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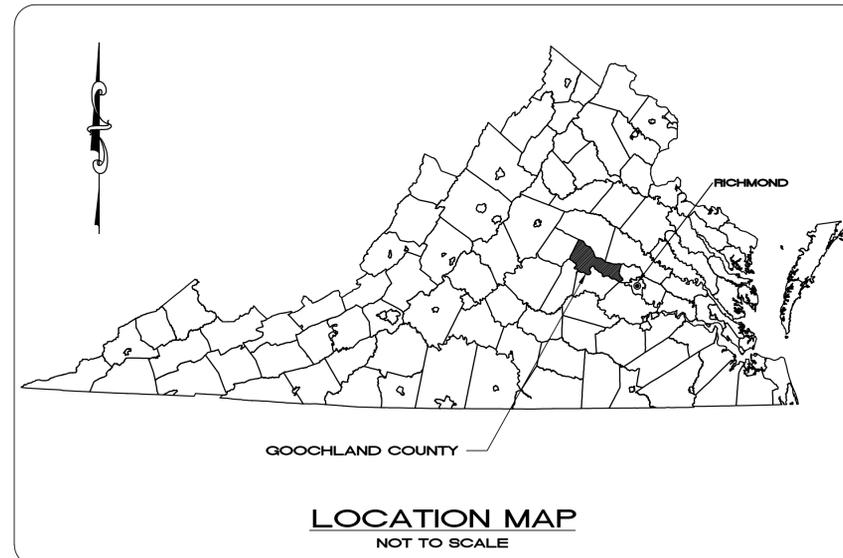
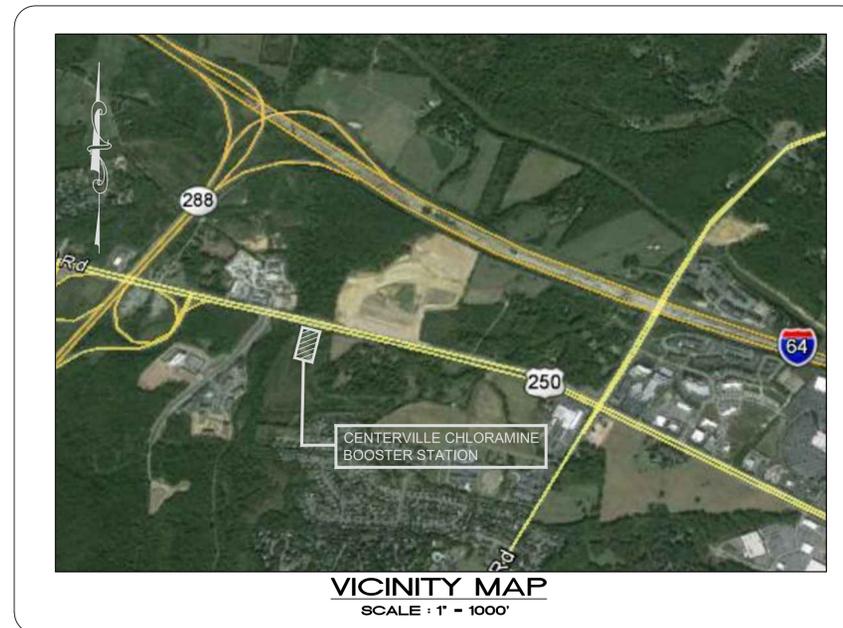
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CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION

GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES



COUNTY OF GOOCHLAND DEPARTMENT OF PUBLIC UTILITIES WATER AND SEWER NOTES

1. ALL CONSTRUCTION, MATERIALS AND INSTALLATION SHALL CONFORM TO THE LATEST EDITION OF STANDARDS AND SPECIFICATIONS, DEPARTMENT OF PUBLIC UTILITIES, GOOCHLAND COUNTY, VIRGINIA.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE DEPARTMENT OF PUBLIC UTILITIES AND SCHEDULING A PRE-CONSTRUCTION MEETING AT LEAST 48 HOURS PRIOR TO STARTING ANY WORK ON THIS PROJECT. ALL WORK SHALL BE SUBJECT TO INSPECTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.
3. THE CONTRACTOR SHALL INCLUDE IN APPLICABLE BID PRICE, THE COST OF LOCATING AND UNCOVERING ALL SEWER MANHOLES AND VALVE BOXES AFTER SURFACE TREATMENT OF ROADS AND TO ADJUST THEM TO THE FINAL ROAD GRADES, IF NECESSARY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR CLEANING OUT SEWER MAINS FOR FINAL INSPECTION, IF NECESSARY.
4. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF EXISTING UTILITIES ACROSS OR ALONG THE LINE OF THE PROPOSED WORK IS NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN IS ONLY APPROXIMATELY CORRECT. THE CONTRACTOR SHALL, ON HIS OWN INITIATIVE AND AT NO EXTRA COST, LOCATE 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 OBSTRUCTIONS OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES.
5. CONTRACTOR SHALL CALL "MISS UTILITY" TOLL FREE AT 1-800-552-7001 PRIOR TO CONSTRUCTION.
6. DATUM FOR ALL ELEVATIONS SHOWN IS NATIONAL GEODETIC SURVEY.
7. MINIMUM COVER OVER TOP OF WATER PIPE SHALL BE 3.50 FEET.
8. SERVICE SADDLES MUST BE USED ON ALL WATER CONNECTIONS TO PVC MAINS.
9. FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING D-200.
10. ENGINEER SHALL CERTIFY THAT UNPAVED STREETS ARE TO SUBGRADE PRIOR TO CONTRACTOR INSTALLING WATER SYSTEM. CURB AND GUTTER, IF REQUIRED, SHALL BE INSTALLED PRIOR TO ACCEPTANCE OF WATER SYSTEM BY COUNTY.
11. NO STRUCTURES OR PLANTING OF TREES SHALL BE PERMITTED IN UTILITY EASEMENTS.
12. VANDALPROOF COVERS SHALL BE USED ON ALL MANHOLES IN EASEMENTS. WATERTIGHT COVERS SHALL BE USED IN FLOOD PLAINS. THE MANHOLE COVERS SHALL BE IN ACCORDANCE WITH STANDARD DRAWINGS D-111 AND D-112.
13. FINAL ACCEPTANCE BY COUNTY SHALL NOT BE MADE UNTIL ALL WORK SHOWN ON APPROVED UTILITY PLANS IS COMPLETED INCLUDING PAVING, GRADING AND ALL REQUIRED ADJUSTMENTS.
14. A WETLANDS PERMIT MAY BE REQUIRED FROM THE U.S. ARMY CORPS OF ENGINEERS FOR THIS PROJECT. FOR INFORMATION CONCERNING SUCH REQUIREMENT, CONTACT THE CORPS AT (804) 462-5382.
15. THE DEPARTMENT WILL INSPECT ALL WATER AND SANITARY SEWER MAINS, CONNECTIONS AND APPURTENANCES THERETO, AS SHOWN ON THE APPROVED UTILITY PLANS, LOCATED WITHIN DEDICATED EASEMENTS AND/OR PUBLIC RIGHTS-OF-WAY. ALL OTHER LINES TO BE INSTALLED ON SITE TO SERVE ROOF DRAINAGE, WATER SUPPLY AND SANITARY SEWERS SHALL BE APPROVED BY THE DEPARTMENT OF BUILDING INSPECTIONS PRIOR TO INSTALLATION AND SHALL BE INSPECTED BY BUILDING INSPECTIONS BEFORE COVERING.
16. CONCURRENT INSPECTIONS BY BUILDING INSPECTIONS AND COUNTY ENGINEER WILL BE PERFORMED FOR THE FOLLOWING: MAINLINE BACKFLOW PREVENTERS; MONITORING MANHOLES; GREASE TRAPS; EXCLUSION METERS; IRRIGATION METERS. COUNTY ENGINEER WILL INSPECT TO ENSURE THAT THE PROPER TYPE FACILITY, AS SHOWN ON THE APPROVED UTILITY PLANS, HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH DPU STANDARDS.



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CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description
REVISIONS			

DRAWN BY: SMK
 APPROVED BY: BJH
 CHECKED BY: RNK
 DATE: JULY 2020
 TITLE: _____

COVER SHEET

PROJECT NO. 50109630

SUBMITTAL		SET NUMBER
<input type="checkbox"/> PRELIMINARY	<input type="checkbox"/> CONSTRUCTION	
<input type="checkbox"/> APPROVAL	<input type="checkbox"/> REVISION	
<input checked="" type="checkbox"/> BIDDING	<input type="checkbox"/> RECORD	

G1.0

**CENTERVILLE CHLORAMINE
BOOSTER STATION EXPANSION**

**GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES**

GOOCHLAND COUNTY, VIRGINIA

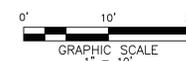
- NOTES:**
1. REPLACE PAVEMENT DAMAGED DURING INSTALLATION PER VDOT STANDARDS AND ASPHALT DRIVEWAY REPAIR DETAIL. MATCH EXISTING PAVEMENT SECTIONS AND SAWCUT PAVEMENT AT ALL TRANSITIONS BETWEEN NEW AND EXISTING PAVEMENT. REFER TO C4.0 FOR PAVEMENT DETAIL.
 2. THE NEW CONCRETE SIDEWALK WILL BE POURED DIRECTLY AGAINST THE EXISTING SAWCUT ASPHALT. THERE WILL NOT BE A CRACK/GAP BETWEEN THE TWO SURFACES AND A SMOOTH TRANSITION WILL BE PROVIDED.
 3. ALL PIPING SHALL BE INSTALLED WITH A MINIMUM OF 3'-6" OF COVER.
 4. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND INVERTS OF ALL EXISTING PIPING AND NOTIFY THE ENGINEER IF THERE ARE DISCREPANCIES.
 5. CONTRACTOR SHALL ROUTE PROPOSED PIPING AROUND EXISTING LIGHT POLES, ELECTRICAL CONDUIT/DUCTBANKS, AND PIPING.
 6. ROUTE ELECTRIC DUCTBANK AROUND OTHER UTILITIES AS REQUIRED TO FACILITATE CONSTRUCTION.
 7. CONNECT TO UTILITY SERVICE LINES PER SERVICE PROVIDER'S RECOMMENDATIONS.
 8. CONTRACTOR SHALL REPAIR ANY EXISTING STRUCTURES DAMAGED DURING CONSTRUCTION.
 9. ALL MANHOLE TOP ELEVATIONS SHOWN ARE APPROXIMATE. MANHOLE TOPS SHALL BE SLOPED WITH PAVEMENT IN PAVED AREAS AND MINIMUM 6" ABOVE FINISHED GRADE IN NON-PAVED AREAS.
 10. COORDINATE THE EXACT LOCATION OF CHEMICAL INJECTION POINTS WITH OWNER AND ENGINEER DURING CONSTRUCTION.
 11. ALL CHEMICAL TUBING CARRIER PIPE SHALL BE ELECTRICAL CONDUIT AND SHALL BE INSTALLED WITH SWEEPS OF A MINIMUM RADIUS OF 2 FEET.
 12. ALL PIPE AND CONDUITS INTO THE BUILDING SHALL PASS THROUGH THE FOUNDATION WALLS. NO PIPE OR CONDUIT SHALL BE INSTALLED UNDER THE BUILDING FOOTINGS.
 13. METER IS ABB MAGMASTER (MODEL WASTEWATER) WITH TRANSMITTER & TOTALIZER. THE LINER MUST BE MADE OF TEFLON. A MANUFACTURER'S REPRESENTATIVE SHALL CERTIFY INSTALLATION OF THE METER. SUBMIT A CALIBRATION CERTIFICATE FOR THE INSTALLED METER FROM THE MANUFACTURER. MOUNT THE TOTALIZER IN A LOCKABLE NEMA 4 STEEL BOX MOUNTED ON THE BACK OF THE BUILDING. THE BOX BOTTOM SHALL BE 42" ABOVE FINISHED GROUND. THE TOTALIZER SHALL HAVE AN LED READOUT WITH AN 8-DIGIT FLOATING DECIMAL. THIS READOUT SHALL BE IN CCF. THE MANUFACTURER SHALL RECALIBRATE THE METER ANNUALLY AND A REPORT SHALL BE PROVIDED TO THE COUNTY OF HENRICO. THE TOTALIZER CLOSURE SHALL BE DOUBLE LOCKED. ACTUATION OF EITHER LOCK SHALL OPEN THE ENCLOSURE. ONE LOCK SHALL BE KEYPED FOR HENRICO COUNTY DPU KEY OPERATION AND ONE FOR GOOCHLAND COUNTY DPU OPERATION.

KEY PLAN

HUNTON PARK LAND PARTNERS LC
INST. 130004309
TAX PARCEL 59-3-2-FP7



SCALE



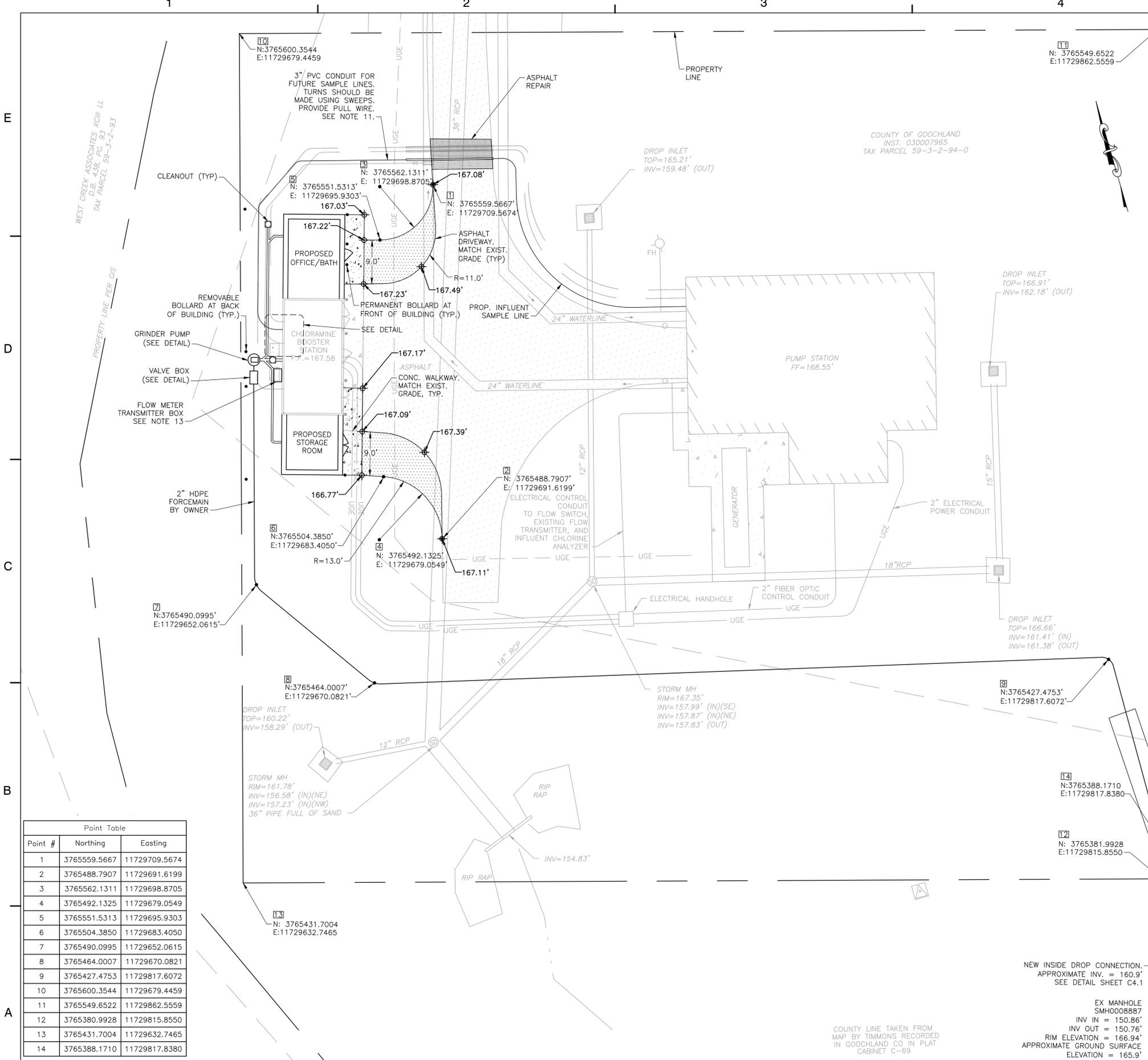
No.	DATE	BY	Description
REVISIONS			

DRAWN BY: SMK
APPROVED BY: BJH
CHECKED BY: RNK
DATE: JULY 2020

TITLE: **CHLORAMINE BOOSTER STATION SITE LAYOUT AND UTILITY PLAN**

PROJECT NO. 50109630

C2.0



Point Table

Point #	Northing	Easting
1	3765559.5667	11729709.5674
2	3765488.7907	11729691.6199
3	3765562.1311	11729698.8705
4	3765492.1325	11729679.0549
5	3765551.5313	11729695.9303
6	3765504.3850	11729683.4050
7	3765490.0995	11729652.0615
8	3765464.0007	11729670.0821
9	3765427.4753	11729817.6072
10	3765600.3544	11729679.4459
11	3765549.6522	11729862.5559
12	3765380.9928	11729815.8550
13	3765431.7004	11729632.7465
14	3765388.1710	11729817.8380

- NOTE:**
1. DIMENSIONS ADDED FROM PROPOSED BUILDING TO EXISTING PROPERTY LINES, EASEMENTS, AND STRUCTURES PER COUNTY COMMENTS.
 2. EXISTING GROUND AND CLEANOUT INVERT ELEVATION DERIVED FROM GOOCHLAND COUNTY GIS CONTOURS AND TIMMONS PLANS TITLED "WESTERN AREA TRUNK SEWER", DATED DECEMBER 20, 2013.

SITE LAYOUT PLAN
SCALE: 1" = 10'

COUNTY LINE TAKEN FROM MAP BY TIMMONS RECORDED IN GOOCHLAND CO IN PLAT CABINET C-69

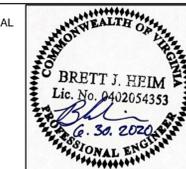
NEW INSIDE DROP CONNECTION. APPROXIMATE INV. = 160.9' SEE DETAIL SHEET C4.1

EX MANHOLE SMH0008887
INV IN = 150.86'
INV OUT = 150.76'
RIM ELEVATION = 166.94'
APPROXIMATE GROUND SURFACE ELEVATION = 165.9'
N: 313811.4208
E: 977494.4167

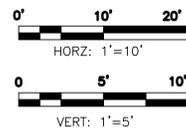
**CENTERVILLE CHLORAMINE
 BOOSTER STATION EXPANSION**
**GOOCHLAND COUNTY
 DEPARTMENT OF PUBLIC UTILITIES**
 GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

SEAL



SCALE



No.	DATE	BY	Description
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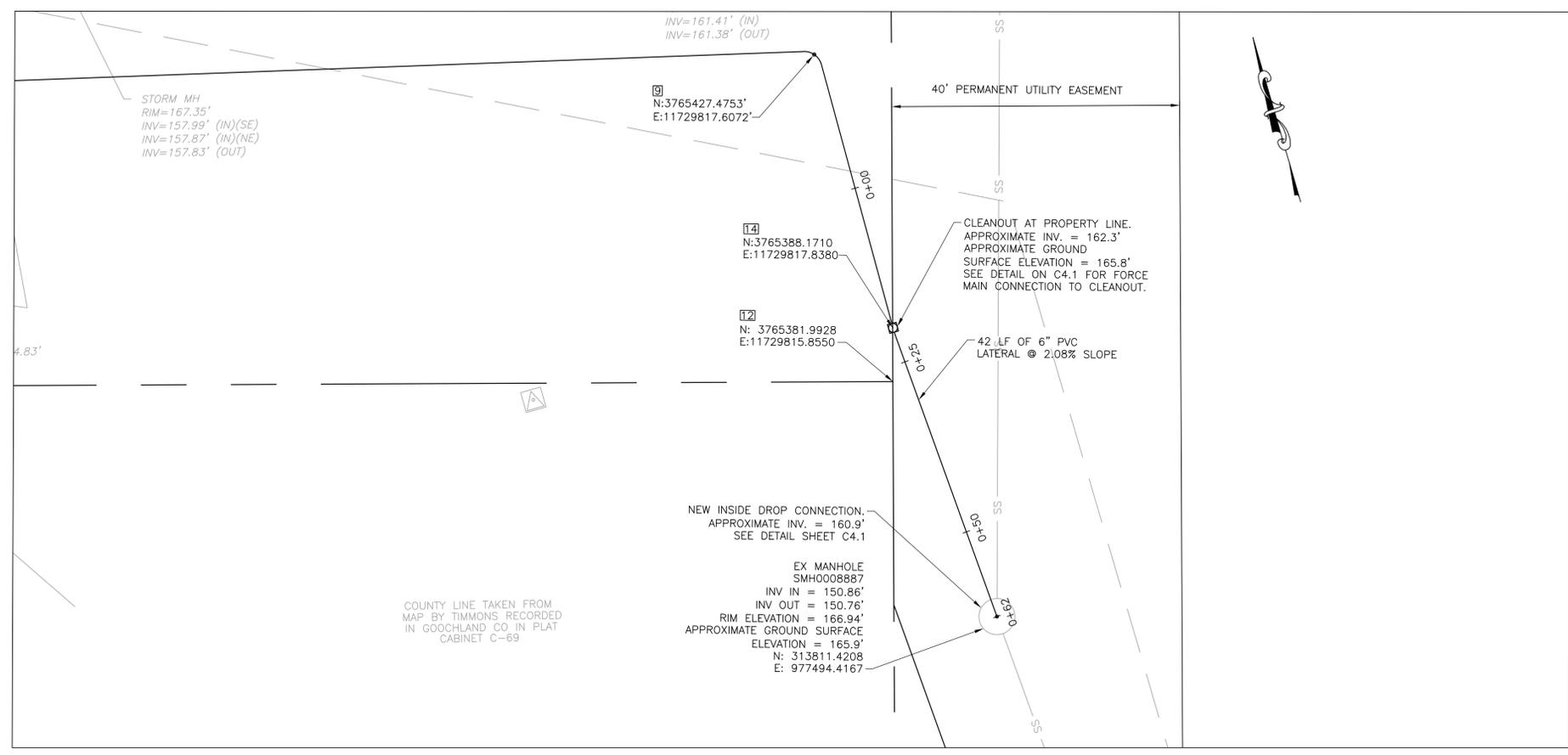
REVISIONS

