

GENERAL

- 1. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS PRIOR TO COMMENCING CONSTRUCTION.
2. ALL OF THE WORK TO BE DONE UNDER THIS CONTRACT SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS, THE GENERAL REQUIREMENTS OF DIVISION ONE, THE GENERAL CONDITIONS, THE SPECIFICATIONS, AND ANY ADDENDA THERETO.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUAINT THEMSELVES AND ALL SUPERVISORY PERSONNEL WITH THE ABOVE-NAMED DRAWINGS AND DOCUMENTS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE SITE OF THE PROPOSED WORK TO SATISFY THEMSELVES AS TO THE EXISTING CONDITIONS RELATIVE TO THE CONTRACT.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING/BRACING OF WALLS, SLABS, COLUMNS, ETC., AS REQUIRED BY ALL FEDERAL, STATE AND LOCAL AGENCIES HAVING JURISDICTION, UNTIL ALL PERMANENT FRAMING IS INSTALLED.
6. UTILITY LOCATIONS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UTILITIES BE FOUND DIFFERENT THAN LOCATED OR SHOWN ON THE DRAWINGS, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.
7. ALL CONSTRUCTION SHALL CONFORM TO INTERNATIONAL BUILDING CODE 2015 UNLESS NOTED OTHERWISE.
8. DIMENSIONS MARKED +/- REQUIRE VERIFICATION BY THE CONTRACTOR.
9. IN ANY CASE OF CONFLICT BETWEEN THE NOTES, DETAILS AND SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
10. PROTECT AND SHORE ALL OF THE UTILITIES INSIDE AND OUTSIDE OF THE TUNNEL AS REQUIRED.
11. PROTECTIVE FENCE TO BE INSTALLED DURING WORK PREVENTING ENTRANCE TO EXCAVATED AREA. SNOW FENCE TO BE USED AND MAINTAINED THROUGHOUT CONSTRUCTION.
12. UTILITIES WITHIN THE VAULT MUST BE PROTECTED IN PLACE.
13. ALL PRODUCTS LISTED IN THESE DRAWINGS ARE THE BASIS-OF-DESIGN AND NOT REQUIRED PRODUCTS. CONTRACTOR MAY USE PRODUCTS THAT ARE SIMILAR OR BETTER IN PERFORMANCE.

DEMOLITION AND SHORING

- 1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THAT PARTS OF THE STRUCTURE TO BE PRESERVED ARE NOT DAMAGED BY THE APPLICATION OF EXCESSIVE LOADS OR BY ANY OTHER MEANS. AND THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE CAUSED.
2. ENSURE SAFE PASSAGE OF PERSONS AROUND AREA OF DEMOLITION AND CONSTRUCTION. CONDUCT OPERATIONS TO PREVENT INJURY TO ADJACENT BUILDINGS, STRUCTURES, EQUIPMENT AND OTHER FACILITIES AND PERSONS.
3. EXISTING STRUCTURE SHALL BE TEMPORARILY SHORED AS REQUIRED TO PERFORM CONSTRUCTION SHOWN HEREIN. MEMBERS SHALL BE REMOVED IN SUCH A MANNER AS NOT TO DAMAGE EXISTING STRUCTURE.
4. ALL REMOVALS OF EXISTING CONCRETE SHALL BE INITIATED WITH A NEAT, 3/4" MIN. DEEP STRAIGHT SAW CUT.
5. PROTECT EXISTING REINFORCING STEEL IN PLACE. EXERCISE EXTREME CARE TO AVOID DAMAGING EXISTING REINFORCEMENT.
6. EXACT LOCATION OF EXISTING REINFORCEMENT IS TO BE DETERMINED BY THE CONTRACTOR USING A REBAR LOCATOR OR SIMILAR METHOD.
7. LOCATE HOLES FOR BOLTS TO AVOID EXISTING REINFORCEMENT.
8. CONTRACTOR RESPONSIBLE TO REPAIR DAMAGED EXISTING REINFORCEMENT TO THE SATISFACTION OF THE ENGINEER/OWNER. CONTRACTOR RESPONSIBLE FOR ALL COSTS AND DELAYS ASSOCIATED WITH THE REPAIR.
9. IN THE EVENT OF CONFLICTS, NOTIFY ENGINEER PRIOR TO FIELD MODIFICATIONS OF DETAILS, CONNECTIONS, OR DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS.
10. CURRENT WALL TEMPORARY SHORING IS DESIGNED FOR 400 LBS./FT. LATERAL FORCE TO HOLD BACK THE SOIL PRESSURES ON THE UNSUPPORTED WALL IN ITS TEMPORARY CONDITION. NO HEAVY EQUIPMENT EXCEEDING 100 PSF SHALL BE ALLOWED WITHIN 6FT OF THE FACE OF THE TEMPORARY TUNNEL LID EXCAVATION WHILE THE STRUCTURAL SLAB IS REMOVED UNTIL AFTER THE NEW SLAB IS Poured AND CURED. CONTRACTOR MAY PROVIDE ALTERNATE EXTERIOR TEMPORARY SHORING ALONG THE TOP OF THE WALL WITH STEEL OR TIEBACKS FOR APPROVAL TO INCREASE THIS ALLOWABLE LOAD.

