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RPS WILLIAM FOX ES CLASSROOM MODULARS

2300 HANOVER AVE, RICHMOND, VA 23220

BID DOCUMENTS
JUNE 6, 2018

IFB# 18-6853-5



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PROJECT CONTACT INFORMATION

	OWNER RICHMOND PUBLIC SCHOOLS 2395 HERMITAGE ROAD, VATEX BUILDING RICHMOND, VA 23220
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	CONSULTANTS (CIVIL) TIMMONS GROUP 1001 BOULDERS PARKWAY, SUITE 300 RICHMOND, VA 23225 O 804 200 6500 F 804 200 6467 PROJECT MANAGER STEVE RAUGH EMAIL steve.rough@timmons.com (STRUCTURAL) LYNCH MYKINS 1503 SANTA ROSA ROAD, SUITE 210 RICHMOND, VA 23229 O 804 346 3935 F 804 346 1171 PRINCIPAL JOHN HANCOCK, S.E. PROJECT MANAGER GARRETT BRAUN, S.E. EMAIL gbraun@stroudpence.com (MEP) PACE COLLABORATIVE 7814 CAROUSEL LANE, SUITE 115 RICHMOND, VA O 804 270 7222 F 757 301 6060 PRINCIPAL KEITH NEUBERT, PE, RCDD, LEED AP EMAIL kethn@pace-pme.com
	
	

VICINITY MAP (N.T.S.)



LOCATION MAP (N.T.S.)



RICHMOND PUBLIC SCHOOLS
**WILLIAM FOX ES
CLASSROOM
MODULARS**

2300 Hanover Ave
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Structural Engineer

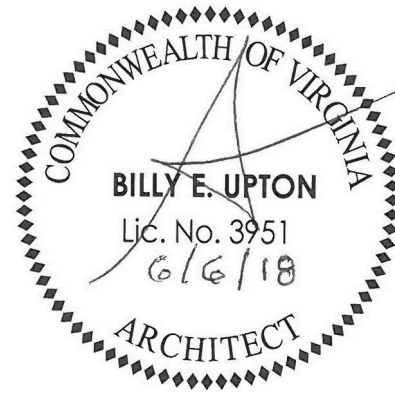


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Key Information

No:	Revisions	Date
Sheet Title:		

COVER SHEET

Drawn By:	DTP
Issue Date:	6 June 2018
Scale:	As Noted
BJUA Project No.:	18006.01
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Sheet No.:	

G001

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WILLIAM FOX ES CLASSROOM MODULARS

2300 HANOVER AVE
CITY OF RICHMOND, VIRGINIA

PROJECT INFORMATION

- PARCEL INFORMATION:
1. ADDRESS: 2300 HANOVER AVE
RICHMOND, VA 23220
 2. PARCEL ID: W0001042019
 3. EXISTING USE: PUBLIC SCHOOL
 4. PROPOSED USE: PUBLIC SCHOOL
 5. ZONING: R-6; EXEMPTION CODE: 105 - PUBLIC SCHOOLS
 6. PARCEL ACREAGE: 2.975 AC (TOTAL)
LIMITS OF DISTURBANCE: 275 SF (TOTAL)
UTILITY TRENCHES/PAVEMENT DEMO: 275 SF
 7. CLASSROOMS BUILDING: 1 STORY, 1,564 S.F.
 8. PARKING ANALYSIS:
NOT APPLICABLE



VICINITY MAP

SCALE: 1" = 2,000'

JUNE 6, 2016

PROPERTY OWNER

CITY OF RICHMOND SCHOOL BOARD
ADDRESS: 301 N. 9TH ST, 17TH FLOOR
RICHMOND, VA 23219

ENGINEER

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ADDRESS: 2402 N. PARHAM RD
RICHMOND, VA 23239



UNDERGROUND UTILITIES MAY BE IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 811 AT LEAST 48 HOURS PRIOR TO THE START OF EXCAVATION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES IN AREA OF CONSTRUCTION PRIOR TO STARTING WORK.

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LAYOUT & UTILITY PLAN	C3.0
TOTAL DRAWINGS	4



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CITY OF RICHMOND RIGHT OF WAY CONSTRUCTION NOTES

GEOTECHNICAL NOTES

FOR CITY OF RICHMOND DEPT. OF PUBLIC WORKS AND COMMUNITY DEVELOPMENT

- 1. ALL CONTROLLED FILL ZONES ARE TO BE MONITORED BY A FULL TIME GEOTECHNICAL ENGINEERING SERVICE FIRM.
- 2. ENGINEERED FILLS SHALL BE PROPERLY PLACED ACCORDING TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER
- 3. ALL SUMMARY REPORTS FROM THE GEOTECHNICAL ENGINEER REPRESENTING THE PROJECT MUST STATE HIS PROFESSIONAL OPINION ON THE SATISFACTORILY COMPLETED PHASES OF CONSTRUCTION, SUCH AS; SLOPE CUTS, SUBDRAINAGE SYSTEMS, PREPARATION OF SUBGRADES AND COMPACTION OF EARTH FILLS
- 4. NO FILLS SHALL HAVE ZONES THAT EXCEED TWO (2) FEET IN ELEVATION WITHOUT CONDUCTING COMPACTION TEST AND OBTAINING RESULTS 95% OR GREATER
- 5. THE GEOTECHNICAL ENGINEER MUST SUBMIT A DETAILED ANALYSIS, ITEMIZING THE FIELD DENSITY TEST RESULTS. THIS REPORT SHALL BE ACCOMPANIED WITH A COPY OF THE SITE PLAN SHEET AND INDICATE THE TEST LOCATIONS & ELEVATIONS. THE GEOTECHNICAL ENGINEER MUST PROVIDE ENOUGH DESIGNATED TESTING IN ALL FILL ZONES TO ADEQUATELY EXAMINE & CERTIFY THE INTEGRITY OF THE FILL.
- 6. THE GEOTECHNICAL ENGINEER MUST SUBMIT A CERTIFIED BUILDING PAD REPORT FOR EACH FILL PAD LOCATION. THIS REPORT SHALL PROFILE THE FILL MATERIAL PLACEMENT AND PROVIDE THE COMPACTION TEST RESULTS. ALL REPORTS WILL BE ACCOMPANIED BY THE SITE PLAN, INDICATING THE TEST LOCATIONS & ELEVATIONS
- 7. NO BUILDING PADS IN FILL ZONES WILL HAVE A STRATUM EXCEEDING TWO (2) FEET IN ELEVATION WITHOUT TEST VERIFYING DENSITY.
- 8. THESE GEOTECHNICAL NOTES SHALL IN NO WAY LESSEN THE REQUIREMENTS OF THE SUBMITTED SOILS REPORT.

CONSTRUCTION NOTES

- 1. THIS PROJECT TO BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT CITY OF RICHMOND RIGHT OF WAY EXCAVATION AND RESTORATION MANUAL AND VDOT ROAD AND BRIDGE SPECIFICATIONS AND ROAD DESIGN & STANDARDS INCLUDING ALL SUBSEQUENT REVISIONS.
- 2. CONTRACTOR SHALL CALL "MISS UTILITY" 48 HOURS PRIOR TO THE START OF EXCAVATION. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES SHOWN ON PLANS IN AREAS OF CONSTRUCTION PRIOR TO STARTING WORK. CONTACT THE ENGINEER IMMEDIATELY IF LOCATION OR ELEVATION IS DIFFERENT FROM THAT SHOWN ON THE PLAN, IF THERE APPEARS TO BE A CONFLICT, AND UPON DISCOVERY OF ANY UTILITY NOT SHOWN ON PLAN, TO MISS THE UTILITY CALL "MISS UTILITY" OF CENTRAL VIRGINIA: 1-800-552-7001 (TOLL FREE).
- 3. CONTRACTOR SHALL ACQUIRE ANY AND ALL NECESSARY CONSTRUCTION PERMITS, AND FURNISH COPIES TO THE CITY.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTION SANITARY SEWER LATERAL AND RESTORING SITE. SEWER SHALL TIE INTO EXISTING MANHOLE. CONTRACTOR SHALL PROVIDE RISER IN EXISTING MANHOLE, IF REQUIRED.
- 5. ANY EXISTING UTILITIES CUT DURING CONSTRUCTION ACTIVITIES ARE TO BE REPAIRED, COORDINATED, AND RESTORED TO SERVICE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 6. WATER AND SEWER PIPING MATERIAL SHALL COMPLY WITH 605.3, 702.3, AND 712 OF THE IPC.
- 7. THE MINIMUM CLEAR COVER OVER WATER PIPES SHALL BE 3.5 FEET.
- 8. SANITARY SEWER PIPES SHALL BE PVC.
- 9. ALL SEWER SERVICES ARE TO BE 6" WITH A MINIMUM SLOPE OF 1/4" PER FOOT.
- 10. SAWCUT ALL DEMOLISHED PAVEMENT EDGES.
- 11. IN ACCORDANCE WITH HANDICAP ACCESSIBILITY REQUIREMENTS, ALL APPLICABLE CODES AND REQUIREMENTS FOR ACCESSIBILITY FOR DISABLED PERSONS SHALL BE STRICTLY COMPLIED WITH.

ABBREVIATIONS:

ACP - ASBESTOS CONCRETE PIPE
AD - APPROXIMATE DIRECTION
ADV - ADVANCE
AFG - ABOVE FINISHED GRADE
APPR LOC. - APPROXIMATE LOCATION
ASSY - ASSEMBLY
BC - BRICK CHAMBER
B/C - BACK OF CURB
BW - BOTTOM OF WALL
C&G - CURB AND GUTTER
CL - CENTERLINE
CL - CLASS
CMP - CORRUGATED METAL PIPE
CO - CLEAN OUT
CONC - CONCRETE
CONN - CONNECTION
CP - CORRUGATED PLASTIC
CY - CUBIC YARD
DCVA - DOUBLE CHECK VALVE ASSEMBLY
DI - DROP INLET
DIP - DUCTILE IRON PIPE
DR - DRIVE
DS - DOWNSPOUT
E - ELECTRIC
EA - EACH
E BOX - ELECTRICAL BOX
ELEC - ELECTRIC
E/P - EDGE OF PAVEMENT
E/S - EDGE OF SHOULDER
EX - EXISTING
F/C - FACE OF CURB
FDC - FIRE DEPARTMENT CONNECTION
F.E.S. - FLARED END SECTION
FF - FINISHED FLOOR
FL - FLOW LINE
FL - FIRE LANE
G - GAS
GND - GROUND
GTS - GAS TEST STATION
GV - GATE VALVE
HORIZ - HORIZONTAL
HP - HIGH POINT
HYD - HYDRANT
INV - INVERT
LF - LINEAR FEET
LOD - LIMITS OF DISTURBANCE
MECH - MECHANICAL
MH - MANHOLE
MIN - MINIMUM
MIN S - MINIMUM SLOPE
MJ - MECHANICAL JOINT
NGAS - NATURAL GAS
NIC - NOT IN CONTRACT
OHE - OVERHEAD ELECTRIC
OHP - OVERHEAD POWER
OHT - OVERHEAD TELEPHONE
PC - POINT OF CURVATURE
PED - PEDESTAL
PH - PHASE
PI - POINT OF INTERSECTION
PKG - PARKING
P/L - PROPERTY LINE
PT - POINT OF TANGENT
PP - POWER POLE
PVMT - PAVEMENT
PWR - POWER
RD - ROOF DRAIN
RJ - RESTRAINED JOINT
RW - RIGHT-OF-WAY
REGD - REQUIRED
ROP - REINFORCED CONCRETE PIPE
S - SLOPE
SAN - SANITARY SEWER
SDWK - SIDEWALK
SF - SILT FENCE
SPT - SPOT GRADE ELEVATION
SS - SANITARY SEWER CONNECTION
STA - STATION
STD - STANDARD
STM - STORM
STMH - STORM SEWER MANHOLE
STR - STRUCTURE
T - TELEPHONE
TCM - TELECOMMUNICATIONS MANHOLE
T/C - TOP OF CURB
TEL - TELEPHONE
TW - TOP OF WALL
UGE - UNDERGROUND ELECTRIC
UNK - UNKNOWN
UP - UTILITY POLE
VAR - VARIABLE
VC - VITRIFIED CLAY
VERT - VERTICAL
W/ - WITH
WL - WATER LINE
W - WATER
WUS - WATERS OF THE US
X-ING - CROSSING
Ø - DIAMETER

PAVEMENT SECTION

- 1. ALTERNATE EQUIVALENT PAVEMENT SECTIONS MAY BE SUBSTITUTED FOR THE CITY STANDARD PAVEMENT DESIGN WHEN PROPER METHODS OF SUBGRADE SOIL ANALYSIS ARE CONDUCTED AND WITH THE APPROVAL OF THE DIRECTOR AND ENGINEER.
- 2. CBR SAMPLING OF THE SUBGRADE SOILS FOR THE FINAL PAVEMENT DESIGN MUST BE COORDINATED BY THE OWNER, THROUGH THE GEOTECHNICAL ENGINEER AND VERIFIED BY THE ASSIGNED SITE INSPECTOR DURING THE CONSTRUCTION PHASE.
- 3. TEST FOR THE FINAL PAVEMENT DESIGN SHALL BE CONDUCTED ON A APPROVED REVEAL OF THE SUBGRADE. THESE TESTS SHALL BE MADE AT EACH INTERSECTION, CHANGES IN SUBGRADE SOILS, AND AT A MAXIMUM SPACING OF 500'. A MINIMUM OF TWO (2) CBR SAMPLES WILL BE REQUIRED FOR ANY CUL-DE-SAC OR DEAD END STREET LESS THAN 500' IN LENGTH
- 4. TEST SPACING AND METHODS MUST FOLLOW THE APPROVED GUIDELINES SET FORTH AND/OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- 5. THE FINAL ALTERNATIVE EQUIVALENT PAVEMENT DESIGN MUST BE SUBMITTED FOR APPROVAL BY DIRECTOR. THE SUBMISSION WILL BE ACCOMPANIED BY THE GEOTECHNICAL REPORT AND DESIGNED BY AN ENGINEER.

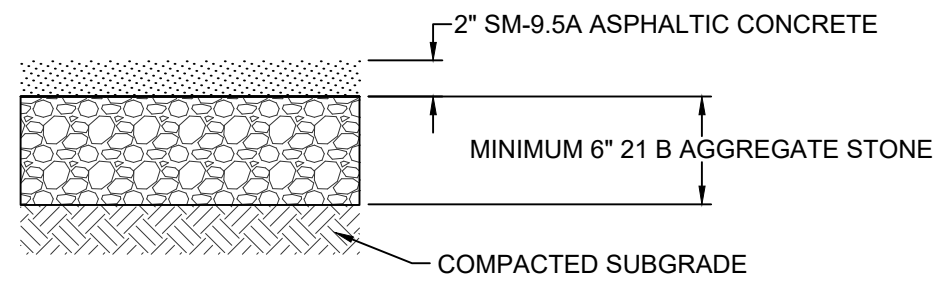
CITY OF RICHMOND EROSION AND SEDIMENT CONTROL GUIDELINES

THE SITE IS TO BE GRADED TO PROPOSED CONTOURS AS SHOWN. NO CRITICAL EROSION CONTROL PROBLEMS ARE ANTICIPATED AS MOST EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED PRIOR TO LAND DISTURBANCE. THE CONTRACTOR SHALL ADHERE TO THE FOLLOWING MAINTENANCE AND PROCEDURES.

