

1 EXISTING FEATURES AND SITE DEMOLITION PLAN
 SCALE: 1" = 20'
 NORTH

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

GENERAL SHEET NOTES

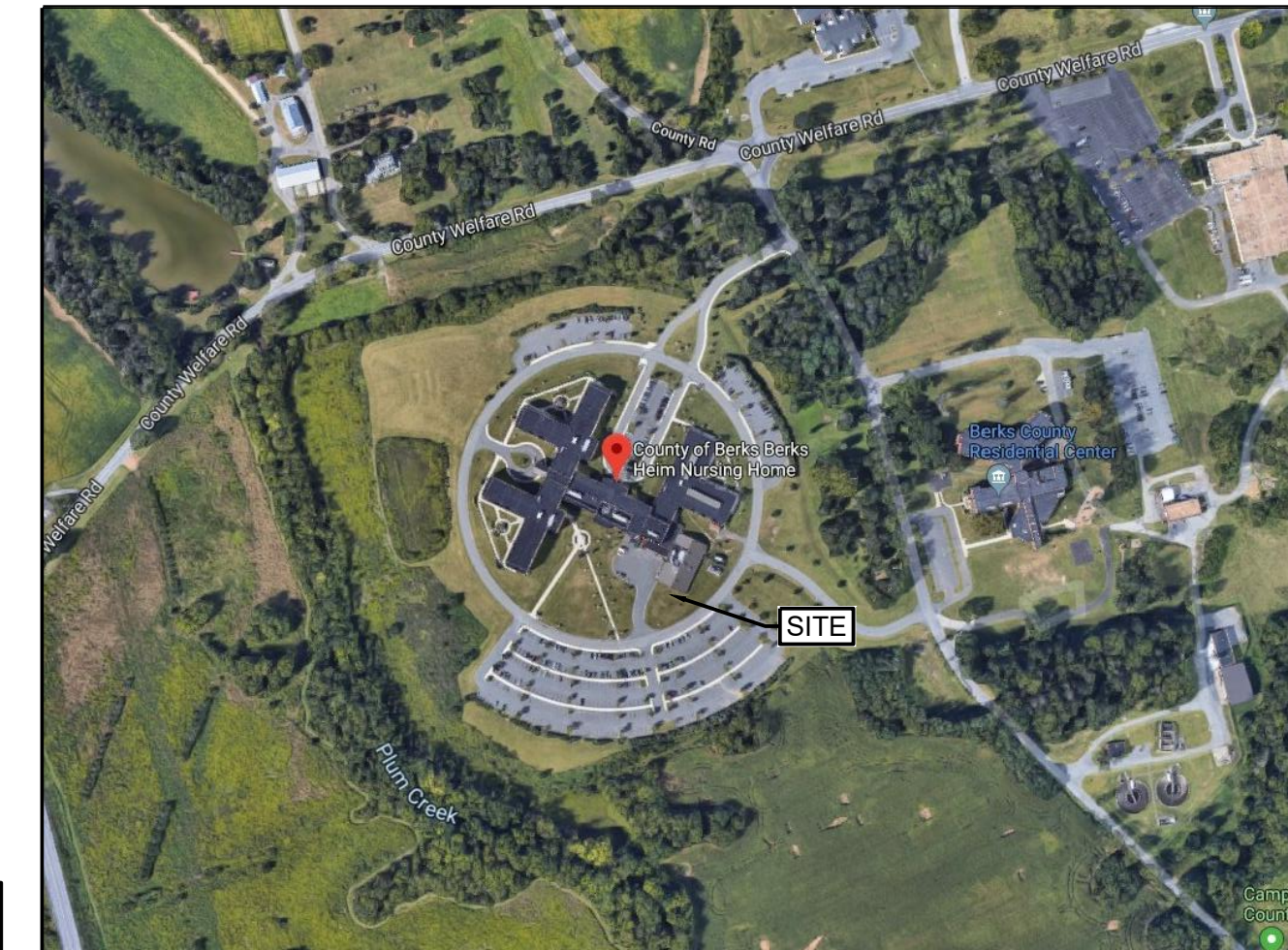
- FIELD SURVEY BY SNYDER SURVEYING, DATED OCTOBER 2019. NAVD88 DATUM.
- ONE CALL PERFORMED BY SNYDER SURVEYING, DATED OCTOBER 2019.
- UNDERGROUND UTILITIES LOCATED BY MASTER LOCATORS, DATED NOVEMBER 2019.
- THE LOCATION AND DIMENSIONS OF ALL SITE FEATURES SHOWN ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO BIDDING.
- ALL UNDERGROUND UTILITIES SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO ANY EARTH MOVING ACTIVITIES. PURSUANT TO ACT 187, UNDERGROUND UTILITY LOCATIONS MUST BE VERIFIED BY CALLING 1-800-242-1176.
- ALL UNDERGROUND UTILITY LOCATIONS AND ELEVATIONS ON THE CONSTRUCTION PLANS ARE APPROXIMATE LOCATIONS DELINEATED FROM LIMITED FIELD MARKINGS AND AVAILABLE RECORDS. THEREFORE, ANY UTILITIES NOT SHOWN OR NOT LOCATED AS SHOWN, SHALL NOT BE THE CAUSE OF THE CONTRACTOR TO DENY RESPONSIBILITY FOR PROTECTION AND/OR REPAIR DURING CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FACILITIES AND PROVIDE ALL PROTECTIVE MEASURES, RESTRAINTS AND APPURTENANCES AS NECESSARY.
- THESE DESIGN DRAWINGS MUST BE WORKED IN CONJUNCTION WITH THE PROJECT MANUAL/SPECIFICATIONS.
- CONTRACTOR SHALL USE, MAINTAIN AND PROVIDE ADEQUATE PROPER SHORING DEVICES ON SITE AT ALL TIMES. CONTRACTOR SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SHEET KEY NOTES

- REMOVAL AND ABANDONMENT OF EXISTING SANITARY SEWER FORCE MAIN MUST BE COORDINATED WITH THE INSTALLATION OF THE RELOCATED FORCE MAIN, SEE SHEET C-101.

CIVIL LEGEND

- 355 --- EXISTING CONTOURS (MAJOR)
- 357 --- EXISTING CONTOURS (MINOR)
- --- EXISTING TREE LINE OR BRUSH
- Bh SwD SOIL LINE AND TYPE
- --- PROPERTY LINE
- --- EXISTING EASEMENT
- --- EXISTING CHAIN LINK FENCE
- --- STREAM / SWALE
- --- 1% FLOODPLAIN LINE
- --- EXISTING STORM DRAIN
- --- EXISTING OVERHEAD ELECTRIC LINE
- --- EXISTING WATERLINE
- --- EXISTING SANITARY SEWER
- --- EXISTING SANITARY FORCE MAIN
- --- EXISTING FOUNDATION DRAIN
- (TBR) TO BE REMOVED



1 LOCATION MAP
 SCALE: NONE

DATE	REV	ISSUED FOR BIDDING	MAF	APPD
01/09/20	0			

COUNTY OF BERKS
 BERKS HEIM
 BERN TOWNSHIP
 BOILER PROJECT
 CIVIL
 EXISTING FEATURES AND SITE DEMOLITION PLAN

SCALE: AS NOTED
 PREPARED BY: GEM
 CHECKED BY: KLG
 APPROVED BY: MAF

PROJECT NO: 4177.009
 DRAWING NO: CD-101

GENERAL SHEET NOTES

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SHEET KEY NOTES

1. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR DETAILS OF EQUIPMENT AND PIPING.
2. EXISTING BUILDING FLOOR ELEVATION = 259.89. PROPOSED BUILDING FLOOR ELEVATION = 259.89. CORRESPONDS TO FLOOR ELEVATION 0.0 ON OTHER DISCIPLINE DRAWINGS.
3. PROVIDE 6" THICK CONCRETE APRON AT OVERHEAD DOOR. REINFORCE WITH W.W.R. TO MATCH FLOOR SLAB.

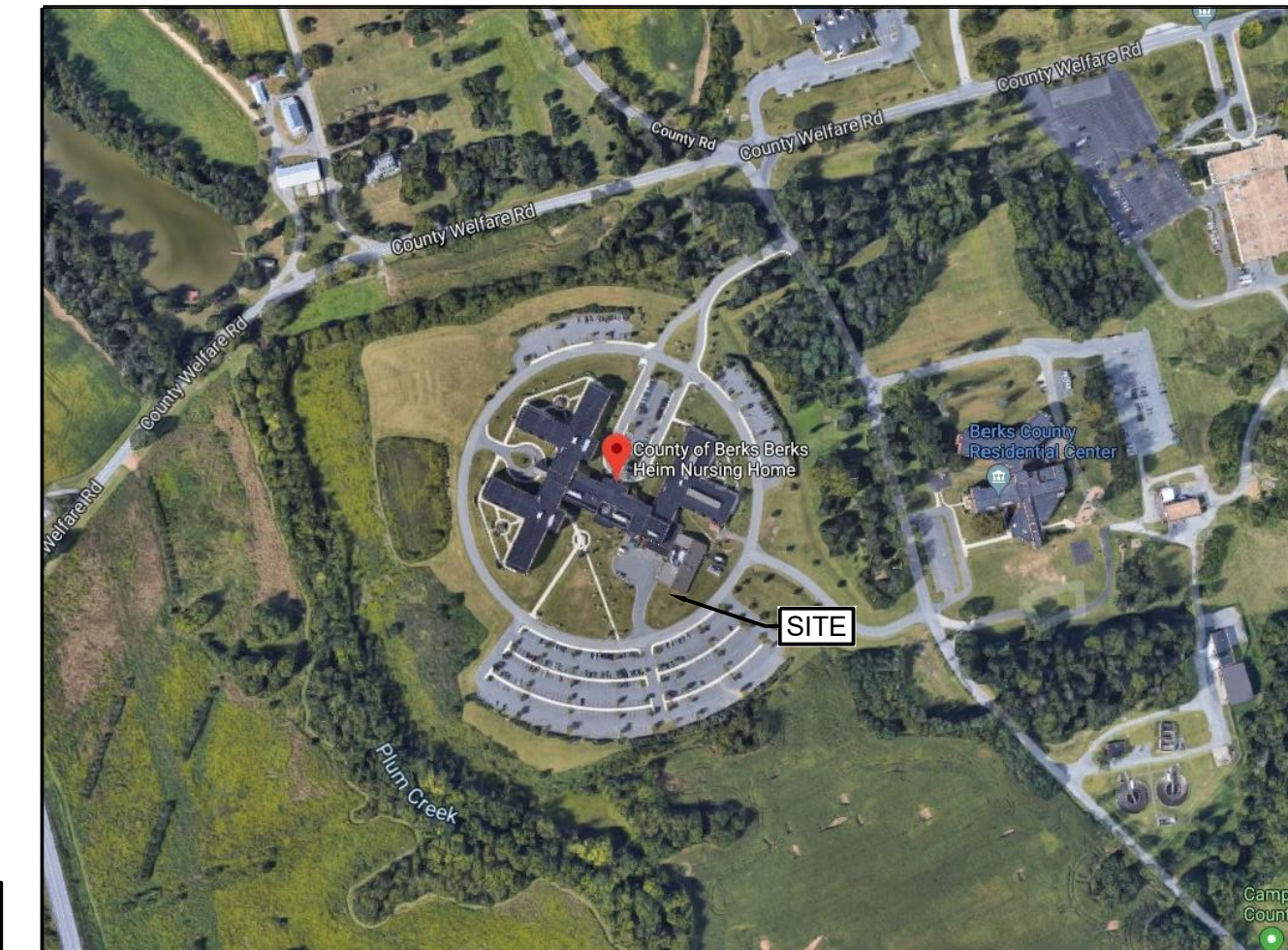
CIVIL LEGEND

- 355 --- EXISTING CONTOURS (MAJOR)
- 357 --- EXISTING CONTOURS (MINOR)
- --- EXISTING TREELINE OR BRUSH
- Bh** --- SOIL LINE AND TYPE
- --- PROPERTY LINE
- --- EXISTING EASEMENT
- --- EXISTING CHAIN LINK FENCE
- --- STREAM / SWALE
- --- 1% FLOODPLAIN LINE
- --- EXISTING STORM DRAIN
- --- EXISTING OVERHEAD ELECTRIC LINE
- --- EXISTING WATERLINE
- --- EXISTING SANITARY SEWER
- --- EXISTING SANITARY FORCEMAIN
- --- EXISTING FOUNDATION DRAIN
- --- PROPOSED DRAIN
- --- PROPOSED ALUMINUM FENCE
- --- PROPOSED GAS LINE
- --- PROPOSED SANITARY FORCE MAIN



1 SITE GRADING PLAN
SCALE: 1" = 20'
PLAN NORTH

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.



1 LOCATION MAP
SCALE: NONE

SCALE:	AS NOTED
PREPARED BY:	GEM
DESIGNED BY:	KLG
APPROVED BY:	MAF
PROJECT NO:	4177.009
DRAWING NO:	

GENERAL SHEET NOTES

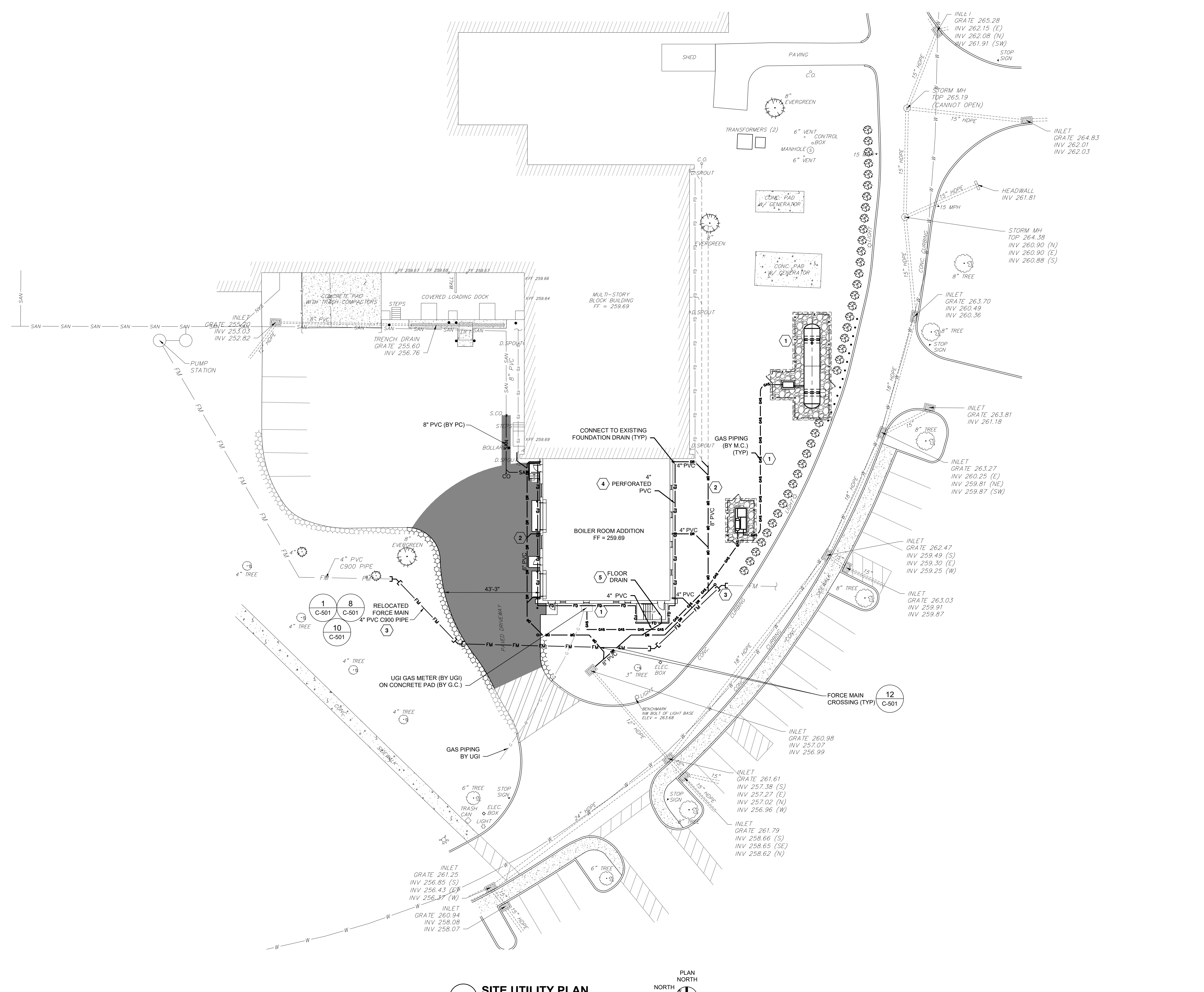
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SHEET KEY NOTES

1. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR DETAILS OF EQUIPMENT, PIPING, CONCRETE PADS AND FOUNDATIONS.
2. MAINTAIN POSITIVE SLOPE ON RELOCATED ROOF DRAIN PIPING.
3. CONNECTION OF RELOCATED FORCE MAIN TO EXISTING FORCE MAIN SHALL BE COORDINATED WITH THE ENGINEER AND BERKS HEIM FACILITIES DEPARTMENT. CONNECTION IS TO BE PLANNED TO LIMIT THE DOWN TIME OF THE PUMP STATION AND FORCE MAIN TO A MAXIMUM OF 8 HOURS.
4. SEE ARCHITECTURAL DWG A-302 FOR DETAILS OF FOUNDATION DRAIN INSTALLATION.
5. PROVIDE FLOOR DRAIN, CAST IRON WITH LARGE GRATE AND SEDIMENT BUCKET. JASOM MODEL 32330 OR APPROVED EQUAL.

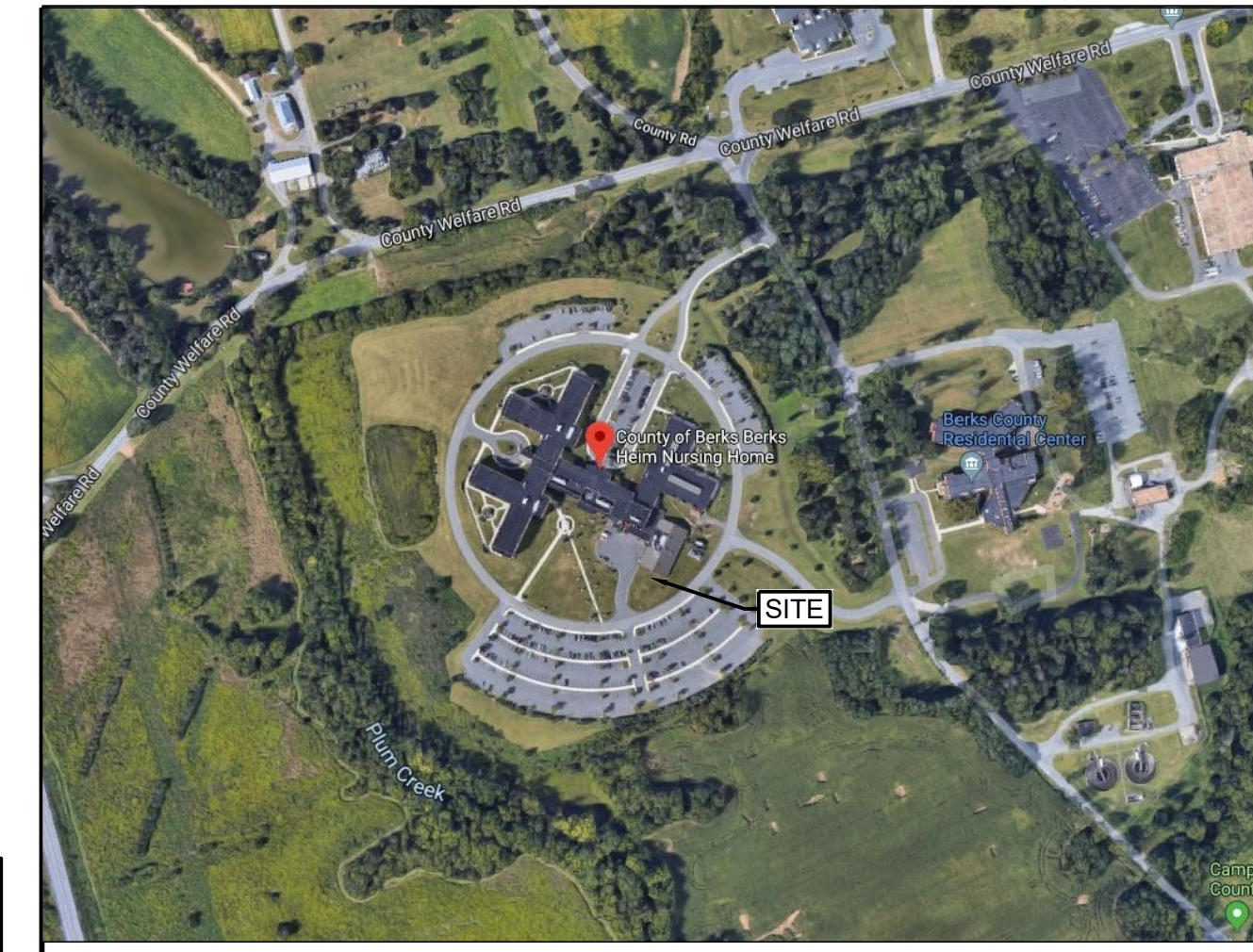
CIVIL LEGEND

---	3.55	EXISTING CONTOURS (MAJOR)
---	3.57	EXISTING CONTOURS (MINOR)
---		EXISTING TREELINE OR BRUSH
---	Bh SwD	SOIL LINE AND TYPE
---		PROPERTY LINE
---		EXISTING EASEMENT
---		EXISTING CHAIN LINK FENCE
---		STREAM / SWALE
---		1% FLOODPLAIN LINE
---		EXISTING STORM DRAIN
---	OHE	EXISTING OVERHEAD ELECTRIC LINE
---	W	EXISTING WATERLINE
---	SAN	EXISTING SANITARY SEWER
---	FM	EXISTING SANITARY FORCEMAIN
---	FD	EXISTING FOUNDATION DRAIN
---		PROPOSED DRAIN
---		PROPOSED ALUMINUM FENCE
---		PROPOSED GAS LINE
---	FM	PROPOSED SANITARY FORCE MAIN



1 SITE UTILITY PLAN
SCALE: 1" = 20'

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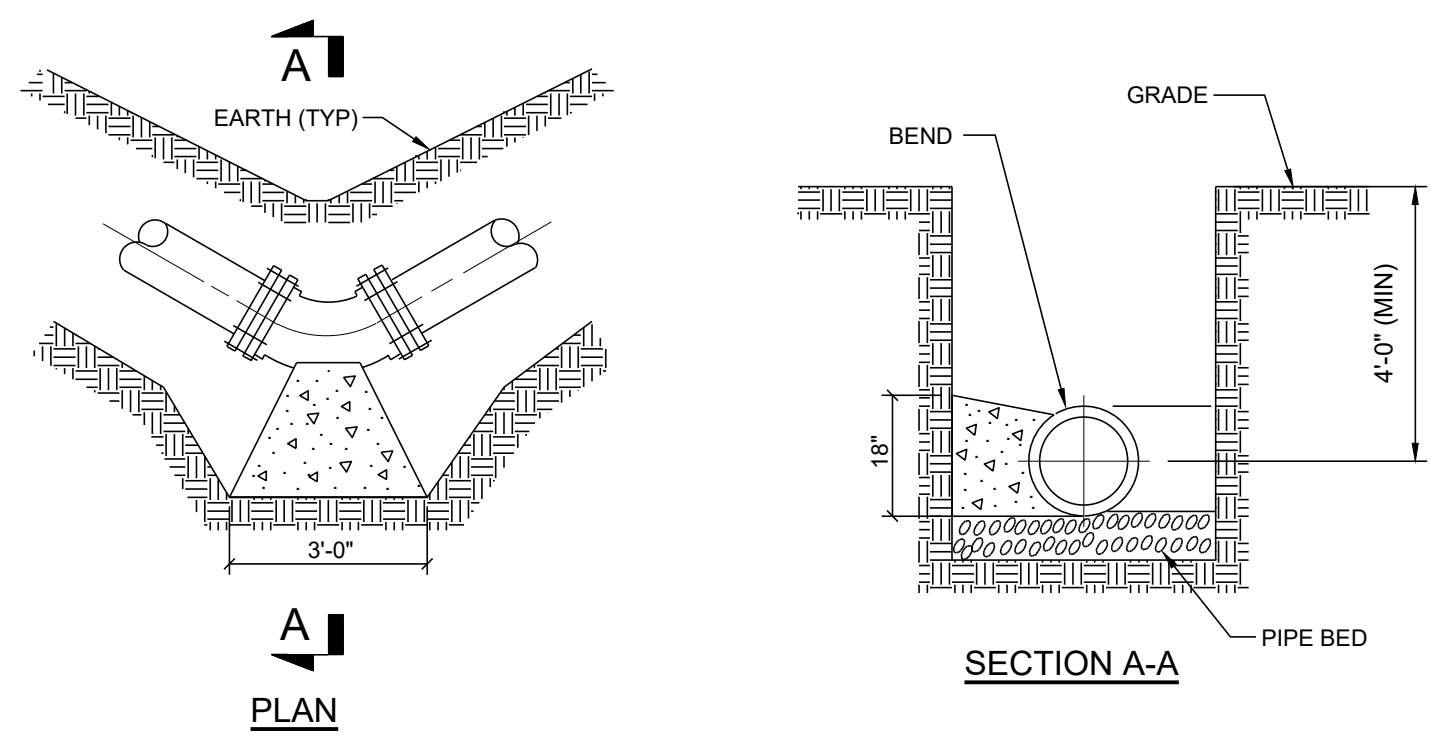
1 LOCATION MAP
SCALE: NONE



COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
CIVIL
SITE UTILITY PLAN

SCALE:	AS NOTED
PREPARED BY:	GEM
DESIGNED BY:	KLJ
APPROVED BY:	MAE
PROJECT NO:	4177.009
DRAWING NO:	C-102

C-102



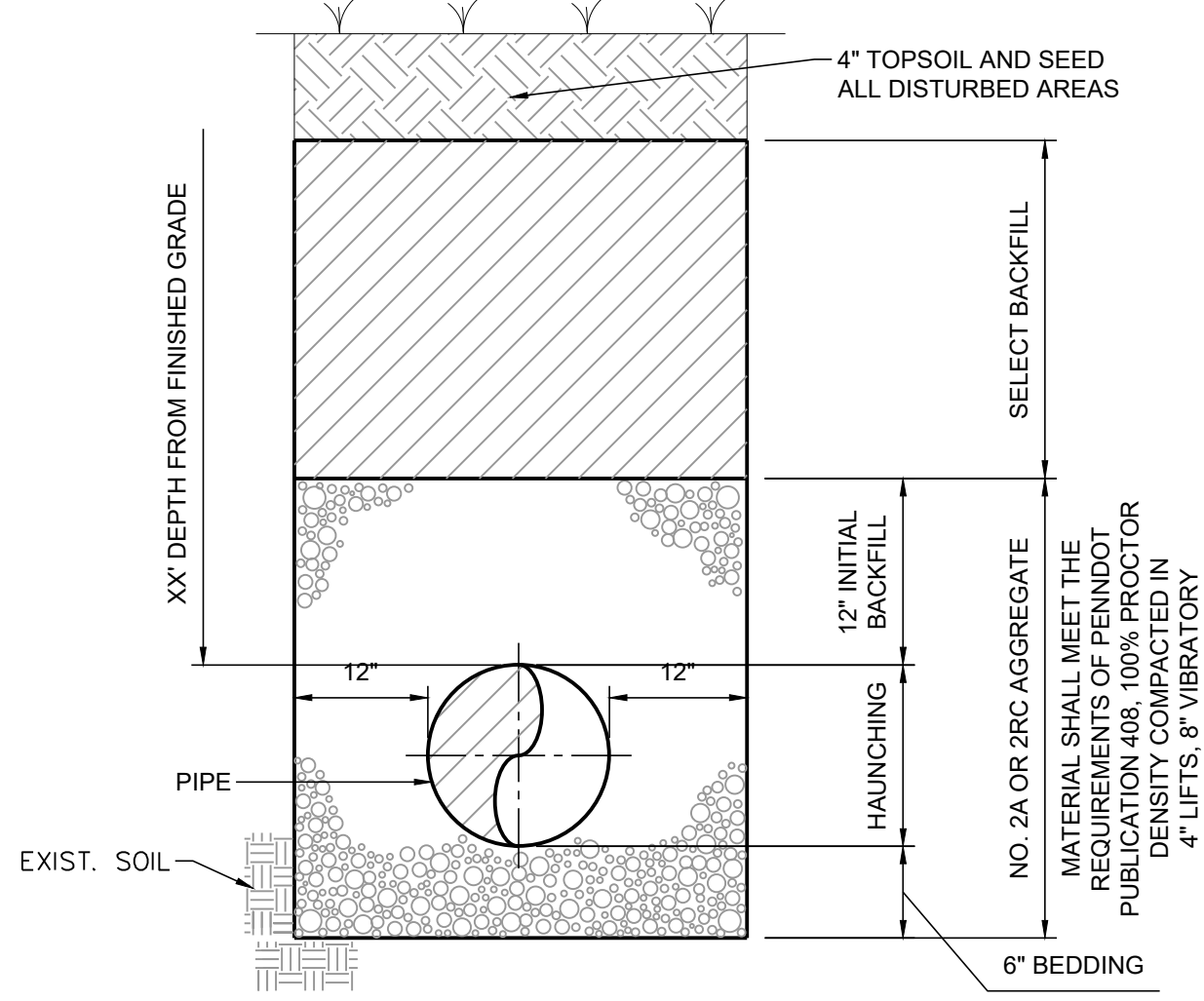
HORIZONTAL THRUST BLOCKING DETAILS FOR 4" FORCE MAIN

NOTES:

- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT THE END OF 28 DAYS.
- ALL REINFORCING STEEL SHALL BE GRADE 60 DEFORMED BARS.
- INSTALL CONCRETE THRUST BLOCKS AT EACH ELBOW, TEE AND CAPPED OR VALVED END FITTINGS LOCATED IN THE HORIZONTAL PLANE.
- PAINT ALL EXPOSED STEEL WITH TWO COATS OF ASPHALT PAINT.
- NO COUPLING OR JOINTS SHALL BE COVERED WITH CONCRETE.
- ALL THREADS WITH PIPE STRAPS MAY BE USED IN PLACE OF REINFORCING BARS.
- ALL THRUST BLOCKS SHOWN ARE INTENDED AS A GUIDE AND SHALL WITHSTAND THE REQUIRED PRESSURE.
- RETAINER GLANDS REQUIRED ON ALL MECHANICAL JOINT FITTINGS.
- CERTAIN SITUATIONS MAY WARRANT THE USE OF THE RODS, AUTHORIZED BY THE AUTHORITY ONLY.
- PIPING SHALL BE WRAPPED WITH POLYETHYLENE PRIOR TO PLACEMENT OF CONCRETE.
- FOR SOIL BEARING VALUES LESS THAN 1 TON / SQ. FT., CONSULT WITH AUTHORITY ENGINEER FOR RECOMMENDATION.

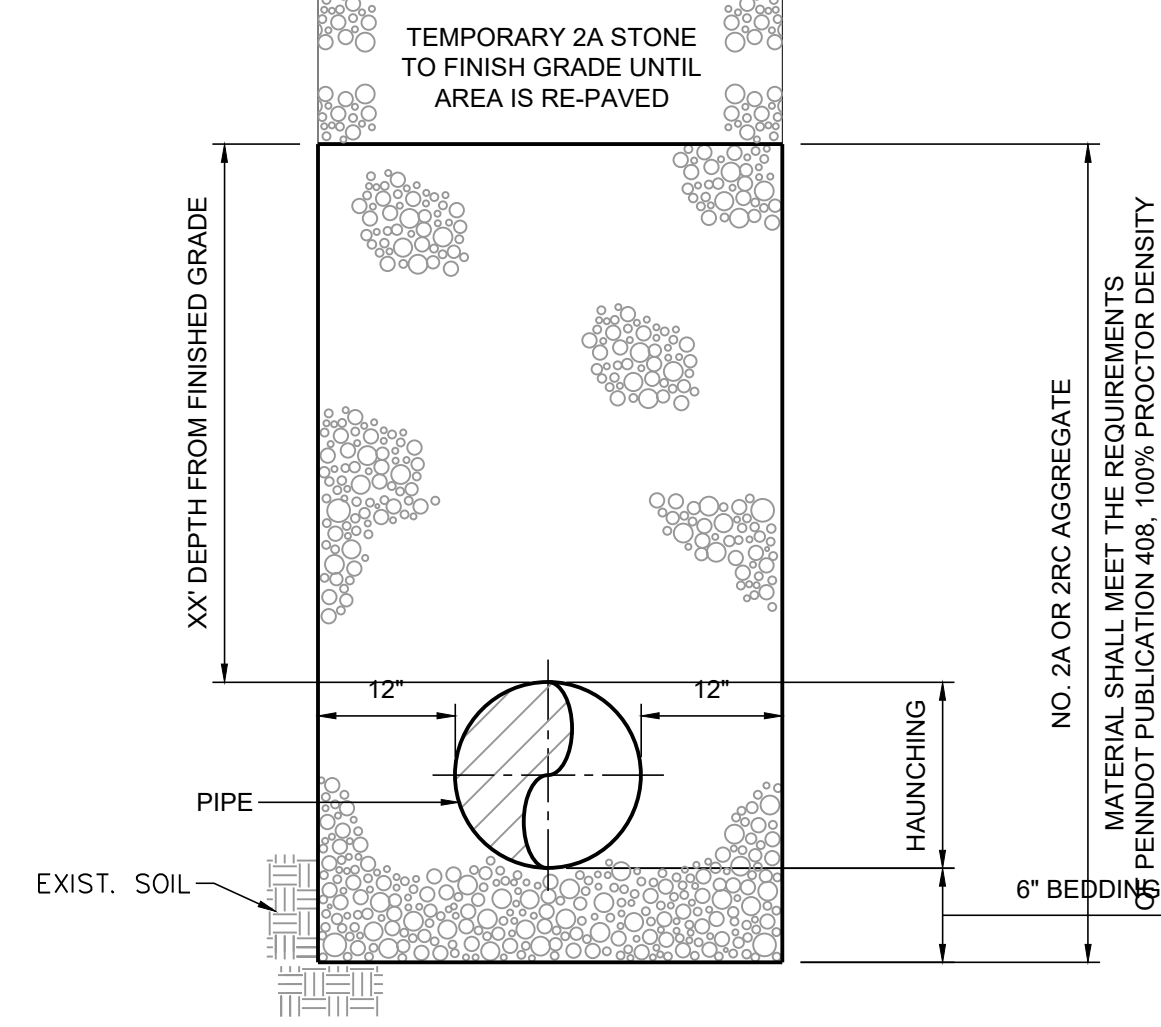
1 THRUST BLOCKING DETAILS

SCALE: NONE



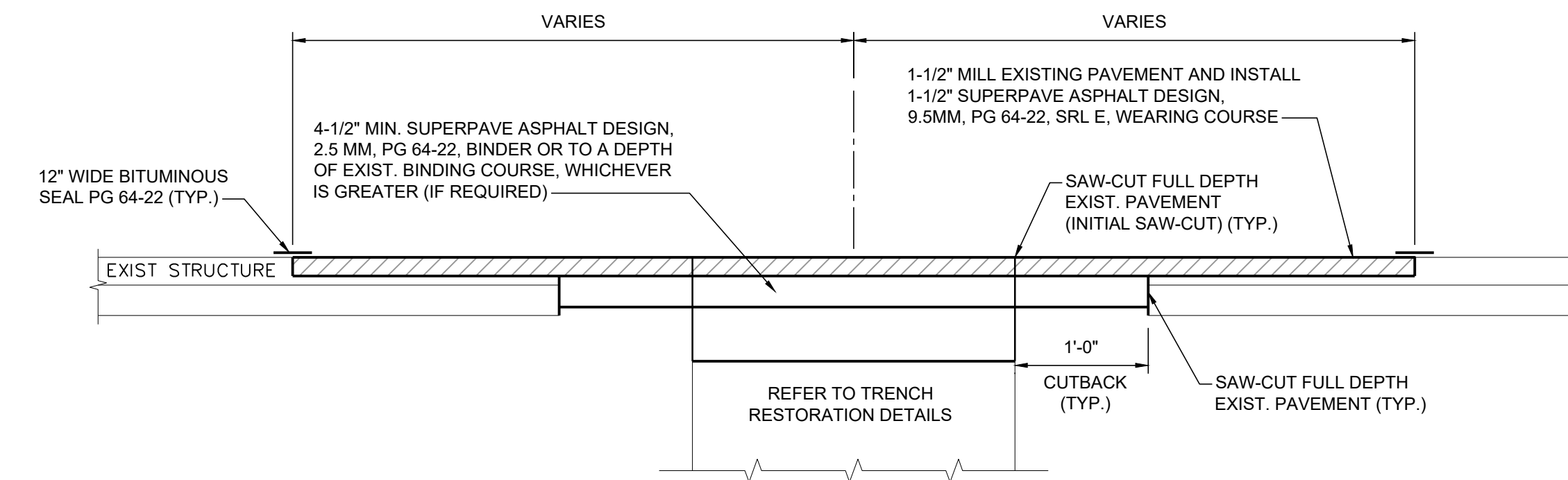
2 TYPICAL SELECT BACKFILL TRENCH RESTORATION DETAIL IN GRASS AREAS

SCALE:



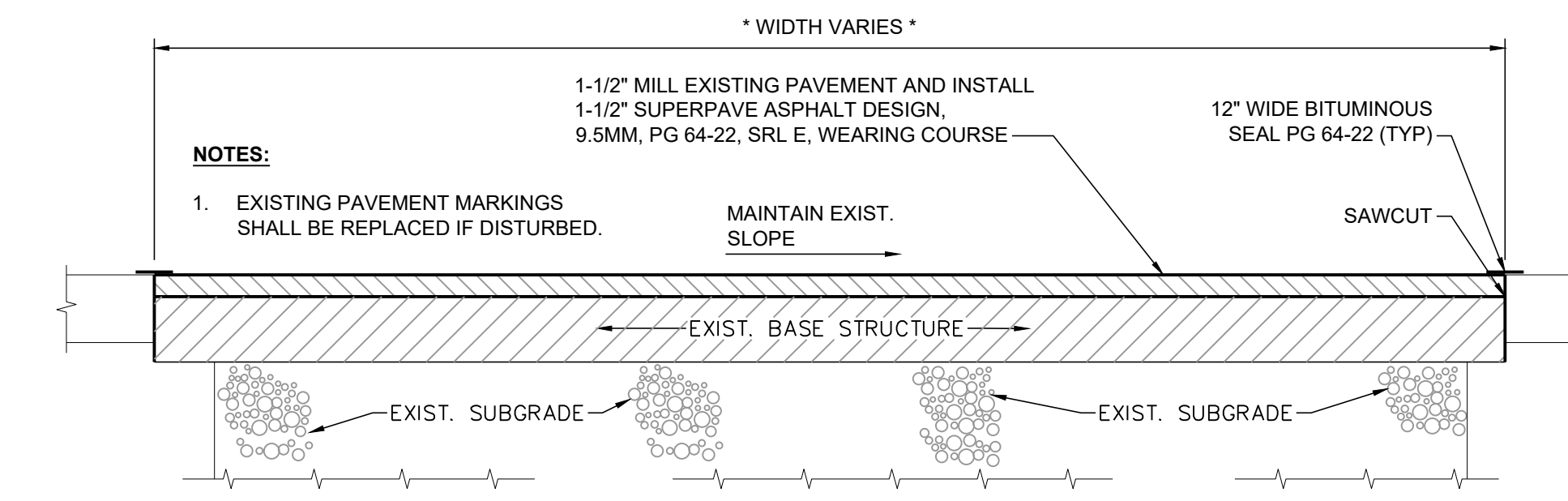
3 TYPICAL AGGREGATE BACKFILL TRENCH RESTORATION DETAIL IN PAVEMENT AREAS

SCALE:



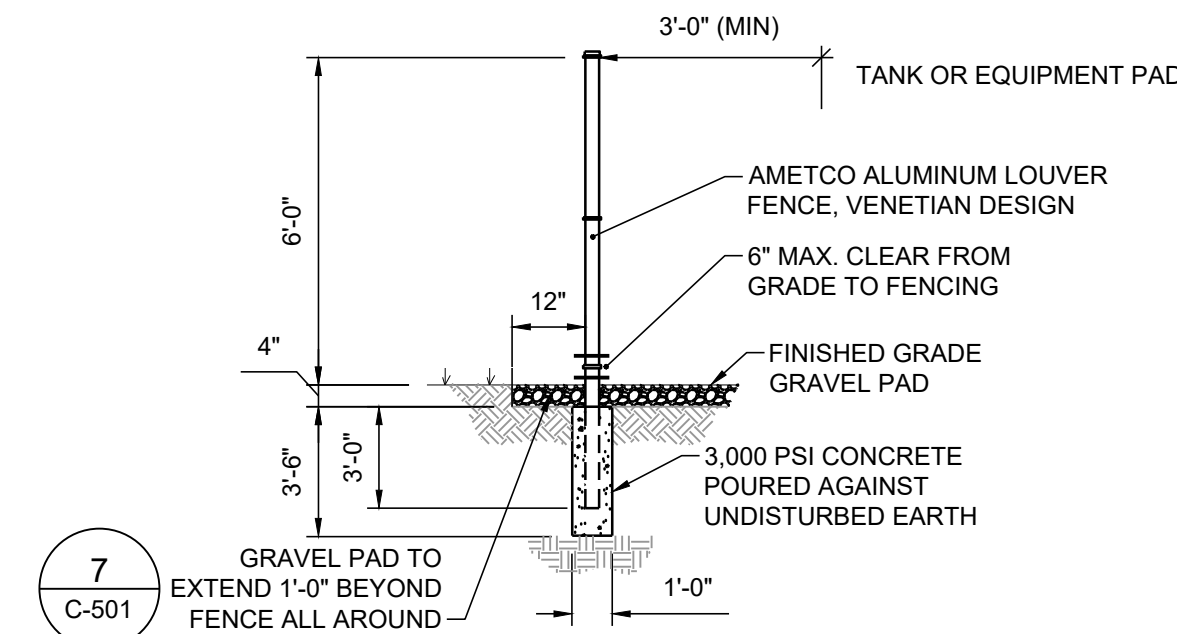
4 SURFACE RESTORATION DETAIL FOR PAVED ROADWAY W/ MILL AND OVERLAY

SCALE:



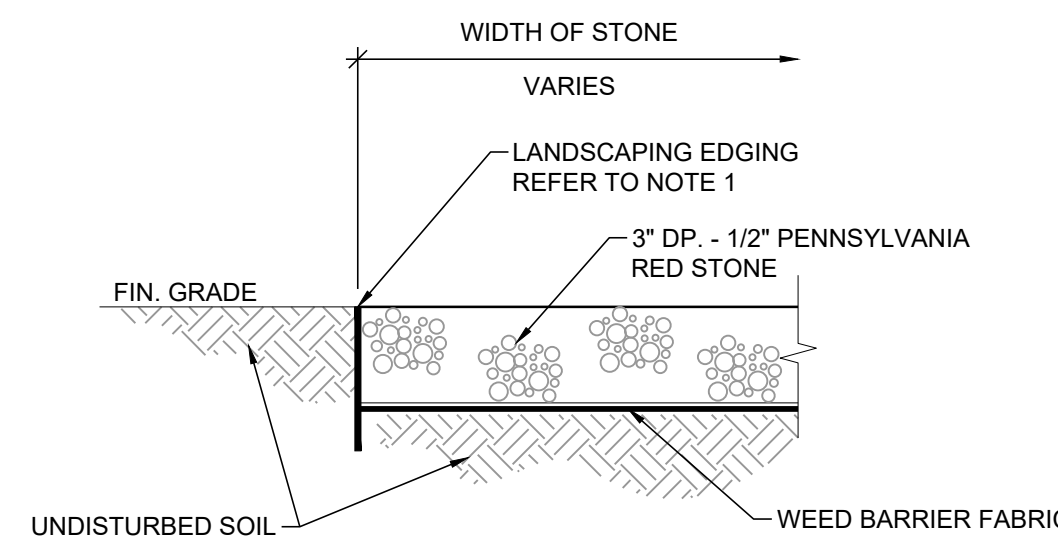
5 MILL AND OVERLAY DETAIL

SCALE:



6 EQUIPMENT FENCE DETAIL

SCALE: NONE



7 EQUIPMENT PADS STONE LANDSCAPING DETAIL

SCALE:

HORIZONTAL BENDS							
NOMINAL PIPE DIA.	LENGTH OF PIPE RESTRAINT REQUIRED PER FITTING IN FEET						
	11.25'	22.5'	45'	90'	TEE	CROSS	REDUCER
4	14	16	18	26	24	24	27
6	15	17	21	31	30	30	32
8	15	18	23	37	36	36	36

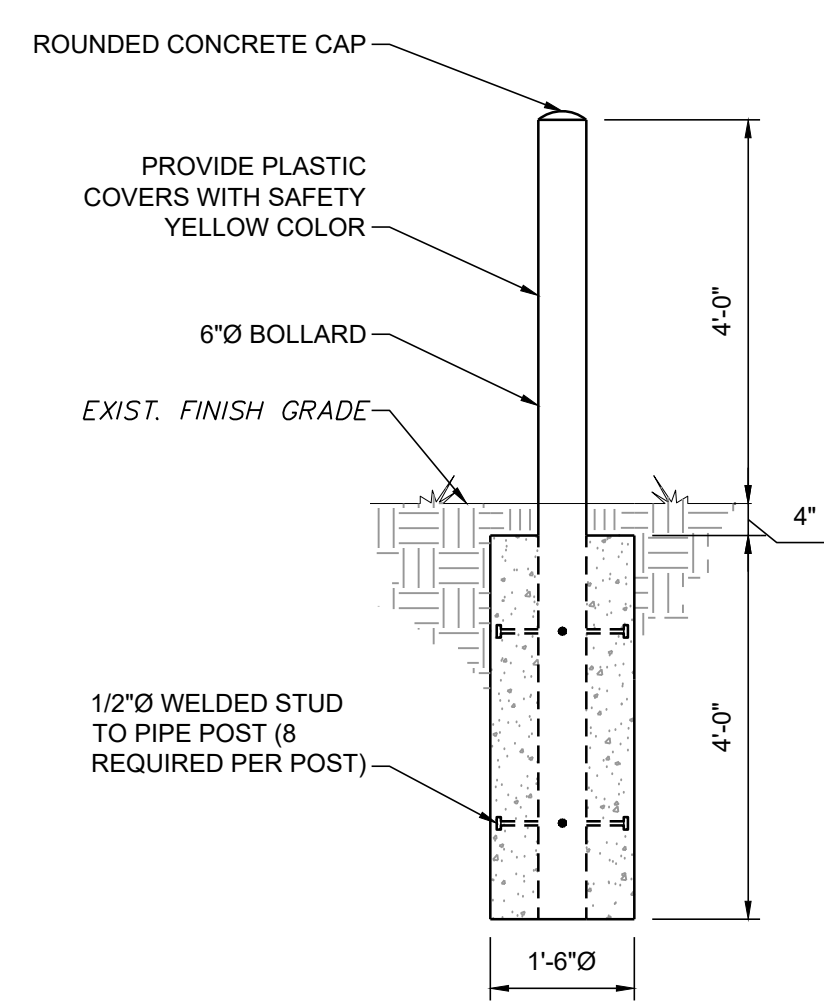
VERTICAL BENDS							
NOMINAL PIPE DIA.	LENGTH OF PIPE RESTRAINT REQUIRED PER FITTING IN FEET						
	11.25'	22.5'	45'	90'	11.25'	22.5'	45'
4	14	16	18	26	14	16	18
6	15	17	21	31	15	17	21
8	15	18	23	37	15	18	23

NOTES:

- LENGTHS ARE BASED ON THE DUCTILE IRON PIPE RESEARCH ASSOCIATION PIPE RESTRAINT CALCULATOR VERSION 3.3 (05/09/2003).
- LENGTHS ARE PROVIDED FOR DUCTILE IRON PIPE AND PVC PIPE WITHOUT POLYETHYLENE WRAP. POLYETHYLENE WRAP WILL REQUIRE ADDITIONAL RESTRAINT LENGTH TO BE DETERMINED ON AN AS NEEDED BASIS BY ENGINEER.
- REDUCER LENGTHS ARE GIVEN FROM THE INDICATED SIZE TO THE NEXT SMALLER SIZE. REDUCER RESTRAINT LENGTHS SHOULD BE ADDED IF GREATER REDUCTION IS REQUIRED (I.E. 16" TO 8" = 21+11+11 = 43 FEET)

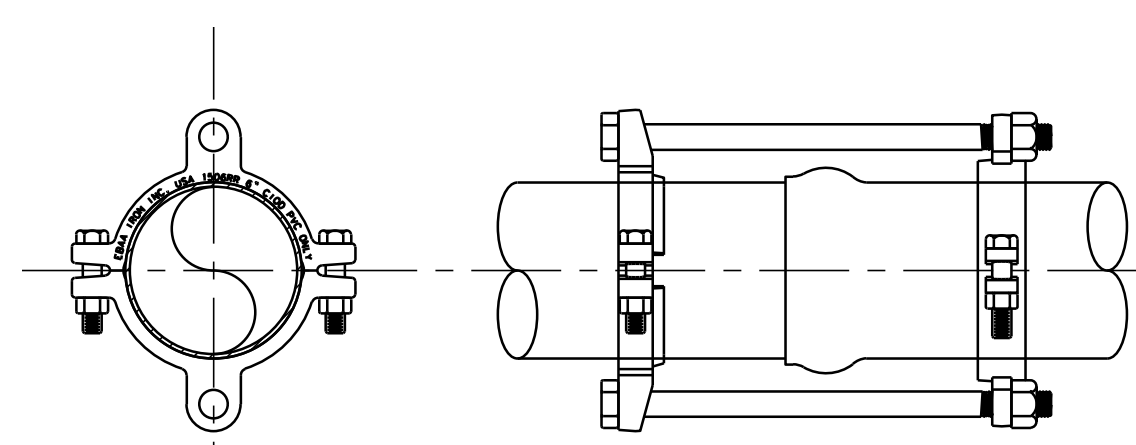
8 RESTRAINED PIPE LENGTH SCHEDULE

SCALE: NONE



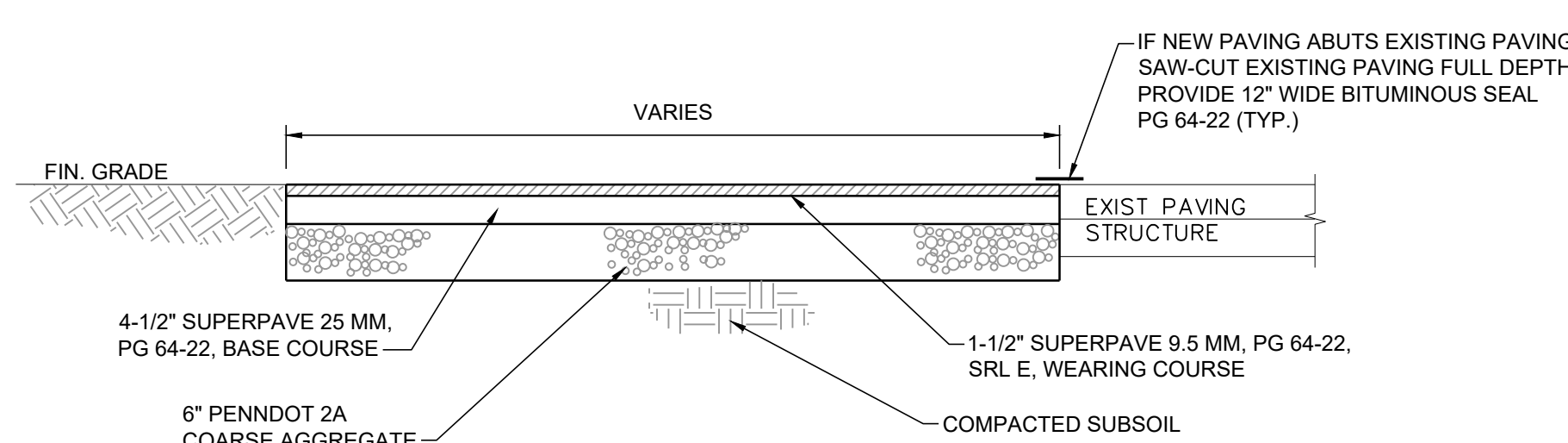
9 EXTERIOR BOLLARD DETAIL

SCALE: NONE



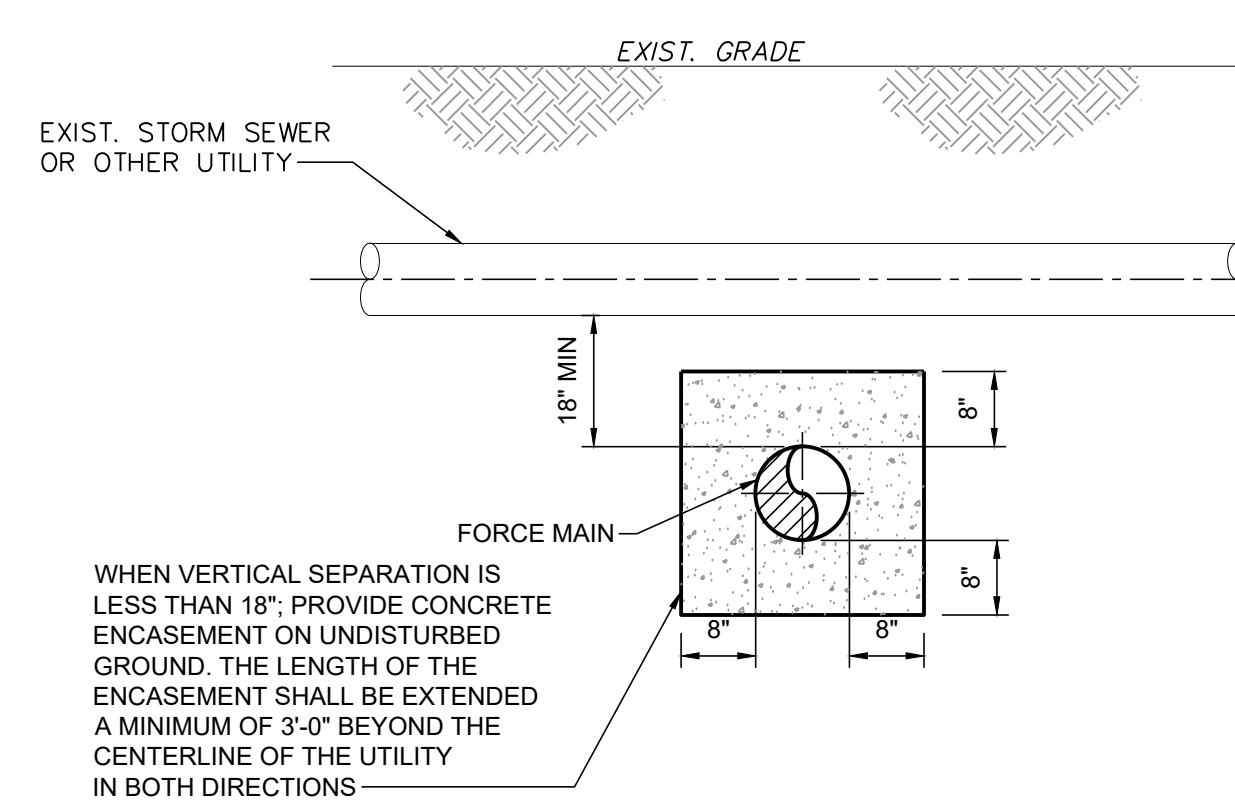
10 TYPICAL C-900 PVC PIPE HARNESS RESTRAINT DETAIL

SCALE: NONE



11 NEW BITUMINOUS PAVED AREA DETAIL

SCALE:

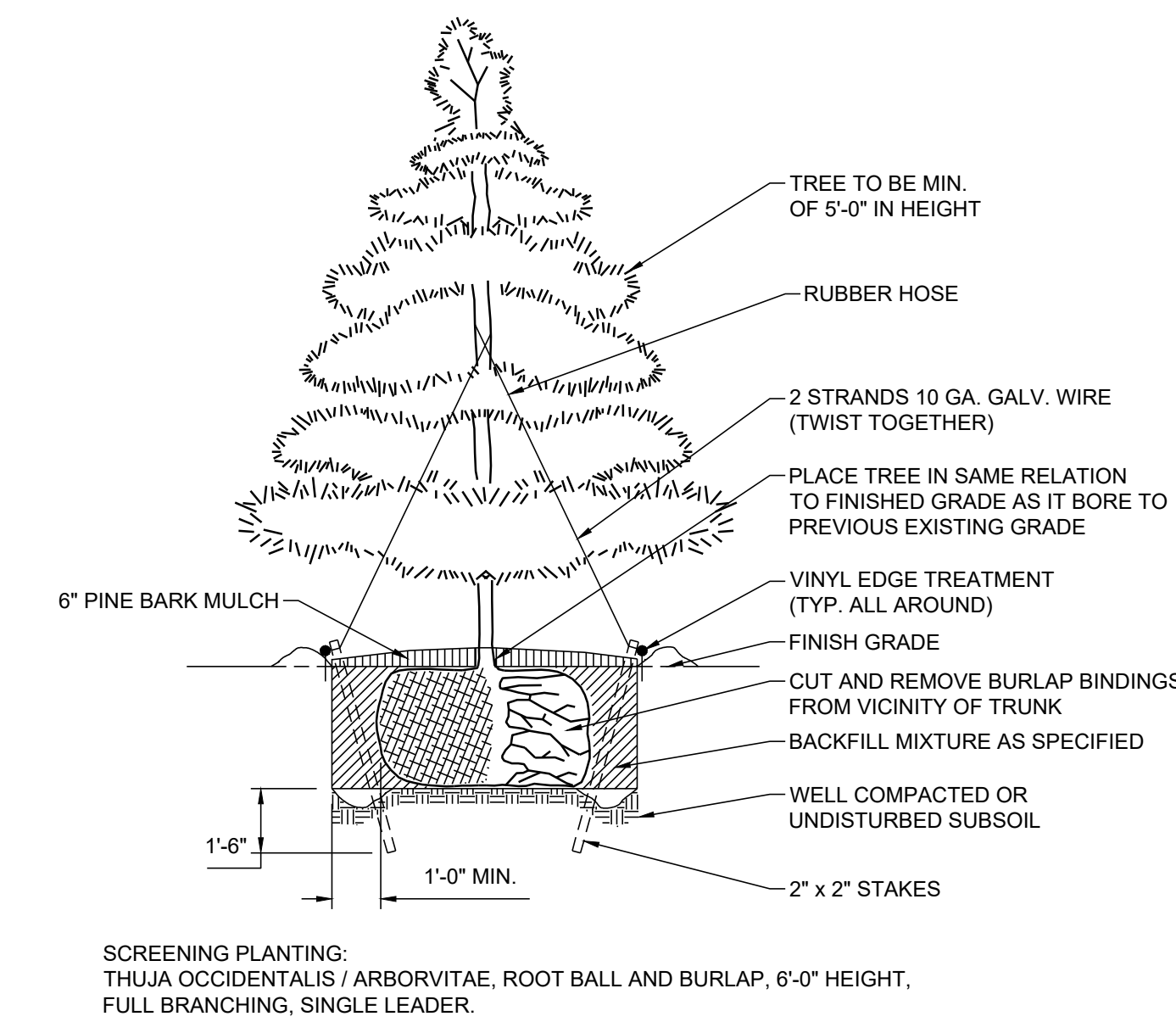


NOTES:

- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT THE END OF 28 DAYS.

