

ACT	ACOUSTIC CEILING	F.C.C.	FIRE EXTINGUISHER	P.T. PTD.	PAINTED
AC	AC	AC	CABINET	P.R.V.	POWER ROOF VENTILATOR
AL	ALUMINUM	FIN.F.F.	FINISH FLOOR	P.R.D.	POWER DOWN
AL	ALUMINUM	F.O.S.	FACE OF STUD	RE	RECESSED
AP	ACCESS PANEL	FRP	FIREGLASS	RECEPT.	RECEPTIONIST
A.P.	ABUSE RESISTANT		REINFORCED PLASTIC	RECYCLED	REFRIGERATOR
A.R.GWB	GWB	F.R.T.	FIRE RETARDANT	REQD.	REQUIRED
A.F.F.	ABOVE FINISHED FLOOR		FIRE RETARD	R.L.	RAIN LEADER
		FTG.	FOOTING	R.M.	ROOM
BD.	BOARD	FURRING	FLOORING	R.O.	ROUGH OPENING
BD.	BUILDING	F.V.	FIRE VERIFIY	RUB.	RUBBER (WALL BASE)
B.M.	BENCH MARK	F.W.	FIRE FIGHTING CABINET	S.D.	SOAP DISPENSER
B.B.	BEARING	GA.	GRAVE	S.E.C.T.	SECTION
CAB.	CABINET	G.B.	GRAB BAR		
C.B.	C.B.	G.Y.W.B.	GYPSON WALL BOARD		STRUCT. GLAZED
C.C.	CERAMIC TILE	G.Y.W.B.	GYPSON BOARD	S.H.T.	FACING T
C.T.	CEILING HEIGHT	H. HT.	HEIGHT	S.H.	SHOWER HEAD
C.H.	CONTROL JOINT	H.C.	HANDICAPPED	S.H.	SHEET
C.J.	CENTER LINE	H.D.W.	HARDWARE	S.M.	SURFACE MOUNTED
C.L.G.	CEILING	H.M.	HOLLOW METAL	S.P.	STAIR PIPES
C.C.	CLOSET	H.P.	HIGH POINT	S.S.	SERVICE SINK
CLCR	CLEAR	H.P.	INSIDE DIAMETER	S.S.	STAINLESS STEEL
C.M.U.	CONCRETE UNIT	I.D.	INSIDE DIAMETER	S.T.	STEEL
COL.	COLUMN	I.N.SUL.	INSULATION	S.T.O.R.	STORAGE
CONC.	CONCRETE	J. JAN.	JANITOR	STRUCT.	STRUCTURAL
CONST.	CONSTRUCTION	J.O.I.S.T.	JOIST	SUSPENDED	SUSPENDED
CONT.	CONTINUOUS	J.SYN.F.L.	JOINT SYNTHETIC FLOOR	T.B.	TACK BOARD
CORR.	CORROD	L.A.M.	LOW POINT	T.B.	TELEPHONE
CPT.	CARPET	L.V.A.P.	LOW VOLTAGE SINK	T.G.	TONGUE AND GROOVE
C.R.	COLD ROLLED	M.	MEN	T.H.	THRESHOLD
D.A.	DETAIL AREA	M.	MACHINE	T.H.	THRESHOLD
D.F.	DETAIL	M.	MAINTENANCE	T.O.M.	TOP OF MASONRY PARAPET
D.F.	DRINKING FOUNTAIN	M.A.S.	MASONRY	T.P.	TOILET PAPER HOLDER
D.D.	DOUBLE	M.A.T.E.R.I.A.L.	MATERIAL	T.S.	TACK
D.D.	DIAMETER	M.A.X.	MAXIMUM	T.S.	TEACHING STATION
DM	DIMENSION	M.B.B.	MARKER BOARD	T.W.	TEACHING WALL
DISP.	DISPENSER	M.E.D.I.C.A.L.	MEDICAL CABINET	T.U.	TYPICAL
DOOR	DOOR	M.E.C.H.	MECHANICAL	T.U.	UNDERWRITERS
DR	DRYWALL	M.E.T.	METAL	T.U.	UNDERWRITERS
D.W.	DOWNSPOUT	M.E.T.	METAL	T.U.	UNDERWRITERS
DWG.	DRAWING	M.I.N.	MINIMUM	U.S.G.	UNLESS OTHERWISE NOT U.S. GYPSUM COMPANY
E.	ELECTRIC	M.O.	MASONRY OPENING	V.A.T.	VINYL ASBESTOS TILE
E.	EXPANSION JOINT	M.O.	MASONRY OPENING	V.A.T.	VINYL COMPOSITION TILE
ELEC.	ELECTRICAL	M.T.D.	MOUNTED	V.E.T.	VERTICAL
E.P.	EPOXY PAINT	N.C.	NON COMBUSTIBLE	V.E.T.	VESTIBULE
EQ	EQUIPMENT	N.C.	NON COMBUSTIBLE	V.E.T.	VENT
E.Q.P.	EQUIPMENT	N.O.	NUMBER	V.E.T.	VENT THROUGH ROOF
E.W.C.	ELECTRIC WATER CLOSER	N.T.S.	NOT TO SCALE	V.W.	WOMEN
		N.T.S.	NOT TO SCALE	W.	WITH
		O.D.	OUTSIDE DIAMETER	W.A.I.N.	WAINSCOT
EXP.	EXPANSION	O.F.F.	OFFICE	W.A.R.D.	WARDROBE
EX.	EXTERIOR	O.P.P.	OPPOSITE HAND	W.A.R.D.	WARDROBE
F.	FIRE CODE	O.P.N.G.	OPENING	W.C.	WATER CLOSET
F.C.U.	FAN COIL UNIT	P.	PARTITION	W.D.R.	WARDROBE
F.D.	FLOOR DRAIN	P.L.	PLYWOOD	W.	WALL
F.O.	FOUNDATION	P.L.A.M.	PLASTIC LAMINATE	W.M.	WALL-MOUNTED
F.F.	FIRE EXTINGUISHER	P.L.Y.	PLYWOOD	W.W.W.	WELDED WIRE MESH

	ALL METALS-SMALL SCALE		GLAZED C.M.U.
	ACOUSTIC C.M.U. SMALL SCALE		PARTICLE BOARD
	ACOUSTIC C.M.U. LARGE SCALE		RIGID INSULATION
	BATT INSULATION		SHINGLES
	BRICK		SOLID CONCRETE MASONRY UNITS
	CAST STONE		STEEL-LARGE SCALE
	CONCRETE		STUD PARTITION
	CONCRETE MASONRY UNITS		WOOD-FINISH
	EARTH		WOOD BLOCKING
	GLASS-LARGE SCALE		

Figure 1 illustrates various symbols used in architectural drawings:

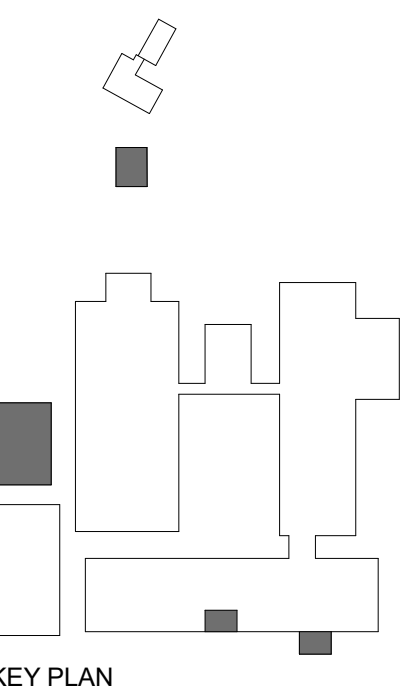
- STRUCTURAL GRID LINES:** A circle containing the number 0.
- SECTION:** A triangle with a horizontal line through it, labeled 1 A101, with the word SECTION to its right.
- ELEVATION:** A triangle with a vertical line through it, labeled 1 A101, with the word ELEVATION to its right.
- DETAILS IN PLAN, SECTION:** A circle with a horizontal line through it, labeled 1 A101, with the text DETAILS IN PLAN, SECTION to its right.
- WALL TYPE, SEE A501:** A dashed line.
- NEW WALL:** A solid line with a cross-hatch pattern.
- EXISTING WALL TO REMAIN:** A solid grey filled rectangle.
- EXISTING WALL TO BE REMOVED:** A dashed line.
- Name:** A rectangle containing the text 101.
- WINDOW TAG:** A circle containing the text 11.
- DOOR TAG:** A circle containing the text 101.

An architectural rendering of a proposed three-story building. The building features a flat roof, a brick-like exterior texture, and several multi-paned windows. A small, square, light-colored object is placed on the roof. The building is situated next to an existing structure with a gabled roof. A curved driveway or path is visible in the foreground.

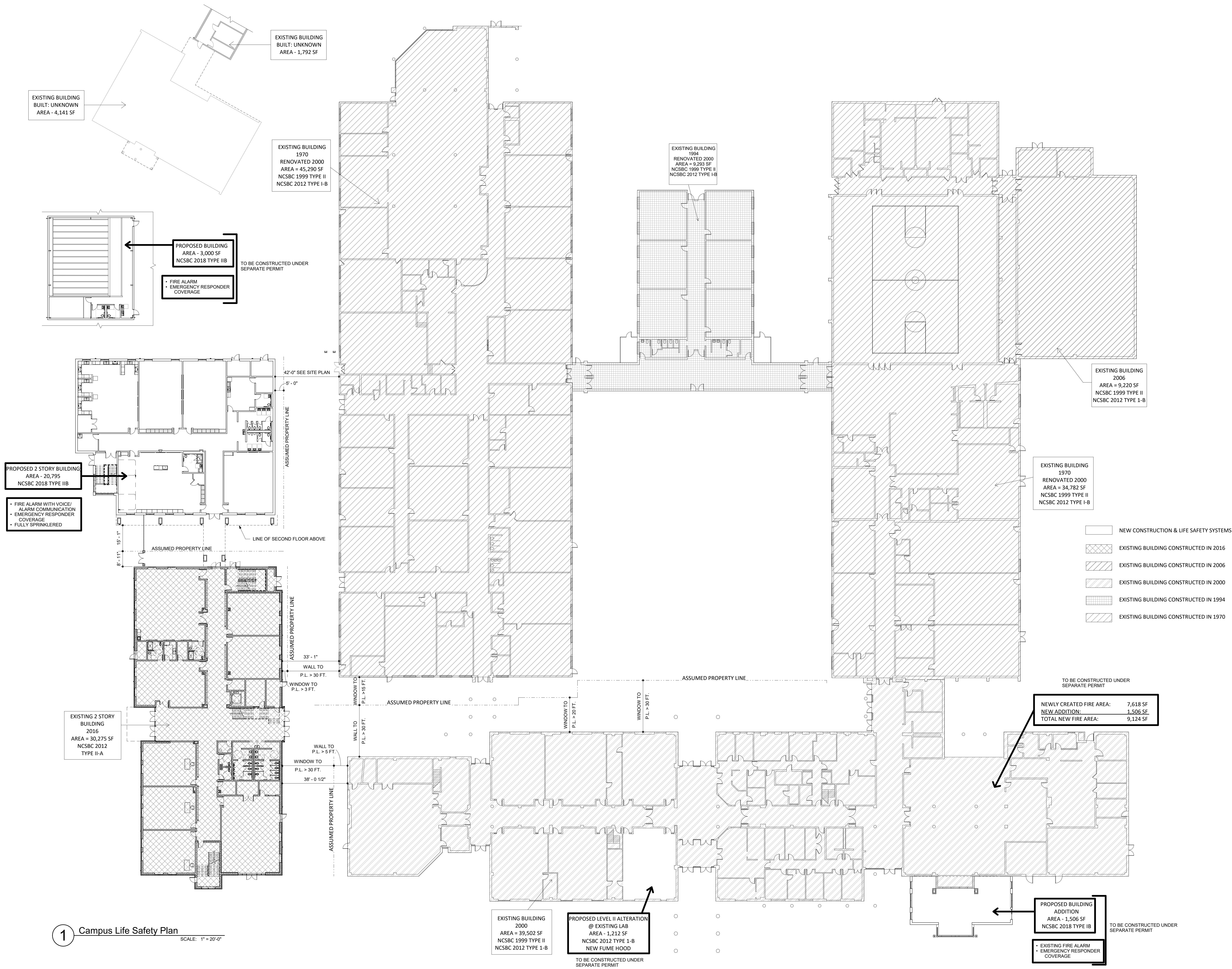
SHEET No.	SHEET TITLE
GENERAL	
G001	COVER SHEET
G100	CLASSROOM BUILDING CODE SUMMARY
G200	CAMPUS LIFE SAFETY PLAN AND LIFE SAFETY SYSTEMS
G201	CLASSROOM BUILDING LIFE SAFETY PLANS
G301	UL DETAILS
CIVIL	
C-0.1	COVER SHEET
C-1.0	GENERAL NOTES
C-1.1	GENERAL NOTES
C-2.0	DEMOLITION PLAN
C-2.1	DEMOLITION PLAN
C-2.2	DEMOLITION PLAN
C-2.3	DEMOLITION PLAN
C-2.4	SITE PLAN
C-2.5	SITE PLAN
C-2.6	SITE PLAN
C-2.7	SITE PLAN
C-2.8	SITE PLAN
C-3.0	GRADING - DRAINAGE - EC PLANS
C-3.1	GRADING - DRAINAGE - EC PLANS
C-3.2	GRADING - DRAINAGE - EC PLANS
C-3.3	GRADING - DRAINAGE - EC PLANS
C-3.4	GRADING - DRAINAGE - EC PLANS
C-4.0	UTILITY PLAN
C-4.1	UTILITY PLAN
C-5.0	DETAILS
C-5.1	DETAILS
C-5.2	DETAILS
C-5.3	DETAILS
LANDSCAPE	
L-1.0	LANDSCAPE PLAN
L-1.1	LANDSCAPE PLAN
L-1.2	LANDSCAPE PLAN
STRUCTURAL	
S101	GENERAL NOTES
S102	TYPICAL DETAILS
S200	FOUNDATION AND SECOND FLOOR SLAB PLANS
S201	FOUNDATION PLAN
S202	SECOND FLOOR FRAMING PLAN
S203	ROOF FRAMING PLAN
S301	FOUNDATION SECTIONS AND DETAILS
S401	SECTIONS AND DETAILS
S402	SECTIONS AND DETAILS
S501	BRACE FRAME ELEVATIONS
ARCHITECTURAL	
A001	CONSTRUCTION TYPES
AD101	DEMOLITION PLANS AND ELEVATION
A101	CLASSROOM BUILDING FIRST FLOOR PLAN
A102	CLASSROOM BUILDING SECOND FLOOR PLAN
A103	ROOF PLAN
A104	CLASSROOM BUILDING REFLECTED CEILING PLANS
A151	FURNITURE PLANS
A201	CLASSROOM BUILDING EXTERIOR ELEVATIONS
A301	CLASSROOM BUILDING BUILDING SECTIONS
A302	CLASSROOM BUILDING CONNECTOR BUILDING SECTIONS
A303	CLASSROOM BUILDING WALL SECTIONS
A401	ENLARGED RESTROOM PLANS AND DETAILS
A402	RESTROOM ELEVATIONS
A403	ENLARGED STAIR PLANS AND SECTIONS
A501	PLAN DETAILS
A510	SECTION DETAILS
A511	SECTION DETAILS
A520	STAIR DETAILS
A530	ROOF DETAILS
A540	TYPICAL MANUFACTURES ROOF DETAILS
A601	FINISH SCHEDULE
A602	DOOR SCHEDULE. TYPES AND WINDOW TYPES
A603	WINDOW DETAILS
A604	DOOR DETAILS
A605	SIGNAGE SCHEDULE AND DETAILS
A701	INTERIOR ELEVATIONS
A702	INTERIOR ELEVATIONS
A703	CASEWORK SECTIONS
A801	FINISH PLANS AND DETAILS
PLUMBING	
P101	CLASSROOM BUILDING FLOOR PLANS - WASTE AND VENT
P201	CLASSROOM BUILDING FLOOR PLANS - DOMESTIC WATER
P301	NATURAL GAS PLANS AND GAS RISER
P401	ENLARGED PLUMBING PLANS
P501	WASTE AND VENT RISER DIAGRAMS
P502	DOMESTIC RISER DIAGRAM
P503	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
MECHANICAL	
M001	MECHANICAL ABBREVIATIONS, LEGEND, ENERGY AND MECHANICAL SUMMARIES
MH101	CLASSROOM BUILDING FLOOR PLANS - HVAC
MH101	CLASSROOM BUILDING FIRST AND SECOND FLOORS - HYDRONIC
MH102	CLASSROOM BUILDING FLOOR PLANS - HVAC RCP AND T-STAT LOC
MH103	CLASSROOM BUILDING ROOF PLAN - HVAC
MH401	ENLARGED PLANS
M501	HVAC DETAILS
M502	HVAC DETAILS
M503	HVAC DETAILS
M504	HVAC UL DETAILS
M601	MECHANICAL SCHEDULES
M602	MECHANICAL SCHEDULES
M701	MECHANICAL CONTROL DIAGRAMS AND SEQUENCES
M702	MECHANICAL CONTROL DIAGRAMS AND SEQUENCES
M703	MECHANICAL HYDRONIC FLOW DIAGRAM
ELECTRICAL	
E001	ELECTRICAL SYMBOLS, GENERAL NOTES AND ABBREVIATIONS
E100	ELECTRICAL SITE PLAN
E101	CLASSROOM BUILDING FLOOR PLANS - POWER
E102	CLASSROOM BUILDING FLOOR PLANS - HVAC POWER
E103	CLASSROOM BUILDING ROOF - POWER
E201	CLASSROOM BUILDING FLOOR PLANS - LIGHTING
E301	LEVEL 1 CLASSROOM RENOVATION FLOOR PLAN - SYSTEMS
E401	ENLARGED PLANS
E501	ELECTRICAL DETAILS
E502	ELECTRICAL DETAILS
E503	UL DETAILS
E601	ELECTRICAL RISER DIAGRAM AND SCHEDULES
E602	ELECTRICAL SCHEDULES AND LIGHT FIXTURE SCHEDULE
E603	SYSTEMS RISERS
FIRE PROTECTION	
F101	CLASSROOM ADDITION FLOOR PLANS - FIRE ALARM
F601	FIRE ALARM RISER DIAGRAM, LEGEND AND NOTES

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Mark	Date	Description
04.23.20	04.23.20	ISSUED FOR BIDDING
03.28.20	03.28.20	100% REVIEW SUBMISSION
10.14.19	10.14.19	NCPIR DO SUBMISSION
7.30.19	7.30.19	SD PROGRESS DRAWINGS
7.11.19	7.11.19	NCPIR SD SUBMISSION



[illegible]

NORTH BRUNSWICK HIGH SCHOOL IMPROVEMENTS

114 SCORPION DRIVE NE
LELAND, NORTH CAROLINA 28451

BID DOCUMENTS

APRIL 2020

NOTICE REQUIRED

ALL EXISTING UNDERGROUND UTILITIES SHALL BE PHYSICALLY LOCATED PRIOR TO THE BEGINNING OF ANY CONSTRUCTION IN THE VICINITY OF SAID UTILITIES.

CONTRACTORS SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN TEN WORKING DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.

CONTRACTORS SHALL CONTACT OVERHEAD ELECTRIC PROVIDER TO COMPLY WITH FEDERAL OSHA 1910.333 MINIMUM APPROACH DISTANCE TO ENERGIZED POWERLINES AND OSH 29 CFR 1926.1407-1411 MUST BE FOLLOWED.

CONTRACTOR SHALL CONTACT AT&T PRIOR TO ANY DEMOLITION TO ALLOW FOR AT&T TO DISCONNECT COMMUNICATIONS CABLES COMING INTO THE SITE.

CONTACT THESE UTILITIES

TOWN OF LELAND PLANNING & INSPECTIONS DEPARTMENT
ATTN: MATTHEW KIRKLAND, SENIOR PLANNER
PH: 910-332-4816

PIEDMONT NATURAL GAS
ATTN: CATHY PLEASANT
PH: 910-251-2827

**EMERGENCY DIAL 911
POLICE - FIRE - RESCUE**
ATTN: TOWN OF LELAND FIRE/RESCUE DEPARTMENT
PH: 910-371-2727

BRUNSWICK COUNTY ENGINEERING
ATTN: BRIGIT FLORA (STORMWATER)
PH: 910-253-2405

H2GO - BRUNSWICK REGIONAL WATER
ATTN: BOB WALKER
PH: 910-371-9949

TOWN OF LELAND PUBLIC SERVICES - SEWER
ATTN: LYNN VETTER
PH: 910-332-4652

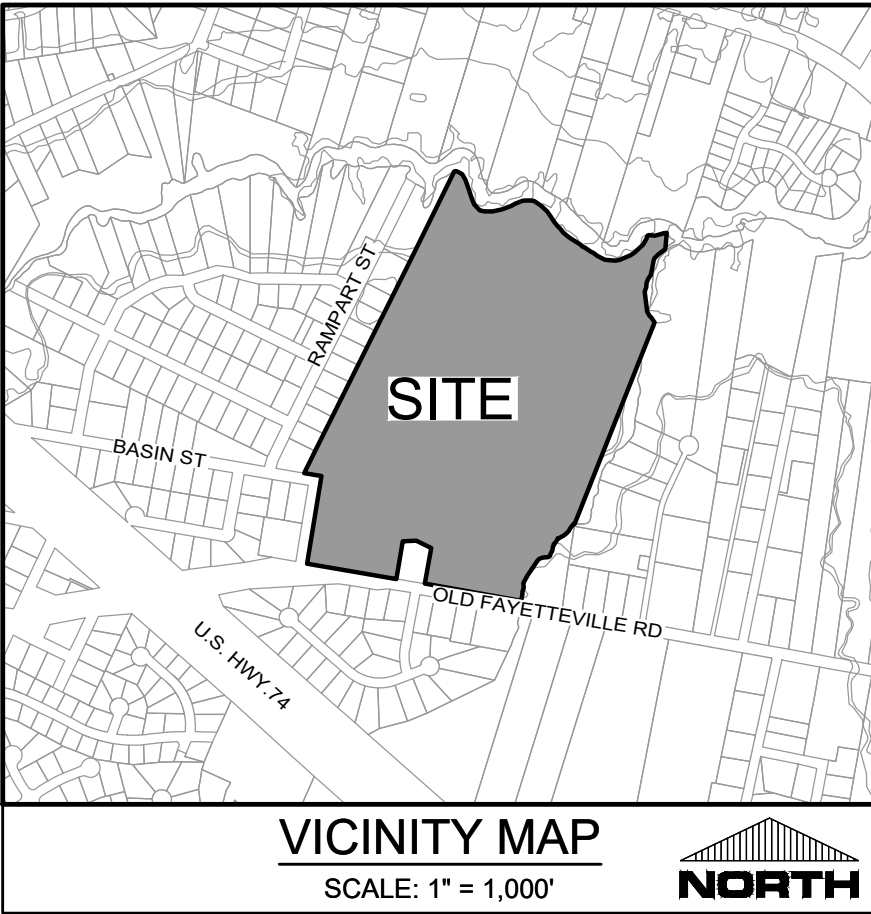
DUKE ENERGY
DISTRIBUTION CONSTRUCTION SERVICE
ALLISON WALSH
PH: 910-350-3457

TRANSMISSION AGENT
BILL WILDER
PH: 910-772-4903

AT&T/BELL SOUTH
ATTN: STEVE DAYVAULT (BUILDING ENGINEERING)
PH: 910-341-0741

ATTN: JAMES BATSON, ENGINEERING
PH: 910-341-1621

SPECTRUM
ATTN: STEVE BARNETTE
PH: 910-772-5755

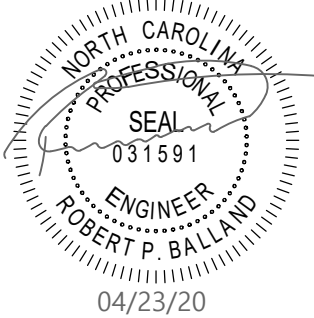


OWNER/DEVELOPER:
BRUNSWICK COUNTY SCHOOLS
35 REFERENDUM DRIVE NE
BOLIVIA, NC 28422

ENGINEER (CIVIL) & LANDSCAPE ARCHITECT:
PARAMOUNTE ENGINEERING, INC.
122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: ROB BALLAND, P.E. (910) 791-6707 - ENGINEER
ATTN: JIM CIRELLO, LA (910) 791-6707 - LANDSCAPE

SURVEYING:
PARAMOUNTE ENGINEERING, INC.
122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: CHRIS GAGNE, P.L.S. (910) 791-6707

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C-0.0	COVER SHEET
C-1.0 & C-1.1	GENERAL NOTES
C-2.0 - C-2.3	DEMOLITION PLANS
C-2.4 - C-2.8	SITE PLANS
C-3.0 - C-3.3	GRADING-DRAINAGE-EC PLANS
C-4.0 & C-4.1	UTILITY PLAN
C-5.0 - C-5.3	DETAILS
L-1.0 - L-1.2	LANDSCAPE PLANS



PREPARED BY:
PARAMOUNTE
ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846
PROJECT # 19248.PE

COORDINATION NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH THE TOWN OF LELAND, BRUNSWICK COUNTY, H260 WATER, AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

GENERAL NOTES:

1. TREE INVENTORY AND TOPOGRAPHIC SURVEY COMPLETED BY PARAMOUNT ENGINEERING, INC. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE OWNER AND ENGINEER.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING, AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
10. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, THE TOWN OF LELAND, BRUNSWICK COUNTY, OR H260 WATER, RESPECTIVELY.
17. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ANY EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OR OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL* TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
21. LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
22. ALL DIMENSIONS AND RADI ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.

TRAFFIC NOTES:

1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY(S) ARE TO BE THERMOPLASTIC & MEET TOWN OF LELAND AND/OR NCDOT STANDARDS.
2. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS NOT WITHIN THE PUBLIC RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. ANY OPEN CUTTING OF A TOWN STREET REQUIRES A UTILITY CUT PERMIT. CONTACT TOWN OF LELAND PLANNING 910-332-4816 FOR MORE DETAILS. IN CERTAIN CASES, AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED. CONTACT NCDOT, DIVISION 3, DIVISION ENGINEER FOR ANY WORK WITHIN NCDOT RIGHT-OF-WAY AT 910-341-2000.
6. CONTACT TOWN OF LELAND PLANNING AT 910-332-4816 TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING FORTY- EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
7. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND/OR CURBING SHALL BE REPLACED.
8. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS AND CURB CUTS.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. THE EROSION CONTROL PLAN SHALL INCLUDE PROVISIONS FOR GROUND COVER ON ALL EXPOSED PERIMETER DITCHES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. GROUND COVER SHALL BE PROVIDED ON ALL OTHER DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK (NO SEPARATE PAYMENT).
3. THE CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NEW HANOVER COUNTY FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL, INSTANT NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY EITHER THE REVIEWING AGENCY OR THE ENGINEER. (NO SEPARATE PAYMENT).
8. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
9. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SOODED OR SEEDED AS DISTURBED AND STABILIZED.
10. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. (NO SEPARATE PAYMENT). NCDENR'S FINAL APPROVAL IS REQUIRED.
13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREA. (NO SEPARATE PAYMENT).
14. WHEN CROSSING CREEK OR DRAINAGE-WAY, THE DIVISION OF WATER QUALITY SHALL BE CONTACTED PRIOR TO DISTURBING A CREEK. THE CONTRACTOR SHALL INSTALL RIP-RAP WITH FABRIC ALONG DISTURBED BANKS AND CHANNEL AND RESTORE SLOPES TO ORIGINAL CONOURS, BUT NOT STEEPER THAN 2:1 MAXIMUM. DISTURBED CREEK AREA SHALL BE STABILIZED IMMEDIATELY.

DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES; ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTORS ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS.

NPDES BUILDING WASTES HANDLING:

1. NO PAINT OR LIQUID WASTES IN STREAM OR STORM DRAINS.
2. DEDICATED AREAS FOR DEMOLITION CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
3. EARTHEN-MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
4. CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.

NPDES INSPECTIONS:

1. SAME WEEKLY INSPECTION REQUIREMENTS.
2. SAME RAIN GAUGE & INSPECTIONS AFTER 0.5" RAIN EVENT.
3. INSPECTIONS ARE ONLY REQUIRED DURING "NORMAL BUSINESS HOURS"
4. INSPECTION REPORTS MUST BE AVAILABLE ON-SITE DURING BUSINESS HOURS UNLESS A SITE-SPECIFIC EXEMPTION IS APPROVED.
5. RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST.
6. ELECTRONICALLY AVAILABLE RECORDS MAY BE SUBSTITUTED UNDER CERTAIN CONDITIONS.

NPDES SEDIMENT BASINS:

1. OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACE UNLESS DRAINAGE AREA IS LESS THAN 1 ACRE.
2. USE ONLY DWO-APPROVED FLOCULANTS.

NPDES - SPECIFIC PLAN SHEETS NOTES:

1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
2. THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCEPT PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
4. THE COUNTY IS NOT AUTHORIZED TO ENFORCE THE NPDES PORTION OF THIS PAGE OF THE PLANS AND THEY ARE NOT A PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE COUNTY CODE.

EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH PHASE OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE PROJECT IS DEVELOPED, WHETHER AS A WHOLE OR IN PHASES. ANY EROSION CONTROL DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.

1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
3. CONSTRUCT TEMPORARY SEDIMENT BASIN(S) AND ASSOCIATED SKIMMER, OUTLET PIPE, SPILLWAY, ETC.
4. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING CONSTRUCTION.
5. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING ACTIVITY.
6. IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
8. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY ENGINEER OR EROSION CONTROL INSPECTOR.
9. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL MEASURES.
10. THE CONTRACTOR SHALL CONTINUE TO WATER, FERTILIZE, MOW AND MAINTAIN GRASS & PLANTED AREAS UNTIL ALL CONSTRUCTION IS COMPLETE.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 12-INCH OR GREATER RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.
3. SEDIMENT FENCE / SEDIMENT FENCE OUTLETS - SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF-FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL, AND SPACED 6 FEET WITH EXTRA STRENGTH FABRIC AND NO WIRE BACKING. STAKE SPACING CAN BE 6 FEET WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS (OR EXCELSIOR WATTLES) ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK OR WATTLE WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT. NO LONGER DRAINS, OR DAMAGED.
4. INLET PROTECTION - SEDIMENT SHALL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL, BLOCK AND GRAVEL, OR ROCK-PIPE INLETS, WHEN IT REACHES HALF-FILLED. ROCK WILL BE CLEANED OR REPLACED WHEN NO LONGER DRAINS. SILT SACKS, BEAVER DAMS, SANDY SACKS, AND SOCKS NEED CHECKING EVERY WEEK AND AFTER RAIN.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS ON THESE PLANS AND CONTRACT SPECIFICATIONS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.

PERMANENT SEEDING

GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
BERMUDA, HULLED BERMUDA, UNHULLED	10-20 35	MARCH - AUGUST SEPT. - FEB.	BY SOIL TEST
CENTPEIDE	10	MARCH - AUGUST	BY SOIL TEST (NO HIGH PH)
TALL FESCUE (COASTAL CULTIVAR RECOMMENDED)	50	MARCH - AUGUST	300 LB/AC 10-20-20 OR BY SOIL TEST
SLOPES >= 2:1 CENTPEIDE SERICEA LESPEDEZA	5 20	JAN - DEC	BY SOIL TEST

TEMPORARY SEEDING

GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
RYE GRAIN	50	OCT. - APR.	400 LBS/AC. 10-20-20
SWEET SUDAN GRASS	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
GERMAN OR BROWNTOP MILLET	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
STRAW MULCH AS NEEDED	4,000		

STABILIZATION TIME FRAME:

"IN THE EVENT THAT THE GOVERNING AGENCIES TIMEFRAME FOR STABILIZATION VARY, CONTRACTOR SHALL MEET THE MORE STRINGENT REQUIREMENT

NC ACCESSIBILITY NOTES:

GENERAL NOTES:

1. SPECIAL ATTENTION SHALL BE GIVEN TO COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
2. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. PARAMOUNT ENGINEERING HAS DEVELOPED THESE NOTES AND DETAILS TO ASSURE THAT CONTRACTORS ARE AWARE OF THE REQUIREMENTS AT THE POINT IN TIME WHEN THEY ARE BIDDING THE PROJECT. IN ADDITION, PARAMOUNT ENGINEERING HAS MADE A POINT IN THESE NOTES AND DETAILS, AS WELL AS IN OUR DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1 AND APPLICABLE LOCAL LAWS & REGULATIONS. IF THESE SLOPES / GRADES OR DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK.
3. THE CONTRACTOR SHALL NOTIFY PARAMOUNT ENGINEERING IMMEDIATELY OF ANY CONFLICT BETWEEN THESE NOTES AND DETAILS AND OTHER PROJECT DRAWINGS, WHETHER BY PARAMOUNT ENGINEERING OR OTHERS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK FOR WHICH THE ALLEGED CONFLICT HAS BEEN DISCOVERED UNTIL SUCH ALLEGED CONFLICT HAS BEEN RESOLVED. NO CLAIM SHALL BE MADE BY THE CONTRACTOR FOR DELAY OR DAMAGES AS A RESULT OF RESOLUTION OF ANY SUCH CONFLICT(S).
4. THESE ACCESSIBILITY NOTES AND DETAILS ARE INTENDED TO DEPICT SLOPE AND DIMENSIONAL REQUIREMENTS ONLY. REFER TO SIDEWALK, CURBING, AND PAVEMENT DETAILS FOR ADDITIONAL INFORMATION.

ACCESSIBLE ROUTE NOTES:

1. AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES AND ACCESSIBLE PASSENGER LOADING ZONES; PUBLIC STREETS OR SIDEWALKS; AND PUBLIC TRANSPORTATION STOPS TO THE ACCESSIBLE BUILDING OR FACILITY ENTRANCE THEY SERVE.
2. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, ACCESSIBLE FACILITIES, ACCESSIBLE ELEMENTS, AND ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
3. WALKING SURFACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.0%.
4. ANY WALKING SURFACE THAT IS PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5.0% IS A RAMP AND SHALL COMPLY WITH THE GUIDELINES FOR RAMPS OR CURB RAMPS.
5. TRANSITIONS BETWEEN RAMPS, WALKS, LANDINGS, GUTTERS OR STREETS SHALL BE FLUSHAND FREE OF ABRUPT VERTICAL CHANGES (1/4 INCH MAXIMUM VERTICAL CHANGE IN LEVEL PERMITTED).
6. FLOOR SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT.
7. THE MINIMUM CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES SHALL BE FORTY- EIGHT (48) INCHES MINIMUM MEASURED BETWEEN HANDRAILS WHERE HANDRAILS ARE PROVIDED (NC BUILDING CODE 1104.1 & 1104.2).
8. WHERE AN ACCESSIBLE ROUTE MAKES A 180 DEGREE TURN AROUND AN OBJECT THAT IS LESS THAN 48 INCHES IN WIDTH, CLEAR WIDTH SHALL BE FORTY TWO (42) INCHES MINIMUM APPROACHING THE TURN, FORTY EIGHT (48) INCHES MINIMUM DURING THE TURN, AND FORTY-TWO (42) INCHES MINIMUM LEAVING THE TURN. THE CLEAR WIDTH APPROACHING AND LEAVING THE TURN MAY BE THIRTY-SIX (36) INCHES MINIMUM WHEN THE CLEAR WIDTH AT THE TURN IS SIXTY (60) INCHES MINIMUM. * SEE NOTE 7 ABOVE FOR NC CLEAR WIDTH OF EXTERIOR ACCESSIBLE ROUTES"
9. AN ACCESSIBLE ROUTE WITH A CLEAR WIDTH LESS THAN SIXTY (60) INCHES SHALL PROVIDE PASSING WITH A CLEAR WIDTH INTERVAL OF TWO HUNDRED (200) FEET MINIMUM. PASSING SPACES SHALL BE EITHER A SIXTY (60) INCH MINIMUM BY SIXTY (60) INCH MINIMUM SPACE, OR AN INTERSECTION OF TWO (2) WALKING SURFACES THAT PROVIDE A COMPLIANT T-SHAPED TURNING SPACE, PROVIDED THE BASE AND ARMS OF THE T-SHAPED SPACE EXTEND FORTY-EIGHT (48) INCHES MINIMUM BEYOND THE INTERSECTION.
10. DOORS, DOORWAYS AND GATES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
11. DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE NEAREST ACCESSIBLE BUILDING ENTRANCE SHALL BE PROVIDED AT INACCESSIBLE BUILDING ENTRANCES.
12. WHERE POSSIBLE, DRAINAGE INLETS SHALL NOT BE LOCATED ON AN ACCESSIBLE ROUTE. IN THE EVENT THAT A DRAINAGE INLET IS LOCATED ON AN ACCESSIBLE ROUTE, THE GRATE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), A117.1, THE NC BUILDING CODE, AND APPLICABLE LOCAL LAWS & REGULATIONS

RAMP NOTES:

1. ANY PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5% SHALL BE CONSIDERED A RAMP.
2. THE MAXIMUM RUNNING SLOPE FOR A RAMP SHALL BE 8.33% AND THE MAXIMUM CROSS SLOPE SHALL BE 2.0%.
3. THE CLEAR WIDTH OF AN EXTERIOR RAMP RUN SHALL BE FORTY EIGHT INCHES (NC BUILDING CODE 1104.1). WHERE HANDRAILS ARE PROVIDED ON THE RAMP RUN, THE CLEAR WIDTH SHALL BE MEASURED BETWEEN THE HANDRAILS.
4. THE RISE FOR ANY RAMP RUN SHALL BE THIRTY (30) INCHES MAXIMUM.
5. LANDINGS SHALL BE PROVIDED AT THE TOP AND BOTTOM OF RAMPS. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2.0% IN ANY DIRECTION. THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING. THE LANDING CLEAR LENGTH SHALL BE SIXTY (60) INCHES LONG MINIMUM. RAMPS THAT CHANGE DIRECTION BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING OF SIXTY (60) INCHES BY SIXTY (60) INCHES MINIMUM.
6. RAMP RUNS WITH A RISE GREATER THAN SIX (6) INCHES SHALL HAVE HANDRAILS ON BOTH SIDES COMPLYING WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
7. FLOOR SURFACES OF RAMPS AND LANDINGS SHALL BE STABLE, FIRM AND SLIP RESISTANT.
8. EDGE PROTECTION COMPLYING WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS SHALL BE PROVIDED ON EACH SIDE OF RAMP RUNS AND ON EACH SIDE OF RAMP LANDINGS.
9. WHERE DOORWAYS ARE LOCATED ADJACENT TO A RAMP LANDING, MANEUVERING CLEARANCES REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NC BUILDING CODE/ANSI A117.1 SHALL BE PERMITTED TO OVERLAP THE REQUIRED LANDING AREA. WHERE DOORS THAT ARE SUBJECT TO LOOKING ARE ADJACENT TO A RAMP LANDING, LANDINGS SHALL BE SIZED TO PROVIDE A COMPLIANT TURNING SPACE.

CURB RAMP NOTES:

1. THE MAXIMUM RUNNING SLOPE OF A CURB RAMP SHALL BE 8.33% AND THE MAXIMUM CROSS SLOPE SHALL BE 2.0%.
2. COUNTER SLOPES OF ADJOINING GUTTERS AND ROAD SURFACES IMMEDIATELY ADJACENT TO THE CURB RAMP SHALL NOT BE STEEPER THAN 5%. THE ADJACENT SURFACES AT TRANSITIONS AT CURB RAMPS TO WALKS, GUTTERS AND STREETS SHALL BE AT THE SAME LEVEL.
3. THE CLEAR WIDTH OF A CURB RAMP SHALL BE 36 INCHES (36) MINIMUM, EXCLUSIVE OF FLARED SIDES, IF PROVIDED. *NOTE NO BUILDING CODE REQUIRE EXTERIOR ACCESSIBLE ROUTES TO BE 48 INCHES MINIMUM WIDE (1104.1 & 1104.2)."
4. LANDINGS SHALL BE PROVIDED AT THE TOP OF CURB RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE THIRTY-SIX (36) INCHES MINIMUM. THE CLEAR WIDTH OF THE LANDING SHALL BE AT LEAST AS WIDE AS THE CURB RAMP, EXCLUDING FLARED SIDES, LEADING TO THE LANDING. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2% IN ANY DIRECTION.
5. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.
6. WHERE PROVIDED, CURB RAMP FLARES SHALL NOT EXCEED 10%.
7. CURB RAMPS AND THE FLARED SIDES OF CURB RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO THE VEHICLE TRAVEL LANE. CURBS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
8. CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.
9. IT IS RECOMMENDED TO PROVIDE CURB RAMPS WITH A TWENTY-FOUR (24) INCH DEEP DETECTABLE WARNING COMPLYING WITH 406.12 A117.1, EXTENDING THE FULL WIDTH OF THE RAMP. REFERTO DETECTABLE WARNING DETAILS AND NOTES FOR PLACEMENT, ORIENTATION AND NOTES. THE NC BUILDING CODE DOES NOT CURRENTLY REQUIRE DETECTABLE WARNINGS AT CURB RAMPS, NOR DO THE 2010 ADA STANDARDS - HOWEVER US DOT ADA REGULATIONS DO REQUIRE THESE.
10. FLOOR SURFACES OF CURB RAMPS SHALL BE DEEP GROOVED, 1/4 INCH WIDE BY 1/4 INCH DEEP, ONE (1) INCH CENTERS TRANSVERSE TO THE RAMP.
11. WHERE PROVIDED, STOP LINES SHALL BE LOCATED IN ADVANCE OF CURB RAMP.
12. WHERE PROVIDED, PEDESTRIAN ACTIVATED SIGNALS SHALL BE LOCATED ADJACENT TO THE SIDEWALK AND NOT ON THE SIDEWALK.
13. WHERE PROVIDED, DRAINAGE INLETS SHALL BE LOCATED UPSTREAM OF CURB RAMPS AND NOT IN THE RAMP AREA.
14. CURB RAMP TYPE AND LOCATION ARE PER PLAN.

NC ACCESSIBILITY NOTES CONTD.

PARKING SPACE NOTES:

1. ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTES OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE.
2. ACCESSIBLE PARKING SPACES SHALL BE AT LEAST NINETY-SIX (96) INCHES WIDE. ACCESS AISLES SHALL BE 60 INCHES WIDE. ONE OF SIX ACCESSIBLE SPACES SHOULD PROVIDE A VAN ACCESSIBLE AISLE. THE AISLE SHOULD BE 96 INCHES WIDE (OR ACCESSIBLE SPACE IS 11 FEET AND ACCESS AISLE IS FIVE FEET), WHERE PARKING SPACES AND ACCESS AISLES ARE MARKED WITH LINES, THE WIDTH MEASUREMENTS SHALL BE MADE FROM CENTERLINE OF THE MARKINGS. WHERE PARKING SPACES OR ACCESS AISLES ARE NOT ADJACENT TO ANOTHER PARKING SPACE OR ACCESS AISLES, MEASUREMENTS SHALL BE PERMITTED TO INCLUDE THE FULL WIDTH OF THE LINE DEFINING THE PARKING SPACE OR ACCESS AISLE.
3. PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH PROVISIONS FOR ACCESSIBLE ROUTES. MARKED CROSSINGS SHALL BE PROVIDED WHERE THE ACCESSIBLE ROUTE MUST CROSS VEHICULAR TRAFFIC LANES. WHERE POSSIBLE, IT IS PREFERABLE THAT THE ACCESSIBLE ROUTE NOT PASS BEHIND PARKED VEHICLES.
4. TWO (2) ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE.
5. ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE THEY SERVE.
6. ACCESS AISLES SHALL BE MARKED SO AS TO DISCOURAGE PARKING IN THEM.
7. ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPT FOR ANGLED VAN PARKING SPACES WHICH SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.
8. FLOOR SURFACES OF PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED.
9. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS.
10. PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE ROUTE.
11. PARKING SPACES FOR VANS AND ACCESS AISLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF NINETY-EIGHT (98) INCHES MINIMUM. SIGNS SHALL BE PROVIDED AT ENTRANCES TO PARKING FACILITIES INFORMING DRIVERS OF CLEARANCES AND THE LOCATION OF VAN ACCESSIBLE PARKING SPACES.
12. EACH ACCESSIBLE PARKING SPACE SHALL BE PROVIDED WITH SIGNAGE DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. SIGNS SHALL BE INSTALLED AT A MINIMUM CLEAR HEIGHT OF SIXTY (60) INCHES ABOVE GRADE AND SHALL NOT INTERFERE WITH AN ACCESSIBLE ROUTE FROM AN ACCESS AISLE. SIGNS LOCATED WHERE THEY MAY BE HIT BY VEHICLES BEING PARKED SHALL BE INSTALLED WITH BOLLARD PROTECTION.
13. SIGNAGE AT ACCESSIBLE PARKING SPACES REQUIRED BY THE NC BUILDING CODE SECTION 1106.15 SHALL COMPLY WITH THE REQUIREMENTS OF NORTH CAROLINA GENERAL STATUTE 20-37.6 AND 136-30 AND THE NCDOT UNIFORM MANUAL ON TRAFFIC CONTROL DEVICES. A SEPARATE SIGN IS REQUIRED FOR EACH SPACE. SIGNS TO INDICATE THE MAXIMUM PENALTY MUST BE PROVIDED AT EACH ACCESSIBLE SPACE.
14. ACCESSIBLE PARKING SPACE, ACCESS AISLE STRIPING, AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PAINTED BLUE (OR ANOTHER COLOR THAT CAN BE DISTINGUISHED FROM PAVEMENT).

PASSENGER LOADING ZONE NOTES:

1. PASSENGER LOADING ZONES SHALL PROVIDE VEHICULAR PULL-UP SPACE NINETY-SIX (96) INCHES WIDE MINIMUM AND TWENTY (20) FEET LONG MINIMUM.
2. PASSENGER LOADING ZONES SHALL PROVIDE A CLEARLY MARKED ACCESS AISLE THAT IS SIXTY (60) INCHES WIDE MINIMUM AND EXTENDS THE FULL LENGTH OF THE VEHICLE PULL-UP SPACE THEY SERVE.
3. ACCESS AISLE SHALL ADJOIN AN ACCESSIBLE ROUTE AND NOT OVERLAP THE VEHICULAR WAY.
4. VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ALL DIRECTIONS. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE VEHICLE PULL-UP SPACE THEY SERVE. CHANGES IN LEVEL ARE NOT PERMITTED.
5. FLOOR SURFACES OF VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT.
6. VEHICLE PULL-UP SPACES, ACCESS AISLES SERVING THEM AND A VEHICULAR ROUTE FROM AN ENTRANCE TO THE PASSENGER LOADING ZONE AND FROM THE PASSENGER LOADING ZONE TO A VEHICULAR EXIT SERVING THEM, SHALL PROVIDE A VERTICAL CLEARANCE OF ONE HUNDRED FOURTEEN (114) INCHES MINIMUM.

ACCESSIBLE ENTRANCE NOTES:

1. ACCESSIBLE ENTRANCES SHALL BE PROVIDED AS REQUIRED BY THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS) AND THE NORTH CAROLINA BUILDING CODE, AND APPLICABLE LOCAL LAWS & REGULATIONS.
2. ENTRANCE DOORS, DOORWAYS AND GATES SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS) THE NC BUILDING CODE/ANSI A117.1 AND SHALL BE ON AN ACCESSIBLE ROUTE.

GENERAL STORM SEWER NOTES

1. ALL STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TOWN OF LELAND REQUIREMENTS AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
2. BEDDING FOR ALL STORM SEWER PIPE SHALL BE AS SPECIFIED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
3. ALL STORM SEWER PIPES SHOWN AS RCP ON THE PLANS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76, UNLESS INDICATED OTHERWISE ON PLANS.

ROOF DRAIN NOTE:

1. PROPOSED BUILDING SHALL DIVERT ROOF DRAINAGE TO STORMWATER COLLECTION SYSTEM OR AS SHOWN ON THE PLANS.

EXISTING UTILITY NOTES:

1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO VERIFY THE ACTUAL LOCATION AND AVAILABILITY OF ALL EXISTING AND PROPOSED UTILITIES IN THE FIELD PRIOR TO GROUND BREAKING.
2. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH

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.

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
<ul style="list-style-type: none">Temporary grass seed covered with straw or other mulches and tackifiersHydroseedingRoller erosion control products with or without temporary grass seedAppropriately applied straw or other mulchPlastic sheeting	<ul style="list-style-type: none">Permanent grass seed covered with straw or other mulches and tackifiersGeotextile fabrics such as permanent soil reinforcement mattingHydroseedingShrubs or other permanent plantings covered with mulchUniform and evenly distributed ground cover sufficient to restrain erosionStructural methods such as concrete, asphalt or retaining wallsRoller erosion control products with grass seed

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

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

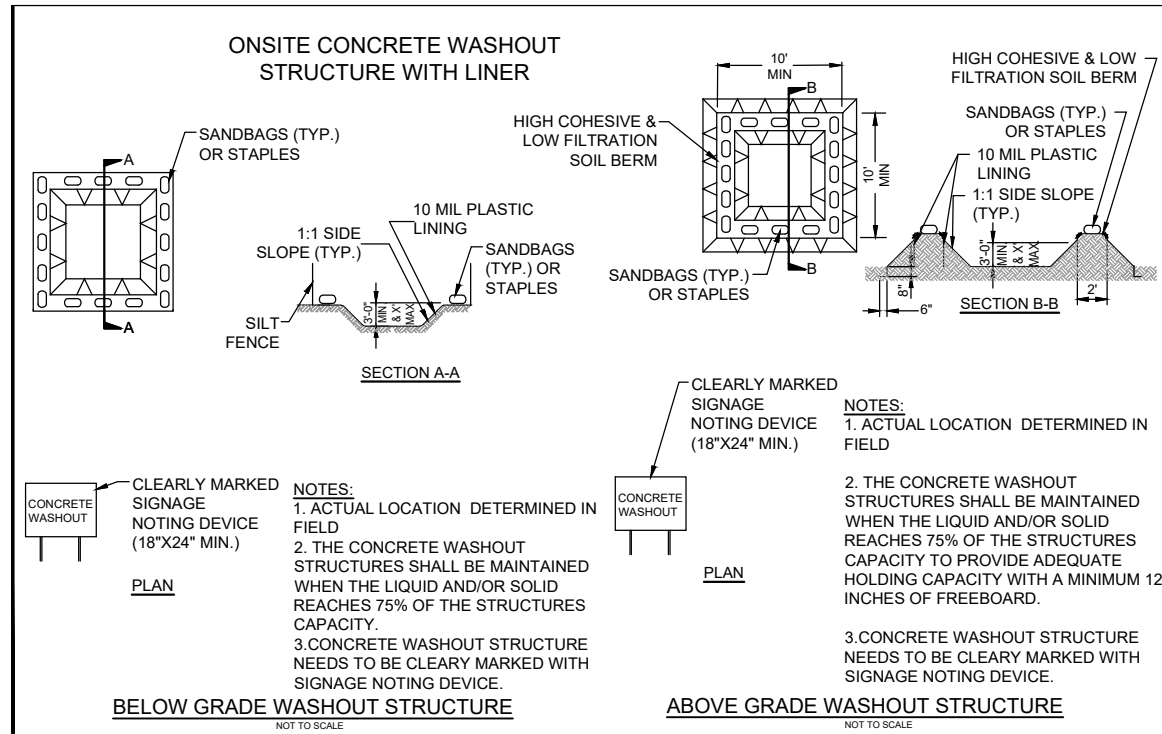
- LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**
- Never bury or burn waste. Place litter and debris in approved waste containers.
 - Provide a sufficient number and size of waste containers (e.g. dumpster, trash receptacle) on site to contain construction and domestic wastes.
 - Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
 - 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.
 - Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
 - Anchor all lightweight items in waste containers during times of high winds.
 - Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
 - Dispose waste off-site at an approved disposal facility.
 - On business days, clean up and dispose of waste in designated waste containers.

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

- PORTABLE TOILETS**
- 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.
 - Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
 - 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**
- 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.
 - Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
 - Provide stable stone access point when feasible.
 - 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.

- HAZARDOUS AND TOXIC WASTE**
- Create designated hazardous waste collection areas on-site.
 - Place hazardous waste containers under cover or in secondary containment.
 - Do not store hazardous chemicals, drums or bagged materials directly on the ground.



- CONCRETE WASHOUTS**
- Do not discharge concrete or cement slurry from the site.
 - Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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**
- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
 - 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.
 - 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.
 - Do not stockpile these materials onsite.

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 hour. 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 unattended 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 \geq 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 \geq 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. 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.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Identification of the 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.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event \geq 1.0 inch in 24 hours	1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit 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 documented in the manner described:	
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**
In addition to the E&SC Plan documents above, the following items shall be kept on the site and available for agency 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:

- This general permit as well as the certificate of coverage, after it is received.
- Records of inspections made during the previous 30 days. 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.
- All data used to complete the Notice of Intent and older 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: <ul style="list-style-type: none">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), orThey 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 Division's Emergency Response personnel at (800) 662-7956, (800) 658-0368 or (919) 733-3300.	
Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none">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 3303a-100 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)-(d) above	<ul style="list-style-type: none">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)]	<ul style="list-style-type: none">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)]	<ul style="list-style-type: none">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(i)(7)]	<ul style="list-style-type: none">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(i)(6)].Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

REVISIONS:

CLIENT INFORMATION:

PARAMOUNT ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

GENERAL NOTES
N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

PROJECT STATUS
PRELIMINARY LAYOUT:
FINAL DESIGN:
RELEASED FOR CONSTRUCTION:

DRAWING INFORMATION
DATE: 04/23/20
SCALE: N.T.S.
DRAWN: RPE
CHECKED: RPE
04/23/20

PEI JOB#: 19248.PE

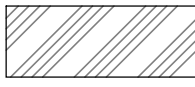
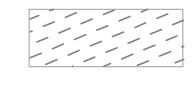
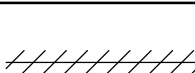
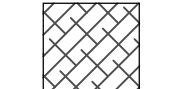
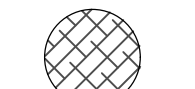
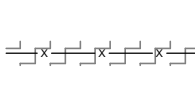
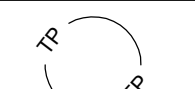




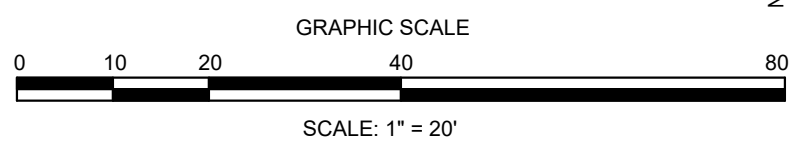
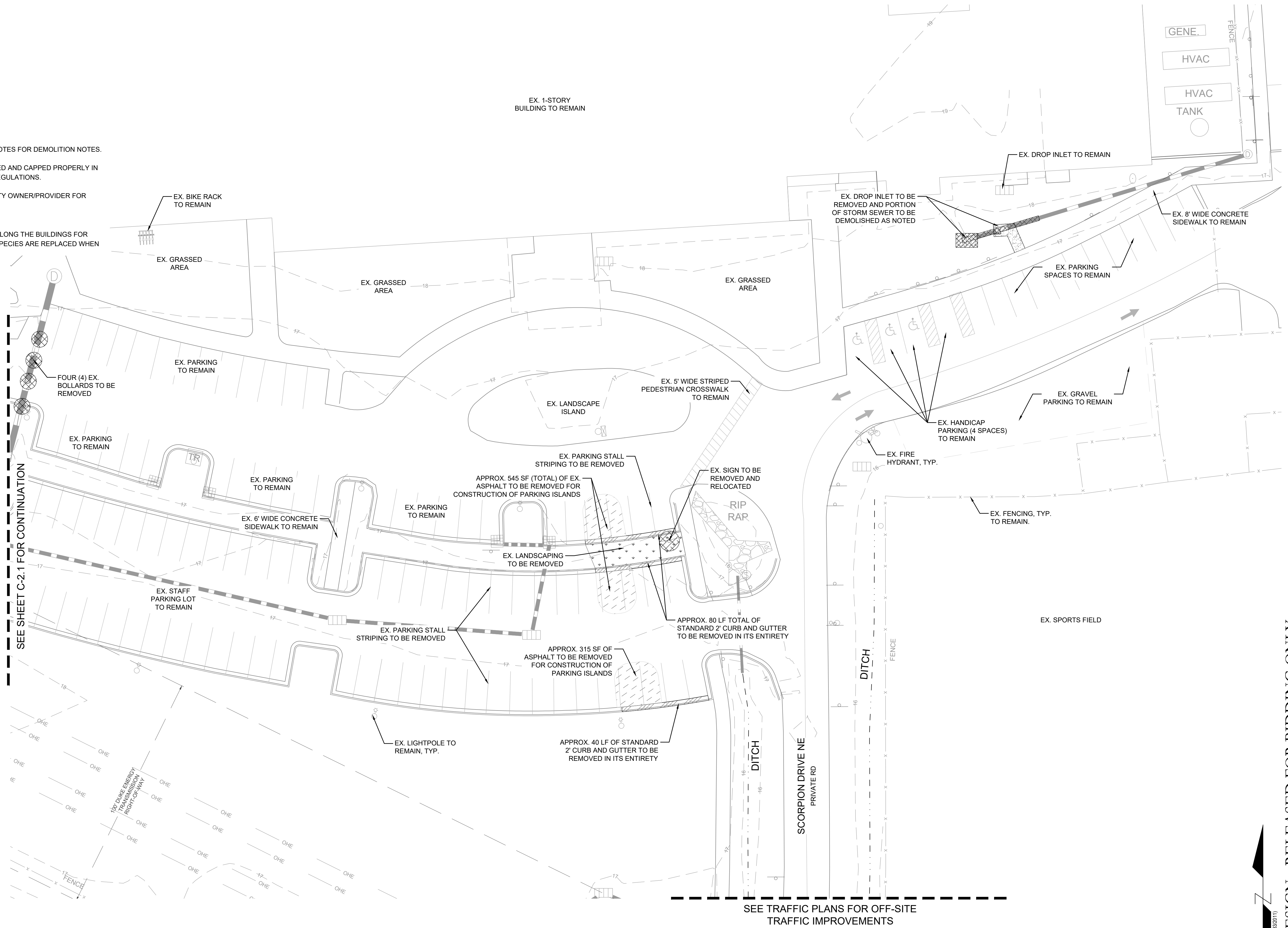
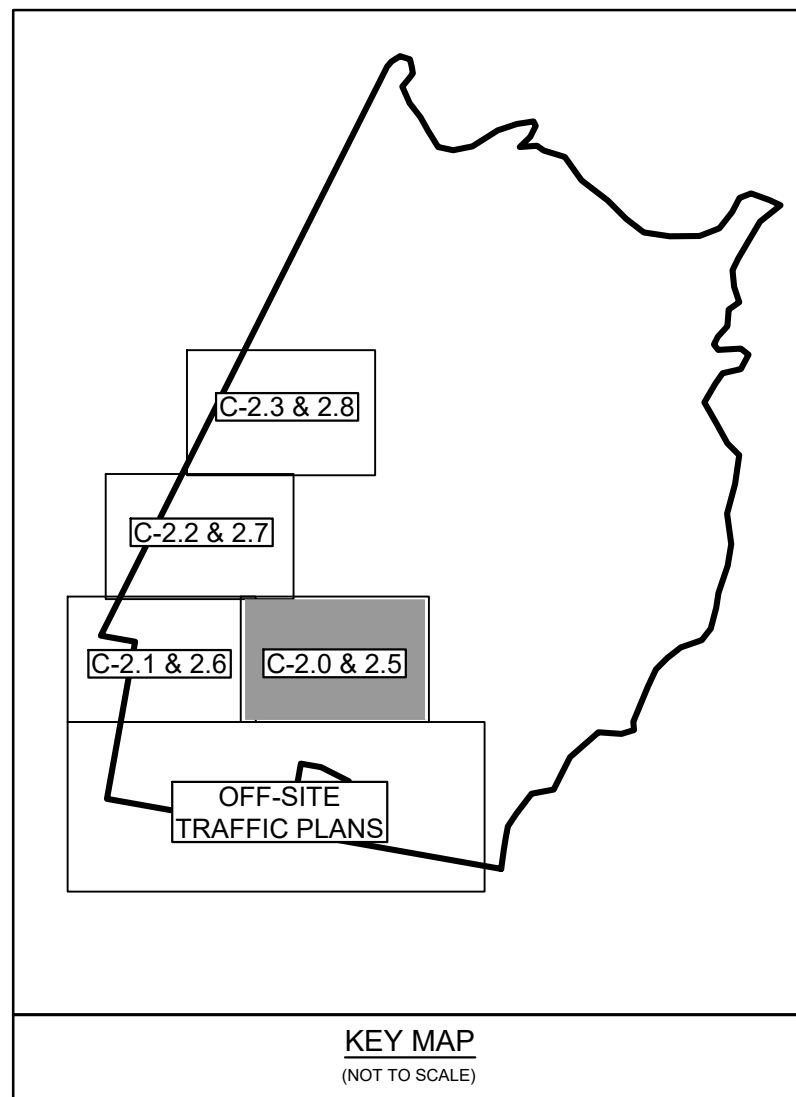
FINAL DESIGN - RELEASED FOR BIDDING ONLY



1. CONTRACTOR SHALL REFER TO SHEET C-1.0 GENERAL NOTES FOR DEMOLITION NOTES
2. ALL UTILITIES SHALL BE ABANDONED AND/OR DEMOLISHED AND CAPPED PROPERLY IN ACCORDANCE WITH THE UTILITY OWNERS RULES AND REGULATIONS.
3. CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY OWNER/PROVIDER FOR DEMOLITION.

1. CONTRACTOR SHALL REMOVE SHRUBS AS NECESSARY ALONG THE BUILDINGS FOR CONSTRUCTION AS LONG AS THE SAME QUANTITY AND SPECIES ARE REPLACED WHEN CONSTRUCTION IS COMPLETE.

SYMBOLS LEGEND	
	EXISTING CONCRETE TO BE REMOVED
	EXISTING ASPHALT TO BE REMOVED
	EXISTING UTILITY LINE TO BE REMOVED
	EXISTING STORM STRUCTURE TO BE REMOVED
	EXISTING SIGNAL/LIGHT/UTILITY POLE TO BE REMOVED
	EXISTING FENCE TO BE REMOVED
	TREE PROTECTION FENCING
	EXISTING TREE/SHRUBS TO BE REMOVED
	EXISTING BUILDING/STRUCTURE TO BE REMOVED



FINAL DESIGN - RELEASED FOR BIDDING ONLY

<u>REVISIONS:</u>	

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PARAMOUNT

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(910) 791-6707 (O) (910) 791-6760 (F)
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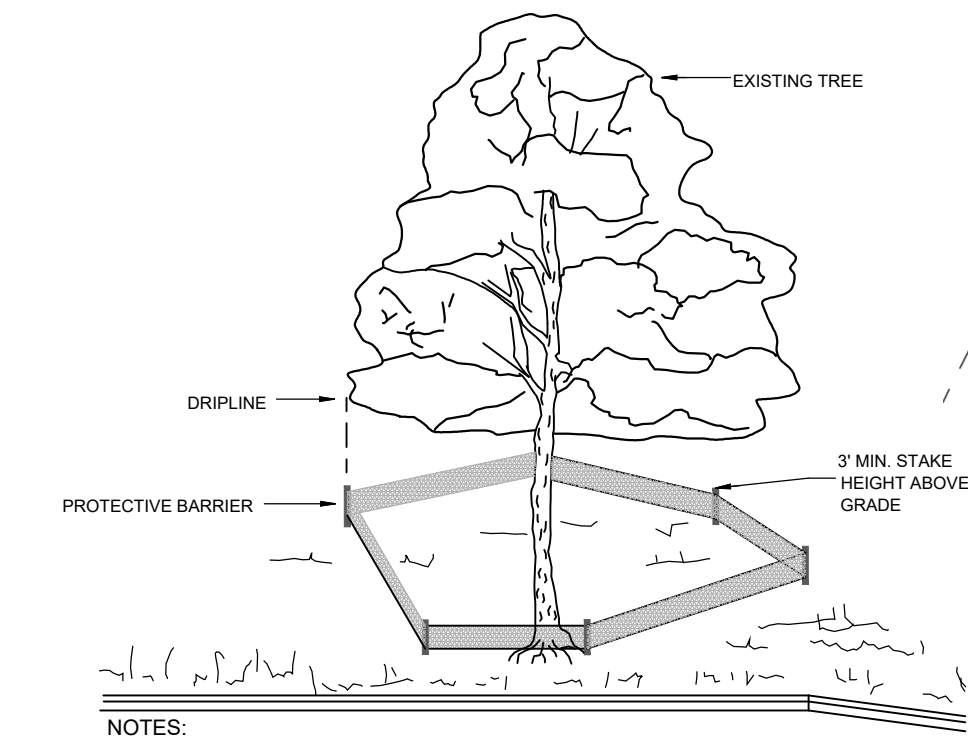
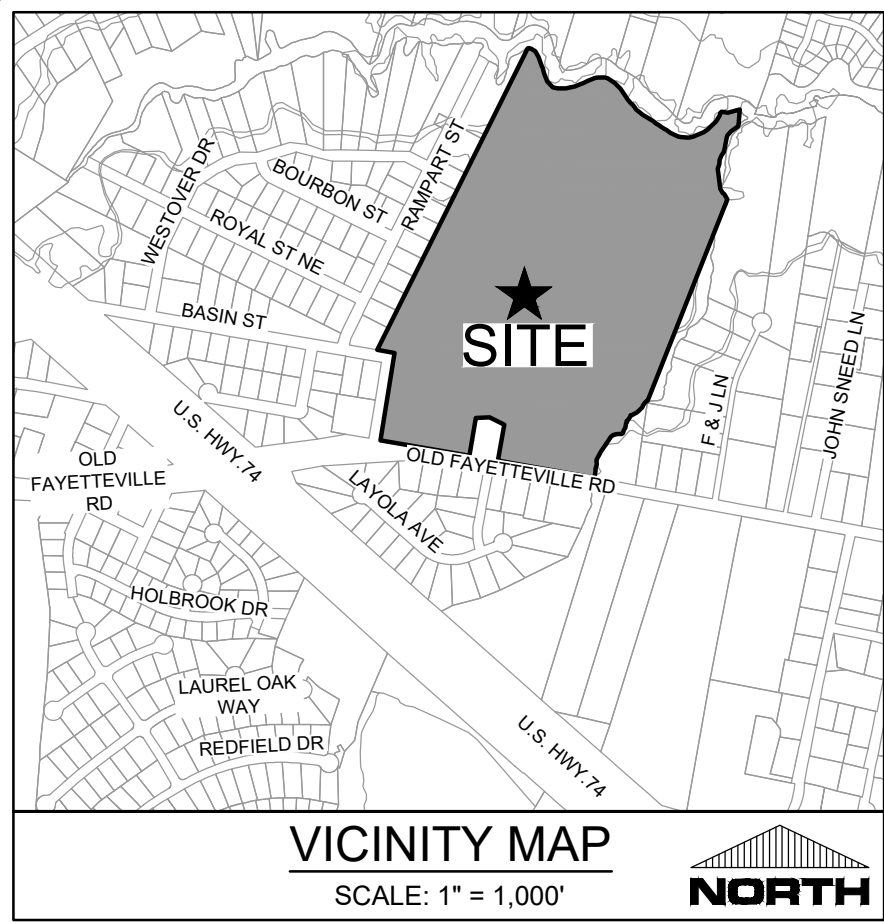
DEMOLITION PLAN

N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT HALLAND 04/23/20	DRAWING INFORMATION DATE: 04/23/20 DESIGNED: T CHECKED: AEC DRAWN: AEC RPP:
	PROJECT STATUS: PRELIMINARY: YES FINAL DESIGN: RELEASED FOR CONSTRUCTION:
C-2.0	
PEI JOB#: 19248.PE	

PEI JOB#: 19248.PE

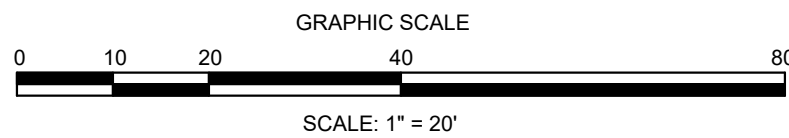
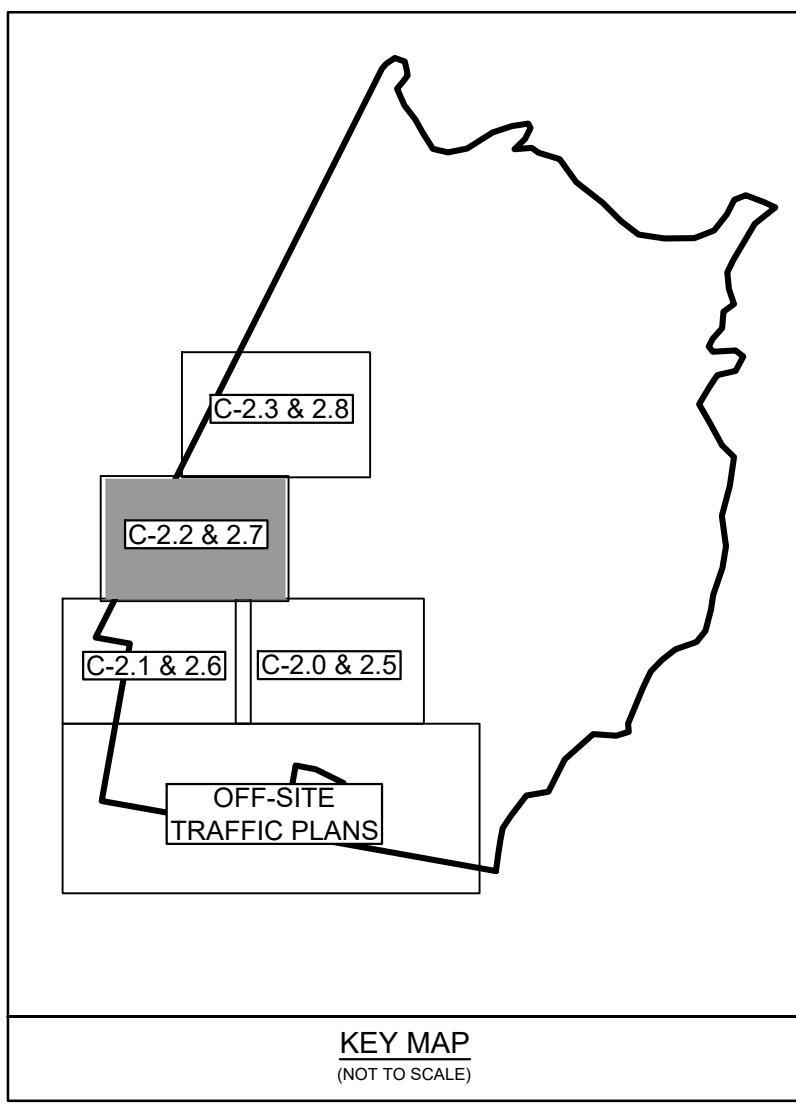
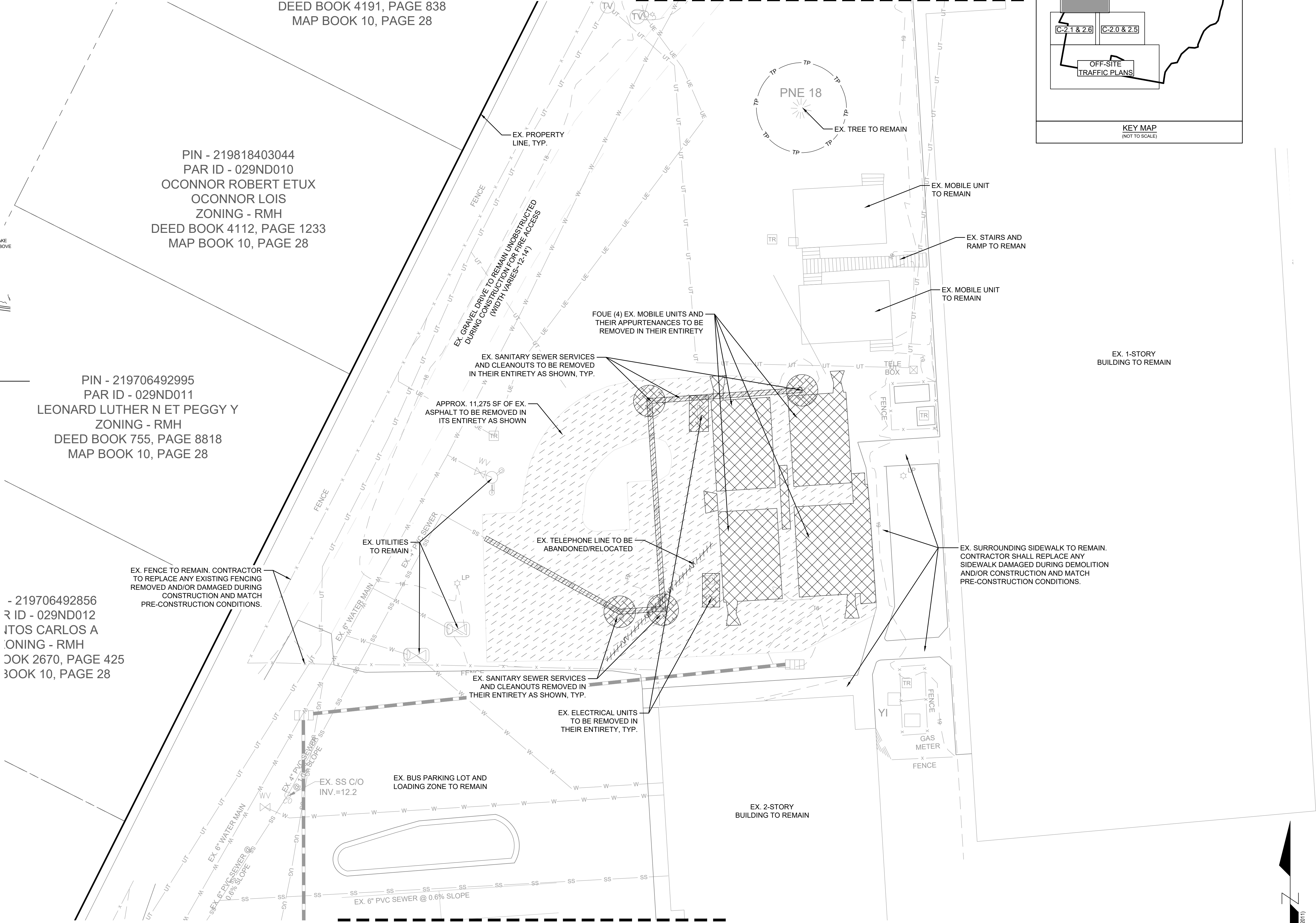
FINAL DESIGN - RELEASED FOR BIDDING ONLY



METHOD OF TREE PROTECTION DURING CONSTRUCTION
NTS

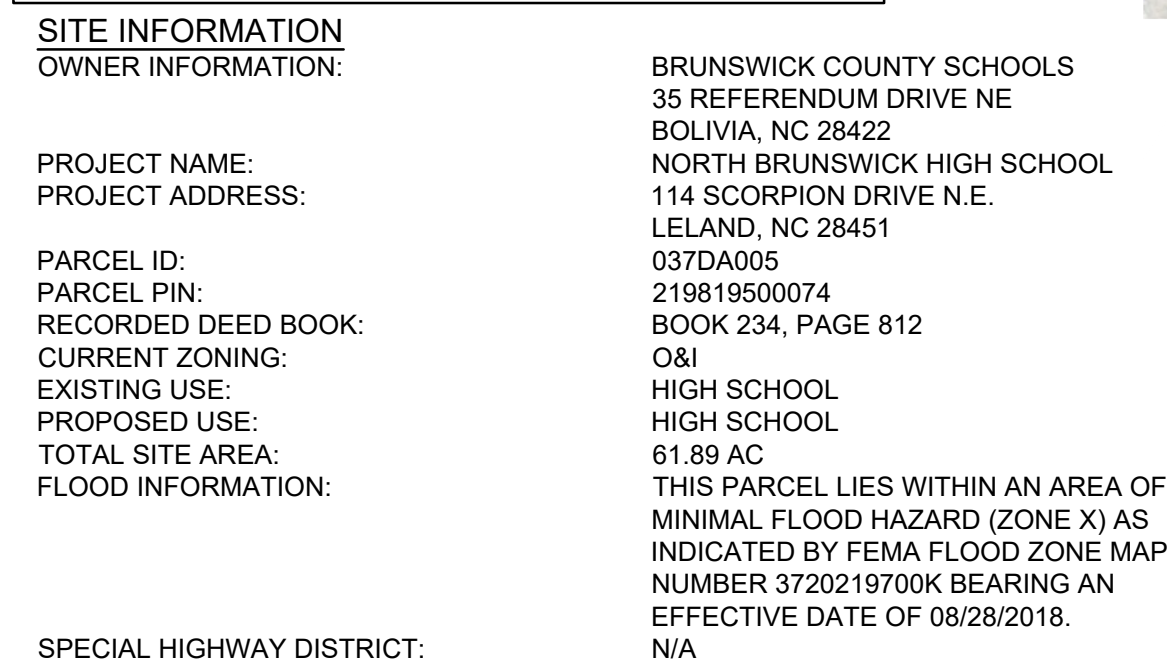
SYMBOLS LEGEND	
	EXISTING CONCRETE TO BE REMOVED
	EXISTING ASPHALT TO BE REMOVED
	EXISTING UTILITY LINE TO BE REMOVED
	EXISTING STORM STRUCTURE TO BE REMOVED
	EXISTING SIGNAL/LIGHT/UTILITY POLE TO BE REMOVED
	EXISTING FENCE TO BE REMOVED
	TREE PROTECTION FENCING
	EXISTING TREE/SHRUBS TO BE REMOVED
	EXISTING BUILDING/STRUCTURE TO BE REMOVED

- DEMOLITION NOTES:**
- CONTRACTOR SHALL REFER TO SHEET C-1.0 GENERAL NOTES FOR DEMOLITION NOTES.
 - ALL UTILITIES SHALL BE ABANDONED AND/OR DEMOLISHED AND CAPPED PROPERLY IN ACCORDANCE WITH THE UTILITY OWNERS RULES AND REGULATIONS.
 - CONTRACTOR SHALL COORDINATE WITH ELECTRIC UTILITY OWNER/PROVIDER FOR DEMOLITION.
- EX. VEGETATION NOTES:**
- CONTRACTOR SHALL REMOVE SHRUBS AS NECESSARY ALONG THE BUILDINGS FOR CONSTRUCTION AS LONG AS THE SAME QUANTITY AND SPECIES ARE REPLACED WHEN CONSTRUCTION IS COMPLETE.



FINAL DESIGN - RELEASED FOR BIDDING ONLY

REVISIONS:	
CLIENT INFORMATION:	
BECKER MORGAN GROUP 3333 JAECKLE DRIVE, SUITE 120 WILMINGTON, NC 28403	
PARAMOUNT ENGINEERING, INC. 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6760 (F) NC License # C-2846	
DEMOLITION PLAN N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS 1.14 SCORPION DRIVE, LELAND BRUNSWICK COUNTY, NC	
PROJECT STATUS: DESIGNED BY: [Signature] PRELIMINARY LAYOUT: FINAL DESIGN: RELEASED FOR CONSTRUCTION: DATE: 04/23/20 SCALE: 1" = 20'	DRAWING INFORMATION: DRAWN BY: [Signature] CHECKED BY: [Signature] DATE: 04/23/20
SEAL NORTH CAROLINA PROFESSIONAL ENGINEER ROBERT P. BALLARD 031591 04/23/20	
C-2.2 PEI JOB#: 19248.PE	



TOTAL IMPERVIOUS (ENTIRE SITE) = 897,160 SF (20.25 AC)
PERCENT IMPERVIOUS (ENTIRE SITE) = 897,160 / 2,039,755 = 44.0%

SEE EXHIBIT DA-MAP FOR BREAKDOWN OF STORMWATER DRAINAGE AREAS

<u>BUILDING SETBACKS*</u>	<u>REQUIRED</u>	<u>PROVIDED</u>
FRONT	25'	SEE PLAN
SIDE	50'	SEE PLAN
REAR	50'	SEE PLAN

*SETBACKS LISTED ARE FOR O&I AND PUBLIC & PRIVATE SCHOOLS

BUILDING COVERAGE
COVERAGE CALCULATED HERE IS FOR ALL BUILDINGS
(EX. & PROPOSED) ON ENTIRE SITE

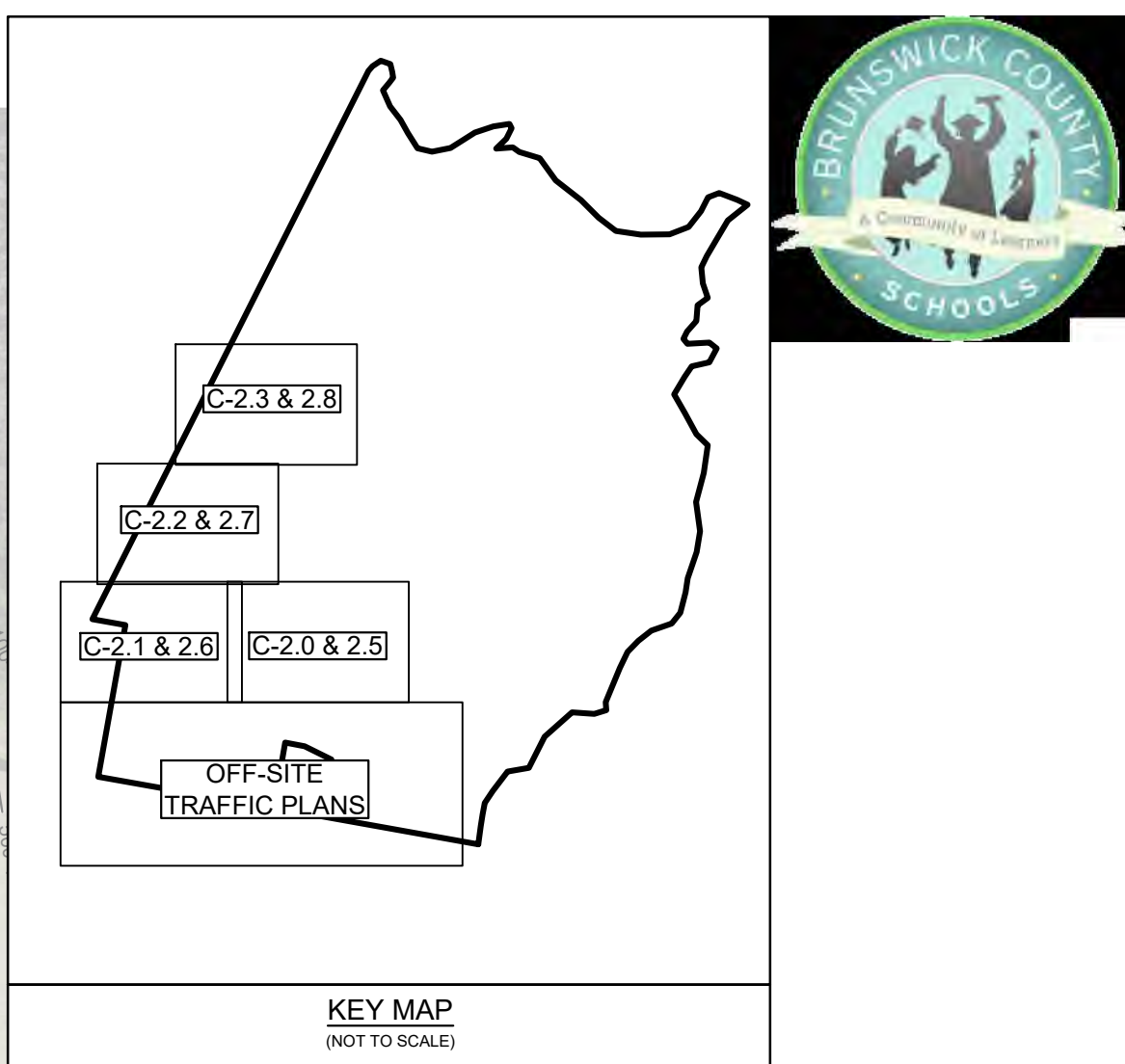
ALLOWABLE	80%
PROVIDED	200,454 SF / 2,695,928 SF = 7.44%

*SEE ARCHITECTURAL PLANS FOR INFORMATION OF ALL OTHER EXISTING BUILDINGS

GENERAL NOTES

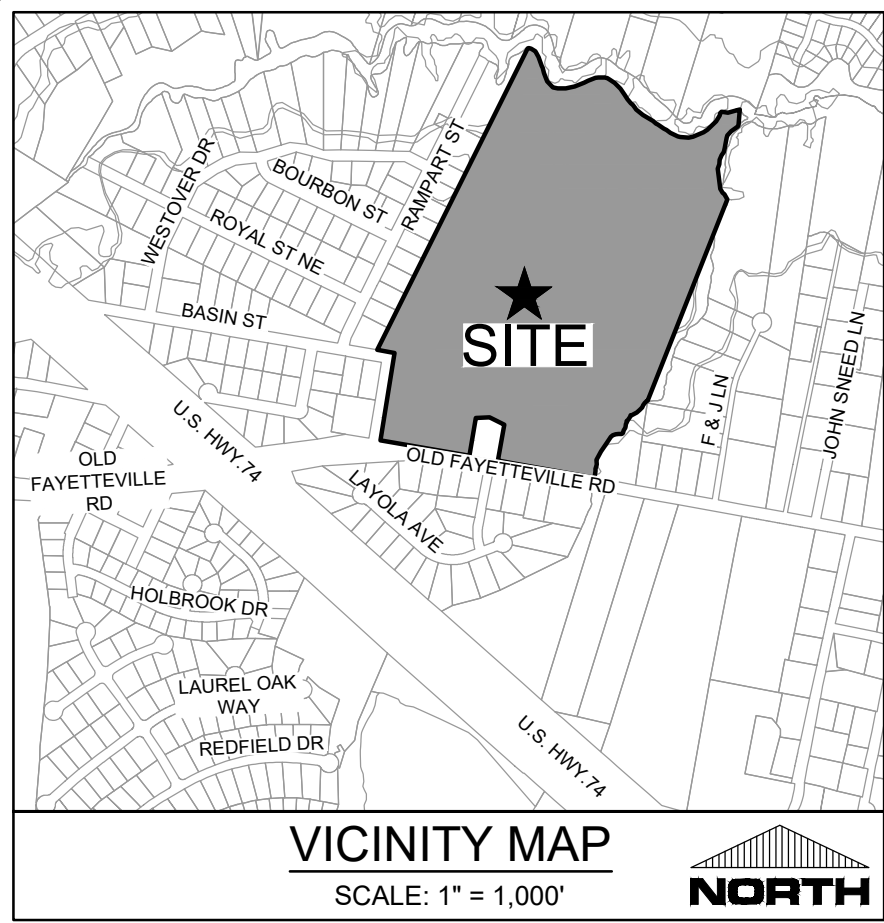
1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET TOWN AND/OR NCDOT STANDARDS.
2. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS.
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT OF WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. SEE LANDSCAPE PLAN FOR PLANTING INFORMATION.

GARBAGE REMOVAL
EXISTING DUMPSTERS AND ROLLOUT SERVICES TO REMAIN AND BE USED.
SEE PLAN FOR LOCATION.



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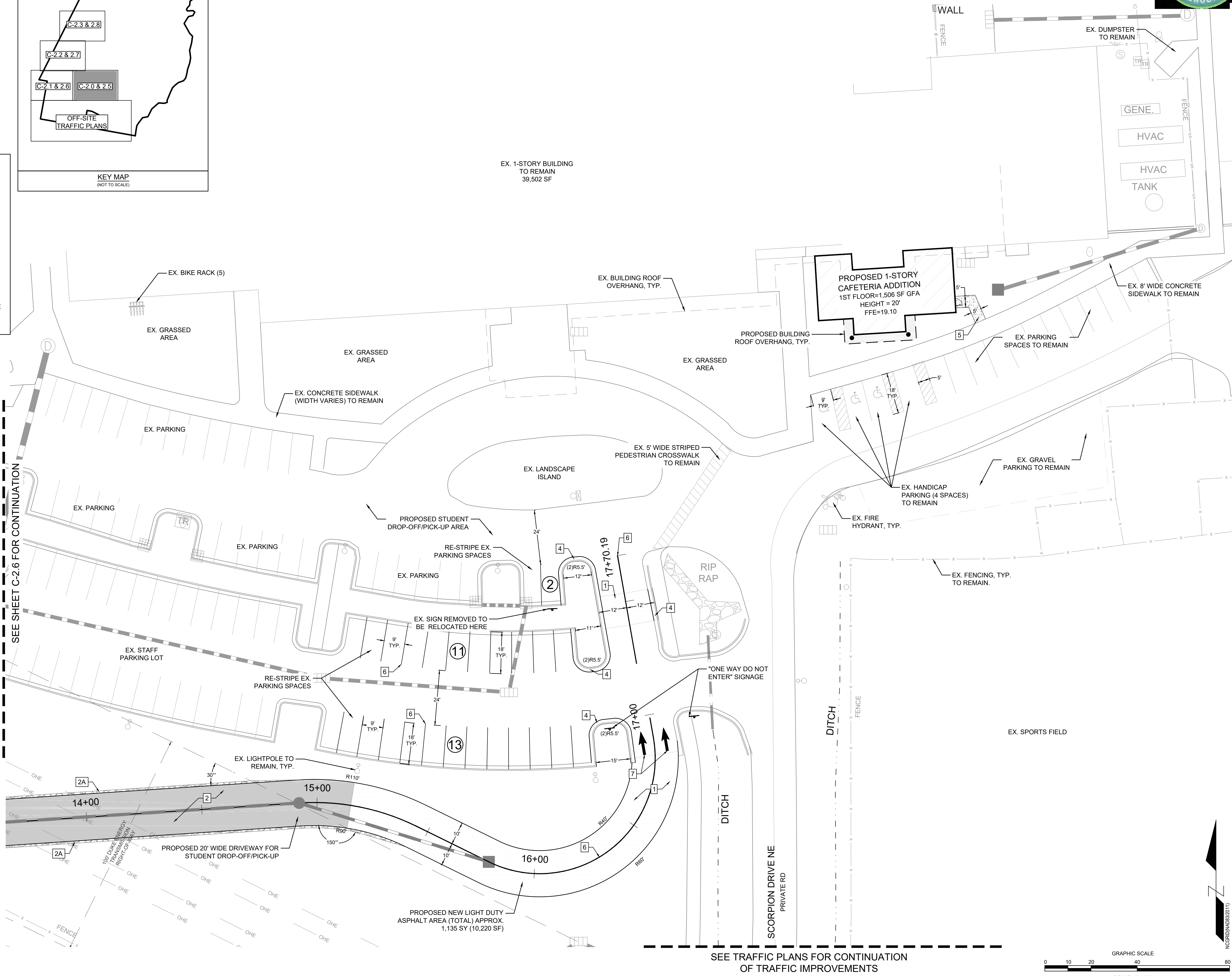
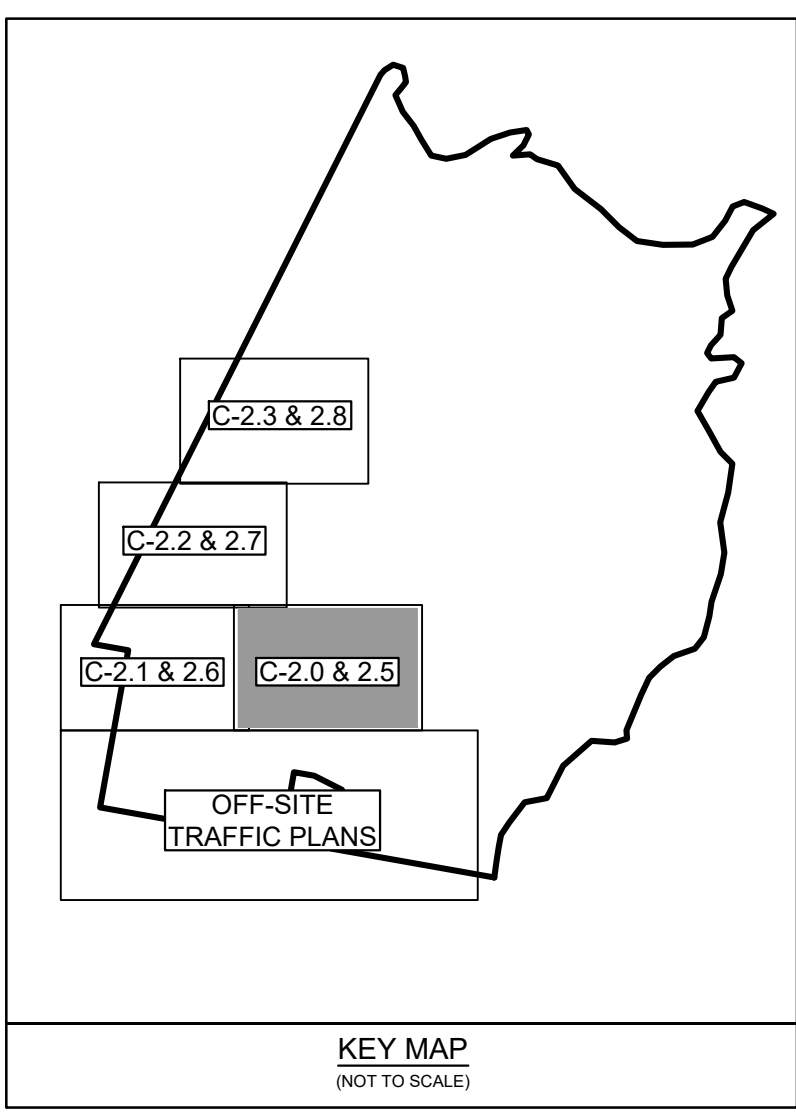


VICINITY MAP
SCALE: 1" = 1,000'



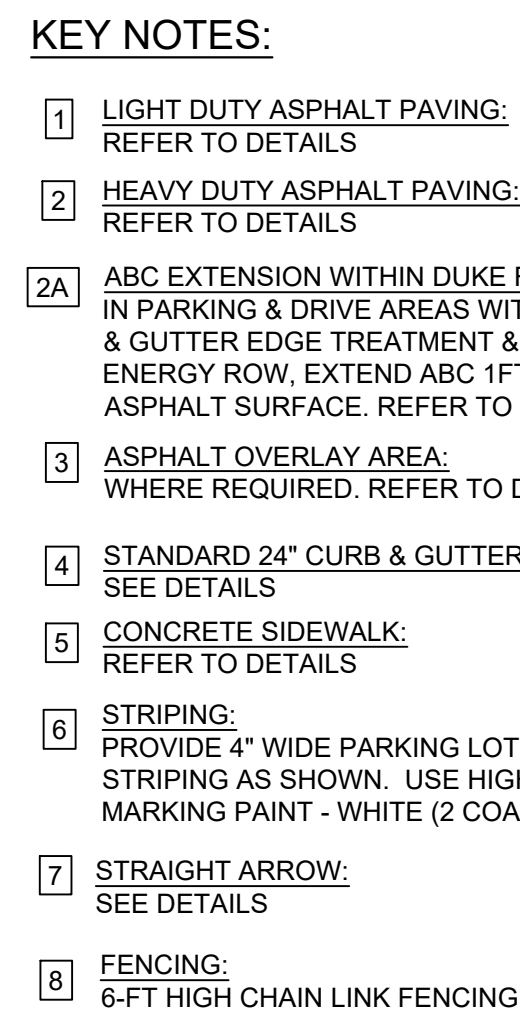
LEGEND:	
	PROPOSED ASPHALT OVERLAY
	PROPOSED LIGHT DUTY ASPHALT
	PROPOSED HEAVY DUTY ASPHALT
	PROPOSED BUILDING
	PROPOSED ROOF OVERHANG
	PROPOSED CONCRETE
	EXISTING CONCRETE
	PROPOSED FENCE
	PROPOSED TREE PROTECTION FENCE
	EXISTING CONTOURS

- KEY NOTES:**
- 1 LIGHT DUTY ASPHALT PAVING:
REFER TO DETAILS
 - 2 HEAVY DUTY ASPHALT PAVING:
REFER TO DETAILS
 - 2A ABC EXTENSION WITHIN DUKE ROW:
IN PARKING & DRIVE AREAS WITHOUT CURB
& GUTTER EDGE TREATMENT & WITHIN DUKE
ENERGY ROW, EXTEND ABC 1FT MIN. PAST
ASPHALT SURFACE. REFER TO DETAILS
 - 3 ASPHALT OVERLAY AREA:
WHERE REQUIRED. REFER TO DETAILS.
 - 4 STANDARD 24" CURB & GUTTER:
SEE DETAILS
 - 5 CONCRETE SIDEWALK:
REFER TO DETAILS
 - 6 STRIPING:
PROVIDE 4" WIDE PARKING LOT
STRIPING AS SHOWN. USE HIGHWAY
MARKING PAINT - WHITE (2 COATS).
 - 7 STRAIGHT ARROW:
SEE DETAILS
 - 8 FENCING:
6-FT HIGH CHAIN LINK FENCING



FINAL DESIGN - RELEASED FOR BIDDING ONLY

REVISIONS:		CLIENT INFORMATION:	
		BECKER MORGAN GROUP 3333 JAECKLE DRIVE, SUITE 120 WILMINGTON, NC 28403	
		PARAMOUNT ENGINEERING, INC. 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6700 (F) NC License # C-2846	
PROJECT STATUS:		SITE PLAN	
DESIGNED BY: PRELIMINARY LAYOUT		N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS 114 SCORPION DRIVE, LELAND BRUNSWICK COUNTY, NC	
DATE: 04/23/20		DRAWING INFORMATION	
SCALE: 1" = 20'		DRAWN: RFE	
CHECKED: RFE		SEAL	
		NORTH CAROLINA PROFESSIONAL ENGINEER 031591 ROBERT P. BALLARD 04/23/20	
		C-2.5	
		PEI JOB#: 19248.PE	

[illegible][illegible]

CLIENT INFORMATION:

BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 120
WILMINGTON, NC 28403

PARAMOUNT ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6700 (F)
NC License #: C-2846

SITE PLAN
N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

<p>PROJECT STATUS</p> <p>CONCEPTUAL LAYOUT: PRELIMINARY LAYOUT: FINAL DESIGN: RELEASED FOR CONST:</p>	<p>DRAWING INFORMATION</p> <p>DATE: 04/23/20 SCALE: 1" = 20' DESIGNED: AEC CHECKED: RPB RFB</p>	
<p>04/23/20</p>		

C-2.6

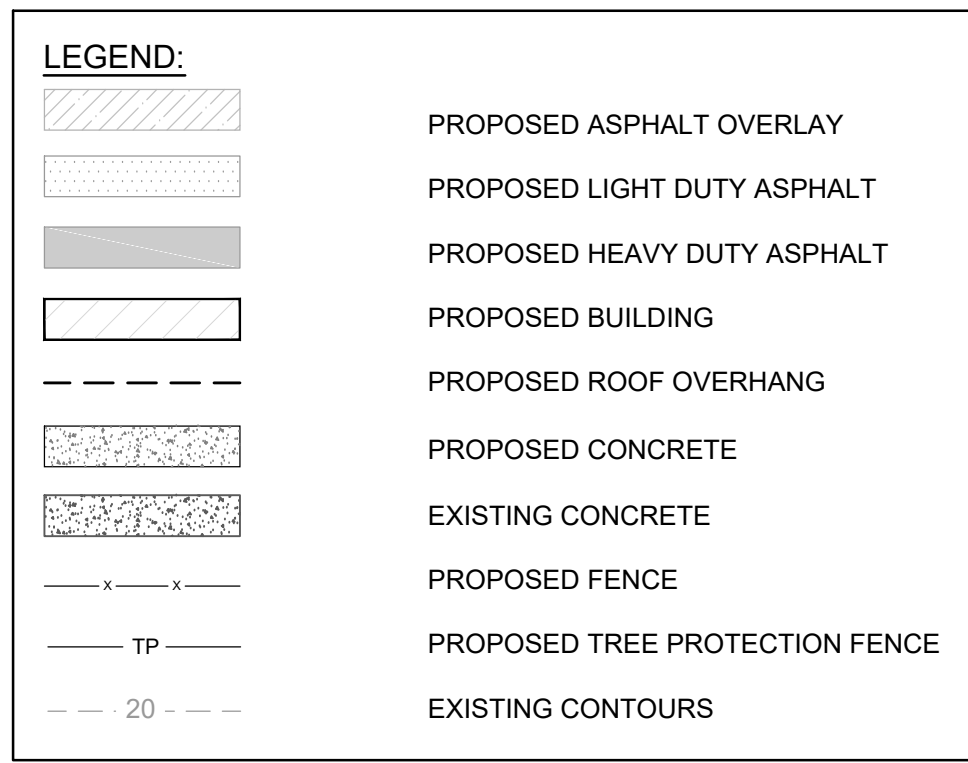
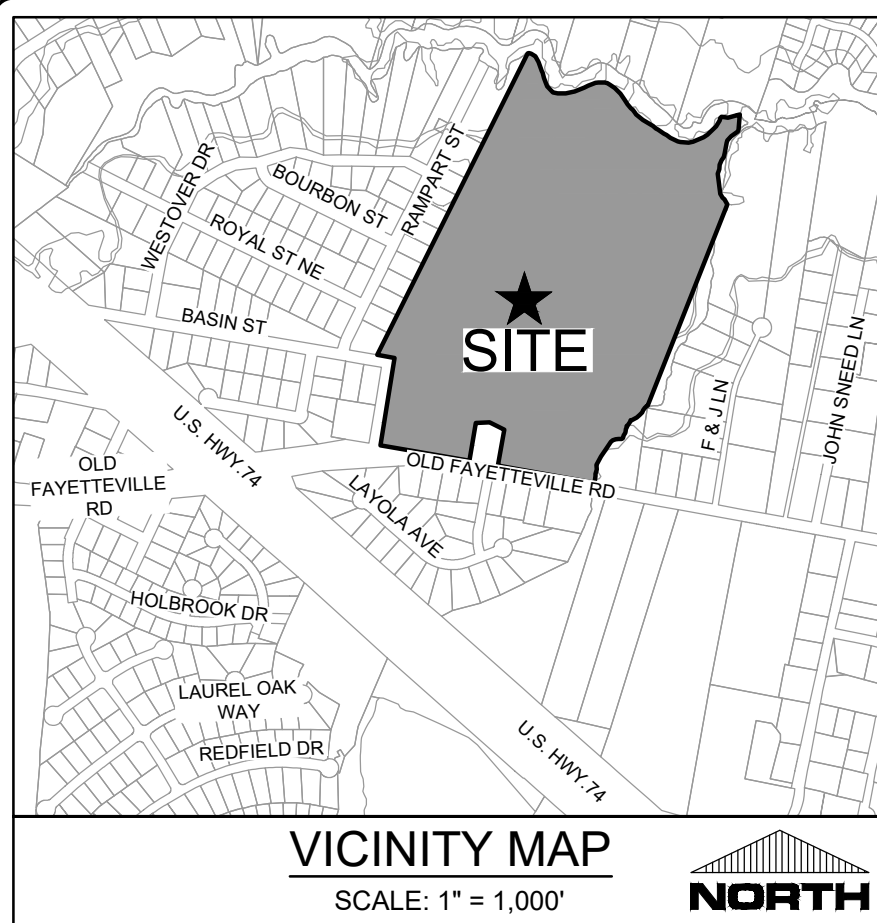
PEI JOB#: 19248.PE

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1000



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



PIN - 219818403044
PAR ID - 029ND010
OCONNOR ROBERT ETUX
OCONNOR LOIS
ZONING - RMH
DEED BOOK 4112, PAGE 1233
MAP BOOK 10, PAGE 28

PIN - 219706492995
PAR ID - 029ND011
LEONARD LUTHER N ET PEGGY Y
ZONING - RMH
DEED BOOK 755, PAGE 8818
MAP BOOK 10, PAGE 28

- 219706492856
R ID - 029ND012
JTOS CARLOS A
ONING - RMH
BOOK 2670, PAGE 425
BOOK 10, PAGE 28

SEE SHEET C-2.8 FOR CONTINUATION

EE PROTECTION
NCING, TYP.

EX. 6' WIDE CONCRETE
SIDEWALK TO REMAIN

— EX. MOBILE UN
TO REMAIN

— EX. STAIRS AND
RAMP TO REMAIN

EX. MOBILE UNIT
TO REMAIN

EX. 1-STORY BUILDING
TO REMAIN
45,290 SF

— EX. TRANSFORMER
AND ELECTRICAL

TIE INTO EXISTING
8' WIDE CONCRETE

EX. LIGHTPOLE
TO REMAIN

EX. SURROUNDING SIDEWALK TO REMAIN.
CONTRACTOR SHALL REPLACE ANY
SIDEWALK DAMAGED DURING DEMOLITION
AND/OR CONSTRUCTION AND MATCH
PRE-CONSTRUCTION CONDITIONS.

— EX. BUILDING ROOF
OVERHANG, TYP.

EX. FENCE TO REMAIN. CONTRACTOR
TO REPLACE ANY EXISTING FENCING
REMOVED AND/OR DAMAGED DURING
CONSTRUCTION AND MATCH
PRE-CONSTRUCTION CONDITIONS.

EX. SCHOOL BUS
PARKING AND
LOADING AREA

EX. SURROUNDING SIDEWALK TO REMAIN.
CONTRACTOR SHALL REPLACE ANY
SIDEWALK DAMAGED DURING DEMOLITION
AND/OR CONSTRUCTION AND MATCH
PRE-CONSTRUCTION CONDITIONS.

EX. 2-STORY
BUILDING TO REMAIN
30,275 SF

FX 6" PVC SEWER @ 0.6% SLOPE

NCGRID(NAD83/2011)

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REVISIONS:

CLIENT INFORMATION:

PARAMOUNT

BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 120
WILMINGTON, NC 28403

N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

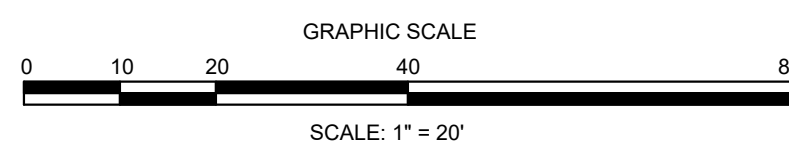
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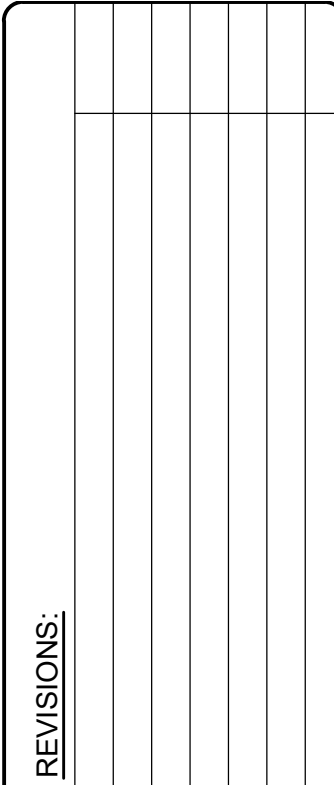
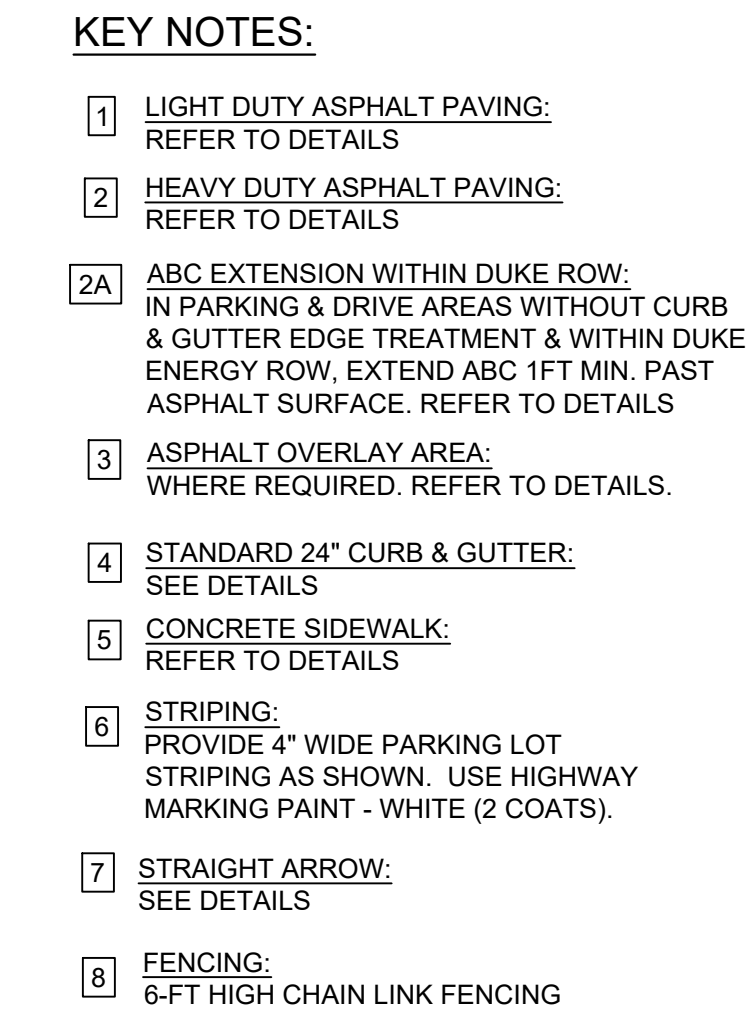
PROJECT STATUS:
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
FINAL DESIGN:
RELEASED FOR CONSTRUCTION:

<p>PROJECT STATUS</p> <p>CONCEPTUAL LAYOUT: PRELIMINARY LAYOUT: FINAL DESIGN: RELEASED FOR CONST:</p>	<p>DRAWING INFORMATION</p> <p>DATE: 04/23/20 SCALE: 1" = 20' DESIGNED: AEC DRAWN: AEC</p>
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C-2.7

PEI JOB#: 19248.PE

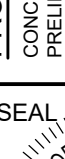




BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 120
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NC License #: C-2846

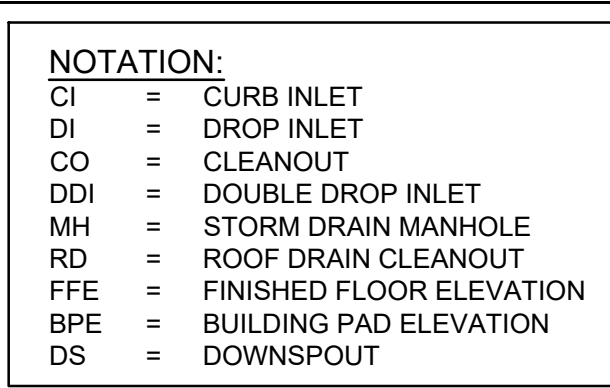
N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
1114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

<p>PROJECT STATUS</p> <p>CONCEPTUAL LAYOUT: PRELIMINARY LAYOUT: RELEASED FOR CONST.</p>	<p>DRAWING INFORMATION</p> <p>DATE: 04/23/20 SCALE: 1" = 20' DESIGNED: AEC DRAWN: AEC CHECKED: RPB</p>
	<p>SEAL</p>  <p>04/23/20</p>

C-2.8

PEI JOB#: 19248.PE

FINAL DESIGN - RELEASED FOR BIDDING ONLY



	EXISTING CONTOUR
	PROPOSED CONTOUR
	EXISTING SPOT ELEVATION
	PROPOSED EDGE OF PAVEMENT
	PROPOSED SIDEWALK ELEVATION
	PROPOSED GRADE
	PROPOSED TOP OF WALL
	EXISTING TOP OF CONCRETE
	INLET PROTECTION
	LIMITS OF DISTURBANCE
	SILT FENCE
	TREE PROTECTION FENCING
	DRAINAGE FLOW PATH
	DRAINAGE INLET LABEL

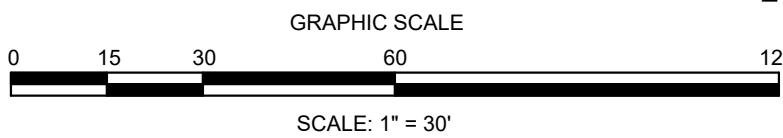
STORM PIPE SCHEDULE									
Upstream Node	Downstream Node	Diameter (in.)	Upstream Invert (ft)	Downstream Invert (ft)	Pipe Length (ft)	Pipe Slope (%)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Pipe Material
CO-4	DI-2	12.00	15.19	15.17	5	0.47%	18.50	18.48	HDPE
CO-6	CO-4	12.00	15.29	15.19	24	0.42%	18.50	18.50	HDPE
CO-7	CO-6	8.00	15.45	15.29	39	0.41%	18.50	18.50	HDPE
CO-8	CO-7	8.00	15.79	15.45	85	0.40%	18.33	18.50	HDPE
CO-9	CO-8	8.00	15.86	15.79	18	0.40%	18.35	18.33	HDPE
CO-10	CO-9	8.00	15.97	15.86	26	0.43%	18.35	18.35	HDPE
CO-11	CO-10	8.00	16.14	15.97	41	0.41%	18.51	18.35	HDPE
CO-12	CO-11	6.00	16.24	16.14	24	0.41%	18.85	18.51	HDPE
CO-5	CO-4	6.00	15.59	15.18	24	1.74%	18.09	18.50	HDPE
MH-1	DI-3	15.00	13.44	12.50	187	0.50%	18.50	17.10	RCP III
DI-4	MH-1	15.00	14.82	14.39	86	0.50%	16.88	18.50	RCP III
CO-3	CO-2	6.00	16.27	16.02	25	1.01%	18.50	18.00	HDPE
CO-2	EX DI-1	6.00	16.02	16.00	2	1.00%	18.00	17.87	HDPE
CO-1	EX DI-1	6.00	16.10	16.00	8	1.27%	18.90	17.87	HDPE

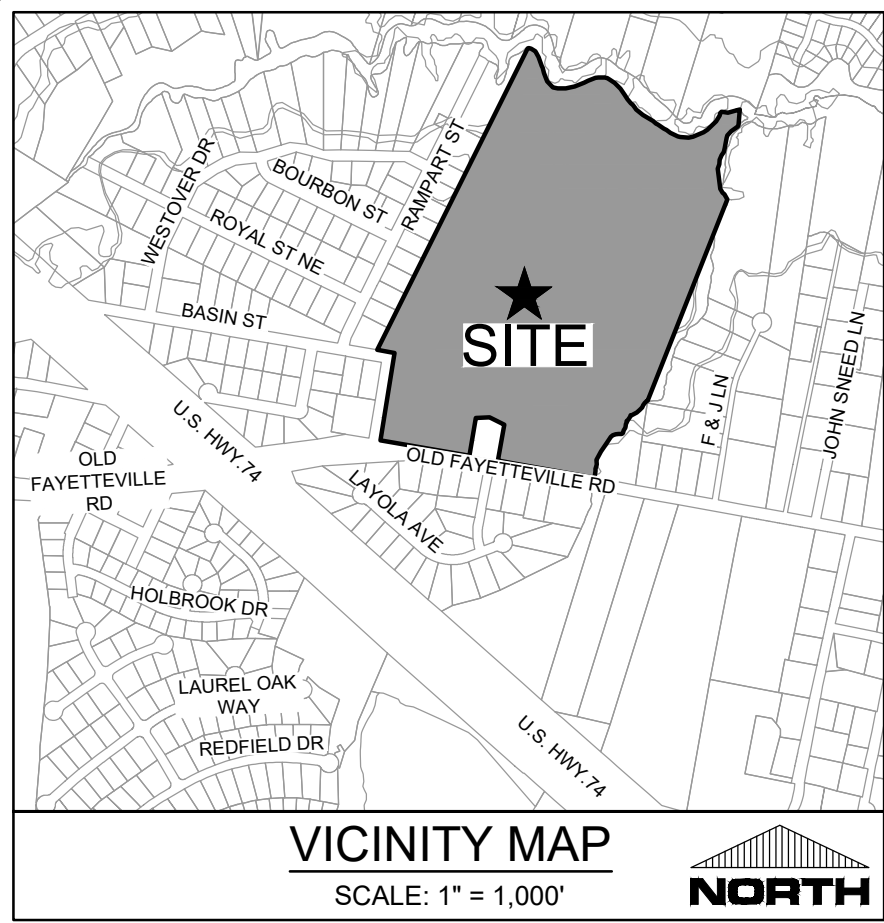


PEI JOB#: 19248.PE

FINAL DESIGN - RELEASED FOR BIDDING ONLY

SEE TRAFFIC PLANS FOR OFF-SITE
TRAFFIC IMPROVEMENTS





NOTATION:

CI = CURB INLET
DI = DROP INLET
CO = CLEANOUT
DDI = DOUBLE DROP INLET
MH = STORM DRAIN MANHOLE
RD = ROOF DRAIN CLEANOUT
FFE = FINISHED FLOOR ELEVATION
BPE = BUILDING PAD ELEVATION
DS = DOWNSPOUT

LEGEND:

16 --- 16 --- EXISTING CONTOUR
16 --- PROPOSED CONTOUR
25.05EG --- EXISTING SPOT ELEVATION
25.05EP --- PROPOSED EDGE OF PAVEMENT
25.05SW --- PROPOSED SIDEWALK ELEVATION
25.05PG --- PROPOSED GRADE
25.05TW --- PROPOSED TOP OF WALL
25.05TW --- PROPOSED TOP OF WALL
17.15TC --- EXISTING TOP OF CONCRETE
LOD --- LIMITS OF DISTURBANCE
SILT FENCE
TP --- TREE PROTECTION FENCING
DRAINAGE FLOW PATH
DRAINAGE INLET LABEL

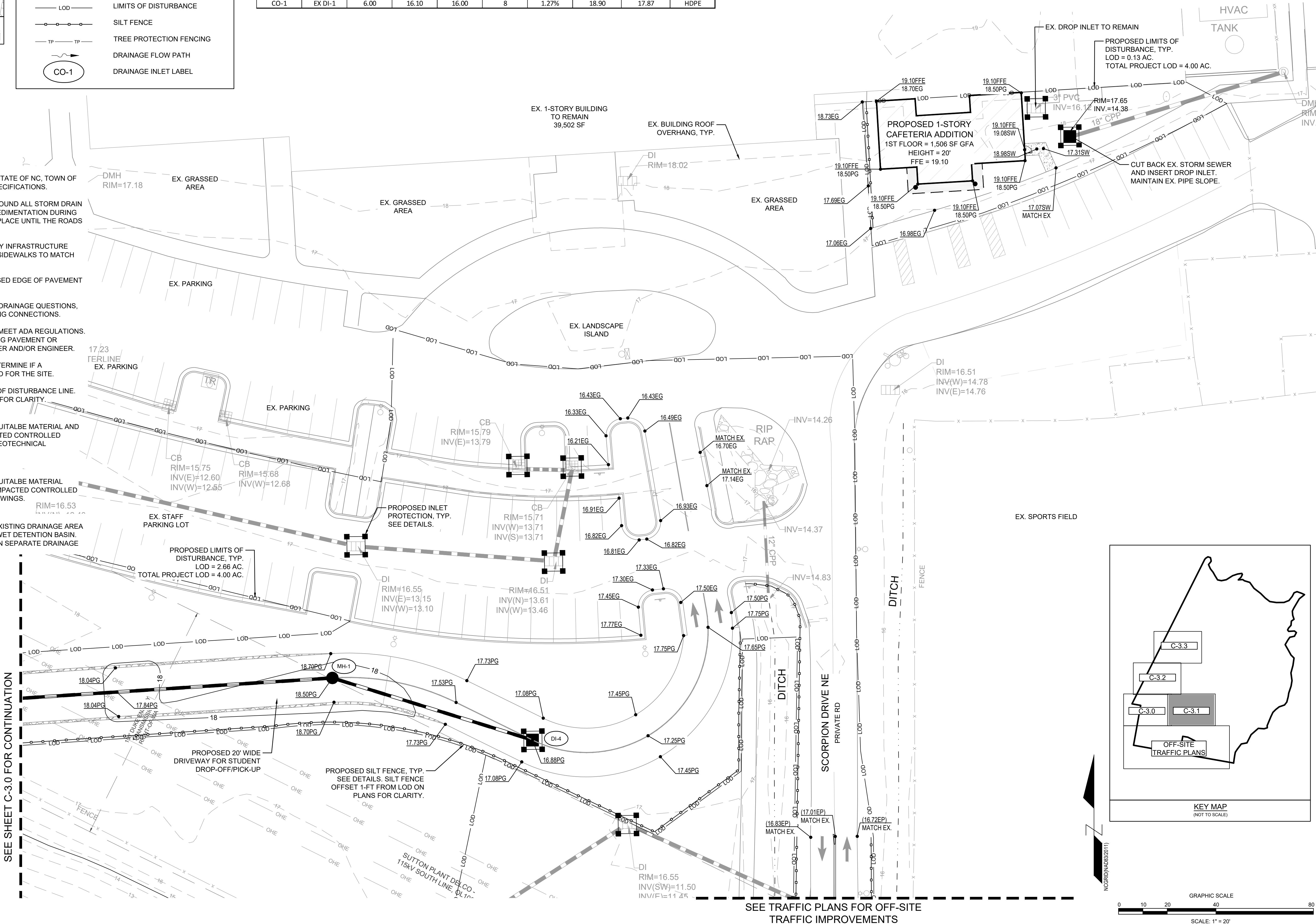
Upstream Node	Downstream Node	Diameter (in.)	Upstream Invert (ft)	Downstream Invert (ft)	Pipe Length (ft)	Pipe Slope (%)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Pipe Material
CO-4	DI-2	12.00	15.19	15.17	5	0.47%	18.50	18.48	HDPE
CO-6	CO-4	12.00	15.29	15.19	24	0.42%	18.50	18.50	HDPE
CO-7	CO-6	8.00	15.45	15.29	39	0.41%	18.50	18.50	HDPE
CO-8	CO-7	8.00	15.79	15.45	85	0.40%	18.33	18.50	HDPE
CO-9	CO-8	8.00	15.86	15.79	18	0.40%	18.35	18.33	HDPE
CO-10	CO-9	8.00	15.97	15.86	26	0.43%	18.35	18.35	HDPE
CO-11	CO-10	8.00	16.14	15.97	41	0.41%	18.51	18.35	HDPE
CO-12	CO-11	6.00	16.24	16.14	24	0.41%	18.85	18.51	HDPE
CO-5	CO-4	6.00	15.59	15.18	24	1.74%	18.09	18.50	HDPE
MH-1	DI-3	15.00	13.44	12.50	187	0.50%	18.50	17.10	RCP III
DI-4	MH-1	15.00	14.82	14.39	86	0.50%	16.88	18.50	RCP III
CO-3	CO-2	6.00	16.27	16.02	25	1.01%	18.50	18.00	HDPE
CO-2	EX DI-1	6.00	16.02	16.00	2	1.00%	18.00	17.87	HDPE
CO-1	EX DI-1	6.00	16.10	16.00	8	1.27%	18.90	17.87	HDPE

- GENERAL NOTES:
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC, TOWN OF LELAND, AND BRUNSWICK COUNTY STANDARDS AND SPECIFICATIONS.
 - THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE ROADS ARE PAVED.
 - CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE WITHIN ASPHALT OVERLAY, NEW ASPHALT AREAS, AND SIDEWALKS TO MATCH PROPOSED GRADES.
 - ALL PROPOSED SPOT ELEVATIONS SHOWN ARE PROPOSED EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
 - CONNECT ROOF DRAINS AS SHOWN. IF THERE ARE ANY DRAINAGE QUESTIONS, PLEASE NOTIFY OWNER AND ENGINEER PRIOR TO MAKING CONNECTIONS.
 - ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.
 - CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE IF A GEOTECHNICAL ENGINEERING REPORT WAS COMPLETED FOR THE SITE.
 - CONTRACTOR SHALL STAKE SILT FENCE ALONG LIMITS OF DISTURBANCE LINE. THE SILT FENCE LINETYPE IS OFFSET ON THE DRAWING FOR CLARITY.

- ASPHALT AREA NOTE:
- SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND/OR TECHNICAL SPECIFICATIONS.

- BUILDING PAD NOTE:
- SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH STRUCTURAL DRAWINGS.

- STORMWATER NOTES:
- THE PROPOSED CLASSROOM ADDITION IS WITHIN THE EXISTING DRAINAGE AREA THAT DRAINS TO THE EXISTING ON-SITE STORMWATER WET DETENTION BASIN. THE PROPOSED ROTC AND CAFETERIA ADDITIONS ARE IN SEPARATE DRAINAGE AREAS WHICH IS A LOW DENSITY AREA.



FINAL DESIGN - RELEASED FOR BIDDING ONLY

BRUNSWICK COUNTY
SCHOOLS

REVISIONS:

NO.	DATE	DESCRIPTION

CLIENT INFORMATION:

BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 120
WILMINGTON, NC 28403

PARAMOUNT ENGINEERING, INC.