DRILLED-IN-DOWELS AND ANCHOR BOLTS

- 1. HOLES FOR DOWELS SHALL BE DRILLED INTO THE EXISTING CONCRETE AT THE LOCATIONS AND OF THE SIZE SHOWN ON THE PLANS. EMBED DRILLED-IN-DOWELS 15 BAR OR ANCHOR BOLT DIAMETERS MINIMUM, UNLESS NOTED OTHERWISE. AFTER HOLES ARE DRILLED, THEY SHALL BE BLOWN CLEAN WITH OIL-FREE COMPRESSED AIR BEFORE THE EPOXY RESIN IS PLACED IN THE HOLE. THE HOLE SHALL BE FILLED WITH EPOXY RESIN TO A LEVEL SUCH THAT AFTER THE BAR IS INSERTED, THE EPOXY WILL RISE TO THE SURFACE OF THE HOLE. IN OVERHEAD APPLICATIONS, WORK AND SECURE ENOUGH EPOXY RESIN INTO THE HOLE SUCH THAT WHEN THE DOWEL IS INSERTED, THE EPOXY RESIN COMPLETELY FILLS THE VOID AROUND THE DOWEL. SECURE THE EPOXY RESIN IN PLACE FOR CURING BY PLUGGING THE HOLE AROUND THE SHANK OF THE DOWEL. REINFORCING STEEL DOWELS OR ANCHOR BOLTS OF THE SIZE SHOWN ON THE PLANS SHALL BE INSERTED INTO THE HOLE IMMEDIATELY AFTER THE EPOXY RESIN IS PLACED. THE EPOXY RESIN SHALL BE PERMITTED TO SET BEFORE NEW CONCRETE IS LAYED AROUND THE ANCHOR.