12 NEW SEWER FORCE MAIN CROSSING UNDER EXISTING UTILITY DETAIL

SCALE: NONE



13 TYPICAL EVERGREEN TREE PLANTING DETAIL

SCALE: NONE

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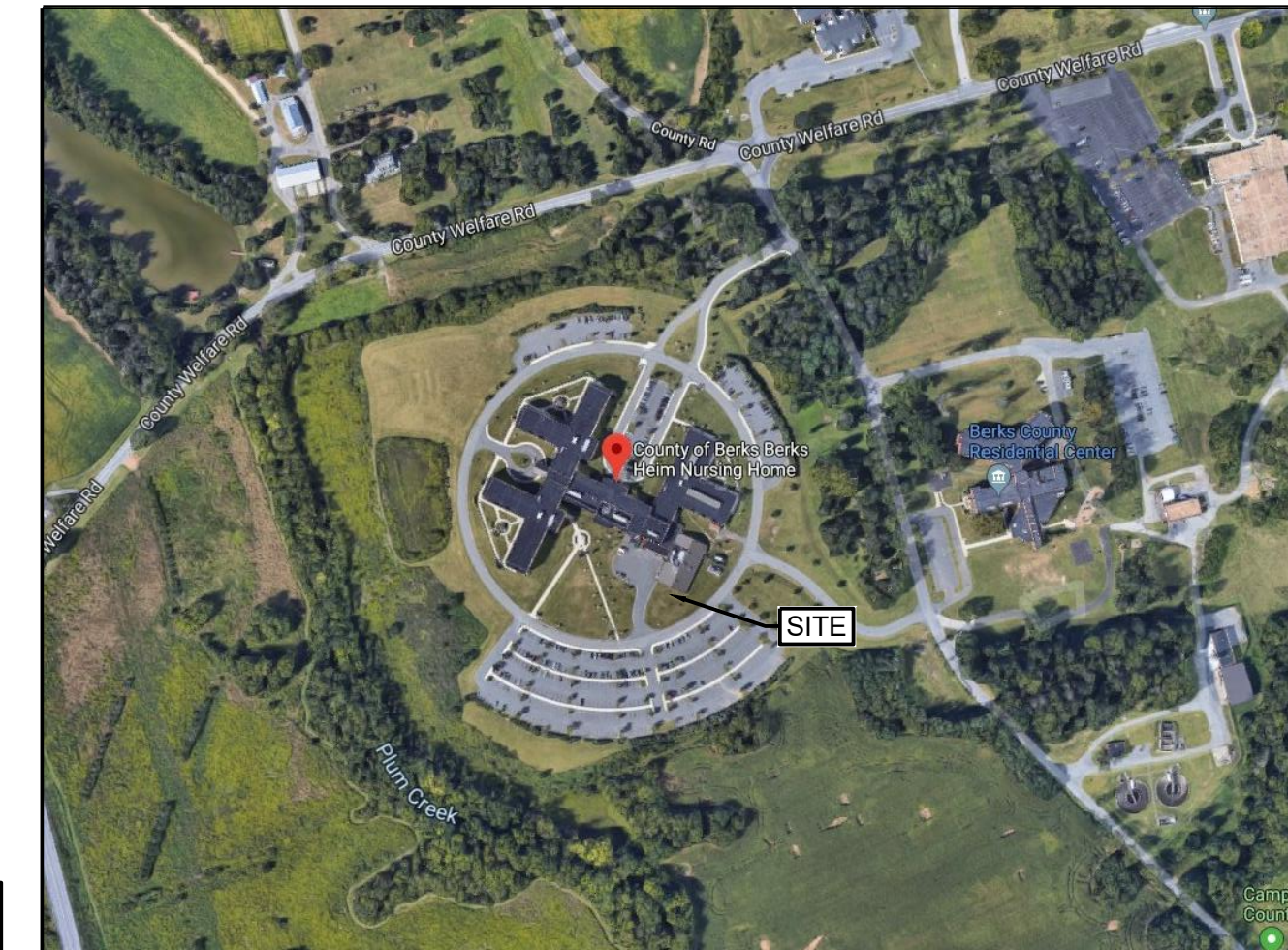
E&S LEGEND

- 355 --- EXISTING CONTOURS (MAJOR)
 - 357 --- EXISTING CONTOURS (MINOR)
 - LIMIT OF DISTURBANCE
 - SSK --- SSK --- COMPOST SILT SOCK (12")
 - Bh SwD --- SOIL LINE AND TYPE
 - ROCK CONSTRUCTION ENTRANCE
- SOILS
DdB - DUFFIELD SILT LOAMS, 8 TO 15 PERCENT SLOPES



1 EROSION AND SEDIMENTATION PLAN
SCALE: 1" = 20'
PLAN NORTH

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1 LOCATION MAP
SCALE: NONE

SCALE:	AS NOTED
PREPARED BY:	GEM
DESIGNED BY:	KLG
APPROVED BY:	MAE
PROJECT NO:	4177.009
DRAWING NO:	

CONSTRUCTION NOTES AND SEQUENCE

STANDARD E&S PLAN NOTES

- 1. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES...
2. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE...
3. CLEARING, GRUBBING, AND STRIPPED OF TOPSOIL TO REMOVE TREES...
4. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES...
5. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATIONS SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING...
6. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR EXCEEDED EROSION AND/OR SEDIMENT POLLUTION...
7. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS...
8. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL...
9. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN...
10. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMP'S SHALL BE MAINTAINED PROPERLY...
11. A LOG SHOWING DATES THAT E&S BMP'S WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE...
12. ALL SEDIMENT REMOVED FROM BMP'S SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS...
13. AREAS WHICH ARE TO BE TOP SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES...
14. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS...
15. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LIFTS...
16. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS...
17. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS...
18. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES...
19. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD...
20. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE...
21. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT...
22. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION...
23. E&S BMP'S SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT...
24. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMP'S MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMP'S...
25. FAILURE TO CORRECTLY INSTALL E&S BMP'S, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMP'S WILL BE CONSIDERED A VIOLATION OF THE PENNSYLVANIA CLEAN STREAMS LAW...

MATERIAL NOTES

- 1. ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS...
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL...
3. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS...
4. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS...
5. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

STABILIZATION NOTES

- 1. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET...
2. AREAS WHICH ARE TO BE TOP SOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES...
3. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE A CESSATION OF EARTH DISTURBANCE ACTIVITIES EXCEED 4 DAYS...
4. STRAW MULCH MUST BE APPLIED AT RATES OF AT LEAST 3.0 TONS PER ACRE...
5. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE...
6. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H: 1V OR STEEPER...
7. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT...
8. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION...
9. OTHER MOVEMENTS.

CONSTRUCTION SEQUENCE

- 1. PRIOR TO CONSTRUCTION THE PROPOSED LIMIT OF DISTURBANCE (LOD) SHALL BE DELINEATED AND STAKED IN THE FIELD...
2. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCES AND FOLLOWING DETAIL AND SPECIFICATIONS ON ES-501...
3. PRIOR TO EARTHMOVING, INSTALL PERIMETER E&S CONTROLS...
4. THE CONTRACTOR WILL INSPECT WEEKLY AND AFTER EACH RAIN EVENT...
5. THE CONTRACTOR MUST IMMEDIATELY REPAIR ANY DAMAGED EROSION CONTROLS (BMP'S)...
6. CLEAR AND GRUB PROJECT AREA AS NECESSARY...
7. INSTALL RELOCATED SANITARY SEWER FORCE MAIN PIPING AND CONNECT INTO EXISTING SYSTEM...
8. PERFORM THE DEMOLITION/REMOVAL OF IMPACTED PAVEMENT AREAS AND SITE UTILITIES...
9. PERFORM THE NECESSARY EXCAVATION AND GRADING FOR THE PROPOSED BUILDING ADDITION...
10. INSTALL NEW PAVING INCLUDING MILL AND OVERLAY PORTION...
11. ONCE BUILDING ADDITION IS COMPLETE AND ALL AREAS OF THE LIMIT OF DISTURBANCE RETURNED TO FINISHED GRADE...
12. STABILIZATION FOR THIS PROJECT SHALL CONSIST OF VEGETATION OF DISTURBED AREAS...
13. IF CONSTRUCTION IS TERMINATED OR SUSPENDED PRIOR TO CONSTRUCTION COMPLETION...
14. AFTER FINAL STABILIZATION HAS BEEN ACHIEVED, TEMPORARY E&S BMP'S SHALL BE REMOVED...
NOTE: A COPY OF THE EROSION AND SEDIMENTATION CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE DURING CONSTRUCTION UNTIL THE SITE IS STABILIZED.

GROUND COVER

AFTER THE EARTH DISTURBANCE ACTIVITY IS COMPLETED, THE DISTURBED AREA MUST BE REVEGETATED. THE VEGETATIVE COVER MUST BE A UNIFORM 70% PERENNIAL VEGETATIVE COVER WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION AND SEDIMENTATION.

TEMPORARY SEEDING

- TEMPORARY SEEDING WILL BE PERFORMED DURING THE GERMINATION SEASON (APRIL TO OCTOBER) FOR THE ESTABLISHMENT OF GRASS SEED ON DISTURBED AREAS BEFORE THE START OF THE DORMANT SEASON...
ALL GRASS AREAS DISTURBED BY THE WORK OF THIS PROJECT SHALL BE SEEDDED AS FOLLOWS:
- APPLY AGRICULTURAL LIME AND FERTILIZER AS FOLLOWS FOR TEMPORARY SEEDING:
 - AGRICULTURAL LIME - 40 POUNDS PER 1,000 SQUARE FEET

- FERTILIZER - 12.5 POUNDS PER 1,000 SQUARE FEET
FERTILIZER SHALL BE A COMMERCIAL TYPE 10-10-10
TEMPORARY SEED MIXTURE - SEE RECOMMENDED SEED MIXTURES TABLE BELOW UNDER PERMANENT SEEDING SECTION REPORT.
UTILIZE SEED MIXTURE NUMBER 2 IN LAWN AND ATHLETIC FIELD AREAS.
UTILIZE SEED MIXTURE NUMBER 3 IN WOODED AND STEEP SLOPE AREAS.
ALL TEMPORARY SEEDING SHALL BE MULCHED. TEMPORARY SEEDING SHALL BE WATERED AS REQUIRED TO DEVELOP COVER.
MULCH SHALL BE STRAW, SHALL BE CLEAN AND FREE FROM NOXIOUS WEEDS, AND SHALL BE APPLIED AT THE RATE OF 140 POUNDS PER 1,000 SQUARE FEET. APPLICATION OF MULCH SHALL BE USED IN CONJUNCTION WITH CRIMPING, A TACKIFIER OR A SIMILAR METHOD IN ORDER TO PREVENT MULCH FROM BEING WINDLOWN.

PERMANENT SEEDING

- PERMANENT SEEDING SHALL TAKE PLACE IN ALL DISTURBED AREAS AS FOLLOWS:
UPON COMPLETION OF EARTH DISTURBANCE ACTIVITIES, THE SITE SHALL BE IMMEDIATELY STABILIZED.
THE FILL MATERIAL SHALL BE SPREAD AND WORKED INTO THE TOPSOIL TO A DEPTH OF 3 TO 4 INCHES.
FERTILIZER - 25 POUNDS PER 1,000 SQUARE FEET
FERTILIZER SHALL BE A COMMERCIAL TYPE 10-20-20.
IF AGRICULTURAL LIME AND FERTILIZER HAVE BEEN APPLIED PREVIOUSLY TO THE GROUND WHERE THE PERMANENT SEED IS TO BE APPLIED, THE LIME AND FERTILIZER RATES SHALL BE REDUCED BY THE AMOUNT BY WHAT HAS BEEN APPLIED PREVIOUSLY.
UPON COMPLETION OF EARTH DISTURBANCE ACTIVITIES, THE SITE SHALL BE IMMEDIATELY STABILIZED.
PERMANENT SEED MIXTURE: THE FOLLOWING SEED MIXTURES SHALL BE APPLIED AS FOLLOWS:

Table with columns: MIXTURE NUMBER, SPECIES, SEEDING RATE - PURE LIVE SEED MOST SITES, ADVERSE SITES. Lists various grasses and legumes like Spring Oats, Annual Ryegrass, etc.

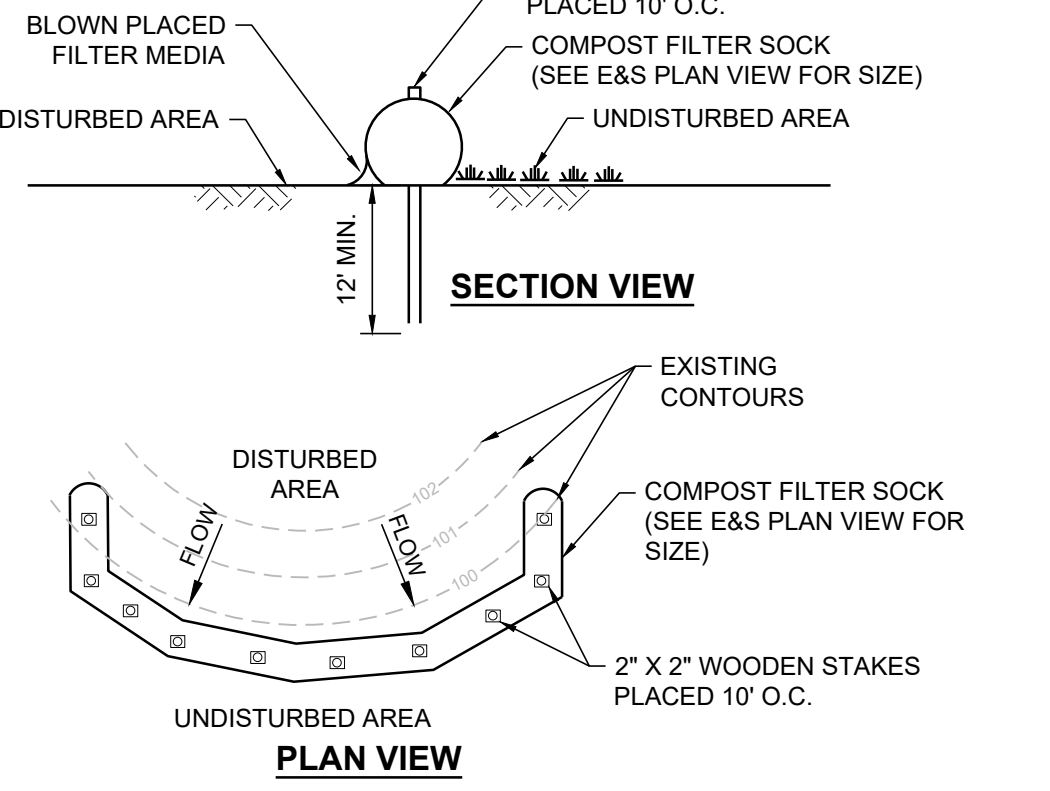
- UTILIZE MIXTURE NUMBER 2 IN LAWN AND ATHLETIC FIELD AREAS.
UTILIZE MIXTURE NUMBER 3 IN WOODED AND STEEP SLOPE AREAS.
TO RE-ESTABLISH DISTURBED WETLAND AREAS, UTILIZE THE WETLAND SEED MIXTURE.
APPLY MULCH TO ALL DISTURBED AREAS.
MATERIALS: STRAW, AIR-DRIED AND FREE FROM UNDESIRABLE SEEDS AND COURSE MATERIALS. APPLICATION: 140 POUNDS PER 1,000 SQUARE FEET. APPLICATION OF MULCH SHALL BE USED IN CONJUNCTION WITH CRIMPING, A TACKIFIER OR A SIMILAR METHOD IN ORDER TO PREVENT MULCH FROM BEING WINDLOWN.

MAINTENANCE PROGRAM

- EMERGENCY EROSION PROTECTION
PERIODIC INSPECTION PROGRAM
MAINTENANCE OPERATIONS
RECYCLING AND DISPOSAL METHODS
COLLECTED SEDIMENT WILL BE PLACED ON FILL SLOPES AND GRADED, SEEDDED AND MULCHED AS NEEDED TO ATTAIN STABILIZATION.

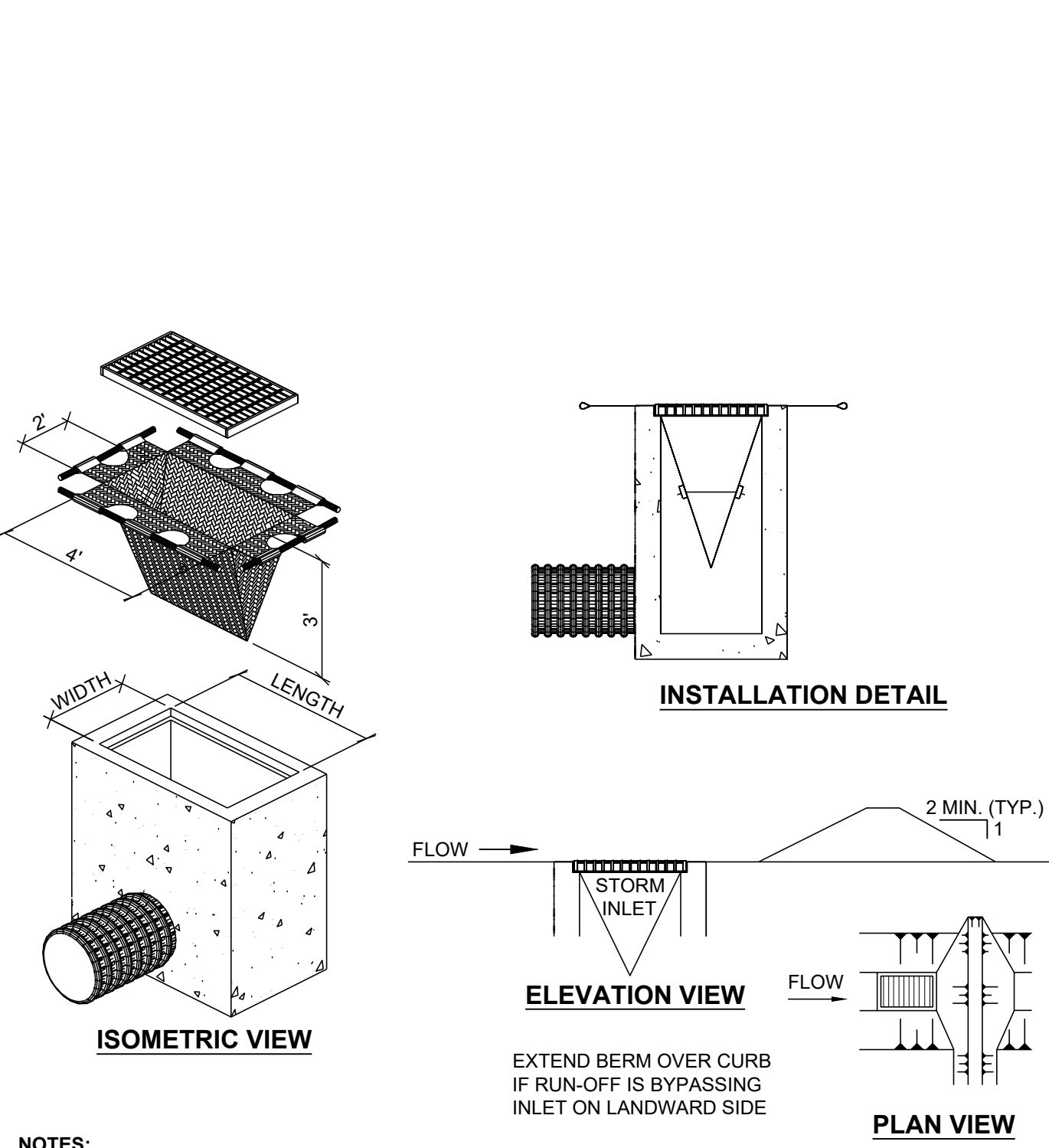
Table 4.1: Compost Sock Fabric Minimum Specifications. Columns: Material Type, Material Characteristics, Mesh Opening, Tensile Strength, Ultraviolet Resistance, Original Strength, Minimum Functional Longevity.

Table 4.2: Compost Standards. Columns: Organic Matter Content, Organic Carbon, Nitrogen Content, Phosphorus Content, Sulfur Content, Soluble Salt Concentration.



STANDARD CONSTRUCTION DETAIL #4-1 COMPOST FILTER SOCK

- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE...
TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE ABOVE GROUND HEIGHT OF THE SOCKS...
SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT...
BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS.
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED.

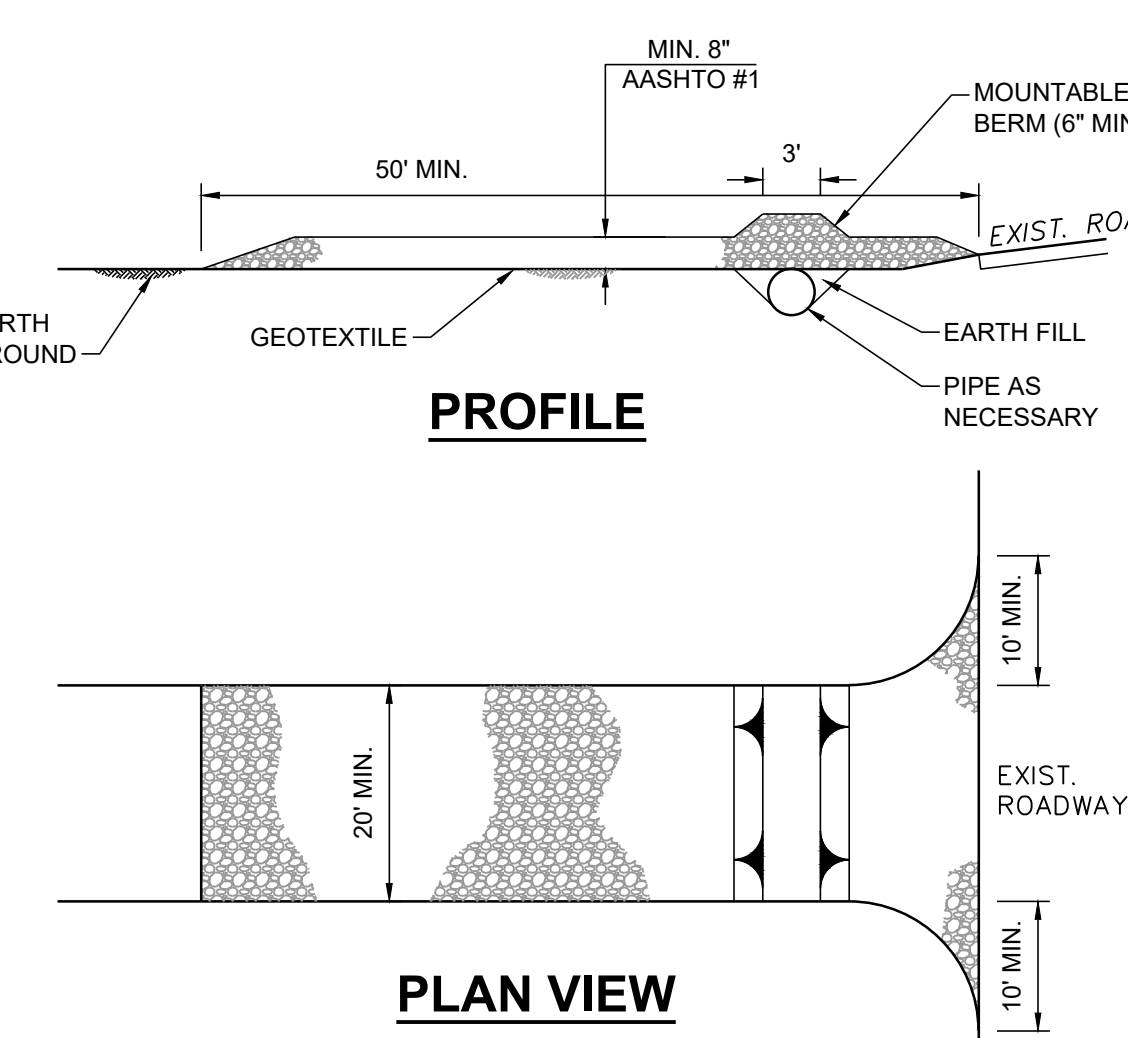


STANDARD CONSTRUCTION DETAIL #4-16 FILTER BAG INLET PROTECTION - TYPE M INLET

- MAXIMUM DRAINAGE AREA= 1/2 ACRE
INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP...
ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED...
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS...
DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF CONSTRUCTION ENTRANCE...
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP...
MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED...
MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK.



STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF CONSTRUCTION ENTRANCE...
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP...
MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED...
MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK.

STANDARD CONSTRUCTION DETAIL #3-1 ROCK CONSTRUCTION ENTRANCE

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF CONSTRUCTION ENTRANCE...
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP...
MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED...
MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK.

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.



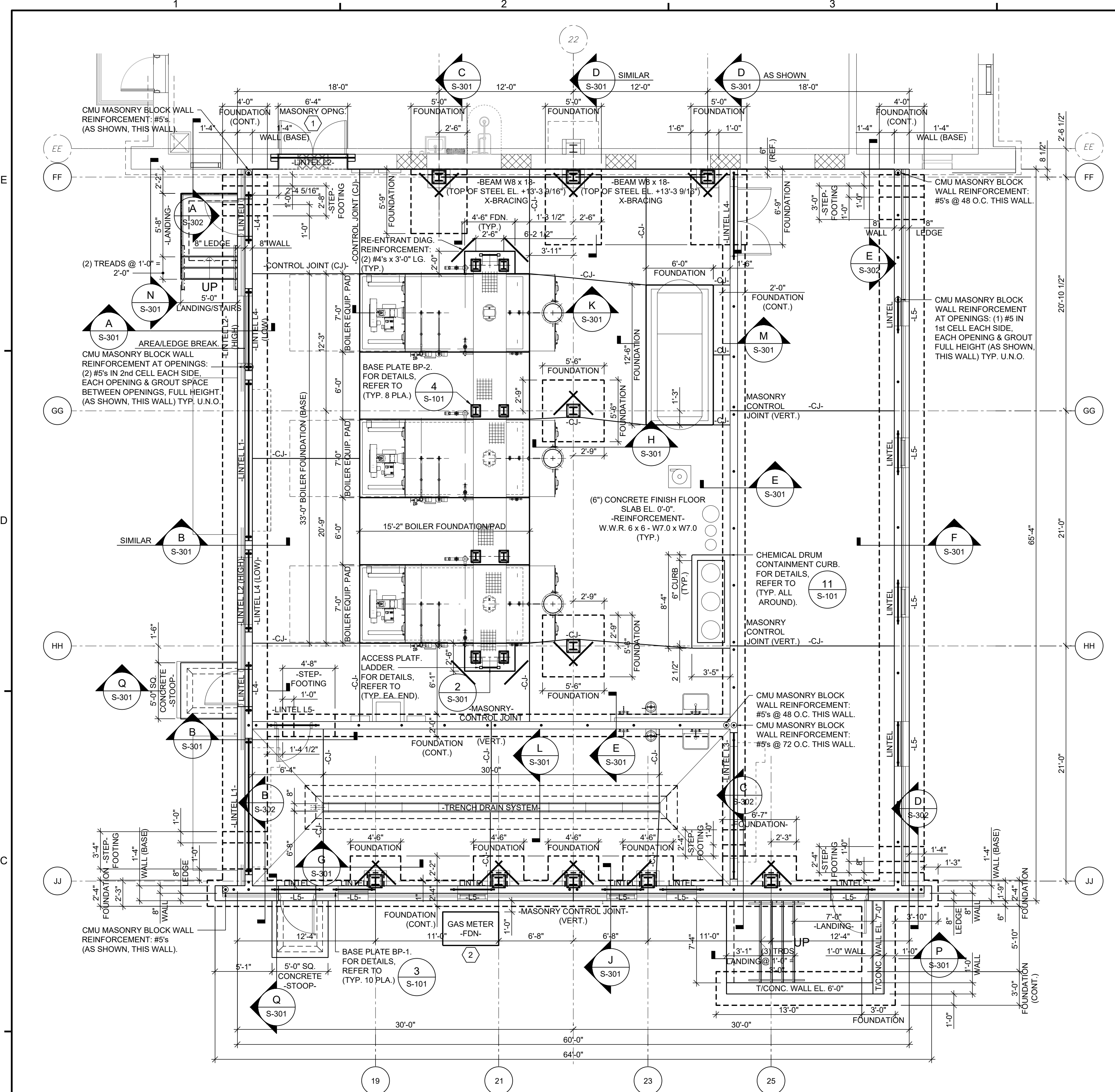
Table with columns: DATE, REV, ISSUED FOR BIDDING, ISSUED FOR CONSTRUCTION. Includes a grid for revision tracking.

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
CIVIL
EROSION AND SEDIMENTATION NOTES AND DETAILS

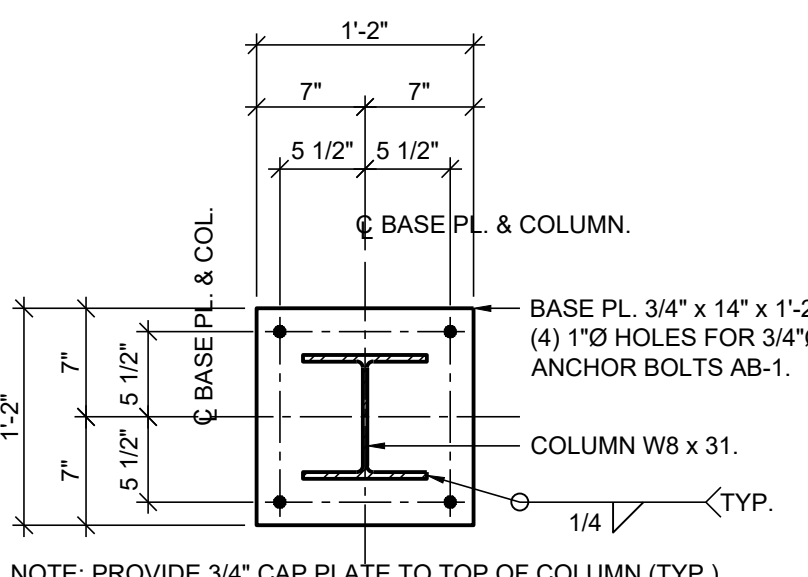
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ES-501

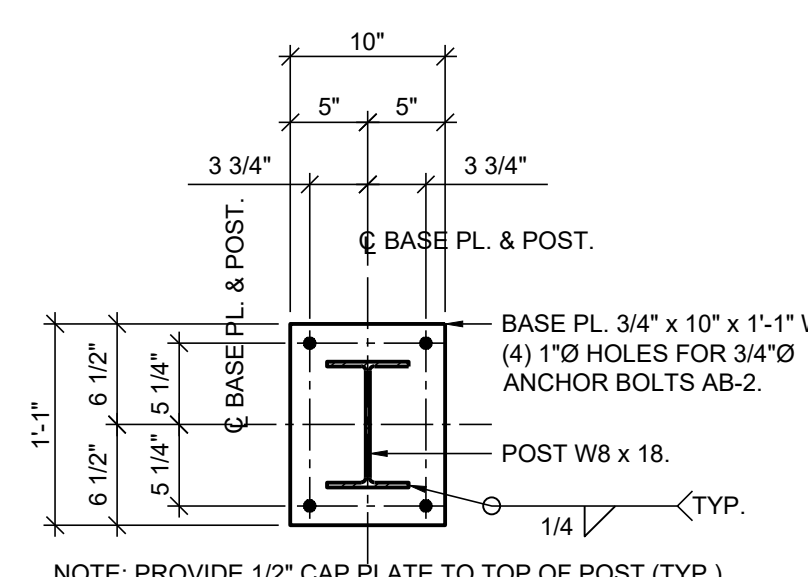
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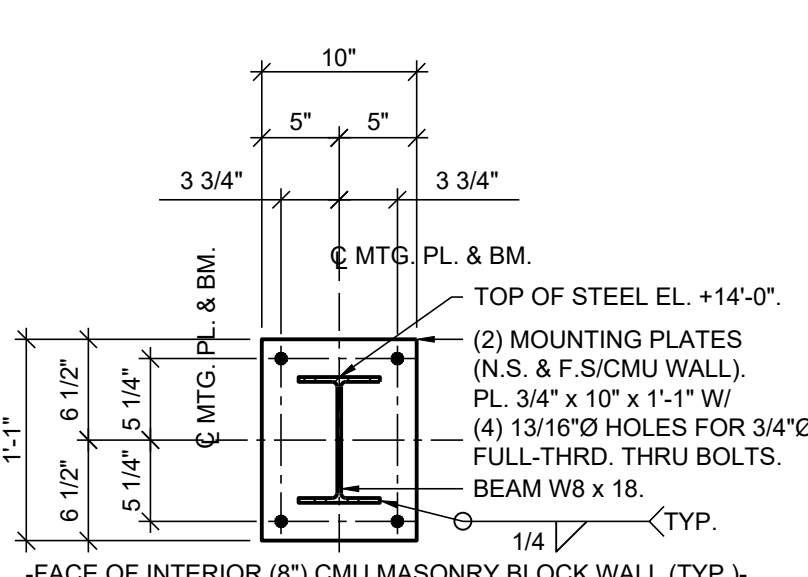
1 EXISTING BUILDING & NEW BOILER BUILDING FOUNDATION PLAN
Scale: 3/16" = 1'-0"
PLAN NORTH



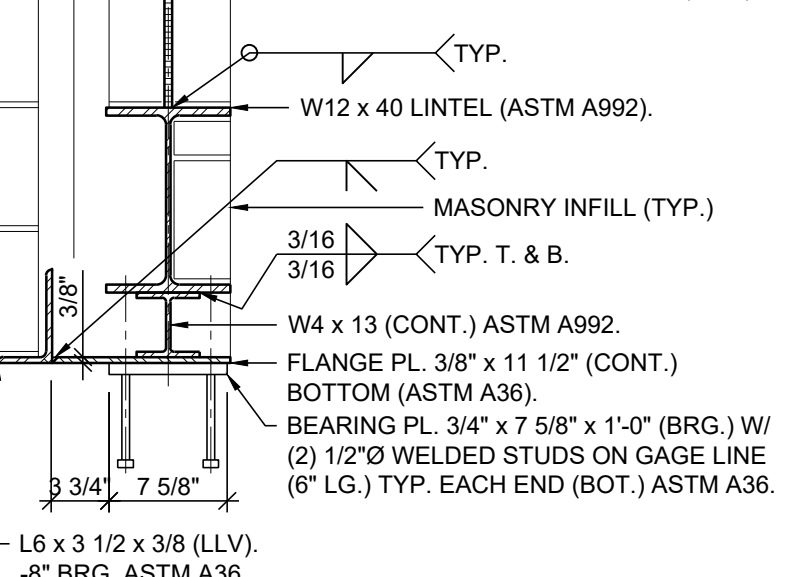
3 BASE PLATE BP-1 DETAIL
Scale: 1" = 1'-0"



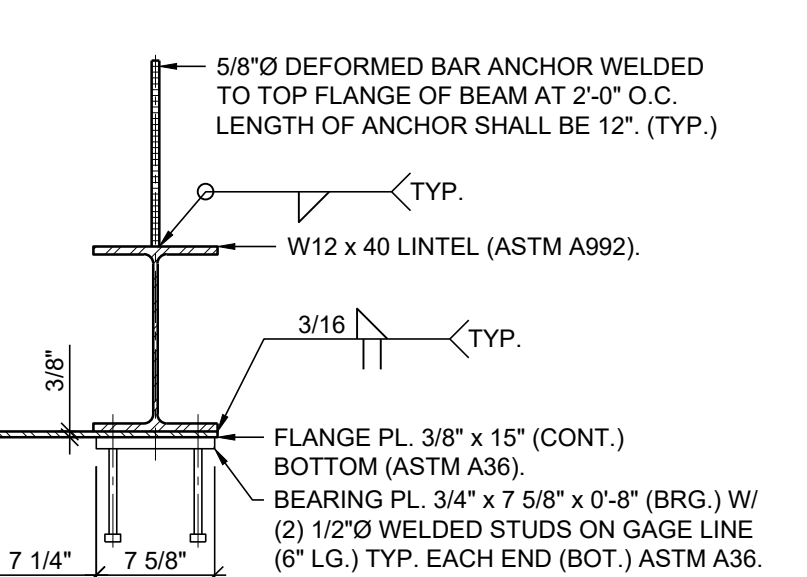
4 BASE PLATE BP-2 DETAIL
Scale: 1" = 1'-0"



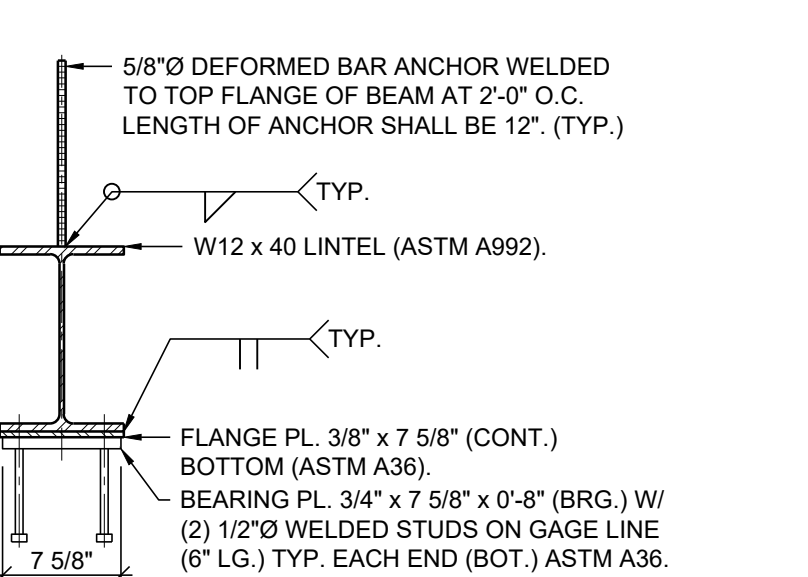
5 MOUNTING PLATE MP-3 DETAIL
Scale: 1" = 1'-0"



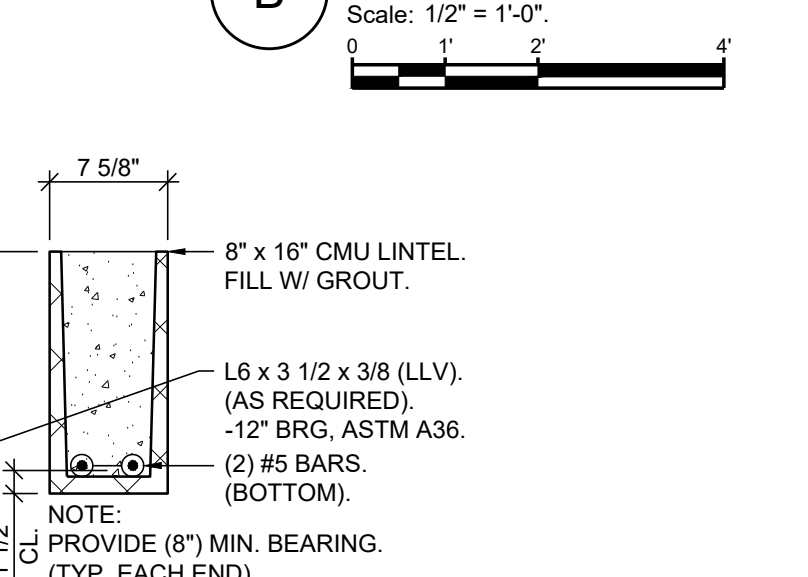
6 LINTEL L1 DETAIL
Scale: 1" = 1'-0"



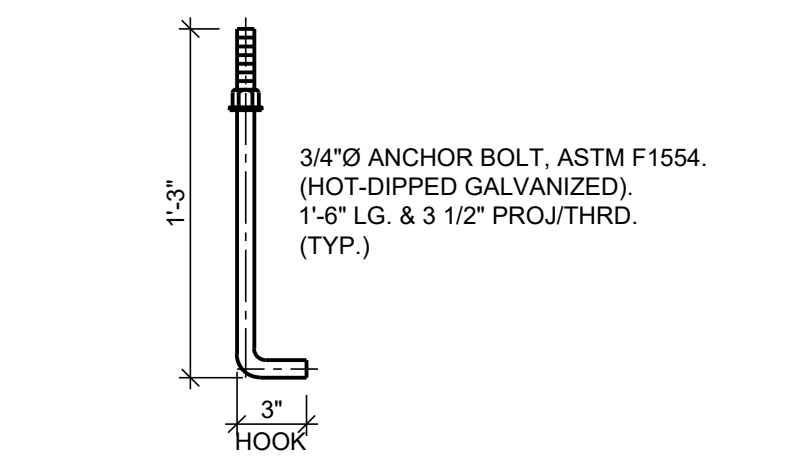
7 LINTEL L2 DETAIL
Scale: 1" = 1'-0"



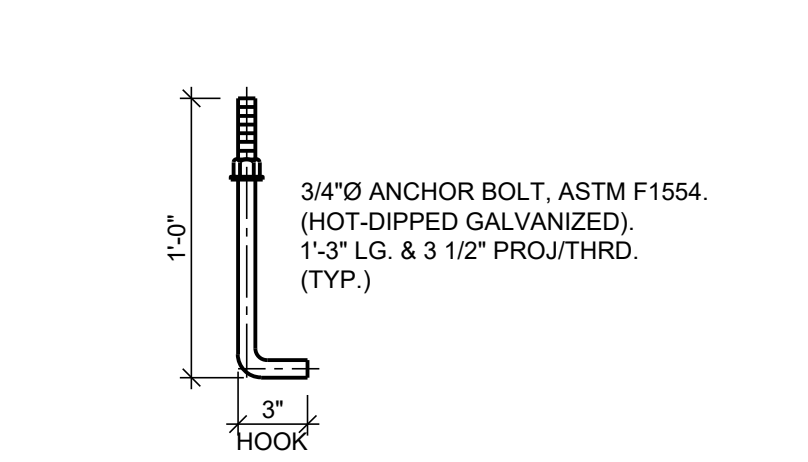
8 LINTEL L3 DETAIL
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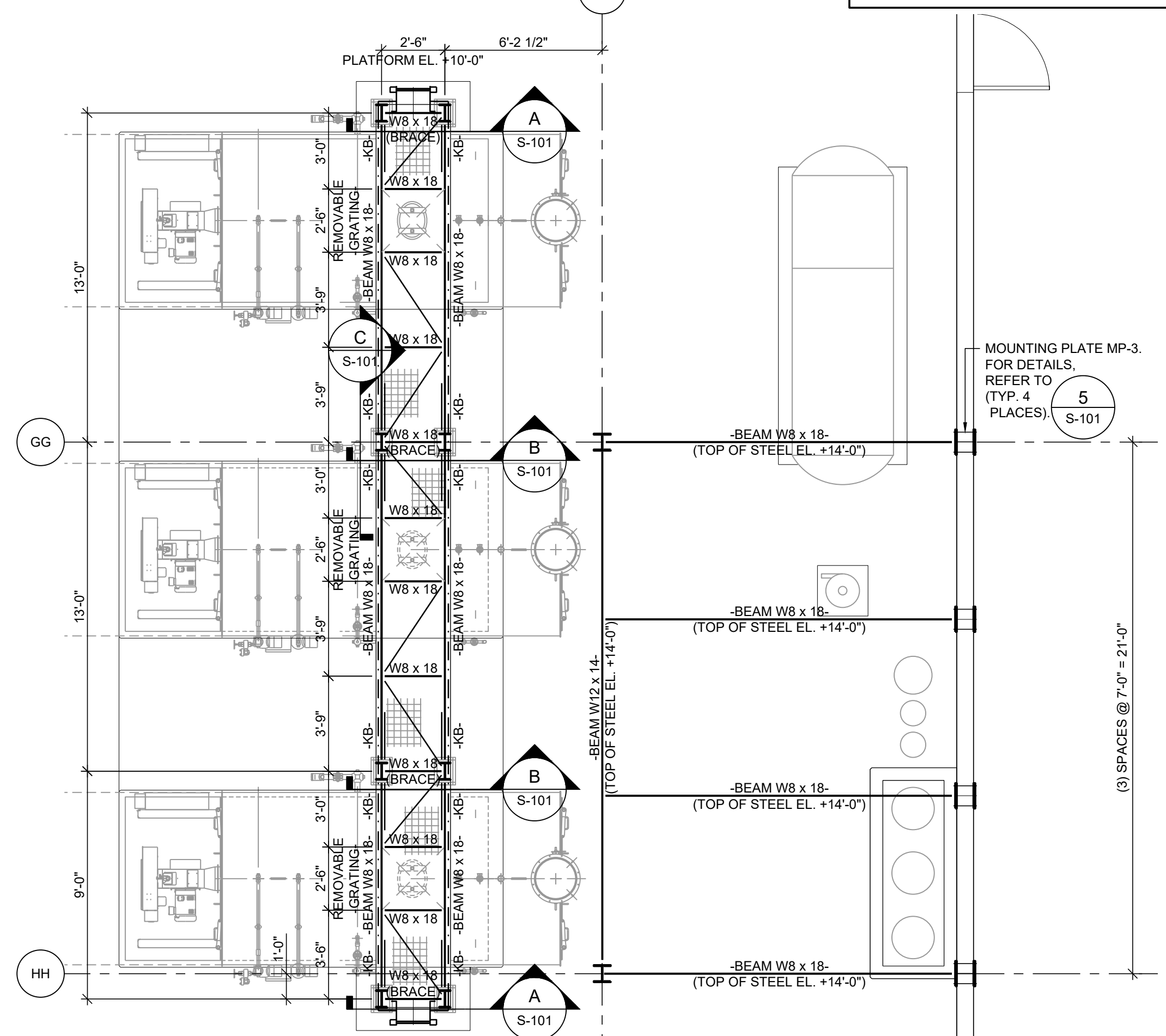
9 LINTEL L4 DETAIL
Scale: 1" = 1'-0"



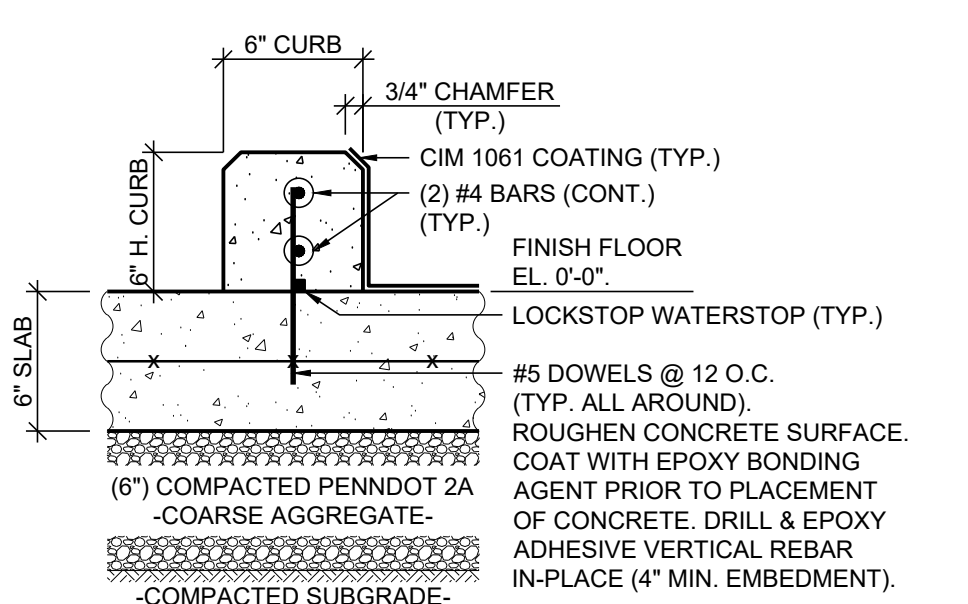
12 ANCHOR BOLT AB-1 DETAIL
Scale: 1 1/2" = 1'-0"



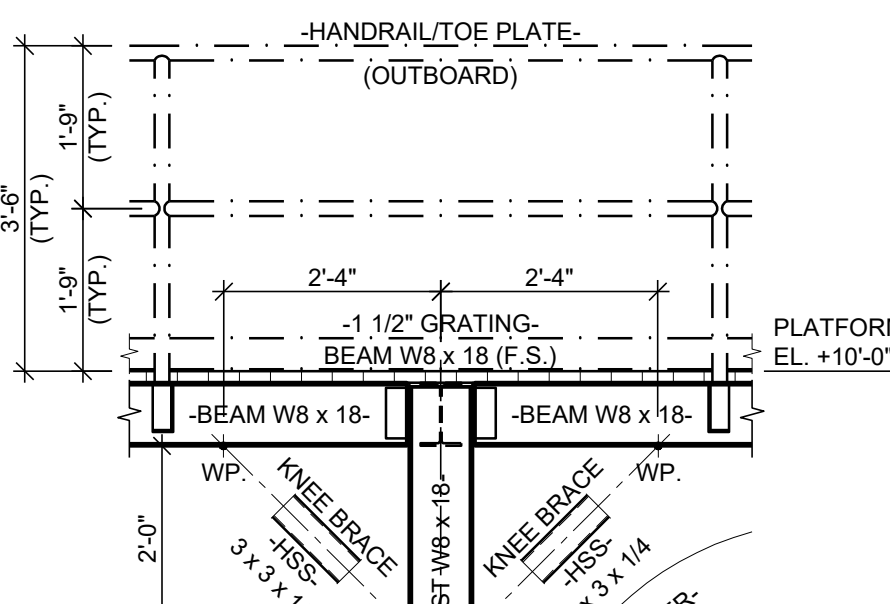
13 ANCHOR BOLT AB-2 DETAIL
Scale: 1 1/2" = 1'-0"



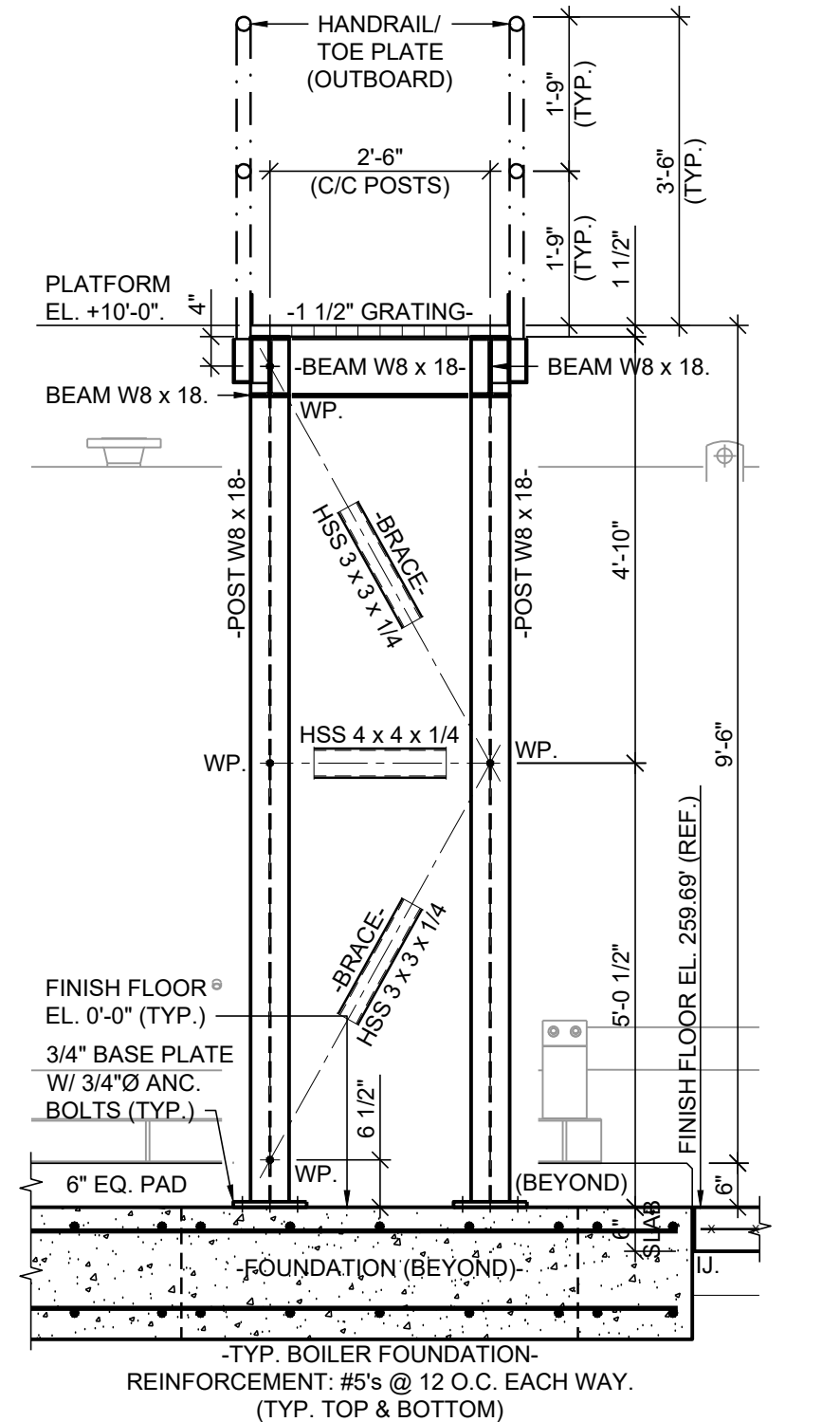
NEW BOILER BUILDING ACCESS PLATFORM/PIPE SUPPORT STEEL FRAMING PLAN
Scale: 1/4" = 1'-0"
PLAN NORTH



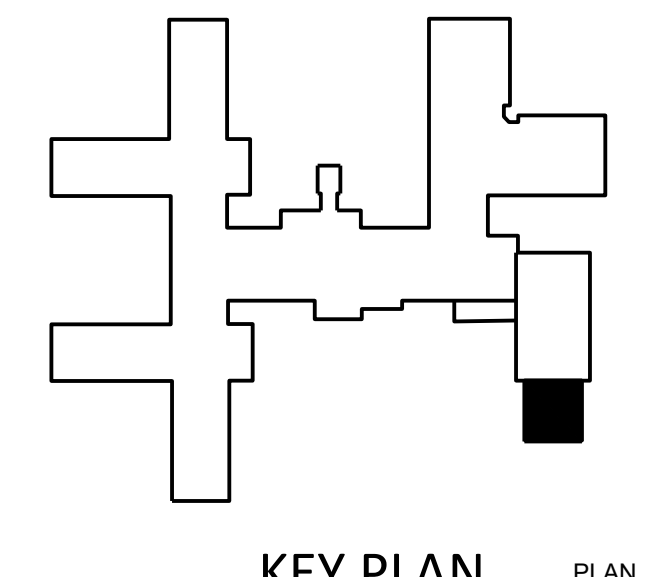
11 TYP. CHEMICAL DRUM CONTAINMENT CURB DETAIL
Scale: 1 1/2" = 1'-0"



C SECTION
Scale: 1/2" = 1'-0"



B SECTION
Scale: 1/2" = 1'-0"



KEY PLAN
Scale: 1" = 1'-0"

SHEET KEYNOTES

- CONTRACTOR SHALL TEMPORARILY SUPPORT/SHORE THE EXISTING BUILDING WHERE NEW LINTEL/BEAM ARE TO BE INSTALLED. THE BUILDING WILL BE OCCUPIED DURING THE CONSTRUCTION. CONTRACTOR SHALL RETAIN A LICENSED PENNSYLVANIA PROFESSIONAL ENGINEER TO DESIGN ALL TEMPORARY SHORING SYSTEMS PROVIDED IN THE BUILDING. ALL SHORING DRAWINGS AND CALCULATIONS SHALL BE SEALED AND SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW.
- PROVIDE GAS METER FOUNDATION (5'-0" x 3'-0" x 0'-6" THICK) REINFORCED WITH #4s @ 12 O.C. (CENTER) ON (8") COMPACTED PENNDOT 2A COARSE AGGREGATE. TOP OF FOUNDATION SHALL BE SET AT ELEVATION 260'-0".

GENERAL SHEET NOTES

- REFER TO DRAWING G-001 FOR DRAWING INDEX, GENERAL PROJECT NOTES AND DRAWING CONVENTIONS.