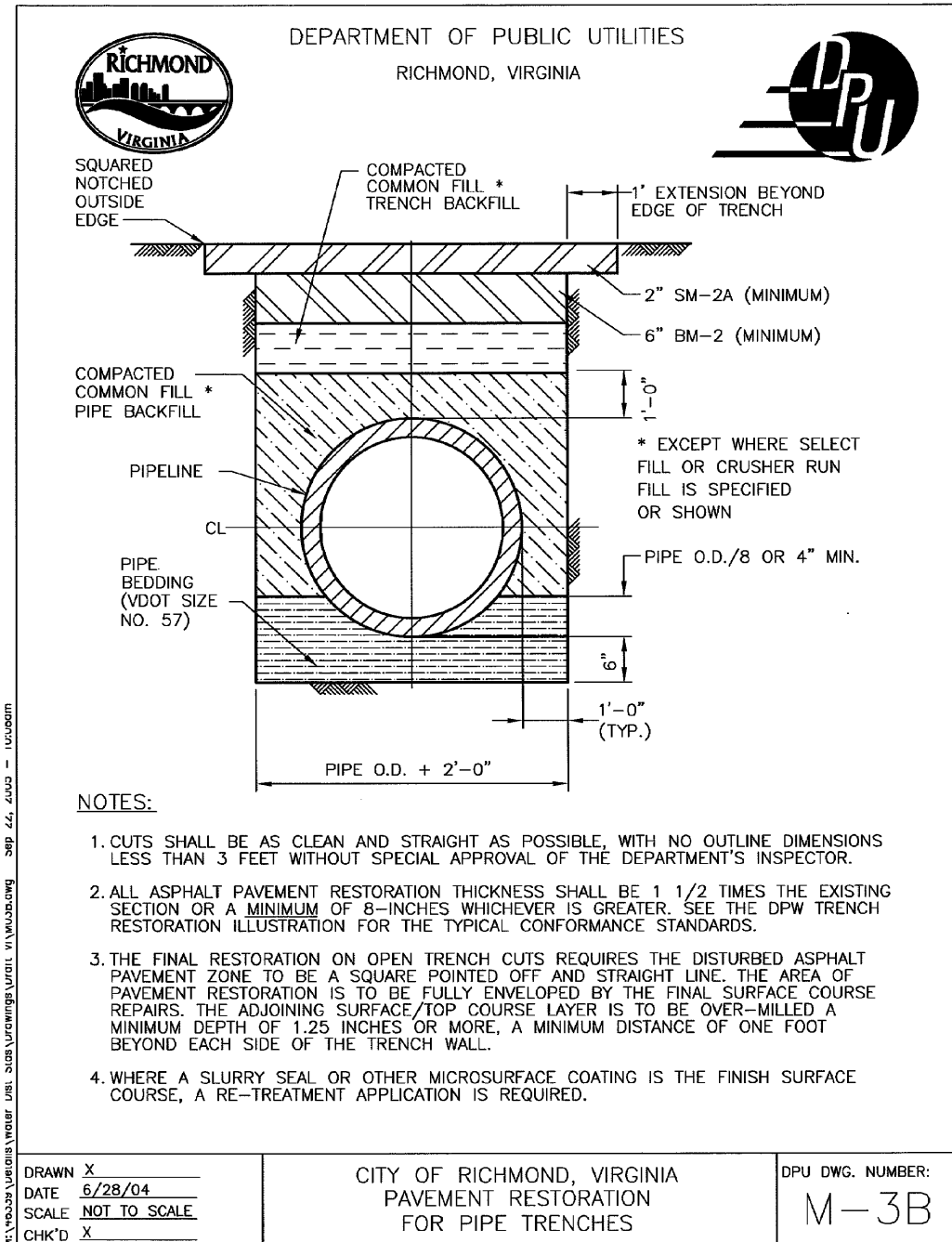
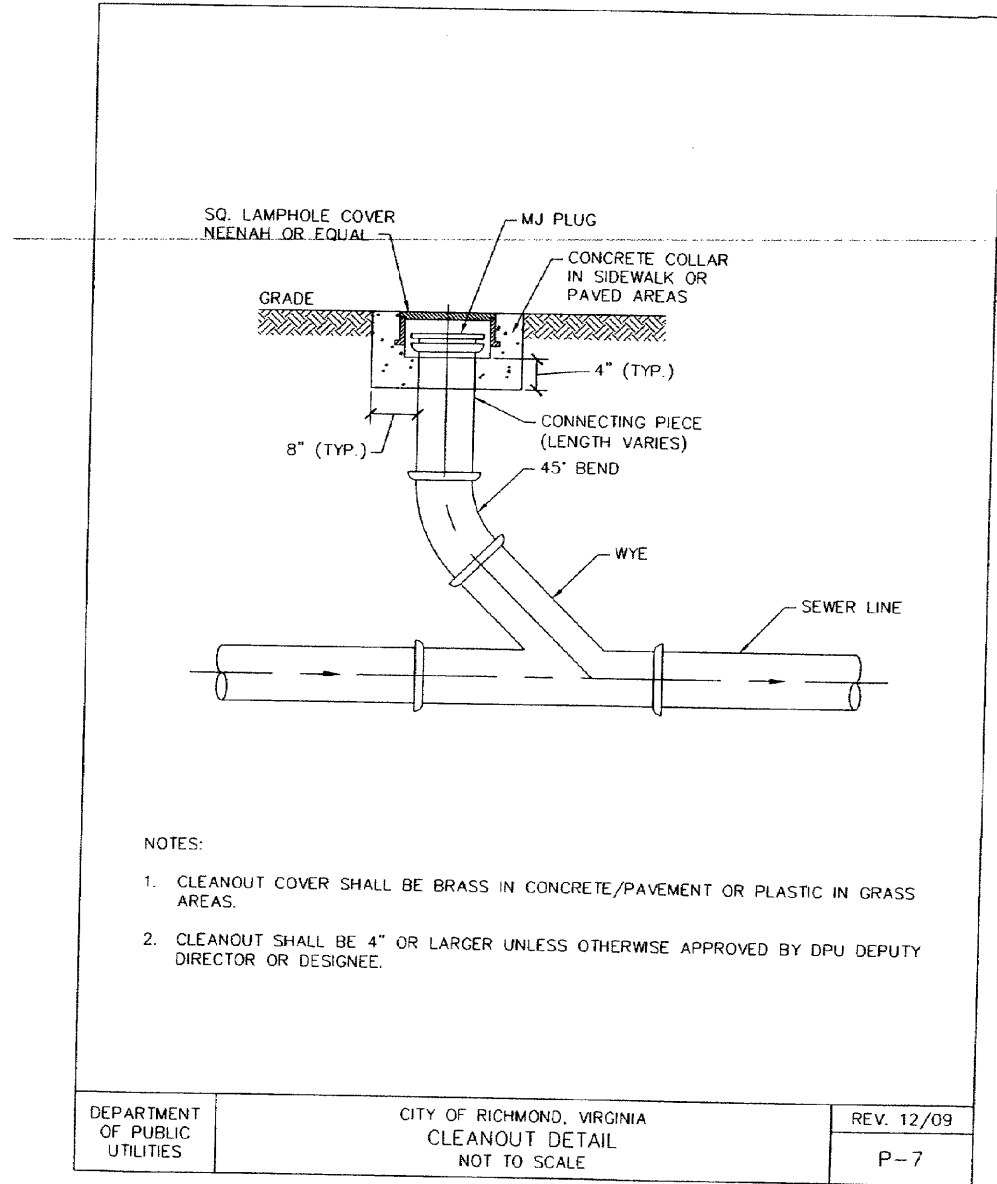
- 1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- 2. EXCESS EXCAVATION DISPOSED OF OFF THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- 3. EROSION AND SEDIMENT CONTROLS SHALL BE INSTALLED IN ACCORDANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP OF THE LAND DISTURBING ACTIVITY.
- 4. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED SO THAT SEDIMENT CARRYING RUNOFF FROM THE SITE WILL NOT ENTER STORM DRAINAGE FACILITIES.
- 5. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED UNTIL THE DISTURBED AREA IS STABILIZED.
- 6. PROPERTIES ADJOINING THE SITE SHALL BE KEPT CLEAN OF MUD OR SILT CARRIED FROM THE SITE BY VEHICULAR TRAFFIC OR RUNOFF.
- 7. THE DISPOSAL OF WASTE MATERIALS REMOVED FROM EROSION AND SEDIMENT CONTROL FACILITIES AND THE DISPOSAL OF THESE FACILITIES SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION SEDIMENT CONTROL HANDBOOK.
- 8. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- 9. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- 10. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED DAILY AND AFTER EACH RUN-OFF PRODUCING RAINFALL.

EROSION AND SEDIMENT CONTROL MEASURES

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THE MINIMUM STANDARDS OF THE VESCH SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE BY LOCAL AUTHORITIES HAVING JURISDICTION.



LIGHT DUTY ASPHALT PAVEMENT SECTION NO SCALE



RICHMOND PUBLIC SCHOOLS

WILLIAM FOX ES CLASSROOM MODULARS

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Architect of Record



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MEP Engineers



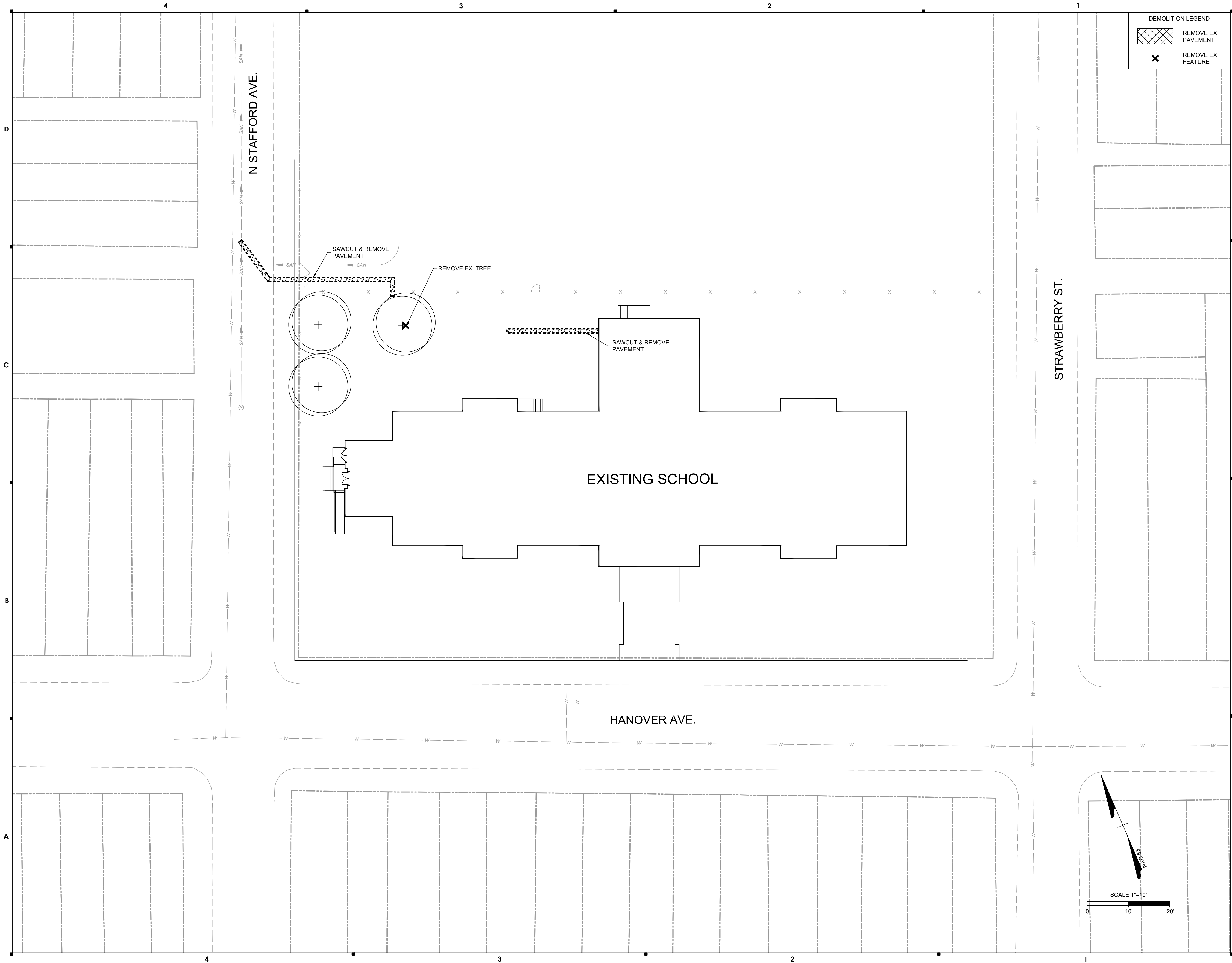
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Key Information

Notes & Details section containing revision table, drawing title, and project information.






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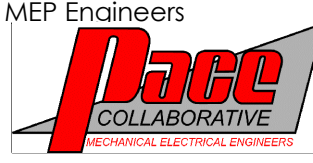
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lynch mykins
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Pace
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TECHNICAL ELECTRICAL ENGINEERS

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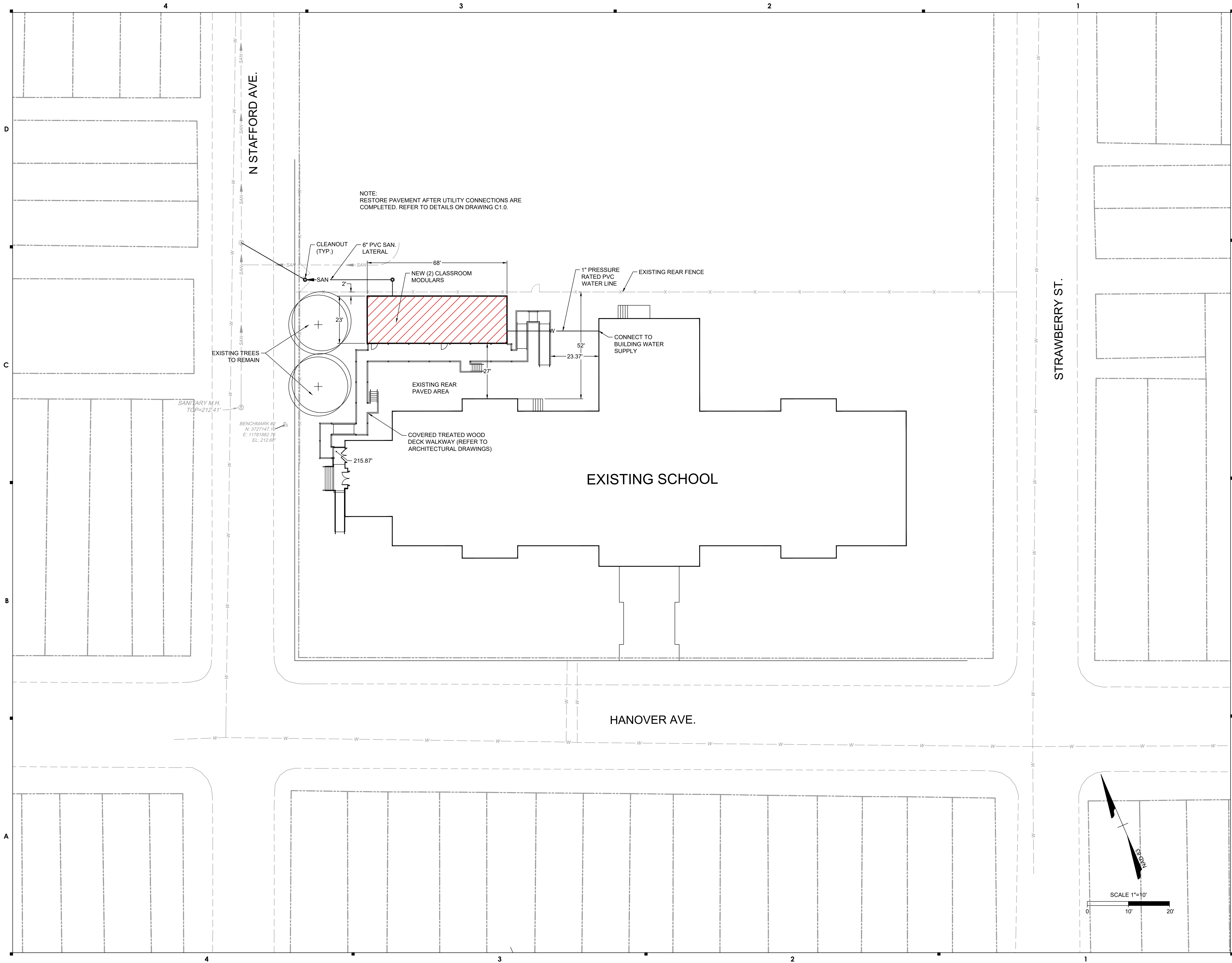
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EXISTING CONDITIONS & DEMOLITION PLAN

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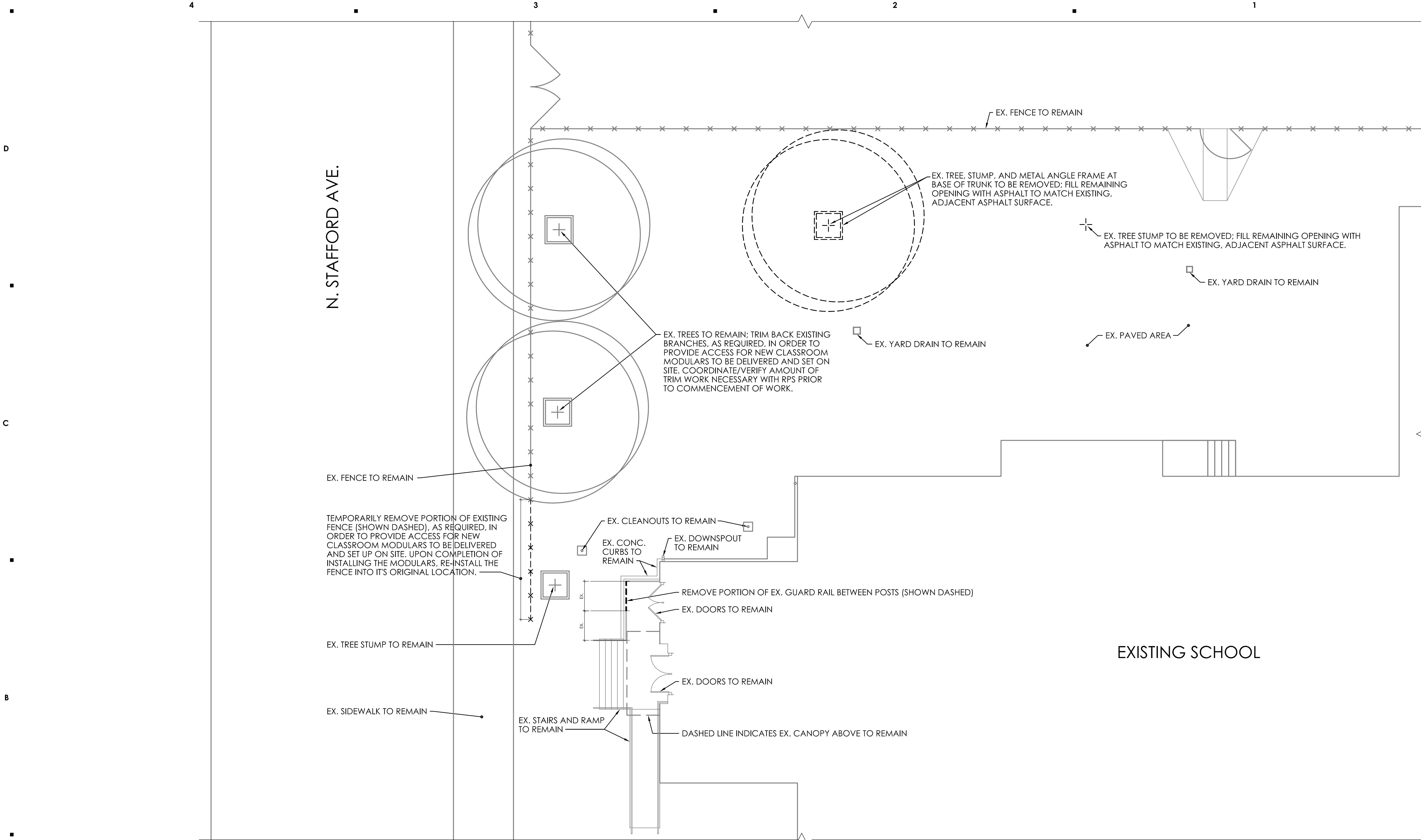
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DEMOLITION SITE PLAN
SCALE: 1/8" = 1'-0"