122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License # C-2846

GRADING-DRAINAGE-EC PLAN

N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
1.14 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

PROJECT STATUS

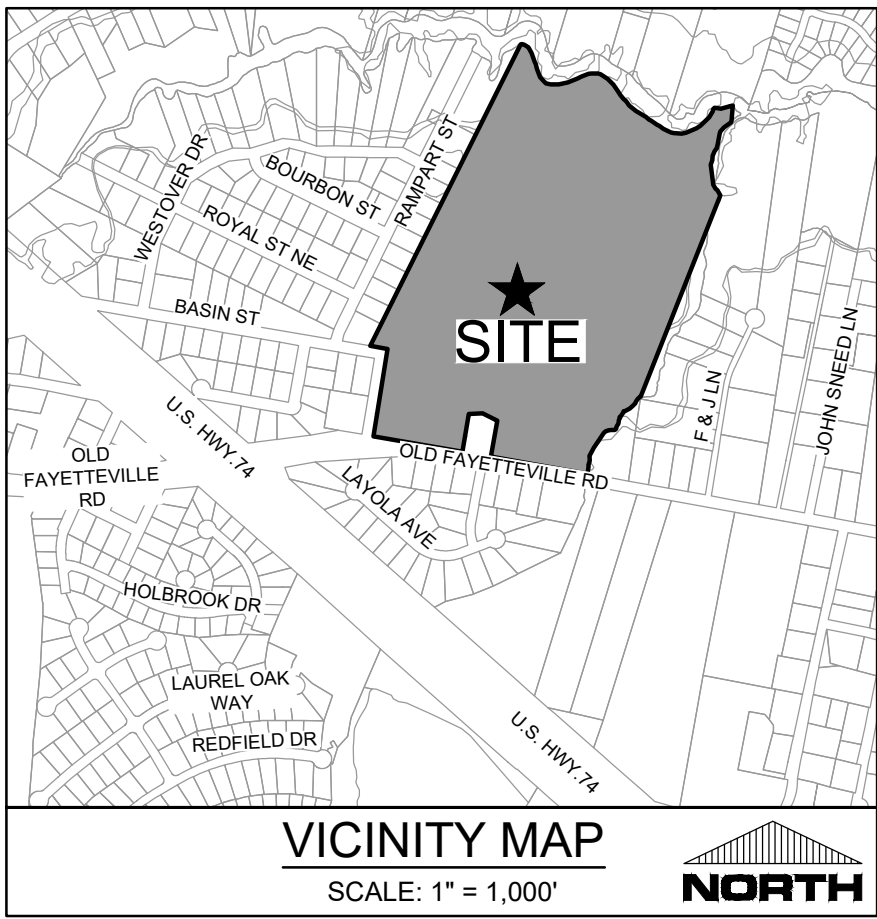
DATE: 04/23/20
SCALE: 1" = 20'

DRAWING INFORMATION

DATE: 04/23/20
SCALE: 1" = 20'

PROJECT: N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
SHEET: C-3.1
DATE: 04/23/20

PEI JOB#: 19248.PE



LEGEND:

- 16 --- EXISTING CONTOUR
--- 16 --- PROPOSED CONTOUR
25.05EP --- EXISTING SPOT ELEVATION
25.05EP --- PROPOSED EDGE OF PAVEMENT
25.05SW --- PROPOSED SIDEWALK ELEVATION
25.05PG --- PROPOSED GRADE
25.05TW --- PROPOSED TOP OF WALL
17.15TC --- EXISTING TOP OF CONCRETE
--- INLET PROTECTION
--- LOD --- LIMITS OF DISTURBANCE
--- SILT FENCE
--- TP --- TREE PROTECTION FENCING
--- DRAINAGE FLOW PATH
--- CO-1 --- DRAINAGE INLET LABEL

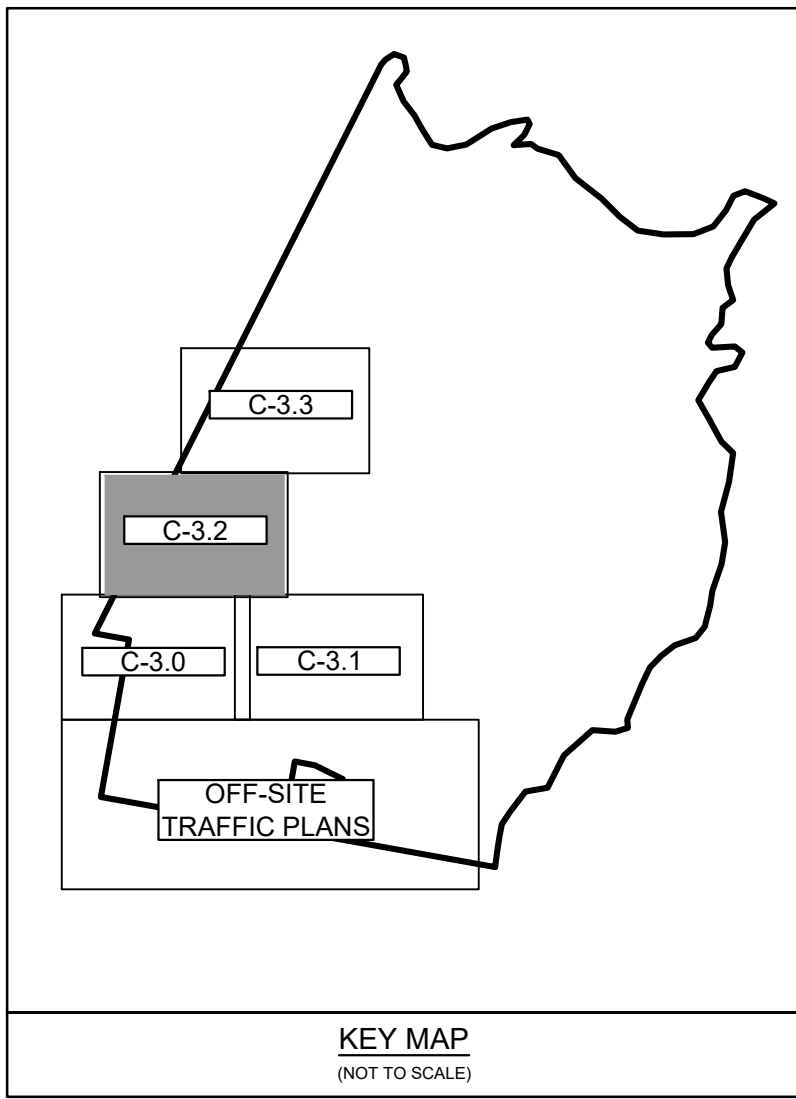
NOTATION:

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DI = DROP INLET
CO = CLEANOUT
DDI = DOUBLE DROP INLET
MH = STORM DRAIN MANHOLE
RD = ROOF DRAIN CLEANOUT
FFE = FINISHED FLOOR ELEVATION
BPE = BUILDING PAD ELEVATION
DS = DOWNSPOUT

STORM PIPE SCHEDULE

Upstream Node	Downstream Node	Diameter (in.)	Upstream Invert (ft)	Downstream Invert (ft)	Pipe Length (ft)	Pipe Slope (%)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Pipe Material
CO-4	DI-2	12.00	15.19	15.17	5	0.47%	18.50	18.48	HDPE
CO-6	CO-4	12.00	15.29	15.19	24	0.42%	18.50	18.50	HDPE
CO-7	CO-6	8.00	15.45	15.29	39	0.41%	18.50	18.50	HDPE
CO-8	CO-7	8.00	15.79	15.45	85	0.40%	18.33	18.50	HDPE
CO-9	CO-8	8.00	15.86	15.79	18	0.40%	18.35	18.33	HDPE
CO-10	CO-9	8.00	15.97	15.86	26	0.43%	18.35	18.35	HDPE
CO-11	CO-10	8.00	16.14	15.97	41	0.41%	18.51	18.35	HDPE
CO-12	CO-11	6.00	16.24	16.14	24	0.41%	18.85	18.51	HDPE
CO-5	CO-4	6.00	15.59	15.18	24	1.74%	18.09	18.50	HDPE
MH-1	DI-3	15.00	13.44	12.50	187	0.50%	18.50	17.10	RCP III
DI-4	MH-1	15.00	14.82	14.39	86	0.50%	16.88	18.50	RCP III
CO-3	CO-2	6.00	16.27	16.02	25	1.01%	18.50	18.00	HDPE
CO-2	EX DI-1	6.00	16.02	16.00	2	1.00%	18.00	17.87	HDPE
CO-1	EX DI-1	6.00	16.10	16.00	8	1.27%	18.90	17.87	HDPE

SEE SHEET C-3.3 FOR CONTINUATION



GENERAL NOTES:

- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC, TOWN OF LELAND, AND BRUNSWICK COUNTY STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE ROADS ARE PAVED.
- CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE WITHIN ASPHALT OVERLAY, NEW ASPHALT AREAS, AND SIDEWALKS TO MATCH PROPOSED GRADES.
- ALL PROPOSED SPOT ELEVATIONS SHOWN ARE PROPOSED EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
- CONNECT ROOF DRAINS AS SHOWN. IF THERE ARE ANY DRAINAGE QUESTIONS, PLEASE NOTIFY OWNER AND ENGINEER PRIOR TO MAKING CONNECTIONS.
- ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.
- CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE IF A GEOTECHNICAL ENGINEERING REPORT WAS COMPLETED FOR THE SITE.
- CONTRACTOR SHALL STAKE SILT FENCE ALONG LIMITS OF DISTURBANCE LINE. THE SILT FENCE LINETYPE IS OFFSET ON THE DRAWING FOR CLARITY.

ASPHALT AREA NOTE:

- SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND/OR TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:

- SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITABLE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED BUILDING PAD, IN ACCORDANCE WITH STRUCTURAL DRAWINGS.

STORMWATER NOTES:

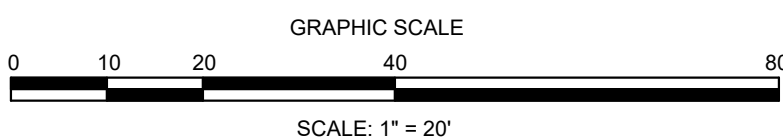
- THE PROPOSED CLASSROOM ADDITION IS WITHIN THE EXISTING DRAINAGE AREA THAT DRAINS TO THE EXISTING ON-SITE STORMWATER WET DETENTION BASIN. THE PROPOSED ROTC AND CAFETERIA ADDITIONS ARE IN SEPARATE DRAINAGE AREAS WHICH IS A LOW DENSITY AREA.

PIN - 219818403044
PAR ID - 029ND010
OCONNOR ROBERT ETUX
OCONNOR LOIS
ZONING - RMH
DEED BOOK 4112, PAGE 1233
MAP BOOK 10, PAGE 28

PIN - 219706492995
PAR ID - 029ND011
D LUTHER N ET PEGGY Y
ZONING - RMH
BOOK 755, PAGE 8818
P BOOK 10, PAGE 28

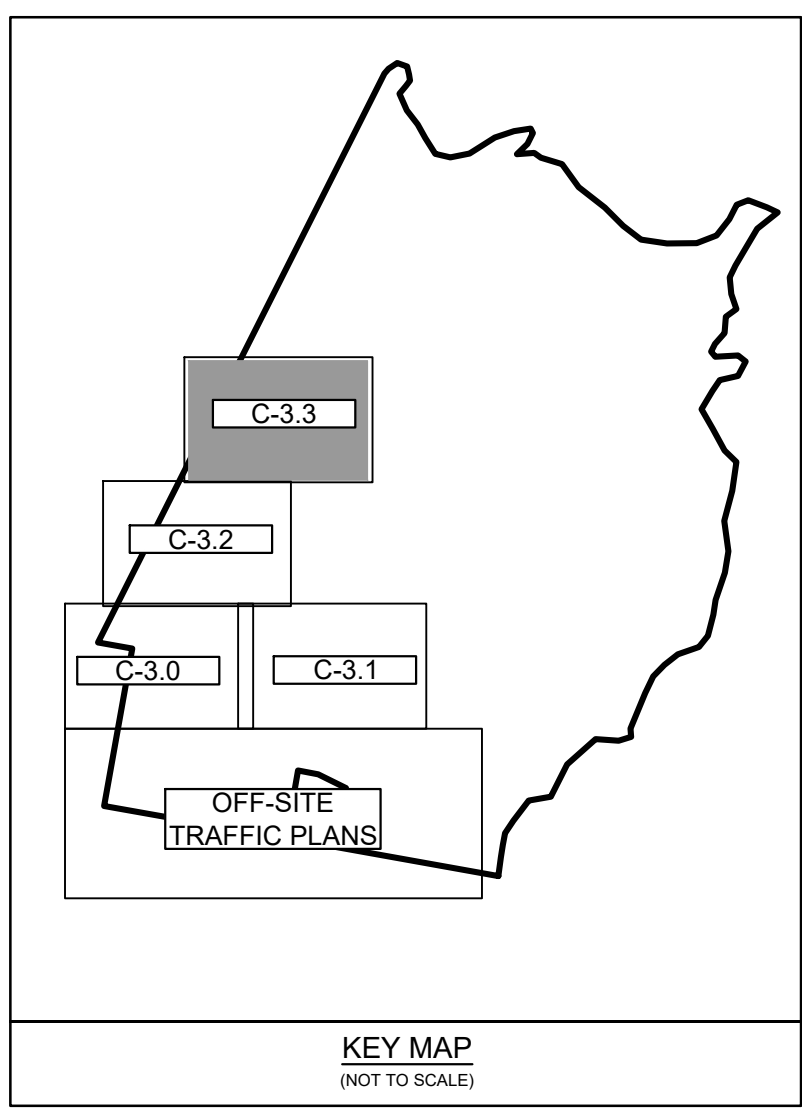
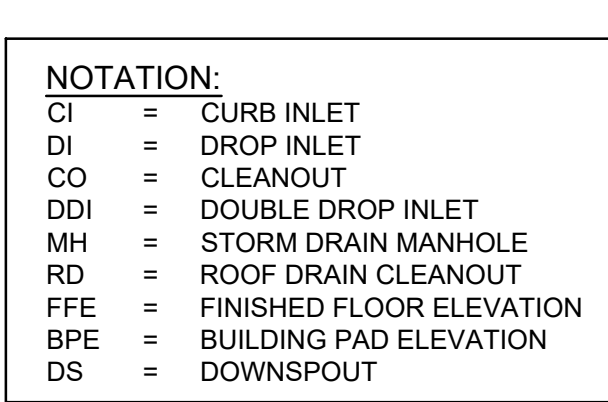
PIN - 219706492856
PAR ID - 029ND012
SANTOS CARLOS A
ZONING - RMH
DEED BOOK 2670, PAGE 425
MAP BOOK 10, PAGE 28

SEE SHEET C-3.0 FOR CONTINUATION



FINAL DESIGN - RELEASED FOR BIDDING ONLY

REVISIONS:	
CLIENT INFORMATION:	
BECKER MORGAN GROUP 3333 JAECKLE DRIVE, SUITE 120 WILMINGTON, NC 28403	
PARAMOUNT ENGINEERING, INC. 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6700 (F) NC License # C-2846	
GRADING-DRAINAGE-EC PLAN	
N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS 1.14 SCORPION DRIVE, LELAND BRUNSWICK COUNTY, NC	
PROJECT STATUS DESIGN: PRELIMINARY LAYOUT FINAL DESIGN RELEASED FOR BIDDING	DRAWING INFORMATION DATE: 04/23/20 SCALE: 1" = 20' DRAWN: RFB CHECKED: RFB
SEAL NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLARD 04/23/20	
C-3.2 PEI JOB#: 19248.PE	



- STORMWATER NOTES:**
1. THE PROPOSED CLASSROOM ADDITION IS WITHIN THE EXISTING DRAINAGE AREA THAT DRAINS TO THE EXISTING ON-SITE STORMWATER WET DETENTION BASIN. THE PROPOSED ROTC AND CAFETERIA ADDITIONS ARE IN SEPARATE DRAINAGE AREAS WHICH IS A LOW DENSITY AREA.

[illegible]

GRAPHIC SCALE

0 10 20 40 80

SCALE: 1" = 20'

FINAL DESIGN - RELEASED FOR BIDDING ONLY

REVISIONS:

CLIENT INFORMATION:

PARAMOUNT
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846

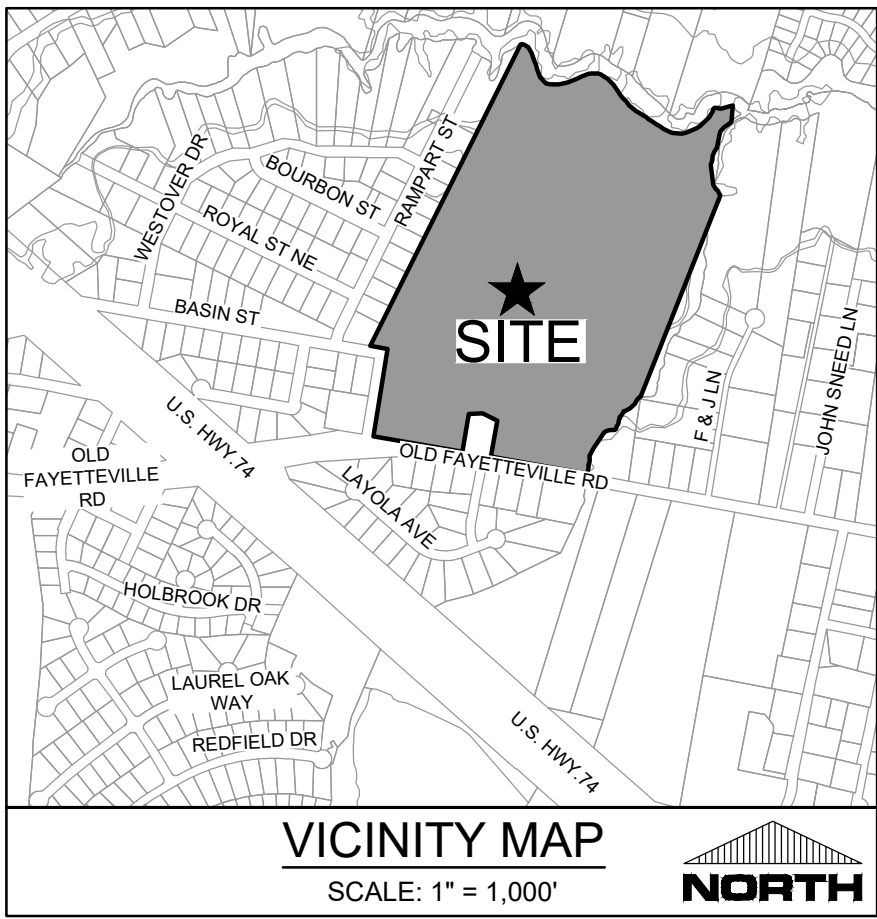
GRADING-DRAINAGE-EC PLAN
N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

PROJECT STATUS
CONCEPTUAL LAYOUT:
PRELIMINARY LAYOUT:
FINAL DESIGN:
RELEASED FOR CONST:

SEAL
NORTH CAROLINA
PROFESSIONAL
SEAL
031591
ENGINEER
ROBERT P. BALLARD
04/23/20

C-3.3

PEI JOB#: 19248.PE



SITE INFORMATION
OWNER INFORMATION: BRUNSWICK COUNTY SCHOOLS
35 REFERENDUM DRIVE NE
BOLIVIA, NC 28422
NORTH BRUNSWICK HIGH SCHOOL
114 SCORPION DRIVE N.E.
LELAND, NC 28451
037DA005
219819500074
BOOK 3631, PAGE 1079
O&I
HIGH SCHOOL
HIGH SCHOOL
59.74 AC (2,602,274 SF)
THIS PARCEL LIES WITHIN AN AREA OF
MINIMAL FLOOD HAZARD (ZONE X) AS
INDICATED BY FEMA FLOOD ZONE MAP
NUMBER 3720219700K BEARING AN
EFFECTIVE DATE OF 08/28/2018.

PROJECT NAME:
PROJECT ADDRESS:

PARCEL ID:
PARCEL PIN:
RECORDED DEED BOOK:
CURRENT ZONING:
EXISTING USE:
PROPOSED USE:
TOTAL SITE AREA:
FLOOD INFORMATION:

UTILITY INFORMATION
CONTRACTOR SHALL INSTALL WATER AND SEWER SERVICES IN ACCORDANCE WITH H2GO AND TOWN OF LELAND RESPECTIVELY STANDARD DETAILS AND SPECIFICATIONS.

SANITARY SEWER
THIS PROJECT IS PROPOSING A 4" SANITARY SEWER SERVICE FOR BOTH THE ROTC AND CLASSROOM ADDITIONS. THESE SERVICES WILL BE CONNECTING TO THE EXISTING MAINS AND/OR SERVICES AS SHOWN. THERE ARE NO PROPOSED SANITARY SEWER MAINS WITH THIS PROJECT. THERE ARE NO PROPOSED SANITARY SERVICES FOR THE CAFETERIA ADDITION. ALL SANITARY SEWER ALLOCATION PROVIDED BY TOWN OF LELAND.

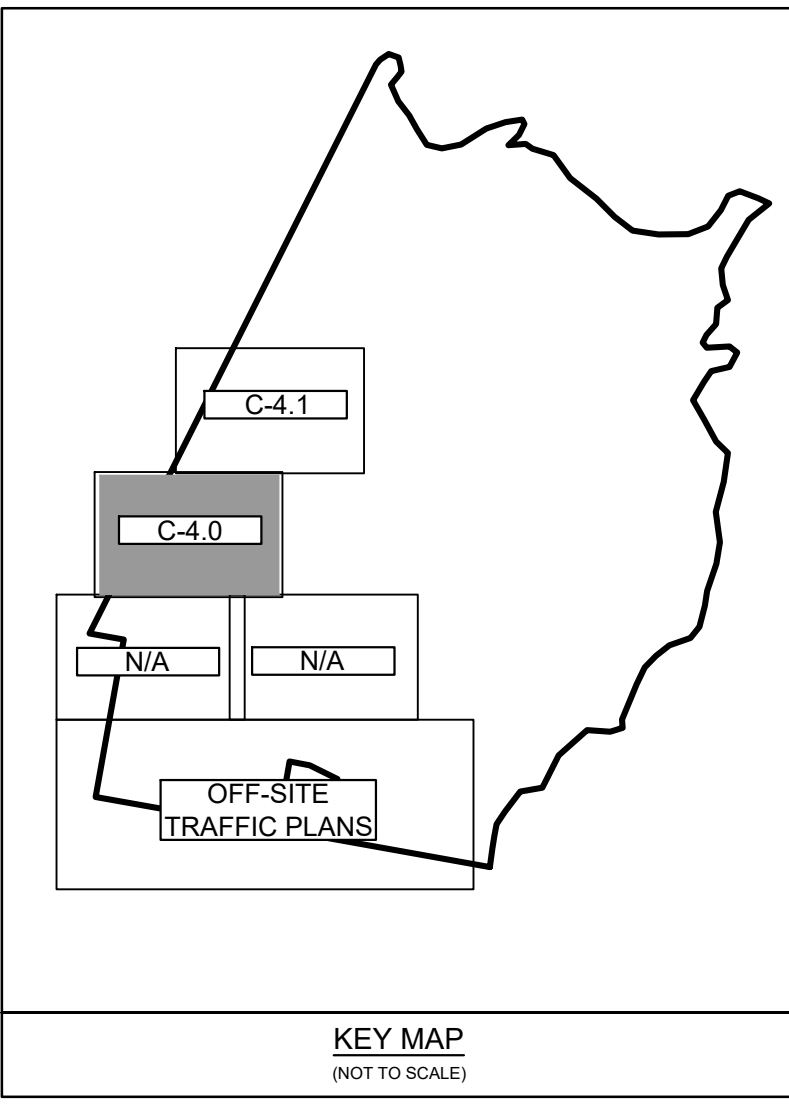
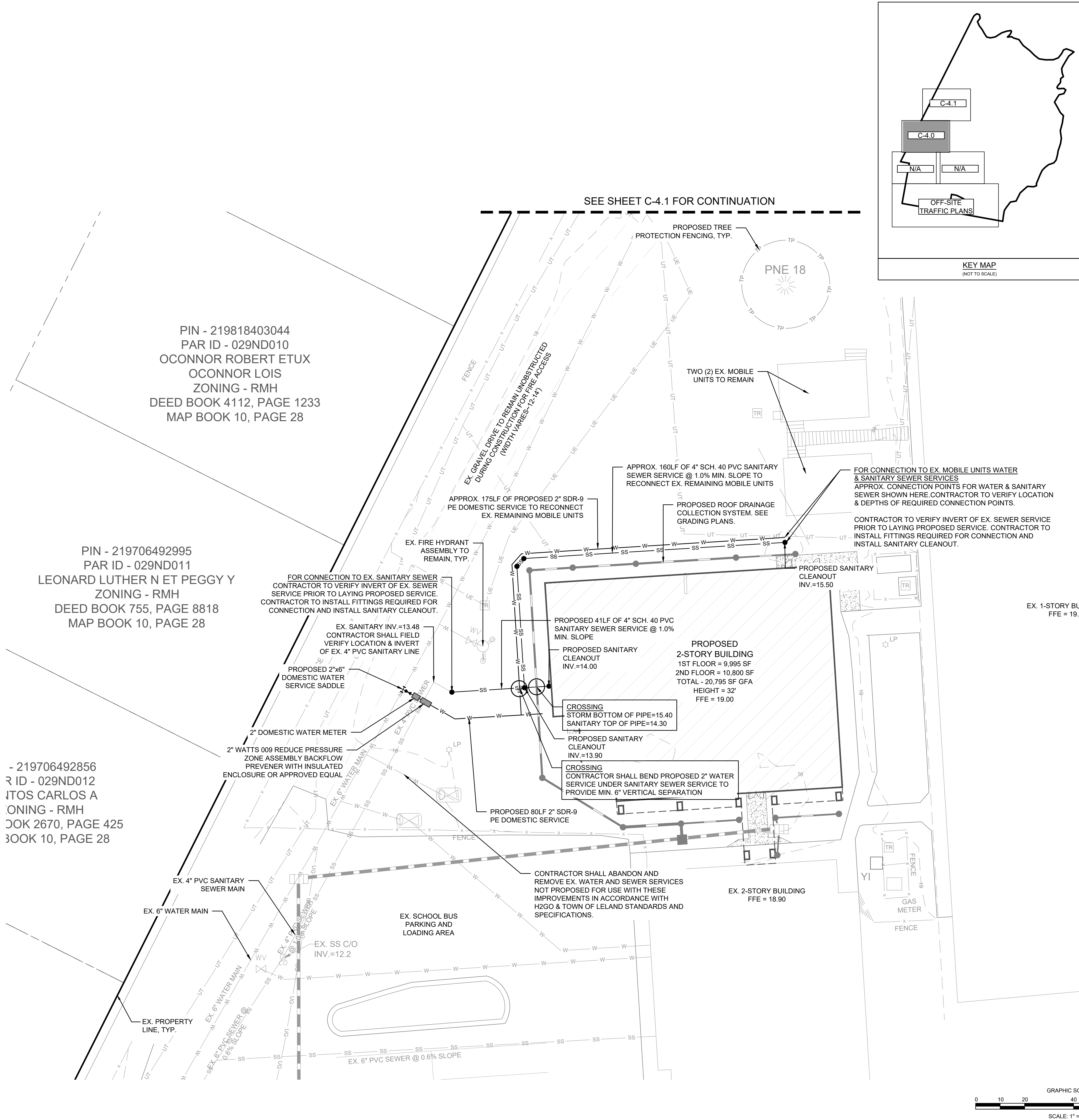
CONTRACTOR TO COORDINATE SANITARY TIE-IN TO EXISTING FACILITIES WITH TOWN OF LELAND AND BRUNSWICK COUNTY SCHOOLS. TOWN OF LELAND INSPECTOR TO BE ON-SITE DURING TAPPING OF EX. SEWER FACILITIES. SANITARY IN-LINE PLUGS ARE REQUIRED AT ALL CONNECTION POINTS TO EX. SEWER FACILITIES AND MUST REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE TOWN OF LELAND INSPECTIONS DEPARTMENT HAS COMPLETED INSPECTIONS.

WATER
THIS PROJECT IS PROPOSING A 2" DOMESTIC SERVICE FOR THE ROTC BUILDING ADDITION AND A 2" DOMESTIC SERVICE FOR THE CLASSROOM ADDITION. THESE SERVICES WILL BE CONNECTING TO EXISTING WATER MAINS AND/OR SERVICES AS SHOWN. THERE ARE NO PROPOSED WATER MAINS WITH THIS PROJECT. THERE ARE NO PROPOSED WATER SERVICES FOR THE CAFETERIA ADDITION. ALL DOMESTIC WATER ALLOCATION PROVIDED BY H2GO.

CONTRACTOR TO COORDINATE WATER TIE-IN TO EXISTING FACILITIES WITH H2GO AND BRUNSWICK COUNTY SCHOOLS. H2GO INSPECTORS ARE REQUIRED TO BE ON-SITE DURING TAPPING OF THE EX. FACILITIES.

- UTILITY NOTES: (NCAC 15A.02T.0305 / T15A.18C.0906)**
1. WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
 2. WHEN CROSSING A WATER MAIN OVER A SEWER, THE WATER MAIN SHALL BE LAID AT LEAST 18 INCHES ABOVE THE SEWER. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS THAT MEET WATER MAIN STANDARDS. THE DUCTILE IRON PIPE SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING WITH A SECTION OF WATER MAIN PIPE CENTERED ON THE CROSSING.
 3. CROSSING A WATER MAIN UNDER A SEWER, WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
 4. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.
 5. WHERE VERTICAL CLEARANCE IS LESS THAN 18" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.

- FIRE & LIFE SAFETY NOTES:**
1. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN ANY DEVELOPMENT.
 2. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB.
 3. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
 4. A MINIMUM OF 4' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
 5. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS OR ACCESS TO THESE APPARATUSES. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.
 6. HYDRANTS SHOULD BE 18 INCHES FROM THE CENTERLINE OF THE STEAMER CONNECTION TO FINISH GRADE, THIS INCLUDES LANDSCAPING. STEAMER CONNECTIONS SHALL FACE THE STREET.
 7. FIRE HYDRANTS SHOULD NOT BE BLOCKED BY PARKING SPACES OR UTILITIES.
 8. A KNOX BOX IS REQUIRED FOR ALL NEW BUILDINGS.



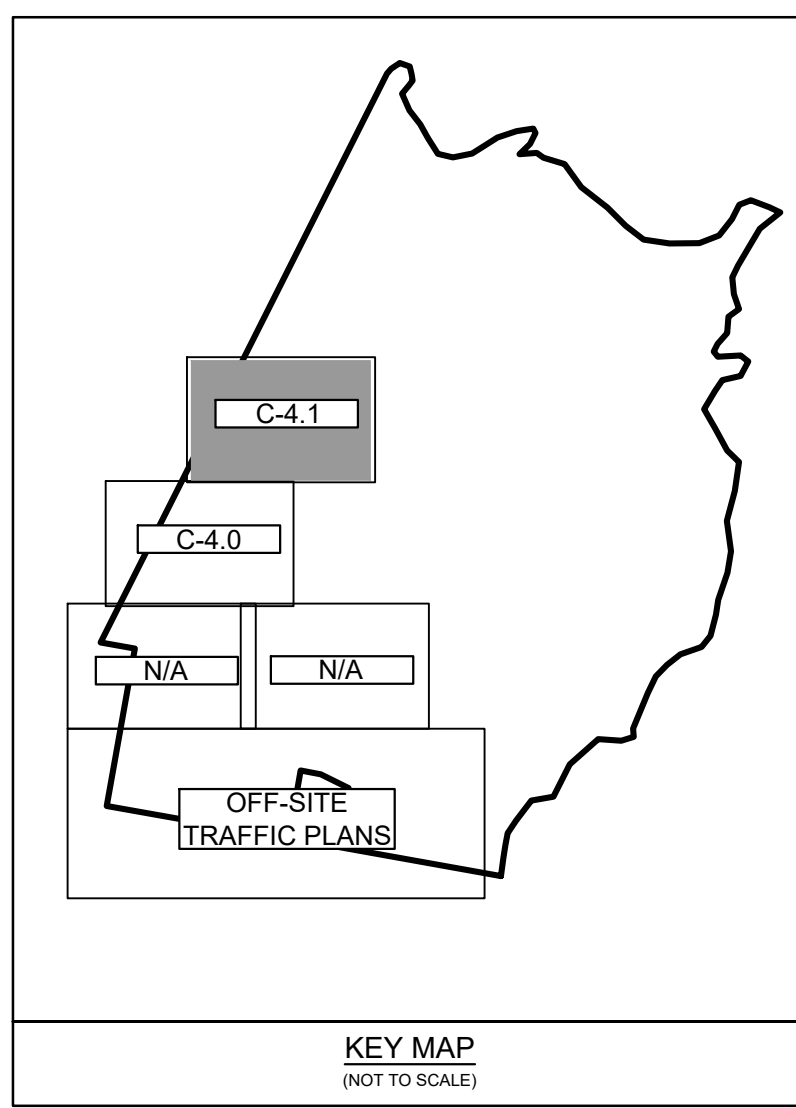
FINAL DESIGN - RELEASED FOR BIDDING ONLY

REVISIONS:		CLIENT INFORMATION:	
		BECKER MORGAN GROUP 3333 JAECKLE DRIVE, SUITE 120 WILMINGTON, NC 28403	
		PARAMOUNT ENGINEERING, INC. 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6700 (F) NC License # C-2846	
		UTILITY PLAN N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS 114 SCORPION DRIVE, LELAND BRUNSWICK COUNTY, NC	
PROJECT STATUS		DRAWING INFORMATION	
DATE: 04/23/20 SCALE: 1" = 20' DRAWN: RFE CHECKED: RFE		DATE: 04/23/20 SCALE: 1" = 20' DRAWN: RFE CHECKED: RFE	
SEAL NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLARD 04/23/20		C-4.0	
PEI JOB#: 19248.PE			

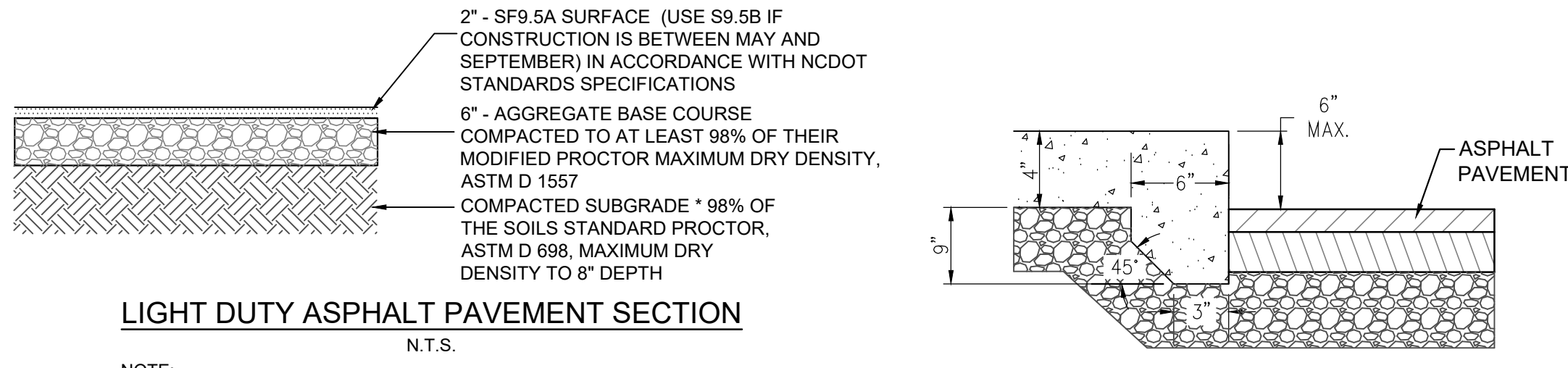


FIRE & LIFE SAFETY NOTES:

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7. FIRE HYDRANTS SHOULD NOT BE BLOCKED BY PARKING SPACES OR UTILITIES.
8. A KNOX BOX IS REQUIRED FOR ALL NEW BUILDINGS.

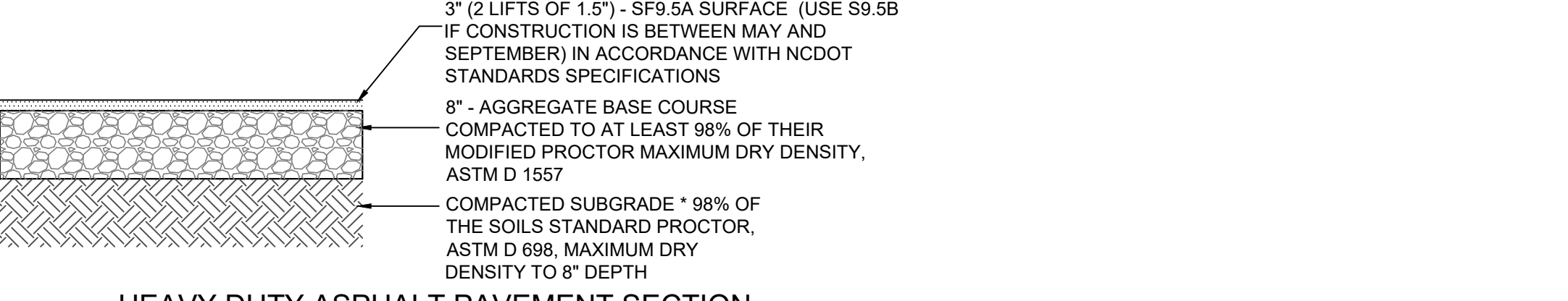


<p>PROJECT STATUS CONCEPTUAL LAYOUT PRELIMINARY LAYOUT FINAL DESIGN RELEASED FOR CONSTRUCTION</p>	<p>SEAL</p> 	<p>DRAWING INFORMATION DATE: 04/23/20 SCALE: 1" = 20' DESIGNED: AEC DRAWN: AEC CHECKED: RPB</p>	<p>UTILITY PLAN</p>	<p>N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS 114 SCORPION DRIVE, LELAND BRUNSWICK COUNTY, NC</p>	<p>PARAMOUNT ENGINEERING, INC. 122 Cicero Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6760 (F) NC License #. C-2846</p>	<p>CLIENT INFORMATION:</p> <p>BECKER MORGAN GROUP 3333 JAECKLE DRIVE, SUITE 120 WILMINGTON, NC 28403</p>	<p>REVISIONS:</p>
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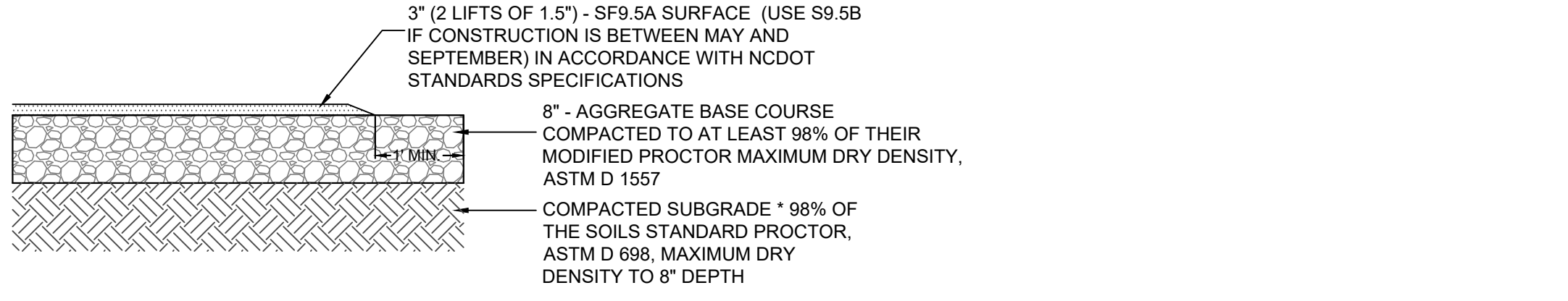
LIGHT DUTY ASPHALT PAVEMENT SECTION
N.T.S.

NOTE:
REFER TO THE "GEOTECHNICAL EXPLORATION REPORT FOR NBHS BUILDING ADDITIONS" PREPARED BY SMAE DATED AUGUST 21, 2019 FOR FURTHER DETAILED PAVEMENT SECTION INFORMATION



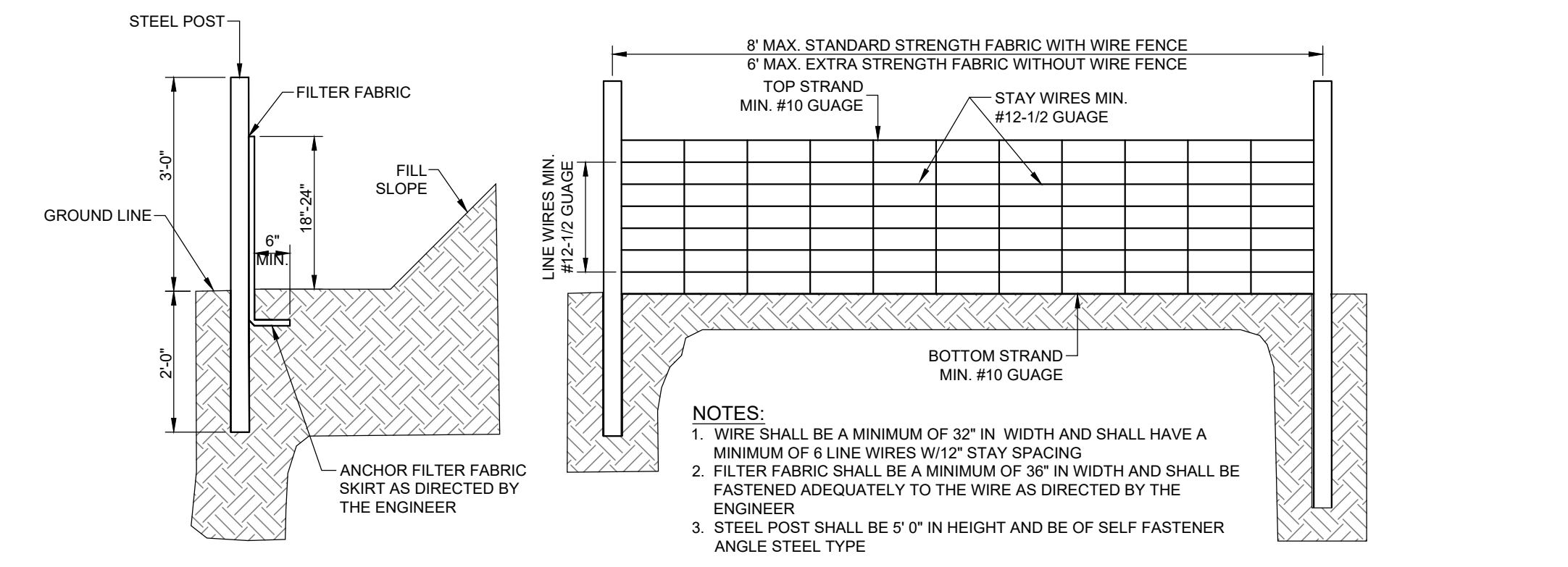
HEAVY DUTY ASPHALT PAVEMENT SECTION
N.T.S.

NOTE:
REFER TO THE "GEOTECHNICAL EXPLORATION REPORT FOR NBHS BUILDING ADDITIONS" PREPARED BY SMAE DATED AUGUST 21, 2019 FOR FURTHER DETAILED PAVEMENT SECTION INFORMATION

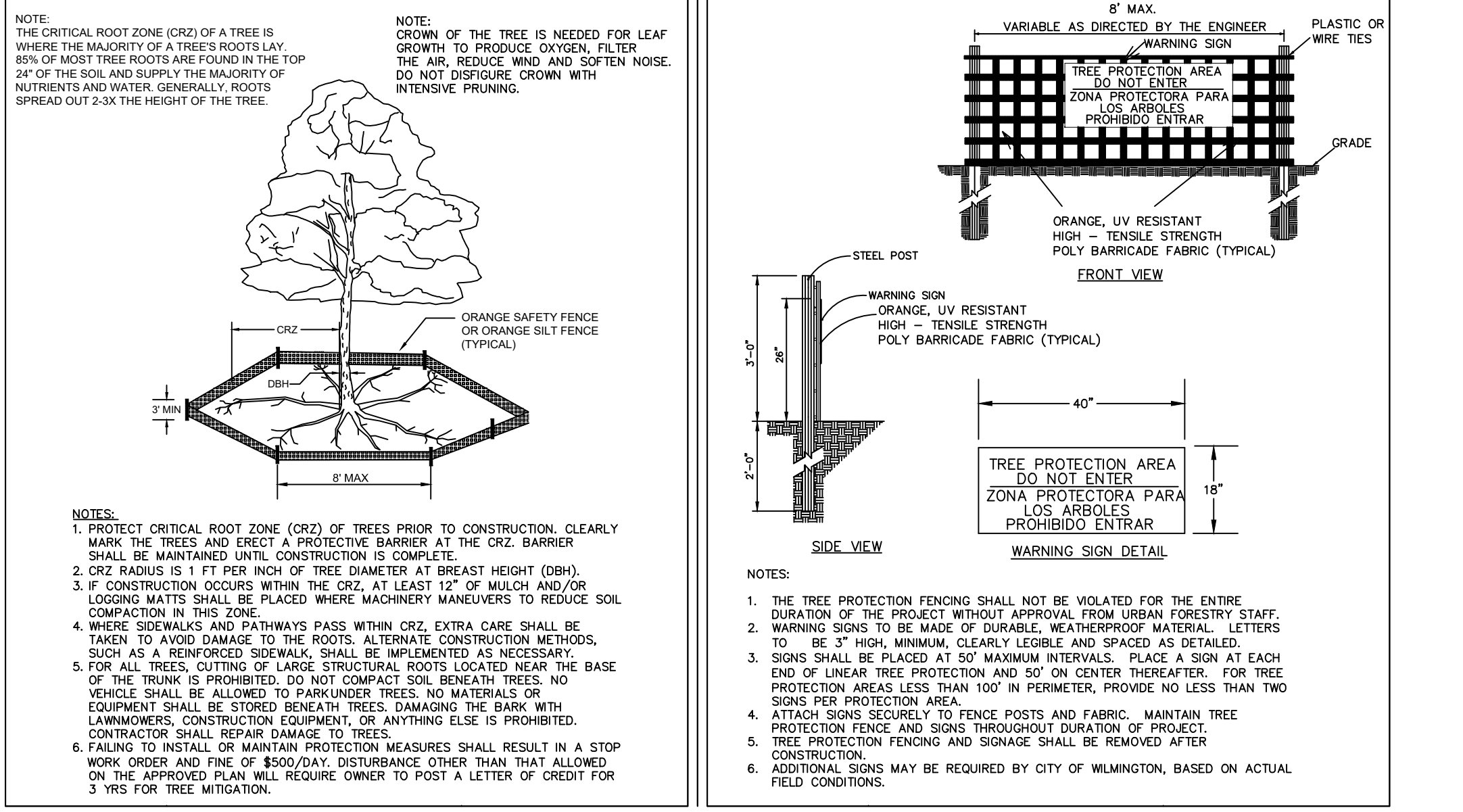


HEAVY DUTY ASPHALT PAVEMENT SECTION
N.T.S.

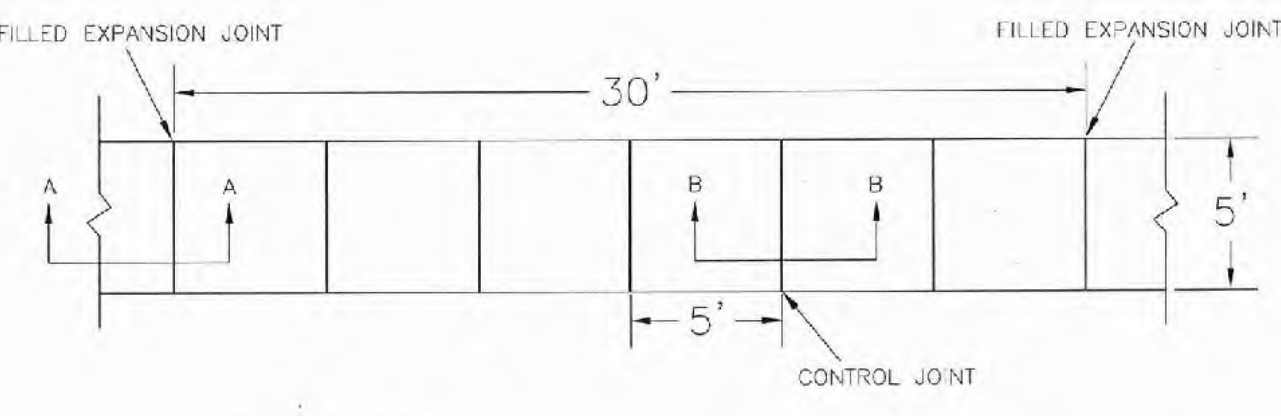
NOTE:
FOR PARKING & DRIVE AREAS WITHIN DUKE ENERGY R.O.W., THAT DO NOT HAVE CURB & GUTTER PROPOSED AS EDGE TREATMENT, EXTEND ABC & SUBGRADE MIN. 1 FT PAST ACP SURFACE



GUIDELINES FOR TEMPORARY SILT FENCE DETAIL
NOT TO SCALE

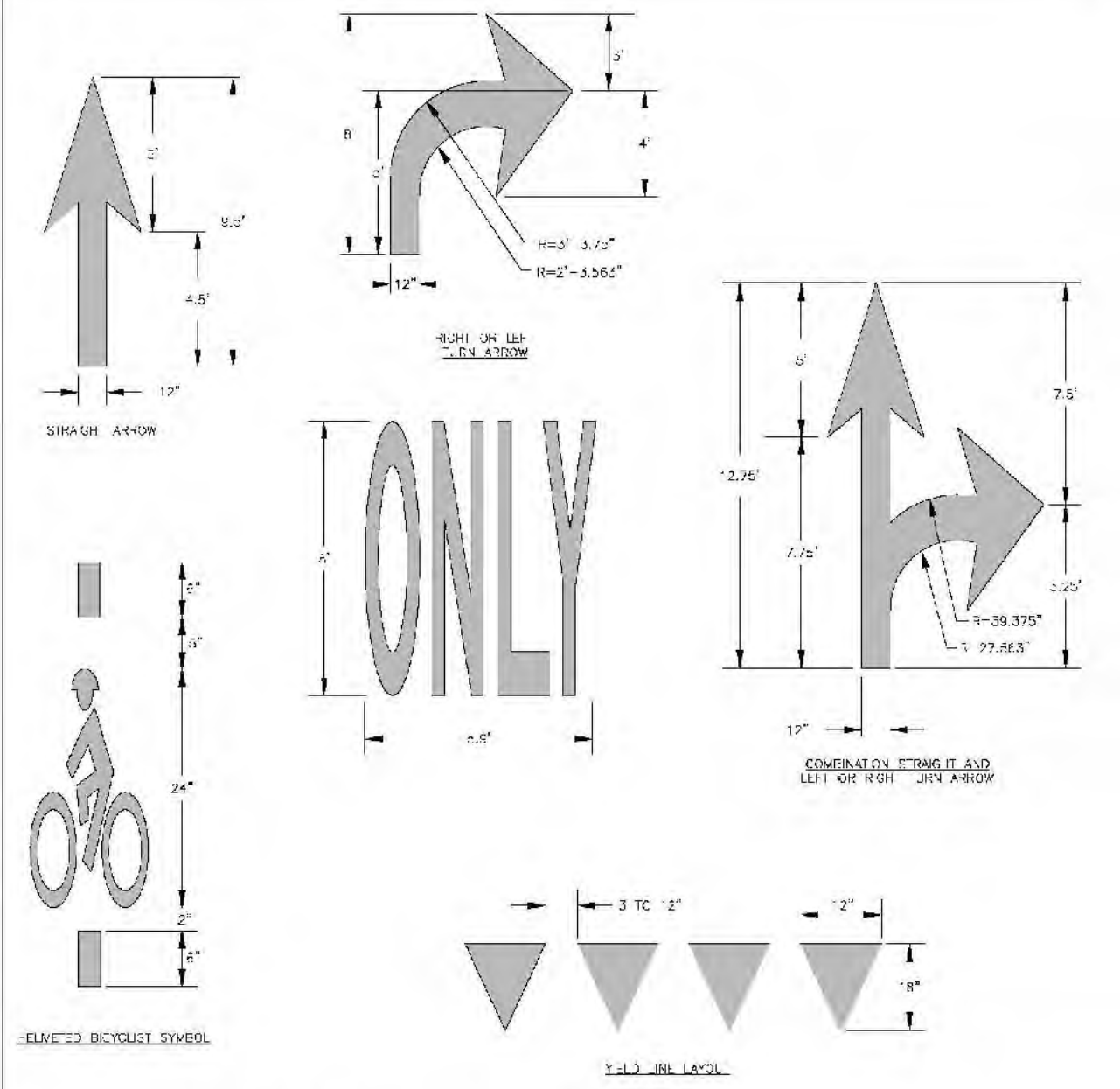


TYPICAL DETAIL FOR TREE PROTECTION DURING CONSTRUCTION
NOT TO SCALE

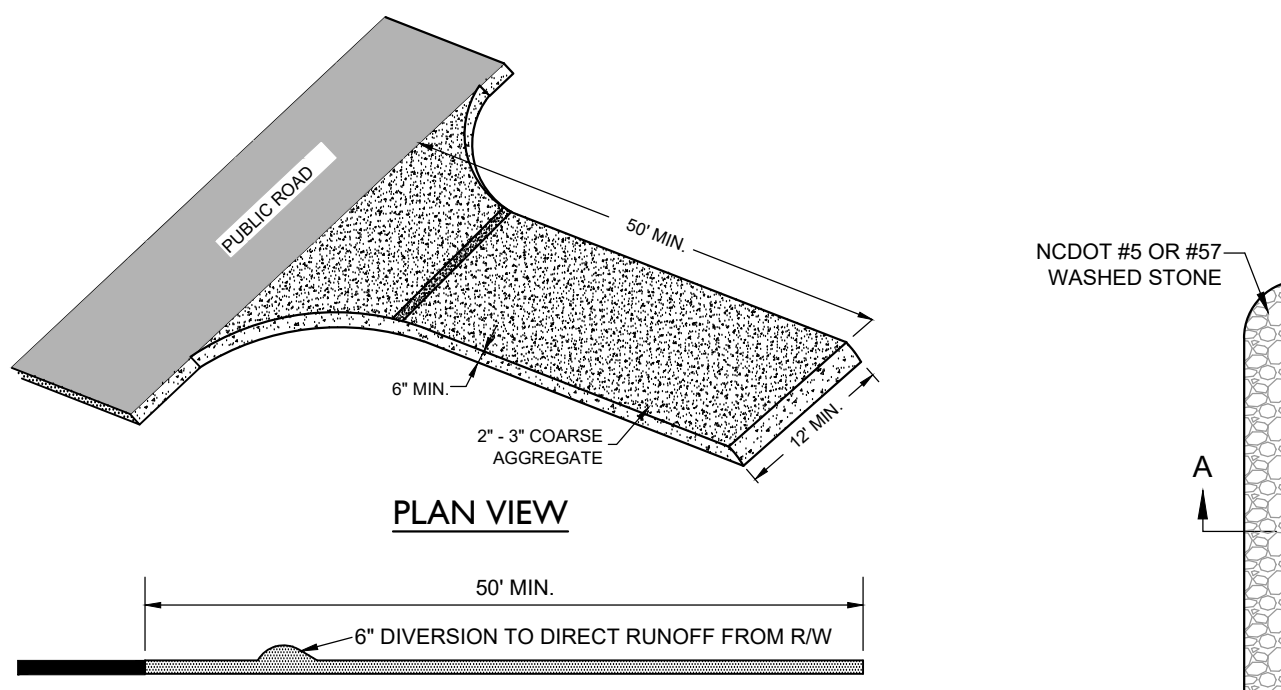


- NOTES:
1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
 2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
 3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
 4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
 5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL.
 6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS.
 7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
 8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
 9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

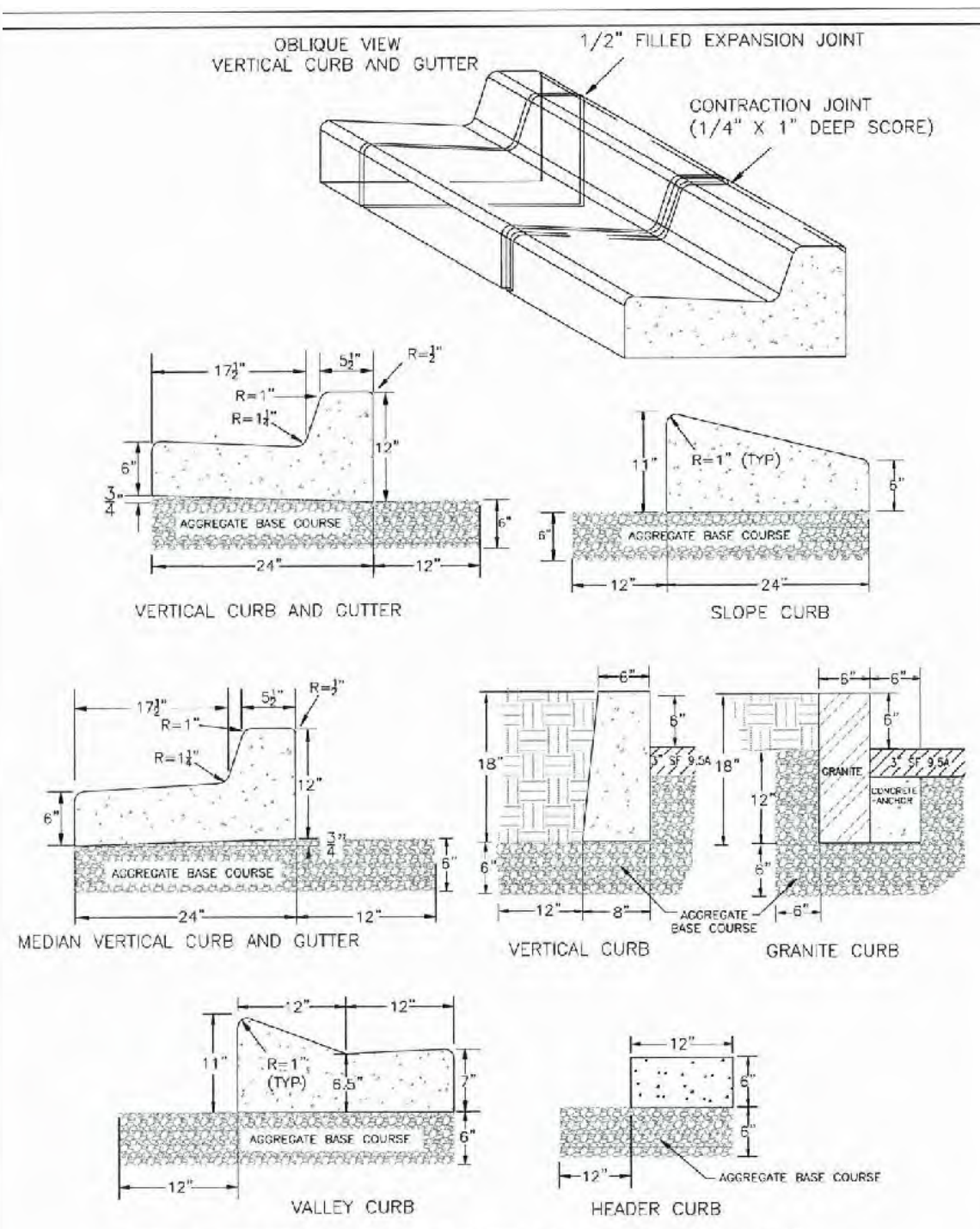
TYPICAL SIDEWALK DETAIL
NOT TO SCALE



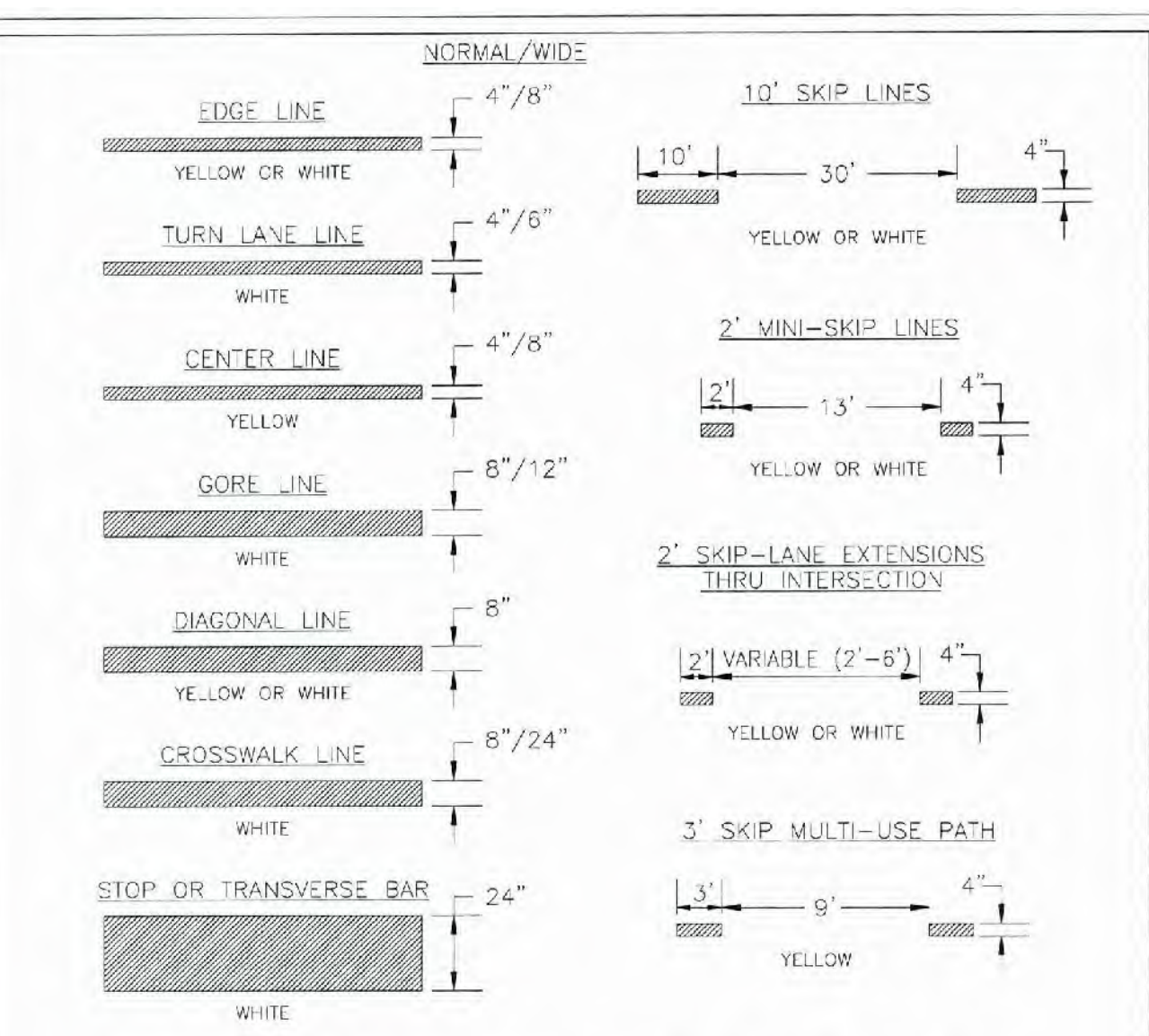
TYPICAL DETAIL FOR PAVEMENT MARKINGS & SYMBOLS
NOT TO SCALE



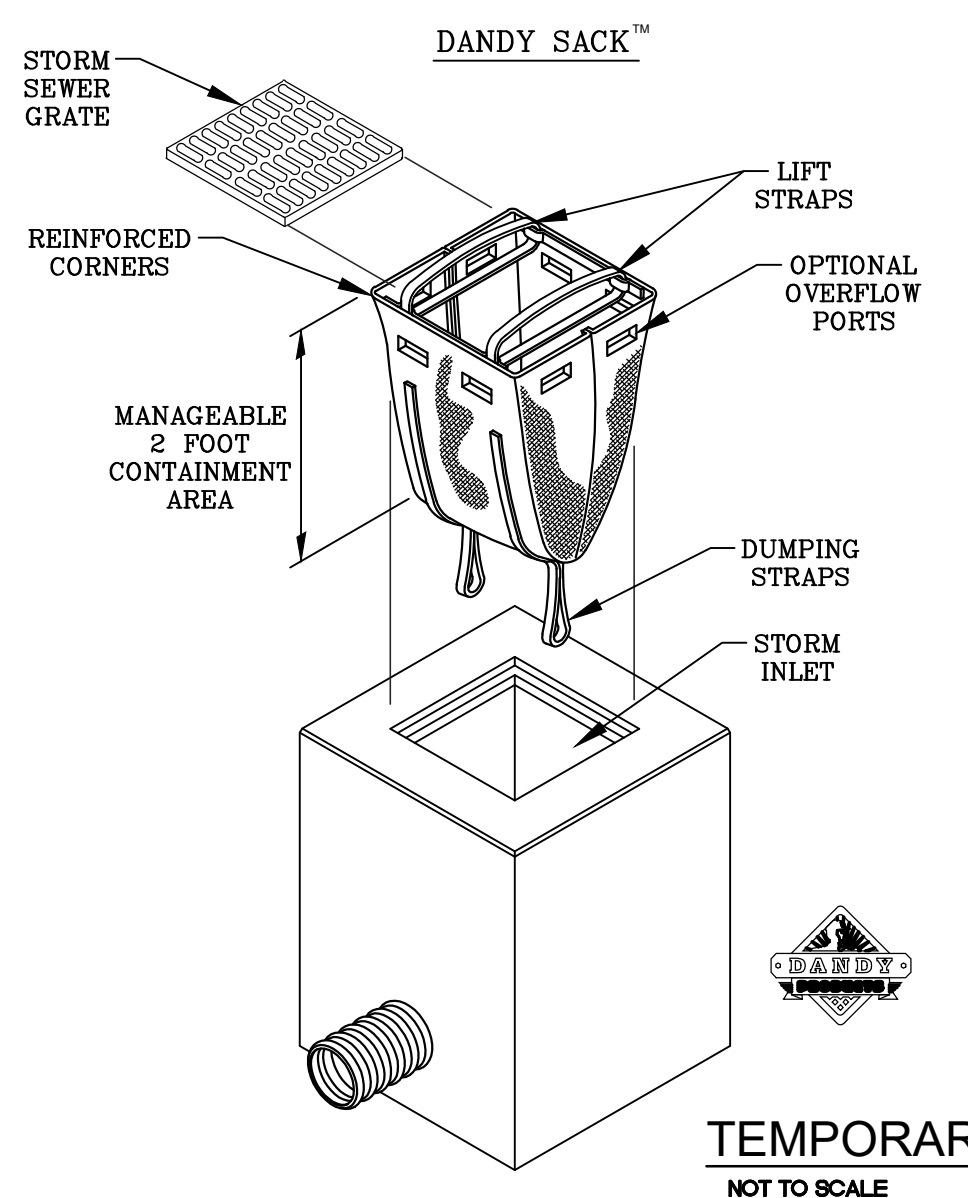
TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE



TYPICAL CURBING DETAIL
NOT TO SCALE

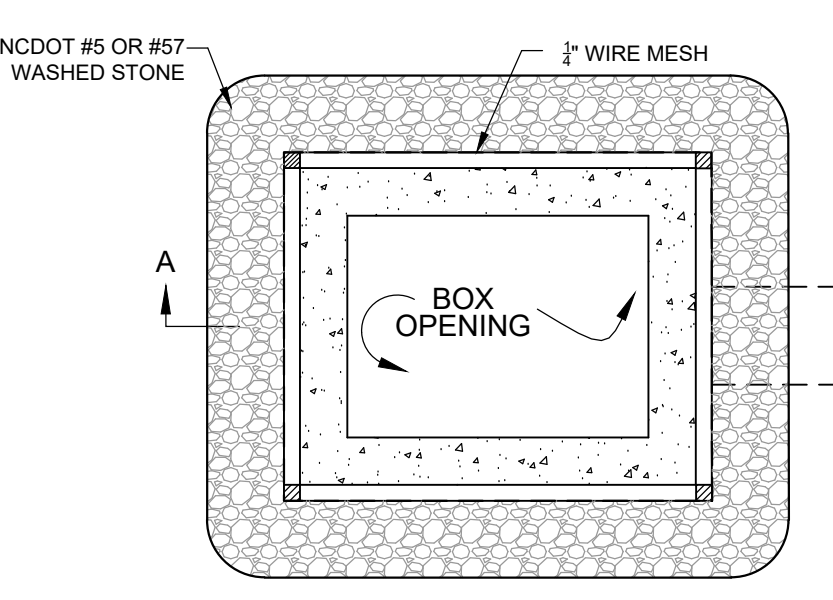


TYPICAL DETAIL FOR PAVEMENT MARKINGS LINE TYPES
NOT TO SCALE

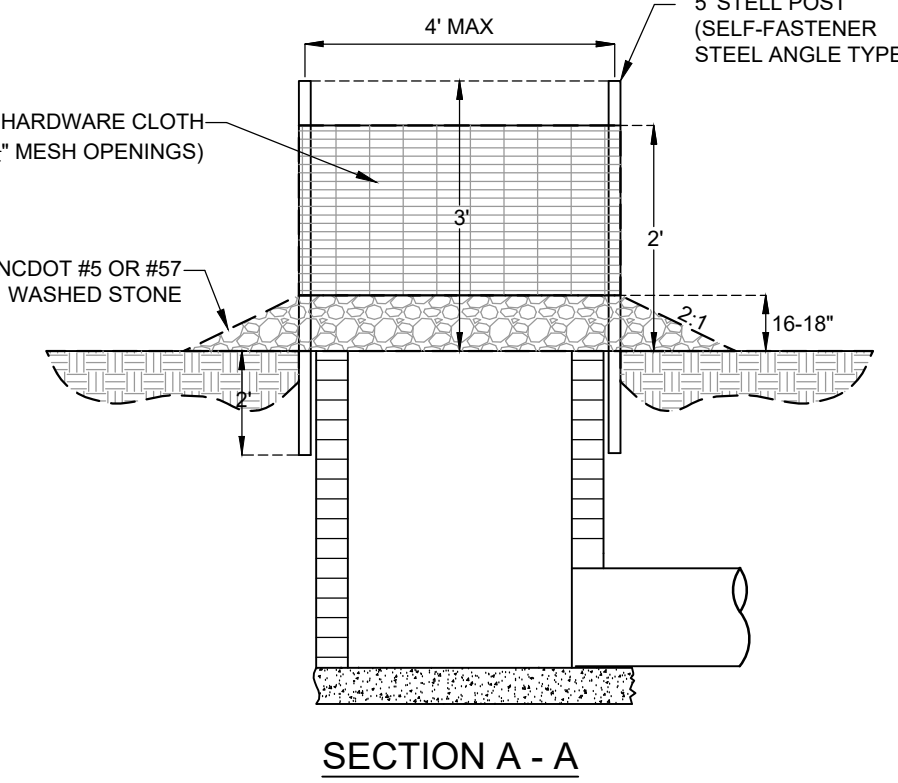


TEMPORARY DANDY SACK® INLET PROTECTION
NOT TO SCALE

NOTE
CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT IN A DESIGNATED DISPOSAL AREA AND NOT WITHIN LIMITS OF DISTURBANCE. SEDIMENT SHALL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL, BLOCK AND GRAVEL, OR ROCK-PIPE INLETS, WHEN IT REACHES HALF-FILLED. ROCK WILL BE CLEANED OR REPLACED WHEN NO LONGER DRAINS. SILT SACKS, BEAVER DAMS, SANDY SACKS, AND SOCKS NEED CHECKING EVERY WEEK AND AFTER RAIN.



NOTE:
FOR CURB INLETS AND DROP INLETS
INLET PROTECTION
NOT TO SCALE



SECTION A - A



FINAL DESIGN - RELEASED FOR BIDDING ONLY

REVISIONS:

CLIENT INFORMATION:

DETAILS

PROJECT STATUS

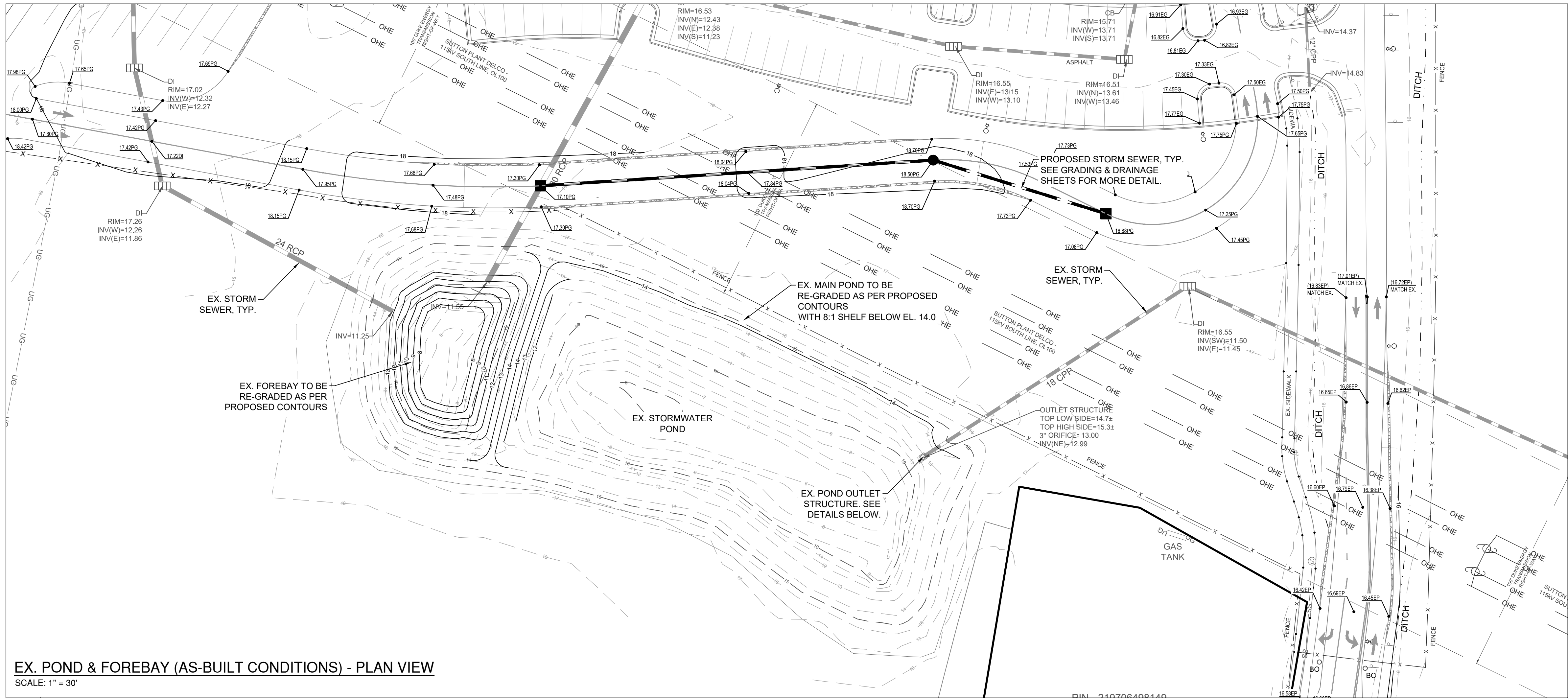
SEAL

BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 120
WILMINGTON, NC 28403

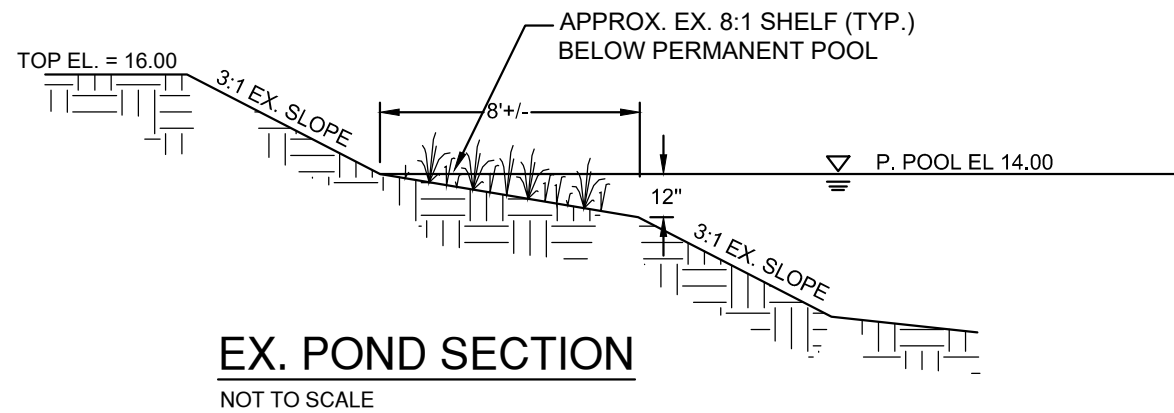
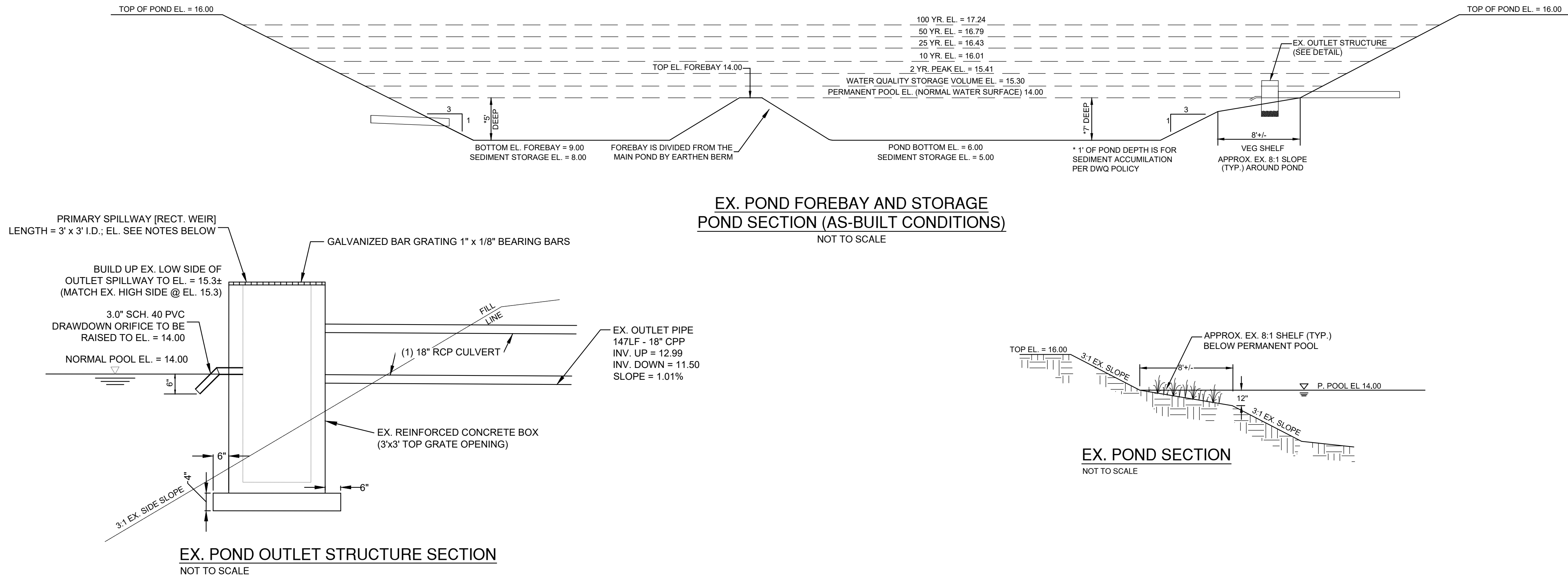
PARAMOUNT ENGINEERING, INC.
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License # C-2846

N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

DATE: 04/23/20
SCALE: N.T.S.
DRAWN: JAC
CHECKED: JAC
PROJECT STATUS: PRELIMINARY LAYOUT
FINAL DESIGN: RELEASED FOR BIDDING
DRAWING INFORMATION: 031591
04/23/20
C-5.0
PEI JOB#: 19248.PE

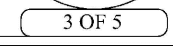
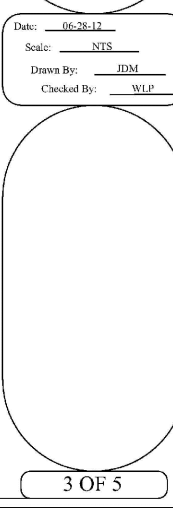
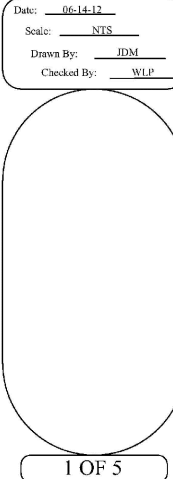


EX. POND & FOREBAY (AS-BUILT CONDITIONS) - PLAN VIEW
SCALE: 1" = 30'



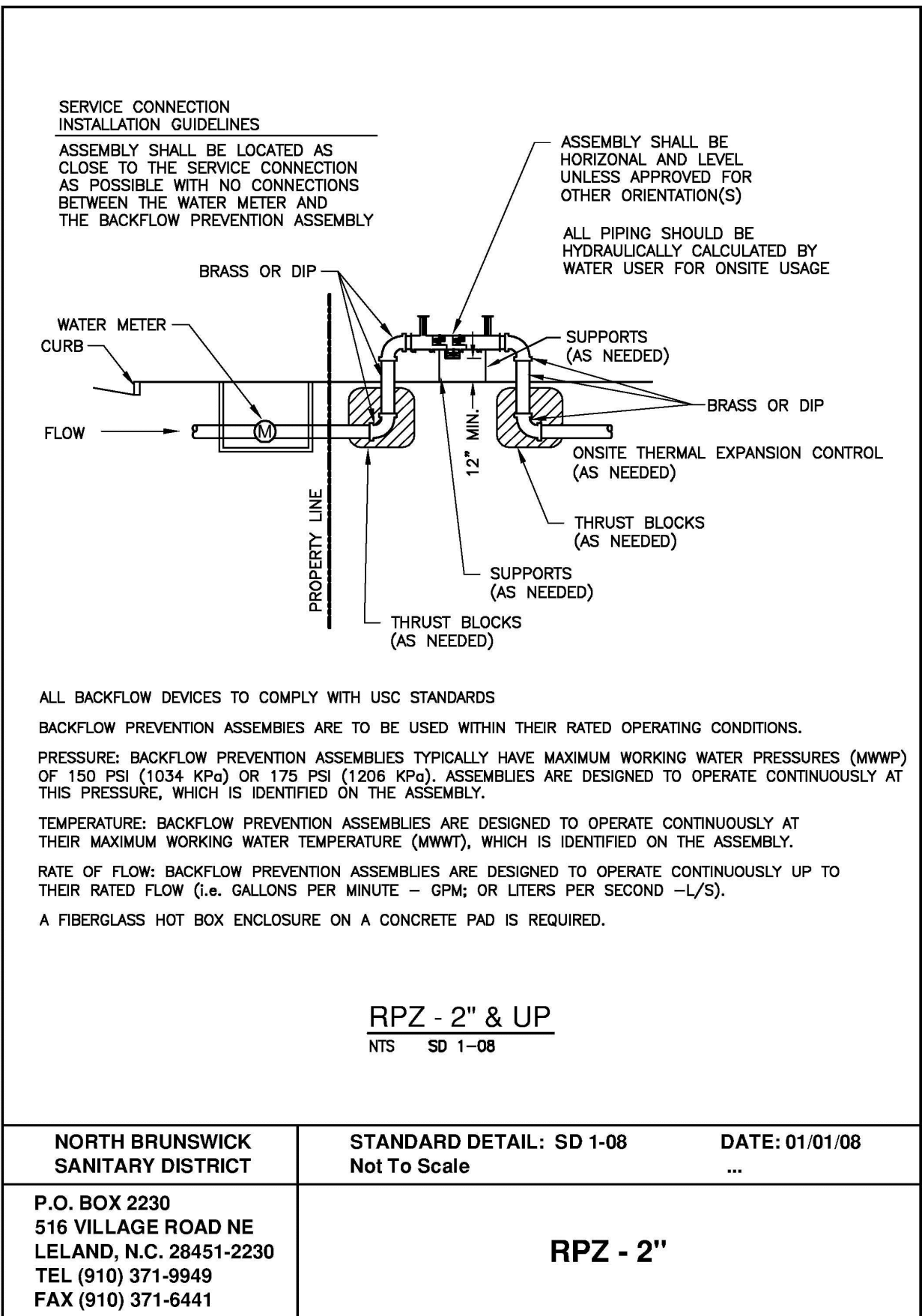
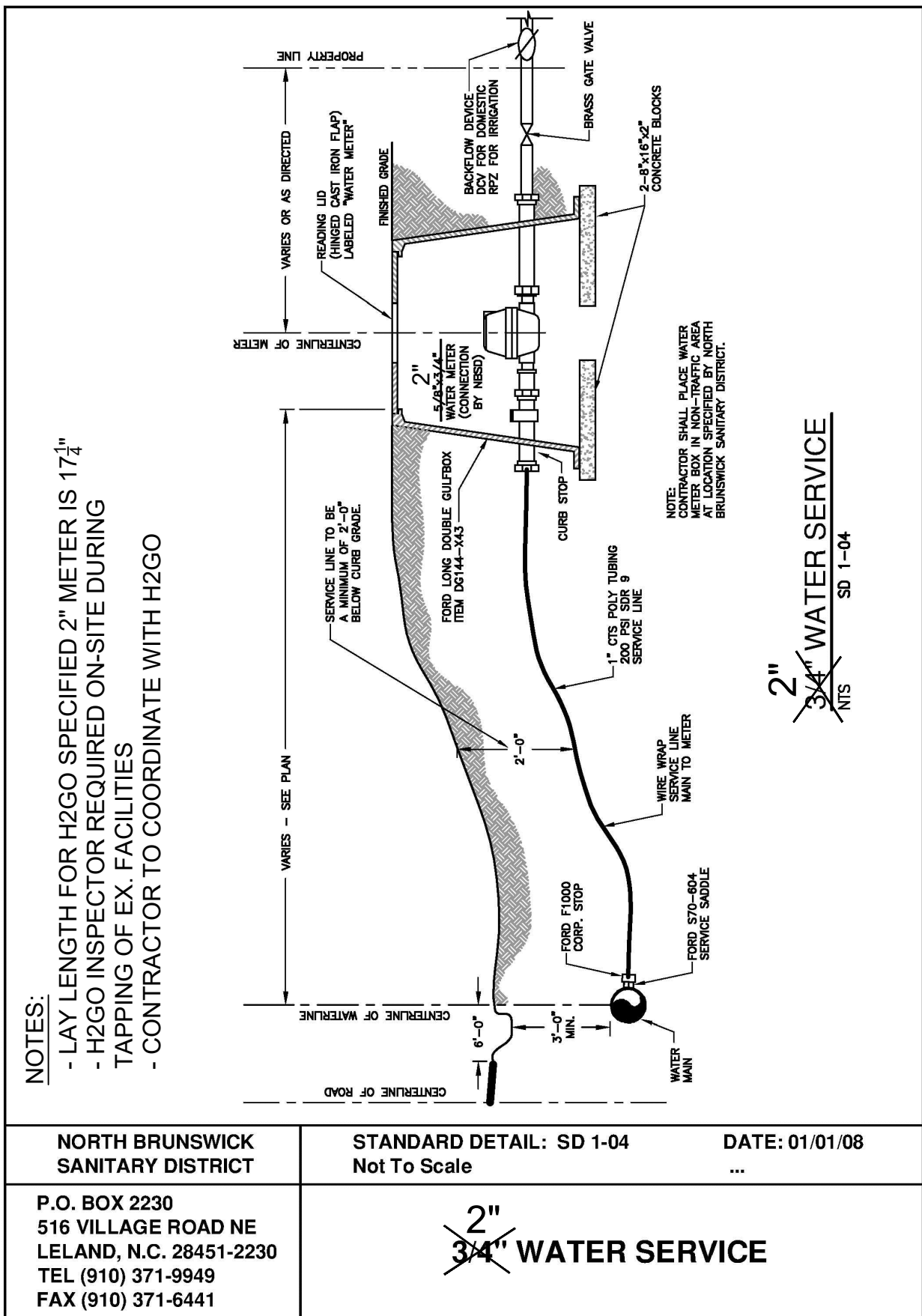
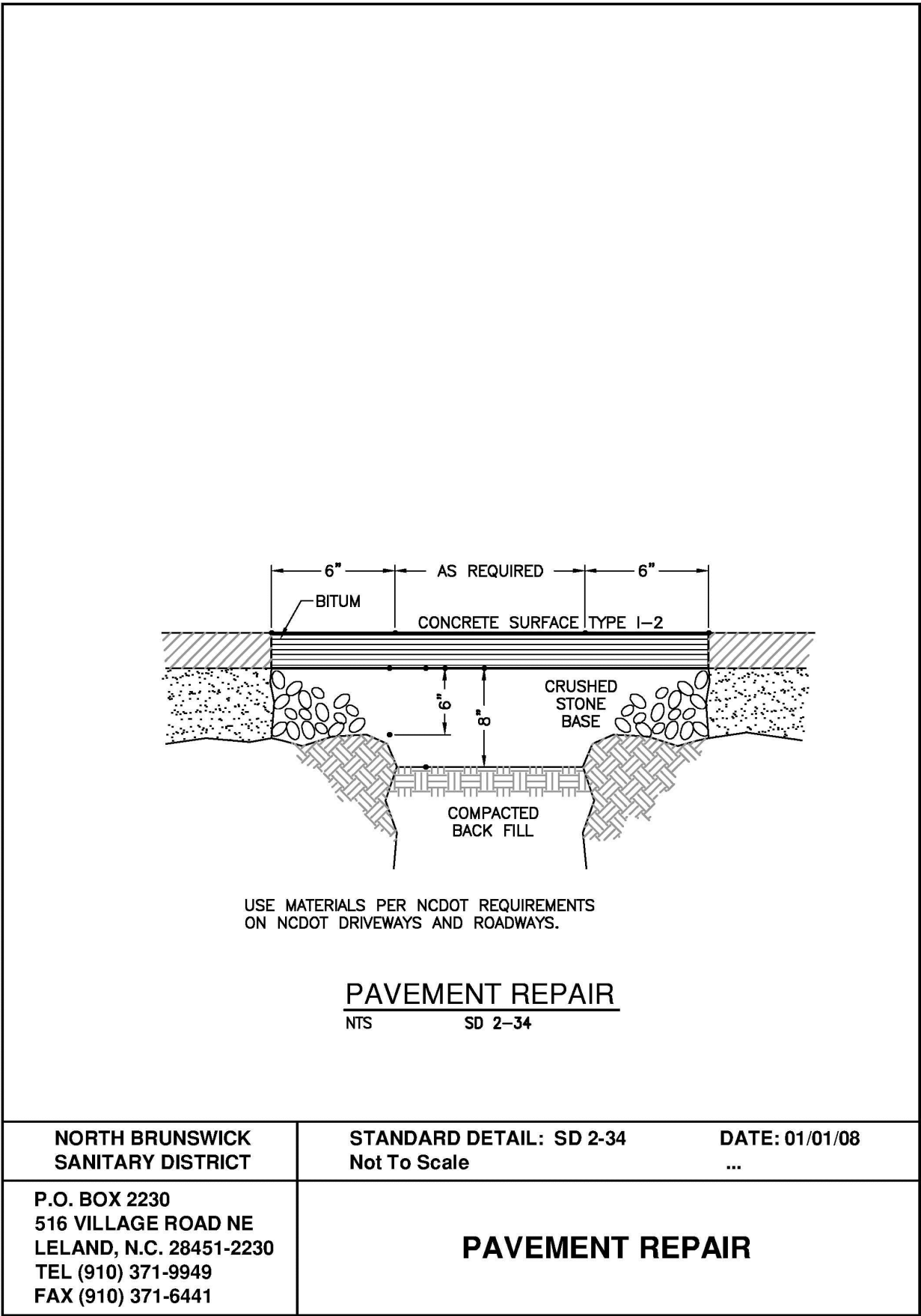
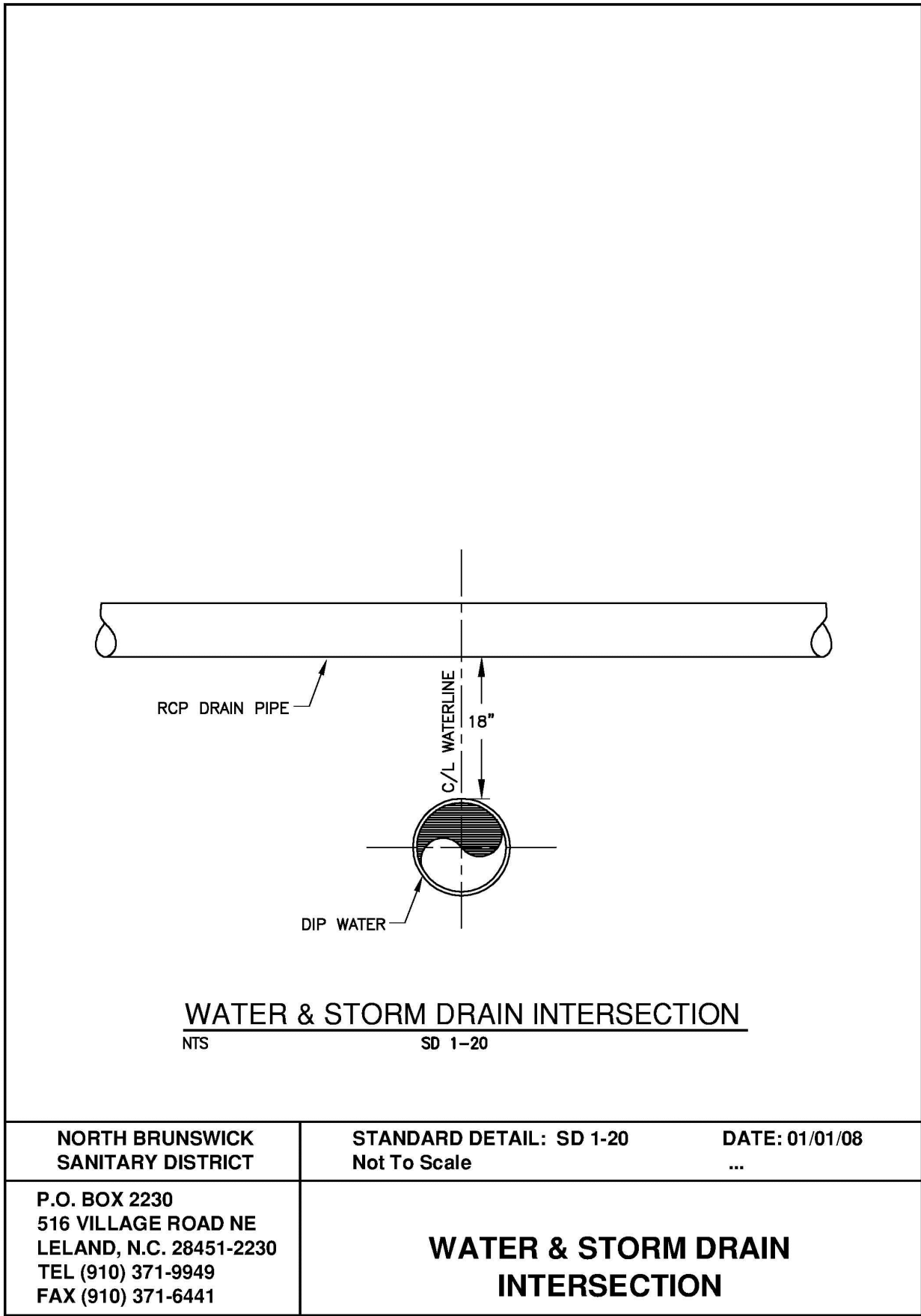
FINAL DESIGN - RELEASED FOR BIDDING ONLY

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C-5.2

NOTE:
BRUNSWICK COUNTY UTILITIES DETAILS PROVIDED AT REQUEST
OF TOWN OF LELAND. TOWN OF LELAND IS THE SANITARY SEWER
PROVIDER FOR NORTH BRUNSWICK HIGH SCHOOL

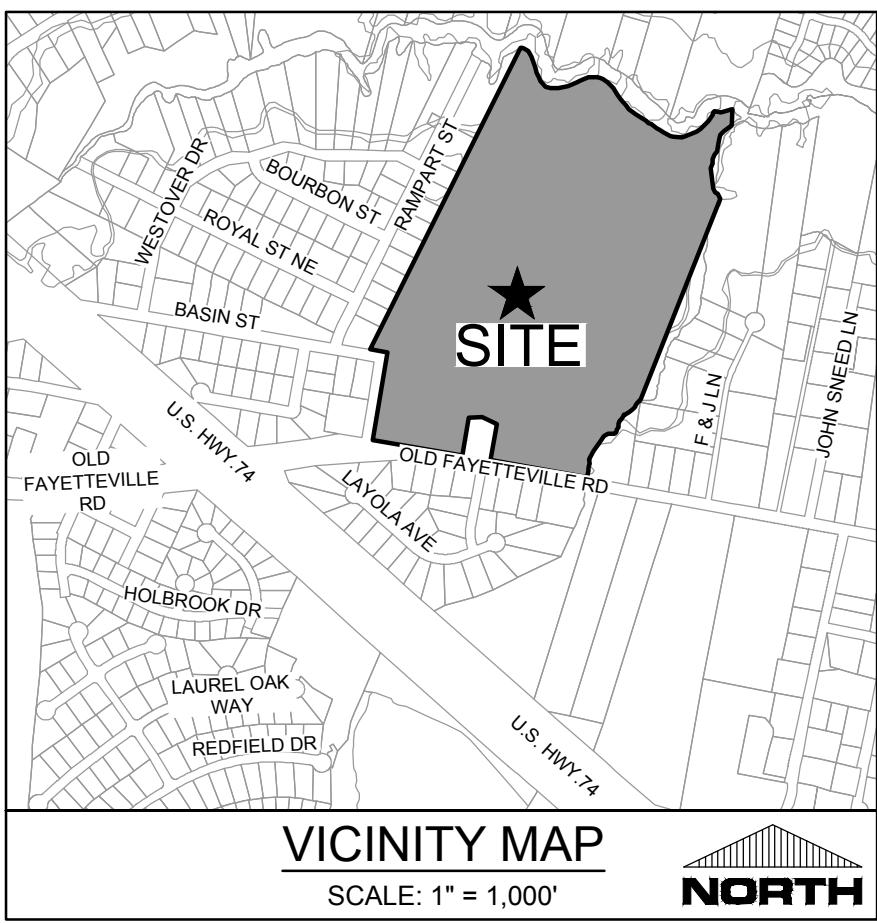


NOTE:
DETAILS PROVIDED SHOW "NORTH BRUNSWICK SANITARY DISTRICT" WHICH IS H2GO. H2GO IS THE WATER PROVIDER FOR NORTH BRUNSWICK HIGH SCHOOL



FINAL DESIGN - RELEASED FOR BIDDING ONLY

PROJECT STATUS: DESIGN DEVELOPMENT: PRELIMINARY LAYOUT: FINAL DESIGN: RELEASED FOR BIDDING:		DRAWING INFORMATION: DATE: 04/23/20 SCALE: N.T.S. DRAWN: JAC CHECKED: RBE	
SEAL NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. SALLAND 04/23/20		C-5.3	
PEI JOB#: 19248.PE		DETAILS N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS 114 SCORPION DRIVE, LELAND BRUNSWICK COUNTY, NC	
CLIENT INFORMATION: BECKER MORGAN GROUP 3333 JAECKLE DRIVE, SUITE 120 WILMINGTON, NC 28403		REVISIONS: ...	
P.O. BOX 2230 516 VILLAGE ROAD NE LELAND, N.C. 28451-2230 TEL (910) 371-9949 FAX (910) 371-6441		PARAMOUNT ENGINEERING, INC. 122 Cinema Drive Wilmington, North Carolina 28403 (910) 791-6707 (O) (910) 791-6760 (F) NC License # C-2846	



LANDSCAPE REQUIREMENTS

PARKING LOT REQUIREMENTS:
38,643 SF X .35 = 13,525 SF

EXISTING LARGE MATURING TREE
EXISTING SMALL MATURING TREES

PROPOSED LARGE MATURING TREES

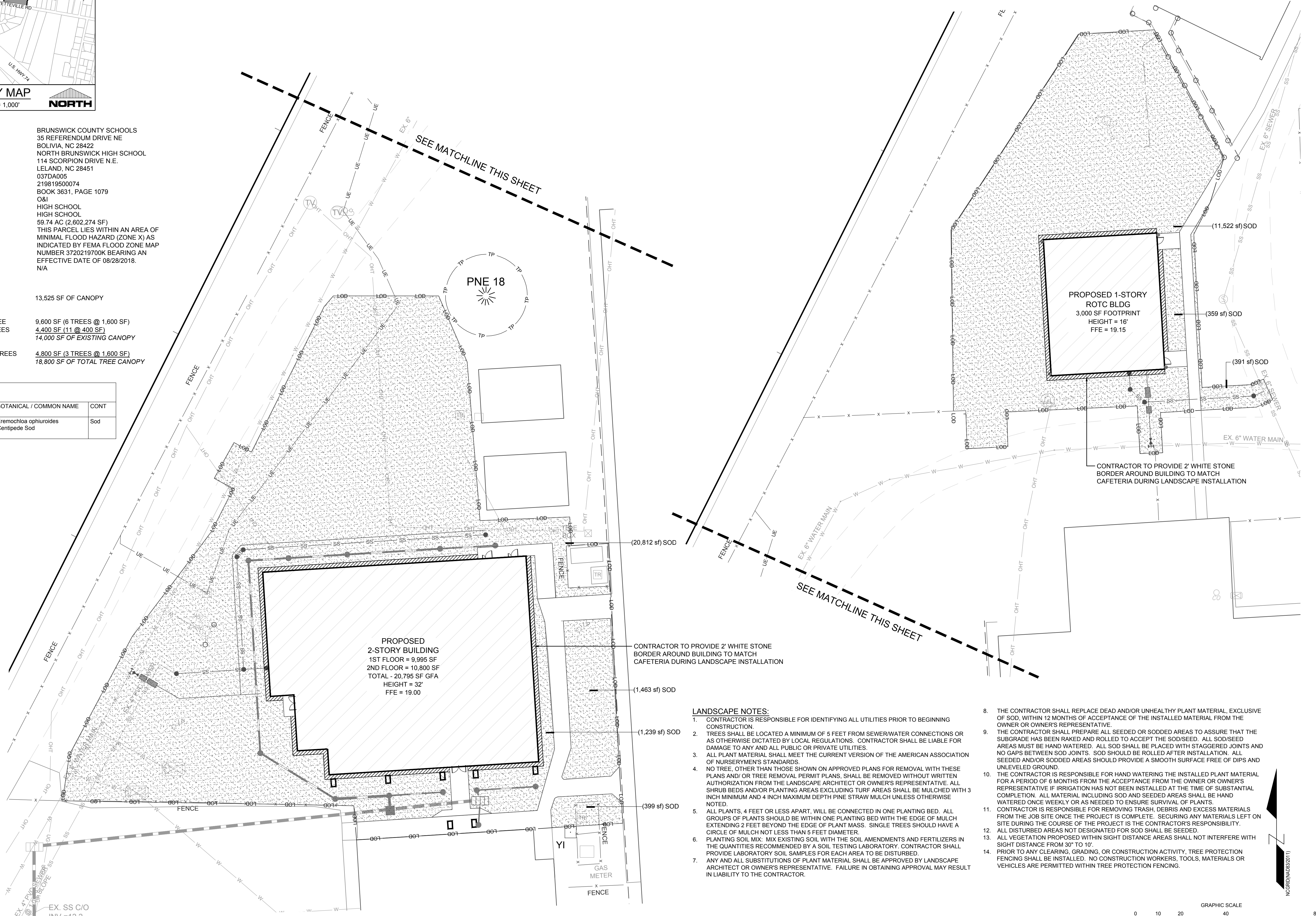
BRUNSWICK COUNTY SCHOOLS
35 REFERENDUM DRIVE NE
BOLIVIA, NC 28422
NORTH BRUNSWICK HIGH SCHOOL
114 SCORPION DRIVE N.E.
LELAND, NC 28451
037DA005
219819500074
BOOK 3631, PAGE 1079
O&L
HIGH SCHOOL
HIGH SCHOOL
59.74 AC (2,602.274 SF)
THIS PARCEL LIES WITHIN AN AREA OF
MINIMAL FLOOD HAZARD (ZONE X) AS
INDICATED BY FEMA FLOOD ZONE MAP
NUMBER 3720219700K BEARING AN
EFFECTIVE DATE OF 08/28/2018.
N/A

13,525 SF OF CANOPY

9,600 SF (6 TREES @ 1,600 SF)
4,400 SF (11 @ 400 SF)
14,000 SF OF EXISTING CANOP

4,800 SF (3 TREES @ 1,600 SF)
18,800 SF OF TOTAL TREE CANOPY

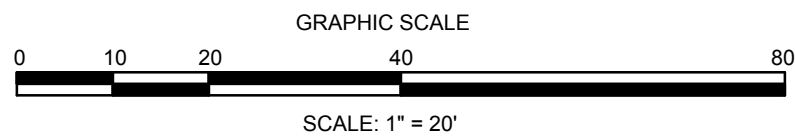
PLANT SCHEDULE L-1.0				
SOD/SEED	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	SOD	35,385 sf	Eremochloa ophiuroides Centipede Sod	Sod



LANDSCAPE NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
2. TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS OR AS OTHERWISE DICTATED BY LOCAL REGULATIONS. CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO ANY AND ALL PUBLIC OR PRIVATE UTILITIES.
3. ALL PLANT MATERIAL SHALL MEET THE CURRENT VERSION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS.
4. NO TREE, OTHER THAN THOSE SHOWN ON APPROVED PLANS FOR REMOVAL WITH THESE PLANS AND/OR TREE REMOVAL PERMIT PLANS, SHALL BE REMOVED WITHOUT WRITTEN AUTHORIZATION FROM THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. ALL SHRUB BEDS AND/OR PLANTING AREAS EXCLUDING TURF AREAS SHALL BE MULCHED WITH 3 INCH MINIMUM AND 4 INCH MAXIMUM DEPTH PINE STRAW MULCH UNLESS OTHERWISE NOTED.
5. ALL PLANTS, 4 FEET OR LESS APART, WILL BE CONNECTED IN ONE PLANTING BED. ALL GROUPS OF PLANTS SHOULD BE WITHIN ONE PLANTING BED WITH THE EDGE OF MULCH EXTENDING 2 FEET BEYOND THE EDGE OF PLANT MASS. SINGLE TREES SHOULD HAVE A CIRCLE OF MULCH NOT LESS THAN 5 FEET DIAMETER.
6. PLANTING SOIL MIX: MIX EXISTING SOIL WITH THE SOIL AMENDMENTS AND FERTILIZERS IN THE QUANTITIES RECOMMENDED BY A SOIL TESTING LABORATORY. CONTRACTOR SHALL PROVIDE LABORATORY SAMPLES FOR EACH AREA TO BE DISTURBED.
7. ANY AND ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE APPROVED BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE. FAILURE IN OBTAINING APPROVAL MAY RESULT IN LIABILITY TO THE CONTRACTOR.

8. THE CONTRACTOR SHALL REPLACE DEAD AND/OR UNHEALTHY PLANT MATERIAL, EXCLUSIVE OF SOD, WITHIN 12 MONTHS OF ACCEPTANCE OF THE INSTALLED MATERIAL FROM THE OWNER OR OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL PREPARE ALL SEEDED OR SODDED AREAS TO ASSURE THAT THE SUBGRADE HAS BEEN PROPERLY PREPARED TO ACCEPT THE SOD/SEED. ALL SOD/SEED AREAS MUST BE HAND WATERED. ALL SOD SHALL BE PLACED WITH STAGGERED JOINTS AND NO GAPS BETWEEN SOD JOINTS. SOD SHOULD BE ROLLED AFTER INSTALLATION. ALL SEEDED AND/OR SODDED AREAS SHOULD PROVIDE A SMOOTH SURFACE FREE OF DIPS AND UNLEVELLED GROUND.
10. THE CONTRACTOR IS RESPONSIBLE FOR HAND WATERING THE INSTALLED PLANT MATERIAL FOR A PERIOD OF 6 MONTHS FROM THE ACCEPTANCE FROM THE OWNER OR OWNER'S REPRESENTATIVE. IRRIGATION HAS NOT BEEN PROVIDED AT THE TIME OF SUBstantial COMPLETION. ALL MATERIAL INCLUDING SODS AND SEEDED AREAS SHALL BE HAND WATERED ONCE WEEKLY OR AS NEEDED TO ENSURE SURVIVAL OF PLANTS.
11. CONTRACTOR IS RESPONSIBLE FOR REMOVING TRASH, DEBRIS AND EXCESS MATERIALS FROM THE JOB SITE ONCE THE PROJECT IS COMPLETE. SECURING ANY MATERIALS LEFT ON SITE DURING THE COURSE OF THE PROJECT IS THE CONTRACTOR'S RESPONSIBILITY.
12. ALL DISTURBED AREAS NOT DESIGNATED FOR SOD SHALL BE SEEDDED.
13. ALL VEGETATION PROPOSED WITHIN SIGHT DISTANCE AREAS SHALL NOT INTERFERE WITH SIGHT DISTANCE FROM THE PROJECT.
14. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN TREE PROTECTION FENCING.

