-0"

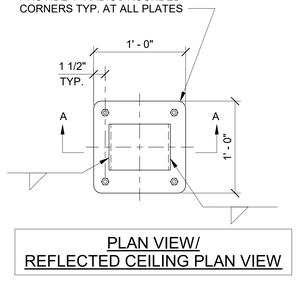


NOTES:

1. SEE SECTION A-A FOR ADDITIONAL INFORMATION.

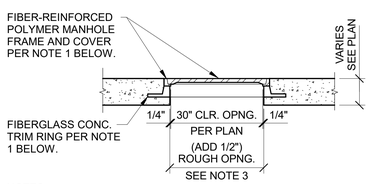
CEILING / BOTTOM OF SLAB-MOUNTED ROPE ANCHOR





NOTES:

1. ALL PIECES SHALL BE 316 STAINLESS STEEL, U.O.N.
2. PROVIDE PART #29009 BY AMERICAN DRILL BUSHING CO. OR AN EQUIVALENT APPROVED BY THE ENGINEER BY ALL AMERICAN PRODUCTS GROUP OR BAIRSTOW LIFTING PRODUCTS CO.
3. SLAB REINFORCING NOT SHOWN FOR CLARITY.
4. DO NOT USE POST-INSTALLED ANCHORS.
5. GRIND ALL CHANNEL AND PLATE EDGES AND CORNERS SMOOTH.



NOTES:

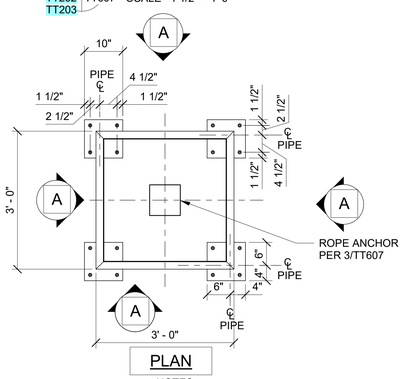
1. PROVIDE 3200 SERIES FIBER-REINFORCED POLYMER COMPOSITE MANHOLE ASSEMBLIES (FRAMES & COVERS) BY E.J. CO. AT (410) 833-6100 OR WWW.EJCO.COM, CUSTOMIZED FIBERLITE FRAMES AND COVERS BY VIRTUAL POLYMER COMPOUNDS, LLC, AT (888) 290-9522 OR WWW.VPCFIBERGLASS.COM, OR AN EQUIVALENT APPROVED BY THE ENGINEER. COORDINATE SERIES # WITH SIZE OF CLEAR OPENING PER PLAN.
2. COVER DIAMETER IS 2" LARGER THAN CLEAR OPENING DIAMETER.
3. PROVIDE COVERS WITH (2) S.S. HANDLES, EITHER RECESSED OR HINGED TO LIE FLAT ON TOP OF THE LID, AND PICK BAR.
4. TOP OF MANHOLE FRAME SHALL BE CAST FLUSH WITH TOP OF CONCRETE SLAB.
5. MANHOLES SHALL BE WATERTIGHT.
6. VERIFY CONCRETE OPENING DIMENSION WITH PRODUCT MANUFACTURER.
7. SLAB REINFORCING NOT SHOWN FOR CLARITY.

4 MANHOLE SECTION DETAILS

TT202, TT402 TT607 SCALE 3/4" = 1'-0"

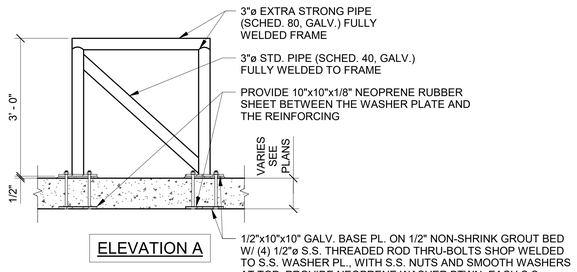
3 SLAB-MOUNTED ROPE ANCHOR DETAIL

TT202-TT203 TT607 SCALE 1 1/2" = 1'-0"



NOTES:

1. ALL PIECES SHALL BE GALVANIZED, U.O.N. S.S. ITEMS SHALL BE 316.
2. DO NOT DAMAGE REINFORCING OR TOP SURFACE OF SLAB WITH POST-INSTALLED ANCHORS.
3. SEAL GALVANIZING VENT HOLES PER GENERAL NOTE Q.7 ON TT001.



5 SLAB-MOUNTED ROPE FRAME DETAIL

TT203, TT301-TT302 TT607 SCALE 3/4" = 1'-0"

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SHEET **TRAINING TOWER - MISCELLANEOUS DETAILS**

TT607

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