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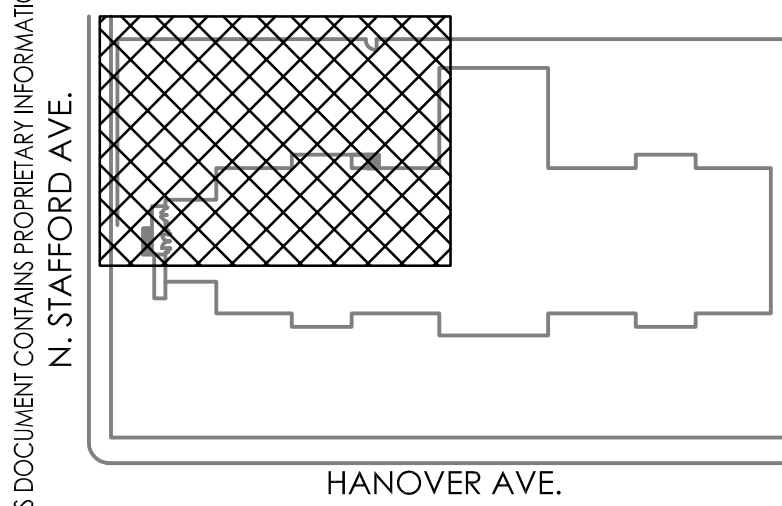
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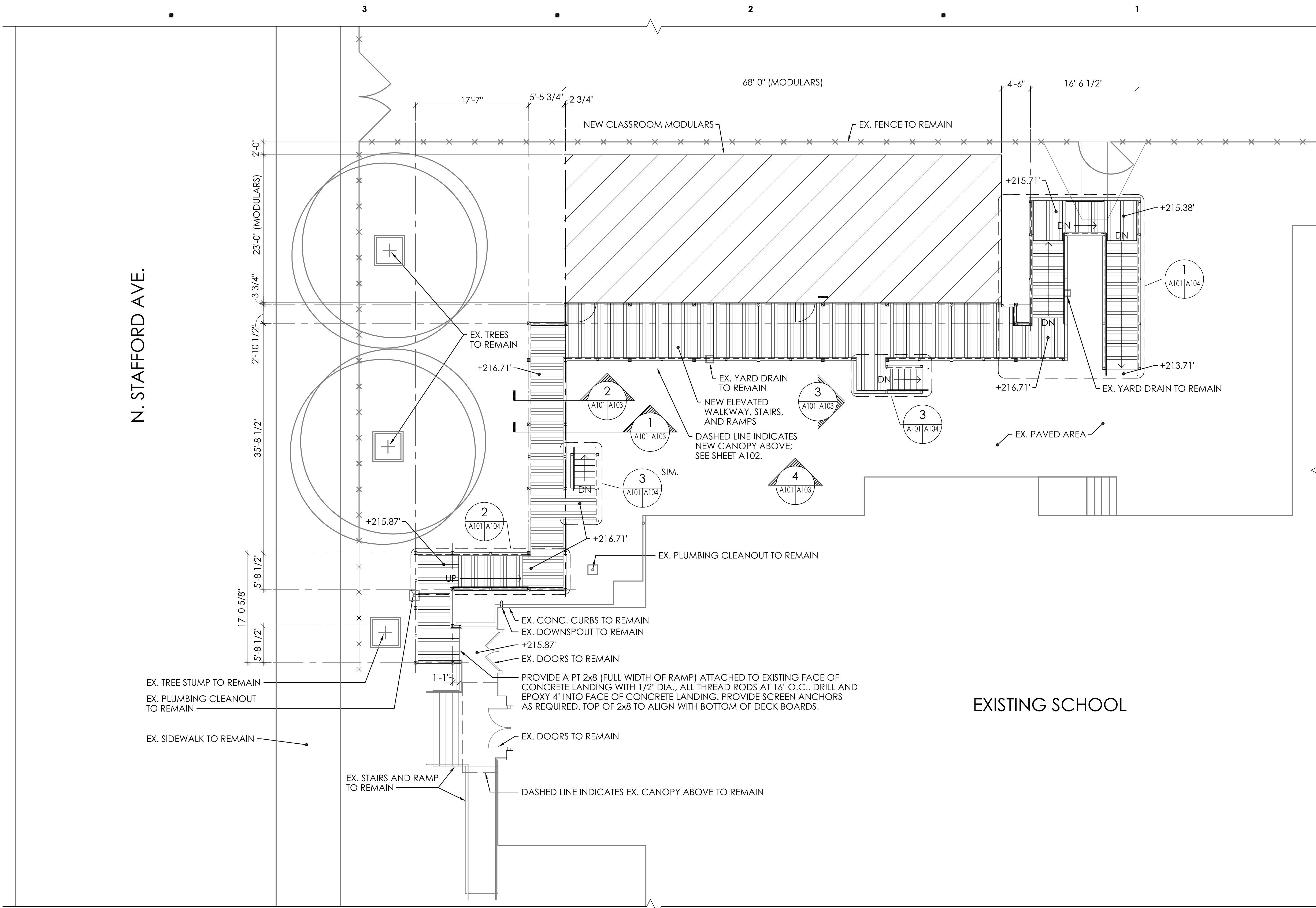


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KEYPLAN
NOT TO SCALE

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<div>DEMOLITION SITE PLAN</div>		



NEW WORK SITE PLAN
SCALE: 1/8" = 1'-0"



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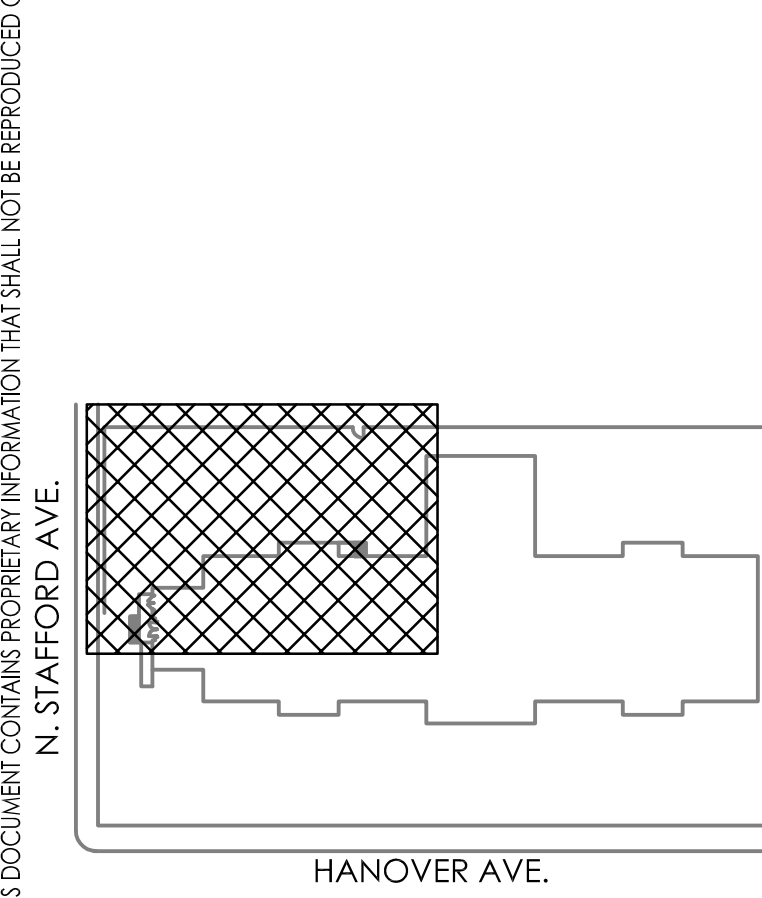
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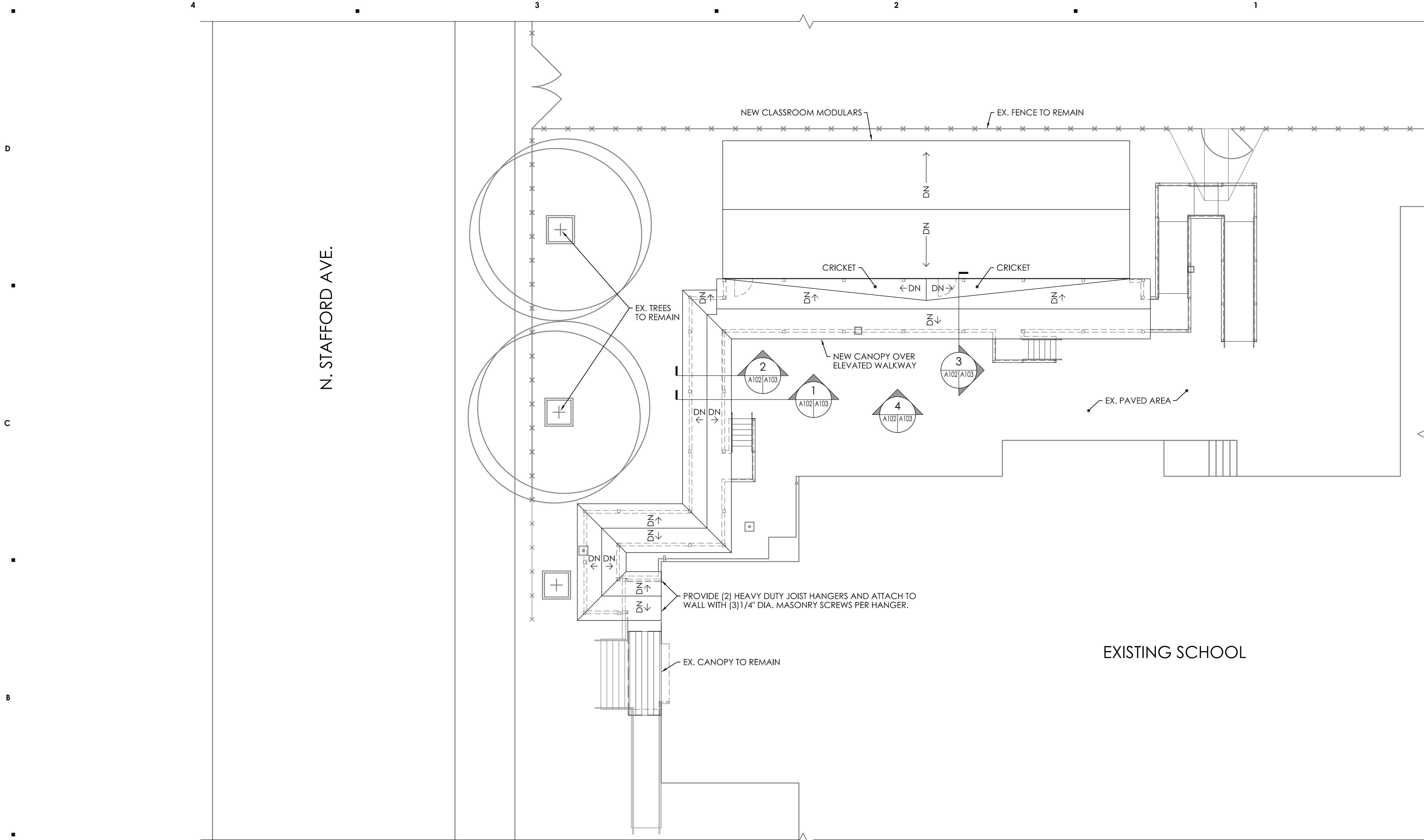


Key Information



KEYPLAN
NOT TO SCALE

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No.	Revisions	Date
Sheet Title:		
NEW WORK SITE PLAN		
Drawn By: DTP		
Issue Date: 6 June, 2018		
Scale: As Noted		
BJUA Project No.: 18006.01		
IFB No.: 18-6853-5		
Sheet No.:		
A101		
Bid Documents		



NEW WORK ROOF PLAN
SCALE: 1/8" = 1'-0"