REVISIONS:

PARAMOUNT

BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 1200
WILMINGTON, NC 28403

N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
114 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC

CONCEPTUAL LAYOUT

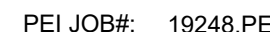
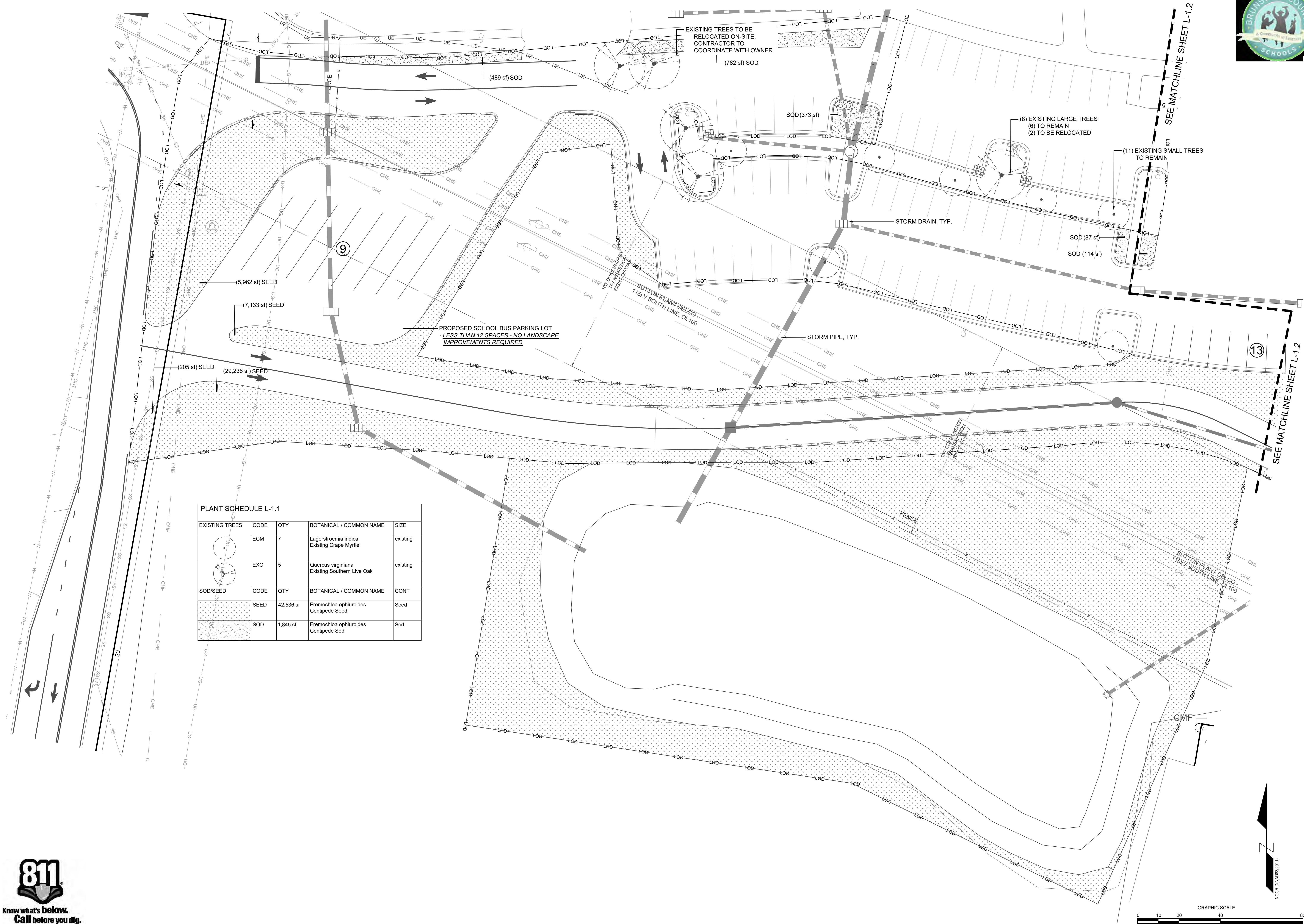
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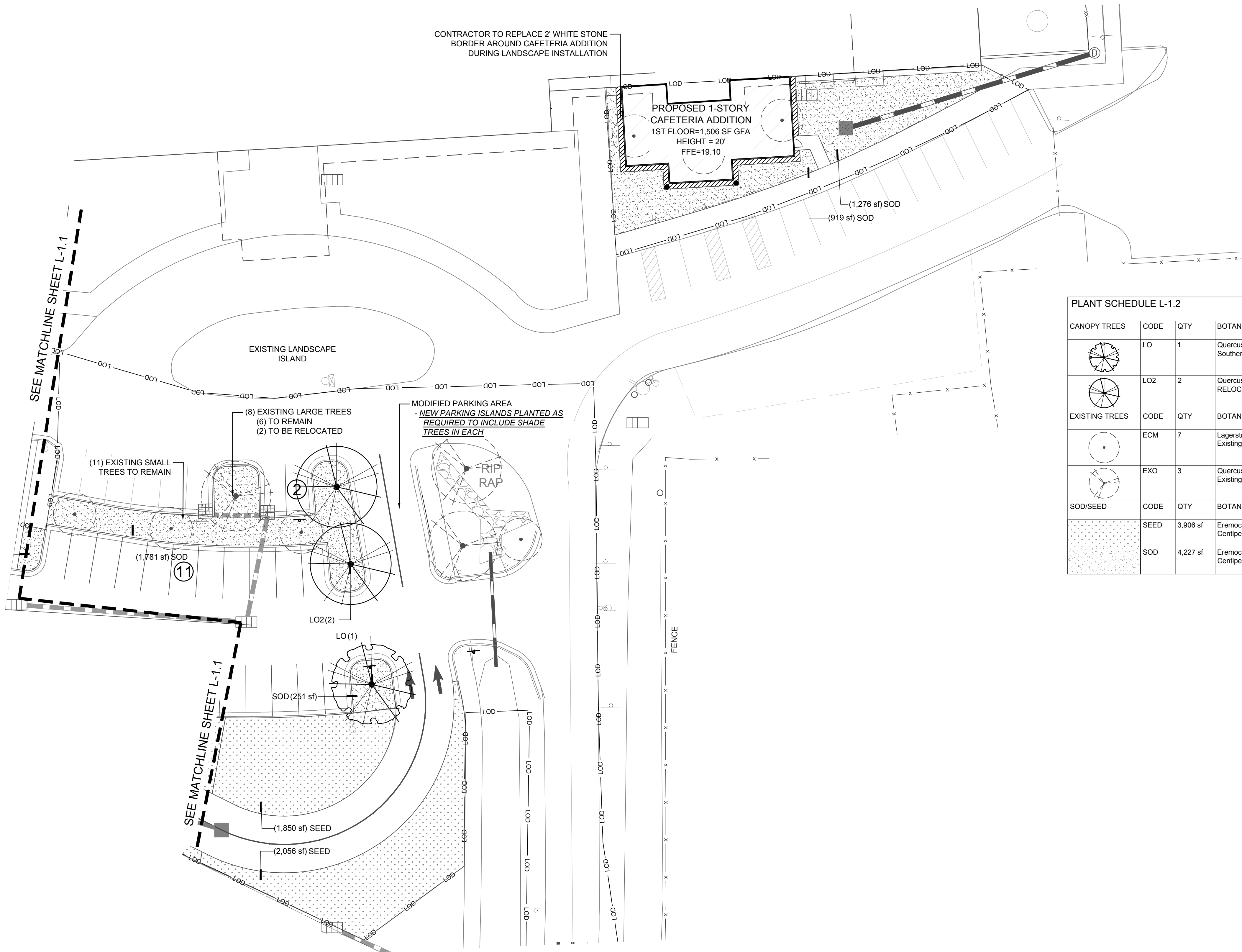
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SCALE: 1" =

DESIGNED:
DRAWN:
CHECKED:

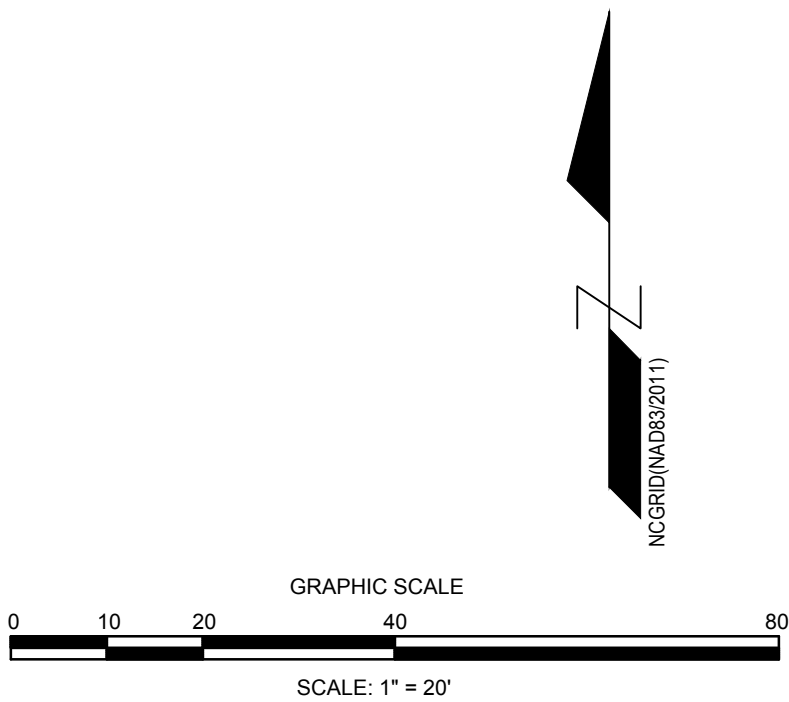
L-1.0

PEI JOB#: 19248.PE





PLANT SCHEDULE L-1.2				
CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE
	LO	1	Quercus virginiana Southern Live Oak	10' - 12' H
	LO2	2	Quercus virginiana RELOCATED Southern Live Oak	10' - 12' H
EXISTING TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE
	ECM	7	Lagerstroemia indica Existing Crape Myrtle	existing
	EXO	3	Quercus virginiana Existing Southern Live Oak	existing
SOD/SEED	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	SEED	3,906 sf	Eremochloa ophiuroides Centipede Seed	Seed
	SOD	4,227 sf	Eremochloa ophiuroides Centipede Sod	Sod



REVISIONS:

CLIENT INFORMATION:

LANDSCAPE PLAN

PROJECT STATUS:
DESIGNED BY: [blank]
PRELIMINARY LAYOUT:
FINAL DESIGN:
RELEASED FOR CONSTRUCTION:
DATE: [blank]
SCALE: [blank]
DRAWN: [blank]
CHECKED: [blank]

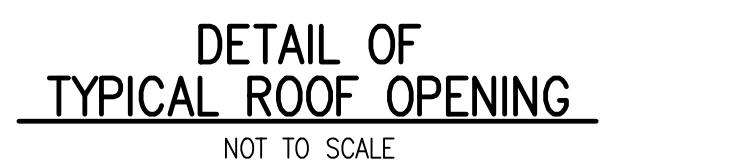
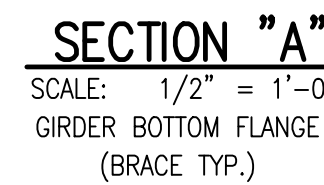
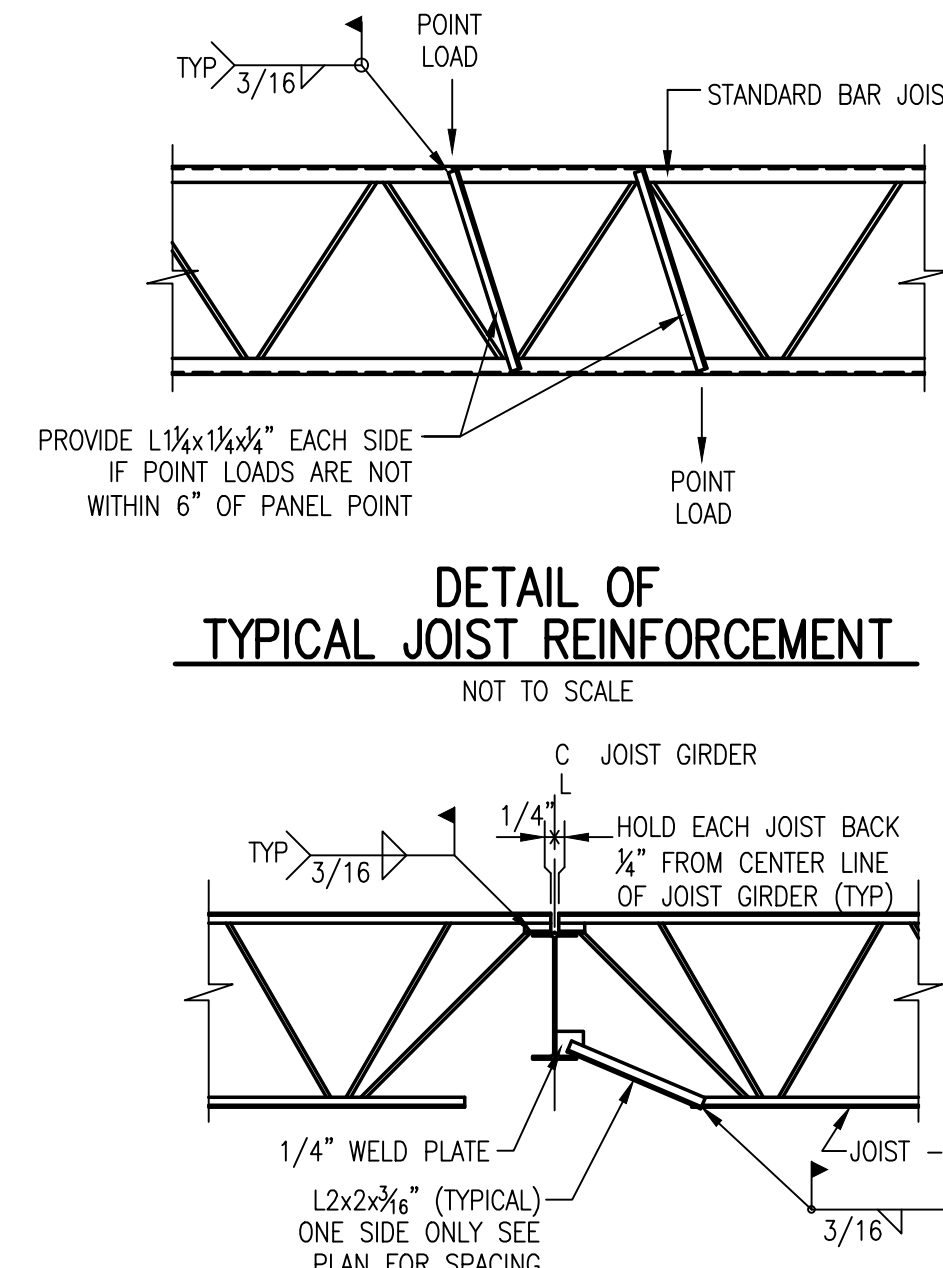
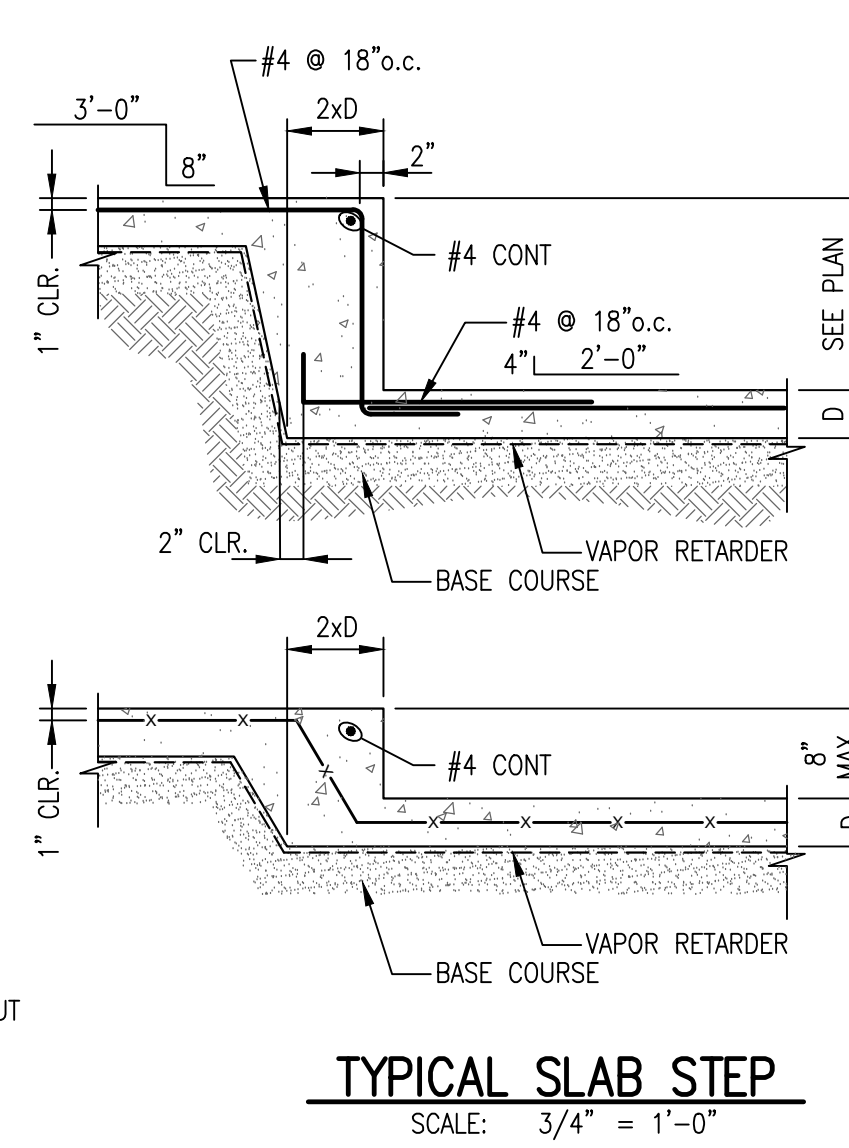
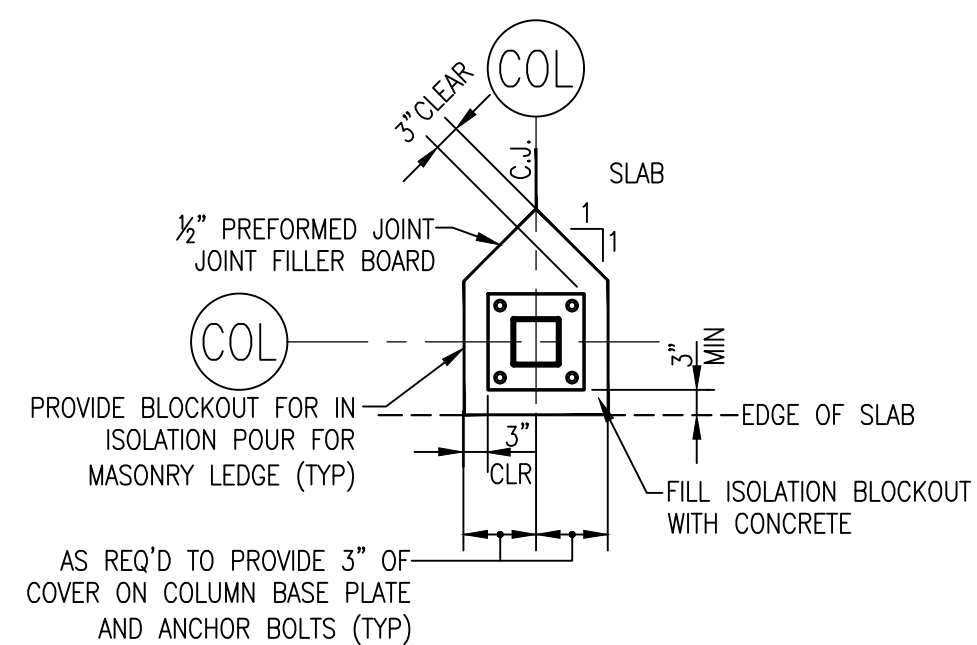
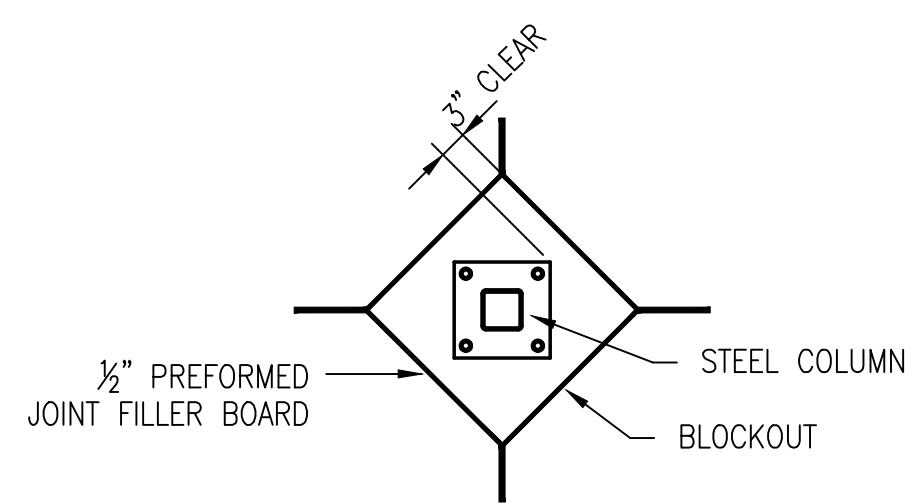
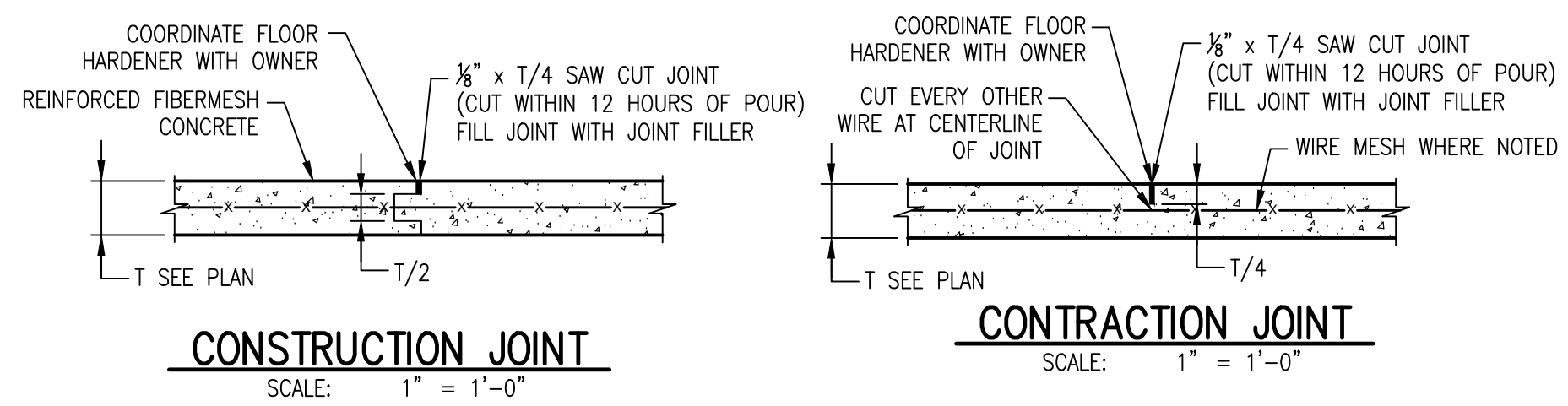
SEAL:
NORTH CAROLINA
1823
04/23/2020
ALISON H. ENGBERG, P.E.
NCEM0000032011

L-1.2
PEI JOB#: 19248.PE

BECKER MORGAN GROUP
3333 JAECKLE DRIVE, SUITE 120
WILMINGTON, NC 28403

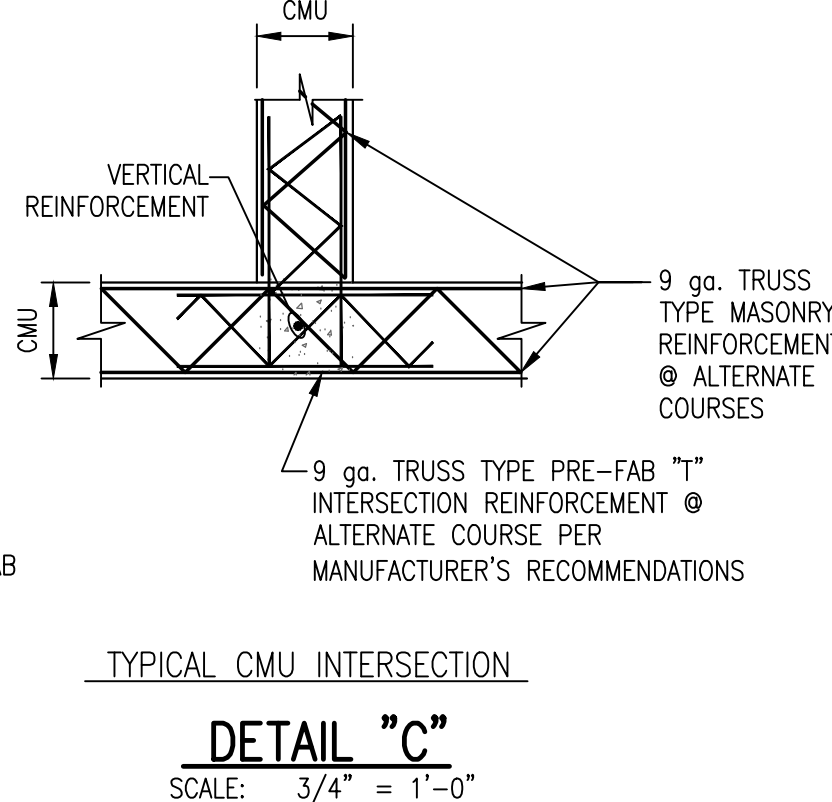
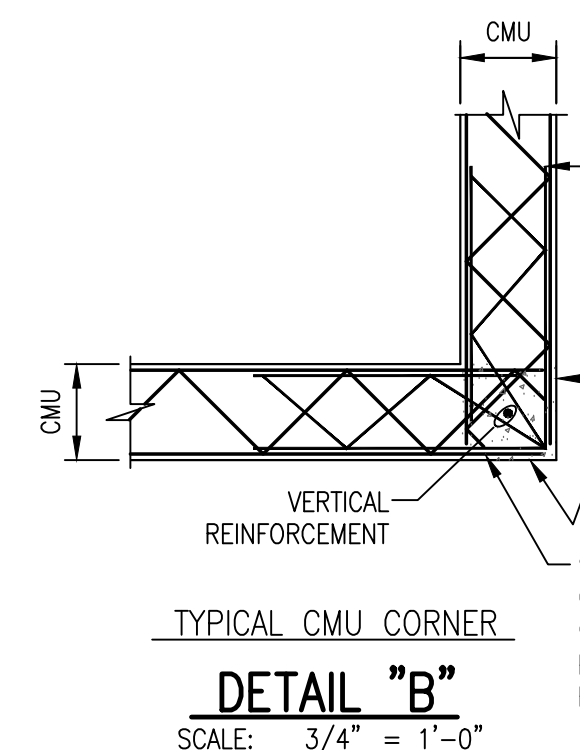
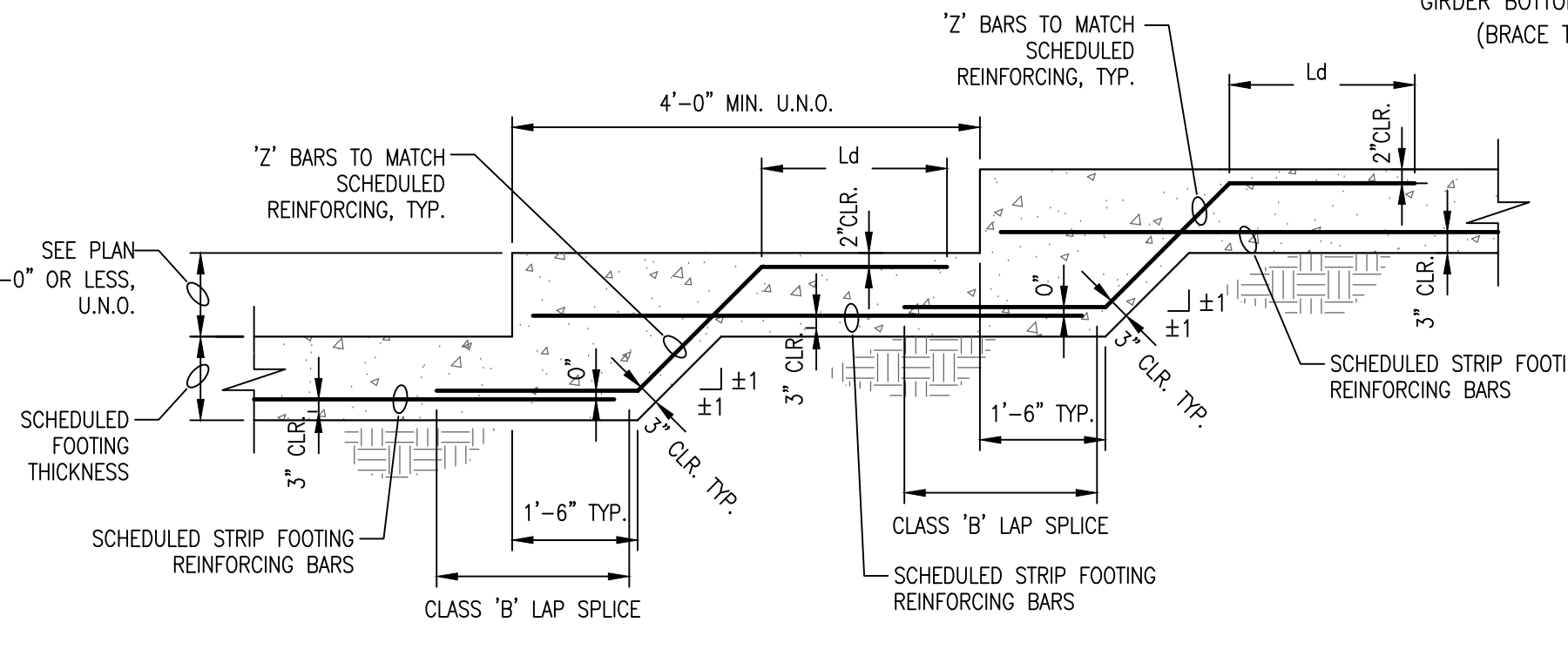
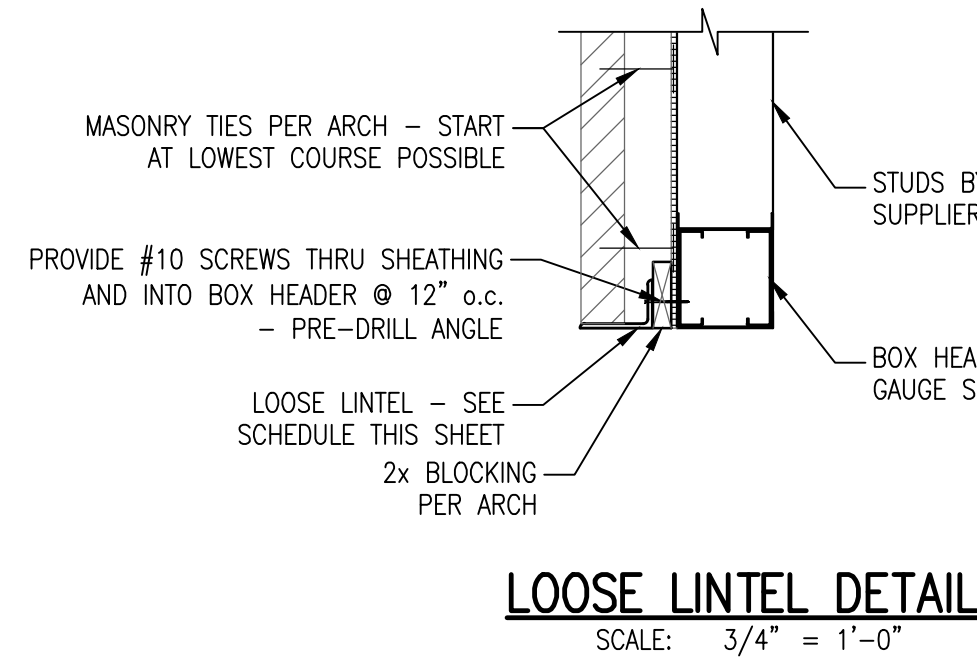
PARAMOUNT ENGINEERING
122 Cinema Drive
Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License # C-2846

N. BRUNSWICK HIGH SCHOOL IMPROVEMENTS
1.14 SCORPION DRIVE, LELAND
BRUNSWICK COUNTY, NC



STEEL LINTEL SCHEDULE			
CLEAR OPENING	ONE ANGLE FOR EA 4" WYTHE	MIN BRG	MAX. HEIGHT OF BRICK
0'-8" TO 6'-0"	L6" x 4" x 5/8" LLH	8"	9'-0"
6'-0" TO 8'-0"	L6" x 6" x 5/8" LLV	8"	9'-0"
8'-0" TO 12'-0"	L8" x 6" x 5/8" LLV	8"	9'-0"

- NOTES:
- WHERE LINTELS BEAR ON HOLLOW MASONRY UNITS FILL ALL CORES UNDER BEARING WITH GROUT FROM BOTTOM OF LINTEL TO 16" MINIMUM BELOW.
 - THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOAD.
 - LINTELS ARE DESIGNED TO CARRY THE MAXIMUM HEIGHT OF BRICK LISTED IN SCHEDULE. IF STACKED BRICK HEIGHT EXCEEDS LISTED VALUE, THEN CONTACT STRUCTURAL ENGINEER FOR ALTERNATE DESIGN.
 - ALL STEEL LINTELS SHALL BE HOT DIP GALVANIZED AND PAINTED.
 - SEE DETAIL BELOW FOR REQUIREMENTS

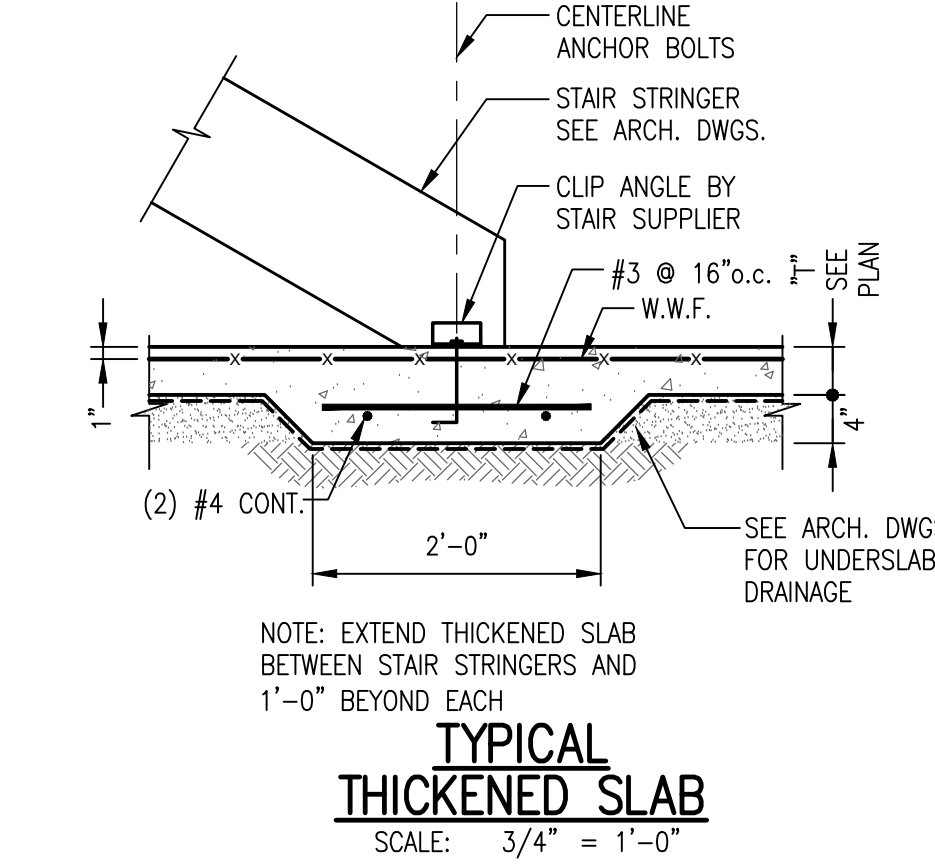
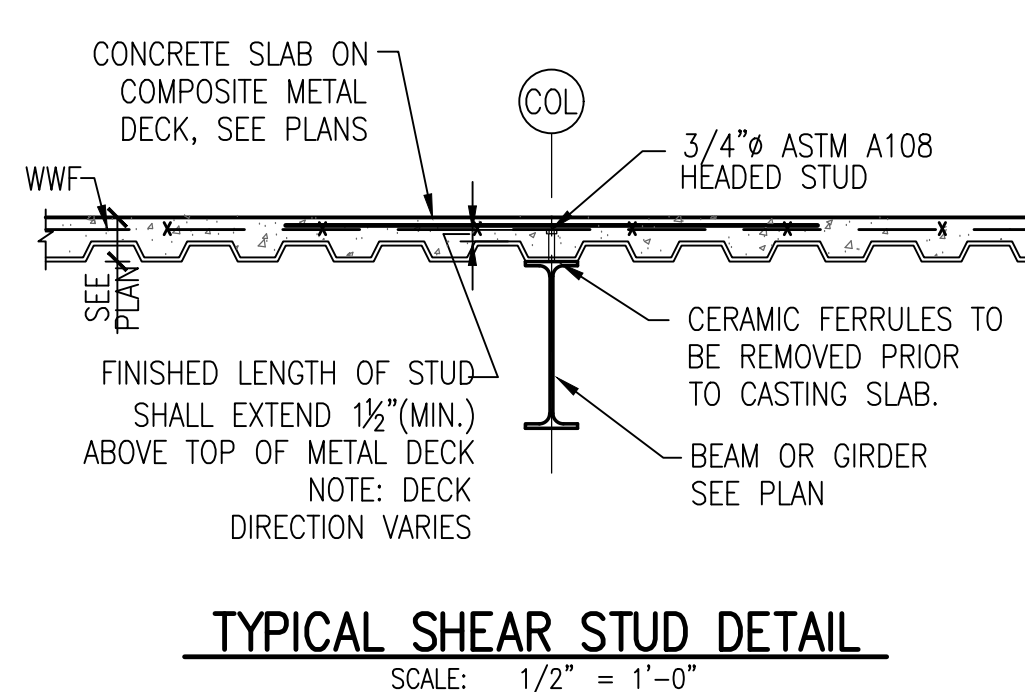
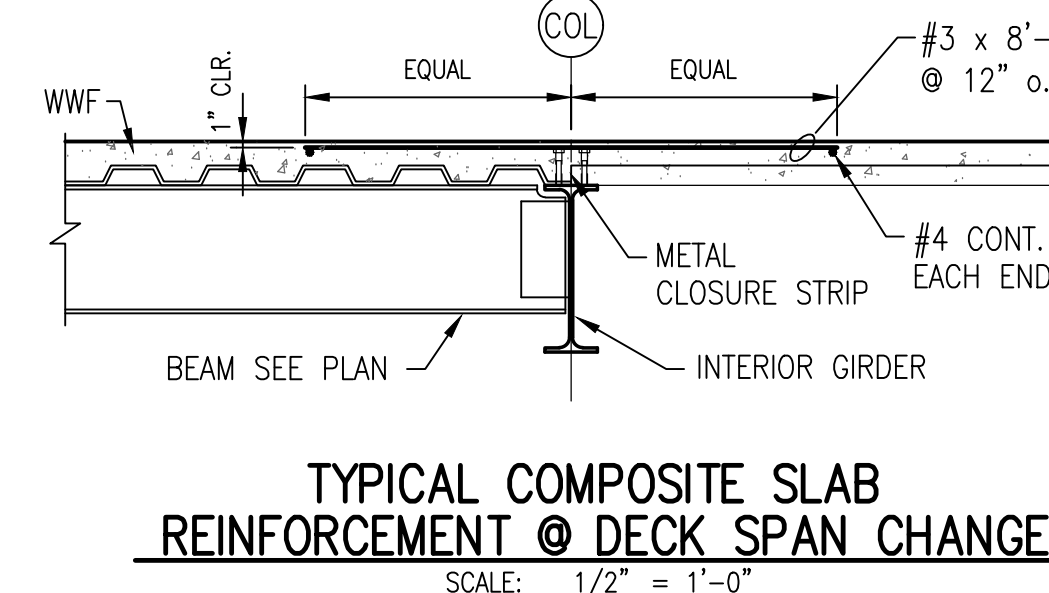
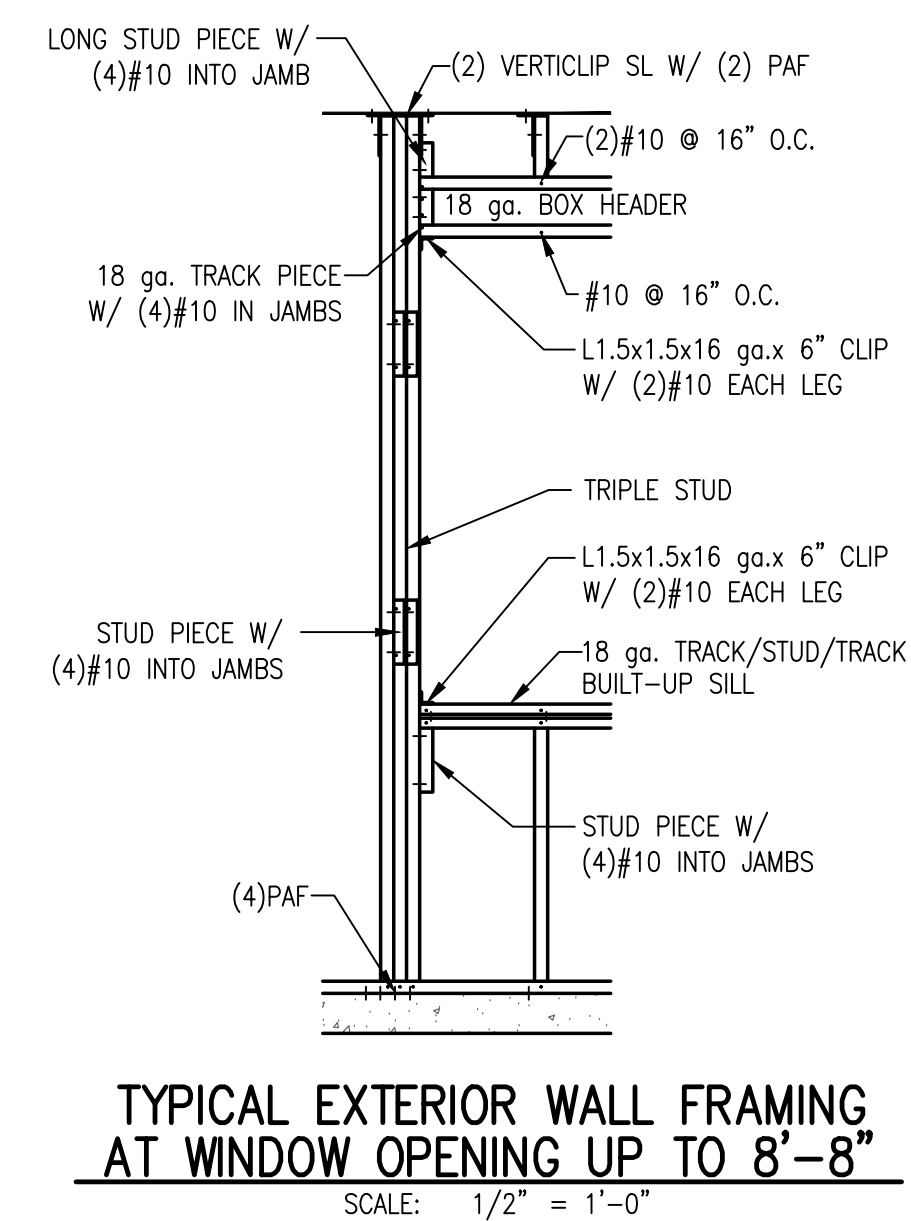
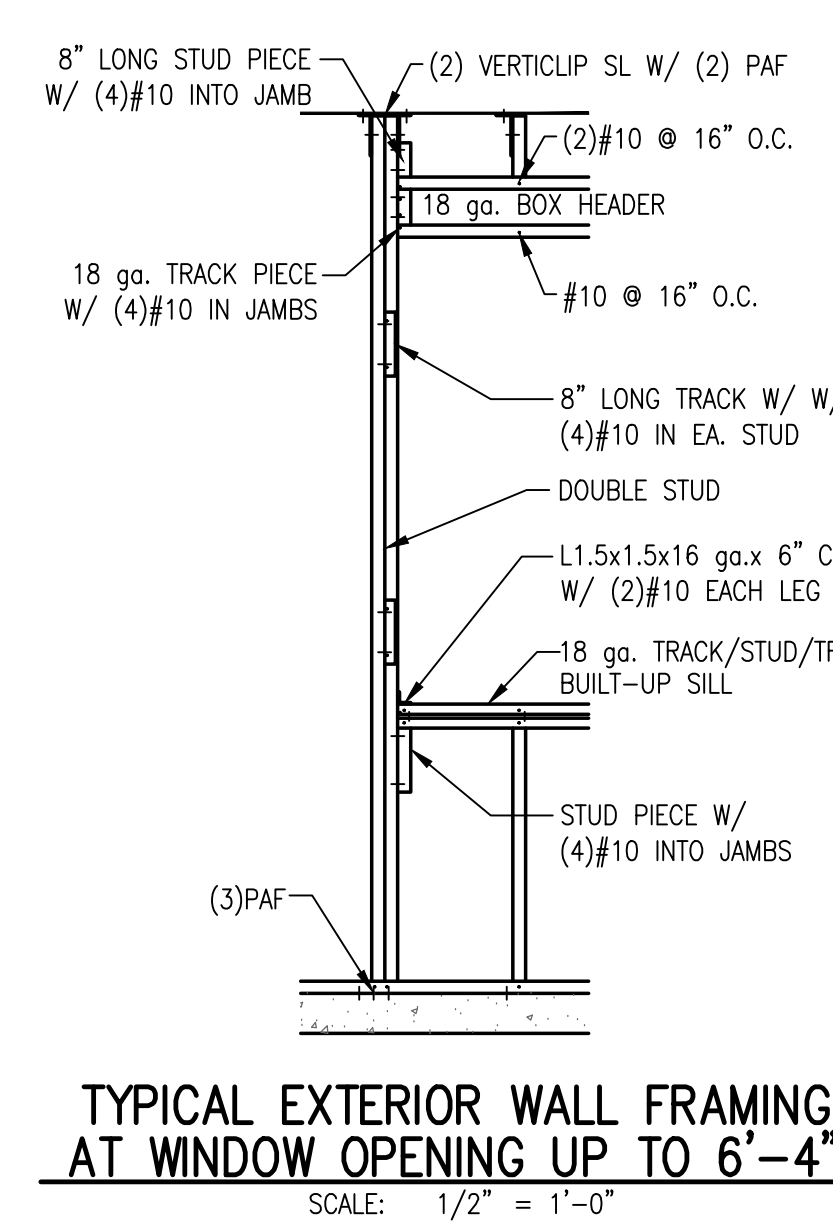
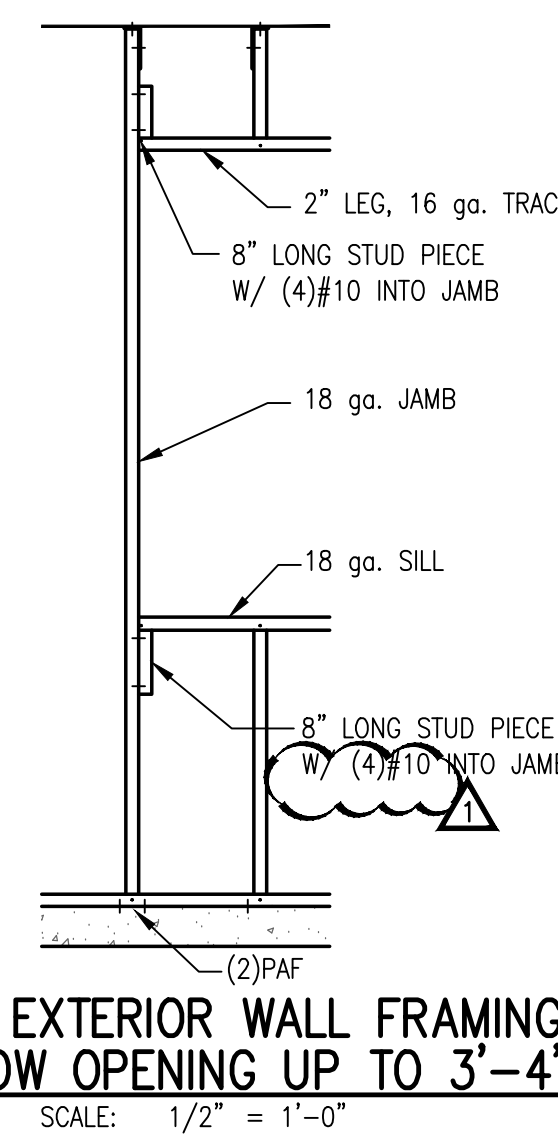
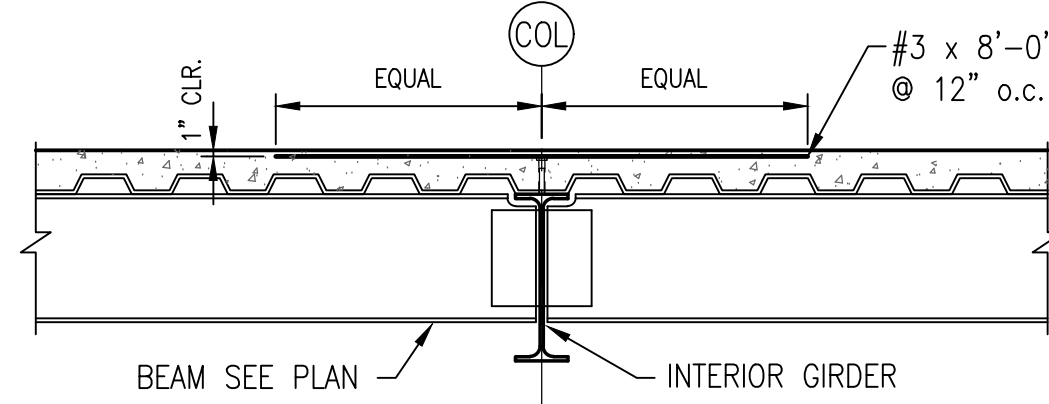
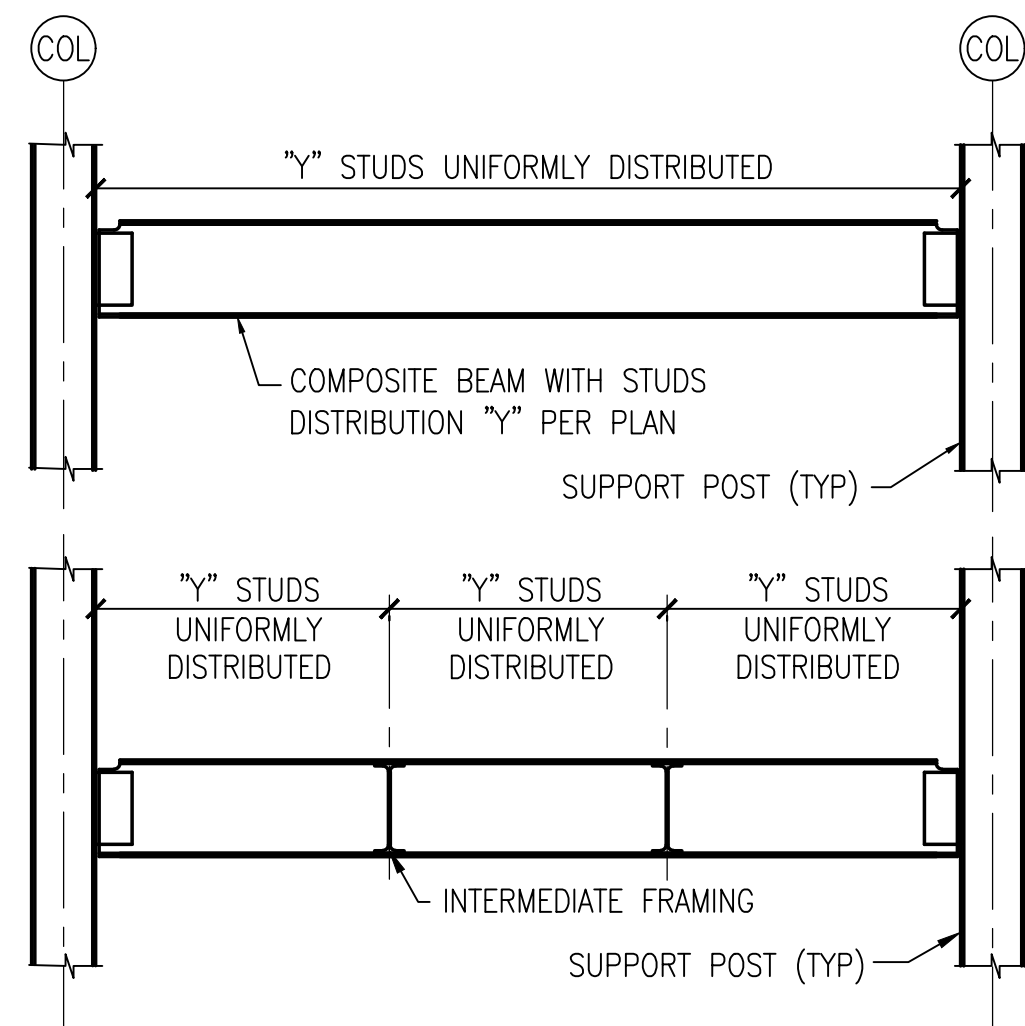
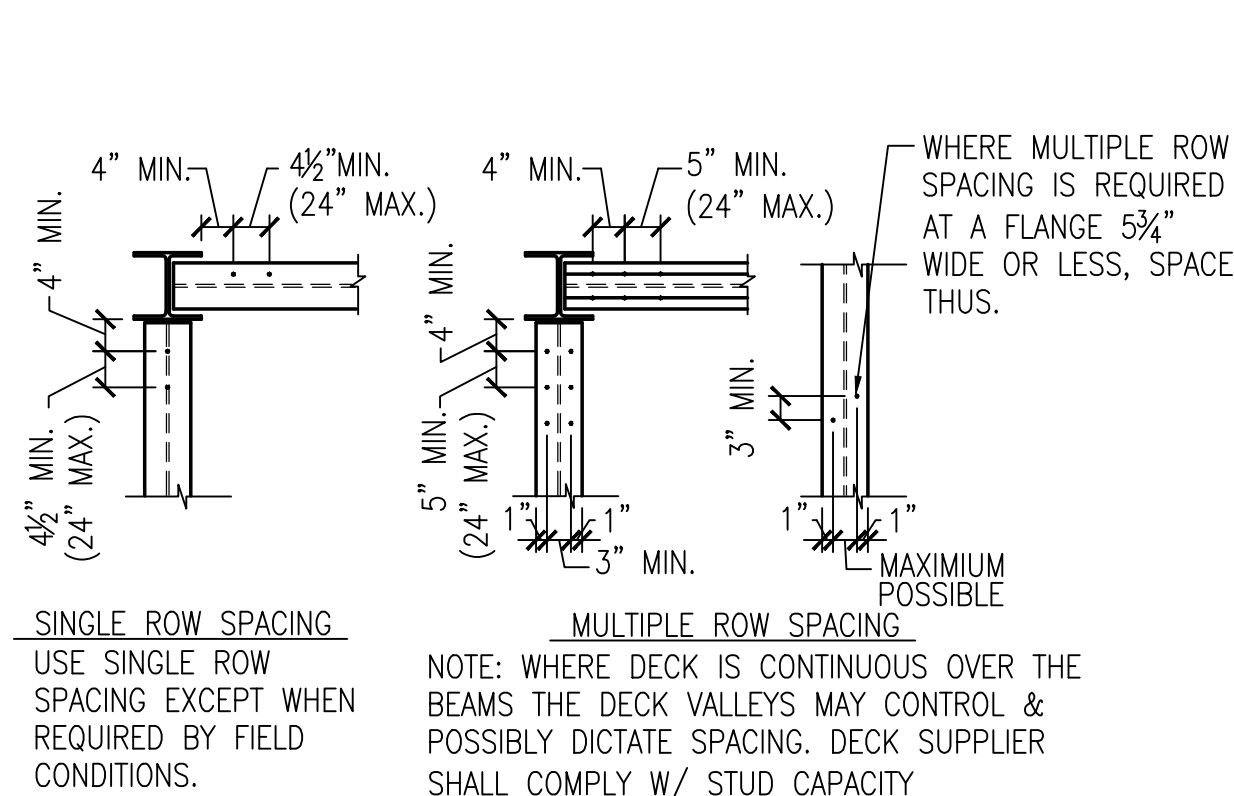
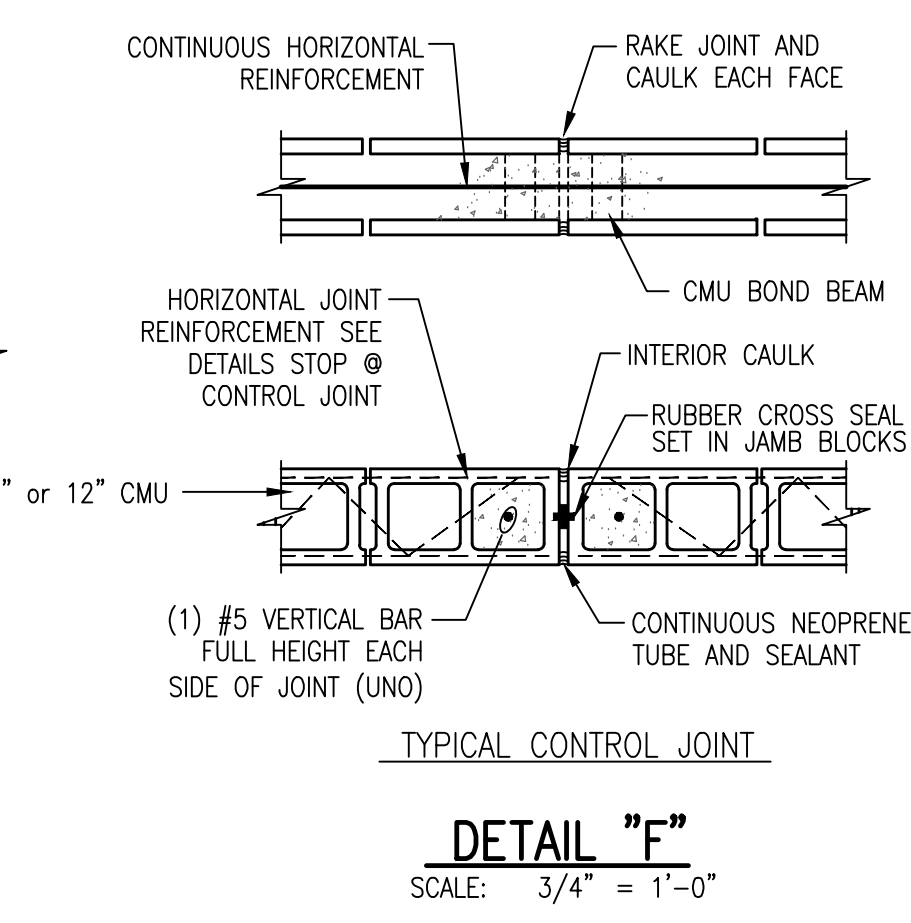
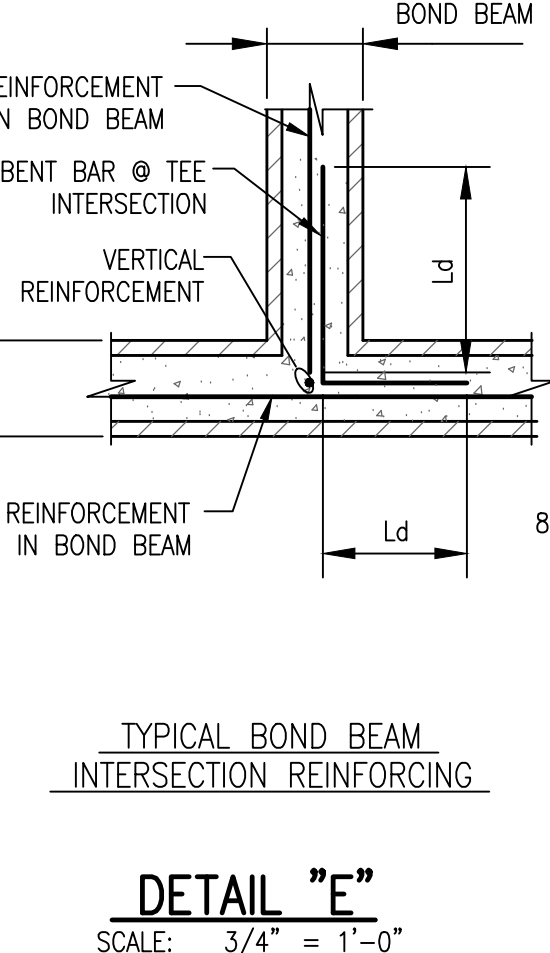
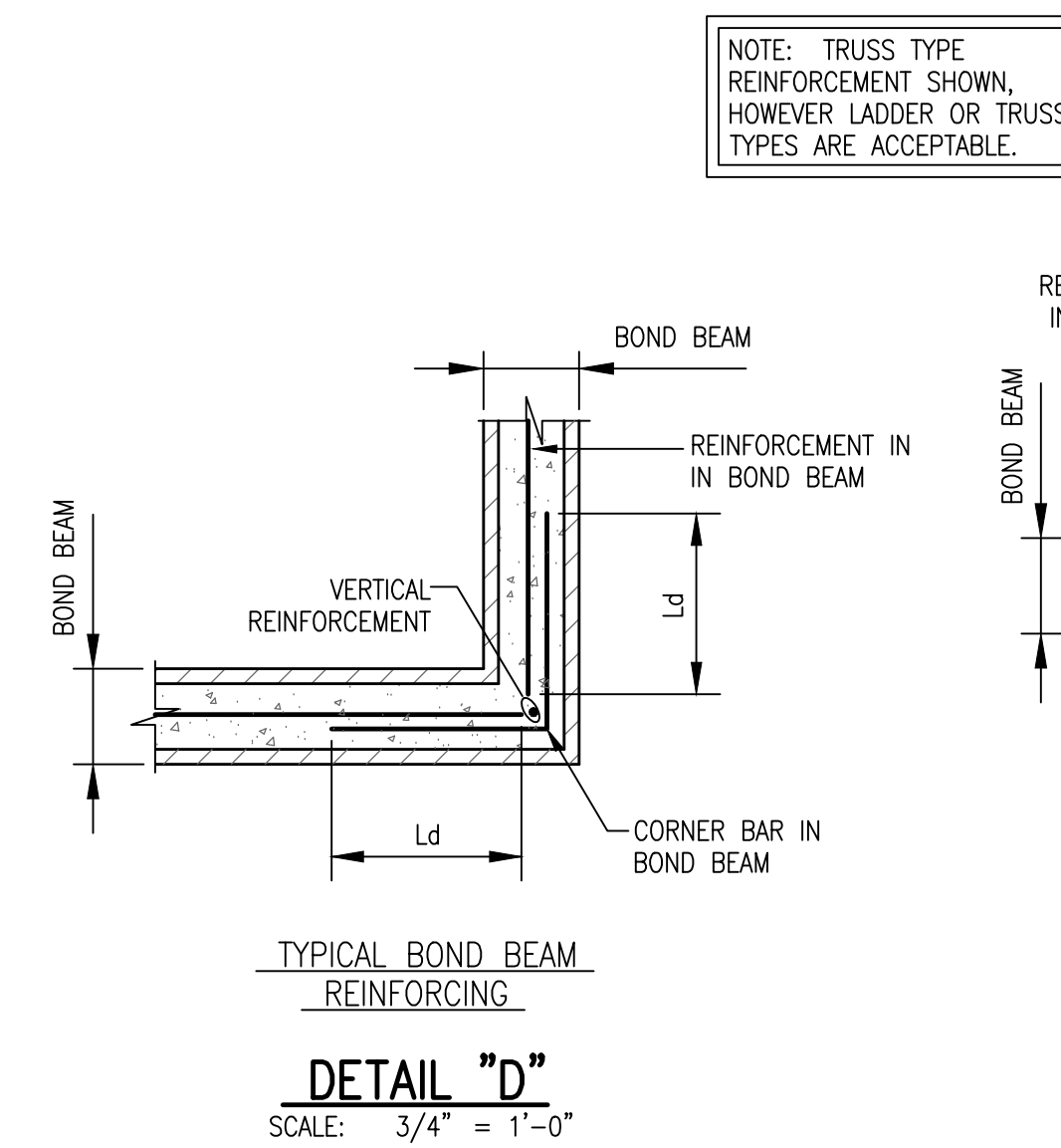


NON LOAD BEARING CMU LINTEL SCHEDULE					
CLEAR OPENING	DEPTH	REINFORCING			MIN. BRG.
		6" CMU	8" CMU	12" CMU	
0'-8" TO 3'-4"	8"	1#4	1#4	2#5	8"
3'-4" TO 4'-8"	8"	1#4	1#4	2#5	8"
4'-8" TO 6'-0"	8"	1#4	1#5	2#5	8"
6'-0" TO 8'-0"	8"	1#4	2#5	2#5	8"
8'-0" TO 10'-0"	16"	1#4	2#5	2#5	12"
10'-0" TO 12'-0"	16"	-	-	2#5	12"

- NOTES:
- BEAR REINFORCING 4" (MIN) EACH END.
 - FILL BLOCK CORES WITH GROUT TO A DEPTH OF 48" (MIN) BELOW LINTEL BEARING.
 - SEE BEAM SCHEDULE FOR LINTELS FOR CLEAR SPANS OVER 12' AND LINTELS SUPPORTING FLOOR OR ROOF LOADS.
 - THESE LINTELS ARE NOT DESIGNED FOR MASONRY WALLS THAT CARRY FLOOR OR ROOF LOADS.

LOCATE CMU CONTROL JOINTS AS FOLLOWS:

- AT MAXIMUM SPACING OF 25' OR 3 TIMES THE WALL HEIGHT. COORDINATE CONTROL JOINT LOCATIONS W/ ARCHITECTURAL PLANS.
- AT ALL ABRUPT CHANGES IN WALL HEIGHT.
- AT ALL CHANGES IN WALL THICKNESS, SUCH AS AT PIPE AND DUCT CHASES AND ADJACENT TO COLUMNS OR PLASTERS.
- CENTERED OVER JOINTS IN FOUNDATIONS AND FLOORS.
- CENTERED BELOW JOINTS IN ROOFS AND FLOORS THAT BEAR ON CMU WALLS.
- AT A DISTANCE NOT OVER ONE-HALF THE REQUIRED JOINT SPACING FROM BONDED WALL INTERSECTIONS, CORNERS OR CHANGES IN WALL DIRECTION.
- DO NOT PROVIDE CONTROL JOINTS IN CMU SHEAR WALLS.



254 North Front Street
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ARCHITECTURE PLANNING

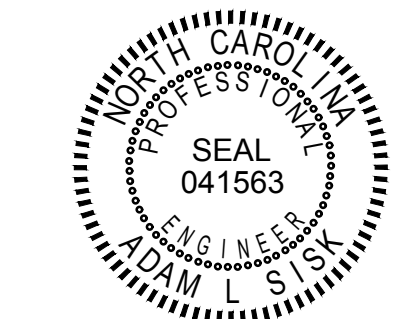
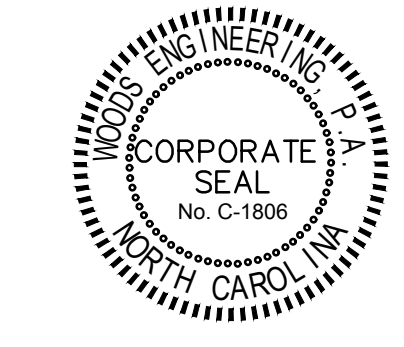
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ISSUED: 04.23.2020



PROJECT TITLE

NORTH BRUNSWICK HIGH SCHOOL NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

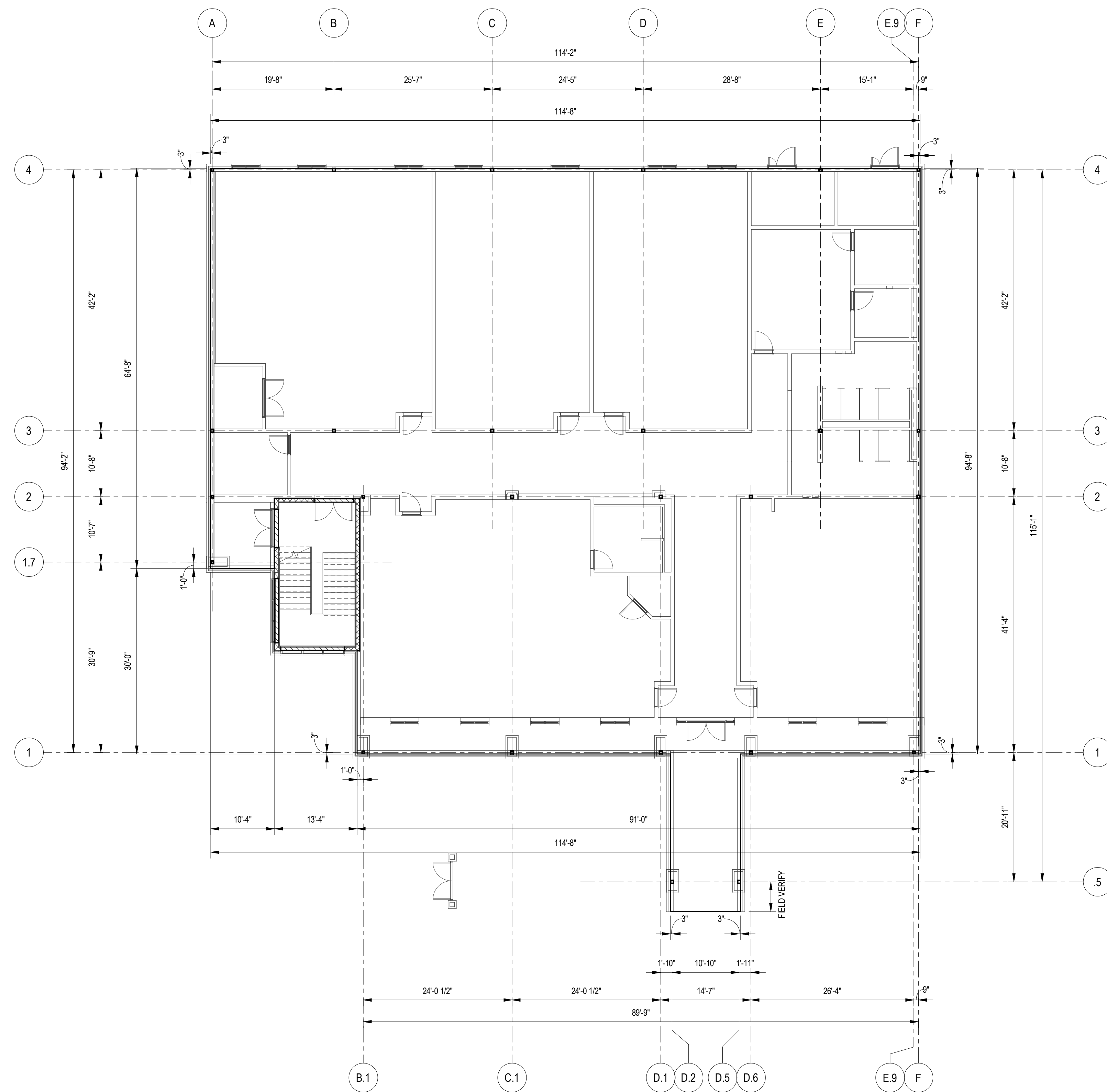
SHEET TITLE

TYPICAL DETAILS

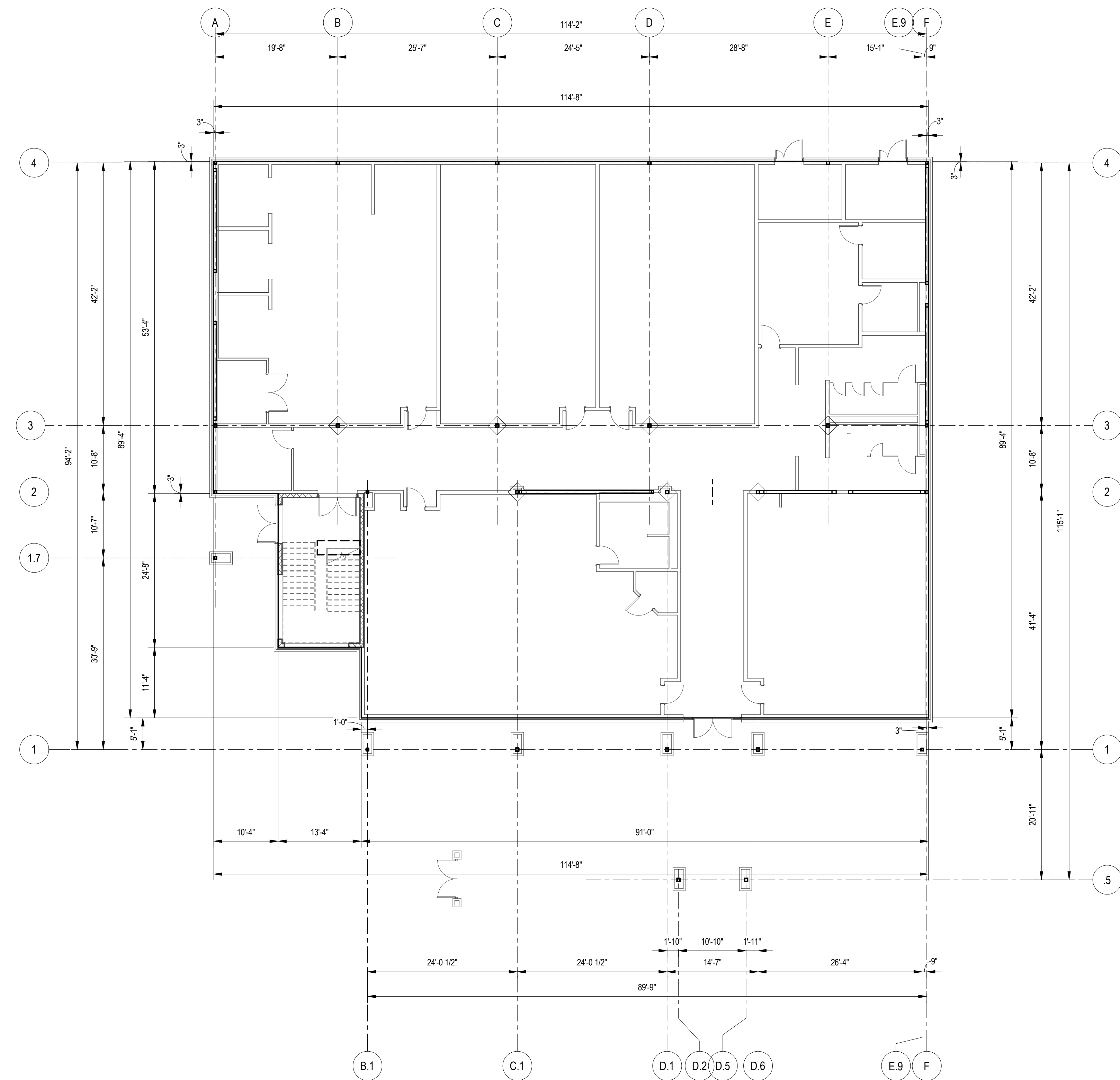
ISSUE BLOCK

DATE	DESCRIPTION
04.23.20	ISSUED FOR BIDDING
05.22.20	100% REVIEW SUBMISSION
10.14.19	NCPI SD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NCPI SD SUBMISSION

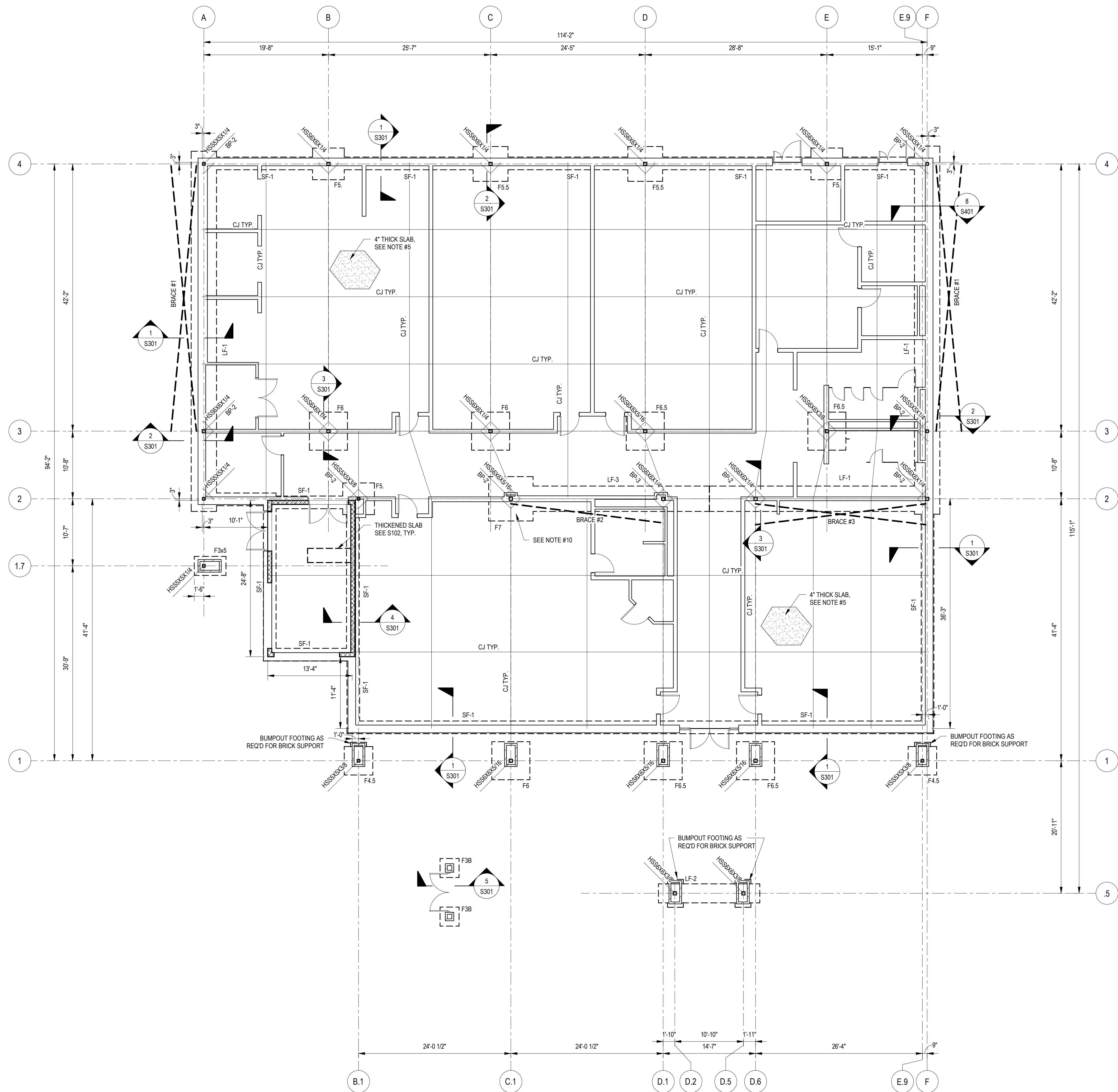
PROJECT NO: 19-2952
DATE: 04.23.20
SCALE: AS INDICATED
DRAWN BY: MBK PROJ MGR: ALS



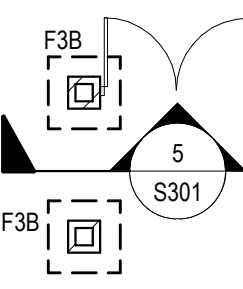
CLASSROOM SECOND FLOOR SLAB PLAN
SCALE: 3/32" = 1'-0"



CLASSROOM FOUNDATION SLAB PLAN
SCALE: 3/32" = 1'-0"



CLASSROOM FOUNDATION PLAN
SCALE: 1/8" = 1'-0"



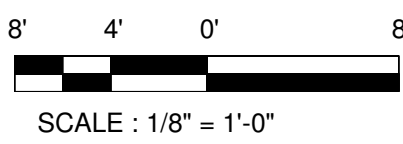
- LEGEND - FOUNDATION**
- INDICATES 8" CMU WALL WITH #5 @ 48" o.c. TYP. U.N.O.
 - SF-X SPREAD FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
 - STRIP FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
 - INDICATES CONCRETE SLAB CONTRACTION JOINTS. SEE S1.02 FOR TYPICAL DETAILS.
 - INDICATES STEEL COLUMN.
 - 0 GRID DESIGNATION FOR CENTERLINE OF COLUMN

- NOTES - FOUNDATION PLAN**
- SEE SHEET S1.01 FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES, AND REINFORCING STEEL NOTES. ALSO, SEE SHEET S1.03 & S1.04 FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
 - DATUM ELEVATION = TOP OF SLAB ELEVATION = ASSUMED 0'-0". OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
 - TOP OF FOOTINGS SHALL BE (-1'-4") FROM DATUM ELEVATION, U.N.O. ON PLAN AS (+/- X'-X") FROM DATUM ELEVATION.
 - RELOCATE ANY UTILITY LINES THAT CONFLICT WITH THE FOUNDATIONS OR DROP THE FOUNDATIONS TO AN ELEVATION BELOW THE PROPOSED UTILITIES. RELOCATE ANY GRAVITY FLOW LINES THAT CONFLICT WITH SPREAD FOOTINGS AS SHOWN ON STRUCTURAL FOUNDATION PLANS. IF A GRAVITY FLOW LINE TRAVELS UNDER A CONTINUOUS STRIP FOOTING EITHER:
 - DROP THE FOOTING ELEVATION BELOW THE PROPOSED LINE
 - ENCASE THE LINE IN A STEEL PIPE 2" LARGER IN DIAMETER THAN THE LINE AND EXTEND THE PIPE 1'-0" PAST EACH SIDE OF THE CONCRETE FOOTING. BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY.
 - SLAB-ON-GRADE SHALL BE 4" THICK (SEE PLAN) 3000 psi CONCRETE WITH W/M 6x6xW2.0xW2.0 ON SUPPORT CHAIRS ON 15 ml VAPOR BARRIER, ON 6" COMPACTED SELECT GRANULAR MATERIAL ON WELL COMPACTED SUB GRADE. SEE S1.01 FOUNDATION NOTES FOR COMPACTION REQUIREMENTS. VERIFY COMPACTION w/QUALIFIED GEOTECHNICAL ENGINEER.
 - REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
 - G.C. TO COORDINATE STEPS IN FOUNDATION FOR PLUMBING, ELECTRICAL, AND MECHANICAL.
 - PROVIDE STEEL SLEEVE FOR PLUMBING LINES UNDER FOUNDATIONS. SLEEVE SHALL BE 2" LARGER IN DIAMETER THAN PLUMBING LINE AT THAT LOCATION.
 - DIMENSIONS ARE FROM EDGE OF SLAB (E.O.S.) AND OUTSIDE FACE OF STUD (O.F.S.) / CURTAINWALL (O.F.C.W.) TO COLUMN CENTERLINE UNLESS NOTED OTHERWISE.
 - CAST SPREAD AND LATERAL FOOTINGS MONOLITHIC AND CONTINUE LATERAL FOOTING REINFORCEMENT TO FAR END OF SPREAD FOOTING.

SPREAD FOOTING (FX) SCHEDULE				
MARK	WIDTH x LENGTH x THICKNESS	REINFORCEMENT		COMMENTS
		TOP BARS EACH WAY (U.N.O.)	BOTTOM BARS EACH WAY (U.N.O.)	
F38	3'-0" x 3'-0" x 1'-4"	N/A	(4) #5	
F3x5	3'-0" x 5'-0" x 1'-0"	N/A	(3) #5 LONG & (6) #5 SHORT	
F4.5	4'-0" x 4'-6" x 1'-0"	N/A	(4) #5	
F5	5'-0" x 5'-0" x 1'-0"	N/A	(6) #5	
F5.5	5'-6" x 5'-6" x 1'-1"	N/A	(6) #5	
F6	6'-0" x 6'-0" x 1'-2"	N/A	(7) #5	
F6.5	6'-6" x 6'-6" x 1'-4"	N/A	(8) #5	
F7	7'-0" x 7'-0" x 2'-0"	N/A	(7) #7	

LATERAL FOOTING (LF-x) SCHEDULE				
MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT		COMMENTS
		TOP BARS	BOTTOM BARS	
LF-1	4'-0" x 2'-0" x CONT.	(6) #6 CONT. & #5 @12"o.c. SHORT	(6) #6 CONT. & #5 @12"o.c. SHORT	
LF-2	3'-0" x 1'-6" x 16'-6"	(4) #5	(4) #5	
LF-3	4'-0" x 2'-0" x CONT.	(6) #6 CONT. & #5 @12"o.c. SHORT	(6) #7 CONT. & #5 @12"o.c. SHORT	

STRIP FOOTING (SF-x) SCHEDULE				
MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT		COMMENTS
		TOP BARS	BOTTOM BARS	
SF-1	2'-0" x 1'-0" x CONT.	N/A	(3) #4	



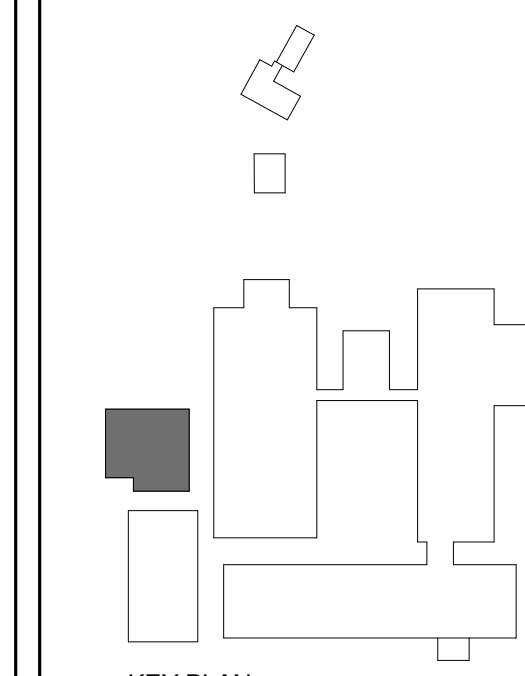
NORTH
BRUNSWICK
HIGH SCHOOL
NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

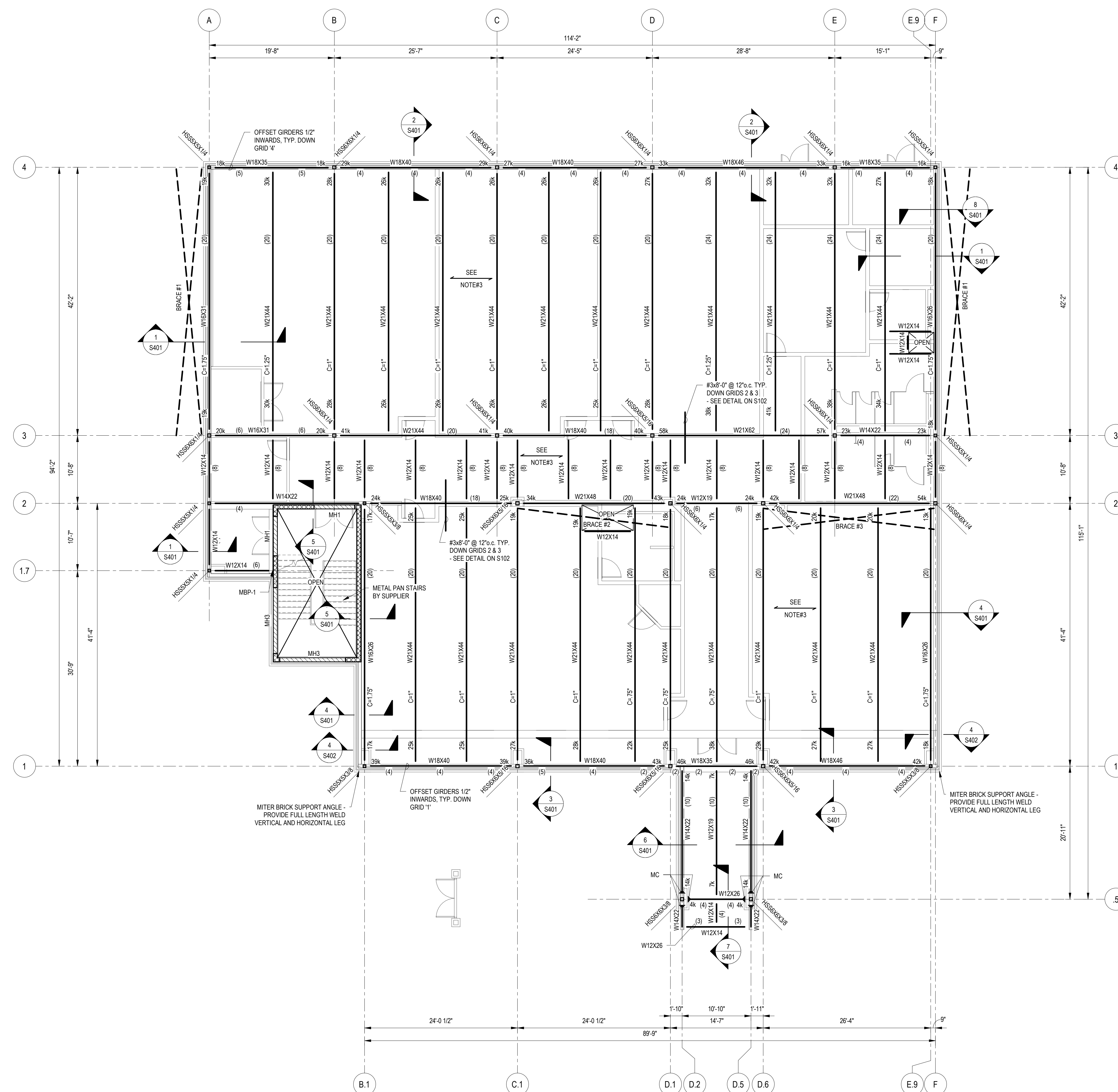
SECOND FLOOR
FRAMING PLAN

[illegible]

PROJECT NO:	19-2952
DATE:	03.20.20

S202

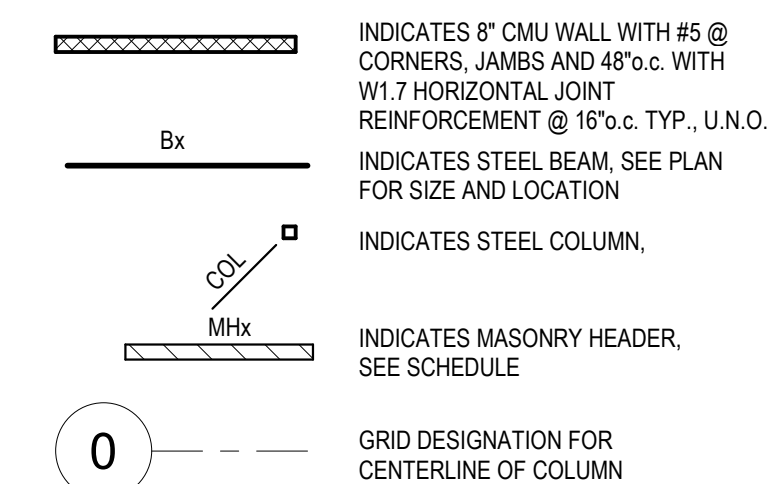
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CLASSROOM SECOND FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

LEGEND - FLOOR FRAMING

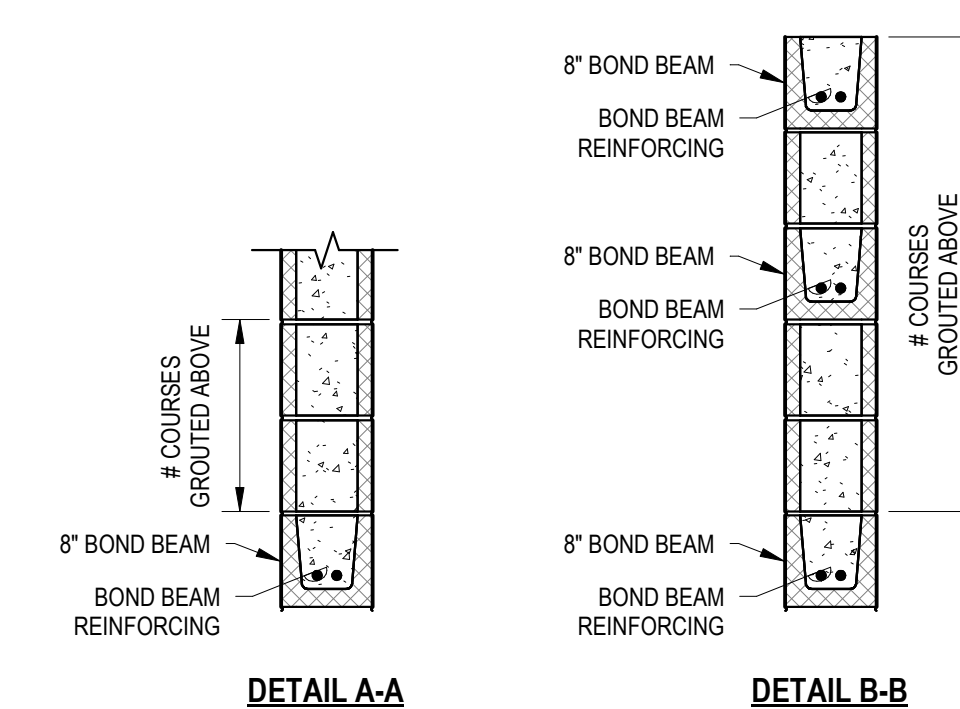


NOTES - FLOOR FRAMING PLAN

1. SEE SHEET S11 0 SERIES SHEETS FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES, REINFORCING STEEL, STEEL FRAMING, JOIST, DECK AND LIGHT GAUGE FRAMING NOTES AND TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE THE TYPICAL CONSTRUCTION CONDITIONS.
2. TYPICAL SLAB ELEVATION IS 1' ABOVE DATUM ELEVATION ASSUMED "0" (SEE S2 01). TYPICAL TOP OF STEEL IS 1 1/2" BELOW TOP OF SLAB U.O.
3. TYPICAL FLOOR SLAB IS 3 1/2" - 3.000 PH. NORMAL WEIGHT CONCRETE TOPPING WITH 4000 PSI SYNTHETIC MICROBULK REINFORCER OR 20' VULC. GAUGE GLAZED COMPOSITE DECK BY VULCRUF (2.01/02) OR APPROVED EQUAL. TOTAL FLOOR SLAB SYSTEM IS 5 1/2" THICK.
4. ALL BEAMS, GIRDS AND COLUMNS SHALL BE ASTM A992, GRADE 50.
5. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND PENETRATIONS NOT SHOWN ON THESE DRAWINGS. MECHANICAL, PLUMBING, AND ELECTRICAL WEIGHTS ARE FOR DESIGN PURPOSES ONLY. VERIFY ACTUAL OPERATING WEIGHT WITH PURCHASED EQUIPMENT MANUFACTURER SPECIFICATIONS.
6. DESIGNATIONS ON PLAN FOR BEAM REACTIONS, CAMBERS AND COMPOSITE BEAM SHEAR STUDS AS INDICATED BELOW. SEE "TYPICAL DETAILS" SHEET S11 02 FOR FLOOR CAMBERED DETAILS. ALL SHEAR STUDS SHALL BE 3/4"x1" S LONG HEADED STUDS AND SHALL COMPLY WITH ASTM A108.

STUDS EQUALLY PLACED ALONG MEMBER (xx)
 (MAXIMUM SPACING = $24 \sqrt{c}$)
 STUDS EQUALLY PLACED BETWEEN CONNECTING MEMBERS (xxyYYZ)
 CAMBER AT MID SPAN (IN) C=xx
 REACTIONS AT EACH END (KIPS) K=xx
 (MINIMUM REACTION = 1/8 IF NOT SHOWN ON PLAN) (LRFSD)
 BEAM REACTION (IN kips)
 BEAM SIZE
 CAMBER (IF REQUIRED)

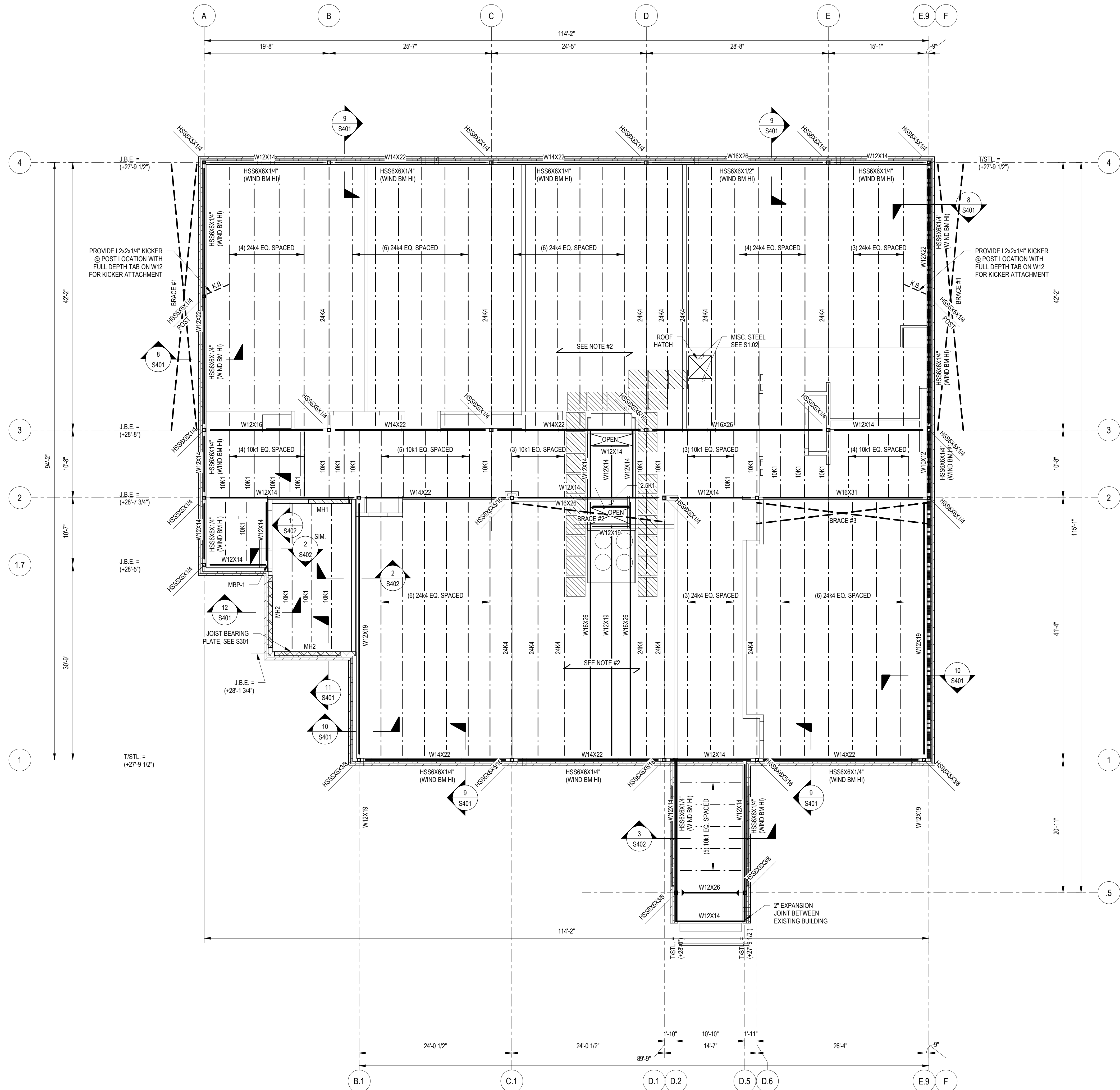
 x y z
 NUMBER OF STUDS EQUALLY SPACED BETWEEN CONNECTING MEMBERS



DETAIL A-A

DETAIL B-B

Alt. MASONRY HEADER (MHx) SCHEDULE					
MARK	WALL THICKNESS	BOND BEAM REINF.	JAMB REINF.	#COURSES GROUTED ABOVE	REMARKS
MH1	8" CMU	(1) #5	(2) #5 INT. / (3) #5 EXT.	(2)	DETAIL A-A
MH2	8" CMU	(2) #5	(2) #5 INT. / (3) #5 EXT.	(2)	DETAIL A-A
MH3	8" CMU	(1) #5	(3) #5 EXT.	(3)	DETAIL B-B



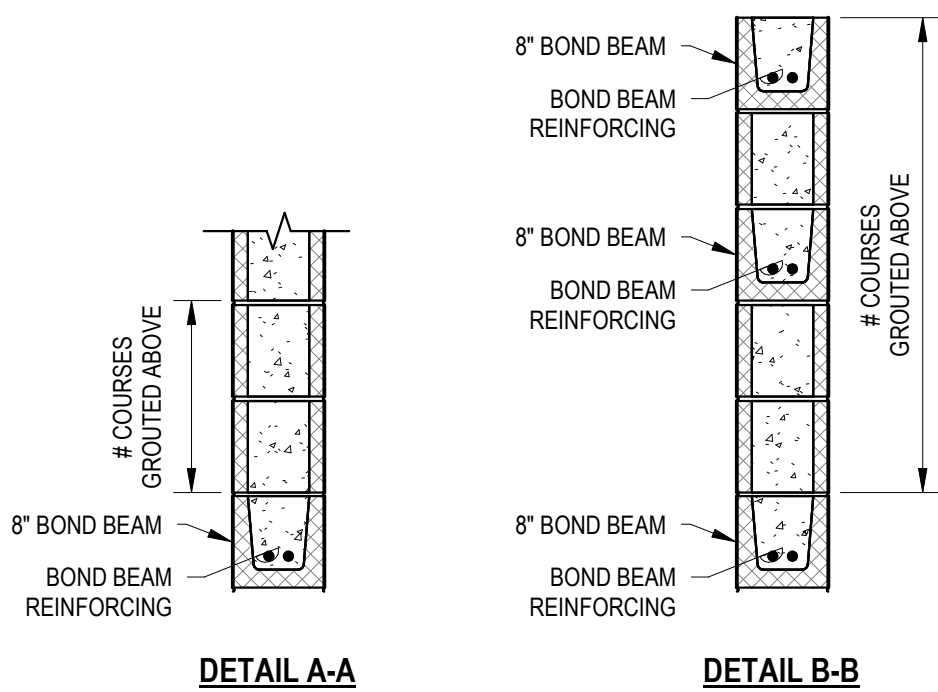
CLASSROOM ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

LEGEND - ROOF FRAMING

- INDICATES 8" CMU WALL WITH #5 @ CORNERS, JAMBS AND 48" o.c. WITH W1.7 HORIZONTAL JOINT REINFORCEMENT @ 18" o.c. TYP., U.N.O.
- INDICATES STEEL BEAM, SEE PLAN FOR SIZE AND LOCATION
- INDICATES STEEL JOIST, SEE PLAN
- INDICATES STEEL COLUMN.
- INDICATES MASONRY HEADER, SEE SCHEDULE
- GRID DESIGNATION FOR CENTERLINE OF COLUMN

NOTES - ROOF FRAMING

- SEE SHEET S1.0 SERIES SHEETS FOR GENERAL STEEL, JOIST, DECK, LIGHT GAUGE FRAMING NOTES AND TYPICAL DETAILS NOT SHOWN ON PLAN.
- TYPICAL ROOF DECK IS 1 1/2" DEEP, 20 ga., GALVANIZED, TYPE 'B' METAL ROOF DECK.
- METAL ROOF DECK SHALL BE ATTACHED TO STEEL SUPPORTING MEMBERS WITH HILTI X-HSN 24 FOR STEEL THICKNESS EQUAL TO OR LESS THAN 3/8" AND HILTI X-ENP 19 OTHERWISE IN A 36/4 PATTERN EXCEPT IN CORNER ZONES (ZONE 3 - SEE S1.0 SERIES SHEETS) - PROVIDE FASTENERS IN A 36/7 PATTERN. PROVIDE (1) #10 SIDELAP PER SPAN.
- ALL JOISTS SHALL BE DESIGNED FOR A NET UPLIFT PRESSURE OF 30 psf.
- PROVIDE JOIST BRIDGING PER SJI RECOMMENDATIONS.
- ALL BEAMS, GIRDERS AND COLUMNS SHALL BE ASTM A992, GRADE 50.
- J.B.E. = JOIST BEARING ELEVATION - SEE BUILDING SECTIONS ON SHEETS S3.01-S3.04 FOR JOIST BEARING ELEVATIONS.
- T/STL = TOP OF STEEL



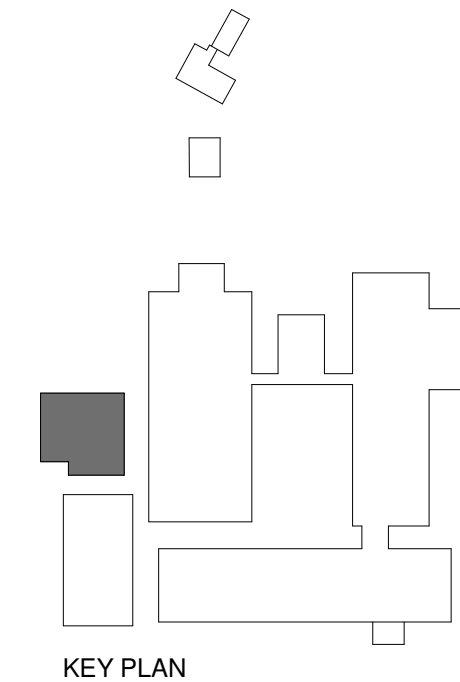
ALL MASONRY HEADER (MHx) SCHEDULE					
MARK	WALL THICKNESS	BOND BEAM REINF.	JAMB REINF.	#COURSES GROUTED ABOVE	REMARKS
MH1	8" CMU	(1) #5	(2) #5 INT. / (2) #5 EXT.	(2)	DETAIL A-A
MH2	8" CMU	(2) #5	(2) #5 INT. / (3) #5 EXT.	(2)	DETAIL A-A
MH3	8" CMU	(6) #5	(3) #5 EXT.	(5)	DETAIL B-B

**NORTH
BRUNSWICK
HIGH SCHOOL
NEW BUILDING**

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

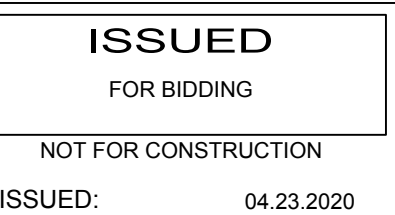
ROOF FRAMING PLAN



Mark	Date	Description
04.23.20	04.23.20	ISSUED FOR BIDDING
06.23.20	06.23.20	100% REVIEW SUBMISSION
10.14.19	10.14.19	NCDDP SUBMISSION
07.30.19	07.30.19	SD PROGRESS DRAWINGS
07.11.19	07.11.19	NCDDP SD SUBMISSION

PROJECT NO: 19-2952
DATE: 03.20.20
SCALE: As indicated
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PROJECT TITLE

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NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
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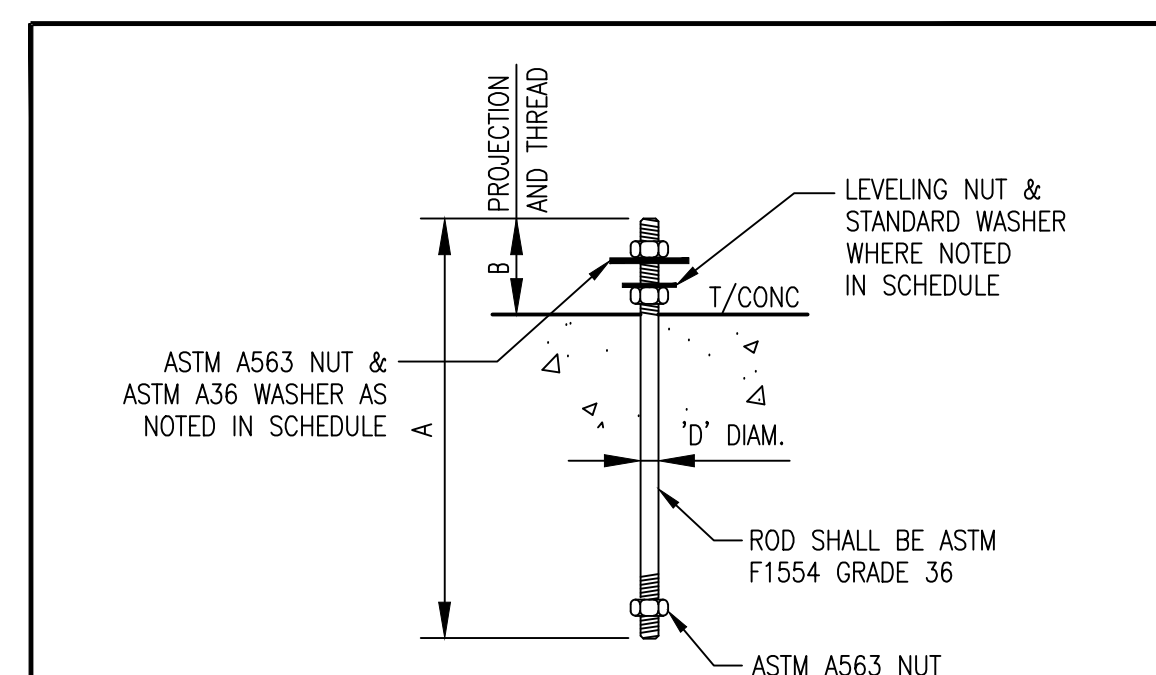
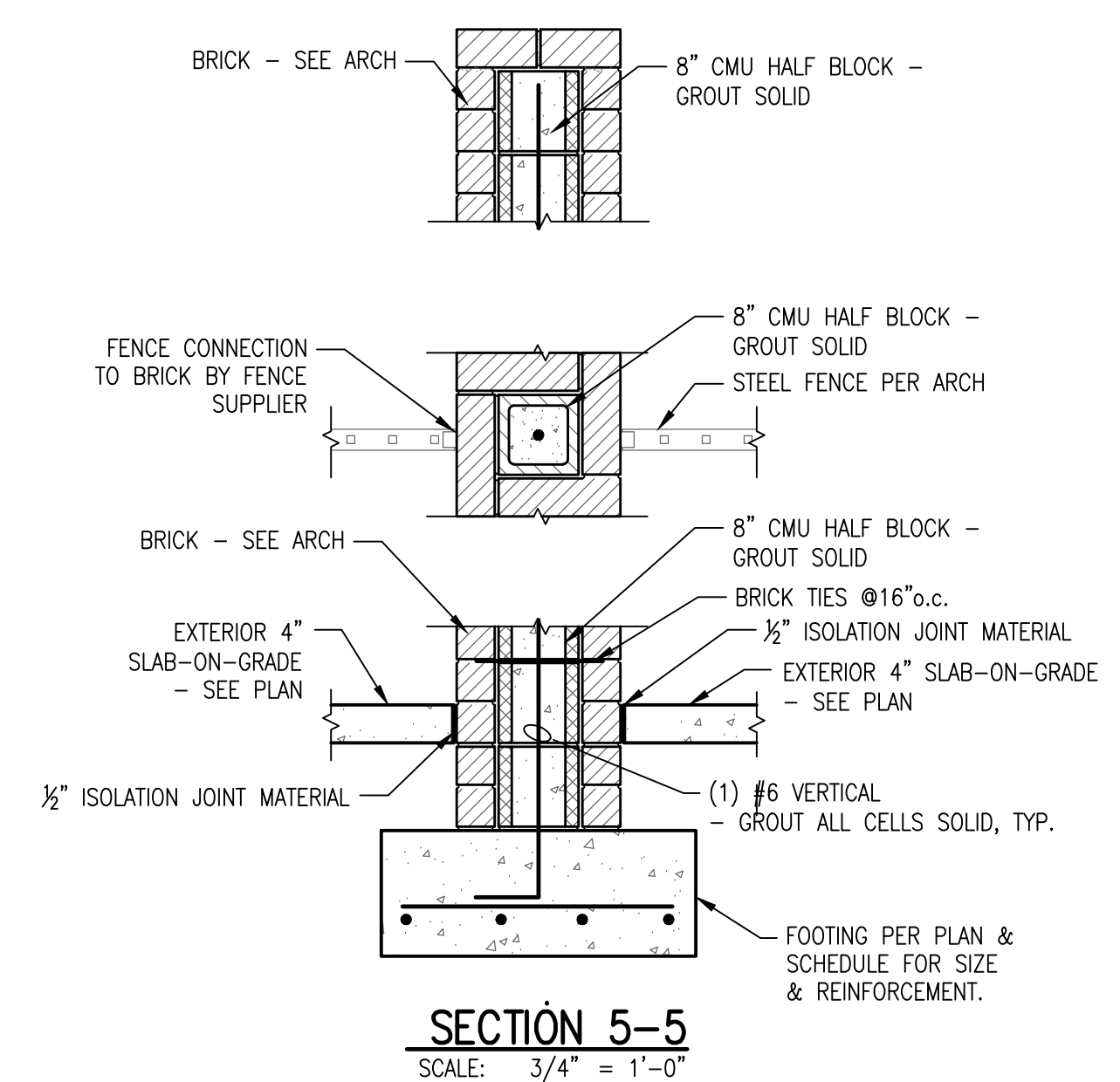
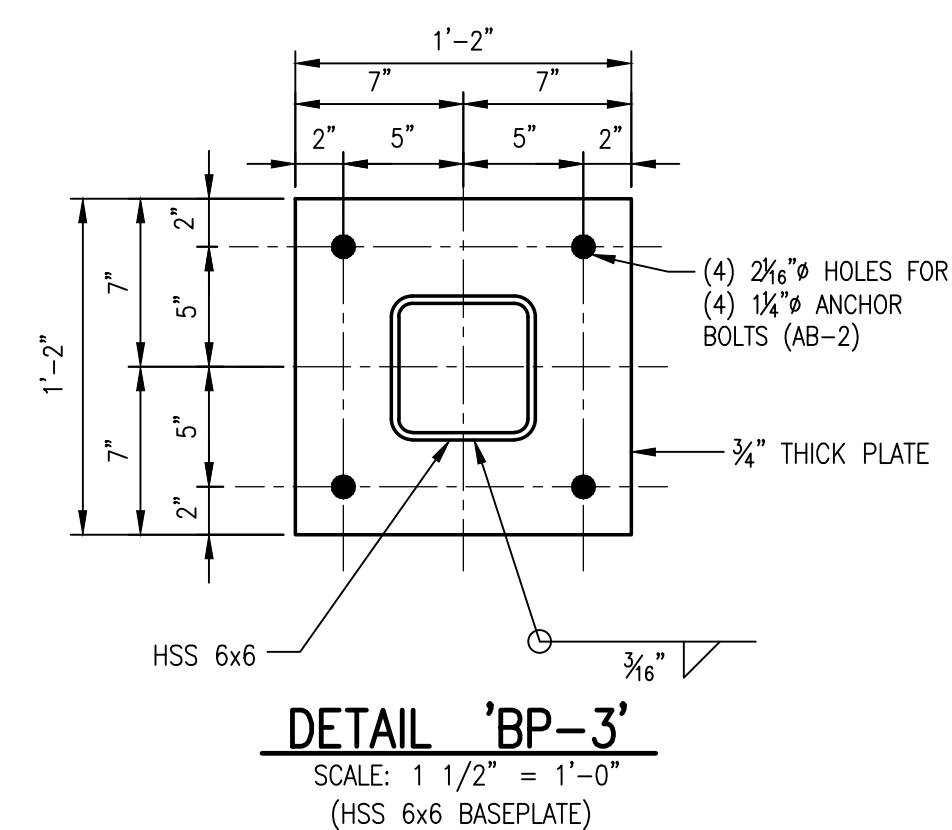
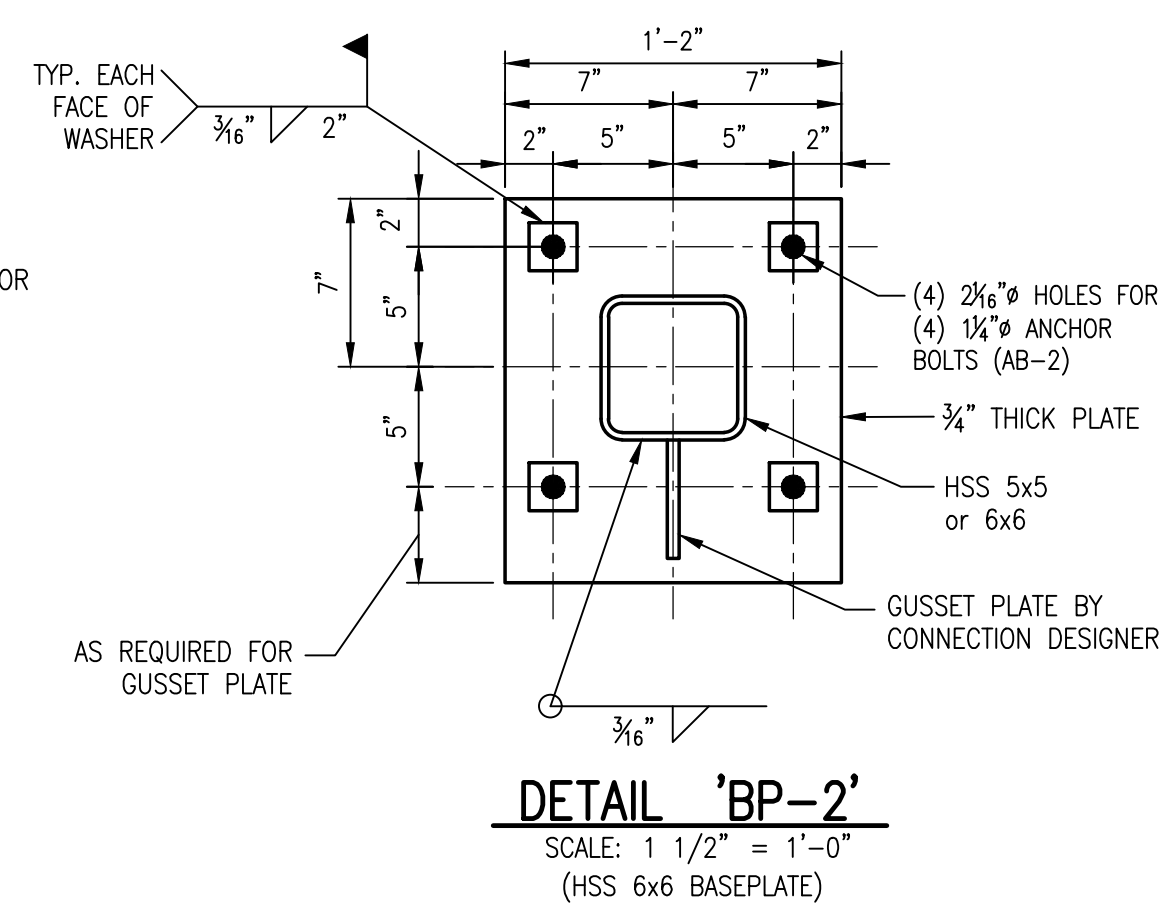
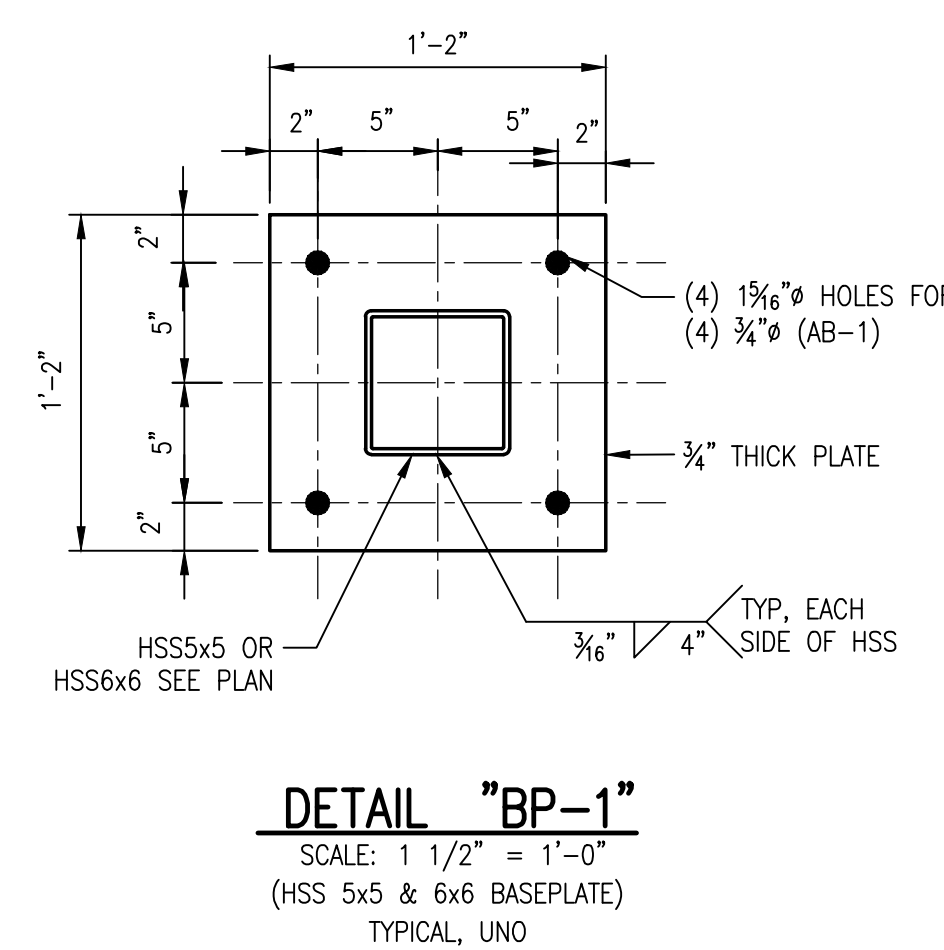
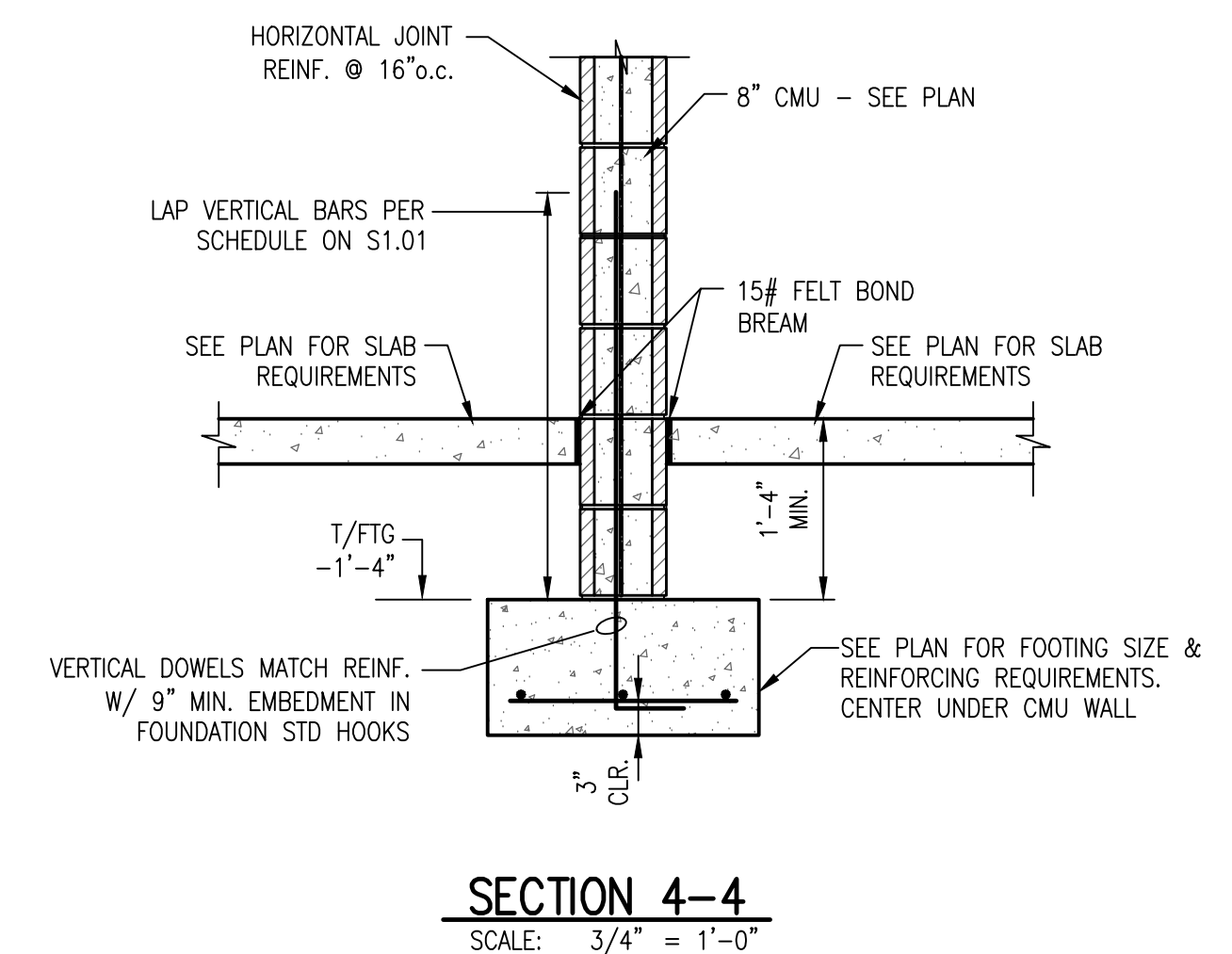
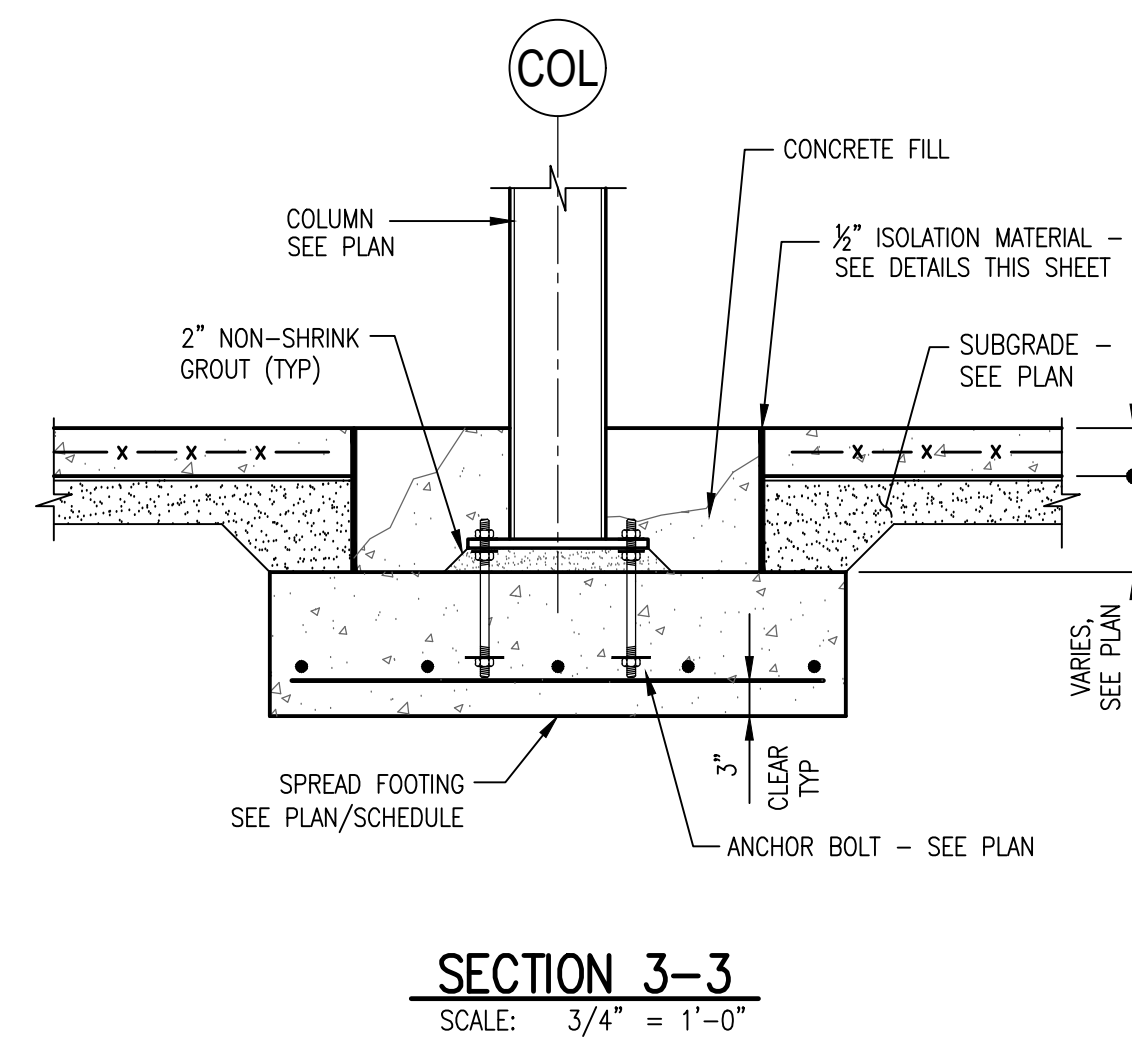
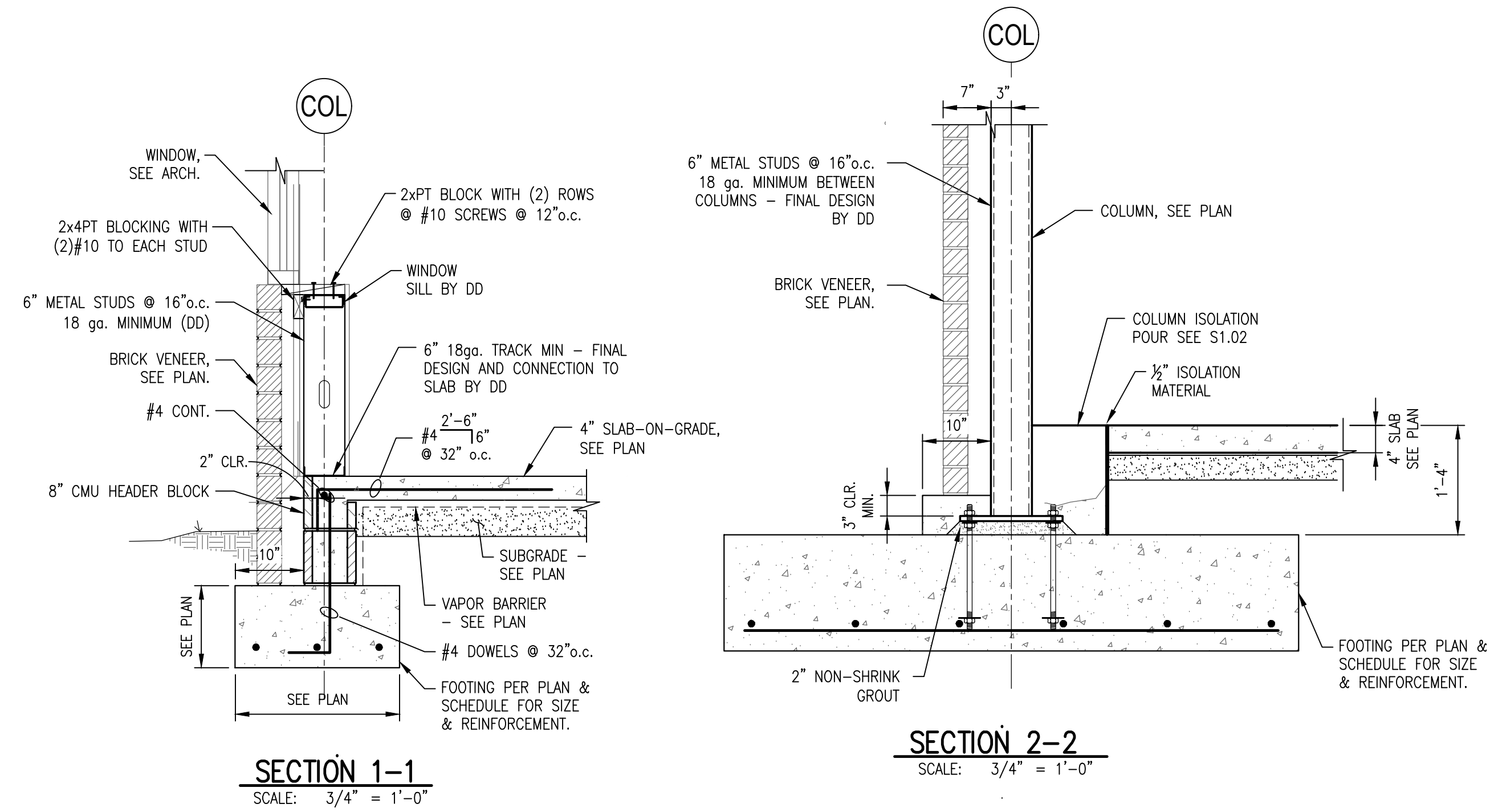
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FOUNDATION SECTIONS AND DETAILS

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PROJECT NO:	19-2952
DATE:	04.23.20
SCALE:	AS INDICATED
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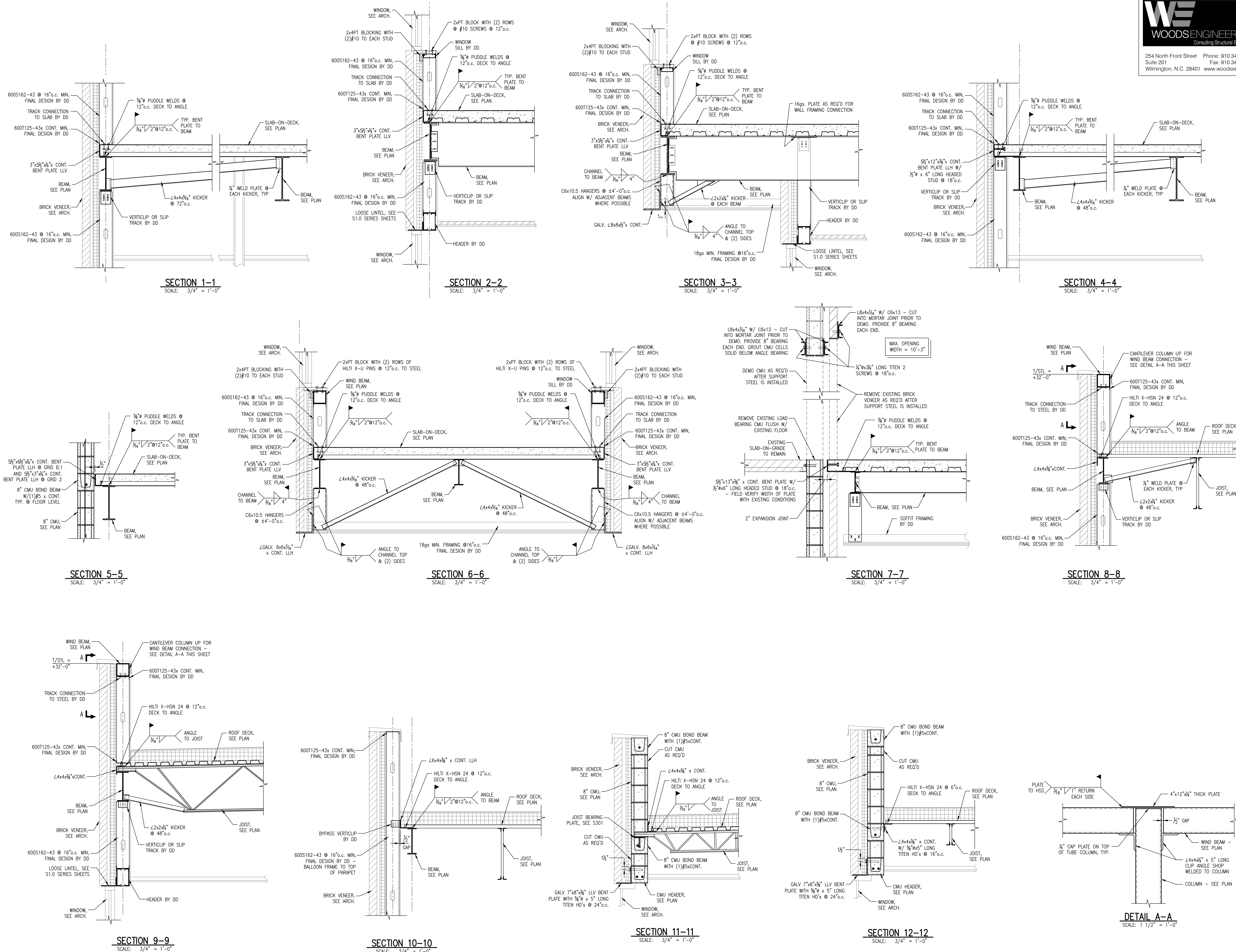
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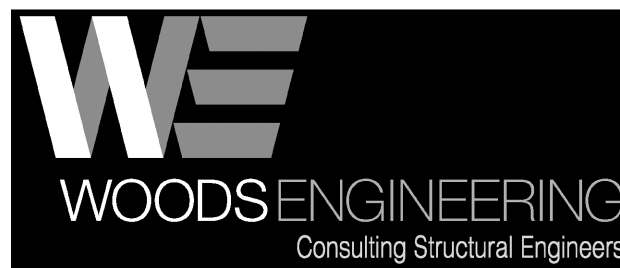


ANCHOR BOLT SCHEDULE							
MARK	BOLT DIAM. D	HOLE DIAMETER	A	B	TOP WASHER O.D. x t	LEVELING NUT	REMARKS
AB-1	¾"	1⅝"	1'-2"	5"	2" x ¼"	YES	2" LEVELING GROUT
AB-2	1¼"	2⅝"	1'-9"	7"	3" x ½"	YES	2" LEVELING GROUT

NOTE: ALL ANCHOR BOLTS GREATER OR EQUAL TO 1½"Ø SHALL HAVE HEAVY HEX HEAD NUTS.