DRAWN BY	SMK
APPROVED BY	BJH
CHECKED BY	RNK
DATE	JULY 2020

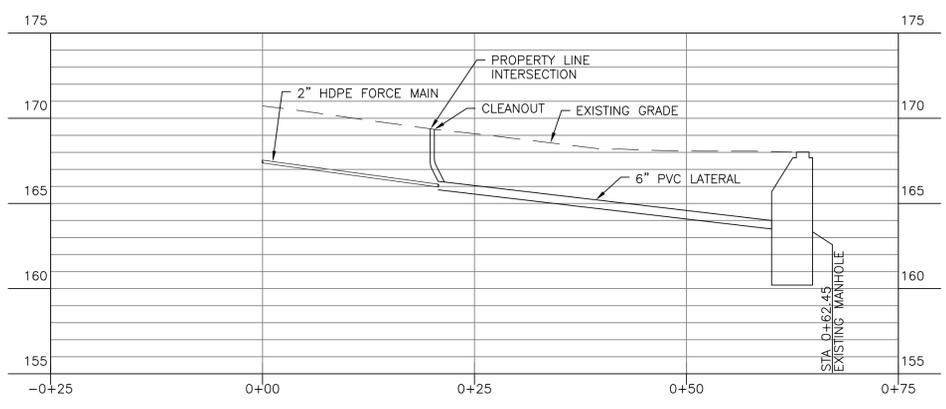
TITLE
**CHLORAMINE
 BOOSTER STATION
 FORCE MAIN
 PROFILE**

PROJECT NO. 50109630

C2.1



PROFILE



CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
 GOOCHLAND COUNTY, VIRGINIA

EROSION & SEDIMENT CONTROL LEGEND

SOILS LEGEND

-  INLET PROTECTION
-  SILT FENCE
- LIMITS OF DISTURBANCE
-  TEMPORARY SEEDING
-  PERMANENT SEEDING
-  MULCH
-  SOIL STABILIZATION BLANKET

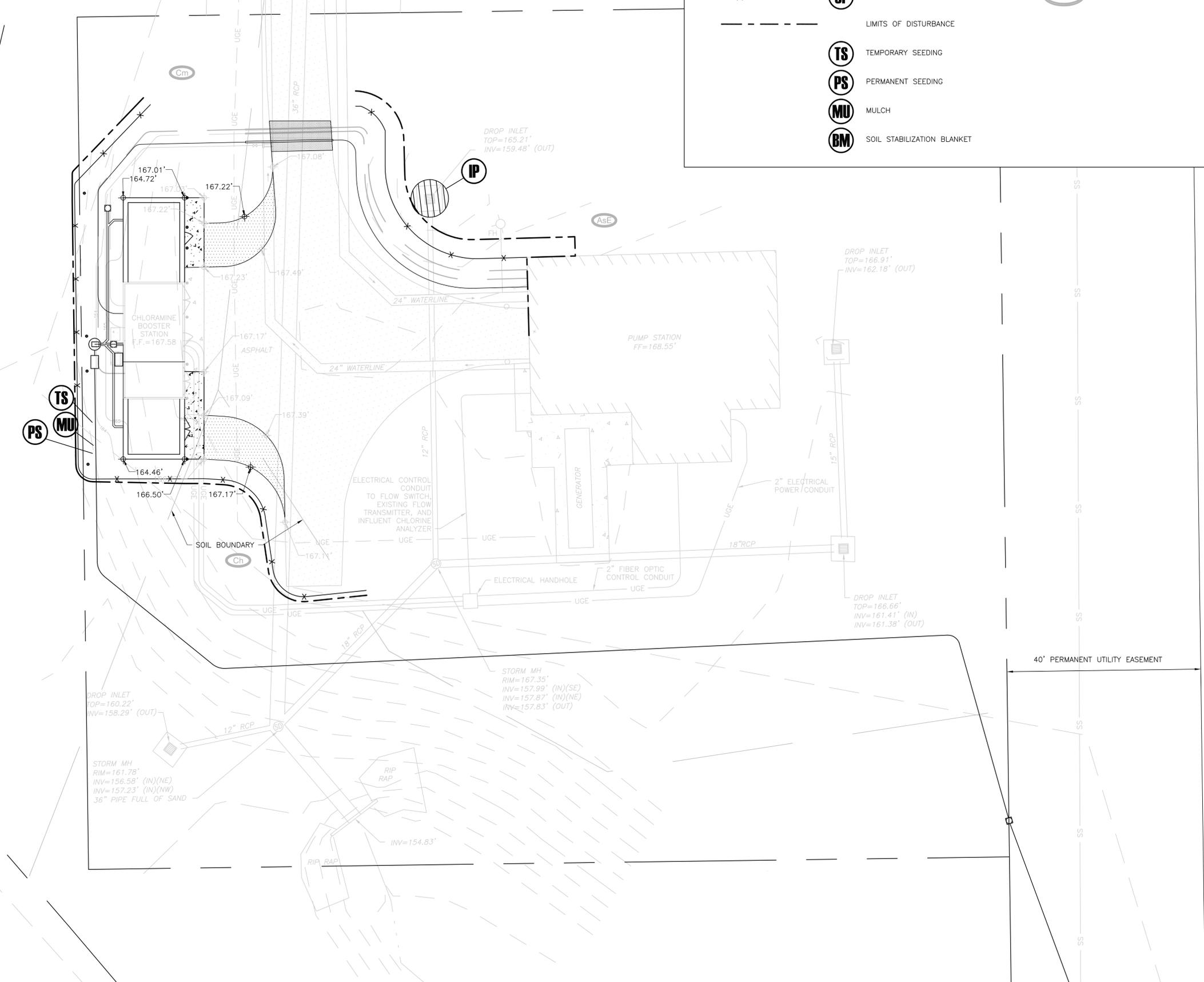
- SOIL BOUNDARY
-  SOIL TYPE



E
D
C
B
A

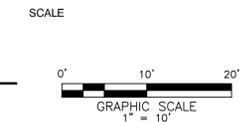
WEST CREEK ASSOCIATES ARCH LL
 D/B/E, 438, FC, 93
 TAX PARCEL 59-3-2-83

PROPERTY LINE PER GIS



HUNTON PARK LAND
 INST. 13000
 TAX PARCEL 59-

KEY PLAN



No.	DATE	BY	Description
REVISIONS			

DRAWN BY: SMK
 APPROVED BY: BJH
 CHECKED BY: RNK
 DATE: JULY 2020

GRADING, EROSION AND SEDIMENT CONTROL PLAN

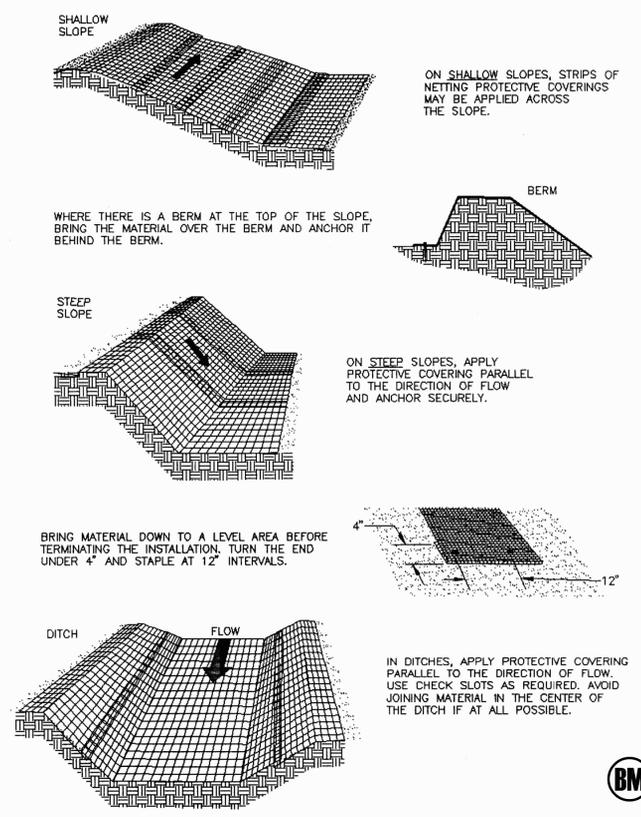
PROJECT NO. 50109630

C3.0

GRADING AND EROSION & SEDIMENT CONTROL PLAN
 SCALE: 1" = 10'

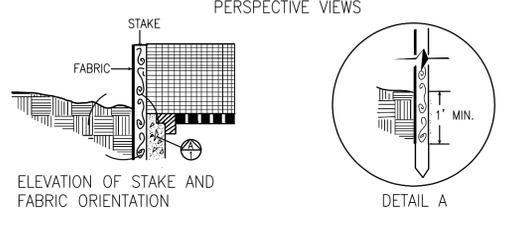
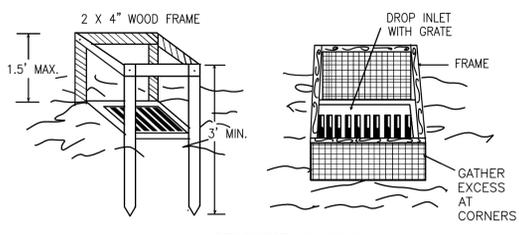
NOTE:
 1. CONTRACTOR SHALL PROVIDE SOIL STABILIZATION BLANKET FOR ALL SLOPES GREATER THAN 3:1.

TYPICAL ORIENTATION OF TREATMENT - 1 (SOIL STABILIZATION BLANKET)



Source: Adapted from Ludlow Products Brochure

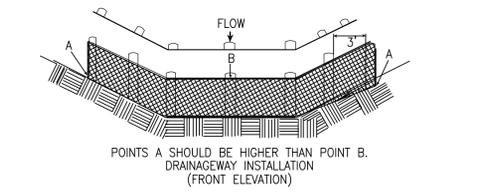
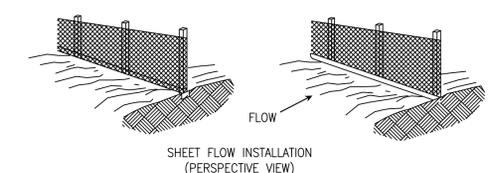
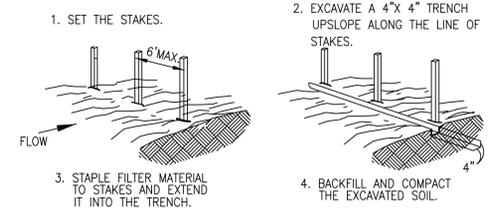
Plate 3.36-1



SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

IP SILT FENCE DROP INLET PROTECTION

SOURCE: N.C. EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, 1988
PLATE 3.07-1



SF SILT FENCE

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)
N.T.S. Plate 3.05-2

TABLE 3.31-C
TEMPORARY SEEDING PLANT MATERIALS, SEEDING RATES, AND DATES

SPECIES	SEEDING RATE		NORTH ^a				SOUTH ^b				PLANT CHARACTERISTICS
	Acres	1000 ft ²	3/1 to 4/30	5/1 to 8/15	8/15 to 11/1	2/15 to 4/30	5/1 to 9/1	9/1 to 11/15			
OATS (Avena sativa)	3 lbs. (up to 100 lbs., not less than 50 lbs.)	2 lbs.	X	-	-	X	-	-		Use spring varieties (e.g., Noble).	
RYE ^c (Secale cereale)	2 lbs. (up to 110 lbs., not less than 50 lbs.)	2.5 lbs.	X	-	X	X	-	X		Use for late fall seedings, winter cover. Tolerates cold and low moisture.	
GERMAN MILLET (Setaria italica)	50 lbs.	approx. 1 lb.	-	X	-	-	X	-		Warm-season annual. Dies at first frost. May be added to summer mixes.	
ANNUAL RYEGRASS ^d (Lolium multi-florum)	60 lbs.	1 1/4 lbs.	X	-	X	X	-	X		May be added in mixes. Will mow out of most stands.	
WEEPING LOVEGRASS (Eragrostis ciliaris)	15 lbs.	5/8 oz.	-	X	-	-	X	-		Warm-season perennial. May bleach. Tolerates hot, dry slopes and acid, infertile soils. May be added to mixes.	
KOREAN LESPEDEZA ^e (Lespedeza stipularia)	25 lbs.	approx. 1 1/4 lbs.	X	X	-	X	X	-		Warm season annual legume. Tolerates acid soils. May be added to mixes.	

^a Northern Piedmont and Mountain region. See Plates 3.22-1 and 3.22-2.
^b Southern Piedmont and Coastal Plain.
^c May be used as a cover crop with spring seeding.
^d May be used as a cover crop with fall seeding.
^e May be planted between these dates.
^f May not be planted between these dates.

TS TEMPORARY SEEDING SPECIFICATIONS FOR ALL REGIONS

MULCHES	RATES		NOTES
	PER ACRE	PER 1,000 sq. ft.	
STRAW OR HAY	1 1/2-2 TONS (MINIMUM 2 TONS FOR WINTER COVER)	70-90 lbs.	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED. SPREAD WITH MULCH BLOWER OR BY HAND.
FIBER MULCH	MINIMUM 1,500 lbs.	35 lbs.	DO NOT USE AS MULCH FOR WINTER COVER OR DURING HOT, DRY PERIODS.* APPLY AS SLURRY.
CORN STALKS	4-6 TONS	185-275 lbs.	CUT OR SHREDDED IN 4-6" LENGTHS. AIR DRIED. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER OR BY HAND.
WOOD CHIPS	4-6 TONS	185-275 lbs.	FREE OF COARSE MATTER. AIR-DRIED. TREAT WITH 12 lbs. NITROGEN PER TON. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER, OR BY HAND.
BARK CHIPS OR SHREDDED BARK	50-70 cu. yds.	1-2 cu. yds.	FREE OF COARSE MATTER. AIR-DRIED. TREAT WITH 12 lbs. NITROGEN PER TON. DO NOT USE IN FINE TURF AREAS. APPLY WITH MULCH BLOWER, CHIP HANDLER, OR BY HAND.

* WHEN FIBER MULCH IS THE ONLY AVAILABLE MULCH DURING PERIODS WHEN STRAW SHOULD BE USED, APPLY AT A MINIMUM RATE OF 2,000 lbs./ac. OR 45 lbs./1,000 sq. ft.

MU ORGANIC MULCH MATERIALS AND APPLICATION RATES

SOURCE: VA. DSWC TABLE 3.35-A

LAND USE	SEED ¹	
	SPECIES	APPLICATION PER ACRE
MINIMUM CARE LAWN (COMMERCIAL OR RESIDENTIAL)	TALL FESCUE ¹ PERENNIAL RYEGRASS KENTUCKY BLUEGRASS ¹	95-100% 0-5% 0-5% TOTAL: 175-200 LBS.
HIGH-MAINTENANCE LAWN	TALL FESCUE ¹	TOTAL: 200-250 LBS.
GENERAL SLOPE (3:1 OR LESS)	TALL FESCUE RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP	128 LBS. 2 LBS. TOTAL: 150 LBS.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	TALL FESCUE RED TOP GRASS OR CREEPING RED FESCUE ² SEASONAL NURSE CROP CROWNVELTCH ³	128 LBS. 2 LBS. 20 LBS. TOTAL: 150 LBS.

1-WHEN SELECTING VARIETIES OF TURFGRASS, USE THE VIRGINIA CROP IMPROVEMENT ASSOCIATION (VCIA) RECOMMENDED TURFGRASS VARIETY LIST. QUALITY SEED WILL BEAR A LABEL INDICATING THAT THEY ARE APPROVED BY VCIA. A CURRENT TURFGRASS VARIETY LIST IS AVAILABLE AT THE LOCAL COUNTY EXTENSION OFFICE OR THROUGH VCIA AT 804.746.4884 OR AT <http://sudan.cses.vt.edu/html/Turf/turf/publications/publications2.html>

2-USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

FEBRUARY 16 - APRIL 30..... ANNUAL RYE
MAY 1 - AUGUST 15..... FOXTAIL MILLET
AUGUST 16 - OCTOBER 31..... ANNUAL RYE
NOVEMBER 1 - FEBRUARY 15..... WINTER RYE

3-SUBSTITUTE SERICEA LESPEDEZA FOR CROWNVELTCH EAST OF FARMVILLE, VA (MAY THROUGH SEPTEMBER USE HULLED SEED, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED, INCREASE RATE TO 30 LBS./ACRE. IF WEEPING LOVEGRASS IS USED, INCLUDE IN ANY SLOPE OR LOW MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS, INCREASE TO 30-40.

FERTILIZER & LIME

- APPLY 10-20-10 FERTILIZER AT A RATE OF 1000 lbs./acre (OR 23 lbs./1,000 sq. ft.)
- LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 TO 6 INCHES OF THE SOIL BY DISCING OR OTHER MEANS WHENEVER POSSIBLE.

NOTE:
1.) A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL pH OF SITE.
2.) WHEN APPLYING SLOWLY AVAILABLE NITROGEN USE RATES AVAILABLE IN EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES AT: <http://www.dcr.state.va.us/sw/e&s.htm#pubs>

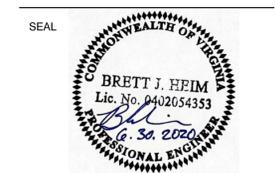
PS PERMANENT SEEDING SPECIFICATIONS FOR PIEDMONT AREA

TABLE 3.32-D (REVISED JUNE 2003)

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CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
GOOCHLAND COUNTY, VIRGINIA