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

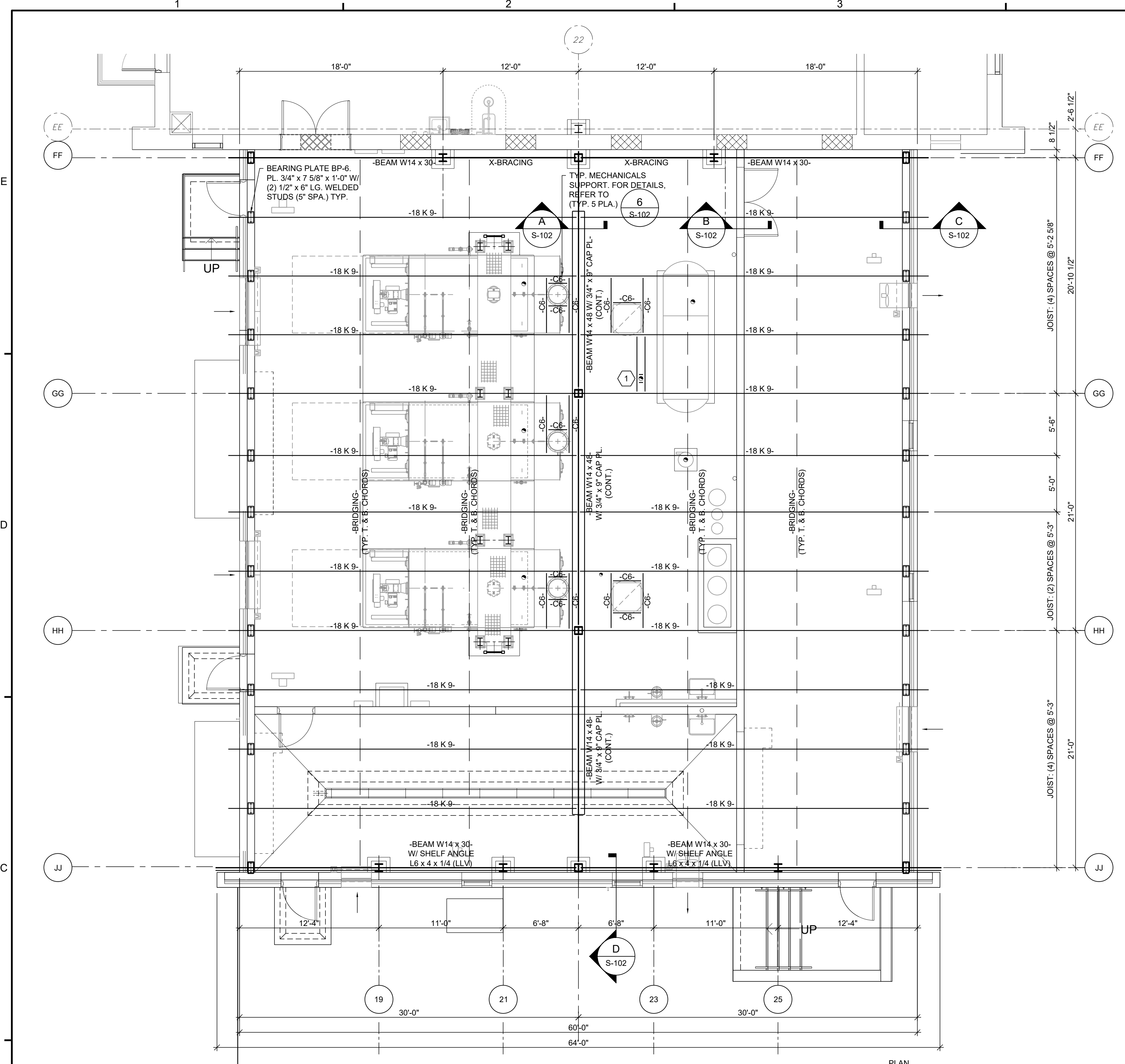
ENTECH ENGINEERING
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ISSUED FOR BIDDING	MAF
ISSUED (REVISED)	APPD
DATE	REV.
01/03/20	0

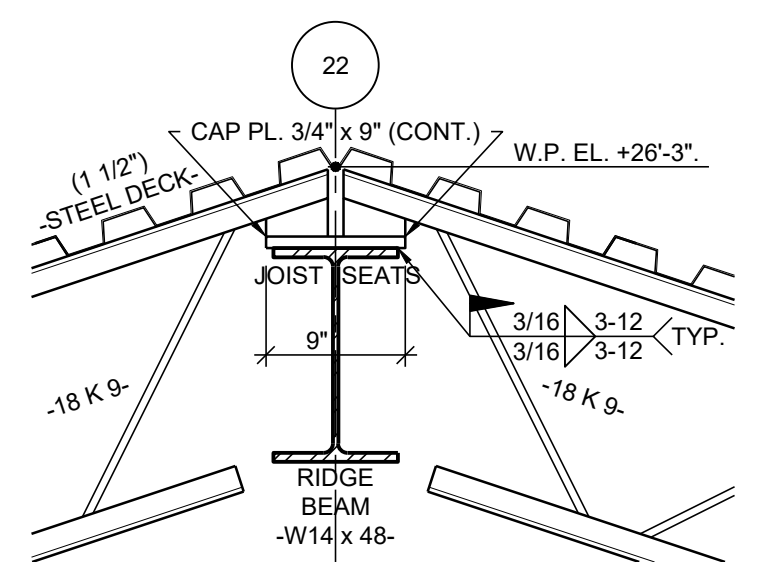
COUNTY OF BERKS
 BERKS HEIM
 BERN TOWNSHIP
 BOILER PROJECT
 STRUCTURAL
 EXISTING BUILDING & NEW BOILER BUILDING FOUNDATION AND STEEL FRAMING PLATFORM PLANS

SCALE: AS NOTED
 PREPARED BY: KCH
 CHECKED BY: CJA
 APPROVED BY: MAF
 PROJECT NO: 4177.009
 DRAWING NO:

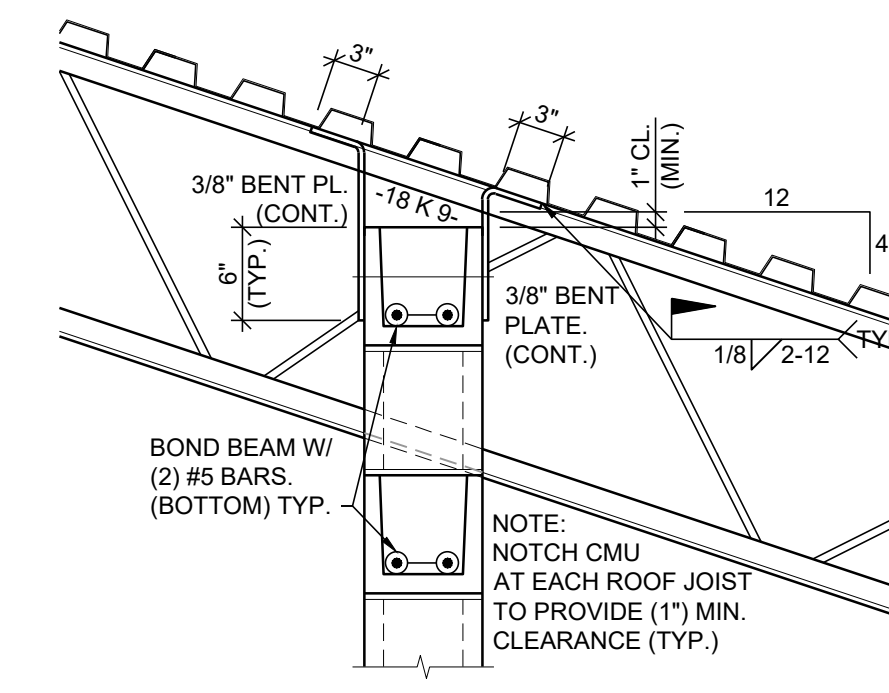
S-101



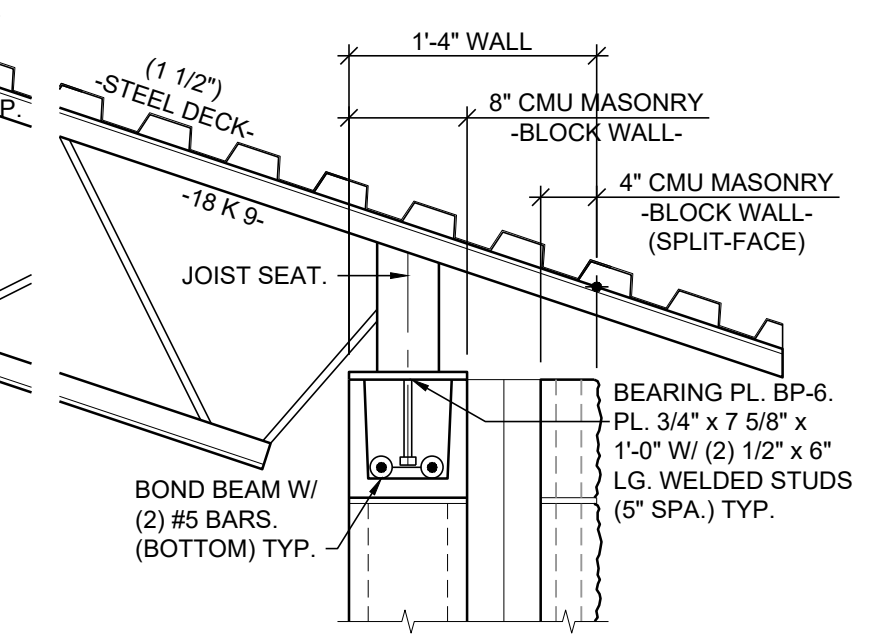
1 EXISTING BUILDING & NEW BOILER BUILDING ROOF FRAMING PLAN
Scale: 3/16" = 1'-0"



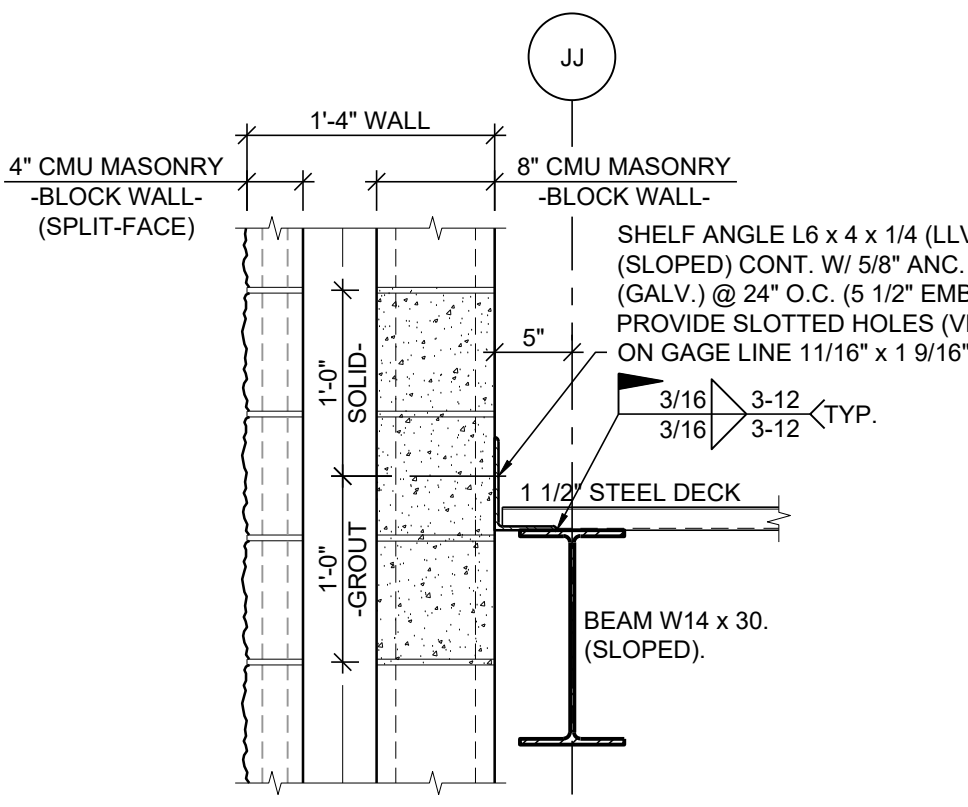
A RIDGE SECTION
Scale: 1" = 1'-0"



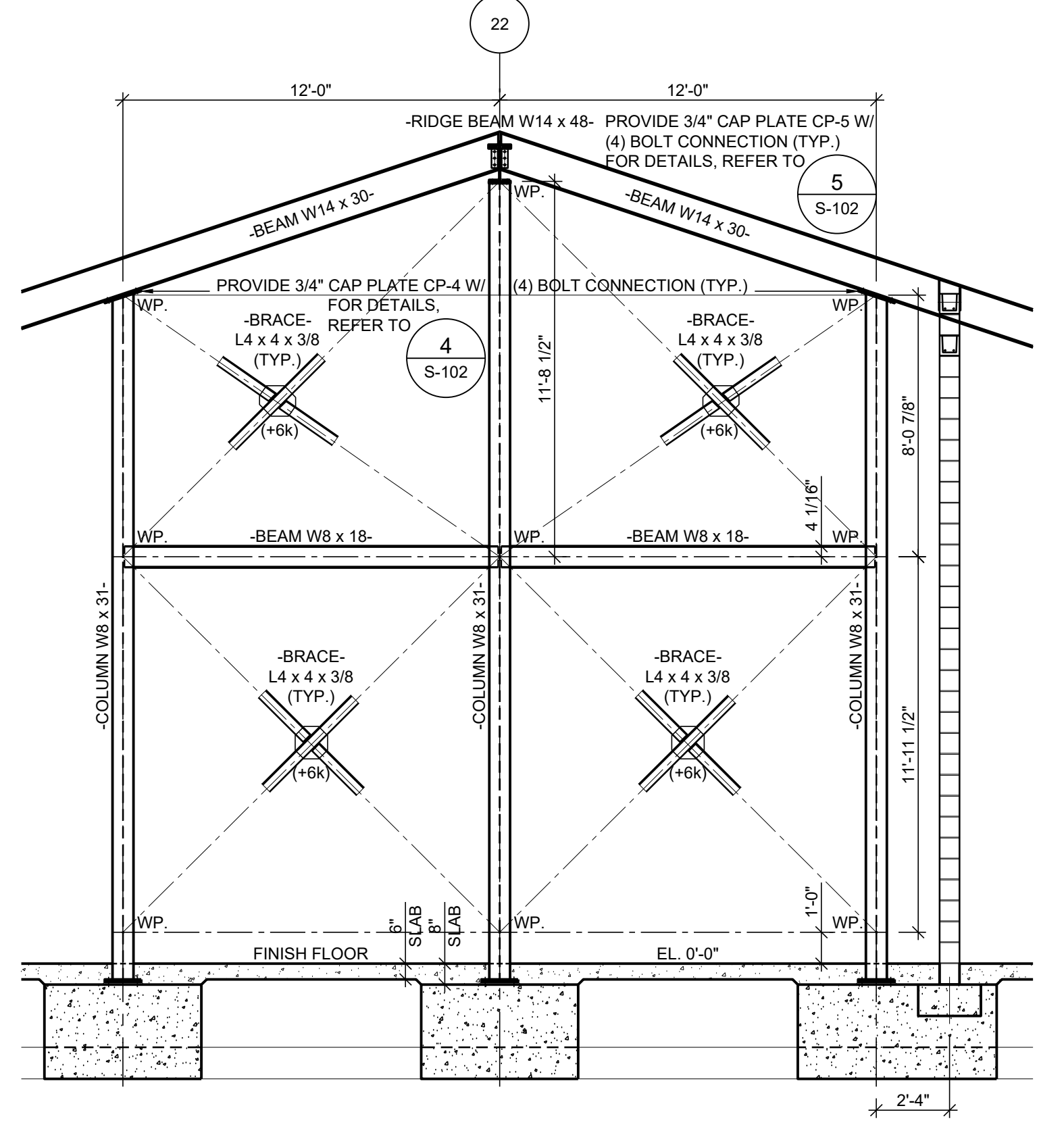
B SEPARATION WALL SECTION
Scale: 1" = 1'-0"



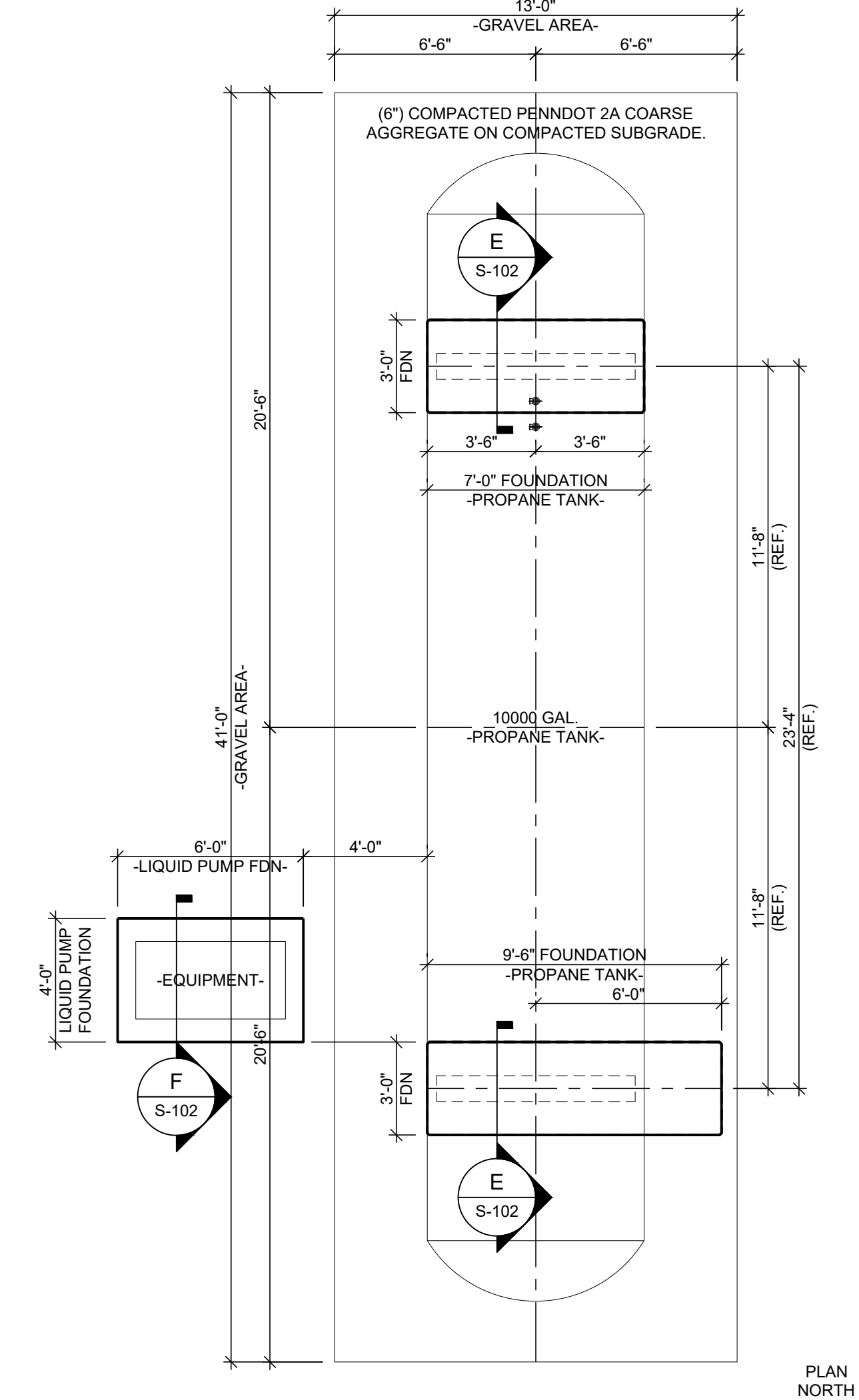
C TYP. END WALL SECTION
Scale: 1" = 1'-0"



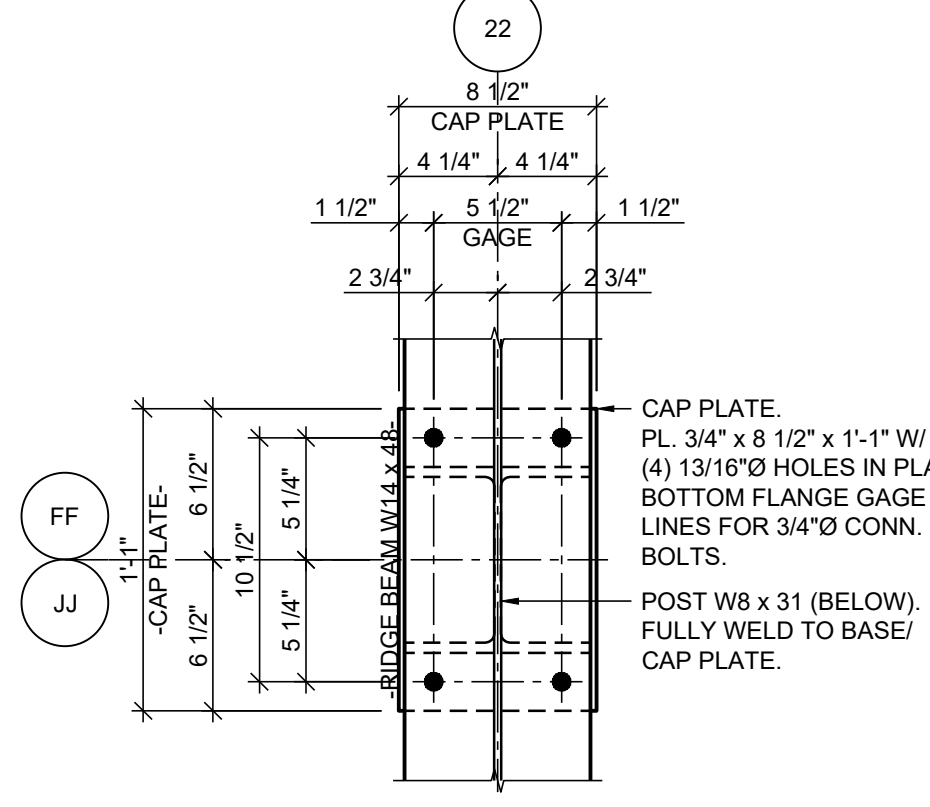
D TYP. END WALL SECTION
Scale: 1" = 1'-0"



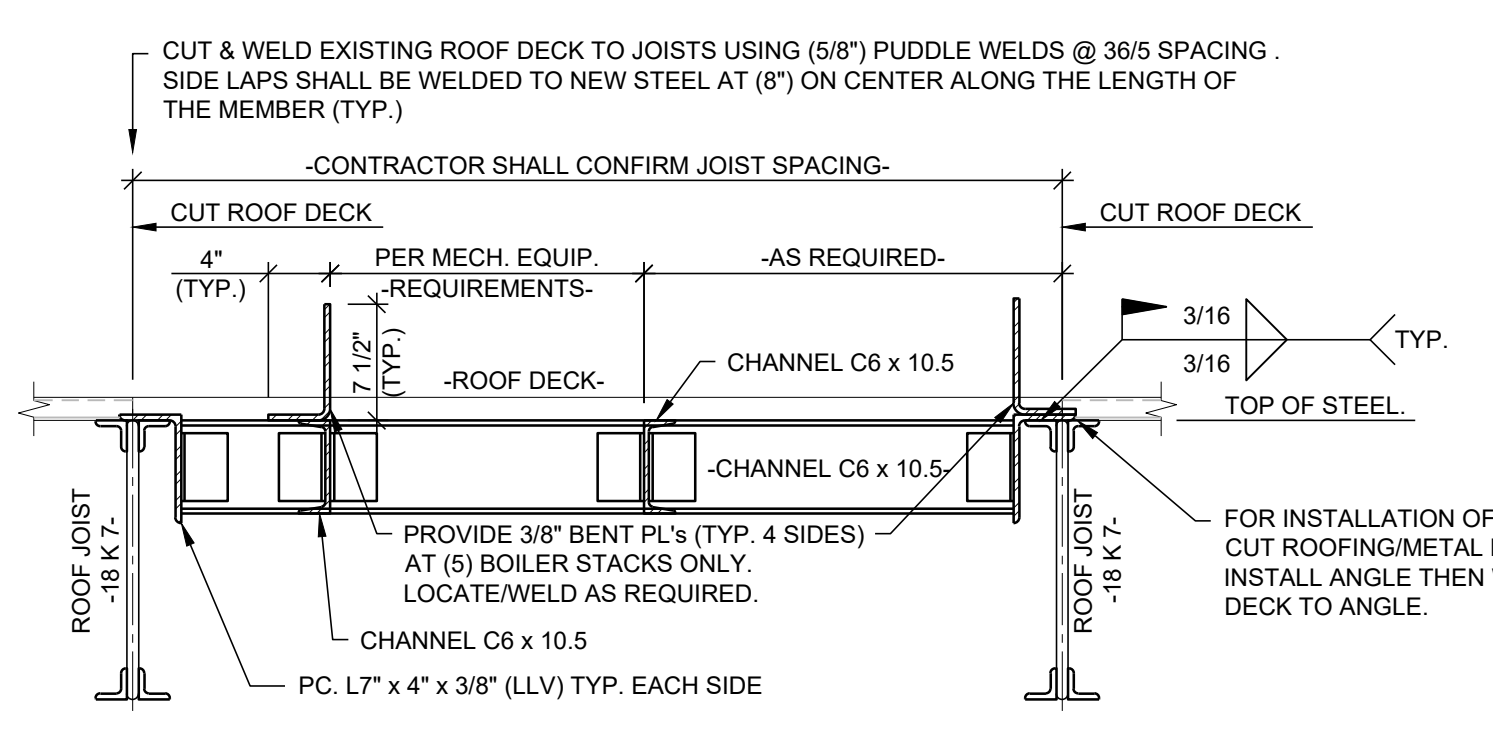
2 BUILDING BRACING ELEVATION
Scale: 1/4" = 1'-0"



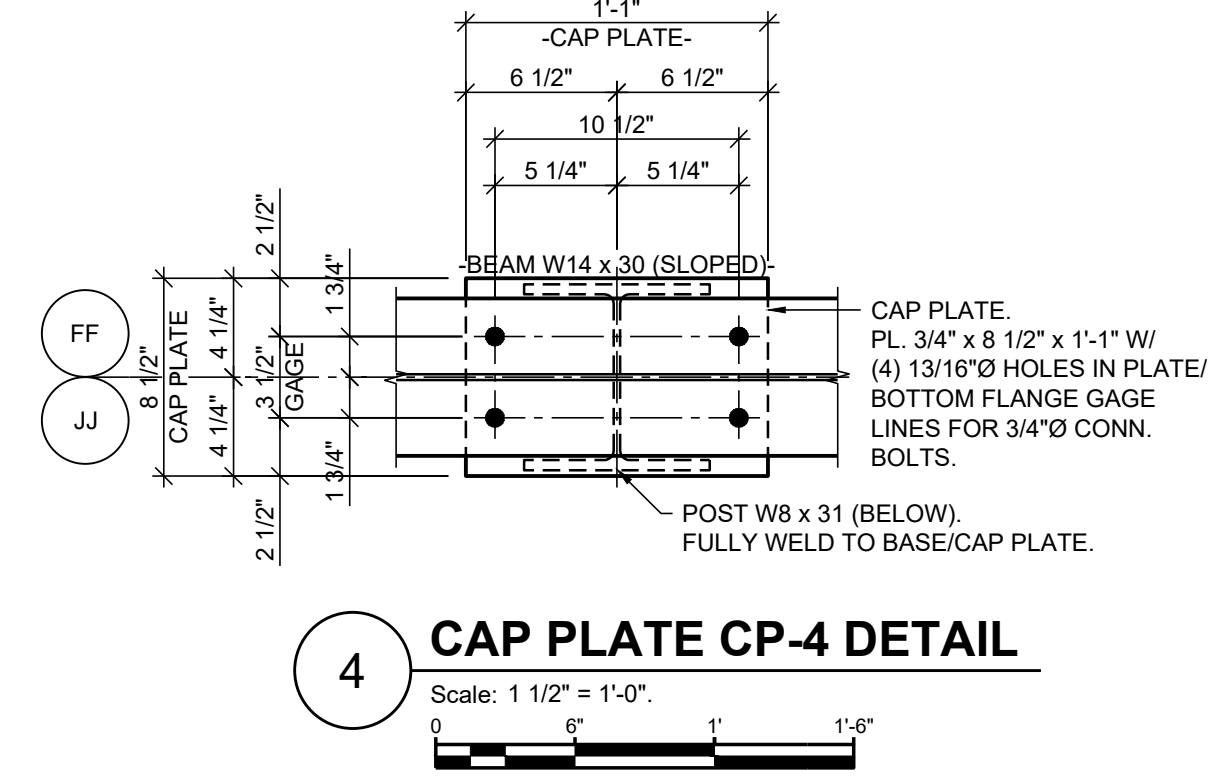
3 PROPANE TANK FOUNDATION PLAN
Scale: 1/4" = 1'-0"



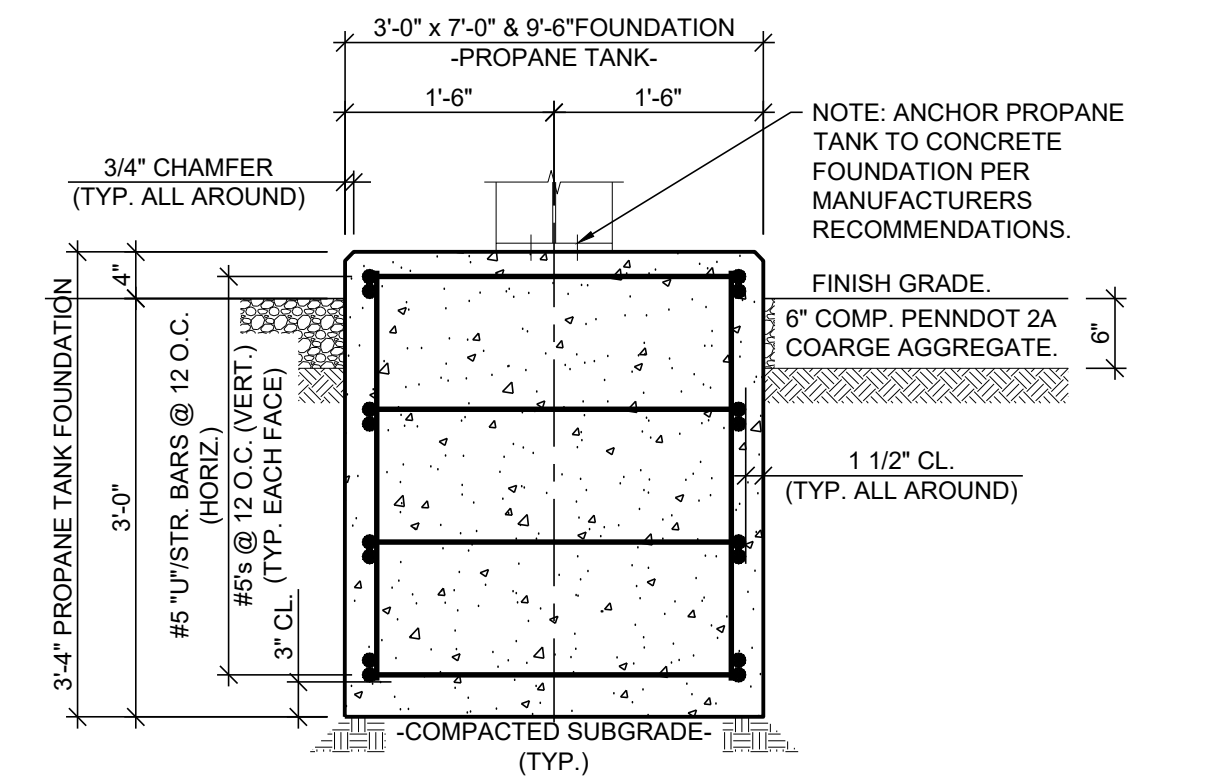
5 CAP PLATE CP-5 DETAIL
Scale: 1 1/2" = 1'-0"



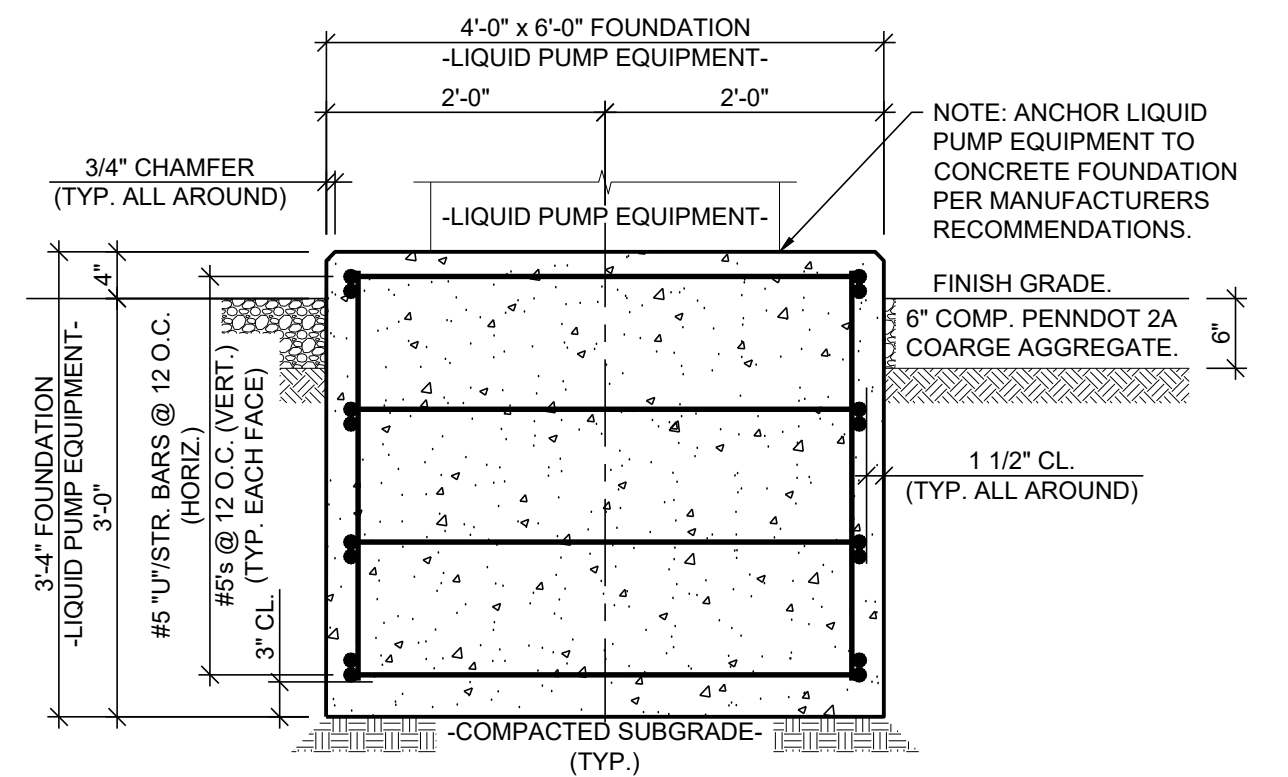
6 TYP. MECHANICALS CHANNEL SUPPORT DETAIL
Scale: None.



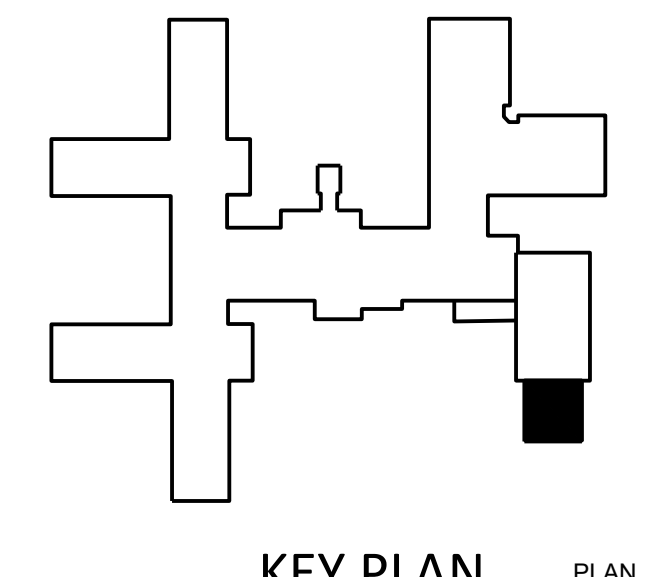
4 CAP PLATE CP-4 DETAIL
Scale: 1 1/2" = 1'-0"



E SECTION
Scale: 3/4" = 1'-0"



F SECTION
Scale: 3/4" = 1'-0"



KEY PLAN
Scale: AS NOTED

SHEET KEYNOTES

- FOR THE TEN (10) VENT STACKS (VTR) THAT PENETRATE THE ROOF, PROVIDE SUPPLEMENTAL CHANNEL C/S STEEL FRAMING AS SHOWN IN DETAIL 6.

GENERAL SHEET NOTES

- REFER TO DRAWING G-001 FOR DRAWING INDEX, GENERAL PROJECT NOTES AND DRAWING CONVENTIONS.

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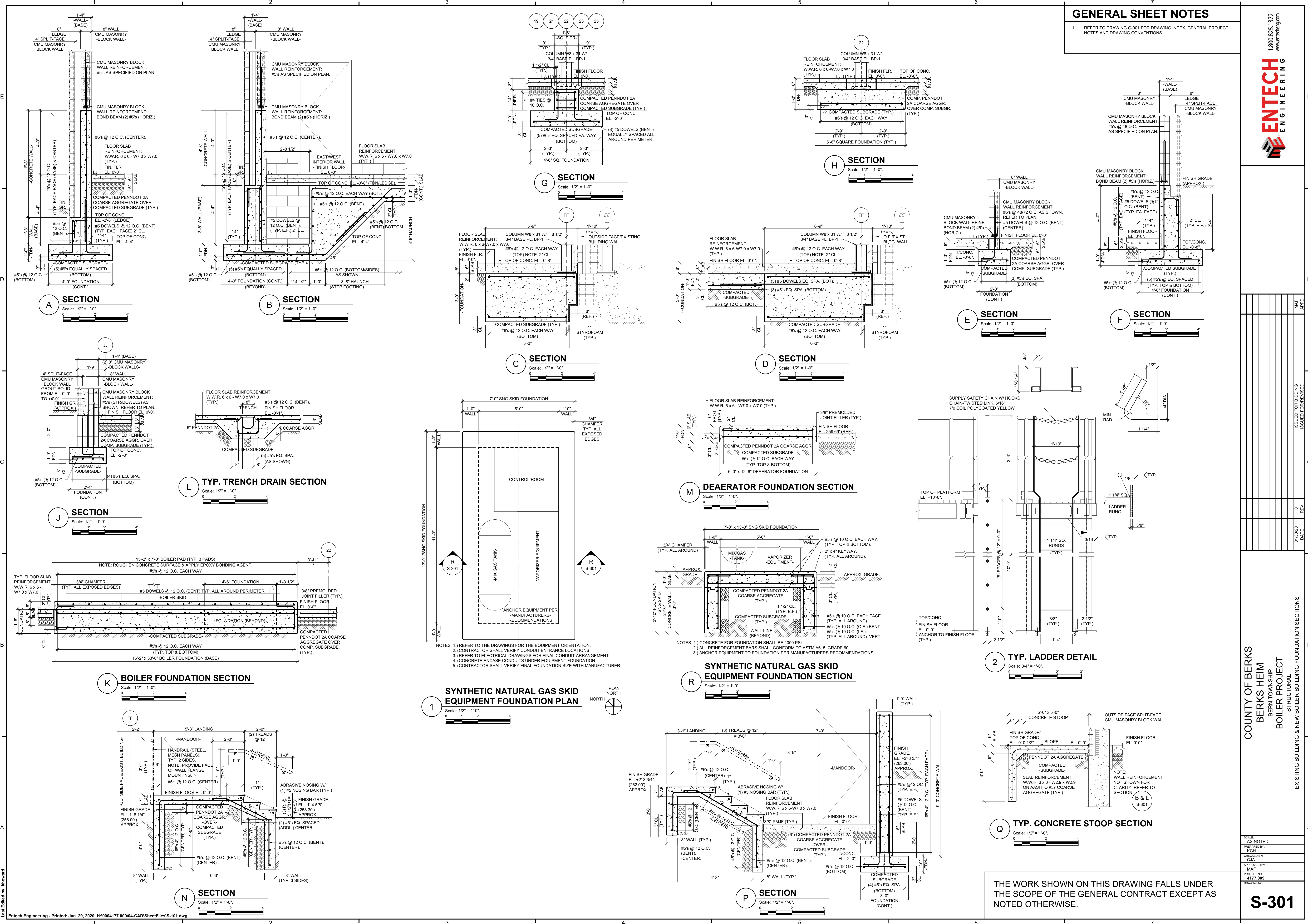
COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
STRUCTURAL

EXISTING BUILDING & NEW BOILER BUILDING ROOF FRAMING PLAN, ELEVATION, & SECTIONS

SCALE: AS NOTED
PREPARED BY: KCH
CHECKED BY: CJA
APPROVED BY: MAF
PROJECT NO: 4177.009
DRAWING NO:

S-102

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.



GENERAL SHEET NOTES

- REFER TO DRAWING G-001 FOR DRAWING INDEX, GENERAL PROJECT NOTES AND DRAWING CONVENTIONS.

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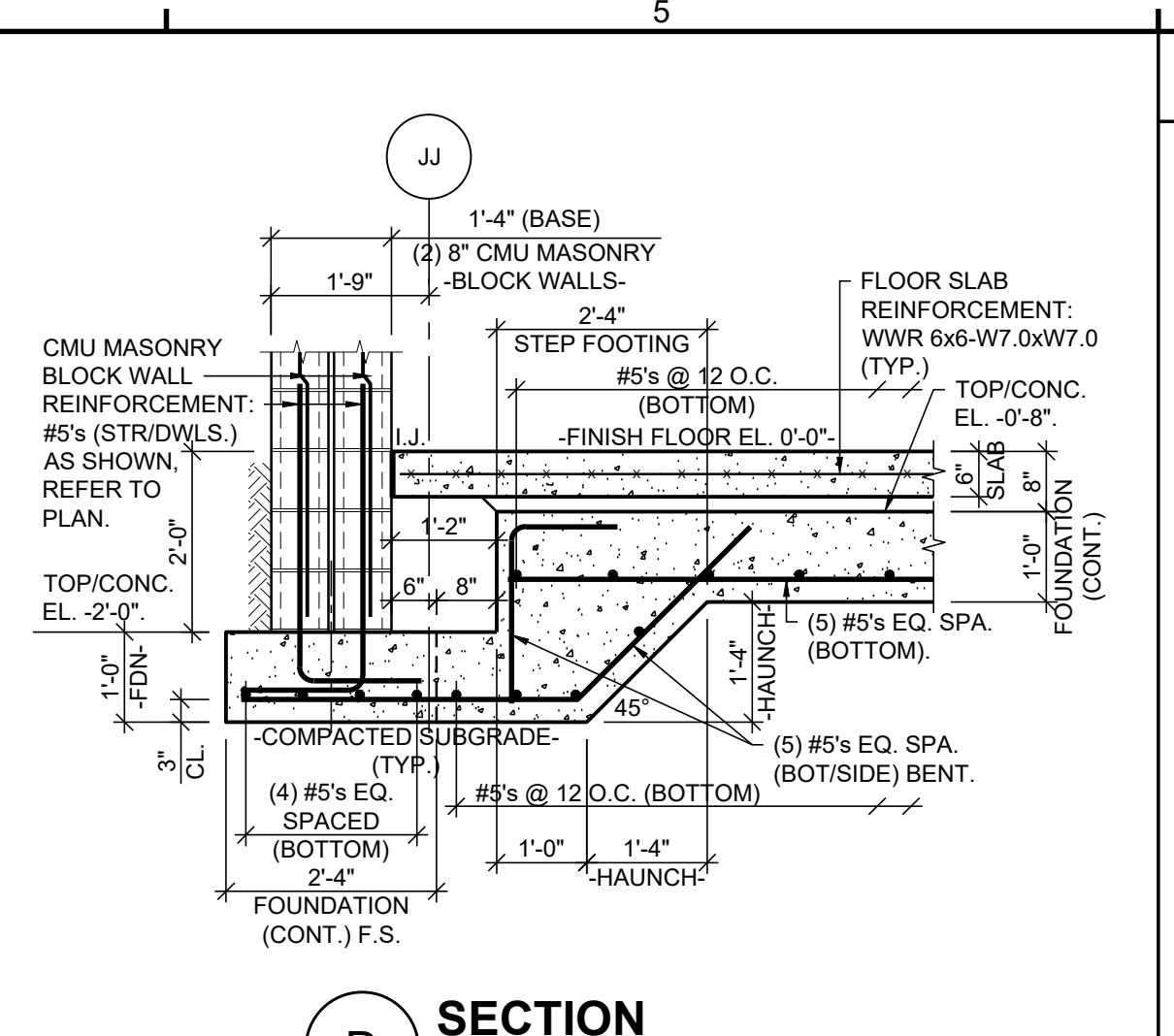
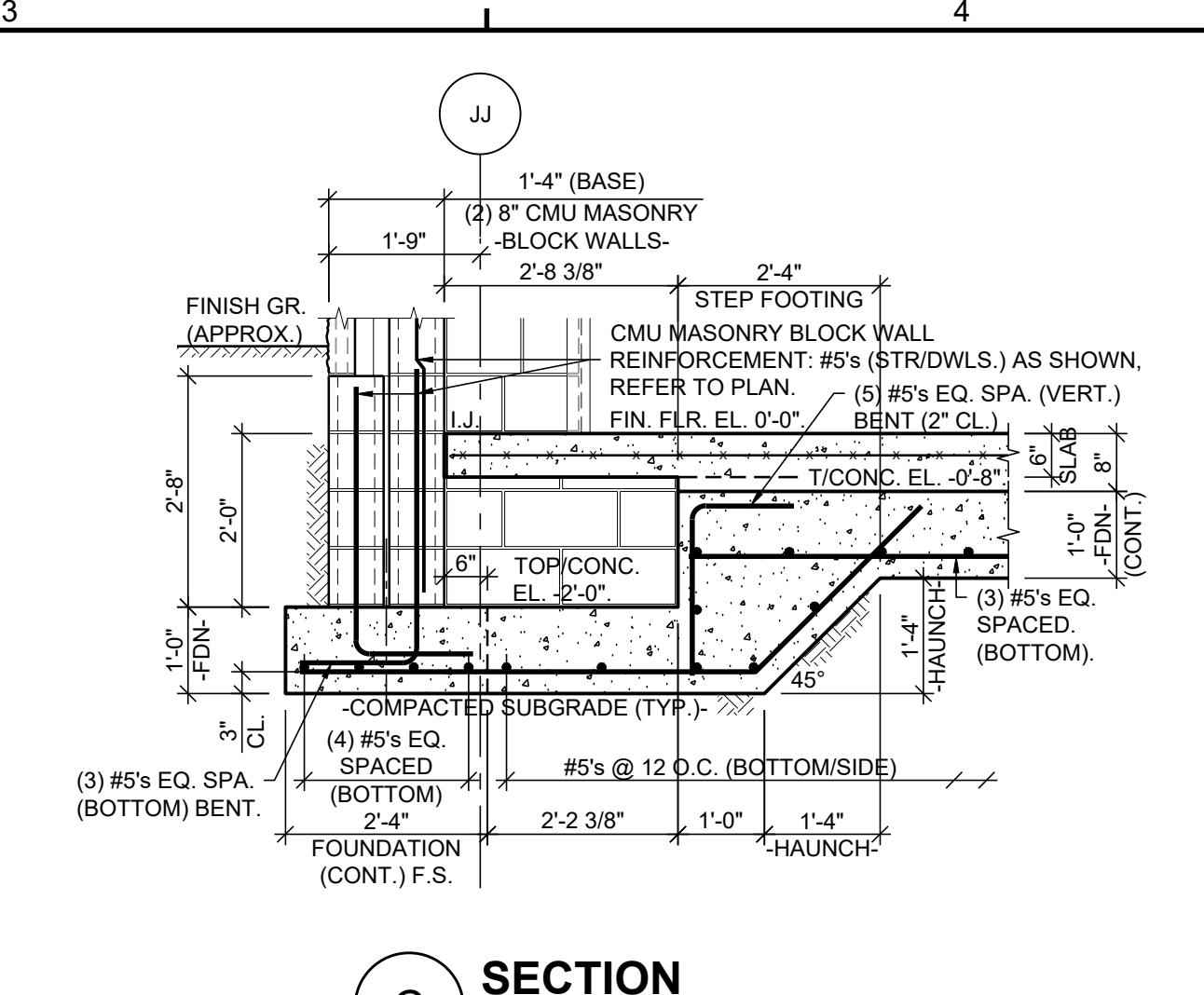
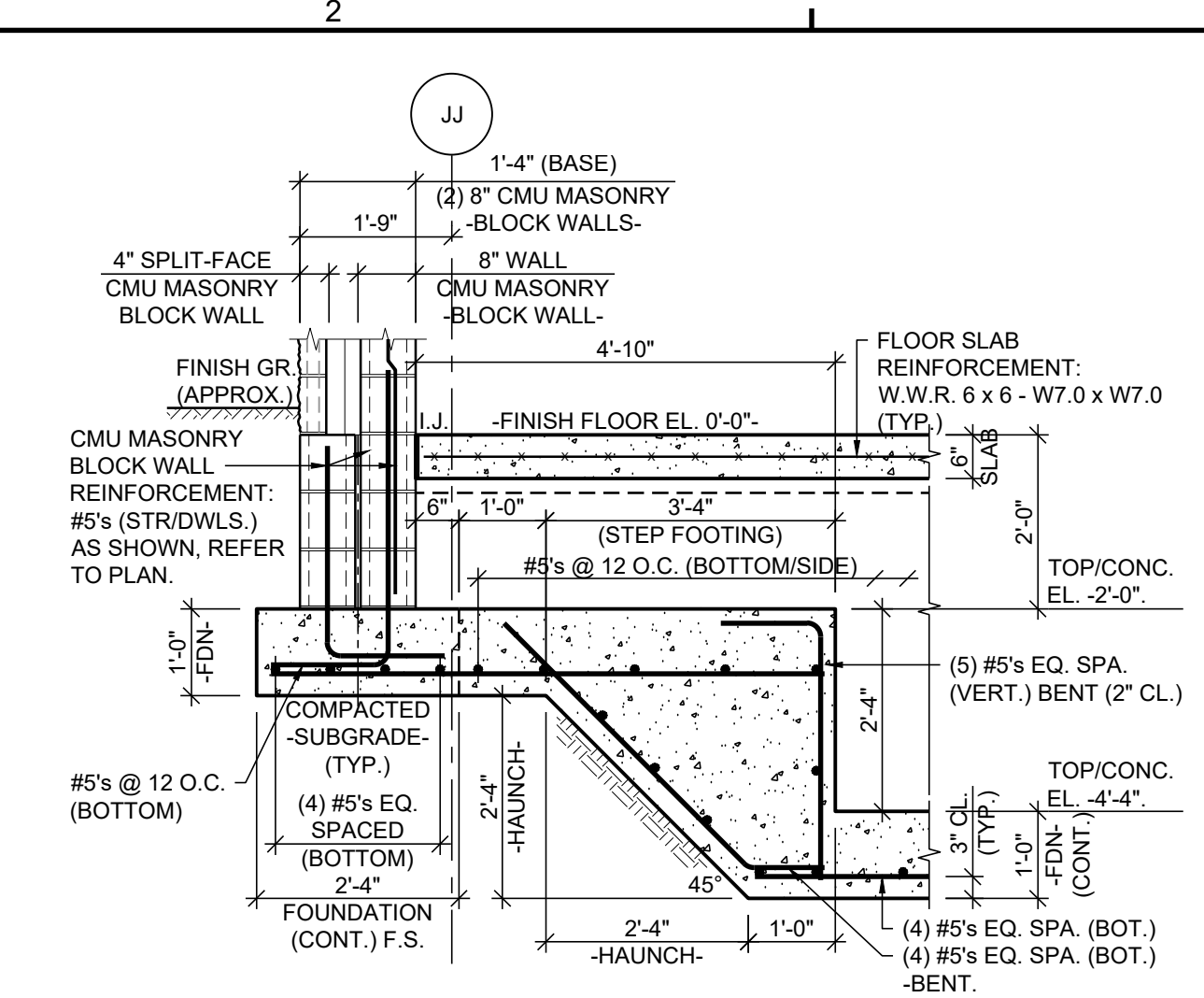
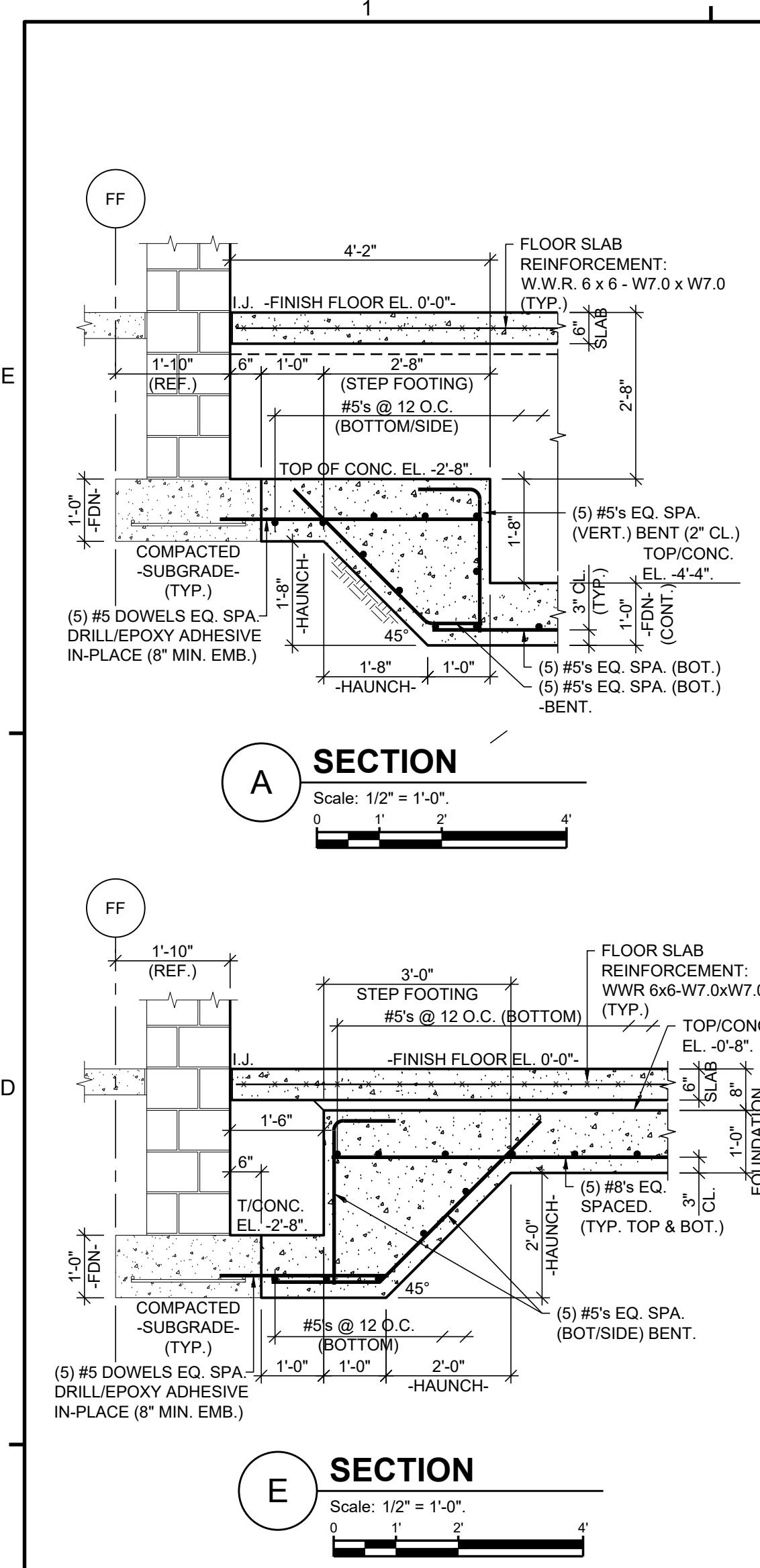
NO.	DATE	REV.	ISSUED FOR BUILDING	ISSUED FOR REVISION
0	01/03/20	0		

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
STRUCTURAL
EXISTING BUILDING & NEW BOILER BUILDING FOUNDATION SECTIONS

SCALE: AS NOTED
PREPARED BY: KCH
CHECKED BY: CJA
APPROVED BY: MAF
PROJECT NO: 4177.009
DRAWING NO:

S-301

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.



GENERAL STRUCTURAL NOTES

- FOUNDATION**
- SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE BASED ON THE GEOTECHNICAL REPORT PREPARED BY EARTH ENGINEERING, INC. DATED NOVEMBER 25, 2019 THAT SHOWS THE ALLOWABLE SOIL BEARING PRESSURE IS (3000) PSF.
 - THE STRUCTURAL BACKFILL BENEATH THE FOOTINGS SHALL BE COMPACTED SUBGRADE.
 - BACKFILL MATERIAL SHALL BE COMPACTED TO (95%) PERCENT OF MAXIMUM DRY DENSITY PER ASTM D1557.
- CAST-IN-PLACE CONCRETE**
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 301 AND 318, LATEST EDITION.
 - ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT (28) DAYS.
SLUMP RANGE FOR FOOTINGS: ONE (1") INCH TO THREE (3") INCHES.
SLUMP RANGE FOR PIERS: TWO (2") INCHES TO FOUR (4") INCHES.
AIR CONTENT: SIX (6%) PERCENT, PLUS OR MINUS (+) 1.0 PERCENT. WATER/CEMENT RATIO: 0.45
 - ALL REINFORCING BARS SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60. DETAILING SHALL CONFORM TO ACI 315, LATEST EDITION. ALL WELDED WIRE REINFORCING SHALL MEET THE REQUIREMENTS OF ASTM A1064.
 - ALL CORNERS AND INTERSECTIONS PER ACI MANUAL OF STANDARD PRACTICE.
 - BAR CHAIRS, HIGH CHAIRS, SUPPORT BARS AND ALL OTHER ACCESSORIES SHALL BE PROVIDED IN ACCORDANCE WITH ACI AND CRSI STANDARDS.
 - BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY ON EACH SIDE UNTIL THE LOWER FINAL GRADE IS REACHED.
 - SIZE AND LOCATION OF ALL WALL AND FLOOR PENETRATIONS SHALL BE VERIFIED BY THE CONTRACTOR REQUIRING THE OPENING PRIOR TO PLACING OF CONCRETE.
 - CONTRACTOR SHALL PROVIDE LATERAL SUPPORT OF ALL CONCRETE WALLS UNTIL SUPPORTING ELEMENTS HAVE BEEN INSTALLED UNLESS NOTED OTHERWISE ON THE DRAWINGS.
 - ANCHOR BOLTS SHALL BE IN ACCORDANCE WITH ASTM F1554, HOT-DIPPED GALVANIZED.
 - NON-SHRINK, NON-METALLIC GROUT TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI.
 - FOR CONSTRUCTING CONCRETE PEDESTALS, ROUGHEN THE EXISTING CONCRETE SURFACE AND TREAT WITH APPROVED EPOXY BONDING COMPOUND FOR BONDING PRIOR TO PLACING CONCRETE.
 - CONTRACTOR SHALL PROVIDE CONTROL JOINTS IN SLAB. FLOOR SLAB SHALL BE POURED IN ALTERNATE SECTIONS.
 - ALL REINFORCING SPLICES SHALL BE IN ACCORDANCE WITH ACI 318.
 - FLOOR, CONCRETE SHALL BE AIR ENTRAINED (3% INTERIOR / 6% EXTERIOR).
 - FLOOR, CONCRETE SLUMP SHALL BE (2" TO 4") INCHES, PLUS OR MINUS ONE-HALF (1/2") INCH.
 - FLOOR, OVERALL FLOOR FLATNESS SHALL BE F20.
 - PROVIDE NO BURN MARKS ON SLAB SURFACE WHILE TROWELING.
 - FOR THE FLOOR, PROVIDE DAMP CURING, SEVEN (7) DAY CURE.
 - ISOLATION JOINTS (IJ) ARE (1/4") THICK JOINT FILLER STRIPS AND PLACED IN THE JOINT BETWEEN THE SLAB-ON-GRADE AND THE CONCRETE WALL AND AROUND THE COLUMNS.
 - RE-ENTRANT CORNER REINFORCEMENT SHOWN ON THE FLOOR PLAN SHALL BE (2) #4 x 3'-0" LONG DIAGONALS.
- MASONRY**
- CONCRETE MASONRY UNITS SHALL BE NORMAL WEIGHT UNITS AND SHALL CONFORM TO ASTM C90 WITH A MINIMUM DESIGN COMPRESSIVE UNIT STRENGTH OF (1900) PSI AND A PRISM STRENGTH OF (1500) PSI. CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE FOLLOWING STANDARDS:
A. "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", ACI 530, LATEST EDITION.
B. "SPECIFICATIONS FOR MASONRY STRUCTURES", ACI 530.1.
 - MORTAR FOR CONCRETE MASONRY SHALL CONFORM TO ASTM C270, TYPE S AT CONCRETE MASONRY UNITS.
 - REINFORCING FOR CONCRETE MASONRY SHALL CONFORM TO ASTM A615, GRADE 60. MINIMUM LAP SPLICE PER ACI 530.
 - GROUT FOR BOND BEAMS AND TO FILL CORES OF WALLS WITH REINFORCING SHALL CONFORM TO ASTM C476, WITH A MINIMUM COMPRESSIVE CYLINDER STRENGTH OF (3000) PSI AT (28) DAYS. GROUT SHALL BE VIBRATED AND RE-VIBRATED AFTER INITIAL WATER LOSS TO INSURE COMPLETE FILLING OF CORES. PROVIDE (2) #5 BARS IN ALL BOND BEAMS. BOND BEAMS SHALL BE PLACED AT THE TOP OF ALL WALLS.
 - PLACE LADDER TYPE HORIZONTAL JOINT REINFORCING WITH PREFORMED LAPPED CORNER REINFORCING AT (16") C/C AND (8") C/C VERTICALLY IN ALL INTERIOR AND EXTERIOR MASONRY WALLS RESPECTIVELY, UNLESS NOTED OTHERWISE.
A. JOINT REINFORCING SHALL CONFORM TO ASTM A951, BE GALVANIZED, AND HAVE SIDE WIRES OF NINE (9) GAGE MINIMUM, CONFORMING TO A62, UNLESS NOTED OTHERWISE.
B. ALL JOINT REINFORCING SHALL BE HOT-DIPPED GALVANIZED.
 - PROVIDE A CONTINUOUS BOND BEAM WITH TWO (2) #5 CONTINUOUS IN THE TOP COURSE OF ALL BLOCK WALLS, AT ALL LOCATIONS WHERE FRAMING MEMBERS ARE BOLTED TO FACE OF CMU WALLS.
 - THE DISCONTINUED ENDS OF ALL MASONRY WALLS SHALL BE SOLIDLY GROUTED A MINIMUM OF EIGHT (8") INCHES OR ONE (1) BLOCK CELL AND REINFORCED FOR THEIR FULL HEIGHT WITH ONE (1) #7 BAR, UNLESS NOTED OTHERWISE.
 - WHERE CMU COMES INTO A COLUMN, WELD ANCHORS TO THE EXISTING COLUMN AT EIGHT (8") INCHES ON VERTICAL CENTERS. ANCHORS SHALL BE AS SHOWN ON THE ARCHITECTURAL DRAWINGS.
 - ALL PRECAST CONCRETE LINTELS SHALL BE CONSTRUCTED FROM 3000 PSI CONCRETE.

GENERAL SHEET NOTES

- REFER TO DRAWING G-001 FOR DRAWING INDEX, GENERAL PROJECT NOTES AND DRAWING CONVENTIONS.

GENERAL STRUCTURAL NOTES (CONT.)