DATE	DESCRIPTION
04.23.20	ISSUED FOR BIDDING
05.22.20	100% REVIEW SUBMISSION
10.14.19	NCPI RD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NCPI SD SUBMISSION
DATE	DESCRIPTION





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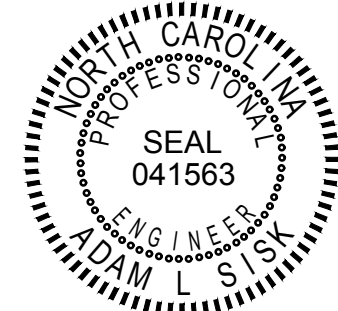
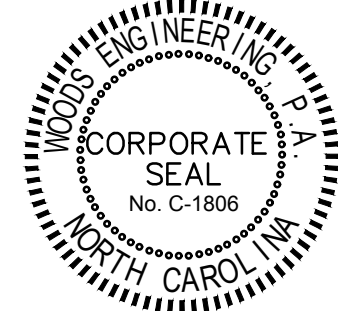
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ISSUED: 04.23.2020



PROJECT TITLE

**NORTH
BRUNSWICK
HIGH SCHOOL
NEW BUILDING**

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

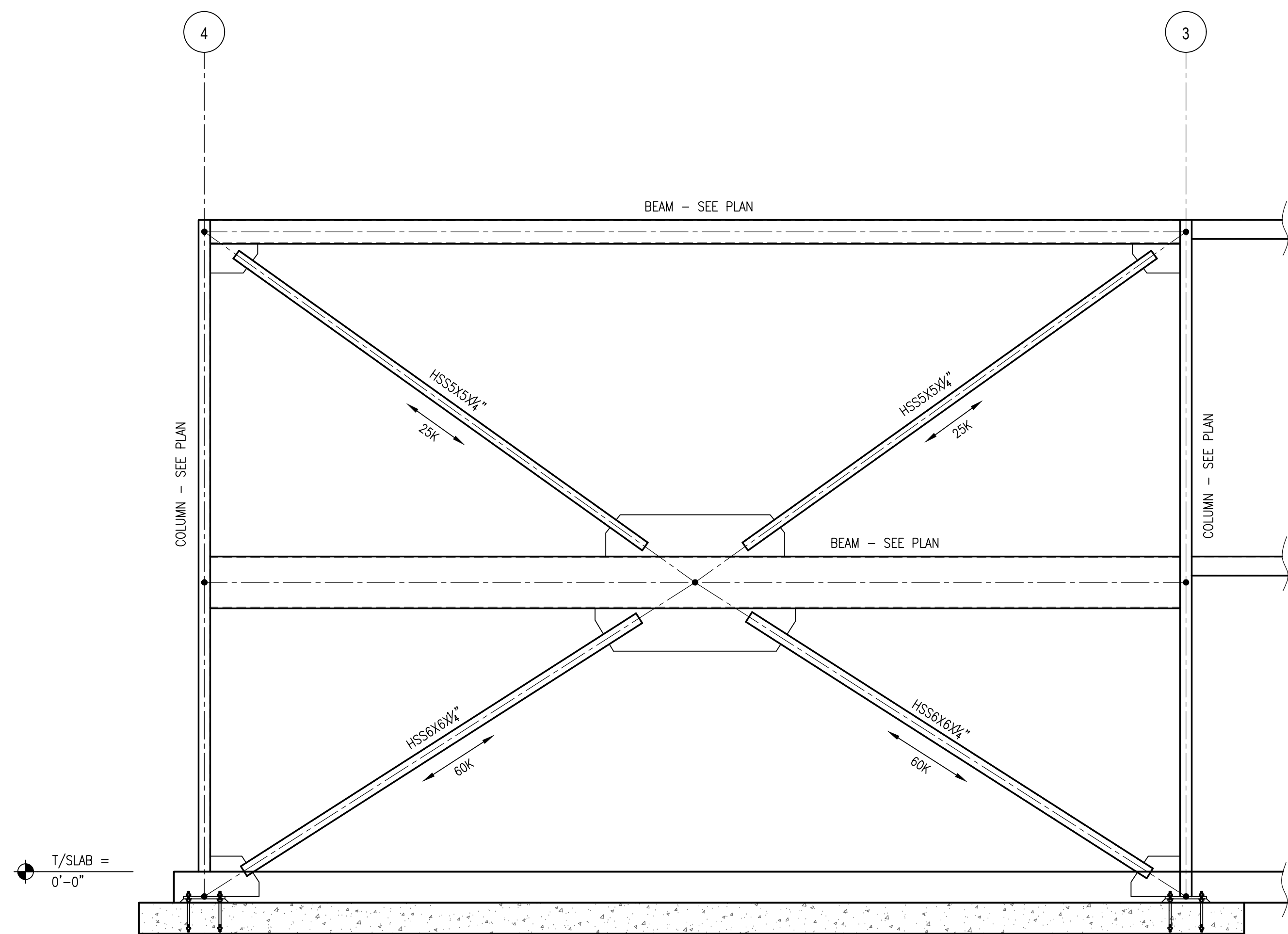
**BRACE FRAME
ELEVATIONS**

ISSUE BLOCK

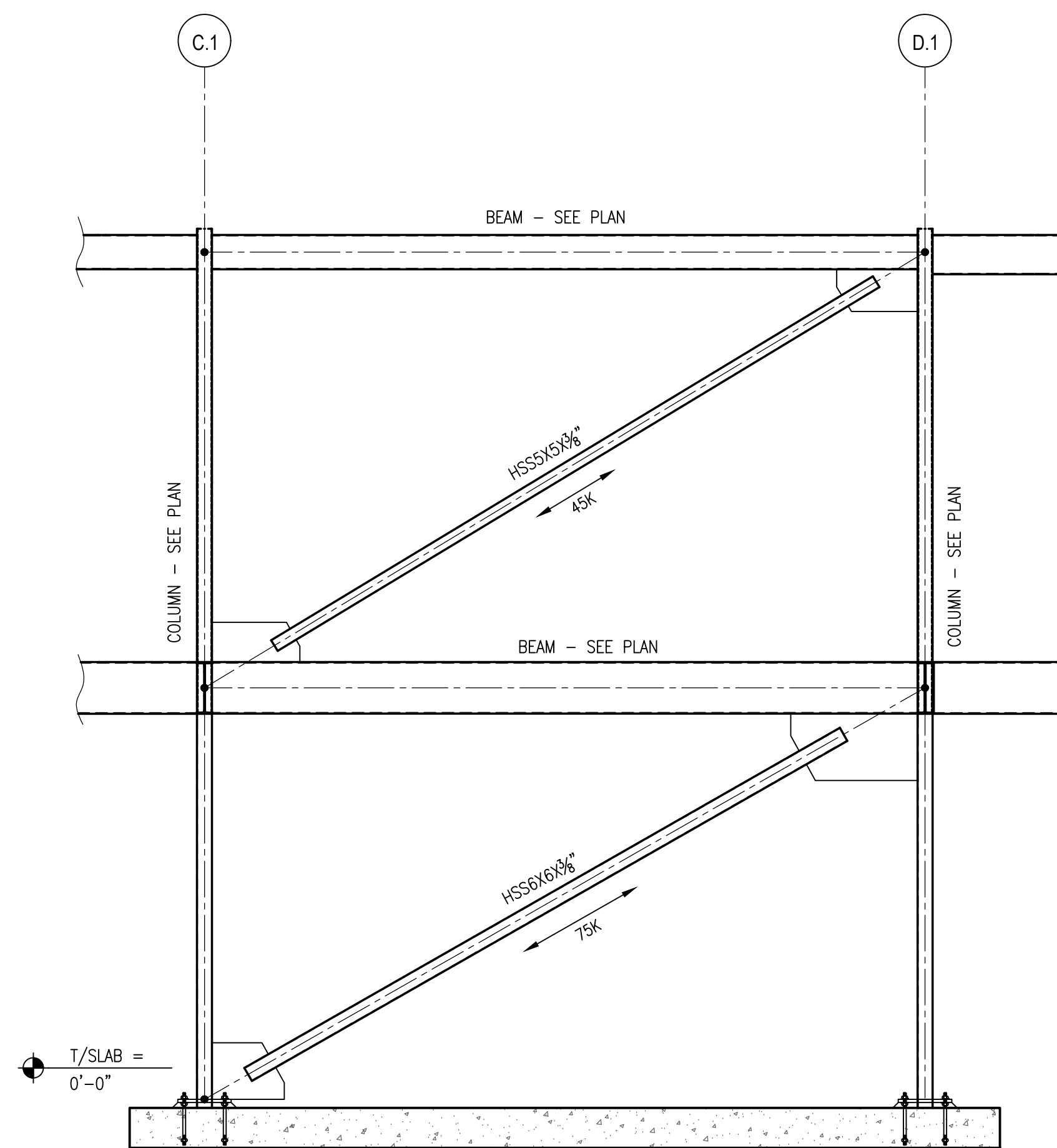
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07.30.19	SD PROGRESS DRAWINGS
07.11.19	NCORI SD SUBMISSION

PROJECT NO: 19-2952
DATE: 04.23.20
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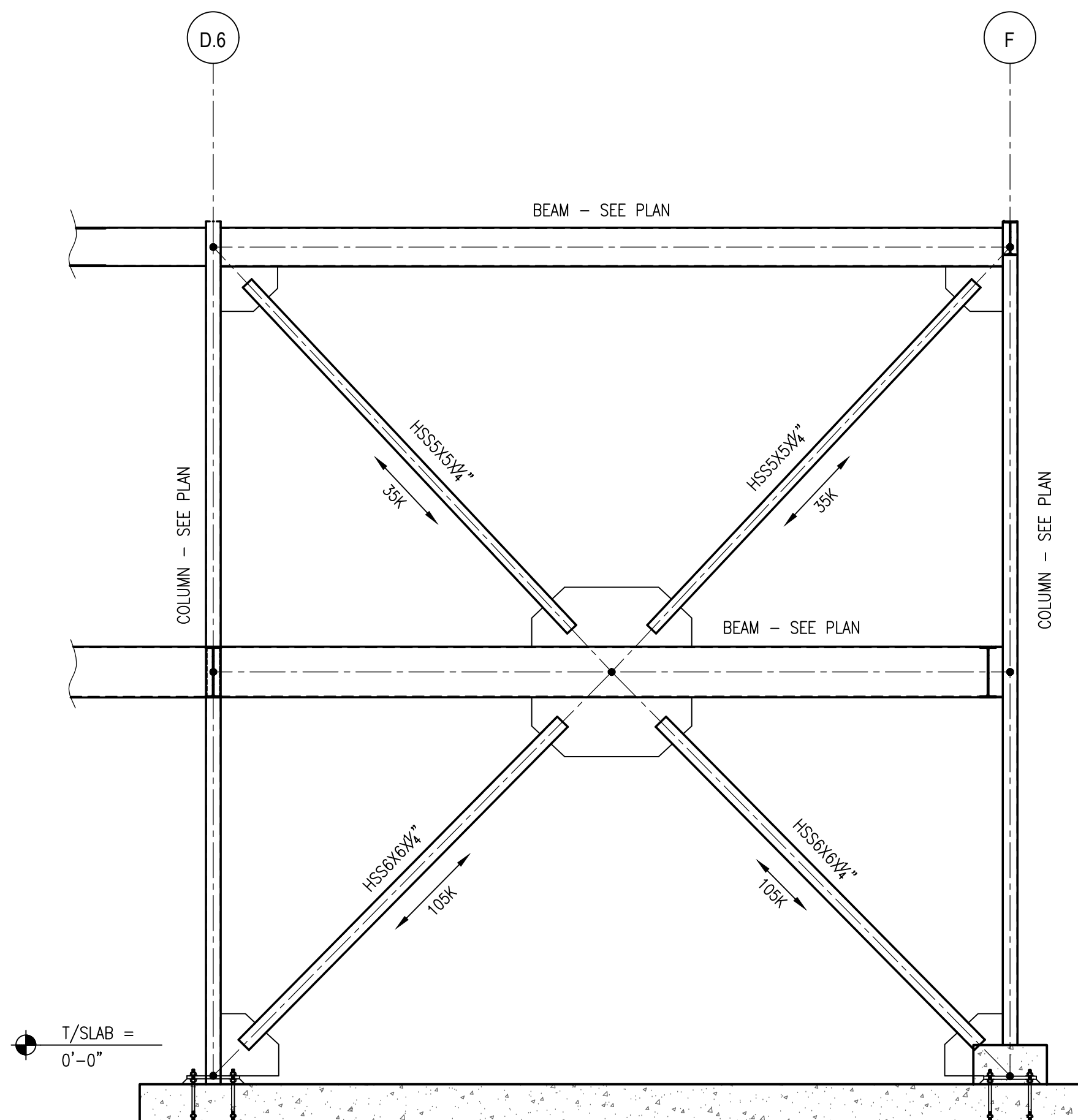


BRACE FRAME #1 ELEVATION
SCALE: 1/4" = 1'-0"

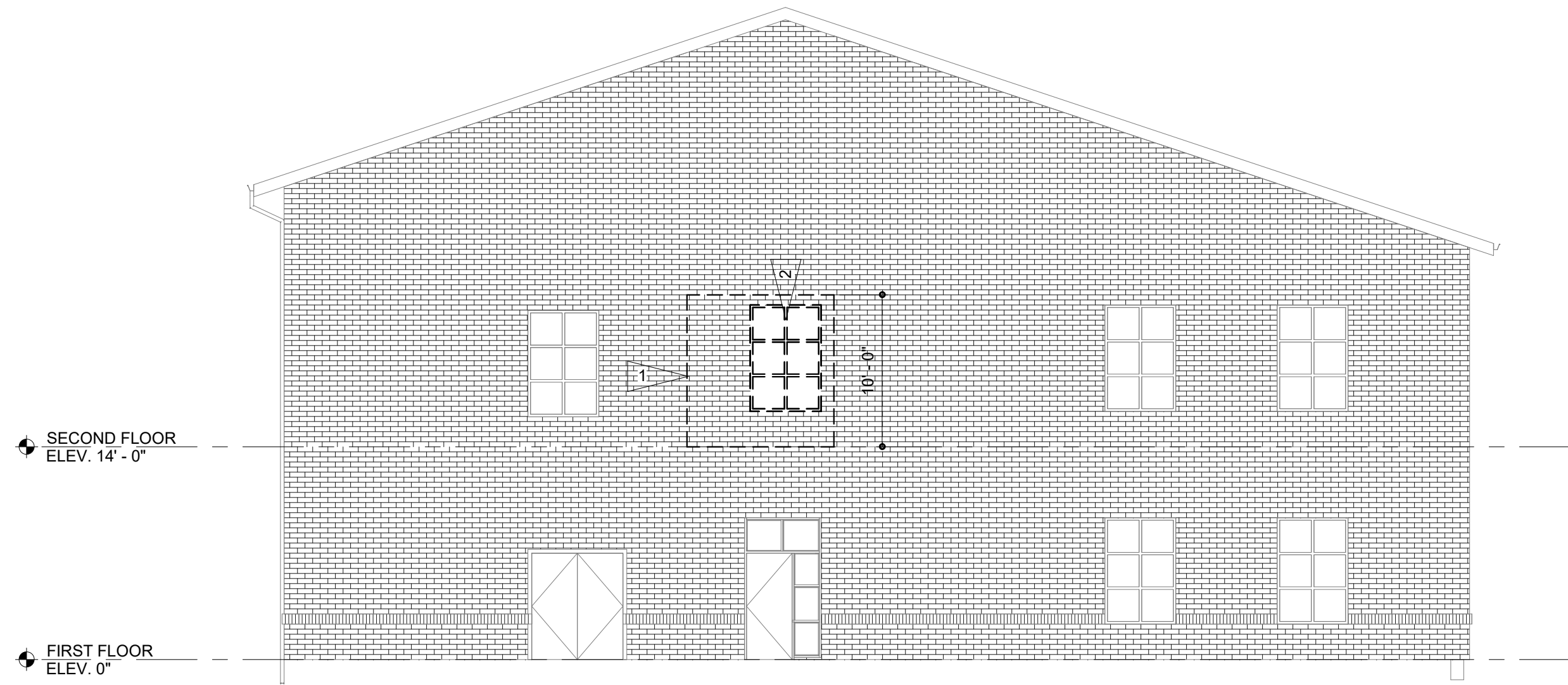


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SCALE: 1/4" = 1'-0"

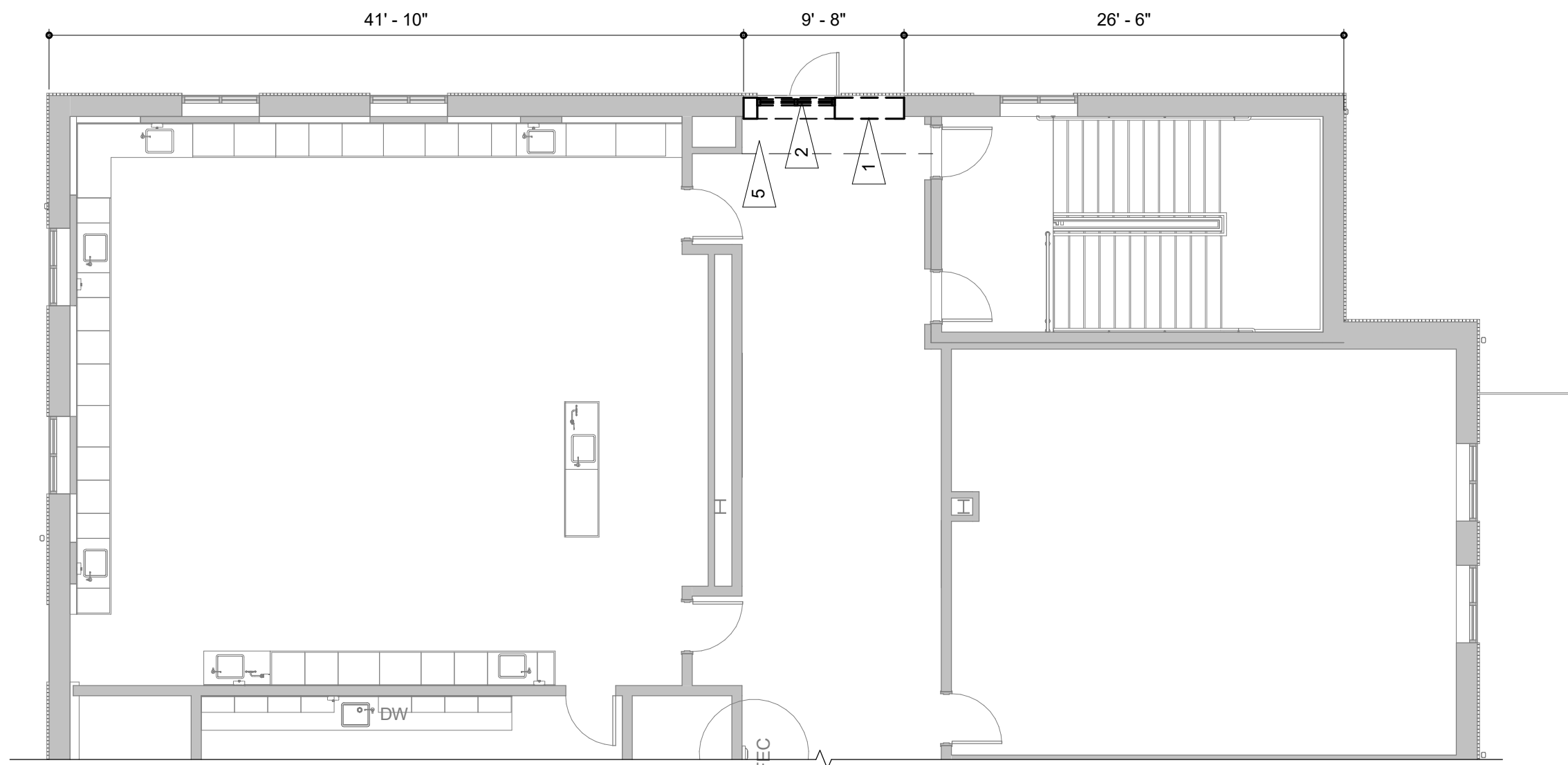
LOADS SHOWN ARE IN LRFD



BRACE FRAME #3 ELEVATION
SCALE: 1/4" = 1'-0"

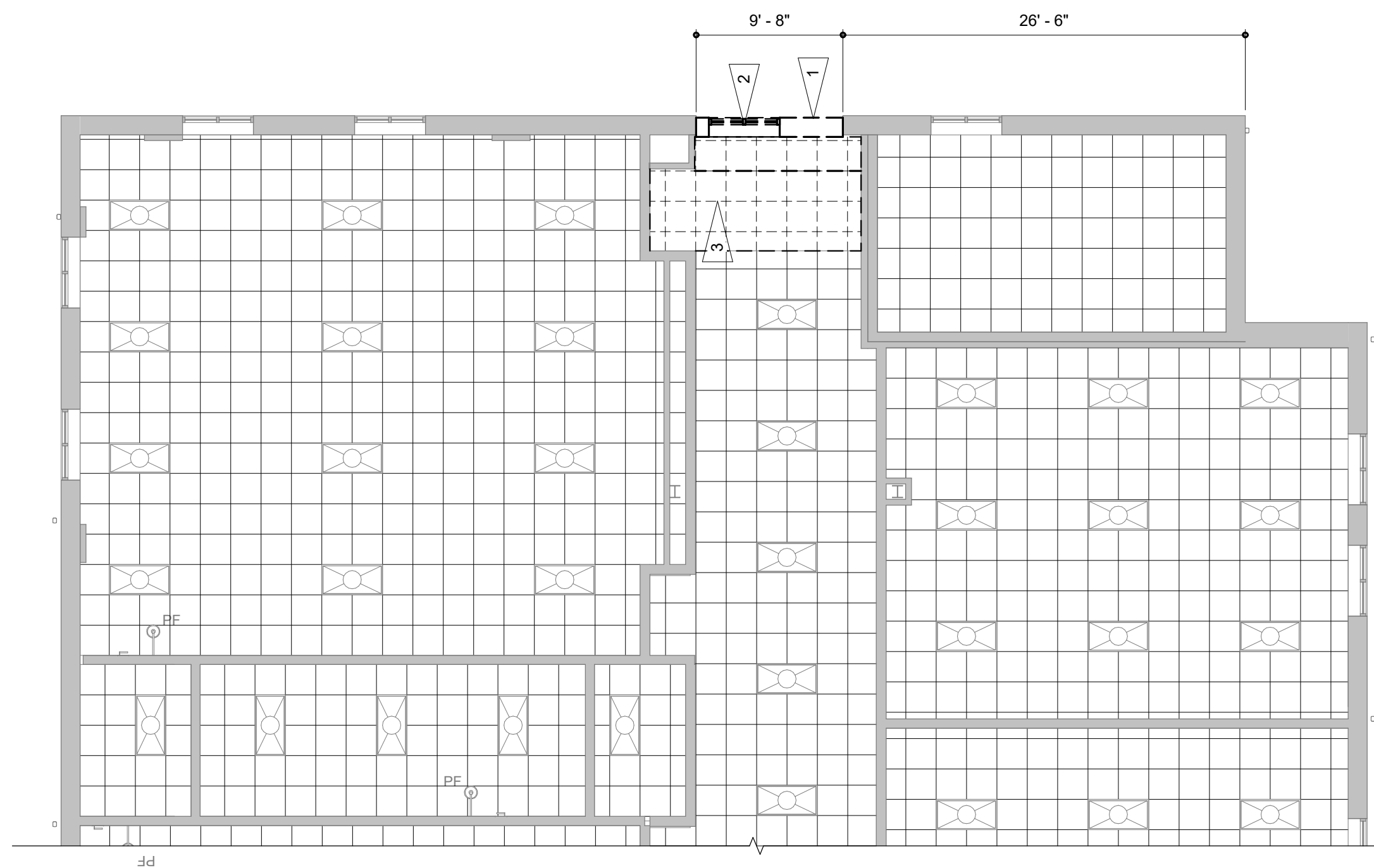


3 CLASSROOM ADDITION
DEMOLITION ELEVATION
SCALE: 1/8" = 1'-0"

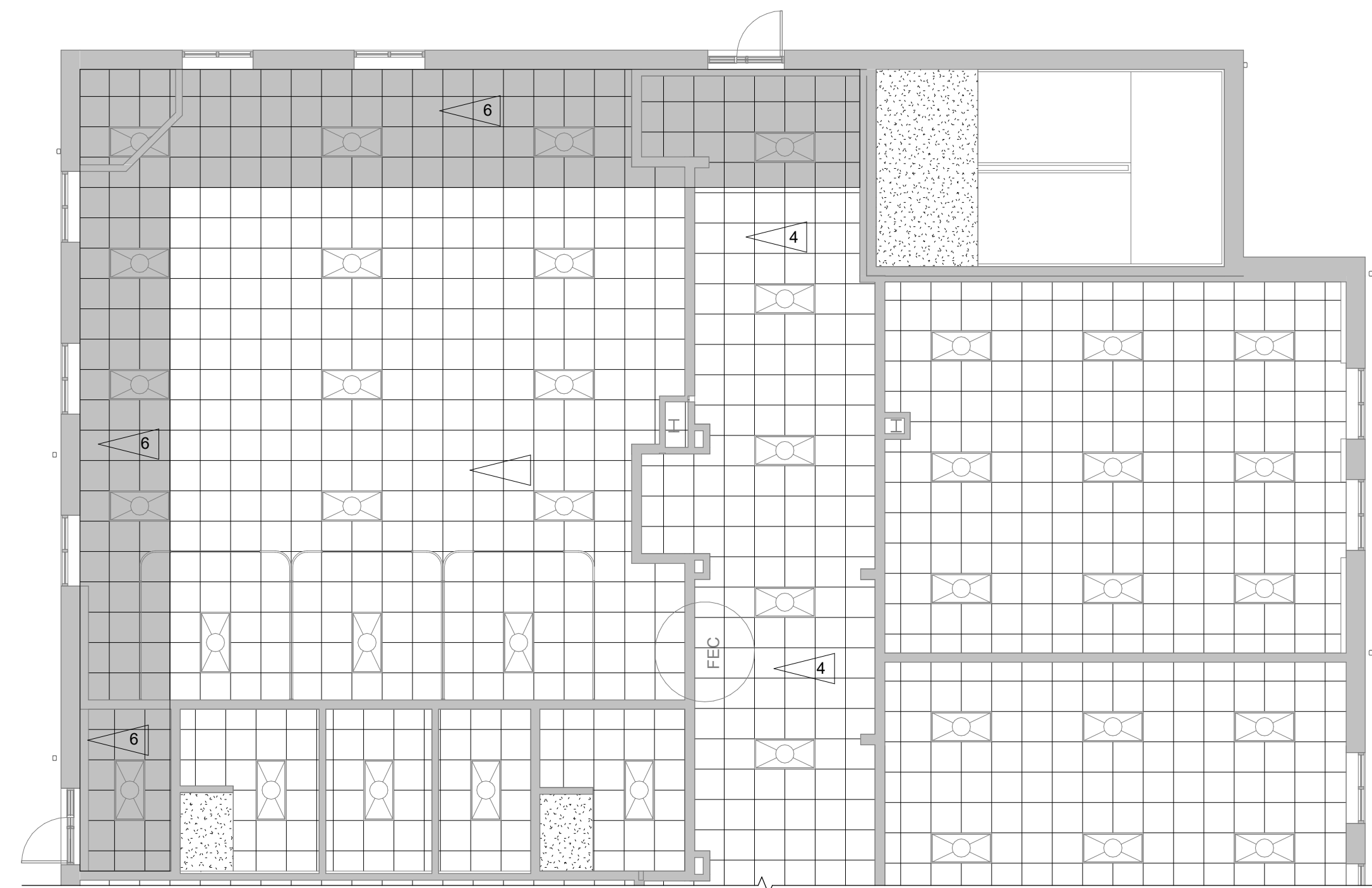


1 CLASSROOM BUILDING
DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

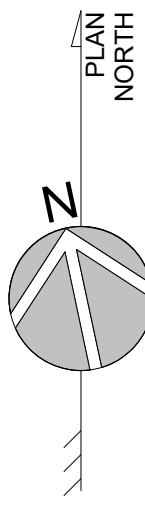
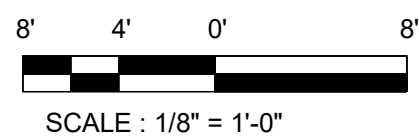
DEMOLITION KEY NOTES	DEMO LEGEND	GENERAL DEMOLITION NOTES
<p>1 REMOVE PORTION OF WALL/PARTITION FOR NEW DOOR/ WINDOW; SEE NEW WORK AS REQUIRED</p> <p>2 REMOVE WINDOW SYSTEM, ASSOCIATED FRAME, SASH, SILL, AND ACCESSORIES.</p> <p>3 REMOVE PORTION OF CEILING AND ASSOCIATED SUPPORT SYSTEM BACK TO STRUCTURE. SEE MEP FOR DEMOLITION OF LIGHTING, GRIDS, ETC.</p> <p>4 SEE ELECTRICAL DRAWINGS FOR EXTENT OF DEMOLITION OF CEILING IN THIS CORRIDOR ASSOCIATED WITH THE INSTALLATION OF NEW LOW VOLTAGE CONTUITS.</p> <p>5 REMOVE VCT AS NEEDED FOR NEW WORK</p> <p>6 COORDINATE WITH SPRINKLER DESIGN DRAWINGS FOR THE REMOVAL AND REPLACEMENT OF CEILINGS IN THE SHADED AREA.</p> <p>NOTE: REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES AND DETAILS</p>	<p>EXISTING WALL TO REMAIN</p> <p>EXISTING WINDOW TO REMIAN</p> <p>EXISTING DOOR TO REMAIN</p> <p>EXISTING WALL TO BE REMOVED</p> <p>EXISTING WINDOW TO BE REMOVED</p> <p>EXISTING DOOR TO BE REMOVED</p> <p>EXISTING ACT CEILING TO BE REMOVED</p> <p>EXISTING ACT CEILING TO BE REMOVED</p>	<p>1. EXISTING WORK TO REMAN SHALL BE PROTECTED FROM DEMOLITION AND CONSTRUCTION OPERATIONS.</p> <p>2. CONTRACTOR TO PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED TO ACCOMPLISH DEMOLITION ACTIVITIES AND MAINTAIN STRUCTURAL STABILITY UNTIL NEW WORK IS INSTALLED. SEE STRUCTURAL</p> <p>3. COORDINATE EXTENT OF DEMOLITION WITH NEW WORK.</p> <p>4. PATCH, RESTORE, AND REPAIR SURFACES AT DEMOLISHED ELEMENTS TO MATCH ADJACENT UNDAMAGED SURFACES. REFER TO "EXECUTION" SPECIFICATION.</p> <p>5. PROVIDE PRE-DEMOLITION PHOTOGRAPHIC OR VIDEO DOCUMENTATION; SEE SPECIFICATIONS.</p> <p>6. PATCH, REPAIR, AND PREP ALL WALL SURFACES TO RECEIVE NEW FINISHES.</p> <p>7. NO KNOWN HAZARDOUS MATERIALS EXIST IN THE BUILDING EXCEPT AS NOTED. REFER TO SPECIFICATION FOR HAZARDOUS MATERIALS ENCOUNTERED DURING CONSTRUCTION.</p> <p>8.REFER TO SPECIFICATIONS FOR ITEMS TO SALVAGE FOR OWNER.</p> <p>9. REFER TO M/ E/ P/ FP DRAWINGS FOR ADDITIONAL WORK.</p>



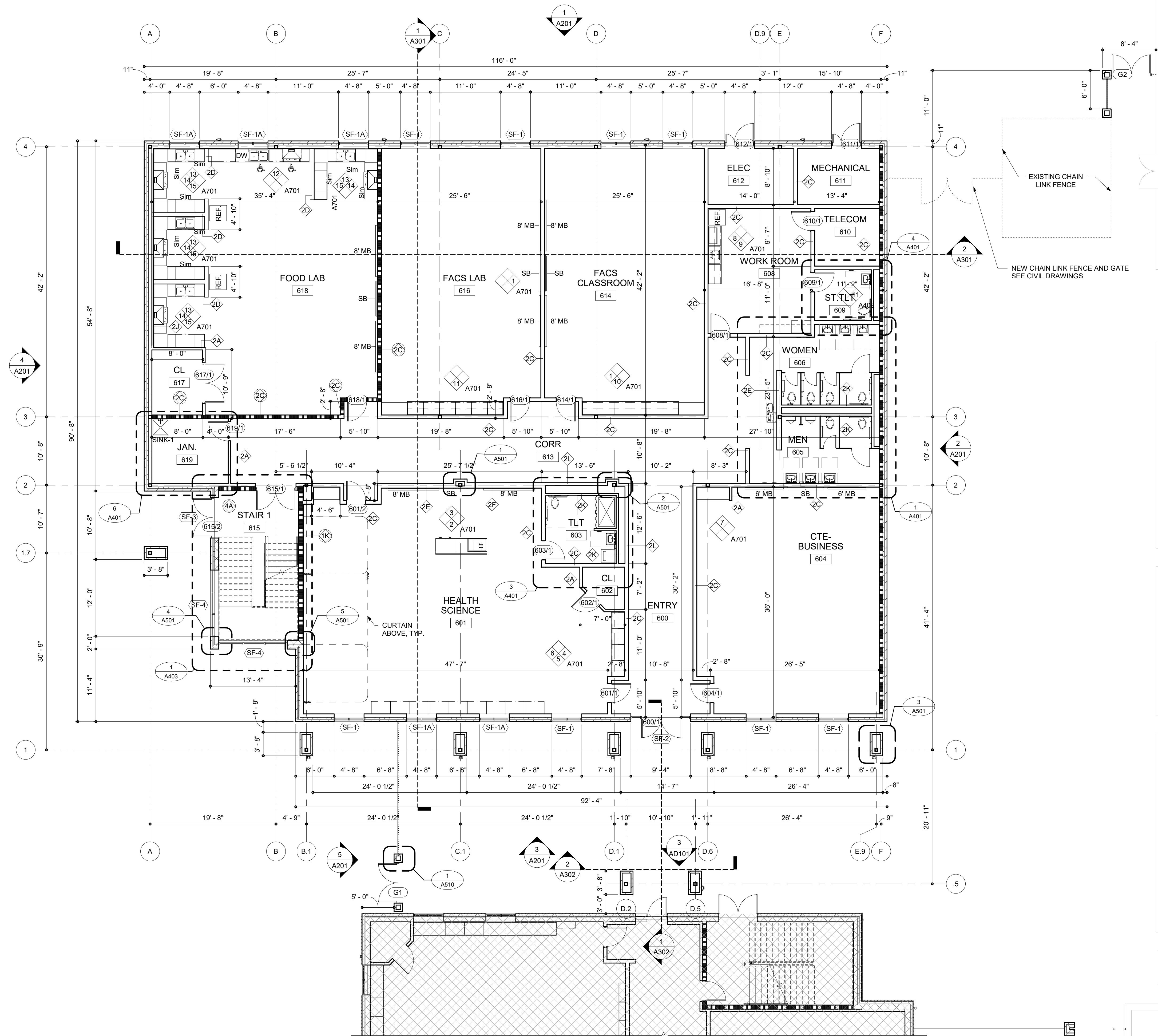
2 EXISTING BUILDING SECOND
FLOOR REFLECTED CEILING
DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



4 EXISTING BUILDING FIRST
FLOOR REFLECTED CEILING
DEMOLITION PLAN
SCALE: 1/8" = 1'-0"



Mark	Date	Description
04.23.20	04.23.20	ISSUED FOR BIDDING
03.28.20	03.28.20	100% REVIEW SUBMISSION
10.14.19	10.14.19	NCDP DO SUBMISSION
7.30.19	7.30.19	SD PROGRESS DRAWINGS
7.11.19	7.11.19	NCDP SD SUBMISSION



1 CLASSROOM BUILDING FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

- DIMENSIONS ARE TO EXTERIOR FACE OF CONCRETE MASONRY, OR METAL STUD UNLESS OTHERWISE NOTED.
- REFER TO A000-SERIES DRAWINGS FOR SLAB AND OTHER CONSTRUCTION TYPES, PARTITION TYPES AND TYPICAL DETAILS.
- SEE A103 FOR ROOF PLAN.
- SEE A400-SERIES DRAWINGS FOR ENLARGED PLANS AND SECTIONS.
- SEE A601 FOR FINISH SCHEDULE AND LEGEND.
- SEE A602-A603 FOR DOOR SCHEDULE, DOOR TYPES AND HOLLOW METAL, CURTAINWALL, AND STOREFRONT TYPES.
- COORDINATE REQUIREMENTS OF WORK WITH ALL OTHER TRADES.
- SEE A501 FOR TYPICAL CORNER GUARD AND END WALL GUARD DETAILS.

LEGEND

	AREA N.I.C.
MB	MARKERBOARD, CONTRACTOR FURNISHED & INSTALLED
SB	SMARTBOARD, OWNER FURNISHED, CONTRACTOR INSTALLED

BECKER MORGAN GROUP

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Newark, DE 19711
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ISSUED: 04/23/2020

PROJECT TITLE
NORTH BRUNSWICK HIGH SCHOOL NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

SHEET TITLE
CLASSROOM BUILDING FIRST FLOOR PLAN

KEY PLAN

Mark	Date	Description
	04.23.20	ISSUED FOR BIDDING
	03.28.20	100% REVIEW SUBMISSION
	10.14.19	NCPR DO SUBMISSION
	7.30.19	SD PROGRESS DRAWINGS
	7.11.19	NCPR SD SUBMISSION

PROJECT NO: 2019082.00
DATE: 04.23.2020
SCALE: 1/8" = 1'-0"
DRAWN BY: EEM PROJ MGR: RMC

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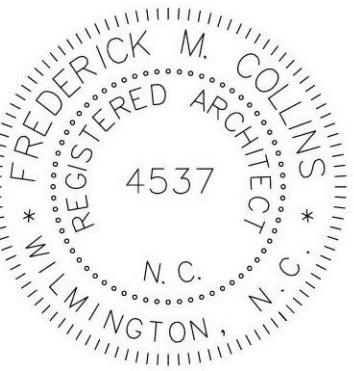
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PROJECT TITLE

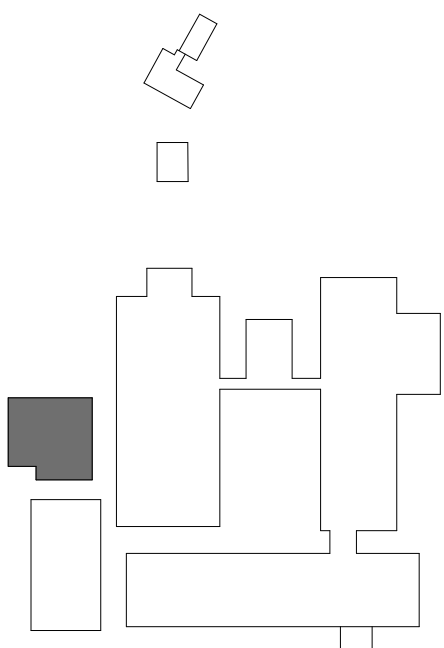
NORTH
BRUNSWICK
HIGH SCHOOL
NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

ROOF PLAN



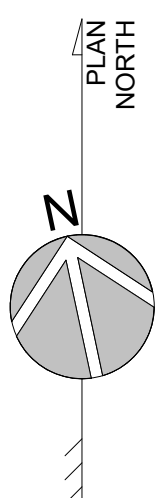
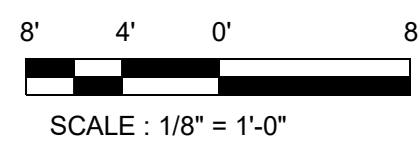
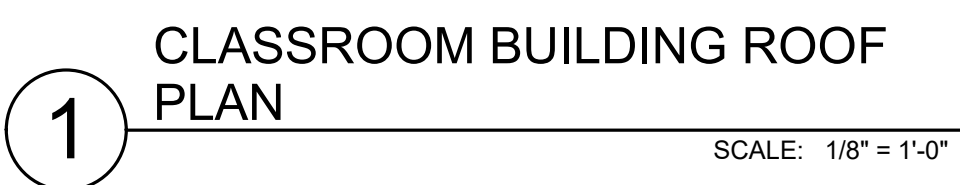
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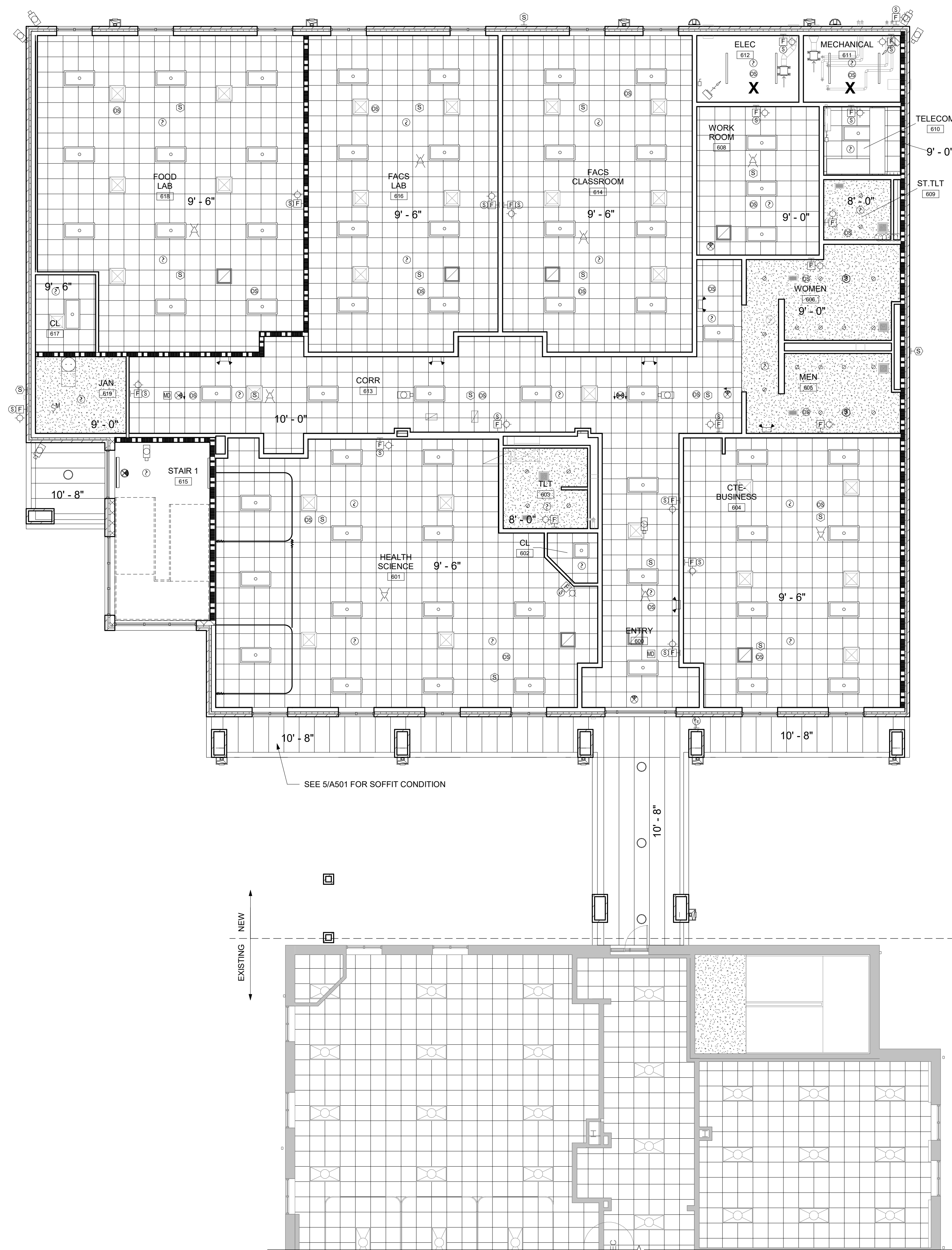
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	10.14.19	NCMPI DO SUBMISSION
	7.30.19	SD PROGRESS DRAWINGS
	7.11.19	NCMPI SD SUBMISSION
Mark	Date	Description

PROJECT NO:	2019082.00
DATE:	04/23/2020

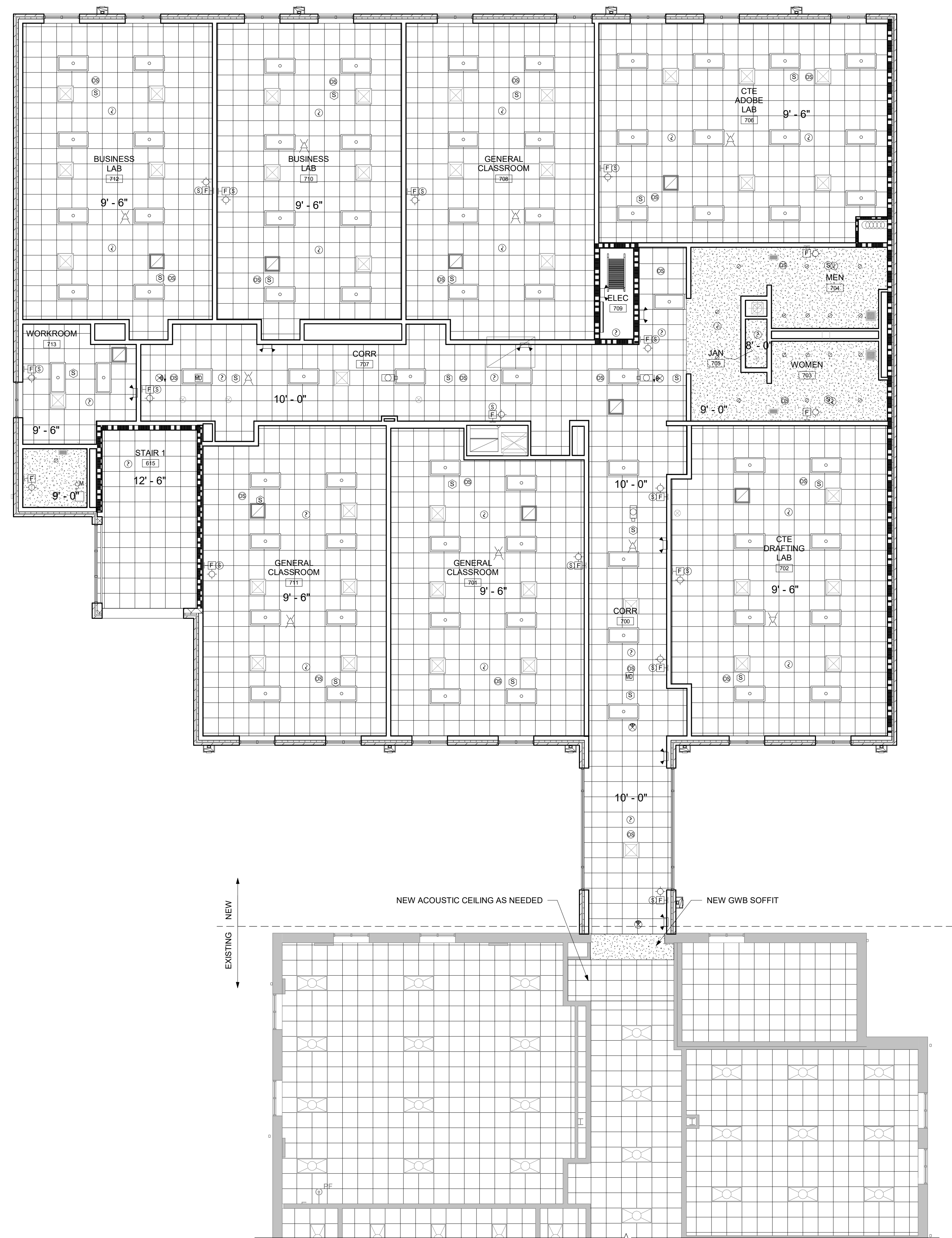
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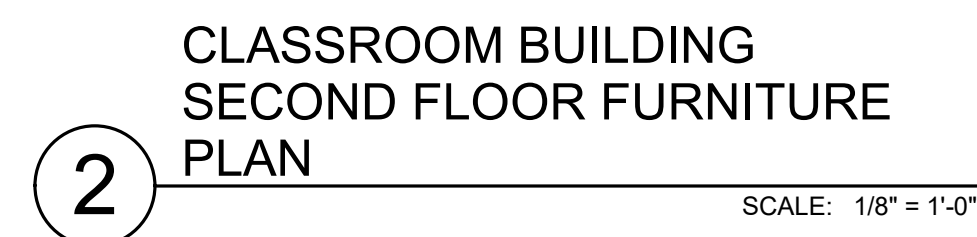


1 CLASSROOM BUILDING FIRST FLOOR REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"



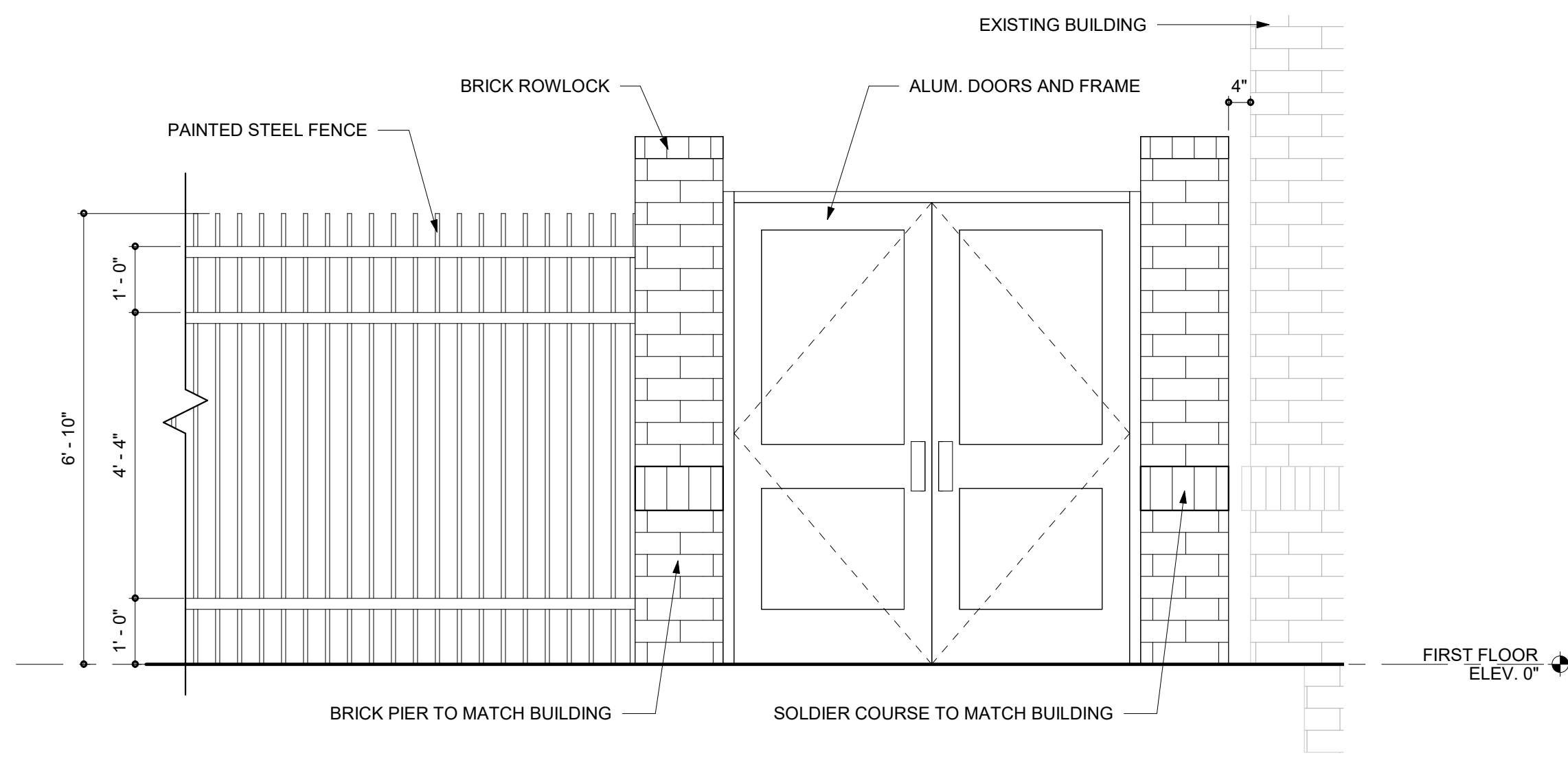
2 CLASSROOM BUILDING SECOND FLOOR REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

CEILING LEGEND		CEILING NOTES
	2x2 ACT CEILING ACT-1	1. SEE FINISH SCHEDULE FOR ACT TYPES. 2. SEE MECHANICAL DRAWINGS FOR G.R.D. TYPES, LOCATIONS, AND ADDITIONAL WORK. 3. SEE ELECTRICAL DRAWINGS FOR LIGHT FIXTURE TYPES AND LOCATIONS. 4. CEILING HEIGHTS INDICATED ARE FROM FINISH FLOOR, CEILINGS AT LANDINGS, RAMP, ETC., REFER TO NEAREST FLOOR LEVEL, COORDINATE WITH EXG. WINDOW MULLION LOCATIONS. 5. ALL EXPOSED LINTELS SHALL BE PAINTED. 6. ALIGN BULKHEADS TO FACE OF WALL / OPENING, U.O.N.
	INTERIOR - GWB CEILINGS / BULKHEADS	
	EXPOSED	
	VRF UNIT - SEE MECH.	
	RADIANT HEAT PANEL - SEE MECH.	
	SUPPLY/RETURN/EXHAUST DIFFUSER OR REGISTER - SEE MECH.	
	LIGHT - SEE ELEC.	

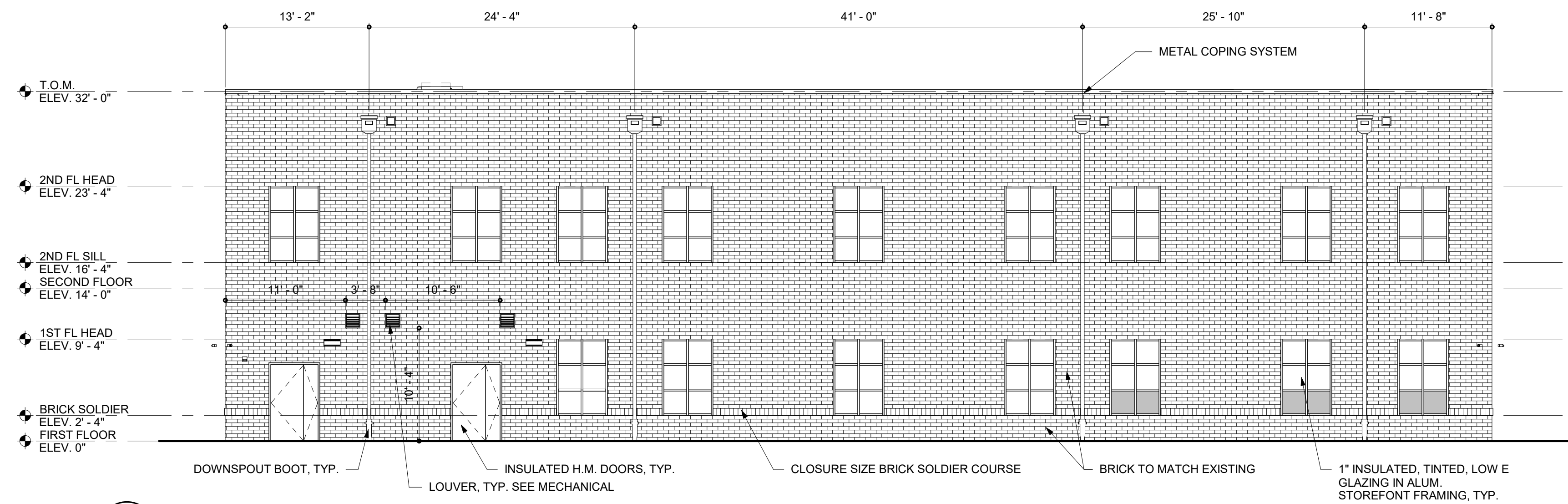


1. FURNITURE IS UNDER SEPARATE CONTRACT AND SHOWN FOR INFORMATION ONLY

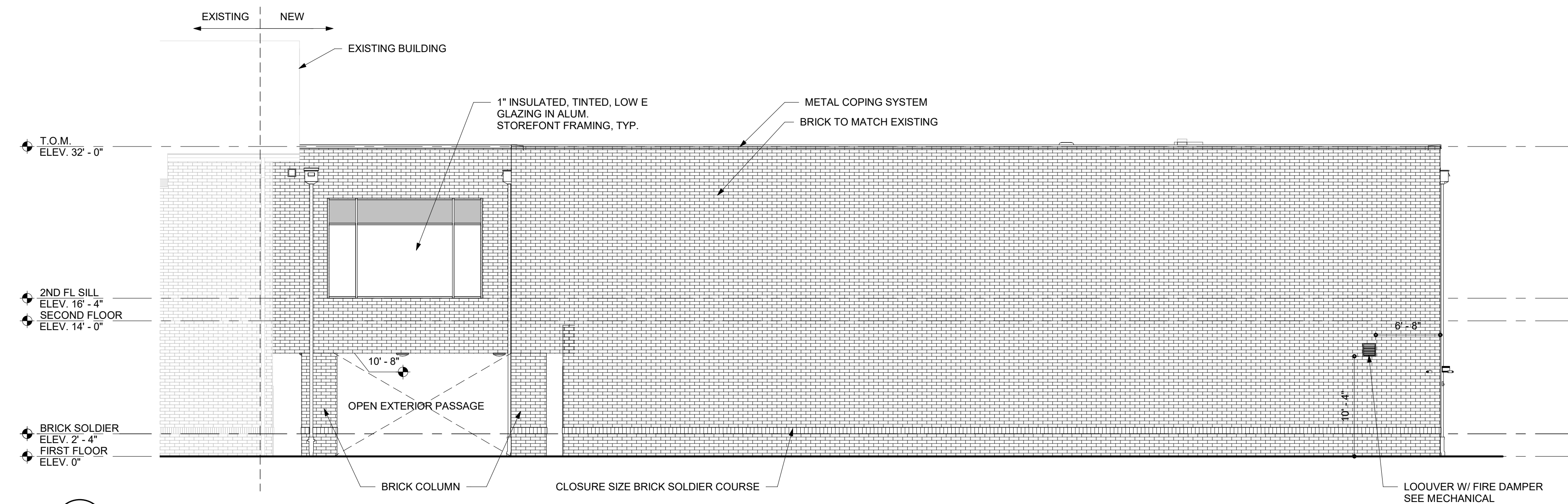
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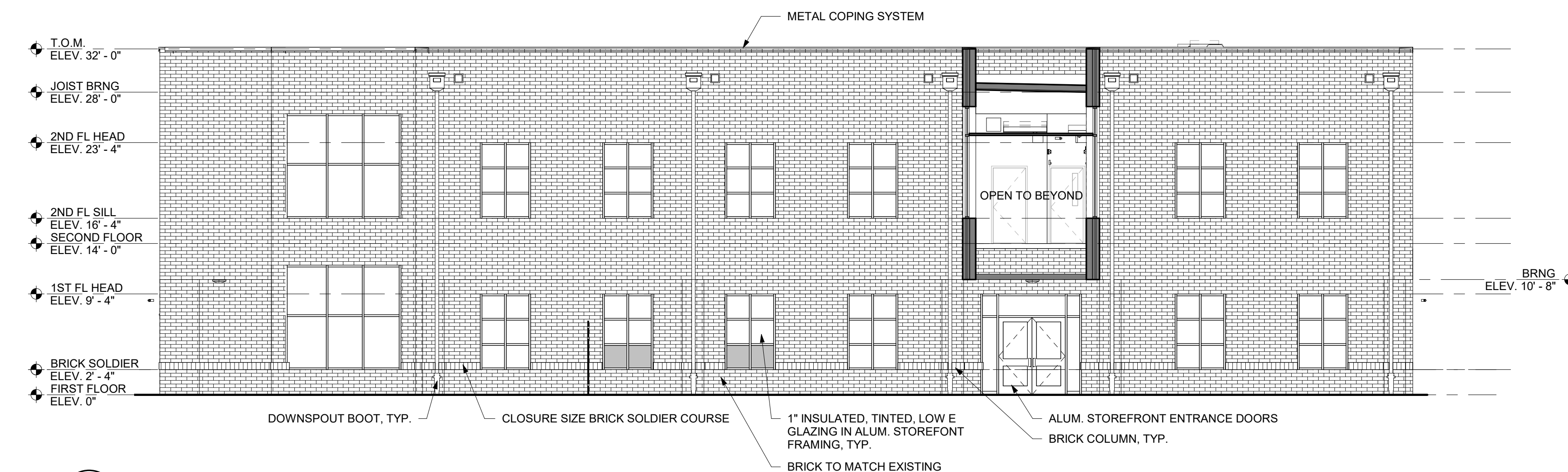
5 FENCE ELEVATION
SCALE: 1/2" = 1'-0"



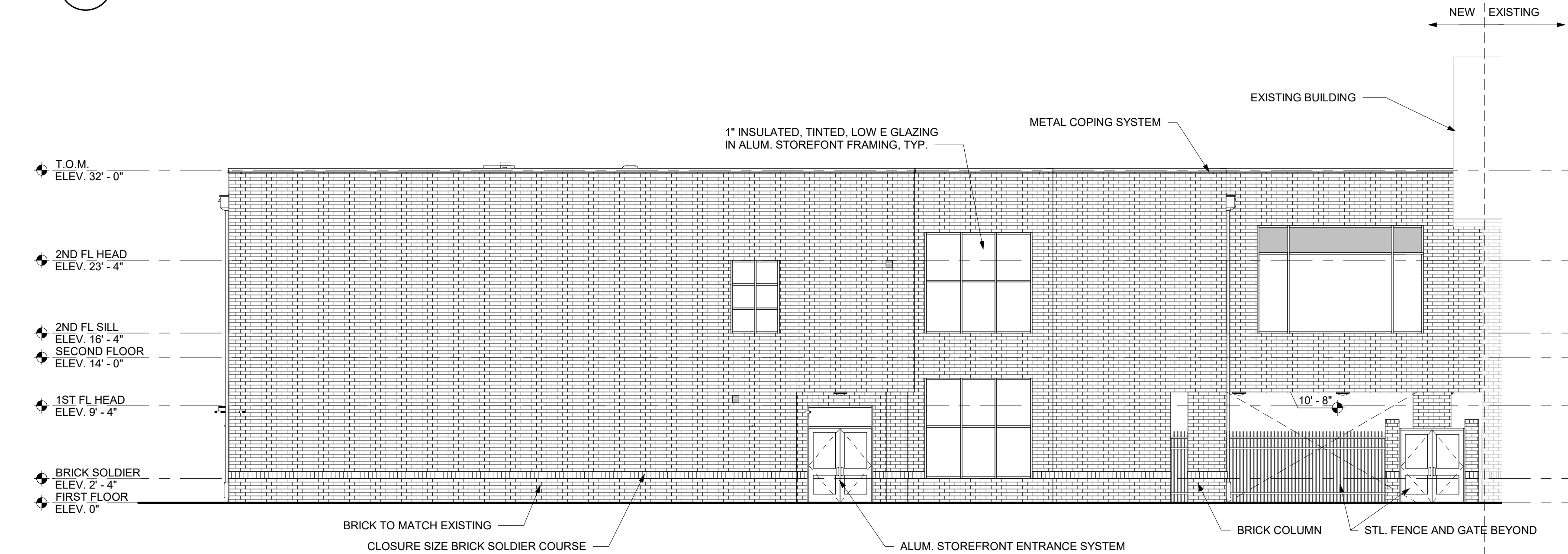
1 CLASS NORTH ELEVATION
SCALE: 1/8" = 1'-0"



2 CLASS EAST ELEVATION
SCALE: 1/8" = 1'-0"



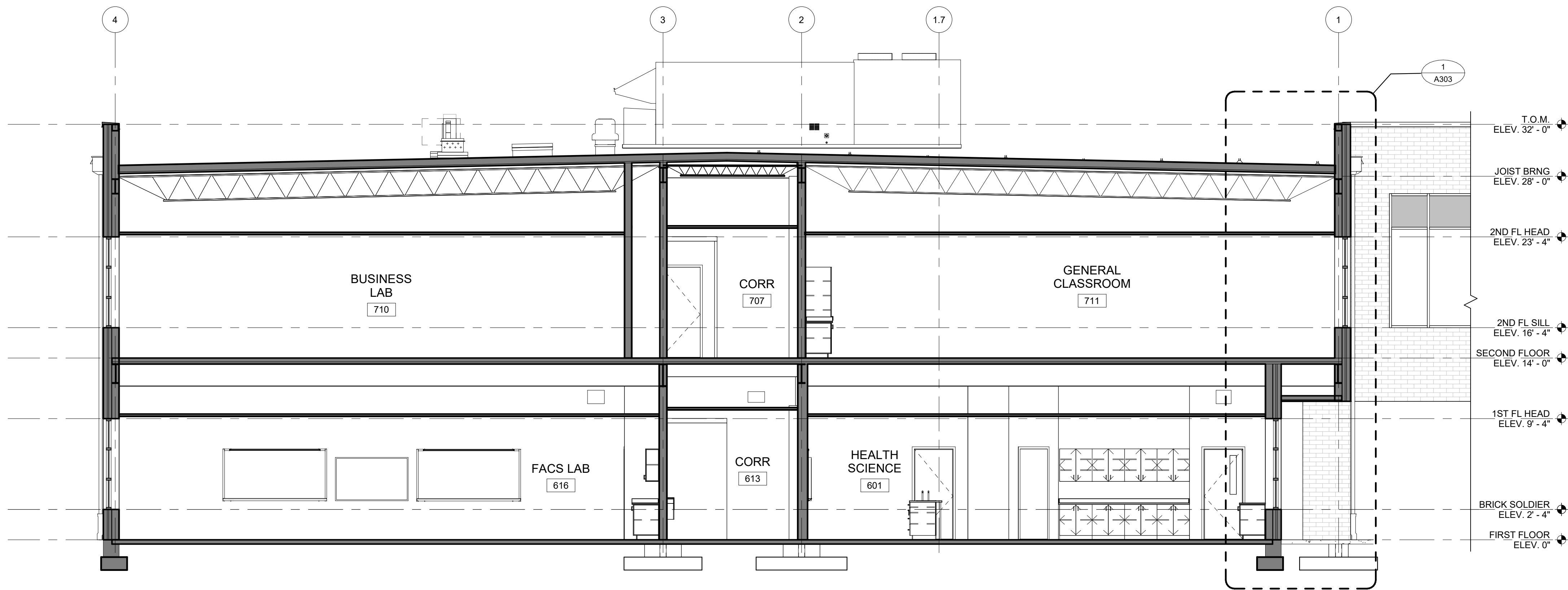
3 CLASS SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



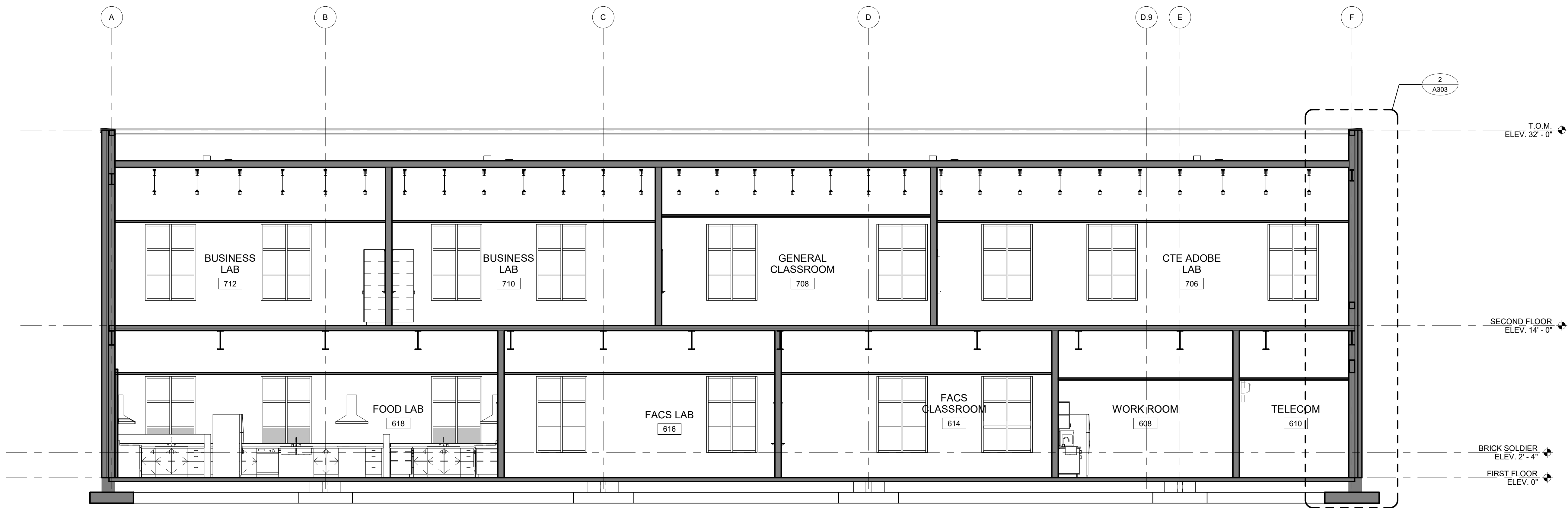
4 CLASS WEST ELEVATION
SCALE: 1/8" = 1'-0"

Mark	Date	Description
04.23.20	04.23.20	ISSUED FOR BIDDING
03.28.20	03.28.20	100% REVIEW SUBMISSION
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7.11.19	7.11.19	NCDP SD SUBMISSION

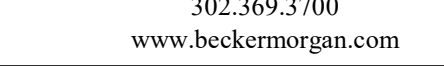
PROJECT NO:	2019082.00
DATE:	04.23.2020
SCALE:	As indicated
DRAWN BY:	EEM
PROJ MGR:	RMG



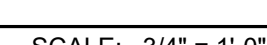
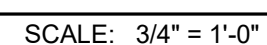
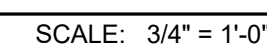
1 CLASSROOM BUILDING N/S
BUILDING SECTION
SCALE: 3/16" = 1'-0"



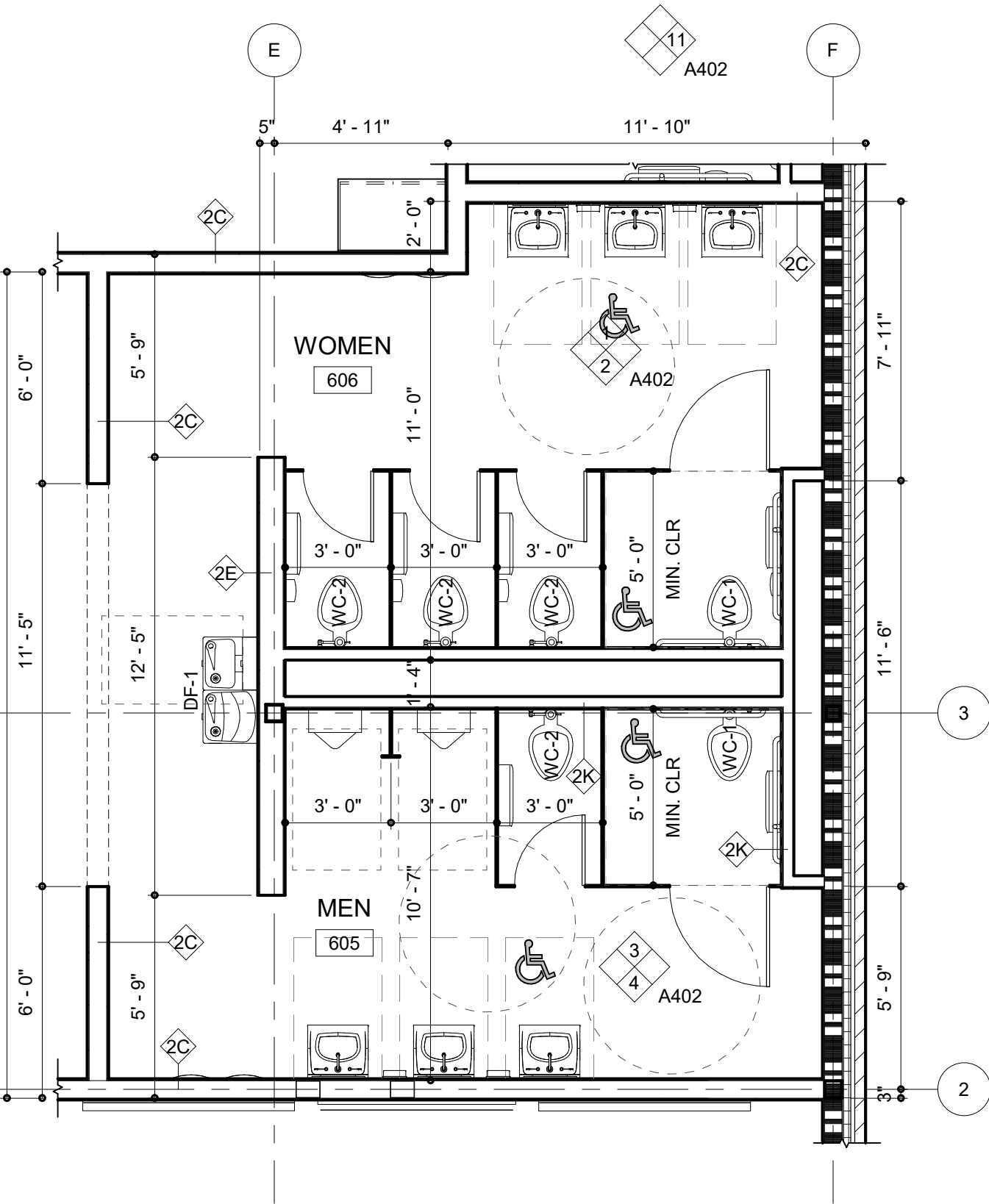
2 CLASSROOM BUILDING W/E
BUILDING SECTION
SCALE: 3/16" = 1'-0"



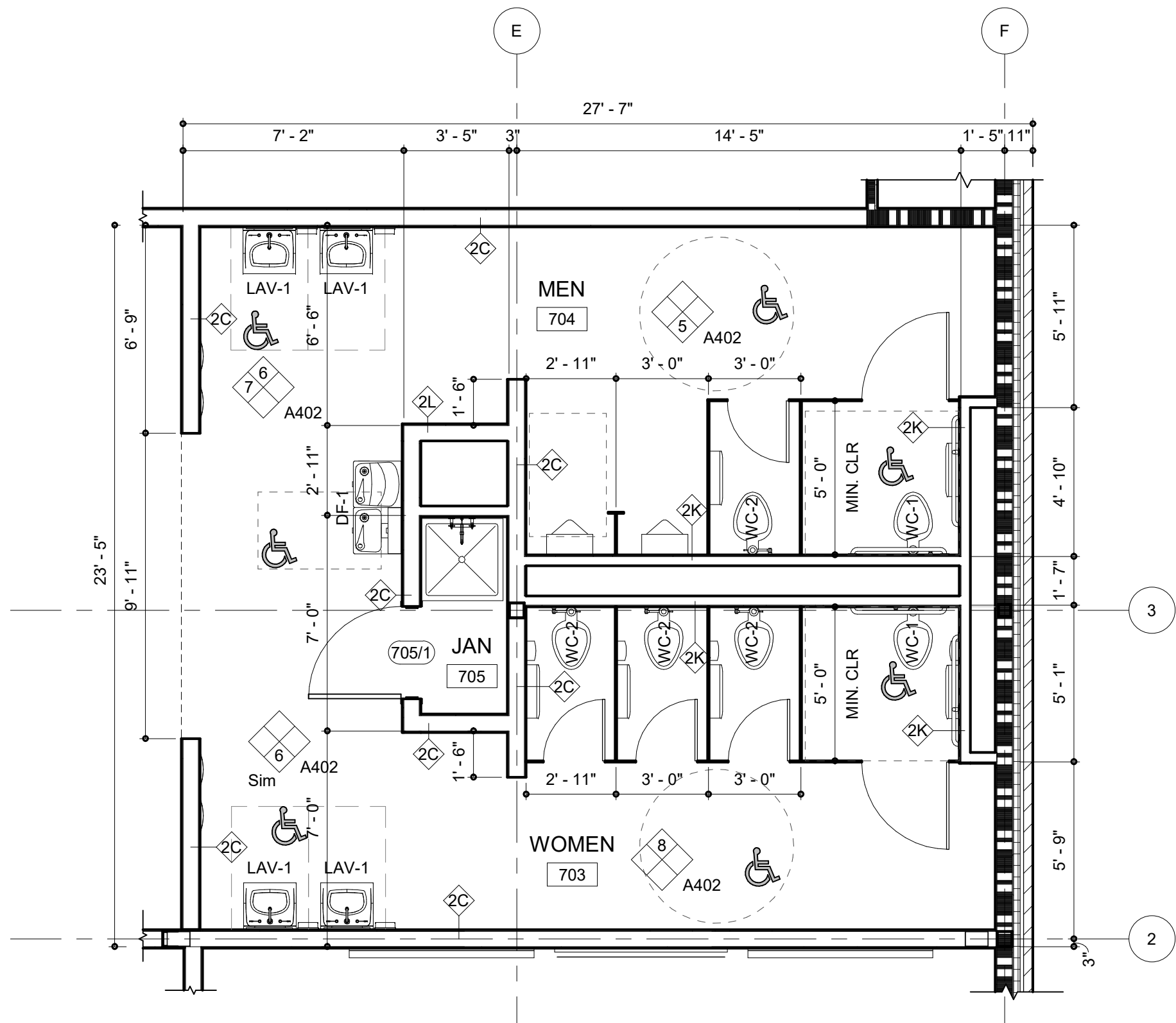
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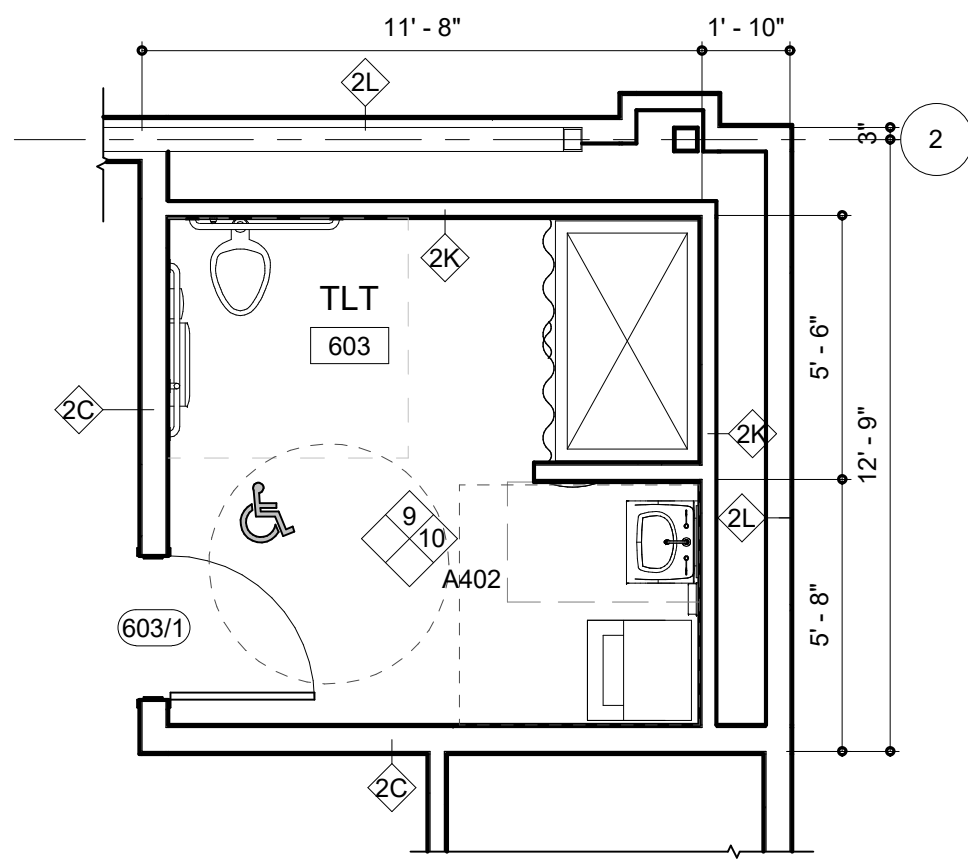
TOILET ACCESSORY SCHEDULE	
A	36" GRAB BAR - HORIZONTAL
B	18" GRAB BAR - VERTICAL
C	42" GRAB BAR - VERTICAL
D	TOILET PAPER DISPENSER
E	SANITARY NAPKIN DISPOSAL
F	SOAP DISPENSER
G	NOT USED
H	UNDER LAVATORY SHIELD
I	18"x36" FRAMED MIRROR
J	ELECTRIC HAND DRYER



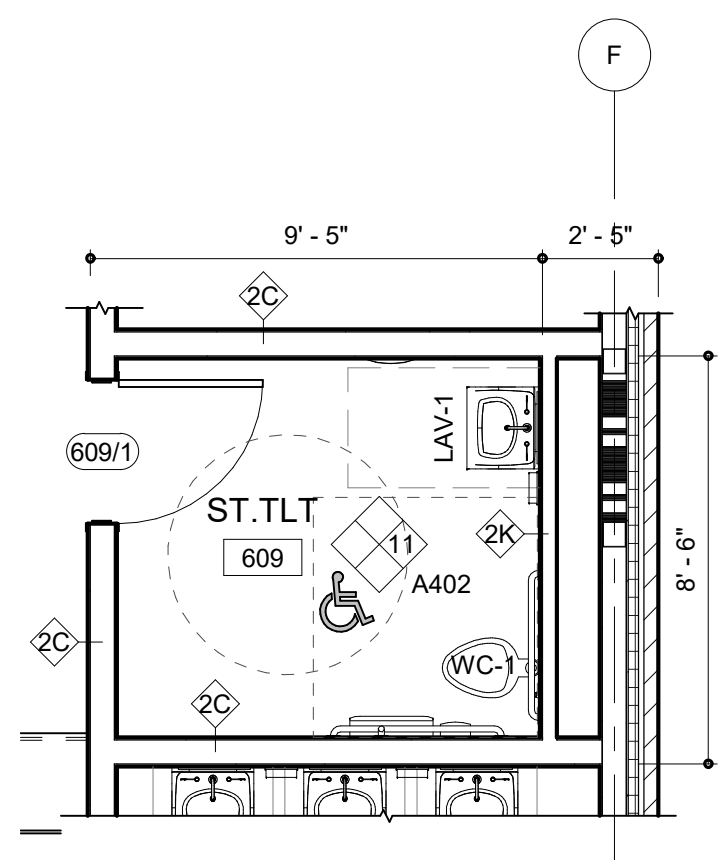
1 GANG TOILETS FIRST FLOOR - ENLARGED PLAN
SCALE: 1/4" = 1'-0"



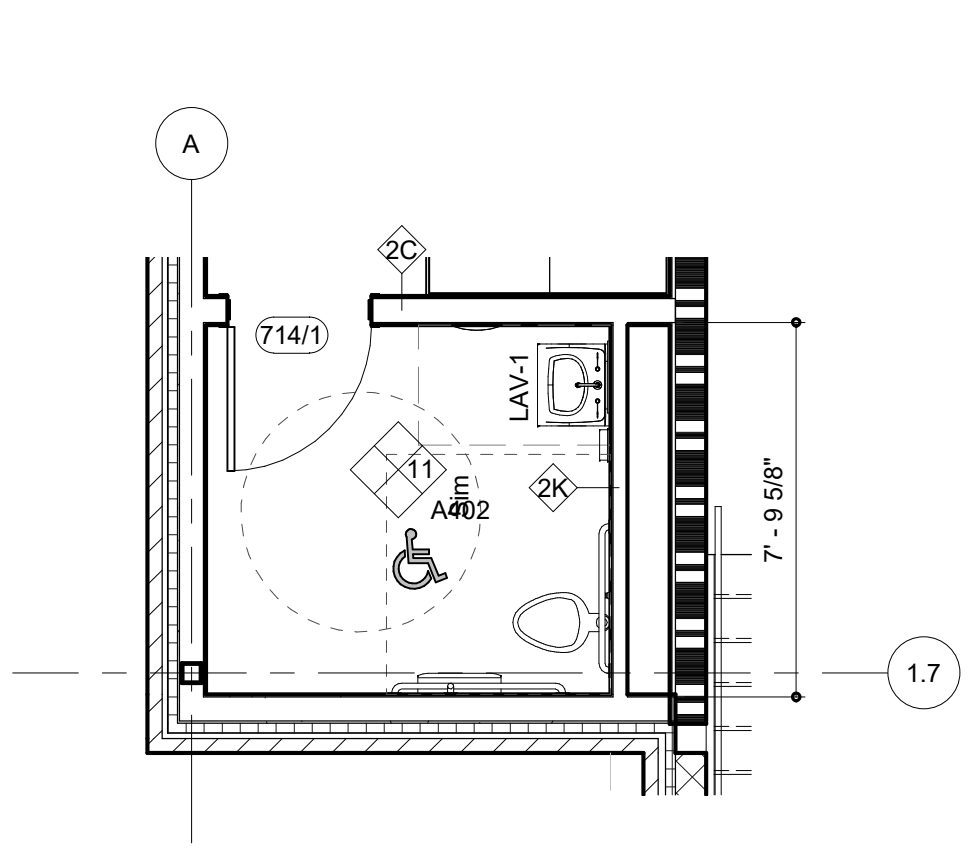
2 GANG TOILET SECOND FLOOR - ENLARGED PLAN
SCALE: 1/4" = 1'-0"



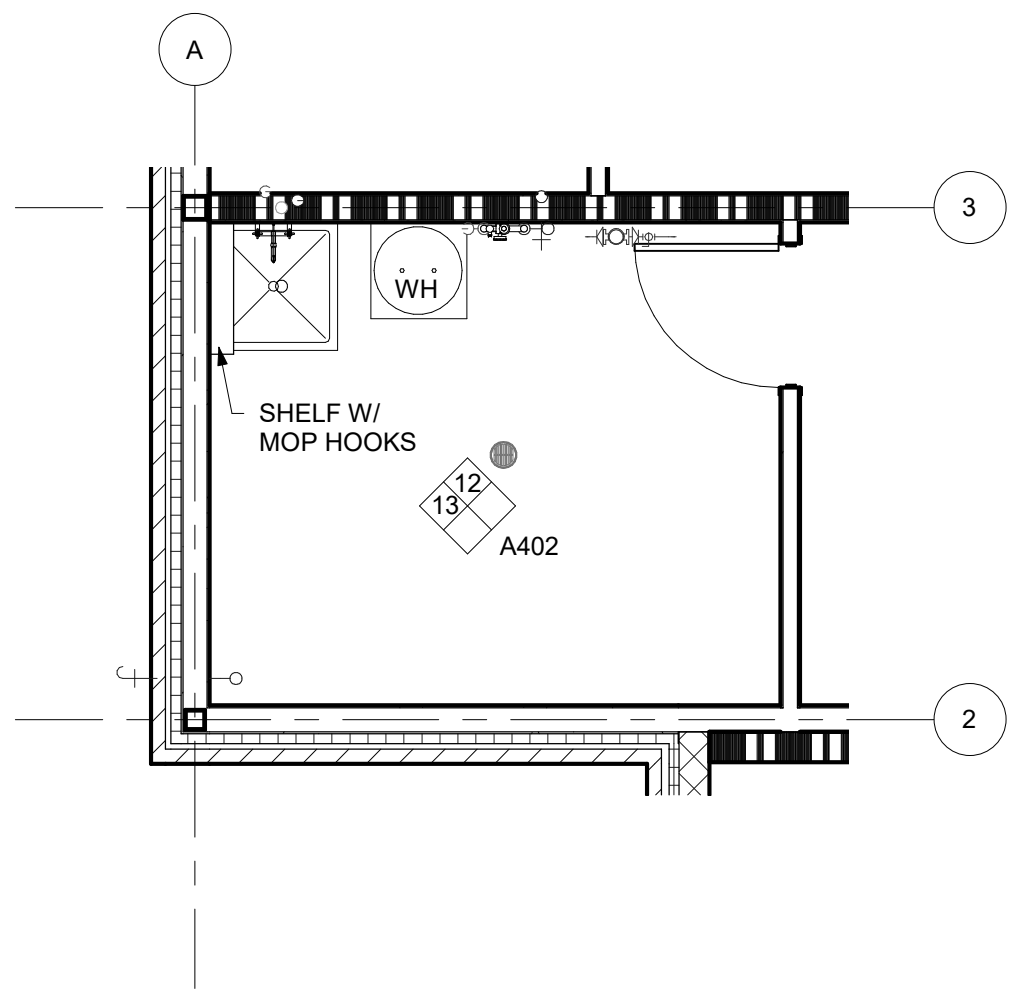
3 TOILET 603 - ENLARGED PLAN
SCALE: 1/4" = 1'-0"



4 TOILET 609 - ENLARGED PLAN
SCALE: 1/4" = 1'-0"

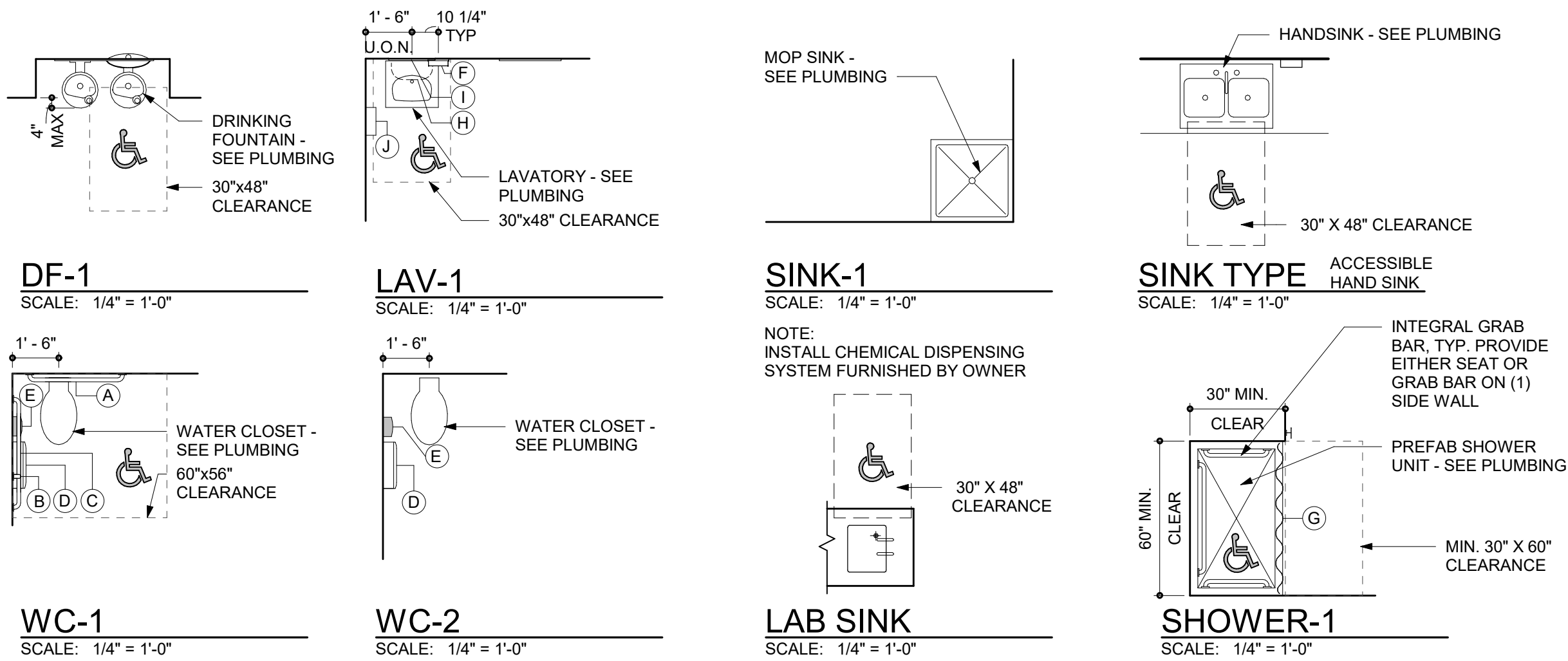


5 TOILET 714 - ENLARGED PLAN
SCALE: 1/4" = 1'-0"

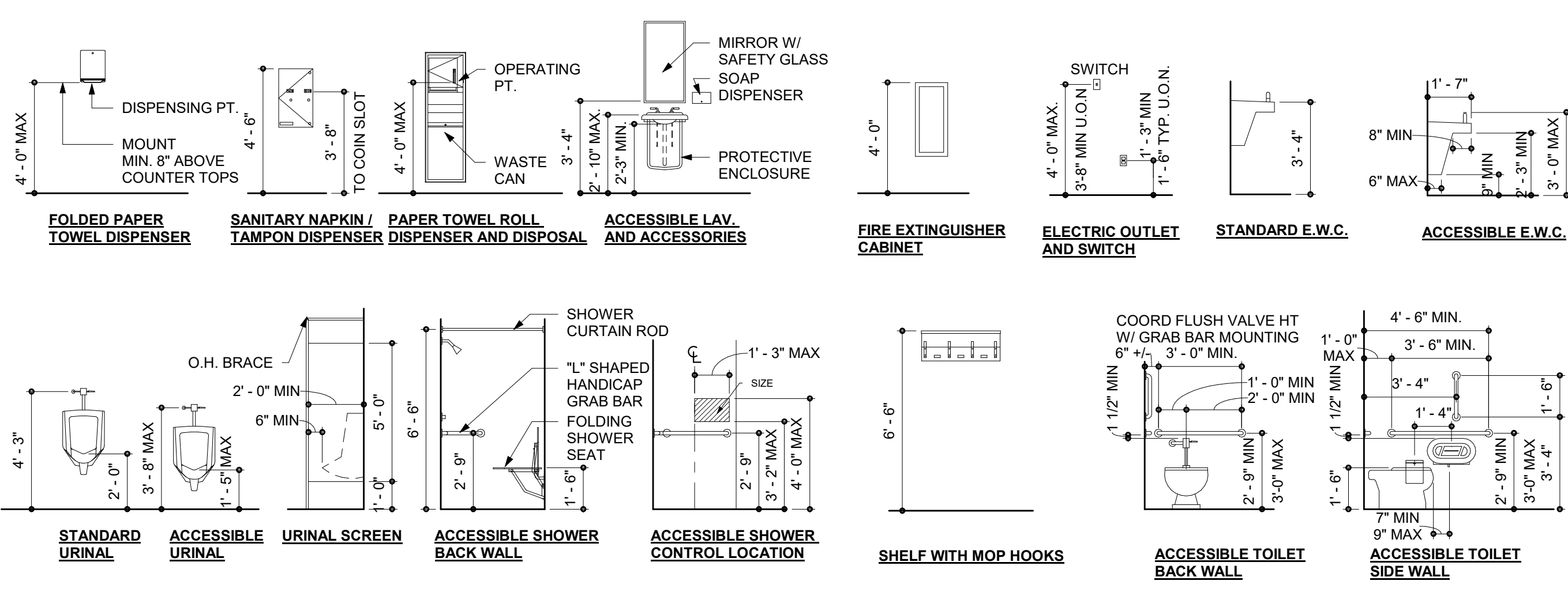


6 JANITOR 619 ENLARGED PLAN
SCALE: 1/4" = 1'-0"

PLUMBING TYPES



STANDARD MOUNTING HEIGHTS



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NORTH BRUNSWICK HIGH SCHOOL NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

ENLARGED RESTROOM PLANS AND DETAILS

Mark	Date	Description
04.23.20	04.23.20	ISSUED FOR BIDDING
03.28.20	03.28.20	100% REVIEW SUBMISSION
10.14.19	10.14.19	NCPI DO SUBMISSION
7.30.19	7.30.19	SD PROGRESS DRAWINGS
7.11.19	7.11.19	NCPI SD SUBMISSION
PROJECT NO:	2019082.00	
DATE:	04.23.2020	
SCALE:	As indicated	
DRAWN BY:	KMS	PROJ MGR: RMC

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ISSUED: 04/23/2020



PROJECT TITLE

NORTH
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NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

RESTROOM ELEVATIONS

ISSUE BLOCK		
Mark	Date	Description
	04.23.20	ISSUED FOR BIDDING
	03.26.20	100% REVIEW SUBMISSION
	10.14.19	NCMPI DO SUBMISSION
	7.30.19	SD PROGRESS DRAWINGS
	7.11.19	NCMPI SD SUBMISSION

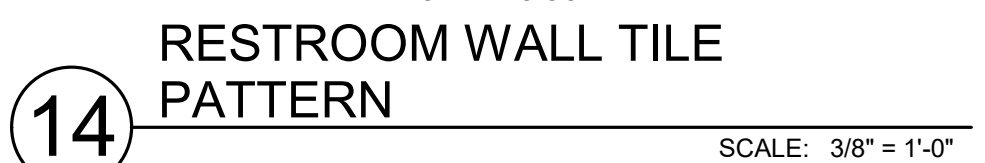
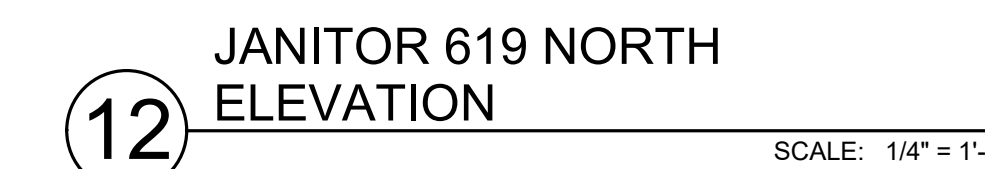
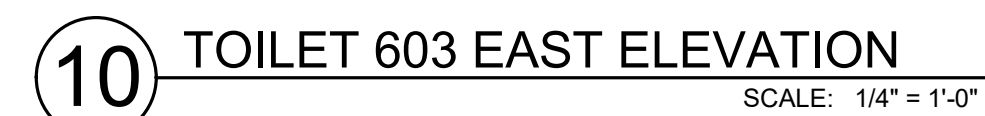
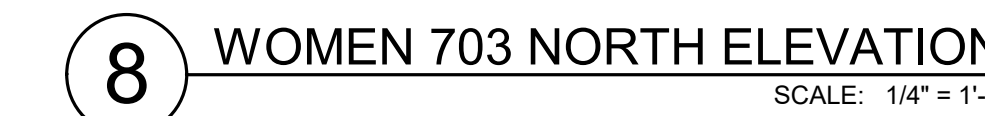
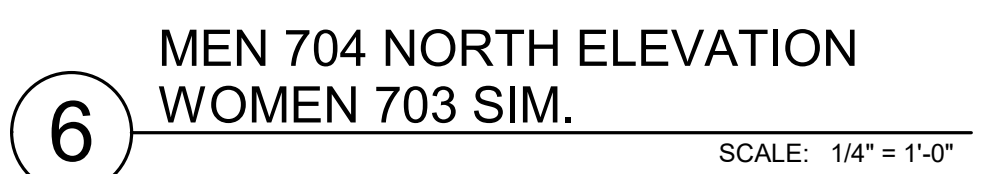
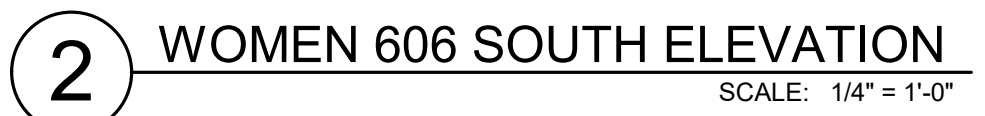
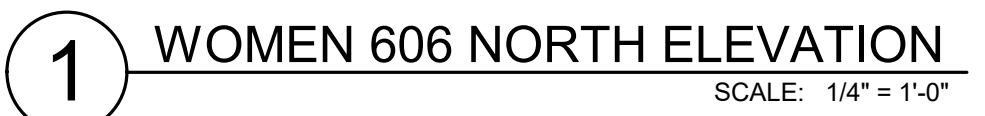
PROJECT NO:	2019082.00
DATE:	04.23.2020

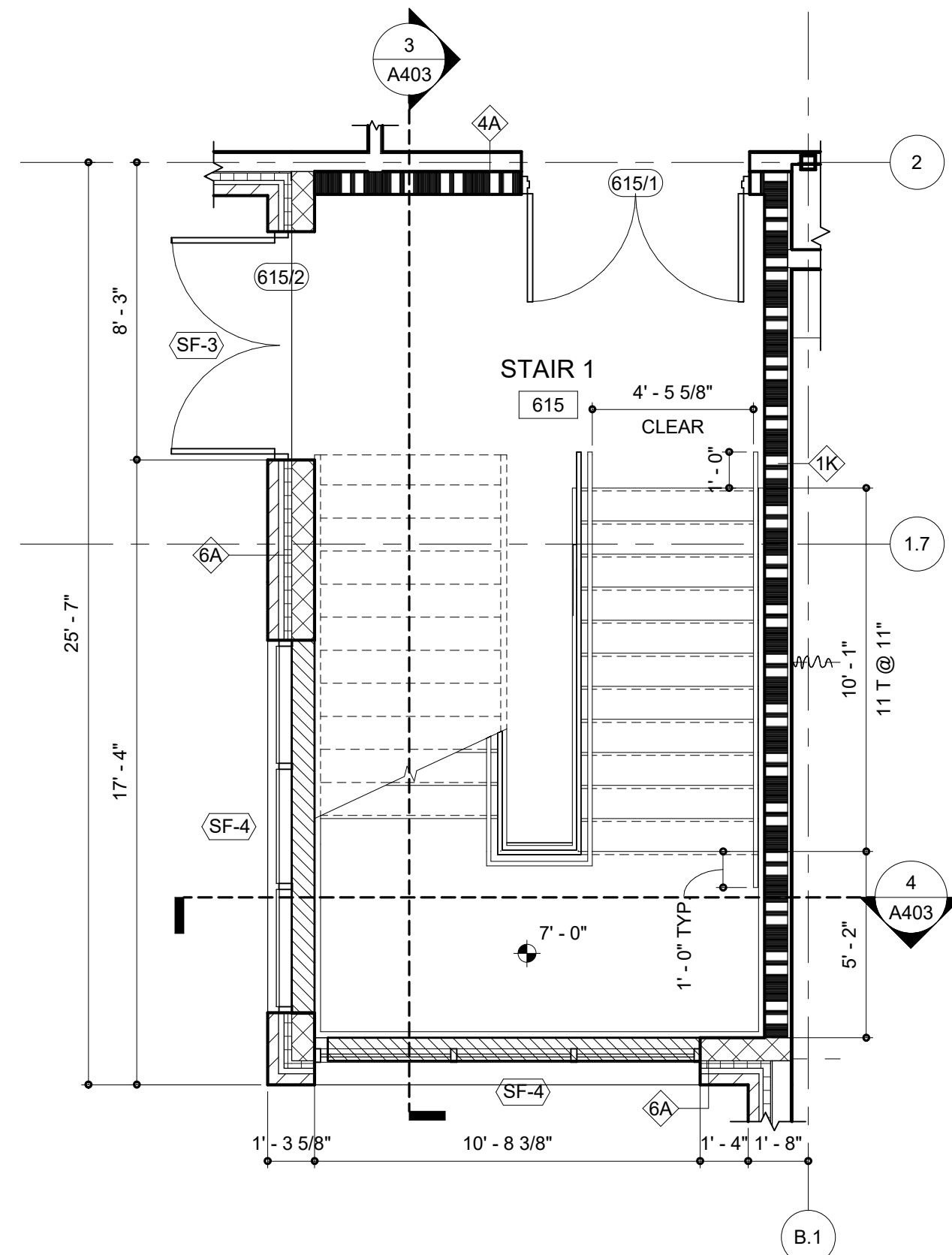
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DRAWN BY	Author
PROJ MG	Checker

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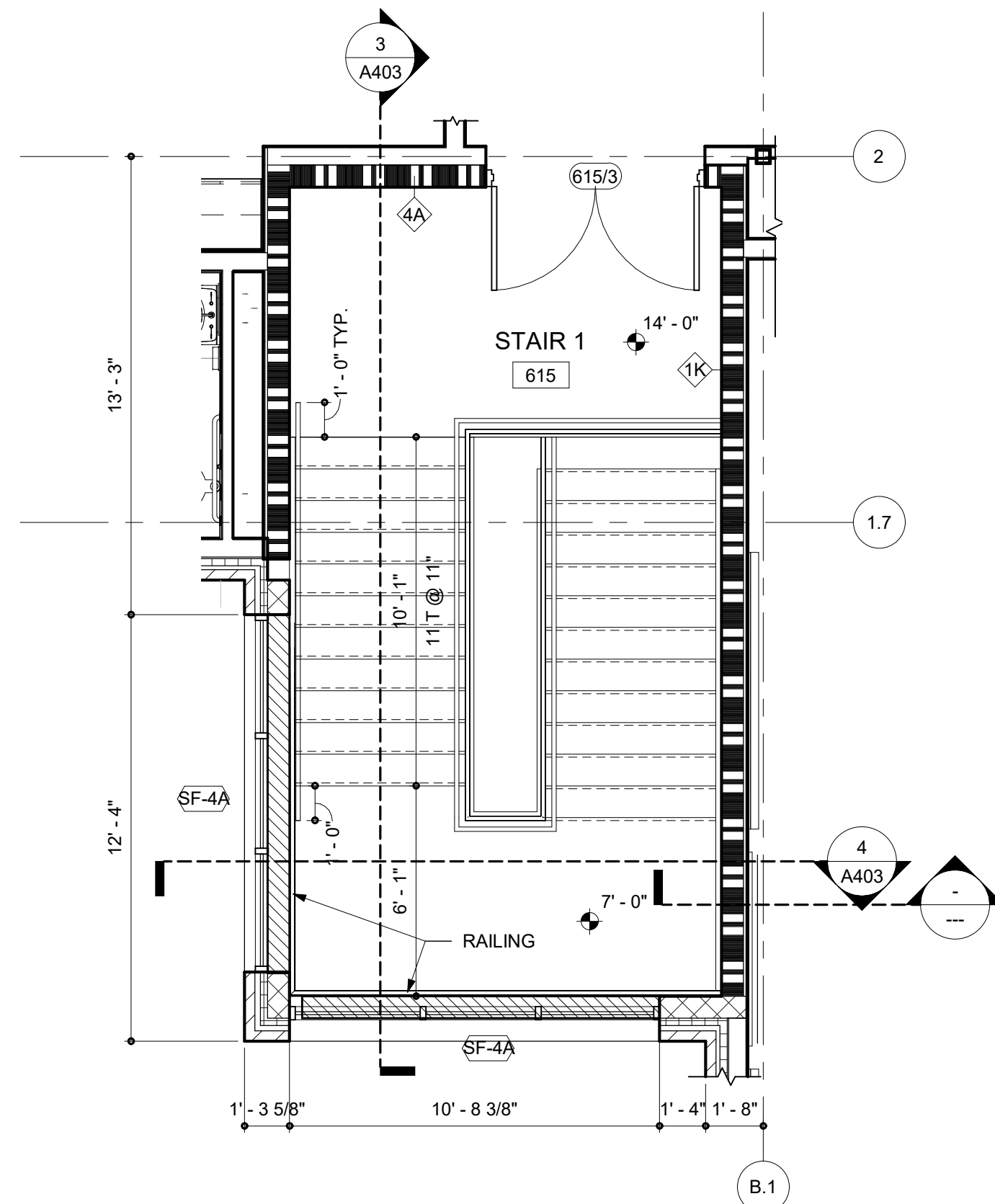
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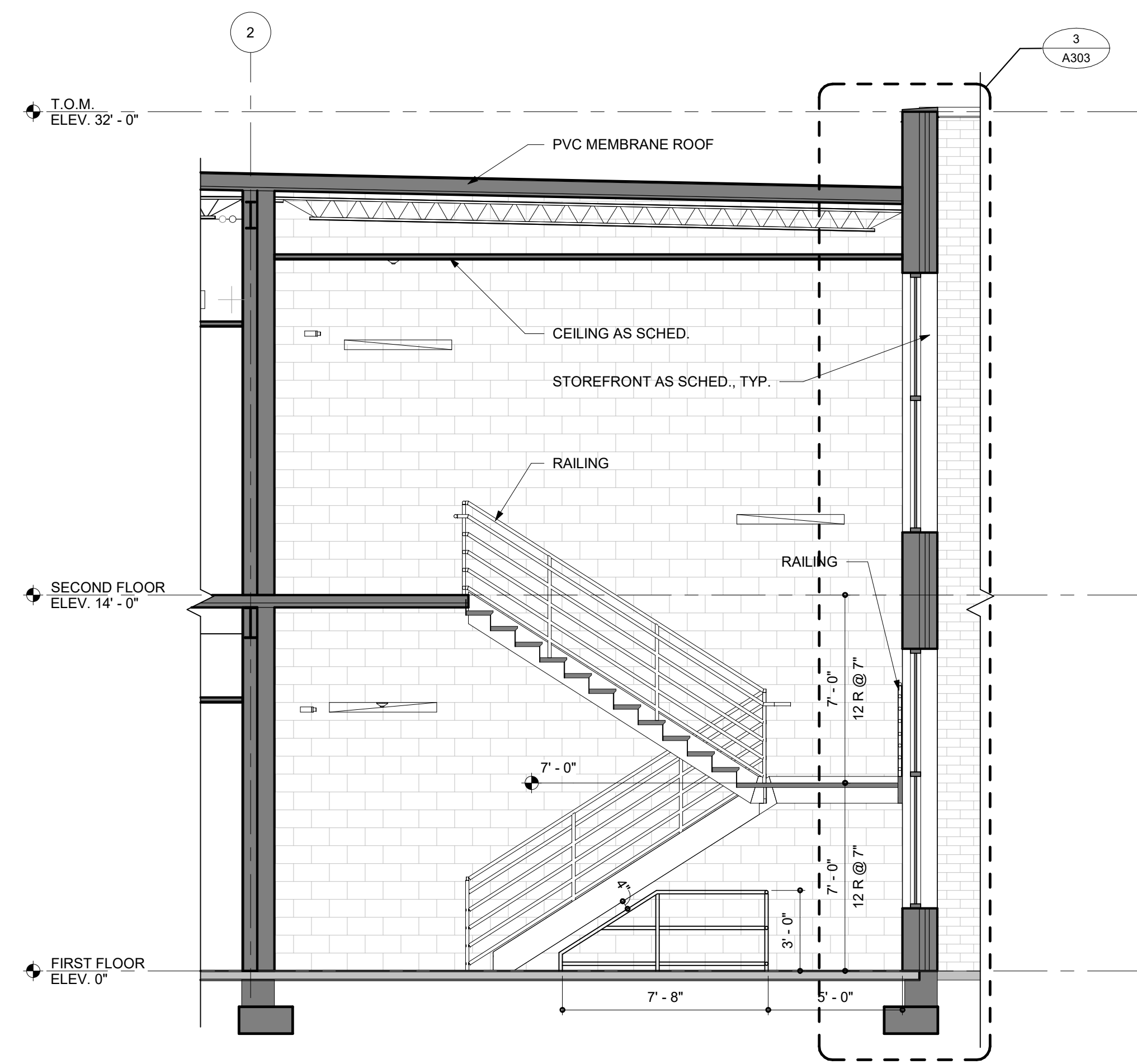
1 STAIR 1 ENLARGED PLAN - FIRST FLOOR

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



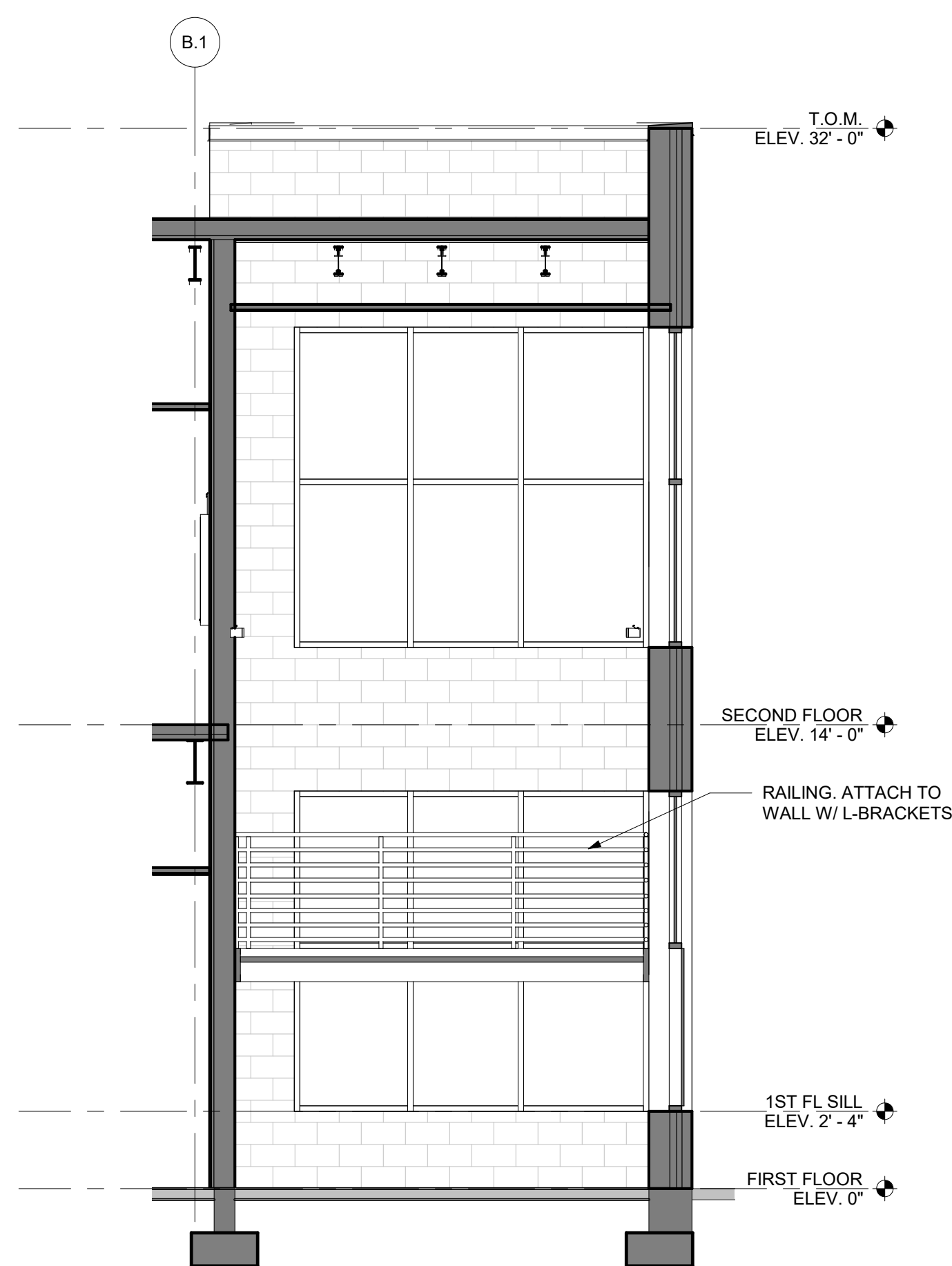
2 STAIR 1 ENLARGED PLAN - SECOND FLOOR

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



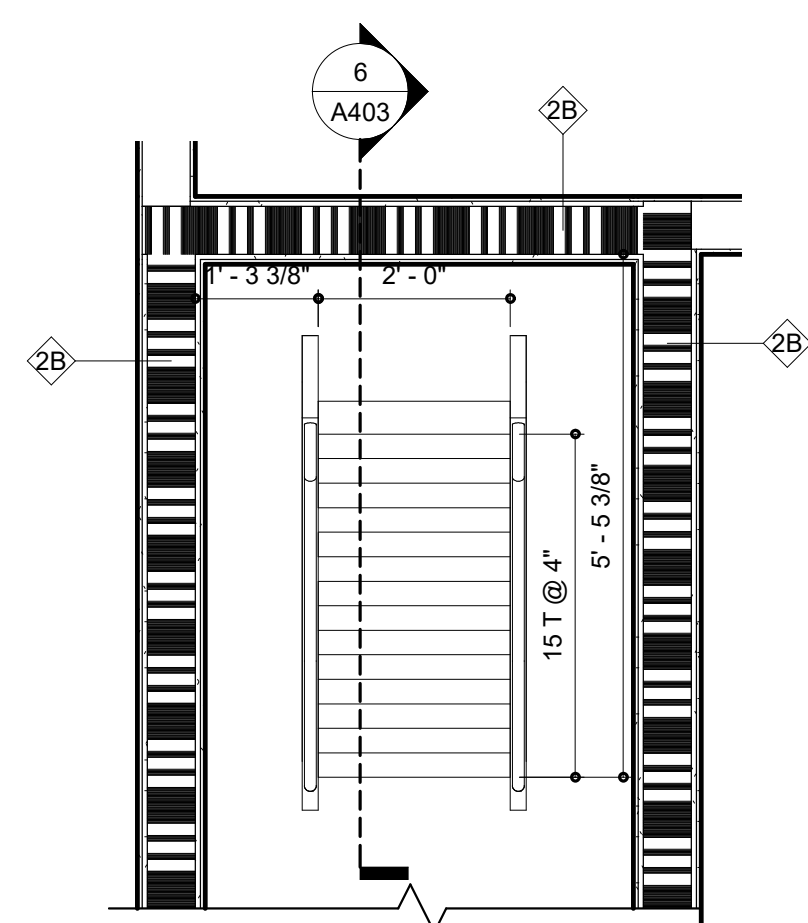
3 ENLARGED SECTION THRU STAIR 1

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



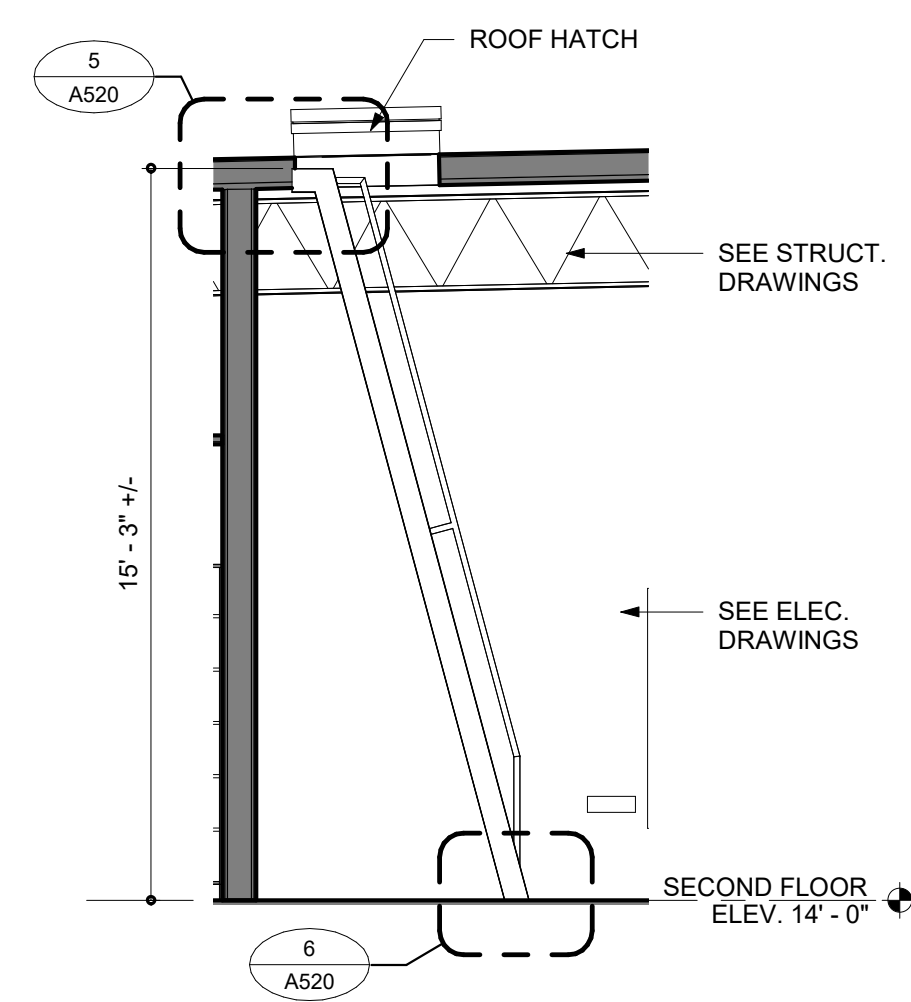
4 ENLARGED SECTION THRU STAIR

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



5 ENLARGED SHIPS LADDER PLAN

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



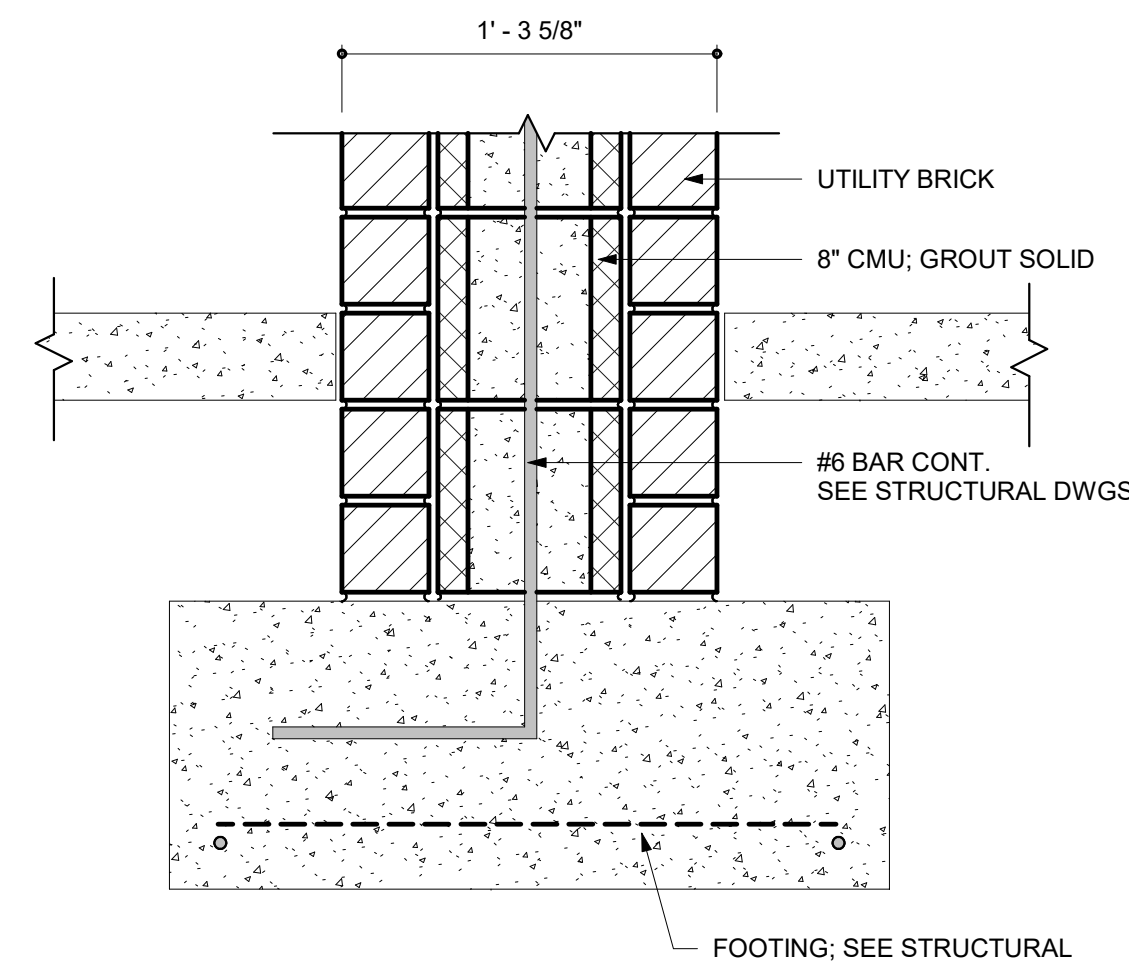
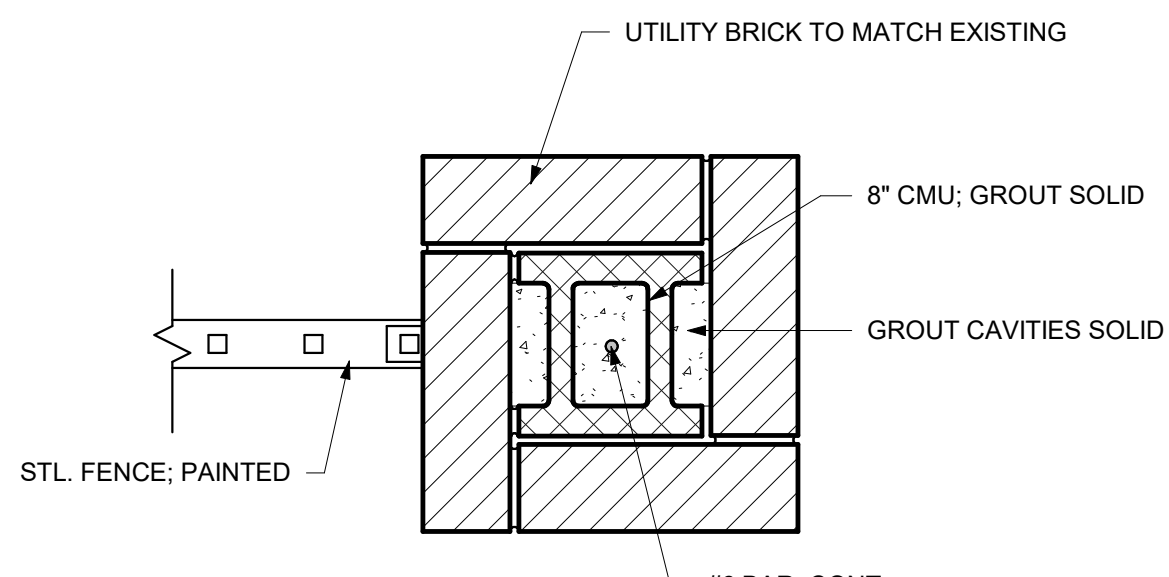
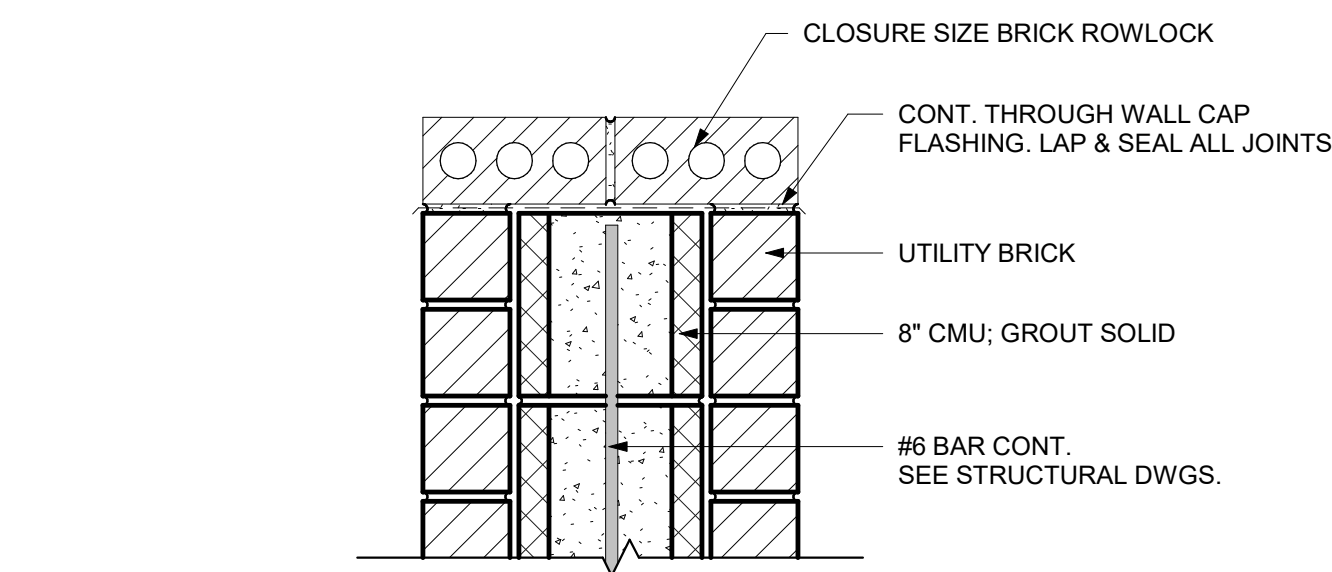
6 SHIPS LADDER SECTION