KEY PLAN



SCALE

No.	DATE	BY	Description

REVISIONS
DRAWN BY: SMK
APPROVED BY: BJH
CHECKED BY: RNK
DATE: JULY 2020

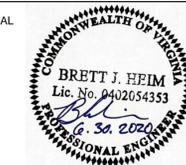
TITLE

EROSION AND SEDIMENT CONTROL DETAILS

PROJECT NO. 50109630

KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY SMK

APPROVED BY BJH

CHECKED BY RNK

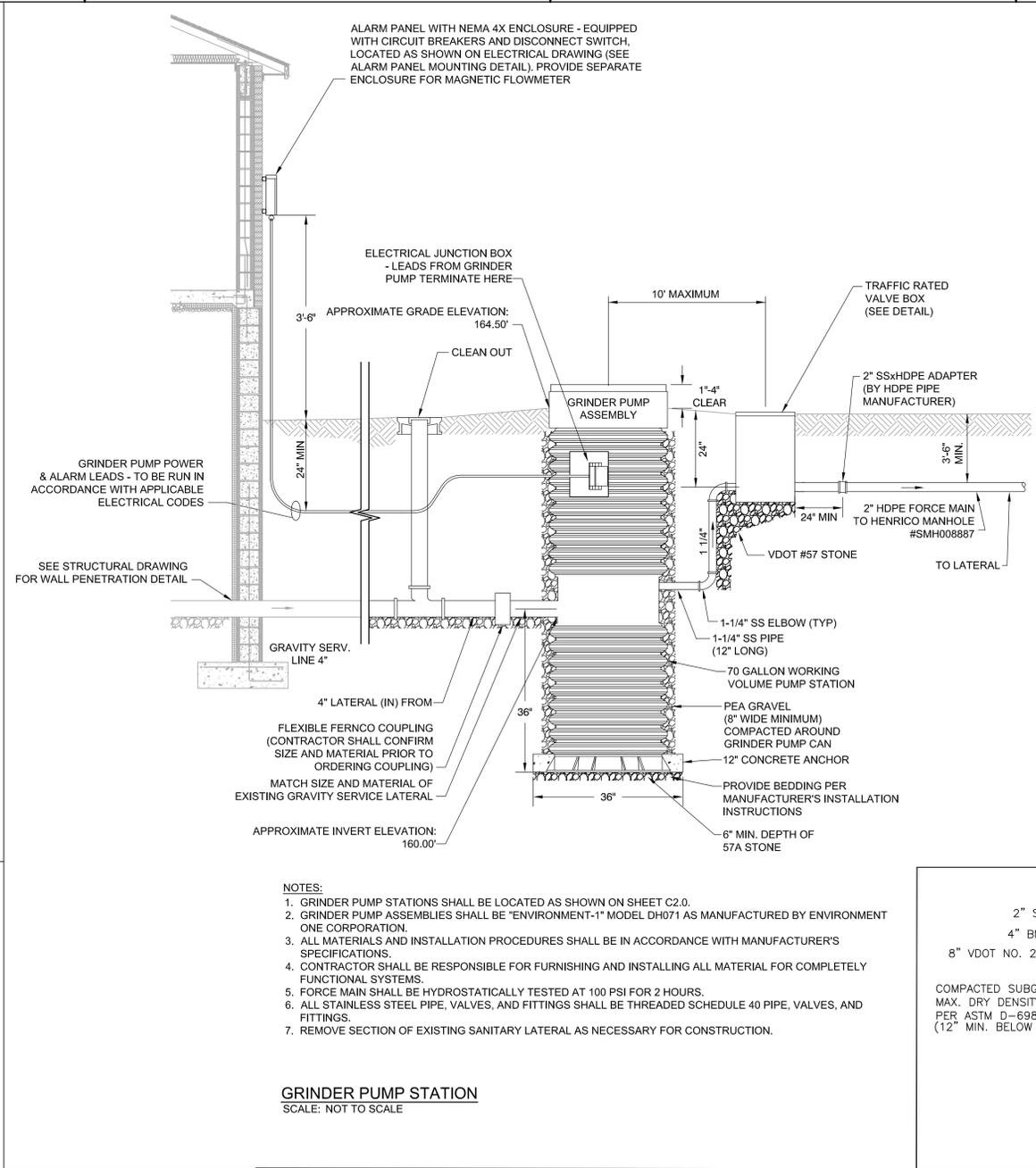
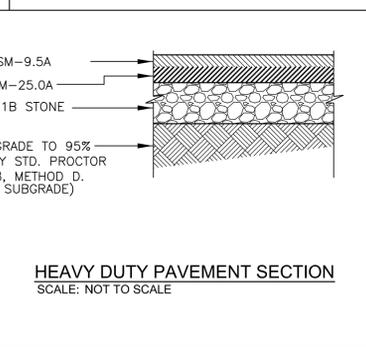
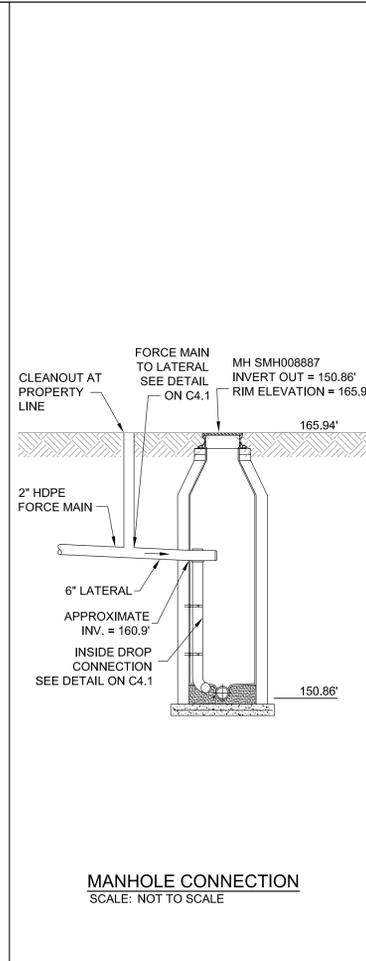
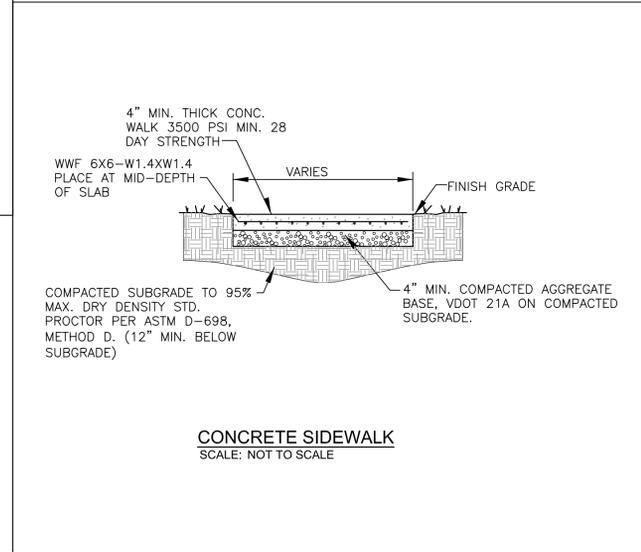
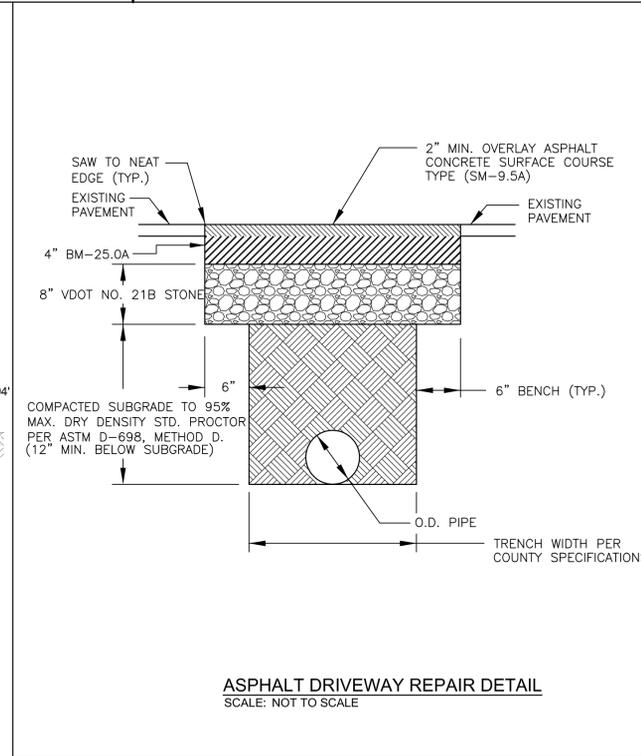
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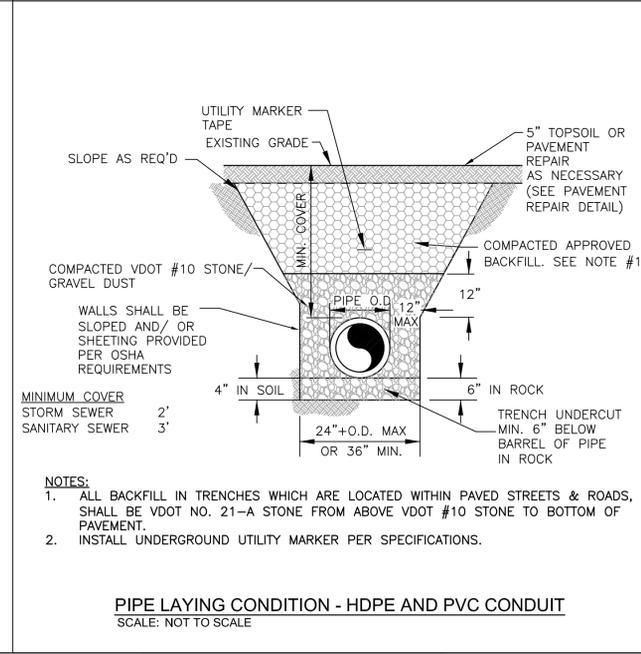
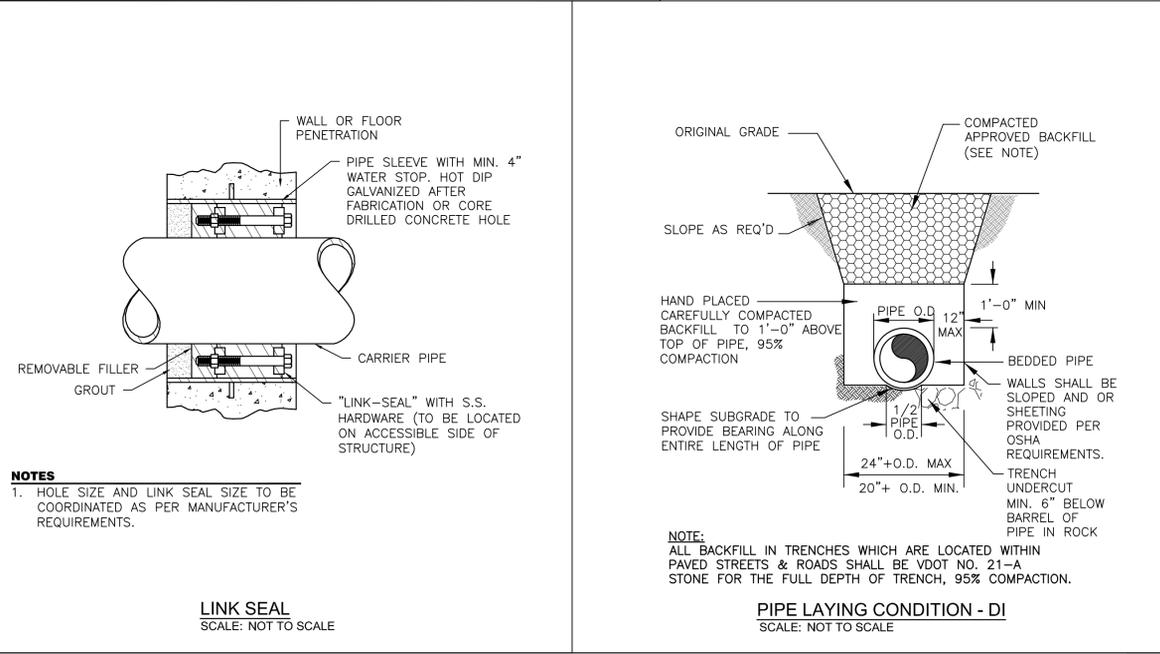
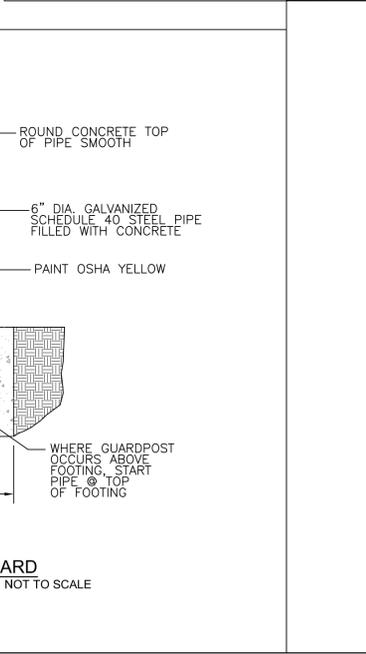
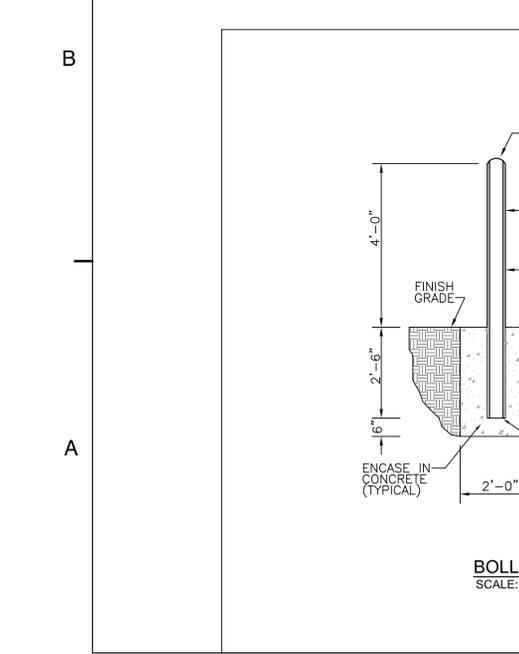
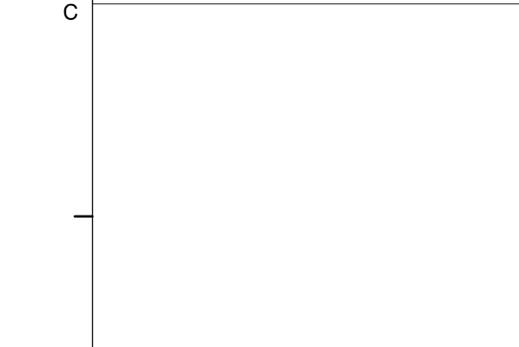
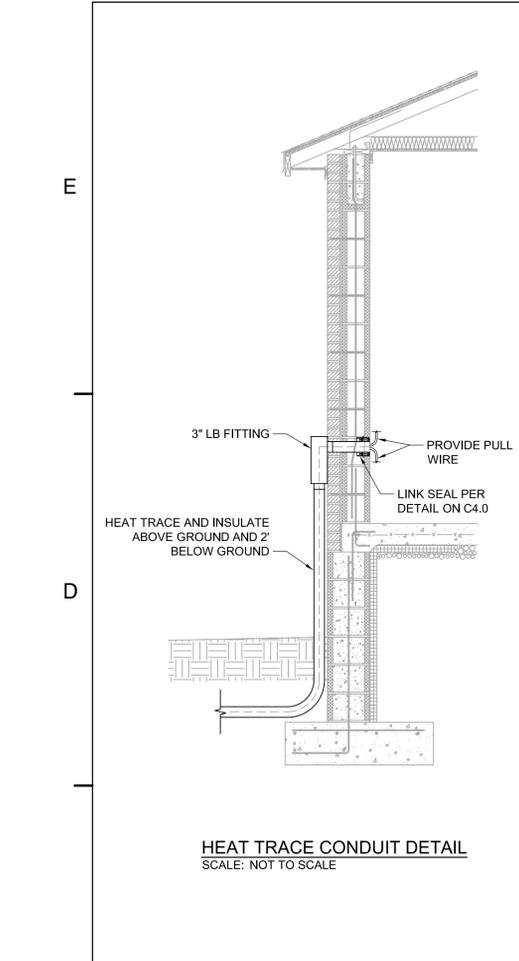
DETAILS

PROJECT NO. 50109630

C4.0

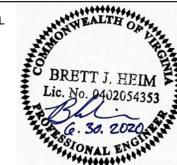


- NOTES:**
- GRINDER PUMP STATIONS SHALL BE LOCATED AS SHOWN ON SHEET C2.0.
 - GRINDER PUMP ASSEMBLIES SHALL BE "ENVIRONMENT-1" MODEL DH071 AS MANUFACTURED BY ENVIRONMENT ONE CORPORATION.
 - ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL MATERIAL FOR COMPLETELY FUNCTIONAL SYSTEMS.
 - FORCE MAIN SHALL BE HYDROSTATICALLY TESTED AT 100 PSI FOR 2 HOURS.
 - ALL STAINLESS STEEL PIPE, VALVES, AND FITTINGS SHALL BE THREADED SCHEDULE 40 PIPE, VALVES, AND FITTINGS.
 - REMOVE SECTION OF EXISTING SANITARY LATERAL AS NECESSARY FOR CONSTRUCTION.



KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description
REVISIONS			

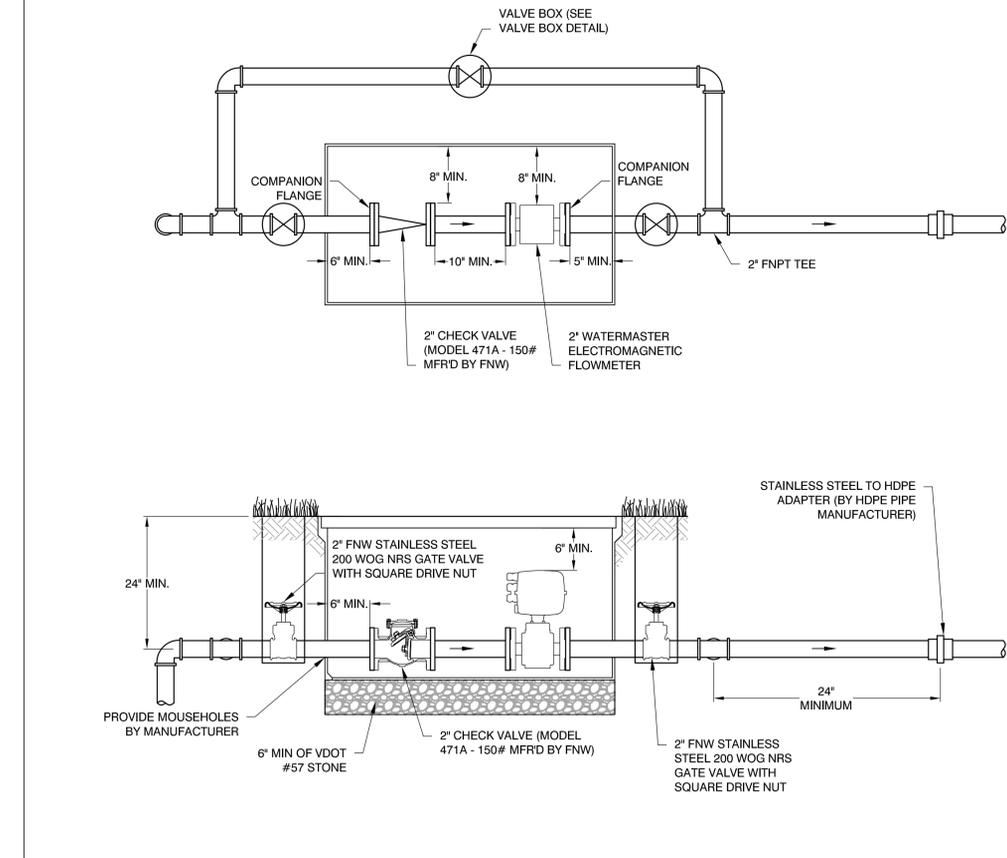
DRAWN BY	SMK
APPROVED BY	BJH
CHECKED BY	RNK
DATE	JULY 2020

TITLE

DETAILS

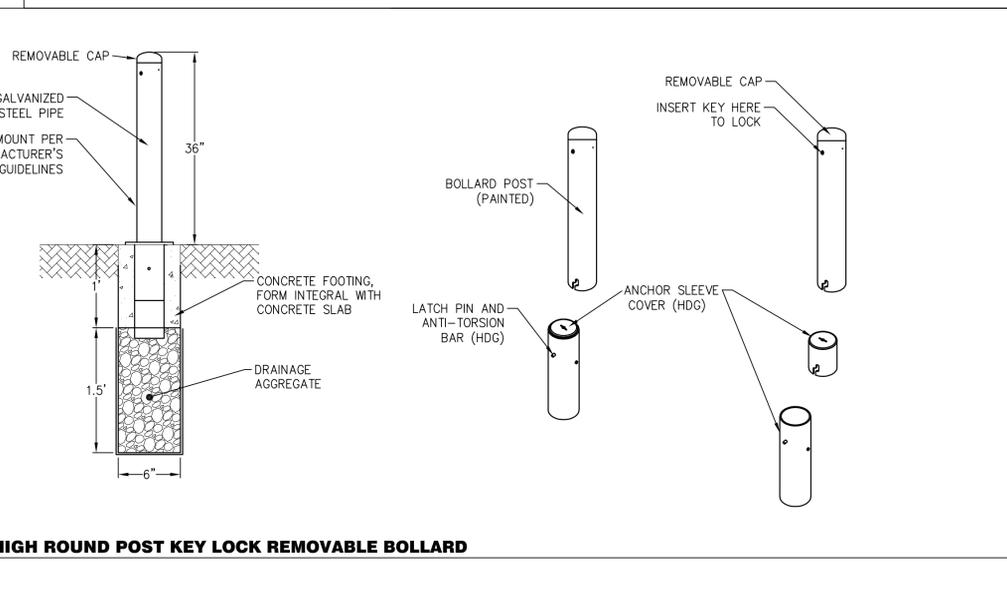
PROJECT NO. 50109630

C4.1

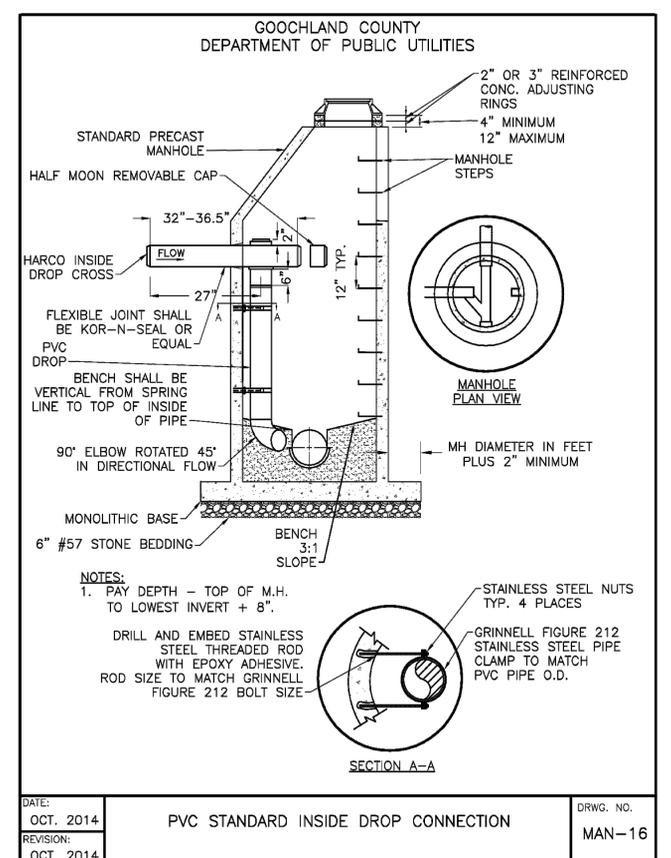


- NOTES**
1. ALL PIPE, FITTINGS, AND VALVES SHALL BE 304 STAINLESS STEEL.
 2. VALVE BOX SHALL BE 24" DEEP OLDCASTLE POLYMER 3048 WITH SOLID POLYMER LID TO ENSURE HEAVY DUTY TRAFFIC LOAD RATING OR APPROVED EQUAL WITH LID LABELED SEWER.

FLOWMETER PIPING
N.T.S.