- WELDING**
- ALL WELDING SHALL BE IN ACCORDANCE WITH THE "STRUCTURAL WELDING CODE" AWS D1.1, LATEST EDITION USING E70XX ELECTRODES UNLESS SPECIFIC WELDING PROCEDURE REQUIRES OTHERWISE.
 - PROPERLY PREPARE EXISTING STEEL BEFORE WELDING NEW STEEL TO EXISTING.
 - ALL WELDERS USED ON THIS PROJECT SHALL BE AWS CERTIFIED WELDERS FOR THE TYPE OF WELDING BEING DONE.
- STRUCTURAL STEEL**
- ALL STRUCTURAL STEEL WORK SHALL CONFORM WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL FOR BUILDINGS ADOPTED JUNE 22, 2010.
 - ALL WIDE FLANGE STRUCTURAL STEEL SHALL CONFORM TO ASTM A992. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36. ALL CUT AND EXPOSED EDGES SHALL BE GROUND SMOOTH.
 - TUBULAR STEEL SHALL CONFORM TO ASTM A500, GRADE B. ALL WELD SEAMS MUST BE GROUND SMOOTH.
 - STEEL ROOF DECK SHALL BE (1 1/2") DEEP, 18 GAGE, GALVANIZED, TYPE "P" ROOF DECKING AS MANUFACTURED BY VULCRRAFT OR APPROVED EQUAL. THE DECKING SHALL BE WELDED TO THE STRUCTURAL STEEL AND PLATES AT 3/8" WELD SPACING USING (5/8") PUDDLE WELDS. MECHANICALLY FASTEN SIDE LAPS USING (2) No. 10 TEK SCREWS PER SIDE LAP SPAN. DECKING SHALL BE INSTALLED PER THE REQUIREMENTS OF THE STEEL DECK INSTITUTION.
 - CONNECTIONS:
A. CONNECTIONS SHALL BE BEARING TYPE USING A325 BOLTS 3/4" DIAMETER.
B. THE INSTALLATION AND TIGHTENING OF ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS".
C. THE FIELD BURNING OF CORES, CUTS, HOLES, ETC. IN STRUCTURAL STEEL MEMBERS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER.
D. BEAM CONNECTIONS NOT DETAILED SHALL BE DESIGNED AND PROVIDED TO SUPPORT A LOAD EQUAL TO 1/2 THE TOTAL UNIFORM LOAD FOR A GIVEN SIZE BEAM AND SPAN. ALL DESIGN AND DETAIL OF THE CONNECTIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - ALL BASE PLATES & CAP PLATES SHALL BE WELDED TO THE COLUMNS.
 - ALL LEVELING PLATES SHALL BE SHIPPED LOOSE.
 - CONTRACTOR SHALL PROVIDE LATERAL SUPPORT OF ALL STEEL MEMBERS UNTIL SUPPORTING ELEMENTS HAVE BEEN INSTALLED.
 - ALL HIGH STRENGTH BOLTS TO BE IN ACCORDANCE WITH ASTM A325N.
 - ALL STRUCTURAL STEEL TO BE CLEANED AND PAINTED. REFER TO THE SPECIFICATIONS. DO NOT PAINT STEEL AREAS TO BE ENCASED IN CONCRETE OR WELDED. AFTER INSTALLATION IS COMPLETE, PAINT THOSE AREAS WHICH NEED TO BE TOUCHED-UP. REMOVE LOOSE MILL SCALE, LOOSE RUST OR OTHER FOREIGN MATTER PRIOR TO PAINTING.
 - PROVIDE DOUBLE CLIP ANGLES AT ALL CONNECTIONS.
 - REPAINT ALL EXISTING STRUCTURAL ITEMS THAT WERE MODIFIED.
 - ALL STEEL LINTELS SHALL BE HOT-DIPPED GALVANIZED.
- STEEL JOISTS**
- MINIMUM BEARING OF K JOISTS SHALL BE (2 1/2") OVER SUPPORT STEEL AND (4") OVER SUPPORTING MASONRY, UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS.
 - JOISTS SHALL BE CONNECTED TO SUPPORTING STEEL WITH (2) 1/316" x 1" LONG FILLET WELDS (MIN) OR WITH (2) 1/2" BOLTS FOR EACH JOIST END (TYP). EXCEPT ANY JOIST END FRAMING INTO A COLUMN, STRUT JOISTS (S.J.), SHALL BE CONNECTED TO THE COLUMN AND TO THE COLUMN, BEAM, OR BEARING PLATE AT THE OPPOSITE END WITH (2) 1/2" BOLTS FOR EACH JOIST END.
 - PROVIDE NUMBER OF ROWS AND TYPE OF HORIZONTAL CONTINUOUS BRIDGING AS SHOWN ON THE STRUCTURAL DRAWINGS. BRIDGING ROWS SHALL BE EQUALLY SPACED. SIZES AND CONNECTIONS OF BRIDGING MEMBERS SHALL MEET THE LATEST REQUIREMENTS OF THE STEEL JOIST INSTITUTE (SJI). SHOP PAINT ALL STEEL JOISTS WITH SHOP PRIMER IN ACCORDANCE WITH THE SPECIFICATIONS.
 - PROVIDE ONE (1) ROW OF CONTINUOUS BOSSOM CHORD BRIDGING NEAR THE FIRST BOTTOM CHORD PANEL. POINTS OF JOISTS IN ACCORDANCE WITH SJI AS REQUIRED TO RESIST NET UPLIFT FORCES INDICATED IN ROOF DESIGN LOAD GENERAL NOTES.
 - ALL STEEL JOIST DESIGN, FABRICATION, AND ERECTION SHALL COMPLY WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) NEW STEEL ERECTION STANDARDS.

GENERAL NOTES

- ROOF DESIGN LOADS: TOTAL DEAD LOAD = 15 PSF.
TOTAL SNOW LOAD = 30 PSF.
TOTAL DESIGN LOAD = 45 PSF.
- WIND NET UPLIFT ON JOISTS = 10 PSF.
- WIND LOAD BASED UPON A (115 MPH) BASIC WIND SPEED AND EXPOSURE C IN ACCORDANCE WITH IBC 2015 & ASCE 7-10.
- RELOCATE UTILITIES IN THE WORK AREA AS REQUIRED.
- CONTRACTOR SHALL TEMPORARILY SUPPORT/SHORE EXISTING MEMBERS THAT ARE TO REMAIN UNTIL PERMANENTLY CONNECTED TO PERMANENT MEMBERS.
- CONTRACTOR SHALL DEWATER ALL EXCAVATIONS, MAINTAIN WATER LEVEL TWO (2) FEET BELOW PROPOSED SUBGRADE ELEVATION. PUMPS SHALL BE RUNNING (24) HOURS A DAY, (7) DAYS A WEEK.
- CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL ITEMS.
- CONTRACTOR SHALL PROVIDE ALL CONDUIT AND PIPE SUPPORTS FOR ALL NEW AND EXISTING THAT NEED TO BE RE-SUPPORTED.

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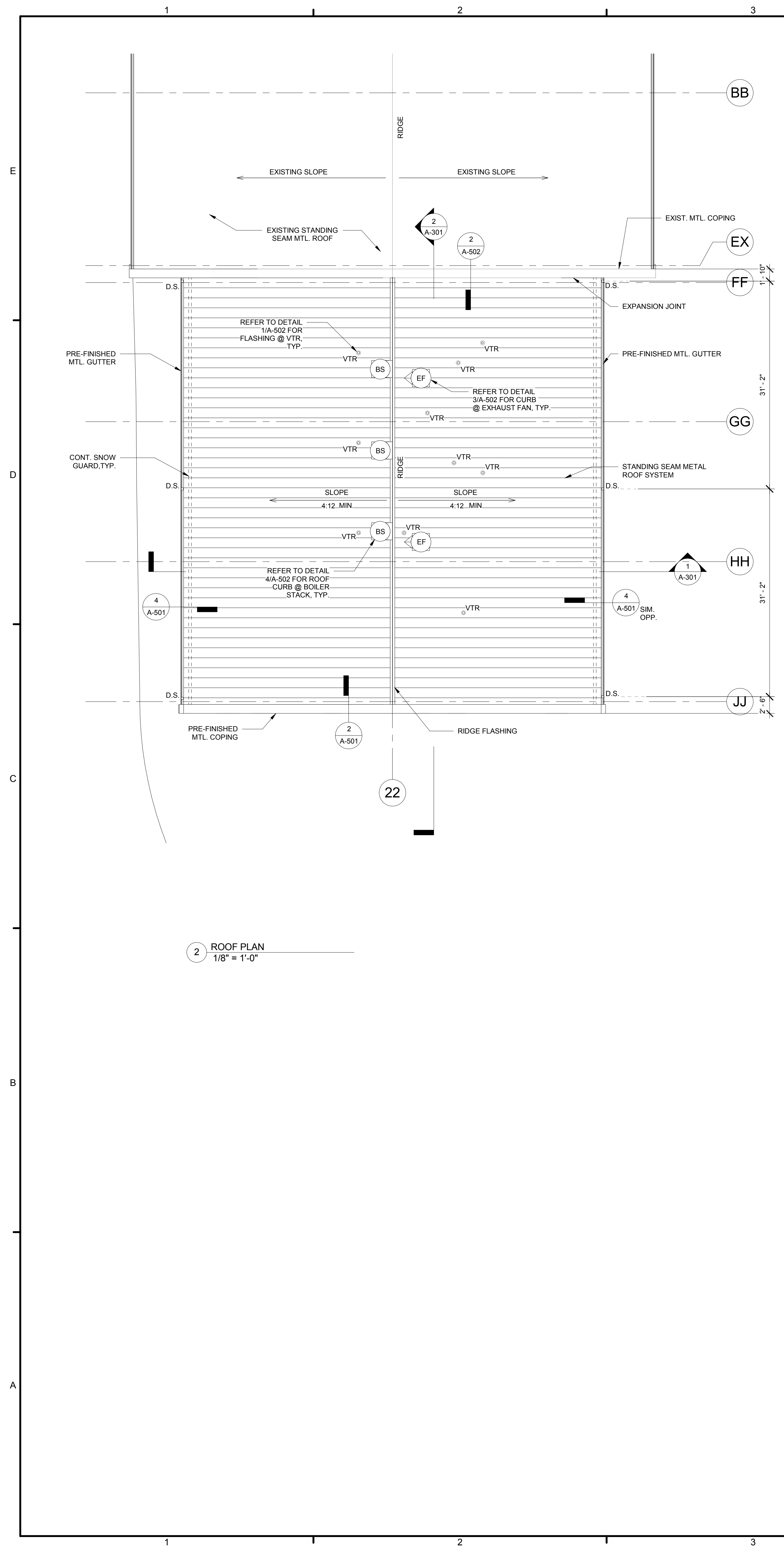
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ENGINEERING

ISSUED FOR BIDDING	MAF
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01/30/20	DATE
0	REV.

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
STRUCTURAL
EXISTING BUILDING & NEW BOILER BUILDING FOUNDATION SECTIONS AND NOTES

SCALE AS NOTED
PREPARED BY: KCH
CHECKED BY: CJA
APPROVED BY: MAF
PROJECT NO: 4177.009
DRAWING NO:

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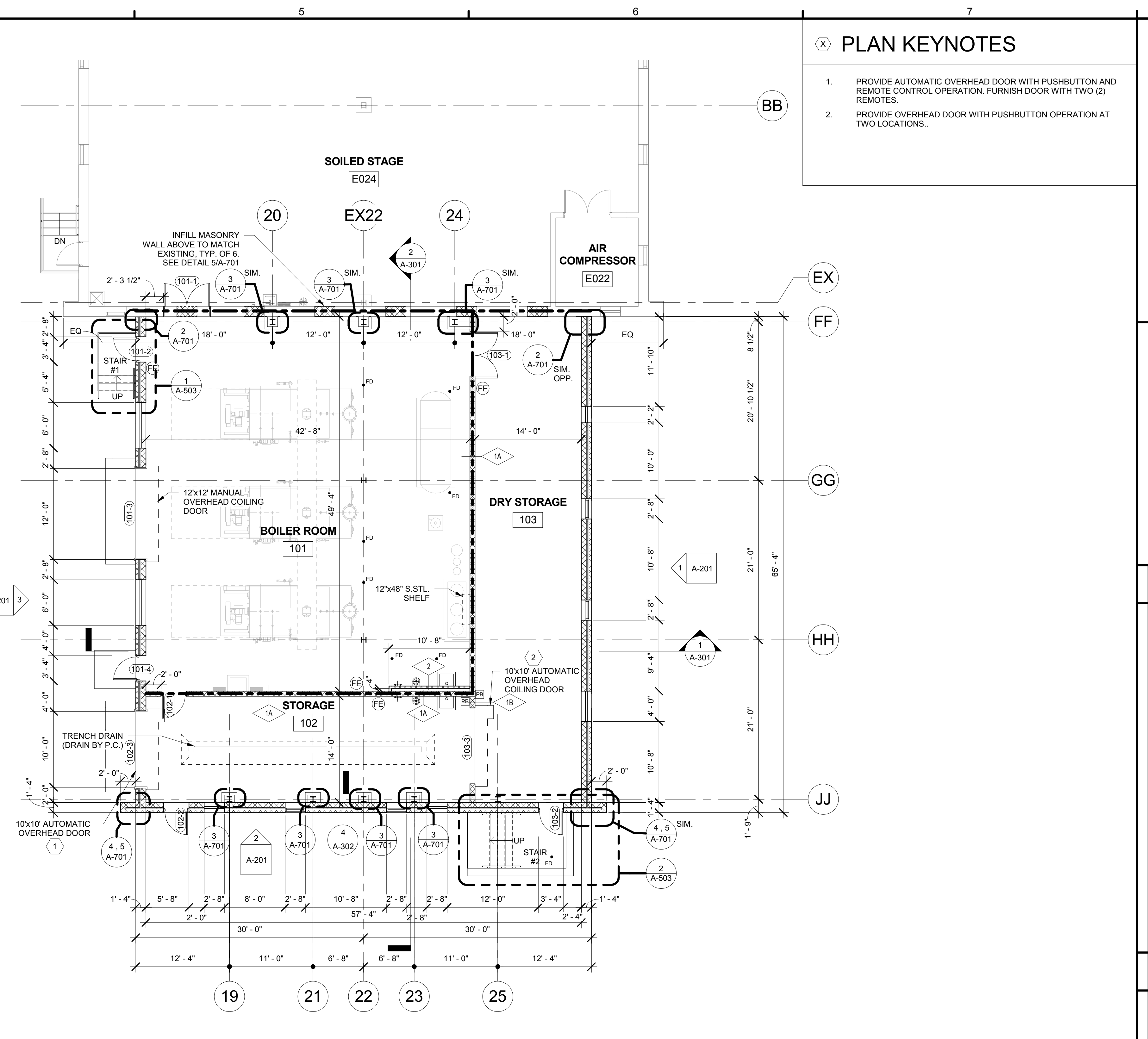


ROOF LEGEND

- VTR VENT THRU ROOF WITH BOOT @ VENT FLASHING
- DS 4"x5" DOWN SPOUT
- EF EXHAUST FAN ON PRE-FABRICATED CURB
- BS BOILER STACK WITH PRE-FABRICATED CURB

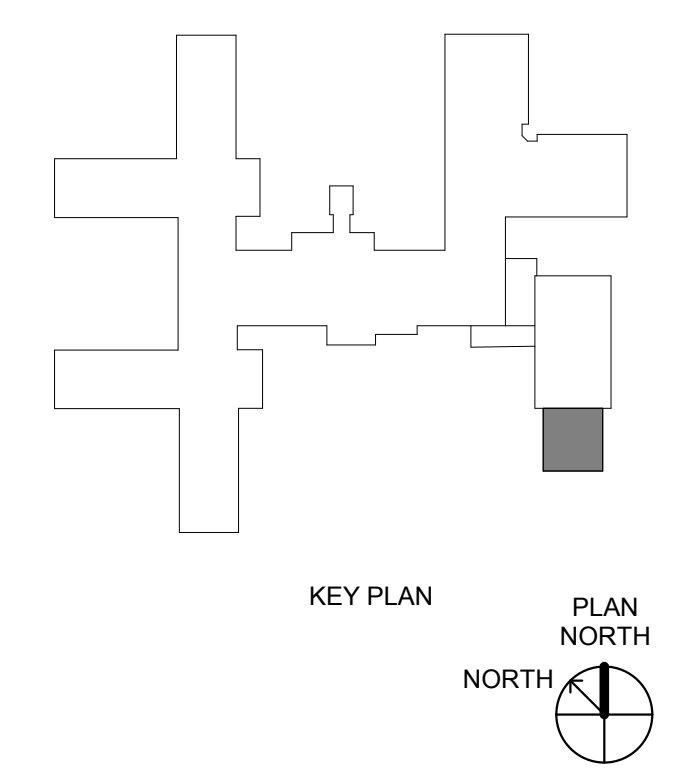
GENERAL ROOF NOTES

1. TYP. ROOF SYSTEM: GALV. METAL DECK - CONT. VAPOR RETARDER - 6" POLYISO. RIGID INSULATION - CONT. UNDERLAYMENT - STANDING SEAM MTL. ROOF PANELS
2. EXHAUST FANS, BOILER STACKS, VENTS, ETC. SHOWN FOR GENERAL LOCATION COORDINATION. COORDINATE SIZE AND LOCATIONS AS PER APPROVED EQUIPMENT SUBMITTALS.
3. PROVIDE PRE-FABRICATED ROOF CURBS AT BOILER STACKS AND EXHAUST FANS.
4. PROVIDE FLASHING ON BOILER STACK OVER CURB OPENING. FLASHING SHALL BE COMPATIBLE WITH BOILER STACK EXTERIOR WALL.
5. PROVIDE FLASHING AND COUNTERFLASHING FOR EACH VENT THRU ROOF.



PLAN KEYNOTES

1. PROVIDE AUTOMATIC OVERHEAD DOOR WITH PUSHBUTTON AND REMOTE CONTROL OPERATION. FURNISH DOOR WITH TWO (2) REMOTES.
2. PROVIDE OVERHEAD DOOR WITH PUSHBUTTON OPERATION AT TWO LOCATIONS.



THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

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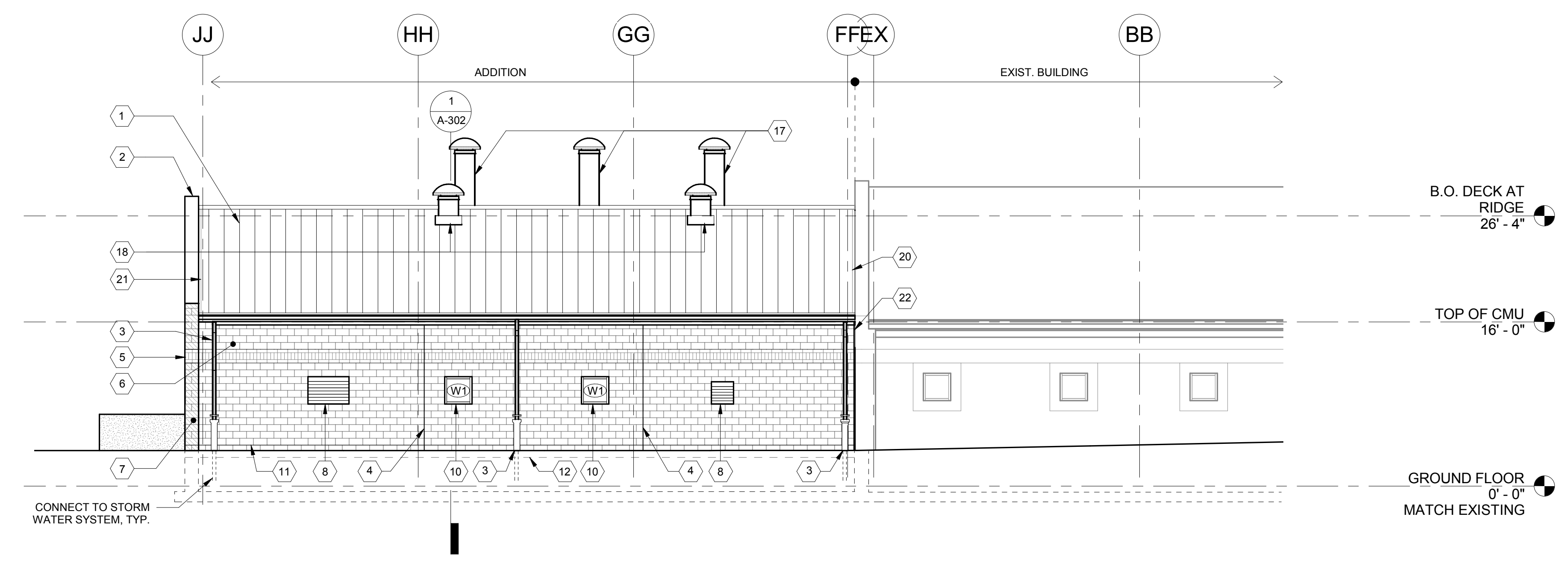
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CHECKED BY: SED
APPROVED BY: SED
PROJECT NO: 4177.000
DRAWING NO:

A-101

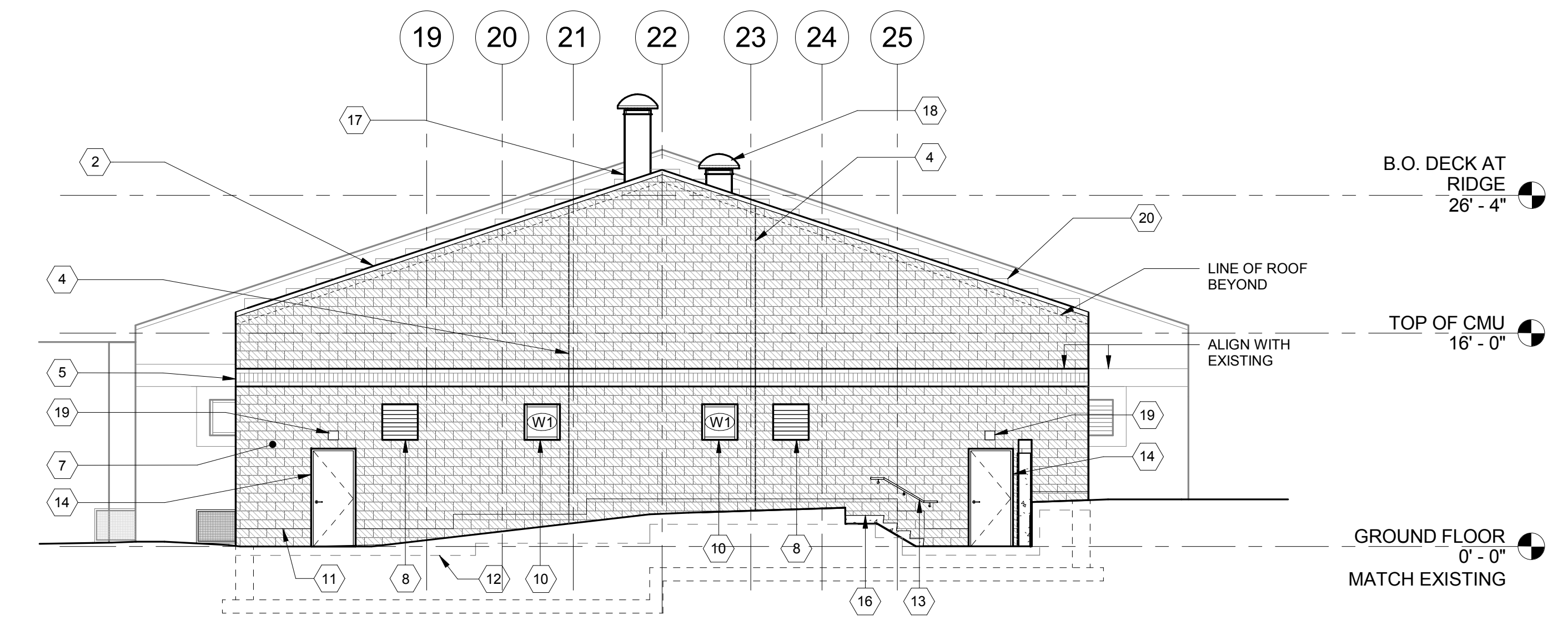
COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
ARCHITECTURAL
FLOOR PLAN AND ROOF PLAN

SHEET KEYNOTES

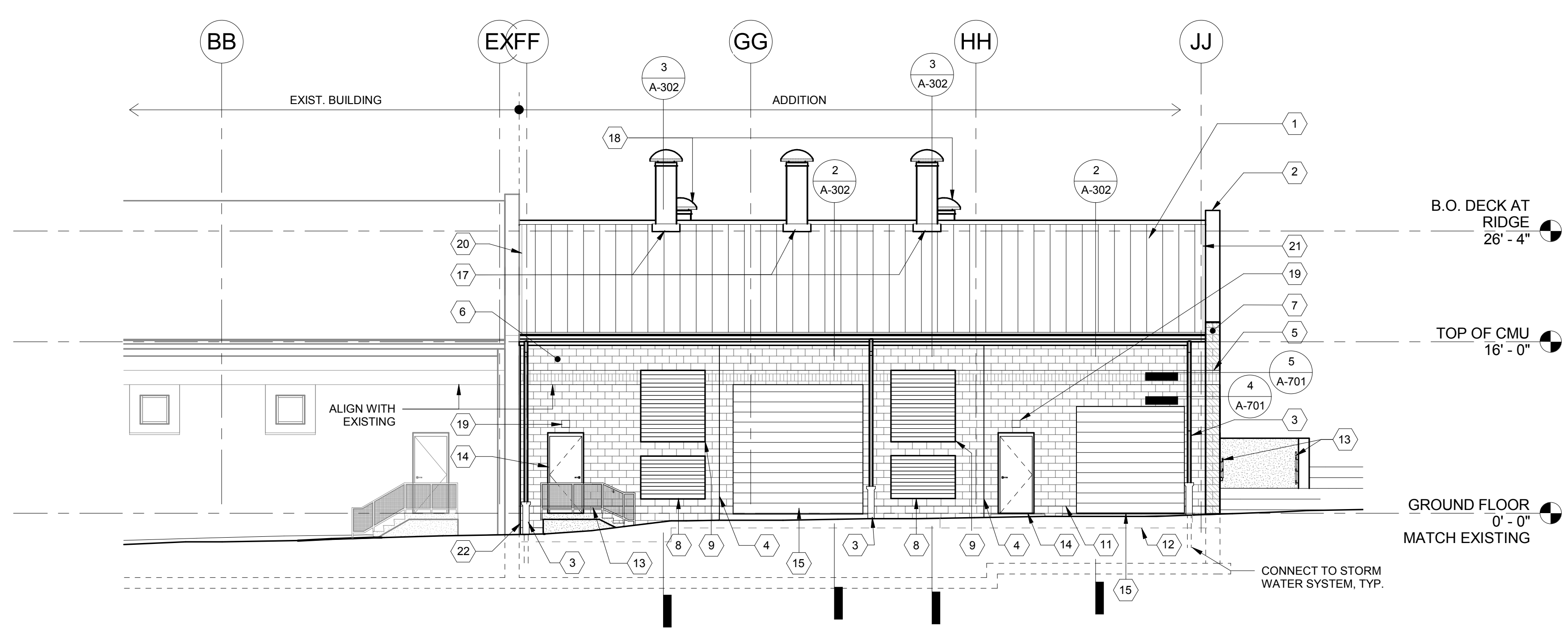
1. STANDING SEAM MTL. ROOF SYSTEM.
2. PRE-FINISHED MTL. COPING SYSTEM.
3. PRE-FINISHED 4"x6" MTL. DOWNSPOUT.
4. CONTROL JOINT.
5. 12"x4" UTILITY BRICK VENEER ACCENT STRIP, TO MATCH ADJACENT.
6. DECORATIVE CMU COLOR 1, TO MATCH EXISTING.
7. LOUVER (BY M.C.).
8. BUILDING VENTILATION/COMBUSTION AIR LOUVER (BY M.C.).
9. ALUMINUM WINDOW SYSTEM (OPERABLE).
10. CONT. THROUGH-WALL FLASHING.
11. BRICK SHELF, ELEV. VARIES.
12. MTL. GUARDRAIL/HANDRAIL, PTD.
13. H.M. DOOR AND FRAME, PTD.
14. OVERHEAD COILING DOOR.
15. CONC. STAIR.
16. BOILER STACK.
17. EXHAUST FAN.
18. WALL MOUNTED LIGHT FIXTURE (BY E.C.).
19. MTL. REGLET AND ROOF COUNTERFLASHING.
20. MTL. ROOF FLASHING.
21. PRE-FORMED EXPANSION JOINT.



1 EAST ELEVATION
1/8" = 1'-0"



2 SOUTH ELEVATION
1/8" = 1'-0"



3 WEST ELEVATION
1/8" = 1'-0"

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

REV.	DATE	ISSUED FOR BIDDING	ISSUED FOR REVISION
0	01/20/20		

GENERAL SHEET NOTES

1. AT EXTERIOR FOUNDATION WALLS: PROVIDE CONTINUOUS WATERPROOFING, DRAINAGE INSULATION PANELS, AND FOUNDATION DRAIN.
2. AT EXTERIOR CMU BACK-UP WALLS: PROVIDE CONTINUOUS FLUID-APPLIED MEMBRANE AIR BARRIER. INSTALL PER MANUFACTURER'S INSTRUCTIONS. SEAL SEAMS, PENETRATIONS, AND EDGES. REFER TO SPEC SECTION 072726.
3. PROVIDE 1 HOUR RATED CEMENTITIOUS SPRAY FIREPROOFING AT STEEL COLUMNS, BEAMS, JOISTS, AND METAL ROOF DECK.

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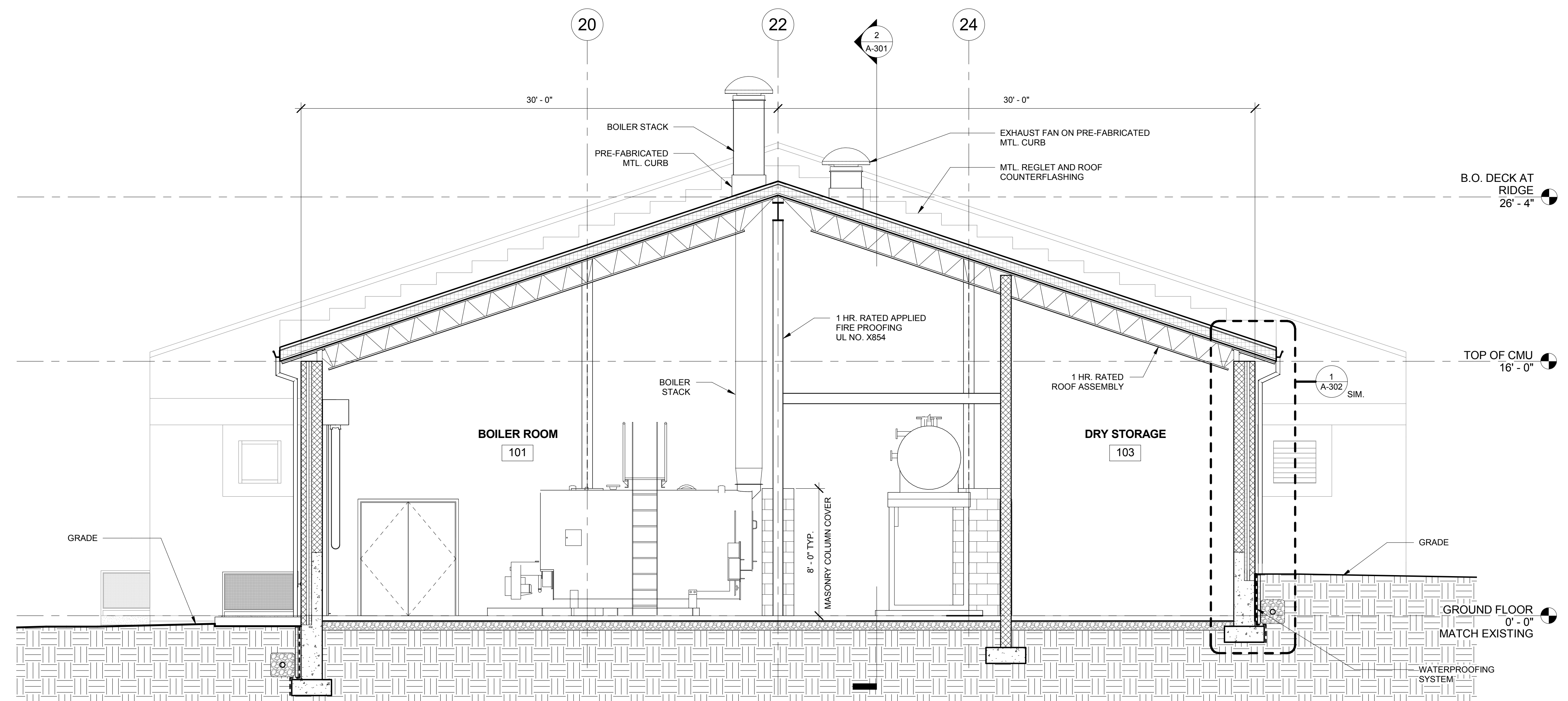
ZIMMERMAN
STUDIO LLC
ARCHITECTURE +
PROJECT MANAGEMENT

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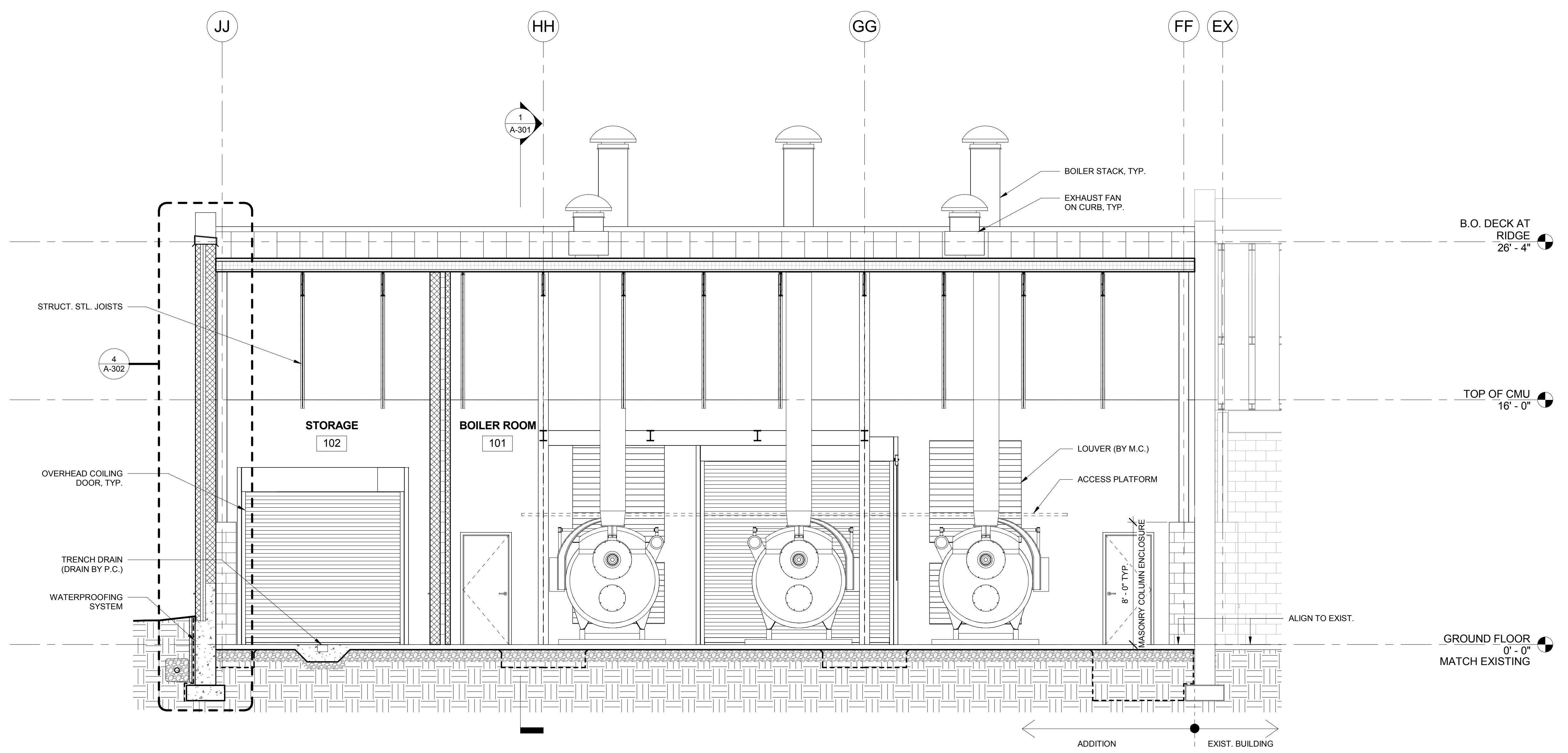
COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
ARCHITECTURAL
BUILDING SECTIONS

SCALE: 1/4" = 1'-0"
PREPARED BY: RNP
CHECKED BY: SED
APPROVED BY: SED
PROJECT NO: 4177.009
DRAWING NO:

A-301

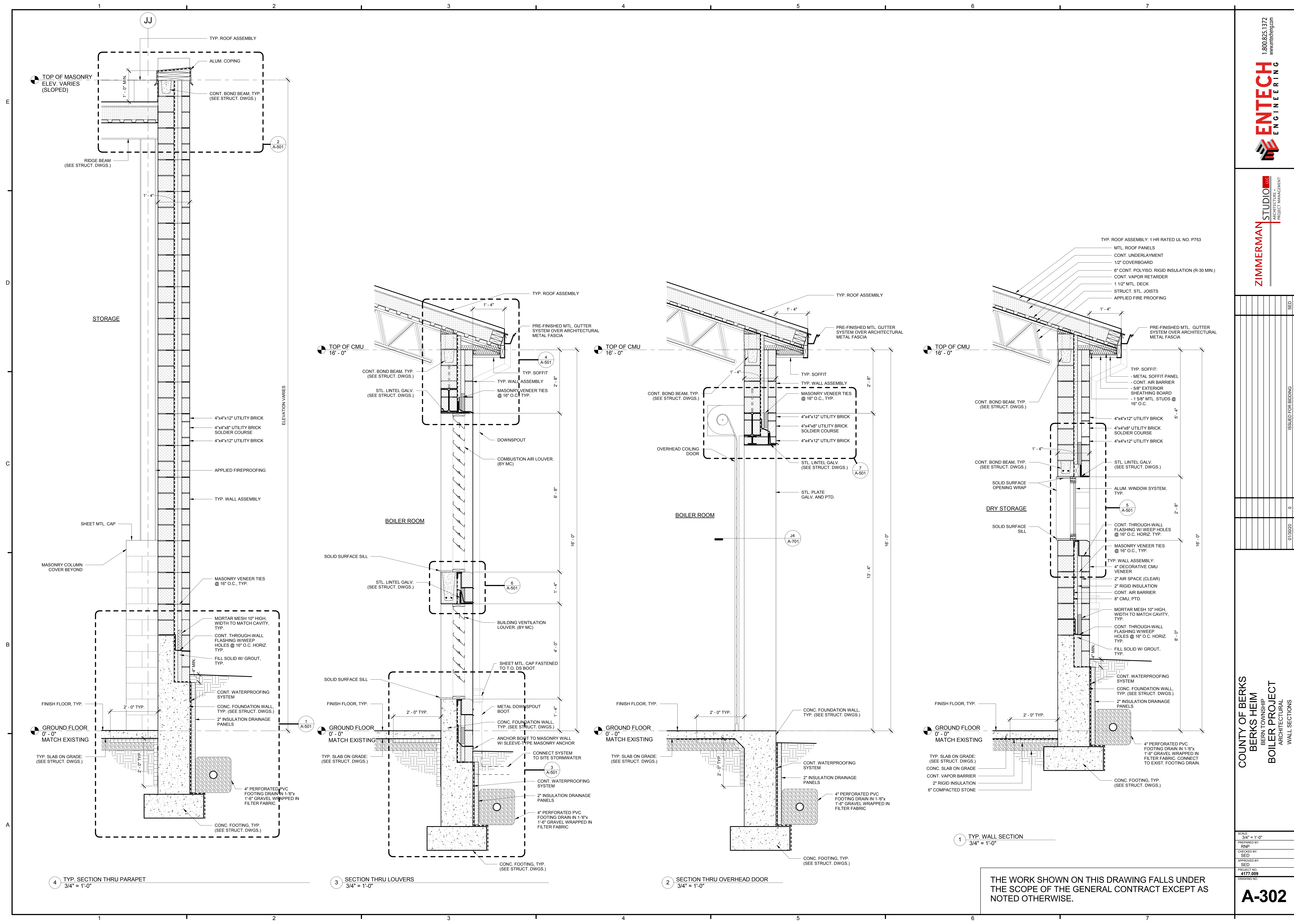


1 BUILDING SECTION - LOOKING NORTH
1/4" = 1'-0"



2 BUILDING SECTION - LOOKING WEST
1/4" = 1'-0"

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4 TYP. SECTION THRU PARAPET
3/4" = 1'-0"

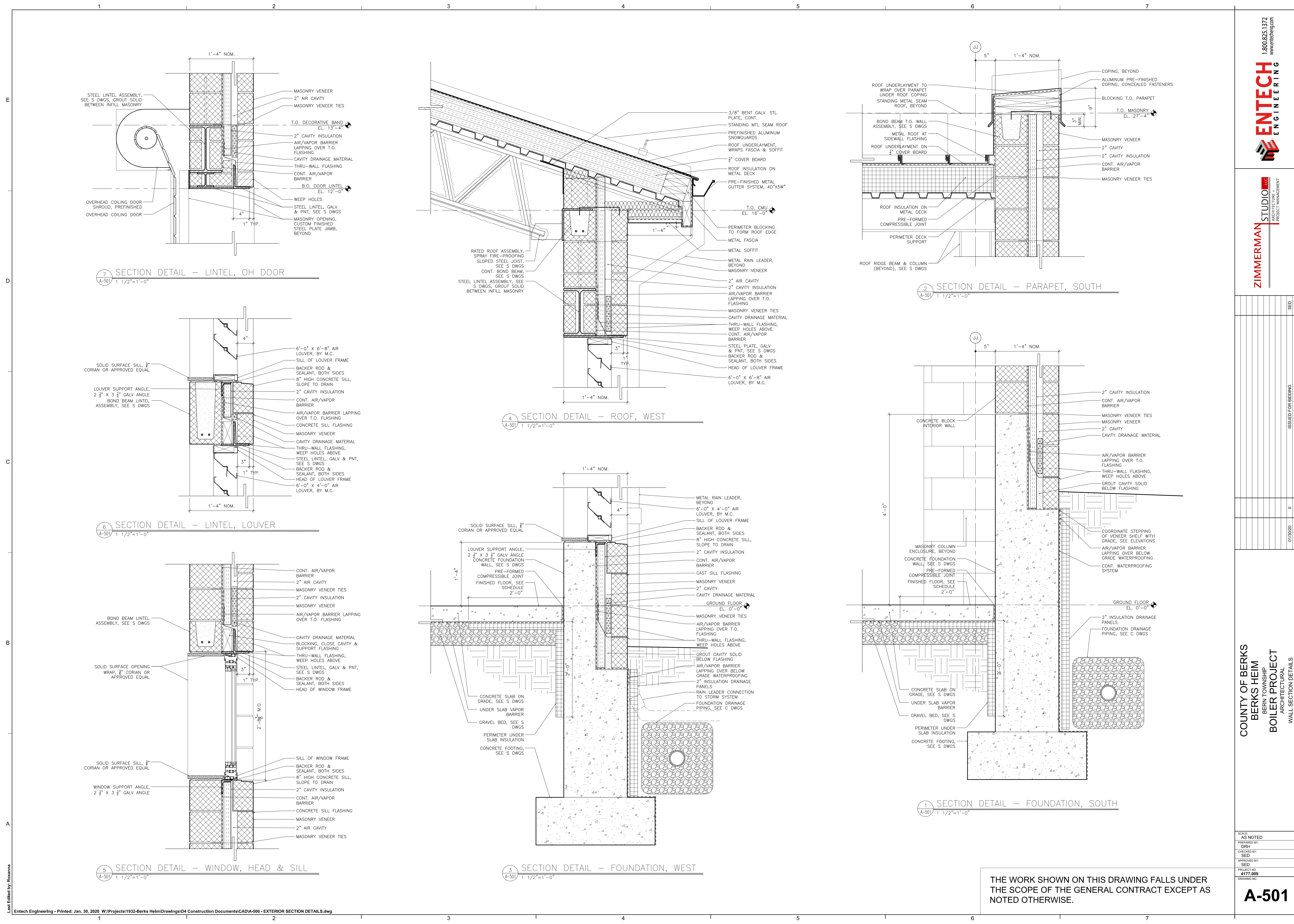
3 SECTION THRU LOUVERS
3/4" = 1'-0"

2 SECTION THRU OVERHEAD DOOR
3/4" = 1'-0"

1 TYP. WALL SECTION
3/4" = 1'-0"

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

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Last Edited by: Rosanna

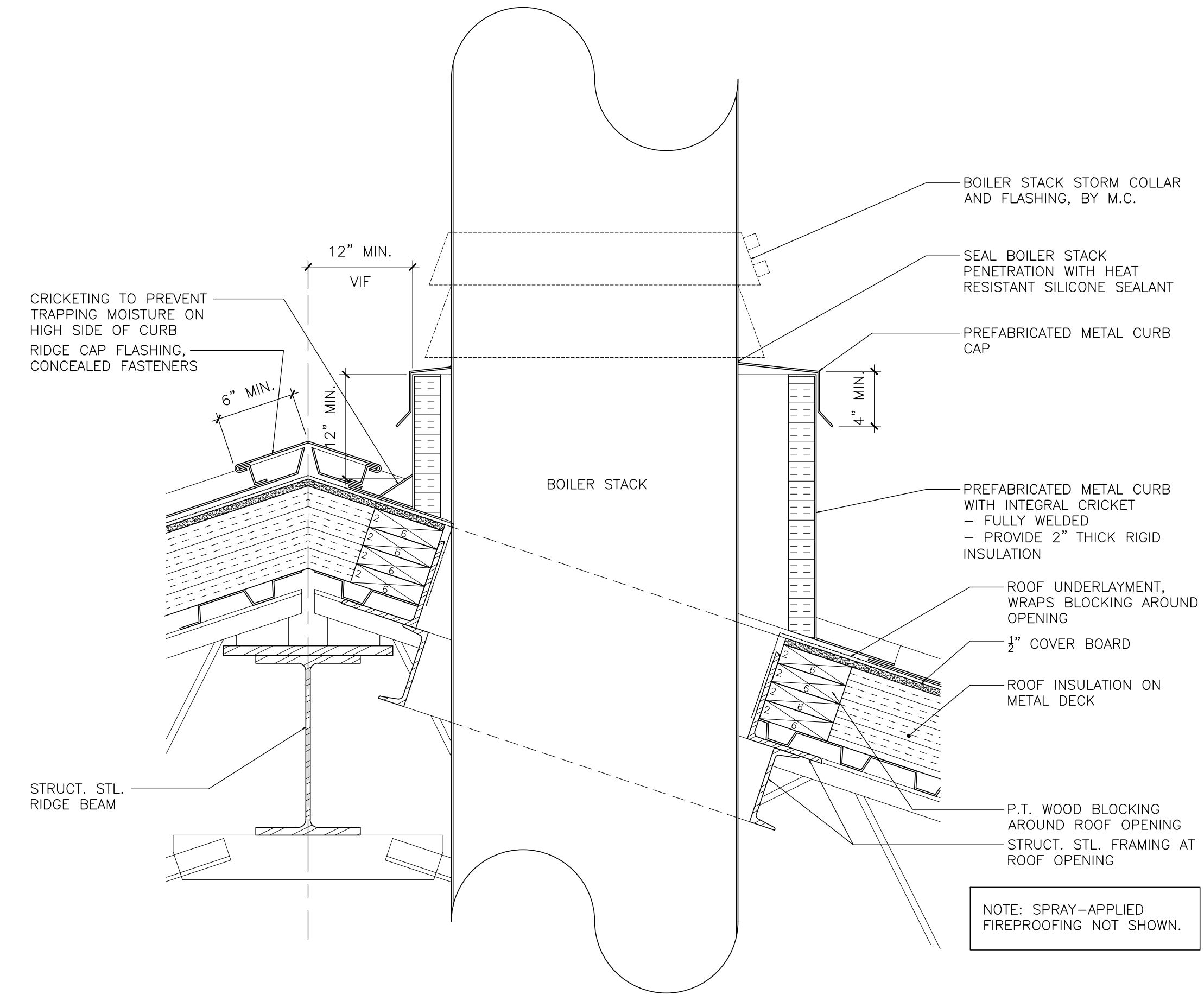
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COUNTY OF BERKS
 BERKS HEIM
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 BOILER PROJECT
 ARCHITECTURAL
 WALL SECTION DETAILS

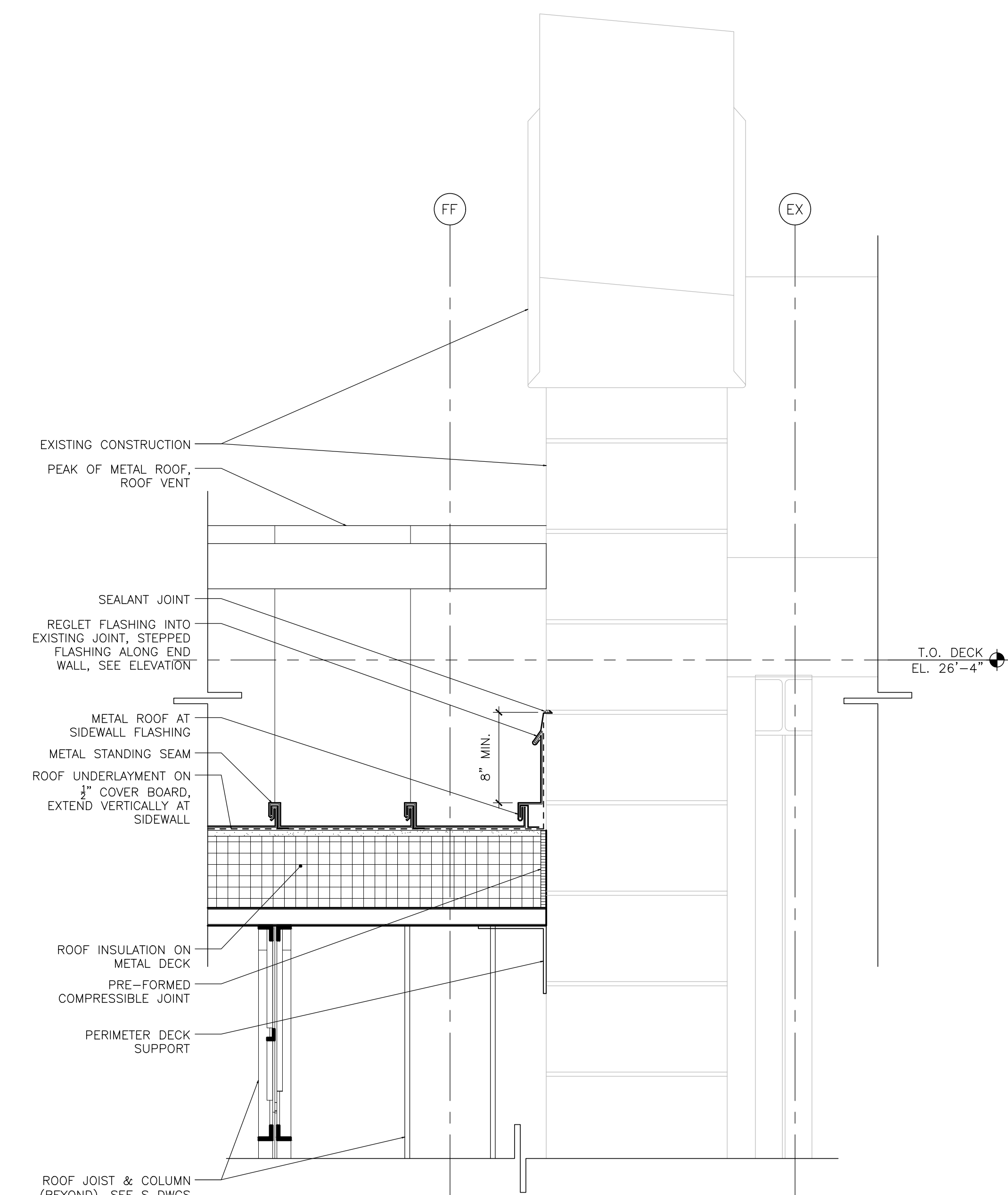
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CHECKED BY:	SED
APPROVED BY:	SED
PROJECT NO:	1177.009
DRAWING NO:	

A-501

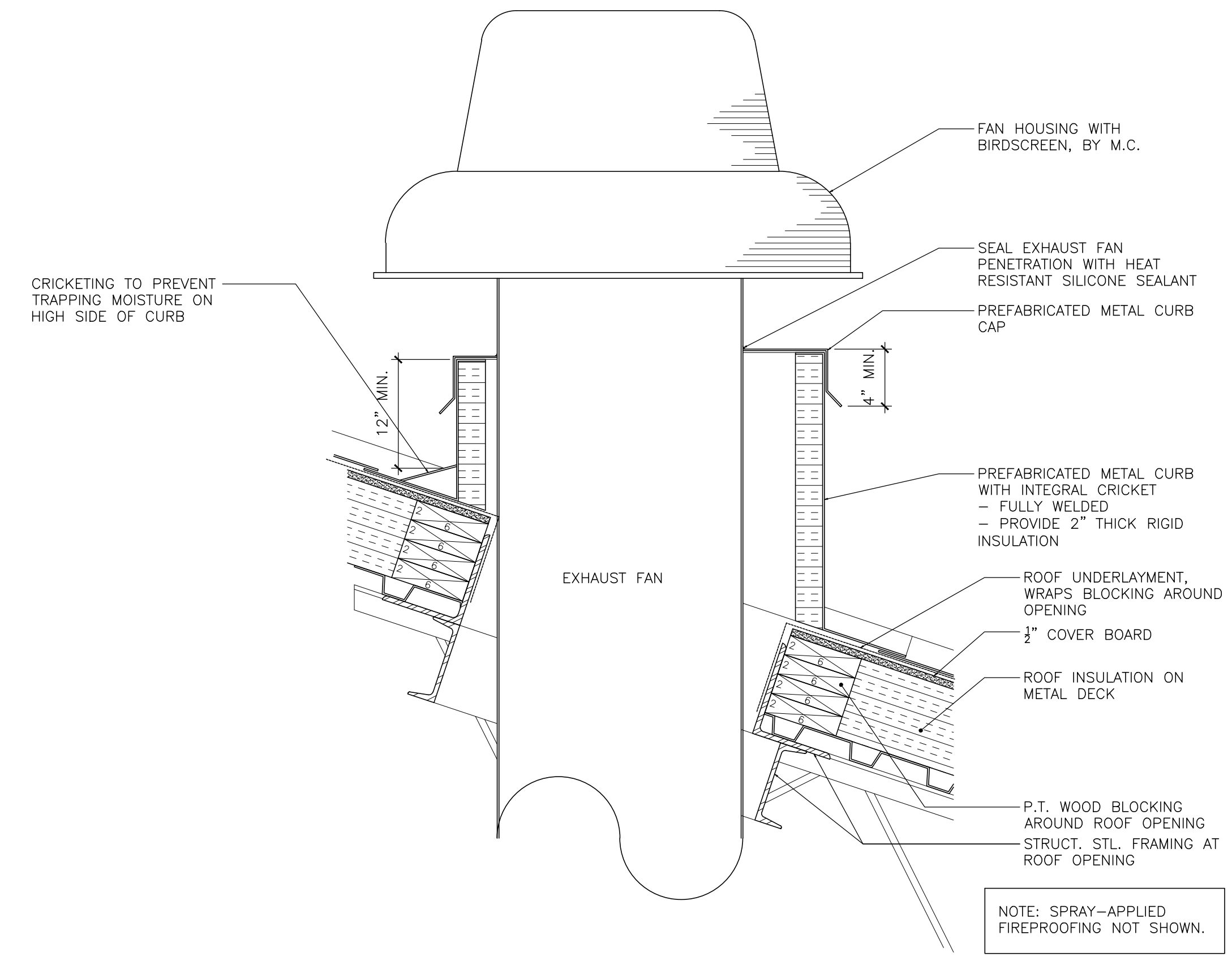
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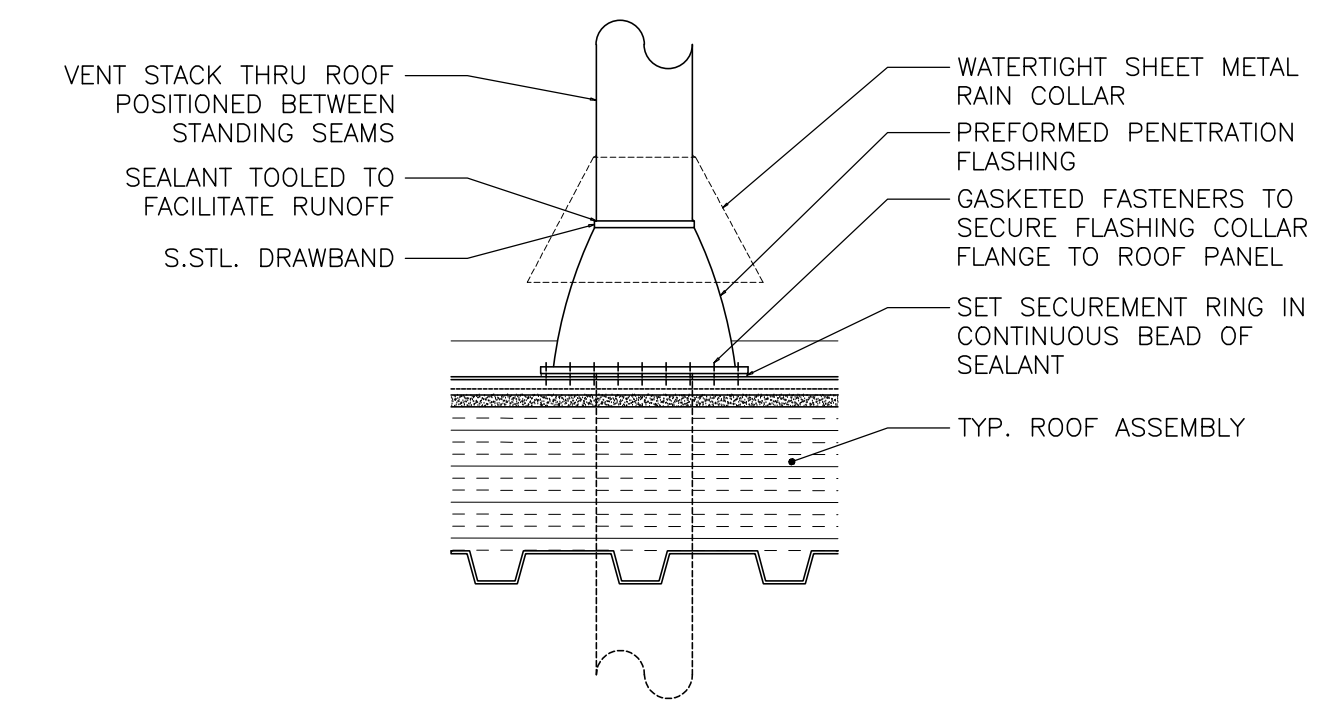
4 SECTION DETAIL - ROOF CURB @ STACK
A-502 1 1/2"=1'-0"



2 SECTION DETAIL - ROOF PARAPET @ EXISTING
A-502 1 1/2"=1'-0"



3 SECTION DETAIL - ROOF CURB @ EXHAUST
A-502 1 1/2"=1'-0"



1 SECTION DETAIL - TYPICAL PIPE PENETRATION
A-502 1 1/2"=1'-0"

REV.	DATE	ISSUED FOR BIDDING	APD
0	01/20/20	ISSUED FOR BIDDING	APD

COUNTY OF BERKS
BERKS HEIM
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BOILER PROJECT
ARCHITECTURAL
ROOF DETAILS