CONCRETE

- 1. CONCRETE TO BE IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301 CURRENT EDITION)".
2. REINFORCING STEEL TO BE BENT AND PLACED IN ACCORDANCE WITH "MANUAL OF STD. PRACTICE FOR DETAILING CONCRETE STRUCTURES (ACI 315 CURRENT EDITION)".
3. ALL CONCRETE SHALL BE 4000 PSI AT 28 DAYS.
4. CONCRETE EXPOSED TO FREEZE/THAW CONDITIONS SHALL BE AIR ENTRAINED.
5. COARSE AGGREGATE FOR SLABS AND EXPOSED WALLS TO BE CRUSHED LIMESTONE.
6. MAXIMUM AGGREGATE SIZE TO BE 1" - U.N.O.
7. ALL AGGREGATE IN ACCORDANCE WITH ASTM C33. LIMIT SHALE, CHERT, COAL AND IRON OXIDE.
8. 4000 PSI CONCRETE TO HAVE A MIN. 6 SACKS CEMENT/MAX. 5 GAL. OF WATER/SACK.
9. WATER REDUCER REQUIRED FOR ALL WALLS AND SLABS.
10. CONCRETE WATER-CEMENT RATIO INDICATED FOR DESIGN MIXES TO HAVE CEMENT CONTENT ADJUSTED TO PROVIDE A WORKABLE MIX.
11. USE OF CALCIUM CHLORIDES PROHIBITED.
12. ALL REINFORCING STEEL TO BE ASTM A615 - GRADE 60.
13. CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR TO BE:
3" CAST AGAINST EARTH
2" SLABS ON GRADE (DISTANCE FROM TOP OF SLAB TO NEAR BAR)
1 1/2" STRUCTURAL SLABS
14. ALL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED.
15. MAXIMUM SPACING OF BAR SUPPORTS TO BE 3'-0" O.C. EACH WAY.
16. PROVIDE 2-#5 BARS AROUND ALL SIDES OF HOLES THROUGH CONCRETE WALLS AND SLABS. AT WALLS AND SLABS WITH MULTIPLE MATS OF REINFORCING PROVIDE SUPPLEMENTAL REINFORCING BARS IN EACH FACE OF MEMBER. BARS TO EXTEND 2'-0" BEYOND EDGES OF OPENINGS. SEE TYPICAL DETAIL.
17. PROVIDE CLASS B TENSION LAP SPLICES FOR CONTINUOUS BARS UNLESS OTHERWISE SHOWN.
18. ALL SLAB REINFORCING STEEL SHALL CONTINUE THROUGH SLAB CONSTRUCTION JOINTS.
19. DO NOT SAWCUT STRUCTURAL SLABS, STOOPS, OR SLABS ON METAL DECK WITHOUT PRIOR APPROVAL OF ENGINEER.
20. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL OPENINGS IN WALLS, SLABS AND FOUNDATIONS FOR DUCTS, PIPES, UTILITY LINES AND OTHER PENETRATIONS WITH THE RESPECTIVE TRADES. ALL SUCH PENETRATIONS SHALL BE FORMED OR SLEEVED IN CONCRETE AND STEEL LINTELS IN MASONRY WALLS.
21. UNLESS OTHERWISE DETAILED ON PLANS, NO OTHER OBJECTS SHALL BE PLACED IN STRUCTURAL SLABS WITHOUT PRIOR APPROVAL OF ENGINEER (I.E. CONDUIT, MECHANICAL LINES, PLUMBING LINES, ETC.).
22. ALL CONCRETE SLABS SHALL BE Poured TO UNIFORM THICKNESS AS INDICATED ON PLANS.
23. ALL REINFORCING BARS SHALL BE LAPPED AS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. WHERE NOT SPECIFICALLY INDICATED ON THE DRAWINGS, ALL REINFORCING BARS SHALL BE LAPPED AS FOLLOWS: LAP WALL/BEAM TOP HORIZONTAL REINFORCEMENT AT CENTER OF SPAN. LAP WALL/BEAM BOTTOM HORIZONTAL REINFORCEMENT AT SUPPORT. TERMINATE CONTINUOUS BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS.
24. PROVIDE CONSTRUCTION JOINTS IN ACCORDANCE WITH ACI 318, CHAPTER 6.4. SUBMIT SHOP DRAWINGS SHOWING CONSTRUCTION JOINT LOCATIONS ALONG WITH THE SEQUENCE OF POURS FOR REVIEW.
25. NEW WATERSTOPS TO BE BENTONITE SELF ADHERING STRIPS 1"x3/4"