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

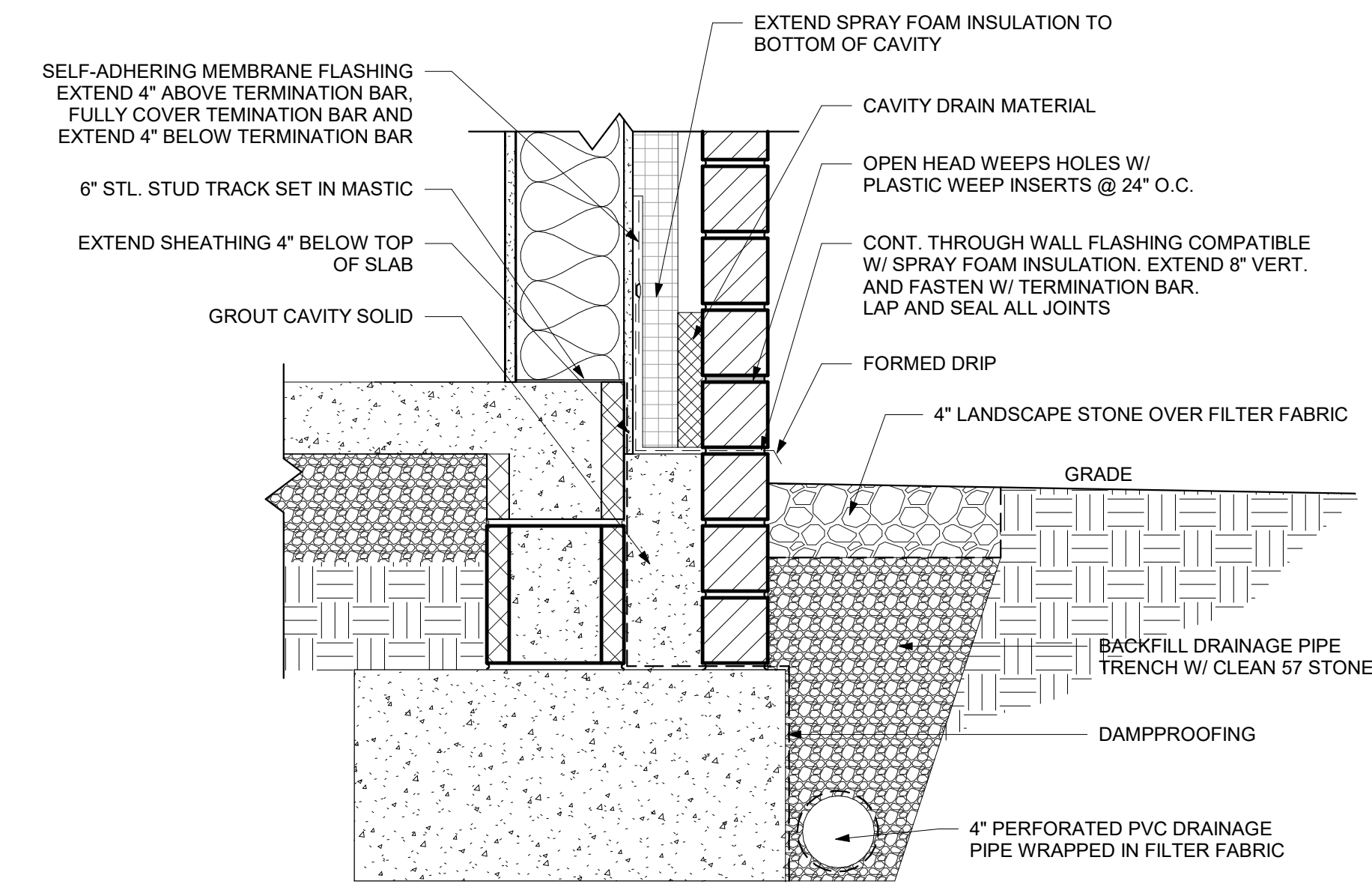
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03.28.20	03.28.20	100% REVIEW SUBMISSION
10.14.19	10.14.19	NCPI DO SUBMISSION
7.30.19	7.30.19	SD PROGRESS DRAWINGS
7.11.19	7.11.19	NCPI SD SUBMISSION

PROJECT NO:	2019082.00
DATE:	04.23.2020
SCALE:	As indicated
DRAWN BY/Author	PROJ MGChecker

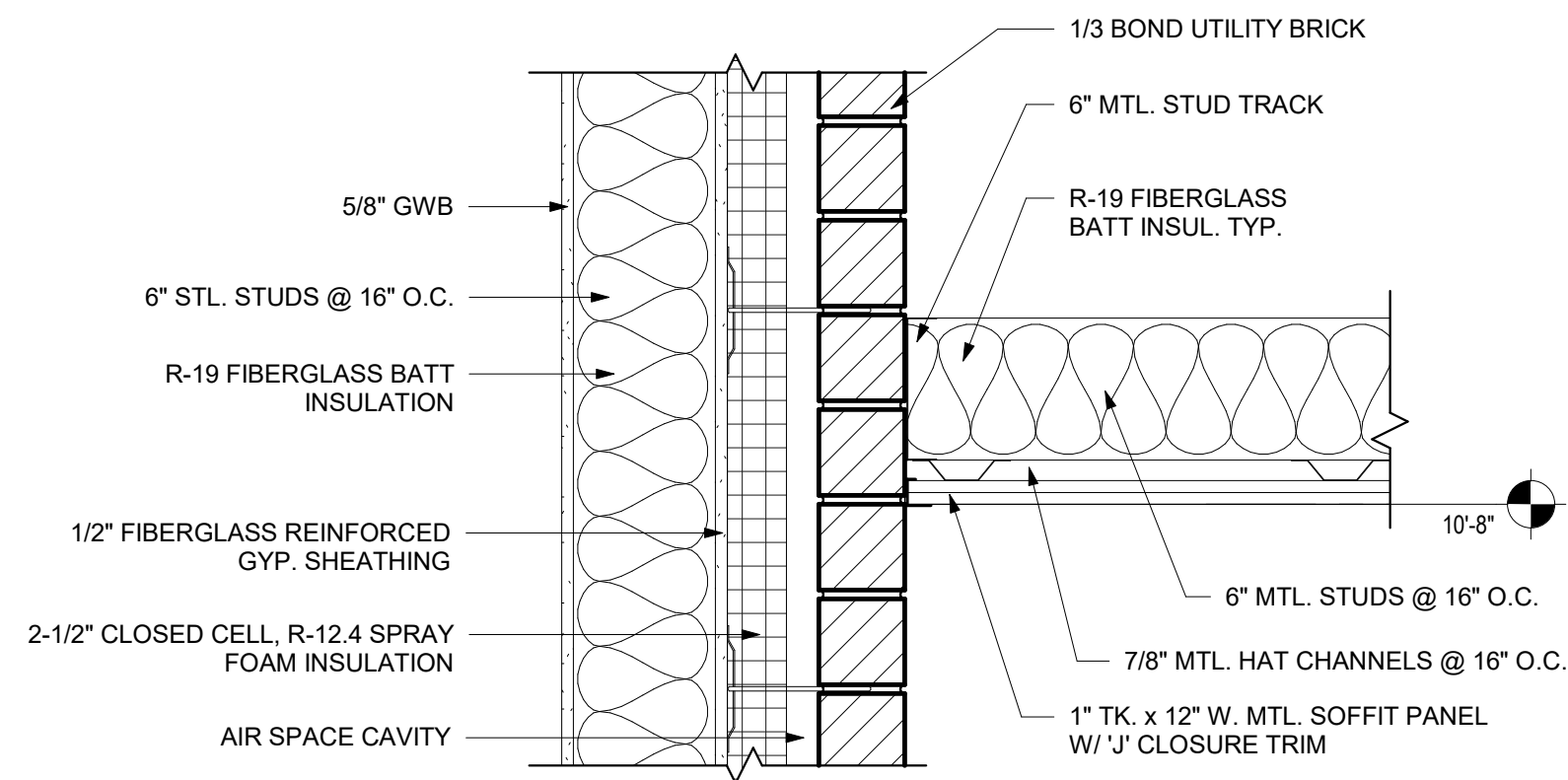




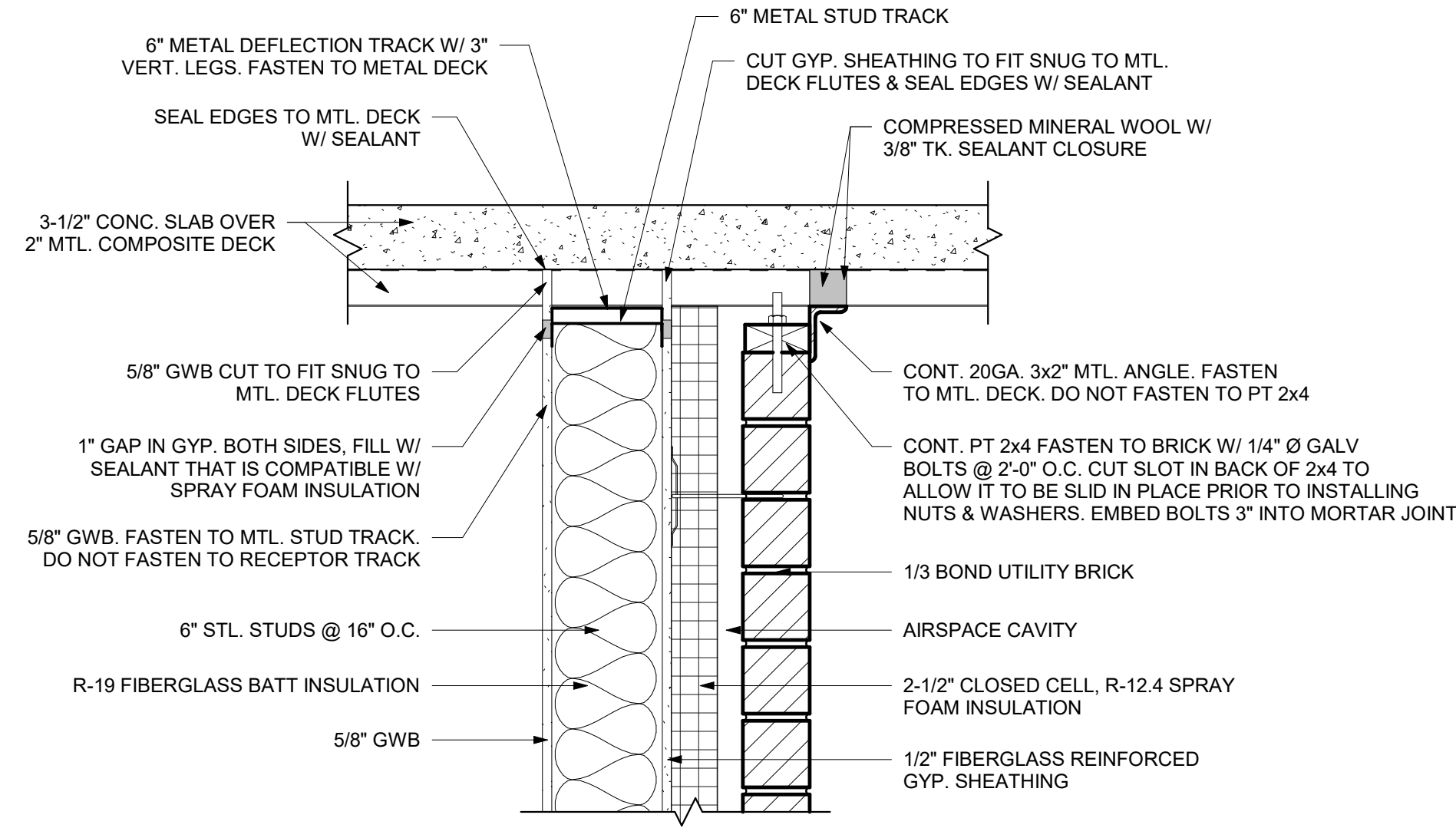
1 FENCE DETAIL
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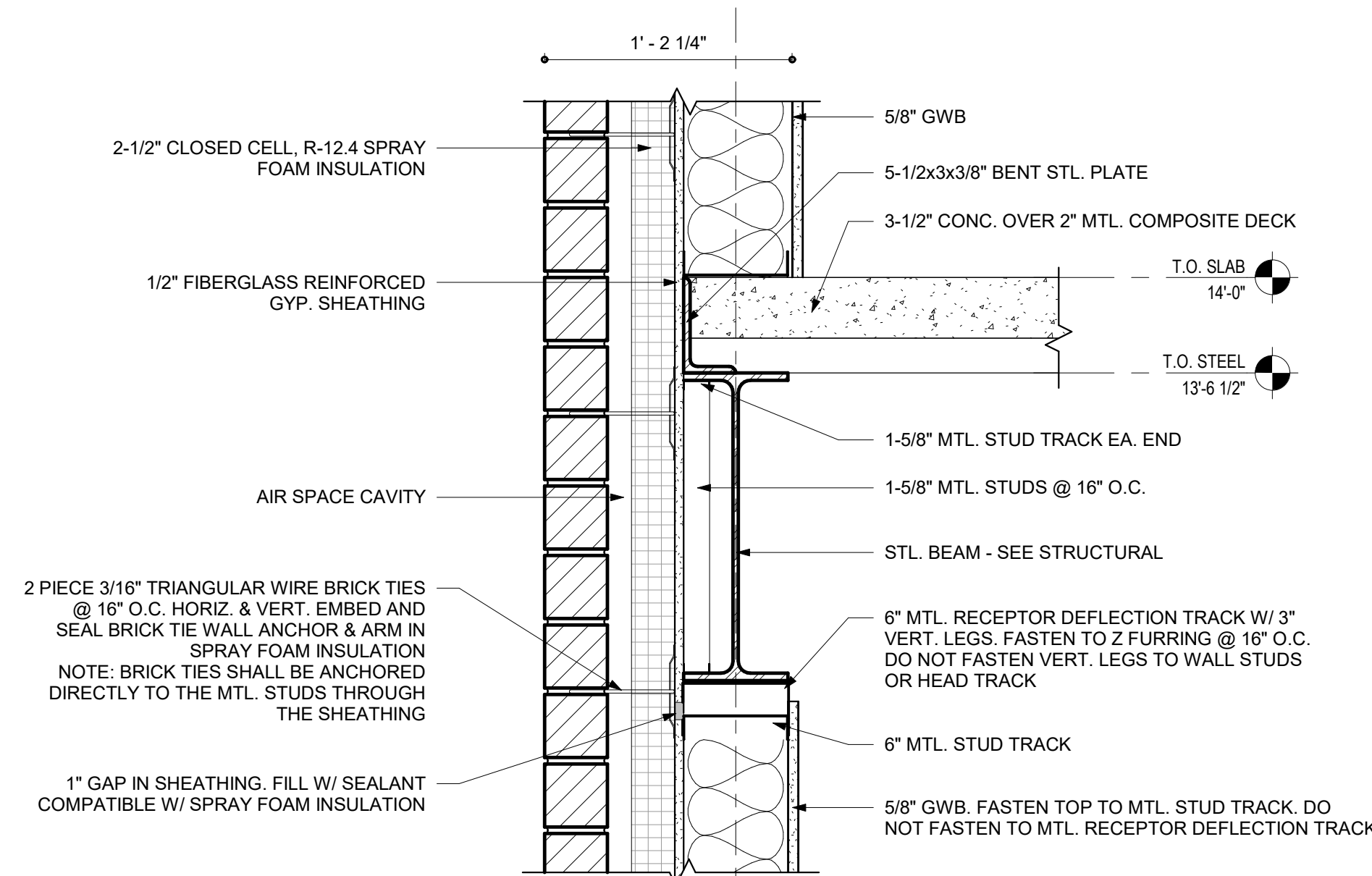
3 SECTION DETAIL @ FOUNDATION
SCALE: 1 1/2" = 1'-0"



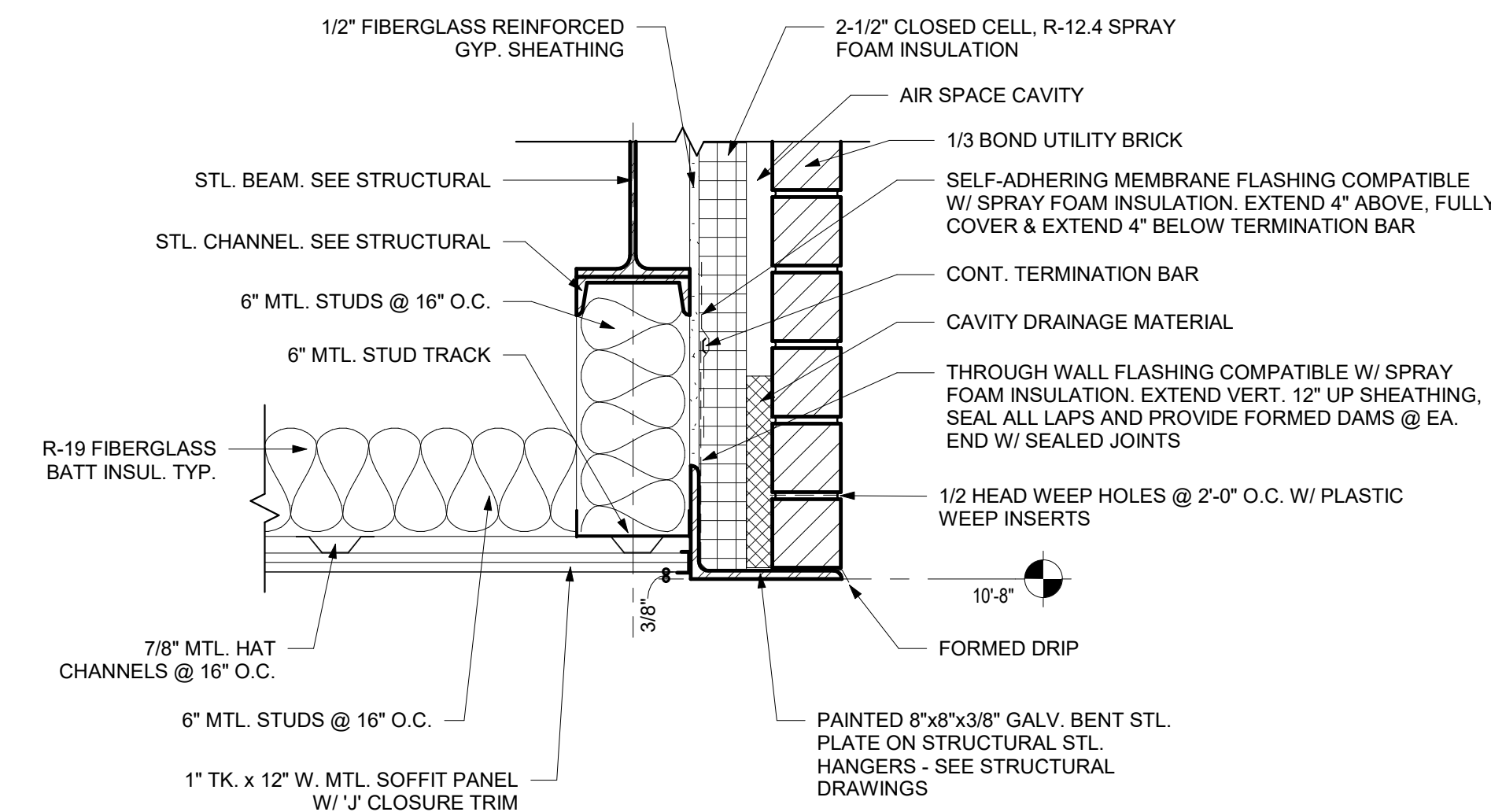
6 SOFFIT DETAIL 2
SCALE: 1 1/2" = 1'-0"



4 SECTION DETAIL @ OVERHANG
SCALE: 1 1/2" = 1'-0"

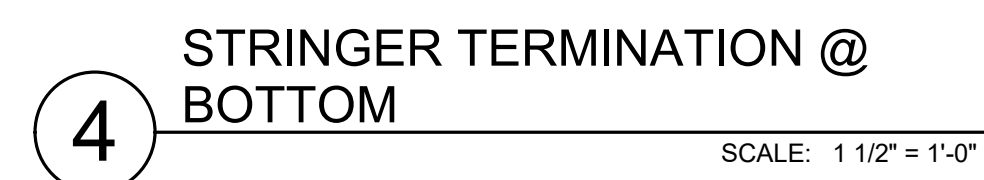


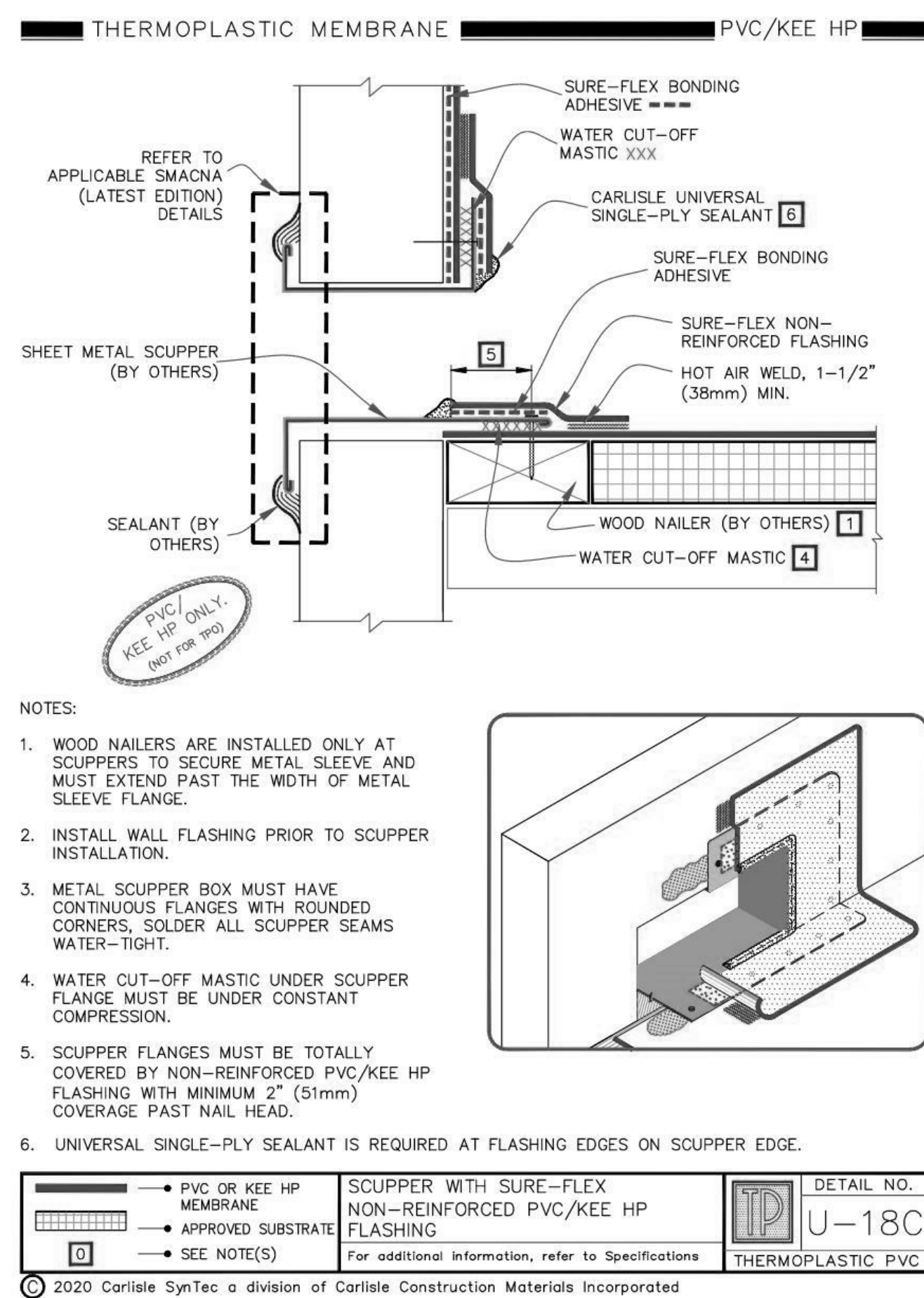
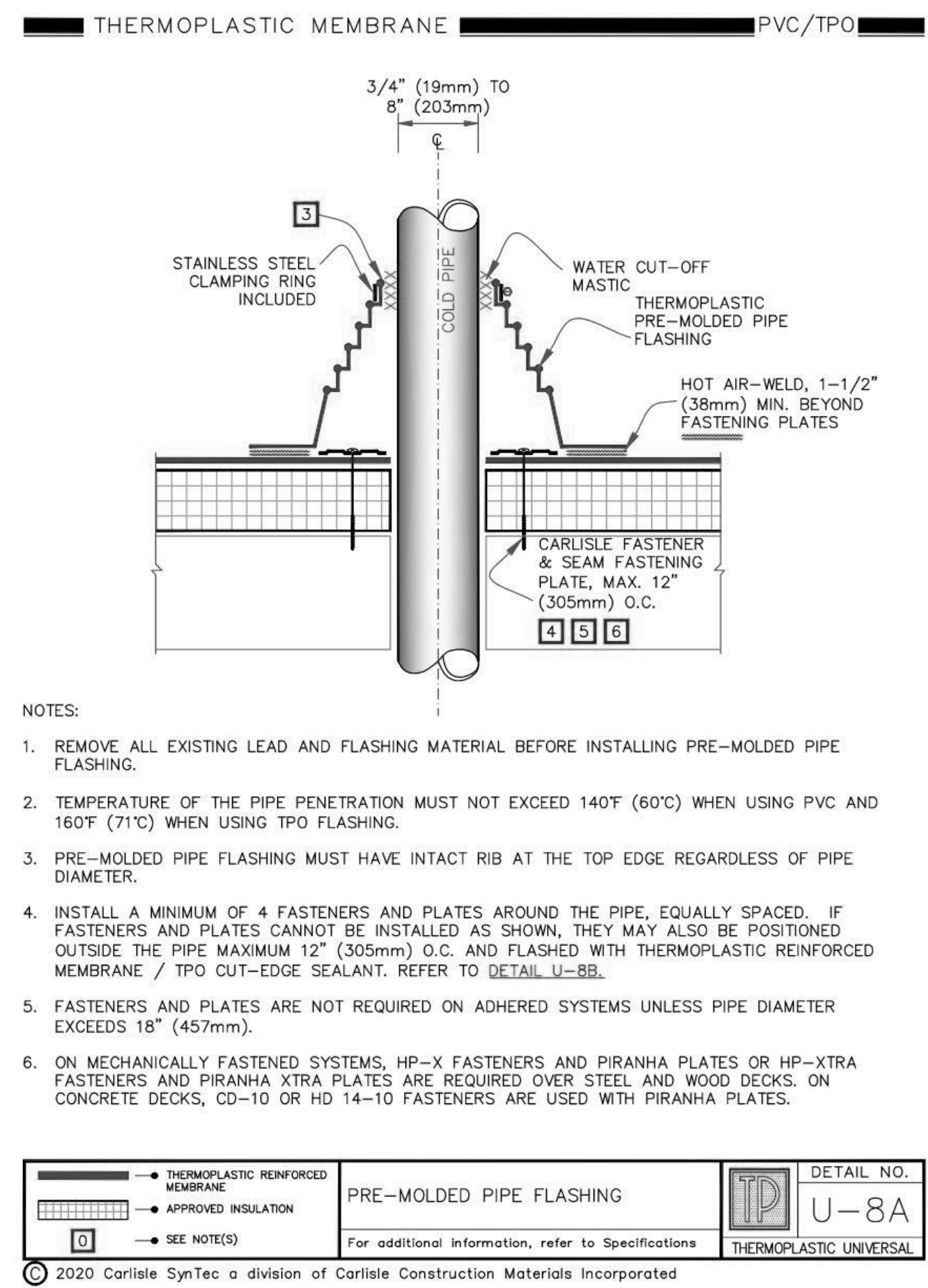
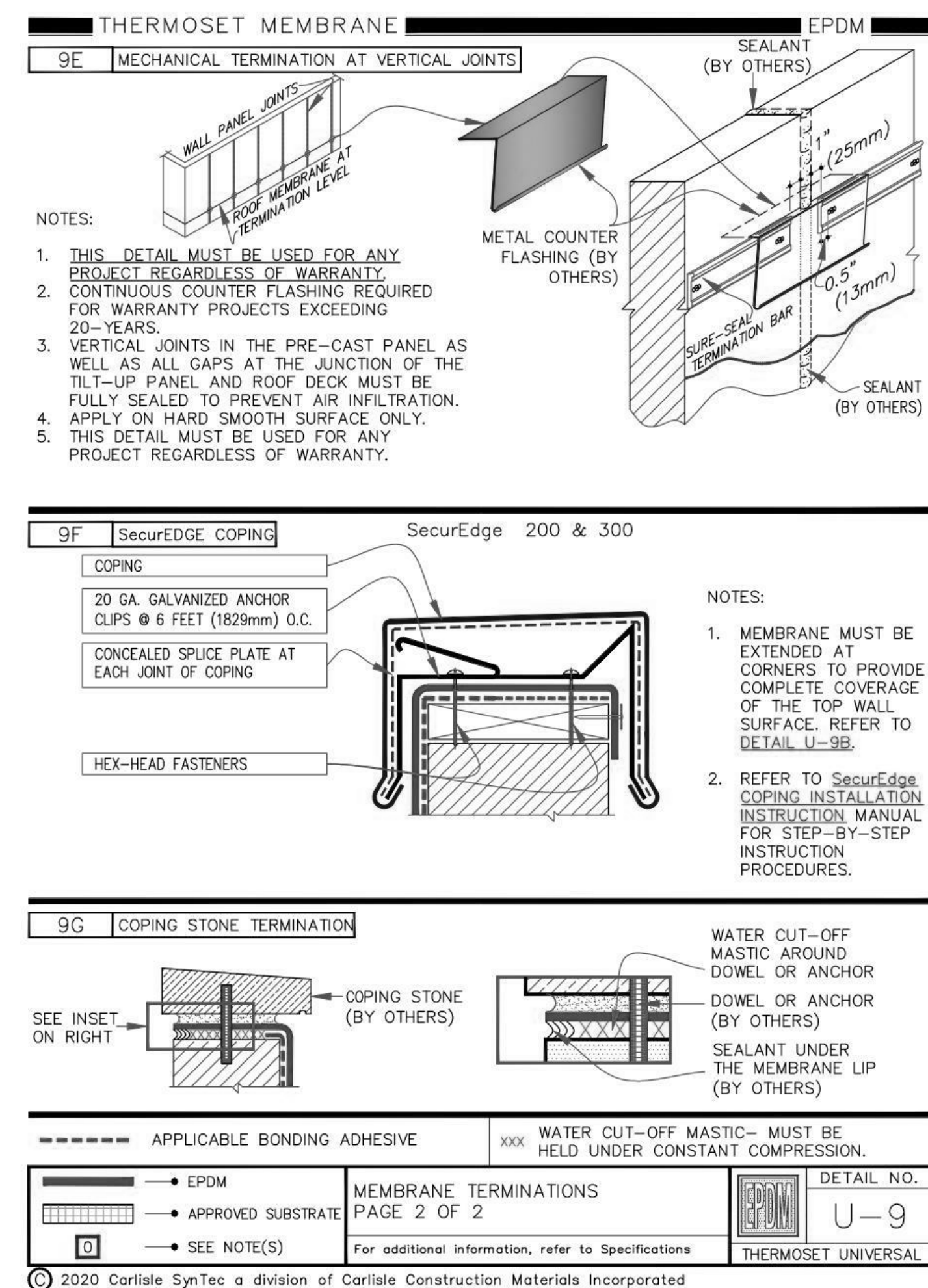
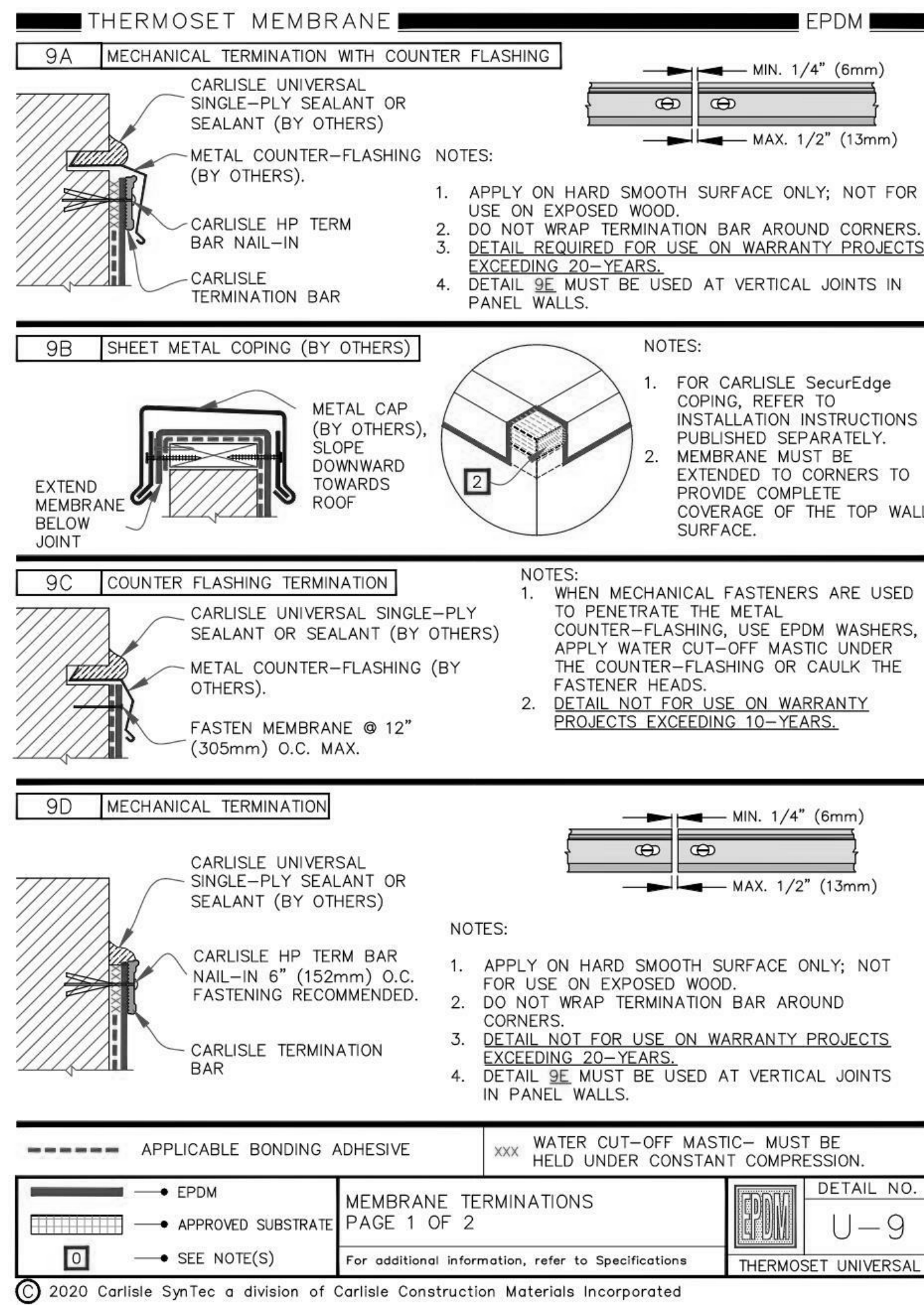
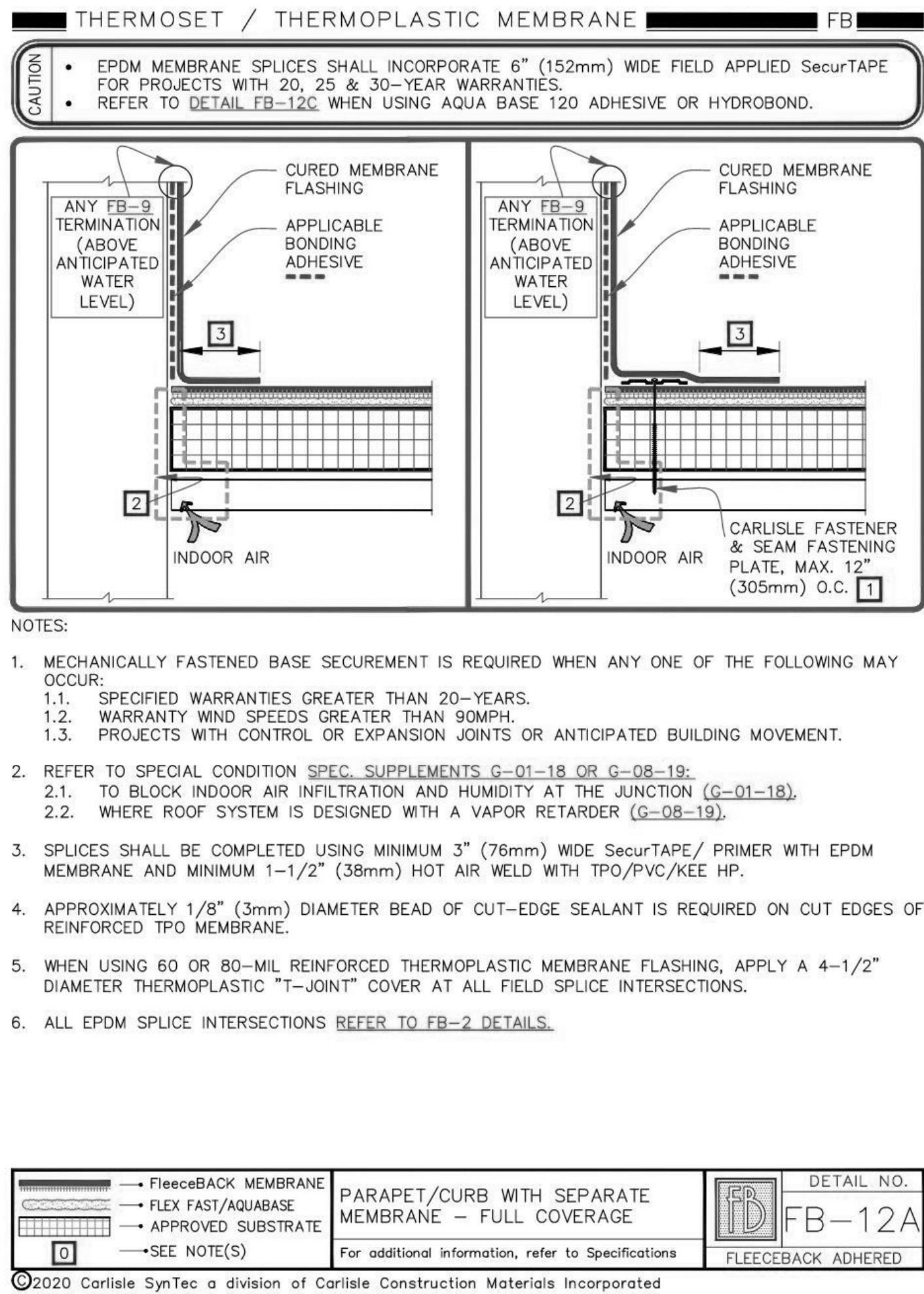
2 TYPICAL SECTION DETAIL @ SECOND FLOOR
SCALE: 1 1/2" = 1'-0"



5 SOFFIT DETAIL 1
SCALE: 1 1/2" = 1'-0"











North Carolina

3333 Jaeckle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

Maryland
312 West Main St, Suite 300
Salisbury, MD 21801
410-741-7155

Delaware
309 S Governors Ave
Newark, NJ 07102

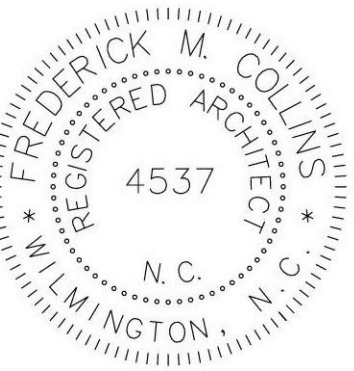
Dover, DE 19904
302.734.7950
Rittenhouse Station
250 South Main Street, Suite 109

Newark, DE 19711
302.369.3700
www.beckermorgan.com

ISSUED
FOR BIDDING

NOT FOR CONSTRUCTION

ISSUED: 04/23/2020



PROJECT TITLE

NORTH
BRUNSWICK
HIGH SCHOOL
NEW BUILDING

114 SCORPION DRIVE N.E.
LELAND, NC 28451

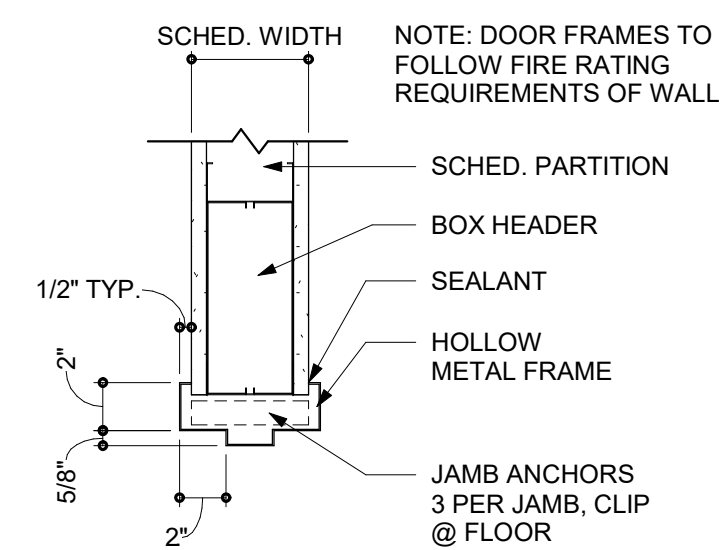
DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

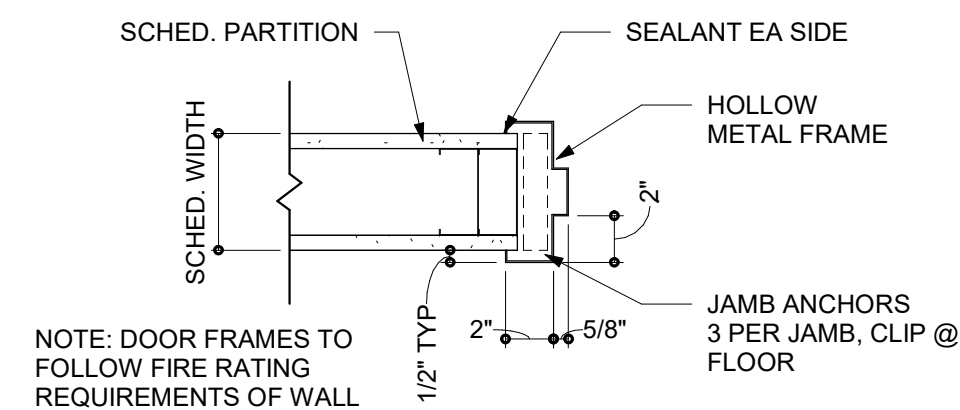
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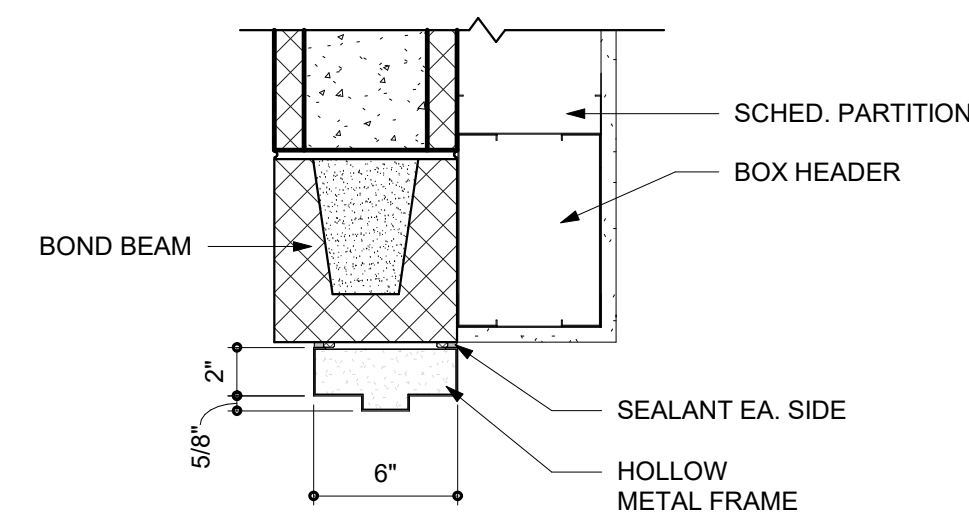
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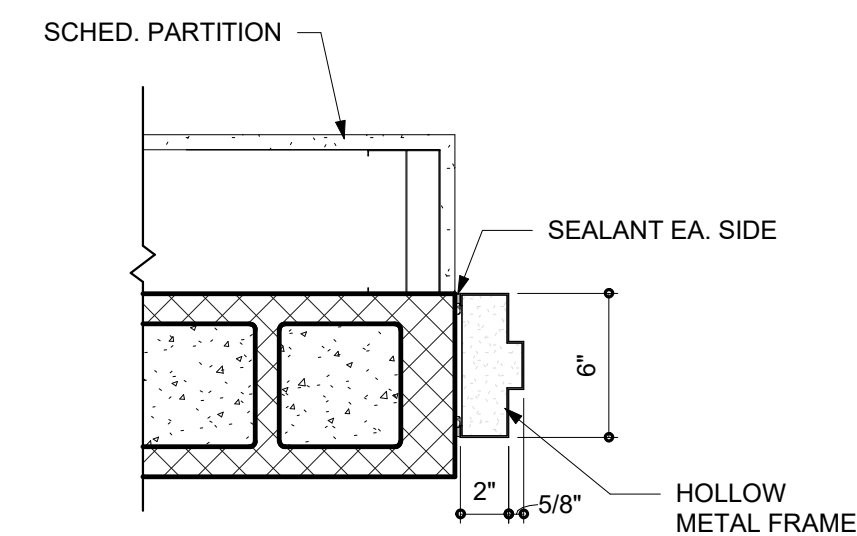
1 TYPICAL INTERIOR DOOR HEAD



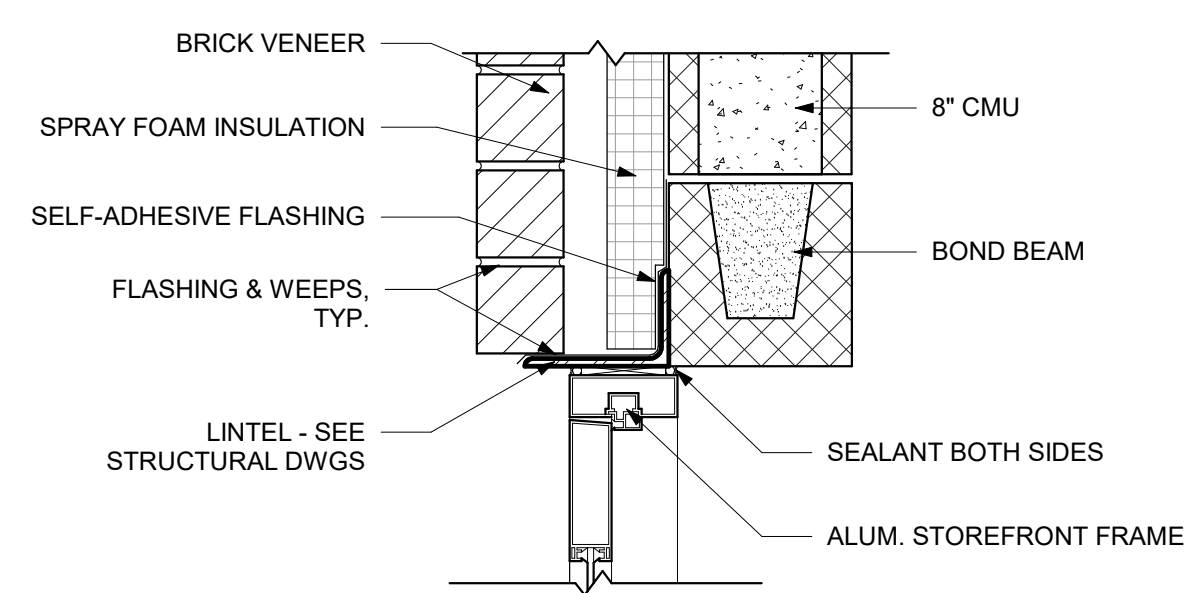
2 TYPICAL INTERIOR DOOR JAMB



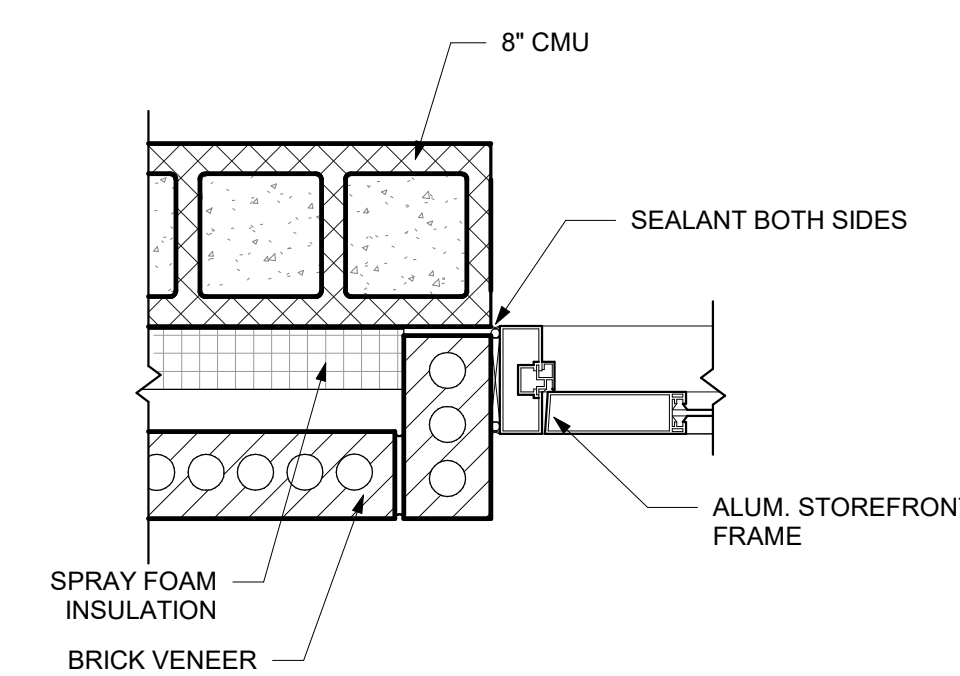
3 INTERIOR DOOR HEAD @ STAIR
SCALE: 1 1/2" = 1'-0"



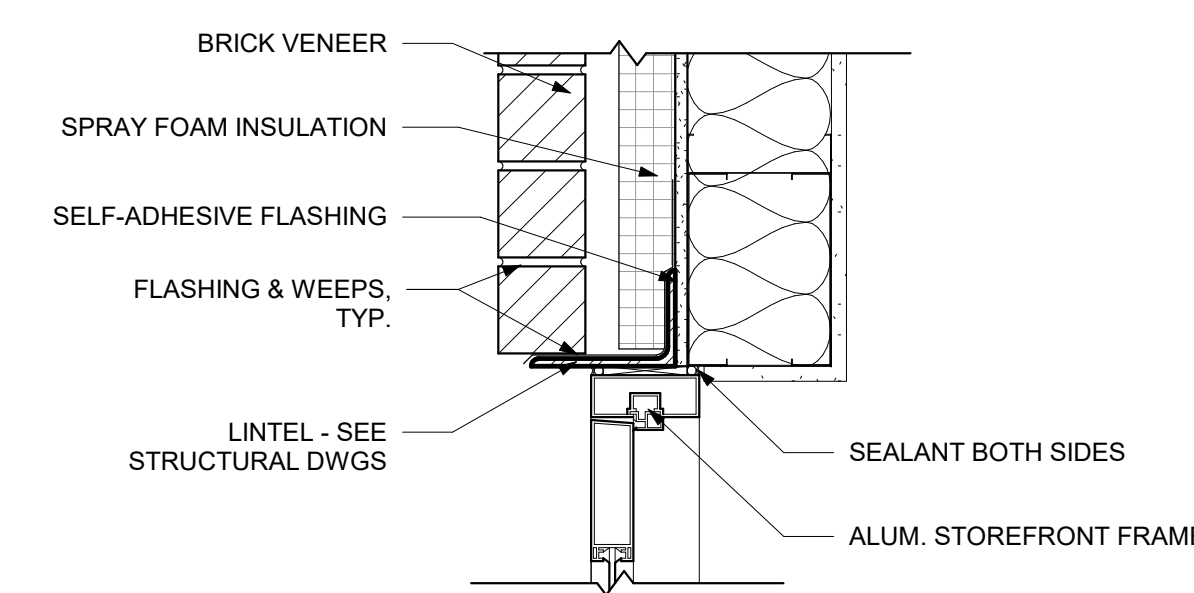
4 INTERIOR DOOR JAMB @ STAIR
SCALE: 1 1/2" = 1'-0"



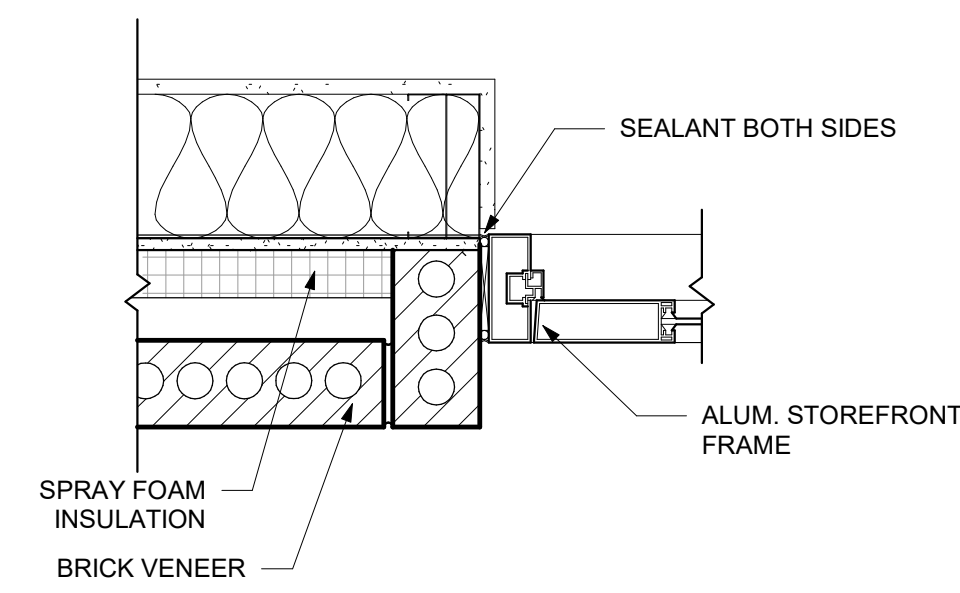
5 EXTERIOR ALUM. DOOR HEAD
@ CMU WALL



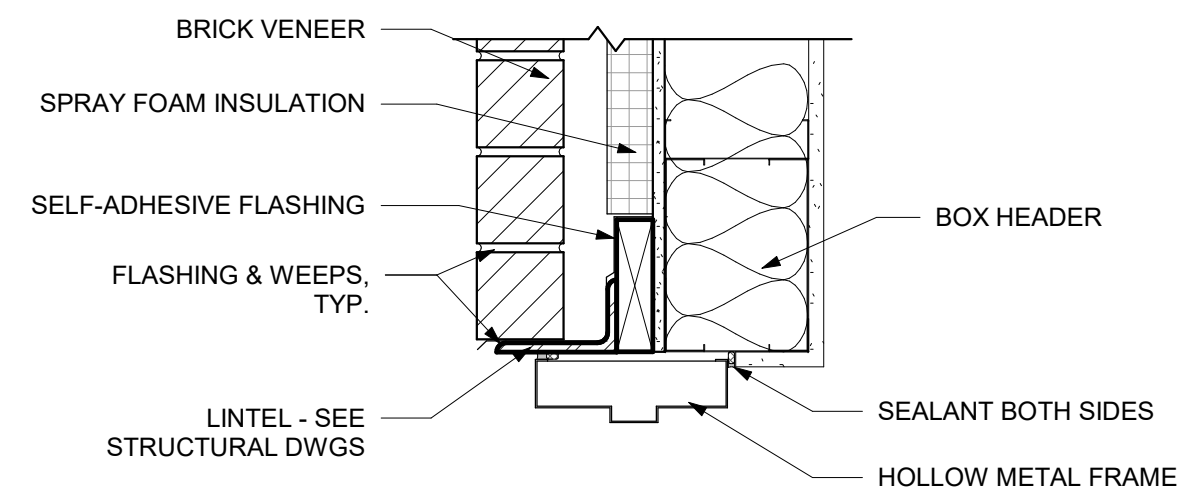
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@ CMU WALL



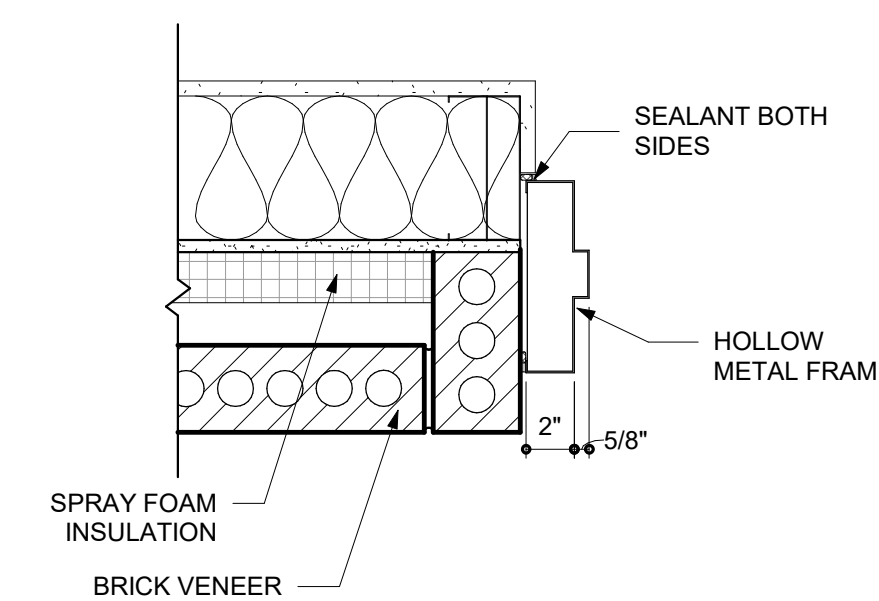
7 EXTERIOR ALUM. DOOR HEAD
@ STUD WALL



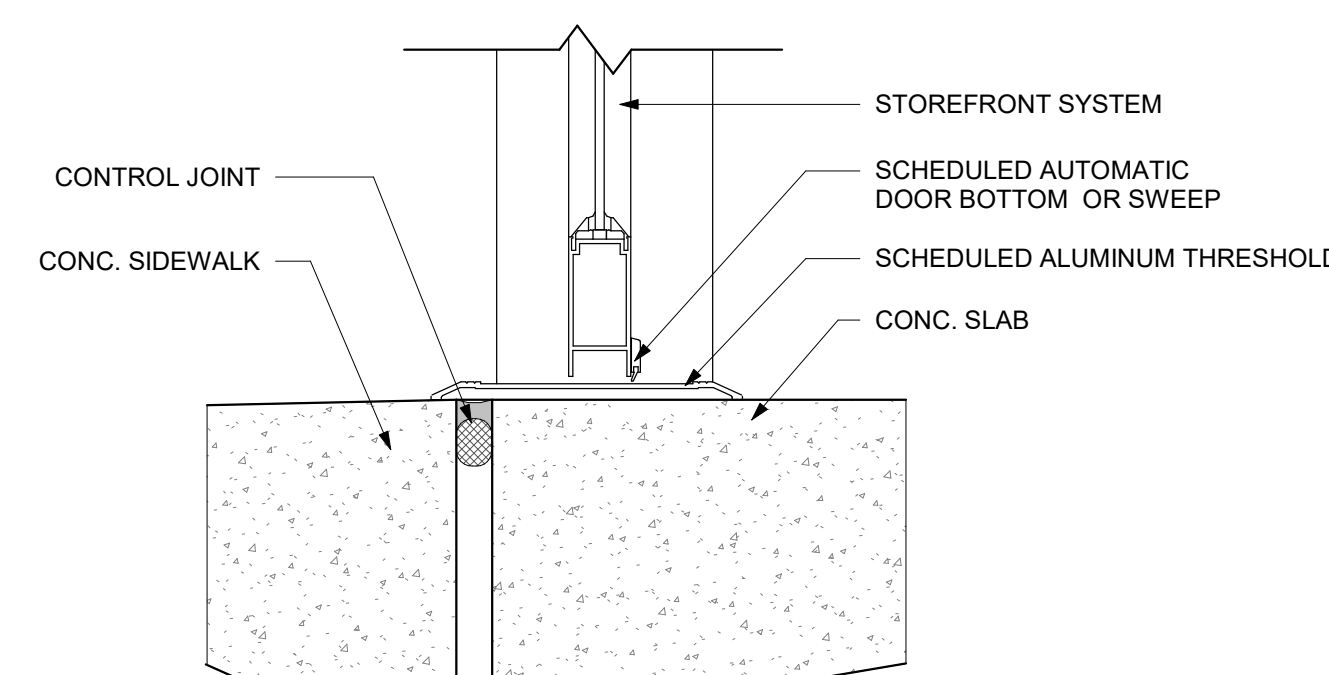
8 EXTERIOR ALUM. DOOR JAMB
@ STUD WALL



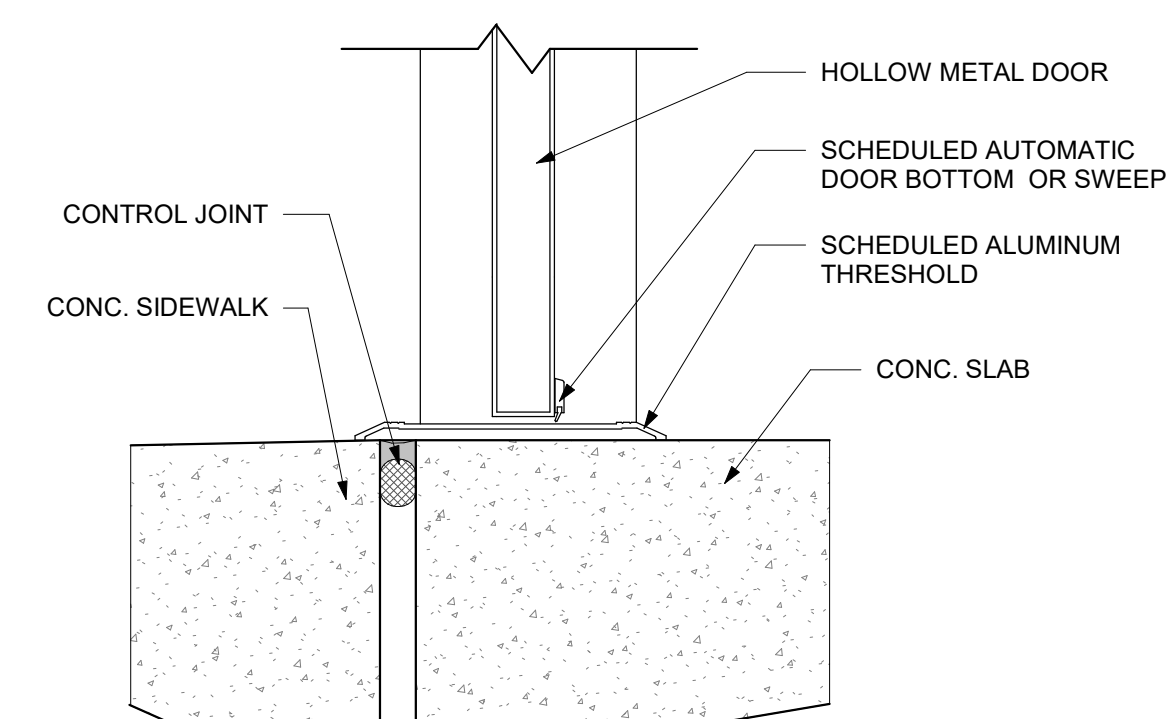
9 EXTERIOR HM DOOR HEAD



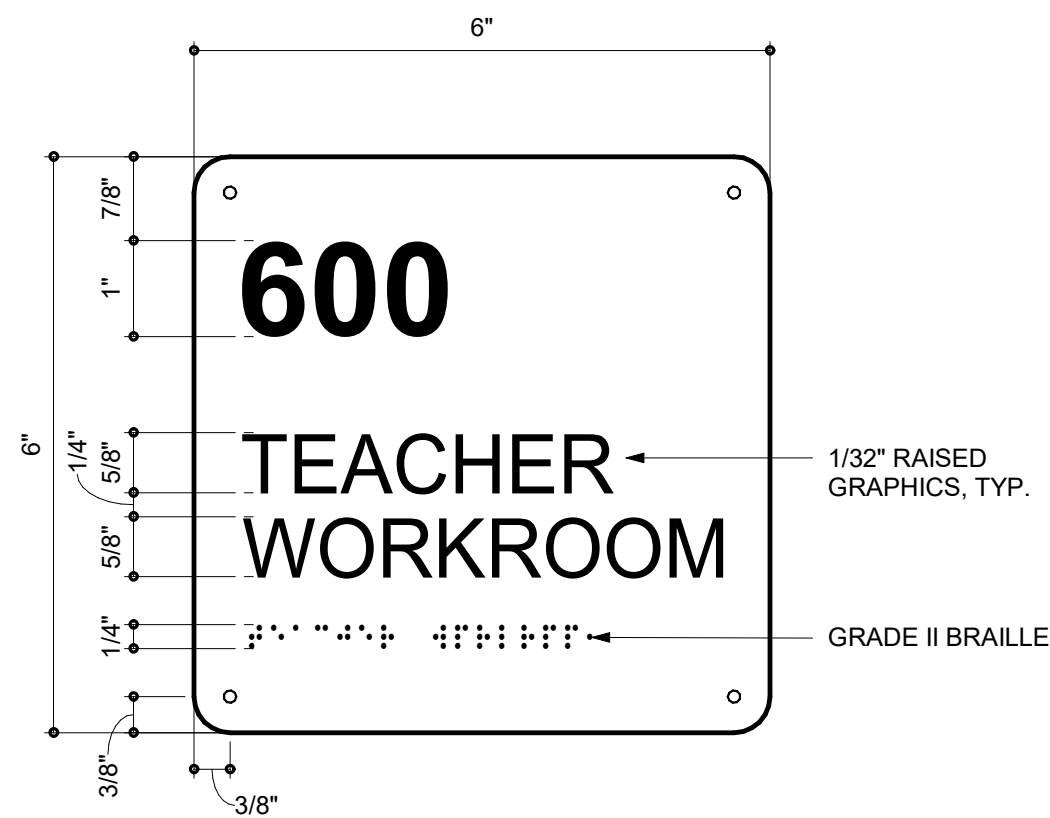
10 EXTERIOR HM DOOR JAMB



11 THRESHOLD @ ALUM. DOOR

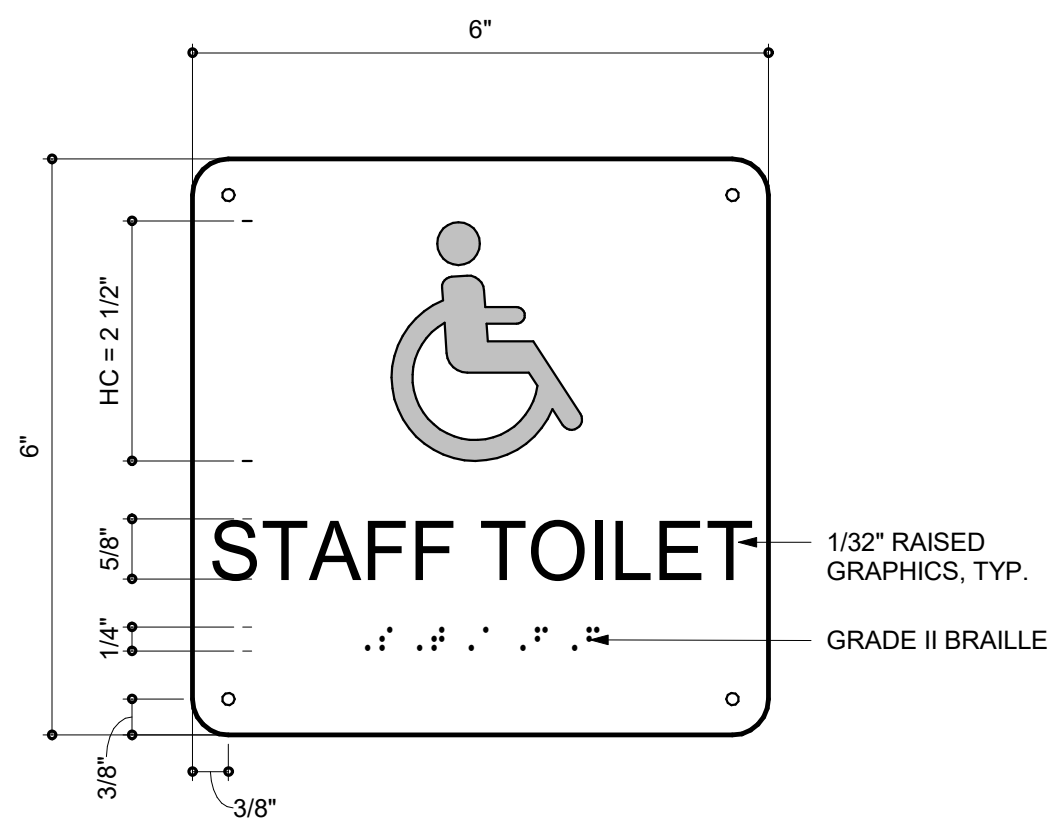


12 THRESHOLD @ HM DOOR



2 SIGN TYPE A

SCALE : 6" = 1' 0"



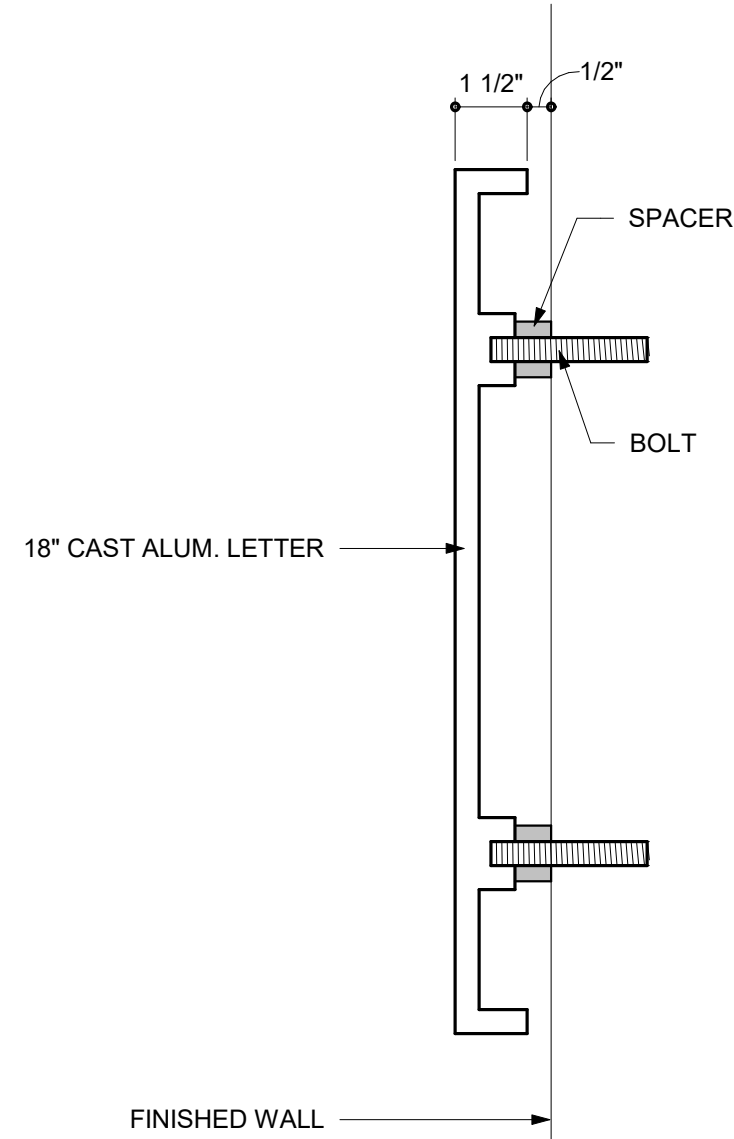
4 SIGN TYPE C

SCALE : 6" = 1' 0"



5 SIGN TYPE D

SCALE : 6" = 1' 0"



7 SIGN TYPE F SCALE : 3" = 1' 0"

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MORGAN**
G R O U P

**ARCHITECTURE
P L A N N I N G**

North Carolina
3333 Jackline Drive, Suite 120
Wilmington, NC 28403
910.341.3600

Maryland
312 West Main St., Suite 300
Salisbury, MD 21801
410.546-0100

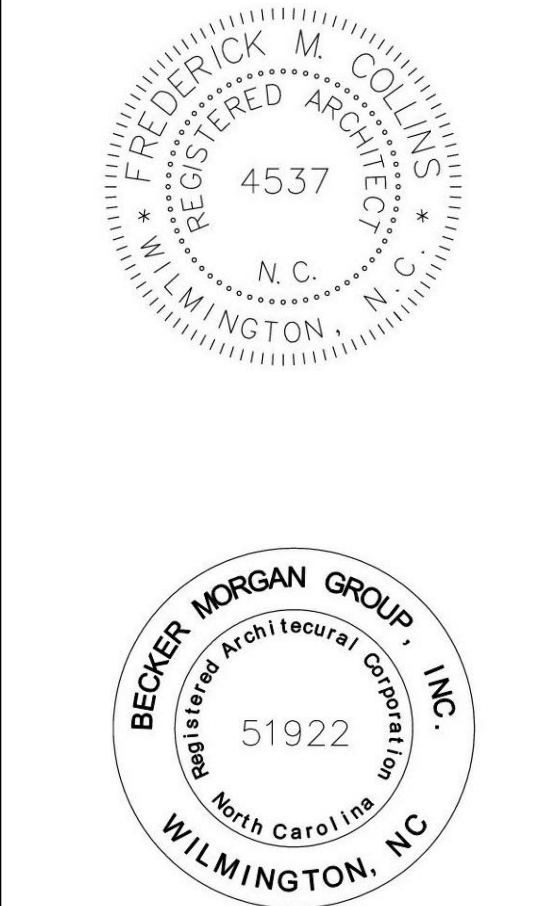
Delaware
309 S Governors Ave
Dover, DE 19904
302.754-7950

Rittenhouse Station
250 South Main Street, Suite 109
Newark, DE 19711
302.469.3700
www.beckermorgan.com

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FOR BIDDING

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ISSUED: 04/23/2020



PROJECT TITLE

**NORTH
BRUNSWICK
HIGH SCHOOL
NEW BUILDING**

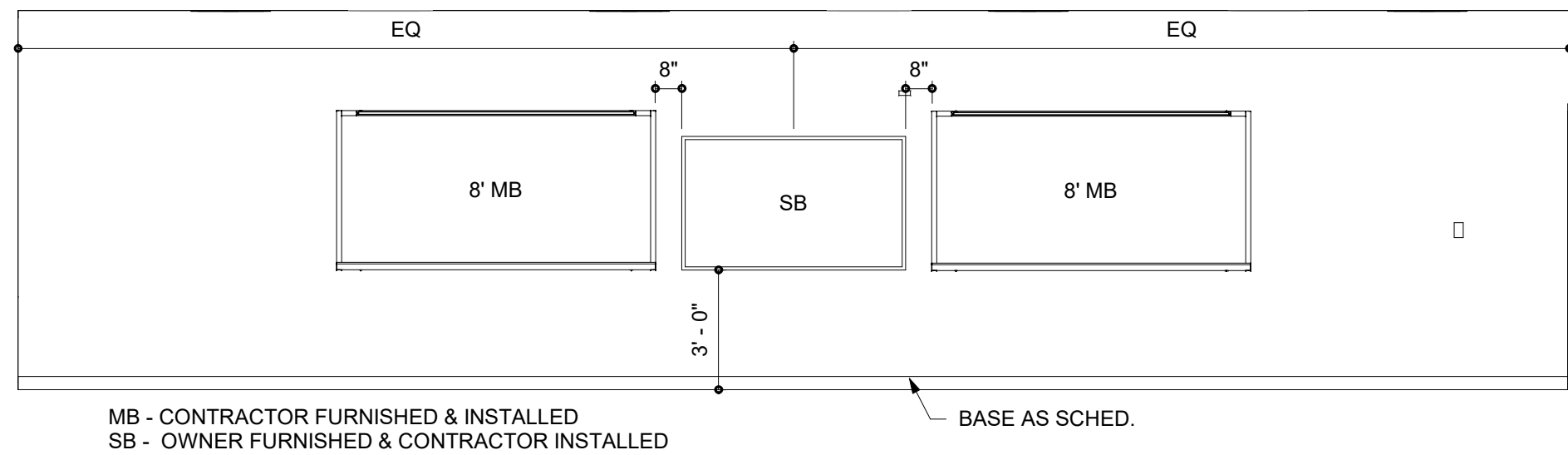
114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

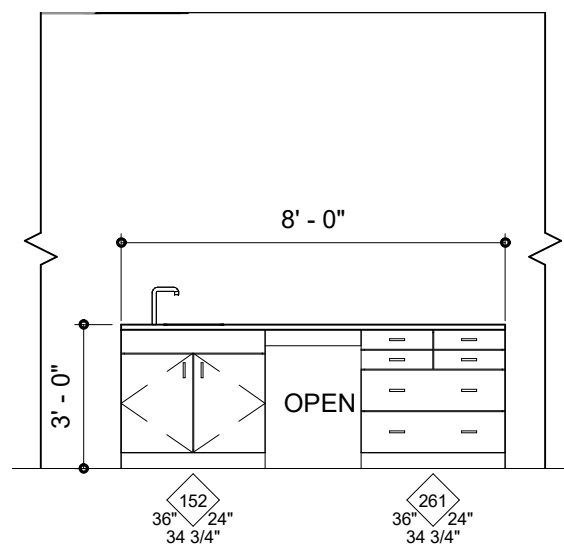
SHEET TITLE

SIGNAGE SCHEDULE
AND DETAILS

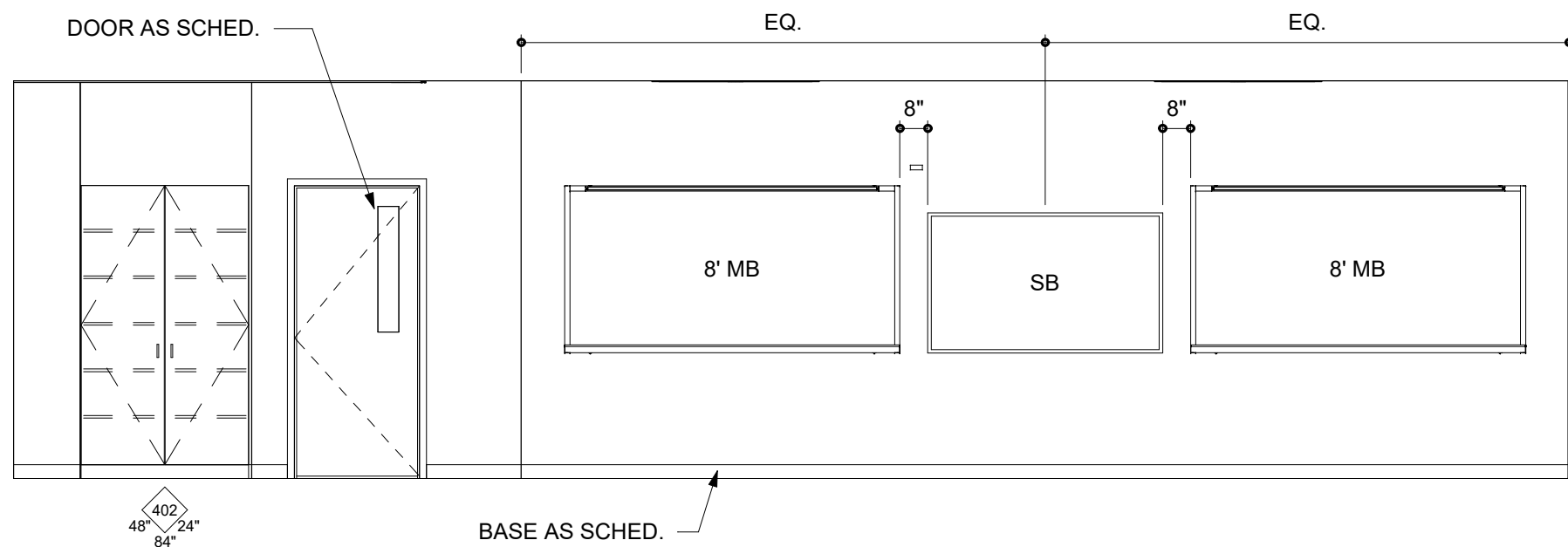
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	04.23.20	ISSUED FOR BIDDING
	03.26.20	100% REVIEW SUBMISSION
	10.14.19	NCDP: DO SUBMISSION
	7.30.19	SD PROGRESS DRAWINGS
	7.11.19	NCDP: SD SUBMISSION
Mark	Date	Description
PROJECT NO:		2019082.00
DATE:		04.23.2020
SCALE:		As Indicated
DRAWN BY/Author		PROJ MG/Checker
<h1>A605</h1> <p>COPYRIGHT © 2020</p>		



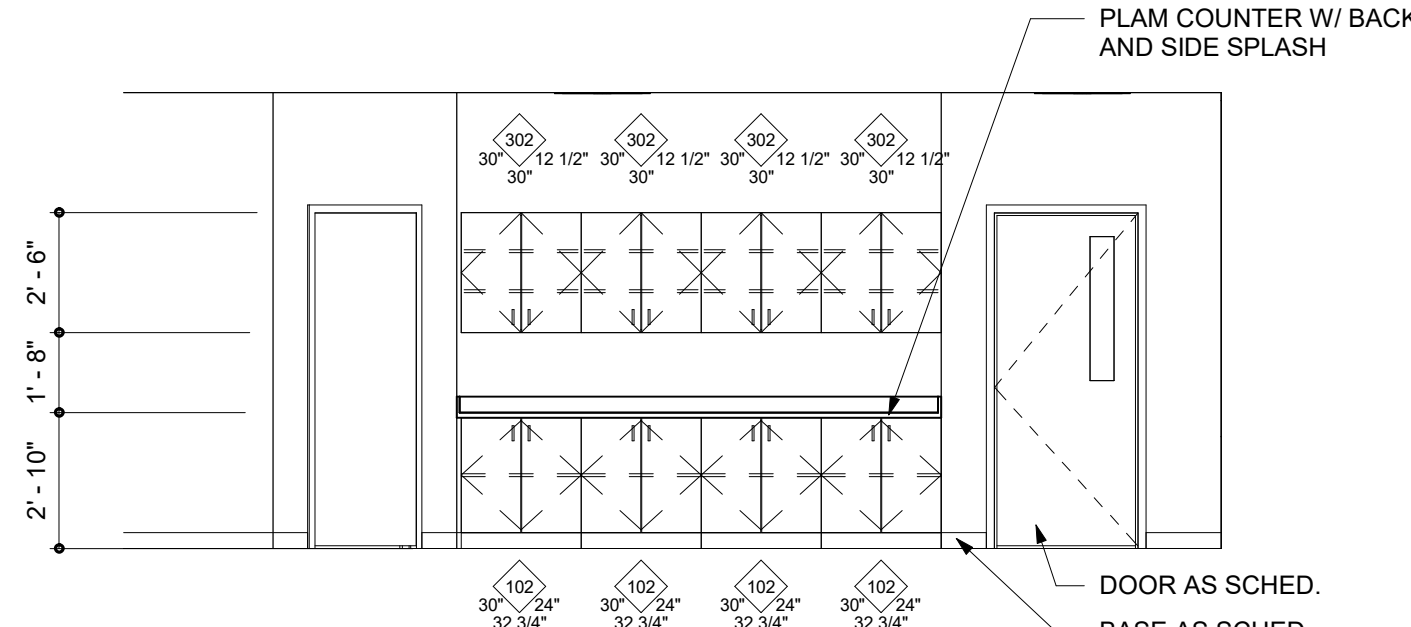
1 TYPICAL TEACHING WALL
SCALE: 1/4" = 1'-0"



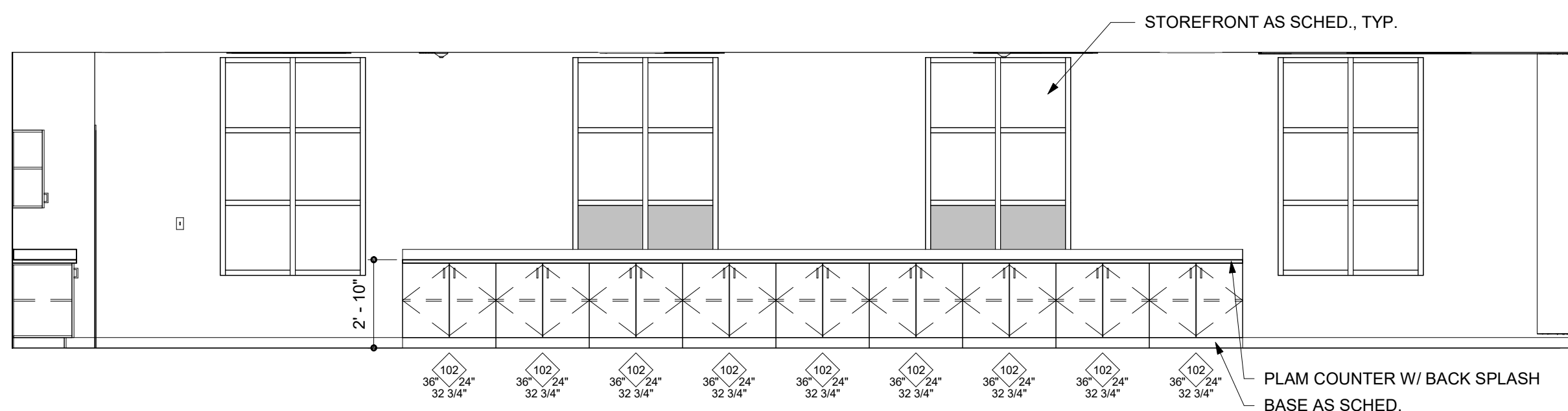
2 HEALTH SCIENCE 601 - TEACHER
SCALE: 1/4" = 1'-0"



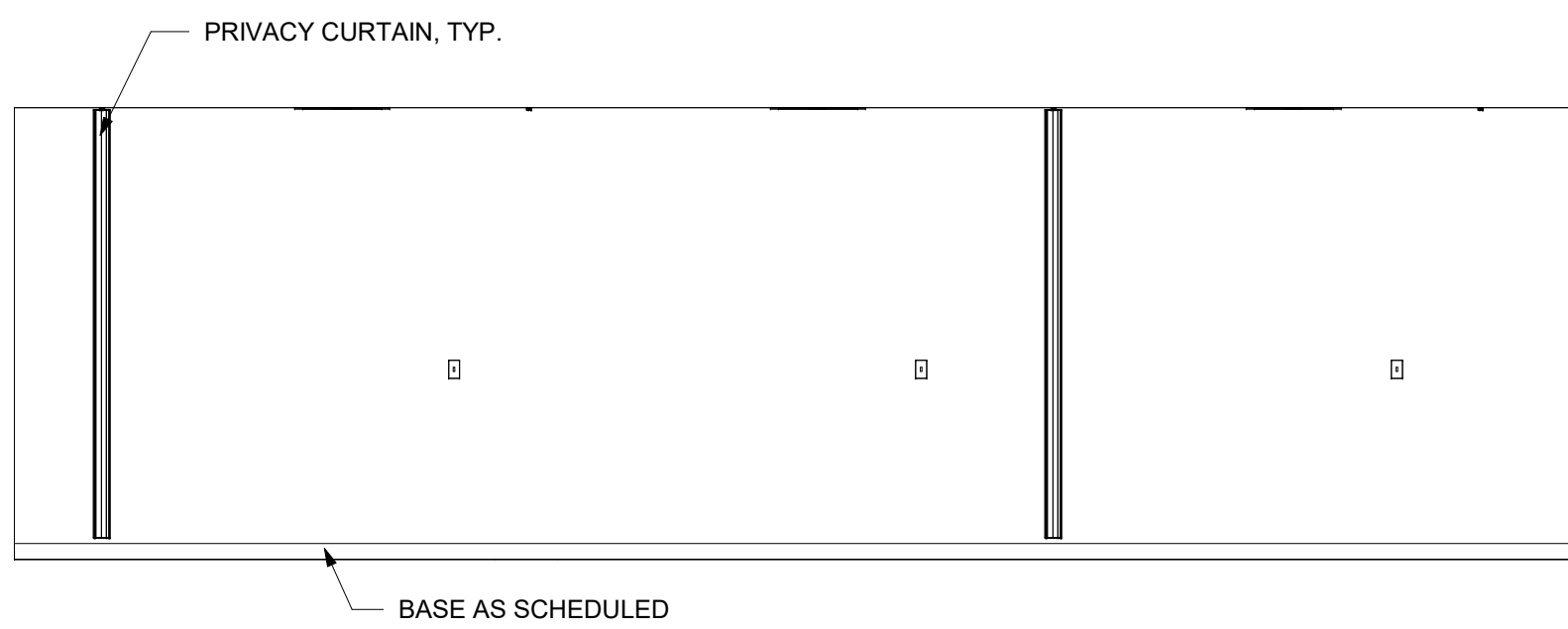
3 HEALTH SCIENCE 601 - NORTH
SCALE: 1/4" = 1'-0"



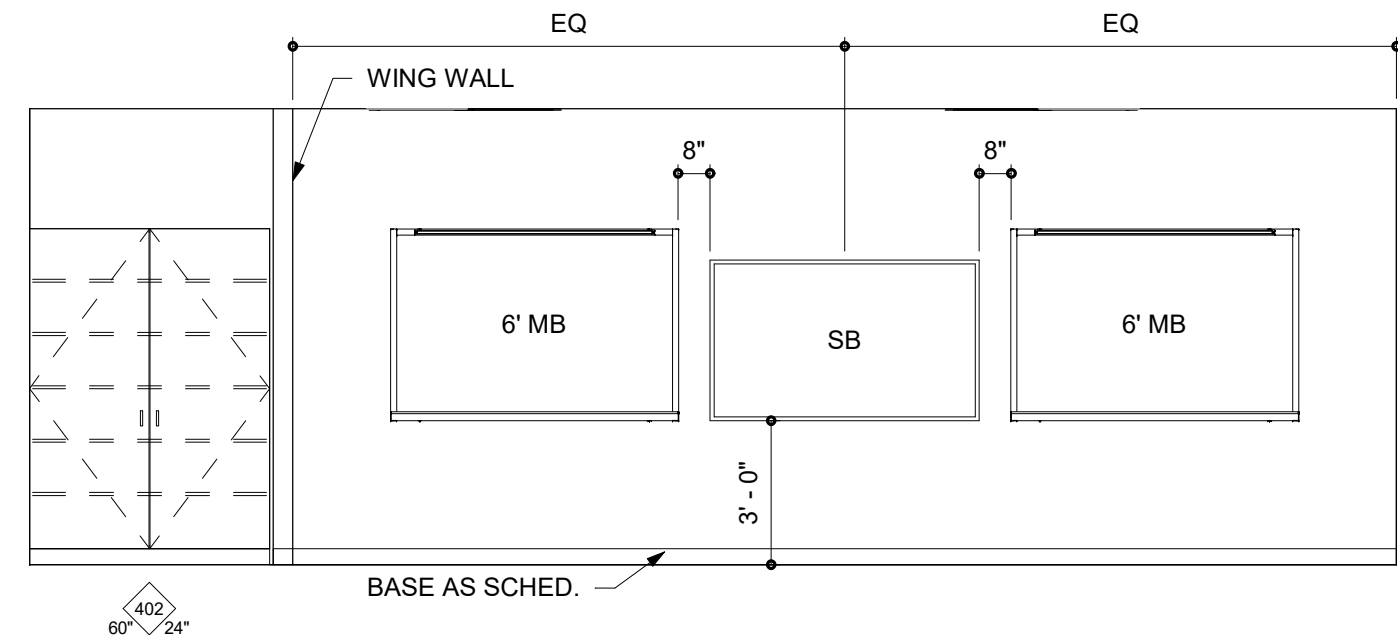
4 HEALTH SCIENCE 601 - EAST
SCALE: 1/4" = 1'-0"



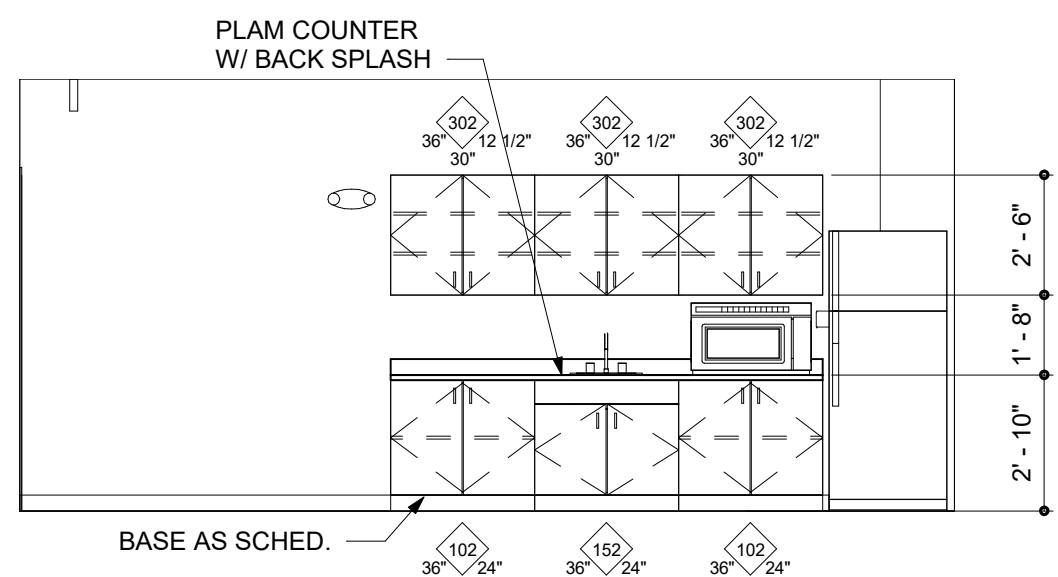
5 HEALTH SCIENCE 601 - SOUTH
SCALE: 1/4" = 1'-0"



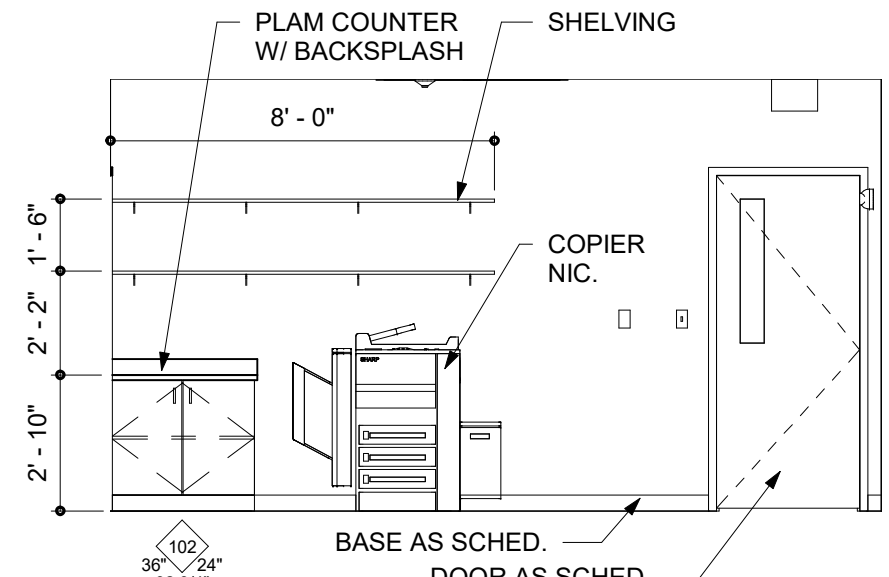
6 HEALTH SCIENCE 601 - WEST
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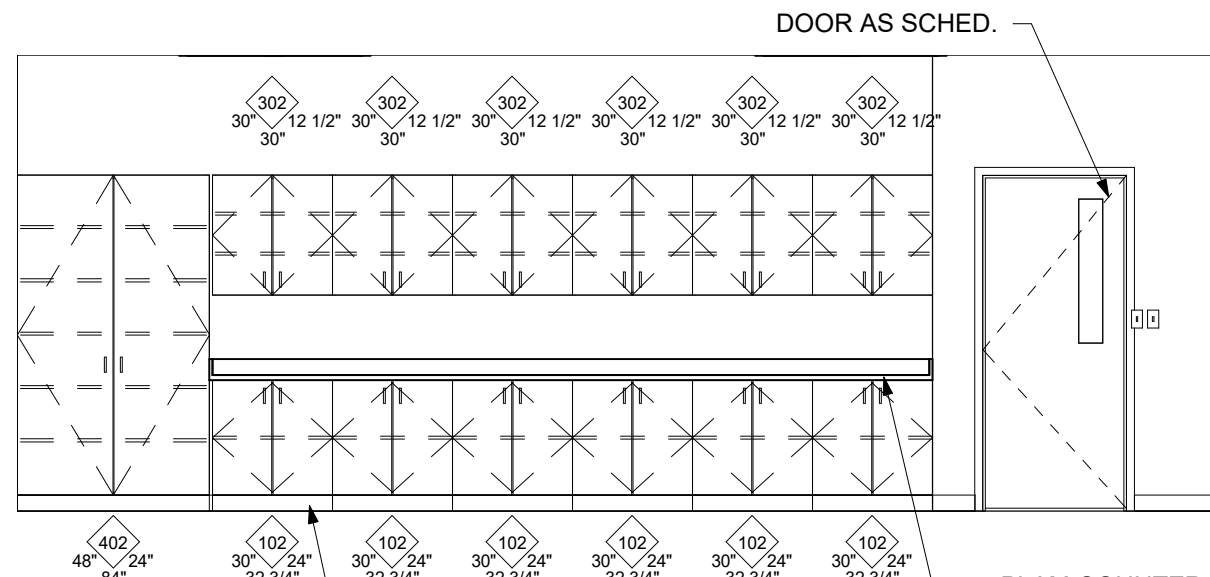
7 CTE-BUSINESS 604 - NORTH
SCALE: 1/4" = 1'-0"



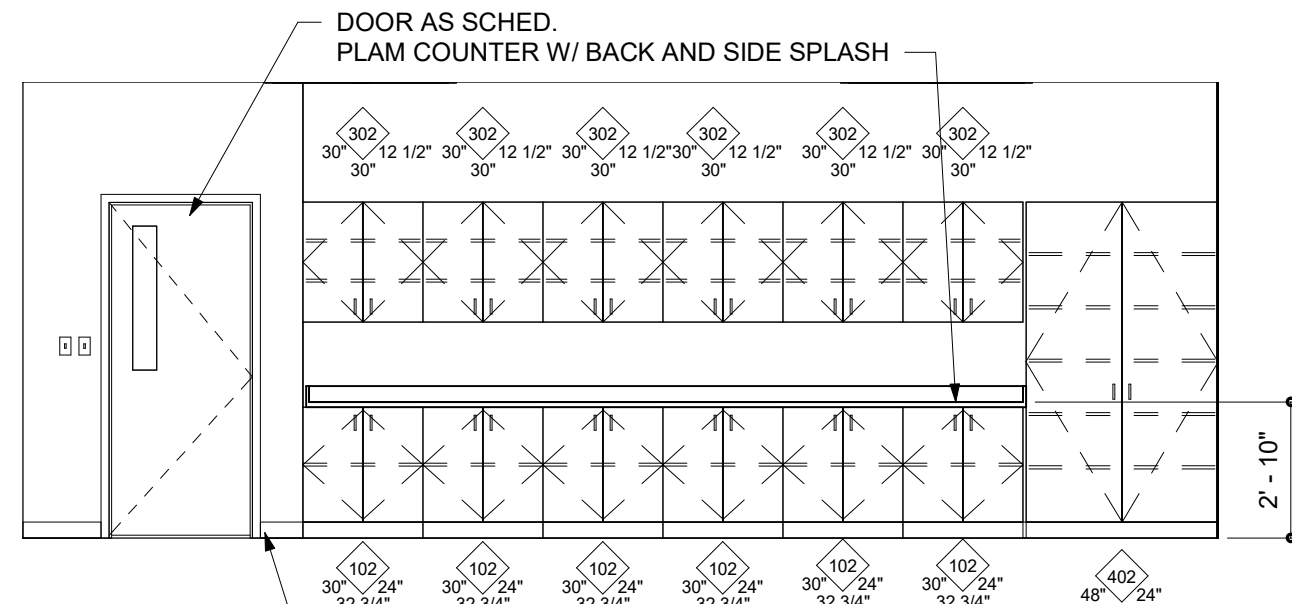
8 WORK ROOM 608 - WEST
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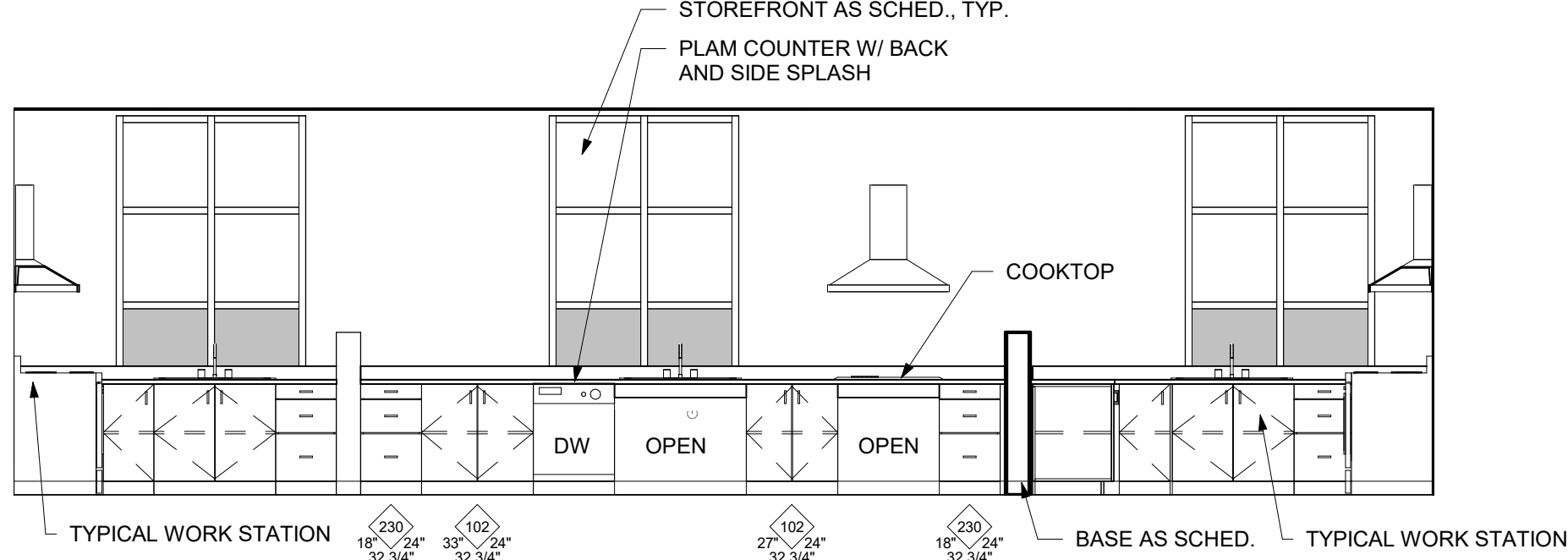
9 WORK ROOM 608 - SOUTH
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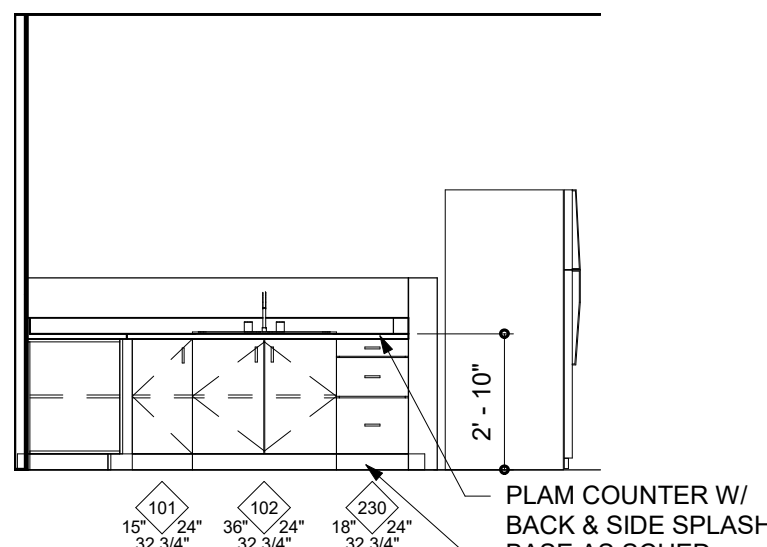
10 FACS CLASSROOM 614 - SOUTH
SCALE: 1/4" = 1'-0"



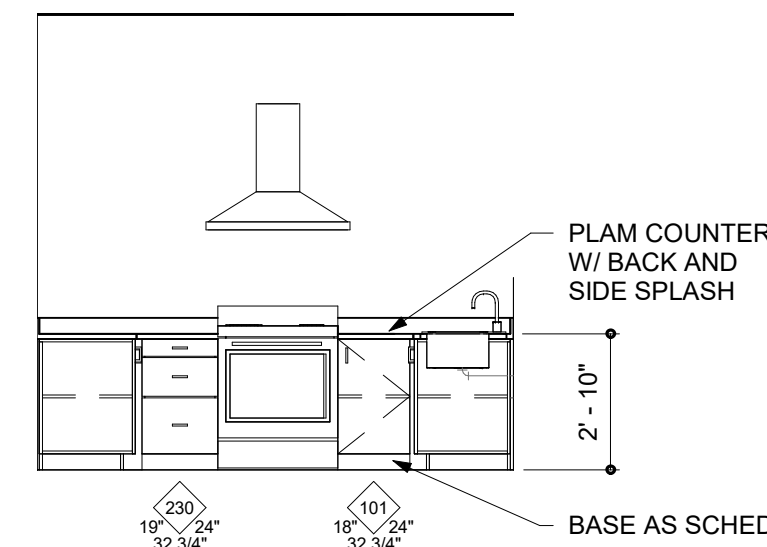
11 FACS LAB 616 - SOUTH
SCALE: 1/4" = 1'-0"



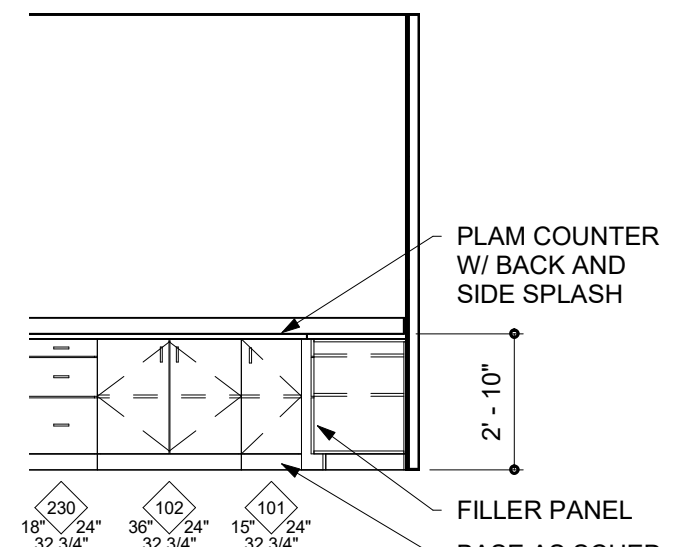
12 FOOD LAB 618 - NORTH
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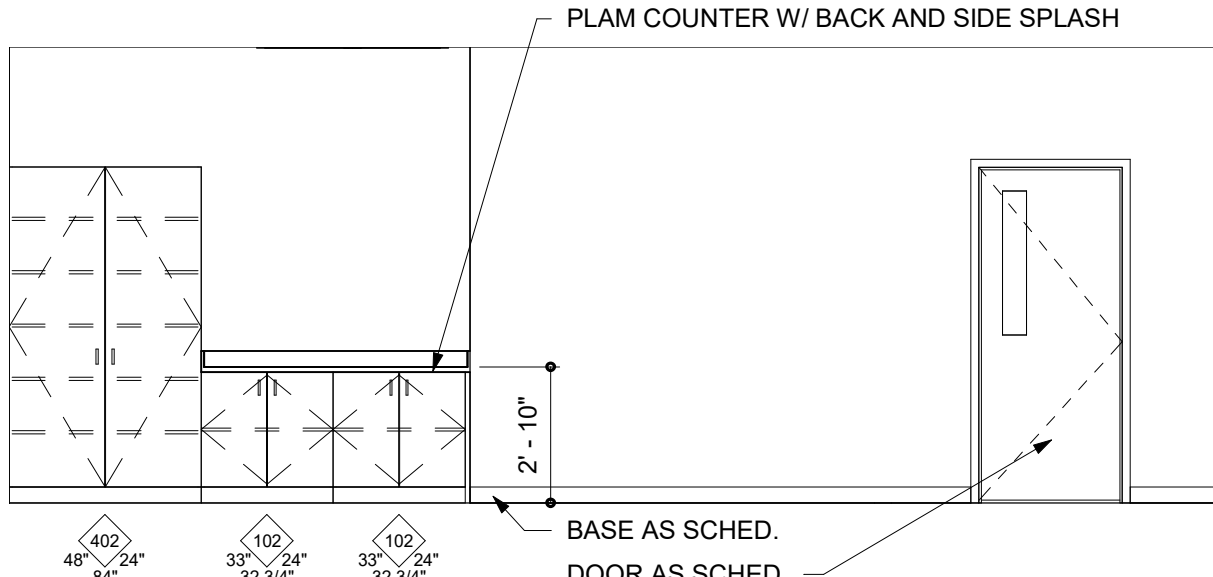
13 FOOD LAB 618 TYPICAL WORK STATION - NORTH
SCALE: 1/4" = 1'-0"



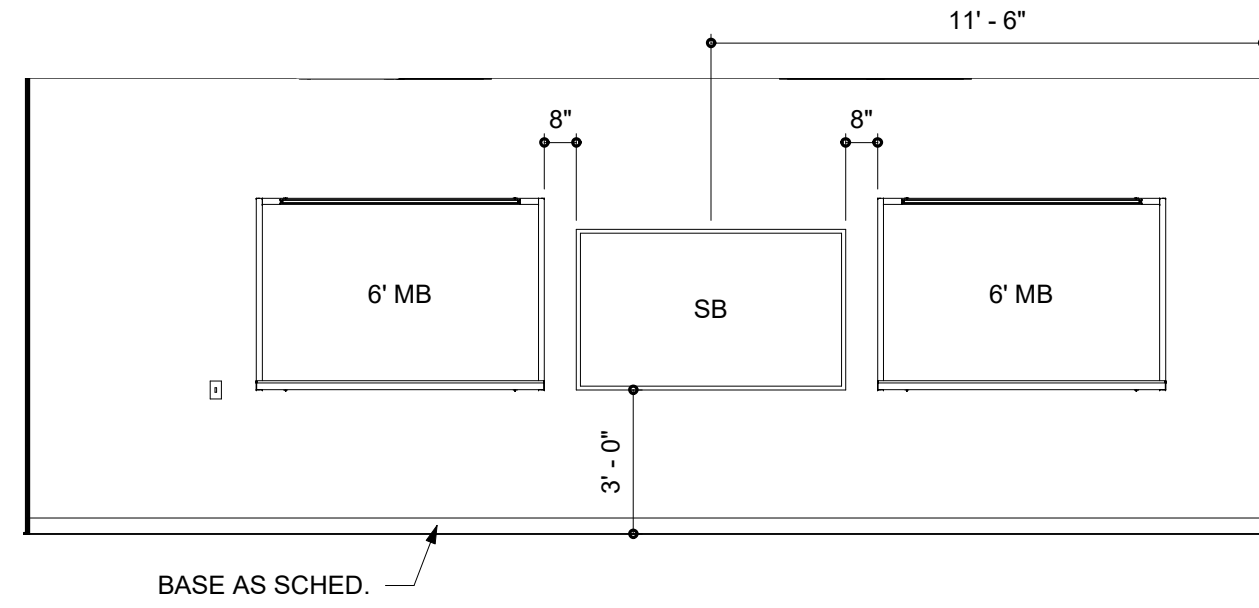
14 FOOD LAB 618 TYPICAL WORK STATION - WEST
SCALE: 1/4" = 1'-0"



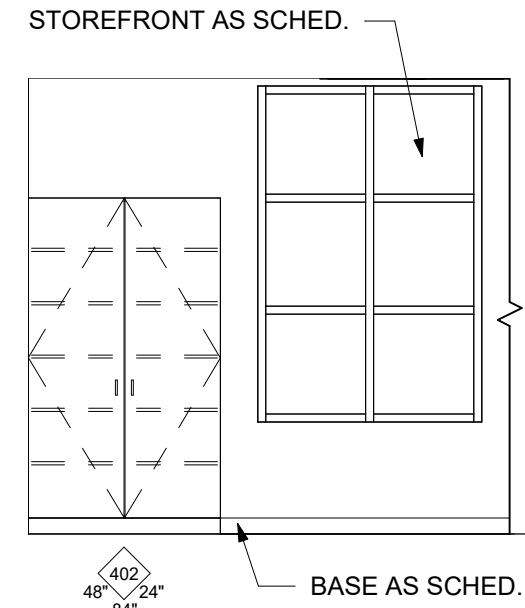
15 FOOD LAB 618 TYPICAL WORK STATION - SOUTH
SCALE: 1/4" = 1'-0"



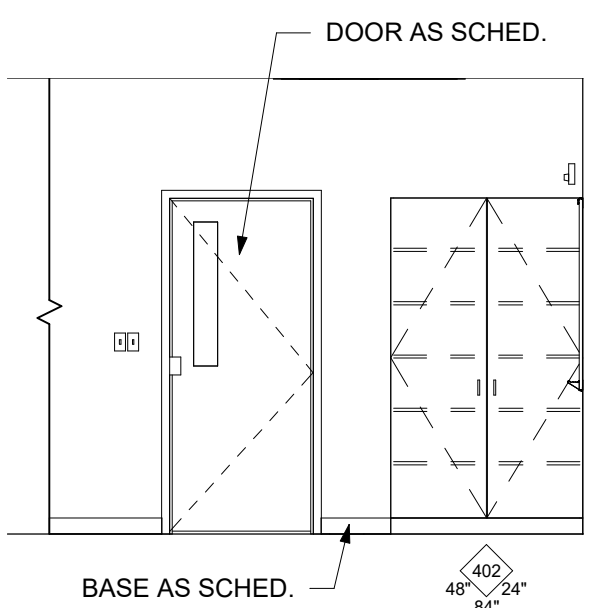
16 GENERAL CLASSROOM 701 - NORTH
SCALE: 1/4" = 1'-0"



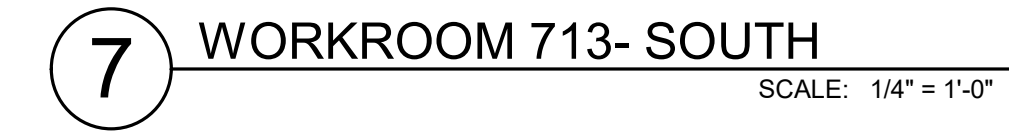
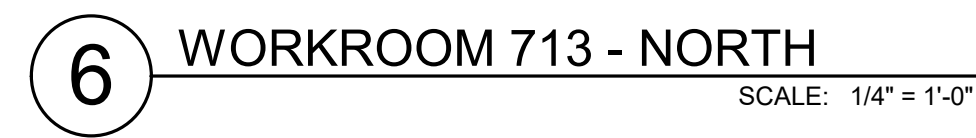
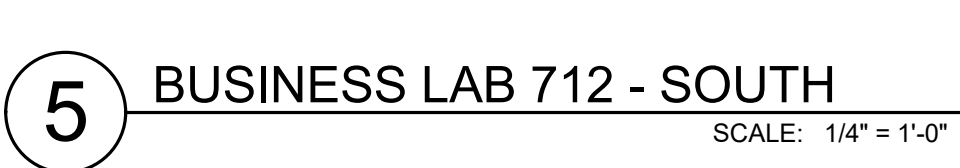
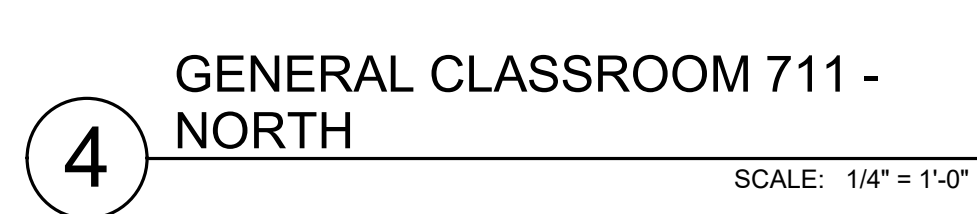
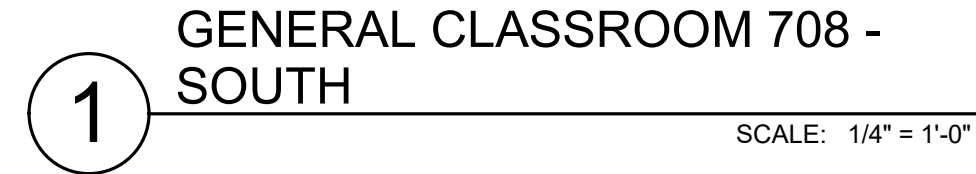
17 CTE DRAFTING LAB 702 - NORTH
SCALE: 1/4" = 1'-0"

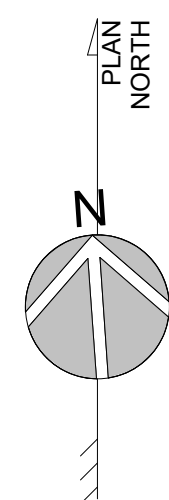


18 CTE DRAFTING LAB 702 - SOUTH
SCALE: 1/4" = 1'-0"

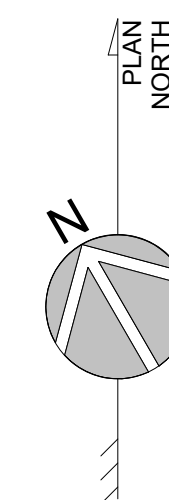


19 CTE ADOBE LAB 706 - SOUTH
SCALE: 1/4" = 1'-0"





SCALE: 1/8" = 1'-0"



SCALE: 1/8" = 1'-0"

KEYNOTES	
1	REFER TO SITE UTILITY PLAN C-4.0 FOR CONTINUATION
2	2"V-STACK; WCO
3	2"V-STACK, 2" AIR ADMITTANCE VALVE
4	2"W-DOWN, WCO; 2"V ROUTED BELOW WINDOW
5	2"V UP TO ABOVE CEILING
6	2"V-STACK
7	4"W-STACK; WCO
8	2"W-STACK; WCO
9	2"V-STACK; 2"VTR
10	PC SHALL PROVIDE AND INSTALL DISHWASHER CONNECTION KIT, INSTALLED IN ACCORDANCE WITH SECTION 802.1.6 OF THE 2018 NC PLUMBING CODE.