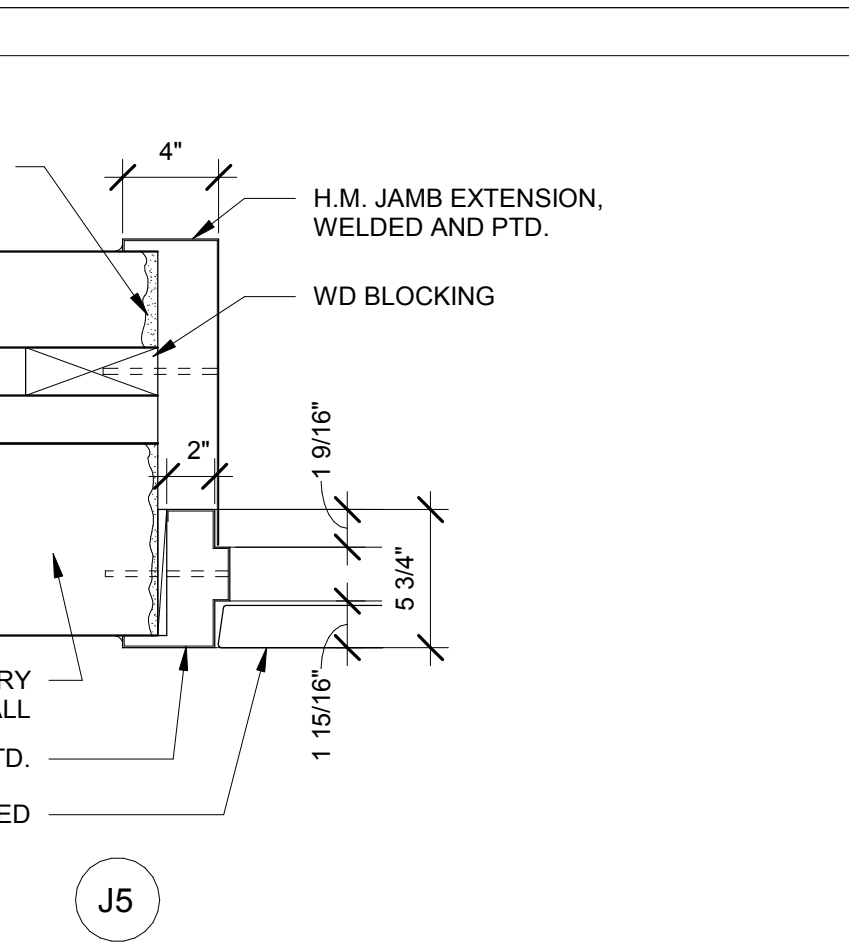
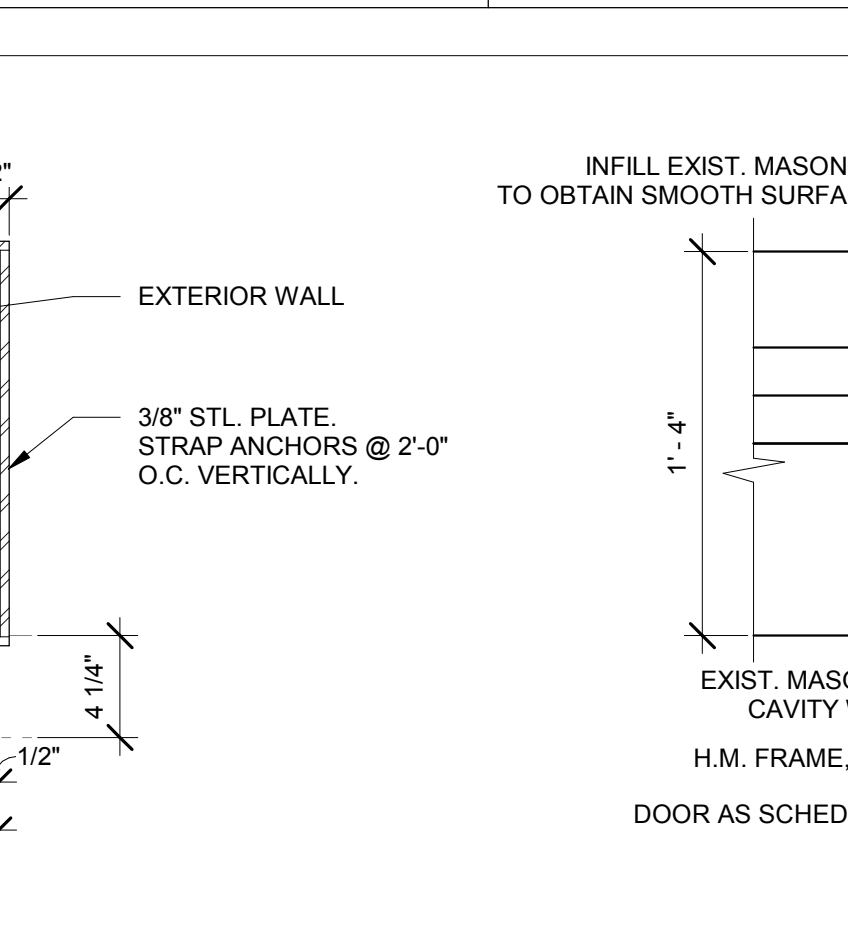
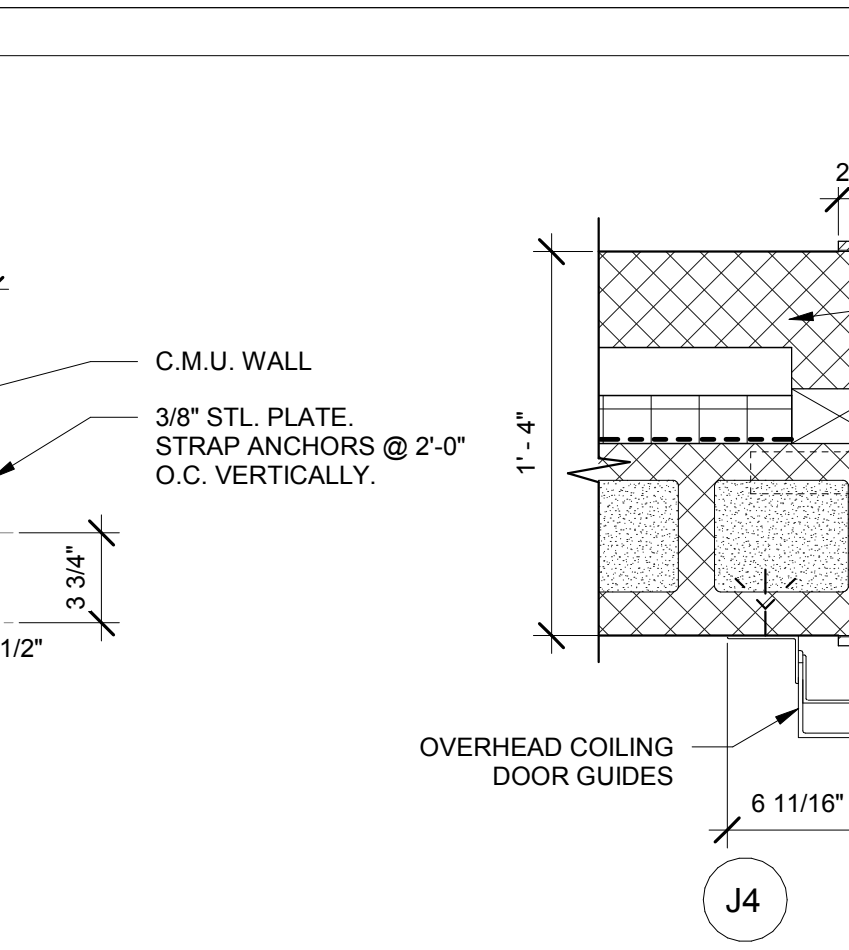
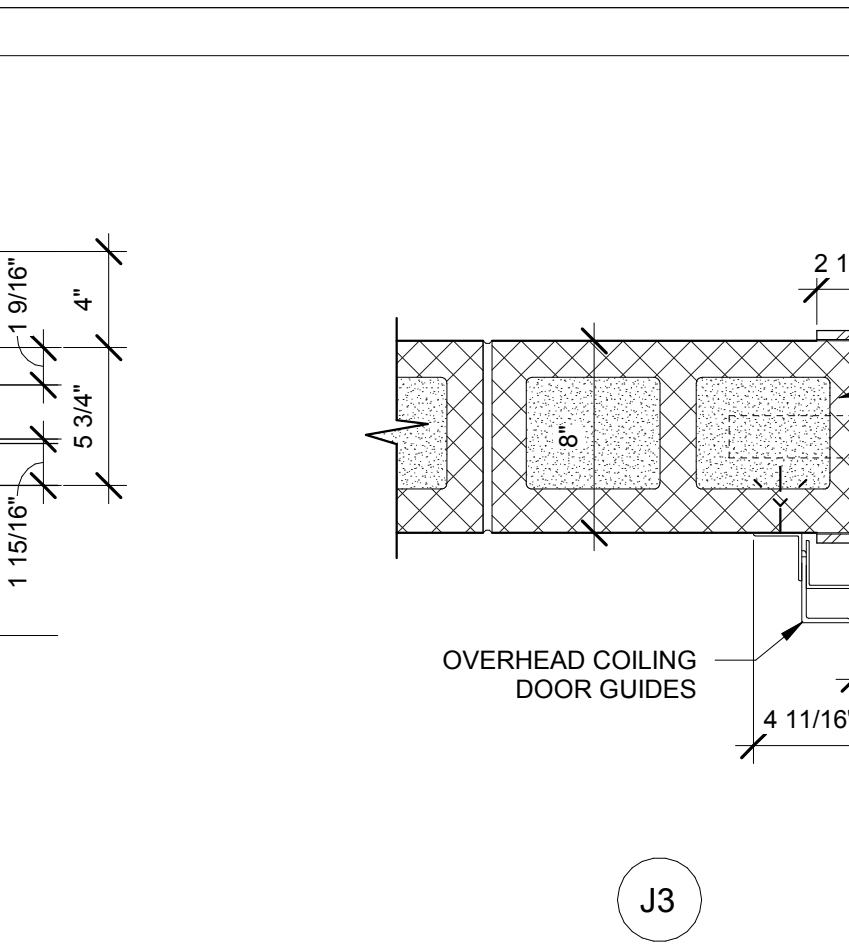
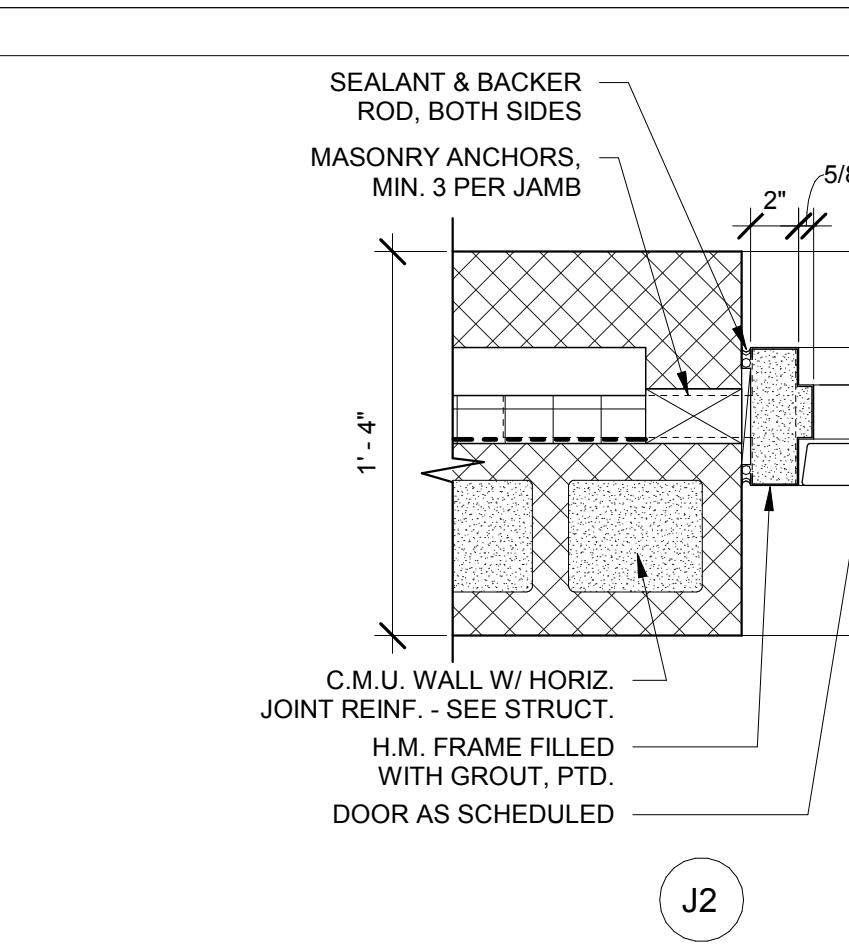
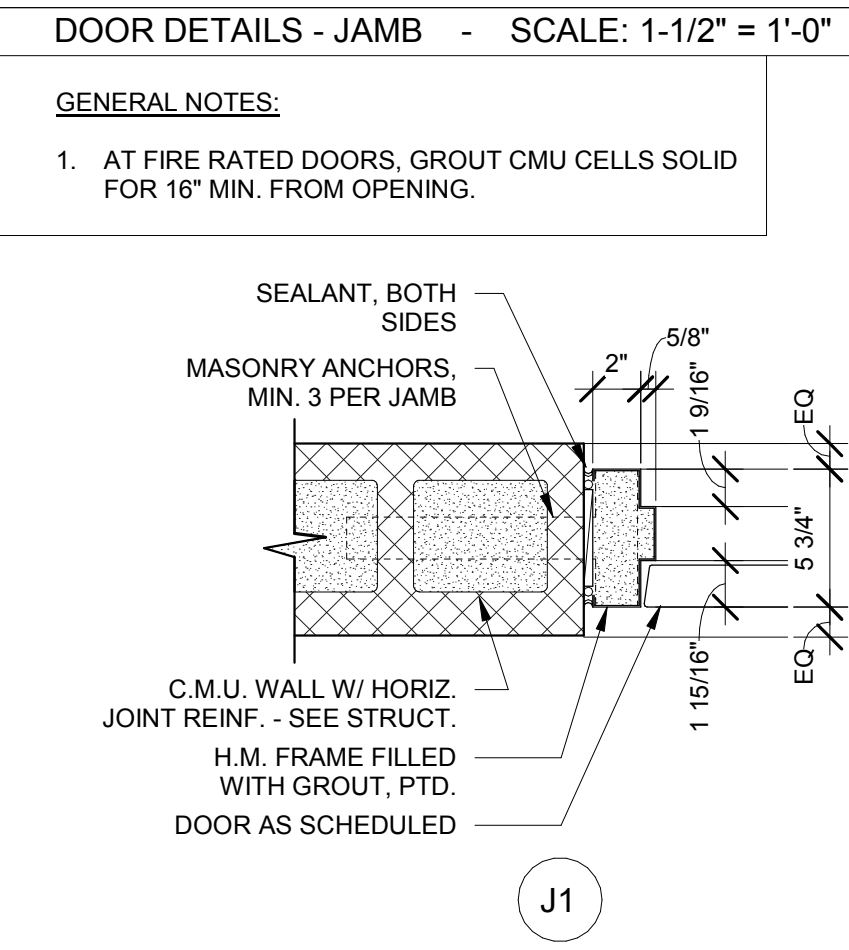
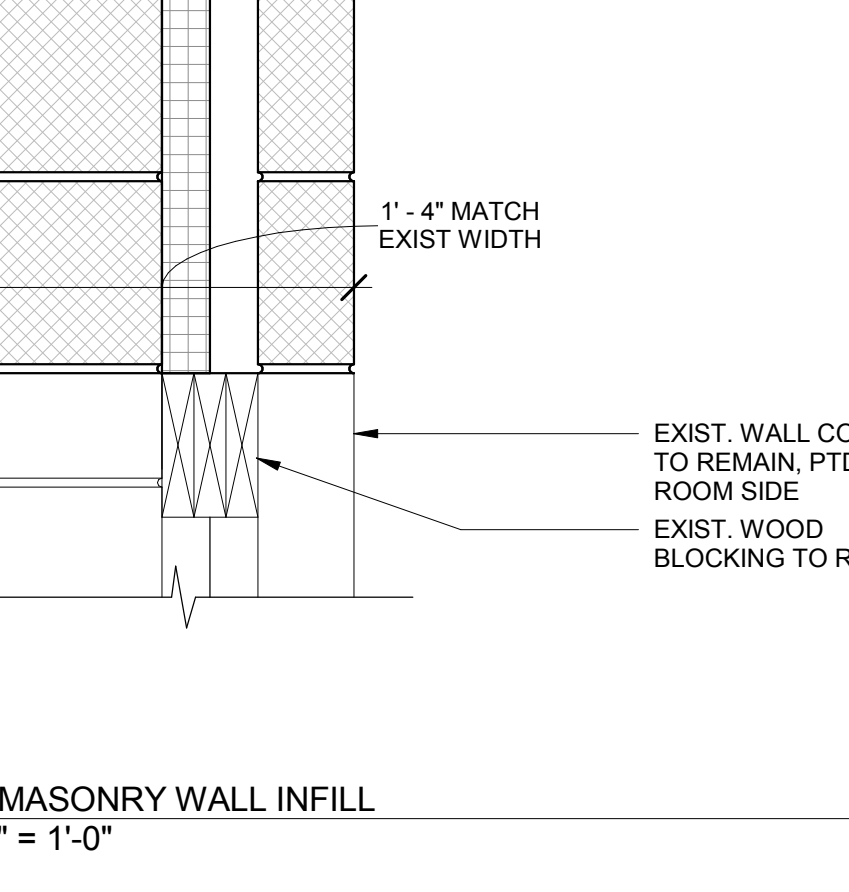
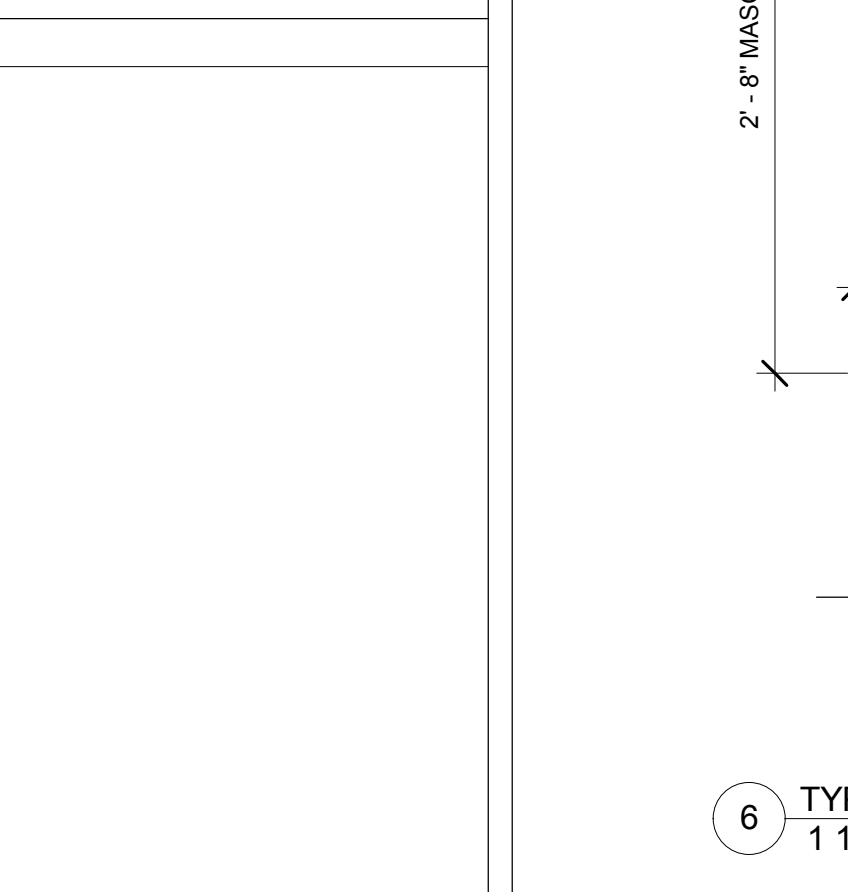
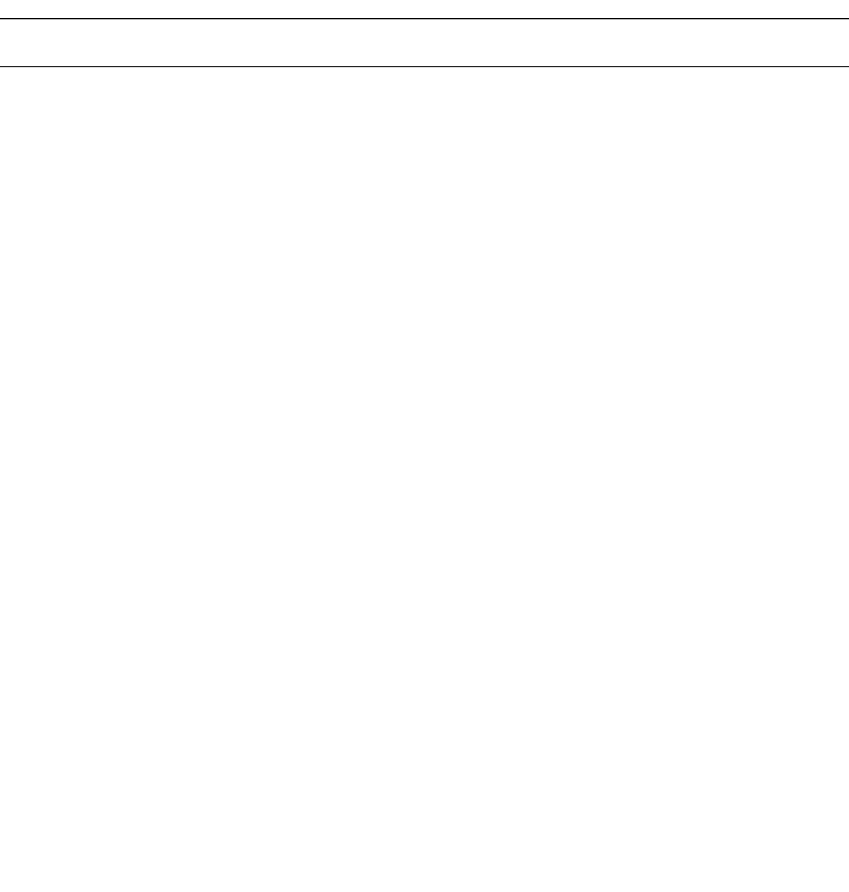
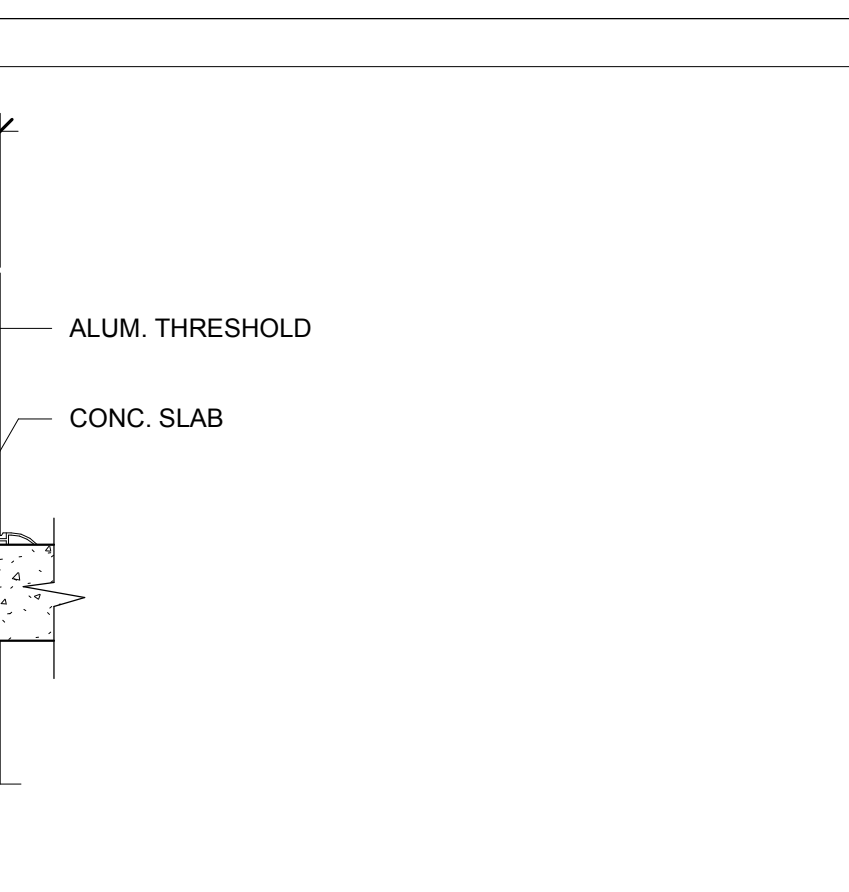
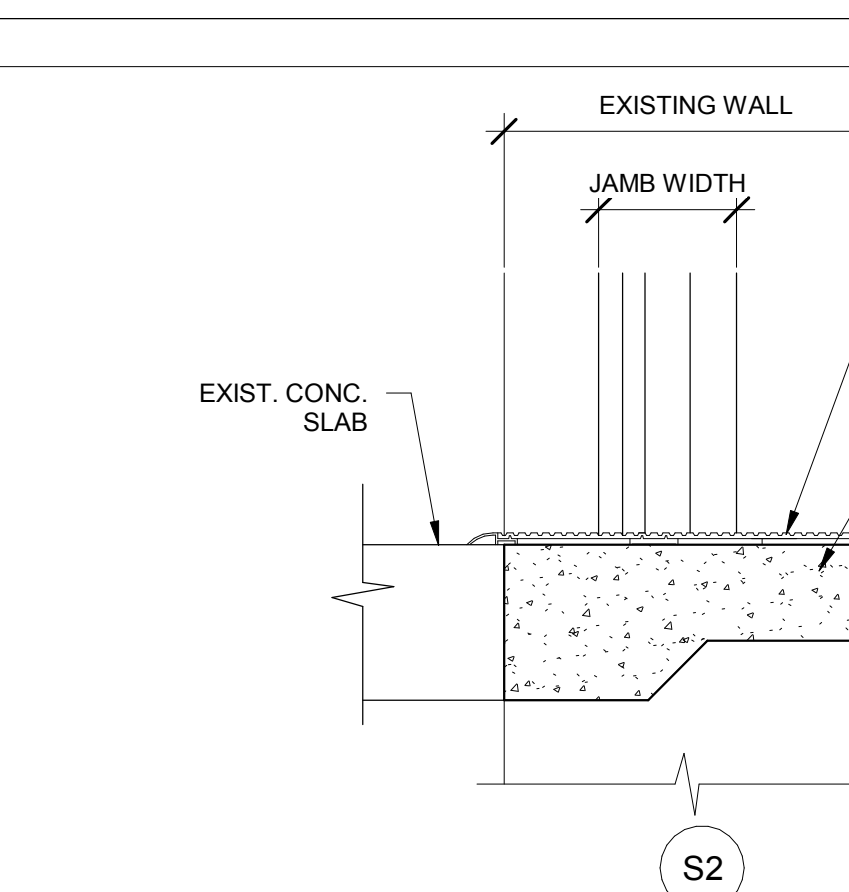
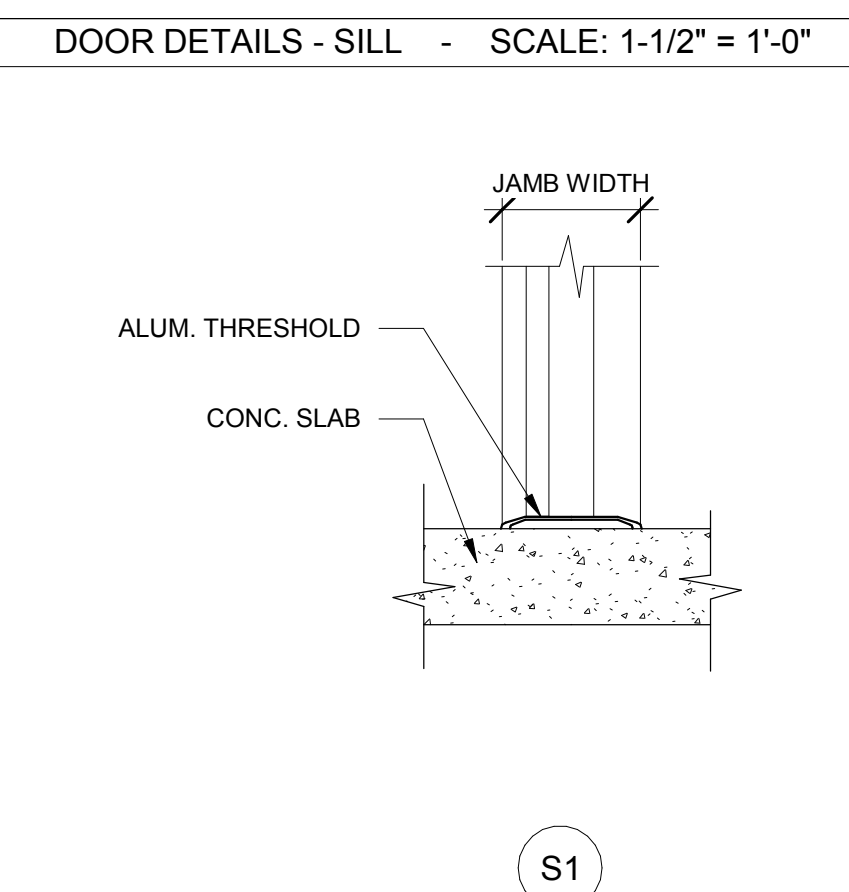
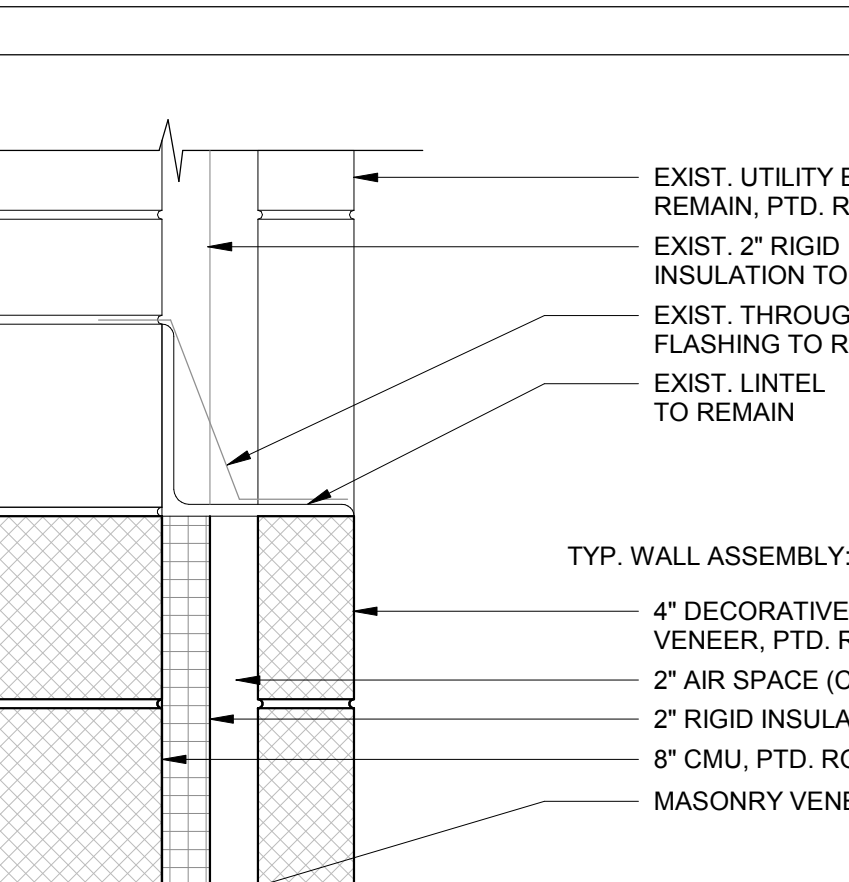
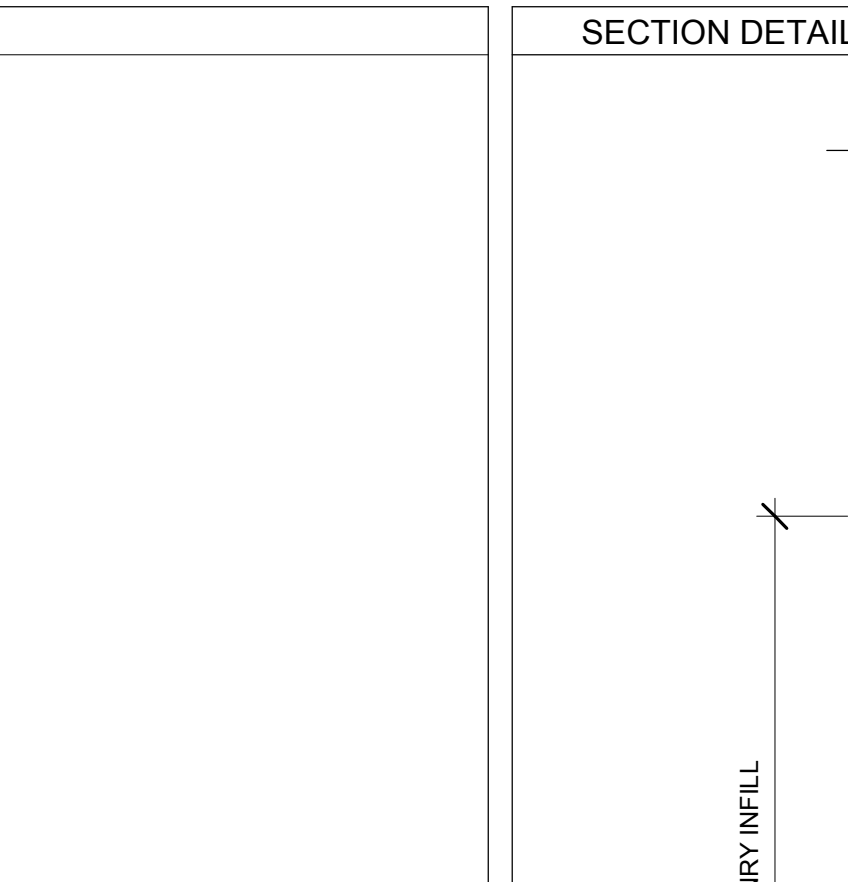
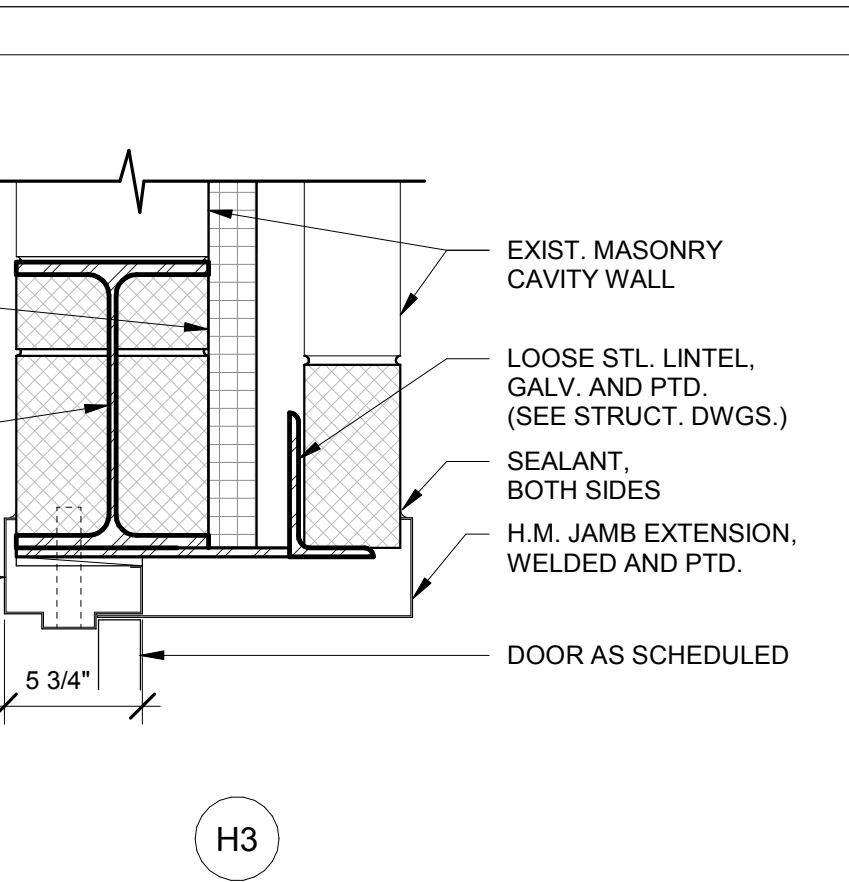
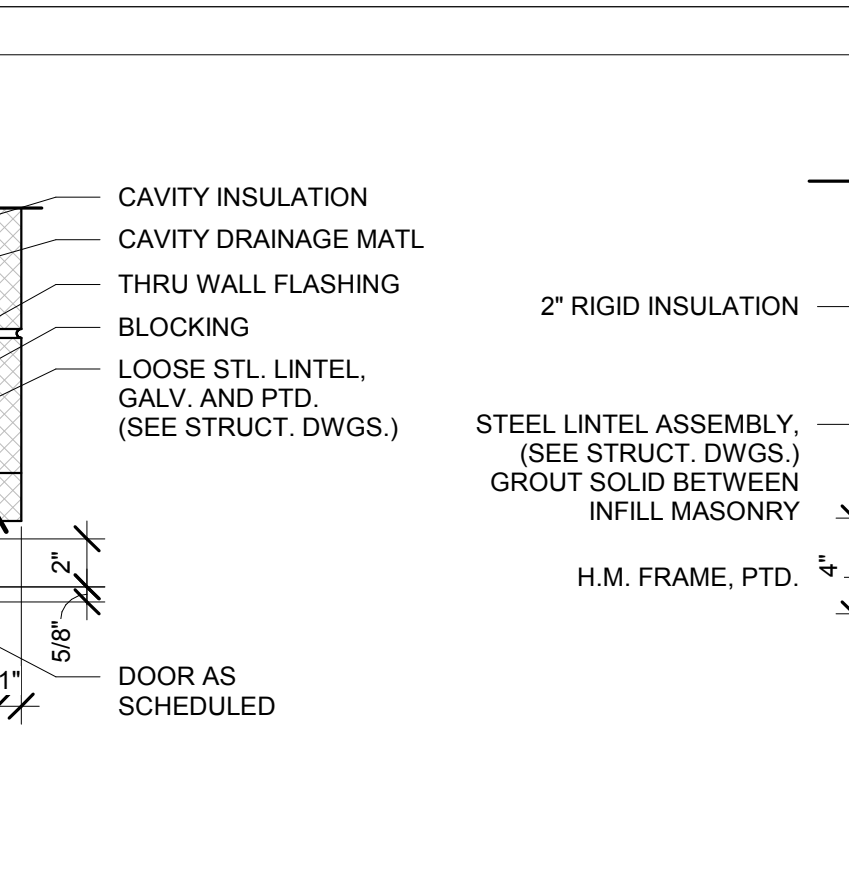
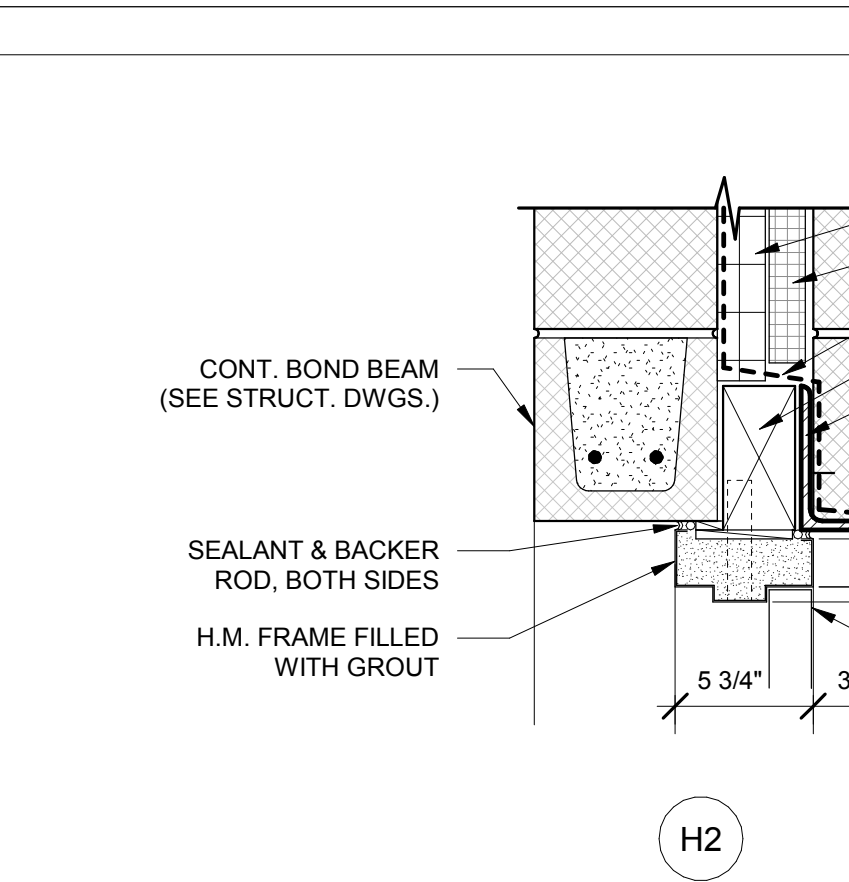
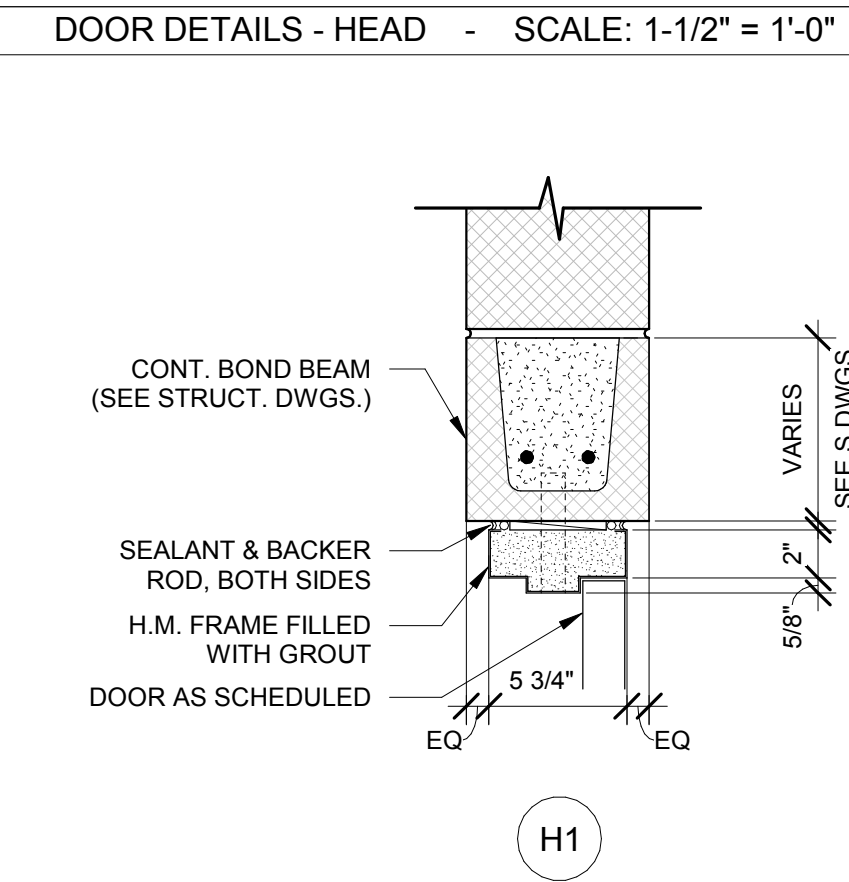
SCALE	AS NOTED
PREPARED BY	DRH
CHECKED BY	SED
APPROVED BY	SED
PROJECT NO.	4177.009
DRAWING NO.	A-502

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

A-502

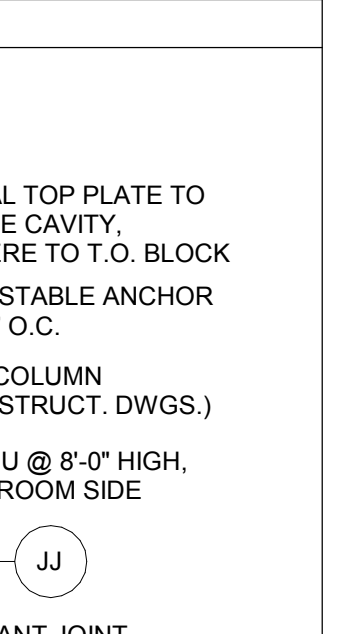
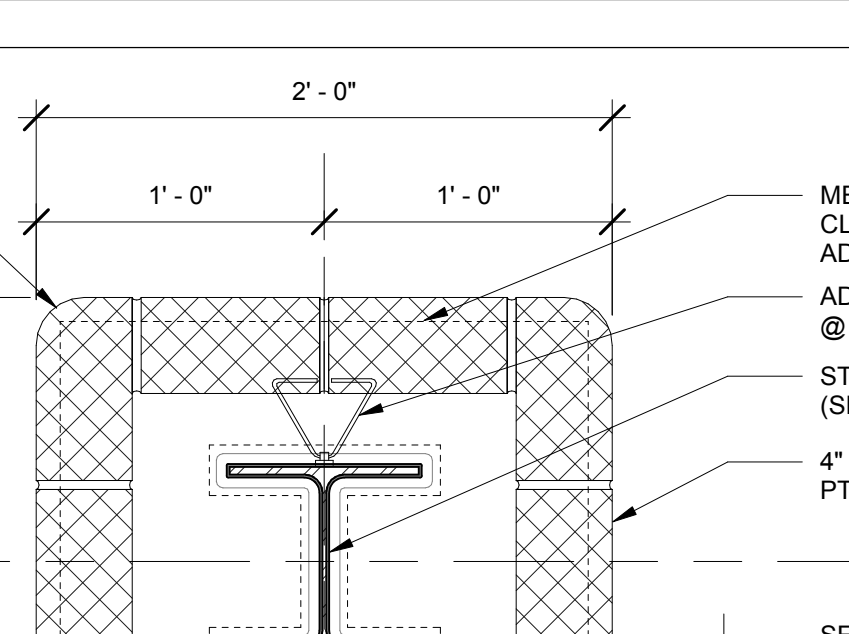
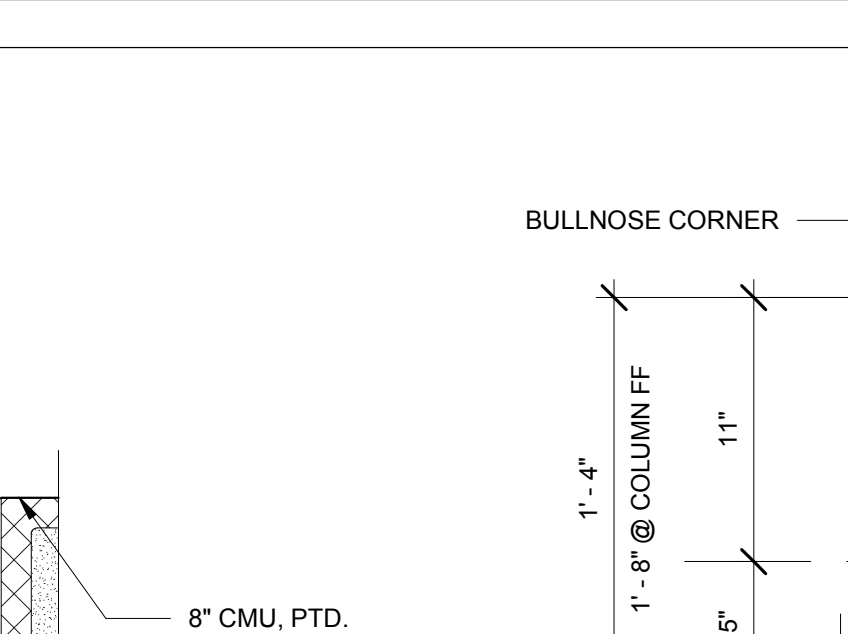
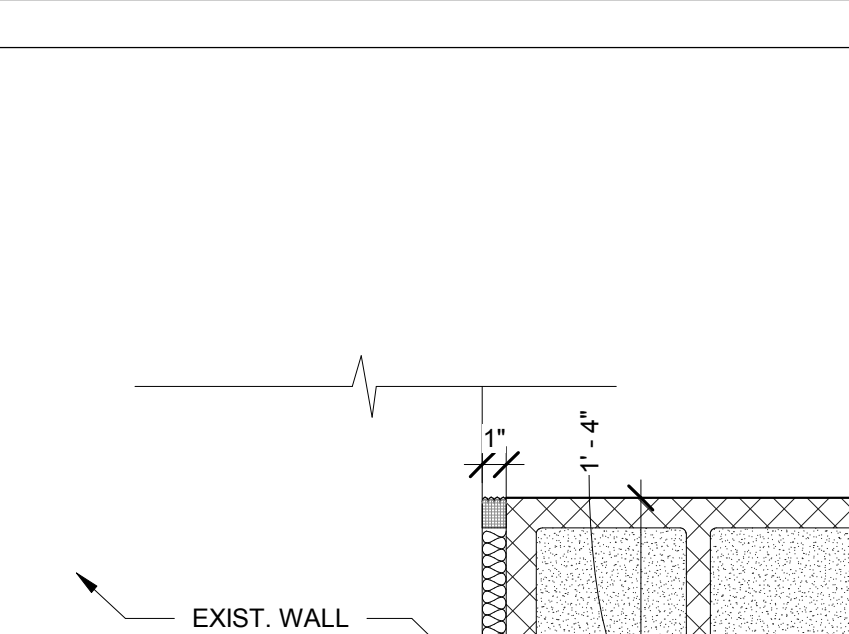
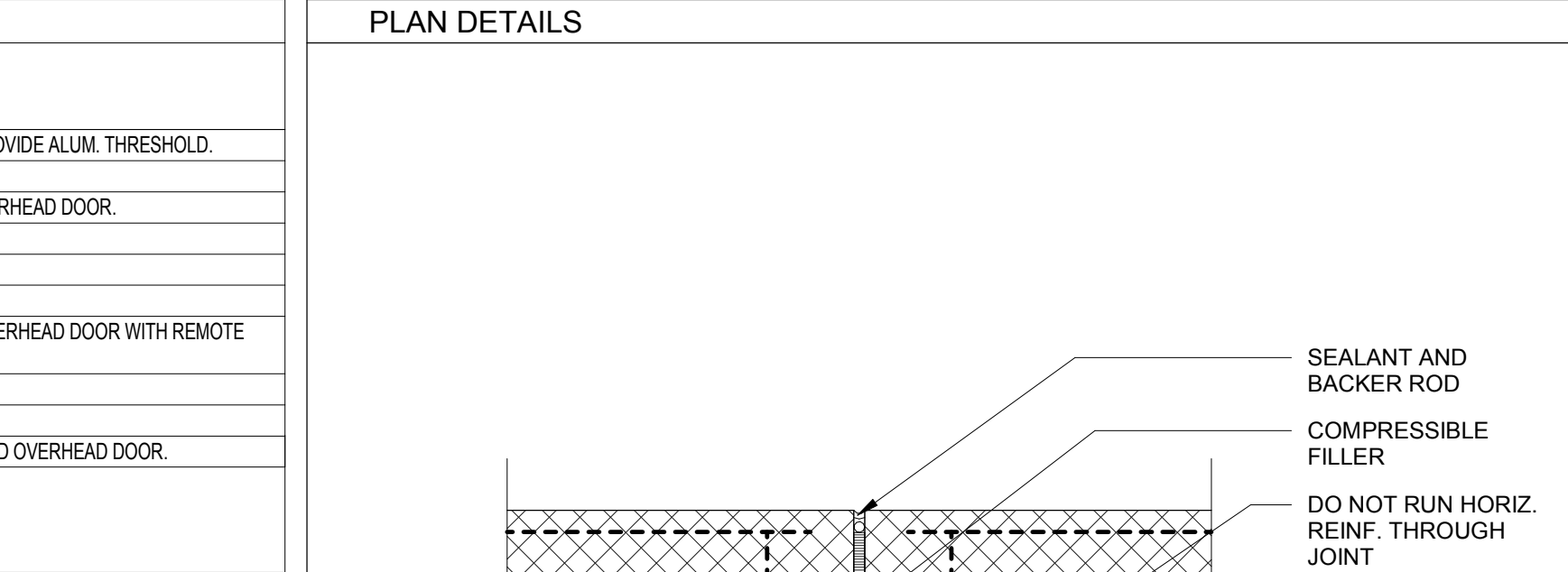
ABBREVIATIONS	
ACOUSTIC	ACOUS
ADJ. FINISHED FLOOR	ADJ
ADJACENT	ADJ
ALUMINUM	AL OR ALUM
ARCHITECT, ARCHITECTURAL	ARCH
BOARD	BD
BOTTOM OF	B.O.
BOILER STACK	B.S.
BUILDING	BLDG
CABINET	CAB
CARPET	CPT
CEILING	C.G.
CEILING JOIST	CJ
CENTERLINE	CL
CERAMIC TILE	CT
CLEAR	CLR
COLD WATER	CW
COLUMN	COL
CONCRETE	CONC
CONCRETE MASONRY UNIT	CMU
CONSTRUCTION	CONST
CONTINUOUS	CONT
DEMOLITION	DEMO
DETAIL	DTL
DIAMETER	DIA
DIMENSION	DM
DOOR	DR
DOWN	DN
DRAWING	DWG
EACH	EACH
ELECTRIC	ELEC
ELECTRICAL CONTRACTOR	E.C.
ELEVATION	ELEV
EQUIPMENT	EQUIP
ESTIMATE	EST
EXISTING	EXIST
FEET FOOT	FT FT
FINISH	FIN
FINISH FLOOR	F.F.
FIRE EXTINGUISHER	F.E.
FIRE EXTINGUISHER CABINET	F.E.C.
FIRE RESISTANCE TREATED	F.R.T.
FLOOR DRAIN	FD
FLUORESCENT	FLUOR
FRAME	FR
FURNITURE	FURN
GAUGE	GA
GENERAL CONTRACTOR	G.C.
GLASS	GL
GYP-SUM WALL BOARD	GWB
HARDWARE	HWDR
HEIGHT	HT
HOLLOW METAL	HM
HORIZONTAL	HORIZ
HOT WATER	HW
HIGH	OR H
INSULATION	INSUL
INTERIOR	INT
JUNCTION BOX	JB
LAVATORY	LAV
MANUFACTURE	MFR
MASONRY OPENING	M.O.
MAXIMUM	MAX
MECHANICAL	MECH
MECHANICAL CONTRACTOR	M.C.
METAL	MTL
MINIMUM	MIN
MISCELLANEOUS	MISC
NOMINAL	NOM
NOT IN CONTRACT	NIC
NOT TO SCALE	NTS
OPPOSITE	OPP
PAINT PARTITION	PT, PTD
PARTITION	PTN
PLASTIC LAMINATE	PLAM
PLUMBING CONTRACTOR	P.L.C.
PLYWOOD	PLYWD
PRESSURE TREATED	P.T.
QUANTITY	QTY
RADIUS	R
RAINWATER CONDUCTOR	RWC
REFERENCE	REF
REINFORCE	RENF
REQUIRED	REQD
REVISION	REV
ROOM	RM
ROUGH OPENING	R.O.
SIMILAR	SIM
SOLID CORE	SC
SPECIFICATIONS	SPECS
SQUARE FEET	SF OR SQ. FT.
SQUARE INCHES	SQ. IN.
STAINLESS STEEL	S.S.TL
STANDARD	STD
STEEL	ST
SUSPENDED	SUSP
SYSTEM	SYS
TELEPHONE	TEL
TOP OF	T.O.
TYPICAL	TYP
UNLESS NOTED OTHERWISE	UNO
VERIFY IN FIELD	V.I.F.
VERTICAL	VERT
VINYL COMPOSITION TILE	VCT
WATER CLOSET	WC
WEIGHT	WT
WELDED WIRE REINFORCING	WWF
WITH	WTH
WITHOUT	W/O
WOOD	WD

ARCHITECTURAL LEGEND	
	ROOM IDENTIFICATION
	ENLARGED PLAN OR DETAIL MARK
	BUILDING ELEVATION REFERENCE
	MULTIPLE ELEVATION REFERENCE
	ELEVATION REFERENCE
	SECTION REFERENCE
	WORKING POINT OR DATUM
	PARTITION TYPE
	COLUMN GRID
	SPOT ELEVATION TAG
	DOOR TAG IDENTIFICATION
	WINDOW TAG
	CLEAR DIMENSION BETWEEN ELEMENTS
	DIMENSION TO EDGE
	DIMENSION TO CENTERLINE
	FLOOR CORE, COORD. LOCATION WITH MPE DOCUMENTS
	PARTITION CORE, COORD. LOCATION & SIZE WITH MPE DOCUMENTS
	FIRE EXTINGUISHER
	FIRE EXTINGUISHER CABINET
	AUTOMATIC PUSHBUTTON
	WALL OR PARTITION WITH 1/2-HOUR FIRE-RESISTANCE RATING
	WALL OR PARTITION WITH 1-HOUR FIRE-RESISTANCE RATING
	WALL OR PARTITION WITH 2-HOUR FIRE-RESISTANCE RATING

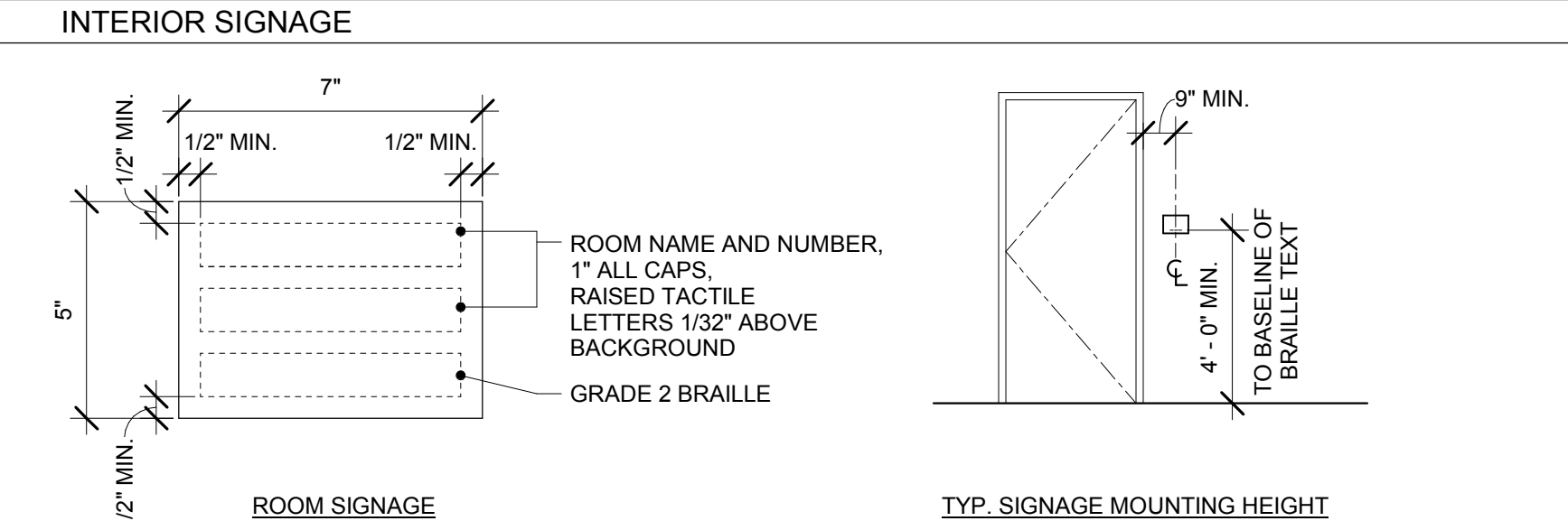


MATERIALS LEGEND	
	EARTH, COMPACTED FILL
	EARTH, UNDISTURBED OR SHIM
	CRUSHED ROCK GRAVEL
	CONCRETE, CAST STONE
	CONCRETE MASONRY
	CONCRETE MASONRY
	BRICK
	RIGID INSULATION
	WOOD BLOCKING OR SHIM
	WOOD FRAMING, CONTINUOUS
	PLYWOOD
	WOOD - FINISHED
	PLASTER OR GYPSUM BOARD
	SOLID SURFACE

DOOR SCHEDULE													
DOOR NO.	DOOR TYPE	SIZE		FRAME			HDWR	DETAILS			NOTES		
		W	H	MATL	FINISH	TYPE		MATL	FINISH	SET		HEAD	JAMB
101-1	A	3'-0"	7'-2"	HM	PTD	1	HM	PTD	1	H3	J5	S2	1-HOUR FIRE-RESISTANCE RATING. PROVIDE ALUM. THRESHOLD.
101-2	A	3'-0"	7'-2"	HM	PTD	1	HM	PTD	2	H2	J2	S1	INSULATED MANUALLY OPERATED OVERHEAD DOOR.
101-3	B	12'-0"	12'-0"	STL	-	-	-	-	4	7/8-501	J4	-	INSULATED MANUALLY OPERATED OVERHEAD DOOR.
102-1	A	3'-0"	7'-2"	HM	PTD	1	HM	PTD	2	H2	J2	S1	1-HOUR FIRE-RESISTANCE RATING.
102-2	A	3'-0"	7'-2"	HM	PTD	1	HM	PTD	2	H2	J2	S1	1-HOUR FIRE-RESISTANCE RATING.
102-3	B	10'-0"	10'-0"	STL	-	-	-	-	4	7/8-501	J4	-	INSULATED AUTOMATIC OPERATED OVERHEAD DOOR WITH REMOTE ACCESS CONTROL.
103-1	A	3'-0"	7'-2"	HM	PTD	1	HM	PTD	1	H1	J1	-	1-HOUR FIRE-RESISTANCE RATING.
103-2	A	3'-0"	7'-2"	HM	PTD	1	HM	PTD	2	H2	J2	S1	1-HOUR FIRE-RESISTANCE RATING.
103-3	B	10'-0"	10'-0"	STL	-	-	-	-	4	7/8-501 (SM)	J3	-	NON-INSULATED AUTOMATIC OPERATED OVERHEAD DOOR.