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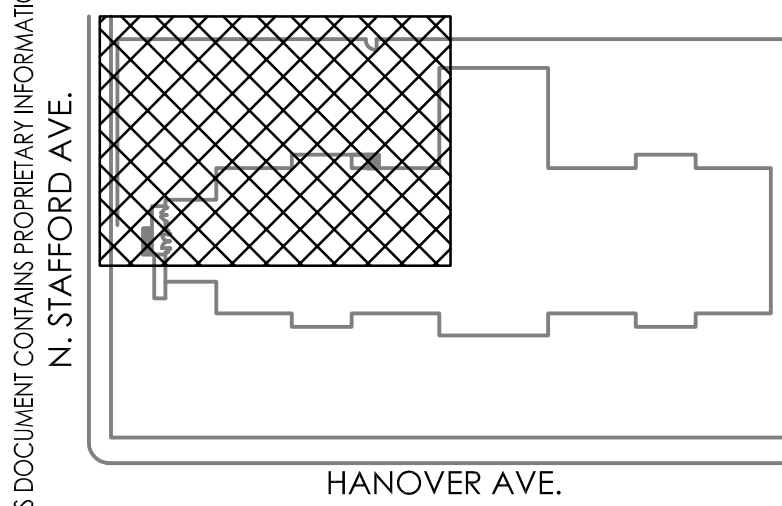
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**lynchmykins**
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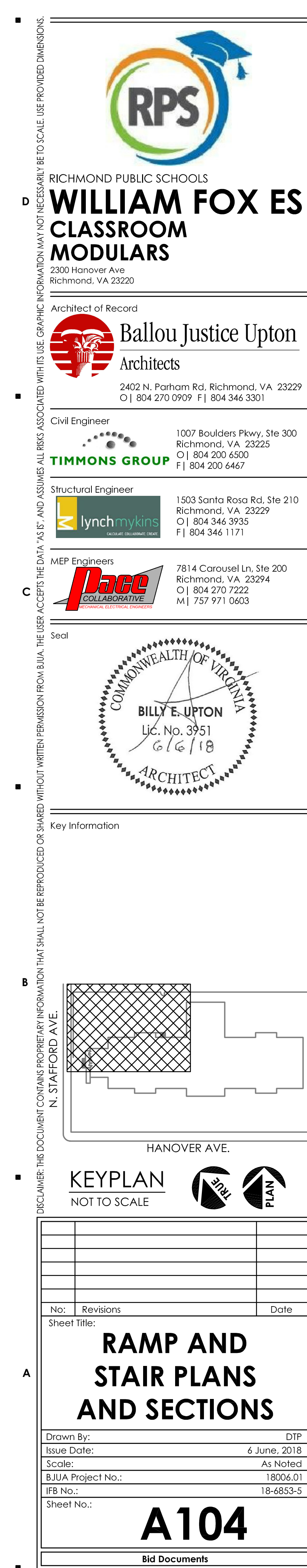
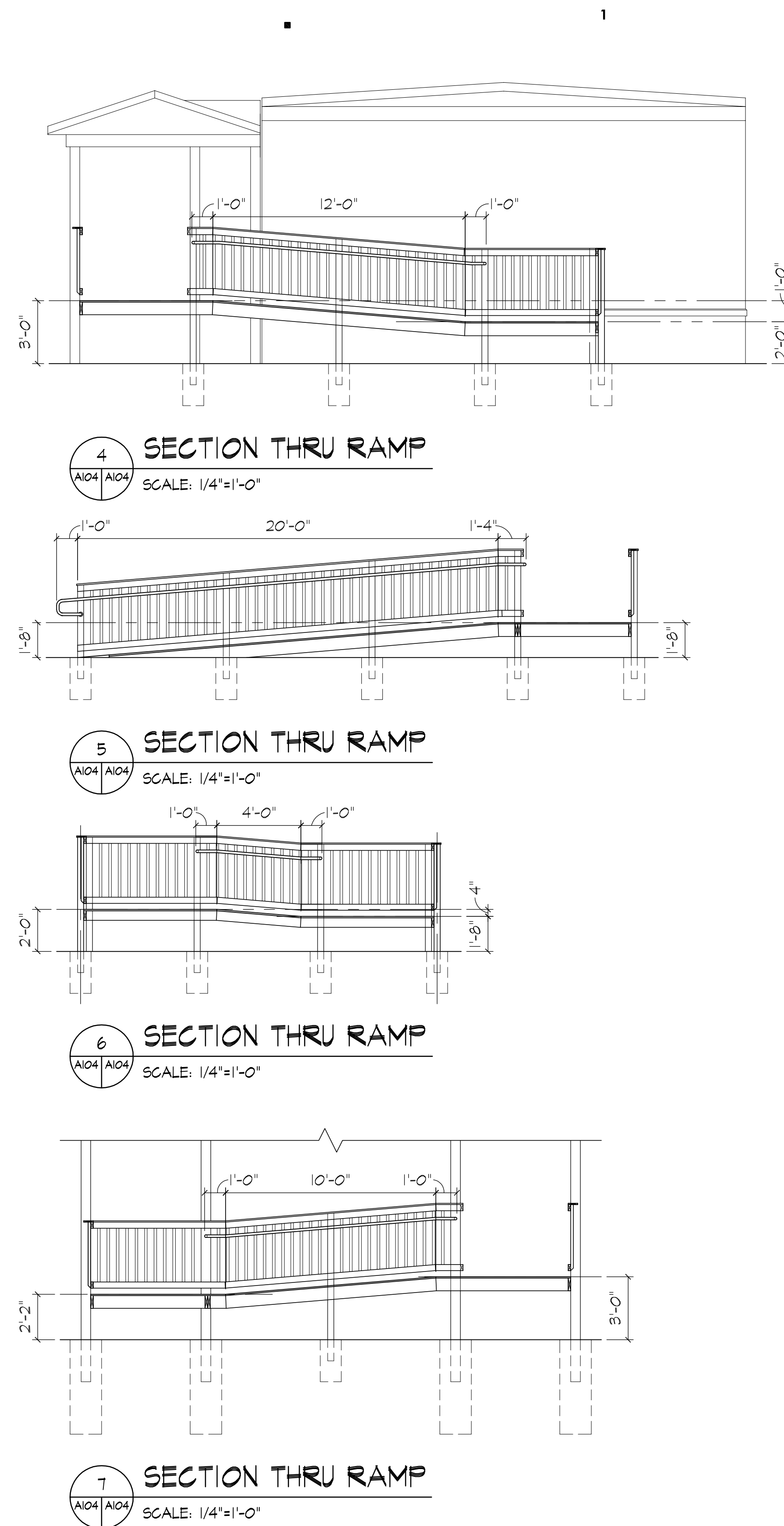
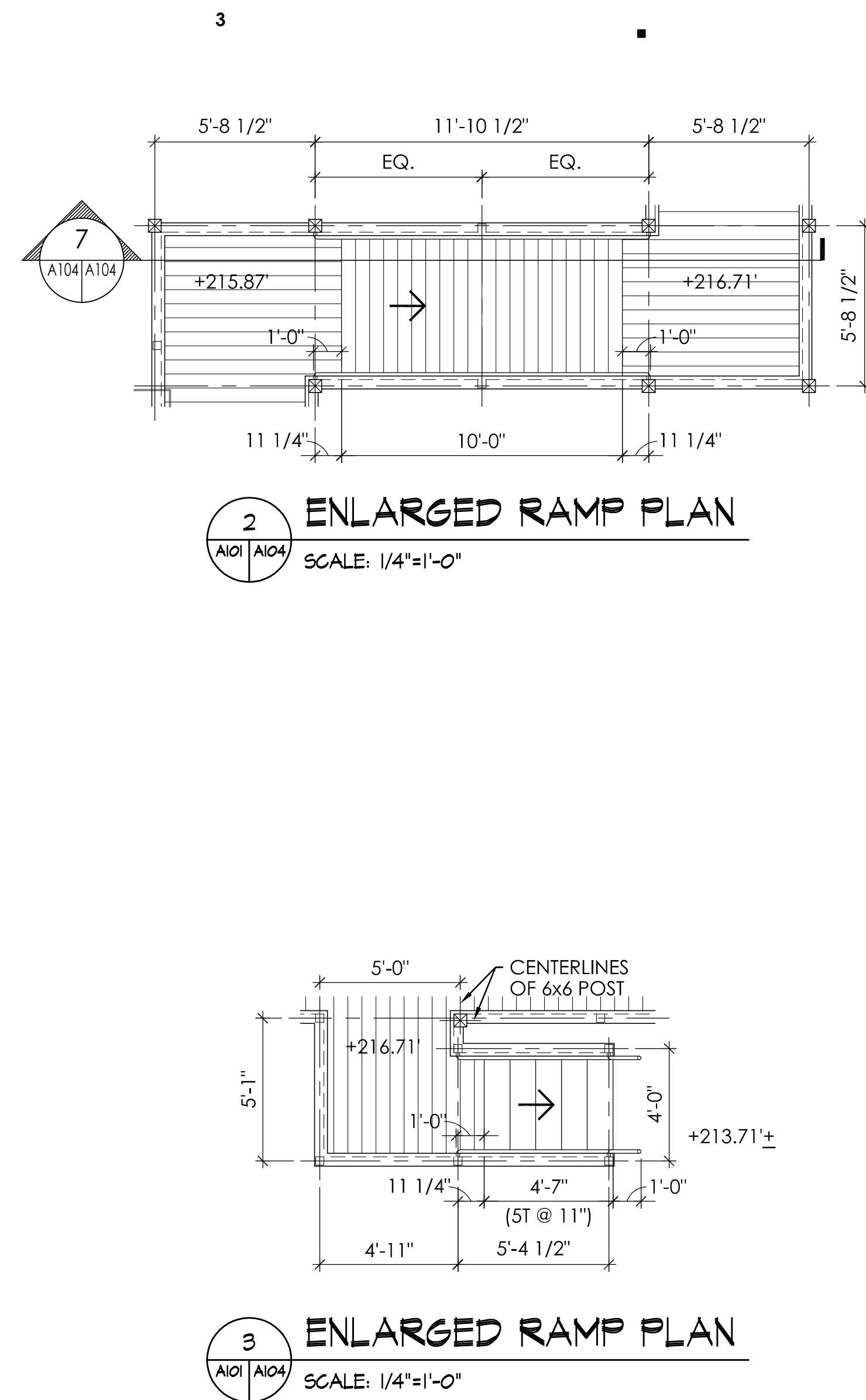
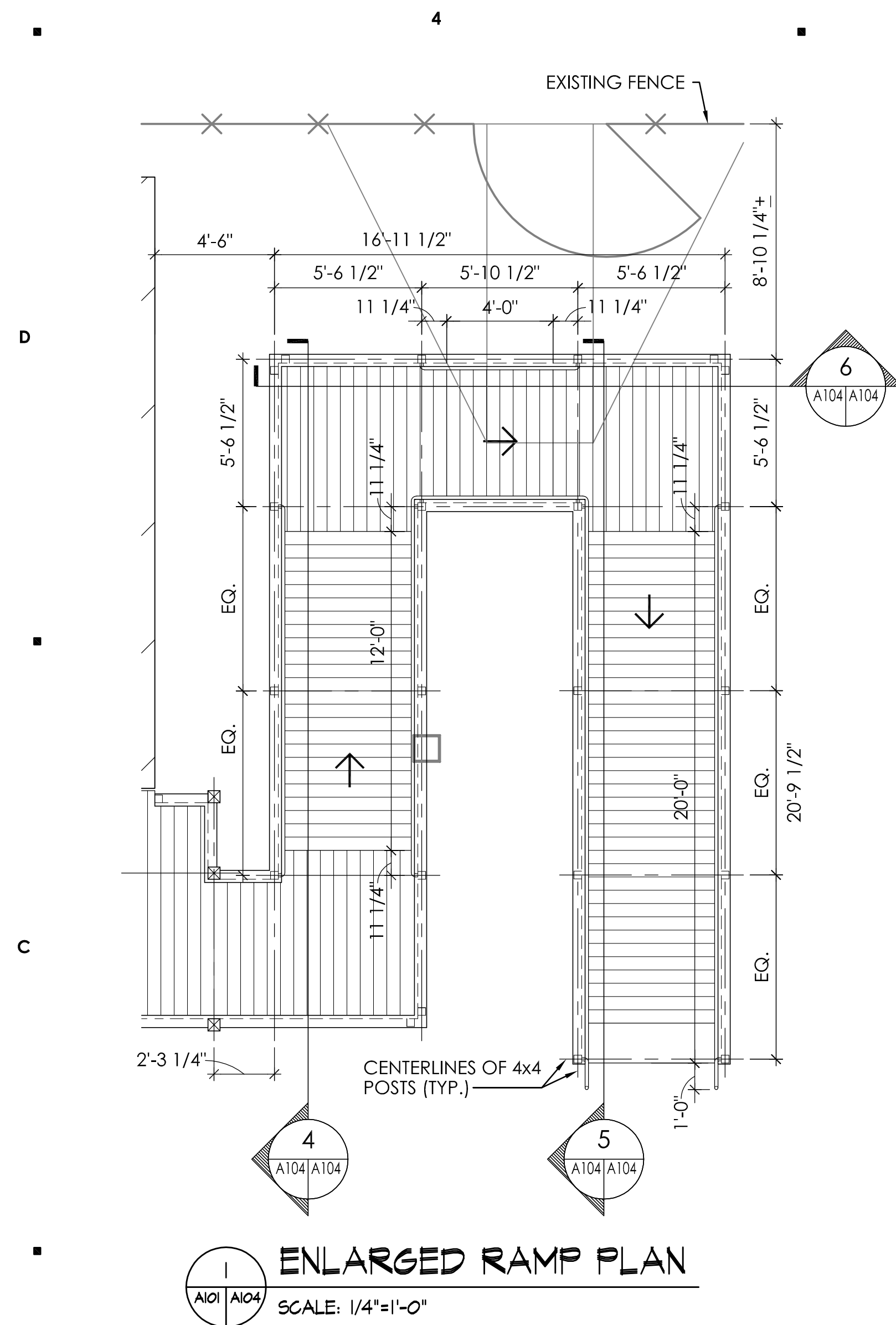


Key Information



KEYPLAN
NOT TO SCALE

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NEW WORK		
ROOF PLAN		
Drawn By: DTP		
Issue Date: 6 June, 2018		
Scale: As Noted		
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IFB No.: 18-6853-5		
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A102		
Bid Documents		



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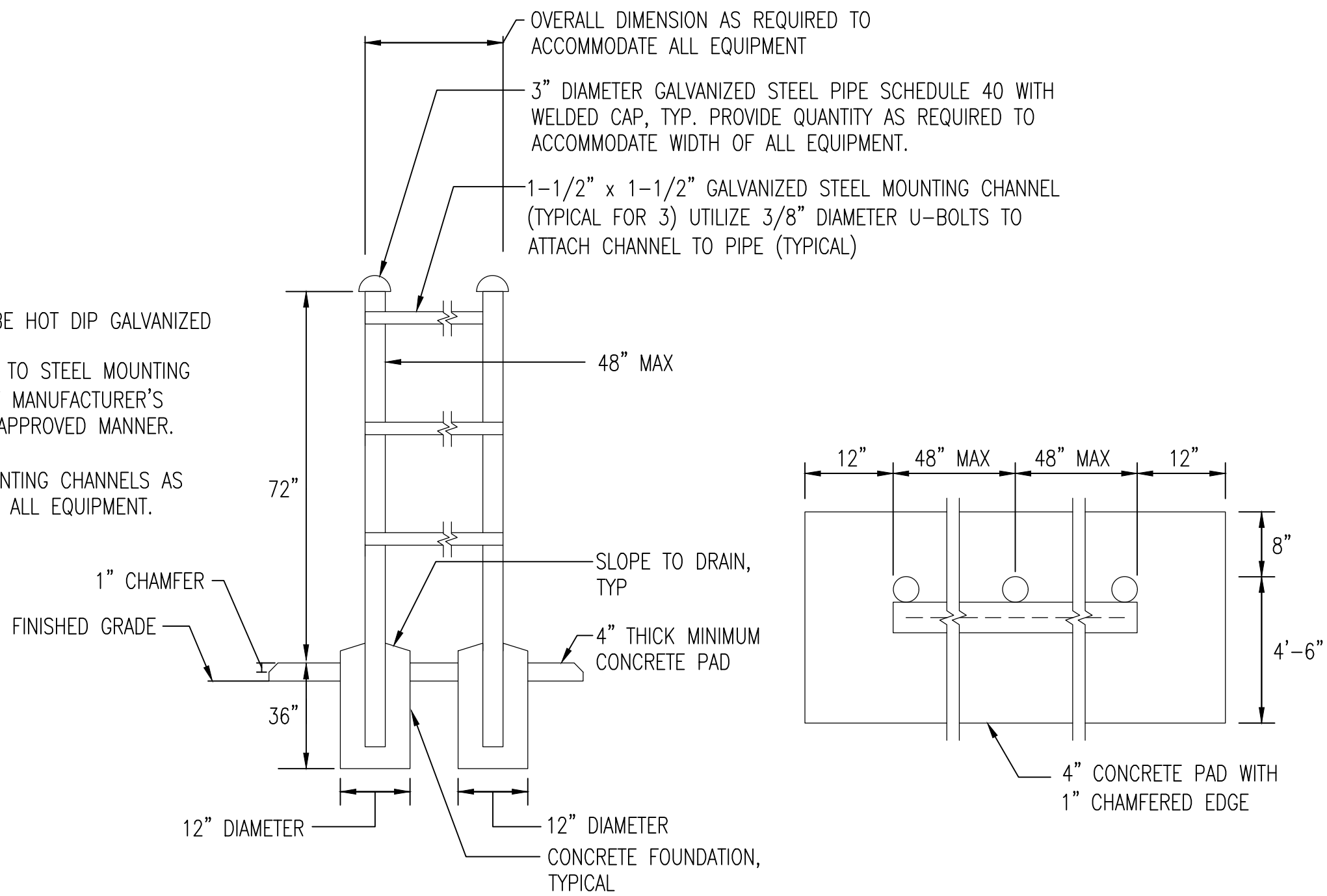
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NOTES:

1. ALL HARDWARE SHALL BE HOT DIP GALVANIZED
2. ATTACH ALL EQUIPMENT TO STEEL MOUNTING CHANNELS PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS IN AN APPROVED MANNER.
3. SPACE THE THREE MOUNTING CHANNELS AS REQUIRED TO ACCOMMODATE ALL EQUIPMENT.



ELEVATION VIEW

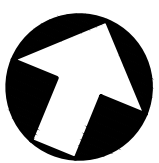
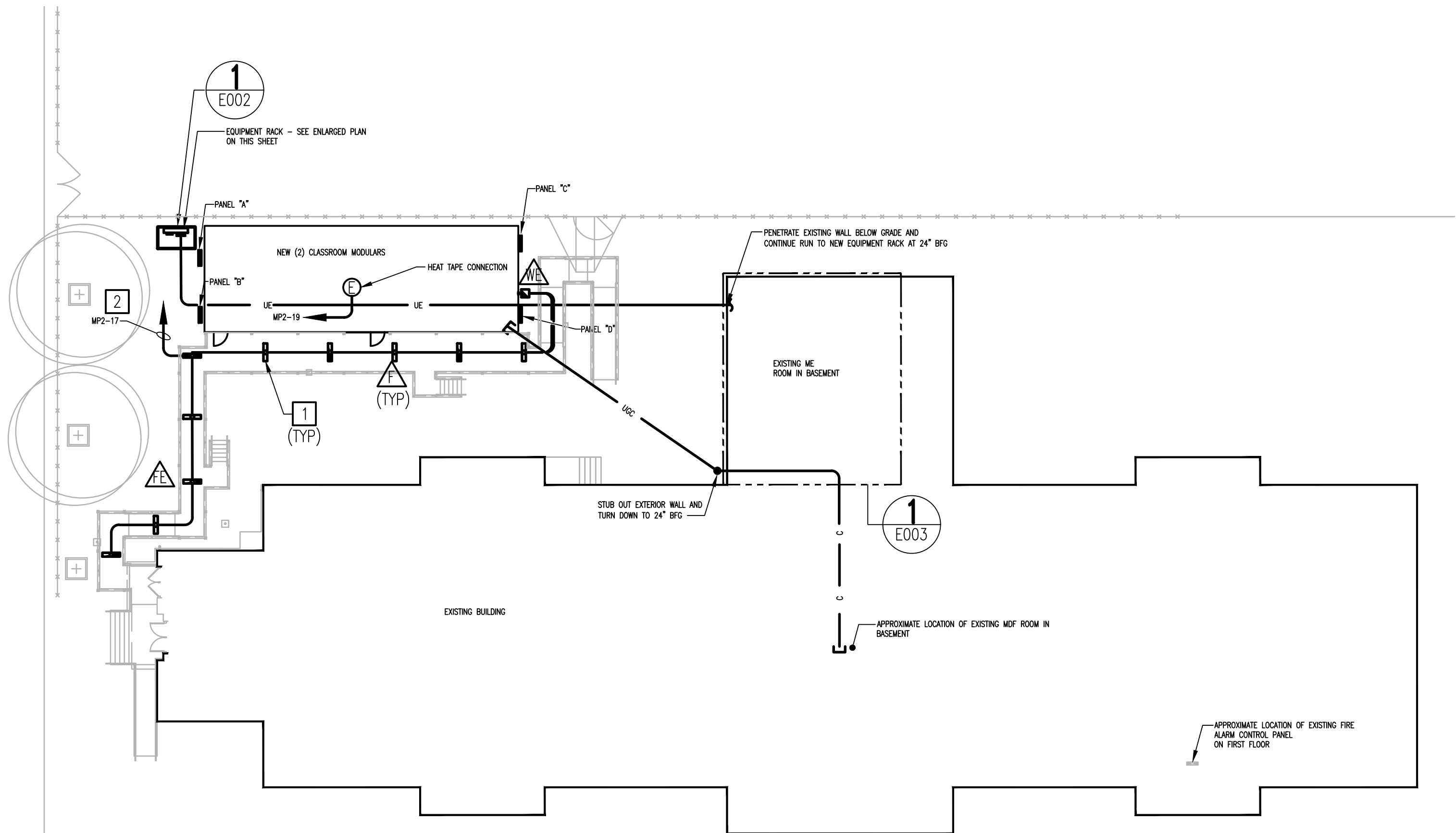
PLAN VIEW