BECKER
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GROUP

ARCHITECTURE
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Delaware
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302.734.7950

Rittenhouse Station
250 South Main Street, Suite 109
Newark, DE 19711
302.369.3700
www.beckermorgan.com

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ISSUED: 04.23.20

CBHF
Engineers, PLLC

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Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfengineers.com
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**FINAL DRAWING
DO NOT USE FOR
CONSTRUCTION**

PROJECT TITLE

NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

	SHEET TITLE
--	-------------

CLASSROOM BUILDING FLOOR PLANS - WASTE AND VENT

ISSUE BLOCK		
	04.23.20	ISSUED FOR BIDDING
	03.26.20	100% REVIEW SUBMISSION
	01.20.20	60% CD PROGRESS DRAWING
	10.14.19	NCDPI DD SUBMISSION
	07.30.19	SD PROGRESS DRAWINGS
	07.11.19	NCDPI SD SUBMISSION
Mark	Date	Date/Issue

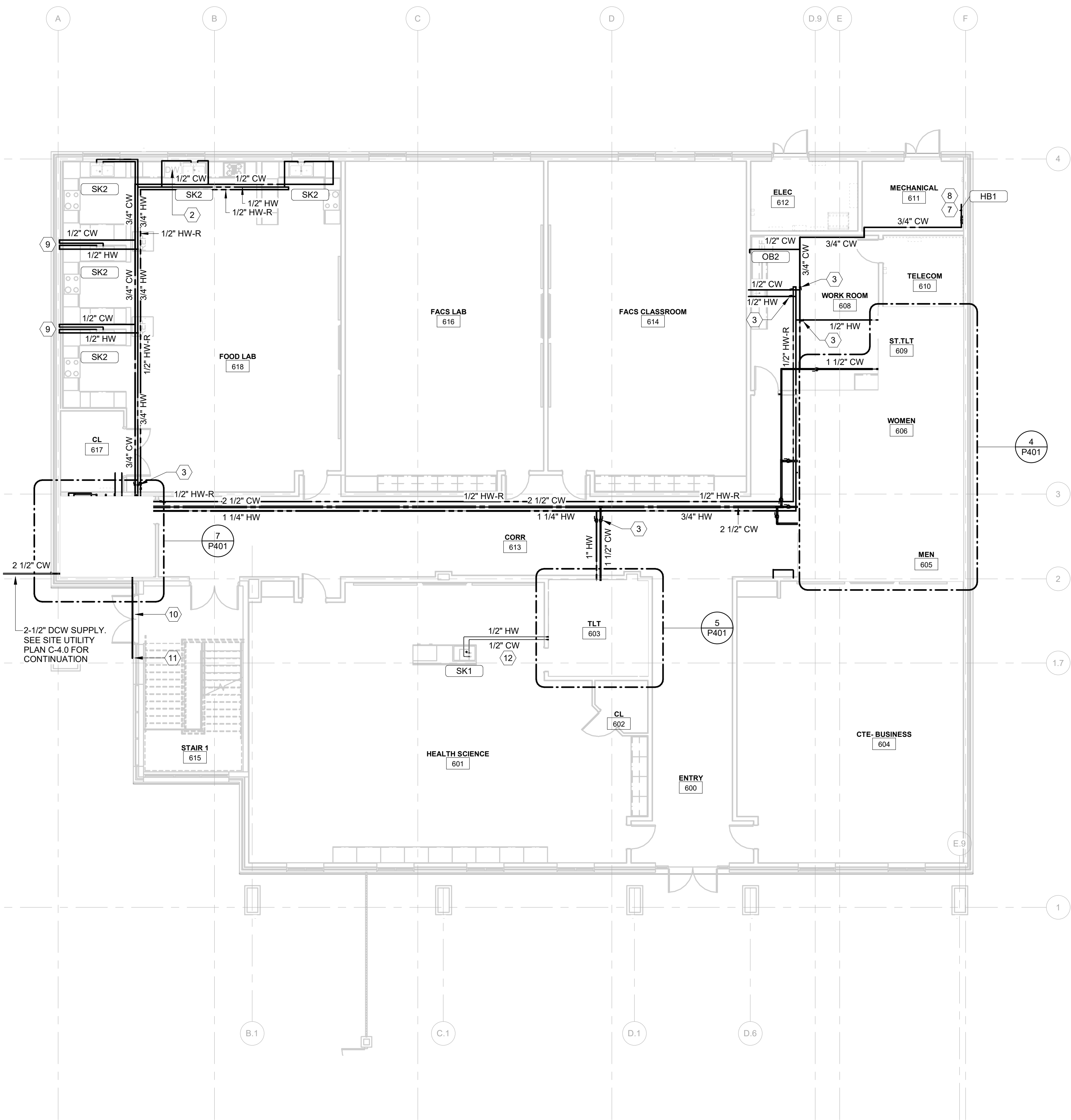
PROJECT NO:	2019082.0
DATE:	10.14.201

DATE:	10.14.201
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DRAWN BY: IRS	PROJ MGR: DMH

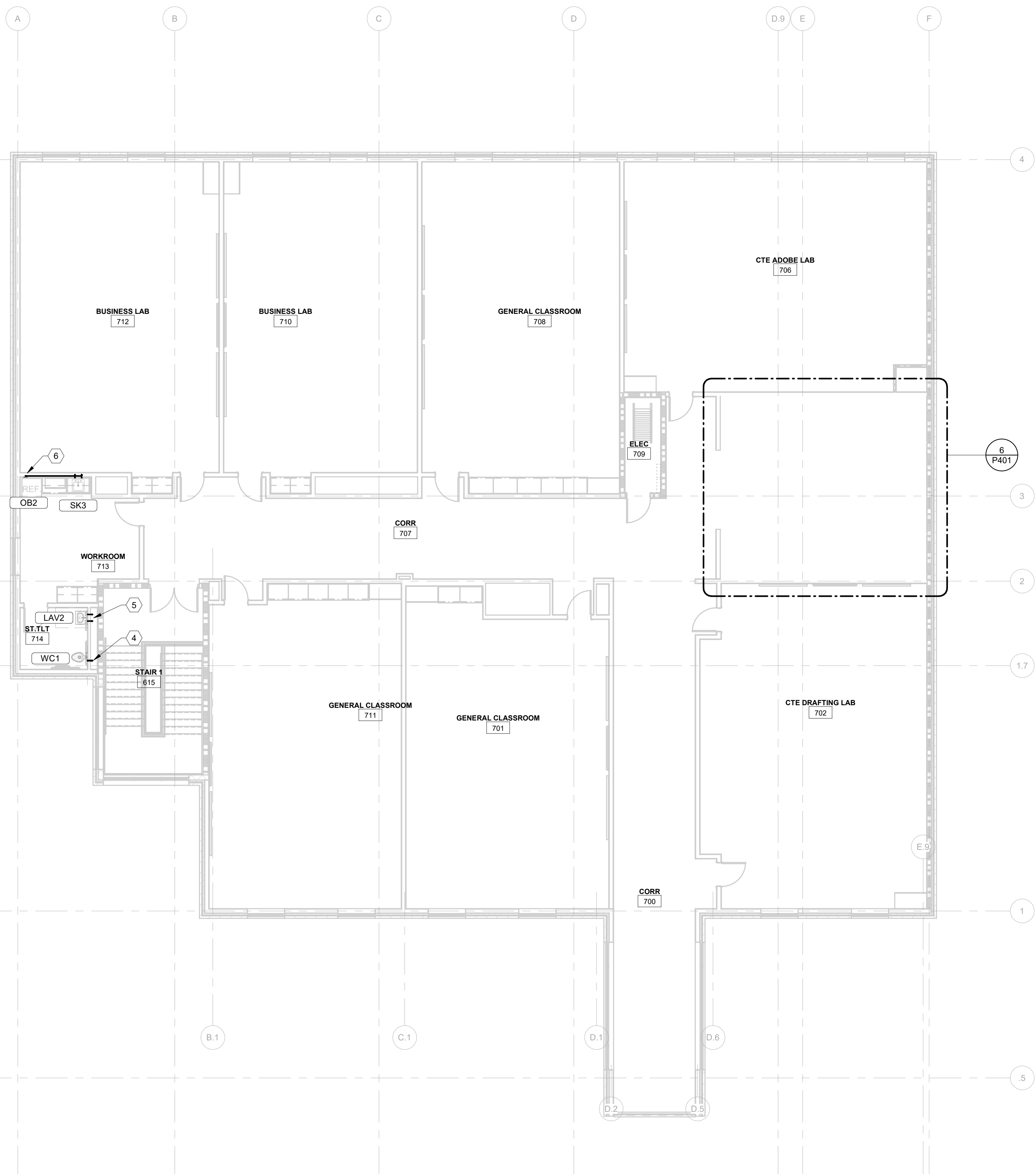
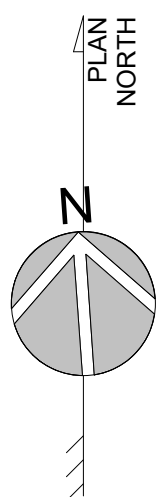
P101

11/22/2020 3:45:37 C:\Users\lstanley\Documents\MEP NBHS Addition_bs-cbhf.rvt

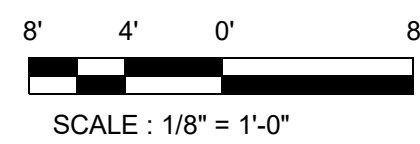
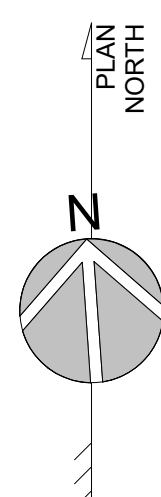
KEYNOTES	
2	PC SHALL CONNECT WATER SUPPLY TO DISHWASHER IN ACCORDANCE WITH SECTION 409.2 OF THE 2018 NC PLUMBING CODE.
3	BRANCH VALVE: TYPICAL.
4	1" DOWN FROM BELOW.
5	1/2" DOWN & DRHW FROM BELOW.
6	1/2" DOWN FROM BELOW.
7	3/4" LEAD FREE BACKFLOW PREVENTER FOR MAKE-UP WATER TO BOILER ROOM. WATTS' F109 OR EQUAL.
8	CONNECTION FROM RPT TO MECHANICAL EQUIPMENT BY MECHANICAL CONTRACTOR.
9	ROUTE DCW & DRHW DOWN TO EXTERIOR WALL AND THROUGH PERPENDICULAR HAF WALL TO SK2
10	1/2" DCW & DRHW UP TO LAVATORY ABOVE
11	1" DCW UP TO WATER CLOSET ABOVE
12	1/2" TYPE "T" SOFT COPPER UNDER SLAB. NO JOINTS PERMITTED UNDER SLAB.

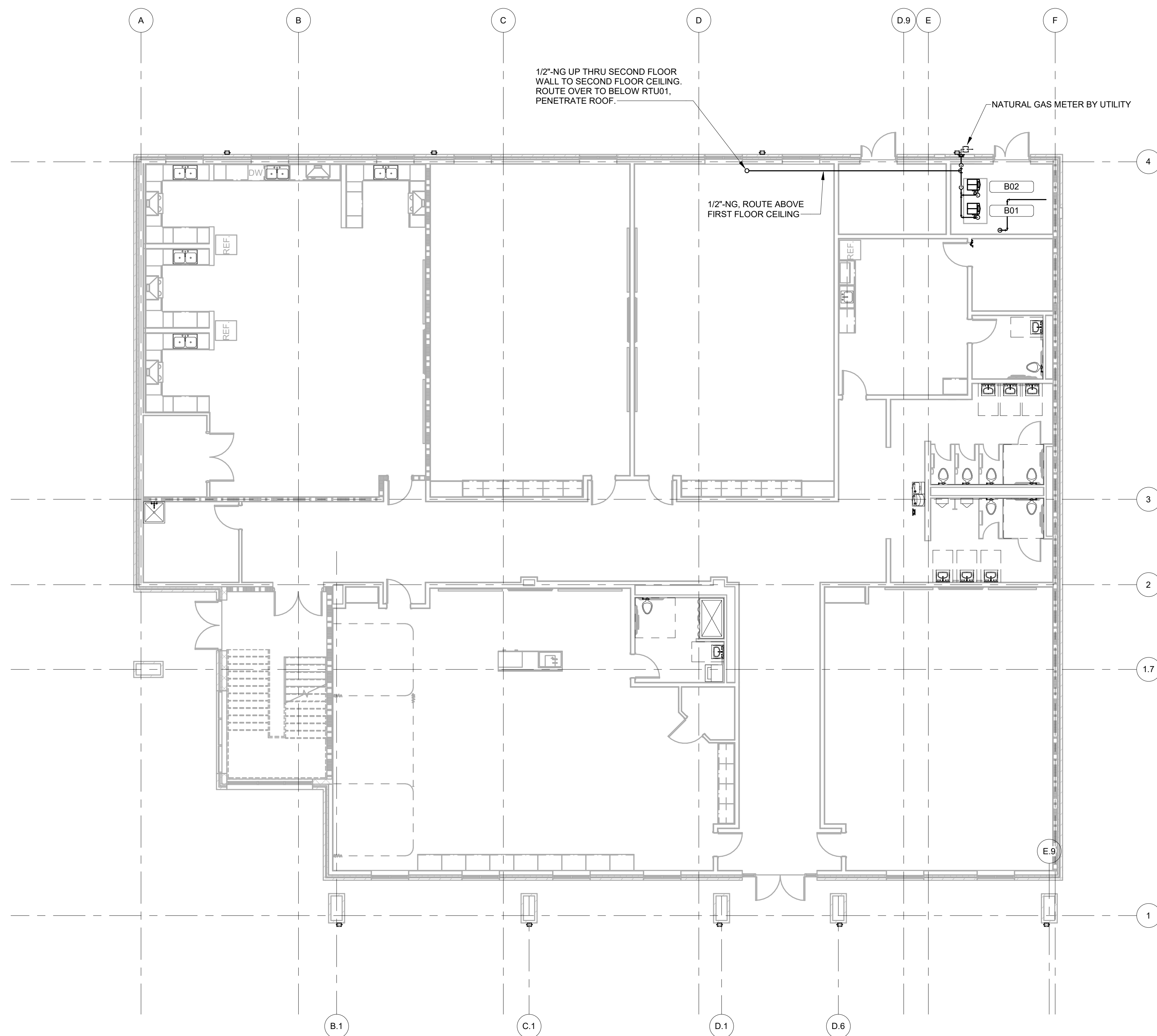


1 CLASSROOM ADDITION FIRST FLOOR DOMESTIC WATER PLAN

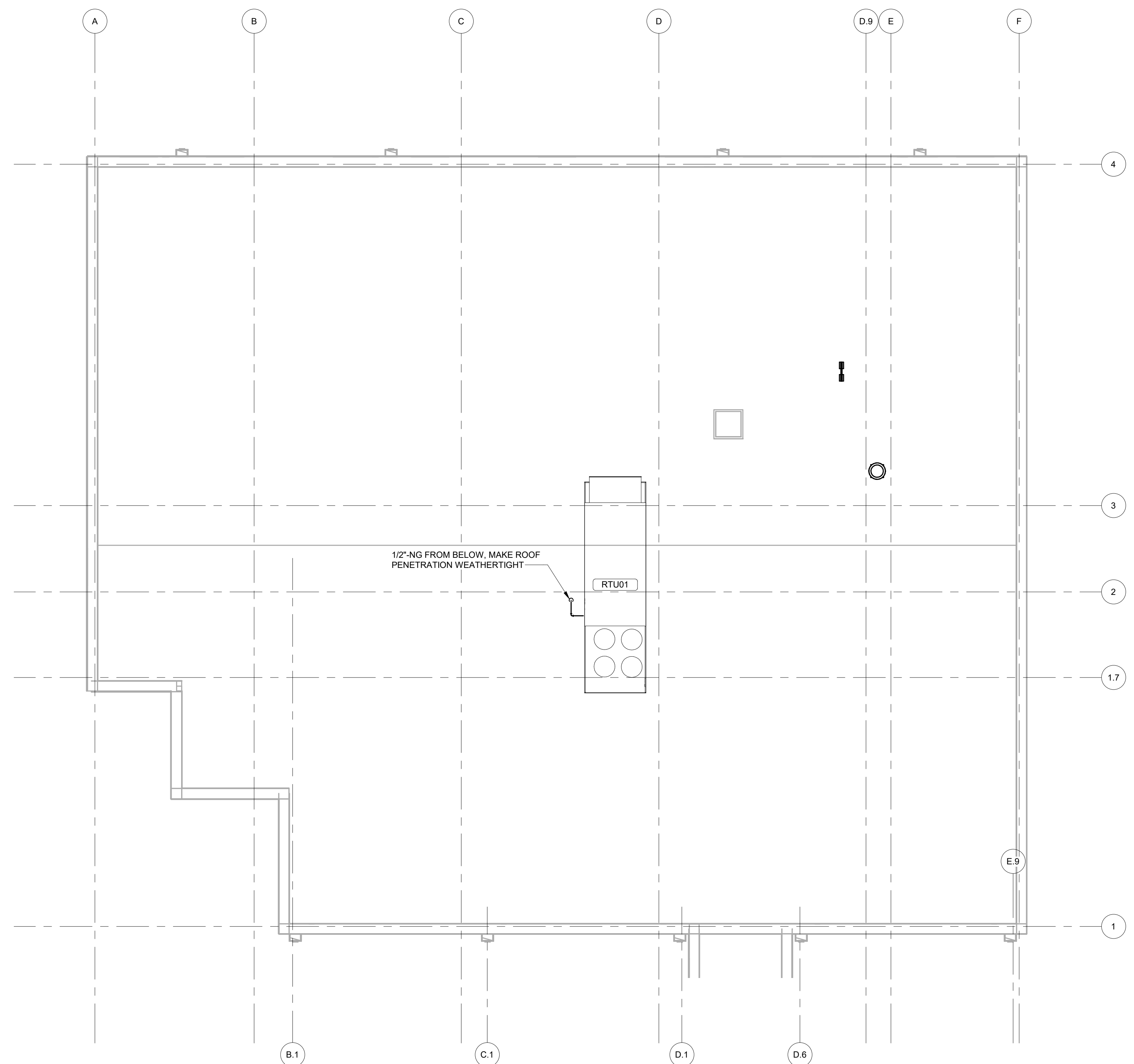


2 CLASSROOM ADDITION SECOND FLOOR DOMESTIC WATER PLAN

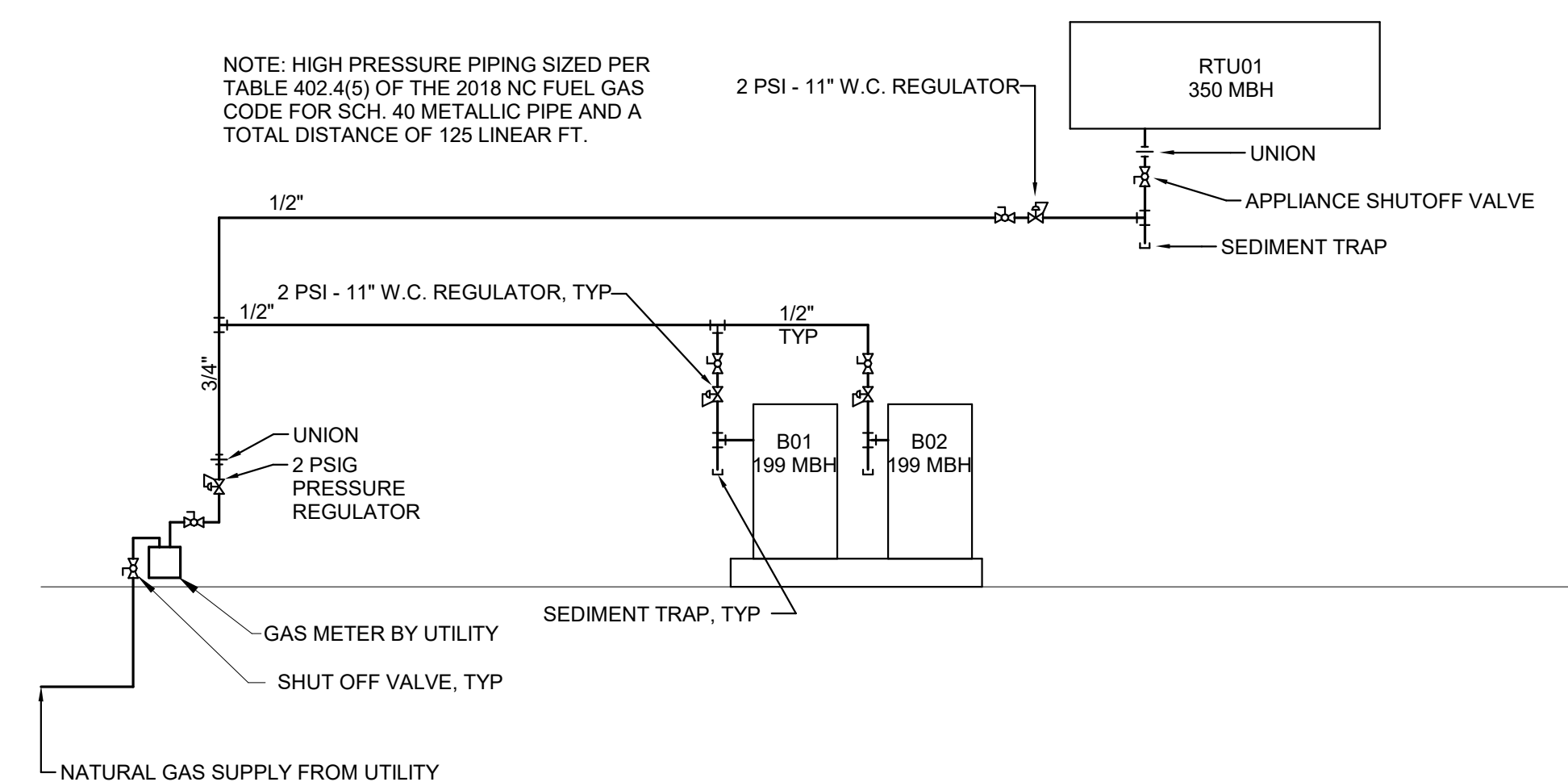




1 FIRST FLOOR NAT. GAS PLAN
SCALE: 1/8" = 1'-0"



2 ROOF LEVEL NAT. GAS PLAN
NO SCALE



3 LP GAS RISER DIAGRAM
NO SCALE

1
P401 ENLARGED FIRST FLOOR GANG TOILET WASTE-VENT PLAN
1/4" = 1'-0"

2 ENLARGED TLT 603 WASTE-VENT PLAN
P401 1/4" = 1'-0"

3 ENLARGED SECOND FLOOR GANG TOILETS WASTE-VENT PLAN
P401 1/4" = 1'-0"

4 ENLARGED FIRST FLOOR GANG TOILET DOMESTIC WATER PLAN
P401 1/4" = 1'-0"

5 ENLARGED TLT 603 DOMESTIC WATER PLAN
P401 1/4" = 1'-0"

6 ENLARGED SECOND FLOOR GANG TOILETS DOMESTIC WATER PLAN
P401 1/4" = 1'-0"

7 ENLARGED JANITORS ROOM - DOMESTIC WATER
P401 $1/4" = 1'-0"$

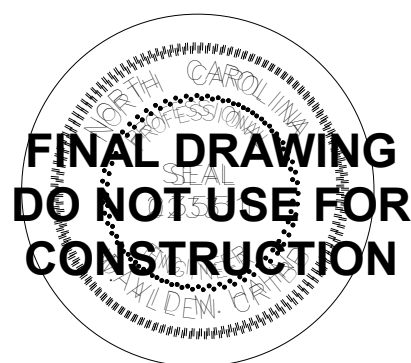
KEYNOTES

1	2"W-STACK; WCO
2	4"W-STACK; WCO
3	2"W-STACK; WCO; 3" V-STACK
4	2"V-STACK
5	3" VENT STACK
6	3"STACK-VENT; 3" VTR
7	2"V-STACK FROM BELOW
8	2"W-STACK; 2" STACK VENT; 2"VTR
9	BRANCH VALVE; TYPICAL
10	2" DCW-UP
11	1/2" DCW AND DHW UP TO MOP SINK ABOVE
12	1/2" DCW UP TO EWC ABOVE
13	3/4" HAMMER ARRESTOR
14	1" HAMMER ARRESTOR
15	1" HAMMER ARRESTOR
16	1/2" DCW AND DHW DOWN IN WALL TO BELOW SLAB.
17	1/2" DCW AND DHW FROM BELOW
18	1/2" DCW FROM BELOW
19	2" DCW FROM BELOW
20	THERMOSTATIC MIXING VALVE. LAWLER MODEL 801 OR EQUAL
21	REPAIR WATER HEATER DETAIL 3/P501 FOR FURTHER INFORMATION
22	1/2" DCW UP TO LAVATORIES ABOVE
23	INSTALL VALVE ACCESS HATCH IN CEILING OF JANITORS CLOSET
24	INSTALL SHUTOFF VALVE AND CIRCUIT SETTER ABOVE LAY-IN CEILING FOR ACCESS

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ISSUED: 04.23.20

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PROJECT TITLE

**NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION**

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

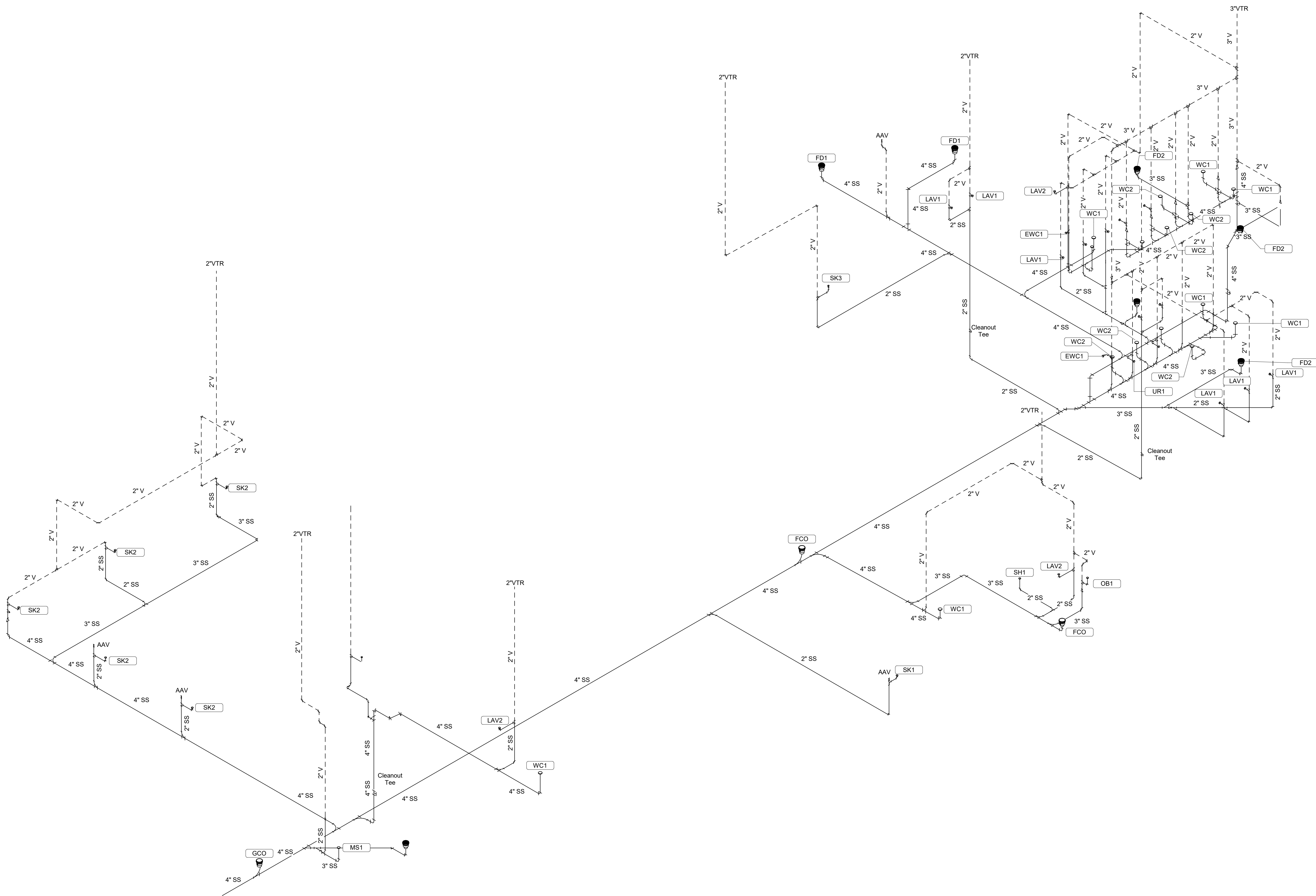
**WASTE & VENT
RISER DIAGRAMS**

Mark	Date	Description
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	03.26.20	100% REVIEW SUBMISSION
	01.22.20	60% CD PROGRESS DRAWINGS
	10.14.19	NC DPI SD SUBMISSION
	07.30.19	SD PROGRESS DRAWINGS
	07.11.19	NC DPI SD SUBMISSION

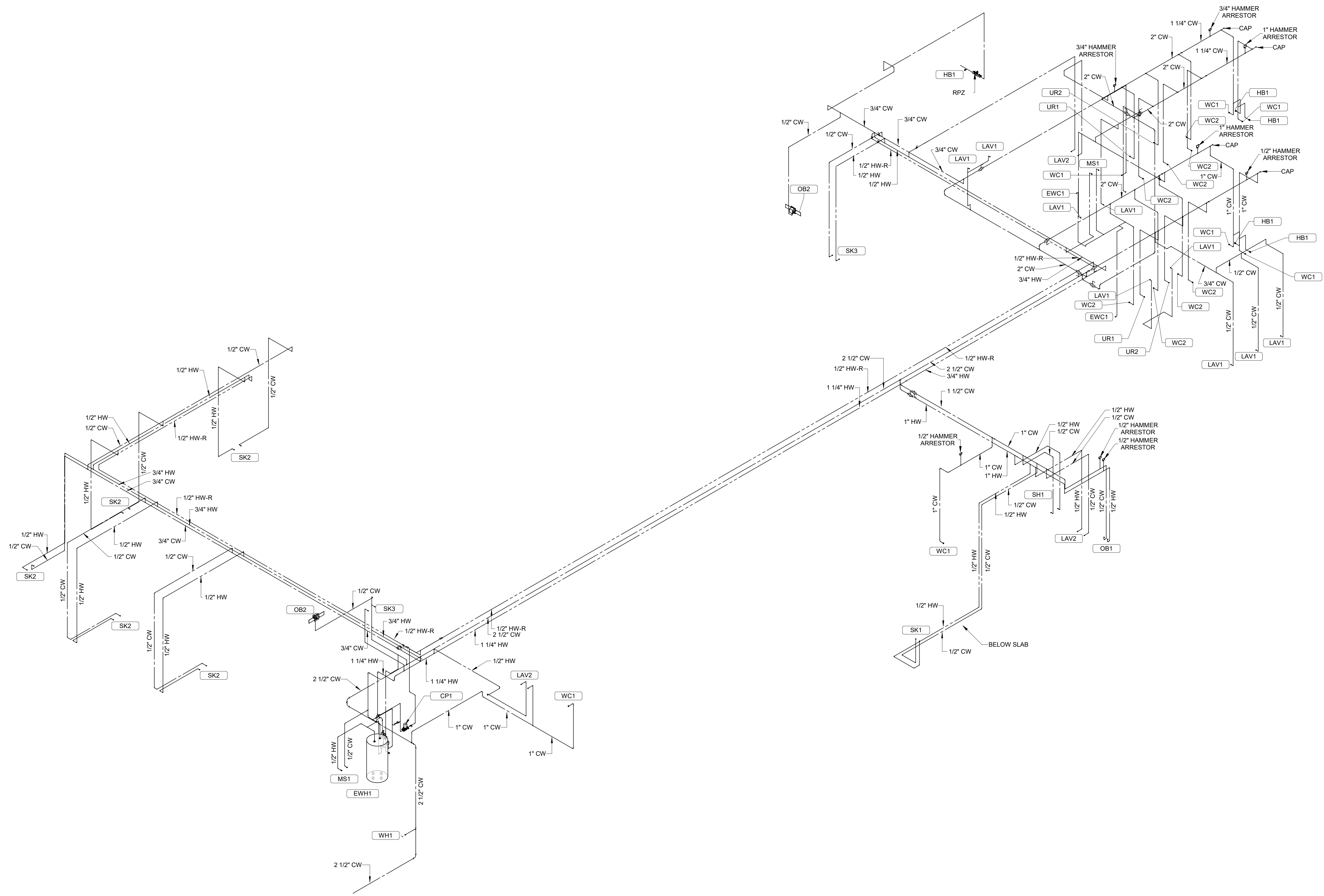
PROJECT NO: 2019082.00
DATE: 10.14.2019

SCALE:
DRAWN BY: Author
PROJ MG: Checker

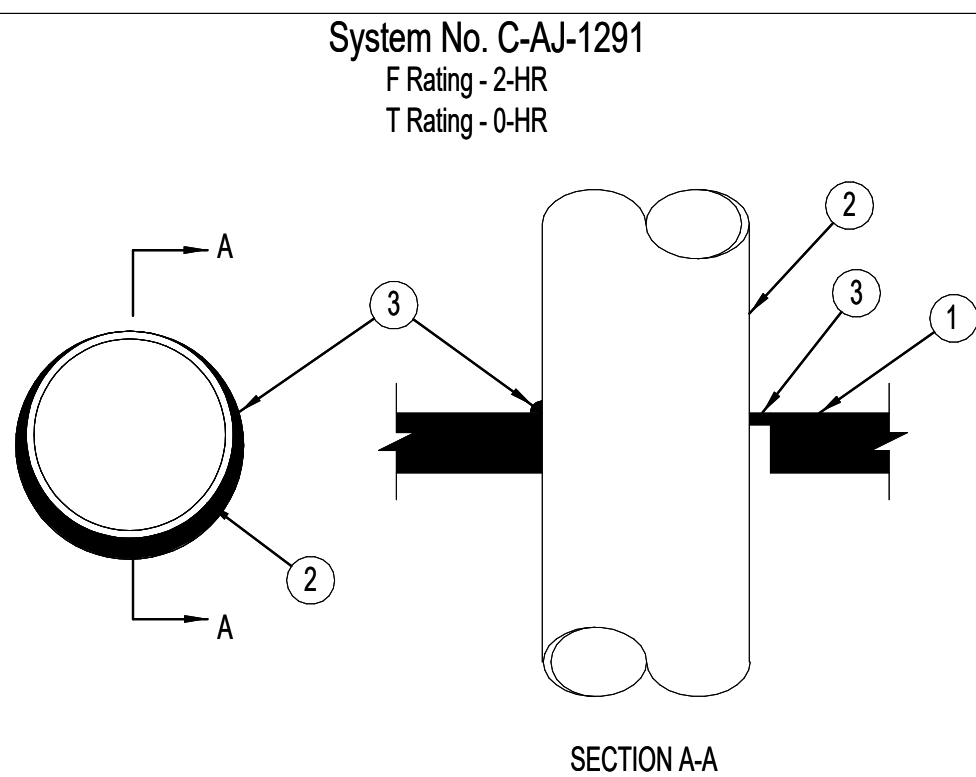
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1
WASTE AND VENT RISER
DIAGRAM
NO SCALE



1 DOMESTIC WATER RISER
DIAGRAM
NO SCALE



PLUMBING FIXTURE SCHEDULE													
TYPE ID	DESCRIPTION	MANUFACTURER	MODEL	TRIM MANUFACTURER	TRIM TYPE	TRIM MODEL	ALTERNATE MANUFACTURER	WASTE PIPE ROUGH-IN PIPE SIZE	VENT ROUGH-IN PIPE SIZE	COLD WATER ROUGH-IN PIPE SIZE	HOT WATER ROUGH-IN PIPE SIZE	SPECIFICATION	REMARKS
EW1	ELECTRIC WATER COOLER, DUAL HEIGHT, BOTTLE FILLER, NON-FILTERED, ADA	ELKAY	EZSTL8WSLK	ELKAY	FLOOR MOUNTED CARRIER	MLP200	HALSEY-TAYLOR, OASIS	2"	2"	1/2"		TWO LEVEL WALL HUNG WATER COOLER WITH BOTTLE FILLING STATION ON LOW SIDE. THE UNIT SHALL BE COMPLETE WITH CABINET, MOUNTING FRAME, SELF CLOSING EASY TOUCH SIDE AND FRONT PUSHBAR CONTROLS, FLEXIGUARD SAFETY BUBBLER, REFRIGERATING SYSTEM, AIR COOLED, 120 VOLT, 60 CYCLE, SINGLE PHASE POWER CONNECTION, FULLY AUTOMATIC, COMPLETE AND READY TO OPERATE.	
FCO	6 1/2" ADJUSTABLE, SCORiated, NICKEL BRONZE TOPS	SIOUX CHIEF	834				WATTS, ZURN					ADJUSTABLE, ON GRADE CLEANOUT, SCORiated COVER, SLOTTED, BRASS CLEANOUT PLUG	
FD1	BASE / CORING SLEEVE / HEAD / STRAINER - 4" NO-HUB	SIOUX CHIEF	832				WATTS, ZURN					ADJUSTABLE, ON GRADE FLOOR DRAIN, ROUND, NICKEL-BRONZE STRAINER	
FD2	BASE / CORING SLEEVE / HEAD / STRAINER - 3" NO-HUB	SIOUX CHIEF	832				WATTS, ZURN						
GCO	BASE W/ PLUG / CORING SLEEVE / HEAD / COVER - 4" NO-HUB	SIOUX CHIEF	851				WATTS, ZURN					ADJUSTABLE, ON GRADE CLEANOUT, SCORiated COVER, SLOTTED, BRASS CLEANOUT PLUG	
HB1	CHROME PLATED INTERIOR HOSE BIBB	WOODFORD	24				PRIER, MIFAB						
LAV1	STUDENT WALL HUNG CAST IRON LAVATORY, METERING, CW ONLY, WALL HUNG, ADA	KOHLER	K-2812	T&S BRASS	MANUAL METERING SINGLE TEMPERATURE	B-0712	-	2"	2"	1/2"		WALL HUNG LAVATORY WITH BACKSPASH, SINGLE HOLE DRILL, DECK-MOUNTED METERING FAUCET, COLD WATER ONLY, GRID DRAIN, LOOSE KEY ANGLE STOPS AND SUPPLIES. INSULATE WATER AND WASTE WITH INSULATION KIT. MOUNT AT ADA COMPLIANT HEIGHT. INSULATE WATER AND WASTE TO	
LAV2	STAFF WALL HUNG LAVATORY, ADA	AMERICAN STANDARD	0355.012	MOEN	SINGLE LEVER, 0.5 GPM	8413F05	KOHLER, SLOAN	2"	2"	1/2"	1/2"	VITREOUS CHINA WALL HUNG LAVATORY, 4" CENTERS, DECK-MOUNTED LEVER FAUCET, GRID DRAIN, ANGLE STOPS AND SUPPLIES, MOUNT AT ADA COMPLIANT HEIGHT.	
MS1	MOP SINK	FIAT	MSB-2424	MOEN	MANUAL	8124	MUSTEE, PROFLO	3"	---	3/4"	3/4"	24"X 24"X 10" MOLDED STONE WITH GRID DRAIN, FAUCET SHALL BE ROUGH CHROME FINISH, INTEGRAL VACUUM BREAKER, CHECK STOPS,PAIL HOOK, 3/4" THREADED SPOUT, FURNISH MOP HANGER, HOSE AND BRACKET	
OB1	WASHING MACHINE OUTLET BOX	SIOUX CHIEF	696-23				OATEY, WATER-TITE	2"	---	1/2"	1/2"	WASHING MACHINE VALVE OR EQUIVALENT OF GUY GRAY WITH RECESSED SUPPLY AND 2" DRAIN. PROVIDE A 2" TRAPPED STANDPIPE IN CONCEALED WALL SPACE.	
OB2	Oatey Moda , Ice Maker, 1-Valve, Copper (Male), Hammer	Oatey Company	37687				SIOUX CHIEF, WATER-TITE						
SH1	60"x30" PREFAB ROLL-IN SHOWER STALL - ADA	AQUATIC	6030CFS	MOEN	MANUAL	8342EP15	ACRYLINE, AQUARIUS	2"	---	1/2"	1/2"	BARRIER FREE, CAST ACRYLIC, SMOOTH WALL, CENTER DRAIN, FOLD UP SEAT, GRAB BARS, PRESSURE BALANCE MIXING VALVE, CURTAIN ROD AND CURTAIN	
SK1	SINK - SINGLE	ELKAY	LRAD2219-55-3	ELKAY	MANUAL	LK1000	JUST, ACORN	2"	---	1/2"	1/2"	SINGLE COMPARTMENT, ADA COMPLIANT, SELF-RIMMING, 18 GAUGE, SINGLE LEVER SWIVEL FAUCET, ONE ELKAY MODEL NO. LK35 BASKET STRAINER, P-TRAP, TAILPIECES, SUPPLIES AND STOPS, INSULATE WATER AND WASTE TO MEET ADA REQUIREMENTS.	
SK2	2-COMPARTMENT COUNTERTOP SINK	ELKAY	LR322	ELKAY	MANUAL	8701	JUST, ACORN	2"	---	1/2"	1/2"	DOUBLE COMPARTMENT, SELF-RIMMING, 18 GAUGE, SINGLE LEVER SWIVEL FAUCET, ONE ELKAY MODEL NO. LK35 BASKET STRAINER, P-TRAP, TAILPIECES, SUPPLIES AND STOPS.	
SK3	1-COMPARTMENT SINK, STAINLESS STEEL, ADA	ELKAY	LRAD2219-55-3	ELKAY	MANUAL	LK1000	JUST, ACORN	2"	---	1/2"	1/2"	COUNTERTOP LAVATORY, SELF-RIMMING, FAUCET HOLES ON 4" CENTERS, DECK-MOUNTED FAUCET, EXTERNAL THERMOSTATIC MIXING VALVE, GRID DRAIN, LOOSE KEY ANGLE STOPS AND SUPPLIES. INSULATE WATER AND WASTE WITH INSULATION KIT.	
UR1	WALL MOUNT URINAL, MANUAL FLUSH VALVE, ADA	AMERICAN STANDARD	6002.001	SLOAN	MANUAL FLUSHOMETER	ROYAL 186-0 125-DBP	SLOAN, KOHLER	2"	2"	3/4"		WALL HUNG VITREOUS CHINA URINAL WITH WASHOUT ACTION, 3/4" TOP SPUD, MANUAL 0.125 GPF FLUSHOMETER, INST. ALL AT ADA COMPLIANT HEIGHT.	
UR2	WALL MOUNT URINAL, MANUAL FLUSH VALVE	AMERICAN STANDARD	6002.001	SLOAN	MANUAL FLUSHOMETER	ROYAL 186-0 125-DBP	SLOAN, KOHLER	2"	2"	3/4"		WALL HUNG VITREOUS CHINA URINAL WITH WASHOUT ACTION, 3/4" TOP SPUD, MANUAL 0.125 GPF FLUSHOMETER.	
WC1	ELONGATED, DUAL FLUSH, VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED WATER CLOSET, ADA	AMERICAN STANDARD	3043.001	SLOAN	MANUAL DUAL FLUSH FLUSHOMETER	WES-111-1.6/1.1	SLOAN, KOHLER	4"	2"	1"		ELONGATED FLOOR MOUNTED, 1-1/2" TOP SPUD, MANUAL DUAL FLUSH FLUSHOMETER, 11-1/2" ROUGH-IN, OPEN FRONT SEAT WITH SELF SUSTAINING, STAINLESS STEEL CHECK HINGES	
WC2	ELONGATED, DUAL FLUSH, VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED WATER CLOSET	AMERICAN STANDARD	2234.001	SLOAN	MANUAL DUAL FLUSH FLUSHOMETER	WES 113-1.6/1.1	SLOAN, KOHLER	4"	2"	1"		ELONGATED FLOOR MOUNT, 15" RM HEIGHT, 1-1/2" TOP SPUD, MANUAL DUAL FLUSH FLUSHOMETER, 11" ROUGH-IN, OPEN FRONT SEAT WITH SELF SUSTAINING, STAINLESS STEEL CHECK HINGES	
WH1	EXTERIOR WALL HYDRANT	WOODFORD	67				PRIER, MIFAB			3/4"		NON-FREEZE TYPE WALL HYDRANT, WITH DOUBLE CHECK BACKFLOW PREVENTER, VALVE ON THE INSIDE OF THE WALL, SPOUT WITH BACKFLOW PREVENTER, AND LOOSE KEY SOCKET ON THE OUTSIDE OF THE WALL. MAKE ARRANGEMENTS WITH THE GENERAL CONTRACTOR TO PROVIDE THE NECESSARY RECESS IN THE WALL, WHERE A RISER TO A WALL HYDRANT OCCURS IN AN OUTSIDE WALL. THE CONTRACTOR SHALL INSULATE THE CHASE WITH 2" STYROFOAM INSULATION ON ALL SIDES OF THE CHASE, EXCEPT THE INSIDE WALL OF THE CHASE. PROVIDE SHUTOFF VALVE IN ACCESSIBLE LOCATION.	
Grand total: 67													

PUMP SCHEDULE							
DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESGIN MODEL	ALTERNATE MANUFACTURERS	PUMP TYPE	SERVICE	MOTOR HP	ELECTRICAL VOLT PH FREQ
CP1	BELL & GOSSETT	ECOCIRC N 19-16	GRUNDFOS, TACO	HIGH EFFICIENCY WET ROTOR CIRCULATOR WITH ELECTRONICALLY COMMUTATED MOTOR	DOMESTIC WATER	0.08 hp	115 V 1 60 Hz

ELECTRIC WATER HEATER SCHEDULE									
Identify Mark	MANUFACTURER	MODEL NO.	ALTERNATE MANUFACTURERS	TYPE	kW	UNIT WEIGHT	VOLT	PH	Frequency
EW1	BRADFORD WHITE	LE250S3-3	A.O. SMITH, STATE	ELECTRIC WATER HEATER	4.5	130 lb	208 V	2	60 Hz

FIXTURE UNIT SUMMARY												
FIXTURE SYMBOL	FIXTURE DESCRIPTION	COUNT	LOCATION		WASTE	PIPE SIZE			FIXTURE UNITS			
			NAME	NO.		VENT	CW		HW	WFU 0	CWFU 0	HWFU 0
EW1	ELECTRIC WATER COOLER, DUAL HEIGHT, BOTTLE FILLER, NON-FILTERED, ADA	2			2"			1/2"		1	0.5	0
FCO	6 1/2" ADJUSTABLE, SCORIATED, NICKEL BRONZE TOPS	2								0	0	0
FD1	BASE / CORING SLEEVE / HEAD / STRAINER - 4" NO-HUB	2								0	0	0
FD2	BASE / CORING SLEEVE / HEAD / STRAINER - 3" NO-HUB	5								0	0	0
GCO	BASE W/ PLUG / CORING SLEEVE / HEAD / COVER - 4" NO-HUB	1								0	0	0
HB1	CHROME PLATED INTERIOR HOSE BIBB	6								0	0	0
LAV1	STUDENT WALL HUNG CAST IRON LAVATORY, METERING, CW ONLY, WALL HUNG, ADA	10			2"			1/2"		20	10	0
LAV2	STAFF WALL HUNG LAVATORY, ADA	3			2"			1/2"	1/2"	3	4.5	4.5
MS1	MOP SINK	2			3"			3/4"	3/4"	8	4.5	4.5
OB1	WASHING MACHINE OUTLET BOX	1			2"			1/2"	1/2"	3	2.25	2.25
OB2	Oatey Moda , Ice Maker, 1-Valve, Copper (Male), Hammer	2								0	0	0
SH1	60"x30" PREFAB ROLL-IN SHOWER STALL - ADA	1			2"			1/2"	1/2"	2	3	3
SK1	SINK - SINGLE	1			2"			1/2"	1/2"	2	1.5	1.5
SK2	2-COMPARTMENT COUNTERTOP SINK	5			2"			1/2"	1/2"	10	7.5	7.5
SK3	1-COMPARTMENT SINK, STAINLESS STEEL, ADA	2			2"			1/2"	1/2"	2	3	3
UR1	WALL MOUNT URINAL, MANUAL FLUSH VALVE, ADA	2			2"			3/4"		4	10	0
UR2	WALL MOUNT URINAL, MANUAL FLUSH VALVE	2			2"			3/4"		4	10	0
WC1	ELONGATED, DUAL FLUSH, VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED WATER CLOSET, ADA	7			4"			1"		28	70	0
WC2	ELONGATED, DUAL FLUSH, VITREOUS CHINA, TOP SPUD, FLOOR MOUNTED WATER CLOSET	8			4"			1"		32	80	0
WH1	EXTERIOR WALL HYDRANT	2						3/4"		0	6	0
Grand total: 67										119	212.75	26.25



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3333 Jaeckle Drive, Suite 120
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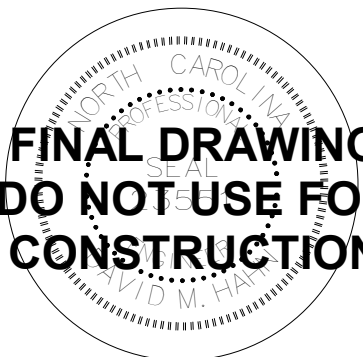
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309 S Governors Ave
Dover, DE 19904
302.734.7950

Rittenhouse Station
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PROJECT TITLE

NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1165

SHEET TITLE

PLUMBING
SCHEDULES

ISSUE BLOCK

04.23.20	ISSUED FOR BIDDING
03.26.20	100% REVIEW SUBMISSION
01.22.20	80% CD PROGRESS DRAWINGS
10.14.19	NCDP1 CD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NCDP1 SD SUBMISSION

Mark	Date	Description
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PROJECT NO: 2019082.00
DATE: 10.14.2019
SCALE:
DRAWN BY: JBS PROJ MGR: DMH

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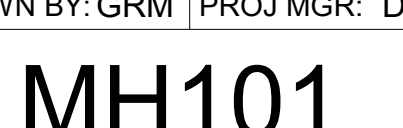
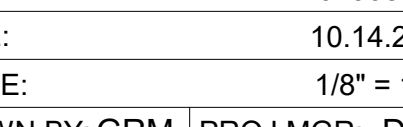
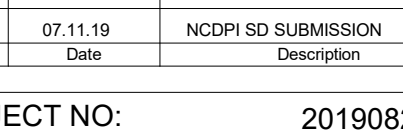
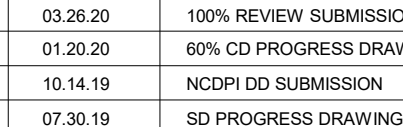
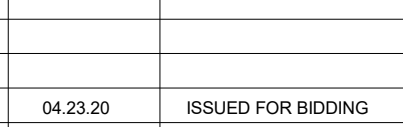
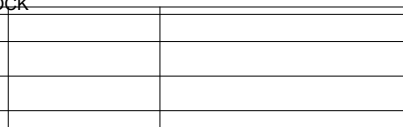
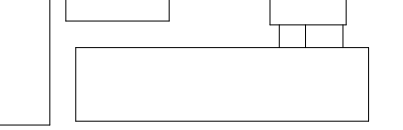
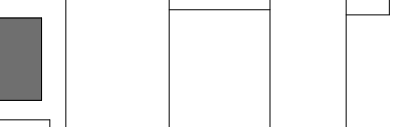
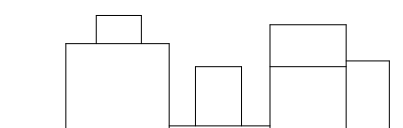
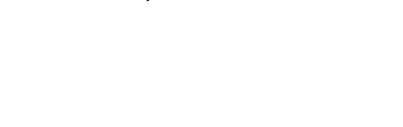
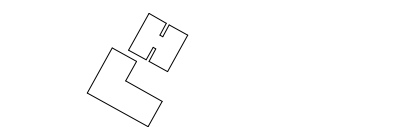
NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

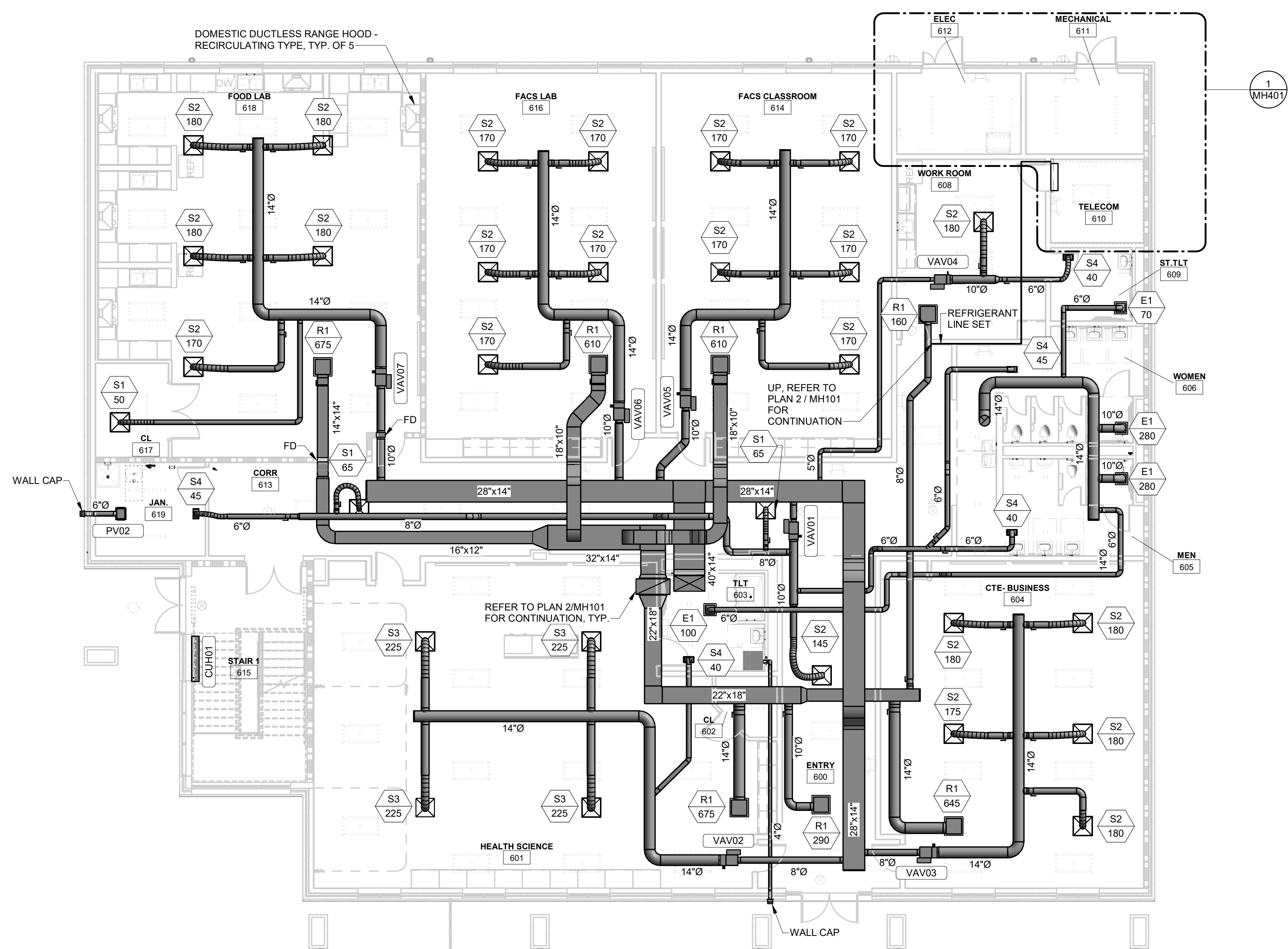
SHEET TITLE

CLASSROOM
BUILDING FLOOR
PLANS - HVAC

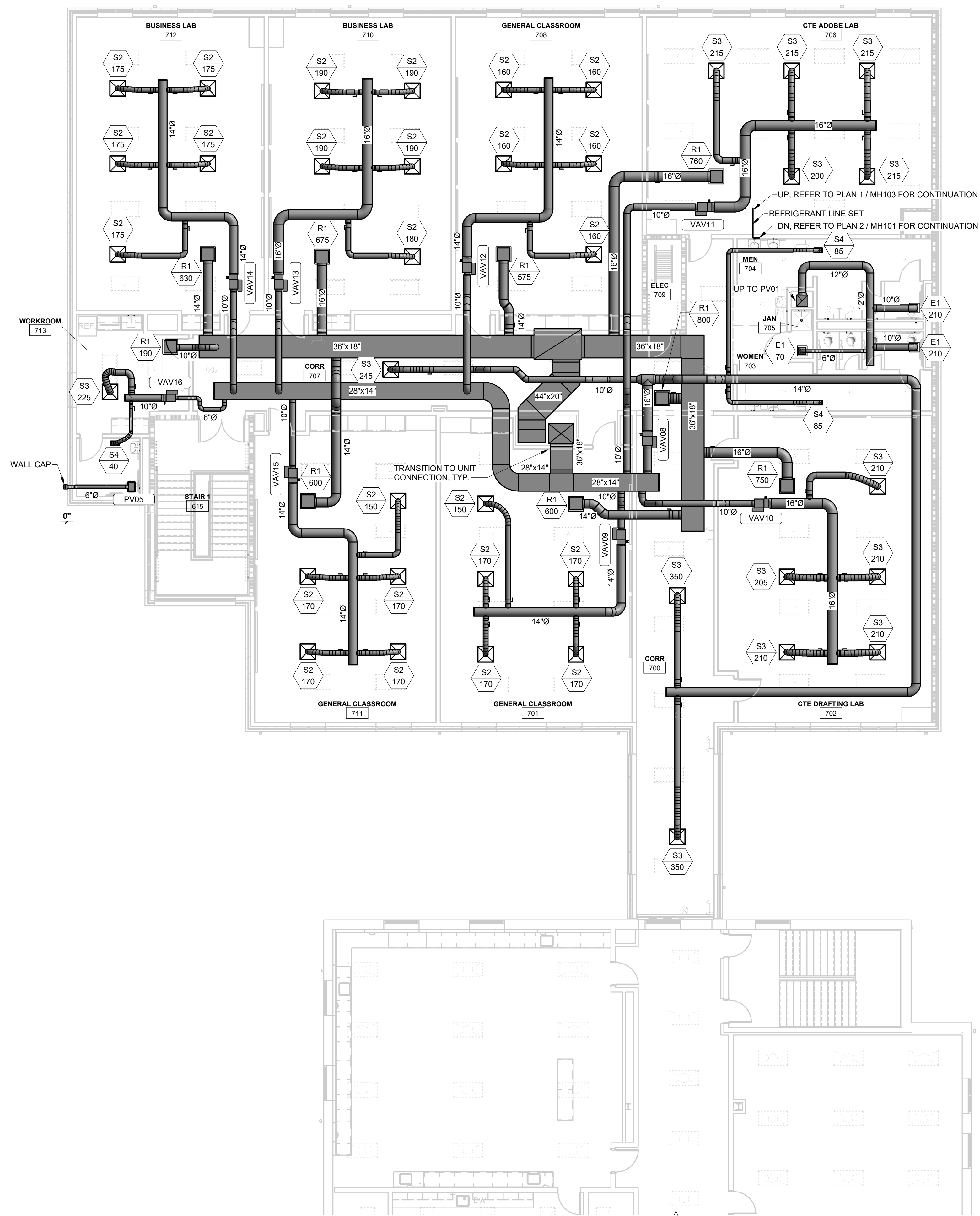


FLOOR PLAN SHEET NOTES

1. MAINTAIN MANUFACTURER'S CLEARANCE REQUIREMENTS FOR INDOOR EQUIPMENT.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. REFER TO ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY U/L NUMBERS (WALLS, FLOOR / CEILINGS, ETC).
4. COORDINATED CONDENSATE PIPE ROUTING WITH GENERAL CONTRACTOR AND OWNER, TYPICAL. CONCERNING DIFFUSER LAYOUT AND CEILING TYPE. REFER TO ARCHITECTURAL PLANS FOR FURTHER INFORMATION.
5. IN GENERAL, LOCATE VAV TERMINALS ABOVE DOOR SWING TO ASSURE CONTINUED ACCESS.
6. PRIOR TO BRICK INSTALLATION FOR PROPER WATERPROOFING / FLASHING.



1 CLASSROOM BUILDING FIRST
FLOOR PLAN - HVAC
SCALE: 1/8" = 1'-0"



2 CLASSROOM BUILDING
SECOND FLOOR PLAN - HVAC
SCALE: 1/4" = 1'-0"

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PROJECT TITLE
**NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION**

114 SCORPION DRIVE N.E.
LELAND, NC 28451

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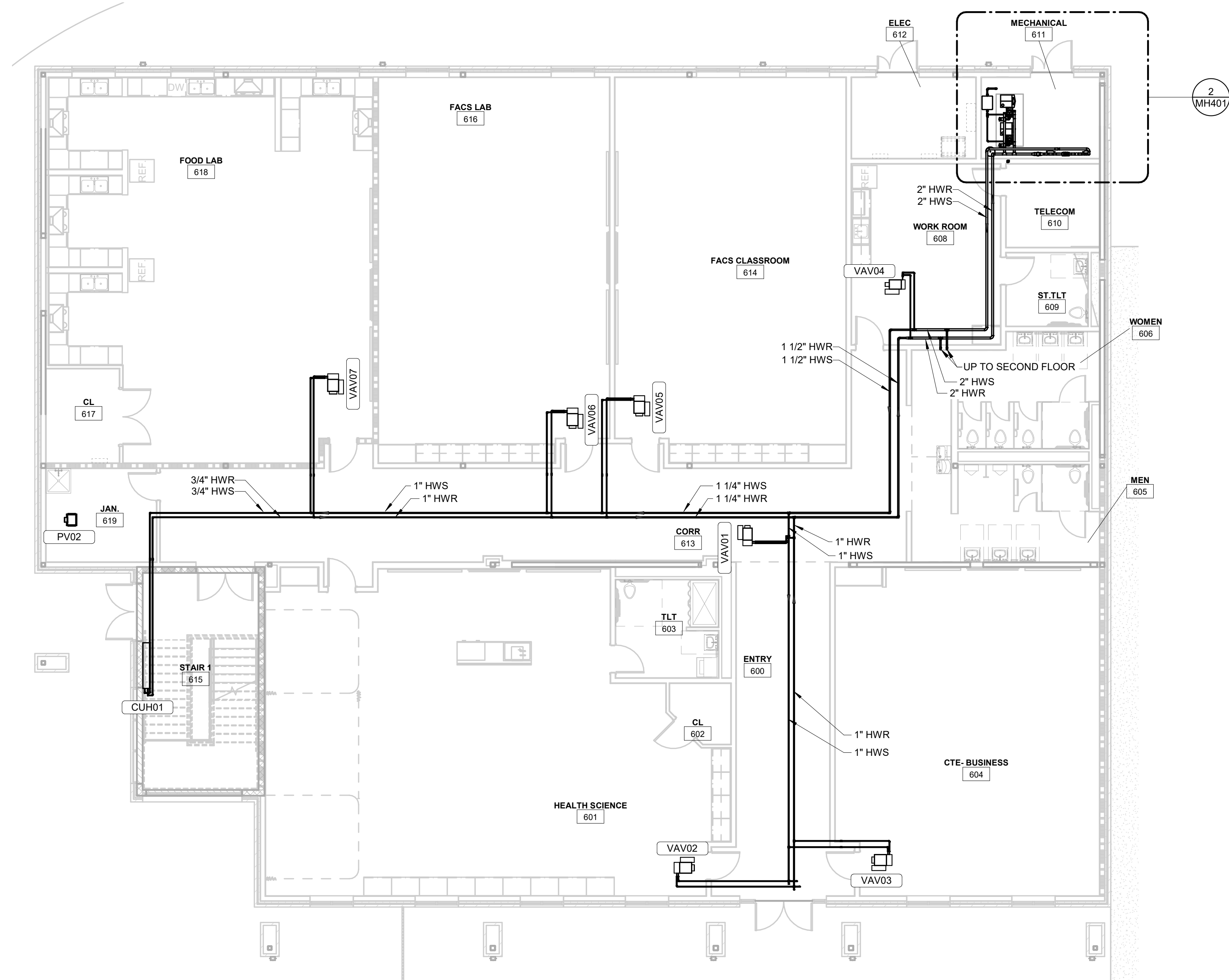
SHEET TITLE
**CLASSROOM
ADDITION FIRST AND
SECOND FLOORS -
HYDRONIC**

Mark	Date	Description
04.23.20	ISSUED FOR BIDDING	
03.26.20	100% REVIEW SUBMISSION	
01.22.20	60% CD PROGRESS DRAWINGS	
10.14.19	NC DPI SD SUBMISSION	
07.30.19	SD PROGRESS DRAWINGS	
07.11.19	NC DPI SD SUBMISSION	

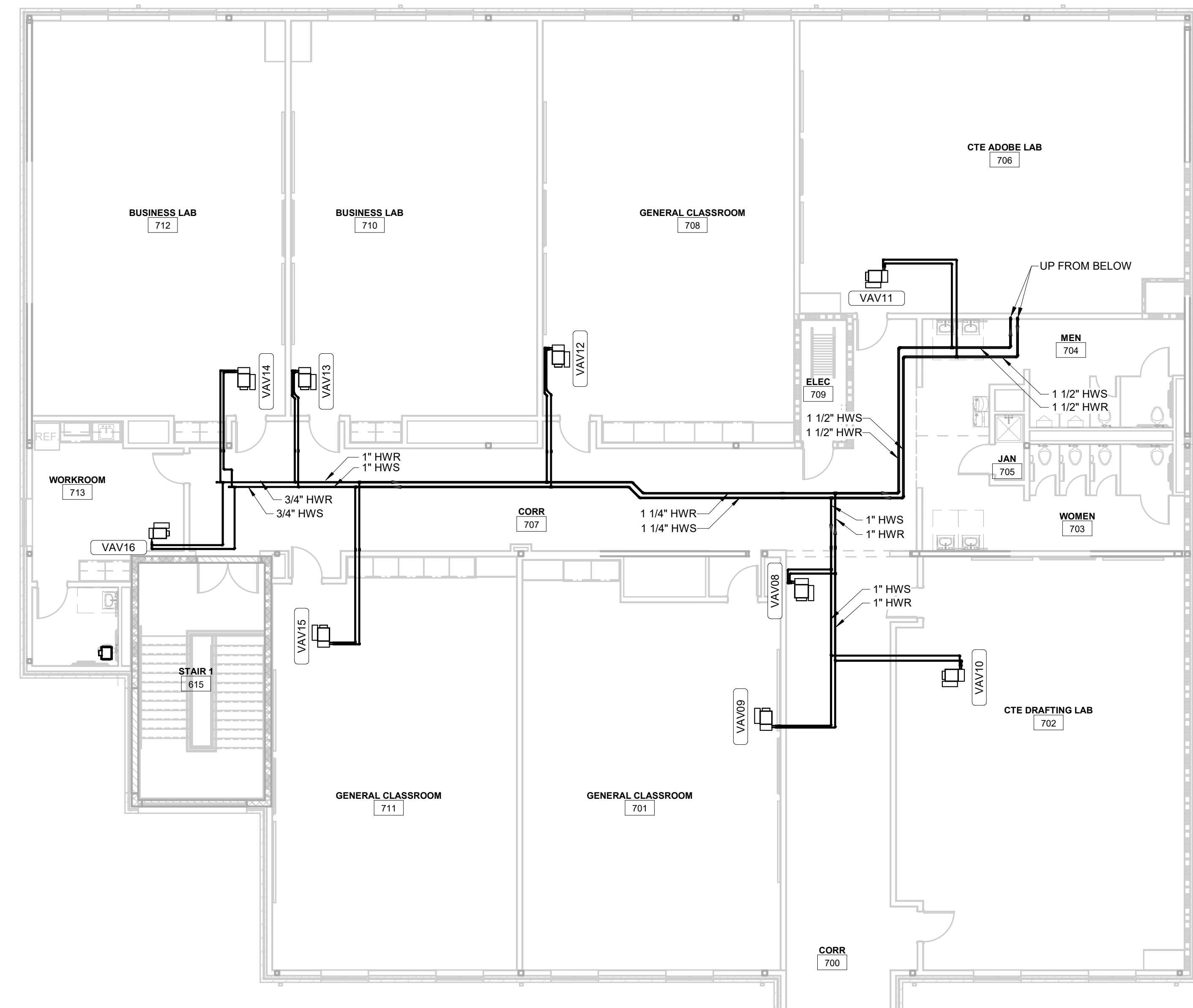
PROJECT NO: 2019082.00
DATE: 10.14.2019
SCALE: 1/8" = 1'-0"

DRAWN BY: RWC PROJ MGR: DMH

MP101
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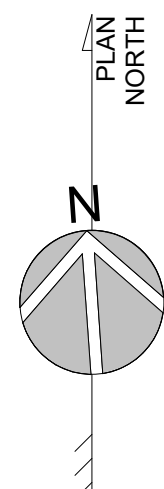


1
CLASSROOM ADDITION FIRST
FLOOR PLAN - HYDRONIC
SCALE: 1/8" = 1'-0"



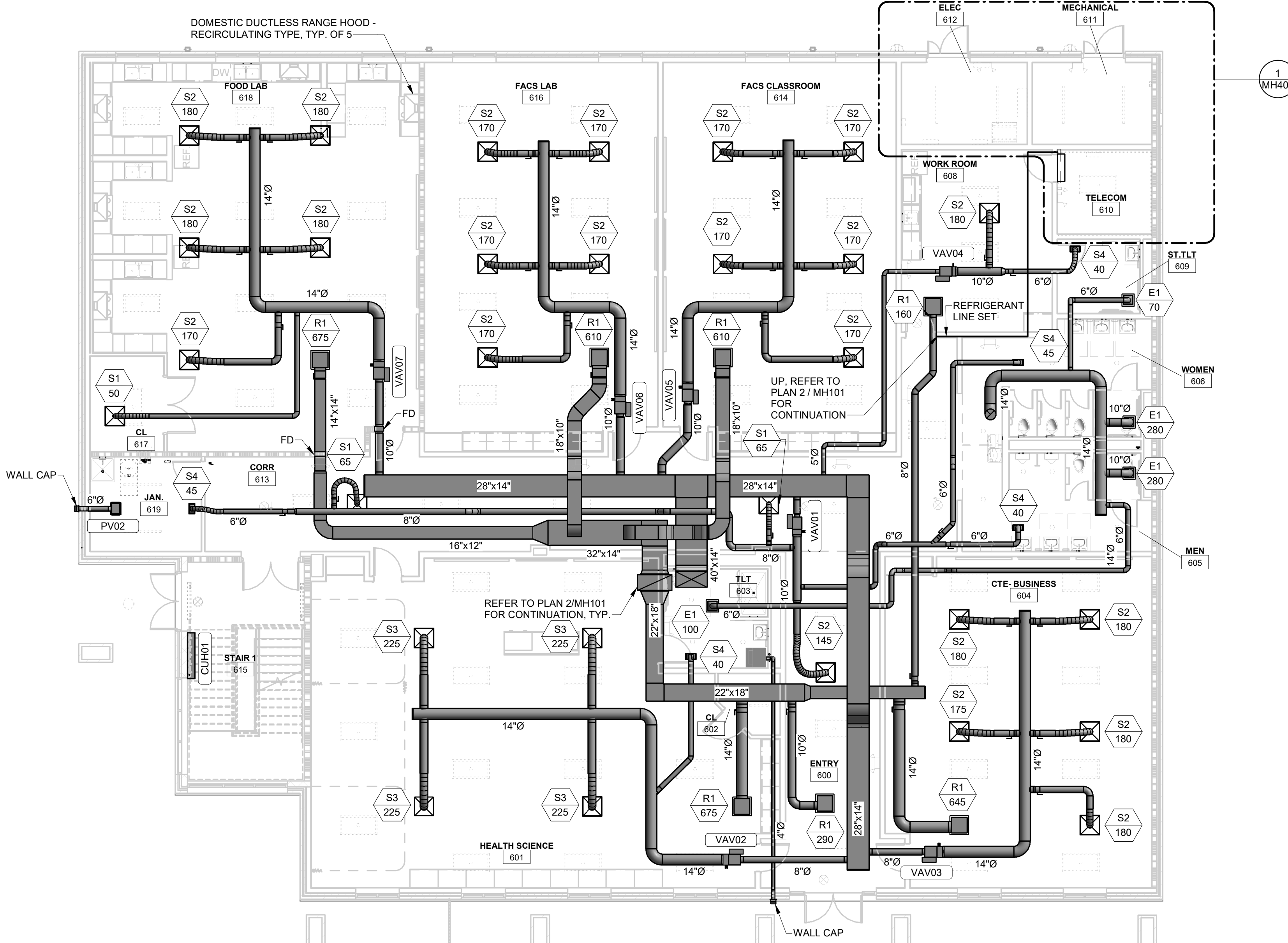
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CLASSROOM ADDITION
SECOND FLOOR PLAN -
HYDRONIC
SCALE: 1/8" = 1'-0"

8' 4' 0' 8'
SCALE: 1/8" = 1'-0"

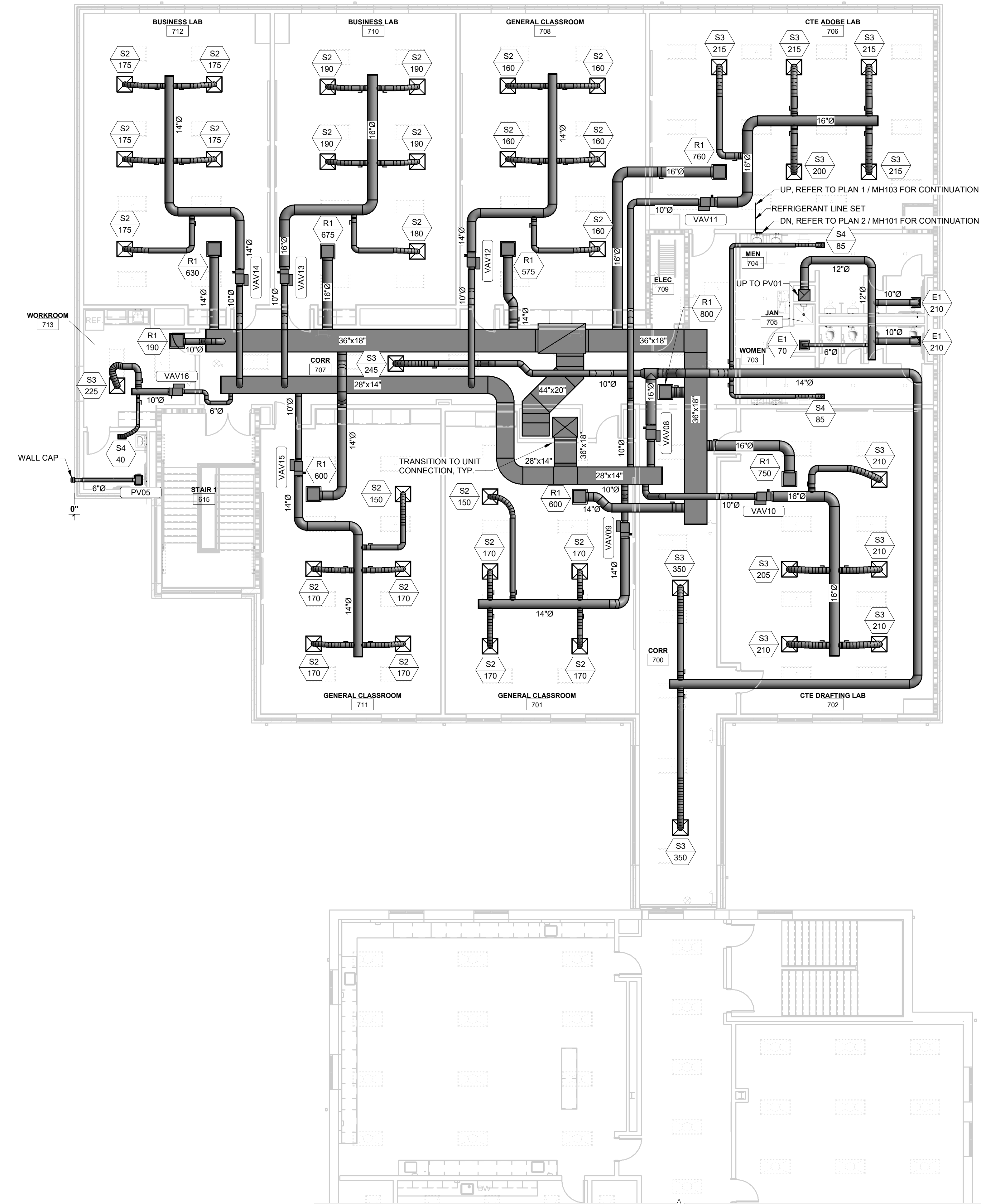


FLOOR PLAN SHEET NOTES

1. MAINTAIN MANUFACTURER'S CLEARANCE REQUIREMENTS FOR INDOOR EQUIPMENT.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. REFER TO ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY U/L NUMBERS (WALLS, FLOOR / CEILINGS, ETC).
4. COORDINATED CONDENSATE PIPE ROUTING WITH GENERAL CONTRACTOR AND OWNER, TYPICAL. CONCERNING DIFFUSER LAYOUT AND CEILING TYPE. REFER TO ARCHITECTURAL PLANS FOR FURTHER INFORMATION.
5. IN GENERAL, LOCATE VAV TERMINALS ABOVE DOOR SWING TO ASSURE CONTINUED ACCESS.
6. PRIOR TO BRICK INSTALLATION FOR PROPER WATERPROOFING / FLASHING.



1 CLASSROOM BUILDING FIRST
FLOOR PLAN - HVAC
SCALE: 1/8" = 1'-0"



2 CLASSROOM BUILDING
SECOND FLOOR PLAN - HVAC
SCALE: 1/8" = 1'-0"

ISSUED
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ISSUED: 04.23.20

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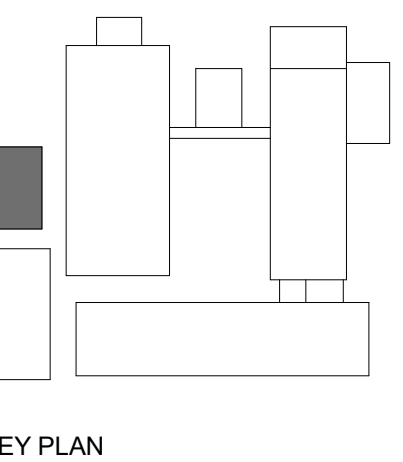
FINAL DRAWING
DO NOT USE FOR
CONSTRUCTION

PROJECT TITLE
**NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION**

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

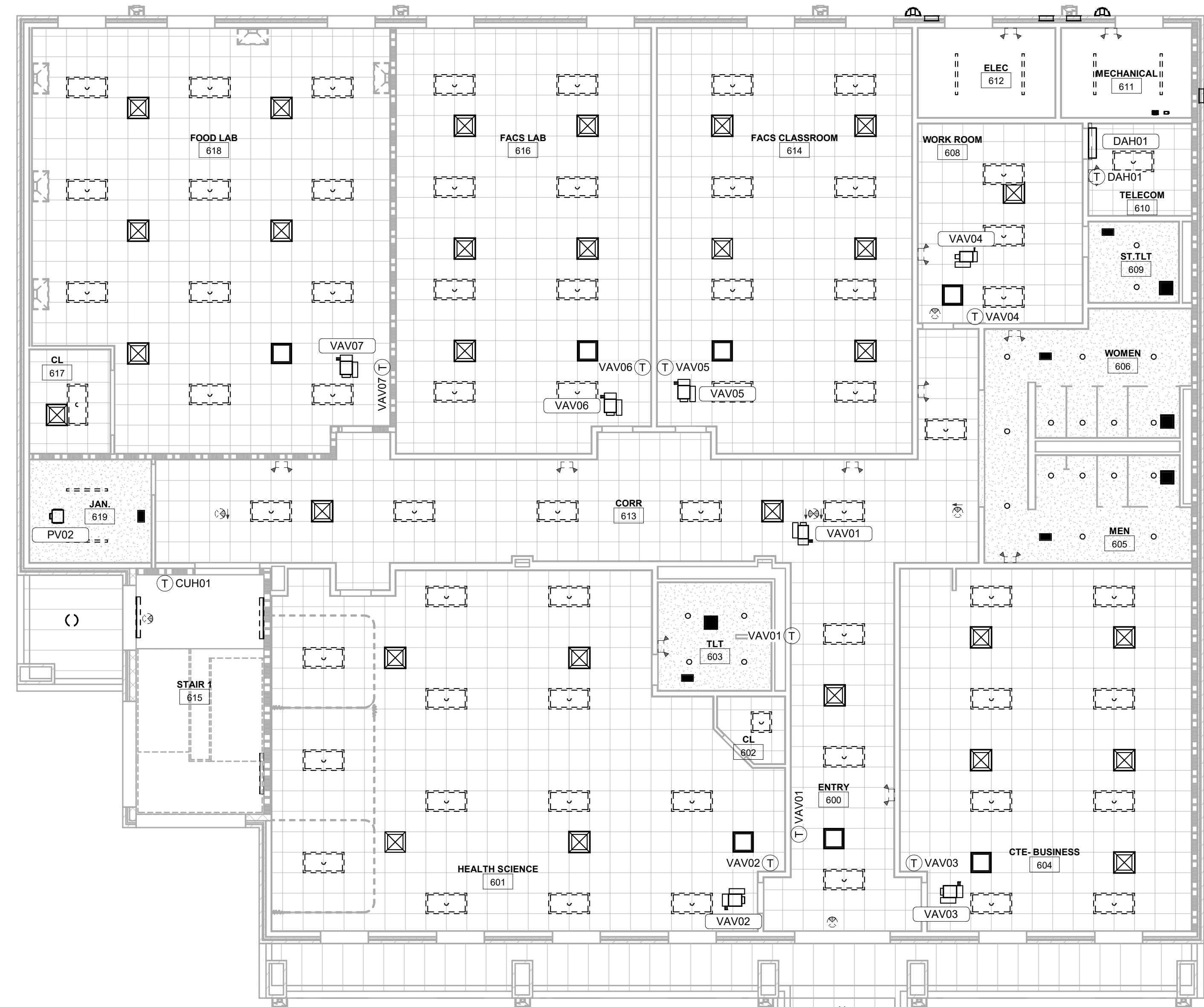
SHEET TITLE
**CLASSROOM
BUILDING FLOOR
PLANS - HVAC
AND T-STAT LOC**



Mark	Date	Description
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03.26.20	100% REVIEW SUBMISSION	
01.22.20	60% CD PROGRESS DRAWINGS	
10.14.19	NCPI DD SUBMISSION	
07.30.19	SD PROGRESS DRAWINGS	
07.11.19	NCPI SD SUBMISSION	

PROJECT NO: 2019082.00
DATE: 10.14.2019
SCALE: 1/8" = 1'-0"
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CLASSROOM BUILDING FIRST
FLOOR PLAN - HVAC RCP AND
T-STAT LOCATION

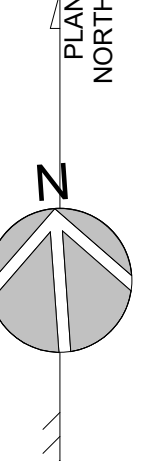
SCALE: 1/8" = 1'-0"



CLASSROOM BUILDING
SECOND FLOOR PLAN - HVAC
RCP AND T-STAT LOCATION

SCALE: 1/8" = 1'-0"

4' 2' 0' 4'
SCALE: 1/4" = 1'-0"



1. MAINTAIN MANUFACTURER'S CLEARANCE REQUIREMENTS FOR INDOOR EQUIPMENT.
2. MECHANICAL CONTRACTOR TO COORDINATE WITH OTHER TRADES PRIOR TO BEGINNING WORK.
3. REFER TO ARCHITECTURAL DRAWINGS FOR RATED ASSEMBLY UL NUMBERS (WALLS, FLOOR / CEILINGS, ETC.).
4. CONDENSATE PIPING AND PIPE ROUTING WITH GENERAL CONTRACTOR AND OWNER. TYPICAL.
5. REFER TO STRUCTURAL DRAWINGS FOR EQUIPMENT ROOF MOUNTING CONDITIONS.
6. ALL ROOF PENETRATIONS SHALL CONFORM TO ROOF MANUFACTURER'S APPROVED METHODS.

ARCHITECTURE
P L A N N I N G

Maryland
312 West Main St, Suite 300
Salisbury, MD 21801
410.546.9100

Rittenhouse Station
250 South Main Street, Suite 109
Newark, DE 19711
302.369.3700
www.beckermorgan.com

CBHF
Engineers, PLLC

SCORPION DRIVE N.E.
AND, NC 28451

LE

KEY PLAN

04.23.20	ISSUED FOR BIDDING
03.26.20	100% REVIEW SUBMISSION
01.20.20	60% CD PROGRESS DRAWING
10.14.19	NCDDP DD SUBMISSION
07.30.19	SD PROGRESS DRAWING
07.11.19	NCDDP SD SUBMISSION
Date	Description

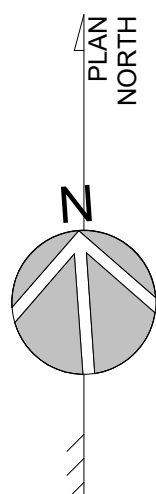
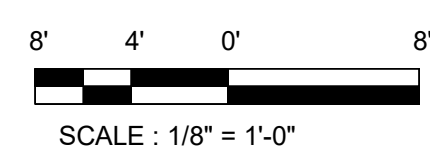
ECT NO: 201908

:	10.14.3
E.	1/8" =

OWN BY: GRM	PROJ MGR: D
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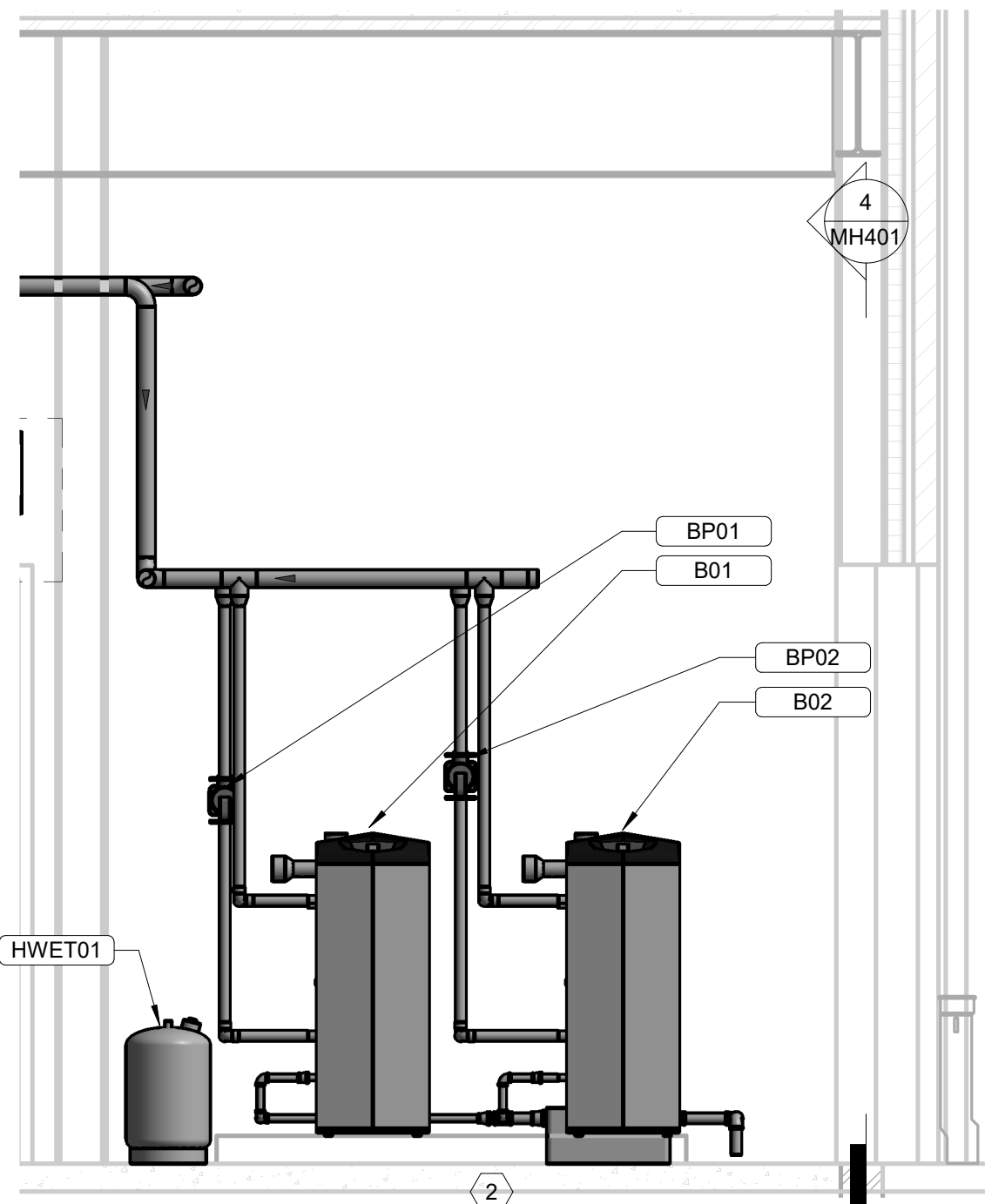
MH103

MF103

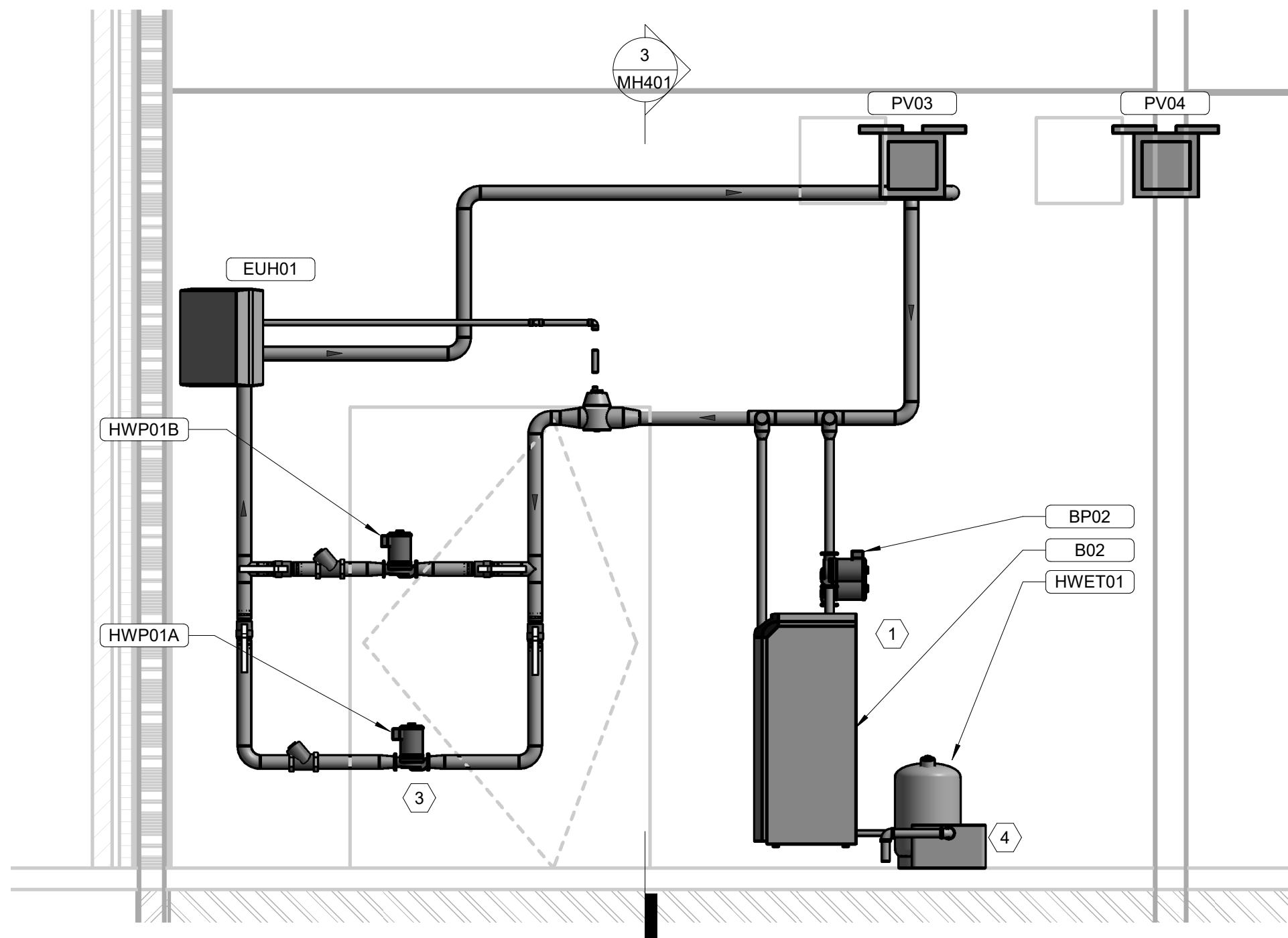


SCALE: 1/8" = 1'-0"

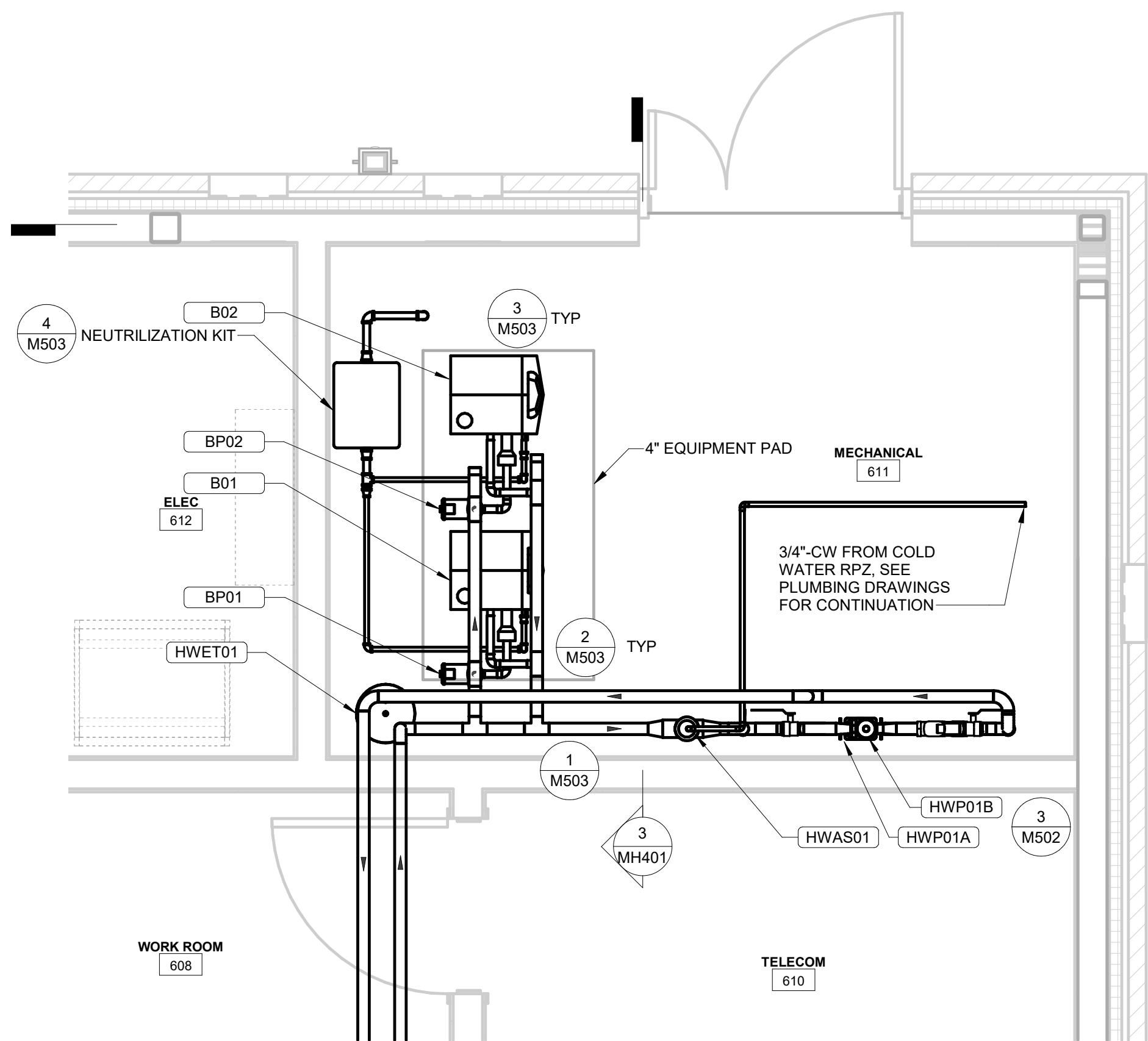
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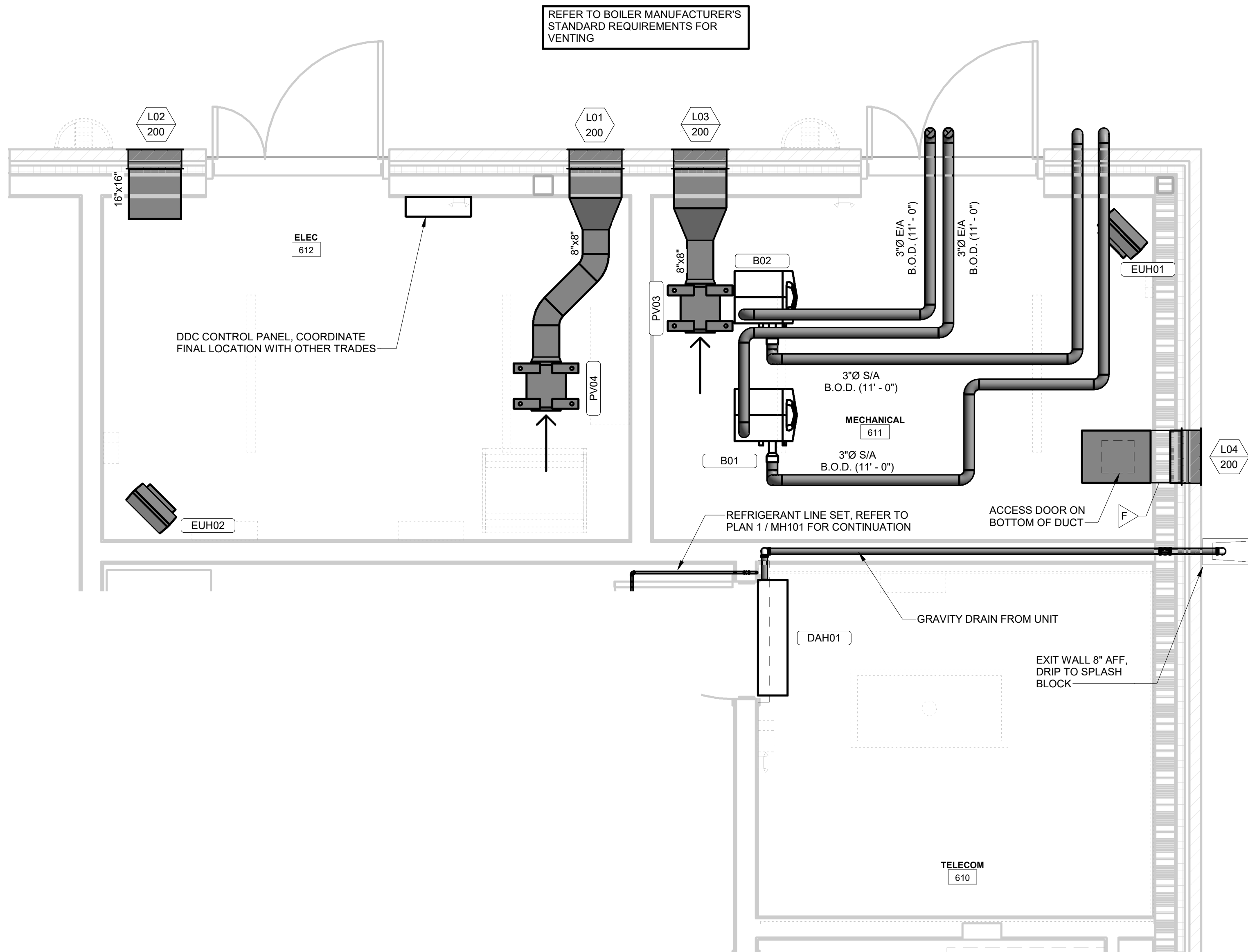
3 MECHANICAL ROOM HYDRONIC SECTION - WEST
SCALE: 1/2" = 1'-0"



4 MECHANICAL ROOM HYDRONIC SECTION - SOUTH
SCALE: 1/2" = 1'-0"



2 ENLARGED MECHANICAL ROOM HYDRONIC PIPING PLAN
SCALE: 1/2" = 1'-0"



1 ENLARGED PLAN - MECHANICAL ROOMS
SCALE: 1/2" = 1'-0"

KEYNOTES	
1	NATURAL GAS CONDENSING BOILER, SEE DETAIL 3.M503
2	EQUIPMENT HOUSEKEEPING PAD, SEE DETAIL 6.M502
3	INLINE PUMP, SEE DETAIL 3.M502
4	NEUTRALIZATION KIT, 4.M503

FLOOR PLAN SHEET NOTES	
1.	REFER TO ARCHITECTURAL ELEVATIONS FOR LOUVER LOCATIONS.
2.	ALL EXTERIOR WALL PENETRATIONS MUST OCCUR PRIOR TO BRICK INSTALLATION FOR PROPER WATERPROOFING / FLASHING.



ARCHITECTURE
PLANNING

North Carolina
3333 Jaecle Drive, Suite 120
Wilmington, NC 28403
910.341.7600

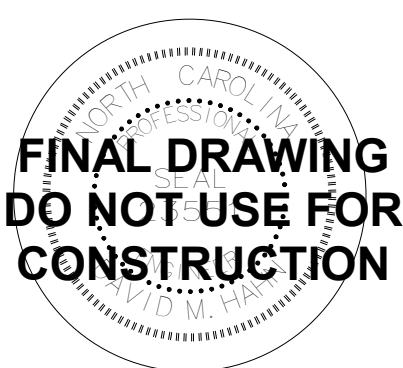
Maryland
312 West Main St, Suite 300
Salisbury, MD 21801
410.546.9100

Delaware
309 S Governors Ave
Dover, DE 19904
302.734.7950

Rittenhouse Station
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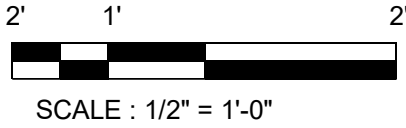
PROJECT TITLE
**NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION**

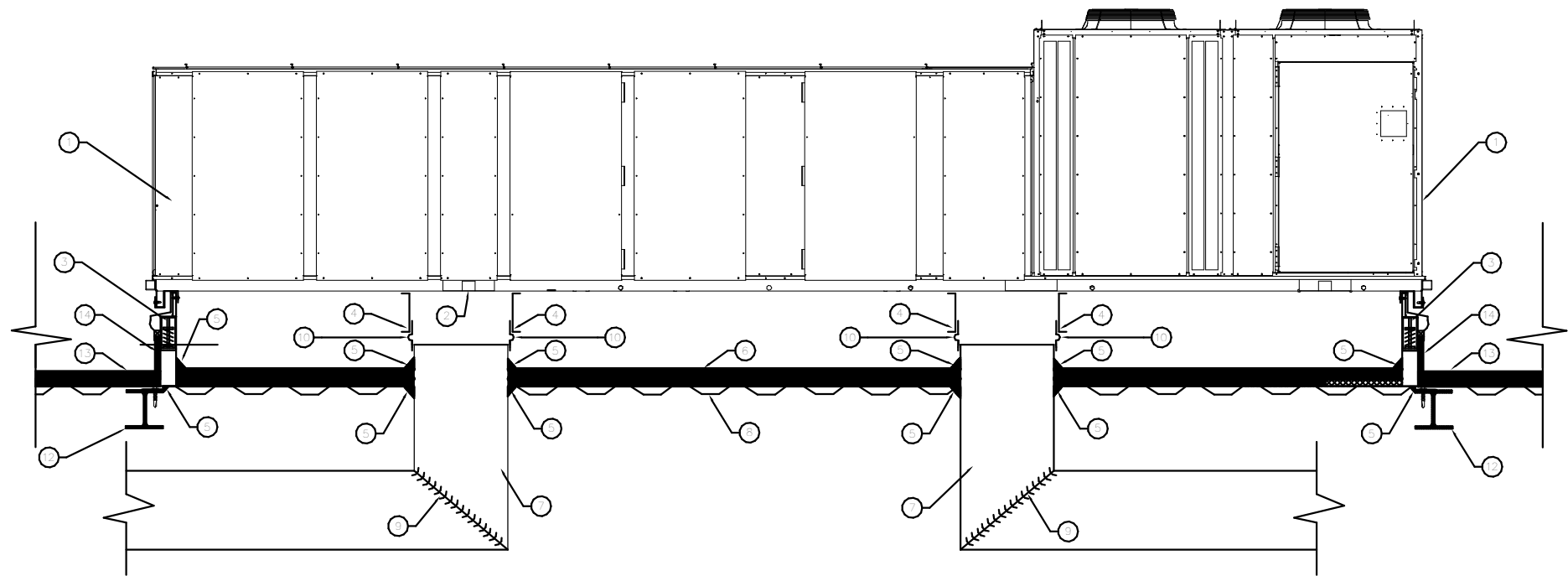
114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

SHEET TITLE
ENLARGED PLANS

ISSUE BLOCK	
Mark	Description
04.23.20	ISSUED FOR BIDDING
03.26.20	100% REVIEW SUBMISSION
01.22.20	60% CD PROGRESS DRAWINGS
10.14.19	NC DPI CD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NC DPI SD SUBMISSION
PROJECT NO: 2019082.00	
DATE: 10.14.2019	
SCALE: 1/2" = 1'-0"	
DRAWN BY: RWC PROJ MGR: DMH	
MH401	
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RTU UNIT WITH HUSHCORE **PLUS™ HSIC-DS-52** ACOUSTIC CURB

BY RTU UNIT MANUFACTURER

1. RTU-01, 02
2. SARA Unit Openings

BY ACOUSTICAL MANUFACTURER

3. 2" Deflection Fully Assembled Seismic HUSH CURB™
4. Integral Curb Duct Supports
5. HUSH SEALANT™ Acoustical Caulk at all Duct Drops & Curb Perimeter
6. HUSHCORE™ DS-52 Deck System In-Curb Acoustical Treatment

BY HVAC CONTRACTOR

7. Duct Work
8. Roof Deck Flashing to within 1/8" of all Duct Drops but not in contact with Duct Wall
9. Turning Vane
10. Flex Connectors
11. Submit Letter of Certification from Acoustical Supplier following Inspection

BY GENERAL CONTRACTOR

12. Building Steel
13. Built-up Roof or Concrete
14. Insulation and Cant Strip
15. Curb Slope requirements where applicable

RTU NOISE REDUCTION SYSTEM

HUSHCORE™ **PLUS™** System Model **HSIC-DS-52** shall be a seismic isolation, 2" deflection, fully adjustable and fully assembled curb system. The completely isolated top and bottom steel structural frames shall have a continuous flexible weathertight seal. The system shall be capable of serving as a blocking device during installation. The springs shall have built-in limit stops to snub out wind resistance. The HUSH CURB™ shall be designed and certified as per specified wind and seismic loads by a licensed professional engineer in the state of North Carolina. The HUSH CURB™ shall be 24" high and shipped completely assembled. Factory curbs with a secondary vibration rail kit are not acceptable. The HUSH CURB™ shall have a field installed in-curb **DS-52** sound package for radiated noise. Materials shall meet Class "A" per ASTM E84 for flammability. The multi-layer composite system shall have a nominal installed height of 8" with transmission loss ratings as listed below in accordance with ASTM E-90-10. HUSH SEALANT™ model HSAC-100 acoustical grade caulk shall be used around all curb perimeter edges and around all curb openings as detailed above after decking is flashed to within 1/8" without contacting the duct wall. Fan noise sound attenuation shall be as scheduled on the drawings or as listed in the specifications. A letter of certification shall be issued by the acoustical system supplier stating the complete system has been properly installed prior to setting the units. Products and systems shall be by BRD Noise and Vibration Control, Inc., Wind Gap, PA - (810) 963-6300, www.HUSHCORE.net

PERFORMANCE

To assure optimized aerodynamic and acoustic performance as well as proper integration and coordination of the final installation, the HUSHCORE™ System shall be supplied by the rooftop unit manufacturer as part of a turnkey package. The HUSH CURB™ shall provide minimum 85% vibration isolation efficiency. HUSHCORE™ Model **HSIC-DS-52** In-Curb Acoustical Treatment Performance shall be tested in accordance with procedure ASTM E-90-10. The assembly shall be rated at not less than STC-52 with 1/3 octave performance values as listed below for sound radiation through the deck inside the curb.

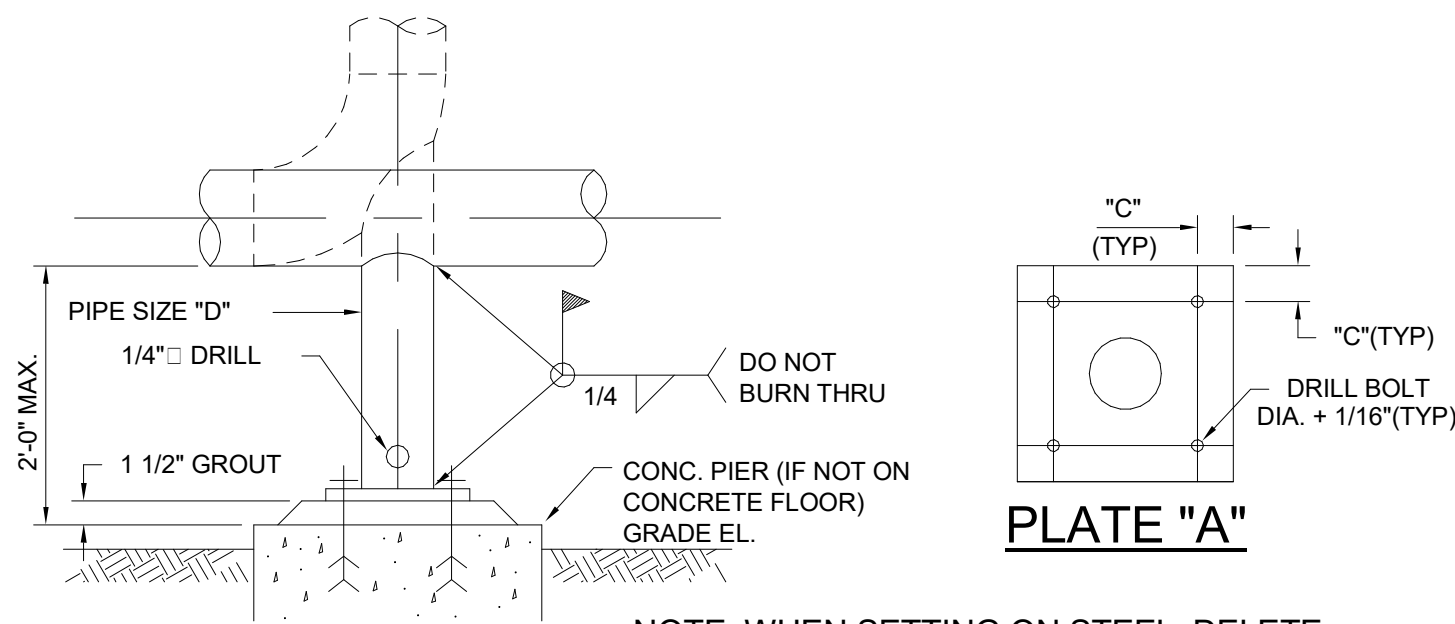
HUSHCORE™ In-Curb Composite DS-52 - (Transmission Loss) in accordance with ASTM E-90-10																						
Freq. (Hz)	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000			
Transmission Loss (dB)	26	27	33	32	35	42	45	45	50	56	59	60	62	63	64	65	67	71	74	76	80	82

APPROVED ALTERNATE MANUFACTURERS:

1. BRD NOISE AND VIBRATION CONTROL, INC.
2. VMC
3. MASON INDUSTRIES

TYPICAL RTU ACOUSTICAL
DETAIL

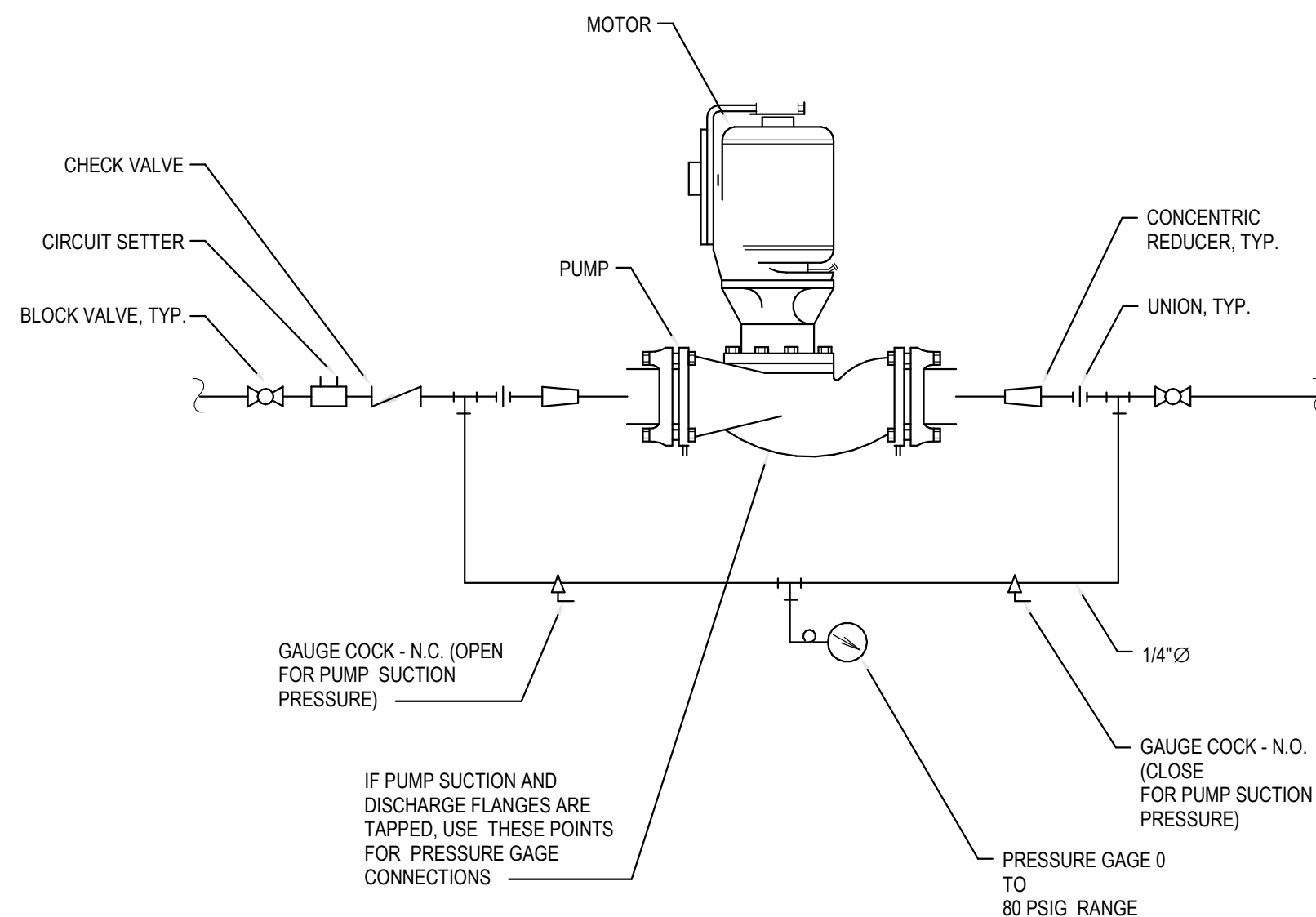
NO SCALE



ELEVATION

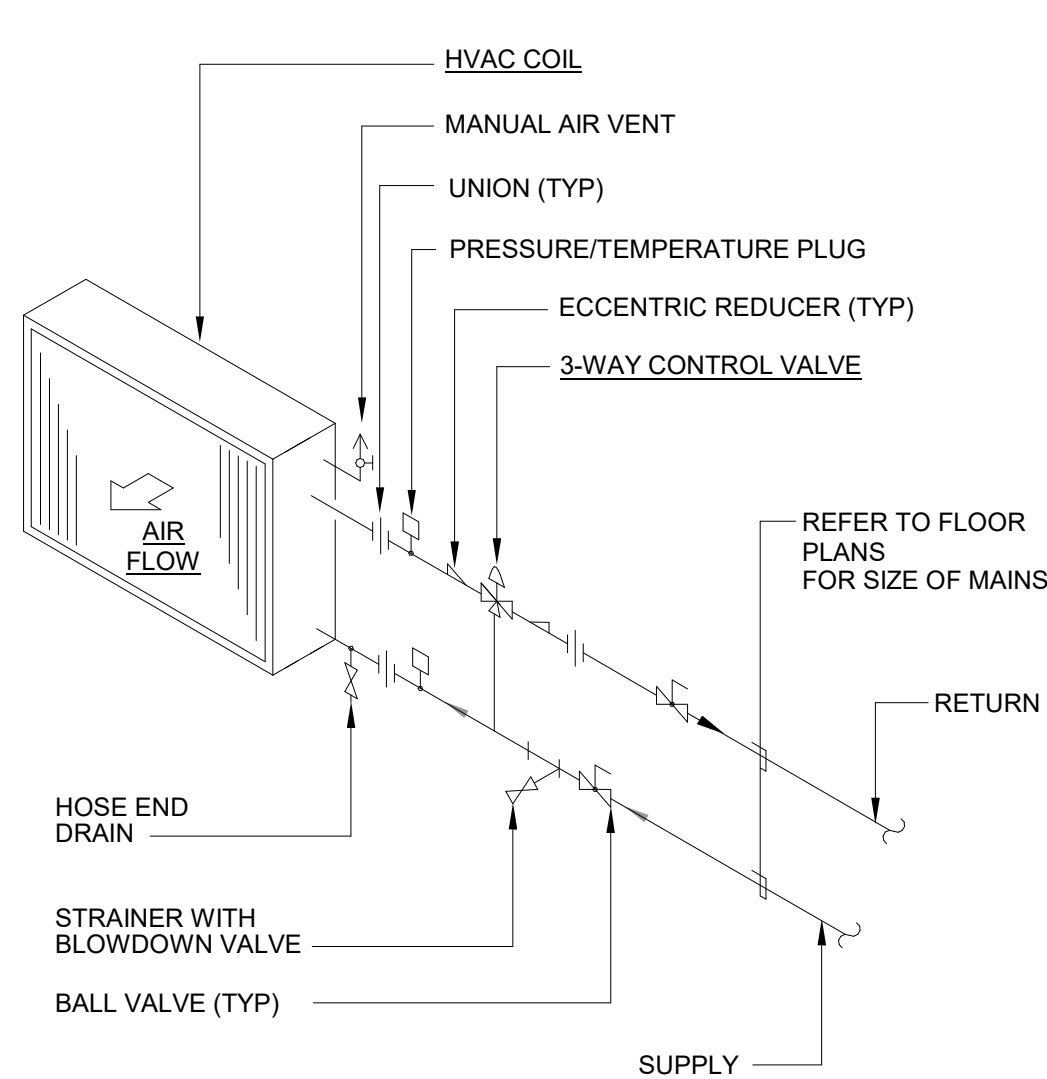
PIPE SIZE	STANCHION SIZE "D"	PLATE "A"	DIM "C"	ANCHOR BOLT SIZE
2"	1 1/2" SCH. 40	6"x1/2"x6"	1"	1/2"
3"-4"	2" SCH. 40	6"x5/8"x6"	1"	1/2"
6"-8"	3" SCH. 40	10"x3/4"x10"	1"	5/8"
10"-14"	4" SCH. 40	10"x3/4"x10"	1"	5/8"
16"-20"	6" SCH. 40	12"x1"x12"	1"	3/4"

NOTE: WHEN SETTING ON STEEL, DELETE ANCHOR BOLTS AND WELD BASE PLATE TO STEEL WITH 1/4" FILLET ALL AROUND.



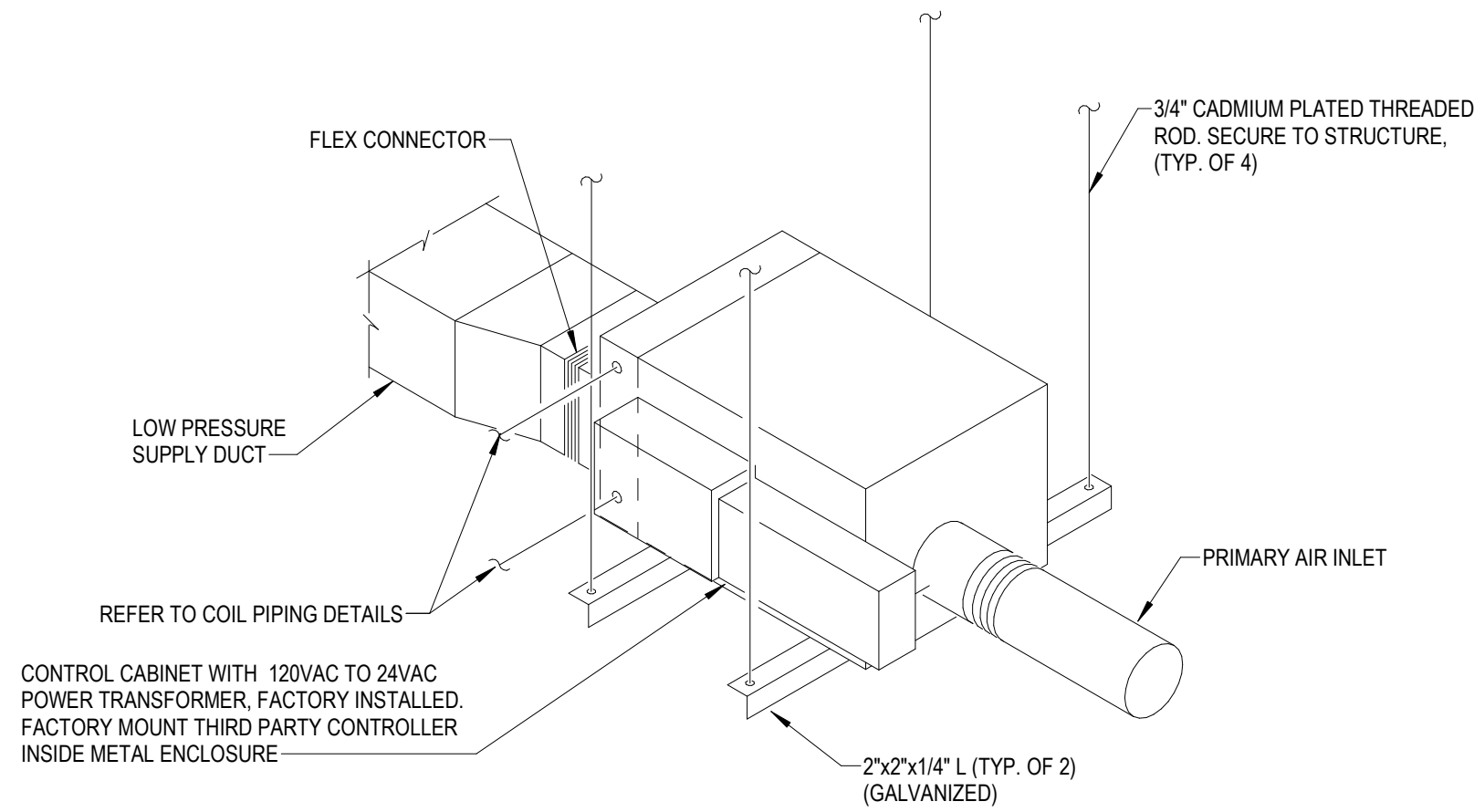
INLINE SYSTEM PUMP DETAIL

NO SCALE



HVAC COIL (3-WAY VALVE)
DETAIL

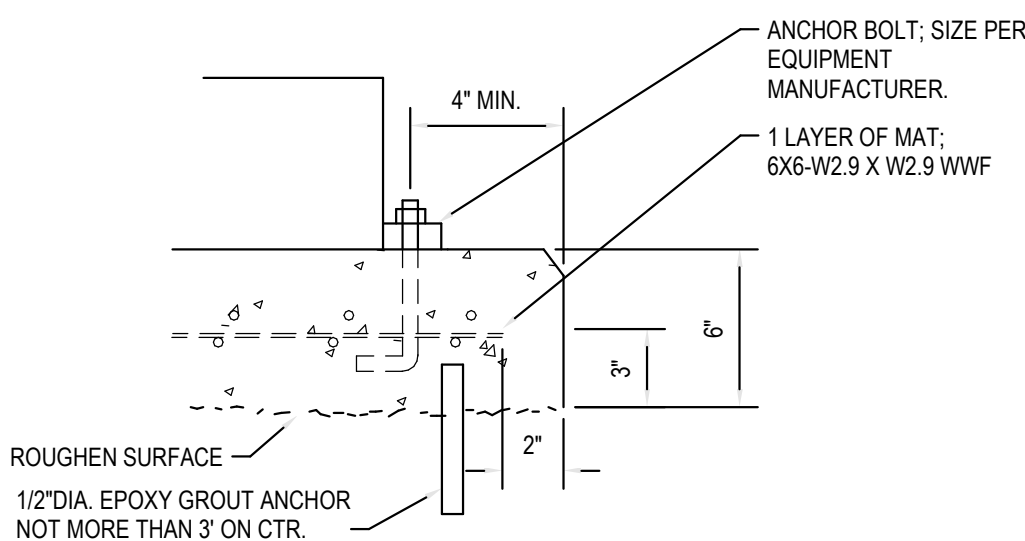
NO SCALE



TYPICAL SINGLE DUCT
TERMINAL WITH HOT WATER
COIL

NO SCALE

- NOTE:
1. MESH SHALL BE FURNISHED IN SHEETS.
 2. ALL PAD EDGES SHALL BE CHAMFERED.
 3. CONCRETE COMPRESSIVE STRENGTH SHALL BE 3,000 PSI AT 28 DAYS.
 4. ONLY ANCHOR EQUIPMENT WITH MANUFACTURER SUPPLIED ANCHOR MOUNTS



EQUIPMENT HOUSEKEEPING
PAD DETAIL

NO SCALE

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PROJECT TITLE

NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

SHEET TITLE

HVAC DETAILS

ISSUE BLOCK

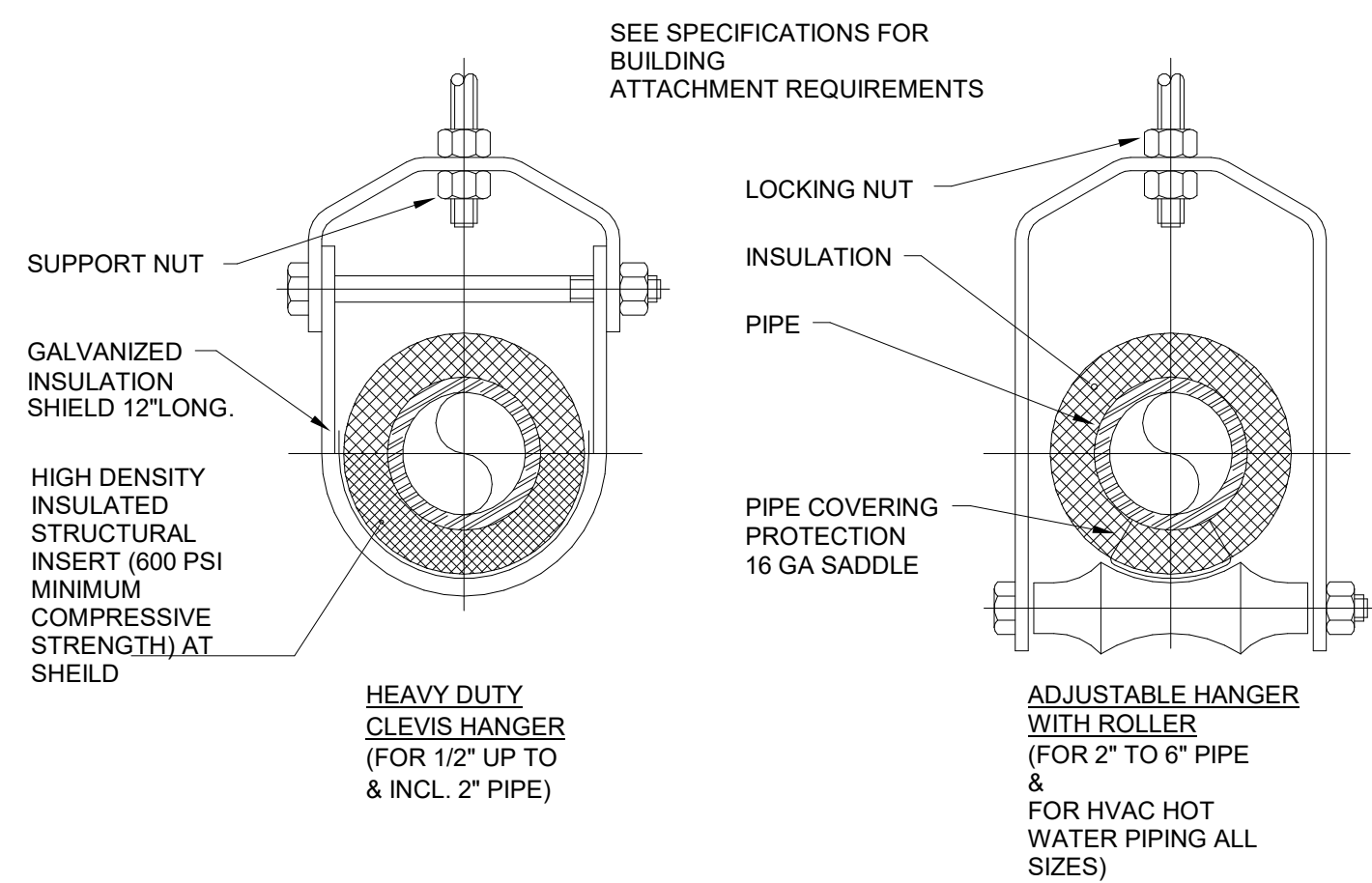
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03.26.20	100% REVIEW SUBMISSION	
01.22.20	60% CD PROGRESS DRAWINGS	
10.14.19	NC DPI DD SUBMISSION	
07.30.19	SD PROGRESS DRAWINGS	
07.11.19	NC DPI SD SUBMISSION	

PROJECT NO: 2019082.00
DATE: 10.14.2019
SCALE: 12" = 1'-0"

DRAWN BY: GRM PROJ MGR: DMH

M502

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LOAD SCHEDULE		
PIPE SIZE	MAXIMUM SPACING	ROD SIZE
1/2" - 2"	8'	1/2"Ø
2 1/2"	10'	5/8"Ø
3"	10'	5/8"Ø
4"	14'	5/8"Ø
5"	14'	5/8"Ø

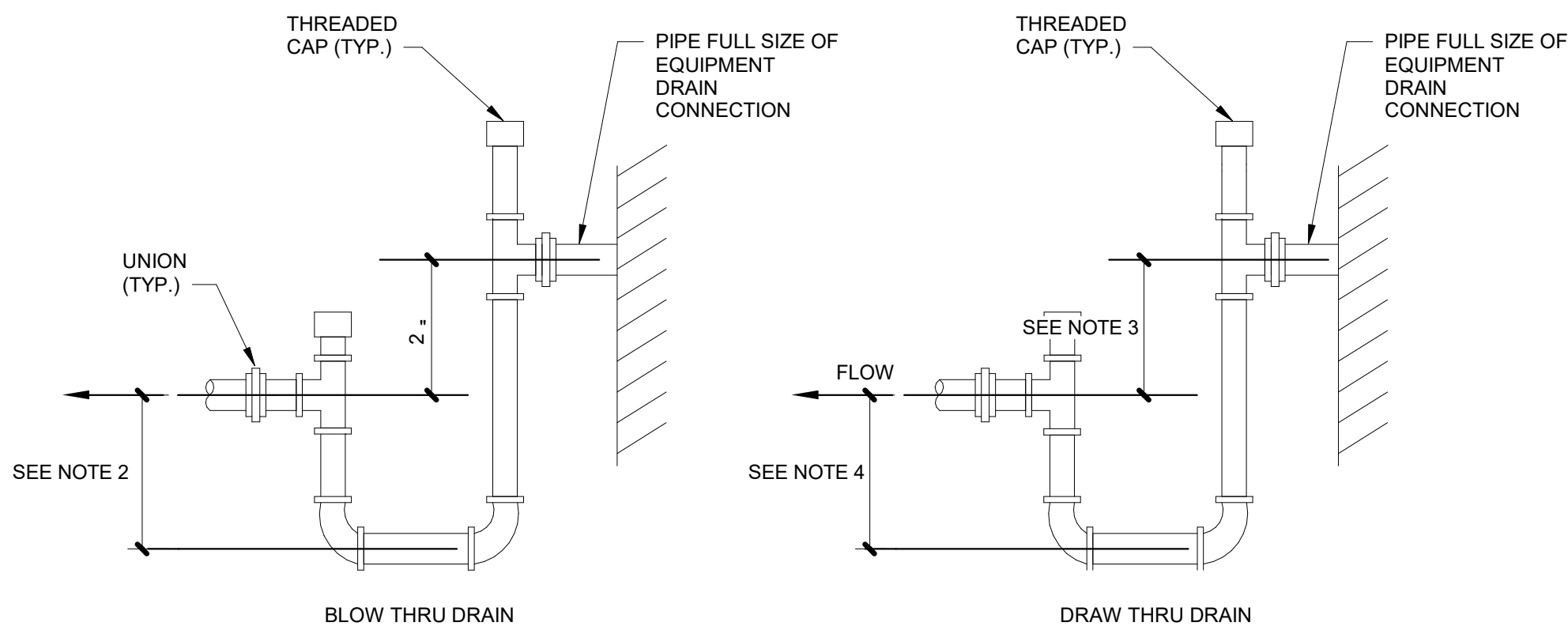
- NOTES:
- THIS DETAIL SHALL BE USED AS A GUIDE. ALL HANGERS SHALL MEET THE REQUIREMENTS OF THE SPECIFICATIONS.
 - PIPE 6" AND LARGER SHALL HAVE ROLLER SUPPORTED WITH DUAL RODS.
 - FOR CHW SERVICE OVER 3" REPLACE SADDLE WITH 12" LONG 14 GA SHIELD WITH RIGID INSULATION BETWEEN PIPE AND SHIELD.
 - WHERE TRAPEZE HANGERS ARE USED FOR HEATING HOT WATER PROVIDE ROLLERS.