STEEL

- 1. STRUCTURAL STEEL TO BE FABRICATED AND ERECTED IN ACCORDANCE WITH "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" (AISC 360, CURRENT EDITION) AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" (AISC 303, CURRENT EDITION).
2. STRUCTURAL STEEL WIDE FLANGE AND WT SECTIONS IN ACCORDANCE WITH ASTM A992.
3. STEEL CHANNELS, PLATES AND ANGLES IN ACCORDANCE WITH ASTM A36.
4. STEEL TUBES IN ACCORDANCE WITH ASTM A500 GRADE C (Fy = 50 ksi).
5. STEEL PIPE IN ACCORDANCE WITH ASTM A53 GRADE B (Fy = 35 ksi).
6. ALL ELECTRODES E70 SERIES.
7. STAINLESS STEEL TO BE ASTM A304.
8. CONCRETE ANCHORS SHALL BE HILTI HIT-HY 200 OR APPROVED EQUAL. THREADED RODS SHALL BE HILTI HAS-E STANDARD RODS OR GRADE 36 THREADED RODS UNLESS NOTED OTHERWISE.
9. SHOP PRIME ALL STRUCTURAL STEEL AND FIELD PAINT ALL STEEL AND FIELD WELDS PER THE PAINTING NOTES
10. SUMP GRATING TO BE MCNICHOLS 1"x18" GW-2 OR APPROVED EQUAL SUFFICIENT TO SUPPORT 100 PSF/300 LB POINT LOAD OVER 24" SPAN. CONTRACTOR MAY INCREASE THE DEPTH OF THE GRATING TO FACILITATE IN CONCRETE FORMING AND GUTTER DRAINAGE COORDINATE DEPTH OF GRATING WITH TOP OF SUMP CONCRETE POUR TO PROVIDE FLAT TUNNEL PROFILE

CONCRETE REPAIR NOTES:

- 1. ALL EXISTING CONCRETE TO BE REMOVED IS TO BE REMOVED TO NEAT LINES. ALL SUCH REMOVALS SHALL BE TO NEAT SAW CUTS TO PROVIDE CLEAN STRAIGHT SURFACES AT INTERFACES BETWEEN NEW CONCRETE AND REMAINING CONCRETE. PATCHING REQUIRED DUE TO POOR REMOVAL PRACTICES WILL BE AT THE DIRECTION OF THE ENGINEER AND AT THE CONTRACTORS EXPENSE.
2. ALL CONCRETE REMOVALS SHALL COMMENCE WITH A NEAT 3/4" DEEP, STRAIGHT SAW CUT. ALL SAW CUTS SHALL TERMINATE AT A 90 DEG RIGHT ANGLE. SAW CUTS SHALL NOT OVERLAP. DO NOT CUT EXISTING REINFORCING.
3. EXPOSED REINFORCING SHALL BE CLEANED TO BARE METAL BY SANDBLASTING AND BASF/MASTER BUILDERS MASTEREMACO P124 OR APPROVED EQUAL APPLIED TO EXPOSED STEEL.
4. ALL SURFACES OF OLD CONCRETE AGAINST WHICH NEW PATCHING MORTAR OR REPAIR CONCRETE IS TO BE PLACED SHALL BE THOROUGHLY CLEANED AND ALL LOOSE MATERIAL SHALL BE REMOVED BY DRY SWEEPING AND BLOWING OUT WITH CLEAN, DRY COMPRESSED AIR AND BASF/MASTER BUILDERS MASTEREMACO P124 OR APPROVED EQUAL APPLIED TO SURFACES.
5. ALL EXISTING REINFORCING BARS THAT ARE EXPOSED BY CONCRETE REMOVAL SHALL BE CLEANED AND CAREFULLY INCORPORATED INTO THE NEW WORK, EXCEPT WHERE THE REINFORCING SECTION LOSS IS 25% OR MORE DETERIORATED THEN THE EXISTING REINFORCING SHALL BE REPLACED AS DIRECTED BY THE ENGINEER.
6. THE CONCRETE ANCHORS REQUIRED SHALL HAVE A MINIMUM PULL OUT OF 5000 LBS. BASED ON 4000 PSI CONCRETE. THE ANCHORS SHALL BE GALVANIZED AND SHALL BE INCLUDED INSTALLED ACCORDING TO RECOMMENDATIONS OF THE MANUFACTURER.
7. THE WELDED WIRE FABRIC SHALL BE ASTM A185 AND GALVANIZED AS PER ASTM A-641. THE WWF WIRES SHALL BE SPACED 3X3 OR 4X4 AND THE WIRES SHALL HAVE A NOMINAL AREA OF 0.14 TO 0.029 SQUARE INCHES INCLUSIVE, EXAMPLE "WWF 3X3-W1.4XW2.9"
8. WHERE REINFORCEMENT HAS BEEN EXPOSED AND CLEARANCE AROUND THE PERIPHERY OF THE EXISTING BAR IS PROVIDED NO SUPPLEMENTAL REINFORCING IS REQUIRED, EXCEPT WHERE EXISTING REINFORCING DENSITY AND PATTERN ARE SUCH THAT INDIVIDUAL OPEN SPACES BETWEEN BARS ARE OF 1.5 SF OR LARGER. FOR THIS CONDITION 1/2" DIA. CONCRETE ANCHORS AND WELDED WIRE FABRIC SHALL BE INSTALLED AT THE RATE OF ONE CONCRETE ANCHOR WITH WWF PER EACH 1.5 SF OF AREA WITHIN EACH OPEN SPACE.
9. FINISH REPAIR SPALL WITH BASF/MASTER BUILDERS MASTEREMACO N425 OR APPROVED EQUAL.
10. USE ALL PRODUCTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION INCLUDING ANY AND ALL SURFACE PREPARATION.