EQUIPMENT RACK DETAIL

NO SCALE

1 ENLARGED EQUIPMENT RACK PLAN

E002 SCALE: 1/2" = 1'-0"

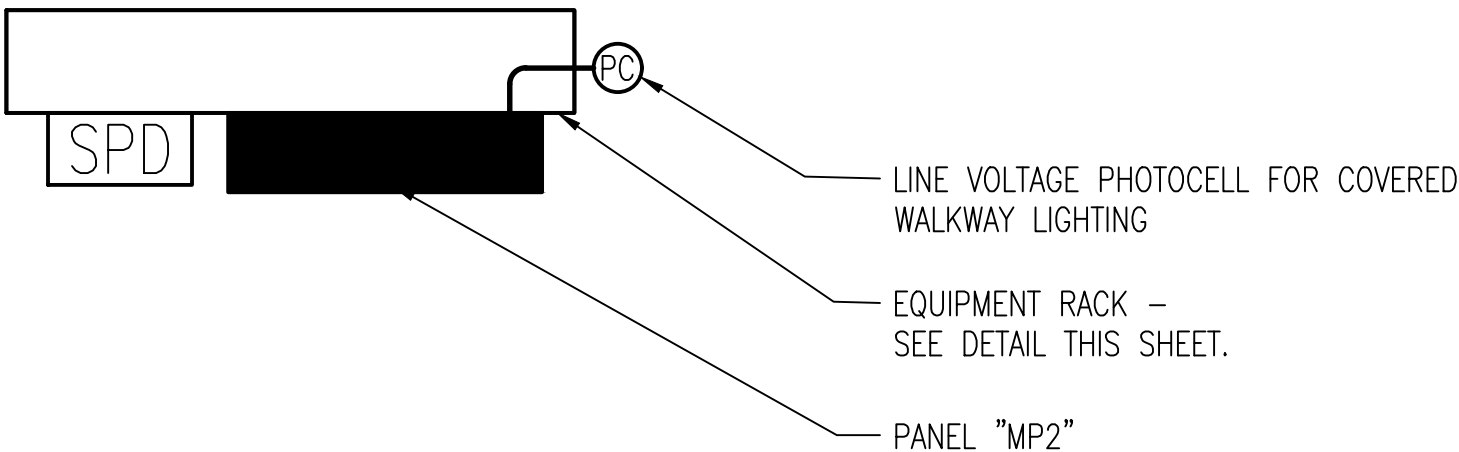


SITE PLAN

SCALE: 1" = 10' - 0"

NOTES THIS SHEET

- 1 SURFACE MOUNT TYPES "F" AND "FE" LIGHTING FIXTURES TO UNDERSIDE OF COVERED WALKWAY STRUCTURE. CONNECT TO NEW PANEL "MP2" AS INDICATED.
- 2 RUN LIGHTING CIRCUIT HOMERUN VIA PHOTOCELL. REFER TO ENLARGED EQUIPMENT RACK PLAN ON THIS SHEET.



1 ENLARGED EQUIPMENT RACK PLAN

E002 SCALE: 1/2" = 1'-0"



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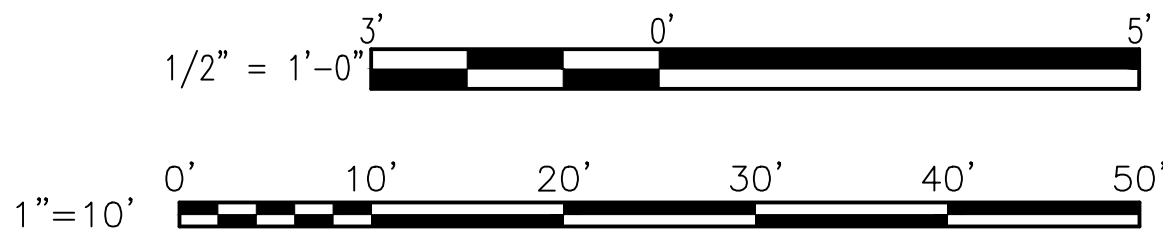
SITE PLAN

Drawn By: GMD
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Scale: As Noted
BJJA Project No.: 18006.01
IFB No.: 18-6853-5
Sheet No.:

E002

Bid Documents

GRAPHIC SCALE(S)



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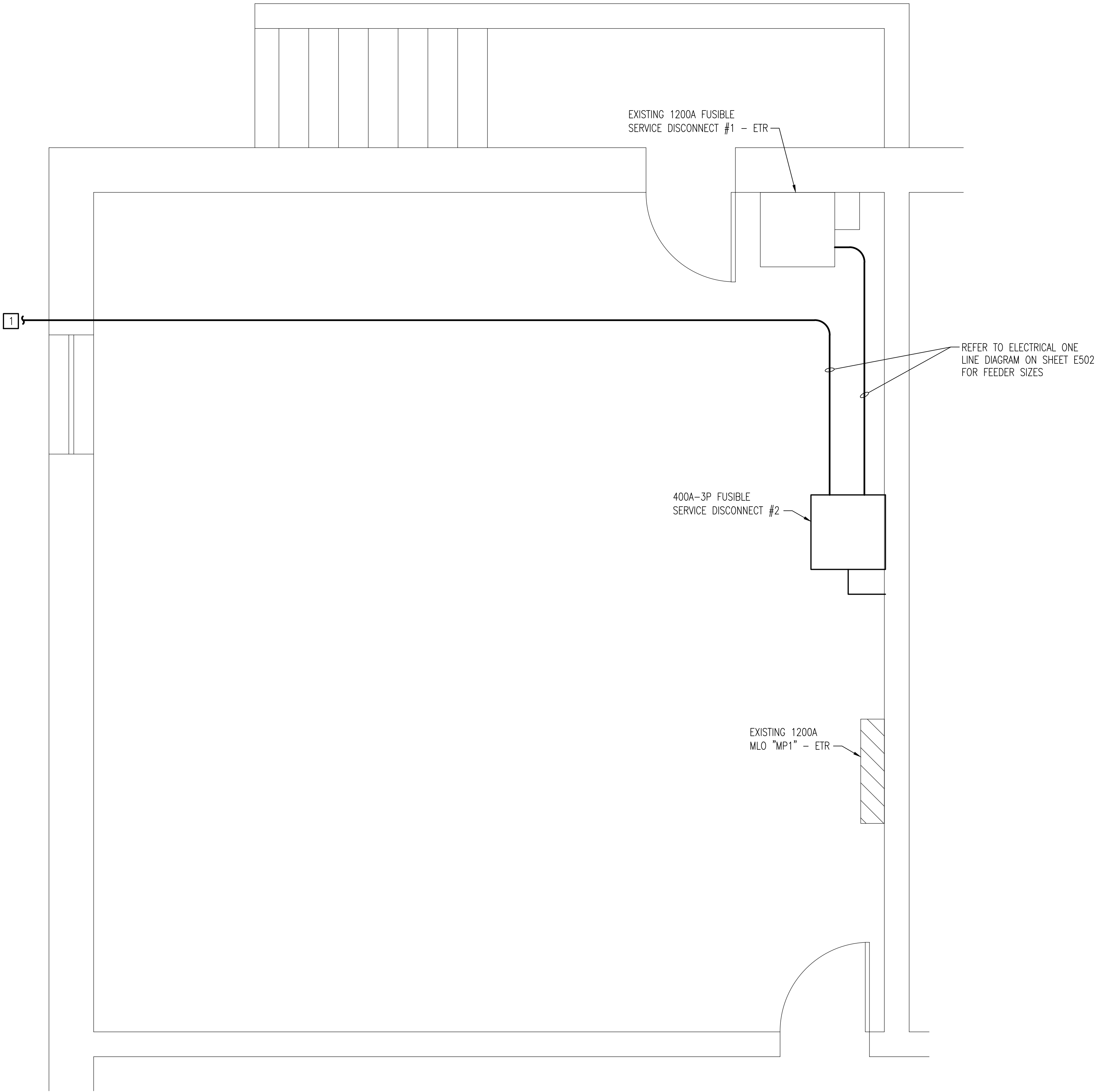
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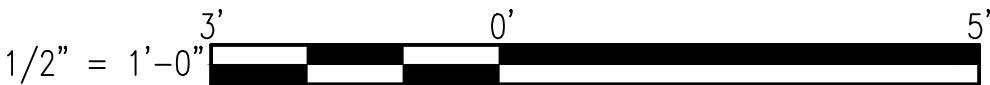
NOTES THIS SHEET

1 COORDINATE EXACT ROUTING OF NEW 400A FEEDER TO NEW PANEL "MP2" WITH EXISTING UNDERGROUND UTILITIES. CONTACT MISS UTILITIES PRIOR TO PERFORMING ANY EXCAVATION WORK FOR NEW UNDERGROUND CONDUIT RUNS TO MODULAR CLASSROOM ELECTRICAL EQUIPMENT RACK.



1 ENLARGED PLAN – EXISTING M/E ROOM
E003 SCALE: 1/2" = 1'-0"

GRAPHIC SCALE(S)



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Key Information

B

No.	Revisions	Date

Sheet Title:

ENLARGED ME
ROOM PLAN

Drawn By:	GMD
Issue Date:	6 June, 2018
Scale:	As Noted
BJJA Project No.:	18006.01
IFB No.:	18-6853-5
Sheet No.:	

E003

Bid Documents

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NOTES THIS SHEET

1 MODULAR TRAILER FLOOR PLANS WERE UNAVAILABLE AT THE TIME OF THIS SUBMITTAL. REFER TO LOW VOLOTAGE SYSTEM REQUIREMENTS ON THIS SHEET FOR TELECOMMUNICATIONS, PAGING, CAMERAS AND CATV SYSTEMS.

FOX ELEMENTARY SCHOOL 2018

IDF, Module Unit

- CSI will provide a 4 post rack, assembled and installed, in the IDF in the module unit
- CSI will provide a UPS installed in the rack in the IDF in the module unit

Phones

- Electrical contractor shall provide Cat 5–e from the IDF in the module unit to each classroom as indicated on the drawing
- Electrical contractor shall terminate the Cat 5–e in each classroom and office area at a wall jack with rj–45 connector in the location indicated on the drawing
- Electrical contractor shall terminate the Cat 5–e cable in the rack in the IDF at the patch panel with an rj–45 connector
- Epitome will provide desk sets for the NEC 8200system in each classroom in the module unit
- Epitome will provide necessary licensing for the phone additions
- Epitome will provide all necessary programming and testing of the phone system

Network

- Electrical contractor shall provide a 6 strand multimode fiber optic cable pulled from the IDF in the existing building to the IDF in the new module unit
- Electrical contractor shall terminate the fiber optic cable in a rack mounted WIC box to ST connectors in each IDF in the module units. WIC box to be provided by electrical contractor
- Electrical contractor shall test the fiber termination and ensure signal loss is less than 0.75 dB
- Electrical contractor shall provide a Cat 5–e cabling from the IDF in the module unit to each classroom and as indicated on the drawing for PC data drops, access points, and cameras
- Electrical contractor shall terminate the Cat 5–e cable in each classroom at a wall jack with rj–45 connector in the location indicated on the drawing for the PC data drops
- Electrical contractor shall terminate the Cat 5–e cable in a jack with an rj–45 connector above the ceiling grid for the Access Point in each classroom as indicated on the drawing
- Electrical contractor shall terminate the Cat 5–e cable in a jack with an rj–45 connector above the ceiling grid at each end of the hallway for externally mounted cameras
- Electrical contractor shall terminate the Cat 5–e cable

in the rack in the IDF at the patch panel with an rj–45 connector

- CSI will provide and install the patch panel and a Cisco 2960 switch in the rack in the IDF in the module unit
- CSI will provide necessary ST to LC fiber jumpers
- CSI will make all necessary patch connections for data, access points, and cameras in the IDF at the switch
- CSI will install access points, Cisco 2702, as indicated on the drawing
- RPS Network Technologies will program the switch and test the network

Overhead Paging

- Electrical contractor shall provide (Qty 2) 18ga 1 pair shielded cables pulled from the IDF in the existing building to the IDF in the new module unit
- Electrical contractor shall provide (Qty 1) 18ga paralleled to each speaker location as indicated on the drawing originating in the IDF in the module units
- CSI will provide and install overhead paging speakers, Bogen SM6T
- CSI will connect module unit overhead paging to existing classroom module building overhead paging and test

Cameras

- CSI will provide ip cameras, Honeywell series, and required mounting hardware and install as indicated on the drawing
- CSI will program and test security cameras to operate on existing Honeywell system

CATV

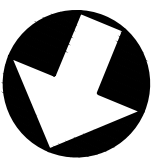
N/A

Electrical Requirements

- Electrical Contractor shall ground equipment rack in the IDF in the module unit
- Electrical Contractor shall provide one 20amp circuit in a double gang box installed in the rack in the IDF in the module unit
- Electrical Contractor shall provide one 20 amp circuit in a double gang box installed on the wall in the IDF in the module unit

Notes

- All cabling listed above may be pulled in a common conduit
- All cabling shall be labeled at each end to room number and / or jack number
- All jacks shall be labeled



LOW VOLTAGE SYSTEM REQUIREMENTS 1

SCALE: NONE

GRAPHIC SCALE(S)



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BJJA Project No.:		18006.01
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Sheet No.:		
E101		
Bid Documents		

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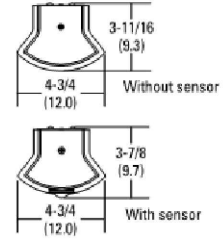
C



WL4
4"
LED

DIMENSIONS
All dimensions are inches (converters) unless otherwise noted.

Specifications	
Length with sensor	50-52 1/16 (129.40)
without sensor	46-13 7/16 (119.80)
Height with sensor	3-7/8 (9.7)
without sensor	3-11/16 (9.3)
Width	4-1/4 (12.1)



3-11/16
(9.3)

4-3/4
(12.06)

Without sensor

3-7/8
(9.7)



4-3/4
(12.06)

With sensor

LUMINAIRE DESCRIPTION:

- CONSTRUCTION: HOUSING SHALL BE ROLL FORMED FROM CODE GAUGE STEEL. PAINTED AFTER FABRICATION WITH WHITE POLYESTER POWDER COAT.
- OPTICS: IMPACT MODIFIED LINEAR FACETED REFRACTOR. OPTICALLY ENGINEERED FOR SUPERIOR LIGHT DISTRIBUTION AND MAXIMUM EFFICACY.
- ELECTRICAL: LONG LIFE LEDs, COUPLED WITH HIGH-EFFICIENCY DRIVERS, PROVIDE SUPERIOR QUANTITY AND QUALITY OF ILLUMINATION FOR EXTENDED SERVICE LIFE. LUMINAIRE IS RATED 90% LED LUMEN MAINTENANCE AT 60,000 HOURS (L90/60,000). LED'S HAVE A CRI OF 82. PROVIDE DRIVER DISCONNECT TO COMPLY WITH NEC.
- INSTALLATION: DRIVERS AND INTERNAL COMPONENTS ARE ACCESSED FROM FLOOR. DRIVER TRAY MAY BE REMOVED FROM FIXTURE DURING SERVICE. LED BOARDS INCLUDE PLUG - IN CONNECTORS FOR EASY REPLACEMENT AND SERVICING.
- MAXIMUM DEPTH OF HOUSING SHALL BE 3 11/16".
- FIXTURE SHALL BE CSA CERTIFIED TO MEET US STANDARDS. SUITABLE FOR DAMP LOCATION.
- WARRANTY: 5-YEAR LIMITED WARRANTY.
- PROVIDE 1400 LUMEN EMERGENCY BATTERY PACK FOR TYPE "FE" LIGHTING FIXTURES ONLY.