1 PIPE HANGER SUPPORT DETAIL

NO SCALE

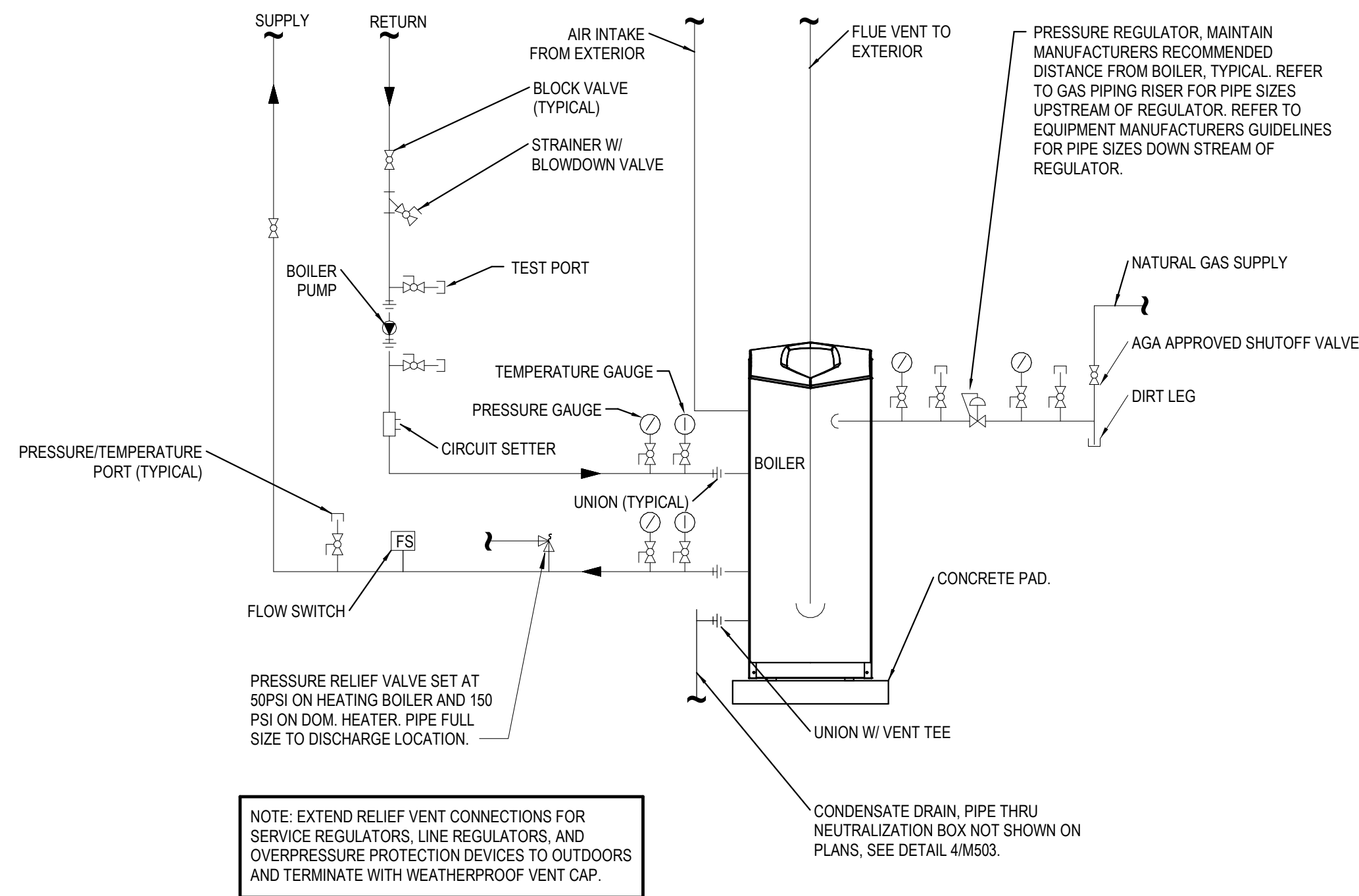
NOTES:

- LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
- HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
- HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
- HEIGHT SHALL BE 1/2" OF HEIGHT INSTALLED ON NOTE 3.
- PIPE TO NEAREST DRAIN.
- TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT.
- PROVIDE UNIONS AT INLET AND OUTLET OF TRAP.



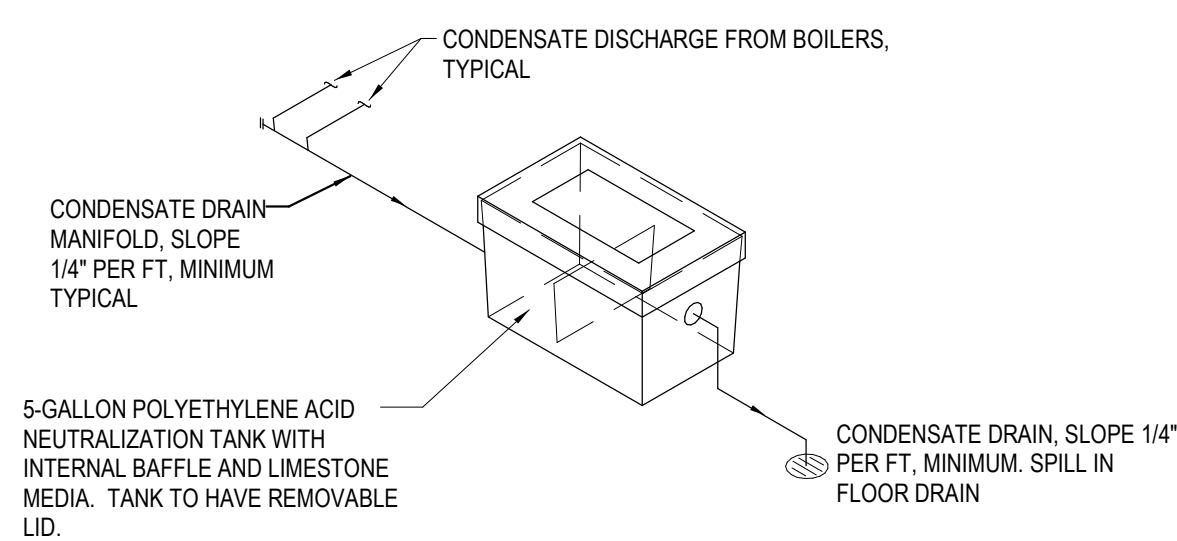
2 TYPICAL EQUIPMENT CONDENSATE DRAIN DETAIL

NO SCALE



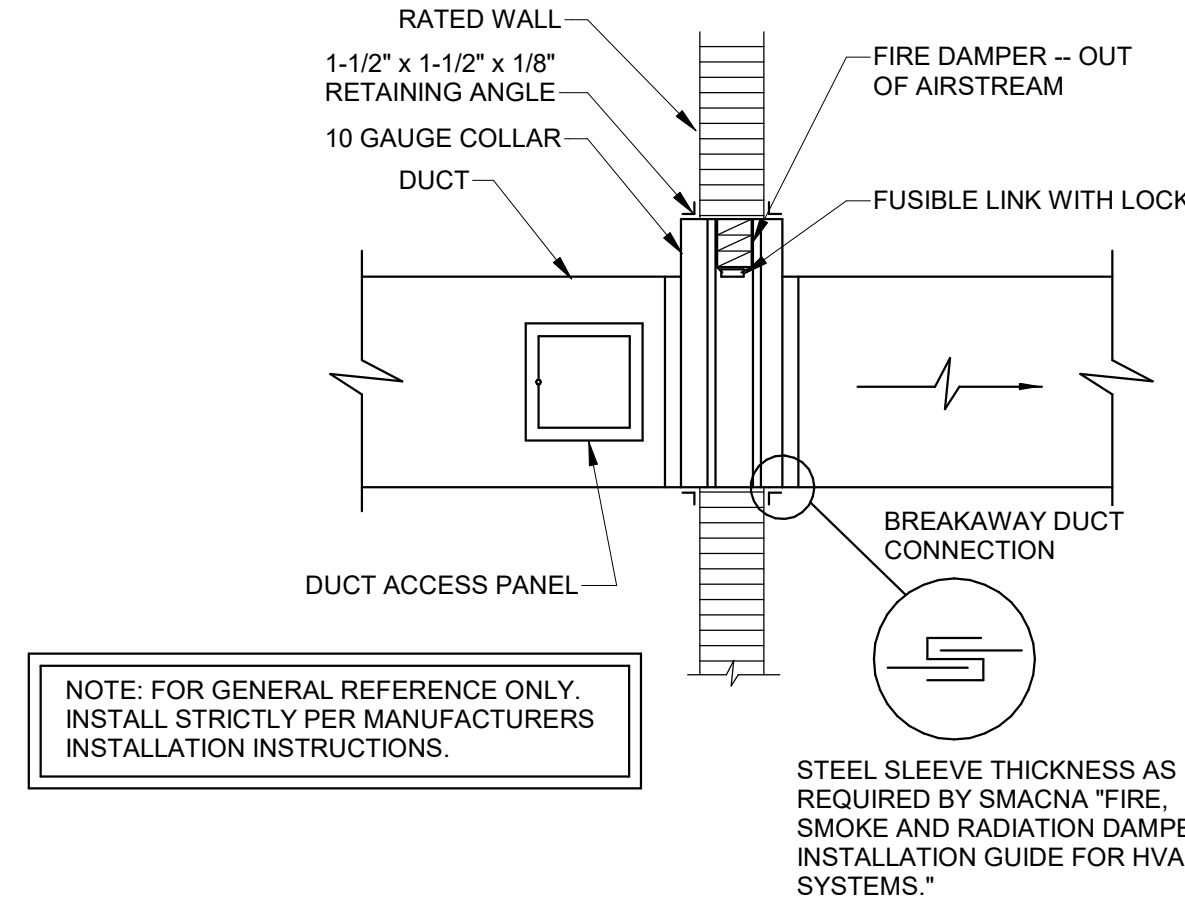
3 GAS-FIRED, FLOOR-MOUNTED HOT WATER BOILER DETAIL

NO SCALE



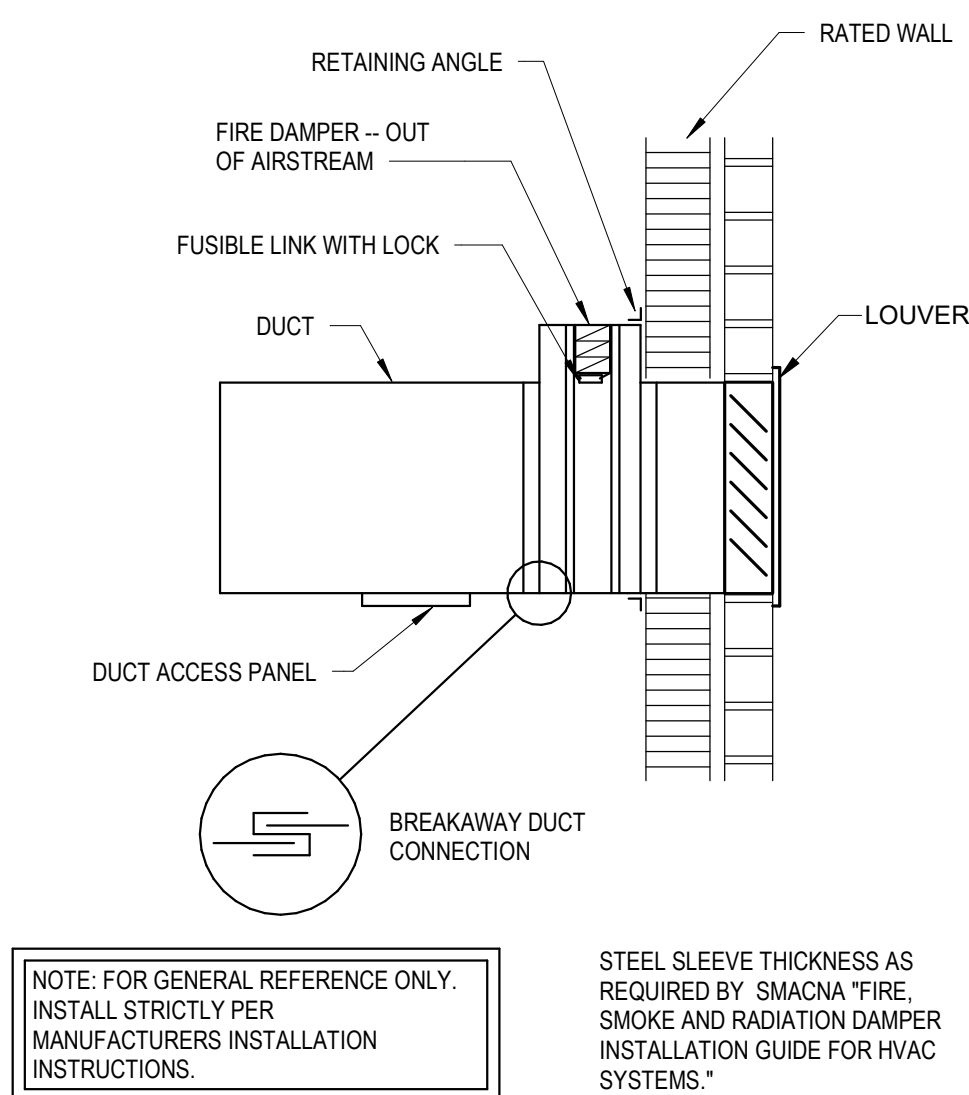
4 CONDENSATE NEUTRALIZATION TANK DETAIL

NO SCALE



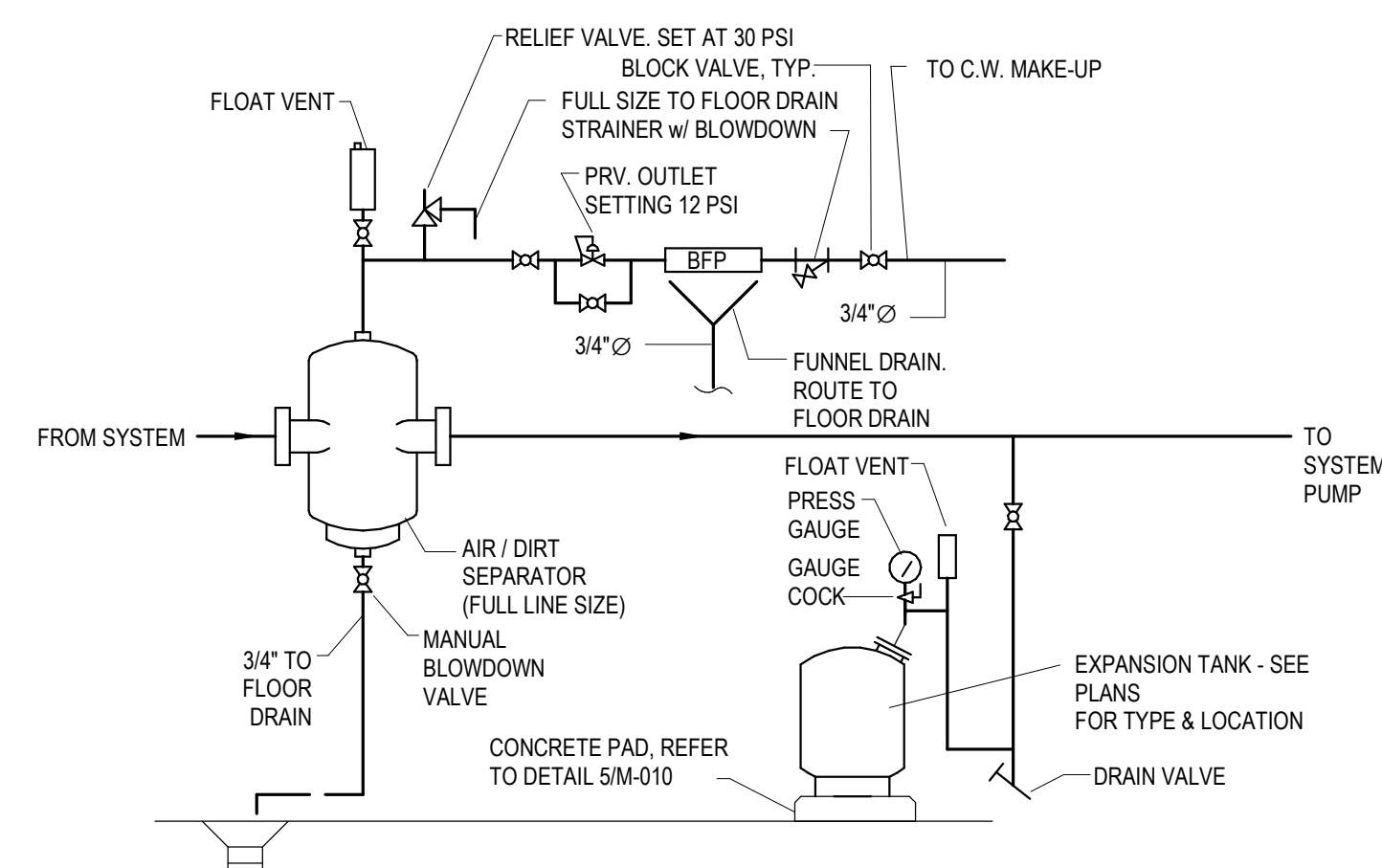
5 FIRE DAMPER

NO SCALE



6 FIRE DAMPER DETAIL - EXTERIOR WALL

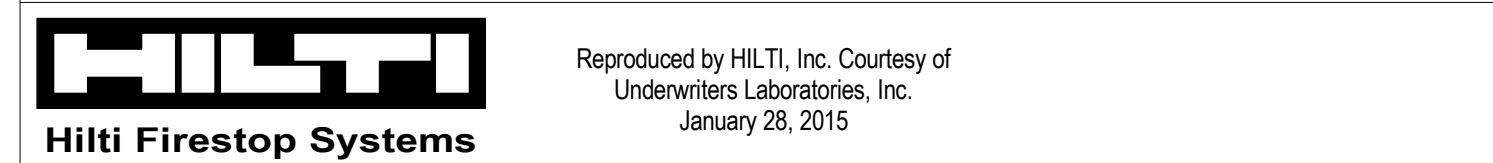
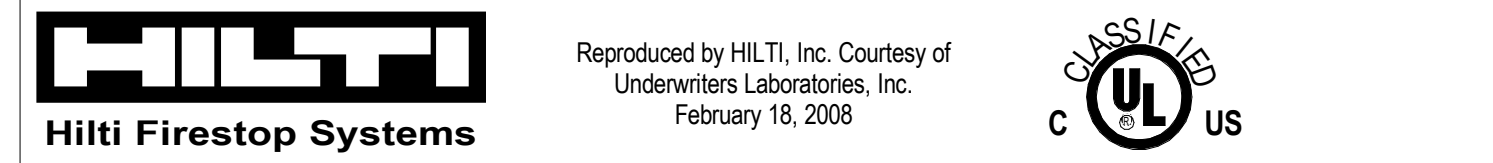
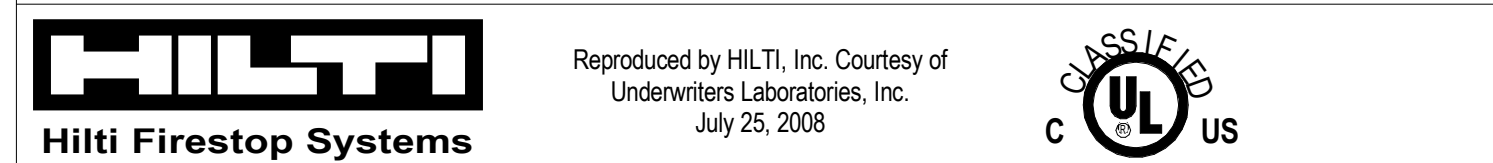
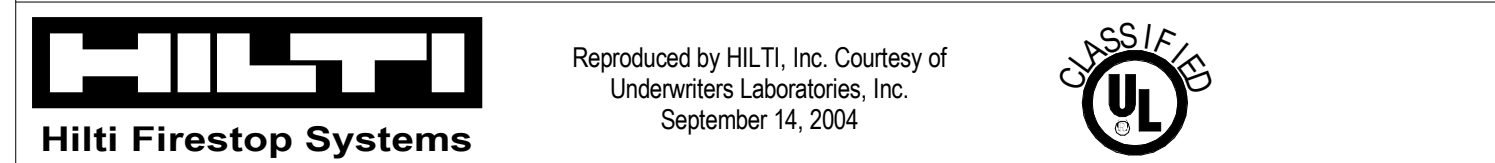
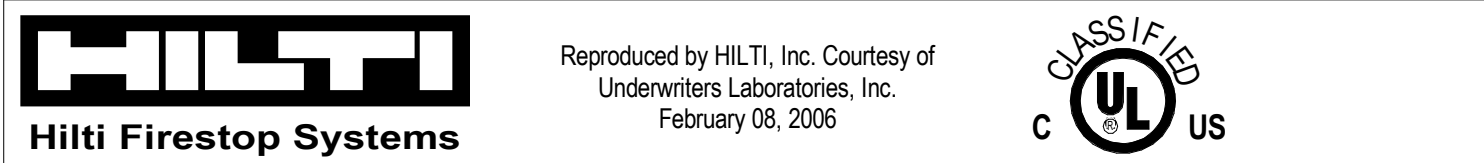
NO SCALE



7 AIR SEPARATOR DETAIL

NO SCALE

ISSUE BLOCK	
Mark	Description
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03.26.20	100% REVIEW SUBMISSION
01.22.20	60% CD PROGRESS DRAWINGS
10.14.19	NC DPI CD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NC DPI SD SUBMISSION



ROOF TOP UNIT SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	ALTERNATE APPROVED MANUFACTURERS	BASIS OF DESIGN MODEL	SYSTEM TYPE	SUPPLY AIR FANS (2@250CFM, 7.5HP)					RELIEF AIR FANS (2@250CFM, 6.0HP)				SUPPLY AIR REFRIGERANT COIL				SUPPLY AIR GAS FURNACE				EFFICIENCY ELECTRICAL				WEIGHT	NOTES	ACCESSORIES									
					TOTAL AIRFLOW	OUTSIDE AIRFLOW	ESP	TSP	MOTOR	SUPPLY FAN QTY	AIRFLOW	ESP	MOTOR	RELIEF FAN QTY	NET TOTAL	NET SENSIBLE	EAT(db)	EAT(wb)	LAT(db)	LAT(wb)	AGA INPUT (MBH) INPUT MAX	INPUT MIN	AGA OUTPUT MAXIMUM (MBH)	GAS CONNECTION	INLET GAS PRESSURE				FUEL TYPE	EAT(db)	LAT(db)	EER	IEER	POWER SUPPLY (V/PH/Hz)	MCA	MOCP	
RTU01	TRANE	DAIKIN, YORK	RF05524E	AIR CONDITIONER	12500 CFM	3540 CFM	2.00 in-wg	4.37 in-wg	15.00 hp	2	12500 CFM	1.00 in-wg	12.00 hp	2	554620 Btu/h	359760 Btu/h	79.7 °F	66.8 °F	54.0 °F	52.3 °F	350	35	283.5	1"	1.7 rh/20	NATURAL GAS	46.5 °F	69.7 °F	10.6	16.2	460/60/3	130.5 A	150.0 A	9170 lb	1,2,3	A THRU R	
NOTES: 1. REFER TO DIVISION SPECIFICATION SECTION 237416.13 - PACKAGED, LARGE-CAPACITY, ROOFTOP AIR-CONDITIONING UNITS FOR ADDITIONAL INFORMATION. 2. AMBIENT DESIGN TEMPERATURE: 95F DB. 3. OUTSIDE AIRFLOW SHALL REMAIN CONSTANT AS SCHEDULED DURING OCCUPIED SCHEDULE.																																					
ACCESSORIES: A. DOUBLE WALLED CONSTRUCTION WITH HINGED ACCESS DOORS. B. PLEATED MEDIA TYPE, 2 INCH THICKNESS, MERV 8. C. DOUBLE INLET, FORWARD CURVED SUPPLY FANS WITH 2 INCH DEFLECTION SPRING ISOLATION. D. INTERNAL, SHAFT GROUNDING RING. E. EXTENDED GREASE LINES. F. DOUBLE SLOPING STAINLESS STEEL DRAIN PAN. G. VARIABLE SPEED COMPRESSORS CAPABLE OF SPEED MODULATION FROM 25 HZ TO A MAXIMUM OF 100 HZ. H. 100 PERCENT MODULATING RETURN FAN WITH CONTROL SYSTEM TO MODULATE DISCHARGE DAMPERS TO CONTROL BUILDING PRESSURE. I. 0-100 PERCENT MODULATING COMPARITIVE ENTHALPY ECONOMIZER. J. FACTORY MOUNTED AIRFLOW MEASUREMENT STATION TO MAINTAIN CONSTANT OUTSIDE AIR. K. LOW LEAK ECONOMIZER DAMPERS HAVING A LEAKAGE RATE OF 1% AT 1.0 IN WC PRESSURE DIFFERENTIAL. L. FACTORY DDC MICROPROCESSOR CONTROLS. M. FACTORY BUILDING MANAGEMENT SYSTEM CONTROL INTERFACE. N. WIND RATED ROOF CURB WITH PE STAMPED CALCULATIONS AND 2" SPRING ISOLATION. O. CORROSION COATED CONDENSER AND EVAPORATOR COIL TO MEET ASTM B117 6000 HOUR SALT SPRAY TEST. P. PROVIDE 5 YEAR PARTS AND LABOR WARRANTY BY EQUIPMENT MANUFACTURER. Q. ULTRA MODULATING GAS HEAT WITH 10:1 TURNDOWN. R. PROVIDE SINGLE POINT POWER CONNECTION.																																					

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE

DRAWING CODE	MANUFACTURER	MODEL NO.	ALTERNATE APPROVED MANUFACTURERS	TYPE	PRIMARY AIRFLOW		HEATING COIL CAP	AIRSIDE DESIGN FLOW				WATERSIDE				NOISE CRITERIA		UNIT DIMENSIONS		UNIT WEIGHT	NOTES	ACCESSORIES	
					MAX	MIN		DISCHARGE	EAT(db)	LAT(db)	PD	ROWS	FLOW	EWIT	LWT	PD	DISCHARGE	RADIATED	TOP MOUNT HEIGHT				AFF ELEVATION
VAV01	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	405 CFM	220 CFM	10477 Btu/h	220 CFM	53.0 °F	97.2 °F	0.46 in-wg	3	1.10 GPM	130 °F	109 °F	0.9 RH2O	34	30	12' - 0"	12' - 0"	51 lb	1,2	A,B,C,D
VAV02	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	940 CFM	470 CFM	20390 Btu/h	470 CFM	53.0 °F	93.2 °F	0.50 in-wg	3	1.60 GPM	130 °F	103 °F	0.5 RH2O	25	26	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV03	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	895 CFM	535 CFM	21589 Btu/h	535 CFM	53.0 °F	90.4 °F	0.46 in-wg	3	1.60 GPM	130 °F	101 °F	0.5 RH2O	25	26	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV04	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	220 CFM	90 CFM	4616 Btu/h	90 CFM	53.0 °F	100.6 °F	0.10 in-wg	2	1.00 GPM	130 °F	111 °F	0.2 RH2O	34	24	12' - 0"	12' - 0"	43 lb	1,2	A,B,C,D
VAV05	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	890 CFM	510 CFM	21152 Btu/h	510 CFM	53.0 °F	91.5 °F	0.42 in-wg	3	1.60 GPM	130 °F	102 °F	0.5 RH2O	24	25	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV06	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	890 CFM	510 CFM	21152 Btu/h	510 CFM	53.0 °F	91.5 °F	0.42 in-wg	3	1.60 GPM	130 °F	102 °F	0.5 RH2O	24	25	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV07	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	940 CFM	565 CFM	24262 Btu/h	565 CFM	53.0 °F	92.8 °F	0.42 in-wg	3	2.20 GPM	130 °F	106 °F	0.5 RH2O	25	26	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV08	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	1115 CFM	515 CFM	20771 Btu/h	515 CFM	53.0 °F	90.4 °F	0.38 in-wg	3	1.60 GPM	130 °F	102 °F	0.2 RH2O	21	24	12' - 0"	12' - 0"	74 lb	1,2	A,B,C,D
VAV09	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	830 CFM	500 CFM	20969 Btu/h	500 CFM	53.0 °F	91.9 °F	0.41 in-wg	3	1.60 GPM	130 °F	102 °F	0.5 RH2O	24	25	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV10	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	1045 CFM	525 CFM	20789 Btu/h	525 CFM	53.0 °F	89.7 °F	0.34 in-wg	3	1.60 GPM	130 °F	102 °F	0.2 RH2O	21	24	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV11	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	1060 CFM	530 CFM	20867 Btu/h	530 CFM	53.0 °F	89.5 °F	0.35 in-wg	3	1.60 GPM	130 °F	102 °F	0.2 RH2O	21	24	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV12	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	800 CFM	475 CFM	20489 Btu/h	475 CFM	53.0 °F	93.0 °F	0.38 in-wg	3	1.60 GPM	130 °F	102 °F	0.5 RH2O	22	25	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV13	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	940 CFM	470 CFM	20390 Btu/h	470 CFM	53.0 °F	93.2 °F	0.50 in-wg	3	1.60 GPM	130 °F	103 °F	0.5 RH2O	25	26	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV14	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	875 CFM	525 CFM	21417 Btu/h	525 CFM	53.0 °F	90.8 °F	0.44 in-wg	3	1.60 GPM	130 °F	101 °F	0.5 RH2O	24	25	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV15	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	830 CFM	500 CFM	20969 Btu/h	500 CFM	53.0 °F	91.9 °F	0.41 in-wg	3	1.60 GPM	130 °F	102 °F	0.5 RH2O	24	25	12' - 0"	12' - 0"	62 lb	1,2	A,B,C,D
VAV16	TRANE	VCWF	TITUS, KRUEGER	SINGLE DUCT	265 CFM	130 CFM	5612 Btu/h	130 CFM	53.0 °F	93.0 °F	0.14 in-wg	2	1.00 GPM	130 °F	107 °F	0.2 RH2O	36	24	12' - 0"	12' - 0"	43 lb	1,2	A,B,C,D
NOTES:																							
1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.																							
2. COIL CONNECTION AND CONTROL ENCLOSURE SHALL BE ON SAME SIDE OF THE UNIT. MAINTENANCE ACCESS SHALL BE FROM BOTTOM.																							
ACCESSORIES:																							
A. PROVIDE 120 VAC TO 24 VAC CONTROL POWER TRANSFORMER, FACTORY INSTALLED BY VAV MANUFACTURER.																							
B. FACTORY MOUNT THIRD PARTY CONTROLLER INSIDE A METAL ENCLOSURE.																							
C. CASING REQUIREMENTS SHALL BE 1" DOUBLE WALL WITH R-3.8 INSULATION VALUE.																							
D. CONNECT VAV BOX TO ELECTRICAL CONTRACTOR PROVIDED/INSTALLED OCCUPANCY SENSOR WITH SPARE SET OF DRY CONTACTS TO OPERATE VAV BOX IN STAND-BY MODE PER SEQUENCE OF OPERATIONS.																							

LOUVER SCHEDULE

DRAWING CODE	MANUFACTURER	MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	FRAME	DESCRIPTION	MATERIAL	LOUVER DEPTH (IN)	SIZE (W x H)	SERVICE TYPE	Air Flow	PERFORMANCE RATINGS			NOTES	ACCESSORIES
												FREE AREA (SF)	S.P. LOSS (IN H2O)	WATER PENETRATION (OZ/SF)		
L01	RUSKIN	ELF6375DXH	VENT PRODUCTS, POTTORF	FIXED	EXTERIOR FLANGE	HORIZONTAL, DRAINABLE-BLADE	ALUMINUM	6	16"x16"	E/A, General Exhaust Air	200 CFM	0.77	0.01	-	1,2,3	A,B
L02	RUSKIN	ELF6375DXH	VENT PRODUCTS, POTTORF	FIXED	EXTERIOR FLANGE	HORIZONTAL, DRAINABLE-BLADE	ALUMINUM	6	16"x16"	R/A, Outside Air	200 CFM	0.77	0.01	-	1,2,3	A,B
L03	RUSKIN	ELF6375DXH	VENT PRODUCTS, POTTORF	FIXED	EXTERIOR FLANGE	HORIZONTAL, DRAINABLE-BLADE	ALUMINUM	6	16"x16"	E/A, General Exhaust Air	200 CFM	0.77	0.01	-	1,2,3	A,B
L04	RUSKIN	ELF6375DXH	VENT PRODUCTS, POTTORF	FIXED	EXTERIOR FLANGE	HORIZONTAL, DRAINABLE-BLADE	ALUMINUM	6	16"x16"	R/A, Outside Air	200 CFM	0.77	0.01	-	1,2,3	A,B
NOTES: 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. 2. FINISH AS SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE OF COLOR AND GLOSS. 3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION.																
ACCESSORIES: A. BIRD SCREENING (MATERIAL TO MATCH LOUVER MATERIAL). B. GRAVITY DAMPER, SEA-COAST PROTECTION.																

POWER VENTILATOR SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO.	ALTERNATE APPROVED MANUFACTURERS	FAN TYPE	SERVICE	CAPACITIES AIRFLOW	Fan ESP	DRIVE TYPE	FAN RPM	ELECTRICAL		VOLT	PH	FREQUENCY	FLA	MOCP	SONES	WEIGHT	NOTES	ACCESSORIES
										MOTOR (HP)	MOTOR SIZE (HP)(W)									
PV01	GREENHECK	G-123-VG	TWIN CITY, PENNBARRY	CENTRIFUGAL ROOF VENTILATORS	EXHAUST	1360 CFM	0.50 in-wg	DIRECT	1366	Yes	0.500 hp	115 V	1	60 Hz	6.4 A	15.0 A	11.6	50 lb	1	B,E,F,G,H
PV02	GREENHECK	SP-A50-90-VG	TWIN CITY, PENNBARRY	CEILING MOUNTED VENTILATORS	EXHAUST	70 CFM	0.25 in-wg	DIRECT	838	Yes	0.008 hp	115 V	1	60 Hz	0.3 A	15.0 A	0.9	15 lb	1	B,I,J
PV03	GREENHECK	SD-70-VG	TWIN CITY, PENNBARRY	IN-LINE CENTRIFUGAL VENTILATORS	EXHAUST	200 CFM	0.25 in-wg	DIRECT	1585	Yes	0.100 hp	115 V	1	60 Hz	2.1 A	15.0 A	5	45 lb	1	A,B,C,D
PV04	GREENHECK	SD-70-VG	TWIN CITY, PENNBARRY	IN-LINE CENTRIFUGAL VENTILATORS	EXHAUST	200 CFM	0.25 in-wg	DIRECT	1585	Yes	0.100 hp	115 V	1	60 Hz	2.1 A	15.0 A	5	45 lb	1	A,B,C,D
PV05	GREENHECK	SP-A50-90-VG	TWIN CITY, PENNBARRY	CEILING MOUNTED VENTILATORS	EXHAUST	70 CFM	0.25 in-wg	DIRECT	838	Yes	0.008 hp	115 V	1	60 Hz	0.3 A	15.0 A	0.9	15 lb	1	B,I,J
NOTES: 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.																				
ACCESSORIES: A. SAFETY GUARD ON INLET. B. GRAVITY DAMPER. C. ISOLATORS AND BRACKETS. D. ON/OFF/AUTO SWITCH LOCATED PER PLANS. PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. E. FAN TO RUN ON OCCUPIED SCHEDULE. REFER TO CONTROL SEQUENCES FOR ADDITIONAL INFORMATION. F. ROOF CURB. G. BIRD SCREEN. H. HIGH WIND RATING. I. 120V TO 277V TRANSFORMER PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. J. FAN CONTROLLED BY OCCUPANCY SENSOR PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.																				

ELECTRIC UNIT HEATER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	DESCRIPTION TYPE	FAN	DISCHARGE	ELECTRIC COIL CAPACITY	STEPS	SUPPLY AIR DESIGN	THROW	FAN MOTOR SPEED (RPM)	MOTOR (HP)	ELECTRICAL		FLA	MCA	MOCP	UNIT WEIGHT	RECOMMENDED MOUNTING HEIGHT	NOTES	ACCESSORIES
													VOLT	PH							
EUH01	MARKEL	F1F5103N	QMARK, INDEECO	UNIT HEATER	PROPELLER	HORIZONTAL	3 KW	1	400 CFM	12 FT	-	-	208 V	1	15.9 A	19.8 A	20.0 A	25 lb	9'-0"	1	A,B
EUH02	MARKEL	F1F5103N	QMARK, INDEECO	UNIT HEATER	PROPELLER	HORIZONTAL	3 KW	1	400 CFM	12 FT	-	-	208 V	1	15.9 A	19.8 A	20.0 A	25 lb	9'-0"	1	A,B
NOTES: 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.																					
ACCESSORIES: A. FACTORY INSTALLED THERMOSTAT. B. MOUNTING HARDWARE FOR WALL MOUNT APPLICATION.																					



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VENTILATION SCHEDULE

1. SUMMARY - RTU01
 VENTILATION SIZING METHOD ASHRAE STD 62.1-2016
 DESIGN CONDITION MINIMUM FLOW (HEATING)
 OCCUPANT DIVERSITY (D) 1.000 UNCORRECTED OUTDOOR AIR INTAKE (VOLU) 2860 CFM
 SYSTEM VENTILATION EFFICIENCY... 0.809
 OUTDOOR AIR INTAKE 3537 CFM

2. SPACE VENTILATION ANALYSIS

ZONE NAME / SPACE NAME	MULT.	MINIMUM SUPPLY AIR (CFM)	SPACE FLOOR AREA (FT²)	AREA OUTDOOR AIR RATE (CFM/FT²)	TIME AVERAGED OCCUPANCY (OCCUPANTS)	PEOPLE OUTDOOR AIR RATE (CFM/PERSON)	DISTRIBUTION EFFECTIVENESS	SPACE OUTDOOR AIR (CFM)	BREATHING ZONE OUTDOOR AIR (CFM)	SPACE VENTILATION EFFICIENCY
VAV01										
600 ENTRY	1	72	410	0.06	0	0	0.8	31	25	0.981
605 WOMENS TOILET	1	22	235	0	0	0	0.8	0	0	1.409
606 MENS TOILET	1	19	210	0	0	0	0.8	0	0	1.409
613 CORRIDOR	1	63	1091	0	0	0	0.8	0	0	1.409
619 JANITOR	1	25	125	0	0	0	0.8	0	0	1.409
VAV02										
601 HEALTH SCIENCE	1	471	1540	0	30	7.5	0.8	281	225	0.812
VAV03										
604 CTE-BUSINESS	1	537	1013	0	30	7.5	0.8	281	225	0.885
VAV04										
608 WORK ROOM	1	80	335	0	5	7.5	0.8	47	38	0.826
609 TOILET	1	12	88	0	0	0	0.8	0	0	1.409
VAV05										
614 BUSINESS	1	509	1052	0	30	7.5	0.8	281	225	0.856
VAV06										
616 MARKETING_BUSINESS	1	509	1052	0	30	7.5	0.8	281	225	0.856
VAV07										
617 CLOSET	1	26	50	0	0	0	0.8	0	0	1.409
618 FOOD	1	549	1422	0	30	7.5	0.8	281	225	0.897
VAV08										
700 CORR	1	283	756	0.06	0	5	0.8	57	45	1.209
703 WOMENS TOILET	1	34	318	0	0	0	0.8	0	0	1.409
704 MENS TOILET	1	34	322	0	0	0	0.8	0	0	1.409
707 CORRIDOR	1	97	971	0	0	0	0.8	0	0	1.409
707A JAN	1	1	23	0	0	0	0.8	0	0	1.409
709 ACCESS ROOF	1	3	49	0	0	0	0.8	0	0	1.409
VAV09										
701 CTE	1	498	1012	0	30	7.5	0.8	281	225	0.844
VAV10										
702 CTE DRAFTING	1	523	1145	0	30	7.5	0.8	281	225	0.871
VAV11										
706 CTE ADOBE	1	528	1112	0	30	7.5	0.8	281	225	0.877
VAV12										
708 CLASSROOM	1	477	996	0	30	7.5	0.8	281	225	0.82
VAV13										
710 CLASSROOM	1	469	1024	0	30	7.5	0.8	281	225	0.809
VAV14										
712 CLASSROOM	1	526	1039	0	30	7.5	0.8	281	225	0.874
VAV15										
711 CLASSROOM	1	497	978	0	30	7.5	0.8	281	225	0.843
VAV16										
713 WORK ROOM	1	132	128	0	7	7.5	0.8	66	53	0.913
TOTALS (INCL. SPACE MULTIPLIERS)		6994							2860	0.809

PUMP SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	PUMP TYPE	SERVICE	FLUID	Flow Rate	Pump Head (FT)	INLET	OUTLET	MOTOR ENCLOSURE TYPE	MATERIALS	MOTOR SPEED RPM	HP	ELECTRICAL VOLT	PH	FREQ	WEIGHT	NOTES	ACCESSORIES
HWP01A	BELL & GOSSETT	PL-30B	GRUNDFOS, TACO	DRY ROTOR CIRCULATOR PUMP	HOT WATER	WATER	26.5 GPM	30	1 1/2"	1 1/2"	ODP	CAST IRON	3250	0.40 hp	120 V	1	60 Hz	13 lb	1	A,B
HWP01B	BELL & GOSSETT	PL-30B	GRUNDFOS, TACO	DRY ROTOR CIRCULATOR PUMP	HOT WATER	WATER	26.5 GPM	30	1 1/2"	1 1/2"	ODP	CAST IRON	3250	0.40 hp	120 V	1	60 Hz	13 lb	1	A,B

NOTES:
 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ACCESSORIES:
 A. PREMIUM EFFICIENT MOTOR.
 B. BRONZE FITTED.

CONDENSING BOILER SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	BURNER	HEATING MEDIUM	DESIGN WATER PRESSURE RATING (PSIG)	AGA INPUT (MBH)		AGA OUTPUT MAX (MBH)	CONNECTIONS	ELECTRICAL					WEIGHT	Notes	ACCESSORIES					
							MIN	MAX			GAS	INLET GAS PRESSURE	WATER	INTAKE	VENT				VOLT	PH	FREQ	MCA	MOCP
B01	Lochinvar	KHB199N	AERCO, LAARS	Knight Fire Tube Boiler	WATER		160	20	199	185	1/2"	0.5 psi	1 1/4"	3"	3"	120 V	1	60 Hz	3.3 A	15.0 A	195 lb	1,2,3,4	A THRU E
B02	Lochinvar	KHB199N	AERCO, LAARS	Knight Fire Tube Boiler	WATER		160	20	199	185	1/2"	0.5 psi	1 1/4"	3"	3"	120 V	1	60 Hz	3.3 A	15.0 A	195 lb	1,2,3,4	A THRU E

NOTES:

- 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 2. REFER TO PLANS FOR VENTING ARRANGEMENT.
- 3. ROUTE CONDENSATE THROUGH CONDENSATE NEUTRALIZATION KIT. REFER TO PLANS FOR LOCATION AND ARRANGEMENT.
- 4. MOUNT BOILER ON 4" HIGH CONCRETE HOUSE KEEPING PAD. PROVIDE SINGLE PAD FOR MULTIPLE BOILERS WHERE INDICATED ON PLANS.

ACCESSORIES:

- A. MODBUS COMMUNICATION.
- B. BMS MSTP INTERFACE TO BACNET
- C. HIGH AND LOW GAS PRESSURE SWITCHES WITH MANUAL RESET.
- D. LOW WATER CUTOFF WITH MANUAL RESET AND TEST
- E. PROVIDE MANUFACTURERS BOILER PUMP. 120V/1/60, 100W.

CABINET HEATER SCHEDULE

DRAWING CODE	MANUFACTURER	MODEL NO.	ALTERNATE APPROVED MANUFACTURERS	TYPE	COIL OUTPUT	WATER	EWI	LWT	WPD	AIRFLOW	MOTOR HP	RPM	TYPE (ECM)	ELECTRICAL V/PH/Hz	MCA	MOCP	WEIGHT	NOTES	ACCESSORIES
CUH01	STERLING	RWI-06	MCQUAY, MODINE	VERTICAL CABINET	31080.00 Btu/h	2.0 GPM	130 °F	98.84 °F	1.2 ftH2O	645 CFM	0.13 hp	838	Yes	115/1/60	6.1 A	15.0 A	218 lb	1,2	A THRU G

NOTES:
 1. REFER TO SPECIFICATION SECTION 23 73 33 - HEATING, VENTILATING, AND COOLING SYSTEM FOR FURTHER INFORMATION.
 2. CONFIRM PIPING SYSTEM PLACEMENT PRIOR TO SUBMITTING FOR APPROVAL.

ACCESSORIES:
 A. FILTER: 1" PLEATED PERV 8.
 B. BAR GRILLE INLET AND OUTLET.
 C. BEIGE PAINT COLOR.
 D. LOW-VOLTAGE TERMINAL STRIP WITH CONTROL POWERED TRANSFORMER.
 E. UNIT-MOUNTED NON-FUSED DISCONNECT.
 F. 8" EXTENDED END POCKET FOR HEATING WATER PIPING AND CONTROL VALVE.
 G. KEYLESS ACCESS DOOR AND LEVELING FEET.

DUCTLESS AIR HANDLER UNIT SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO.	ALTERNATE APPROVED MANUFACTURERS	ARI COOLING 80/67/95 TOTAL	ARI HEATING 70/47	SEER	COP	FAN BA MAX	ELECTRICAL VOLT	PH	FREQUENCY	MCA	MOCP	WEIGHT	NOTES	ACCESSORIES	
DAH01	MITSUBISHI ELECTRIC	PKA-A12KA4	DAIKIN, LG	12000 Btu/h	5800 Btu/h	14000 Btu/h	20.8	4.31	425 CFM	208 V	1	60 Hz	1.0 A	15.0 A	29 lb	1	A,B,C

NOTES:
1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ACCESSORIES:
A. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTOR FROM OUTDOOR UNIT TO INDOOR UNIT.
B. WIRED WALL MOUNTED REMOTE CONTROLLER.
C. GRAVITY DRAIN CONDENSATE IS PREFERRED. IF NOT APPLICABLE PROVIDE ASPEN MINI-WHITE OR APPROVED EQUAL WALL MOUNT CONDENSATE PUMP.

DUCTLESS HEAT PUMP UNIT SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL NO.	ALTERNATE APPROVED MANUFACTURERS	ELECTRICAL VOLT	PH	FREQUENCY	MCA	MOCP	WEIGHT	REFRIGERANT PIPING MAX LENGTH	MAX HEIGHT DIFFERENTIAL	NOTES	ACCESSORIES
DHP01	MITSUBISHI ELECTRIC	PUZ-A12NKA7	DAIKIN, LG	208 V	2	60 Hz	11.0 A	15.0 A	93 lb	100' - 0"	100' - 0"	1	A,B

NOTES:
 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ACCESSORIES:
 A. MANUFACTURER'S LOW AMBIENT WIND BAFFLE FOR COOLING OPERATION TO 0-DEGREES F.
 B. MANUFACTURERS RECOMMENDED ROOF MOUNTING RAILS AND ACCESSORIES.

AIR/DIRT SEPARATOR SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	DESCRIPTION	FLOW	WORKING PRESSURE	WATER CONNECTIONS WATER INLET DIAMETER	WATER OUTLET DIAMETER	WEIGHT	NOTES	ACCESSORIES
HWS01	BELL & GOSSETT	EASB-JR	TACO, WESSELS	AIR DIRT SEPARATOR	26.5 GPM	150.0 psi	2"	2"	5	1	

NOTES:
 1. PROVIDE AUTOMATIC AIR VENT.

ACCESSORIES:
 A. N/A

EXPANSION TANK SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	VOLUME	ORIENTATION	OVERALL LENGTH	OVERALL DIAMETER	WEIGHT	NOTES	ACCESSORIES
HWET01	Bell & Gossett	D-15V	2.4 gal	VERTICAL	1' - 7 1/2"	12"	43	-	-

NOTES:
 1. N/A

ACCESSORIES:
 1. N/A

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

DRAWING CODE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE APPROVED MANUFACTURERS	TYPE	SERVICE	NECK SIZE	MODULE SIZE	MATERIAL	FINISH	MOUNTING	NOTES	ACCESSORIES
E1	TITUS	350FL	PRICE, METAL AIRE	LOUVERED GRILLE	EXHAUST	12 X12	-	ALUMINUM	WHITE ENAMEL	CEILING SURFACE	1,2,3	A
R1	TITUS	355FL	PRICE, METAL AIRE	LOUVERED GRILLE	RETURN	20 X 20	24 X 24	ALUMINUM	WHITE ENAMEL	T-BAR	1,2,3	-
S1	TITUS	OMNI-AA	PRICE, METAL AIRE	PLAQUE FACE DIFFUSER	SUPPLY	6 DIA	24 X 24	ALUMINUM	WHITE ENAMEL	T-BAR	1,2,3	A
S2	TITUS	OMNI-AA	PRICE, METAL AIRE	PLAQUE FACE DIFFUSER	SUPPLY	8 DIA	24 X 24	ALUMINUM	WHITE ENAMEL	T-BAR	1,2,3	A
S3	TITUS	OMNI-AA	PRICE, METAL AIRE	PLAQUE FACE DIFFUSER	SUPPLY	10 DIA	24 X 24	ALUMINUM	WHITE ENAMEL	T-BAR	1,2,3	A
S4	TITUS	300FS	PRICE, METAL AIRE	LOUVERED DOUBLE DEFLECTION GRILLE	SUPPLY	12 X 6	-	ALUMINUM	WHITE ENAMEL	CEILING SURFACE	1,2,3	A

NOTES:
 1. REFER TO DIVISION 23 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 2. DUCT BRANCH CONNECTION SIZE TO BE EQUAL TO THE NECK SIZE OF DIFFUSER UNLESS NOTED OTHERWISE ON PLANS.
 3. COORDINATE FINAL COLOR AND FINISH WITH ARCHITECT.

ACCESSORIES:
 A. OPPOSED BLADE DAMPER.



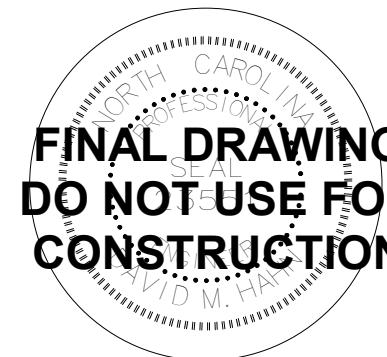
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PROJECT TITLE

NORTH BRUNSWICK HIGH SCHOOL NEW ADDITION

114 SCORPION DRIVE N.E.
 LELAND, NC 28451

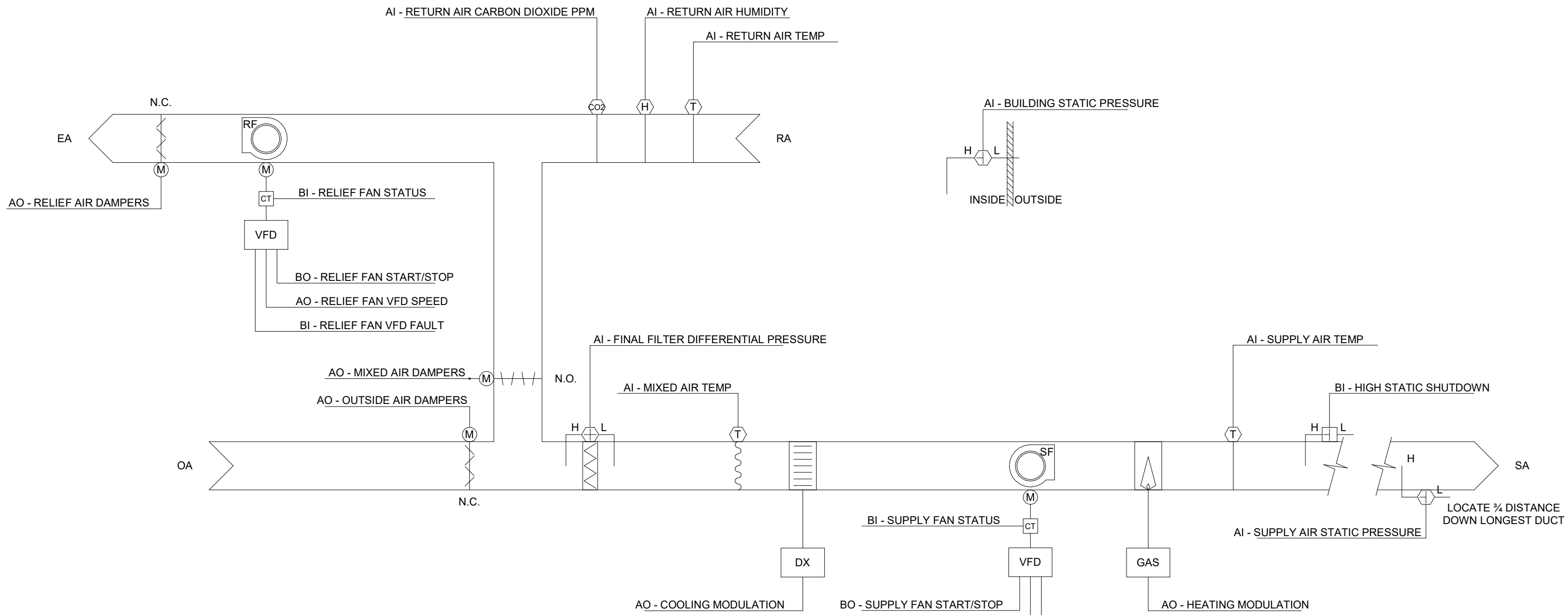
DSP # : 100
 DPI SCHOOL # : 1165

SHEET TITLE

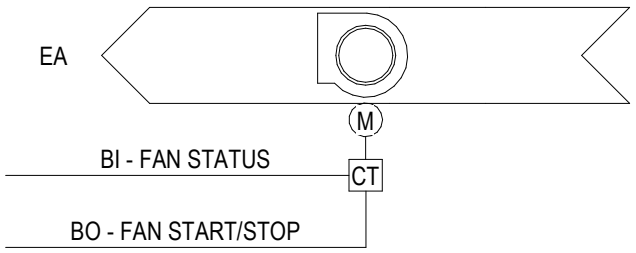
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ISSUE BLOCK

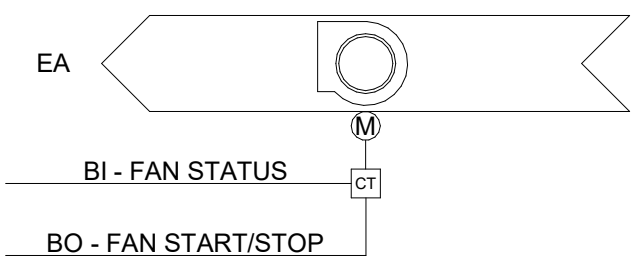
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 03.26.20 100% REVIEW SUBMISSION
 01.29.20 60% CD PROGRESS DRAWINGS
 10.14.19 NC DPI DD SUBMISSION
 07.30.19 SD PROGRESS DRAWINGS
 07.11.19 NC DPI SD SUBMISSION
 Mark Date Description
 PROJECT NO: 2019082.00
 DATE: 10.14.2019
 SCALE:
 DRAWN BY: GRM PROJ MGR: DMH
M602
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**VARIABLE AIR VOLUME - RTU
CONTROL DIAGRAM AND
SEQUENCE 1**
NO SCALE



**EXHAUST FAN ON-OFF
CONTROL DIAGRAM AND
SEQUENCE SCHEDULED**
NO SCALE



**EXHAUST FAN COOLING
CONTROL DIAGRAM AND
SEQUENCE COOLING**
NO SCALE

EXHAUST FAN - COOLING
RUN CONDITIONS - CONTINUOUS:
THE UNIT SHALL BE CONTINUOUSLY ENABLED TO MAINTAIN A ZONE TEMPERATURE COOLING SETPOINT OF 90°F (ADJ.).
ALARMS SHALL BE PROVIDED AS FOLLOWS:
• HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
FAN STATUS:
THE CONTROLLER SHALL MONITOR THE FAN STATUS.
ALARMS SHALL BE PROVIDED AS FOLLOWS:
• FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
• FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
• FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).

EXHAUST FAN ON / OFF CONTROL POINTS										
POINT NAME	HARDWARE POINTS					SOFTWARE POINTS				
	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM
FAN STATUS			X						X	X
FAN START/STOP				X					X	X
SCHEDULE								X		
FAN FAILURE										X
FAN IN HAND										X
FAN RUNTIME EXCEEDED										X

EXHAUST FAN COOLING CONTROL POINTS										
POINT NAME	HARDWARE POINTS					SOFTWARE POINTS				
	AI	AO	BI	BO	AV	BV	LOOP	SCHED	TREND	ALARM
ZONE TEMP	X								X	X
FAN STATUS			X						X	X
FAN START/STOP				X					X	X
COOLING SETPOINT					X				X	X
FAN FAILURE										X
FAN IN HAND										X
FAN RUNTIME EXCEEDED										X
HIGH ZONE TEMP										X

System Point Description	Point										Alarm		
	GRAPHIC	ANALOG HARDWARE INPUT (AI)	BINARY HARDWARE INPUT (BI)	ANALOG HARDWARE OUTPUT (AO)	BINARY HARDWARE OUTPUT (BO)	SOFTWARE POINT (SFT)	WIRELESS (WLS)	NETWORK (NET)	HIGH ANALOG LIMIT	LOW ANALOG LIMIT	LATCH DIAGNOSTIC	SENSOR FAIL	COMMUNICATION FAIL
BUILDING STATIC PRESSURE LOCAL SP P	X	X							X	X			
COOLING OUTPUT COMMAND CLG		X		X									
DISCHARGE AIR TEMPERATURE LOCAL DAT		X	X									X	
HEATING OUTPUT COMMAND HTG		X		X									
HOT GAS REHEAT VALVE COMMAND HGHR													
MIXED AIR DAMPER MAG			X	X									
OUTSIDE AIR DAMPER COMMAND OAD		X		X									
OUTSIDE AIR TEMPERATURE LOCAL OAT		X	X									X	
OUTSIDE AIR FLOW LOCAL OA FLW													
PRIMARY FILTER STATUS LOCAL FL		X	X							X			
RELIEF AIR DAMPER OPEN/CLOSE RLF DPR STS		X		X									
RELIEF AIR FAN SPEED RLF		X		X									
RELIEF AIR FAN START/STOP RLF		X		X		X							
RELIEF AIR FAN STATUS LOCAL RLF		X	X										
RETURN AIR CO2 LOCAL RA CO2			X									X	
RETURN AIR DAMPER RAD			X	X									
SUPPLY DUCT STATIC PRESSURE LOCAL DASP		X							X	X	X		
SUPPLY FAN SPEED SF				X									
SUPPLY FAN START/STOP SF					X								
SUPPLY FAN STATUS LOCAL SF		X	X										
APPLICATION MODE APP MODE					X								
BAS COMMUNICATION STATE BAS COM												X	
COMPRESSOR ENABLE CMP ENA		X		X									
COMPRESSOR LOCKOUT STATUS CMP LCK					X								
COOL OUTPUT CLG					X								
DUCT STATIC PRESSURE SETPOINT DASP SPT		X		X									
ECONOMIZER ENABLE ECON ENA					X								
ECONOMIZER MINIMUM POSITION SETPOINT ECON MIN POS SP		X		X									
FAN MODE COMMAND FAN MODE					X								
FILTER RUNTIME HOURS FL HRS						X							
HEAT OUTPUT HTG					X								
HEAT / COOL MODE REQUEST H/C REQ		X		X									
OCCUPANCY STATUS OCC STS		X		X									
OCCUPIED COOLING SETPOINT OCC CLG SP				X		X							
OCCUPIED HEATING SETPOINT OCC HTG SP		X		X		X							
SPACE CO2 HIGH LIMIT SP CO2 HL						X							
SPACE TEMPERATURE SETPOINT ACTIVE SPT SP ACT		X		X		X							
SUPPLY AIR HEATING/COOLING SETPOINT SA H/C SP					X								
TIMED OVERRIDE STATUS TOV STS					X								
UNOCCUPIED COOLING SETPOINT UNOCC CLG SP		X		X		X							
UNOCCUPIED HEATING SETPOINT UNOCC HTG SP		X		X		X							

SEQUENCE OF OPERATIONS: RTU01
BUILDING AUTOMATION SYSTEM INTERFACE:
THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED BYPASS, MORNING WARM-UP/PRE-COOL, OCCUPIED/UNOCCUPIED AND HEAT/COOL MODES. THE BAS SHALL ALSO SEND THE DISCHARGE AIR TEMPERATURE SETPOINT AND THE DUCT STATIC PRESSURE SETPOINT IF A BAS IS NOT PRESENT, OR COMMUNICATION IS LOST WITH THE BAS THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS

OCCUPIED:
DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE MIXED AIR DAMPERS SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. THE UNIT CONTROLLER SHALL CONTROL THE SUPPLY FAN SPEED TO MAINTAIN THE CURRENT DUCT STATIC PRESSURE SETPOINT (ADJ.). THE DX COOLING AND THE GAS HEAT SHALL CONTROL TO MAINTAIN THE ACTIVE DISCHARGE AIR TEMPERATURE SETPOINT. IF ECONOMIZING IS ENABLED, THE OUTDOOR AIR OR MIXED AIR DAMPERS SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT AND THE RELIEF AIR DAMPER SHALL TRACK THE MIXED AIR DAMPERS. IF THE DISCHARGE AIR TEMPERATURE SENSOR FAILS, THE DX COOLING SHALL BE DISABLED, THE GAS HEAT SHALL BE DISABLED, AND AN ALARM SHALL ANNUNCIATE AT THE BAS.

UNOCCUPIED:
WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL BE COMMANDED ON, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE GAS HEAT SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE GAS HEAT SHALL BE DISABLED. WHEN THE SPACE TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL BE COMMANDED ON, THE OUTSIDE AIR DAMPER SHALL OPEN IF ECONOMIZING IS ENABLED AND REMAIN CLOSED IF ECONOMIZING IS DISABLED AND THE DX COOLING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F MINUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP. THE DX COOLING SHALL BE DISABLED AND THE OUTSIDE AIR DAMPER SHALL CLOSE.

OPTIMAL START:
THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL START OCCURS.

MORNING WARM-UP MODE:
DURING OPTIMAL START, IF THE AVERAGE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED THE UNIT SHALL ENABLE THE HEATING AND FANS. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

PRE-COOL MODE:
DURING OPTIMAL START, IF THE AVERAGE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED THE UNIT SHALL ENABLE THE FAN AND COOLING OR ECONOMIZER. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

OPTIMAL STOP:
THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT. OUTSIDE AIR DAMPER SHALL REMAIN ENABLED TO PROVIDE MINIMUM VENTILATION.

OCCUPIED BYPASS:
THE BAS SHALL MONITOR THE STATUS OF THE ON AND CANCEL BUTTONS OF THE SPACE TEMPERATURE SENSORS. WHEN AN OCCUPIED BYPASS REQUEST IS RECEIVED FROM A SPACE SENSOR, THE UNIT SHALL TRANSITION FROM ITS CURRENT OCCUPANCY MODE TO OCCUPIED BYPASS MODE AND THE UNIT SHALL MAINTAIN THE SPACE TEMPERATURE TO THE OCCUPIED SETPOINTS (ADJ.).

HEAT/COOL MODE:
COOLING: THE UNIT CONTROLLER SHALL USE THE DISCHARGE AIR TEMPERATURE SENSOR AND DISCHARGE AIR TEMPERATURE COOLING SETPOINT TO DETERMINE WHEN TO INITIATE REQUESTS FOR COOLING. DISCHARGE AIR SETPOINT SHALL BE MAINTAINED BY CONTROLLING THE COOLING AS REQUIRED.
HEATING: THE UNIT CONTROLLER SHALL USE THE DISCHARGE AIR TEMPERATURE SENSOR AND DISCHARGE AIR TEMPERATURE HEATING SETPOINT TO DETERMINE WHEN TO INITIATE REQUESTS FOR HEATING. DISCHARGE AIR SETPOINT SHALL BE MAINTAINED BY CONTROLLING THE HEATING AS REQUIRED.
MORNING WARM-UP MODE: THE UNIT HEAT REQUEST SHALL BE COMMUNICATED TO THE SYSTEM VAVS PRIOR TO COMMENCING HEATING OPERATION TO ALLOW VAV UNITS TO OPEN. THE VFD SHALL BE COMMANDED TO 100% AND THE HEAT SHALL BE STAGED ON AND OFF TO SATISFY THE ZONE TEMPERATURE SETPOINT.

DISCHARGE AIR TEMPERATURE RESET CONTROL:
THE DISCHARGE AIR TEMPERATURE SETPOINT OF 55.0 DEG. F - 85.0 DEG. F (ADJ.) SHALL BE RESET BASED ON EITHER THE OUTSIDE AIR TEMPERATURE OR SPACE AVERAGE TEMPERATURE (ADJ.). THE MINIMUM DISCHARGE AIR SETPOINT SHALL BE SET AT 55.0 DEG. F (ADJ.). THE DISCHARGE TEMPERATURE SENSOR SHALL PREVENT THE DISCHARGE AIR TEMPERATURE FROM FALLING BELOW THE MINIMUM DISCHARGE AIR SETPOINT (ADJ.). IF THE DISCHARGE AIR TEMPERATURE CONTINUES TO FALL, THE DISCHARGE TEMPERATURE SENSOR SHALL ACT AS A LOW DISCHARGE TEMPERATURE LIMIT. A LOW TEMPERATURE ALARM SHALL ANNUNCIATE AND THE UNIT SHALL SHUT DOWN. IF THE DISCHARGE TEMPERATURE RISES ABOVE THE HIGH LIMIT SETPOINT THE SENSOR SHALL ACT AS A HIGH DISCHARGE TEMPERATURE LIMIT AND SHALL KEEP THE UNIT RUNNING. A HIGH TEMPERATURE ALARM SHALL ANNUNCIATE. OUTDOOR AIR TEMPERATURE RESET: THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE ADJUSTED BASED ON THE OUTSIDE AIR TEMPERATURE AND THE COOLING AND HEATING LOAD OF THE BUILDING.
SPACE TEMPERATURE RESET: THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE ADJUSTED BASED ON THE TEMPERATURE OF THE CRITICAL SPACE(S).

ECONOMIZER:
ENABLE (REFERENCE DRY BULB): OUTSIDE AIR (OA) TEMPERATURE SHALL BE COMPARED WITH A REFERENCE DRY BULB SETPOINT. THE ECONOMIZER SHALL BE DISABLED WHEN OA TEMPERATURE IS GREATER THAN REFERENCE DRY BULB SETPOINT + 2.0 DEG. F.

OPERATION:
THE SUPPLY AIR SENSOR SHALL MEASURES THE DRY BULB TEMPERATURE OF THE AIR LEAVING THE EVAPORATOR COIL WHILE ECONOMIZING. WHEN ECONOMIZING IS ENABLED AND THE UNIT IS OPERATING IN THE COOLING MODE, THE ECONOMIZER DAMPER SHALL BE MODULATED BETWEEN ITS MINIMUM POSITION AND 100% TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SETPOINT. THE ECONOMIZER DAMPER SHALL MODULATE TOWARD MINIMUM POSITION IN THE EVENT THE DISCHARGE AIR TEMPERATURE FALLS BELOW THE DISCHARGE LOW LIMIT TEMPERATURE SETPOINT. COMPRESSORS SHALL BE DELAYED FROM OPERATING UNTIL THE ECONOMIZER HAS OPENED TO 100%.

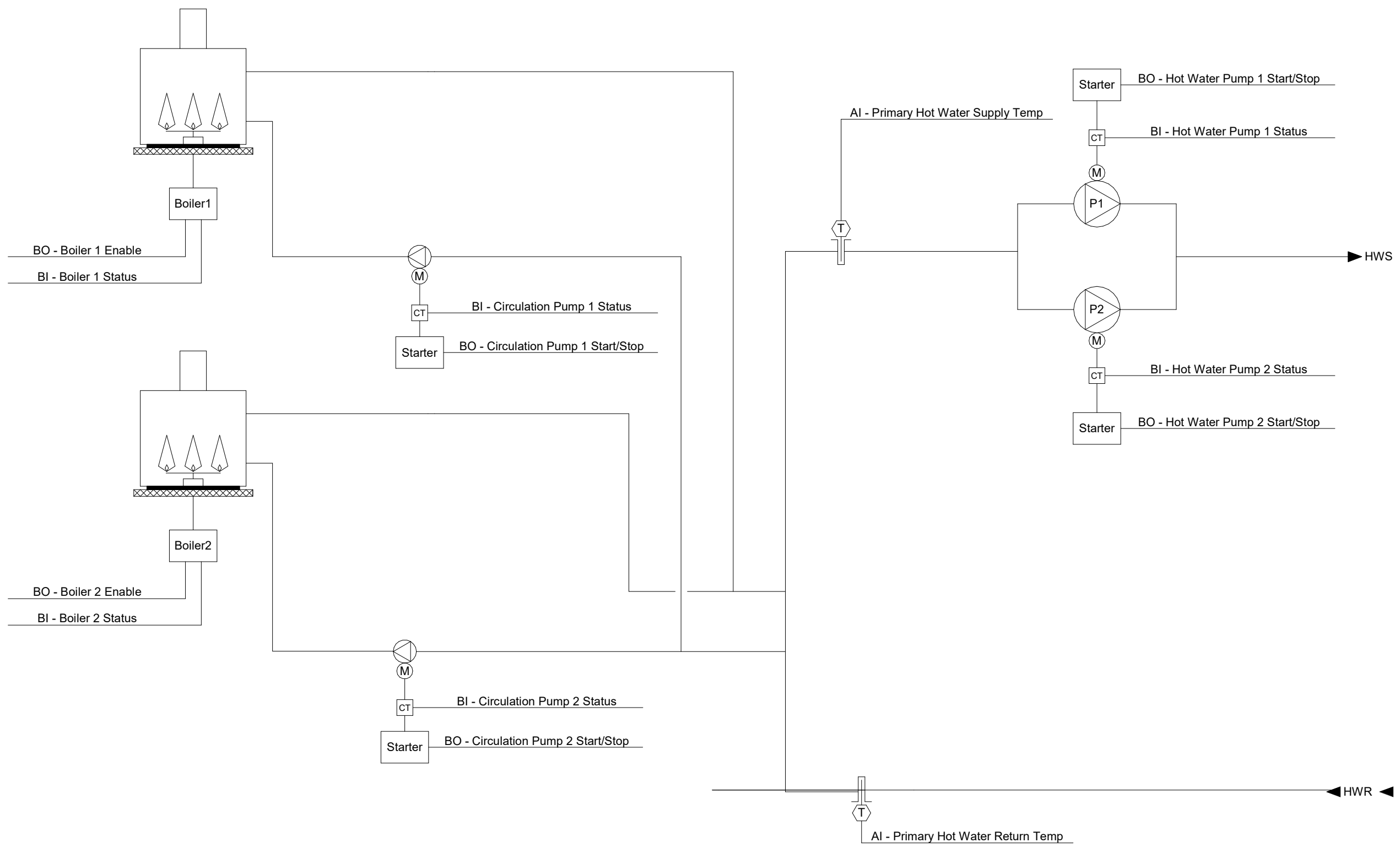
VENTILATION CONTROL:
WHEN THE SPACE CO2 LEVEL IS GREATER THAN OR EQUAL TO THE DESIGN MINIMUM CO2 SETPOINT, THE OUTDOOR AIR DAMPER SHALL OPEN TO THE DESIGN MINIMUM OUTDOOR AIR DAMPER SETPOINT. WHEN THE SPACE CO2 LEVEL IS LESS THAN OR EQUAL TO THE DCV MINIMUM CO2 SETPOINT, THE OUTDOOR AIR DAMPER SHALL CLOSE TO THE DCV MINIMUM OUTDOOR AIR DAMPER SETPOINT. IF THERE IS A CALL FOR ECONOMIZER COOLING, THE DAMPER SHALL BE OPENED FURTHER TO SATISFY THE COOLING REQUEST

SUPPLY FAN:
THE SUPPLY FAN SHALL BE ENABLED WHILE IN THE OCCUPIED MODE AND CYCLED ON DURING THE UNOCCUPIED MODE.

SUPPLY DUCT STATIC PRESSURE CONTROL:
DURING THE OCCUPIED MODE THE UNIT CONTROLLER SHALL MODULATE THE OUTPUT TO THE VFD AS REQUIRED TO MAINTAIN THE DUCT STATIC PRESSURE SETPOINT OF 1.5 INCHES OF W.C. (ADJ.). IF THE DUCT STATIC PRESSURE FALLS BELOW 1.3 INCHES OF W.C. (ADJ.) THE UNIT CONTROLLER SHALL INCREASE THE OUTPUT TO THE VFD TO MAINTAIN SETPOINT. IF THE DUCT STATIC PRESSURE RISES ABOVE 1.7 INCHES OF W.C. (ADJ.) THE UNIT CONTROLLER SHALL DECREASE THE OUTPUT TO THE VFD TO MAINTAIN SETPOINT. UPON A CALL FOR HEATING OR COOLING IN THE UNOCCUPIED MODE THE UNIT CONTROLLER SHALL MODULATE THE SPEED OF THE VFD TO 100%.
STATIC PRESSURE HIGH LIMIT:
IF FOR ANY REASON THE SUPPLY AIR PRESSURE EXCEEDS THE SUPPLY AIR PRESSURE HIGH LIMIT, THE SUPPLY FAN SHALL SHUT DOWN. THE UNIT SHALL BE ALLOWED TO RESTART THREE TIMES AFTER A 15 MINUTE OFF PERIOD. IF THE OVER-PRESSURIZATION CONDITION OCCURS ON THE FOURTH RESTART, THE UNIT SHALL SHUT DOWN AND A MANUAL RESET DIAGNOSTIC IS DISPLAYED AT THE REMOTE PANEL AND/OR THE BAS SYSTEM.

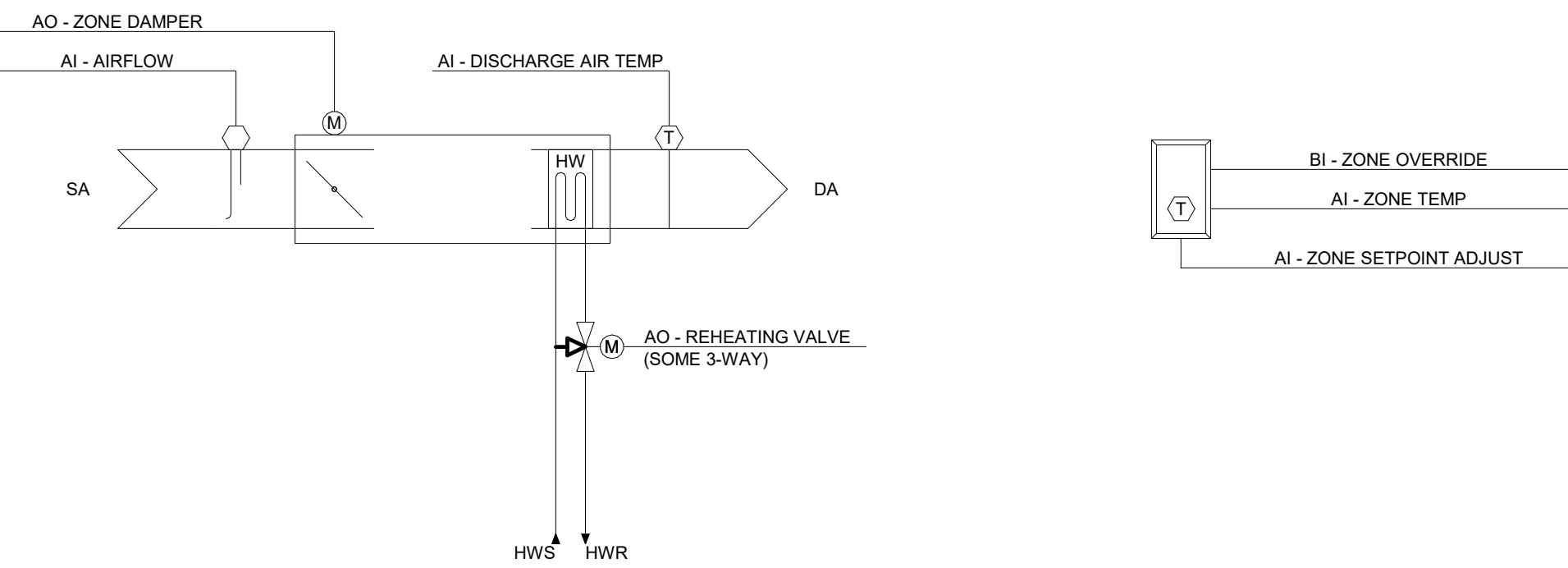
RELIEF AIR AND BUILDING PRESSURE CONTROL:
A DIFFERENTIAL PRESSURE TRANSDUCER SHALL ACTIVELY MONITOR THE DIFFERENCE IN PRESSURE BETWEEN THE BUILDING (INDOORS) AND OUTDOORS. IF THE BUILDING PRESSURE INCREASES ABOVE THE DIFFERENTIAL PRESSURE SETPOINT, THE UNIT CONTROLLER SHALL OPEN THE RELIEF AIR DAMPER, TURN ON THE RELIEF AIR FAN AND MODULATE THE RELIEF AIR FAN VFD TO CONTROL BUILDING PRESSURE TO THE DIFFERENTIAL PRESSURE SETPOINT. IF THE BUILDING PRESSURE DECREASES BELOW THE DIFFERENTIAL PRESSURE SETPOINT, THE ASSOCIATED CONTROLLER SHALL DEACTIVATE THE RELIEF AIR FAN VFD.
A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE RELIEF AIR FAN. IF THE SWITCH IS DETECTED TO BE OPEN FOR 40 CONSECUTIVE SECONDS AFTER A REQUEST FOR RELIEF FAN OPERATION A FAN FAILURE ALARM SHALL ANNUNCIATE AT THE BAS AND THE RELIEF FAN SHALL STOP. A MANUAL RESET SHALL BE REQUIRED.

FILTER STATUS:
A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER(S) WHEN THE FAN IS RUNNING. IF THE SWITCH CLOSURES DURING NORMAL OPERATION A DIRTY FILTER ALARM SHALL ANNUNCIATE AT THE BAS.



TWO BOILER SYSTEM CONTROL DIAGRAM AND SEQUENCE1

NO SCALE



VAV TERMINAL UNIT CONTROL DIAGRAM AND SEQUENCE1

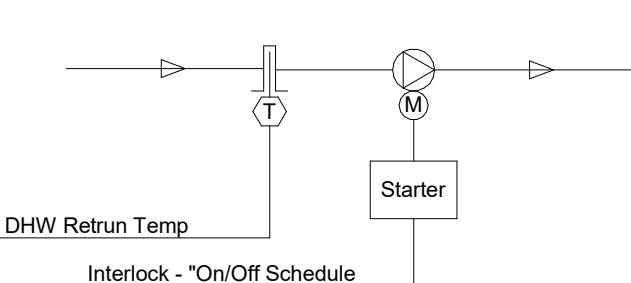
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BOILER ROOM WATER DETECTION:
THE WATER DETECTOR SHALL MONITOR FOR PRESENCE OF WATER ON FLOOR OF ROOM.
ALARM SHALL BE PROVIDED IF WATER IS DETECTED. ROOM/DETECTOR SHALL BE IDENTIFIED.

BOILER ROOM WATER DETECTION DIAGRAM AND SEQUENCE

NO SCALE

RECIRCULATING DOMESTIC HOT WATER PUMP CONTROL POINTS										
Point Name	Hardware Points				Software Points					
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm
RECIRC Pump Status			x							x
RECIRC Pump Start/Stop				x					x	x
RECIRC Pump Failure										x
RECIRC Pump Running in Hand									x	
Low RECIRC Water Temp										x



RECIRCULATING DOMESTIC HOT WATER PUMP DIAGRAM AND SEQUENCE1

NO SCALE

BOILER PLANT

BOILER SYSTEM RUN CONDITIONS:

- THE BOILER SYSTEM SHALL BE ENABLED TO RUN WHENEVER:
 - A DEFINABLE NUMBER OF HOT WATER COILS NEED HEATING.
 - AND OUTSIDE AIR TEMPERATURE IS LESS THAN 65°F (ADJ.).

TO PREVENT SHORT CYCLING, THE BOILER SYSTEM SHALL RUN FOR AND BE OFF FOR MINIMUM ADJUSTABLE TIMES (BOTH USER DEFINABLE), UNLESS SHUTDOWN ON SAFETIES.

THE BOILER SHALL RUN SUBJECT TO ITS OWN INTERNAL SAFETIES AND CONTROLS.

HOT WATER PUMP LEAD/STANDBY OPERATION:

- THE TWO HOT WATER PUMPS SHALL OPERATE IN A LEAD/STANDBY FASHION.
 - THE LEAD PUMP SHALL RUN FIRST.
 - ON FAILURE OF THE LEAD PUMP, THE STANDBY PUMP SHALL RUN AND THE LEAD PUMP SHALL TURN OFF.

THE DESIGNATED LEAD PUMP SHALL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS (USER SELECTABLE):

- MANUALLY THROUGH A SOFTWARE SWITCH
- IF PUMP RUNTIME (ADJ.) IS EXCEEDED
- DAILY
- WEEKLY
- MONTHLY

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HOT WATER PUMP 1
 - FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
 - RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
 - RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- HOT WATER PUMP 2
 - FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
 - RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
 - RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.

CIRCULATION PUMP 1:

THE CIRCULATION PUMP 1 SHALL RUN ANYTIME BOILER 1 IS CALLED TO RUN AND SHALL HAVE A USER DEFINABLE DELAY (ADJ.) ON STOP.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- CIRCULATION PUMP 1 FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- CIRCULATION PUMP 1 RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- CIRCULATION PUMP 1 RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER-DEFINABLE LIMIT.

CIRCULATION PUMP 2:

THE CIRCULATION PUMP 2 SHALL RUN ANYTIME BOILER 2 IS CALLED TO RUN AND SHALL HAVE A USER DEFINABLE DELAY (ADJ.) ON STOP.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- CIRCULATION PUMP 2 FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
- CIRCULATION PUMP 2 RUNNING IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
- CIRCULATION PUMP 2 RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER-DEFINABLE LIMIT.

BOILER LEAD/STANDBY OPERATION:

- THE TWO BOILERS SHALL OPERATE IN A LEAD/STANDBY FASHION WHEN CALLED TO RUN AND FLOW IS PROVEN.
 - THE LEAD BOILER SHALL RUN FIRST.
 - ON FAILURE OF THE LEAD BOILER, THE STANDBY BOILER SHALL RUN AND THE LEAD BOILER SHALL TURN OFF.

THE DESIGNATED LEAD BOILER SHALL ROTATE UPON ONE OF THE FOLLOWING CONDITIONS: (USER SELECTABLE):

- MANUALLY THROUGH A SOFTWARE SWITCH
- IF BOILER RUNTIME (ADJ.) IS EXCEEDED
- DAILY
- WEEKLY
- MONTHLY

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- BOILER 1
 - FAILURE: COMMANDED ON BUT THE STATUS IS OFF.
 - RUNNING IN HAND: COMMANDED OFF BUT THE STATUS IS ON.
 - RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- BOILER 2
 - FAILURE: COMMANDED ON BUT THE STATUS IS OFF.
 - RUNNING IN HAND: COMMANDED OFF BUT THE STATUS IS ON.
 - RUNTIME EXCEEDED: STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT.
- LEAD BOILER FAILURE: THE LEAD BOILER IS IN FAILURE AND THE STANDBY BOILER IS ON.

HOT WATER SUPPLY TEMPERATURE SETPOINT:

THE BOILER SHALL MAINTAIN A HOT WATER SUPPLY TEMPERATURE SETPOINT AS DETERMINED BY ITS OWN INTERNAL CONTROLS (PROVIDED BY OTHERS).

PRIMARY HOT WATER TEMPERATURE MONITORING:
THE FOLLOWING TEMPERATURES SHALL BE MONITORED:

- PRIMARY HOT WATER SUPPLY
- PRIMARY HOT WATER RETURN

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH PRIMARY HOT WATER SUPPLY TEMP: IF GREATER THAN 200°F (ADJ.).
- LOW PRIMARY HOT WATER SUPPLY TEMP: IF LESS THAN 100°F (ADJ.).

VARIABLE AIR VOLUME - TERMINAL UNIT

RUN CONDITIONS - SCHEDULED:

THE UNIT SHALL RUN ACCORDING TO A USER DEFINABLE TIME SCHEDULE IN THE FOLLOWING MODES:

- OCCUPIED MODE: THE UNIT SHALL MAINTAIN
 - A 75°F (ADJ.) COOLING SETPOINT
 - A 70°F (ADJ.) HEATING SETPOINT.
- UNOCCUPIED MODE (NIGHT SETBACK): THE UNIT SHALL MAINTAIN
 - A 65°F (ADJ.) COOLING SETPOINT
 - A 55°F (ADJ.) HEATING SETPOINT.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH ZONE TEMP: IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).
- LOW ZONE TEMP: IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY A USER DEFINABLE AMOUNT (ADJ.).

ZONE SETPOINT ADJUST:

THE OCCUPANT SHALL BE ABLE TO ADJUST THE ZONE TEMPERATURE HEATING AND COOLING SETPOINTS AT THE ZONE SENSOR.

ZONE OPTIMAL START:

THE UNIT SHALL USE AN OPTIMAL START ALGORITHM FOR MORNING START-UP. THIS ALGORITHM SHALL MINIMIZE THE UNOCCUPIED WARM-UP OR COOL-DOWN PERIOD WHILE STILL ACHIEVING COMFORT CONDITIONS BY THE START OF SCHEDULED OCCUPIED PERIOD.

ZONE UNOCCUPIED OVERRIDE:

A TIMED LOCAL OVERRIDE CONTROL SHALL ALLOW AN OCCUPANT TO OVERRIDE THE SCHEDULE AND PLACE THE UNIT INTO AN OCCUPIED MODE FOR AN ADJUSTABLE PERIOD OF TIME. AT THE EXPIRATION OF THIS TIME, CONTROL OF THE UNIT SHALL AUTOMATICALLY RETURN TO THE SCHEDULE.

REVERSING VARIABLE VOLUME TERMINAL UNIT - FLOW CONTROL:

THE UNIT SHALL MAINTAIN ZONE SETPOINTS BY CONTROLLING THE AIRFLOW THROUGH ONE OF THE FOLLOWING:

- OCCUPIED:
 - WHEN ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
 - WHEN THE ZONE TEMPERATURE IS BETWEEN THE COOLING SETPOINT AND THE HEATING SETPOINT, THE ZONE DAMPER SHALL MAINTAIN THE MINIMUM REQUIRED ZONE VENTILATION (ADJ.).
 - WHEN ZONE TEMPERATURE IS LESS THAN ITS HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT ITS HEATING SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM OCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

VARIABLE AIR VOLUME - TERMINAL UNIT - CONT.

UNOCCUPIED:

- WHEN THE ZONE IS UNOCCUPIED THE ZONE DAMPER SHALL CONTROL TO ITS MINIMUM UNOCCUPIED AIRFLOW (ADJ.).
- WHEN THE ZONE TEMPERATURE IS GREATER THAN ITS COOLING SETPOINT, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE MAXIMUM COOLING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.
- WHEN ZONE TEMPERATURE IS LESS THAN ITS UNOCCUPIED HEATING SETPOINT, THE CONTROLLER SHALL ENABLE HEATING TO MAINTAIN THE ZONE TEMPERATURE AT THE SETPOINT. ADDITIONALLY, IF WARM AIR IS AVAILABLE FROM THE AHU, THE ZONE DAMPER SHALL MODULATE BETWEEN THE MINIMUM UNOCCUPIED AIRFLOW (ADJ.) AND THE AUXILIARY HEATING AIRFLOW (ADJ.) UNTIL THE ZONE IS SATISFIED.

REHEATING COIL VALVE:

THE CONTROLLER SHALL MEASURE THE ZONE TEMPERATURE AND MODULATE THE REHEATING COIL VALVE OPEN ON DROPPING TEMPERATURE TO MAINTAIN ITS HEATING SETPOINT.

WHEN COLD AIR IS AVAILABLE FROM THE AHU AND THERE IS NO FAN PRESENT IN THE BOX, THE ZONE DAMPER SHALL MODULATE TO THE MINIMUM OCCUPIED AIRFLOW (ADJ.). IF MORE HEAT IS REQUIRED, THE ZONE DAMPER SHALL MODULATE TO THE AUXILIARY HEATING AIRFLOW (ADJ.).

REHEATING - HIGH DISCHARGE AIR TEMPERATURE LIMIT:

THE CONTROLLER SHALL MEASURE THE DISCHARGE AIR TEMPERATURE AND LIMIT REHEATING IF THE DISCHARGE AIR TEMPERATURE IS MORE THAN 95°F (ADJ.).

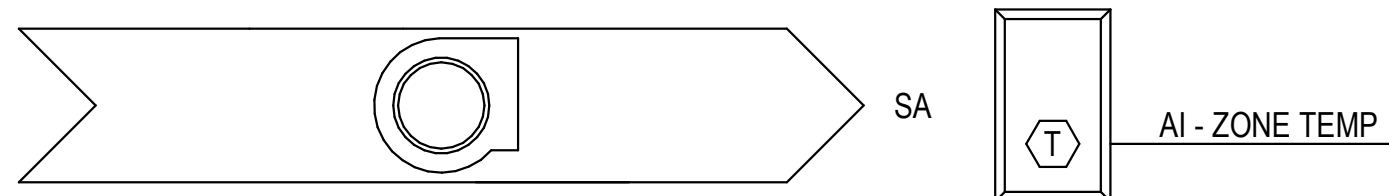
DISCHARGE AIR TEMPERATURE:

THE CONTROLLER SHALL MONITOR THE DISCHARGE AIR TEMPERATURE.

ALARMS SHALL BE PROVIDED AS FOLLOWS:

- HIGH DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120°F (ADJ.).
- LOW DISCHARGE AIR TEMP: IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 40°F (ADJ.).

DUCTLESS SPLIT SYSTEM CONTROL POINTS										
POINT NAME	Hardware Points				Software Points					
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm
ZONE TEMP	x								x	x
HIGH ZONE TEMP										x
LOW ZONE TEMP										x



DUCTLESS SPLIT SYSTEM CONTROL DIAGRAM AND SEQUENCE1

NO SCALE

BOILER PLANT CONTROL POINTS										
POINT NAME	Hardware Points				Software Points					
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm
PRIMARY HOT WATER RETURN TEMP	x								x	x
PRIMARY HOT WATER SUPPLY TEMP	x								x	x
BOILER 1 STATUS			x						x	x
BOILER 2 STATUS			x						x	x
CIRCULATION PUMP 1 STATUS			x						x	x
CIRCULATION PUMP 2 STATUS			x						x	x
HOT WATER PUMP 1 STATUS			x						x	x
HOT WATER PUMP 2 STATUS			x						x	x
BOILER 1 ENABLE				x						x
BOILER 2 ENABLE				x						x
CIRCULATION PUMP 1 START/STOP				x					x	x
CIRCULATION PUMP 2 START/STOP				x					x	x
HOT WATER PUMP 1 START/STOP				x						x
HOT WATER PUMP 2 START/STOP				x						x
OUTSIDE AIR TEMP					x					x
BOILER 1 FAILURE										x
BOILER 1 RUNNING IN HAND										x
BOILER 1 RUNTIME EXCEEDED										x
BOILER 2 FAILURE										x
BOILER 2 RUNNING IN HAND										x
BOILER 2 RUNTIME EXCEEDED										x
CIRCULATION PUMP 1 FAILURE										x
CIRCULATION PUMP 1 RUNNING IN HAND										x
CIRCULATION PUMP 1 RUNTIME EXCEEDED										x
CIRCULATION PUMP 2 FAILURE										x
CIRCULATION PUMP 2 RUNNING IN HAND										x
CIRCULATION PUMP 2 RUNTIME EXCEEDED										x
HIGH PRIMARY HOT WATER SUPPLY TEMP										x
HOT WATER PUMP 1 FAILURE										x
HOT WATER PUMP 1 RUNNING IN HAND										x
HOT WATER PUMP 1 RUNTIME EXCEEDED										x
HOT WATER PUMP 2 FAILURE										x
HOT WATER PUMP 2 RUNNING IN HAND										x
HOT WATER PUMP 2 RUNTIME EXCEEDED										x
LEAD BOILER FAILURE										x
LOW PRIMARY HOT WATER SUPPLY TEMP										x

VAV TERMINAL UNIT CONTROL POINTS

POINT NAME	Hardware Points				Software Points					
	AI	AO	BI	BO	AV	BV	Loop	Sched	Trend	Alarm
AIRFLOW	x								x	x
DISCHARGE AIR TEMP	x								x	x
ZONE SETPOINT ADJUST	x								x	x
ZONE TEMP	x								x	x
REHEATING VALVE		x							x	x
ZONE DAMPER		x							x	x
ZONE OVERRIDE			x						x	x
AIRFLOW SETPOINT				x					x	x
COOLING SETPOINT				x					x	x
DAT HEATING LIMIT				x						x
HEATING SETPOINT				x					x	x
HEATING MODE				x					x	
SCHEDULE								x		
HIGH DISCHARGE AIR TEMP										x
HIGH ZONE TEMP										x
LOW DISCHARGE AIR TEMP										x
LOW ZONE TEMP										x

DUCTLESS SPLIT SYSTEM UNITS

GENERAL:

- A MICROPROCESSOR-BASED CONTROLLER (FURNISHED WITH THE UNIT) SHALL CONTROL THE SPLIT SYSTEM AIR CONDITIONING UNIT.
- THE INDOOR EVAPORATOR UNIT FAN AND DX COOLING SYSTEM SHALL BE STARTED AND STOPPED VIA THE MICROPROCESSOR BASED CONTROLS.
- A SPACE TEMPERATURE SENSOR WILL MONITOR THE ROOM CONDITIONS FOR TEMPERATURE ALARM MONITORING THROUGH THE BUILDING AUTOMATION SYSTEM (BAS).

SYSTEM DESCRIPTION:

- THE SYSTEM IS A DUCTLESS SPLIT SYSTEM COOLING ONLY UNIT.
- THE OUTDOOR CONDENSING UNIT IS LOCATED REMOTELY.

SYSTEM CONTROL:

TEMPERATURE CONTROL:

A. INDOOR UNIT:

- ON A RISE IN SPACE TEMPERATURE ABOVE THE ACTIVE SET POINT, THE MICROPROCESSOR

CONTROLLER SHALL INDEX THE INDOOR UNIT EVAPORATOR FAN TO RUN. THE FAN SHALL RUN INITIALLY AT A PREDETERMINED SPEED UPON STARTUP. IN AUTO MODE, THE INDOOR EVAPORATOR FAN SHALL CYCLE WITH A CALL FOR COOLING, AND THE FAN SHALL SWITCH VIA THE MICROPROCESSOR CONTROLS BETWEEN LOW SPEED AND HIGH SPEED BASED UPON THE ROOM TEMPERATURE DEVIATION FROM THE SET POINT.

2) THE MICROPROCESSOR CONTROLLER WILL ENERGIZE THE OUTDOOR COMPRESSOR TO RUN UPON A CALL FOR COOLING, BASED UPON THE SET POINT ENTERED INTO THE MICROPROCESSOR CONTROLLER.

3) UPON A DROP IN SPACE TEMPERATURE, THE MICROPROCESSOR WILL DE-ENERGIZE THE COMPRESSOR, THE INDOOR UNIT FAN WILL CONTINUE TO RUN FOR A PRE-DETERMINED CYCLE LENGTH TO DISSIPATE REMAINING ENERGY FROM THE COIL. THE UNIT CONTROLS SHALL INCLUDE AN ANTI-CYCLE TIMER TO PREVENT MULTIPLE STARTS ON THE COMPRESSOR.

BAS INTERFACE:

- A TEMPERATURE SENSOR SHALL BE WIRED TO THE BAS TO MONITOR THE ACTIVE SPACE TEMPERATURE. THE BAS SHALL INITIATE AN ALARM WHENEVER THE SPACE TEMPERATURE RANGES BEYOND THE HIGH OR LOW LIMITS DEFINED FOR THE SPACE (BSF HIGH ALARM/BSF LOW ALARM, ADJ.).
- THE BAS SYSTEM SHALL MONITOR THE STATUS OF THE INDOOR EVAPORATOR UNIT VIA A BINARY-IN (B.I.) SIGNAL TO THE CONTROLLER.



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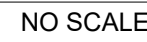
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MECHANICAL ELECTRONIC FLOW GRAM



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1. ALL ELECTRICAL WORK SHALL BE IN FULL COMPLIANCE WITH NFPA, THE NORTH CAROLINA STATE BUILDING CODE, ALL LOCAL CODES AND ORDINANCES AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. ALL EQUIPMENT PROVIDED BY THE CONTRACTOR SHALL BE LISTED AND LABELED BY A NATIONALLY-RECOGNIZED TESTING AGENCY, ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ALL MATERIAL, EQUIPMENT AND DEVICES SHALL BE IN FULL COMPLIANCE WITH THE REQUIREMENTS OF MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS. EQUIPMENT SHALL BE SUITABLE FOR ITS APPLICATION (E.G. WHEN INSTALLED OUTDOORS, IT SHALL BE WEATHERPROOF, ETC.).
3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS. THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.
4. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.
5. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT, SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.

6. TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN THE BID. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. FOR REVIEW PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONDUIT, EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, TRANSFORMERS, TRANSFORMERS, ETC. FOR TEMPORARY POWER. COORDINATE WITH THE ELECTRICAL UTILITY COMPANY AS REQUIRED.
7. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
8. ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL NOT BE STORED OUT OF DOORS, BUT SHALL BE STORED IN DRY, VENTILATED SHEDS. IF AN APPARATUS HAS BEEN DAMAGED OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST.
9. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
10. CIRCUIT LAYOUTS ARE NOT INTENDED TO SHOW THE NUMBER OF FITTINGS, OR OTHER INSTALLATION DETAILS. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.
11. UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CLASHES AND INTERFERENCE WITH OTHER DEVICES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.
12. CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND SPLIT-LOCKWASHING. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.
13. DEVICE BOXES SHOWN BACK-TO-BACK SHALL BE OFFSETTING A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
14. BRANCH CIRCUIT HOMERUNS SHOWN ON DRAWINGS INDICATE PHASE CONDUCTORS, NEUTRAL AND GROUNDING CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONDUIT SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
15. SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.
16. IN SEAL LOCATIONS AND EXTERIOR, ALL WIRING DEVICES SHALL BE WEATHER-RESISTANT LISTED WITH WEATHERPROOFING MATERIALS. SEALS SHALL BE APPROVED LISTED AND APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT INCLUDING 0 DEGREE BALLASTS FOR FLUORESCENT.
17. RACEWAYS PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKE/TIGHT.
18. RACEWAYS PENETRATING RATED FLOOR, CEILING OR WALL ASSEMBLIES SHALL BE PROPERLY SEALED IN ACCORDANCE WITH THE CORRESPONDING UNDERWRITERS LABORATORIES (OR OTHER APPROVED THIRD PARTY TESTING AGENCY) APPROVED AND LISTED WEATHERPROOFING MATERIALS AND THE APPROVED INSTALLATION TECHNIQUES COMPLYING WITH ALL APPLICABLE CODES. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF RATED WALLS AND CEILINGS.
19. ALL RACEWAYS SHALL BE CONCEALED WHERE POSSIBLE.
20. INSTALL EXPOSED RACEWAYS PARALLEL TO, OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS. PROVIDE PRACTICAL, MINIMUM BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.
21. PROVIDE AND PLACE ALL SLEEVES FOR CONDUITS PENETRATING WALLS, FLOORS, PARTITIONS, ETC. LOCATE ALL NECESSARY SLOTS FOR ELECTRICAL WORK AND FORM BEFORE CONCRETE IS POURED.
22. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.

- ALL MOTORS, DRY TYPE TRANSFORMERS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED IN THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
24. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RECEPTS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
25. CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILING AREAS SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH RODS OF SUFFICIENT SIZE TO PREVENT VERTICAL MOVEMENT OF THE OUTLET BOX. BRIDGES ALONE ARE NOT ADEQUATE UNLESS SPECIFICALLY APPROVED. CEILING MOUNTED EXIT LIGHT FIXTURES SHALL BE INSTALLED LEAD. DO NOT SUPPORT DEVICES FROM ACOUSTICAL CEILING TILE.
26. EXCAVATION AND TRENCHING REQUIRED FOR THE INSTALLATION OF ELECTRICAL POWER AND TELECOMMUNICATIONS REACEWAYS SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 26 OF THE PROJECT SPECIFICATIONS.
27. PRIOR TO TRENCHING IN ANY AREA, THE CONTRACTOR SHALL CONTACT ELECTRICAL, COMMUNICATIONS/DATA/FIBER, CABLE TELEVISION, GAS AND WATER UTILITY PROVIDERS AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. DAMAGE TO ANY UNDERGROUND UTILITY OR STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
28. ALL UNDERGROUND REACEWAYS SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE REACEWAY AT 6 TO 8 INCHES BELOW FINISHED GRADE. SEE SPECIFICATIONS SECTION 260553.
29. PROVIDE ADHESIVE BACKED RECEPTAL DEVICE PLATE LABELS IDENTIFYING THE CIRCUIT FEEDING THE DEVICE. LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER.
30. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET SHALL INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.
31. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THE ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C. CIRCUITING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY VY FOR EVALUATION/CORRECTION.
32. DO NOT PULL CONDUCTORS UNTIL THE CONDUIT SYSTEM IS COMPLETE IN EVERY DETAIL. IN THE CASE OF CONCEALED WORK, "COMPLETE" MEANS UNTIL ALL ROUGH PLASTERING OR MASONRY HAS BEEN COMPLETED.
33. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY.
34. USE #10 AWG CONDUCTORS FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS WITH A TOTAL INSTALLED LENGTH GREATER THAN 75 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 50 FEET. I.E., #12 AWG INCREASED TO #10 AWG FOR RECEPTAL BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET. IF 277 VOLT CIRCUITS ARE SHOWN, USE #10 AWG CONDUCTORS FOR 20 AMPERE, 277 VOLT BRANCH CIRCUITS. IF TOTAL INSTALLED LENGTH GREATER THAN 100 FEET AND/OR BRANCH CIRCUIT HOMERUNS LONGER THAN 125 FEET, I.E., #12 AWG INCREASED TO #10 AWG FOR RECEPTAL BRANCH CIRCUITS OVER 75 FEET TOTAL LENGTH (INCLUDING THE HOMERUN SEGMENT) AND HOMERUNS OVER 50 FEET.
35. COMMON NEUTRAL MULTIWIRE RECEPTAL BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR MULTIWIRE BRANCH CIRCUITS.
36. EQUIP CONDUCTOR SIZES TO A MINIMUM. INSTANT SPLICES AND TAPES THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION PROPERTIES THAN CONDUCTORS BEING SPLICED. USE SPLICE AND TAP CONNECTORS COMPATIBLE WITH CONDUCTOR MATERIAL. INSTANT CONDUCTORS AT EACH OUTLET WITH AT LEAST 6 INCHES WITHIN THE CONNECT POINT TO ANY OTHER POINT OF SINKING SHALL BE GFI PROTECTED, AS INDICATED AND INSTRUCTED BY THE MANUFACTURER.
37. DO NOT SPLICE BRANCH CIRCUIT HOMERUNS WITHOUT THE PERMISSION OF THE ARCHITECT/ENGINEER. HOMERUNS SHALL BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD.
38. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
39. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
40. TROUGH TAPS SHALL BE AT SWITCH AMPACITY, UNLESS NOTED OTHERWISE.
41. INSTALL WIRING DEVICES AT HEIGHTS AS SHOWN ON THE DRAWINGS. ALSO COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECTURAL DRAWINGS AND CASEWORK DETAILS. IF CONFLICTING, ARCHITECTURAL DRAWINGS AND DETAILS SHALL GOVERN.
42. PROVIDE GROUND FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL, IN ACCORDANCE WITH THE NEC INCLUDING ALL ELECTRIC WATER COOLERS, EXTERIOR RECEPTABLES AND RECEPTABLES IN AREAS SUBJECT TO POSSIBLE WET CONDITIONS. ALL RECEPTABLES INSTALLED IN RESIDENTIAL AREAS SHALL BE GFI PROTECTED. ALL RECEPTABLES IN NON-RESIDENTIAL KITCHENS SHALL BE GFI PROTECTED.
43. CONNECT BATTERY PACK TYPE EMERGENCY AND EXIT LIGHTING FIXTURES TO THE UNSWITCHED LIGHTING CIRCUIT SERVING THE SPACE LIGHTED BY THE EMERGENCY AND EXIT FIXTURES. THESE CONNECTIONS ARE INTENTIONALLY NOT SHOWN TO MAINTAIN DRAWING FOR CLARITY.
44. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING.
45. ADJACENT SWITCHES SHALL BE GANGED. INSTANT BARRIERS BETWEEN UNLIKE VOLTAGE SECTIONS.

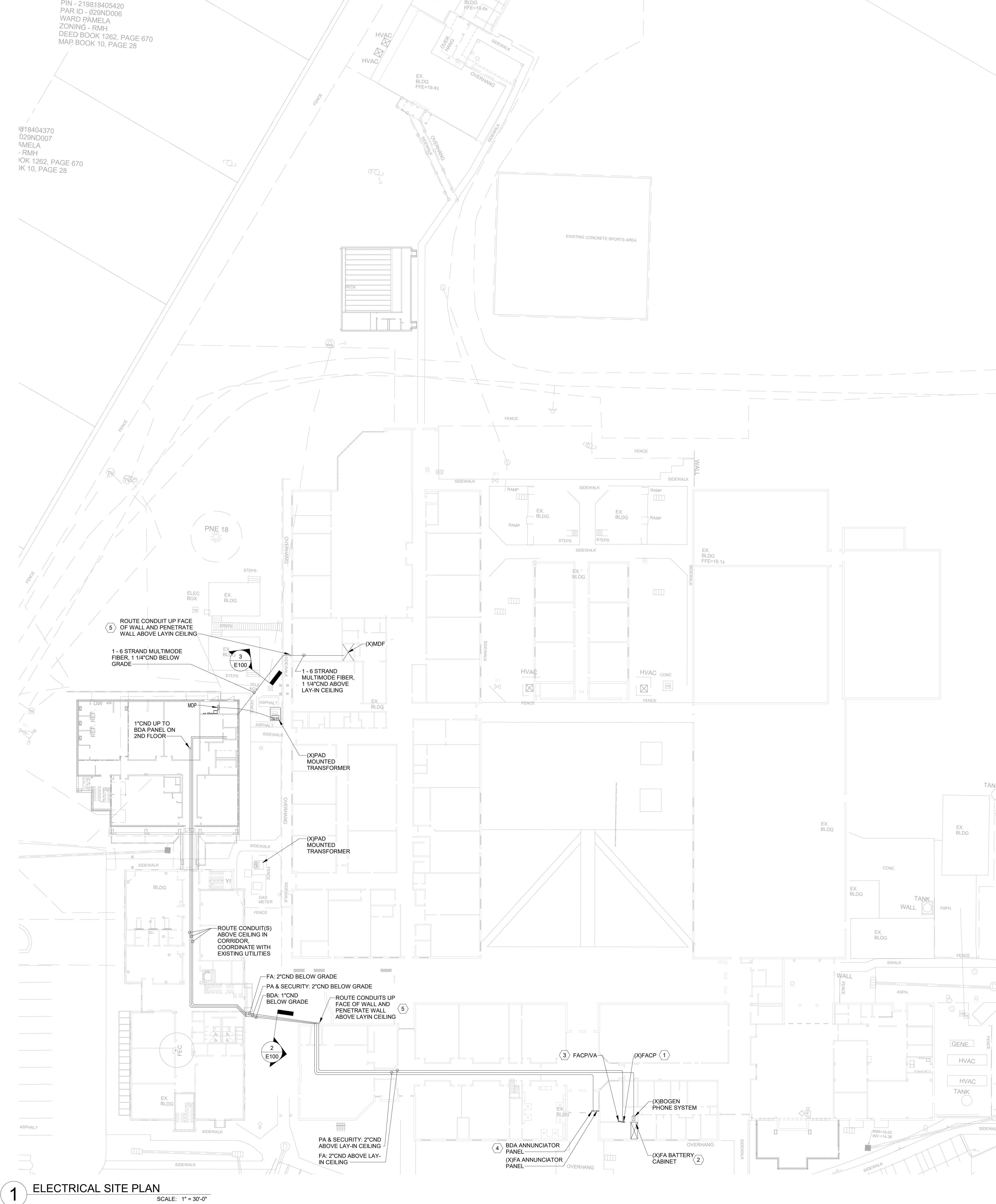
- SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.
47. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY BATTERY, MULTI-LEVEL, ETC), THE CONTRACTOR SHALL PROVIDE THESE FIXTURES WITH THE APPROPRIATE BALLASTING TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR SHALL PROVIDE THE FIXTURES SIZES IN THE LIGHTING FIXTURE SCHEDULE WITH MODIFICATIONS AS REQUIRED BY DRAWINGS NOTES.
48. COORDINATE LOCATIONS OF PLUMBING, MECHANICAL, ELEVATOR, DATA AND TELEPHONE AND AUDIOVISUAL EQUIPMENT AND OF OWNER-PROVIDED EQUIPMENT WITH THE RESPECTIVE CONTRACTORS AND VENDORS AND THE OWNER BEFORE ROUGH-IN. ADJUST LIGHTING FIXTURES, RECEPTACLES AND ELECTRICAL EQUIPMENT TO ACCOMMODATE THIS EQUIPMENT. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.
49. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO VERIFY THE NAMED RATING OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, FEEDERS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.
50. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR PROVIDING THE EQUIPMENT.
51. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTIONS AND PROVIDE APPROPRIATE WIRING METHODS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE MECHANICAL AND PLUMBING SCHEDULES. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.
52. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL MOUNT STARTERS AND CONTROLS AS PROVIDED OR AS REQUIRED BY THE MECHANICAL AND PLUMBING CONTRACTORS. THE ELECTRICAL CONTRACTOR PROVIDE ALL SAFETY SWITCHES, WIRING AND CONNECTIONS TO LINE SIDE AND LOAD SIDE OF STARTERS AND SAFETY SWITCHES COMPLETE TO MECHANICAL AND PLUMBING EQUIPMENT. THE ELECTRICAL CONTRACTOR TYPE OF STARTERS CONTRACTORS ARE NOT REQUIRED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER WIRING AND CONNECTIONS COMPLETE TO EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.
53. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EQUIPMENT TERMINATIONS, PLAGES AND DISCONNECTS WITH VENDOR EQUIPMENT AND VERIFY ALL DEVICE LOCATIONS FOR LAYOUT EQUIPMENT WITH CASEWORK PRIOR TO ROUGH-IN.
54. THE LOCATION AND PLACEMENT OF ELECTRICAL DISTRIBUTION EQUIPMENT IN ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS IS BASED ON PUBLISHED EQUIPMENT SIZES AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DEVIATIONS FROM CONFIGURATIONS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE NATIONAL ELECTRIC CODE AND ALL OTHER APPLICABLE ALL ELECTRICAL CODES, PANEL SCHEDULES, ETC. TRANSFORMERS, SAFETY SWITCHES, SWITCHBOARDS, ETC. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.
55. COORDINATION WITH THE UTILITY COMPANY FOR PLACEMENT OF THE UTILITY'S FACILITIES AND THE CONTRACTOR'S SERVICE ENTRANCE RACEWAYS AND CONNECTIONS TO THE CONTRACTOR'S SERVICE ENTRANCE CONDUCTORS IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
56. TELECOMMUNICATIONS AND DATA CABLES WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. LEAVE PULL WIRES OR ROPES OF ADEQUATE TENSILE STRENGTH IN ALL EMPTY CONDUITS.
57. PROVIDE TELEPHONE, FIBER AND DATA SERVICE ENTRANCE CONDUIT IN SIZES AND LOCATIONS FOR MOBILE UNITS AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY THE PROVIDER AND SERVICE PROVIDER. PROVIDE THE SERVICE PROVIDER'S RACEWAYS, AND PROVIDE AND INSTALLED BY THE OWNER'S SERVICE UTILITIES. LEAVE PULL WIRES OR ROPES OF ADEQUATE TENSILE STRENGTH IN ALL EMPTY CONDUITS.
58. EXACT SPACING OF SMOKE AND HEAT DETECTORS AND ANY DEVICES SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE WITH POSITIONS SHOWN ON THE DRAWINGS. DETECTOR SPACING IS BASED UPON NFPA 72 INCLUDING APPENDIX A. SLIGHT ADJUSTMENTS MAY BE REQUIRED TO AVOID OBSTRUCTIONS. THE ELECTRICAL CONTRACTOR AND ALL SUB CONTRACTORS, AIA, NFPA AND EQUIPMENT MANUFACTURERS SPACING CRITERIA. DO NOT INSTALL SMOKE DETECTORS WITHIN 3 FEET OF SUPPLY AIR DIFFUSERS OR RETURN GRILLES. PROVIDE FLEX CONDUIT CONNECTION TO SMOKE AND HEAT DETECTORS OF ADEQUATE LENGTH TO ALLOW HORIZONTAL ADJUSTMENT OF FOUR FEET FROM POSITIONS INDICATED ON DRAWINGS.
59. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
60. SAFETY: COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
61. ALL SWITCHES, RECEPTACLE AND LIGHTS SHALL COMPLY WITH ANSI 112.7 FOR AREA REQUIREMENTS.
62. THE ELECTRICAL CONTRACTOR AND ALL SUB CONTRACTORS WORKING FOR THE ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR COMMISSIONING EACH SYSTEM INDICATED IN THESE DRAWINGS. THE ELECTRICAL CONTRACTOR AND ALL SUB CONTRACTORS WORKING FOR THE ELECTRICAL CONTRACTOR ARE RESPONSIBLE FOR PROVIDING A COMPLETE OPERATIONAL SYSTEM TO OWNER. THE SYSTEMS WILL NOT BE OPERATIONAL UNTIL THE OWNER HAS APPROVED EACH SYSTEM.
63. INSTALL COLOR CODED CEILING TACKS IN ACoustICAL TILE CEILINGS OR COLOR CODED TAPE ON CEILING GRID TO IDENTIFY LOCATION OF ELECTRICAL EQUIPMENT, DISCONNECTS, TRANSFORMERS, CIRCUIT BREAKERS, FUSES, SAFETY SWITCHES, ETC. PROVIDE MAINTENANCE OR ARE PART OF A LIFE SAFETY SYSTEM. DOTS SHALL BE PLACED ON CEILING GRID.
64. MC CABLE WITH INSULATED GROUND CONDUCTOR MAY BE USED FOR BRANCH CIRCUITS. DO NOT USE WHERE SUBJECT TO PHYSICAL DAMAGE OR WHERE EXPOSED TO CORROSIVE CONDITIONS.

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WALL MOUNTED LIGHT FIXTURE LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		JUNCTION BOX
	RECESSED LIGHT FIXTURE LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		PANELBOARD, SURFACE OR RECESSED MOUNTED AS SHOWN, SIZE, RATINGS, AND MOUNTING AS INDICATED ON PANEL SCHEDULE. CONTRACTOR IS RESPONSIBLE FOR REQUIRED CLEARANCE IN FRONT OF ELECTRICAL PANEL. SEE NEC TABLE 110.9 WORKING SPACES FOR ADDITIONAL CLEARANCE CONDITIONS.
	24 VOLT FIXTURE, RECESSED OR SURFACE MOUNTED LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		TRANSFORMER (TYPE DENOTED)
	4FT SUSPENDED OR SURFACE MOUNTED LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		DISCONNECT SWITCH, FUSED, HEAVY DUTY, SIZE AS INDICATED ON DRAWING #A - DISCONNECT TYPE / # - NUMBER OF POLES / # - NEW RATING #WFF - FUSE SIZE
	SURFACE LIGHT FIXTURE LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		PHOTOCELL
	4FT OR 8FT CHANNEL LIGHT FIXTURE, SUSPENDED OR SURFACE MOUNTED LETTER INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		HALFWIRED SYMBOL INDICATES EXISTING
	EMERGENCY LIGHTING UNIT, 2/HEAD WITH BATTERY BACKUP, WALL MOUNTED, "NOT SWITCHED" INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		DASHED SYMBOL INDICATES REMOVED
	EXIT SIGN, EMERGENCY LIGHTING UNIT, WALL/END MOUNTED, ARROW INDICATES DIRECTION, INDICATES FIXTURE TYPE (SEE FIXTURE SCHEDULE)		FLOOR RECEPT. (DUPLEX SHOWN)
	SINGLE POLE SW, 120/277 VAC, 20A MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE		WALL TELEPHONE IN INTERCOM OUTLET
	3-WAY SW, 120/277 VAC, 20A MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE		DATA INFORMATION OUTLET (TYPE DENOTED)
	KEYER SW, 120/277 VAC, 20A MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE		WIRELESS ACCESS POINT, DATA CABLE MUST BE TERMINATED IN A JACK IN THE CEILING. 17 FT PATCH CABLE MUST BE PROVIDED AND DROPPED BELOW THE CEILING
	HEAVY DUTY 0-10V DIMMER, 1500W @ 120/200V, 400W @ 277VAC MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE		INTERCOM SPEAKER (WALL OR CEILING MT.)
	WALL MOUNTED OCCUPANCY SENSOR, SINGLE BUTTON ON/OFF CONTROL, 180° COVERAGE, MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED		ANTENNA
	DUAL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, DUAL BUTTON ON/OFF CONTROL, 180° COVERAGE, ADDITIONAL POWER SUPPLY FOR FAN OPERATION, MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED		DOOR CONTACTS - TO INTRUSION DETECTION SYSTEM
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE, WP-18R, WP-18R-ER POWER PACKS REQUIRED FOR LIGHTING CONTROLS IN OPEN OFFICE AREAS. POWER PACKS SHALL BE MOUNTED ABOVE ACCESSIBLE CEILING, MARK CEILING TILE WITH RED DOT TO INDICATE LOCATION. 2-SECOND CONTACT TO BE PROVIDED FOR CONNECTION TO BUILDING MANAGEMENT		CARD READER
	TIMED SW, 5-9M, 10M, 15M, 30M, 120/277 VAC, 20A MOUNTED AT 48" AFF UNLESS NOTED OTHERWISE		CCTV CAMERA
	WALL MOUNTED EMERGENCY OFF PUSH BUTTON WITH RED MUSHROOM STYLE LEAF, MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED		KEY NOTE (SEE SCHEDULE)
	RECEPTACLE, DUPLEX, 120VAC, 20A MOUNTED 18" AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAILS) WP - LISTED WEATHER-RESISTANT TYPE DEVICE WITH WEATHERPROOF, EXTRA DUTY, WHILE IN USE COVER GR - GROUND FAULT CIRCUIT INTERRUPTER TYPE, 120VAC, 20A MOUNTED 4" AFF LOCATE GFI TEST SWITCH IN A READILY ACCESSIBLE LOCATION T - TAMPER RESISTANT R - RECEPTACLE SHALL BE RED IN COLOR PER NEC TO, 517.31(E)		POWER AND SWITCH LEG
	RECEPTACLE, DUPLEX, 120VAC, 20A MOUNTED 6" AFF, ABOVE COUNTER TOP		UNSWITCHED LEG
	RECEPTACLE, QUADPLEX, 120VAC, 20A MOUNTED 18" AFF UNLESS OTHERWISE NOTED (SEE ELECTRICAL MOUNTING HEIGHT DETAILS)		
	240 VOLT RECEPT.		