EPOXY INJECTION

- 1. INJECT CRACKS WIDER THAN 0.05 INCH.
2. CLEAN CRACKS WITH OIL-FREE COMPRESSED AIR OR LOW-PRESSURE WATER TO REMOVE LOOSE PARTICLES OR AS RECOMMENDED BY MANUFACTURER. CLEAN AREAS TO RECEIVE CAPPING ADHESIVE OF OIL, DIRT, AND OTHER SUBSTANCES THAT WOULD INTERFERE WITH BOND.
3. PLACE INJECTION PORTS AS RECOMMENDED BY EPOXY MANUFACTURER, SPACING NO FARTHER APART THAN THICKNESS OF MEMBER BEING INJECTED. SEAL INJECTION PORTS WITH CAPPING ADHESIVE. USE BASF/MASTER BUILDERS MASTEREMACO ADH 327 RS OR APPROVED EQUAL FOR INJECTION PORTS.
4. SEAL CRACKS AT EXPOSED SURFACES WITH A RIBBON OF CAPPING ADHESIVE AT LEAST 1/4 INCH THICK BY 1 INCH WIDER THAN CRACK.
5. INJECT EPOXY ADHESIVE, BEGINNING AT WIDEST PART OF CRACK AND WORKING TOWARD NARROWER PARTS. INJECT ADHESIVE INTO PORTS TO REFUSAL, CAPPING ADJACENT PORTS WHEN THEY EXTRUDE EPOXY. CAP INJECTED PORTS AND INJECT THROUGH ADJACENT PORTS UNTIL CRACK IS FILLED.
6. AFTER EPOXY ADHESIVE HAS SET, REMOVE INJECTION PORTS AND GRIND SURFACES SMOOTH.
7. USE BASF/MASTER BUILDERS MASTERINJECT 1380 OR APPROVED EQUAL ON EPOXY INJECTION REPAIRS.