TYPE "F": BASIS OF DESIGN: LITHONIA MODEL WL4-20L-EZ1-LP835
TYPE "FE": BASIS OF DESIGN: LITHONIA MODEL WL4-20L-EZ1-LP835-EL14L


TYPE	LUMENS	LAMP TYPE	INPUT WATTS	VOLTAGE	MOUNTING
	2000	LED 3500K	18.7	MVOLT	SURFACE, CEILING
	2000	LED 3500K	18.7	MVOLT	SURFACE, CEILING

SURFACE 1' X 4' LED LENSED LUMINAIRE

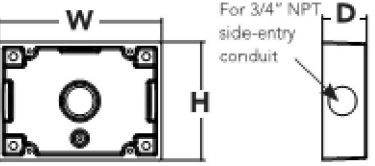
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A



Luminaire
Height: 8-1/2"
(21.59 cm)
Width: 17"
(43.18 cm)
Depth: 10-3/16"
(25.9 cm)
Weight: 20 lbs
(9.1 kg)

Optional Back Box (BBW)
Height: 4"
(10.2 cm)
Width: 5-1/2"
(14.0 cm)
Depth: 1-1/2"
(3.8 cm)


LUMINAIRE DESCRIPTION:

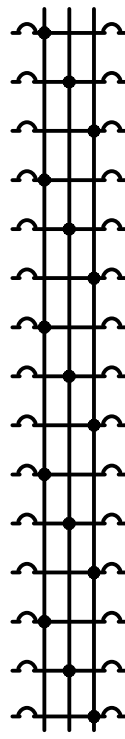
- CONSTRUCTION: SINGLE-PIECE DIE CAST ALUMINUM HOUSING INTEGRATES SECONDARY HEAT SINK TO OPTIMIZE THERMAL TRANSFER FROM THE INTERNAL LIGHT ENGINE HEAT SINKS AND PROMOTE LONG LIFE. THE DRIVER IS MOUNTED IN DIRECT CONTACT WITH THE CASTING FOR A LOW OPERATING TEMPERATURE AND LONG LIFE. THE DIE-CAST DOOR FRAME IS FULLY GASKETED WITH A ONE-PIECE SOLID SILICONE GASKET TO KEEP OUT MOISTURE AND DUST.
- FINISH: EXTERIOR PARTS ARE PROTECTED BY A ZINC-INFUSED SUPER DURABLE TGIC THERMOSET POWDER COAT FINISH THAT PROVIDES SUPERIOR RESISTANCE TO CORROSION AND WEATHERING. A TIGHTLY CONTROLLED MULTI-STAGE PROCESS ENSURES A MINIMUM 3 MILS THICKNESS FOR A FINISH THAT CAN WITHSTAND EXTREME CLIMATE CHANGES WITHOUT CRACKING OR PEELING.
- OPTICS: WELL CRAFTED REFLECTOR OPTICS ALLOW THE LIGHT ENGINE TO BE RECESSED WITHIN THE LUMINAIRE, PROVIDING VISUAL COMFORT, SUPERIOR DISTRIBUTION, UNIFORMITY, AND SPACING IN WALL MOUNTING APPLICATIONS. THE LUMINAIRE HAS ZERO UPLIGHT AND QUALIFIES AS DARK SKY COMPLIANT.
- LIGHT ENGINE(S) CONSIST OF 98 HIGH EFFICACY LEDs MOUNTED TO A METAL CORE CIRCUIT BOARD AND INTEGRAL ALUMINUM HEAT SINKS TO MAXIMIZE HEAT DISSIPATION AND PROMOTE LONG LIFE (100,000 HOURS AT 40° C, L87). CLASS 2 ELECTRONIC DRIVER HAS A POWER FACTOR OF >90%, THD<20%. EASILY SERVICEABLE SURGE PROTECTION DEVICE MEETS MINIMUM CATEGORY B (PER ANSI/IEEE C62.41.2).
- A UNIVERSAL MOUNTING PLATE WITH INTEGRAL MOUNTING SUPPORT ARMS ALLOWS THE FIXTURE TO HINGE DOWN FOR EASY ACCESS WHICH MAKING WIRING CONNECTIONS.
- FIXTURE SHALL BE CSA CERTIFIED TO MEET US STANDARDS. IP65 RATING, SUITABLE FOR DAMP LOCATION.
- WARRANTY: 5-YEAR LIMITED WARRANTY.
- PROVIDE FIXTURE WITH INTEGRAL 18-WATT (2000 LUMENS) CONSTANT POWER EMERGENCY BATTERY PACK.
TYPE "WE": BASIS OF DESIGN: LITHONIA MODEL WSTLED-P2-40K-MVOLT-BBW-E20WC-DBXB

TYPE	LUMENS	LAMP TYPE	INPUT WATTS	VOLTAGE	MOUNTING
	3000	LED 4000K	25.0	MVOLT	WALL, SURFACE

OUTDOOR SURFACE LED WALL PACK

4

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2

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SCHEDULES, DETAILS & CALCULATIONS		
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Sheet No.:		
E501		
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1




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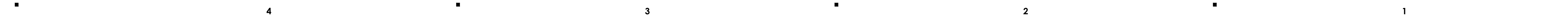
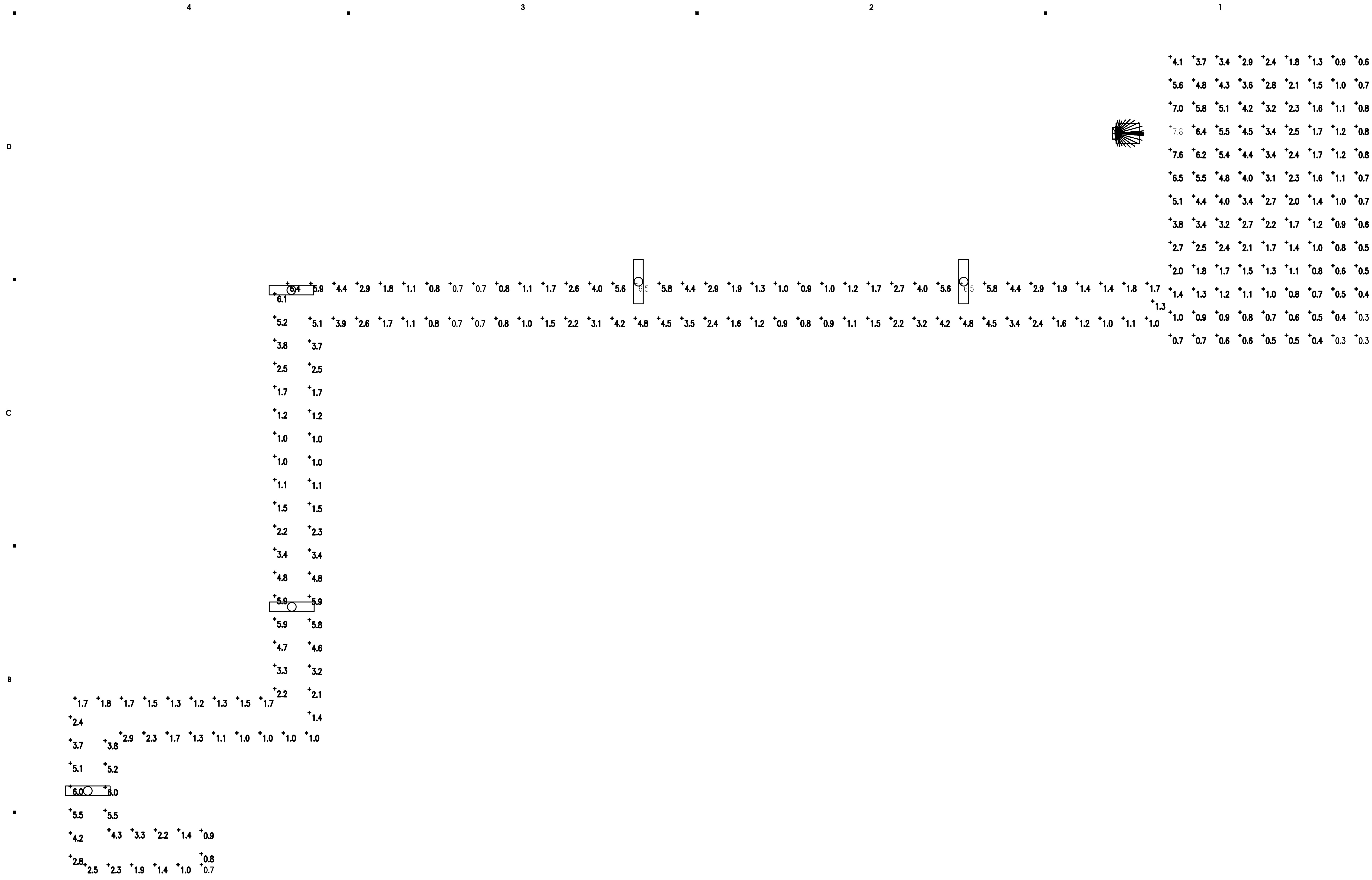
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18194

Key Information

B






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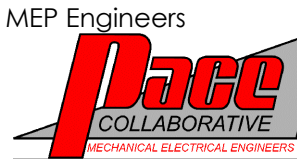
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Key Information

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Date

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EGRESS LIGHTING CALCULATIONS

Drawn By:

Issue Date:

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BJUA Project No.:

IFB No.:

Sheet No.:

CMD

6 June, 2018

As Noted

18006.01

18-6853-5

E601

Bid Documents

ELECTRICAL SPECIFICATIONS

SECTION 16010 – GENERAL PROVISIONS

PART 1 – GENERAL

1.1 Codes and standards – the latest effective publications of all applicable standards, codes, etc., as they apply, form part of these specifications as if were written fully herein and constitute minimum requirements. The following will be referred to throughout in abbreviated forms.

- A. National Electrical Code, (NFPA 70) (NEC).
- B. Institute of Electrical and Electronic Engineers (IEEE).
- C. Rules and regulations of local electric utility company.
- D. National Electrical Manufacturer’s Association (NEMA).
- E. American National Standards Institute (ANSI).
- F. Applicable local codes.
- G. Underwriter’s Laboratories, Inc. (UL).
- H. National Fire Protection Association (NFPA).
- I. Virginia Uniform Statewide Building Code

1.2 Scope of work – provide all work required for this division including all labor, materials, equipment, appurtenances and services to provide complete electrical systems as shown on the drawings and specified in this division of the specifications. The word “provide” shall mean “furnish and install complete and ready for use”.

1.3 The Contractor shall visit the site prior to bid to determine the extent of the work. Lack of knowledge of existing conditions will not be considered a basis for change orders. Prior to ordering equipment, verify that equipment to be provided under this contract is acceptable and can fit into bldg. and room. Expense incurred by the Contractor, which in the Engineer’s opinion could have been avoided by this step, shall not be a basis for change orders.

1.4 Drawings and specifications – the drawings are diagrammatic and indicate the general extent, character and arrangement of equipment, and conduit and wiring systems. It is the intention of these specifications and drawings to fully cover all work and materials for a complete, first-class electrical installation, and any devices such as pull boxes and disconnect switches, usually employed in this class of work, though not specifically mentioned or shown on the drawings or in this specification, but which may be necessary for the satisfactory completion of the work, shall be furnished and installed by the Contractor as a part of his total work under this Division. Consult the specifications and drawings of all other trades and perform all electrical work required therein. Cooperate with all other Contractors or Subcontractors to furnish complete workable systems.

1.5 During construction, keep an accurate record of all deviations between the work as shown on the contract drawings and that which is actually installed on a set of blue line prints of the electrical drawings, and note changes thereon with red marks, in a neat and accurate manner. When all revisions have been shown on these prints to indicate the work as finally installed, the prints shall be delivered to the Owner before final payment.

1.6 Permits, inspection and tests – the right is reserved to inspect and test any portion of the installation/equipment during the progress of its erection. This Contractor shall test all wiring for continuity and grounds before connecting any fixtures or devices. This Contractor shall test the entire system when the work is finally completed to insure that all portions are free from short circuits and grounds.

1.7 Secure and pay for all required permits and inspections. Inspection certificates from local authorities having jurisdiction shall be delivered to the Owner before final payment.

1.8 Submittals – submit shop drawings, product data and samples within thirty (30) days of award of contract and in accordance with the general conditions and supplementary conditions. Submittals are required for all items provided under this specification. Review of submittals by the Engineer and any associated action taken by the Engineer does not relieve the Contractor of any requirements set forth by the contract documents.

PART 2 – PRODUCTS

2.1 Manufacturing standards – materials shall be new and approved and labeled by UL wherever standards have been established by that agency. Defective equipment or equipment damaged in the course of installation or test shall be replaced or repaired in a manner meeting the approval of the Owner. All items of the same type and rating shall be identical.

2.2 Trade names – unless specifically identified otherwise, manufacturers’ names and catalog numbers indicated herein and on the drawings are not intended to be proprietary designations. They are to indicate general type and quality of materials and equipment required. Equipment and materials by other manufacturers which in the opinion of the Engineer are of equal quality and which will produce the same results will be considered acceptable.

2.3 Obtain approved shop drawings showing wiring diagrams, connection diagrams, roughing-in and hookup details, from other involved Contractors for all equipment and comply therewith.

2.4 Short circuit ratings for all panelboards, disconnect switches, etc. shall be suitable to accommodate the available fault current as indicated on the one-line diagram. Contractor shall provide label on service equipment stating available fault current and the date it was calculated.

2.5 Grounding – the entire electrical system, including equipment frames, conduit, switches, controllers, wireways, neutral conductors, and all other such equipment shall be permanently and effectively grounded in accordance with the NEC. Ground rods shall be copper clad steel, 3/4” diameter by 10’-0” long. Grounding of each transformer secondary shall be provided and each shall be considered as a separate service ground. Provide a separate ground conductor in all branch circuit conduits sized in accordance with the NEC.

2.6 Schedule of work – the schedule of the electrical work shall be arranged to suit the progress of work by the other trades and shall in no way retard progress of construction of the project.

2.7 Work under this division shall proceed in advance of the work of others whenever possible, eliminating all cutting and patching. When such procedure is impossible, cutting and patching shall be done in an approved manner. Cutting shall not endanger structural integrity in any way.

Patching shall exactly match contiguous work. Actual work of cutting and patching of existing surfaces shall be performed by the Subcontractor who originally prepared these surfaces, e.g., cutting and patching of masonry wall will be performed by the masonry Subcontractor. Costs of such cutting and patching shall be borne by the electrical Subcontractor. Cutting shall be carefully done and damage to building, piping, wiring or equipment as a result of cutting shall be repaired by skilled mechanics of trade involved.

2.8 Storage and materials – space will be assigned to the Contractor by the Owner for the storage of materials. This Contractor will be responsible for the protection and safekeeping of materials, tools, and equipment. All materials and equipment shall be kept in its assigned place until the time of its installation. Excess materials, dirt and refuse shall be promptly removed from the work site.

2.9 Labeling of equipment

A. All panelboards and safety switches shall be identified by machine engraved laminated plastic designation plates permanently attached thereto with self-tapping screws or rivets. All component parts of each item of equipment or device shall bear the manufacturer’s nameplate, giving name of manufacturer, description, size, type, serial and model number and electrical characteristics in order to facilitate maintenance or replacement.

B. All panelboards shall be field marked to warn personnel of the potential for Arc Flash. Labels shall state “WARNING – ARC FLASH AND SHOCK HAZARD APPROPRIATE PPE REQUIRED”.

2.10 Coordination – cooperate and coordinate efforts with all Contractors on the project. This effort must be executed regardless of information placed on the drawings. Any cost incurred which in the opinion of the Owner, could have been avoided by this step shall be the responsibility of the electrical Contractor.

2.11 Guarantee of work – Contractor guarantees by his acceptance of the contract that all work installed is free from any and all defects in workmanship and/or materials, and that the apparatus will develop capacities and characteristics specified, and that if, during the period of one year or as otherwise specified, from date of certificate of completion and acceptance of the work any such defects in workmanship, material or performance appear, he will, without cost to the Owner, remedy such defects within a reasonable time to be specified in notice. In default thereof, the Owner may have such work done and charge cost to Contractor. Equipment guarantees from date of “start-up” will not be recognized.

SECTION 16210 – RACEWAY, FITTINGS AND BOXES

A. Raceways – conduit shall be hot-dipped, zinc coated or sherardized rigid steel (RS), intermediate metal conduit (IMC), electrical metallic tubing (EMT), or Schedule 40 PolyVinyl Chloride (PVC).

B. Flexible conduit shall be galvanized, continuous spiral, single strip type. Flexible conduit shall be covered with PVC jacket in wet or damp locations. Provide suitable fittings with ground connector.

C. Fittings – all conduit entering or leaving outlet, junction or pull boxes, and cabinets and all conduit stubs shall have bushings. Provide insulating bushings where required by NEC. Provide expansion fittings with bonding jumper where conduits cross expansion joints.

1. Fittings for RS and IMC shall be threaded type.

2. Fittings for EMT shall be threadless, approved for the conditions encountered and may be cast setscrew type or compression type.

D. Fittings for PVC shall be PVC, primed and glued.

E. Outlet boxes and junction boxes – outlet boxes shall be pressed steel, electro-galvanized or cadmium plated with clean cut, easily removable knockouts. Except as noted hereinafter minimum size outlet box shall be 4” square, 1 1/2” deep, and shall be increased in dimensions to accommodate conductors, conduits, and devices as required by the NEC. Shallower boxes may be used where required by structural conditions. Ceiling and bracket outlet boxes shall be not less than 4” octagonal, 1 1/2” deep.

F. Non metallic outlet boxes may be provided in PVC raceway systems. Outlet boxes in wet or damp locations shall be cast-metal, threaded hub-type with gaskets.

G. Junction or pull boxes not over 100 cubic inches in volume shall be standard outlet boxes. Junction boxes over 100 cubic inches in volume shall be constructed of code gage, galvanized sheet steel. Junction boxes shall have removable covers and shall be accessible after completion of work.

H. Raceway and fitting installation – run conduits concealed within finished walls and ceilings where possible. Conduits may be run exposed in mechanical rooms and spaces with exposed construction. Conduit shall be supported at intervals of not more than 8’. Run exposed conduit parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceiling.

I. Support conduits by pipe straps, wall brackets, strap hangers, or ceiling trapeze.

J. Conduit run outside of building shall be buried a minimum of 24” below finished grade.

K. Do not install EMT outdoors, or underground, or encased in concrete, or in hazardous areas, or in areas subject to severe physical damage.

L. Do not install PVC in or through fire rated assemblies, in or through any walls, in or through any ceilings, in hazardous areas, in areas subject to severe physical damage, or exposed within the existing school building.

M. Conduit run underground may be polyvinyl chloride (PVC).

N. Sleeves – All electrical system conduit shall have sleeves where conduit passes through concrete slabs except concrete slabs in contact with grade. Provide water-tight conduit sleeves for all conduits passing through concrete walls below grade. All conduit 1 1/4 inch and larger running concealed above ceiling shall have sleeves where the conduit passes through masonry, tile and gypsum wall construction. Sleeves shall be constructed of galvanized steel pipe, Schedule 40. Provide escutcheon plates for all exposed conduit passing through walls and ceilings. Terminate sleeves flush with wall, partitions and ceilings. Fasten sleeves securely in walls, so that they will not become displaced when other construction is built around them. Where sleeves pass

through fire rated walls provide proper sealant around conduit to maintain fire rating.