[illegible]

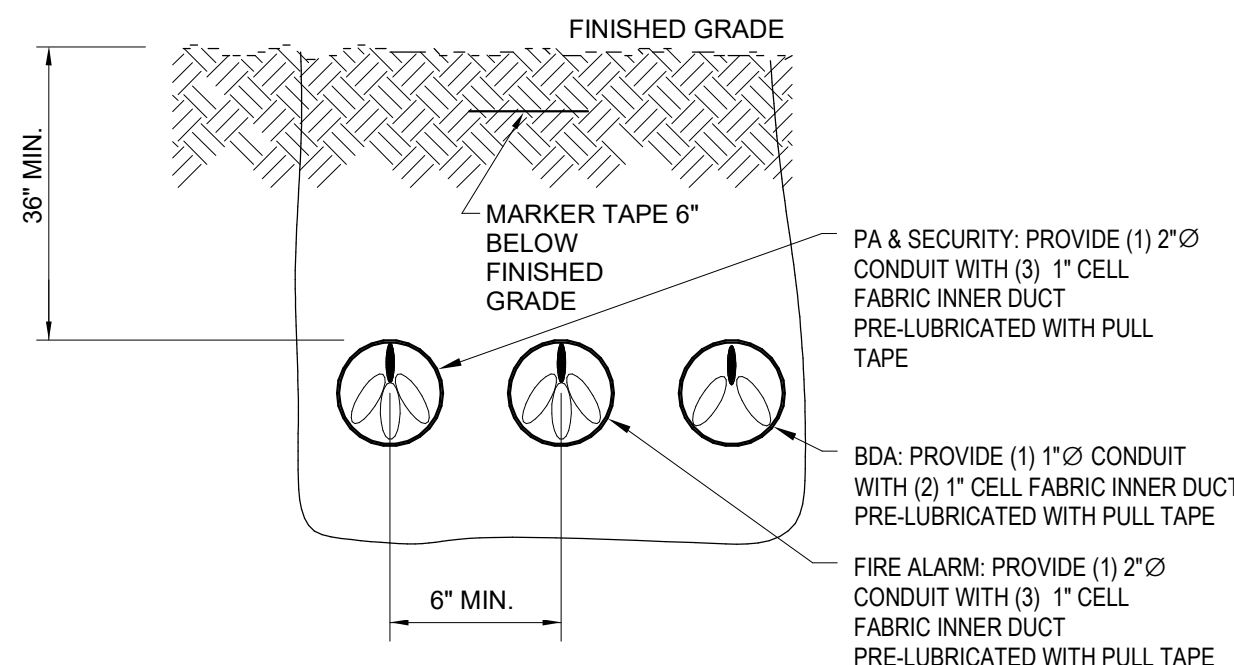
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03.26.20	100% REVIEW SUBMISSION	
01.22.20	80% CD PROGRESS DRAWINGS	
10.14.19	NC DPI CD SUBMISSION	
07.30.19	SD PROGRESS DRAWINGS	
07.11.19	NC DPI SD SUBMISSION	

PROJECT NO: 2019082.00
DATE: 10.14.2019
SCALE: As indicated
DRAWN BY: HGH PROJ MGR: WAC



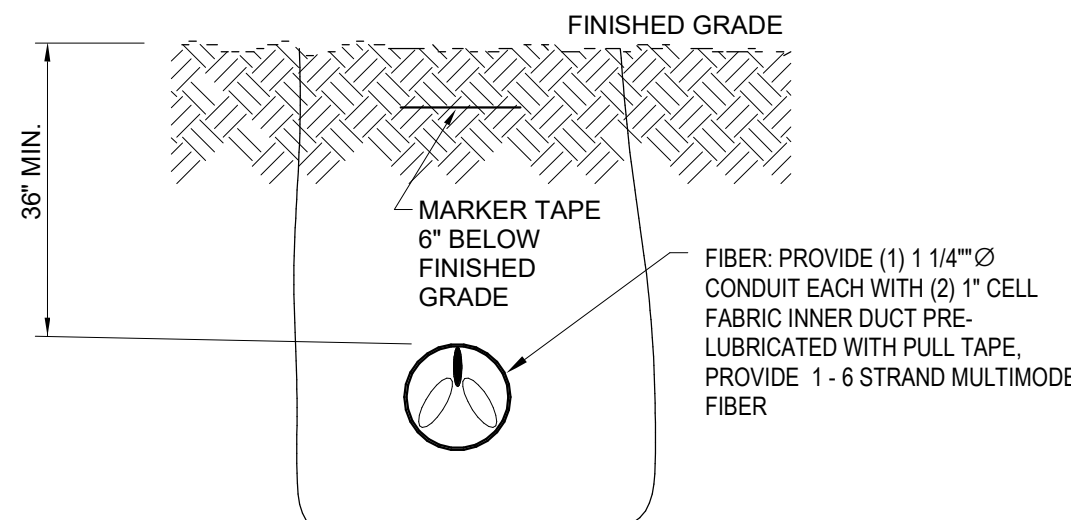
KEYED NOTES

- EXISTING FIRE ALARM CONTROL PANEL
- EXISTING FA BATTERY CABINET
- FIRE ALARM VOICE / ALARM COMMUNICATION PANEL (FACP), MOUNTED ADJACENT TO EXISTING FACP
- BDA ANNUNCIATOR PANEL, SEE BDA INSTALLATION NOTES SHEET E603
- ELECTRICAL CONTRACTOR PAINT EXTERIOR CONDUIT TO MATCH COLOR OF SURFACE THAT CONDUIT IS ATTACHED. MATCH BRICK COLOR, FACIA COLOR AND MATCH TRIM COLOR ETC...



DUCTBANK DETAIL - FIRE
ALARM/PA & SECURITY/BDA

NO SCALE

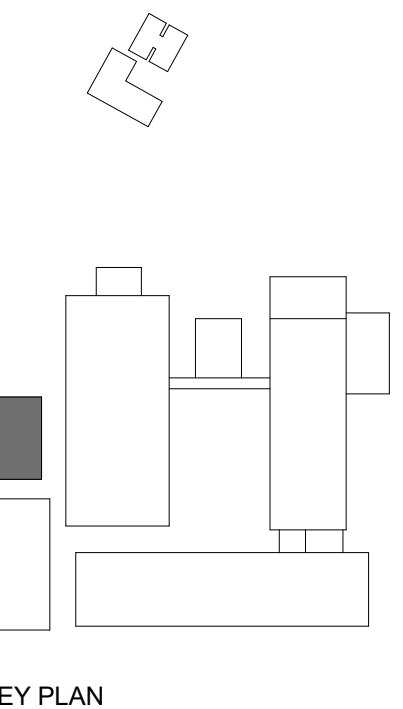


DUCTBANK FIBER

NO SCALE

1 ELECTRICAL SITE PLAN

SCALE: 1" = 30'-0"



ISSUE BLOCK	
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01.22.20	80% CD PROGRESS DRAWINGS
10.14.19	NC DPI CD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NC DPI SD SUBMISSION

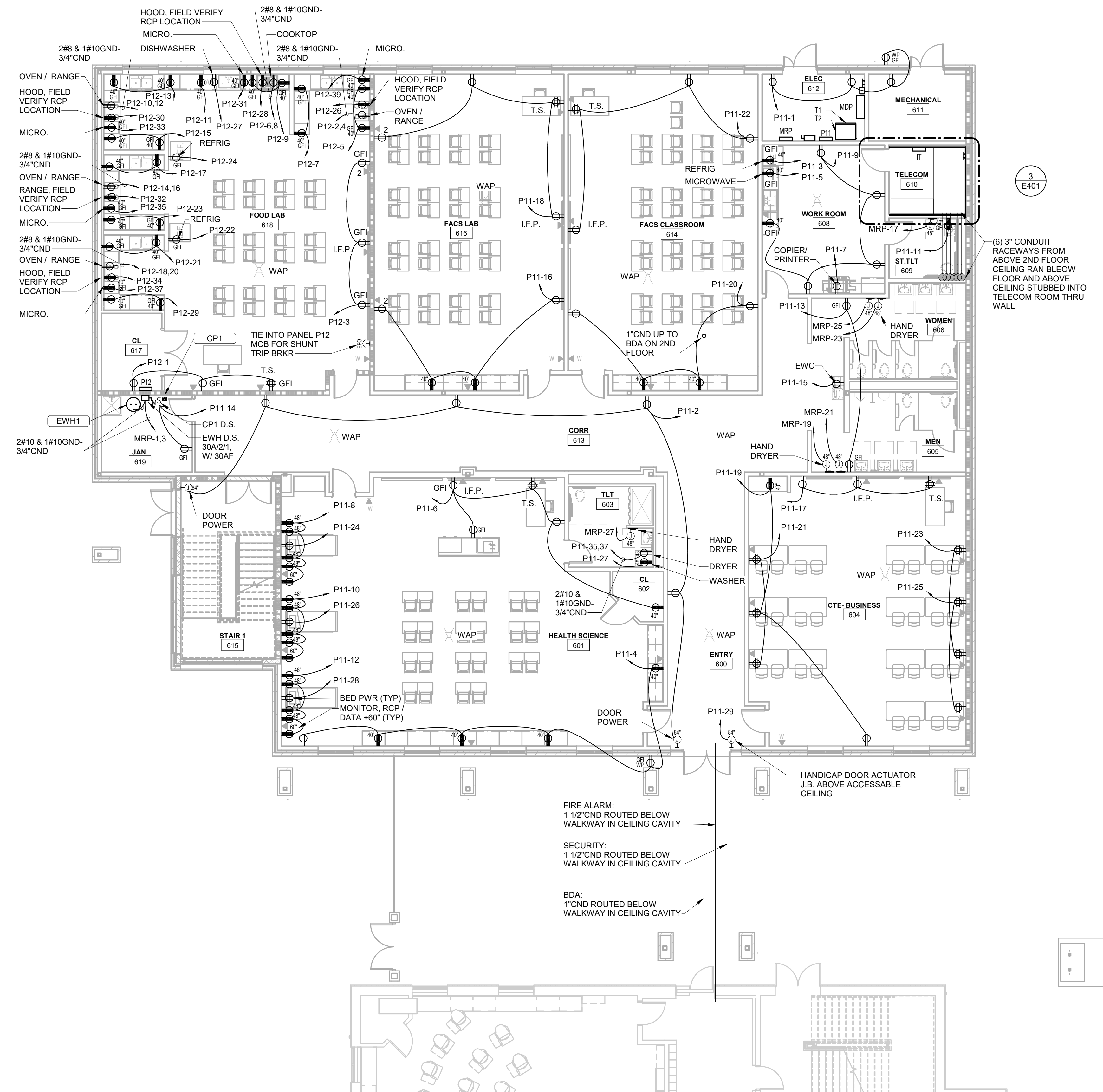
PROJECT NO: 2019082.00

DATE: 10.14.2019

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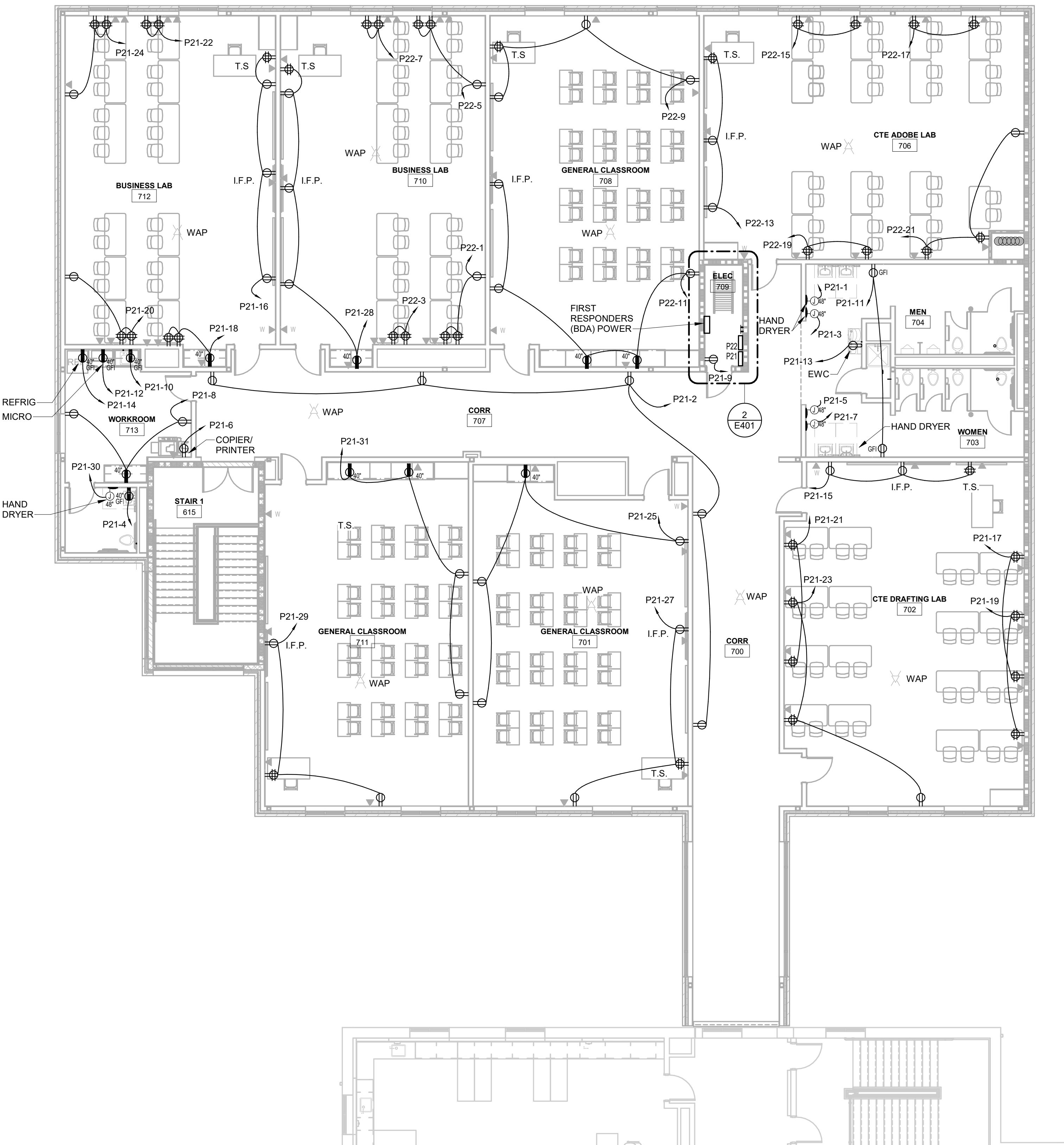
DRAWN BY: HGH PROJ MGR: WAC

E101
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1 CLASSROOM ADDITION FIRST
FLOOR PLAN - POWER

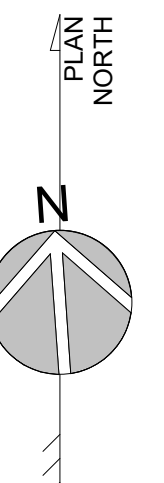
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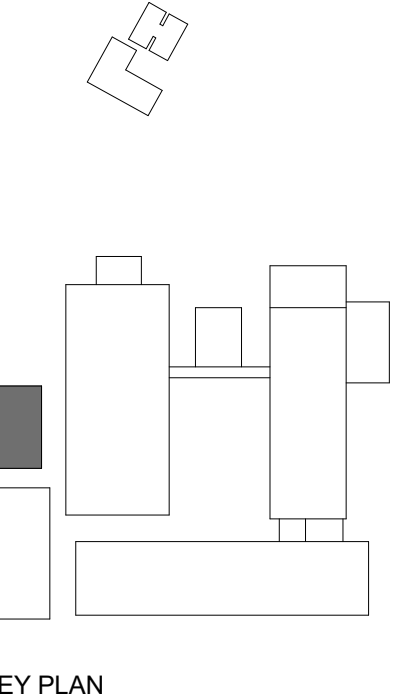


2 CLASSROOM ADDITION
SECOND FLOOR PLAN - POWER

SCALE: 1/8" = 1'-0"

8' 4' 0' 8'
SCALE: 1/8" = 1'-0"

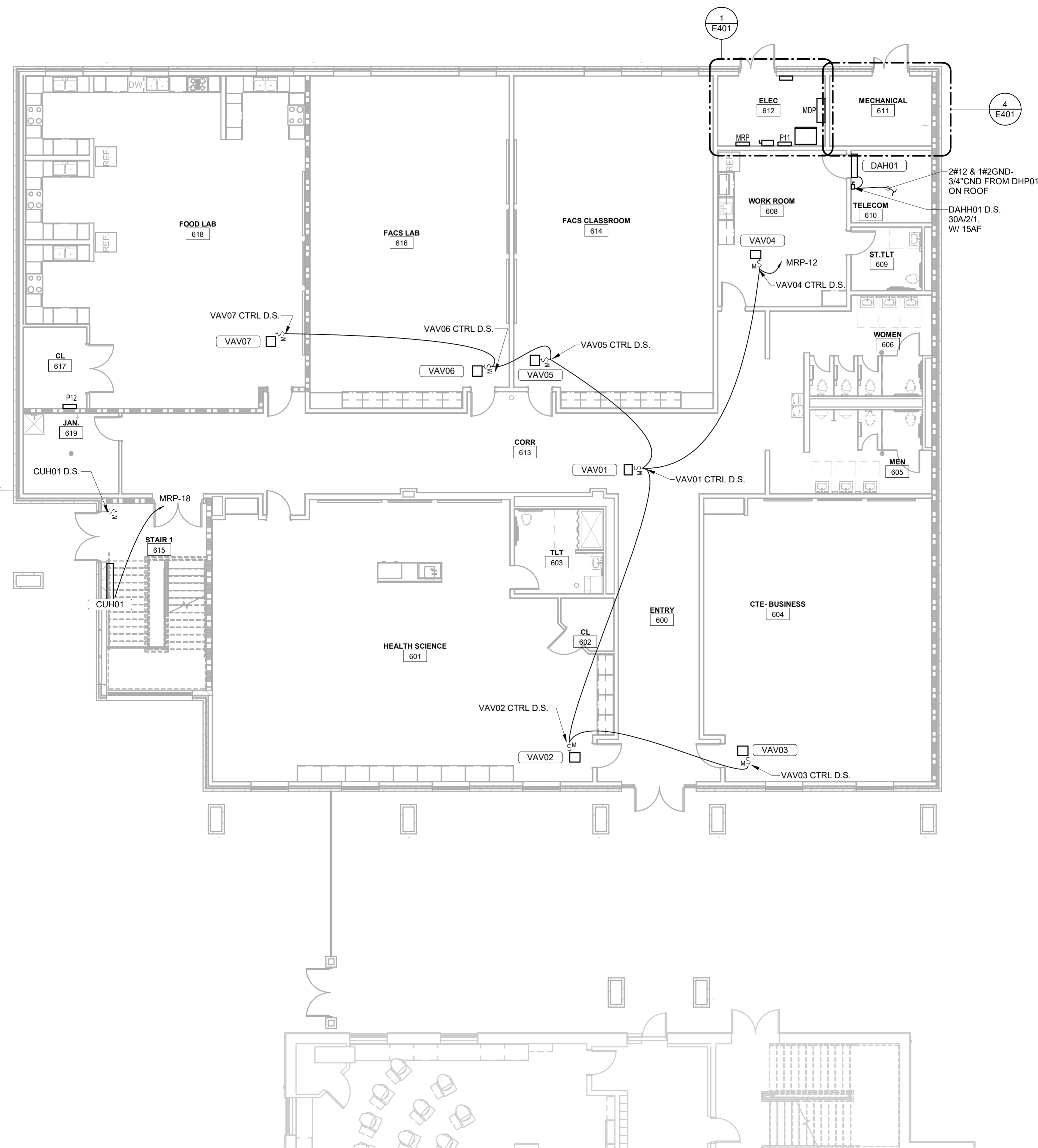




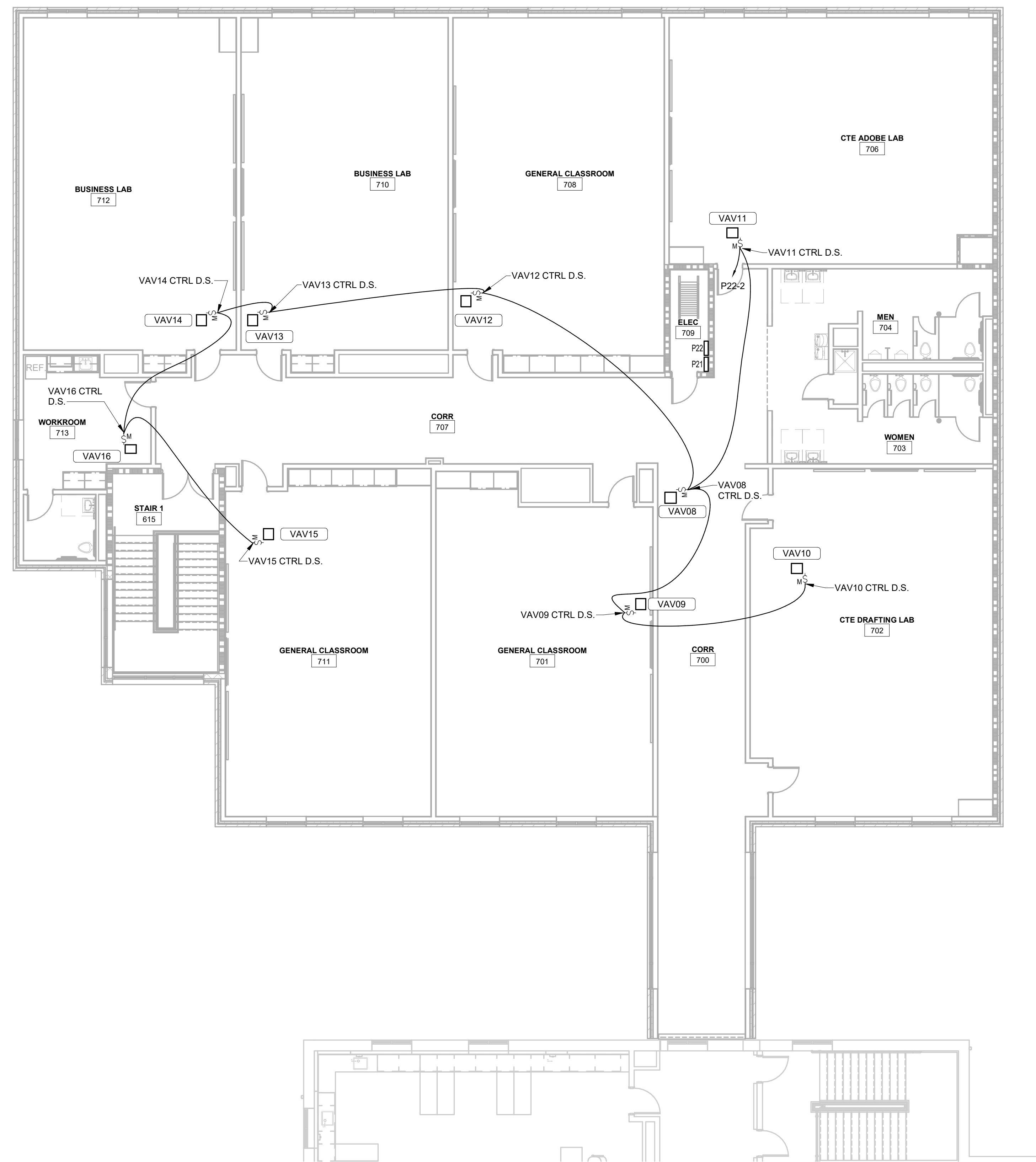
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	10.14.19	NC DPI CD SUBMISSION
	07.30.19	SD PROGRESS DRAWINGS
	07.11.19	NC DPI SD SUBMISSION

PROJECT NO: 2019082.00
DATE: 10.14.2019
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DRAWN BY: HGH PROJ MGR: WAC

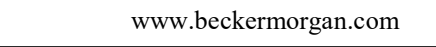
E102
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1 CLASSROOM ADDITION FIRST
FLOOR PLAN - HVAC POWER
SCALE: 1/8" = 1'-0"



2 CLASSROOM ADDITION
SECOND FLOOR PLAN - HVAC
POWER
SCALE: 1/8" = 1'-0"



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114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP # : 100
DPI SCHOOL # : 1

SHEET TITLE

KEY PLAN

	07.11.19	NCDPI SD SUBMISSION
Mark	Date	Description

PROJECT NO: 2019

DATE:	10.1
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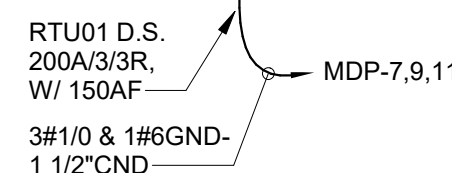
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DRAWN BY: HGH	PROJ MGR:
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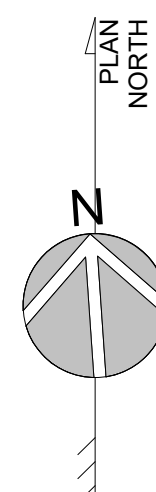
E103

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—ELECTRICAL CONTRACTOR
MUST PROVIDE 2#12 & 1#12GND-
3/4" CND TO DAH01 IN TELECOM

SCALE: 1/8" = 1'-0"



ISSUED
FOR BIDDING

NOT FOR CONSTRUCTION
ISSUED: 04.23.20

CBHF
Engineers, PLLC

2246 Yaupon Drive
Wilmington, NC 28401
Phone: 910.791.4000
Fax: 910.791.5266
www.cbhfenr.com
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FINAL DRAWING
DO NOT USE FOR
CONSTRUCTION

PROJECT TITLE

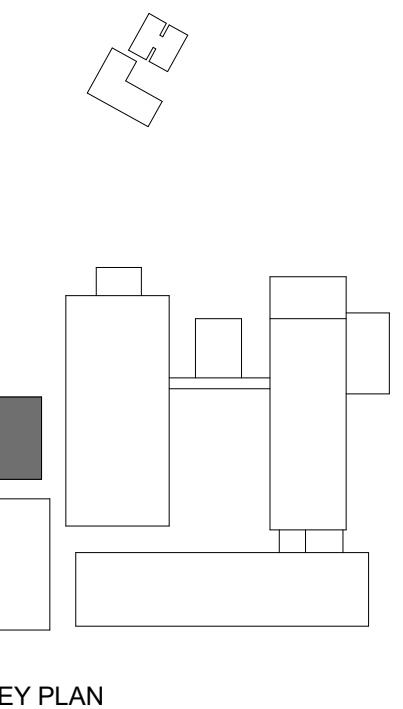
**NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION**

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 1165

SHEET TITLE

**CLASSROOM
ADDITION FLOOR
PLANS - LIGHTING**



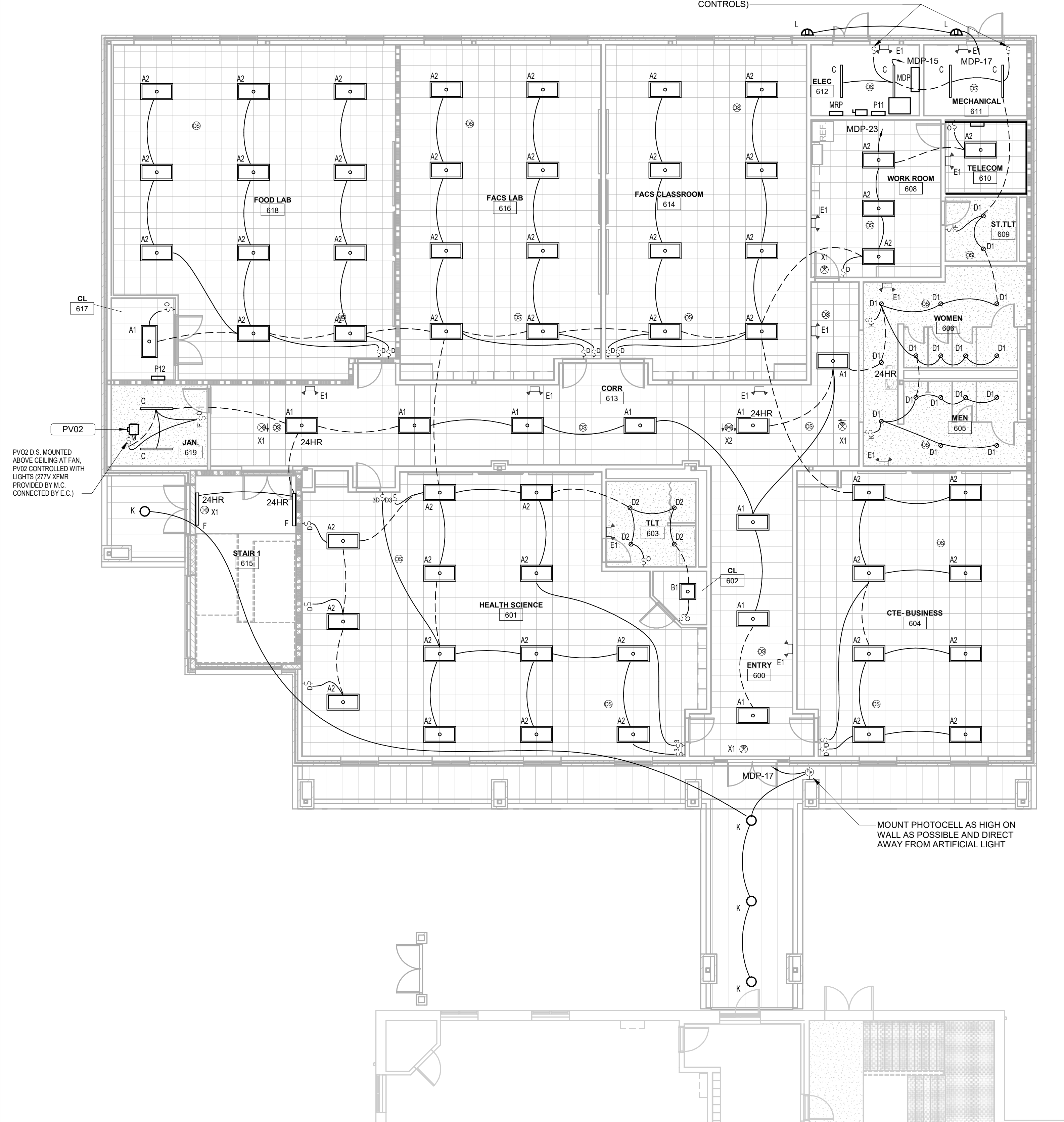
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07.30.19	SD PROGRESS DRAWINGS	
07.11.19	NC DPI SD SUBMISSION	

PROJECT NO: 2019082.00
DATE: 10.14.2019
SCALE: 1/8" = 1'-0"

DRAWN BY: GRM PROJ MGR: WAC

E201
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FROM SWITCH IN MECH ACCESS RM.
NOTE: PROVIDE STANDARD TOGGLE SWITCH
WITH POWER PACK TO OVERRIDE SENSOR
WHEN SWITCH IS FLIPPED. SENSORWORX
POWER PACK SWX-900-AX (SIMILAR
MANUFACTURERS (SENSOR SWITCH, HUBBELL
CONTROLS)

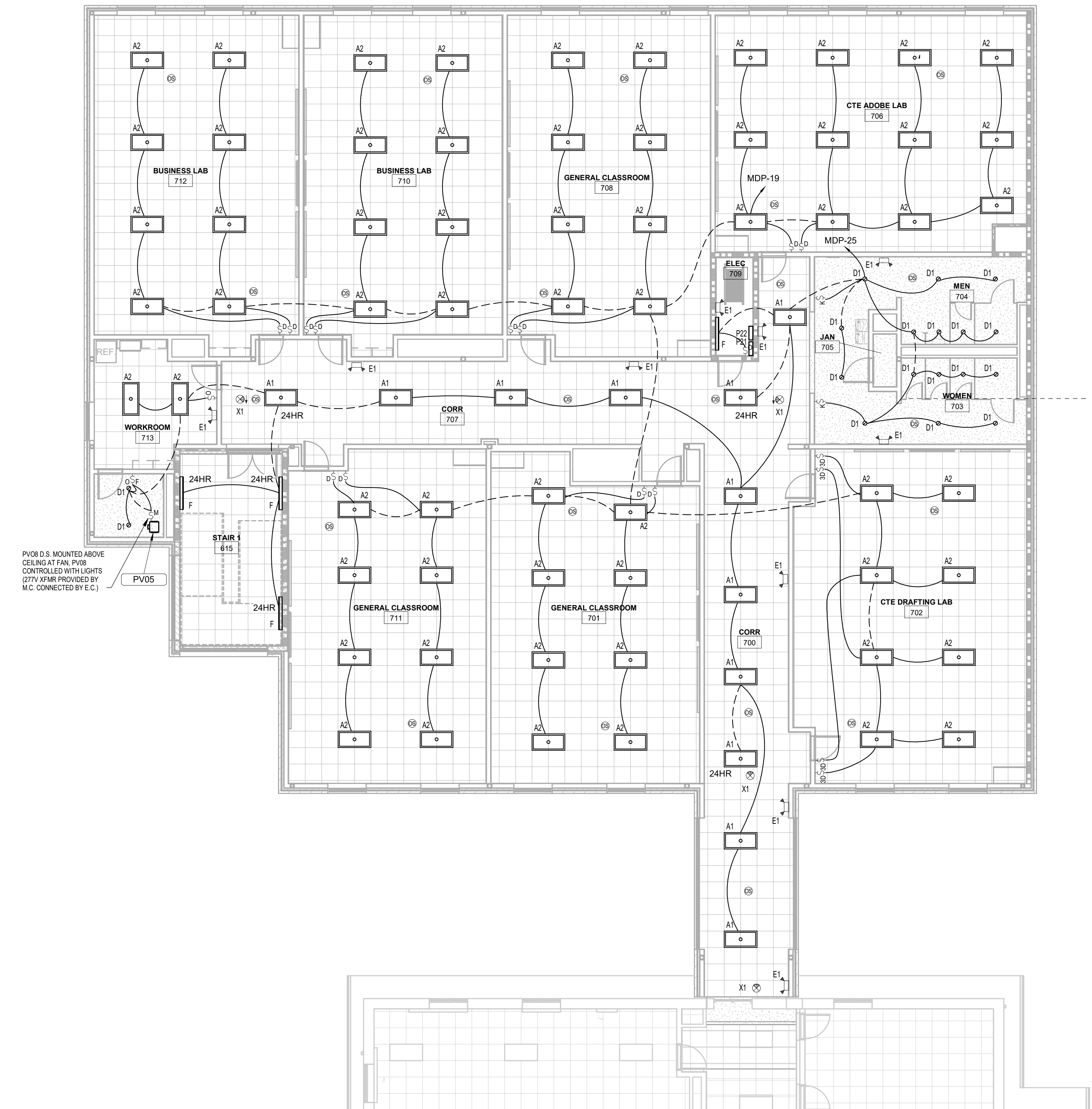


1 CLASSROOM ADDITION FIRST
FLOOR PLAN - LIGHTING

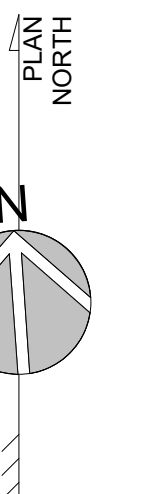
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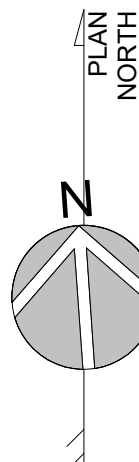
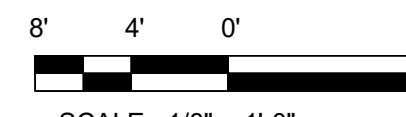
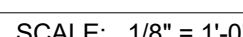
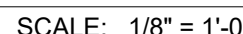
2 CLASSROOM ADDITION
SECOND FLOOR PLAN -
LIGHTING

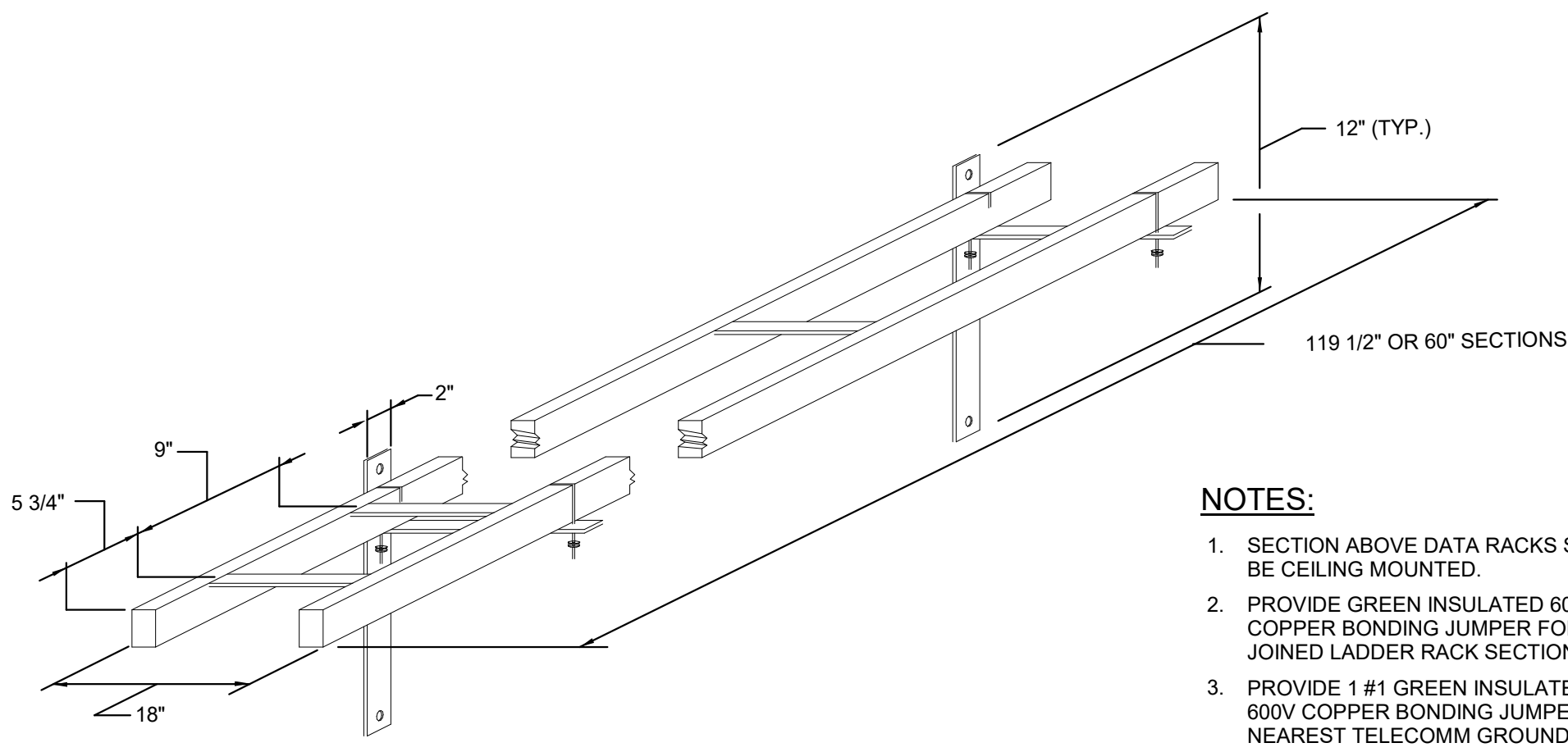
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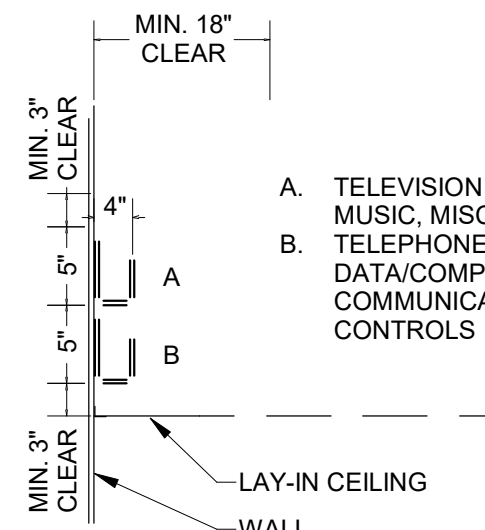
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SCALE: 1/8" = 1'-0"



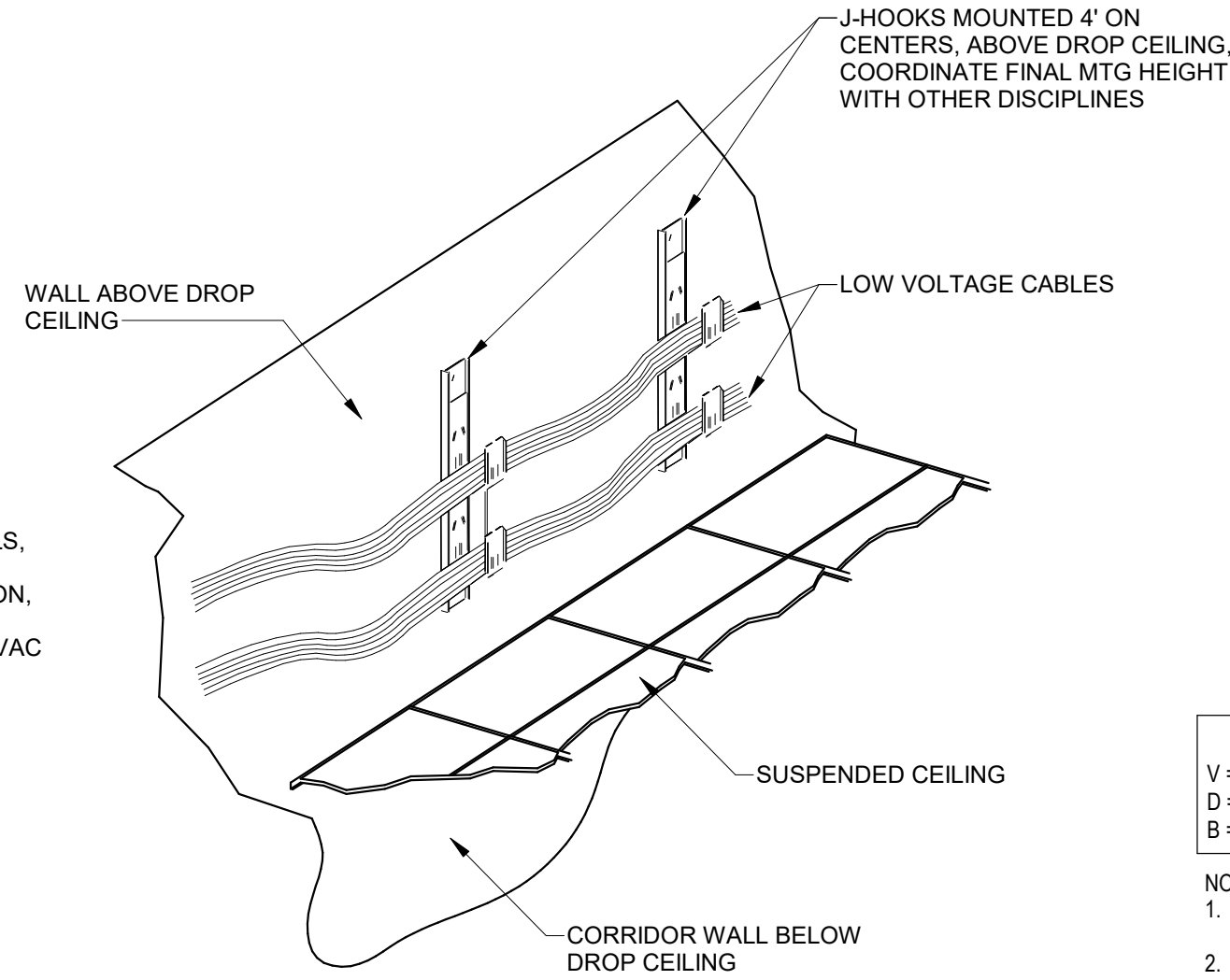




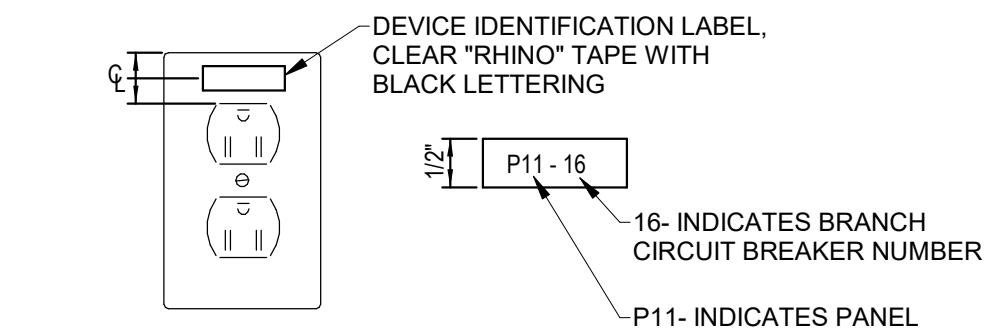
1 WALL MOUNTED TELECOM LADDER RACK DETAIL
NO SCALE



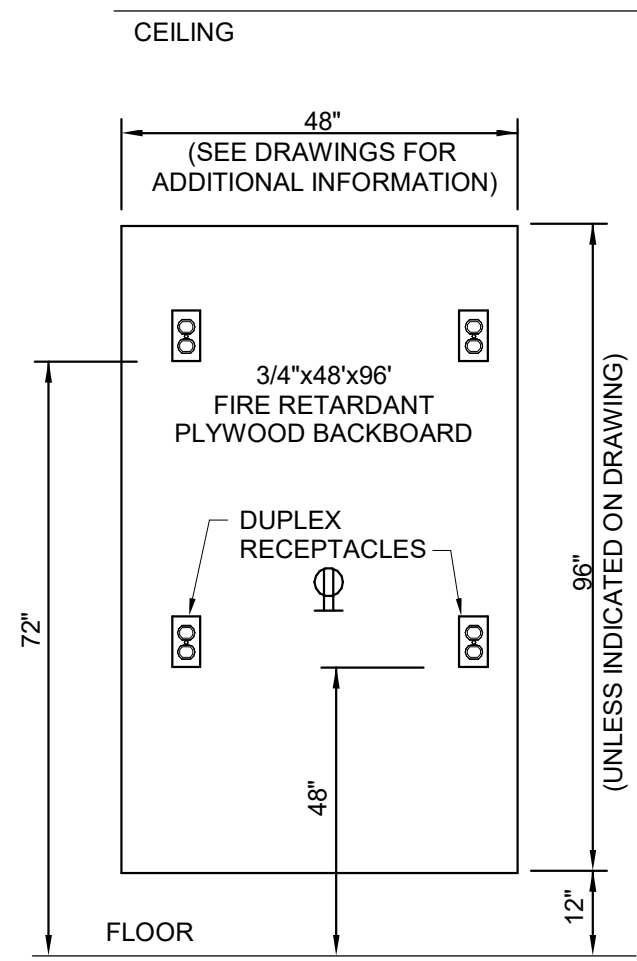
2 J-HOOK DETAIL
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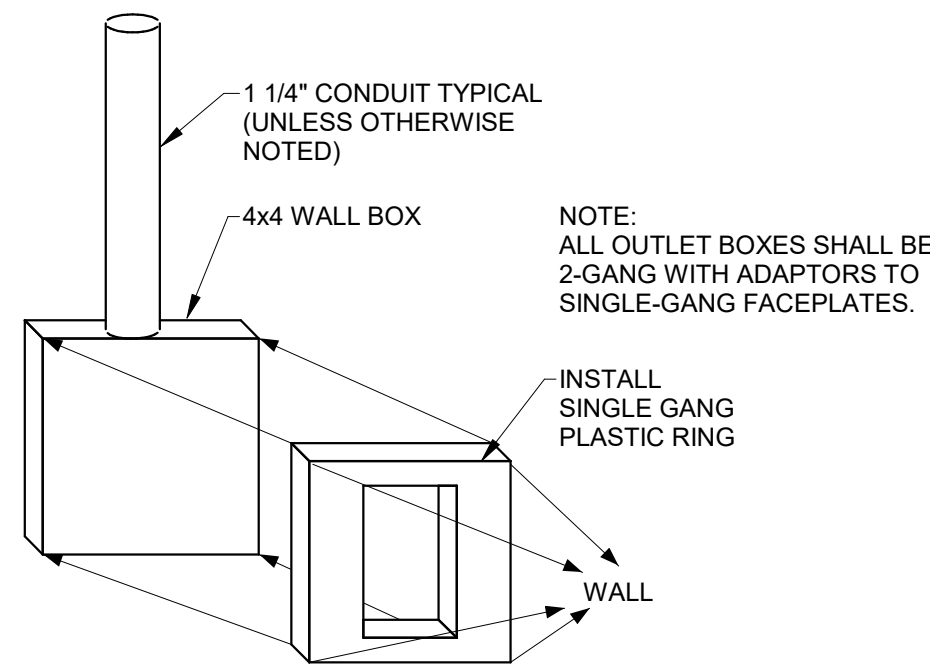
3 DATA FACE PLATE DETAIL
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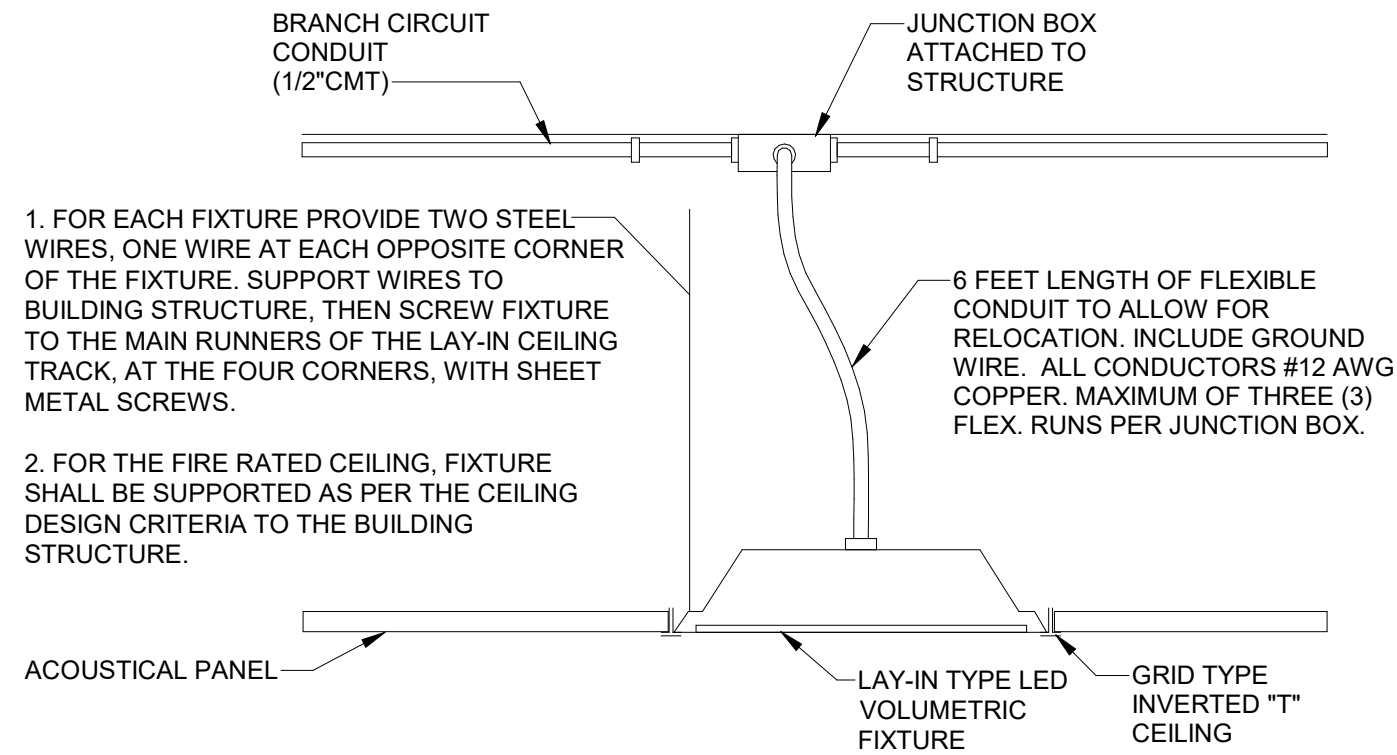
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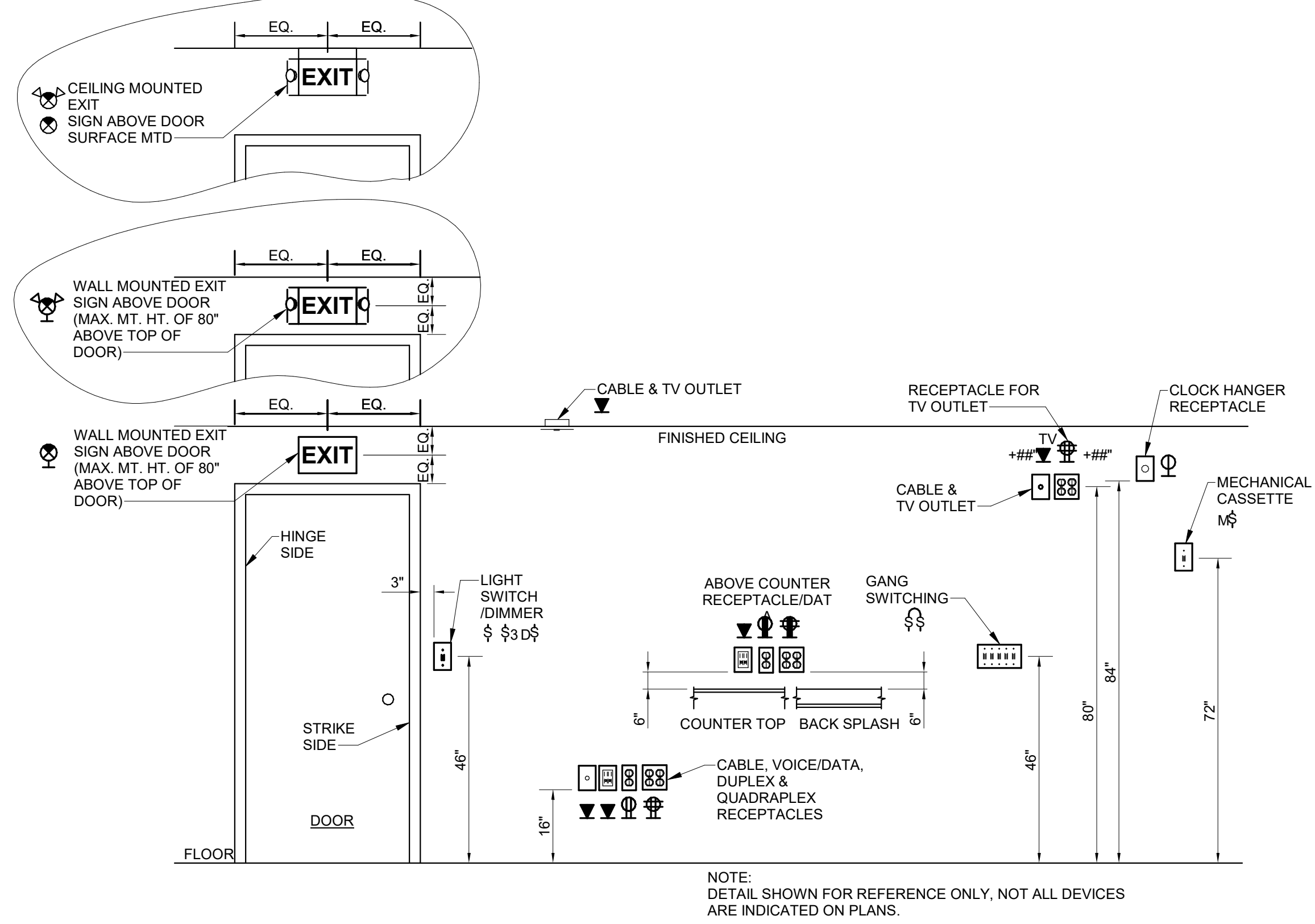
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6 OUTLET PATHWAY DETAIL
NO SCALE



7 LIGHTING FIXTURE MOUNTING DETAIL
NO SCALE



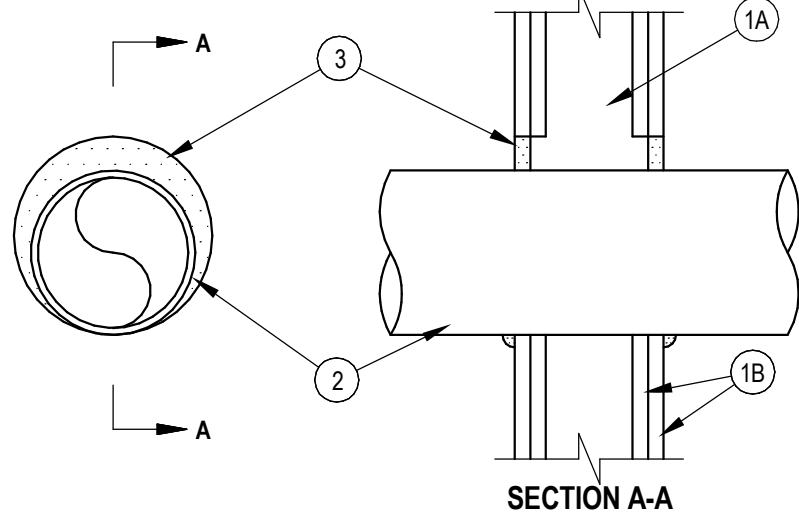
8 ELECTRICAL DEVICES MOUNTING DETAIL
NO SCALE

DATE	DESCRIPTION
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01.22.20	80% CD PROGRESS DRAWINGS
10.14.19	NC DPI CD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NC DPI SD SUBMISSION

System No. W-L-1054

October 14, 2015

ANSI / UL1479 (ASTM E814)	CAN / ULC S115
F Ratings - 1 and 2 Hr (See Items 1 & 3)	F Ratings - 1 and 2 Hr (See Items 1 & 3)
T Ratings - 0 Hr	FT Ratings - 0 Hr
L Ratings at Ambient - Less Than 1 CFM / sq ft	FH Ratings - 1and 2 HR (See Items 1 and 3)
L Ratings at 400 F - Less Than 1 CFM / sq ft	FTH Ratings - 0 Hr
	FTH Ratings - 0 Hr L Rating at Ambient - Less Than 1 CFM / sq ft
	L Ratings at 400 F - Less Than 1 CFM / sq ft



1. WALL ASSEMBLY -- THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300A OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS -- WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC. WHEN STEEL STUDS ARE USED AND THE DIAM OF OPENING EXCEEDS THE WIDTH OF STUD CAVITY, THE OPENING SHALL BE FRAMED ON ALL SIDES USING LENGTHS OF STEEL STUD INSTALLED BETWEEN THE VERTICAL STUDS AND SCREW ATTACHED TO THE STEEL STUDS AT EACH END. THE FRAMED OPENING IN THE WALL SHALL BE 4 TO 6 IN. WIDER AND 4 TO 6 IN. HIGHER THAN THE DIAM OF THE PENETRATING ITEM SUCH THAT, WHEN THE PENETRATING ITEM IS INSTALLED IN THE OPENING, A 2 TO 3 IN. CLEARANCE IS PRESENT BETWEEN THE PENETRATING ITEM AND THE FRAMING ON ALL FOUR SIDES.

B. GYPSUM BOARD -- 5/8 IN. THICK, 4 FT WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 32-1/4 IN. FOR STEEL STUD WALLS, MAX DIAM OF OPENING IS 14-1/2 IN. FOR WOOD STUD WALLS.

THE F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE FIRE RATING OF THE WALL ASSEMBLY.

2. THROUGH-PENETRANTS -- ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE SHALL BE MIN 0 IN. TO MAX 2-1/4 IN. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PIPE, CONDUIT OR TUBING MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45 DEGREES FROM PERPENDICULAR. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

- STEEL PIPE -- NOM 30 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- IRON PIPE -- NOM 30 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- CONDUIT -- NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR 6 IN. DIAM STEEL CONDUIT.
- COPPER TUBING -- NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- COPPER PIPE -- NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. FILL, VOID OR CAVITY MATERIAL * -- SEALANT -- MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND WALL, A MIN 1/2 IN. (13 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE WALL INTERFACE ON BOTH SURFACES OF WALL.
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-ONE SEALANT

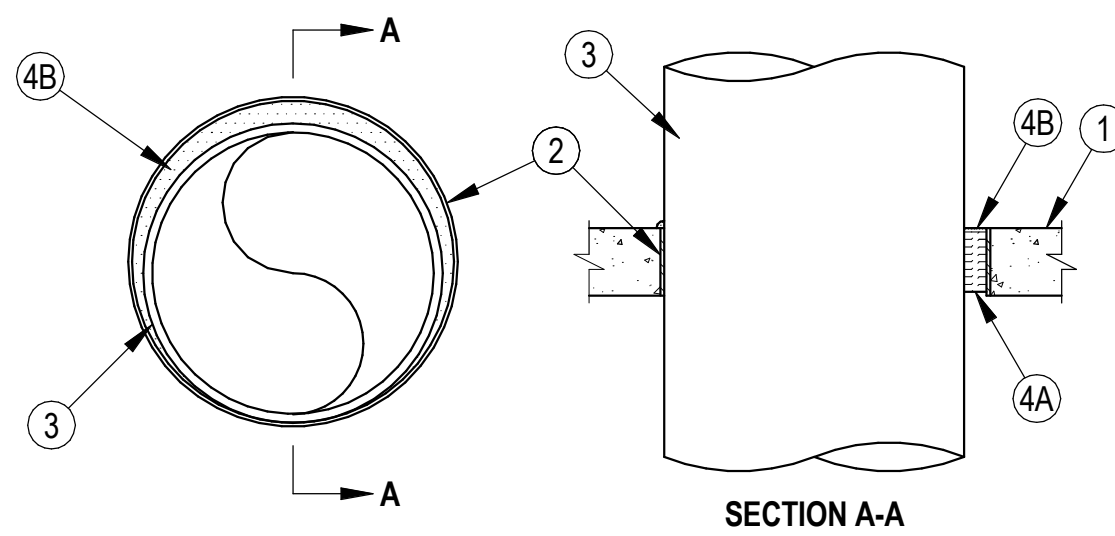
*INDICATES SUCH PRODUCTS SHALL BEAR THE UL OR CUL CERTIFICATION MARK FOR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

2 UL WL1054 DETAIL
NO SCALE

System No. C-AJ-1226

January 07, 2015

ANSI / UL1479 (ASTM E814)	CAN / ULC S115
F Ratings - 3 Hr	F Ratings - 3 Hr
T Ratings - 0 Hr	FT Ratings - 0 Hr
L Ratings at Ambient - Less Than 1 CFM / sq ft	FH Ratings - 3 HR
L Ratings at 400 F - 4 CFM / sq ft	FTH Ratings - 0 Hr
	L Rating At Ambient - Less Than 1 CFM / sq ft
	L Ratings at 400 F - 4 CFM / sq ft



1. FLOOR OR WALL ASSEMBLY MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 32 IN. (813 MM)

2. METALLIC SLEEVE (OPTIONAL) NOM 32 IN. (813 MM) DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY, FLUSH WITH FLOOR OR WALL SURFACES OR EXTENDING A MAX OF 3 IN (76 MM) ABOVE FLOOR OR BEYOND BOTH SURFACES OF WALL.

2A. SHEET METAL SLEEVE -- (OPTIONAL) MAX 6 IN. (152 MM) DIAM, MIN 26 GA. GALV STEEL PROVIDED WITH A 26 GA GALV STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROX MID-HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MIN OF 2 IN. (51 MM) LARGER THAN THE SLEEVE DIAM. THE SLEEVE IS TO BE CAST IN PLACE AND MAY EXTEND A MAX OF 4 IN (102 MM) BELOW THE BOTTOM OF THE DECK AND A MAX OF 1 IN. (25 MM) ABOVE THE TOP SURFACE OF THE CONCRETE FLOOR.

2B. SHEET METAL SLEEVE -- (OPTIONAL) MAX 12 IN. (305 MM) DIAM, MIN 24 GA. GALV STEEL PROVIDED WITH A 24 GA GALV STEEL SQUARE FLANGE SPOT WELDED TO THE SLEEVE AT APPROX MID-HEIGHT, OR FLUSH WITH BOTTOM OF SLEEVE IN FLOORS, AND SIZED TO BE A MIN OF 2 IN. (51 MM) LARGER THAN THE SLEEVE DIAM. THE SLEEVE IS TO BE CAST IN PLACE AND MAY EXTEND A MAX OF 4 IN (102 MM) BELOW THE BOTTOM OF THE DECK AND A MAX OF 1 IN. (25 MM) ABOVE THE TOP SURFACE OF THE CONCRETE FLOOR.

3. THROUGH-PENETRANT ONE METALLIC PIPE OR CONDUIT TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND PERIPHERY OF OPENING SHALL BE MIN 0 IN. (POINT CONTACT) TO MAX 1-7/8 IN (48 MM). PENETRANT MAY BE INSTALLED WITH CONTINUOUS POINT CONTACT. PENETRANT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:

- STEEL PIPE NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- IRON PIPE NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- COPPER PIPE NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- COPPER TUBING NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- CONDUIT NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT.
- CONDUIT NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT).

4. FIRESTOP SYSTEM THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:

A. PACKING MATERIAL MIN 4 IN. (102 MM) THICKNESS OF MIN 4 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL OR SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

B. FILL, VOID OR CAVITY MATERIAL * -- SEALANT MIN 1/4 IN. (6 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. AT THE POINT OR CONTINUOUS CONTACT LOCATIONS BETWEEN PIPE AND CONCRETE, A MIN 1/4 IN. (6 MM) DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE OR SLEEVE/PIPE PENETRANT INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE SEALANT OR FS-ONE MAX INTUMESCENT SEALANT

* INDICATED SUCH PRODUCTS SHALL BEAR THE UL OR CUL CLASSIFICATION MARK FIR JURISDICTIONS EMPLOYING THE UL OR CUL CERTIFICATION (SUCH AS CANADA), RESPECTIVELY.

1 UL CAJ1226 DETAIL
NO SCALE

Branch Panel: MDP										
Location: ELEC 612				Volts: 480Y/277				A.I.C. Rating: 14,000 AMPS SYMMETRICAL		
Supply From:				Phases: 3				Main Type: MAIN CB		
Mounting: SURFACE				Wires: 4				Mains Rating: 600.0 A		
Enclosure: NEMA 1								MCB Rating: 600.0 A		
Notes:										
SERVICE ENTRANCE RATED										
CKT	Circuit Description	Trip	Pol es	A	B	C	Pol es	Trip	Circuit Description	CKT
1	PANELS P11, P12 VIA XFMR T1	175.0 A	3	32194 VA/24346 VA	31091 VA/21939 VA	27057 VA/19884 VA	3	175.0 A	PANEL MRP VIA XFMR T2	2
3										4
5										6
7	RTU01 D.S.	150.0 A	3	28931 VA	0 VA	28931 VA	0 VA	--	-- SPACE	8
9										10
11										12
13	SPARE	20.0 A	1	0 VA	0 VA	28931 VA	0 VA	--	-- SPACE	14
15	LTS 1ST FLR CORR, TLTS, STAIR, MECH, ELEC	20.0 A	1		1239 VA	0 VA		--	-- SPACE	16
17	LTS EXTERIOR	20.0 A	1			160 VA	0 VA	--	-- SPACE	18
19	LTS SECOND FLR CLASSROOMS	20.0 A	1	3060 VA	0 VA			--	-- SPACE	20
21	SPARE	20.0 A	1		0 VA	0 VA		--	-- SPACE	22
23	LTS FIRST FLR CLASSROOMS	20.0 A	1			2854 VA	0 VA	--	-- SPACE	24
25	LTS 2ND FLR CORR, TLTS, STAIR, MECH, ELEC	20.0 A	1	1404 VA	0 VA			--	-- SPACE	26
27	SPARE	--	--		0 VA	0 VA		--	-- SPACE	28
29	SPARE	--	--			0 VA	0 VA	--	-- SPACE	30
31	SPARE	--	--	0 VA	0 VA			--	-- SPACE	32
33	SPARE	--	--		0 VA	0 VA		--	-- SPACE	34
35	SPARE	--	--			0 VA	0 VA	--	-- SPACE	36
37	SPARE	--	--	0 VA	0 VA			--	-- SPACE	38
39	SPARE	--	--		0 VA	0 VA		--	-- SPACE	40
41	SPARE	--	--			0 VA	0 VA	--	-- SPACE	42
Total Load:				89934 VA	83201 VA	78886 VA				
Total Amps:				327.1 A	302.8 A	284.8 A				
Legend:										
Load Classification		Connected Load		Demand Factor		Estimated Demand		Panel Totals		
HVAC		91984 VA		100.00%		91984 VA				
Other		1063 VA		100.00%		1063 VA		Total Conn. Load: 250821 VA		
Power		21080 VA		100.00%		21080 VA		Total Est. Demand: 198619 VA		
RCPT		117895 VA		54.24%		63948 VA		Total Conn.: 301.7 A		
SPEC		4320 VA		100.00%		4320 VA		Total Est. Demand: 236.9 A		
Lighting		1496 VA		100.00%		1496 VA				
LTS		6983 VA		125.00%		8729 VA				
Heating		6000 VA		100.00%		6000 VA				
Notes:										
1. HVAC EQUIPMENT MUST USE TYPE HACR BREAKERS.										
2. PROVIDE GFI BREAKER.										
3. PROVIDE BREAKER HANDEL LOCKING DEVICE.										

Branch Panel: P11											
Location: ELEC 612				Volts: 208Y/120				A.I.C. Rating: 10,000 AMPS SYMMETRICAL			
Supply From: T1				Phases: 3				Main Type: MAIN CB			
Mounting: Enclosure: NEMA 1				Wires: 4				Main Rating: 200.0 A			
								MCB Rating: 200.0 A			
Notes:											
CKT	Circuit Description	Trip	Pol es	A	B	C	Pol es	Trip	Circuit Description	CKT	
1	RCPTS: MECH. ELECT. EXT	20.0 A	1	720 VA	1080 VA			1	20.0 A RCPS: CORR. DOOR POWER	2	
3	RCPT: REFRIG	20.0 A	1		1200 VA	1080 VA		1	20.0 A RCPTS: HEALTH SCIENCE	4	
5	RCPT: MICRO	20.0 A	1			780 VA	1080 VA	1	20.0 A RCPTS: HEALTH SCIENCE	6	
7	RCPT: COPIER/PRINTER	20.0 A	1	1100 VA	360 VA			1	20.0 A RCPTS: HEALTH SCIENCE	8	
9	RCPT: WRK RM	20.0 A	1		900 VA	360 VA		1	20.0 A RCPTS: HEALTH SCIENCE	10	
11	RCPT: ST. TLT	20.0 A	1			180 VA	1260 VA	1	20.0 A RCPTS: HEALTH SCIENCE	12	
13	RCPTS: WOMEN, MEN	20.0 A	1	360 VA	216 VA			1	20.0 A RCPT: CPT D.S. JAN.	14	
15	RCPT: EWC (NOTE 2)	20.0 A	1		430 VA	720 VA		1	20.0 A RCPTS: FACS LAB	16	
17	RCPTS: CTE-BUSINESS	20.0 A	1	720 VA	720 VA		1080 VA	900 VA	1	20.0 A RCPTS: FACS LAB	18
19	RCPTS: CTE-BUSINESS	20.0 A	1	720 VA	720 VA				1	20.0 A RCPTS: FACS C.R.	20
21	RCPTS: CTE-BUSINESS	20.0 A	1		720 VA	900 VA			1	20.0 A RCPTS: FACS C.R.	22
23	RCPTS: CTE-BUSINESS	20.0 A	1	720 VA	180 VA		720 VA	180 VA	1	20.0 A RCPT: HEALTH SCIENCE BED	24
25	RCPTS: CTE-BUSINESS	20.0 A	1	720 VA	180 VA				1	20.0 A RCPT: HEALTH SCIENCE BED	26
27	RCPT: WASHER	20.0 A	1		1200 VA	180 VA			1	20.0 A RCPT: HEALTH SCIENCE BED	28
29	HANDICAP DOOR ACTUATOR	20.0 A	1			180 VA	400 VA		1	20.0 A JDD: CONTROL PANEL	30
31	SPARE	20.0 A	1	0 VA	0 VA				1	20.0 A SPARE	32
33	SPARE	20.0 A	1		0 VA	0 VA			1	20.0 A SPARE	34
35	SPARE	20.0 A	1			2496 VA	0 VA		1	20.0 A SPARE	36
37	RCPT: DRYER	30.0 A	2	2496 VA	0 VA				1	20.0 A SPARE	38
39	SPARE	20.0 A	2		0 VA	0 VA			1	20.0 A SPARE	40
41									1	20.0 A SPARE	42
Total Load:				8672 VA	7690 VA	9256 VA					
Total Amps:				73.5 A	64.1 A	78.4 A					
Legend:											
Load Classification		Connected Load	Demand Factor	Estimated Demand	Panel Totals						
Other		36 VA	100.00%	36 VA	Total Conn. Load: 25218 VA						
Power		540 VA	100.00%	540 VA	Total Est. Demand: 17897 VA						
RCPT		24642 VA	70.29%	17321 VA	Total Conn.: 70.0 A						
					Total Est. Demand: 49.7 A						
Notes:											
1. HVAC EQUIPMENT MUST USE TYPE HACR BREAKERS.											
2. PROVIDE GFI BREAKER.											
3. PROVIDE BREAKER HANDEL LOCKING DEVICE.											

Branch Panel: P12

Location: CL 617

Supply From: T1

Mounting: Enclosure: NEMA 1

Volts: 208Y/120

Phases: 3

Wires: 4

A.I.C. Rating: 10,000 AMPS SYMMETRICAL

Main Type: MAIN CB

Main Rating: 250.0 A

MCB Rating: 250.0 A

Notes:

MAIN BREAKER MUST BE SHUNT TRIP BREAKER FOR SHUTDOWN FROM "EPO".

CKT	Circuit Description	Trip	Pol es	A	B	C	Pol es	Trip	Circuit Description	CKT		
1	RCPTS: FOOD LAB	20.0 A	1	720 VA	5000 VA			2	50.0 A RCPT: OVEN/RANGE	2		
3	RCPTS: FOOD LAB	20.0 A	1		540 VA	5000 VA				4		
5	RCPTS: FOOD LAB	20.0 A	1			360 VA	2880 VA	2	30.0 A RCPT: COOKTOP	6		
7	RCPTS: FOOD LAB	20.0 A	1	360 VA	2880 VA					8		
9	RCPTS: FOOD LAB	20.0 A	1		360 VA	5000 VA		2	50.0 A RCPT: OVEN/RANGE	10		
11	RCPTS: FOOD LAB	20.0 A	1			180 VA	5000 VA	2	50.0 A RCPT: OVEN/RANGE	12		
13	RCPTS: FOOD LAB	20.0 A	1	360 VA	5000 VA			2	50.0 A RCPT: OVEN/RANGE	14		
15	RCPTS: FOOD LAB	20.0 A	1		360 VA	5000 VA				16		
17	RCPTS: FOOD LAB	20.0 A	1			360 VA	5000 VA	2	50.0 A RCPT: OVEN/RANGE	18		
19	SPARE	20.0 A	1	0 VA	5000 VA			1	20.0 A RCPT: REFRIG	20		
21	RCPTS: FOOD LAB	20.0 A	1		360 VA	1200 VA		1	20.0 A RCPT: REFRIG	22		
23	RCPTS: FOOD LAB	20.0 A	1			360 VA	1200 VA	1	20.0 A RCPT: REFRIG	24		
25	SPARE	20.0 A	1	0 VA	600 VA			1	20.0 A RCPT: HOOD IN FOOD LAB	26		
27	RCPT: DISHWASHER IN FOOD LAB	20.0 A	1		1440 VA	600 VA		1	20.0 A RCPT: HOOD IN FOOD LAB	28		
29	RCPTS: FOOD LAB	20.0 A	1	1500 VA	600 VA		360 VA	600 VA	1	20.0 A RCPT: HOOD IN FOOD LAB	30	
31	RCPT: MICRO	20.0 A	1		1500 VA	600 VA		1	20.0 A RCPT: HOOD IN FOOD LAB	32		
33	RCPT: MICRO	20.0 A	1			1500 VA	0 VA	1	20.0 A RCPT: HOOD IN FOOD LAB	34		
35	RCPT: MICRO	20.0 A	1					1	20.0 A SPARE	36		
37	RCPT: MICRO	20.0 A	1	1500 VA	0 VA			1	20.0 A SPARE	38		
39	RCPT: MICRO	20.0 A	1		1440 VA	0 VA		1	20.0 A SPARE	40		
41	SPARE	20.0 A	1				0 VA	1	20.0 A SPARE	42		
Total Load:				23521 VA	23401 VA		17801 VA					
Total Amps:				203.2 A		202.2 A		148.3 A				

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
RCPT	64723 VA	57.73%	37362 VA	
				Total Conn. Load: 64723 VA
				Total Est. Demand: 37362 VA
				Total Conn.: 178.7 A
				Total Est. Demand: 103.7 A

Notes:

1. HVAC EQUIPMENT MUST USE TYPE HACR BREAKERS.

2. PROVIDE GFI BREAKER.

3. PROVIDE BREAKER HANDEL LOCKING DEVICE.

Branch Panel: MRP														
Location: ELEC 612					Volts: 208Y/120				A.I.C. Rating: 10,000 AMPS SYMMETRICAL					
Supply From: T2					Phases: 3				Mains Type: MAIN CB					
Mounting:					Wires: 4				Mains Rating: 400.0 A					
Enclosure: NEMA 1									MCB Rating: 400.0 A					
Notes:														
CKT		Circuit Description	Trip	Pol es	A		B		C		Pol es	Trip	Circuit Description	CKT
1		EDH D.S.	30.0 A	2	2500 VA	252 VA					1	20.0 A	PV03 D.S.	2
3							2500 VA	171 VA			1	15.0 A	B01 D.S. (BP01)	4
5		EUH01 D.S.	20.0 A	2	1500 VA	252 VA			1500 VA	171 VA	1	15.0 A	B02 D.S. (BP02)	6
7											1	20.0 A	PV04 D.S.	8
9		EUH02 D.S.	20.0 A	2			1500 VA	0 VA			1	20.0 A	SPARE	10
11									1500 VA	252 VA	1	20.0 A	VAVS CTRL POWER	12
13		HWPO1A D.S.	20.0 A	1	564 VA	0 VA					--	--	SPACE	14
15		HWPO1B D.S.	20.0 A	1			564 VA	0 VA			--	--	SPACE	16
17		HAND DRYER	20.0 A	1					1380 VA	732 VA	1	20.0 A	CLH1 D.S.	18
19		HAND DRYER	20.0 A	1	1380 VA	0 VA					--	--	SPACE	20
21		HAND DRYER	20.0 A	1			1380 VA	0 VA			--	--	SPACE	22
23		HAND DRYER	20.0 A	1					1380 VA	0 VA	--	--	SPACE	24
25		HAND DRYER	20.0 A	1	1380 VA	0 VA					--	--	SPACE	26
27		HAND DRYER	20.0 A	1			1380 VA	0 VA			--	--	SPACE	28
29		SPACE	--	--					0 VA	0 VA	--	--	SPACE	30
31					2920 VA	0 VA					--	--	SPACE	32
33		PANEL IT	100.0 A	3			2920 VA	0 VA			--	--	SPACE	34
35					8890 VA	4708 VA			360 VA	0 VA	--	--	SPACE	36
37											--	--	SPACE	38
39		PANEL P21	200.0 A	3			6780 VA	4744 VA			3	200.0 A	PANEL P22	40
41									9140 VA	3468 VA				42
Total Load:					24346 VA		21938 VA		19884 VA					
Total Amps:					205.5 A		185.5 A		165.7 A					
Legend:														
Load Classification			Connected Load		Demand Factor		Estimated Demand		Panel Totals					
HVAC			5024 VA		100.00%		5024 VA							
Other			955 VA		100.00%		955 VA		Total Conn. Load: 65369 VA					
Power			20540 VA		100.00%		20540 VA		Total Est. Demand: 56104 VA					
RCPT			28530 VA		67.53%		19265 VA		Total Conn.: 181.4 A					
SPEC			4320 VA		100.00%		4320 VA		Total Est. Demand: 155.7 A					
Heating			6000 VA		100.00%		6000 VA							
Notes:														

Branch Panel: P21											
Location: ELEC 709 Supply From: MRP Mounting: Enclosure: NEMA 1						Volts: 208Y/120 Phases: 3 Wires: 4		A.I.C. Rating: 10,000 AMPS SYMMETRICAL Mains Type: MAIN CB Mains Rating: 200.0 A MCB Rating: 200.0 A			
Notes:											
CKT	Circuit Description		Trip	Pol es	A	B	C	Pol es	Trip	Circuit Description	CKT
1	HAND DRYER		20.0 A	1	1380 VA	900 VA			1	20.0 A RCPTS: CORR	2
3	HAND DRYER		20.0 A	1		1380 VA	180 VA		1	20.0 A RCPT: TLT	4
5	HAND DRYER		20.0 A	1			1380 VA	1100 VA	1	20.0 A RCPT: COPIER/PRINTER	6
7	HAND DRYER		20.0 A	1	1380 VA	540 VA			1	20.0 A RCPTS: WORK RM	8
9	RCPT: ELEC		20.0 A	1		180 VA	180 VA		1	20.0 A RCPT: WRK RM COUNTER	10
11	RCPT: MEN, WOMEN		20.0 A	1			360 VA	780 VA	1	20.0 A RCPT: WRK RM MICRO	12
13	RCPT: EWC (NOTE 2)		20.0 A	1	430 VA	1200 VA			1	20.0 A RCPT: WORK RM REF	14
15	RCPTS: CTE DRAFTING		20.0 A	1		720 VA	900 VA		1	20.0 A RCPTS: BUSINESS LAB	16
17	RCPTS: CTE DRAFTING		20.0 A	1			720 VA	900 VA	1	20.0 A RCPTS: BUSINESS LAB	18
19	RCPTS: CTE DRAFTING		20.0 A	1	720 VA	900 VA			1	20.0 A RCPTS: BUSINESS LAB	20
21	RCPTS: CTE DRAFTING		20.0 A	1		720 VA	720 VA		1	20.0 A RCPTS: BUSINESS LAB	22
23	RCPTS: CTE DRAFTING		20.0 A	1			900 VA	900 VA	1	20.0 A RCPTS: BUSINESS LAB	24
25	RCPTS: GENERAL C.R.		20.0 A	1	720 VA	0 VA			1	20.0 A SPARE	26
27	RCPTS: GENERAL C.R.		20.0 A	1		720 VA	1080 VA		1	20.0 A RCPTS: BUSINESS LAB	28
29	RCPTS: GENERAL C.R.		20.0 A	1			720 VA	1380 VA	1	20.0 A HAND DRYER	30
31	RCPTS: GENERAL C.R.		20.0 A	1	720 VA	0 VA			1	20.0 A SPARE	32
33	SPARE		20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	34
35	SPARE		20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	36
37	SPARE		20.0 A	1	0 VA	0 VA			1	20.0 A SPARE	38
39	SPARE		20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	40
41	SPARE		20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	42
Total Load:					8890 VA	6780 VA	9140 VA				
Total Amps:					76.8 A	56.5 A	78.9 A				
Legend:											
Load Classification		Connected Load	Demand Factor	Estimated Demand	Panel Totals						
Power		6900 VA	100.00%	6900 VA							
RCPT		17910 VA	77.92%	13955 VA	Total Conn. Load: 24810 VA						
					Total Est. Demand: 20855 VA						
					Total Conn.: 181.4 A						
					Total Est. Demand: 57.9 A						
Notes:											
1. HVAC EQUIPMENT MUST USE TYPE HACR BREAKERS.											
2. PROVIDE GFI BREAKER.											
3. PROVIDE BREAKER HANDEL LOCKING DEVICE.											

Branch Panel: P22											
Location: ELEC 709 Supply From: MRP Mounting: Enclosure: NEMA 1						Volts: 208Y/120 Phases: 3 Wires: 4			A.I.C. Rating: 10,000 AMPS SYMMETRICAL Mains Type: MAIN CB Mains Rating: 200.0 A MCB Rating: 200.0 A		
Notes:											
CKT	Circuit Description		Trip	Pol es	A	B	C	Pol es	Trip	Circuit Description	CKT
1	RCPTS: BUSINESS LAB		20.0 A	1	900 VA	324 VA			1	20.0 A VAV CONTROL POWER	2
3	RCPTS: BUSINESS LAB		20.0 A	1		720 VA	360 VA		1	20.0 A RCPTS: ON ROOF	4
5	RCPTS: BUSINESS LAB		20.0 A	1			900 VA	768 VA	1	150.0 A PV01 D.S. ON ROOF	6
7	RCPTS: BUSINESS LAB		20.0 A	1	720 VA	1144 VA			2	15.0 A DP01 D.S. & DAH01	8
9	RCPTS: GENERAL C.R.		20.0 A	1		900 VA	1144 VA				10
11	RCPTS: GENERAL C.R.		20.0 A	1			900 VA	180 VA	1	20.0 A "EMERGENCY COMMUNICATION SYSTEM"	12
13	RCPTS: CTE ADOBE LAB		20.0 A	1	720 VA	180 VA			1	20.0 A "EMERGENCY COMMUNICATION SYSTEM"	14
15	RCPTS: CTE ADOBE LAB		20.0 A	1		720 VA	0 VA		1	20.0 A SPARE	16
17	RCPTS: CTE ADOBE LAB		20.0 A	1			720 VA	0 VA	1	20.0 A SPARE	18
19	RCPTS: CTE ADOBE LAB		20.0 A	1	720 VA	0 VA			1	20.0 A SPARE	20
21	RCPTS: CTE ADOBE LAB		20.0 A	1		900 VA	0 VA		1	20.0 A SPARE	22
23	SPARE		20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	24
25	SPARE		20.0 A	1	0 VA	0 VA			1	20.0 A SPARE	26
27	SPARE		20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	28
29	SPARE		20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	30
31	SPARE		20.0 A	1	0 VA	0 VA			1	20.0 A SPARE	32
33	SPARE		20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	34
35	SPARE		20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	36
37	SPARE		20.0 A	1	0 VA	0 VA			1	20.0 A SPARE	38
39	SPARE		20.0 A	1		0 VA	0 VA		1	20.0 A SPARE	40
41	SPARE		20.0 A	1			0 VA	0 VA	1	20.0 A SPARE	42
Total Load:					4708 VA	4744 VA	3468 VA				
Total Amps:					40.8 A	41.1 A	28.9 A				
Legend:											
Load Classification			Connected Load		Demand Factor		Estimated Demand		Panel Totals		
HVAC			3056 VA		100.00%		3056 VA				
Power			324 VA		100.00%		324 VA		Total Conn. Load: 12920 VA		
RCPT			9540 VA		100.00%		9540 VA		Total Est. Demand: 12920 VA		
									Total Conn.: 35.9 A		
									Total Est. Demand: 35.9 A		
Notes:											
1. HVAC EQUIPMENT MUST USE TYPE HACR BREAKERS.											
2. PROVIDE GFI BREAKER											
3. PROVIDE BREAKER HANDEL LOCKING DEVICE.											

LIGHTING FIXTURE SCHEDULE													
MARK	DESCRIPTION	MANUFACTURER/SERIES	NOM. SIZE	TEMP(°K)	LAMPS	VOLTS	DELIVERED LUMENS	WATTS	LENS	COLOR	MOUNTING HEIGHT	BALLAST/ DRIVER	REMARKS
A1	2X4 LAY-IN LED TROFFER	LITHONIA: GTL SERIES COLUMBIA: LJ724 SERIES DAY-BRITE	2'x4'	3500	LED	MVOLT	5400	51	A19 ACRYLIC	WHITE	RECESSED LAY-IN	LED DRIVER	
A2	2X4 LAY-IN LED TROFFER	LITHONIA: GTL SERIES COLUMBIA: LJ724 SERIES DAY-BRITE	2'x4'	3500	LED	MVOLT	5400	51	A19 ACRYLIC	WHITE	RECESSED LAY-IN	LED DRIVER DIMMING	1
B1	2X2 LAY-IN LED TROFFER	LITHONIA: GTL SERIES COLUMBIA: LJ722 SERIES DAY-BRITE	2'x2'	3500	LED	MVOLT	2700	26	A19 ACRYLIC	WHITE	RECESSED LAY-IN	LED DRIVER	
C	LED UTILITY LIGHT	LITHONIA: CSS COLUMBIA: CSL4 SERIES DAY-BRITE	4'	3500	LED	MVOLT	3000	31	ACRYLIC	WHITE	SURFACE / SUSPENDED	LED DRIVER	4, 6
D1	RECESSED LED DOWN LIGHT	LITHONIA: LDN6 INTENSE LIGHTING: SS864DR SERIES DAY-BRITE	6" DIA	3500	LED	MVOLT	4000	21	OPEN	WHITE	RECESSED GYPSOARD	LED DRIVER	
D2	RECESSED LED DOWN LIGHT	LITHONIA: LDN6 INTENSE LIGHTING: SS864DR SERIES DAY-BRITE	6" DIA	3500	LED	MVOLT	4000	21	OPEN	WHITE	RECESSED GYPSOARD	LED DRIVER	2
E1	2-HEAD EMERGENCY LIGHT NON-ADJUSTABLE HEADS	EELP: EM2LF SERIES ISOLITE ELP-12-54-2-TM-9W EMERG-LITE: 12PRM06M2MG	12"Wx5.5"Hx6"D		LED	MVOLT		12		WHITE	WALL MOUNTED 7'-6" AFF		8
F	STAIR DIRECT / INDIRECT LED LIGHT	LUMINAIRE: LED ENDEAVOR CORONET NULITE		3500	LED	MVOLT	4000	35		WHITE	WALL MOUNTED 10'-0" AFF	LED DRIVER	4, 8
K	EXTERIOR LED AREA LIGHT	BROWNLEE: I762LED LITON: LCMPO SERIES	12"DIAx4"D	4000	LED	MVOLT	1000	16.6		VERIFY WITH ARCHITECT	SURFACE CEILING	LED DRIVER	3, 5, 8
L	EXTERIOR LED AREA LIGHT TYPE 3 DISTRIBUTION	LITHONIA: WSR-LED HUBBELL: GEOPAK SERIES 2	18"Wx7"Hx9"D	4000	LED	MVOLT	3433	44		DARK BRONZE AFF	WALL MOUNTED B.O.F. 8'-6"	LED DRIVER	3, 5, 8, 9
X1	EXIT SIGN, SINGLE FACE	LITHONIA EXR LED EL M6 ISOLITE ELT-EM-R-1W-BA-SC-JC EMERG-LITE: PRESTIGE SERIES	12"Wx8"Hx2"D		LED	MVOLT		2	RED	WHITE	SURFACE CEILING / 7'-6" AFF WHEN WALL MOUNTED		8
X2	EXIT SIGN DOUBLE FACE	LITHONIA EXR LED EL M6 ISOLITE ELT-EM-R-2W-BA-SC-JC EMERG-LITE: PRESTIGE SERIES	12"Wx8"Hx2"D		LED	MVOLT		2	RED	WHITE	SURFACE CEILING / 7'-6" AFF WHEN WALL MOUNTED		8
REMARKS:													
1. 0-10V DIMMING 1%													

1. ALL WIRING SHALL BE IN ACCORDANCE WITH LOCAL AND NATIONAL CODES, INCLUDING NFPA 72 (2013 EDITION) AND NEC.
2. A BDA SYSTEM IS AN EMERGENCY RESPONDER RADIO ENHANCED SYSTEM IN COMPLIANCE WITH THE NC FIRE CODE, SECTION 510.
3. WHERE REQUIRED, WIRING SHALL BE RUN IN MINIMUM 3/4" CONDUIT. SURFACE METAL RACEWAY IS ACCEPTABLE.
4. PLENUM RATED COAXIAL CABLE WITHOUT CONDUIT, MAY BE ACCEPTABLE FOR HORIZONTAL RUNS IN AREAS OTHER THAN WHERE WATERPROOF DEVICES ARE REQUIRED. HOWEVER, CONDUIT SHALL BE USED TO PENETRATIONS IN RATED WALLS SHALL BE MADE IN CONDUIT PER APPROPRIATE U.L. SYSTEM.
5. MANUFACTURER'S 1/2" COAXIAL CABLE SHALL BE USED FOR THE BDA SYSTEM, DUE TO ITS LOW OHM LOSS PROPERTIES.
6. THE DIRECTIONAL DONOR ANTENNA ON THE ROOF SHALL BE TIED INTO THE BUILDING GROUNDING SYSTEM.
7. ALL CABLES USED FOR BDA SHALL BE GROUNDED TO THE BUILDING GROUNDING SYSTEM.
8. THE CABLE BETWEEN THE DONOR ANTENNA AND THE AMPLIFIER MAY BE RUN TO THE ROOF, BUT IT MUST BE IN CONDUIT.
9. THE LIGHTING ARRESTOR SHALL BE INSTALLED AS SHOWN ON THE TYPICAL ANTENNA INSTALLATION DETAIL. THE ARRESTOR PART IS THE "COAXIAL SURGE PROTECTOR," BDA-LA-P8AX-6G.
10. THE CABLE FROM THE DONOR ANTENNA TO THE AMPLIFIER SHALL BE SEPARATED FROM THE RISER CABLE FROM THE BDA TO THE INDOOR ANTENNA, THIS REQUIREMENT APPLIES TO THE RISER.
 - IF BOTH CABLES ARE NOT IN CONDUIT, THE MINIMUM SEPARATION SHALL BE SIX (6) FEET.
 - IF AT LEAST ONE CABLE IS IN CONDUIT, THE MINIMUM SEPARATION SHALL BE THREE (3) FEET.THESE CABLES ARE ALLOWED TO CROSS A MAXIMUM OF ONE TIME.
11. THE BDA AMPLIFIER ENCLOSURE SHALL BE INSTALLED ON METAL STRUT CHANNEL (TO ALLOW AIRFLOW). SEE INSTALLATION DIAGRAM.
12. THE BDA AMPLIFIER AND BATTERY ENCLOSURES SHALL BE GROUNDED TO THE BUILDING GROUNDING SYSTEM UTILIZING A SHORT, DIRECT PATH WITH THE MINIMUM NUMBER OF BENDS (GROUNDING CABLES SHALL NOT REVERSE DIRECTION WHEN CONNECTING TO TERMINATION POINTS).
13. A.C. WIRES SHALL BE RUN IN SEPARATE CONDUIT FROM D.C. WIRING, SUCH THAT A SYSTEM ALARM DOES NOT DE-ENERGIZE THE CONTROL PANEL. MINIMUM SIZE WIRE TO BE AWG 12 THIN. PROTECTION AGAINST VOLTAGE TRANSIENTS AND SURGES SHALL BE INSTALLED AT THE ELECTRICAL PANELBOARD AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
 - PRIMARY POWER TO THE BDA AMPLIFIER SHALL BE DEDICATED CIRCUIT.
 - REDUNDANT AC POWER TO THE BDA AMPLIFIER SHALL BE ANY 120VAC CIRCUIT. (PROVIDING A SECOND (REDUNDANT) POWER CIRCUIT IS PER THE MANUFACTURERS RECOMMENDED PRACTICES.)
14. CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED BY THE SYSTEM TYPE: i.e. "EMERGENCY COMMUNICATION SYSTEM" (ECS)
15. CONDUIT FOR THE DONOR (ROOF) ANTENNA AND FOR THE RISER COAXIAL CABLE SHALL BE PARALLEL TO THE DBA ENCLOSURE. THOSE CONDUIT SHALL TERMINATE WITH A BUSHING WITHIN TWO (2) FEET OF THE BOTTOM OF THE ENCLOSURE. TECHNICIANS SHALL MAKE THE CONNECTION PROVIDED, FIBRE-WIRED 1/4" FLEXIBLE CABLE FROM THE BDA.
16. INSTALLATION REQUIREMENTS TO COMPLY WITH NFPA 72, SECTION 24.3.6.8.
 - THE RISER COAXIAL CABLE SHALL BE INSTALLED IN A 2-HOUR RATED ENCLOSURE OR SHATT. (2 HOUR RATED COAXIAL CABLE IS NOT AVAILABLE AT THE CORRECT LOW OHM LOSS RATING.)
 - THE SPLITTER CONNECTIONS BETWEEN THE RISER CABLE AND THE HORIZONTAL FEEDER CABLE SHALL BE MADE WITHIN A 2 HOUR RATED ENCLOSURE. THE FEEDER CABLE PASSAGE THROUGH THAT 2 HOUR ENCLOSURE SHALL BE FIRE STOPPED WITH THE APPROPRIATE U.L. SYSTEM.
 - ALL FEEDER CABLES SHALL BE PLENUM RATED AT A MINIMUM. (FEEDER CABLES ARE THE HORIZONTAL RUNS TO THE DAs.)
17. WHEN SPLITTER CONNECTIONS ARE IN CONDUIT, PROVIDE A MINIMUM 12 INCH X 12 INCH JUNCTION COX TO MAKE THE CONNECTION.
18. THE BDA ANNUNCIATOR SHALL BE INSTALLED NEAR THE FIRE ALARM CONTROL PANEL/NER THE INSTALLATION NOTES ON THIS SHEET.
19. ALL FIELD WIRING SHALL BE CHECKED FOR SHORTS, OPENS, AND GROUNDS BEFORE MACKING CONNECTIONS.
20. SEE MANUFACTURERS SHEETS FOR MOUNTING DETAILS.
21. ALL JUNCTION BOX COVERS SHALL BE RED IN COLOR. THOSE IN FINISHED AREAS ARE PERMITTED TO MATCH THE FINISH COLOR.
22. ALL PENETRATIONS THROUGH RATED WALLS SHALL BE SEALED USING APPROPRIATE U.L. SYSTEM.



1. A PRELIMINARY SITE SURVEY IS NEEDED TO DETERMINE THE EXISTING dbm SIGNAL STRENGTH.
2. A MORE DETAILED SURVEY WILL MAP THE BUILDING ONCE THE BUILDING IS SUBSTANTIALLY COMPLETED.
3. THE NEXT SIGNAL STRENGTH SURVEY WILL COMPLY WITH THE 2018 NCCF, 510.5.3 AND NFPA 72, 24.5.2.1 (2013 EDITION)
 - EACH FLOOR SHALL BE DIVIDED INTO 20 (APPROXIMATELY) EQUAL TEST AREAS, THE WORST CASE SIGNAL STRENGTH READING SHALL BE RECORDED. PROVIDE 90 PERCENT FLOOR AREA RADIO COVERAGE
 - CRITICAL AREAS, IF PRESENT, SHALL BE SURVEYED SEPARATE FROM THE EQUAL TEST AREAS;
 - EXIT STAIRS
 - EXIT PASSAGEWAYS
 - ELEVATOR LOBBIES
 - AT STANDPIPE CABINETS
 - SPRINKLER SECTIONAL VALVE LOCATIONS
 - AHJ MAY REQUIRE ADDITIONAL LOCATIONS.
- CRITICAL AREAS SHALL BE PROVIDED WITH 99 PERCENT RADIO COVERAGE.
4. THE MINIMUM SIGNAL STRENGTH OF -95 dbm IS REQUIRED.

EMERGENCY RESPONDERS RADIO AMPLIFICATION SYSTEM:

- C** IN BASE CONTRACTOR CONTRACTOR SHOULD INCLUDE INITIAL TESTING/SURVEY OF SIGNAL STRENGTH AND COVERAGE CONDUCTED BY A QUALIFIED PARTY PRIOR TO SUBSTANTIAL COMPLETION OF BUILDING AND ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION TO LOCAL AND TO CONFIRM BUILDING MEETS RADIO SIGNAL STANDARDS. TESTING SURVEYS SHALL BE CONDUCTED IN ACCORDANCE WITH FCC 47 CFR 2.107.
- D** IN BASE CONTRACTOR CONTRACTOR SHOULD INCLUDE ALL CONDUIT/CABLEWAYS INCLUDING CONDUIT FROM BDA SYSTEM TO EACH RADIO EQUIPMENT LOCATION, AND FROM EACH RADIO EQUIPMENT LOCATION, ETC. SHOWN ON CONTRACT DOCUMENTS FOR THE PROJECT. BDA SYSTEM SHOULD BDA SYSTEM NOT BE REQUIRED, ALL RACEWAYS AND BOXES SHALL BE LABELED, AND THE LEFT SIDE OF THE RACEWAY SHALL BE LABELED.
- E** CM/RSK WILL CARRY ALLOWANCE FOR BDA SYSTEM(S) SHOULD TESTING INDICATE THE NEED FOR EMERGENCY RESPONDER COMMUNICATION AMPLIFIER. SHOULD BDA SYSTEM BE REQUIRED, CM/RSK WILL SUBMIT A PROPOSAL FOR INSTALLATION OF COMPLETE BDA SYSTEM (AS SHOWN ON PLANS AND NOTES).

**ARCHITECTURE
P L A N N I N G**

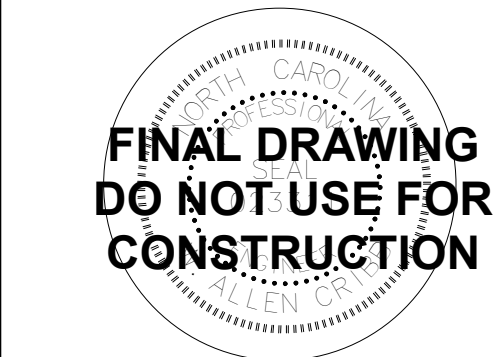
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PROJECT TITLE

NORTH
BRUNSWICK
HIGH SCHOOL
NEW ADDITION

114 SCORPION DRIVE N.E.
LELAND, NC 28451

DSP #: 100
DPI SCHOOL #: 110

SHEET TITLE

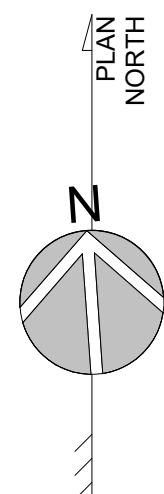
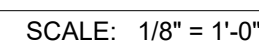
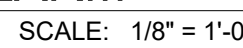
SYSTEMS RISERS

ISSUE BLOCK		
Mark	Date	Description
	04.23.20	ISSUED FOR BIDDING
	03.26.20	100% REVIEW SUBMISSION
	01.20.20	60% CD PROGRESS DRAWING
	10.14.19	NCDPI DD SUBMISSION
	07.30.19	SD PROGRESS DRAWING
	07.11.19	NCDPI SD SUBMISSION

PROJECT NO:		201908
DATE:		10.14.20
SCALE:		12" = 1'-0"
DRAWN BY: HGH		PROJ MGR: W

E603

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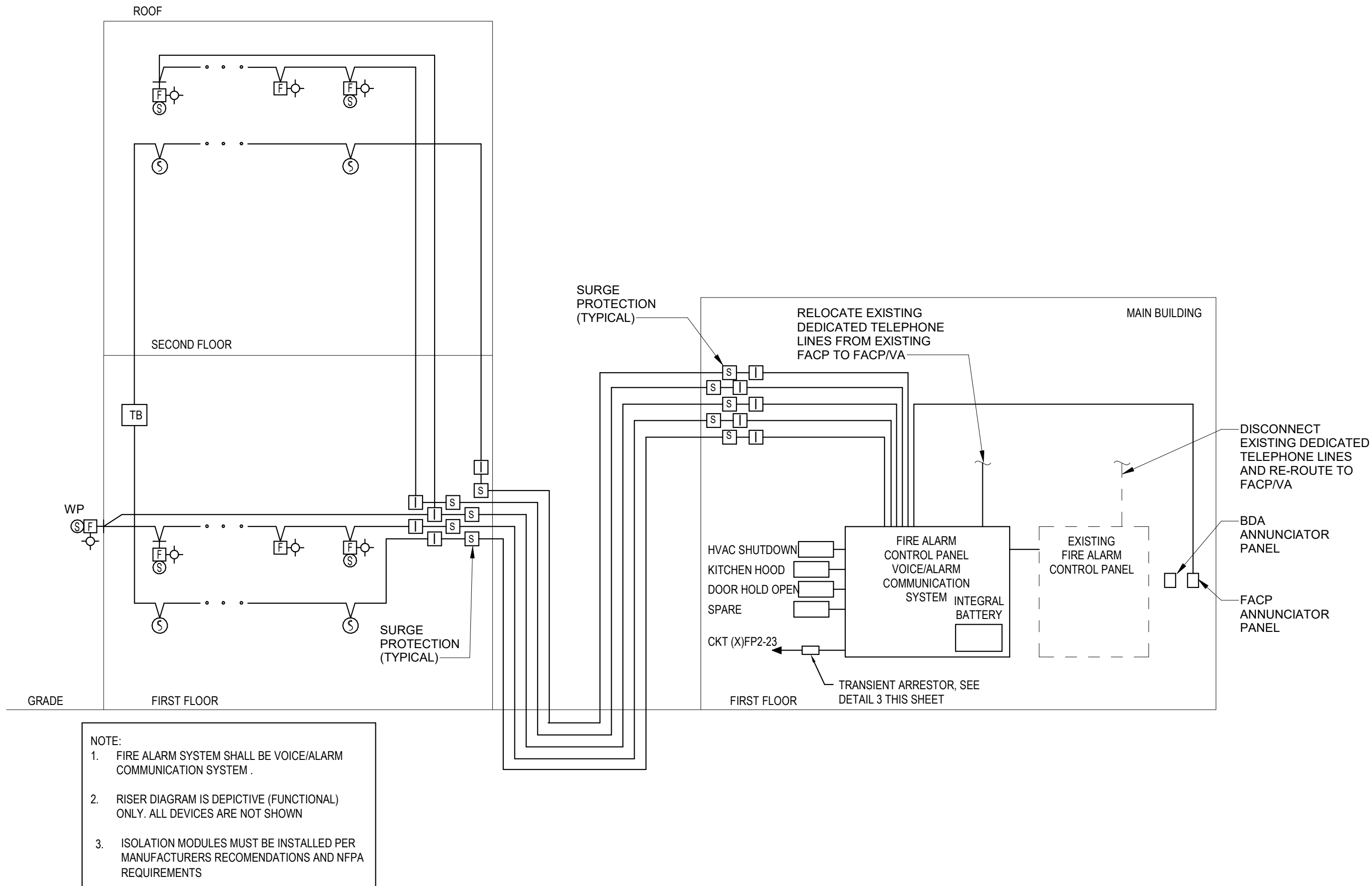


MANUAL FIRE ALARM SYSTEM NOTES

- AS A MINIMUM THE FIRE ALARM SYSTEM SHALL INCLUDE DETECTORS, PULL STATIONS, FIRE ALARM CONTROL PANEL, VOICE/ALARM COMMUNICATION SYSTEM ADJACENT TO THE EXISTING FIRE ALARM SYSTEM, HORN/STROBES AND SPRINKLER MONITORING WITH FIRE RATED CABLE. THE FIRE ALARM SYSTEM SHALL MEET NFPA REQUIREMENTS, THE NATIONAL ELECTRICAL CODE, THE STATE CODES, AND THE LOCAL BUILDING CODES.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CABLE, MATERIALS AND EQUIPMENT AS SHOWN ON THE DRAWINGS/OR HEREIN SPECIFIED. ALL SYSTEM COMPONENTS SPECIFIED HEREIN, AS WELL AS THEIR INSTALLATION, SHALL COMPLY WITH APPLICABLE STANDARDS OF THE NATIONAL ELECTRICAL CODE, NATIONAL FIRE PROTECTION ASSOCIATION, AND LOCAL CODES HAVING AUTHORITY. ALL EQUIPMENT SHALL BE UL LISTED FOR FIRE ALARM SYSTEM USE.
- THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE INSTALLED AND CONNECTED UNDER THE DIRECTION AND SUPERVISION OF A MANUFACTURER'S REPRESENTATIVE. UPON COMPLETION OF INSTALLATION, THE MANUFACTURER'S REPRESENTATIVE SHALL PERFORM ALL OPERATIONAL TESTS AND ADJUSTMENTS AND CERTIFY IN WRITING THAT THE SYSTEM IS PROPERLY INSTALLED AND FUNCTIONS AS SPECIFIED.
- ALL WIRING SHALL BE SYSTEM OR UL LISTED FIRE RATED CABLE AND COLOR CODED TO ALLOW EASE OF IDENTIFICATION OF THE DIFFERENT CIRCUITRY REQUIRED FOR THE SYSTEM. NO CIRCUIT SHALL CHANGE COLOR AT ANY POINT END TO END.
- THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE SHALL PROVIDE SUPERVISION OF FINAL SYSTEM PANEL CONNECTIONS, PERFORM A COMPLETE FUNCTIONAL TEST OF THE SYSTEM, AND A WRITTEN REPORT TO THE CONTRACTOR ATTESTING THE PROPER OPERATION OF THE COMPLETED SYSTEM.
- ALL WIRING SHALL BE INSTALLED IN COMPLIANCE WITH N.E.C., NFPA 72, ALL STATE AND LOCAL REQUIREMENTS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- SLEEVE AND SEAL ALL PENETRATIONS THROUGH FIRE WALLS.
- WIRING SHALL BE A MINIMUM OF NO. 14 AWG UNLESS OTHERWISE NOTED.
- THE SMOKE DUCT DETECTOR SHALL BE FURNISHED AND TERMINATED BY THE FIRE ALARM CONTRACTOR, INSTALLED BY THE MECHANICAL CONTRACTOR.
- SHOP DRAWINGS MUST BE SUBMITTED BY THE FIRE ALARM CONTRACTOR COMPLYING WITH THE FIRE ALARM PLAN REVIEW REQUIREMENTS POLICY. THESE DRAWINGS DO NOT CONSTITUTE APPROVAL AND MAY CHANGE AFTER A FULL REVIEW BY THE FIRE DEPT. HAVING JURISDICTION. A SEPARATE PERMIT MUST BE OBTAINED PRIOR TO INSTALLATION.
- IN CORRIDORS WHERE MORE THAN TWO VISIBLE NOTIFICATION APPLIANCES ARE IN ANY FIELD OF VIEW, THEY SHALL FLASH IN SYNCHRONIZATION.
- FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR MODULES TO SHUTDOWN HVAC EQUIPMENT DURING ALARM CONDITION.
- ALL FIRE ALARM WORK AND DEVICES SHALL BE INSTALLED AND TERMINATED BY A NICET LEVEL 2 FIRE ALARM TECHNICIAN.
- IN THE EVENT OF AN ALARM THERE SHALL BE A "GLOBAL" SHUT DOWN OF ALL AIR HANDLING EQUIPMENT.
- THE VOICE/ALARM COMMUNICATION SYSTEM PROVIDED DURING THIS PROJECT SHALL HAVE THE CAPACITY TO COVER THE ENTIRE CAMPUS IN FUTURE. THE VOICE/ALARM COMMUNICATION SYSTEM SHALL BECOME THE PRIMARY COMMUNICATING FACP AND WILL COMMUNICATE WITH THE EXISTING PANEL AND REPORT ALARMS AND SIGNALS FROM EXISTING PANEL.

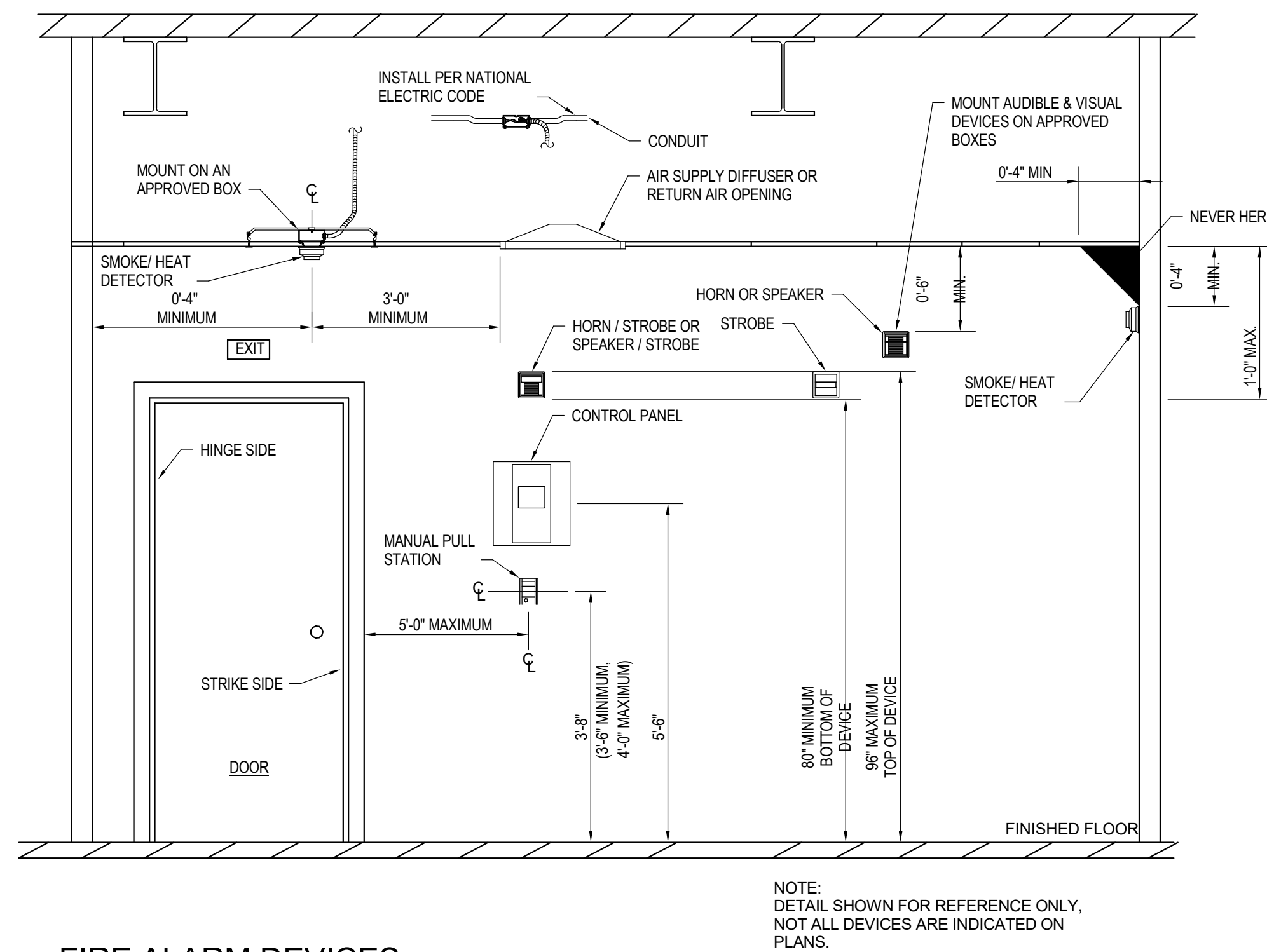
FIRE ALARM SYSTEM CONTROL MATRIX

SYSTEM INPUTS	SYSTEM OUTPUTS									
	ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE NOTIFICATION APPLIANCES	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ALARM SIGNAL TO MONITORING SERVICE	SUPERVISORY SIGNAL TO MONITORING SERVICE	TROUBLE SIGNAL TO MONITORING SERVICE	DISPLAY/PRINT CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO CENTRAL STATION	RELEASE MAGNETICALLY HELD DOORS
COMBINATION SMOKE/CARBON MONOXIDE DETECTORS	X	X		X					X	X
HEAT DETECTORS	X	X		X					X	X
MANUAL PULL STATIONS	X	X		X					X	X
SYSTEM TROUBLE CONDITION			X			X				
LOSS OF FAC/AC POWER (NOTE 1)					X					
GROUND FAULT			X			X				
SHORT CIRCUIT			X			X				
OPEN CIRCUIT			X			X				
NOTES:										
1. ONLY AFTER LOSS OF POWER FOR > 8 HOURS.										
2. ELEVATOR INPUTS AND OUTPUTS ARE TYPICAL FOR EACH ELEVATOR.										
3. REFER TO FIRE PROTECTION DRAWINGS FOR SPRINKLER DEVICE LOCATIONS.										
4. REFER TO MECHANICAL DRAWINGS FOR DUCT MOUNTED SMOKE DETECTOR LOCATIONS.										
5. TYPICAL QUANTITIES OF DEVICES ARE NOT SHOWN, SEE FIRE PROTECTION DRAWINGS FOR QUANTITIES AND LOCATIONS.										



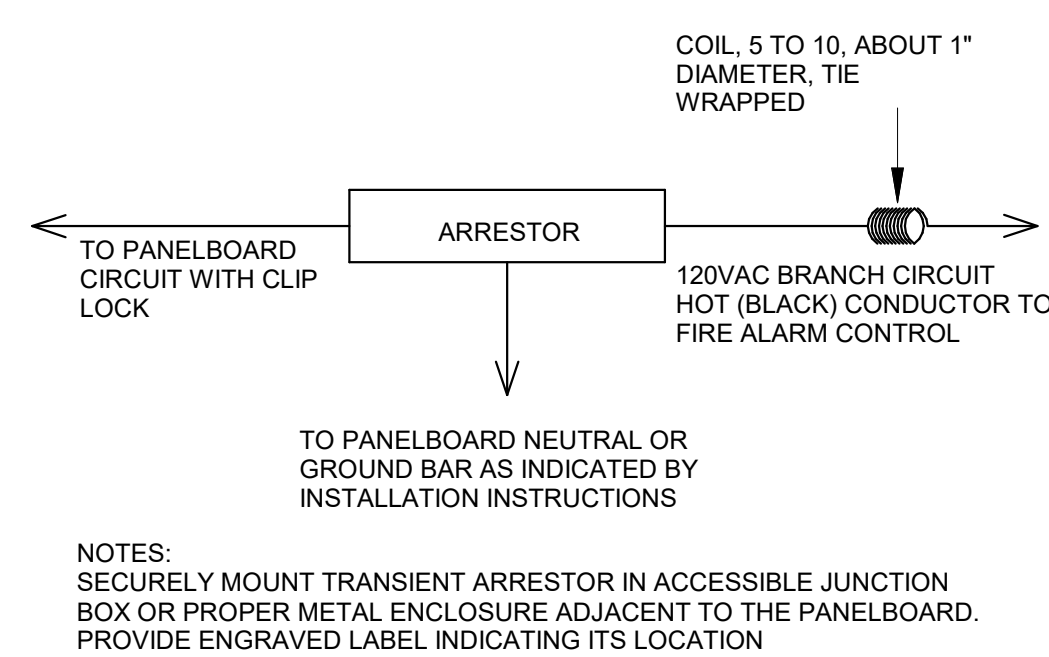
1 FIRE ALARM RISER

NO SCALE



2 FIRE ALARM DEVICES MOUNTING HEIGHTS

NO SCALE

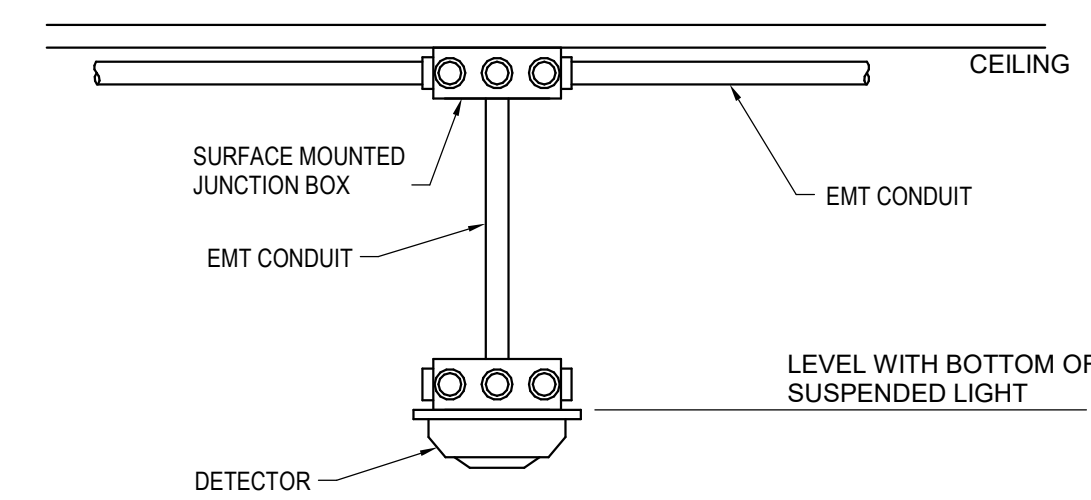


4 TYPICAL CEILING MOUNTED DETECTOR MOUNTING DETAIL

NO SCALE

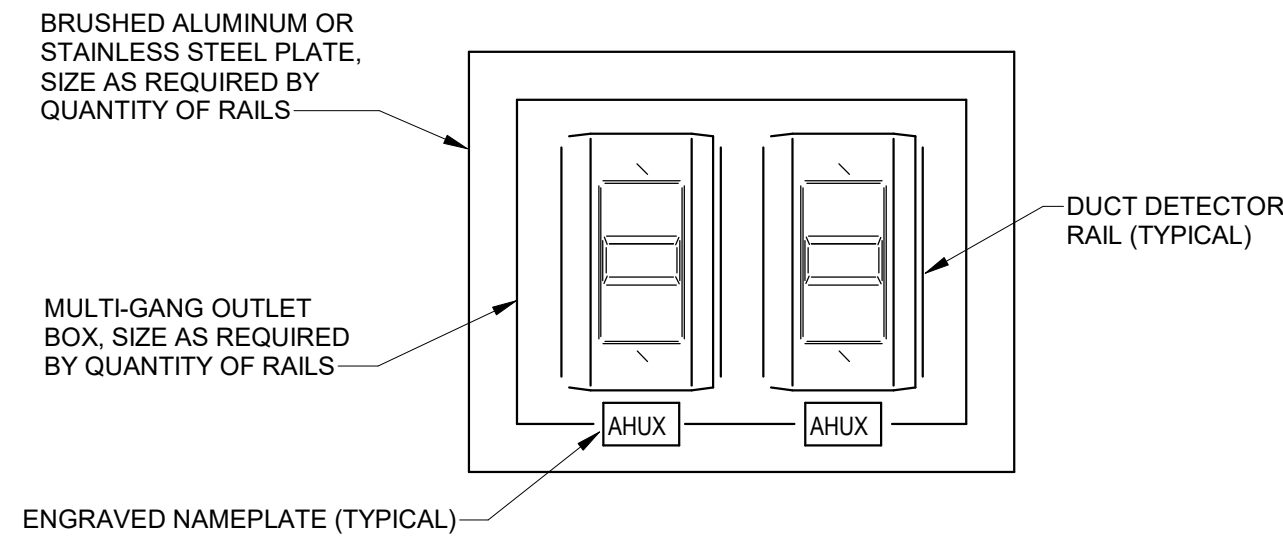
3 TRANSIENT ARRESTOR INSTALLATION DETAIL

NO SCALE



5 TYPICAL SUSPENDED DEVICE DETAIL

NO SCALE



6 AHU RAIL INSTALLATION DETAIL

NO SCALE

FIRE ALARM SYMBOL LEGEND

SYMBOL	DESCRIPTION
(X)FACP	EXISTING FIRE ALARM CONTROL PANEL
⏏	EXISTING FIRE ALARM REMOTE ANNUNCIATOR
⏏	FACPIVA FIRE ALARM CONTROL PANEL VOICE ALARM
⏏	FIRE ALARM SPEAKER/STROBE DEVICE, 80" AFF, 150d" INDICATES CANDELA RATING
⏏	FIRE ALARM STROBE DEVICE, 80" AFF, 150d" INDICATES CANDELA RATING
⏏	COMBINATION SMOKE / CARBON MONOXIDE DETECTOR, CEILING MOUNTED
⏏	FIRE ALARM MANUAL STATION, 48" AFF
⏏	F.A. INDIVIDUAL ADDRESSABLE ISOLATION MODULE
⏏	SURGE PROTECTION MODULE
(X)	INDICATES EXISTING EQUIPMENT
(1)	KEYED NOTE (SEE SCHEDULE)

Date	Description
04.23.20	ISSUED FOR BIDDING
03.26.20	100% REVIEW SUBMISSION
01.22.20	80% CD PROGRESS DRAWINGS
10.14.19	NC DPI CD SUBMISSION
07.30.19	SD PROGRESS DRAWINGS
07.11.19	NC DPI SD SUBMISSION

Mark	Date	Description
PROJECT NO:	2019082.00	
DATE:	10.14.2019	
SCALE:	As indicated	
DRAWN BY:	HGH	PROJ MGR: WAC