FINISH SCHEDULE			
ROOM	FLOOR	BASE	WALLS
101	CONC. SEALED	RUBBER COVE	P-1
102	CONC. SEALED	RUBBER COVE	P-1
103	CONC. SEALED	RUBBER COVE	P-1



INTERIOR PARTITION SCHEDULE	

GENERAL NOTES:
1. ALL FONT SHALL BE UPPERCASE AND SAN'S SERIF.
2. BRAILLE SHALL BE SEPARATED 3/8" MIN. FROM ANY OTHER RAISED CHARACTERS.
3. BASELINE OF GRADE 2 BRAILLE MUST BE BETWEEN 48-60 INCHES A.F.F.
4. SIGNS PROVIDED AT A DOOR SHALL BE LOCATED AT THE LATCH SIDE.
5. PROVIDE PLASTIC PANELS WITH INTEGRAL, RAISED BRAILLE CHARACTERS.
6. REFER TO OWNER FOR BUILDING SIGNAGE STANDARDS.
7. PROVIDE ONE ROOM IDENTIFICATION SIGN AT TYPE 'A' DOORS.

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DATE	01/30/20
REV	0

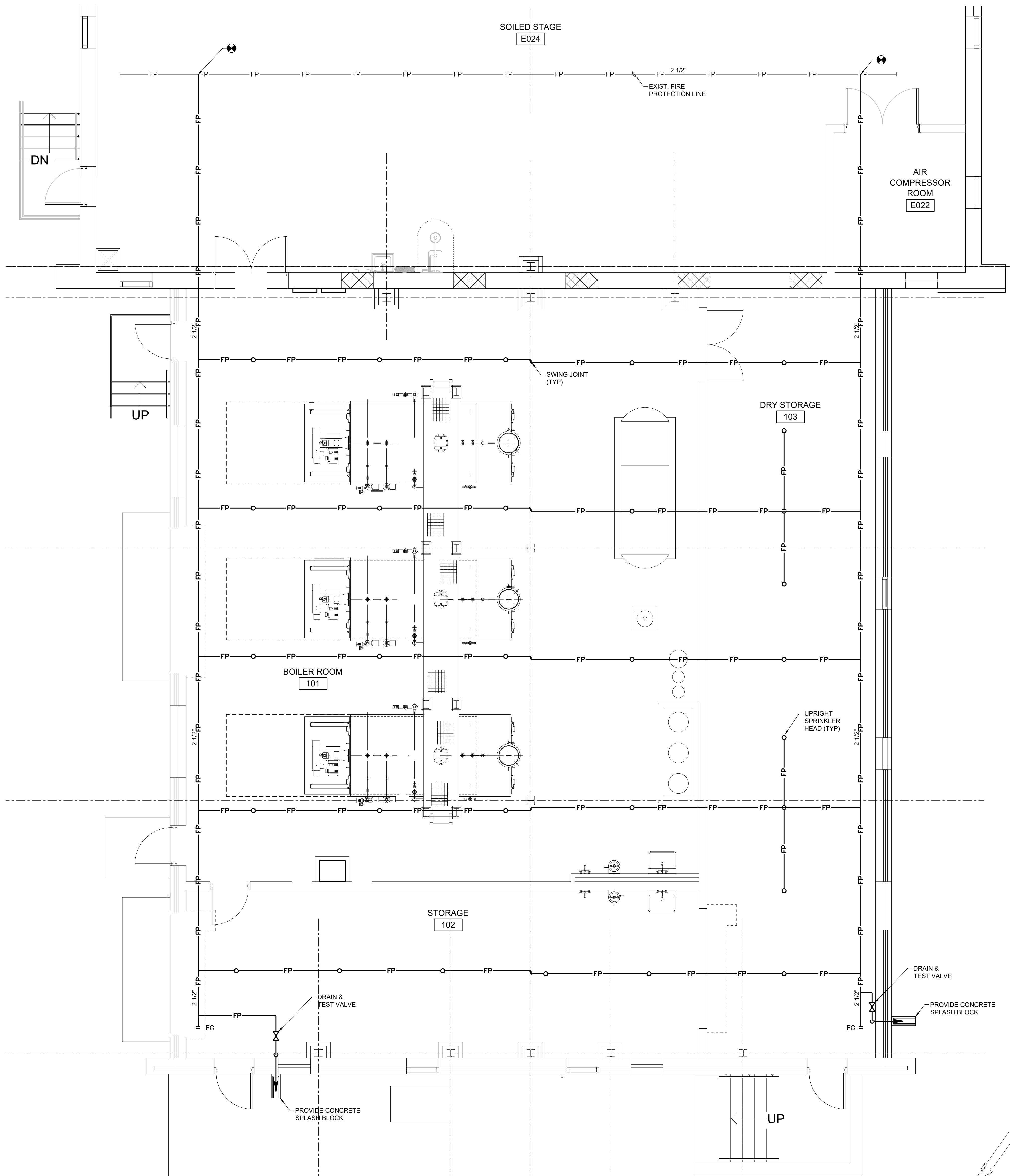
COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
ARCHITECTURAL
LEGENDS, ABBREVIATIONS, SCHEDULES
AND DETAILS

SCALE: As indicated
PREPARED BY: RNP
CHECKED BY: SED
APPROVED BY: SED
PROJECT NO: 4177.009
DRAWING NO: A-701

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE GENERAL CONTRACT EXCEPT AS NOTED OTHERWISE.

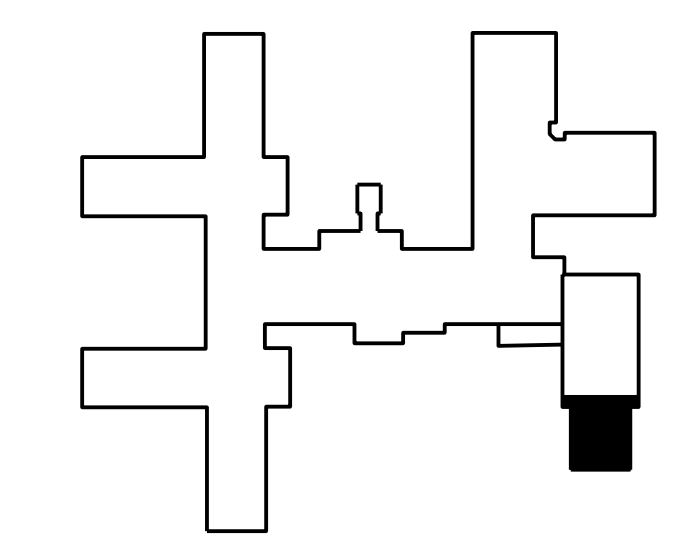
GENERAL FIRE PROTECTION NOTES

1. THE SPRINKLER INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 13, STATE AUTHORITIES HAVING JURISDICTION, AND THE OWNERS INSURANCE UNDERWRITER.
2. PIPING SHOWN IS GENERALLY DIAGRAMMATIC AND INDICATES THE WORK TO BE PERFORMED. NOT ALL FITTINGS AND OFFSETS ARE SHOWN. FOLLOW DRAWINGS AS CLOSELY AS FIELD CONDITIONS ALLOW.
3. SPRINKLER HEADS SHALL BE STANDARD ORIFICE UPRIGHT TYPE, 210 DEGREES F.
4. ALL SPRINKLER SYSTEMS IN THIS BUILDING SHALL BE WET PIPE SYSTEMS.
5. PROVIDE ALL MISCELLANEOUS STEEL SHAPES, HANGER RODS, STRAPS, ETC. REQUIRED FOR ALL FIRE PROTECTION SYSTEM INSTALLATIONS.
6. ALL CUTTING AND PATCHING REQUIRED TO ACCOMMODATE THE FIRE PROTECTION WORK SHALL BE PROVIDED UNDER THE FIRE PROTECTION SPECIFICATIONS.
7. CONCRETE AND MASONRY WALL PENETRATIONS REQUIRED FOR NEW PIPING SHALL BE CORE DRILLED WHERE POSSIBLE. PROVIDE SLEEVED PENETRATIONS SEALED AIRTIGHT AND WEATHERTIGHT WITH FIRE RATED SEALANT.
8. PROVIDE FLUSHING CONNECTIONS IN ACCORDANCE WITH NFPA 13.
9. SPRINKLER SYSTEM SHALL BE FULLY DRAINABLE BY MULTIPLE DRAIN LOCATIONS.
10. PROVIDE INSPECTION TEST AS REQUIRED BY NFPA 13.



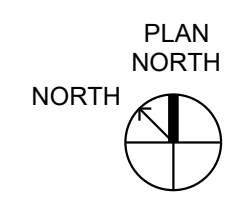
PROVIDE SHOP DRAWINGS AND SPRINKLER SYSTEM DESIGN INCLUDING HYDRAULIC CALCULATIONS, PREPARED ACCORDING TO NFPA13. SIZE WET PIPE SPRINKLER SYSTEM BASED ON ORDINARY HAZARD (GROUP 1) PROVIDING 0.15 GPM/SF OVER 1500 SF. BASE CALCULATIONS ON RESULT OF FIRE FLOW TEST TO BE PERFORMED BY CONTRACTOR.

SCHEDULE WORK IN OCCUPIED SPACES AFTER 3 PM.



KEY PLAN

1 BOILER ADDITION - SPRINKLER PLAN
Scale: 1/4" = 10"
0 2 4 6 8



THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE PLUMBING CONTRACT EXCEPT AS NOTED OTHERWISE.

DATE	REV.	ISSUED FOR BIDDING	ISSUED FOR REVISION	MAF	APFD
01/20/20	0				

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
FIRE PROTECTION
SPRINKLER PLAN

SCALE: AS NOTED
PREPARED BY: SMF
CHECKED BY: MDR
APPROVED BY: MAF

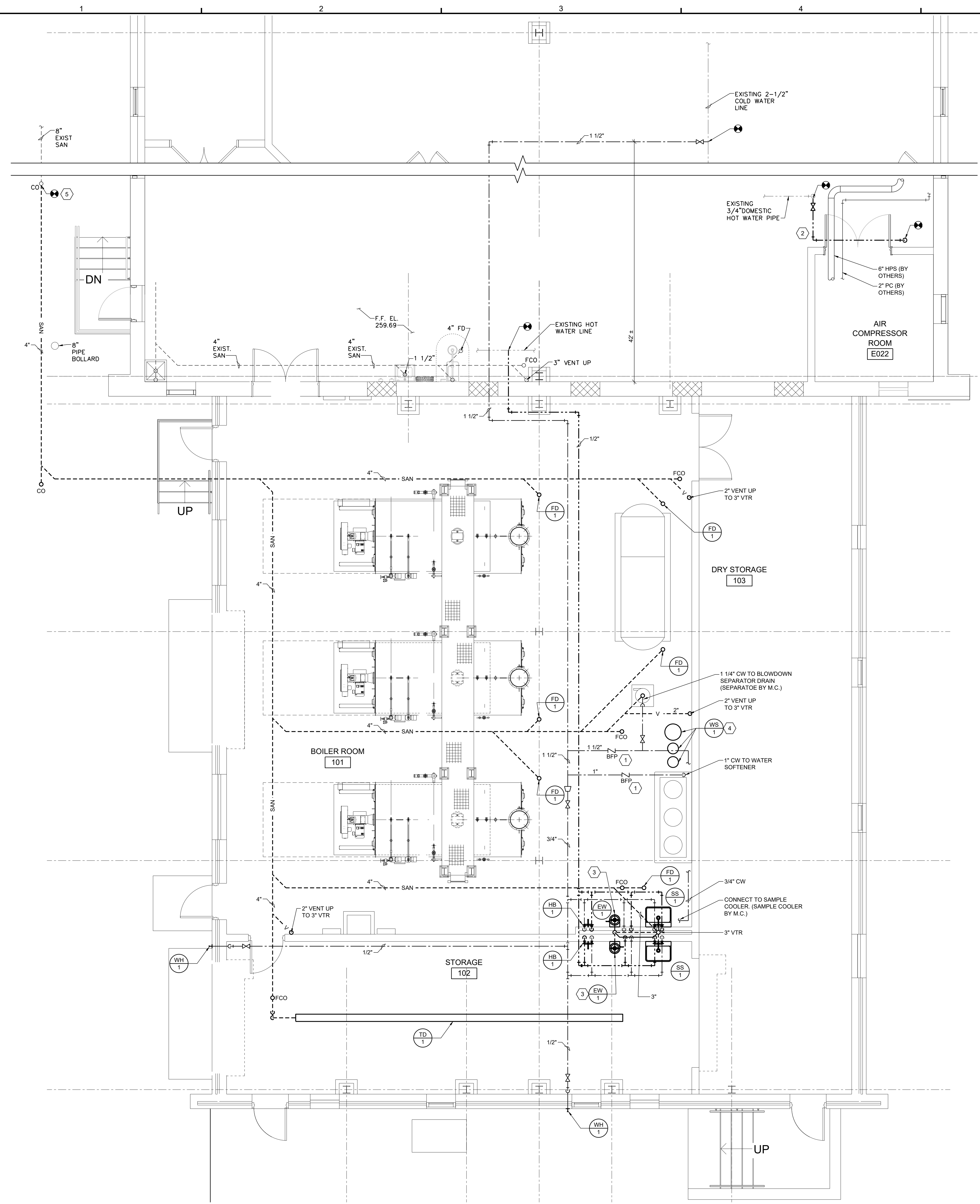
PROJECT NO: 4177.009
DRAWING NO: **FP-101**

GENERAL SHEET NOTES

1. INSTALL FIELD LOCATED PIPING TO ALLOW ACCESS FOR OPERATION AND MAINTENANCE AND TO AVOID TRIPPING HAZARDS.
7. LOCATIONS OF VENT PENETRATIONS SHALL BE REVIEWED, COORDINATED AND APPROVED BY THE ROOFING CONTRACTOR TO AVOID THE STANDING SEAMS.

NEW WORK KEYNOTES

1. PROVIDE REDUCED PRESSURE BACKFLOW PREVENTER WITH ISOLATION VALVES, AIR GAP FITTING AND DRAIN. PIPE DRAIN TO NEAREST FLOOR DRAIN.
2. CONTRACTOR SHALL RELOCATE EXISTING 3/4" DOMESTIC HOT WATER PIPE APPROXIMATELY 24" LOWER AS REQUIRED TO PROVIDE CLEARANCE FOR NEW STEAM AND CONDENSATE PIPING. INSULATE PIPING MODIFICATION TO MATCH ADJACENT.
3. WALL MOUNT THERMOSTATIC MIXING VALVE ABOVE EYEWASH.
4. PROVIDE WATER SOFTENER WITH PIPING AS SHOWN ON DRAWING M-601.
5. EXTEND EXISTING SANITARY LATERAL. PROVIDE REDUCERS AND ADAPTERS AS NEEDED FOR CONNECTION TO EXISTING PIPING.



PLUMBING FIXTURE SCHEDULE

ITEM NO.	DESCRIPTION	MOUNTING HEIGHT	PIPING CONNECTIONS				BASIS OF DESIGN		NOTES
			SAN	VENT	CW	HW	MANUFACTURER	MODEL	
SS-1	SERVICE SINK	28"	3"	2"	1/2"	1/2"	KOHLER	K-6716	1,6
EW-1	EYE WASH, WALL MOUNTED	36"	1 1/4"	--	1/2"	1/2"	GUARDIAN	G1750	2,6
HB-1	FAUCET, HW, CW	36"	--	--	1/2"	1/2"	KOHLER	K-8907	5,6
WH-1	WALL HYDRANT, FREEZE PROOF	24"	--	--	1/2"	--	JOSAM	71300-52	3,6
FD-1	FLOOR DRAIN, LARGE STRAINER	-1/2"	4"	--	--	--	JOSAM	30000-10A	--
TD-1	TRENCH DRAIN	-1/2"	4"	--	--	--	JOSAM	PRO-PLUS 200	4,6

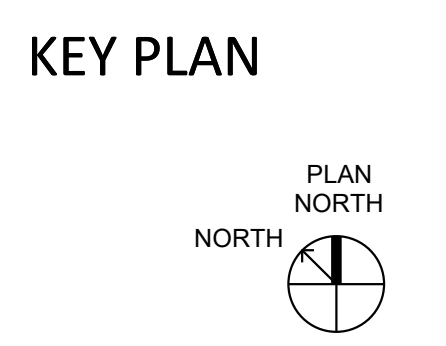
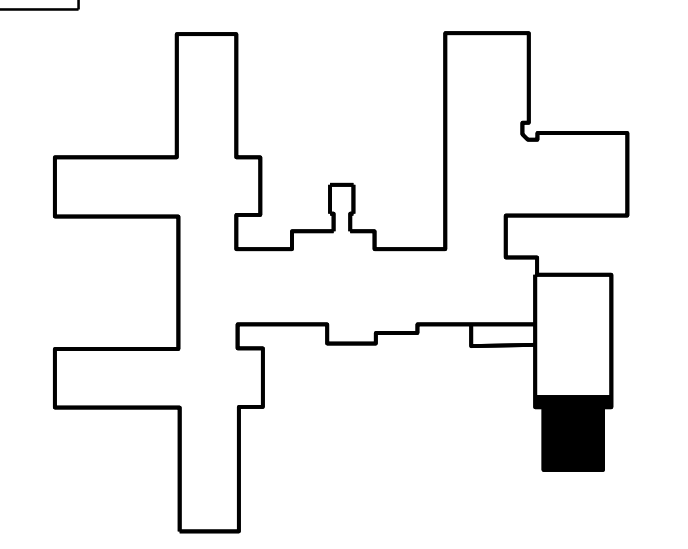
- NOTES:**
1. PROVIDE SERVICE SINK FAUCET K-8905, STRAINER AND 3" P-TRAP.
 2. PROVIDE THERMOSTATIC MIXING VALVE, GUARDIAN MODEL G3600LF AND EMERGENCY EYEWASH SIGN.
 3. PROVIDE WALL BOX WITH VACUUM BREAKER AND BRONZE FACE.
 4. PROVIDE CAST IRON GRATE AND END OUTLET.
 5. PROVIDE WALL MOUNTED HOSE RACK ADJACENT TO HOSE BIB.
 6. PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

WATER SOFTENER SCHEDULE

ITEM NO.	TYPE	FLOW (GPM)	MAX. PRESS. DROP (PSI)	RESIN (CF)	SALT STORAGE (LBS.)	HARDNESS (GR./GAL.)		BASIS OF DESIGN		NOTES
						INCOMING	LEAVING	MANUFACTURER	MODEL	
WS-1	DUPLEX	16	15	2X2	300	--	--	MARLO	MAT 60M-1	1

- NOTES:**
1. PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

SCHEDULE WORK IN
 OCCUPIED SPACES
 AFTER 3 PM.

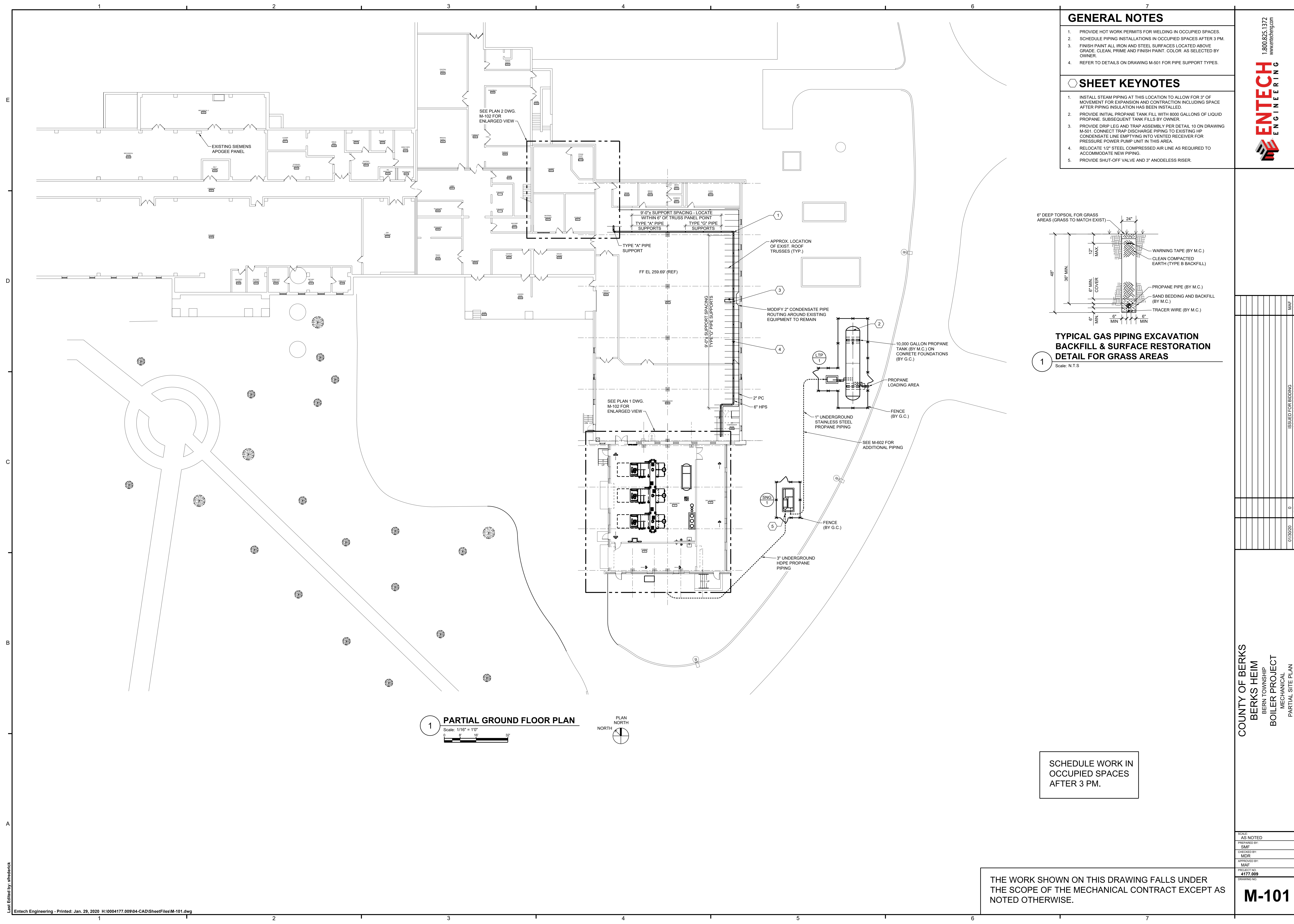


1 BOILER ADDITION - PLUMBING PLAN
 Scale: 1/4" = 10"

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE PLUMBING CONTRACT EXCEPT AS NOTED OTHERWISE.

DATE	01/20/20
REV.	0
ISSUED FOR BIDDING	MAF
ISSUED FOR REVISION	APFD

COUNTY OF BERKS
 BERKS HEIM
 BERN TOWNSHIP
 BOILER PROJECT
 PLUMBING PLAN

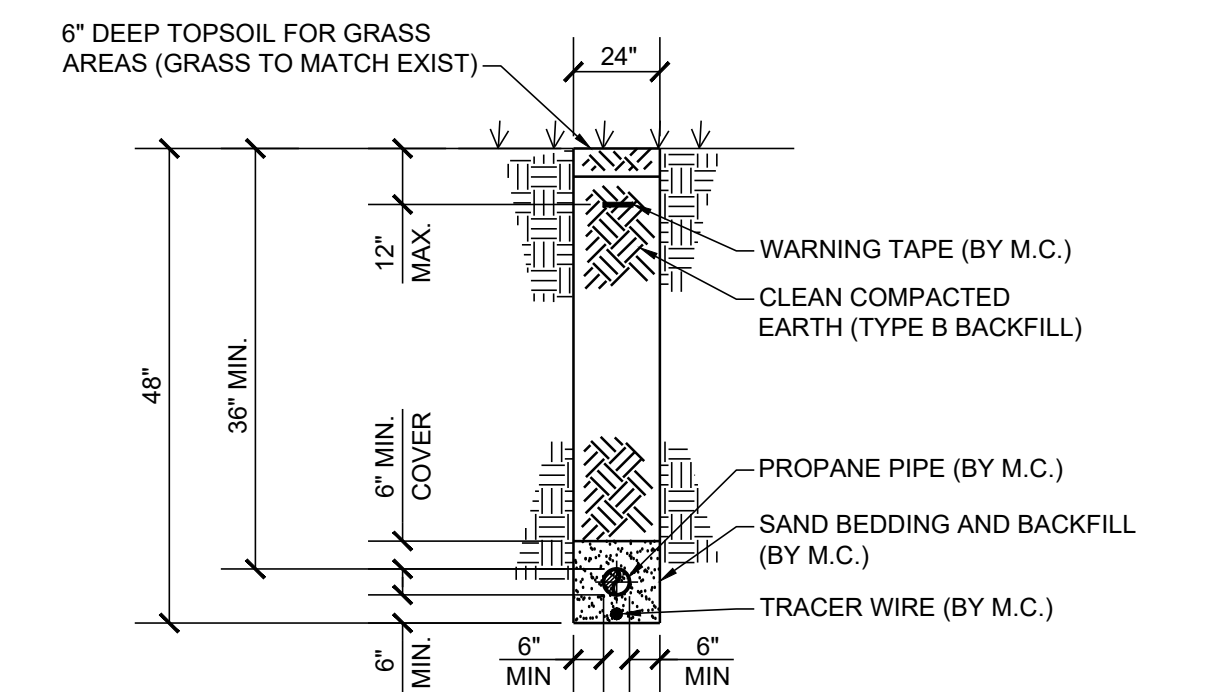


GENERAL NOTES

1. PROVIDE HOT WORK PERMITS FOR WELDING IN OCCUPIED SPACES.
2. SCHEDULE PIPING INSTALLATIONS IN OCCUPIED SPACES AFTER 3 PM.
3. FINISH PAINT ALL IRON AND STEEL SURFACES LOCATED ABOVE GRADE. CLEAN, PRIME AND FINISH PAINT. COLOR AS SELECTED BY OWNER.
4. REFER TO DETAILS ON DRAWING M-501 FOR PIPE SUPPORT TYPES.

SHEET KEYNOTES

1. INSTALL STEAM PIPING AT THIS LOCATION TO ALLOW FOR 3" OF MOVEMENT FOR EXPANSION AND CONTRACTION INCLUDING SPACE AFTER PIPING INSULATION HAS BEEN INSTALLED.
2. PROVIDE INITIAL PROPANE TANK FILL WITH 8000 GALLONS OF LIQUID PROPANE. SUBSEQUENT TANK FILLS BY OWNER.
3. PROVIDE DRIP LEG AND TRAP ASSEMBLY PER DETAIL 10 ON DRAWING M-501. CONNECT TRAP DISCHARGE PIPING TO EXISTING HP CONDENSATE LINE EMPTYING INTO VENTED RECEIVER FOR PRESSURE POWER PUMP UNIT IN THIS AREA.
4. RELOCATE 1/2" STEEL COMPRESSED AIR LINE AS REQUIRED TO ACCOMMODATE NEW PIPING.
5. PROVIDE SHUT-OFF VALVE AND 3" ANODELESS RISER.



1 TYPICAL GAS PIPING EXCAVATION BACKFILL & SURFACE RESTORATION DETAIL FOR GRASS AREAS
Scale: N.T.S.

1 PARTIAL GROUND FLOOR PLAN
Scale: 1/16" = 1'0"
PLAN NORTH

SCHEDULE WORK IN OCCUPIED SPACES AFTER 3 PM.

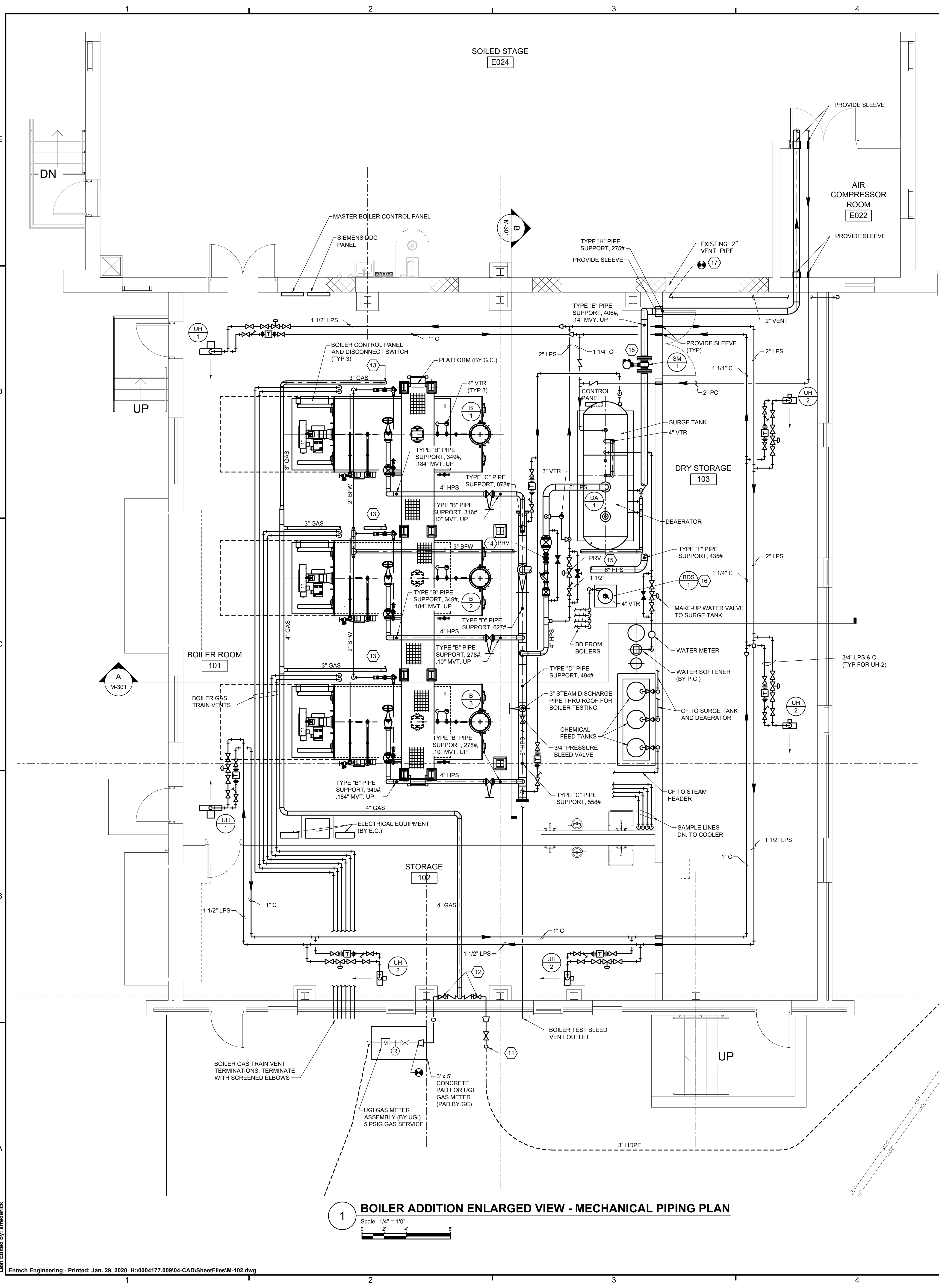
THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE MECHANICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

DATE	REV.	ISSUED FOR BIDDING	ISSUED FOR REVISION
01/20/20	0		

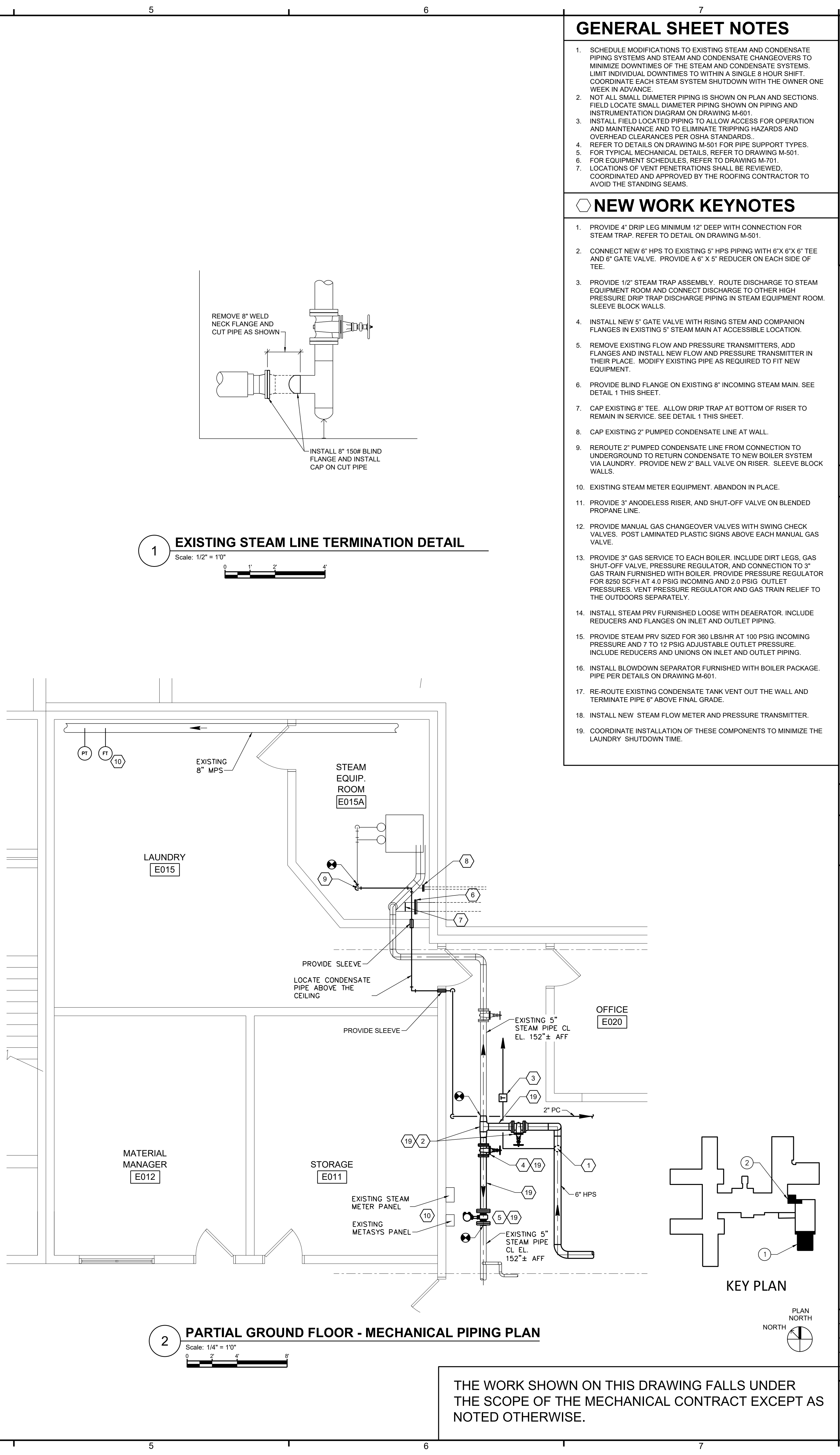
COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
MECHANICAL
PARTIAL SITE PLAN

SCALE:	AS NOTED
PREPARED BY:	SMF
CHECKED BY:	MDR
APPROVED BY:	MAF
PROJECT NO:	4177.009
DRAWING NO:	

M-101



1 BOILER ADDITION ENLARGED VIEW - MECHANICAL PIPING PLAN
 Scale: 1/4" = 1'0"



2 PARTIAL GROUND FLOOR - MECHANICAL PIPING PLAN
 Scale: 1/4" = 1'0"

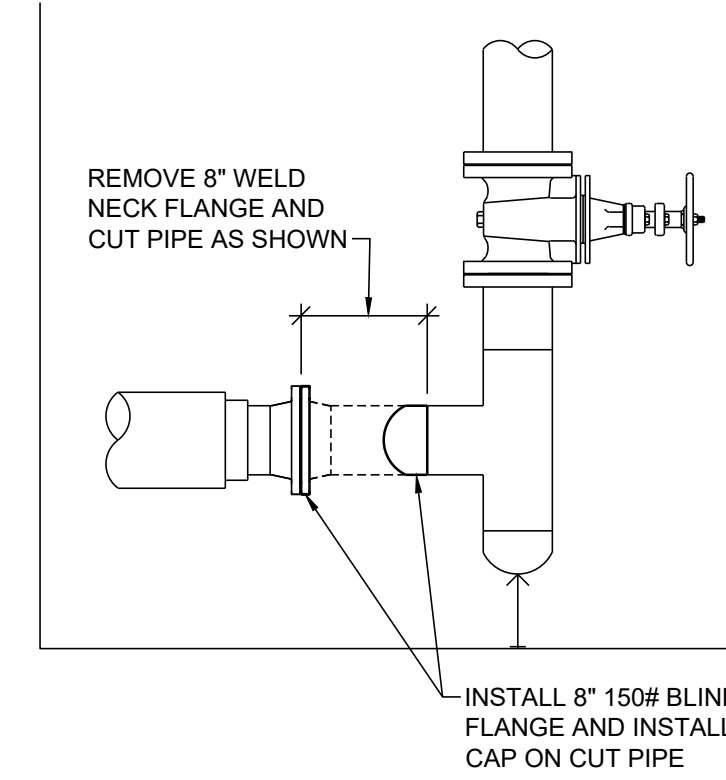
THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE MECHANICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

GENERAL SHEET NOTES

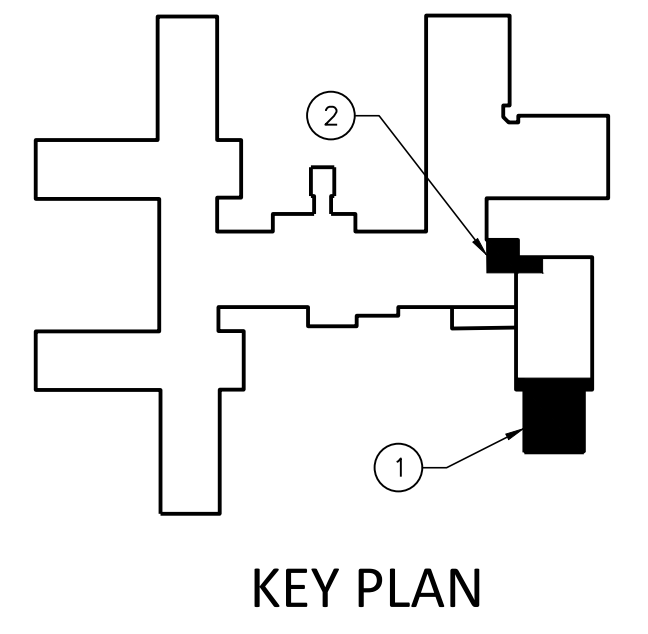
- SCHEDULE MODIFICATIONS TO EXISTING STEAM AND CONDENSATE PIPING SYSTEMS AND STEAM AND CONDENSATE CHANGEOVERS TO MINIMIZE DOWNTIMES OF THE STEAM AND CONDENSATE SYSTEMS. LIMIT INDIVIDUAL DOWNTIMES TO WITHIN A SINGLE 8 HOUR SHIFT. COORDINATE EACH STEAM SYSTEM SHUTDOWN WITH THE OWNER ONE WEEK IN ADVANCE.
- NOT ALL SMALL DIAMETER PIPING IS SHOWN ON PLAN AND SECTIONS. FIELD LOCATE SMALL DIAMETER PIPING SHOWN ON PIPING AND INSTRUMENTATION DIAGRAM ON DRAWING M-501.
- INSTALL FIELD LOCATED PIPING TO ALLOW ACCESS FOR OPERATION AND MAINTENANCE AND TO ELIMINATE TRIPPING HAZARDS AND OVERHEAD CLEARANCES PER OSHA STANDARDS.
- REFER TO DETAILS ON DRAWING M-501 FOR PIPE SUPPORT TYPES.
- FOR TYPICAL MECHANICAL DETAILS, REFER TO DRAWING M-501.
- FOR EQUIPMENT SCHEDULES, REFER TO DRAWING M-701.
- LOCATIONS OF VENT PENETRATIONS SHALL BE REVIEWED, COORDINATED AND APPROVED BY THE ROOFING CONTRACTOR TO AVOID THE STANDING SEAMS.

NEW WORK KEYNOTES

- PROVIDE 4" DRIP LEG MINIMUM 12" DEEP WITH CONNECTION FOR STEAM TRAP. REFER TO DETAIL ON DRAWING M-501.
- CONNECT NEW 6" HPS TO EXISTING 5" HPS PIPING WITH 6" X 6" TEE AND 6" GATE VALVE. PROVIDE A 6" X 5" REDUCER ON EACH SIDE OF TEE.
- PROVIDE 12" STEAM TRAP ASSEMBLY. ROUTE DISCHARGE TO STEAM EQUIPMENT ROOM AND CONNECT DISCHARGE TO OTHER HIGH PRESSURE DRIP TRAP DISCHARGE PIPING IN STEAM EQUIPMENT ROOM. SLEEVE BLOCK WALLS.
- INSTALL NEW 5" GATE VALVE WITH RISING STEM AND COMPANION FLANGES IN EXISTING 5" STEAM MAIN AT ACCESSIBLE LOCATION.
- REMOVE EXISTING FLOW AND PRESSURE TRANSMITTERS. ADD FLANGES AND INSTALL NEW FLOW AND PRESSURE TRANSMITTER IN THEIR PLACE. MODIFY EXISTING PIPE AS REQUIRED TO FIT NEW EQUIPMENT.
- PROVIDE BLIND FLANGE ON EXISTING 8" INCOMING STEAM MAIN. SEE DETAIL 1 THIS SHEET.
- CAP EXISTING 8" TEE. ALLOW DRIP TRAP AT BOTTOM OF RISER TO REMAIN IN SERVICE. SEE DETAIL 1 THIS SHEET.
- CAP EXISTING 2" PUMPED CONDENSATE LINE AT WALL.
- REROUTE 2" PUMPED CONDENSATE LINE FROM CONNECTION TO UNDERGROUND TO RETURN CONDENSATE TO NEW BOILER SYSTEM VIA LAUNDRY. PROVIDE NEW 2" BALL VALVE ON RISER. SLEEVE BLOCK WALLS.
- EXISTING STEAM METER EQUIPMENT. ABANDON IN PLACE.
- PROVIDE 3" ANODELESS RISER, AND SHUT-OFF VALVE ON BLENDED PROPANE LINE.
- PROVIDE MANUAL GAS CHANGEOVER VALVES WITH SWING CHECK VALVES. POST LAMINATED PLASTIC SIGNS ABOVE EACH MANUAL GAS VALVE.
- PROVIDE 3" GAS SERVICE TO EACH BOILER. INCLUDE DIRT LEGS, GAS SHUT-OFF VALVE, PRESSURE REGULATOR, AND CONNECTION TO 3" GAS TRAIN FURNISHED WITH BOILER. PROVIDE PRESSURE REGULATOR FOR 8250 SCFH AT 4.0 PSIG INCOMING AND 2.0 PSIG OUTLET PRESSURES. VENT PRESSURE REGULATOR AND GAS TRAIN RELIEF TO THE OUTDOORS SEPARATELY.
- INSTALL STEAM PRV FURNISHED LOOSE WITH DEAERATOR. INCLUDE REDUCERS AND FLANGES ON INLET AND OUTLET PIPING.
- PROVIDE STEAM PRV SIZED FOR 360 LBSHR AT 100 PSIG INCOMING PRESSURE AND 7 TO 12 PSIG ADJUSTABLE OUTLET PRESSURE. INCLUDE REDUCERS AND UNIONS ON INLET AND OUTLET PIPING.
- INSTALL BLOWDOWN SEPARATOR FURNISHED WITH BOILER PACKAGE. PIPE PER DETAILS ON DRAWING M-501.
- RE-ROUTE EXISTING CONDENSATE TANK VENT OUT THE WALL AND TERMINATE PIPE 6" ABOVE FINAL GRADE.
- INSTALL NEW STEAM FLOW METER AND PRESSURE TRANSMITTER.
- COORDINATE INSTALLATION OF THESE COMPONENTS TO MINIMIZE THE LAUNDRY SHUTDOWN TIME.



1 EXISTING STEAM LINE TERMINATION DETAIL
 Scale: 1/2" = 1'0"



KEY PLAN
 PLAN NORTH

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**COUNTY OF BERKS
 BERKS HEIM
 BERN TOWNSHIP
 BOILER PROJECT
 MECHANICAL
 PIPING PLANS**

SCALE: AS NOTED
 PREPARED BY: SMF
 CHECKED BY: MDR
 APPROVED BY: MAF
 PROJECT NO: 4117.009
 DRAWING NO:

M-102

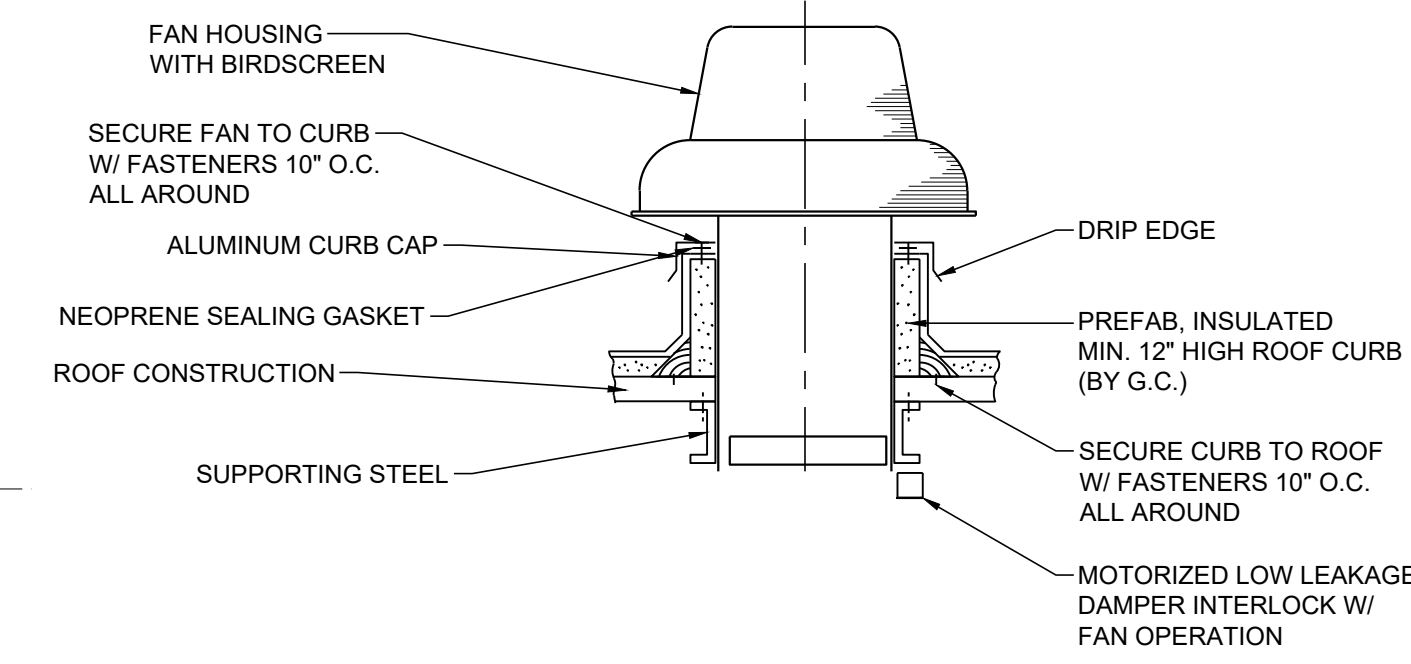
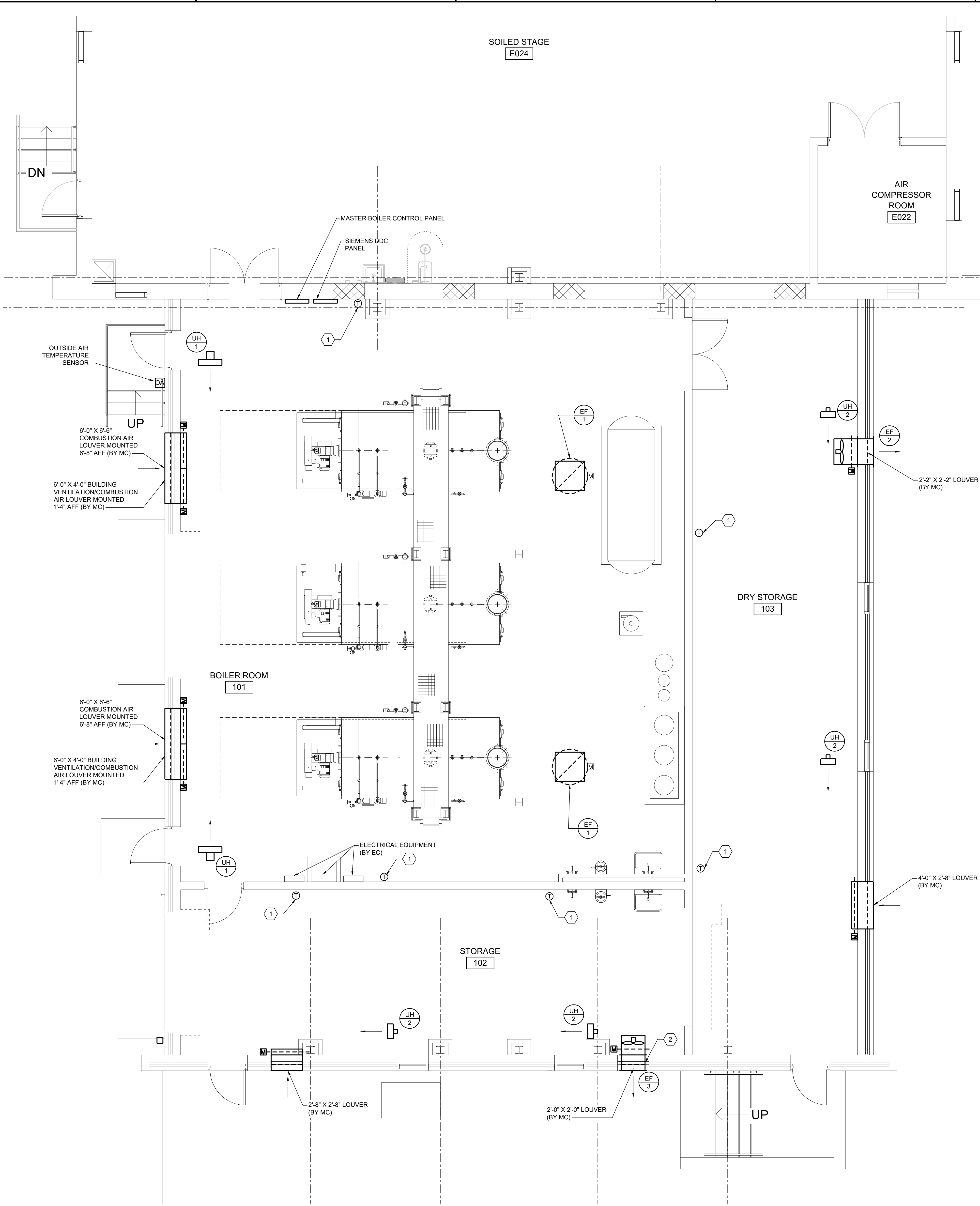
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 Entech Engineering - Printed: Jan. 29, 2020 H:\0004177\009\04-CAD\SheetFiles\M-102.dwg

GENERAL SHEET NOTES

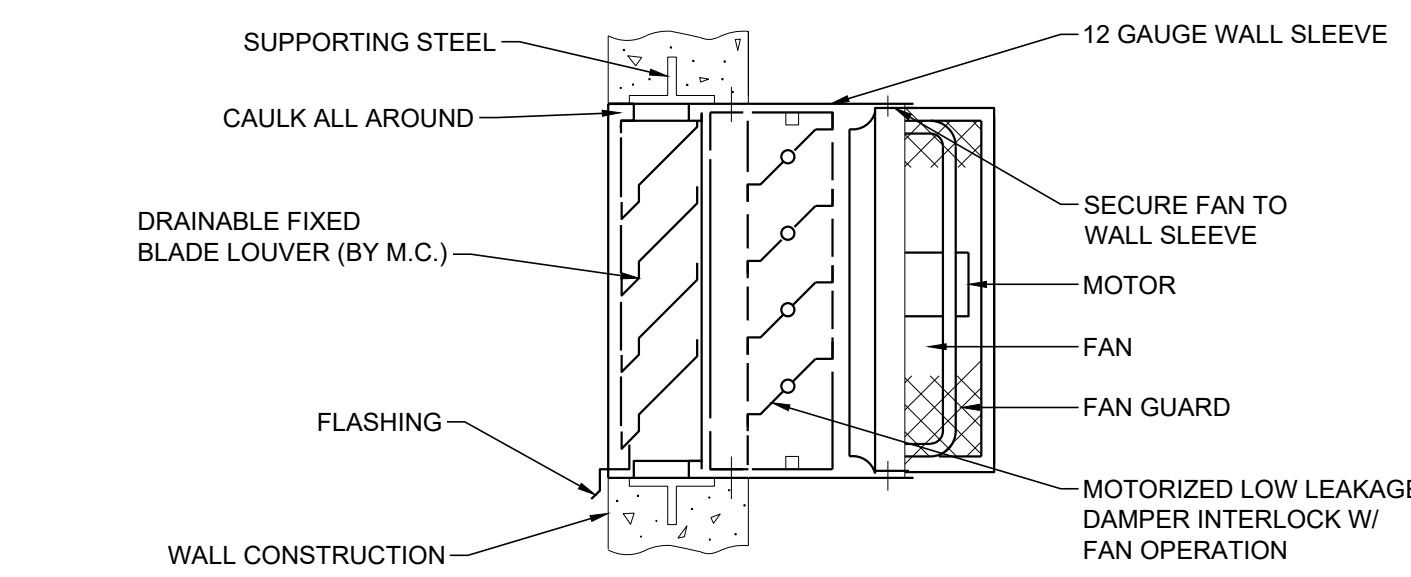
1. DUCTWORK AND SHEET METAL SLEEVES SHALL BE CONSTRUCTED OF GALVANIZED STEEL IN ACCORDANCE WITH SMACNA.
2. FOR TYPICAL MECHANICAL DETAILS, REFER TO DRAWING M-501.
3. FOR EQUIPMENT SCHEDULES, REFER TO DRAWING M-701.

NEW WORK KEYNOTES

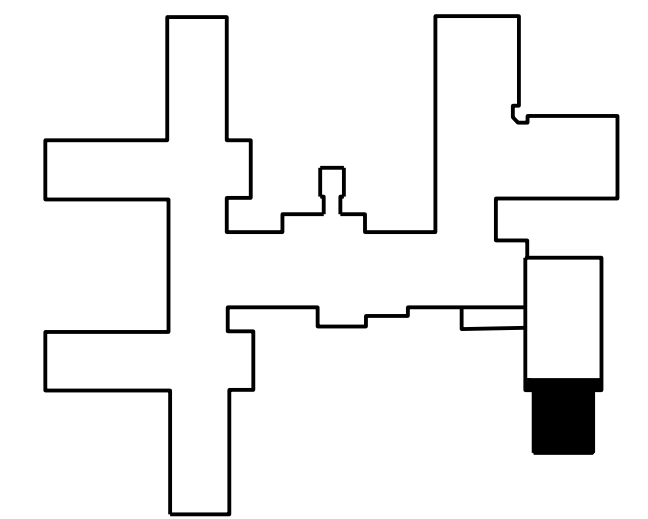
1. SIEMENS ADJUSTABLE DDC THERMOSTAT. INTERLOCK FOR UNIT HEATER AND EXHAUST FAN OPERATIONS.
2. ADJUST OPENING SIZE TO ACCOMMODATE LOUVER AND SLEEVE.



ROOF MOUNTED EXHAUST FAN DETAIL
NO SCALE



PROPELLER FAN DETAIL



KEY PLAN

1 BOILER ADDITION - MECHANICAL VENTILATION PLAN
Scale: 1/4" = 1'-0"
0 2 4 8

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE MECHANICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

DATE	REV.	ISSUED FOR BIDDING	MAF	APFD
01/20/20	0			

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
MECHANICAL
VENTILATION PLAN

SCALE:	AS NOTED
PREPARED BY:	SMF
CHECKED BY:	MDR
APPROVED BY:	MAF
PROJECT NO:	4177.009
DRAWING NO:	

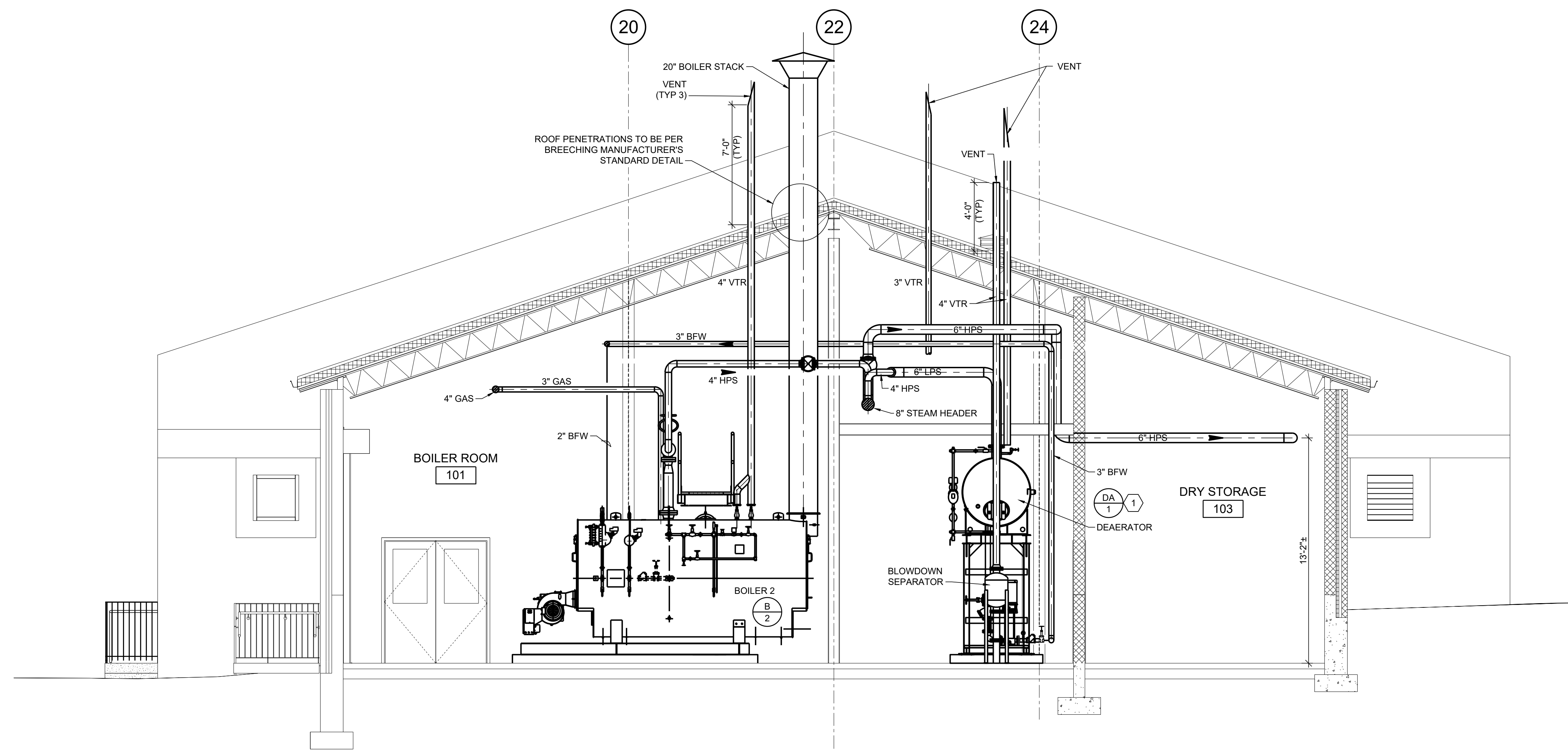
M-103

GENERAL SHEET NOTES

1. NOT ALL SMALL DIAMETER PIPING IS SHOWN ON PLAN AND SECTIONS. FIELD LOCATE SMALL DIAMETER PIPING SHOWN ON PIPING AND INSTRUMENTATION DIAGRAM ON DRAWING M-601.
2. INSTALL FIELD LOCATED PIPING TO ALLOW ACCESS FOR OPERATION AND MAINTENANCE AND TO ELIMINATE TRIPPING HAZARDS AND OVERHEAD CLEARANCES PER OSHA STANDARDS.
3. FOR TYPICAL MECHANICAL DETAILS, REFER TO DRAWING M-501.
4. FOR EQUIPMENT SCHEDULES, REFER TO DRAWING M-701.
5. LOCATIONS OF VENT PENETRATIONS SHALL BE REVIEWED AND COORDINATED WITH THE ROOFING CONTRACTOR TO AVOID THE STANDING SEAMS.