SECTION 16220 – CONDUCTORS

A. Conductors and insulation – wire and cable shall be soft drawn, annealed copper with 600 volt color coded insulation. Minimum wire size shall be #12 awg. Insulation for branch circuits and feeders shall be type THHN–2–THWN–2 or XHHW–2. Conductors No. 8 AWG and larger diameter shall be stranded. Conductors No. 10 AWG and smaller diameter shall be solid, except that conductors for remote-control and signal circuits, classes 1, 2, and 3, may be stranded.

B. Provide a separate ground conductor in all raceways sized in accordance with the NEC.

C. Joints and terminations – for conductors #12 and #10 all fixture and branch circuits joints in junction and outlet boxes shall be made with UL listed pressure type connectors rated at 600 volts and 105 degrees C. Connectors shall be Ideal Industries “Wing-Nut” or Buchanan “B-Cap”, 3M “Scotch-Lok” connectors or equal. Wire #8 and larger shall be joined or terminated with solderless compression type connectors, properly taped in layers to form a moisture-tight joint.

SECTION 16230 – WIRING DEVICES

A. Wiring devices shall be “specification grade” as manufactured by General Electric, Slater (Medalist), Arrow-Hart, Bryant, Hubbell or Pass & Seymour.

B. Duplex convenience receptacles shall be ivory plastic, 20 ampere, 125 volts, 2 pole, 3 wire NEMA 5–20R standard, grounding type.

C. Weatherproof receptacles shall be in cast metal box with gasketed, weatherproof, cast-metal cover plate and gasketed “while in use” cover.

D. Ground fault circuit interrupting receptacles shall conform to NEC, shall be UL listed, ivory plastic, shall have a “push-to-test” button and visible indication of a tripped condition.

E. Device plates on unfinished walls and on fittings, shall be zinc-coated sheet steel having rounded or beveled edges.

SECTION 16250 – SAFETY SWITCHES

A. Safety switches – safety switches shall be rated at 600 or 240 volts with number of poles and current rating as indicated. Switches shall be fused or non-fused type as indicated, NEMA type HD, with full cover interlocks and quick-make, quick-break mechanism.

SECTION 16310 – PANELBOARDS

A. Panelboards – panelboards shall be dead-front, circuit breaker equipped with trip ratings and frame sizes as shown on the drawings. All current-carrying parts of the bus assembly shall be plated.

B. Each panelboard shall be provided with a hinged cover with a flush latch and lock with two keys and keyed the same as all other panelboards. Entire front trim shall be hinged to box with standard door within hinged trim cover. Each panel shall be equipped with typewritten directory card, card holder, transparent protection and complete identifying data on inside of door.

C. Panelboards shall be equal to SQUARE–D, Type NQOD, NF, or I–LINE (HCN, HCM, HCP, HCW, HCWM, HCP–SU, HCR–U), or equal products by Cutler Hammer, Siemens, or G.E.

SECTION 16311 – CIRCUIT BREAKERS

A. Circuit breakers shall be provided as indicated on drawings and be fully compatible with panelboards. Circuit breakers shall conform to latest UL and NEMA standards and shall bear UL labels.

B. Circuit breakers shall be single, double pole, or three pole thermalmagnetic quick-make, quick-break trip-free on overload or short circuit alternating current circuit breakers with trip ratings and frame size as shown on the drawings. Branch circuit breakers shall provide inverse time delayed tripping on overloads and instantaneous tripping on short circuits. Trip indication shall be clearly shown by the breaker handle taking position between ON and OFF when the breaker is tripped. Double and three-pole breakers shall be common trip type. Sub-feed breakers are not acceptable.

C. Circuit breakers shall be fully rated for the available fault current, series ratings are not acceptable, unless stated otherwise on drawings.

D. Circuit breakers shall be installed in conformance with panelboard manufacturer’s recommendations.



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18194

Key Information

Table with 3 columns: No., Revisions, Date. The table is currently empty.

Table with 2 columns: Drawn By, Issue Date, Scale, BJJA Project No., IFB No., Sheet No., and a large section for SPECIFICATIONS. The specifications section includes a table for Drawn By, Issue Date, Scale, BJJA Project No., IFB No., and Sheet No., followed by a large E701 label and a Bid Documents label.

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GENERAL NOTES

ALL PLUMBING & PLUMBING MATERIALS SHALL MEET THE REQUIREMENTS OF THE STATE & LOCAL PLUMBING CODES.

COORDINATE WITH ARCHITECTURAL WORKING DRAWINGS BEFORE ROUGHING-IN PLUMBING FIXTURES.

SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING & ENTERING BUILDING.

ALL HOT & COLD WATER PIPING INDICATED TO RUN ABOVE FINISHED CEILINGS OR IN EXTERIOR WALLS SHALL BE INSTALLED ON THE CONDITIONED SPACE SIDE OF THE BUILDING INSULATION.

SLOPES & INVERT ELEVATIONS OF EXTERIOR SEWERS, MANHOLES, ETC., SHALL BE ESTABLISHED & VERIFIED BY PLUMBING CONTRACTOR BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED & NECESSARY INVERT ELEVATIONS OBTAINED.

IT IS THE INTENTION OF THESE DRAWINGS TO COVER ALL WORK & MATERIAL FOR A COMPLETE FIRST CLASS INSTALLATION. ANY EQUIPMENT, PLUMBING FIXTURE, TRIM HARDWARE &/OR DEVICES USUALLY UTILIZED IN THE CLASS OF WORK, THOUGH NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, BUT WHICH MAY BE NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK (AS DETERMINED BY THE ARCHITECT) SHALL BE FURNISHED & INSTALLED BY THE CONTRACTOR AS PART OF HIS TOTAL WORK.

THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID AND THOROUGHLY FAMILIARIZE HIMSELF/HERSELF WITH THE EXISTING CONDITIONS. NOT ALL EQUIPMENT AND APPURTENANCES ARE SHOWN. FAILURE TO FOLLOW THIS STEP SHALL NOT BE A BASIS FOR CHANGE ORDERS.

VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT, PIPING, FIXTURES, ETC.

SFU NOTE:

THIS RISER ADDS 14 SFU's TO THE EXISTING DOMESTIC WATER SYSTEM.

DFU NOTE:

THIS PROJECT ADD 8 DFU's TO THE SANITARY SYSTEM.

DIG NOTICE

CONTACT MISS UTILITY AT 811, 1-800-552-7001, OR HTTP://WWW.MISSUTILITYOFVIRGINIA.COM NO LESS THAN 72 HOURS PRIOR TO EXCAVATION AND DO NOT DISTURB THE SOIL UNTIL DIG TICKET HAS BEEN PROCESSED.

RIGID GLASS FIBER PIPE INSULATION SCHEDULE

PIPING SYSTEM	SYSTEM TEMPERATURE RANGE (°F)	PIPING INSULATION THICKNESS		
		LESS 1"	1" TO LESS 1-1/2"	1-1/2" & MORE
DOMESTIC CW	48 – 80	1/2"	1"	1"

LEGEND & ABBREVIATIONS

	EXISTING PIPING TO REMAIN	ASSE	AMERICAN SOCIETY OF SANITARY ENGINEERING
	DOMESTIC COLD WATER PIPE (CW)	BF	BELOW FLOOR
	SANITARY WASTE PIPE (WP)	BFG	BELOW FINISH GRADE
	PIPE TURN UP	F	FAHRENHEIT
	NEW WORK NOTE DESIGNATION	MAX	MAXIMUM
	NEW POINT OF CONNECTION	MIN	MINIMUM
	DETAIL/RISER/ENLARGED PLAN	PVC	POLYVINYL CHLORIDE
	SHEET WHERE CUT/SHOWN	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
		TYP	TYPICAL
		UL	UNDERWRITERS LABORATORY

PLUMBING SPECIFICATIONS

PART 1 – GENERAL

1.1 ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH APPLICABLE CODES AND ORDINANCES.

- A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
- B. UNDERWRITER'S LABORATORIES, INC. (UL)

1.2 THE SCOPE OF THE WORK INCLUDES FURNISHING AND INSTALLING A FIRST CLASS WORKING SYSTEM, TESTED READY FOR OPERATION, COMPLETE WITH LABOR, MATERIALS, APPARATUS, TRANSPORTATION AND TOOLS REQUIRED FOR THE INSTALLATION IN CONFORMANCE WITH THE DRAWINGS AND THESE SPECIFICATIONS.

1.3 THE CONTRACTOR SHALL GIVE ALL NOTICES, OBTAIN ALL PERMITS, ARRANGE ALL INSPECTION, AND PAY ALL FEES.

1.4 THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE EXTENT OF THE WORK. LACK OF KNOWLEDGE OF EXISTING CONDITIONS WILL NOT BE CONSIDERED A BASIS FOR CHANGE ORDERS. PRIOR TO ORDERING EQUIPMENT, CERTIFY, IN WRITING, THAT EQUIPMENT TO BE PROVIDED UNDER THIS CONTRACT IS ACCEPTABLE AND APPROPRIATE. EXPENSE INCURRED BY THE CONTRACTOR, WHICH IN THE ENGINEER'S OPINION COULD HAVE BEEN AVOIDED BY THIS STEP, SHALL NOT BE A BASIS FOR CHANGE ORDERS.

1.5 THE CONTRACTOR SHALL DELIVER THE PLUMBING MATERIALS AND EQUIPMENT COVERED BY THE PLANS AND SPECIFICATIONS TO THE OWNER COMPLETE AND IN FIRST CLASS CONDITION IN EVERY RESPECT. HE SHALL GUARANTEE THAT THE MATERIALS, EQUIPMENT AND WORKMANSHIP PROVIDED BY HIM SHALL BE ENTIRELY FREE FROM DEFECTS, AND THAT HE WILL REPAIR OR REPLACE AT HIS OWN EXPENSE AS MAY BE DIRECTED BY THE OWNER, ANY MATERIAL, EQUIPMENT OR WORKMANSHIP IN WHICH DEFECTS MAY DEVELOP. PROVIDE A WRITTEN WARRANTY FOR A PERIOD OF 12 MONTHS AGAINST DEFECTIVE WORKMANSHIP AND MATERIAL AFTER FINAL ACCEPTANCE AT NO ADDITIONAL COST TO THE OWNER.

PART 2 – PRODUCTS

2.1 PIPE HANGERS SHALL BE ADJUSTABLE TYPE, MSS SP-58 AND MSS SP-69. PROVIDE INSULATION PROTECTION SHIELDS FOR INSULATED PIPING. PROVIDE STEEL SUPPORT RODS.

2.2 INSULATION SHALL BE PER ASTM C534. INSULATION PRODUCTS SHALL BE FIRE RESISTANT PER ASTM E84. INSULATE ALL VALVES AND FITTINGS. ALL DOMESTIC HOT AND COLD WATER PIPING SHALL BE INSULATED WITH ONE PIECE FIBERGLASS INSULATION, WITH HIGH DENSITY, WHITE KRAFT BONDED TO ALUMINUM FOIL, FIBERGLASS REINFORCED ALL PURPOSE JACKET. JOINTS SHALL BE SEALED AND PROTECTIVE FINISH APPLIED TO INSULATION INSTALLED ON EXPOSED PIPING AND PIPING ABOVE CEILINGS. THICKNESS AS RECOMMENDED BY MANUFACTURER.

2.3 PEX DOMESTIC WATER PIPING. INSULATION SHALL BE PER ASTM F876, F877, AND F2023. ABOVEGROUND DOMESTIC WATER DISTRIBUTION PIPING FOR DOMESTIC COLD WATER SYSTEM SHALL BE CROSSLINKED POLYETHYLENE PIPE, AND SHALL INCLUDE THE FOLLOWING:

- A. COLD – EXPANSION PEX COMPRESSION – SLEEVE FITTINGS
- B. PIPE FASTENERS AS APPROVED BY THE MANUFACTURER OF THE PEX PIPING
- C. SUPERVISION AND FIELD ENGINEERING REQUIRED FOR THE COMPLETE AND PROPER FUNCTION OF THE SYSTEM
- D. AWWA – AMERICAN WATER WORKS ASSOCIATION – AWWA C904 – CROSSLINKED POLYETHYLENE (PEX) PRESSURE PIPE, 1/2" THROUGH 3" FOR WATER SERVICE

2.4 SANITARY PIPING SHALL BE PVC MEETING STANDARDS LISTED IN TABLES 702.1 AND 702.2 OF VIRGINIA PLUMBING CODE.

PART 3 – EXECUTION

3.1 COORDINATE WORK CLOSELY WITH ALL OTHER TRADES.

3.2 INSTALL INSULATION AFTER TESTING IS COMPLETE.

3.3 THE EXACT LOCATION OF WHERE AND HOW TO INSTALL NEW PIPING SYSTEMS SHALL BE DETERMINED BY THE CONTRACTOR TO AVOID INTERFERENCE WITH EXISTING AND/OR NEW DUCTWORK, LIGHTING FIXTURES, OTHER PIPING SYSTEMS, ETC.

3.4 THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR, AND BE REQUIRED TO MAKE GOOD AT HIS OWN EXPENSE, ANY AND ALL DAMAGES TO ANY WORK OR MATERIALS IN PLACE ON THE PREMISES, OR INCLUDED IN THIS CONTRACT, DURING THE EXECUTION OF HIS CONTRACT.

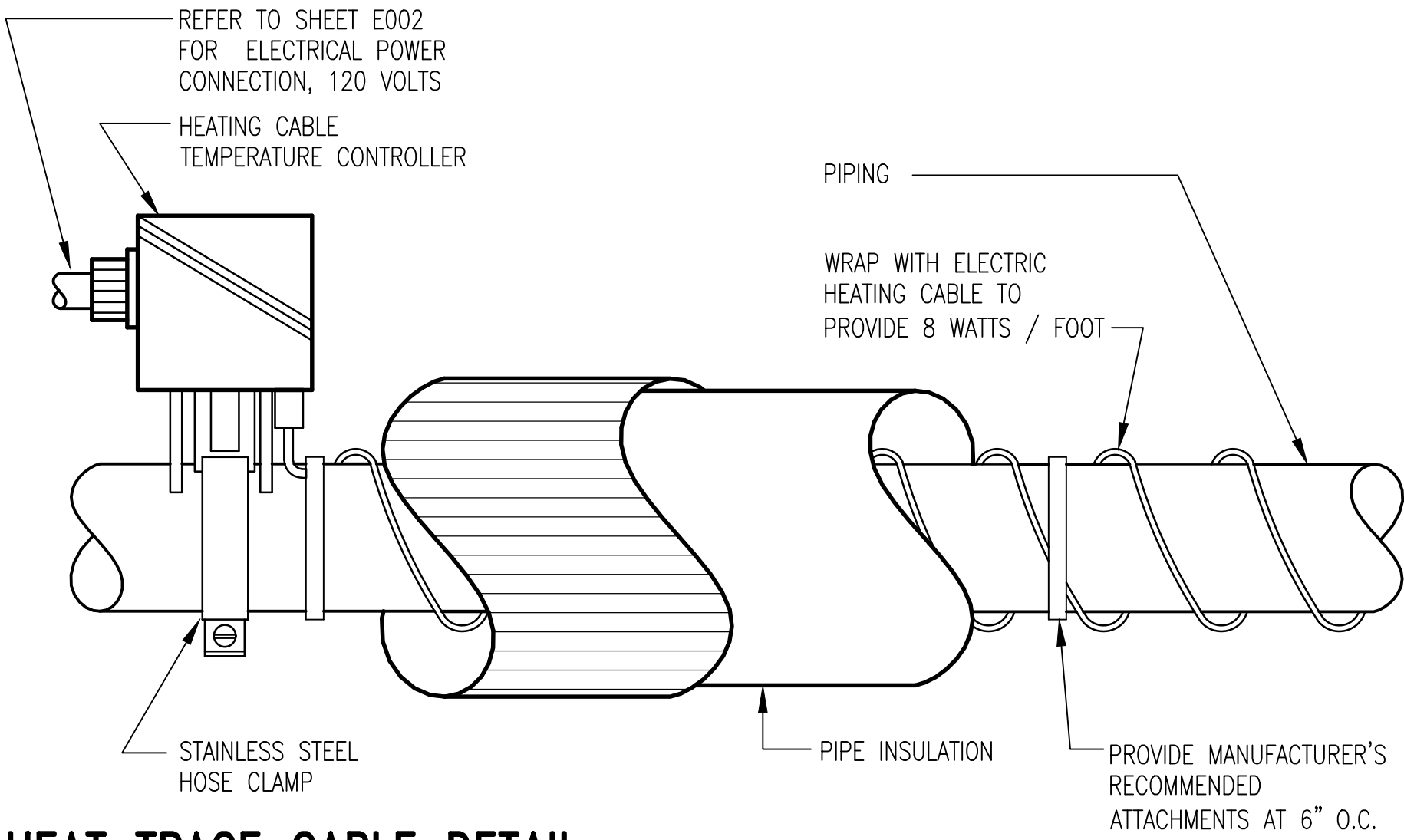
3.5 PROVIDE ALL MATERIALS, TOOLS, LABOR, AND OTHER RELATED ITEMS TO COMPLETE ALL WORK, INCLUDING ROUGH-IN FOR, AND MAKE PLUMBING CONNECTIONS TO ALL NEW EQUIPMENT IN ACCORDANCE WITH THE 2012 VIRGINIA PLUMBING CODE.