PAINTING:

- 1. APPLY PAINTS ONLY WHEN TEMPERATURE OF SURFACES TO BE PAINTED AND AMBIENT AIR TEMPERATURES ARE BETWEEN 50 AND 95 DEG F.
2. DO NOT APPLY PAINTS IN SNOW, RAIN, FOG, OR MIST. WHEN RELATIVE HUMIDITY EXCEEDS 85 PERCENT; AT TEMPERATURES LESS THAN 5 DEG F ABOVE THE DEW POINT; OR TO DAMP OR WET SURFACES.
3. STEEL SUBSTRATES: REMOVE RUST, LOOSE MILL SCALE, AND SHOP PRIMER IF ANY. CLEAN USING METHODS RECOMMENDED IN WRITING BY PAINT MANUFACTURER PER SSPC-SP 6.
4. SHOP-PRIMED STEEL SUBSTRATES: CLEAN FIELD WELDS, AND AREAS WHERE SHOP PAINT IS ABRADED, PAINT EXPOSED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PRIMING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PRIMED SURFACES.
5. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL."
6. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
7. FURNISH EXTRA MATERIALS, FROM THE SAME PRODUCT RUN, THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
8. PAINT PRODUCT: (OR APPROVED EQUAL) SYSTEM TYPE: EPOXY/EPOXY SURFACE PREPARATION: SSPC-SP6/NACE 3 COMMERCIAL BLAST CLEANING OR SSPC-SP3 POWER TOOL CLEANING (SSPC RUST GRADE CONDITION C) PRIMER: SERIES 394 PERIMEPRIME, DFT 2.5 TO 3.5 MILS INTERMEDIATE COAT: SERIES N69 HI-BUILD EPOXOLINE II, DFT 3.0 TO 5.0 MILS FINISH COAT: SERIES N69 HI-BUILD EPOXOLINE II, DFT 4.0 TO 6.0 MILS TOTAL DFT: 9.5 TO 14.5 MILS
9. PAINT SUBMITTAL:
1. COLOR: TO BE SUBMITTED FOR VERIFICATION TO OWNER.
2. PRODUCT DATA: FOR EACH TYPE OF PRODUCT. INCLUDE PREPARATION REQUIREMENTS AND APPLICATION INSTRUCTIONS.
3. INCLUDE PRINTOUT OF CURRENT "MPI APPROVED PRODUCTS LIST" FOR EACH PRODUCT CATEGORY SPECIFIED, WITH THE PROPOSED PRODUCT HIGHLIGHTED.
4. INDICATE VOC CONTENT.
5. SAMPLES FOR VERIFICATION: FOR EACH TYPE OF PAINT SYSTEM AND EACH COLOR AND GLOSS OF TOPCOAT

SPECIAL INSPECTION

- 1. SPECIAL INSPECTION IN ACCORDANCE WITH SECTION 1704 OF THE 2015 INTERNATIONAL BUILDING CODE, AND ICBO MODEL PROGRAM FOR SPECIAL INSPECTION.
2. THE OWNER WILL EMPLOY AN APPROVED AGENCY TO PERFORM THE SPECIAL INSPECTION SERVICES.
3. SPECIAL INSPECTION WILL BE PERFORMED IN ACCORDANCE WITH AND IN ADDITION TO THE INSPECTION AND TESTING REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.
4. THE FOLLOWING ITEMS ARE INCLUDED IN THE SPECIAL INSPECTION:

- CONCRETE: AIR-ENTRAINMENT SLUMP COMPRESSIVE STRENGTH TESTING REINFORCING PLACEMENT POLYMER MORTAR PLACEMENT VISUAL INSPECTION

SOIL: PAVEMENT SUBGRADE AND FILL COMPACTION.

THE QUANTITIES FOR SOME LUMP SUM BID ITEMS ARE INDICATED WITH ROUNDED ESTIMATES FOR THE CONTRACTOR'S CONVENIENCE. DISCREPANCIES IN THE ESTIMATED VS ACTUAL QUANTITIES FOR THESE BID ITEMS WILL NOT CHANGE THE PRICE PAID IN THE CONTRACT.

THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE DOCUMENTS IN FULL INCLUDING ALL THEIR OWN QUANTITIES FOR ANY AND ALL BID ASSUMPTIONS.

BID ITEMS WITH SF, LF, OR EA ARE SUBJECT TO IN FIELD CONDITIONS AND ARE ALL TO BE APPROVED PRIOR TO WORK PERFORMED AND PAYMENT TO THE CONTRACTOR.

ALL ITEMS IN CONSTRUCTION DOCUMENTS ARE LISTED HERE OR INCIDENTAL TO THESE ITEMS.

ONLY THE MOST SEVERE CONCRETE REPAIRS AND EPOXY CRACK INJECTION REPAIRS ARE TO BE PERFORMED, AS IDENTIFIED IN THE ESTIMATED QUANTITIES. WHILE MEASURED QUANTITIES ARE SHOWN ON THE PLANS, THE BID ITEM QUANTITY WILL BE BASED ON THE ACTUAL QUANTITY OF REPAIRS COMPLETED.

ALL CONCRETE REPAIRS TO BE MARKED AND APPROVED FOR QUANTITY BY CM/CCF AND ENGINEER PRIOR TO PERFORMING REPAIRS. CONCRETE ISSUES SHOWN ON THE DRAWINGS DO NOT NECESSARILY CORRELATE TO REPAIRS THAT WILL BE MADE BUT TO OBSERVATIONS MADE ON EXISTING CONCRETE DETERIORATION.

EPOXY CRACK INJECTION REPAIRS TO BE PRIORITIZED BY CRACK WIDTH, WITH THE WIDEST CRACKS REPAIRED FIRST

CONCRETE REPAIRS TO BE PRIORITIZED TO FILL IN OPENINGS AND PENETRATIONS IN THE WALLS TO SEAL THE TUNNEL FROM THE EXTERIOR SOIL AND WHERE THERE IS EXPOSED REBAR.

Table with 5 columns: ITEM #, DESCRIPTION, UNIT, QUANTITY, AS-BUILT QUANTITY. Contains sections for Civil Scope of Work, Structural Scope of Work, and Mechanical/Electrical/Plumbing Scope of Work.



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Table with 3 columns: MARK, REVISION, DATE. Includes a note for 100% CONSTRUCTION DOCUMENTS.

PROJECT NUMBER 125.0278.10 DATE 10/10/2025 SHEET TITLE

NOTES SHEET NO.