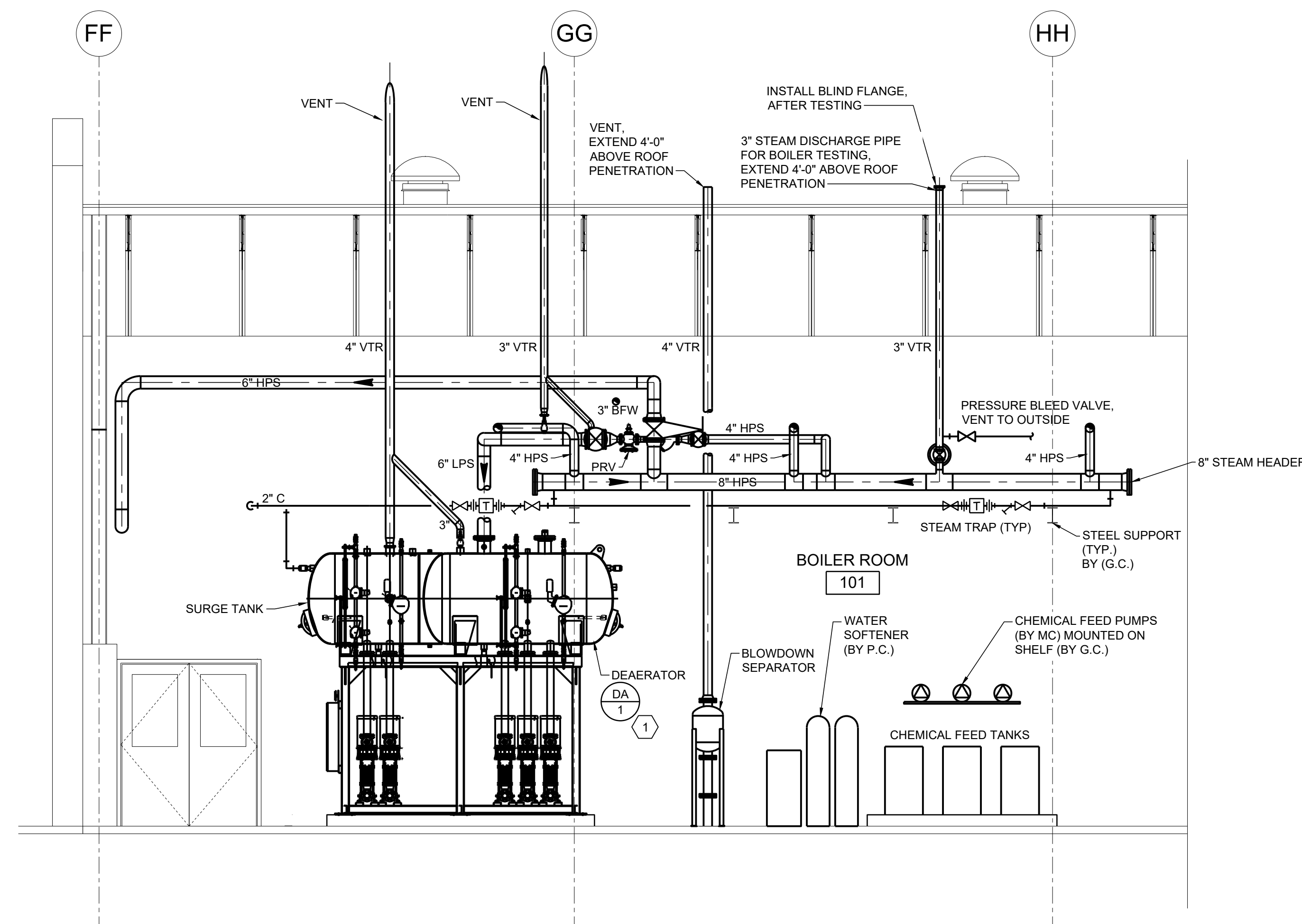
NEW WORK KEYNOTES

1. DEAERATOR/FEEDWATER TANK ASSEMBLY SHIPS IN TWO PARTS AND MUST BE ASSEMBLED IN THE FIELD.



A BOILER ADDITION SECTION

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



B BOILER ADDITION SECTION

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

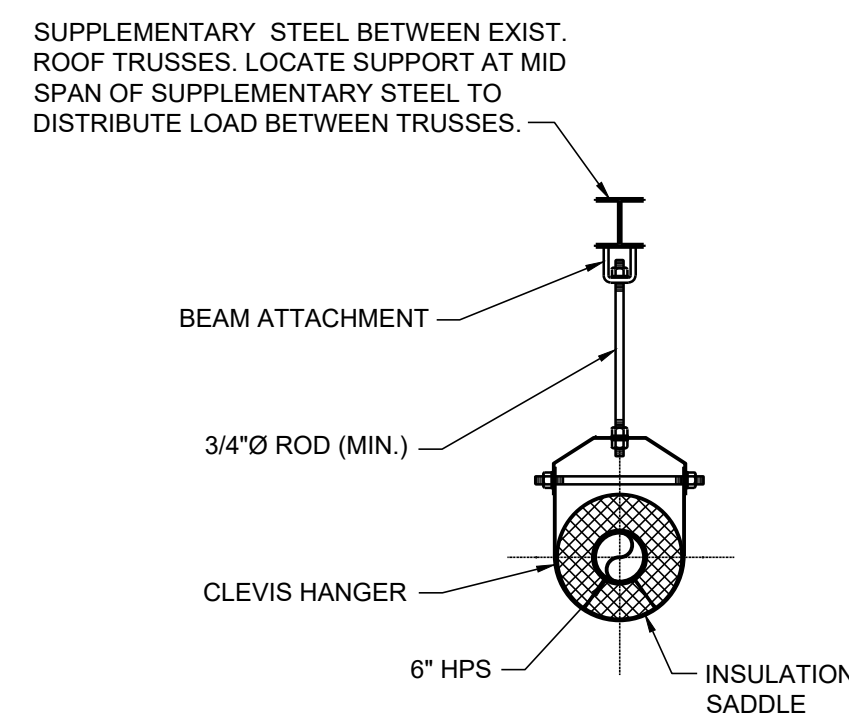
REV.	DATE	ISSUED FOR BIDDING	ISSUED FOR REVISION	MAF	APPD
0	01/20/20				

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
MECHANICAL
SECTIONS

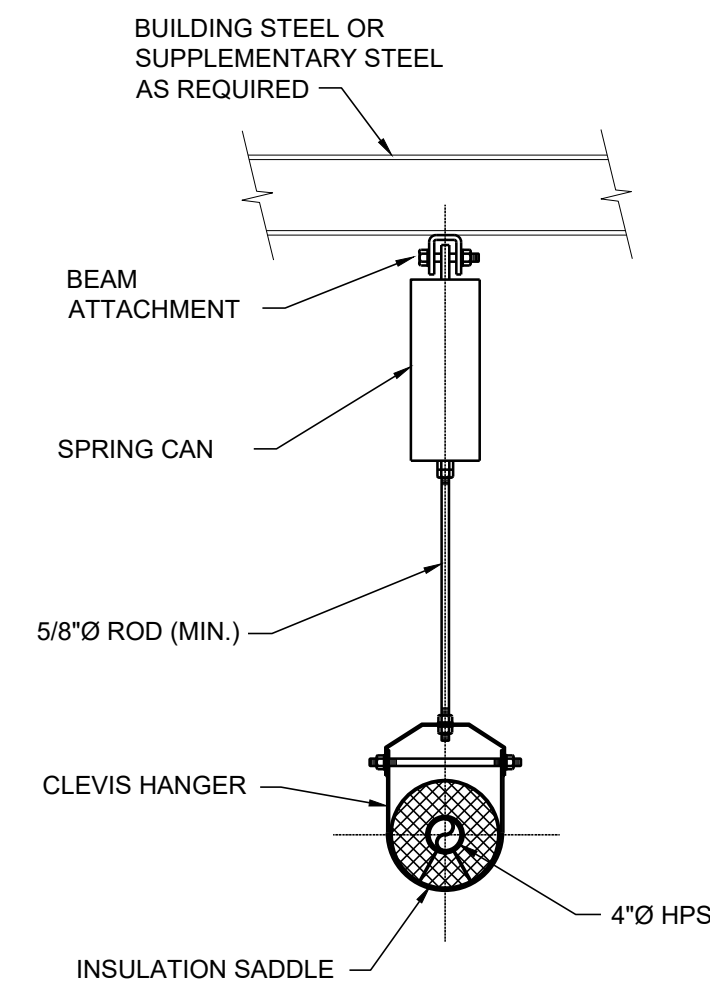
SCALE	AS NOTED
PREPARED BY	SMF
CHECKED BY	MDR
APPROVED BY	MAF
PROJECT NO.	4177.009
DRAWING NO.	

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE MECHANICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

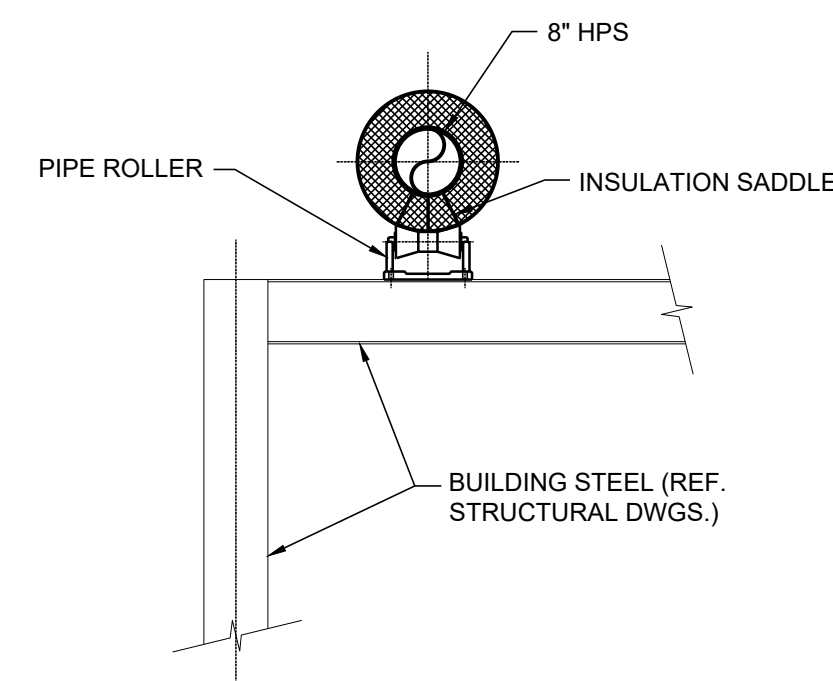
M-301



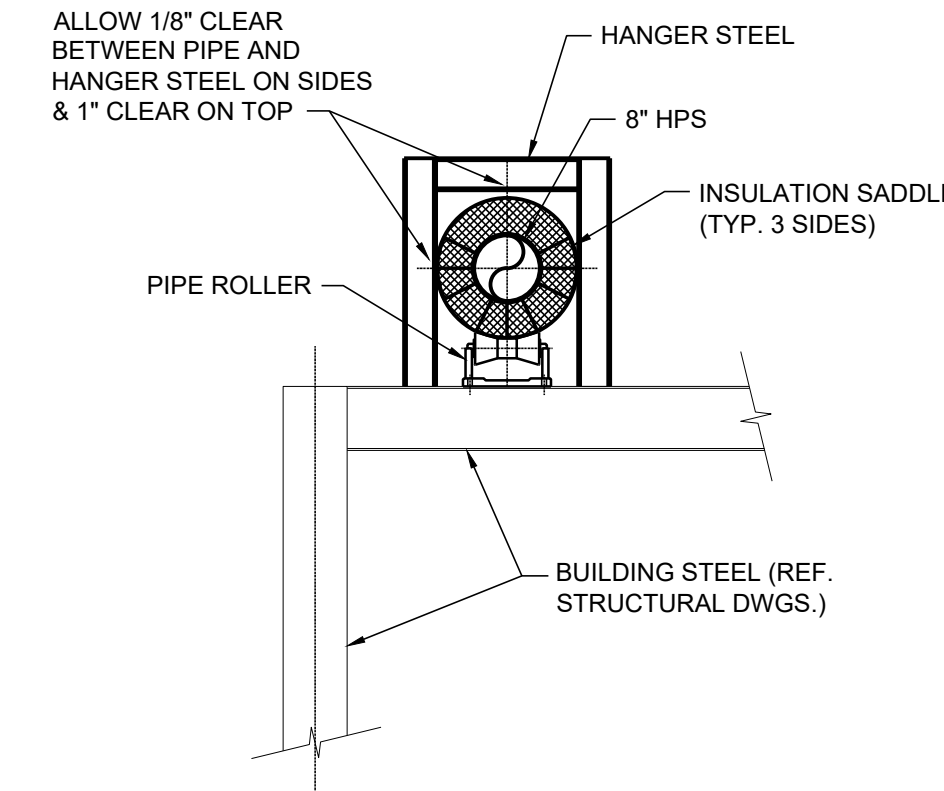
1 TYPE "A" PIPE SUPPORT DETAIL
Scale: NONE



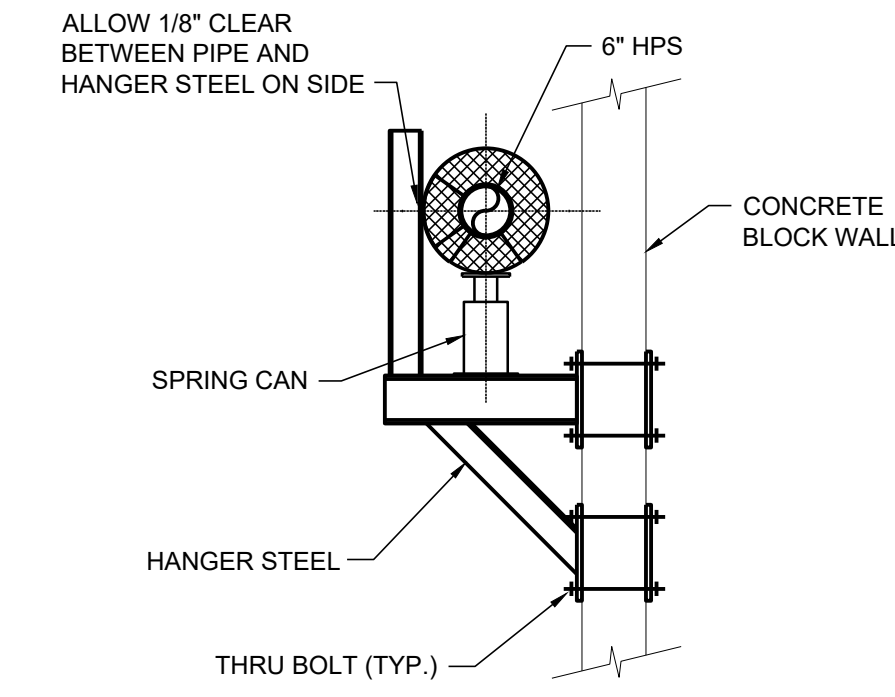
2 TYPE "B" PIPE SUPPORT DETAIL
Scale: NONE



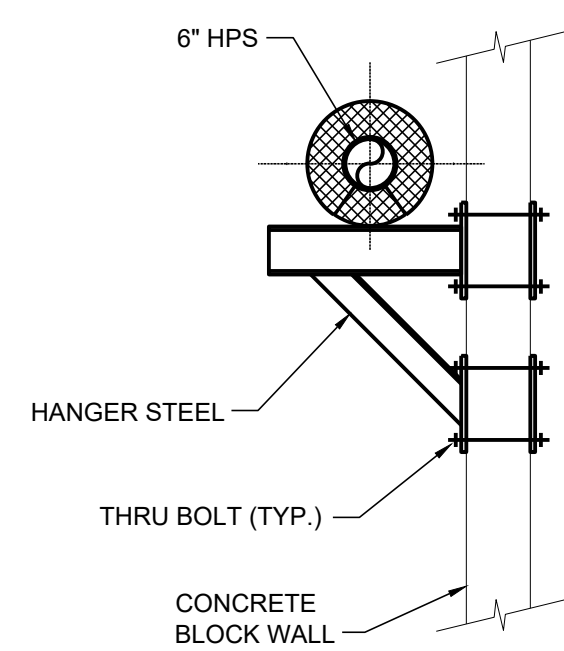
3 TYPE "C" PIPE SUPPORT DETAIL
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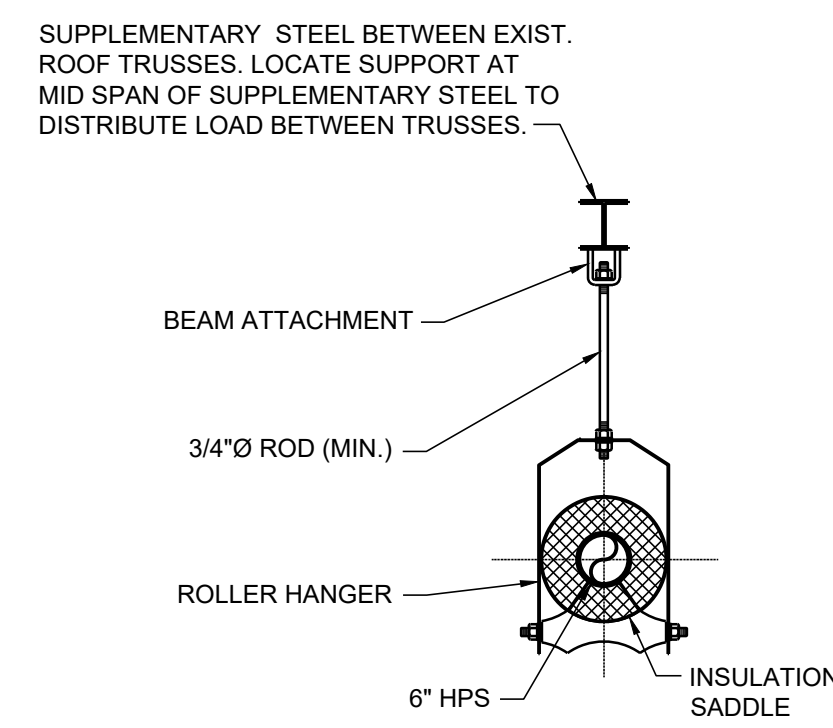
4 TYPE "D" PIPE SUPPORT DETAIL
Scale: NONE



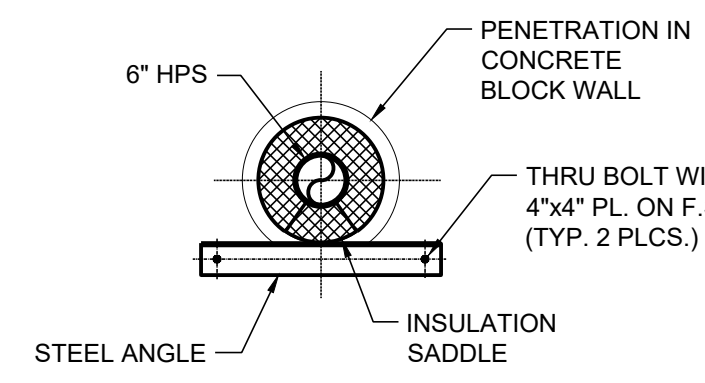
5 TYPE "E" PIPE SUPPORT DETAIL
Scale: NONE



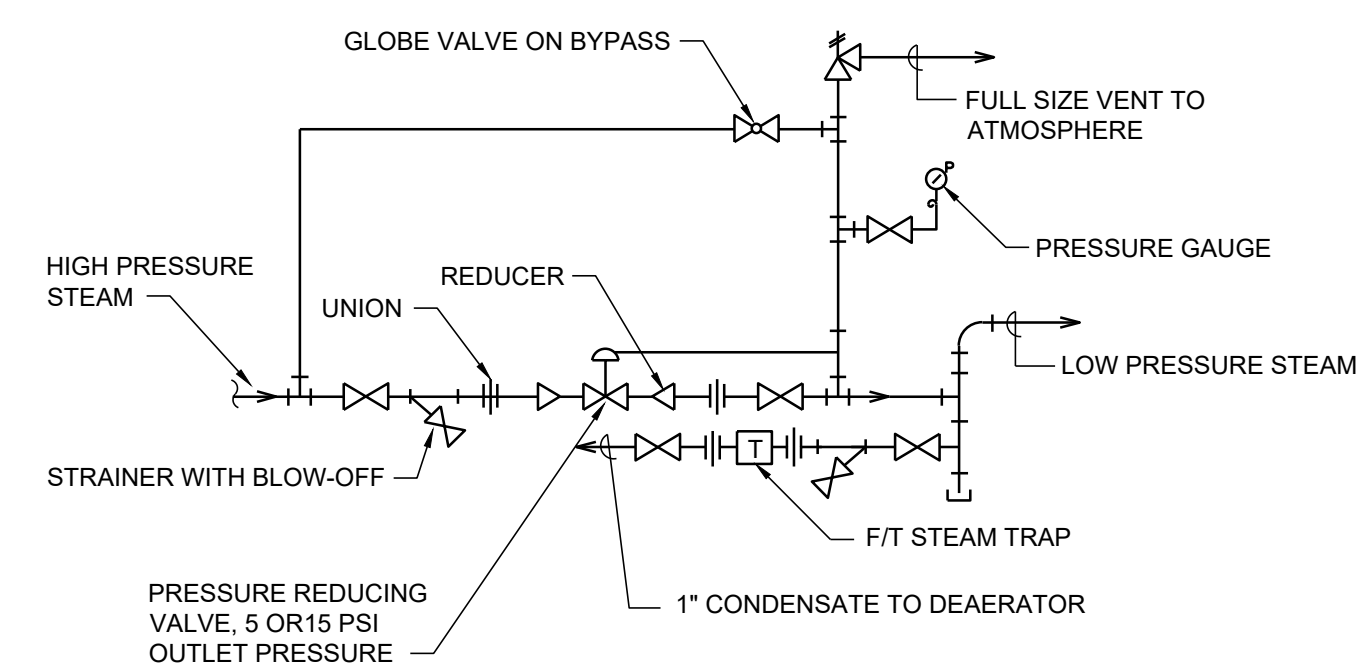
6 TYPE "F" PIPE SUPPORT DETAIL
Scale: NONE



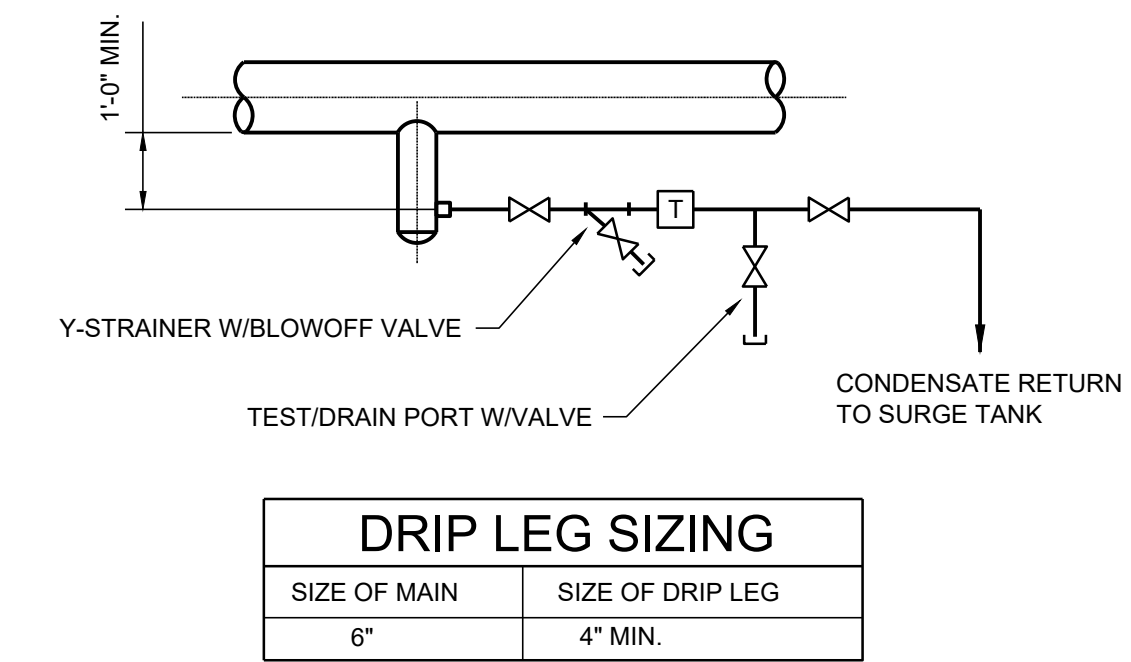
7 TYPE "G" PIPE SUPPORT DETAIL
Scale: NONE



8 TYPE "H" PIPE SUPPORT DETAIL
Scale: NONE

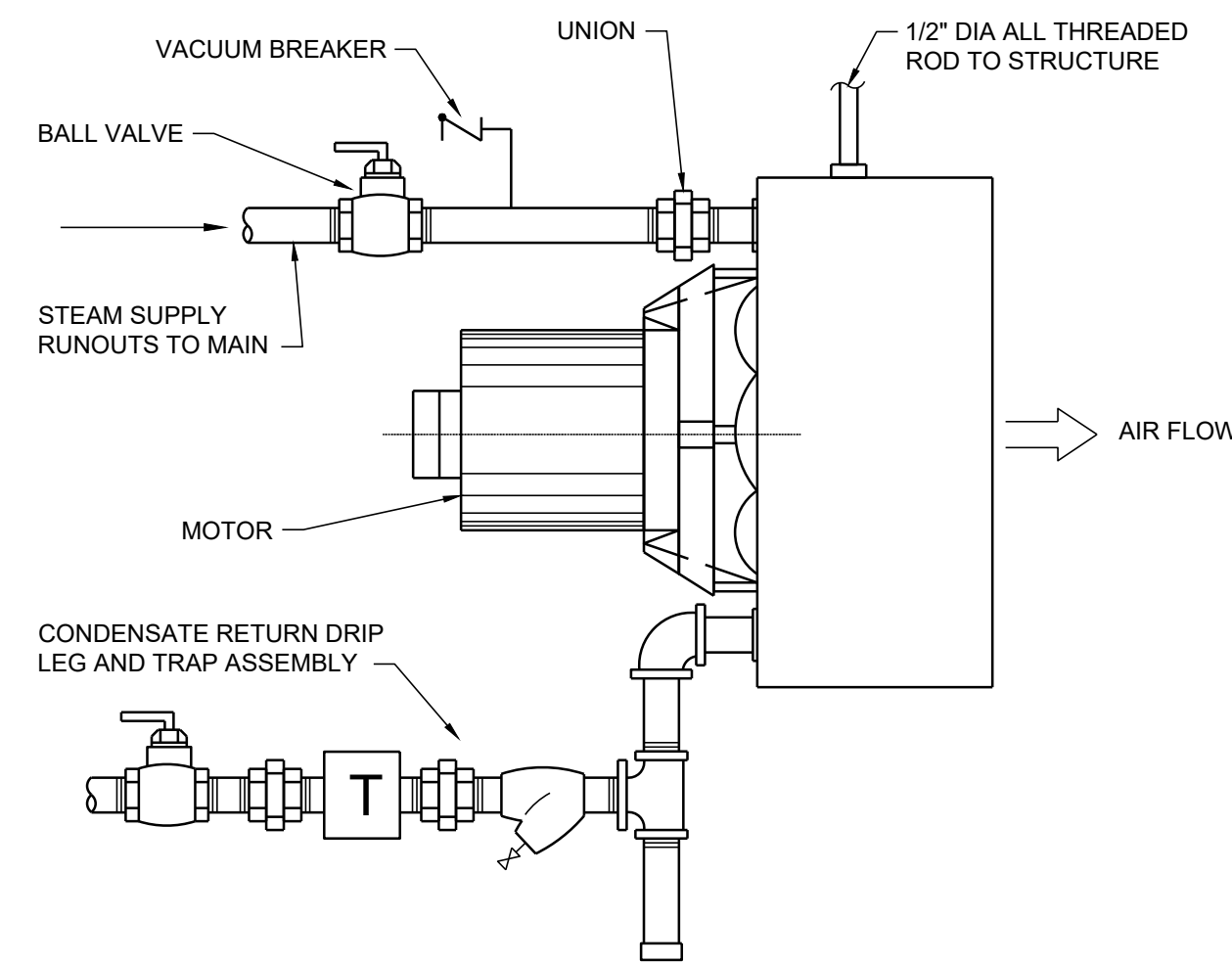


9 STEAM PRESSURE REGULATING VALVE DETAIL
Scale: NONE

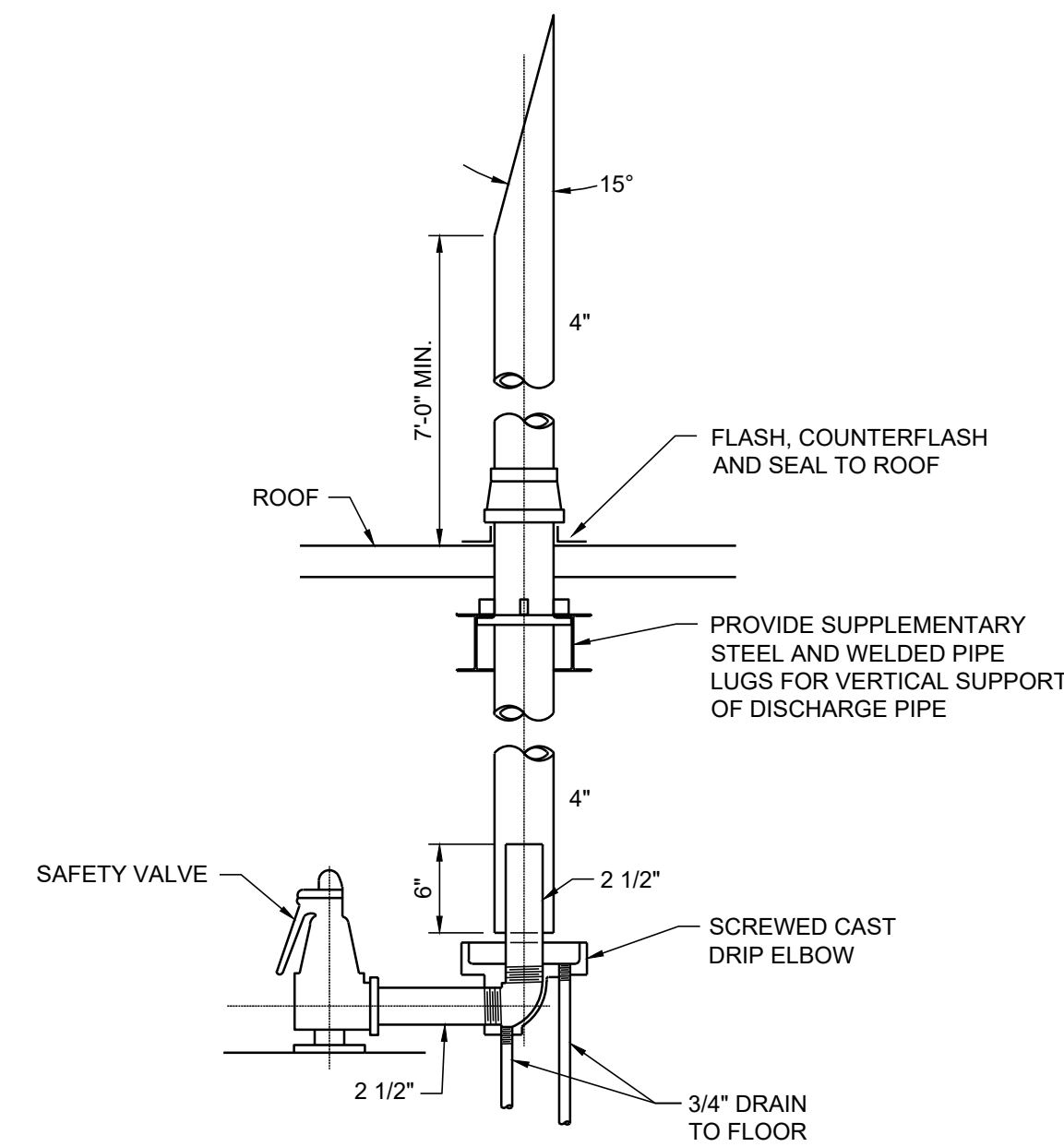


10 TYP. DRIP LEG/STEAM TRAP DETAIL
Scale: NONE

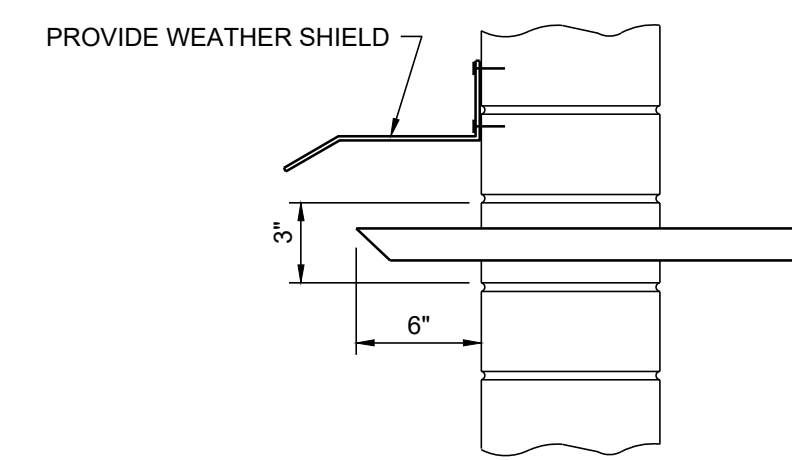
DRIP LEG SIZING	
SIZE OF MAIN	SIZE OF DRIP LEG
6"	4" MIN.



11 STEAM UNIT HEATER DETAIL
Scale: NONE



12 SAFETY VALVE DETAIL
Scale: NONE



13 GAS VENT DISCHARGE DETAIL
Scale: NONE

REV.	DATE	ISSUED FOR BIDDING	ISSUED FOR REVISION
0	01/20/20	MAF	APFD

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
MECHANICAL
DETAILS

SCALE	AS NOTED
PREPARED BY	SMF
CHECKED BY	MDR
APPROVED BY	MAF
PROJECT NO.	4177.009
DRAWING NO.	

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE MECHANICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

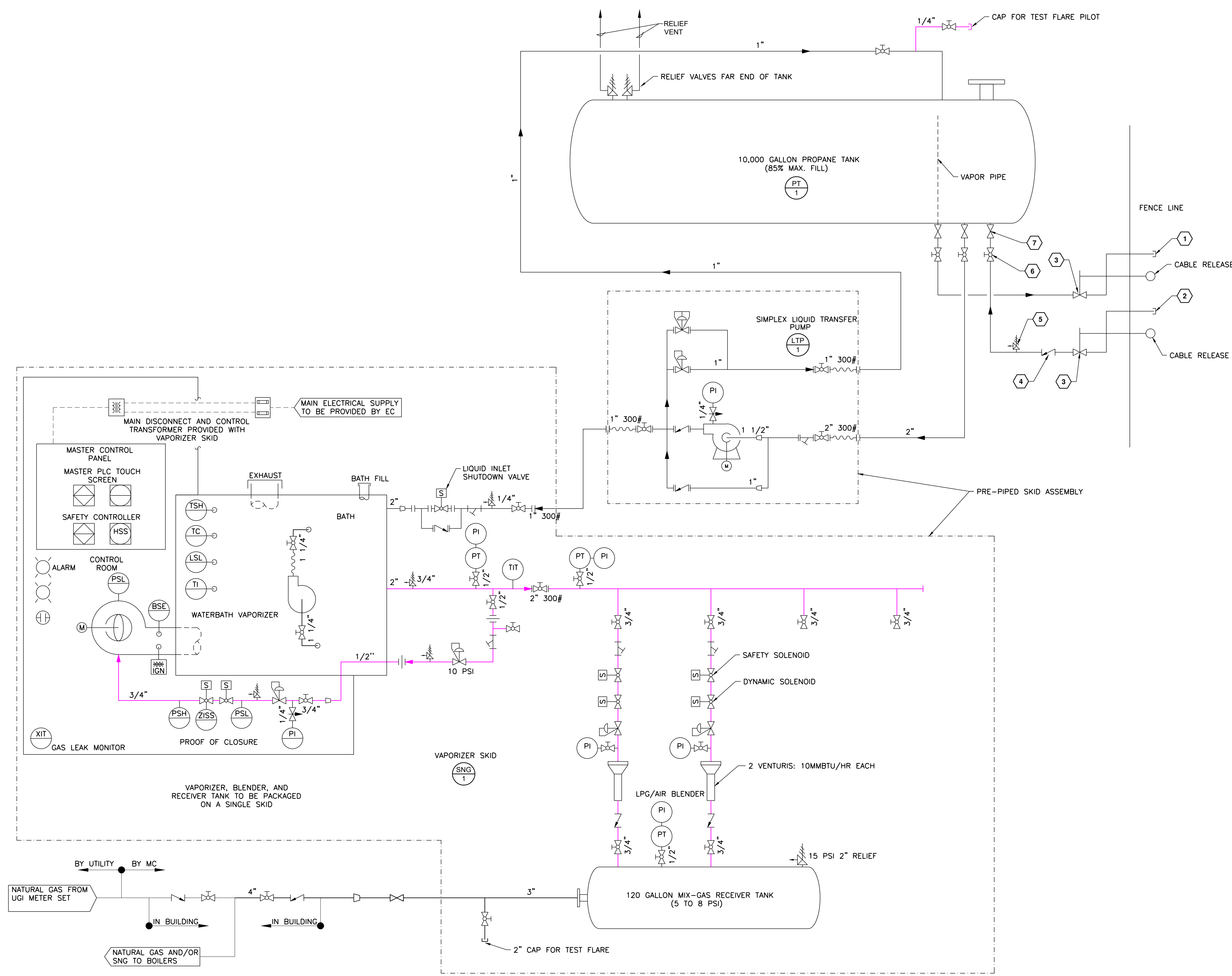
M-501

GENERAL SHEET NOTES

1. CONTRACTOR SHALL PROVIDE A COMPLETE LP SYSTEM DESIGN THAT COMPLIES WITH NFPA 58, INTERNATIONAL FIRE CODE, STATE AND LOCAL REQUIREMENTS. THE CONTRACTOR'S LP SYSTEM CONSTRUCTION DRAWINGS SHALL BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF PENNSYLVANIA.

PROPANE TANK KEYED NOTES

1. MALE HOSE CONNECTION WITH CAP.
2. FEMALE HOSE CONNECTION WITH PLUG.
3. EMERGENCY SHUT-OFF VALVE WITH THERMAL ACTUATION AND CABLE CLOSURE (TYPE 550 SNAPPY JOE ESV OR APPROVED EQUAL).
4. BACKCHECK VALVE.
5. HYDROSTATIC RELIEF VALVE.
6. GLOBE OR ANGLE VALVE. (TYP.)
7. EXCESS FLOW OR INTERNAL VALVE. (TYP.)



LEGEND	(PI) PRESSURE GAUGE	(TC) TEMPERATURE CONTROLLER	(ZISS) PROOF OF CLOSURE SWITCH WITH LOCAL INDICATION	◇ BALL VALVE	◇ BUTTERFLY VALVE	◇ PNEUMATIC ACTUATOR	◇ PRESSURE REGULATOR (INTERNAL SENSING)
WATER/GLYCOL LINE	(PT) PRESSURE TRANSMITTER	(LSL) LOW LEVEL SWITCH	(XIT) GAS LEAK MONITOR	◇ CHECK VALVE	◇ RELIEF VALVE	◇ PNEUMATIC CONTROLLER	◇ PRESSURE REGULATOR (EXTERNAL SENSING)
N2/AIR LINE	(PDT) DIFFERENTIAL PRESSURE TRANSMITTER	(PSL) LOW PRESSURE SWITCH	(HSS) ESD MUSHROOM BUTTON	◇ GLOBE VALVE	◇ STRAINER	◇ ELECTRO PNEUMATIC CONTROLLER	◇ DIFFERENTIAL PRESSURE REGULATOR
MIXED GAS LINE	(TI) THERMOMETER	(PSH) HIGH PRESSURE SWITCH	(HS) HAND SWITCH	◇ NEEDLE VALVE	◇ DOUBLE DOOR WAFER CHECK VALVE	◇ MANUAL ACTUATOR	◇ POM VALVE
LPG VAPOR LINE	(TT) TEMPERATURE TRANSMITTER	(TIT) TEMPERATURE TRANSMITTER WITH LOCAL INDICATION	(BSE) BURNER FLAME DETECTOR	◇ PLUG VALVE	◇ GATE OR MISC. VALVE	◇ MOTOR ACTUATOR	
LPG LIQUID LINE	(TSH) HIGH TEMPERATURE SWITCH	(TSH) HIGH TEMPERATURE SWITCH	(TSH) HIGH TEMPERATURE SWITCH	◇ 3-WAY VALVE	◇ ANGLE VALVE	◇ SOLENOID ACTUATOR	
ELECTRICAL							
PNEUMATIC SIGNAL							
STEAM LINES							

1 PROPANE FLOW DIAGRAM
Scale: NONE

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NO.	DATE	REV.	ISSUED FOR BIDDING	MAF	APFD
0	01/20/20				

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
MECHANICAL
PROPANE FLOW DIAGRAM

SCALE	AS NOTED
PREPARED BY	SMF
CHECKED BY	MDR
APPROVED BY	MAF
PROJECT NO.	4177.009
DRAWING NO.	

M-602

STEAM BOILER SCHEDULE															
ITEM NO.	BOILER TYPE	FUEL TYPE	NOMINAL SIZE	GROSS OUTPUT (#/HR)	MIN HEATING SURFACE AREA	FUEL TO STEAM EFFICIENCY AT FIRING RATES (NATURAL GAS)				FLUE VENT DIA	BLOWER HP	VOLTAGE	BASIS OF DESIGN		NOTES
						100%	75%	50%	25%				MANUFACTURER	MODEL	
B-1	3-PASS FIRETUBE	NATURAL GAS	200 BHP	6,900	1000 S.F.	82.7%	82.9%	83.0%	82.5%	20"	10	460/3/60	SUPERIOR	SUPER SEMINOLE X6-5-1000-S150	1,2,3,4,5,6,7,8,9,10,11,12
B-2	3-PASS FIRETUBE	NATURAL GAS	200 BHP	6,900	1000 S.F.	82.7%	82.9%	83.0%	82.5%	20"	10	460/3/60	SUPERIOR	SUPER SEMINOLE X6-5-1000-S150	1,2,3,4,5,6,7,8,9,10,11,12
B-3	3-PASS FIRETUBE	NATURAL GAS	200 BHP	6,900	1000 S.F.	82.7%	82.9%	83.0%	82.5%	20"	10	460/3/60	SUPERIOR	SUPER SEMINOLE X6-5-1000-S150	1,2,3,4,5,6,7,8,9,10,11,12

- NOTES:
- PROVIDE 150 PSIG BOILER WITH 125 PSIG ASME RELIEF VALVES, 100 PSIG OPERATING PRESSURE.
 - PROVIDE VFD BURNER CONTROL WITH TOUCHSCREEN CONTROL PANEL & BACnet/IP COMMUNICATIONS.
 - PROVIDE MODULATING LINKAGELESS BURNER CONTROL WITH 10:1 TURN-DOWN.
 - PROVIDE LOCKABLE SINGLE POINT POWER WITH FUSED DISCONNECT SWITCH.
 - PROVIDE 250# NON-RETURN VALVE AND STEAM HEADER SPOOL PIECE.
 - PROVIDE FEEDWATER CONTROL VALVE.
 - PROVIDE BLOWDOWN VALVE PACKAGE.
 - FIELD INSTALLED ITEMS SHIPPED LOOSE WITH BOILER.
 - PROVIDE CSD-1 GAS TRAIN.
 - PROVIDE FACTORY START-UP AND TRAINING.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.
 - COORDINATE BOILER TRIM LOCATIONS WITH PLATFORM SUPPORTS SHOWN ON DRAWING M-102 AND S-101.

EXHAUST FAN SCHEDULE													
ITEM NO.	TYPE	MOUNTING	CFM	ESP (WC)	DRIVE	FAN RPM	MOTOR RATING	VOLTAGE	BASIS OF DESIGN		NOTES		
									MANUFACTURER	MODEL			
EF-1	CENTRIFUGAL	ROOF	4500	.50"	BELT	965	1 HP	208/3/60	GREENHECK	GB-200	1,2,5,7		
EF-2	PROPELLER	WALL	3000	.625"	DIRECT	1750	1/2 HP	120/1/60	GREENHECK	SE2	2,4,5,6,7		
EF-3	PROPELLER	WALL	2000	.50"	DIRECT	1750	1/2 HP	120/1/60	GREENHECK	SE2	2,4,5,6,7		

- NOTES:
- PROVIDE SLOPED ROOF CURB.
 - PROVIDE MOTOR OPERATED DAMPER.
 - PROVIDE MOTOR SIDE GUARD.
 - PROVIDE LOCAL DISCONNECT SWITCH.
 - PROVIDE SPEED CONTROLLER.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

STEAM UNIT HEATER SCHEDULE													
ITEM NO.	TYPE	HEATING (BTUH)	EAT	STEAM COIL LBS/HR	MOTOR HP	THROW (FEET)	VOLTAGE	BASIS OF DESIGN		NOTES			
								MANUFACTURER	MODEL				
UH-1	HORIZONTAL	130,000	60	132	5 PSIG	1/3	50	120/1/60	TRANE	UHS132	1,2,3		
UH-2	HORIZONTAL	20,000	60	22	5 PSIG	1/6	24	120/1/60	TRANE	UHS024	1,2,3		

- NOTES:
- PROVIDE UNIT MOUNTED NEC DISCONNECT SWITCH.
 - PROVIDE STEAM CONTROL VALVE AND WALL MOUNTED THERMOSTAT.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

BOILER BLOWDOWN TANK SCHEDULE													
ITEM NO.	DESIGN PSIG	DIMENSIONS DIA X H	CONNECTIONS (IN INCHES)					OPERATING WEIGHT (LBS)	BASIS OF DESIGN		NOTES		
			TANK INLET	TANK OUTLET	VENT	DRAIN	MAKEUP		MANUFACTURER	MODEL			
BDS-1	150 PSIG	16" x 60"	1.25	1	4	4	1.25	420	SUPERIOR	SBDS-1630-1.2544-AC	1,2,3,4,5		

- NOTES:
- MANUFACTURER TO INCLUDE AFTER COOLER TEMPERATURE REGULATING VALVE ASSEMBLY.
 - MANUFACTURER TO INCLUDE THERMOMETER, STRAINER AND CHECK VALVE.
 - MANUFACTURER TO INCLUDE ASME SECTION VIII DIV 1 CERTIFICATION (U-1A).
 - MANUFACTURER TO INCLUDE MOUNTING STAND.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

PACKAGED BOILER FEEDWATER SYSTEM (DEAERATOR, SURGE TANK AND PUMPS)																									
ITEM NO.	STEAM PRESSURE	DIMENSIONS L x W x H	DEAERATOR					SURGE / STORAGE					MAKEUP WATER					PUMPS				BASIS OF DESIGN			REMARKS
			CAPACITY LBS/HR	GALLONS	DESIGN PRESSURE	OPERATING PRESSURE	CAPACITY	DEAERATION	TYPE	GALLONS	DESIGN PRESSURE	CAPACITY	TYPE	GPM	PRESSURE	SERVICE	QUANTITY	TYPE	HP	GPM EACH	MAIN VOLTAGE	MANUFACTURER	MODEL		
DA-1	5 PSIG	160"x49"x146"	14,000	430	50 PSIG	5 PSIG	15 MINUTES	.005 CC/LITER	SPRAY	360	0 PSIG	12.5 MINUTES	ATMOSPHERIC	27.6	50 PSIG	BOILER FEED	3	CENTRIFUGAL	5	26	480/3/60	SUPERIOR	SSD014P155-125	1,2,3,4,5,6,7,8	
																TRANSFER	2	CENTRIFUGAL	3	55					

- NOTES:
- MANUFACTURER TO INCLUDE DA STEAM INLET PRV, ALL ACCESSORY TRIM, INSULATED TANK, STAND, PRE-PIPED PUMPS AND CONTROLS IN NEMA 12 ENCLOSURE AS REQUIRED FOR A PACKAGED SYSTEM.
 - MANUFACTURER TO INCLUDE SINGLE POINT PIPING AND ELECTRICAL CONNECTIONS, WITH DISCONNECT SWITCH, NON-FUSED.
 - MANUFACTURER TO INCLUDE STAINLESS STEEL SURGE TANK.
 - MANUFACTURER TO INCLUDE SCC MAKEUP AND TRANSFER VALVE ACCESSORIES AND CONTROL PANEL WITH TOUCHSCREEN.
 - MANUFACTURER TO INCLUDE VFD'S FOR ALL PUMPS.
 - PROVIDE FACTORY START-UP AND TRAINING.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.
 - FEEDWATER TANK ASSEMBLY LIKELY SHIPS IN 2 PARTS, ASSEMBLE IN FIELD.

SYNTHETIC NATURAL GAS (SNG) SYSTEM SCHEDULE															
ITEM NO.	VAPORIZER CAPACITY	WATER CAPACITY	DESIGN TEMP (VAPOR TUBE)	DESIGN PRESS. (VAPOR TUBE)	TEST PRESS. (VAPOR TUBE)	LIQUID INLET CONNECTION	BURNER TYPE/CAPACITY	VAPOR/AIR MIXER CAPACITY	NUMBER OF VENTURIS	SURGE TANK CAPACITY	MIXGAS OUTLET CONNECTION	ELECTRICAL REQUIREMENTS	BASIS OF DESIGN		NOTES
													MANUFACTURER	MODEL	
SNG-1	258 GAL/H LPG @ 0°F	165 GAL	65°F	250 PSIG	375 PSIG	1" 300# RAISED FACE FLANGE	FORCED DRAFT POWER BURNER WITH ELECTRIC BLOWER / 310,000 BTU/H	20 MILLION BTU/H (NOMINAL)	2 x 10 MMBTU/H	120 GALLON (HORIZONTAL)	3" 150# RAISED FACE FLANGE	208/1/60 25A	ALTERNATE ENERGY SYSTEMS	WB-258/HVS-20MM	1,2,3,4,5,6,7,8,9,10

- NOTES:
- VAPORIZING TUBE CONSTRUCTION SHALL CONFORM TO ASME BOILER & PRESSURE VESSEL CODE, SECTION VIII, DIVISION 1, AND CONFORM TO LATEST EDITION OF NFPA #58.
 - STANDARD SAFETY FEATURES SHALL INCLUDE IGNITION FAILURE SAFETY SHUT-DOWN, LOW WATER LEVEL CUTOFF, HIGH WATER BATH TEMPERATURE CUTOFF, "SMART" LIQUID CARRYOVER PROTECTION, PRESSURE RELIEF VALVE PROTECTION (VAPOR TUBE), PRESSURE RELIEF VALVE PROTECTION (BURNER TRAIN), LOW BURNER GAS PRESSURE, HIGH BURNER GAS PRESSURE, LOW VAPOR PRESSURE, HIGH VAPOR PRESSURE, LOW MIXED GAS PRESSURE, HIGH MIXED GAS PRESSURE AND PRESSURE RELIEF VALVE PROTECTION (SURGE TANK).
 - CONTROL PANEL SHALL BE PROGRAMMABLE LOGIC CONTROLLER (PLC) WITH COLOR LCD DISPLAY WITH TOUCHSCREEN OPERATOR INTERFACE.
 - PROVIDE CONTROL POWER TRANSFORMER FOR CONTROL PANEL.
 - PROVIDE UNINTERRUPTED POWER SUPPLY (UPS) FOR SNG CONTROL PANEL ON SNG SKID.
 - PROVIDE INITIAL CHARGE OF HEAT TRANSFER SOLUTION.
 - PROVIDE CONTROL ROOM HEATER WITH THERMOSTAT.
 - PROVIDE GAS LEAK MONITOR IN CONTROL ROOM WITH WARNING ALARM AND SHUT-DOWN RELAYS.
 - INCLUDE START-UP AND TRAINING FOR SNG SYSTEM.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

LPG LIQUID TRANSFER PUMP SKID PACKAGE SCHEDULE													
ITEM NO.	SKID				PUMP				BASIS OF DESIGN		NOTES		
	CAPACITY	INLET	OUTLET	HP	SPEED	VOLTAGE	PUMP TYPE	MANUFACTURER	MODEL	MANUFACTURER		MODEL	
LTP-1	300 GAL/H LPG @ 0°F	2" FLEX, FLANGED	1" FLEX, FLANGED	2	3450 RPM	208/1/60	DIRECT DRIVE	CORKEN C12	AEP-05C	ALTERNATE ENERGY SYSTEMS	AEP-05C	1,2,3,4	

- NOTES:
- PROVIDE POWER SUPPLY AND CONTACTOR FROM SNG SKID CONTROL ROOM.
 - PROVIDE AUTOMATIC START/STOP BASED ON PRESSURE IN SNG STORAGE TANK.
 - PROVIDE SAME BRAND LIQUID TRANSFER PUMP SKID AS SNG SYSTEM.
 - PROVIDE BASIS OF DESIGN OR APPROVED EQUAL.

MECHANICAL / HVAC SYMBOL LEGEND

	ITEM TO DEMOLISH VALVE		MOTOR OPERATED DAMPER
	BALL VALVE		CENTRIFUGAL PUMP
	BUTTERFLY VALVE		HIGH PRESSURE STEAM
	THREE WAY VALVE		MEDIUM PRESSURE STEAM
	ANGLE VALVE		LOW PRESSURE STEAM
	GLOBE VALVE		HIGH PRESSURE CONDENSATE
	PLUG VALVE		MEDIUM PRESSURE CONDENSATE
	BALANCING VALVE		LOW PRESSURE CONDENSATE
	MOTOR OPERATED VALVE		MAKE-UP WATER
	MOTOR OPERATED THREE-WAY VALVE		VENT PIPING
	CHECK VALVE		NATURAL GAS
	PRESSURE REDUCING VALVE		LP GAS
	STRAINER		EQUIPMENT DESIGNATION
	STRAINER W/ BLOW OFF		CONNECTION TO EXISTING
	RELIEF VALVE		POINT OF DISCONNECTION
	AIR VENT - MANUAL		AIR FLOW
	AIR VENT, AUTOMATIC		G.C. GENERAL CONTRACTOR
	PRESSURE GAUGE W/ GAUGE COCK		E.C. ELECTRICAL CONTRACTOR
	THERMOMETER		M.C. MECHANICAL CONTRACTOR
	PIPING FLEXIBLE CONNECTION		P.C. PLUMBING CONTRACTOR
	REDUCER		
	UNION		
	THERMOSTAT		
	OUTSIDE AIR SENSOR		
	PIPING UP		
	PIPING DOWN		
	PHOTO ORIENTATION		

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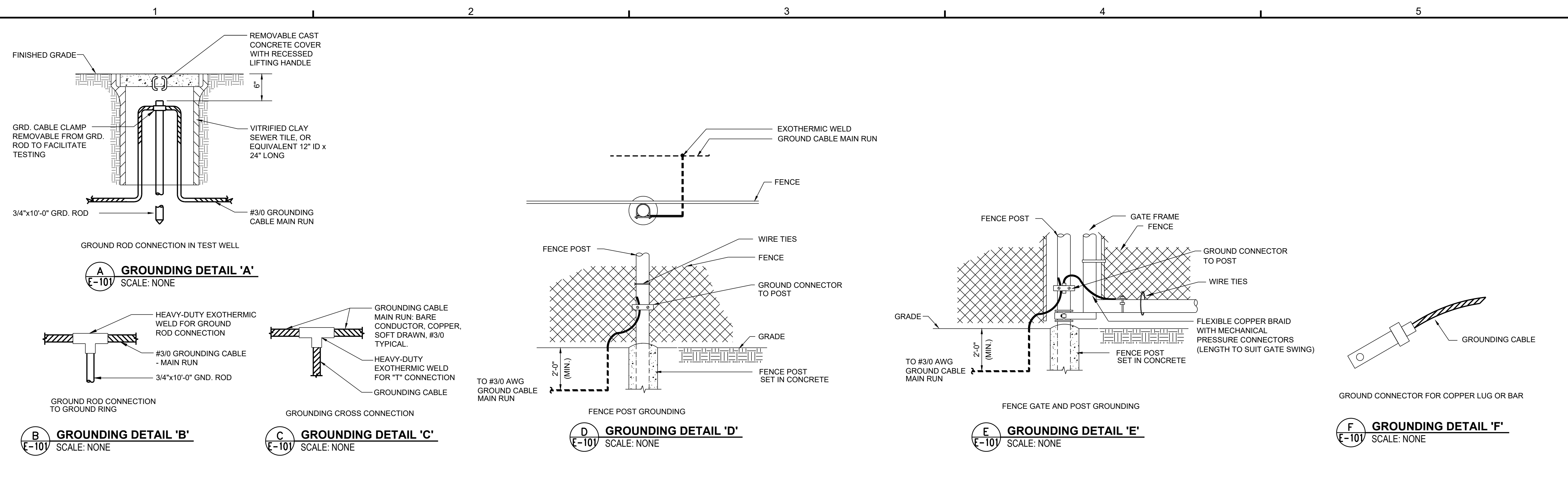
MAF	APFD
ISSUED FOR BIDDING	ISSUED FOR REVISION
0	REV.
01/20/20	DATE

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
MECHANICAL
LEGEND, SCHEDULES AND DETAILS

SCALE: AS NOTED
PREPARED BY: SMF
CHECKED BY: MDR
APPROVED BY: MAF

PROJECT NO: 1177.009
DRAWING NO: M-701

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE MECHANICAL CONTRACT EXCEPT AS NOTED OTHERWISE.