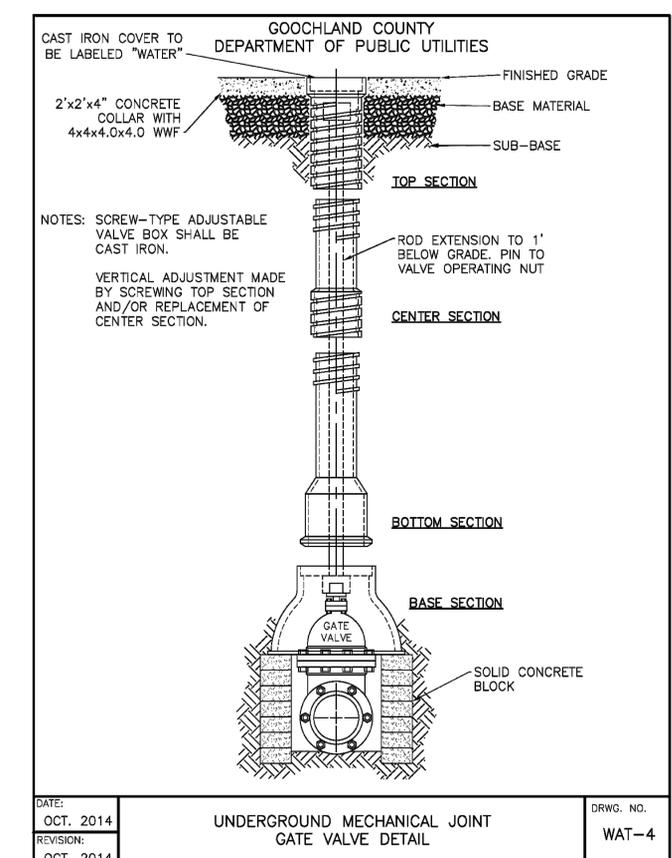
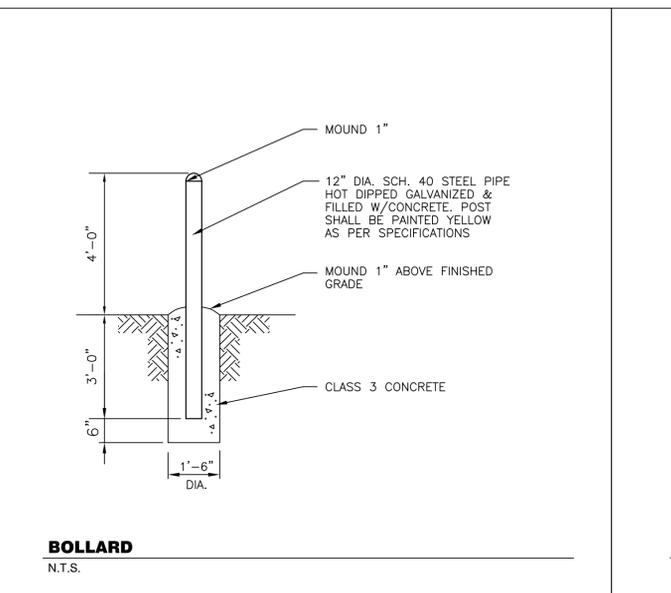


36 INCH HIGH ROUND POST KEY LOCK REMOVABLE BOLLARD
N.T.S.



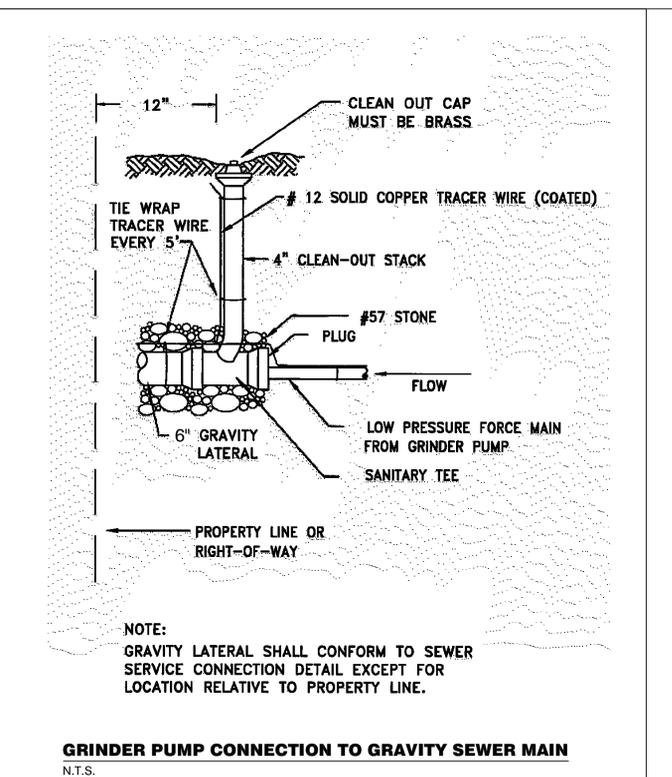
- NOTES**
1. PAY DEPTH - TOP OF M.H. TO LOWEST INVERT + 8".
- DRILL AND EMBED STAINLESS STEEL THREADED ROD WITH EPOXY ADHESIVE. ROD SIZE TO MATCH GRINNELL FIGURE 212 BOLT SIZE.
- STAINLESS STEEL NUTS TYP. 4 PLACES
GRINNELL FIGURE 212 STAINLESS STEEL PIPE CLAMP TO MATCH PVC PIPE O.D.

BOLLARD
N.T.S.

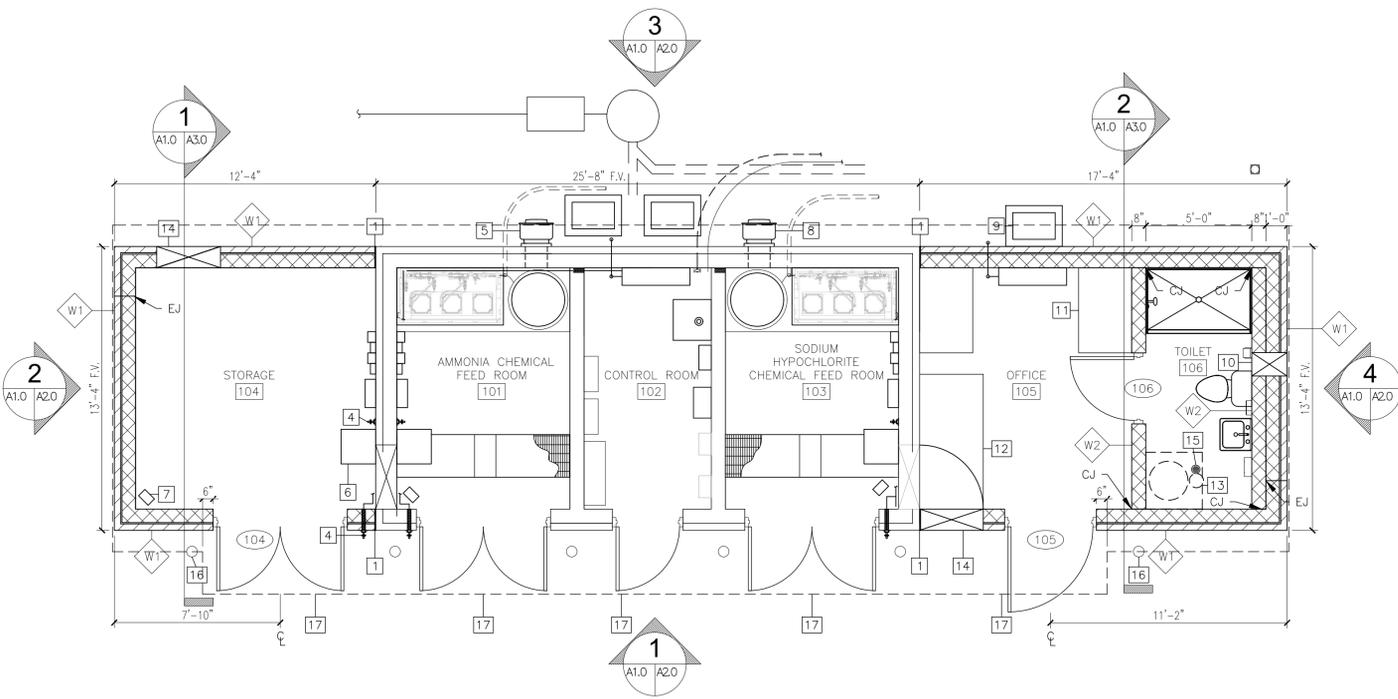


- NOTES:** SCREW-TYPE ADJUSTABLE VALVE BOX SHALL BE CAST IRON.
- VERTICAL ADJUSTMENT MADE BY SCREWING TOP SECTION AND/OR REPLACEMENT OF CENTER SECTION.
- ROD EXTENSION TO 1' BELOW GRADE. PIN TO VALVE OPERATING NUT

UNDERGROUND MECHANICAL JOINT GATE VALVE DETAIL
N.T.S.

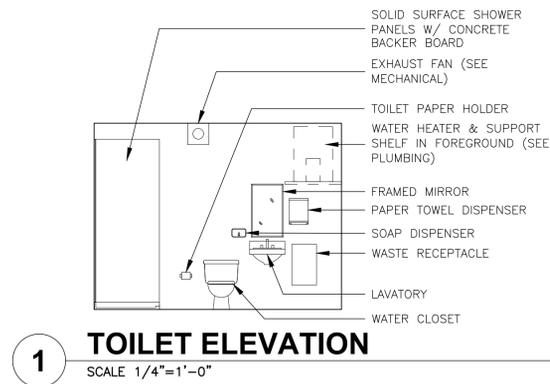


GRINDER PUMP CONNECTION TO GRAVITY SEWER MAIN
N.T.S.

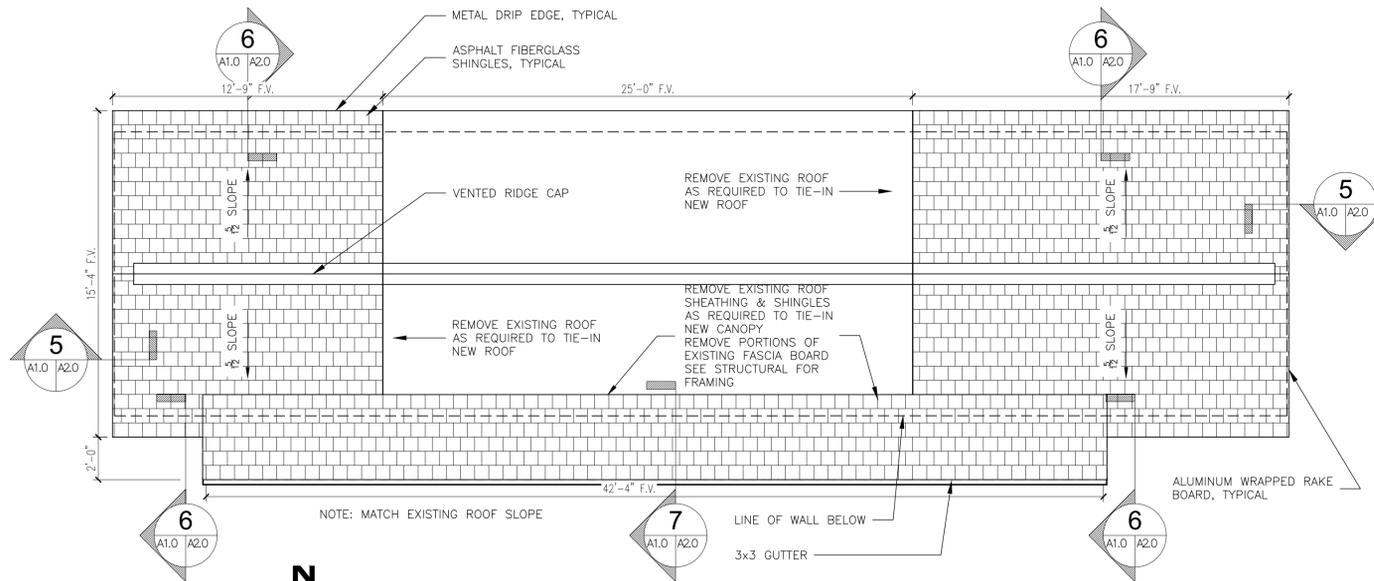


FIRST LEVEL FLOOR PLAN
SCALE 1/4"=1'-0"
TRUE NORTH

WALL TAG	WALL SYMBOL	WALL DESCRIPTION	WALL DETAIL
W1		EXTERIOR WALL 8" CMU W/ MASONRY REINFORCEMENT @ 16" O.C. HORIZONTAL & VERTICAL (FILL UNGROUTED CELLS WITH MOLDED POLYSTYRENE INSULATION), FLUID APPLIED PERMEABLE AIR BARRIER, AIR SPACE, 4" FACE BRICK	
W2		INTERIOR WALL 8" CMU	



TOILET ELEVATION
SCALE 1/4"=1'-0"

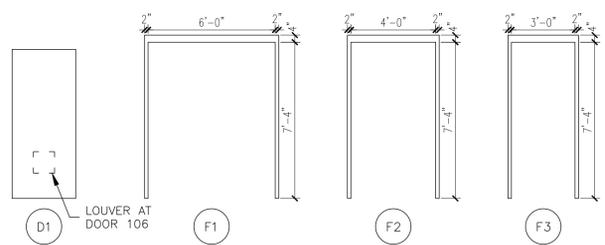


ROOF PLAN
SCALE 1/4"=1'-0"
TRUE NORTH

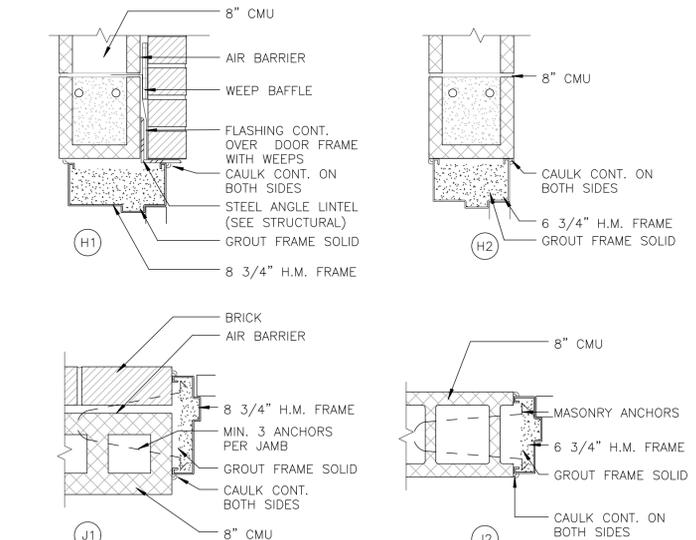
#	NOTE
1	1/2" EXPANSION JOINT
2	NOT USED
3	NOT USED
4	HOSE BIBB (SEE PLUMBING)
5	EXISTING EXHAUST FAN #1 (SEE MECHANICAL)
6	PORTABLE EYE WASH STATION (SEE PLUMBING)
7	UNIT HEATER (SEE MECHANICAL)
8	EXISTING EXHAUST FAN #2 (SEE MECHANICAL)
9	SPLIT SYSTEM OUTDOOR UNIT (SEE MECHANICAL)
10	NEW EXHAUST FAN #3 (SEE MECHANICAL)
11	DESK (BY OWNER)
12	WORKBENCH (BY OWNER)
13	WATER HEATER ABOVE (SEE PLUMBING)
14	LOUVER (SEE MECHANICAL)
15	FLOOR DRAIN (SEE PLUMBING)
16	BOLLARD (COORDINATE WITH CIVIL)
17	CANOPY ABOVE (COORDINATE WITH STRUCTURAL)

ROOM NO.	ROOM DESCRIPTION	FLOOR			WALL		CEILING		REMARKS
		MAT.	FIN.	BASE	MAT.	FIN.	FIN.	HEIGHT	
101	NH3 CHEMICAL FEED ROOM	EXISTING	-	-	EXISTING	-	EXISTING	-	
102	CONTROL ROOM	EXISTING	-	-	EXISTING	-	EXISTING	-	
103	NaClO CHEMICAL FEED ROOM	EXISTING	-	-	EXISTING	-	EXISTING	-	
104	STORAGE	CONCRETE	SEAL	-	CMU/EXISTING BRICK	PAINT	PLYWOOD	8'-9"	
105	OFFICE	CONCRETE	SEAL	-	CMU/EXISTING BRICK	PAINT	PLYWOOD	8'-9"	
106	TOILET	CONCRETE	SEAL	-	CMU	PAINT	PLYWOOD	8'-9"	

DOOR MARK	DOOR SIZE	DOOR				FRAME				FIRE RATING	REMARKS	
		MAT.	FIN.	DES.	HW#	MAT.	FIN.	HEAD	JAMB			
104	6'-0"x7'-4"	FRP	PAINT	D1	1	H.M.	PAINT	H1	J1	F1	---	
105	4'-0"x7'-4"	FRP	PAINT	D1	2	H.M.	PAINT	H1	J1	F2	---	
106	3'-0"x7'-4"	FRP	PAINT	D1	3	H.M.	PAINT	H2	J2	F3	---	LOUVER IN DOOR

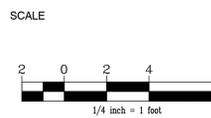


DOOR AND FRAME ELEVATIONS
SCALE 1/4"=1'-0"



HEAD & JAMB DETAILS
SCALE 1 1/2"=1'-0"

KEY PLAN



No.	DATE	BY	Description

DRAWN BY _____
APPROVED BY _____
CHECKED BY _____
DATE JUNE 2020

NEW WORK & ROOF PLANS AND SCHEDULES

PROJECT NO. 50109630

A1.0

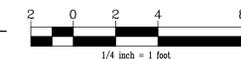
CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
 GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

SEAL



SCALE



No. DATE BY Description

REVISIONS

DRAWN BY

APPROVED BY

CHECKED BY

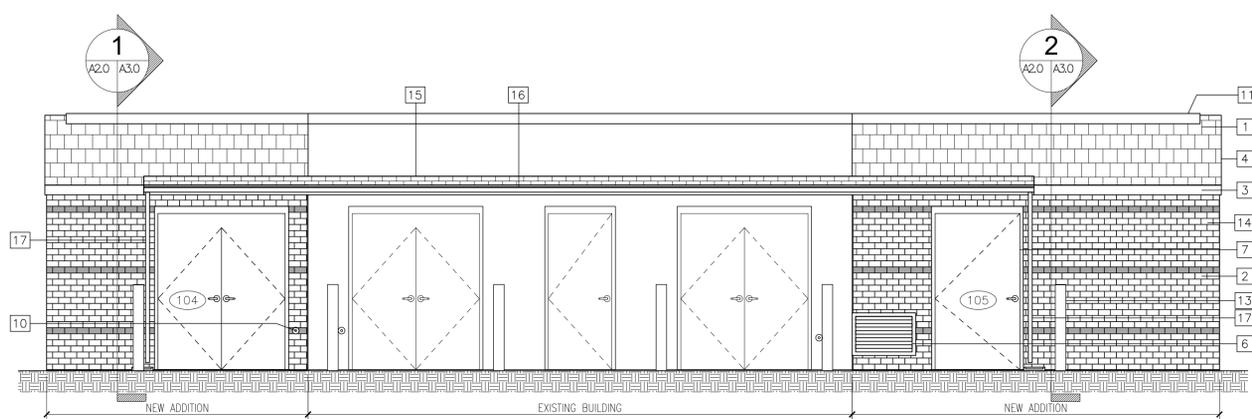
DATE JUNE 2020

TITLE
EXTERIOR ELEVATIONS, ROOF AND JOINT DETAILS

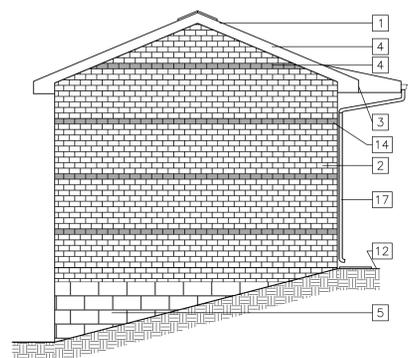
PROJECT NO. 50109630

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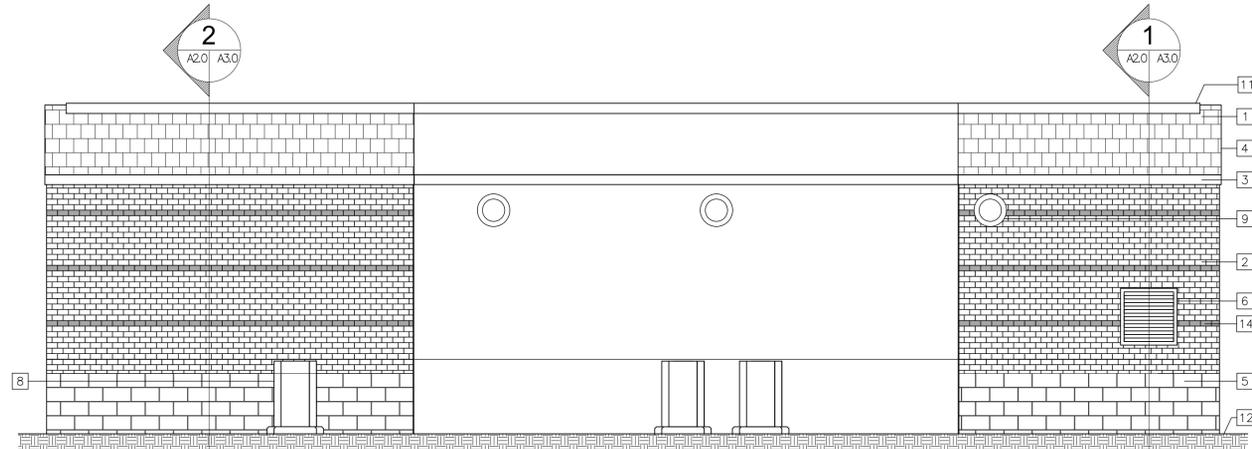
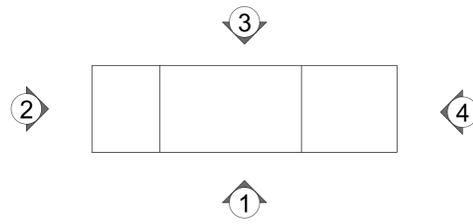
E
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C
B
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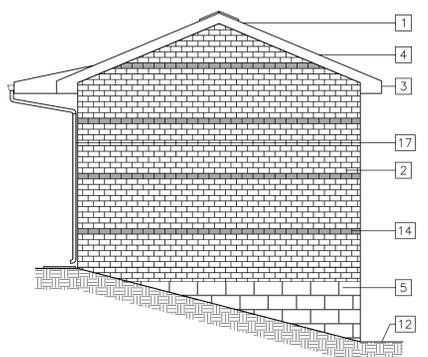
1 EXTERIOR ELEVATION
 SCALE 1/4"=1'-0"