3.6 ALL WATER PIPING SHALL BE STERILIZED IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION, AWWA C651, AND AS REQUIRED BY THE LOCAL HEALTH BOARD.

3.7 BEFORE FINAL ACCEPTANCE OF THE WORK, TEST EACH SYSTEM AS IN SERVICE TO DEMONSTRATE COMPLIANCE WITH TESTING AS SPECIFIED IN THE 2012 VIRGINIA PLUMBING CODE.

APPLICABLE CODES:

VIRGINIA UNIFIED STATEWIDE BUILDING CODE – 2012
VIRGINIA BUILDING CODE – 2012
VIRGINIA PLUMBING CODE – 2012
VIRGINIA ENERGY CONSERVATION CODE – 2012



HEAT TRACE CABLE DETAIL

NO SCALE



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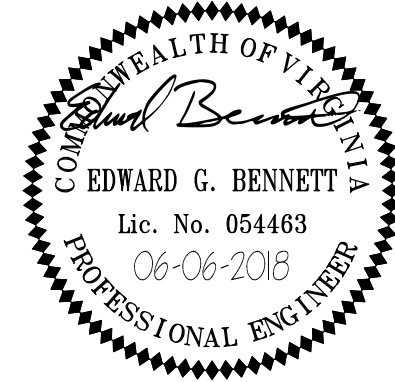
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Key Information

No.:	Revisions	Date
Sheet Title:		
GENERAL NOTES, LEGEND, AND ABBREVIATIONS		
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Issue Date:	6 June, 2018	
Scale:	As Noted	
BJJA Project No.:	18006.01	
IFB No.:	18-6853-5	
Sheet No.:	P001	
Bid Documents		

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EXIST 1 1/2" CW

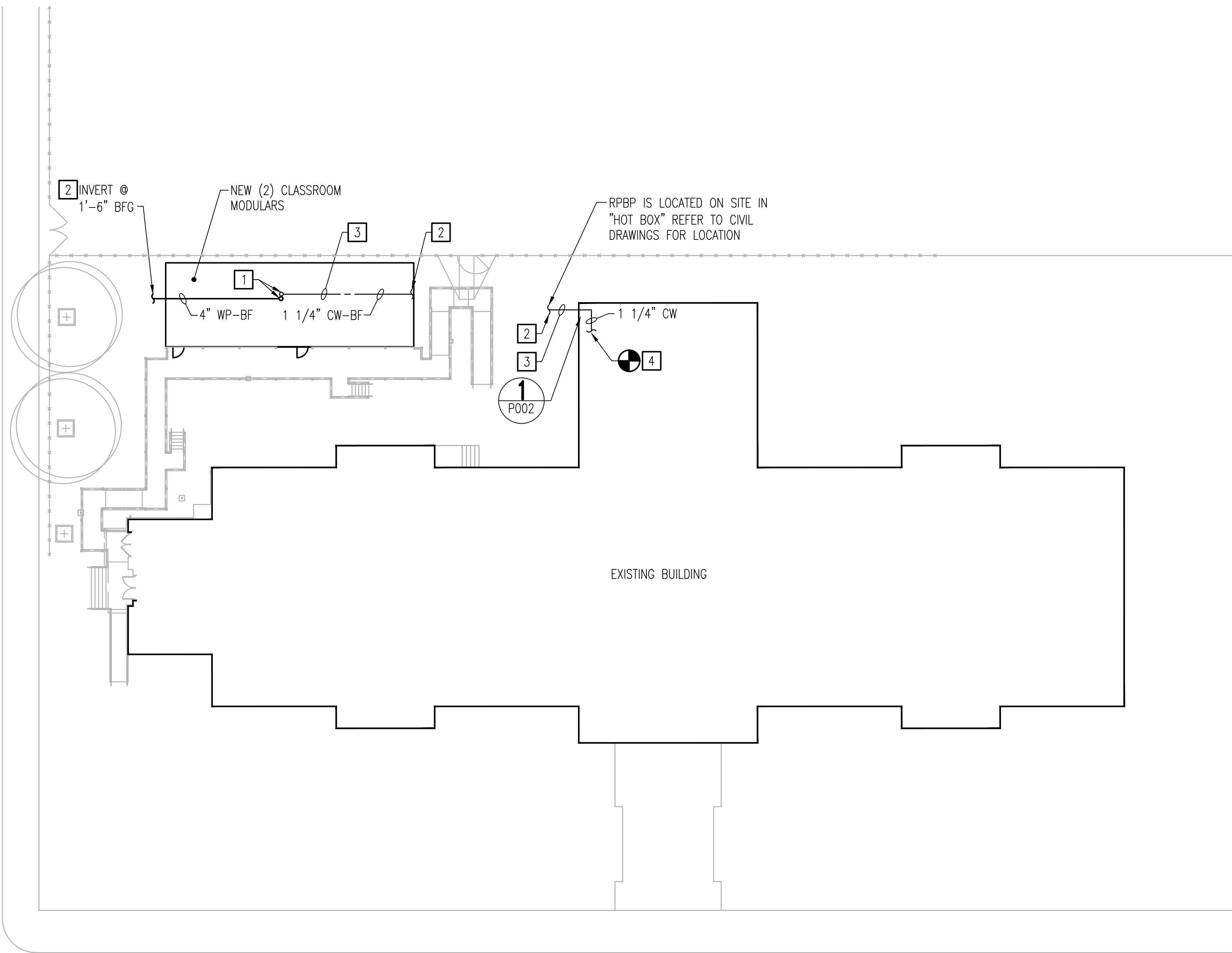


1 EXISTING WATER FOR CONNECTION
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SITE PLAN
SCALE: 1" = 20' - 0"

NOTES THIS SHEET

- 1 FOR PIPE CONTINUATION TO FIXTURES REFER TO MODULAR BUILDING DRAWINGS.
- 2 FOR CW & WP SERVICE PIPE CONTINUATION REFER TO CIVIL DRAWINGS.
- 3 PROVIDE STAINLESS STEEL 14 GAUGE SHROUD TO COMPLETELY ENCLOSE EXPOSED CW MAIN. PROVIDE HEAT TRACE CABLE ON CW PIPING ABOVE GRADE AND BELOW BUILDING. REFER TO DETAIL ON SHEET P001. PROVIDE TRACEABLE WARNING TAPE IN TRENCH WITH NON-METALLIC PIPING. TERMINATE TAPE IN ACCESSIBLE LOCATION.
- 4 CONNECT 1 1/4" CW TO NEAREST MAIN IN STORAGE ROOM.

GRAPHIC SCALE(S)



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No:	Revisions	Date
Sheet Title:		
<div>SITE PLAN</div>		
Drawn By: SO		
Issue Date:		6 June, 2018
Scale:		As Noted
BJJA Project No.:		18006.01
IFB No.:		18-6853-5
Sheet No.:		<div>P002</div>
Bid Documents		



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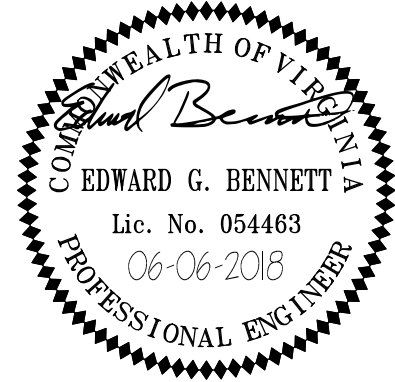
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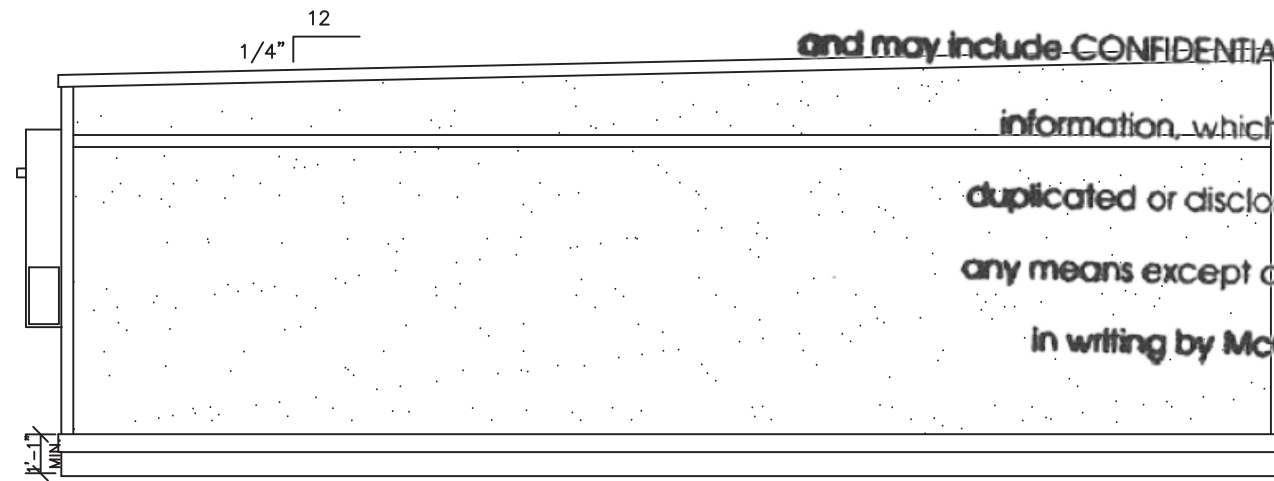
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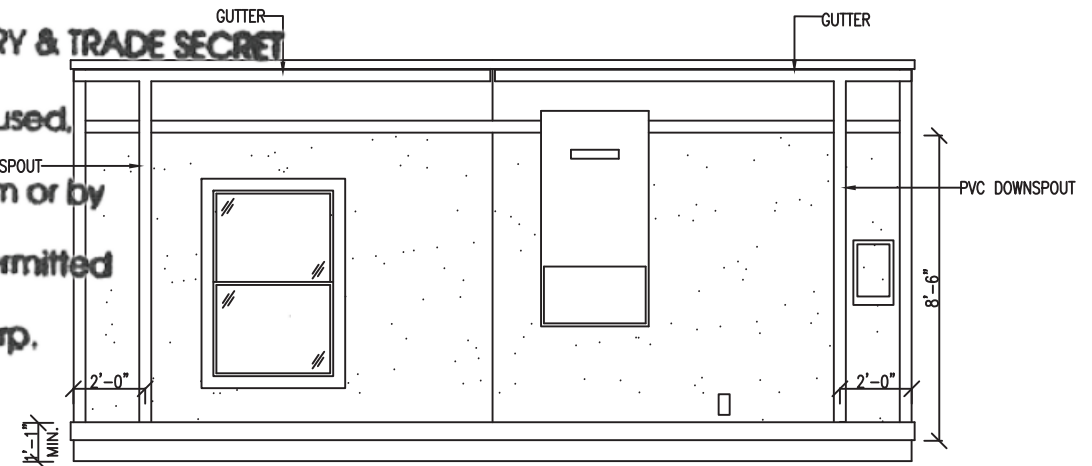
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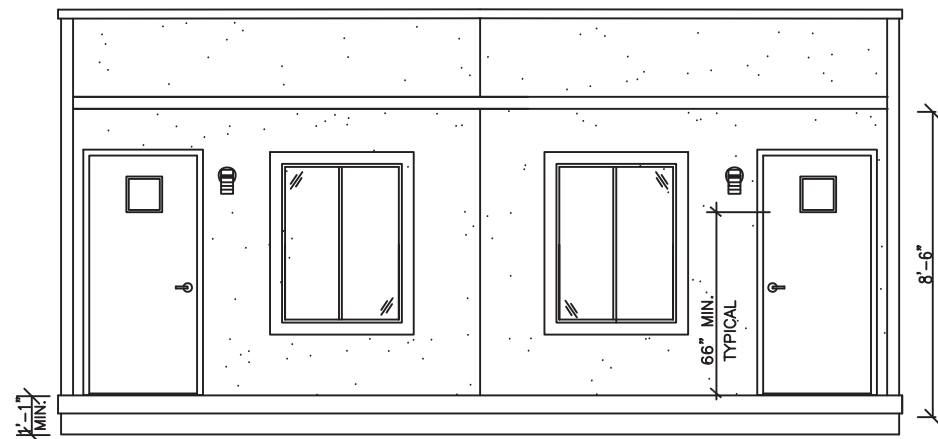
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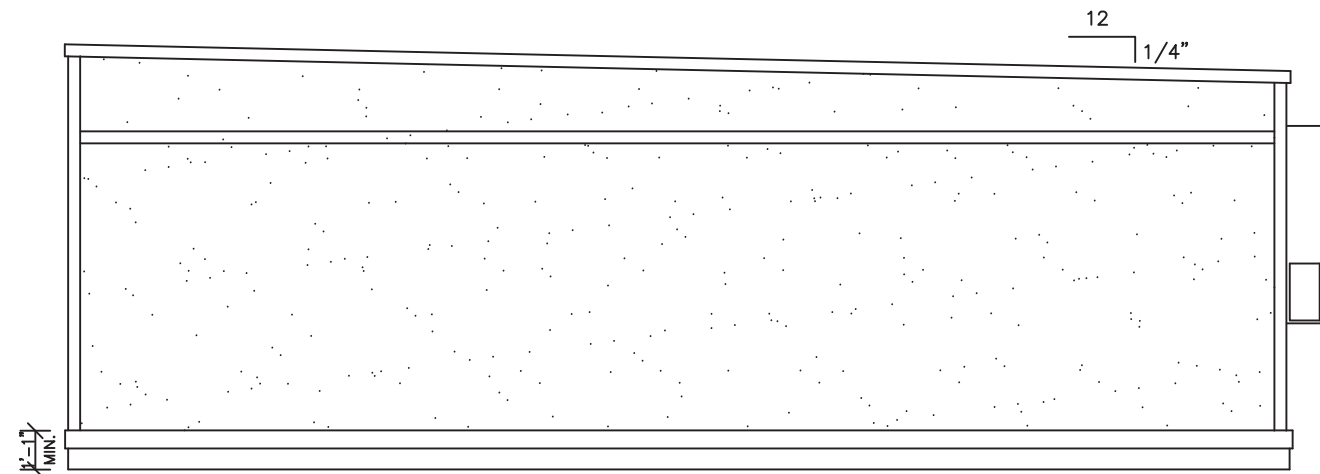


REAR



FRONT

ELEVATIONS 1/4"=1'-0"



RIGHT



R. JOHNSON
APPROVED
03 28 2016

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED
BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER
THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8588
EXPIRATION DATE: 6-6-16

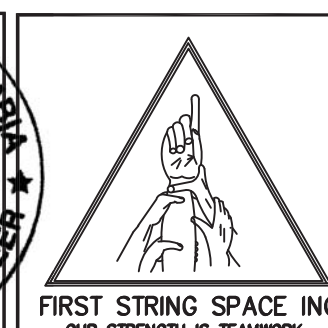
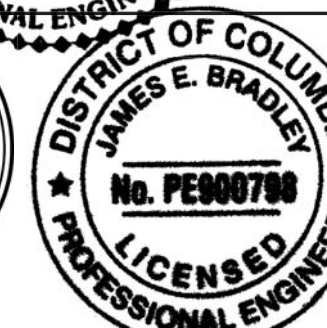
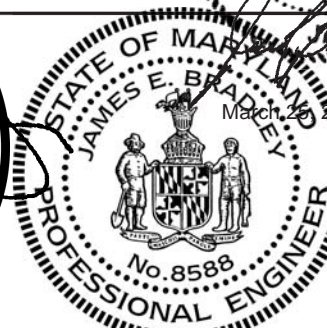
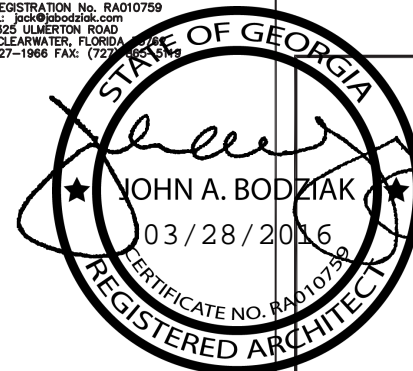
CONSULTING ENGINEER JAMES BRADLEY, P.E. — 212 FOX TRAIL — PARKESBURG, PA. 19365 — (610) 857-2458

ELEVATION NOTES (TYP.)

SEE CROSS SECTION FOR METHOD OF ROOF VENTILATION

- HANDICAP RAMP(S), STAIR(S), AND HANDRAILS ARE TO BE DESIGNED AND SITE INSTALLED BY OTHERS, SUBJECT TO LOCAL JURISDICTION AND APPROVAL.
- FOUNDATION ENCLOSURE (WHEN PROVIDED) MUST HAVE 1 SQUARE FOOT NET VENT AREA PER 1/150th OF THE FLOOR AREA, AND AN 18" x 24" MINIMUM CRAWL SPACE ACCESS, SITE INSTALLED BY OTHERS, SUBJECT TO LOCAL JURISDICTION AND APPROVAL.

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892 RAILROAD AVE. EAST
PEARSON, GEORGIA 31642 (912) 422-6455

DATE: 3-17-16		
SCALE: 1/4"=1'-0"		
CODES: SEE NOTES		
STATES: GA, VA, MD, NC.	REVISIONS:	BY: J.B.
REFERENCE: 4755-57		
FSS4755-57 A/B 23'-4"x34'-0"	SHEET	5 OF 7
ELEVATIONS	DESTINATION: DISTRICT OF COLUMBIA	