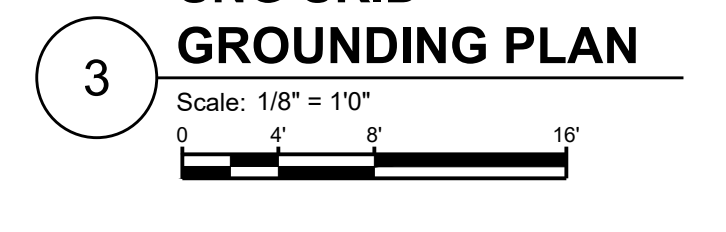
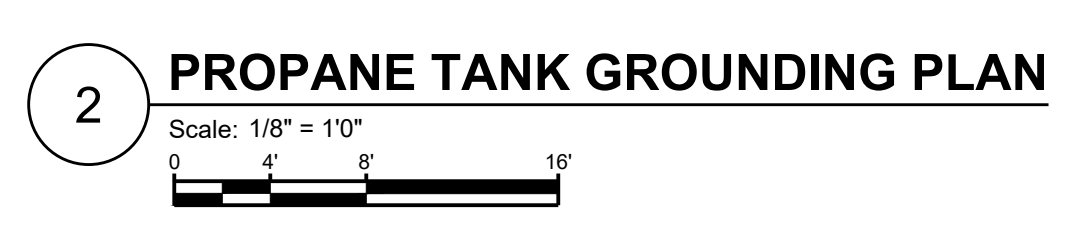
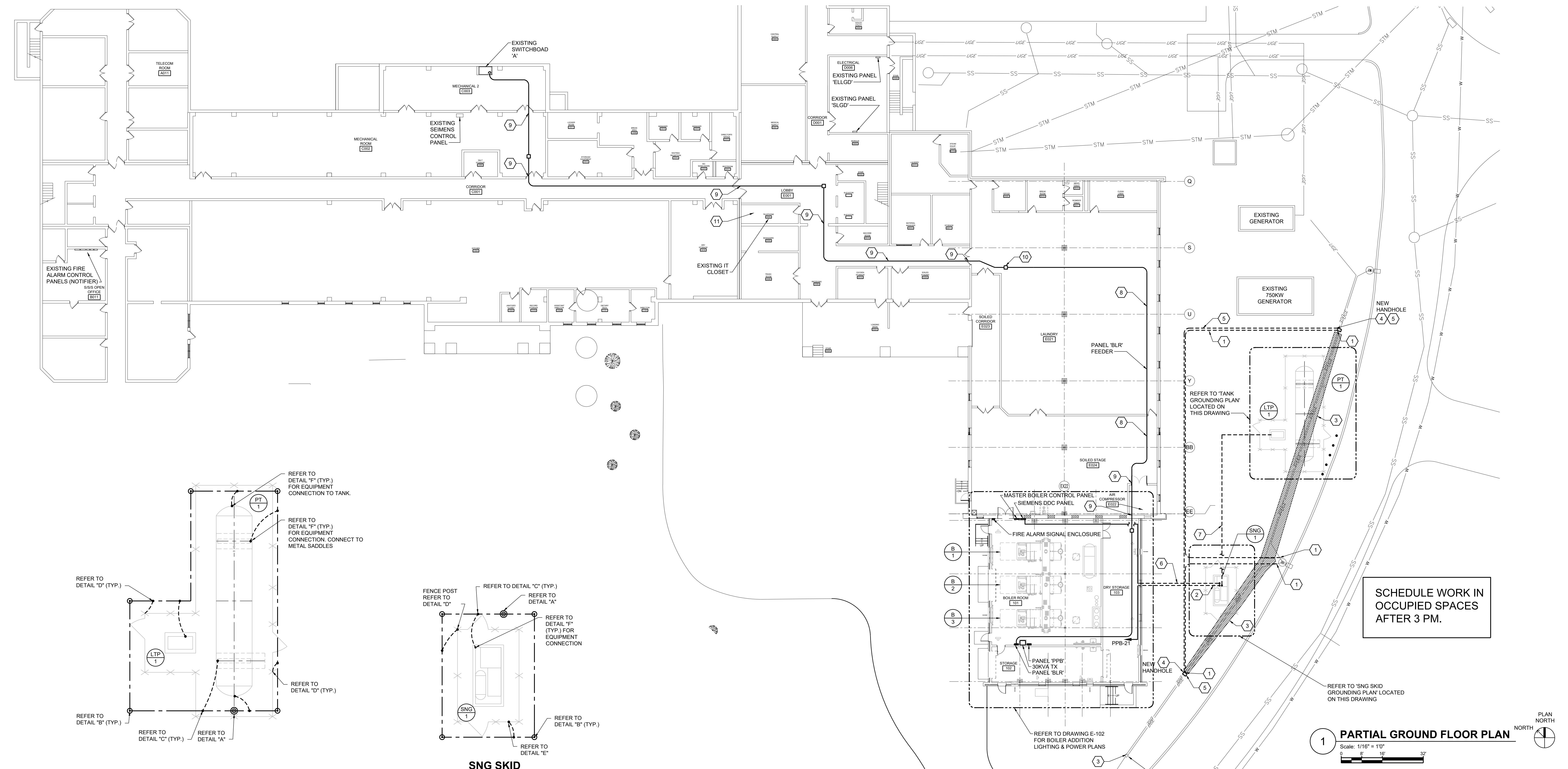
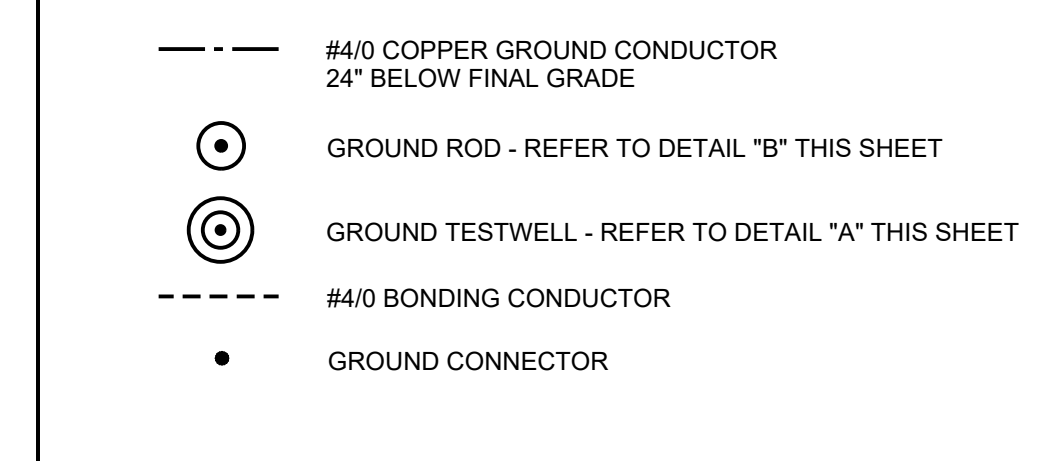
NEW WORK KEYNOTES

- PULL EXISTING CONDUCTORS FROM LIGHT POLE HANDHOLE TO LIGHT POLE HANDHOLE. INTERCEPT EXISTING UNDERGROUND CONDUIT AND RE-ROUTE NEW 1" PVC CONDUITS @ 24" BELOW FINAL GRADE TO ACCOMMODATE NEW CONSTRUCTION OF PROPANE TANK AND VAPORIZER EQUIPMENT PADS. REMOVE EXISTING CONDUITS AT NEW EQUIPMENT PAD AREAS. PROVIDE NEW CONDUCTORS FOR SITE LIGHTING 3 #8 & 1 #8 IN 1" CONDUIT AT NEW ROUTING SHOWN.
- CONNECT VAPORIZER CONTROL PANEL TO CIRCUIT SHOWN. PROVIDE CLASS 1 DIVISION 1 CONDUIT SEALING FITTINGS. CONNECT PROPANE PUMP LTP-1 TO VAPORIZER CONTROL PANEL WITH 2 #10 AND 1 #10 GRD. 1" C.
- PULL EXISTING CONDUCTORS FROM CONDUIT SCHEDULED FOR DEMOLITION FROM NEW HANDHOLE TO NEW HANDHOLE. EXISTING ELECTRICAL HANDHOLE TO THIS POINT. REMOVE CONDUITS TO ACCOMMODATE NEW CONSTRUCTION.
- PROVIDE NEW 12"x18" FRP HANDHOLE AND ROUTE NEW 1-1/4" PVC CONDUIT @ 24" BELOW FINAL GRADE FOR EXISTING SITE LIGHTING TO ACCOMMODATE NEW CONSTRUCTION AND EQUIPMENT PADS. REMOVE EXISTING CONDUITS AT NEW EQUIPMENT PAD AREAS. PULL EXISTING CONDUCTORS FROM NEW HANDHOLE TO NEW HANDHOLE.
- PROVIDE NEW CONDUCTORS FOR SITE LIGHTING FROM NEW HANDHOLE TO NEW HANDHOLE. 12 #8 IN 1-1/4" CONDUIT AT NEW ROUTING SHOWN FOR EXISTING SITE LIGHTING BRANCH CIRCUITS. CIRCUIT FROM PANEL 'SLGD' IN ELECTRICAL ROOM D006.
- PROVIDE CONDUIT WITH CAT5e CABLE FROM VAPORIZER CONTROL ROOM TO SIEMENS DDC PANEL.
- PROVIDE CLASS 1 DIVISION 1 CONDUIT SEALING FITTINGS. CONNECT PROPANE PUMP LTP-1 TO VAPORIZER CONTROL PANEL WITH 2 #10 AND 1 #10 GRD. 1" C FOR POWER AND 6 #12 FOR CONTROL. REFER TO MANUFACTURERS FIELD WIRING SCHEMATICS FOR MORE INFORMATION.
- INSTALL CONDUIT IN CEILING STRUCTURE AT 16'-0" A.F.F. IN THIS AREA.
- PENETRATE WALL AND FIRESTOP WALL PENETRATION.
- SUGGESTED LOCATION FOR PULL BOX (TYPICAL).
- CONNECT TO A SPARE PORT ON THE HEIMS IT NETWORK HUB AND PATH THE NEW SIEMENS CONTROL PANEL TO THE EXISTING SIEMENS DDC SYSTEM.

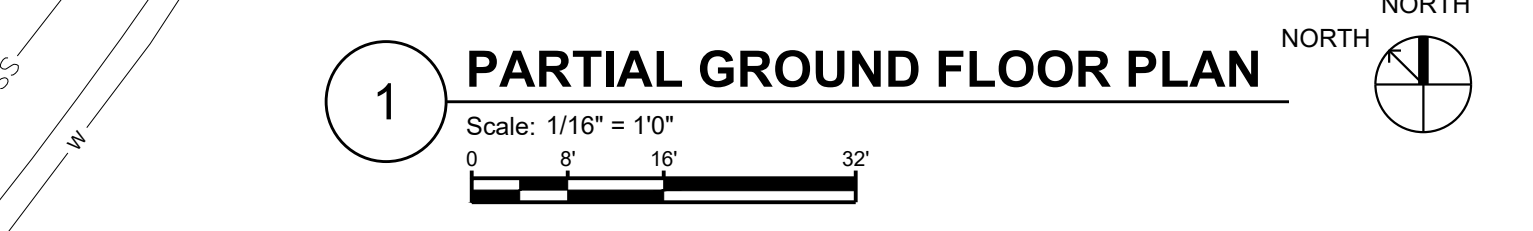
GENERAL SHEET NOTES

- COORDINATE WORK SCHEDULE WITH MECHANICAL CONTRACTOR.
- REFER TO DRAWING E-102 FOR ENLARGED PLANS.
- PROVIDE FIRE CAULKING AT ALL WALL PENETRATIONS FOR CONDUIT.
- SCHEDULE ELECTRICAL WORK IN OCCUPIED SPACES (LAUNDRY, CORRIDORS) AFTER 3 PM.

GROUNDING LEGEND



SCHEDULE WORK IN OCCUPIED SPACES AFTER 3 PM.



THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE ELECTRICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

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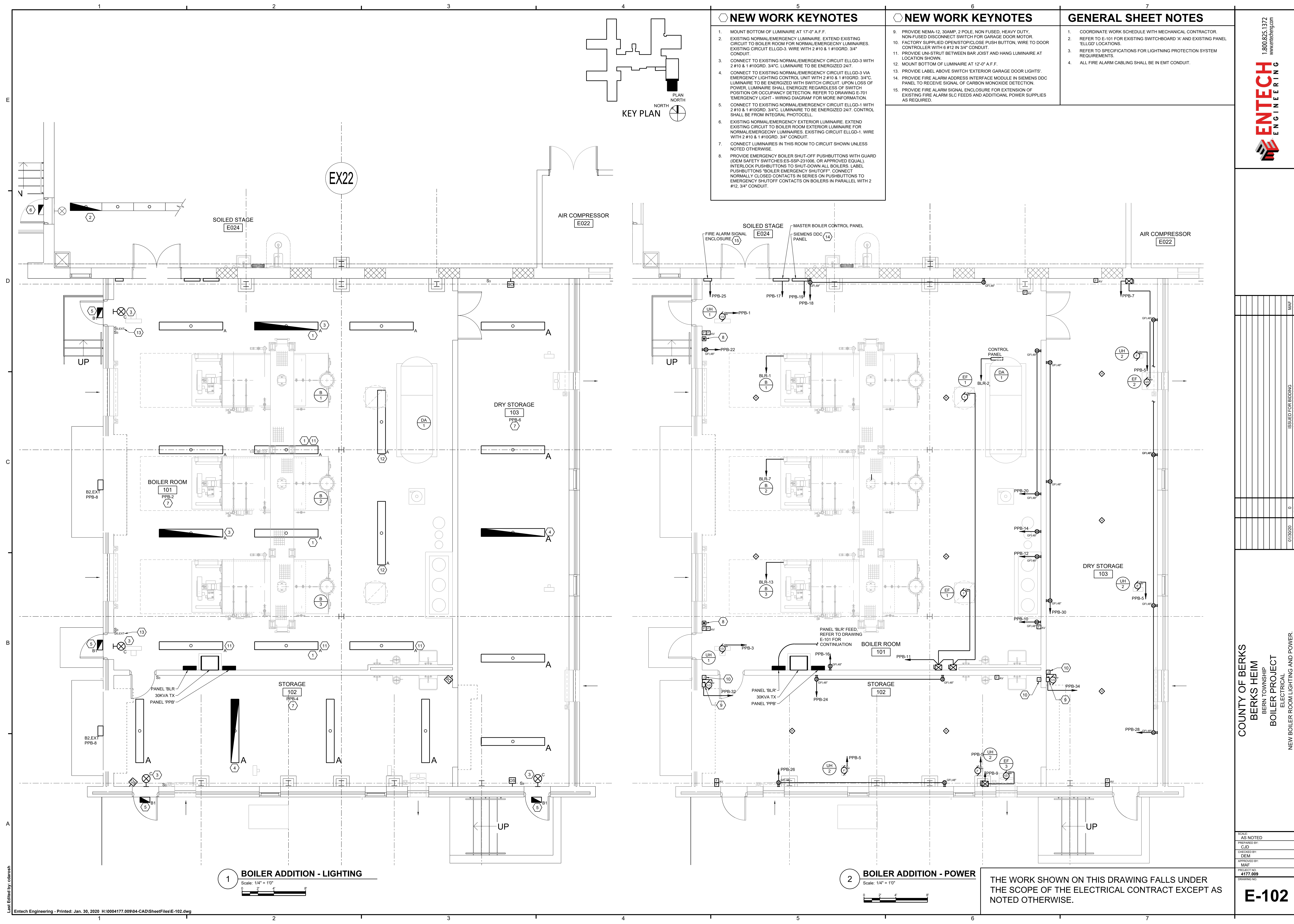
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ENGINEERING

NO.	DATE	REV.	ISSUED FOR BIDDING	MAF	APPD
0	01/20/20	0			

**COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
ELECTRICAL
PARTIAL SITE PLAN**

SCALE: AS NOTED
PREPARED BY: CJD
CHECKED BY: DEM
DESIGNED BY: MAF
APPROVED BY: MAF

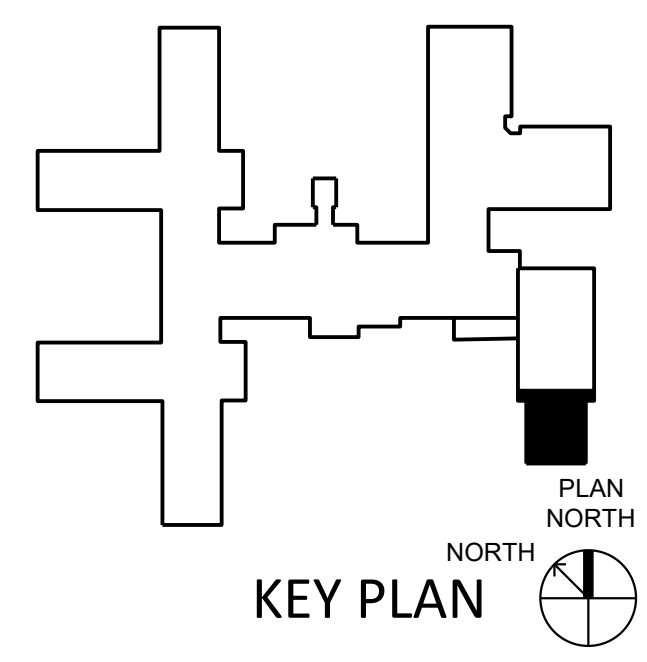
PROJECT NO: 4177.009
DRAWING NO: **E-101**



- ### NEW WORK KEYNOTES
1. MOUNT BOTTOM OF LUMINAIRE AT 17'-0" A.F.F.
 2. EXISTING NORMAL EMERGENCY LUMINAIRE. EXTEND EXISTING CIRCUIT TO BOILER ROOM FOR NORMAL EMERGENCY LUMINAIRES. EXISTING CIRCUIT ELLGD-3. WIRE WITH 2 #10 & 1 #10GRD. 3/4" CONDUIT.
 3. CONNECT TO EXISTING NORMAL EMERGENCY CIRCUIT ELLGD-3 WITH 2 #10 & 1 #10GRD. 3/4" LUMINAIRE TO BE ENERGIZED 24/7.
 4. CONNECT TO EXISTING NORMAL EMERGENCY CIRCUIT ELLGD-3 VIA EMERGENCY LIGHTING CONTROL UNIT WITH 2 #10 & 1 #10GRD. 3/4" LUMINAIRE TO BE ENERGIZED WITH SWITCH CIRCUIT. UPON LOSS OF POWER, LUMINAIRE SHALL ENERGIZE REGARDLESS OF SWITCH POSITION OR OCCUPANCY DETECTION. REFER TO DRAWING E-701 'EMERGENCY LIGHT - WIRING DIAGRAM' FOR MORE INFORMATION.
 5. CONNECT TO EXISTING NORMAL EMERGENCY CIRCUIT ELLGD-1 WITH 2 #10 & 1 #10GRD. 3/4" LUMINAIRE TO BE ENERGIZED 24/7. CONTROL SHALL BE FROM INTEGRAL PHOTOCELL.
 6. EXISTING NORMAL EMERGENCY EXTERIOR LUMINAIRE. EXTEND EXISTING CIRCUIT TO BOILER ROOM EXTERIOR LUMINAIRE FOR NORMAL EMERGENCY LUMINAIRES. EXISTING CIRCUIT ELLGD-1. WIRE WITH 2 #10 & 1 #10GRD. 3/4" CONDUIT.
 7. CONNECT LUMINAIRES IN THIS ROOM TO CIRCUIT SHOWN UNLESS NOTED OTHERWISE.
 8. PROVIDE EMERGENCY BOILER SHUT-OFF PUSHBUTTONS WITH GUARD (IDEM SAFETY SWITCHES ES-SSP-231006, OR APPROVED EQUAL). INTERLOCK PUSHBUTTONS TO SHUT-DOWN ALL BOILERS. LABEL PUSHBUTTONS 'BOILER EMERGENCY SHUT-OFF'. CONNECT NORMALLY CLOSED CONTACTS IN SERIES ON PUSHBUTTONS TO EMERGENCY SHUT-OFF CONTACTS ON BOILERS IN PARALLEL WITH 2 #12, 3/4" CONDUIT.

- ### NEW WORK KEYNOTES
9. PROVIDE NEMA-12, 30AMP, 2 POLE, NON FUSED, HEAVY DUTY, NON-FUSED DISCONNECT SWITCH FOR GARAGE DOOR MOTOR.
 10. FACTORY SUPPLIED OPEN/STOP/CLOSE PUSH BUTTON, WIRE TO DOOR CONTROLLER WITH 6 #12 IN 3/4" CONDUIT.
 11. PROVIDE UNI-STRUT BETWEEN BAR JOIST AND HANG LUMINAIRE AT LOCATION SHOWN.
 12. MOUNT BOTTOM OF LUMINAIRE AT 12'-0" A.F.F.
 13. PROVIDE LABEL ABOVE SWITCH 'EXTERIOR GARAGE DOOR LIGHTS'.
 14. PROVIDE FIRE ALARM ADDRESS INTERFACE MODULE IN SIEMENS DDC PANEL TO RECEIVE SIGNAL OF CARBON MONOXIDE DETECTION.
 15. PROVIDE FIRE ALARM SIGNAL ENCLOSURE FOR EXTENSION OF EXISTING FIRE ALARM SLC FEEDS AND ADDITIONAL POWER SUPPLIES AS REQUIRED.

- ### GENERAL SHEET NOTES
1. COORDINATE WORK SCHEDULE WITH MECHANICAL CONTRACTOR.
 2. REFER TO E-101 FOR EXISTING SWITCHBOARD 'A' AND EXISTING PANEL 'ELLGD' LOCATIONS.
 3. REFER TO SPECIFICATIONS FOR LIGHTNING PROTECTION SYSTEM REQUIREMENTS.
 4. ALL FIRE ALARM CABLING SHALL BE IN EMT CONDUIT.



1 BOILER ADDITION - LIGHTING
Scale: 1/4" = 1'0"

2 BOILER ADDITION - POWER
Scale: 1/4" = 1'0"

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE ELECTRICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

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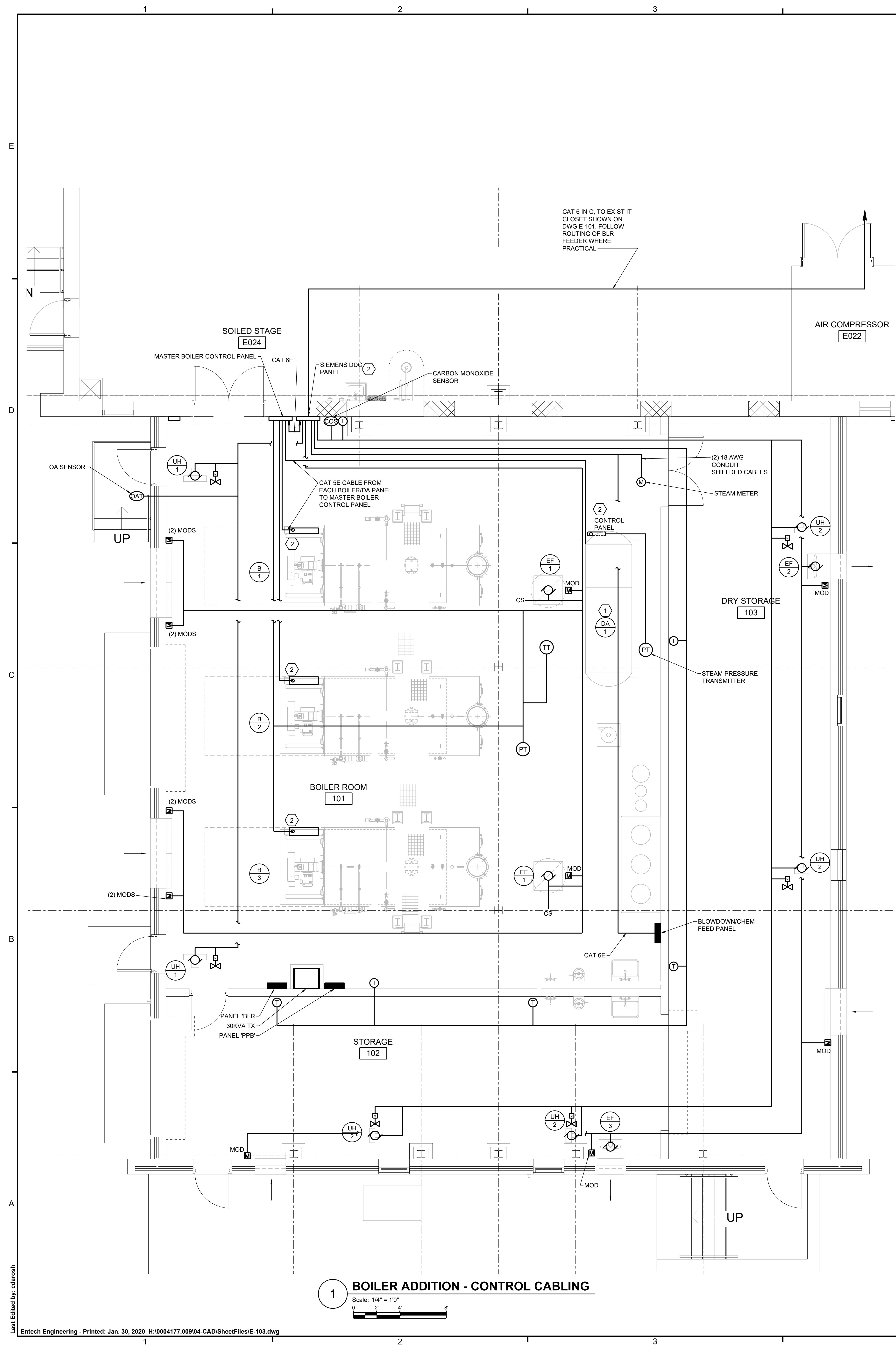
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DATE	REV	ISSUED FOR	BY
01/20/20	0	ISSUED FOR BIDDING	MAF

COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
ELECTRICAL
NEW BOILER ROOM LIGHTING AND POWER.

SCALE:	AS NOTED
PREPARED BY:	CJD
CHECKED BY:	DEM
APPROVED BY:	MAF
PROJECT NO:	4177.009
DRAWING NO:	E-102

Last Edited by: cadmoach
Entech Engineering - Printed: Jan. 30, 2020 H:\0004177.009\04-CAD\SheetFiles\E-102.dwg



- ### NEW WORK KEYNOTES
- DEAERATOR ASSEMBLY WILL SHIP IN TWO PIECES. PROVIDE CONDUIT AND WIRING CONNECTIONS, FOR FIELD WIRING OF DEAERATOR ASSEMBLY AND TRIM SHIPPED LOOSE. IN ACCORDANCE WITH DEAERATOR SHOP DRAWINGS FURNISHED BY M.C. DEAERATOR AND TRIM WILL BE FURNISHED AND MOUNTED BY M.C. PROVIDE A \$2,000 ALLOWANCE IN THE ELECTRICAL CONTRACT BID PRICE FOR WIRING AND CONDUIT CONNECTIONS. ALLOWANCE SHALL COVER BOTH MATERIALS AND LABOR.
 - PROVIDE 3/4" CONDUIT WITH CAT 5E CABLING FROM CONTROL PANEL TO MASTER BOILER CONTROL PANEL.
- ### GENERAL SHEET NOTES
- COORDINATE WORK SCHEDULE WITH MECHANICAL CONTRACTOR.
 - PROVIDE CONTROL CONDUIT AND CABLING BETWEEN ALL CONTROL DEVICES AND CONTROL PANELS INCLUDED ON THE DDC SYSTEM POINT LIST ON DRAWING M-701. CONTROL DEVICES AND CONTROL PANELS WILL BE FURNISHED AND MOUNTED BY M.C.
 - EXCEPT AS OTHERWISE NOTED, PROVIDE 18 AWG 2-CONDUCTOR SHIELDED PLENUM RATED CABLE FROM EACH DEVICE TO CONTROL PANEL.
 - FOR BIDDING PURPOSES, ASSUME 1" CONTROL CONDUIT SERVING MULTIPLE POINTS AND 3/4" BRANCH CONDUITS TO INDIVIDUAL POINTS.
 - COORDINATE CONTROL WIRING REQUIREMENTS WITH CONTROL WIRING SHOP DRAWINGS TO BE FURNISHED BY SIEMENS.
 - INSTALL CONDUIT AND CONTROL WIRING IN ACCORDANCE WITH THE DIVISION 26 SPECIFICATIONS SECTIONS.
 - CONNECT THE NEW STEAM METER LOCATED AT THE OPPOSITE END OF THE LAUNDRY TO THE SIEMENS DDC SYSTEM.

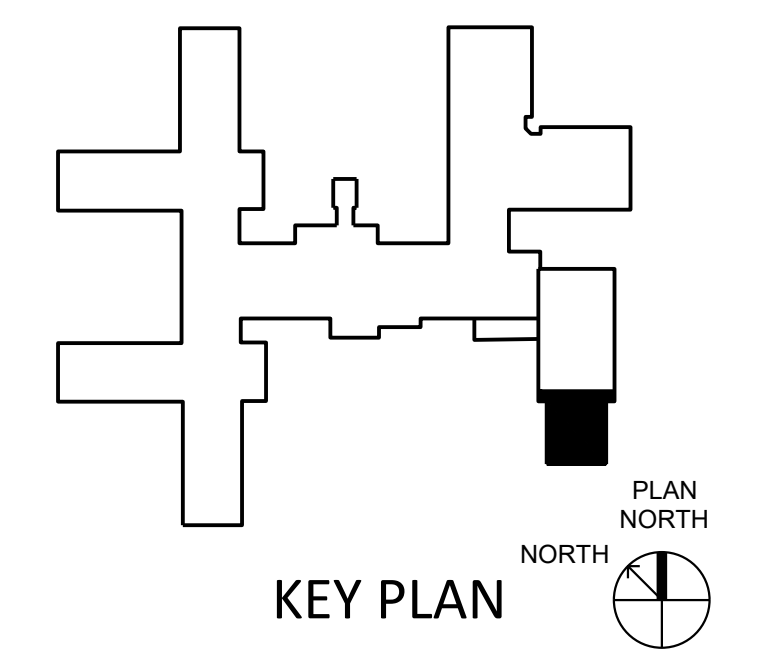
- ### DDC LEGEND
- THERMOSTAT
 - CONTROL VALVE
 - MOTOR
 - CS CURRENT SWITCH
 - MOD MOTOR OPERATED DAMPER
 - PT STEAM PRESSURE TRANSMITTER
 - TT TEMPERATURE TRANSMITTER

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COUNTY OF BERKS
BERKS HEIM
BERN TOWNSHIP
BOILER PROJECT
ELECTRICAL
NEW BOILER ROOM CONTROL WIRING



1 BOILER ADDITION - CONTROL CABLING
Scale: 1/4" = 1'0"

THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE ELECTRICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

SCALE: AS NOTED
PREPARED BY: CJD
CHECKED BY: DEM
APPROVED BY: MAF
PROJECT NO: 4177.009
DRAWING NO: **E-103**

Last Edited by: cadroch

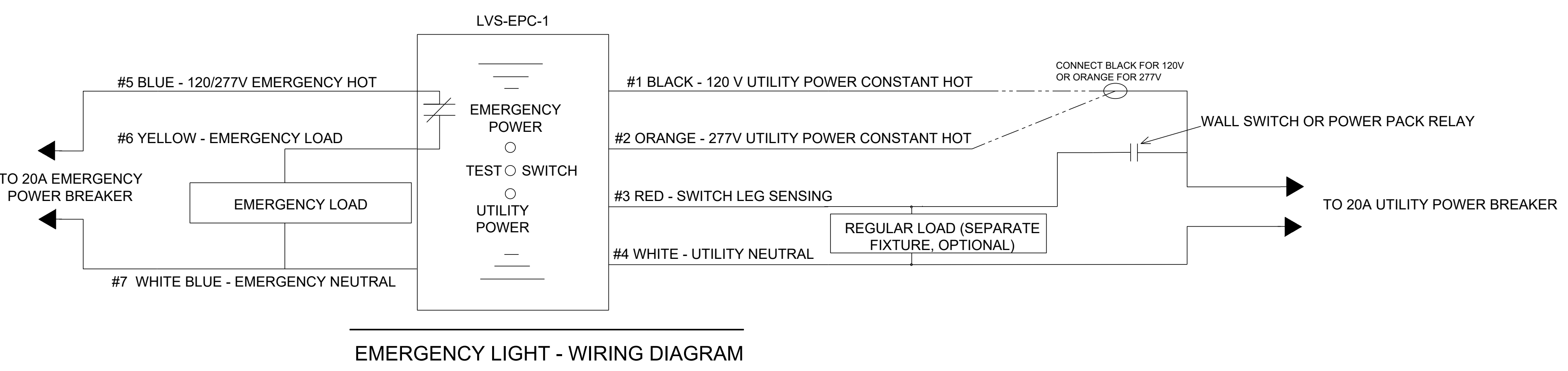
PANEL SCHEDULE 'BLR'																			
CKT #	LOAD DESCRIPTION	FEEDER	GRD	COND.	AMPS	POLE	WATTS PER PHASE						POLE	AMPS	COND.	GRD	FEEDER	LOAD DESCRIPTION	CKT #
							A	B	C	A	B	C							
1	BOILER #1 (B-1)	3	10	10	3/4	30	3	4100									DEAERATOR/SURGE (DS-1)	2	
3								4100										4	
5								4100										6	
7	BOILER #2 (B-2)	3	10	10	3/4	30	3	4100									SPARE	8	
9								4100										10	
11								4100										12	
13	BOILER #3 (B-3)	3	10	10	3/4	30	3	4100									SPARE	14	
15								4100										16	
17								4100										18	
19	30 KVA XFMR FOR PNL 'PPB'	3	6	10	3/4	50	3	10000									SPACE	20	
21								10000									SPACE	22	
23								10000									SPACE	24	
25	SPARE																SPACE	26	
27																	SPACE	28	
29																	SPACE	30	
31	SPARE																SPACE	32	
33																	SPACE	34	
35																	SPACE	36	
37	SPACE																SPACE	38	
39	SPACE																SPACE	40	
41	SPACE																SPACE	42	
TOTAL KILOWATTS PER PHASE							22300	22300	22300	9972	9972	9972							
TOTAL A @ WATTS		32272	TOTAL A @ AMPS		116.51	VOLTAGE		277/480	30.4W		LOCATION		EQUIP RM G4						
TOTAL B @ WATTS		32272	TOTAL B @ AMPS		116.51	AMPACITY		225A			MOUNTING		SURFACE						
TOTAL C @ WATTS		32272	TOTAL C @ AMPS		116.51	AIC RATING		85,000											
TOTAL 3 @ WATTS		96816	TOTAL 3 @ AMPS		116.45														
REMARKS: PROVIDE WARNING LABEL "WARNING POTENTIAL ARC-FLASH HAZARDS EXIST WHILE WORKING ON THIS ENERGIZED EQUIPMENT" ON SURFACE OF PANEL.																			
FED FROM SWBD 'A' IN MECHANICAL #2 C002A																			

PANEL SCHEDULE 'PPB'																			
CKT #	LOAD DESCRIPTION	FEEDER	GRD	COND.	AMPS	POLE	WATTS PER PHASE						POLE	AMPS	COND.	GRD	FEEDER	LOAD DESCRIPTION	CKT #
							A	B	C	A	B	C							
1	UNIT HTR. BLR RM 101 (UH-1) NORTH	2	12	12	3/4"	20	1	865									LIGHTING BOILER ROOM 101	2	
3	UNIT HTR. BLR RM 101 (UH-1) SOUTH	2	12	12	3/4"	20	1	865									LIGHTING STORAGE ROOM 102	4	
5	UNIT HTRS. RM 102, 103 (UH-2)	2	12	12	3/4"	20	1	64									LIGHTING STORAGE ROOM 103	6	
7	EXHAUST FAN STRGE RM 103 (EF-2)	2	12	12	3/4"	20	1	1200									LIGHTING EXTERIOR GARAGE DOORS	8	
9	EXHAUST FAN STRGE RM 102 (EF-3)	2	12	12	3/4"	20	1	865									REC BOILER RM 101, CHEM FEED	10	
11	EXHAUST FANS BOILER RM 101 (EF-1)	3	12	12	3/4"	20	3	1152									REC BOILER RM 101, CHEM FEED	12	
13								1152									REC BOILER RM 101, WATER SOFTNR	14	
15								1152									REC PANELBOARDS RM 101	16	
17	BOILER CONTROL	2	12	12	3/4"	20	1	150									REC CONTROL PANELS BLR RM 101	18	
19	DDC CONTROL	2	12	12	3/4"	20	1	150									REC EAST WALL BOILER RM 101	20	
21	VAPORIZER (SNG-1)	2	10	10	3/4"	25	2	2200									REC WEST WALL BOILER RM 101	22	
23								2200									REC NORTH WALL STORAGE RM 102	24	
25	FIRE ALARM SIGNAL ENCLOSURE	2	12	12	3/4"	20	1	200									REC SOUTH WALL STORAGE RM 102	26	
27	SPARE																REC EAST WALL STORAGE RM 103	28	
29	SPARE																REC WEST WALL STORAGE RM 103	30	
31	SPARE																EXTERIOR GARAGE DOOR	32	
33	SPARE																INTERIOR GARAGE DOOR	34	
35	SPACE																SPACE	36	
37	SPACE																SPACE	38	
39	SPACE																SPACE	40	
41	SPACE																SPACE	42	
TOTAL KILOWATTS PER PHASE							3567	5082	3566	2924	2304	1505							
TOTAL A @ WATTS		6491	TOTAL A @ AMPS		54.09	VOLTAGE		120/208	30.4W		LOCATION		EQUIP RM G4						
TOTAL B @ WATTS		7386	TOTAL B @ AMPS		61.55	AMPACITY		225A			MOUNTING		SURFACE						
TOTAL C @ WATTS		5071	TOTAL C @ AMPS		42.26	AIC RATING		22,000											
TOTAL 3 @ WATTS		18948	TOTAL 3 @ AMPS		52.59														
REMARKS: PROVIDE WARNING LABEL "WARNING POTENTIAL ARC-FLASH HAZARDS EXIST WHILE WORKING ON THIS ENERGIZED EQUIPMENT" ON SURFACE OF PANEL.																			
FED FROM PANEL 'BLR' BOILER ROOM 101 VIA 30KVA TRANSFORMER																			

LUMINAIRE SCHEDULE								
TYPE	MANUFACTURER	CATALOG NUMBER	LUMENS	WATTS	MTG.	VOLT.	RMK.	GENERAL DESCRIPTION
A	LITHONIA OR APPROVED EQUAL	FEM-L96-9000LM-IMAFD-WD-MVOLT-40K-80CRI-STSL	9,302	65	P	277	1,2	8" LED LINEAR VAPOR TIGHT, FIBERGLASS HOUSING, DEEP FROSTED ACRYLIC LENS
B1	LITHONIA OR APPROVED EQUAL	WDGEL-LED-P2-30K-80CRI-F-MVOLT-PE-DBXD	1,929	15	W.S	277	3,4	EXTERIOR WALL PACK W/ PHOTOCELL
B2	LITHONIA OR APPROVED EQUAL	WDGES-LED-P5-30K-80CRI-F-MVOLT-PE-DBXD	5,772	48	W.S	277	5	EXTERIOR WALL PACK W/ PHOTOCELL
C	LITHONIA OR APPROVED EQUAL	LQM-S-W-R-120/277	-	2	W.S	277	3	LED EXIT SIGN

MOUNTING LEGEND
 C = CEILING
 S = SURFACE
 W = WALL

REMARKS:
 1. MOUNT BOTTOM OF LUMINAIRE AT 15'-0" ABOVE FINISH FLOOR, UNLESS NOTED OTHERWISE. PROVIDE BEAM CLAMPS AT JOISTS WITH CHAIN OR AC TO LUMINAIRES, UNLESS NOTED OTHERWISE.
 2. COORDINATE EXACT MOUNTING LOCATIONS WITH NEW PIPING.
 3. CONNECT LUMINAIRE TO UN-SWITCHED SOURCE OF EXISTING EXTERIOR NORMAL/EMERGENCY CIRCUIT.
 4. MOUNT LUMINAIRE CENTERED ABOVE DOOR AT 8'-0" ABOVE FINISH FLOOR.
 5. MOUNT LUMINAIRE CENTERED ABOVE GARAGE DOOR AT 14'-6" ABOVE FINISH FLOOR.



GENERAL SHEET NOTES

1. REFER TO DRAWING E-101 FOR NEW PANEL LOCATIONS.

SHEET KEYNOTES

1. PROVIDE NEW 65KA, 3P, 250 AMP FRAME CIRCUIT BREAKER WITH 225 AMP TRIP IN SWITCHBOARD 'A' BLANK SPACE. LABEL BREAKER 'BOILER ROOM, PANEL 'BLR'. REFER TO DRAWING E-101 FOR SWITCHBOARD LOCATION AND SUGGESTED ROUTING. PROVIDE A 120VAC TO 240VAC POWER SUPPLY FOR THE BREAKER CATALOG NUMBER 85626. BREAKER NUMBER, JJA36250J53X. EXTEND 120VAC POWER FROM LOCAL RECEPTACLE CIRCUIT.

ELECTRICAL NOTES

- NO WORK SHALL BE PERFORMED ON ENERGIZED EQUIPMENT. DE-ENERGIZE LUMINAIRES, EQUIPMENT AND PANELBOARDS BEFORE NEW WORK IS PERFORMED. COORDINATE OUTAGES WITH OWNER 72 HOURS PRIOR TO DE-ENERGIZING.
- FABRICATE AND INSTALL ALL WORK IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC 2014), THE NATIONAL ELECTRICAL SAFETY CODE (NESC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), INTERNATIONAL BUILDING CODE (IBC), AMERICANS WITH DISABILITIES ACT (ADA), NECA STANDARD OF INSTALLATION, BOCA, ALL APPLICABLE STATE AND LOCAL CODES, GENERAL CONDITIONS AND SUPPLEMENTAL TERMS OF THE CONTRACT. ALL EQUIPMENT SHALL BE UNDERWRITERS LABORATORIES (U.L.) LISTED FOR ITS APPLICATION WHERE SUCH ITEMS ARE REQUIRED.
- MAINTAIN ACCESS TO EXISTING ELECTRICAL EQUIPMENT AND INSTALLATIONS WHICH ARE TO REMAIN ACTIVE DURING THE CONSTRUCTION PERIOD.
- ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES AND EQUIPMENT SHALL BE LABELED AND LISTED BY A CERTIFIED TESTING OR LABORATORY OR AGENCY.
- ALL CONTRACTORS AND SUB-CONTRACTORS SHALL BE RESPONSIBLE FOR THE PROPER PERFORMANCE OF THEIR WORK, COORDINATION WITH OTHER TRADES, MEANS AND METHODS OF CONSTRUCTION, AND SAFETY AND SECURITY WHILE ON SITE.
- PROTECT EXISTING PROPERTY DURING CONSTRUCTION. REPAIR OR REPLACE, WITHOUT ADDITIONAL CHARGE TO THE OWNER, ANY EXISTING WORK DAMAGED DURING THE COURSE OF CONSTRUCTION.
- THE CONTRACT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY, IN A GENERAL WAY, THE SCOPE OF THE WORK. THEY ARE NOT INTENDED TO ILLUSTRATE ALL CONDITIONS WHICH MAY BE ENCOUNTERED AT THE SITE.
- THE OWNER RESERVES THE RIGHT TO SALVAGE ANY ITEMS IDENTIFIED TO BE REMOVED. AT THE BEGINNING OF DEMOLITION WORK THE OWNER'S REPRESENTATIVE SHALL IDENTIFY ALL ITEMS TO BE SALVAGED.
- UPON PROJECT COMPLETION PROVIDE OWNER WITH DETAILED AS-BUILT DRAWINGS SHOWING CONDUIT ROUTINGS, LUMINAIRE LOCATIONS, JUNCTION BOXES, AND DEVICE LOCATIONS.
- PROVIDED SEPARATE NEUTRALS AND SEPARATE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. TERMINATE EACH GROUNDING CONDUCTOR ON A GROUNDING LUG, BUS, OR BUSHING.
- COORDINATE EXACT LOCATION OF ELECTRICAL CONNECTION POINT ON APPROVED MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN.

ELECTRICAL LEGEND

POWER
 □ EXISTING ELECTRICAL PANELBOARD
 ■ ELECTRICAL PANELBOARD

NEW DUPLEX RECEPTACLE (5-20R), PROVIDE TYPED LABEL ON EACH RECEPTACLE COUPLER W/PANELBOARD NAME AND CIRCUIT NUMBER. CLEAR LABEL W/ BLACK LETTER, 3/32" HIGH.

NO DENOTE-NEW OUTLET AT 18" #10-HIGH ABOVE FINISH FLOOR GFCH=GROUND FAULT CIRCUIT INTERRUPTER, ETR=EXISTING TO REMAIN

□ NEMA-12, NON-FUSED DISCONNECT
 □ NEMA-12, COMBINATION STARTER DISCONNECT

⊕ MOTOR, F= FRACTIONAL, #=HORSEPOWER

⊕ REPRESENTS MECHANICAL OR PLUMBING EQUIPMENT PROVIDED BY OTHERS. REFER TO MECHANICAL & PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

FIRE ALARM
 □ FIRE ALARM SYSTEM PULL STATION
 □ FIRE ALARM SYSTEM HEAT DETECTOR
 □ FIRE ALARM SYSTEM SMOKE DETECTOR
 □ FIRE ALARM SYSTEM DUCT DETECTOR
 □ FIRE ALARM HORN/STROBE WALL MOUNTED DEVICE

LIGHTING
 □ WALL, CORNER MOUNTED, WIRED MOTION SENSOR, MOUNT AT MINIMUM 8'-7" A.F.F.
 □ LUTRON: LOS-WDT-WHM OR APPROVED EQUAL

IN-WALL, SINGLE POLE SWITCH
 IN-WALL, THREE-WAY SWITCH

LUMINAIRE CONNECTED TO NORMAL POWER, TYPE AS INDICATED ON LUMINAIRE SCHEDULE.
 LUMINAIRE CONNECTED TO NORMAL/EMERGENCY POWER, TYPE AS INDICATED ON LUMINAIRE SCHEDULE.

CEILING MOUNTED EXIT SIGN, CONNECT TO N/E POWER SHOWN
 WALL MOUNTED EXIT SIGN, CONNECT TO N/E POWER SHOWN

ROOM NAME
 ROOM NUMBER
 CIRCUIT NUMBER, CONNECT LUMINAIRES IN ROOM TO CIRCUIT NUMBER SHOWN, UNLESS NOTED OTHERWISE.

FIRE ALARM SYSTEM NOTES

- SECURE THE SERVICES OF CSI COMMUNICATION SYSTEMS, INC. TO PROVIDE, COORDINATE, AND INSTALL DEVICES BASED ON CURRENT NFPA 72 CODE REQUIREMENTS, AND TO INITIALIZE AND STARTUP SYSTEM ONCE INSTALLED. SYSTEM PROVIDER SHALL BE RESPONSIBLE FOR FINAL SYSTEM DESIGN & OPERATION, PROGRAMMING EXISTING FIRE ALARM CONTROL PANEL AND ASSOCIATED EXISTING ANNUNCIATOR PANELS TO INCLUDE NEW FIRE ALARM SYSTEM DEVICES PROVIDED AS PART OF THIS PROJECT. ALL DEVICES SHALL BE ADDRESSABLE AND EASILY IDENTIFIED AT EACH PANEL IN ACCORDANCE WITH AUTHORITY HAVING JURISDICTION. ALL SOFTWARE UPGRADES SHALL BE INCLUDED WITH THE WORK OF THIS PROJECT TO ACCOMMODATE THE INSTALLATION OF NEW DEVICES.
- CONTACT INFORMATION:
 CSI COMMUNICATION SYSTEMS, INC.
 415 NORTH THIRD STREET
 ALLENTOWN, PA 18102
 BERKS HEIM, BOILER PROJECTION
- ALL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- DEVICES SHALL BE INSTALLED IN ALL AREAS REQUIRED BY THE APPROPRIATE NFPA 72 STANDARD, ALL APPLICABLE CODES, AND THE LOCAL AUTHORITY HAVING JURISDICTION.
- ALL FIRE ALARM PRODUCTS SHALL BE LISTED AND CLASSIFIED BY U.L., FM OR TESTING FIRM ACCEPTABLE TO AUTHORITY HAVING JURISDICTION AS SUITABLE FOR PURPOSE SPECIFIED AND INDICATED FOR FIRE ALARM SYSTEM APPLICATIONS FOR WHICH THEY ARE USED. DEVICES SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.
- INSTALLATION PERSONNEL SHALL BE SUPERVISED BY PERSONS WHO ARE QUALIFIED AND EXPERIENCED IN THE INSTALLATION, INSPECTION, AND TESTING OF FIRE ALARM SYSTEMS.
- THE BASIC ELEMENTS (INITIATING DEVICES & SIGNALING DEVICES) OF THE FIRE ALARM SYSTEM MUST BE ELECTRICALLY COMPATIBLE AND SHALL BE INTERCONNECTED BY MEANS OF SUITABLE WIRING CIRCUITS TO FORM A COMPLETE FUNCTIONAL SYSTEM.
- DRAWINGS INDICATE INTENDED LOCATIONS OF NOTIFICATION AND INITIATING DEVICES. CONTRACTOR SHALL RELOCATE DEVICES TO AVOID ANY OBSTRUCTIONS IN ACCORDANCE WITH CODE REQUIREMENTS. COORDINATE WITH OWNER PRIOR TO RELOCATION OF DEVICES.
- FIRE ALARM WIRING THAT PENETRATES FIRE-RATED WALLS AND FLOORS SHALL BE PROVIDED WITH A U.L. LISTED FIRE-STOP SEALANT WITH A RATING EQUAL TO THE FIRE RATING OF THE WALL OR FLOOR THROUGH WHICH IT PASSES
- ALL FIRE ALARM SYSTEM PANELS SHALL BE PROPERLY GROUNDED WITH SEPARATE EARTH GROUND.
- FIRE ALARM SYSTEM SIGNAL PANELS SHALL BE PROVIDED AS NEEDED. THE SIGNAL PANEL SHALL BE CIRCUITED TO ONE 20 AMP, 120 VOLT CIRCUIT AS INDICATED.
- FIRE ALARM SYSTEM DEVICE MOUNTING HEIGHTS SHALL BE IN ACCORDANCE WITH NFPA 72. REFER TO EQUIPMENT DEVICE MOUNTING HEIGHT SCHEDULE LOCATED ON THIS DRAWING FOR ADDITIONAL INFORMATION.
- SUBMITTALS FOR REVIEW

SHOP DRAWINGS: THE FOLLOWING ITEMS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL:

SUBMITTAL BOOKLET TO INCLUDE THE FOLLOWING:

- A LIST OF ALL EQUIPMENT TO BE PROVIDED AND INSTALLED IN THE SYSTEM
- DATA SHEETS OF ALL ITEMS TO BE PROVIDED WITH THE SPECIFIC ITEM OR MODEL NUMBER HIGHLIGHTED
- REQUIRED SUPPORT DOCUMENTATION INDICATING THE AUTHORIZED RELATIONSHIP OF THE SYSTEM SUPPLIER AND COPIES OF CERTIFICATIONS AND LISTINGS THAT ARE REQUIRED
- FIRE ALARM CABLE
- MATRIX OF OPERATION OF THE SYSTEM
- STANDBY BATTERY CALCULATIONS

UPON APPROVAL OF THE SUBMITTAL MATERIAL, PROVIDE SYSTEM DRAWINGS, PREPARED IN AUTOCAD, TO INCLUDE THE FOLLOWING:

- ALL CONTROL EQUIPMENT WITH INTERCONNECTING WIRING.
- FIELD CONNECTIONS OF ALL CIRCUITS CONNECTING TO THE CONTROL EQUIPMENT.
- FLOOR LAYOUTS WITH FIRE ALARM SYSTEM DEVICE LOCATIONS SHOWN.
- ADDRESSABLE DEVICE NUMBERS FOR EACH ADDRESSABLE DEVICE.
- NOTIFICATION APPLIANCES CIRCUITED AND NUMBERED, WITH CANDELA SETTING FOR VISUAL UNITS AND OUTPUT SETTING FOR AUDIBLE UNITS
- TYPICAL DEVICE CONNECTIONS FOR EACH TYPE DEVICE USED IN THE SYSTEM
- BASIC RISER DIAGRAM TO INCLUDE CONTROL EQUIPMENT AND ALL FIELD CIRCUITS
- INDICATE TEMPERATURE SETTINGS OF THERMAL DETECTORS.

13. SUBMITTALS FOR CLOSEOUT

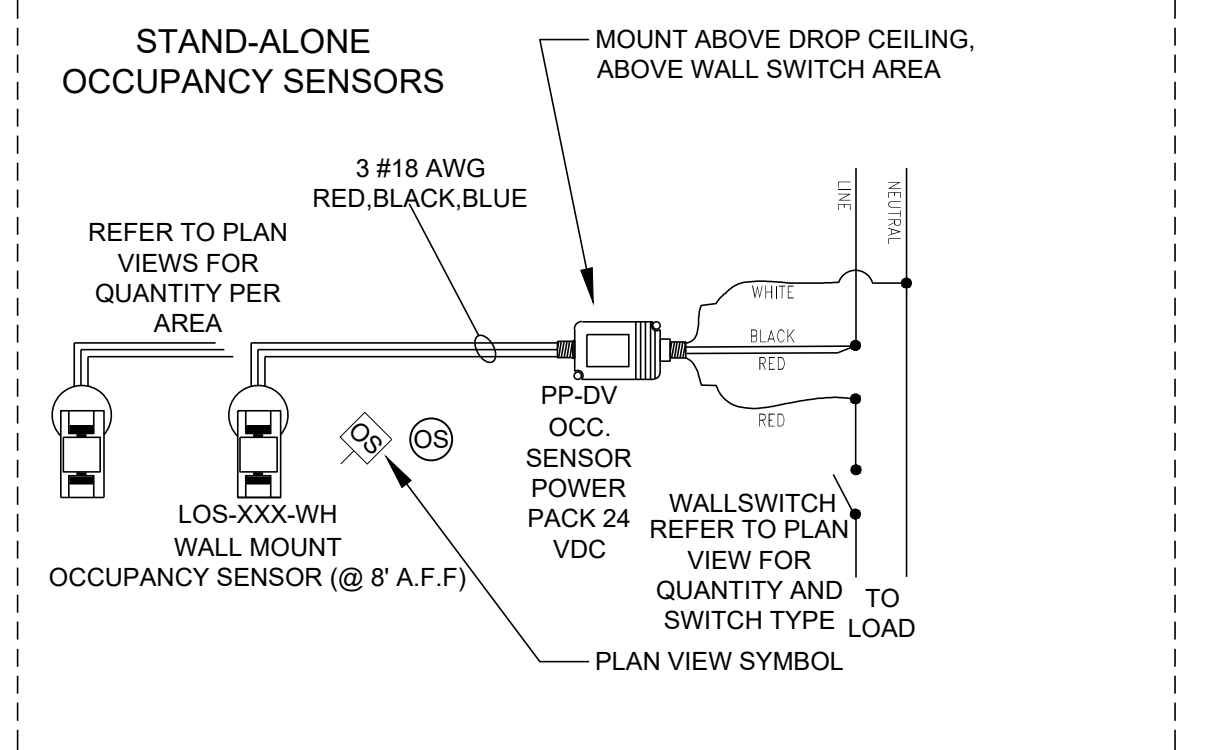
- RECORD OF COMPLETION: THE EQUIPMENT SUPPLIER SHALL COMPLETE THE RECORD OF COMPLETION AS REQUIRED IN NFPA 72. ANY DEFICIENCIES THAT ARE TO BE LISTED ON THE RECORD OF COMPLETION SHALL BE REVIEWED WITH THE ARCHITECT/ENGINEER ON RECORD FOR THE PROJECT BEFORE THE AUTHORITY HAVING JURISDICTION IS REQUESTED TO SIGN THE DOCUMENT. UPON APPROVAL, THE ORIGINAL COPY OF THE COMPLETED RECORD OF COMPLETION, SIGNED BY ALL REQUIRED PARTIES, SHALL BE SUBMITTED THROUGH THE CONTRACTOR TO THE ARCHITECT/ENGINEER AND BUILDING OWNER.
- DRAWINGS OF THE COMPLETED SYSTEM REFLECTING ANY CHANGES THAT WERE MADE FROM THE ORIGINAL SUBMISSION OF DRAWINGS.
- COPY OF THE SYSTEM PROGRAM IN PRINTED FORM AND ON A USB THUMB DRIVE.
- OPERATING AND INSTRUCTION MANUALS OF THE ENTIRE SYSTEM.
- COPY OF THE TESTING AND MAINTENANCE AGREEMENT FOR THE FIRST YEAR OF SERVICE.
- COPY OF THE SUPERVISING STATION MONITORING AGREEMENT. COPY OF THE CERTIFICATE FOR LISTING OR PLACARDING THE SYSTEM.

14. ROUTE CABLE FOR ALL DEVICE WIRING WITHIN ACCESSIBLE CEILING CAVITIES. INSTALL IN BRIDAL RINGS AT 4" SPACING MAXIMUM. NO CABLE SHALL LIE ON OR AT TACK TO CEILING TILE, DUCTS, PIPES, CONDUITS OR CEILING SUSPENSION WIRES, RODS, OR STRUCTURAL MEMBERS. PROVIDE CONDUIT STUDS FROM DEVICE TO CEILING CAVITY. PROVIDE PROTECTIVE CONDUIT BUSHING FOR EACH CONDUIT.

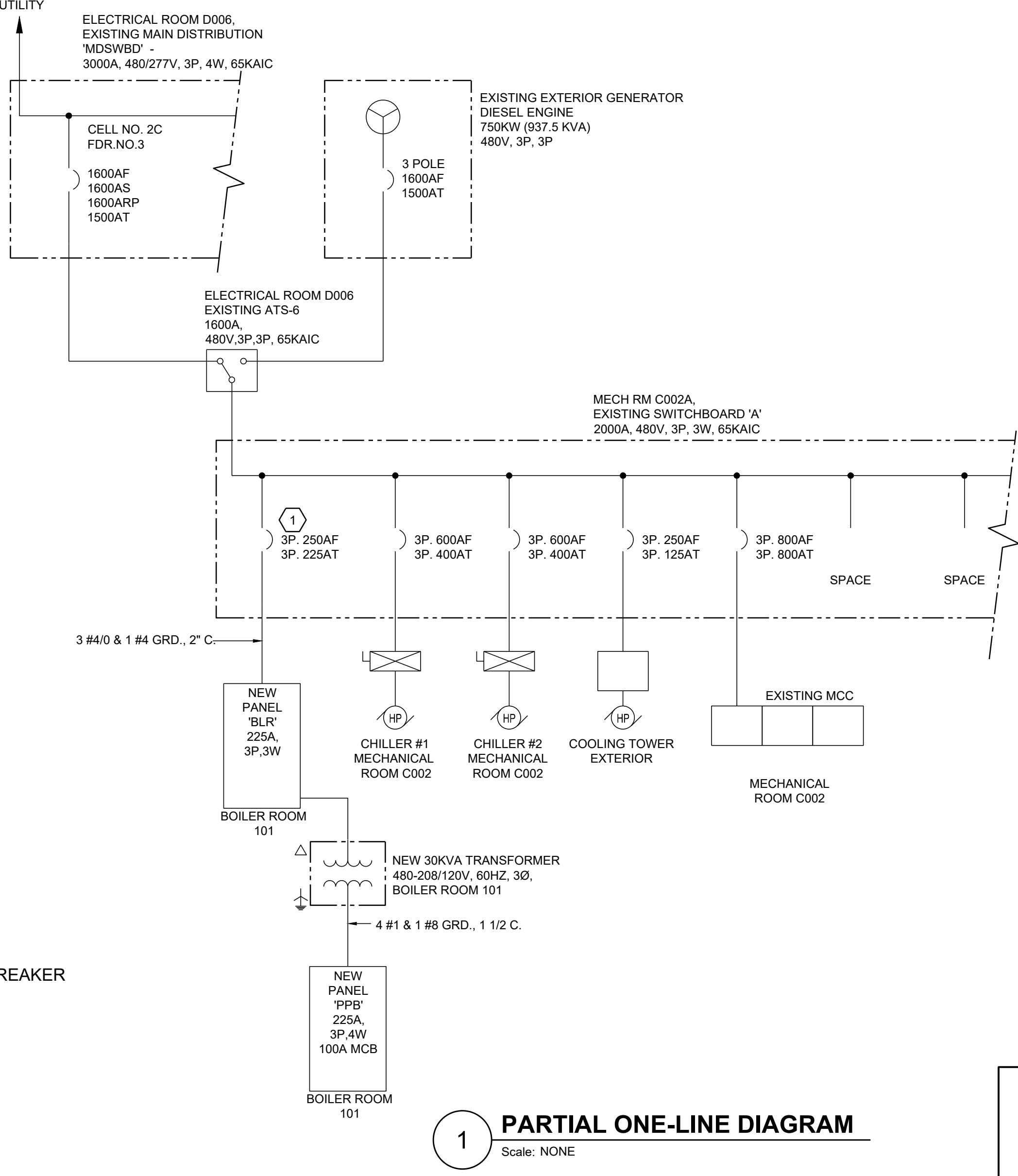
16. WIRING SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND OWNER STANDARD INSTALLATION.

17. IT SHALL BE THE RESPONSIBILITY OF THE APPROVED EQUIPMENT SUPPLIER TO PROVIDE THE REQUIRED MATERIALS AND SUBMITTAL DATA, INCLUDING DRAWINGS, TO THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THEIR REVIEW AND APPROVAL. IF NECESSARY, ANY FEES FOR THE SUBMISSION AND APPROVAL PROCESS SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

18. ALL WIRING IN BOILER ROOM SHALL BE INSTALLED IN EMT CONDUIT.



TYPICAL AREA WITH WALL/CEILING MOUNTED OCCUPANCY SENSOR AND 0-10V DIMMING SWITCH



THE WORK SHOWN ON THIS DRAWING FALLS UNDER THE SCOPE OF THE ELECTRICAL CONTRACT EXCEPT AS NOTED OTHERWISE.

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COUNTY OF BERKS
 BERKS HEIM
 BERN TOWNSHIP
 BOILER PROJECT
 ELECTRICAL
 ONE-LINE DIAGRAM, SCHEDULES, LEGEND, AND NOTES

SCALE: AS NOTED
 PREPARED BY: CJD
 CHECKED BY: DEM
 APPROVED BY: MAF
 PROJECT NO: 4177.009
 DRAWING NO:

E-701