2 EXTERIOR ELEVATION
 SCALE 1/4"=1'-0"

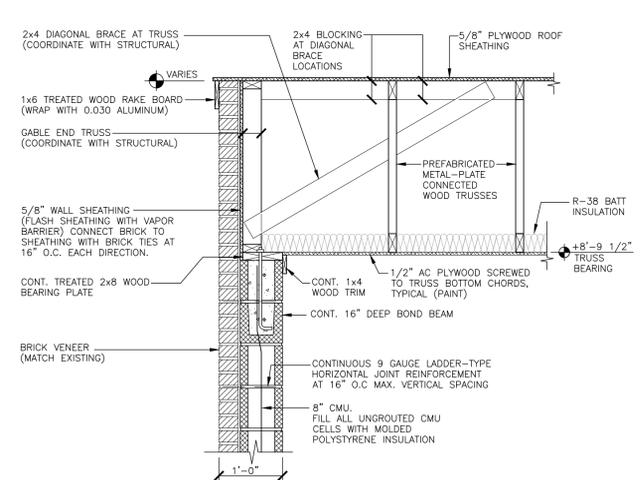


3 EXTERIOR ELEVATION
 SCALE 1/4"=1'-0"

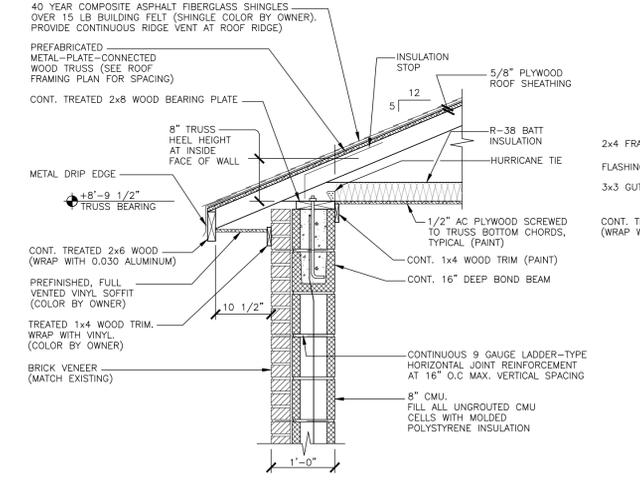


4 EXTERIOR ELEVATION
 SCALE 1/4"=1'-0"

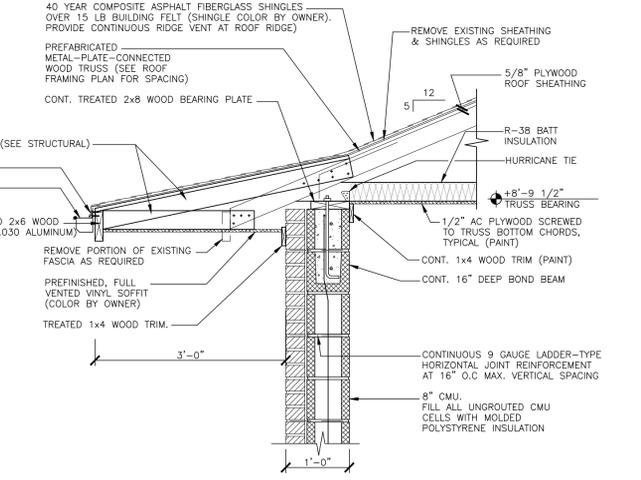
#	NOTE
1	ASPHALT FIBERGLASS SHINGLES
2	FACE BRICK (MATCH EXISTING IN SIZE, COLOR, STYLE, & PATTERN)
3	METAL DRIP EDGE
4	ALUMINUM WRAPPED RAKE BOARD
5	CMU
6	LOUVER (SEE MECHANICAL)
7	HOLLOW METAL DOOR & FRAME
8	OUTDOOR UNIT (SEE MECHANICAL)
9	EXHAUST FAN (SEE MECHANICAL)
10	HOSE BIBB (SEE PLUMBING)
11	RIDGE VENT
12	FINISH GRADE
13	BOLLARD (COORDINATE WITH CIVIL)
14	ACCENT BRICK (MATCH EXISTING IN SIZE, COLOR, STYLE, & ELEVATION)
15	CANOPY (COORDINATE WITH STRUCTURAL)
16	GUTTER (3"x3")
17	DOWNSPOUT (2 1/2"x1 1/2") WITH CONCRETE SPLASH BLOCK



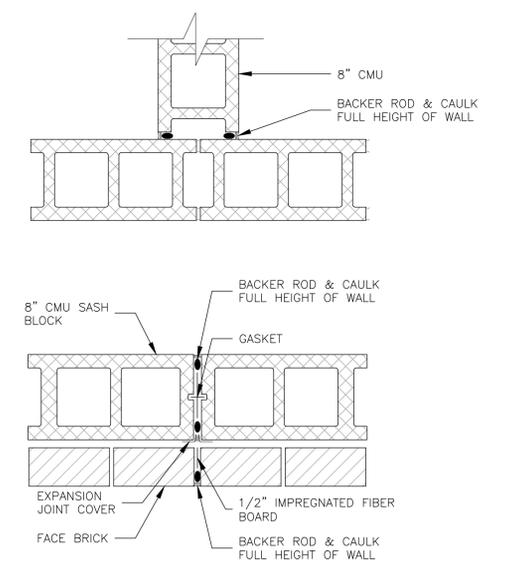
5 ROOF GABLE DETAIL
 SCALE 3/4"=1'-0"



6 ROOF EAVE DETAIL
 SCALE 3/4"=1'-0"



7 CANOPY DETAIL
 SCALE 3/4"=1'-0"



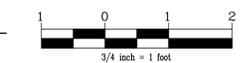
8 EXPANSION & CONTROL JOINT DETAILS
 SCALE 1 1/2"=1'-0"

CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
 GOOCHLAND COUNTY, VIRGINIA

KEY PLAN



SCALE



No. DATE BY Description

REVISIONS

DRAWN BY _____

APPROVED BY _____

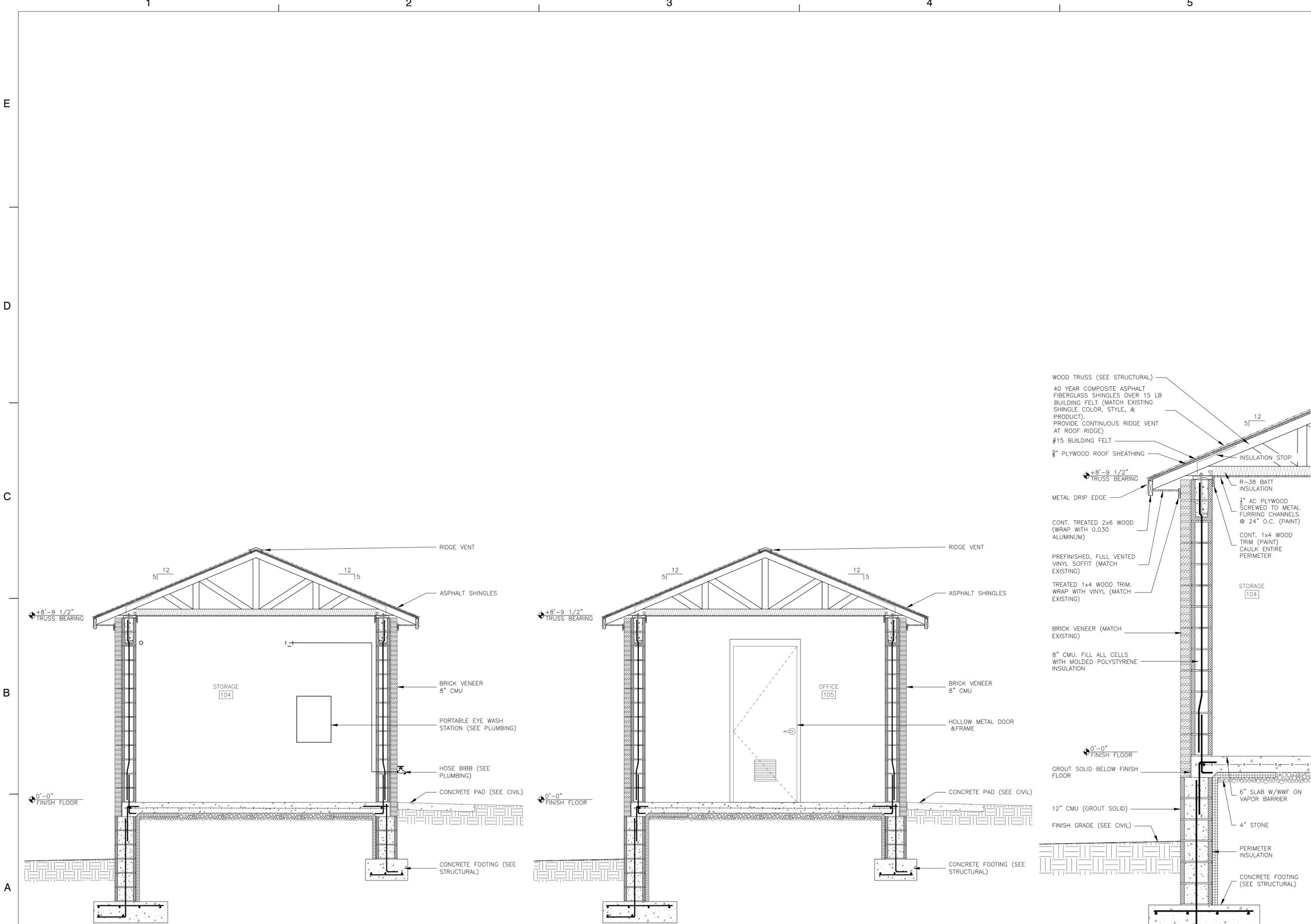
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DATE JUNE 2020

TITLE

BUILDING & WALL SECTIONS

PROJECT NO. 50109630



1 TRANSVERSE SECTION
SCALE 1/2"=1'-0"

2 TRANSVERSE SECTION
SCALE 1/2"=1'-0"

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

GENERAL STRUCTURAL NOTES

DESIGN:

- THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS, AND GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
- STRUCTURAL DESIGN OF RENOVATIONS TO THE ULTRAVIOLET STRUCTURE CONFORMS TO THE REQUIREMENTS OF THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE, 2015 EDITION.
- DESIGN LOADS AND DESIGN DATA FOR NEW CONSTRUCTION ARE AS FOLLOWS:

A. FLOOR LIVE LOADS:	500 PSF
B. MINIMUM ROOF LIVE LOAD:	20 PSF
C. ROOF SNOW LOAD:	
GROUND SNOW LOAD (Pg)	25 PSF
SNOW EXPOSURE FACTOR (Ce)	1.0
SNOW LOAD IMPORTANCE FACTOR (I)	1.1
THERMAL FACTOR (Ct)	1.1
FLAT ROOF SNOW LOAD (Pf)	22 PSF
D. WIND LOAD:	
BASIC WIND SPEED (3 SECOND GUST)	120 MPH
BUILDING RISK CATEGORY	III
WIND EXPOSURE CATEGORY	C
E. SEISMIC DESIGN DATA:	
BUILDING RISK CATEGORY	III
SEISMIC IMPORTANCE FACTOR	1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS, S _s	0.239
MAPPED SPECTRAL RESPONSE ACCELERATIONS, S ₁	0.070
SPECTRAL RESPONSE COEFF. S _{ms}	0.255
SPECTRAL RESPONSE COEFF. S ₀₁	0.113
SITE CLASS (ASSUMED)	D
SEISMIC DESIGN CATEGORY	B

SPECIAL INSPECTIONS:

- OWNER SHALL ENGAGE A SPECIAL INSPECTOR AND A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS PER THE REQUIREMENTS OF THE STATEMENT OF SPECIAL INSPECTIONS.

COORDINATION:

- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH, AND COORDINATED WITH CIVIL, MECHANICAL, ELECTRICAL, AND OTHER CONTRACT DOCUMENTS.
- COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES AND PIPE/CONDUIT PENETRATIONS THROUGH CONCRETE SLABS AND CONCRETE WALLS WITH CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS. SLEEVES SHALL BE ASTM A 53 SCHEDULE 40 STEEL WITH A DIAMETER NOT GREATER THAN 12 INCHES AND SHALL BE GALVANIZED AFTER CUTTING. CONTRACTOR SHALL SLIGHTLY ADJUST REINFORCING BAR LOCATION AROUND SLEEVES OR PIPE/CONDUIT PENETRATIONS AS MUCH AS PRACTICAL. REINFORCING BARS SHALL NOT BE CUT UNLESS SHOWN OTHERWISE ON THE DRAWINGS, OR UNLESS AGREED TO BY THE OWNER'S REPRESENTATIVE (DEWBERRY ENGINEER) ON A CASE BY CASE BASIS.
- THE DRAWINGS HAVE BEEN PREPARED USING SOME DIMENSIONS AND ELEMENTS FROM A PARTICULAR EQUIPMENT MANUFACTURER. IF ALLOWED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR MAY IN FACT PROVIDE A DIFFERENT PIECE OF EQUIPMENT WHICH HAS DIFFERENT DIMENSIONS AND ELEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GAINING APPROVAL OF THE DIFFERENT DIMENSIONS AND ELEMENTS PRIOR TO ANY CONSTRUCTION AND ALL CHANGES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE. THE SALIENT FEATURES SHALL NOT BE COMPROMISED.

FOUNDATIONS:

- FOUNDATION DESIGN IS BASED ON AN ASSUMED ALLOWABLE SOIL BEARING PRESSURE CAPACITY OF 2,000 PSF. CONTRACTOR SHALL CONFIRM 2,000 PSF MINIMUM SOIL BEARING CAPACITY WITH AN INDEPENDENT GEOTECHNICAL TESTING FIRM PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL PROVIDE OWNER AND ENGINEER A WRITTEN REPORT OF TEST RESULTS FOR THEIR RECORDS.
- THE STRUCTURAL ENGINEER OF RECORD IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD CONTRARY TO THOSE ASSUMED FOR DESIGN.
- ALL COMPACTED FILL, EXCAVATIONS, AND SUBGRADES SHALL BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA (OR A QUALIFIED GEOTECHNICAL TECHNICIAN WORKING UNDER THE DIRECT SUPERVISION OF A REGISTERED ENGINEER) TO VERIFY SPECIFIED GEOTECHNICAL CONFORMANCE REQUIREMENTS. CONTRACTOR SHALL COORDINATE TESTING WITH OWNER AS DECLARED IN THE CONTRACT DOCUMENTS.
- COMPACTED STRUCTURAL FILL SHALL BE AS FOLLOWS:

A. SUITABLE, NON-ORGANIC ON-SITE SOILS INSPECTED AND APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER.
B. PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS.
C. COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR (ASTM D 698) MAXIMUM DRY DENSITY.
D. MOISTURE CONTENT AND PLASTICITY INDEX AS RECOMMENDED BY GEOTECHNICAL ENGINEER.
E. FREE OF BOULDERS, ORGANICS, TRASH, PARTICLES OF 3 INCHES OR MORE IN DIAMETER, AND OTHER DELETERIOUS MATERIALS.
- DURING FILLING AND BACKFILLING, DENSITY TESTING SHALL BE MADE IN ACCORDANCE WITH ASTM D-6938 (OR EQUIVALENT) TO MONITOR COMPACTION LEVELS AND MOISTURE CONTENTS. FREQUENCY OF DENSITY TESTING SHALL BE AS DIRECTED BY GEOTECHNICAL ENGINEER TO VERIFY SPECIFIED COMPACTION AND MOISTURE CONTENT REQUIREMENTS.
- CARE SHALL BE EXERCISED DURING EXCAVATION FOR FOUNDATIONS SO THAT AS LITTLE DISTURBANCE AS POSSIBLE OCCURS AT THE FOUNDATION LEVEL. LOOSE OR SOFT SOILS SHALL BE CAREFULLY CLEANED FROM THE BOTTOM OF THE EXCAVATIONS BEFORE PLACING CONCRETE. ACTUAL FOUNDATION SUBGRADES SHALL BE OBSERVED DURING CONSTRUCTION BY THE GEOTECHNICAL ENGINEER TO EVALUATE WHETHER SUITABILITY OF SUBGRADE SOILS.
- UNLESS NOTED OTHERWISE, FOUNDATION SUBGRADES REQUIRING UNDERCUT SHALL BE FILLED FROM THE ELEVATION OF UNDERCUT TO THE ORIGINAL DESIGN SUBGRADE ELEVATION WITH LEAN CONCRETE, MINIMUM 500 PSI FLOWABLE FILL.
- WHenever possible, foundation concrete shall be placed immediately after excavation so that accumulation of water in the excavation or drying of foundation soils can be avoided.
- CONTRACTOR SHALL CONTROL SITE GROUNDWATER AND/OR SURFACE WATER BY ALL MEANS NECESSARY TO MAINTAIN A WATER LEVEL ONE FOOT BELOW SLAB SUBGRADE SO AS TO NOT DAMAGE FOUNDATION EXCAVATIONS.
- ANY SUBGRADE SOILS WHICH HAVE BEEN WEAKENED DUE TO SATURATION OR DISTURBANCE SHALL BE RECOMPACTED OR REMOVED AND REPLACED WITH STRUCTURAL FILL AS DIRECTED BY THE GEOTECHNICAL ENGINEER. CONCRETE STRUCTURES SHALL BE CONSTRUCTED IN AN EXPEDIENT MANNER ONCE EXCAVATIONS ARE MADE TO AVOID WEATHER DAMAGE.

REINFORCED CONCRETE:

- U.N.O., ALL CONCRETE WORK, DETAILING, FABRICATION, AND PLACING OF REINFORCING AND CONCRETE SHALL BE GOVERNED BY THE LATEST REVISIONS OF:

A. ACI 301, ACI 315, AND ACI 318.
B. CRSI RECOMMENDED PRACTICE OF PLACING REINFORCING BARS.
C. ACI 306 AND ACI 305 FOR COLD AND HOT WEATHER CONCRETING RESPECTIVELY.
- ALL POURED IN PLACE CONCRETE SHALL BE NORMAL WEIGHT WITH A MAXIMUM UNIT WEIGHT OF 150 POUNDS PER CUBIC FOOT AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH EQUAL TO 4,000 PSI. SUBMIT DESIGN MIXTURES FOR APPROVAL.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, AND SHALL BE GRADE 60.
- WELDED WIRE FABRIC SHALL BE NEW BILLET STEEL, COLD DRAWN CONFORMING TO ASTM SPECIFICATIONS A 185 AND A 82 AND SHALL BE PROVIDED IN FLAT SHEETS.
- REINFORCING BAR LAP SPLICES AND HOOK DIMENSIONS SHALL BE AS REQUIRED PER THE SCHEDULE ON SHEET S4.0 UNLESS NOTED OTHERWISE.
- EPOXY BONDING ADHESIVE SHALL BE USED FOR BONDING FRESHLY MIXED CONCRETE TO HARDENED OR EXISTING CONCRETE. EPOXY BONDING ADHESIVE SHALL CONFORM TO ASTM C 881 AND SHALL BE A TWO-COMPONENT EPOXY RESIN, CAPABLE OF HUMID CURING AND BONDING TO DAMP SURFACES, OF CLASS SUITABLE FOR APPLICATION TEMPERATURE AND OF GRADE TO SUIT REQUIREMENT, TYPE 4 OR 5.
- CONCRETE MIXTURES: SLAB-ON-GRADE, WALLS, AND FOOTINGS:

PROPORTION NORMAL-WEIGHT CONCRETE MIXTURE AS FOLLOWS:
A. MINIMUM COMPRESSIVE STRENGTH: 4,000 PSI AT 28 DAYS.
B. CEMENT: TYPE II OR TYPE I/II.
C. SLUMP LIMIT: 3 TO 5 INCHES. 8 INCHES FOR CONCRETE WITH VERIFIED SLUMP OF 2 TO 4 INCHES BEFORE ADDING HIGH-RANGE WATER-REDUCING ADMIXTURE OR PLASTICIZING ADMIXTURE, PLUS OR MINUS 1 INCH.
D. AIR CONTENT U.N.O.: 5 PERCENT, PLUS OR MINUS 1 PERCENT AT POINT OF DELIVERY FOR 1-INCH NOMINAL MAXIMUM AGGREGATE SIZE.
E. AIR CONTENT FOR TROWEL-FINISHED INTERIOR FLOOR SLABS: DO NOT ALLOW AIR CONTENT TO EXCEED 3 PERCENT.
F. AIR-ENTRAINING ADMIXTURE: ASTM C 260.
G. CHEMICAL ADMIXTURES: PROVIDE ADMIXTURES CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER ADMIXTURES AND THAT WILL NOT CONTRIBUTE WATER-SOLUBLE CHLORIDE IONS EXCEEDING THOSE PERMITTED IN HARDENED CONCRETE. DO NOT USE CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE.
• WATER-REDUCING ADMIXTURE: ASTM C 494, TYPE A.
• RETARDING ADMIXTURE: ASTM C 494, TYPE B.
• WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494, TYPE D.
• HIGH-RANGE, WATER-REDUCING ADMIXTURE: ASTM C 494, TYPE F.
• HIGH-RANGE, WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C 494, TYPE G.
• PLASTICIZING AND RETARDING ADMIXTURE: ASTM C 1017, TYPE II.
- WHERE "SHAPING GROUT" IS INDICATED FOR SHAPING OR SLOPING THE BOTTOM OF TRENCHES, THE "SHAPING GROUT" SHALL BE A CONCRETE MIX CONTAINING NO COARSE AGGREGATE AND SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. CONTRACTOR SHALL PROPORTION, DESIGN, AND SUBMIT "SHAPING GROUT" MIX DESIGN FOR REVIEW. CONCRETE SURFACES TO RECEIVE GROUT FOR SHAPING OR SLOPING STRUCTURE BOTTOMS SHALL BE PREPARED FOR BONDING USING A EPOXY BONDING ADHESIVE. "SHAPING GROUT" SHALL BE PLACED AS SHOWN ON THE DRAWINGS WITH A TROWEL FINISH, U.N.O.
- FABRICATING REINFORCEMENT: FABRICATE STEEL REINFORCEMENT ACCORDING TO CRSI'S "MANUAL OF STANDARD PRACTICE."
- A QUALIFIED INSTALLER SHALL BE REQUIRED WHO EMPLOYS ON PROJECT PERSONNEL QUALIFIED AS ACI-CERTIFIED FLATWORK TECHNICIAN AND FINISHER AND A SUPERVISOR WHO IS AN ACI-CERTIFIED CONCRETE FLATWORK TECHNICIAN.
- A FIRM EXPERIENCED IN MANUFACTURING READY-MIXED CONCRETE PRODUCTS AND THAT COMPLIES WITH ASTM C 94 REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT SHALL BE REQUIRED. THE MANUFACTURER SHALL BE CERTIFIED ACCORDING TO NRCA'S "CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES."
- CONCRETE MIXING: READY-MIXED CONCRETE: MEASURE, BATCH, MIX, AND DELIVER CONCRETE ACCORDING TO ASTM C 94, AND FURNISH BATCH TICKET INFORMATION. WHEN AIR TEMPERATURE IS BETWEEN 85 AND 90 DEG F, REDUCE MIXING AND DELIVERY TIME FROM 1-1/2 HOURS TO 75 MINUTES; WHEN AIR TEMPERATURE IS ABOVE 90 DEG F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.
- FINISHING FLOOR SLABS: COMPLY WITH ACI 302.1R RECOMMENDATIONS FOR SCREEDING, RESTRAIGHTENING, AND FINISHING OPERATIONS FOR CONCRETE SURFACES. DO NOT WET CONCRETE SURFACES.

A. FLOAT FINISH: CONSOLIDATE SURFACE WITH POWER-DRIVEN FLOATS OR BY HAND FLOATING IF AREA IS SMALL OR INACCESSIBLE TO POWER DRIVEN FLOATS. RESTRAIGHTEN, CUT DOWN HIGH SPOTS, AND FILL LOW SPOTS. REPEAT FLOAT PASSES AND RESTRAIGHTENING UNTIL SURFACE IS LEFT WITH A UNIFORM, SMOOTH, GRANULAR TEXTURE. APPLY FLOAT FINISH TO SURFACES TO RECEIVE TROWEL FINISH.
B. TROWEL FINISH: AFTER APPLYING FLOAT FINISH, APPLY FIRST TROWELING AND CONSOLIDATE CONCRETE BY HAND OR POWER-DRIVEN TROWEL. CONTINUE TROWELING PASSES AND RESTRAIGHTEN UNTIL SURFACE IS FREE OF TROWEL MARKS AND UNIFORM IN TEXTURE AND APPEARANCE.
- SUBMITTALS:

A. CONCRETE MIX: FOR EACH CONCRETE MIXTURE.
B. PRODUCT DATA: CEMENTITIOUS MATERIALS, ADMIXTURES, CURING COMPOUNDS, EPOXY BONDING ADHESIVES, REPAIR MATERIALS.
C. STEEL REINFORCEMENT SHOP DRAWINGS: PLACING DRAWINGS THAT DETAIL FABRICATION, BENDING, AND PLACEMENT. INCLUDE BAR SIZES, LENGTHS, MATERIAL, GRADE, BAR SCHEDULES, STIRRUP SPACING, BENT BAR DIAGRAMS, BAR ARRANGEMENT, SPLICES AND LAPS, MECHANICAL CONNECTIONS, TIE SPACING, HOOP SPACING, AND SUPPORTS FOR CONCRETE REINFORCEMENT.
- CONCRETE TESTS: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C 172 SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:

A. TESTING FREQUENCY: OBTAIN ONE COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE LESS THAN 25 CU. YD., PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
B. SLUMP: ASTM C 143; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
C. AIR CONTENT: ASTM C 231, PRESSURE METHOD, FOR NORMAL-WEIGHT CONCRETE; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY'S POUR OF EACH CONCRETE MIXTURE.
D. CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
E. COMPRESSION TEST SPECIMENS: ASTM C 31, CAST AND LABORATORY CURE ONE SET OF FOUR STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
F. COMPRESSIVE-STRENGTH TESTS: ASTM C 39; TEST ONE LABORATORY-CURED SPECIMEN AT 7 DAYS AND TWO SPECIMENS AT 28 DAYS, AND RETAIN ONE SPECIMEN FOR LATER TESTING AT 56 DAYS IF 28 DAY STRENGTH FALLS BELOW THE REQUIRED SPECIFIED STRENGTH.
G. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM A SET OF TWO SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT AGE INDICATED.
- STRENGTH OF EACH CONCRETE MIXTURE WILL BE SATISFACTORY IF EVERY AVERAGE OF ANY THREE CONSECUTIVE COMPRESSIVE STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.
- TEST RESULTS SHALL BE REPORTED IN WRITING TO OWNER, ENGINEER, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIXTURE PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7- AND 28-DAY TESTS.

HIGH STRENGTH EPOXY DOWELING SYSTEM:

- HIGH STRENGTH EPOXY DOWELING SYSTEM SHALL CONSIST OF AN INJECTABLE TWO-PART EPOXY COMPLYING WITH THE REQUIREMENTS OF ASTM C881-90, TYPE IV, GRADE 3, CLASS B AND C EXCEPT GEL TIMES. EPOXY DOWELING SYSTEM SHALL BE TESTED IN ACCORDANCE WITH ICC ACCEPTANCE CRITERIA 308 DEMONSTRATING COMPLIANCE WITH THE PERFORMANCE FEATURES OF ACI 355.2. THE EPOXY DOWELING SYSTEM SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. ACCEPTABLE PRODUCTS:

A. HILTI HIT-HY 200 EPOXY ADHESIVE ANCHORING SYSTEM (ICC ESR-3187)
B. ITW RED HEAD EPCON G5 ADHESIVE ANCHORING SYSTEM (ICC ESR-1137)
C. SIMPSON STRONG-TIE SET-XP EPOXY ADHESIVE ANCHORS (USE OF SET-PAC SYSTEM NOT ALLOWED). (ICC ESR-2508)

FIBERGLASS GRATING:

- FIBERGLASS GRATING SHALL HAVE THE FOLLOWING PROPERTIES:

3" DEPTH SHEET GRATING ("AMERICAN GRATING I30-40 ADA" OR APPROVED EQUAL):
A. 3" HEIGHT
B. PULTRUDED INDUSTRIAL GRATING WITH 40% OPEN AREA
C. 2000 PSF CAPACITY FOR 1'-9" SPAN
D. COLOR: COORDINATE WITH OWNER

MASONRY:

- ALL MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES" (ACI 530-13/ASCE 5-13/TMS 402-13) AND "SPECIFICATION FOR MASONRY STRUCTURES" (ACI 530.1-13/ASCE 6-13/TMS 602-13).
- CONCRETE MASONRY UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 90.
- MINIMUM REQUIRED COMPRESSIVE STRENGTH OF MASONRY ASSEMBLAGE, F'm, AT 28 DAYS SHALL BE 1500 PSI.
- MORTAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 270 FOR JOB-MIXED MORTAR AND ASTM C 1142 FOR READY MIXED MORTAR AND SHALL BE TYPE S.
- GROUT FOR HOLLOW MASONRY UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 476 AND SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. JOB SITE MIXING OF GROUT IS NOT ALLOWED.

WOOD FRAMING:

- THE FOLLOWING SHALL APPLY FOR WOOD FRAMED CONSTRUCTION:

A. ALL WOOD FRAMING SHALL BE SOUTHERN YELLOW PINE MINIMUM GRADE NUMBER 2, U.N.O.
B. WOOD MEMBERS SHALL HAVE MAXIMUM MOISTURE CONTENT OF 19 PERCENT.
C. WOOD IN CONTACT WITH MASONRY OR CONCRETE SHALL BE PRESSURE-TREATED.
D. ALL PLYWOOD SHALL BE APA-RATED AS INDICATED ON DRAWINGS.
E. ALL BOLTS USED FOR WOOD FASTENING SHALL CONFORM TO ASTM A307, LOW-CARBON STEEL WITH EXTERNALLY AND INTERNALLY THREADED FASTENERS, U.N.O.
F. STEEL CONNECTOR PLATES SHALL CONFORM TO ASTM 36.
G. LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1
H. NAILING SHALL BE IN ACCORDANCE WITH TABLE 2304.9.1 OF THE IBC 2012 CODE.
- ROOF SHEATHING AND WALL SHEATHING SHALL BE 5/8" 32/16 APA-RATED STRUCTURAL I SHEATHING, EXPOSURE 1 (INTERIOR GRADE WITH EXTERIOR GLUE), 48"x96" PANELS. ATTACH SHEATHING TO WOOD SUPPORTS WITH 10d ROSIN COATED OR RING SHANK NAILS AT 6" ON CENTER AT PANEL EDGES AND 12" ON CENTER AT INTERMEDIATE SUPPORT MEMBERS.

METAL-PLATE-CONNECTED WOOD TRUSSES:

- UNLESS NOTED OTHERWISE, ALL DESIGN, DETAILING, FABRICATION AND ERECTION OF PREFABRICATED METAL-PLATE-CONNECTED WOOD TRUSSES SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF:

A. AMERICAN FOREST AND PAPER ASSOCIATIONS - NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
B. TRUSS PLATE INSTITUTE - NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD TRUSSES
C. TRUSS PLATE INSTITUTE - COMMENTARY AND RECOMMENDATIONS FOR HANDLING, INSTALLING, AND BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.
D. TRUSS PLATE INSTITUTE - RECOMMENDED DESIGN SPECIFICATIONS FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES.
- WOOD TRUSSES SHALL BE DESIGNED FOR THE LOADS INDICATED IN THE "DESIGN" SECTION OF THE GENERAL STRUCTURAL NOTES AND AS FOLLOWS:

A. TOP CHORD DEAD LOAD = 10 PSF.
B. BOTTOM CHORD DEAD LOAD = 10 PSF
C. BOTTOM CHORD LIVE LOAD = 10 PSF
- TRUSS MANUFACTURER SHALL CALCULATE AND DESIGN TRUSSES FOR WIND UPLIFT PRESSURES BASED ON THE WIND LOAD CRITERIA IN THESE GENERAL NOTES. THE MINIMUM NET WIND UPLIFT PRESSURE SHALL BE 20 PSF.
- WOOD TRUSS CHORD AND WEB MEMBERS SHALL BE SOUTHERN YELLOW PINE, MINIMUM GRADE NUMBER 2.
- MAXIMUM DEFLECTION DUE TO LIVE LOAD SHALL NOT EXCEED L/360. MAXIMUM DEFLECTION DUE TO DEAD LOAD SHALL NOT EXCEED L/240 (INCLUDING LONG TERM EFFECTS).
- WOOD TRUSS SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW, PRIOR TO FABRICATION OF THE WOOD TRUSSES. WOOD TRUSS SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE SEAL OF A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF VIRGINIA.
- DO NOT FABRICATE TRUSSES UNTIL SHOP DRAWINGS AND CALCULATIONS HAVE BEEN SUBMITTED AND APPROVED.
- PROVIDE AND INSTALL PERMANENT AND TEMPORARY BRACING OF WOOD TRUSS MEMBERS AS SHOWN ON THE PLANS, SHOP DRAWINGS, AND AS REQUIRED BY TRUSS PLATE INSTITUTE SPECIFICATIONS. IN ADDITION, 2X4 DIAGONAL X-BRACING SHALL BE INSTALLED IN WOOD TRUSSES AT 8'-0" MAXIMUM INTERVAL AND ATTACHED TO WOOD TRUSSES WITH MINIMUM (4) 10d NAILS.
- CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING AND SHORING OF WOOD TRUSSES AGAINST WIND LOADS, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE ROOF STRUCTURE.

STRUCTURAL ABBREVIATION LIST

A.F.F. ABOVE FINISHED FLOOR	KSI KIPS PER SQUARE INCH
ARCH. ARCHITECTURAL	LLH LONG LEG HORIZONTAL
B.S. BOTH SIDES	LLV LONG LEG VERTICAL
BOT. BOTTOM	MAX. MAXIMUM
CF CUBIC FOOT	MIN. MINIMUM
CMU CONCRETE MASONRY UNIT	MPH MILES PER HOUR
CLR. CLEAR	N.T.S. NOT TO SCALE
CONC. CONCRETE	NO. NUMBER
CONT. CONTINUOUS	# NUMBER
DIA. DIAMETER	O.C. ON CENTER
DIM. DIMENSION	PSI POUNDS PER SQUARE INCH
EA. EACH	PSF POUNDS PER SQUARE FOOT
ELEV. ELEVATION	REINF. REINFORCING
EQ. EQUAL	REQ'D REQUIRED
EQUIP. EQUIPMENT	SIM. SIMILAR
EXIST. EXISTING	STD. STANDARD
EXP. EXPANSION	STRU. STRUCTURAL
EXT. EXTERIOR	T.O.M. TOP OF MASONRY
F.F.E. FINISHED FLOOR ELEV.	T.O.S. TOP OF STEEL
FIN. FINISH	TYP. TYPICAL
FTG. FOOTING	U.N.O. UNLESS NOTED OTHERWISE
GALV. GALVANIZED	V.I.F. VERIFY IN FIELD
HORIZ. HORIZONTAL	VERT. VERTICAL
INT. INTERIOR	W.W.F. WELDED WIRE FABRIC



Dewberry Engineers Inc.

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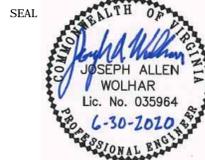
CENTERVILLE CHLORAMINE
BOOSTER STATION EXPANSION

GOOCHLAND COUNTY
DEPARTMENT OF PUBLIC UTILITIES

GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description
REVISIONS			

DRAWN BY: STAFF

APPROVED BY: JAW

CHECKED BY: MKM

DATE: JUNE 2020

TITLE

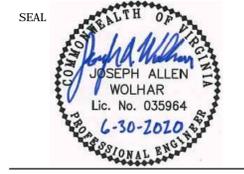
GENERAL
STRUCTURAL
NOTES

PROJECT NO. 50109630

S1.0

CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
 GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
 GOOCHLAND COUNTY, VIRGINIA

KEY PLAN



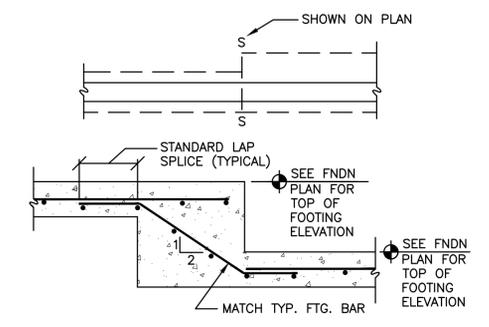
SCALE

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REVISIONS			

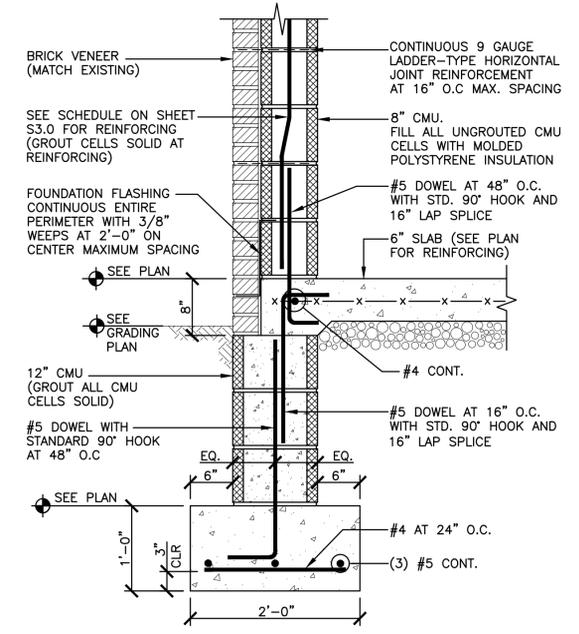
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 CHECKED BY: MKM
 DATE: JUNE 2020
 TITLE: FOUNDATION PLAN AND DETAILS

PROJECT NO. 50109630

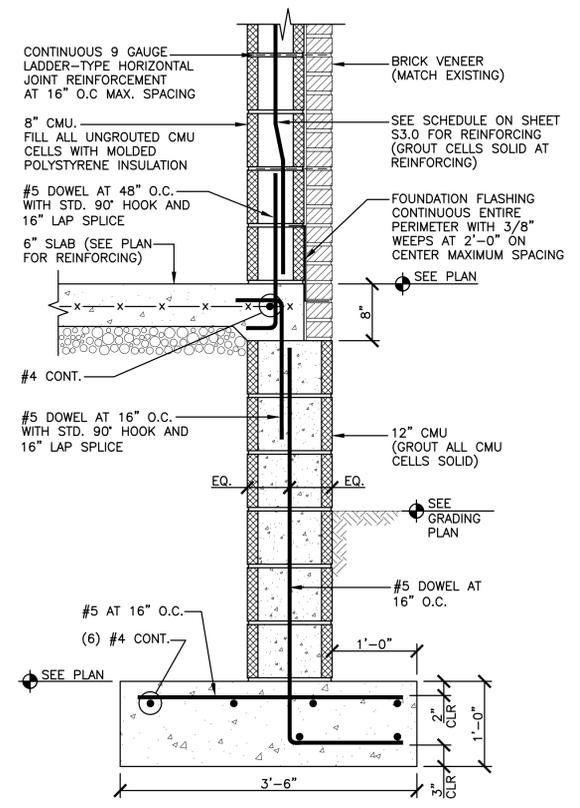
S2.0



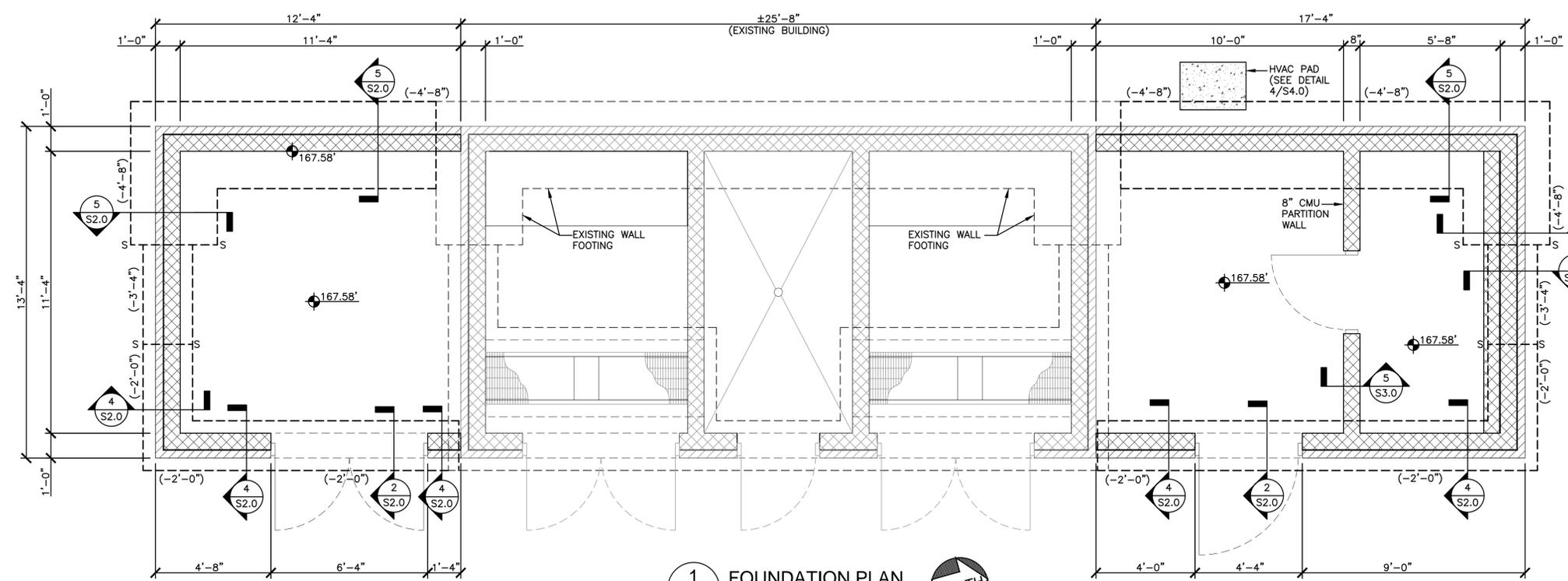
2 DOOR THRESHOLD DETAIL
 S2.0 SCALE: 3/4" = 1'-0"



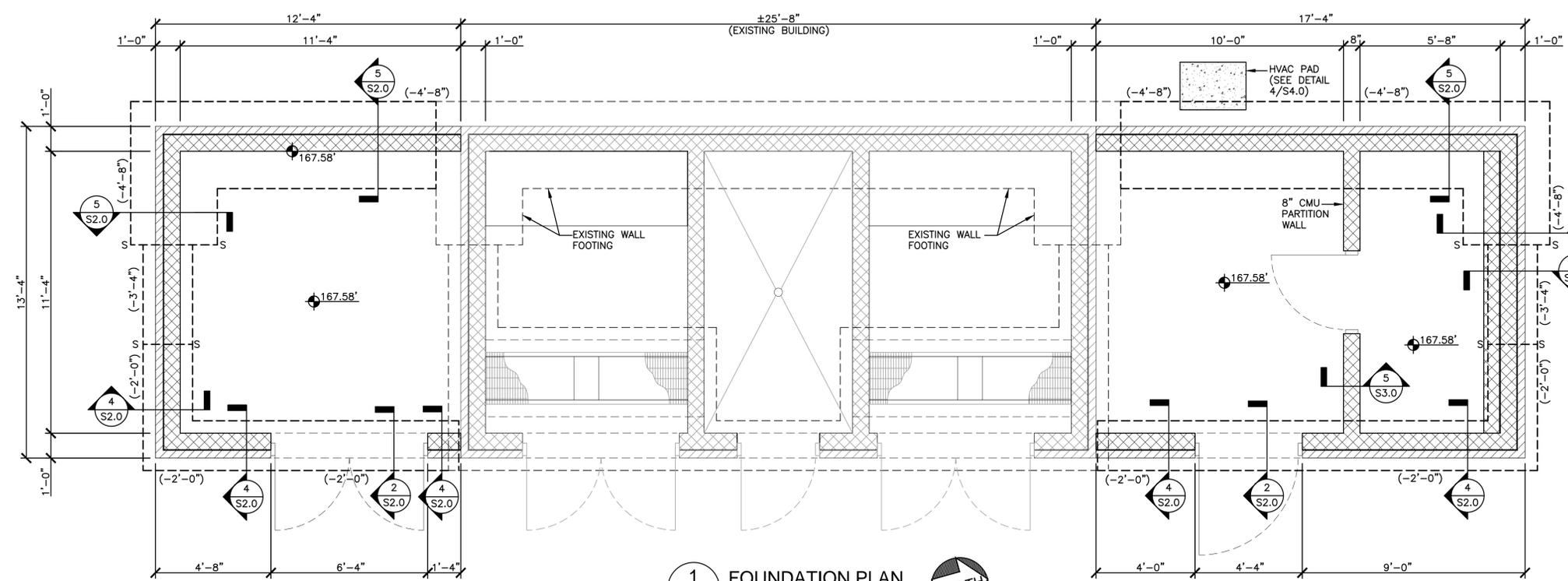
3 FOOTING STEP DETAIL
 S2.0 SCALE: NOT TO SCALE



4 WALL FOOTING DETAIL
 S2.0 SCALE: 1" = 1'-0"



5 RETAINING WALL DETAIL
 S2.0 SCALE: 1" = 1'-0"



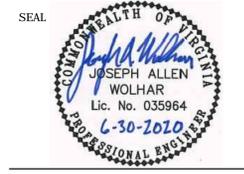
1 FOUNDATION PLAN
 S2.0 SCALE: 3/8" = 1'-0"

FOUNDATION PLAN NOTES:

- SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
- FINISHED FIRST FLOOR ELEVATION SHALL BE 167.58' AND MATCH EXISTING ADJACENT FLOOR SLAB UNLESS NOTED OTHERWISE.
- (-X'-X") DENOTES TOP OF FOOTING ELEVATION REFERENCED FROM FINISH FLOOR ELEVATION 167.34'
- TYPICAL FLOOR CONSTRUCTION SHALL BE 6" THICK CONCRETE SLAB-ON-GRADE WITH 6X6 W2.9xW2.9 WELDED WIRE FABRIC AT MID-DEPTH OF SLAB OVER 15 MIL VAPOR BARRIER AND 4" #57 STONE BASE
- PROVIDE TROWEL FINISH TO INTERIOR CONCRETE FLOOR SLAB.
- S--S DENOTES FOOTING STEP, SEE DETAIL 3/S2.0. CONTRACTOR IS PERMITTED TO SCALE FOOTING STEP LOCATIONS OFF OF THE DRAWINGS. LOCATE STEP WITHIN 12" OF LOCATION SHOWN ON PLAN. MAINTAIN A MINIMUM OF 18" TO BOTTOM OF FOOTING.
- SEE MECHANICAL AND PLUMBING DRAWINGS FOR FLOOR DRAINS AND PIPING. SLOPE FLOOR SLAB IN BATHROOM TO DRAINS.



KEY PLAN



SCALE

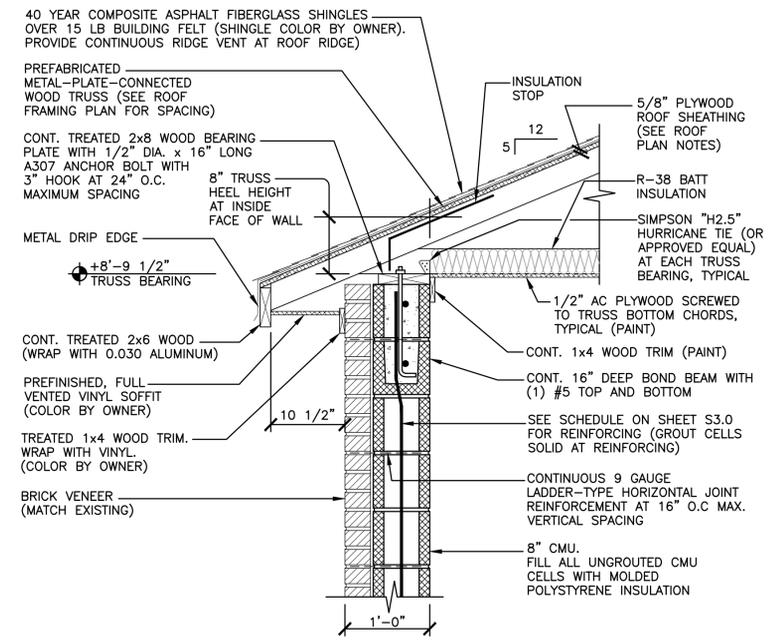
No.	DATE	BY	Description
REVISIONS			

DRAWN BY: STAFF
 APPROVED BY: JAW
 CHECKED BY: MKM
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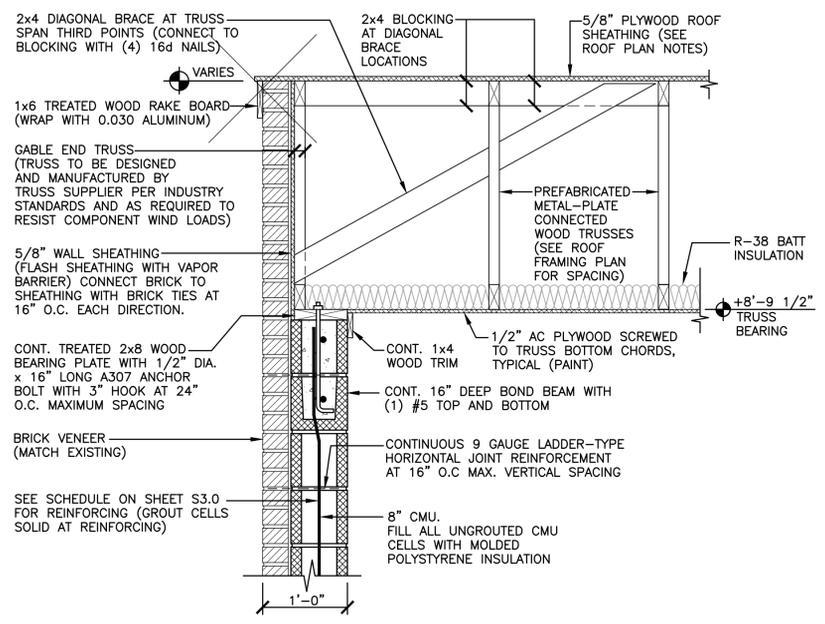
ROOF FRAMING PLAN AND DETAILS

PROJECT NO. 50109630

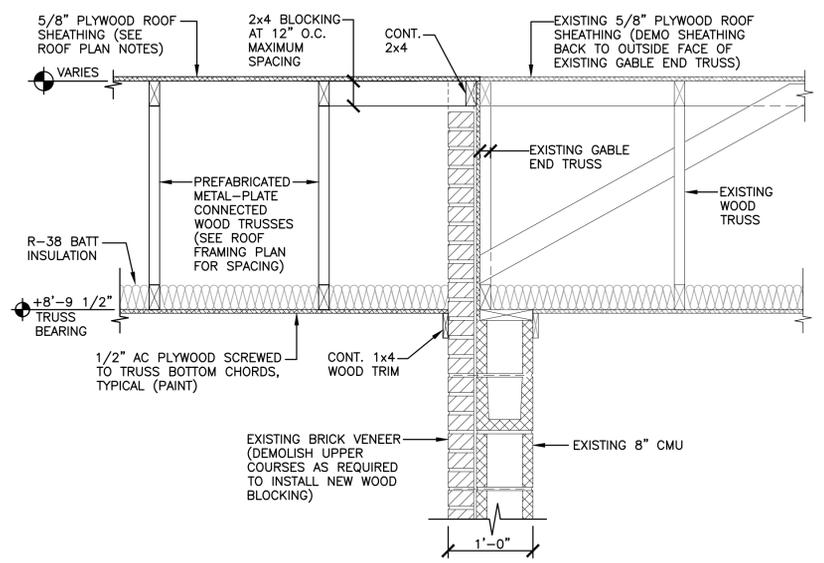
S3.0



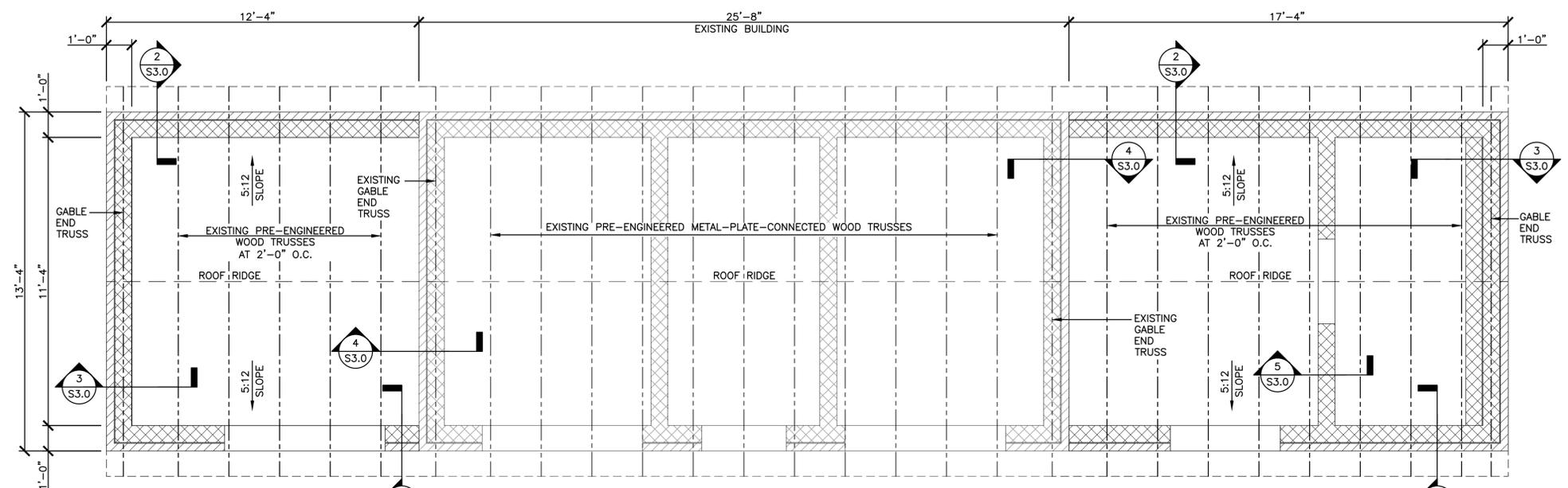
2 ROOF SECTION
 S3.0 SCALE: 1" = 1'-0"



3 GABLE ROOF SECTION
 S3.0 SCALE: 1" = 1'-0"

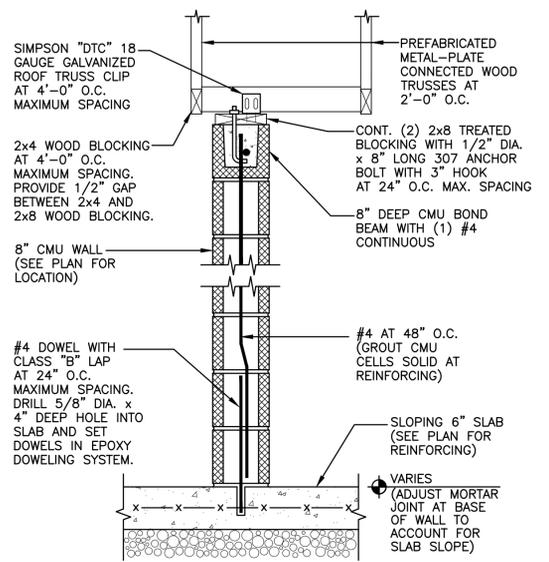


4 GABLE ROOF SECTION
 S3.0 SCALE: 1" = 1'-0"



- ROOF CANOPY FRAMING PLAN NOTES:**
- SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
 - SEE SHEET S4.0 FOR MASONRY LINTEL SCHEDULE AND CMU WALL REINFORCING SCHEDULE.
 - ROOF SHEATHING SHALL BE 5/8" APA-RATED STRUCTURAL I SHEATHING, 32/16 SPAN RATING, EXPOSURE 1 (INTERIOR GRADE WITH EXTERIOR GLUE), 48" X 96" PANELS. ATTACH TO METAL-PLATE-CONNECTED WOOD TRUSSES WITH 10d NAILS AT 6" ON CENTER AT SUPPORTED PANEL EDGES AND WITH 10d NAILS AT 12" ON CENTER AT INTERMEDIATE SUPPORTS.
 - ROOF TRUSS BEARING ELEVATION SHALL BE +8'-9/12" ABOVE FINISHED FLOOR.

1 ROOF FRAMING PLAN
 S3.0 SCALE: 3/8" = 1'-0"



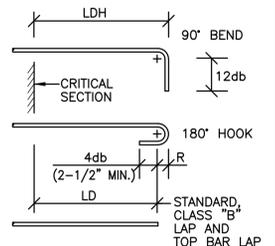
5 INTERIOR CMU WALL SECTION
 S3.0 SCALE: 1" = 1'-0"

E
 D
 C
 B
 A

REBAR SPLICE AND HOOK SCHEDULE

REBAR SPLICE AND HOOK DIMENSIONS IN REINF. CONCRETE
F'c = 4,000 PSI

ASTM BAR SIZE	LD	CLASS B LAP	TOP BAR LAP	LDH
3	12"	12"	16"	7-1/2"
4	12"	15"	20"	9-1/2"
5	15"	19"	24"	12"
6	17"	23"	29"	14-1/2"
7	25"	33"	43"	17"
8	29"	37"	49"	19"

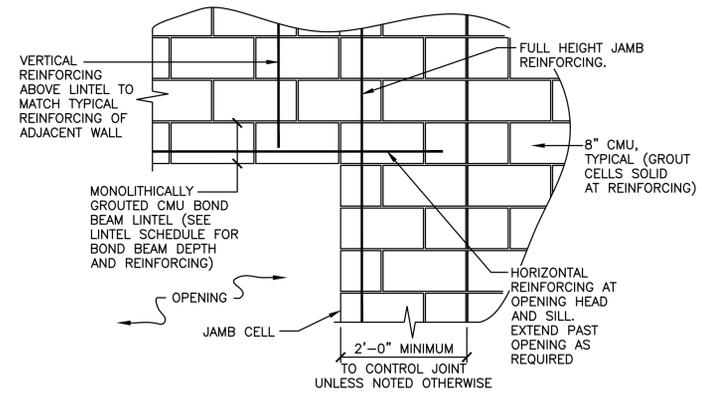


REBAR SPLICE AND HOOK DIMENSIONS IN REINF. CMU WALLS AND BOND BEAMS

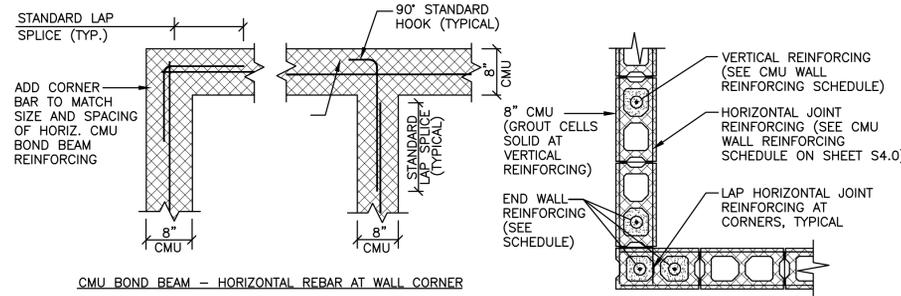
ASTM BAR SIZE	LD	LAP	LDH
3	13-1/2"	19"	4-1/2"
4	18"	25"	6"
5	22-1/2"	31"	7-1/2"

LD - STANDARD DEVELOPMENT LENGTH OF BAR
LDH - STANDARD DEVELOPMENT LENGTH OF HOOK
F'c - SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE
db - BAR DIAMETER PER ASTM

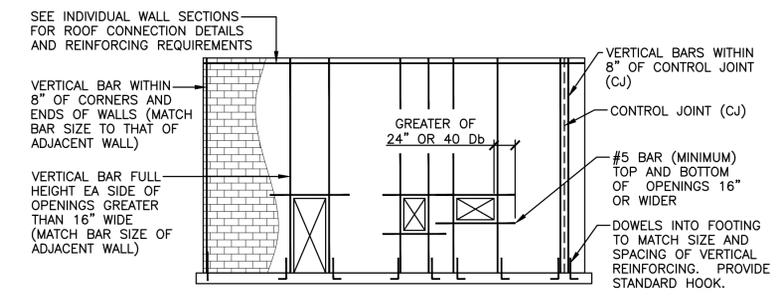
NOTES:
TOP BAR - DEFINED AS A BAR LOCATED SUCH THAT 12 INCH OR MORE OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.
MINIMUM OUTSIDE RADIUS OF BEND, R, SHALL BE 4db.



3 TYPICAL JAMB REINFORCING AT CMU BOND BEAM LINTEL
S4.0 SCALE: NOT TO SCALE



2 CMU WALL CORNER REINFORCING DETAIL
S4.0 SCALE: NOT TO SCALE



- NOTES:**
- REINFORCING SHOWN IS A MINIMUM REQUIREMENT. INDIVIDUAL WALL SECTION REINFORCING REQUIREMENTS (SUCH AS NUMBER OR SIZE OF BARS) SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS SHOWN HEREIN. SEE INDIVIDUAL WALL SECTIONS AND SCHEDULES FOR VERTICAL REINFORCING REQUIREMENTS.
 - ALL DISCONTINUOUS REINFORCEMENT SHALL BE LAPPED PER MINIMUM SPLICE AND EMBEDMENT LENGTH SCHEDULE.
 - VERTICAL STEEL MUST BE SECURED IN PLACE BEFORE THE BLOCKS ARE LAID. ALL VERTICAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH MASONRY LINTELS AND BOND BEAMS U.N.O..
 - PROVIDE MINIMUM (2) LEGS OF 9 GAUGE (W1.7) HORIZONTAL JOINT REINFORCING AT 16" O.C. MAX. SPACING

1 MINIMUM CMU WALL REINFORCING REQUIREMENTS
S4.0 SCALE: NOT TO SCALE

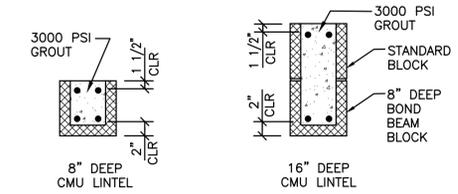
MASONRY LINTEL SCHEDULE

U.N.O. ON THE DRAWINGS, USE THE FOLLOWING SCHEDULE FOR LINTELS AND HEADERS IN NEW MASONRY CONSTRUCTION.

- OPENINGS FOR ROUND PIPING, AND ELECTRICAL CONDUIT ARE NOT SHOWN. SLEEVE OPENINGS BETWEEN 4 AND 12 INCHES DIAMETER WITH SCHEDULE 40 STEEL PIPE PER THE COORDINATION SECTION OF THE GENERAL NOTES.
- MINIMUM BEARING FOR MASONRY LINTELS IS 8". FILL CMU CELLS BELOW BEARING WITH 3,000 PSI GROUT AND REINFORCE PER CMU WALL SCHEDULE.
- MINIMUM BEARING FOR SINGLE STEEL ANGLE LINTELS IS 8".
- STEEL ANGLE LOOSE LINTELS IN EXTERIOR MASONRY WALLS SHALL BE HOT-DIPPED GALVANIZED.

- 4" BRICK LOOSE LINTELS**
- FOR CLEAR SPANS LESS THAN 4'-0", USE L4x4x3/8 SINGLE ANGLE.
 - FOR CLEAR SPANS GREATER THAN 4'-0" AND LESS THAN OR EQUAL TO 6'-8", USE L6x4x3/8 SINGLE ANGLE (LONG LEG VERTICAL).

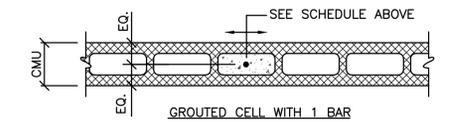
- 8" CMU WALLS**
- FOR CLEAR SPANS LESS THAN 4'-0", PROVIDE AN 8" DEEP BOND BEAM LINTEL WITH (2) #4 BARS TOP AND BOTTOM.
 - FOR CLEAR SPANS GREATER THAN 4'-0" AND LESS THAN 6'-8", PROVIDE A 16" DEEP BOND BEAM LINTEL WITH (2) #4 BARS TOP AND BOTTOM.



CMU WALL REINFORCING SCHEDULE

REINFORCING OF CMU WALLS SHALL BE AS FOLLOWS U.N.O.

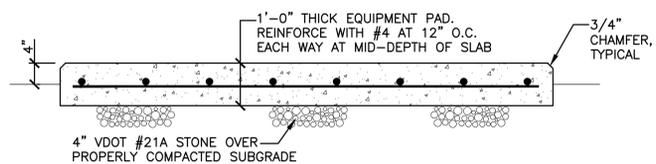
WALL DESCRIPTION	REINFORCING REQUIRED
8" CMU EXTERIOR WALLS	#5 AT 48" O.C.
8" CMU INTERIOR WALLS	#4 AT 48" O.C.
12" CMU FOUNDATION WALLS	SEE DETAILS



- REINFORCING NOTES:**
- ALL BLOCK IN REINFORCED CMU WALLS SHALL BE REINFORCED CONTINUOUSLY FROM FOOTING TO TOP OF WALL U.N.O. GROUT LIFTS SHALL BE LIMITED TO A MAXIMUM OF 5'-0" IN HEIGHT.
 - GROUT 1 CMU CELL WITH SCHEDULED REINFORCING AT SIDES OF ALL OPENINGS LESS THAN OR EQUAL TO 4'-0" WIDE, AT CORNERS OF WALLS, AND AT DISCONTINUOUS ENDS OF WALLS.
 - GROUT 2 CMU CELLS SOLID WITH SCHEDULED REINFORCING AT SIDES OF OPENINGS GREATER THAN 4'-0" WIDE BUT LESS THAN 6'-8" WIDE.
 - ALL VERTICAL CMU WALL REINFORCING SHALL HAVE STANDARD LAP SPLICES PER THE LAP SPLICE SCHEDULE ON SHEET S3.0

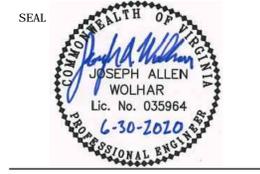
EQUIPMENT PAD NOTES:

- COORDINATE PAD LOCATION WITH MECHANICAL AND CIVIL DRAWINGS.
- EQUIPMENT PAD PLAN DIMENSIONS SHALL EXTEND A MINIMUM OF 6" BEYOND GENERATOR PLAN DIMENSIONS ON ALL 4 SIDES OF PAD.
- CONCRETE SHALL BE NORMAL WEIGHT WITH A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.



4 HVAC EQUIPMENT PAD DETAIL
S4.0 SCALE: NOT TO SCALE

KEY PLAN



SCALE

No.	DATE	BY	Description
REVISIONS			

DRAWN BY: STAFF
APPROVED BY: JAW
CHECKED BY: MKM
DATE: JUNE 2020

STRUCTURAL SCHEDULES AND DETAILS

PROJECT NO. 50109630

S4.0

SEQUENCE OF OPERATION

- DMSS-2/HP-2:** AIR HANDLER AND HEAT PUMP SHALL CYCLE ON/OFF TO MAINTAIN SPACE SET POINT OF 75°F (ADJUSTABLE).
- UH-3:** THE UNIT HEATER SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTAT TO MAINTAIN 60°F (ADJUSTABLE).
- EF-3:** FAN SHALL BE CONTROLLED BY TOGGLE SWITCH.

ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
 CFM CUBIC FEET PER MINUTE (AIR VOLUME)
 COND. CONDENSATE
 CONT'R CONTRACTOR
 ELEC. ELECTRICAL
 TSP TOTAL EXTERNAL STATIC PRESSURE
 HP HORSEPOWER
 IN INCHES
 MBH THOUSANDS BTUH
 PH PHASE
 SA SUPPLY AIR
 SEER SEASONAL ENERGY EFFICIENCY RATIO
 SHC SENSIBLE COOLING
 T.C. TOTAL COOLING
 TEMP TEMPERATURE
 T'STAT THERMOSTAT
 TYP. TYPICAL

SYMBOLS

- 24x12 RECTANGULAR DUCT SIZE
- RECTANGULAR SUPPLY AIR DUCT
- PIPE DOWN
- PIPE UP
- THERMOSTAT
- EQUIPMENT TAG SCHEDULE NUMBER
- MOTORIZED DAMPER
- TOGGLE SWITCH

SYSTEM NOMENCLATURE

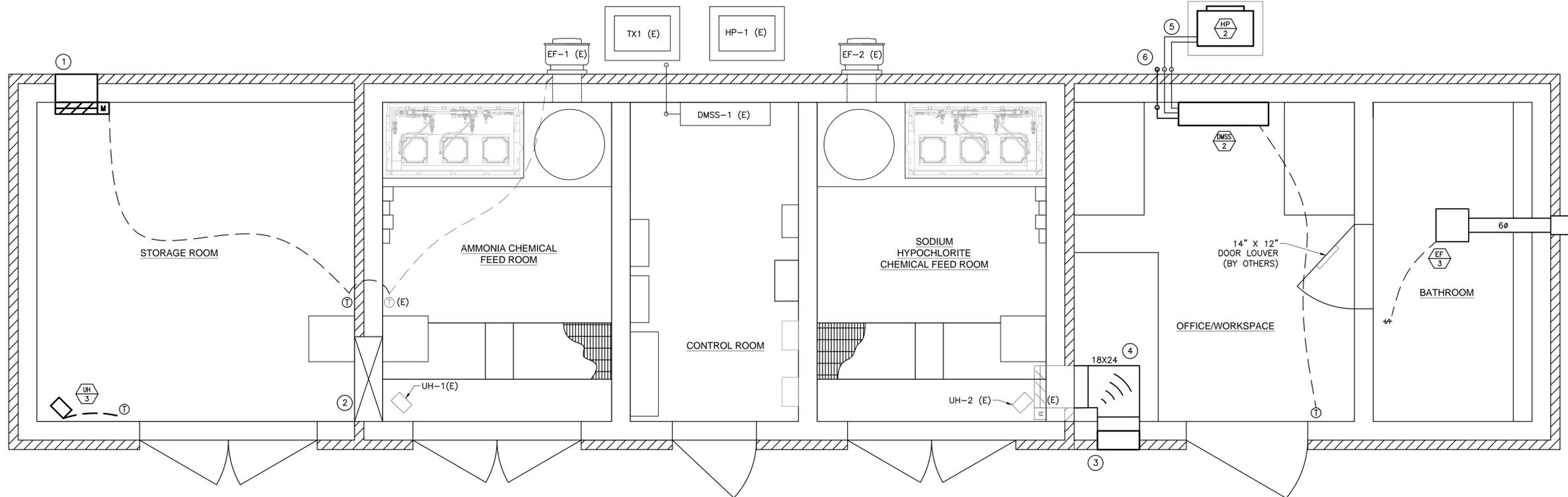
- EF-1 # : NUMBER OF UNIT
- EF = EXHAUST FAN
- UH = UNIT HEATER
- DMSS = DUCTLESS MINI SPLIT SYSTEM
- HP = HEAT PUMP

HVAC PLAN KEY NOTES

1. PROVIDE OUTSIDE AIR INTAKE LOUVER WITH MINIMUM 1.5 SF FREE AREA. MOUNT BOTTOM AT 8" A.F.F. LOUVER SHALL BE DRAINABLE, STATIONARY, AND EXTRUDED ALUMINUM CONSTRUCTION WITH INSECT SCREEN. RELOCATE EXISTING ACTUATOR IN AMMONIA CHEMICAL FEED ROOM TO NEW DAMPER/LOUVER. INTERLOCK EXISTING EF-1 WITH RELOCATED ACTUATOR. PROVIDE T'STAT THAT WILL AVERAGE WITH THE EXISTING T'STAT IN AMMONIA CHEMICAL FEED ROOM.
2. RELOCATE EXISTING ACTUATOR TO NEW DAMPER/LOUVER PER KEYED NOTE 1 IN NEW CHEMICAL FEED ROOM. LOCK EXISTING DAMPER/LOUVER FULLY OPEN.
3. PROVIDE OUTSIDE AIR INTAKE LOUVER WITH MINIMUM 1.5 SF FREE AREA. MOUNT BOTTOM AT 8" A.F.F. LOUVER SHALL BE DRAINABLE, STATIONARY, AND EXTRUDED ALUMINUM CONSTRUCTION WITH INSECT SCREEN.
4. COORDINATE DUCTWORK WITH SYSTEMS FURNITURE AND EXISTING DAMPER/LOUVER.
5. PROVIDE REFRIGERANT LINE SIZES AND SPECIALTIES AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. INSULATE LINE WITH ELASTOMERIC INSULATION, PROVIDE UV RESISTANT COATING ON INSULATION OUTSIDE OF BUILDING. PIPING SHALL BE TYPE ACR OR TYPE L COPPER TUBING WITH BRAZED JOINTS.
6. CONDENSATE DRAIN PIPING SHALL BE 3/4" TYPE L COPPER TUBING WITH SOLDER JOINTS.

GENERAL NOTES

1. THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT SHOW ALL DETAILS REQUIRED FOR THE COMPLETE SYSTEM. THEY SHOULD HOWEVER BE FOLLOWED AS CLOSELY AS POSSIBLE IN THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT. ALL DIMENSIONS SHALL BE CHECKED AT THE BUILDING AND ALL STRUCTURAL AND FINISH CONDITIONS INVESTIGATED. THE CONTRACTOR SHALL ARRANGE THEIR WORK TO MEET THESE CONDITIONS AND PROVIDED SUCH EQUIPMENT AND ACCESSORIES AS MAY BE REQUIRED.
2. PROPERLY SUPPORT ALL WORK AND EQUIPMENT INSTALLED UNDER THIS CONTRACT PLUMB AND PARALLEL. STUDY ALL GENERAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, SHOP DRAWINGS, AND CATALOG DATA TO DETERMINE HOW EQUIPMENT, ACCESSORIES, PIPING, FIXTURES, AND RELATED ITEMS ARE TO BE SUPPORTED, MOUNTED, OR SUSPENDED. PROVIDE ALL BOLTS, INSERTS, PIPE STANDS, BRACKETS, STRUCTURAL SUPPORTS, AND ACCESSORIES FOR PROPER SUPPORT OF EQUIPMENT FURNISHED UNDER THIS CONTRACT. COORDINATE THE MECHANICAL WORK WITH ALL OTHER CONTRACTORS BEFORE BEGINNING WORK TO ENSURE THAT THE ELECTRICAL WORK DOES NOT INTERFERE WITH OTHER WORK.
3. NOTIFY THE ENGINEER IN WRITING IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCY OR POINTS OF CONFLICT IN THE DRAWINGS OR THE SPECIFICATIONS.
4. THERMOSTATS SHALL BE WALL MOUNTED AT 48" ABOVE FINISHED FLOOR. COORDINATE LOCATION WITH OTHER TRADES.



1 HVAC BUILDING PLAN
 H1.0 SCALE: 1/2" = 1'-0"



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 www.dewberry.com

CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
 GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
 GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description
REVISIONS			

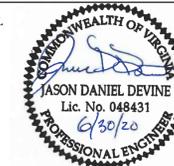
HVAC PLAN

PROJECT NO. 50109630

H1.0

KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description
REVISIONS			

DRAWN BY DTS

APPROVED BY JDD

CHECKED BY JDD

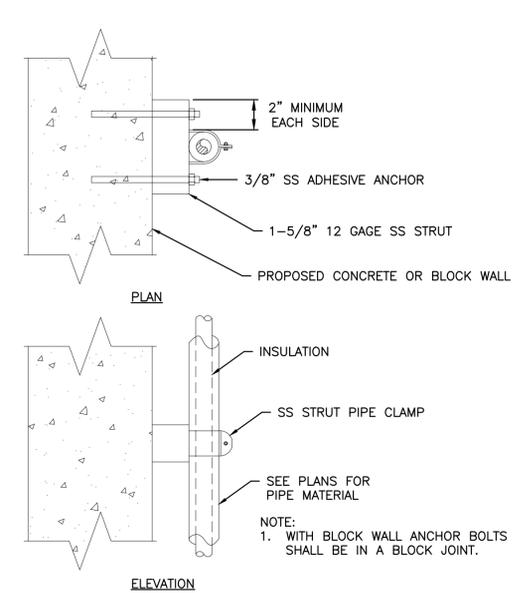
DATE JUNE 2020

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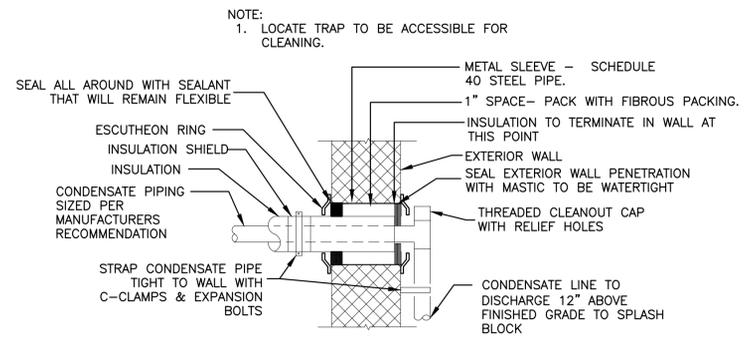
HVAC DETAILS & SCHEDULES

PROJECT NO. 50109630

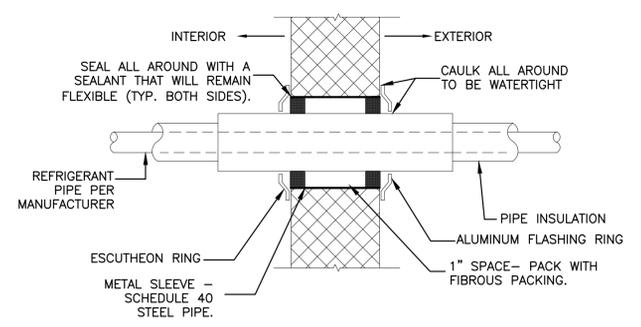
H1.1



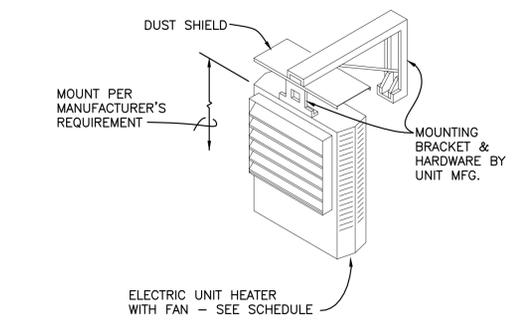
1 WALL PIPE SUPPORT
H1.1 SCALE: NOT TO SCALE



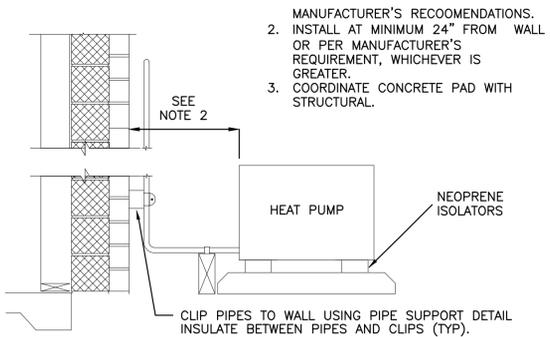
2 CONDENSATE DRAIN - THROUGH WALL
H1.1 SCALE: NOT TO SCALE



3 EXTERIOR WALL PENETRATION
H1.1 SCALE: NOT TO SCALE



4 ELECTRIC UNIT HEATER
H1.1 SCALE: NOT TO SCALE



5 HEAT PUMP DETAIL
H1.1 SCALE: NOT TO SCALE

UNIT HEATER SCHEDULE										
MARK	SERVICE	TYPE	MANUFACTURER / MODEL	FAN		AIR		ELECTRIC		NOTES
				AIR FLOW (CFM)	VOLTAGE/ PHASE	EAT (F)	LAT (F)	DESIGN (KW)	VOLTAGE/ PHASE	
UH-3	STORAGE ROOM	HORIZONTAL	QMARK / MUH	350	480/3	45	89	5.0	480/3	1,2,3,4,5

- NOTES:
- REFER TO SECTION 15739 FOR ADDITIONAL REQUIREMENTS.
 - PROVIDE MOTOR-RATED DISCONNECT SWITCH. MOUNT ON WALL BELOW UNIT.
 - PROVIDE FACTORY-FABRICATED WALL SUPPORT. MOUNT AT 8' AFF TO TOP OF HEATER UNLESS OTHERWISE NOTED ON PLANS.
 - PROVIDE WITH WALL MOUNTED THERMOSTAT.
 - PROVIDE SINGLE-STEP CONTROLLER FOR ELECTRIC COILS.

FAN SCHEDULE													
MARK	SERVICE	TYPE	MANUFACTURER / MODEL	AIR FLOW (CFM)	TSP (IN WG)	DRIVE TYPE	SPEED (RPM)	NOMINAL MOTOR (W)	MAX SOUND (SONES)	DAMPER TYPE	VOLTAGE/ PHASE	STARTER/ DSCNCT	
												MEANS	
EF-3	BATHROOM	CEILING CABINET	GREENHECK / SP	110	0.30	DIRECT	960	12.0	5.0	GRAVITY	120/1	MRS	1,2,3,4

- NOTES:
- REFER TO SECTION 15723 FOR ADDITIONAL REQUIREMENTS.
 - PROVIDE STARTING AND DISCONNECTING MEANS AS SCHEDULED. (MRS = MOTOR RATED SWITCH; MS/D = COMBINATION MOTOR-STARTER AND DISCONNECT; AND VFD = VARIABLE FREQUENCY DRIVE)
 - PROVIDE WITH MANUFACTURER'S INTEGRAL BACKDRAFT DAMPER.
 - PROVIDE WITH MANUFACTURER'S STANDARD WALL CAP WITH BIRDSCREEN.

DUCTLESS MINI-SPLIT UNIT SCHEDULE															
MARK (INDOOR UNIT)	MARK (OUTDOOR UNIT)	SERVICE	TYPE	MANUFACTURER / MODEL INDOOR & OUTDOOR	SUPPLY AIR FLOW (CFM)	COOLING			HEAT PUMP			ELECTRICAL - OUTDOOR UNIT			NOTES
						TOT. CAP. (BTUH/W)	SEER/EER (F)	AMB. (F)	CAPACITY (MBH)	HSPF/ COP	AMB. (F)	MCA (A)	MCCP (A)	VOLTAGE/ PHASE	
DMSS-2	HP-2	OFFICE/WORKSHOP	WALL MOUNTED / HEAT PUMP	COMFORTSTAR / CHP	450	12.3	18.0	95	13.0	9.6	47	8.0	15	208/1	1,2,3,4,5,6

- NOTES:
- REFER TO DIV 15 FOR ADDITIONAL REQUIREMENTS.
 - SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDE SINGLE-POINT POWER CONNECTION. PROVIDE FUSED-DISCONNECT SWITCH FOR OUTDOOR UNIT. PROVIDE MOTOR-RATED DISCONNECT SWITCH FOR INDOOR UNIT.
 - PROVIDE LOW AMBIENT TEMPERATURE OPTION.
 - PROVIDE WIRED WALL MOUNTED THERMOSTAT. WIRELESS REMOTE CONTROLS ARE NOT ACCEPTABLE.
 - PROVIDE DRAIN PAN LEVEL SENSOR CAPABLE OF SHUTTING DOWN THE UNIT UPON DETECTING HIGH WATER.

CENTERVILLE CHLORAMINE BOOSTER STATION EXPANSION
GOOCHLAND COUNTY DEPARTMENT OF PUBLIC UTILITIES
 GOOCHLAND COUNTY, VIRGINIA

KEY PLAN

SEAL



SCALE

No.	DATE	BY	Description

REVISIONS

DRAWN BY	SMK
APPROVED BY	RNK
CHECKED BY	DAV
DATE	JANUARY 2020

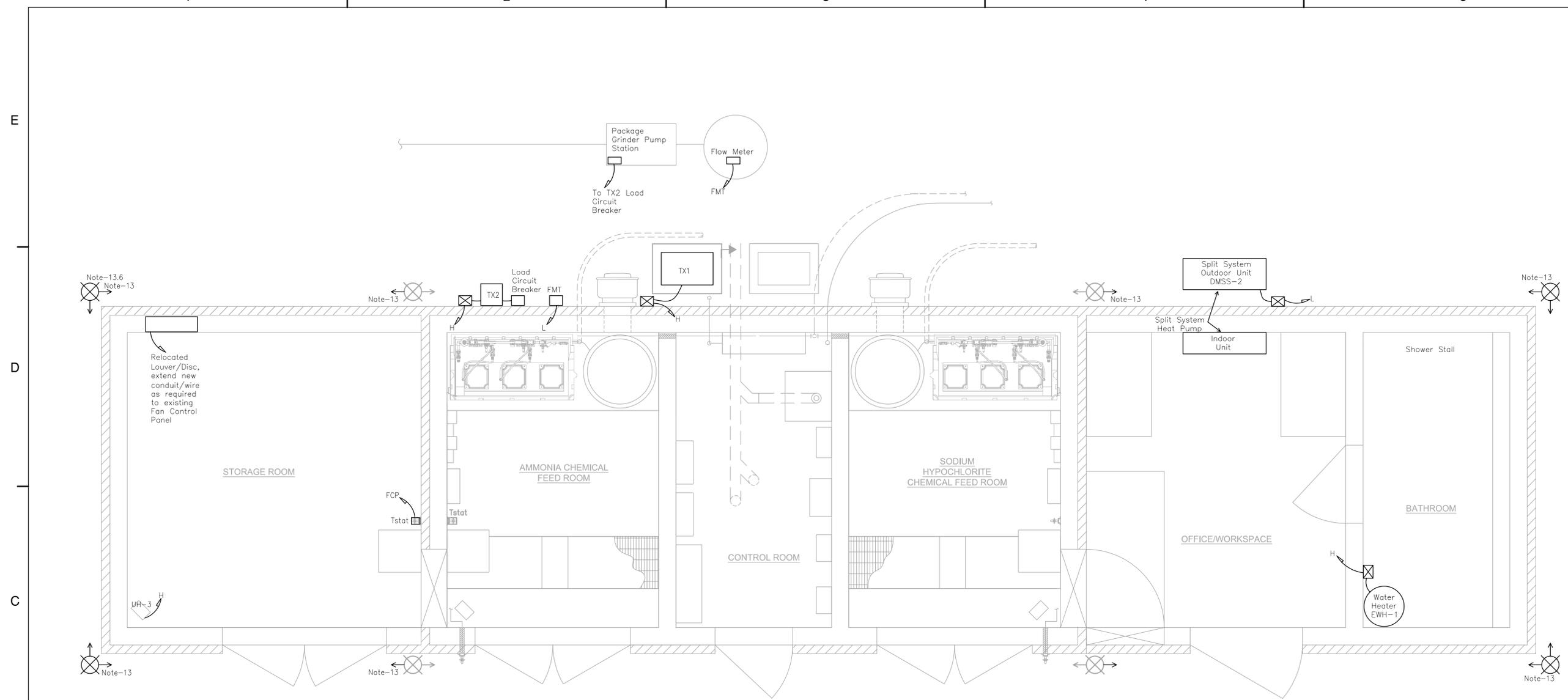
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CHEMICAL BUILDING LAYOUT

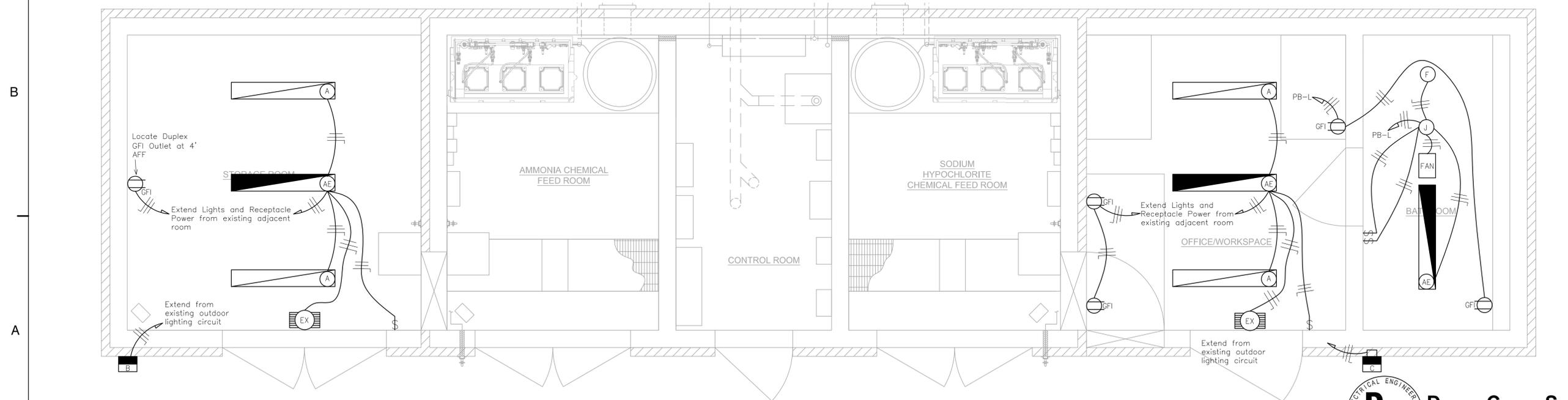
PROJECT NO. 50109630

E3.0

DOMINION CONTROL SYSTEMS, INC.
 P.O. Box 6301 Ashland, VA 23005
 Email: DominionControls@verizon.net
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ELECTRICAL PLAN
 SCALE: 1/2" = 1'-0"



LIGHTS & RECEPTACLES PLAN
 SCALE: 1/2" = 1'-0"