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MARK	REVISION	DATE

100% CONSTRUCTION DOCUMENTS

PROJECT NUMBER 125.0278.10

DATE 10/10/2025

SHEET TITLE

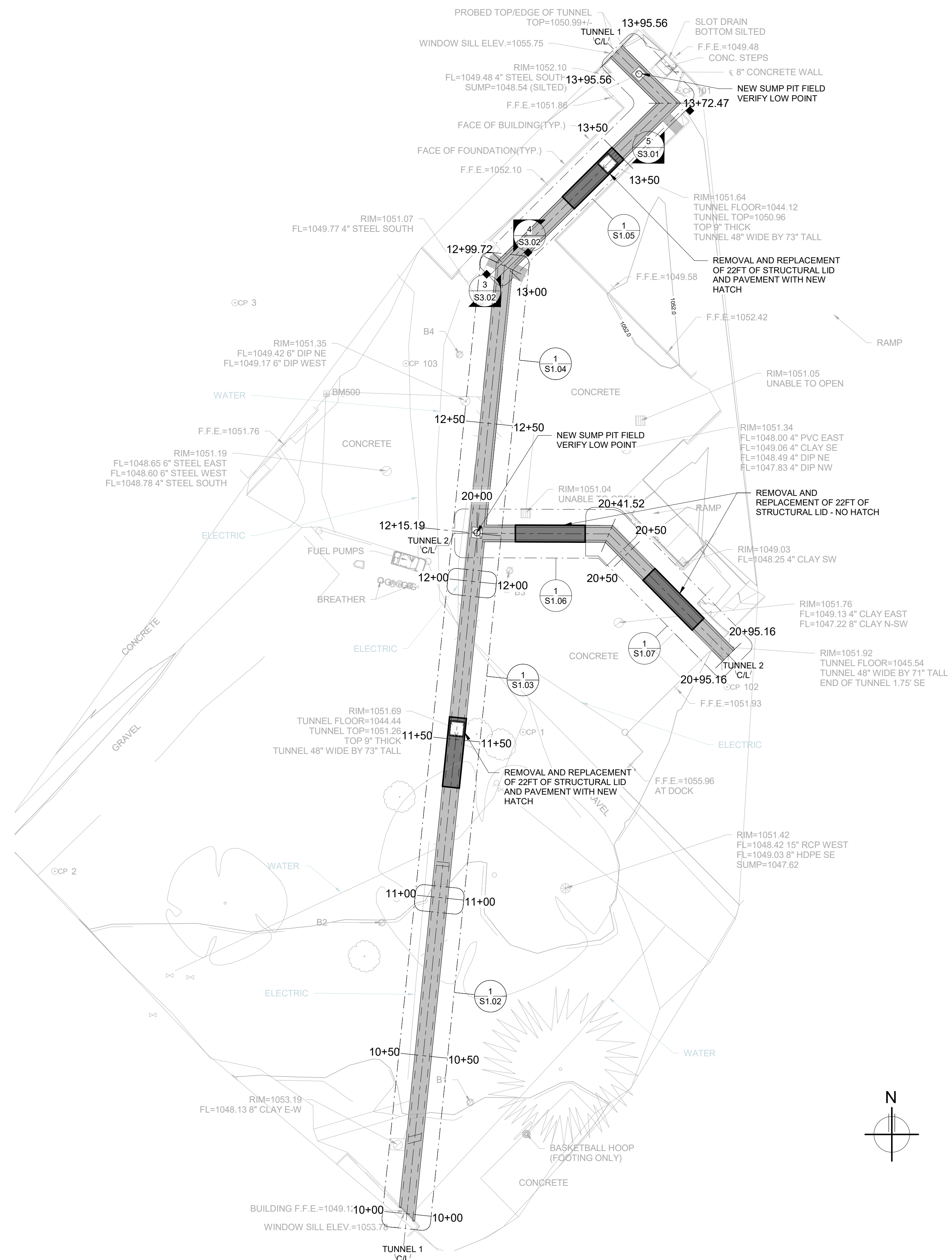
TUNNEL PLAN

SHEET NO.

S1.01

CONSTRUCTION NOTES

- COORDINATE ALL EQUIPMENT, ENTRY TIMES, AND EXIT TIMES WITH CM/CCF.
- WHILE WORKING IN YARD, NO OTHER OPENINGS IN THE TUNNEL ARE PERMITTED TO PREVENT POSSIBLE ESCAPE ROUTES.
- CONTRACTOR TO TEMPORARILY SEAL ANY HOLES IN TUNNEL AT THE END OF EACH WORK DAY.
- CONTRACTOR TO REMOVE ALL TOOLS AND EQUIPMENT AT THE END OF EACH WORK DAY.
- COORDINATE ALL WORK AND SECURITY WITH CM/CCF.
- PROTECT IN PLACE ALL UTILITIES, LIGHT POLES, ETC. AS REQUIRED DURING CONSTRUCTION.
- CONTRACTOR TO SOUND TOP OF EXISTING STRUCTURAL SLAB AND VISUALLY INSPECT FOR DELAMINTIAON, EXPOSED REBAR, OR SPALLING AND REPAIR PER NOTES PRIOR TO PLACING NEW PAVEMENT



1 TUNNEL PLAN
1" = 20'-0"

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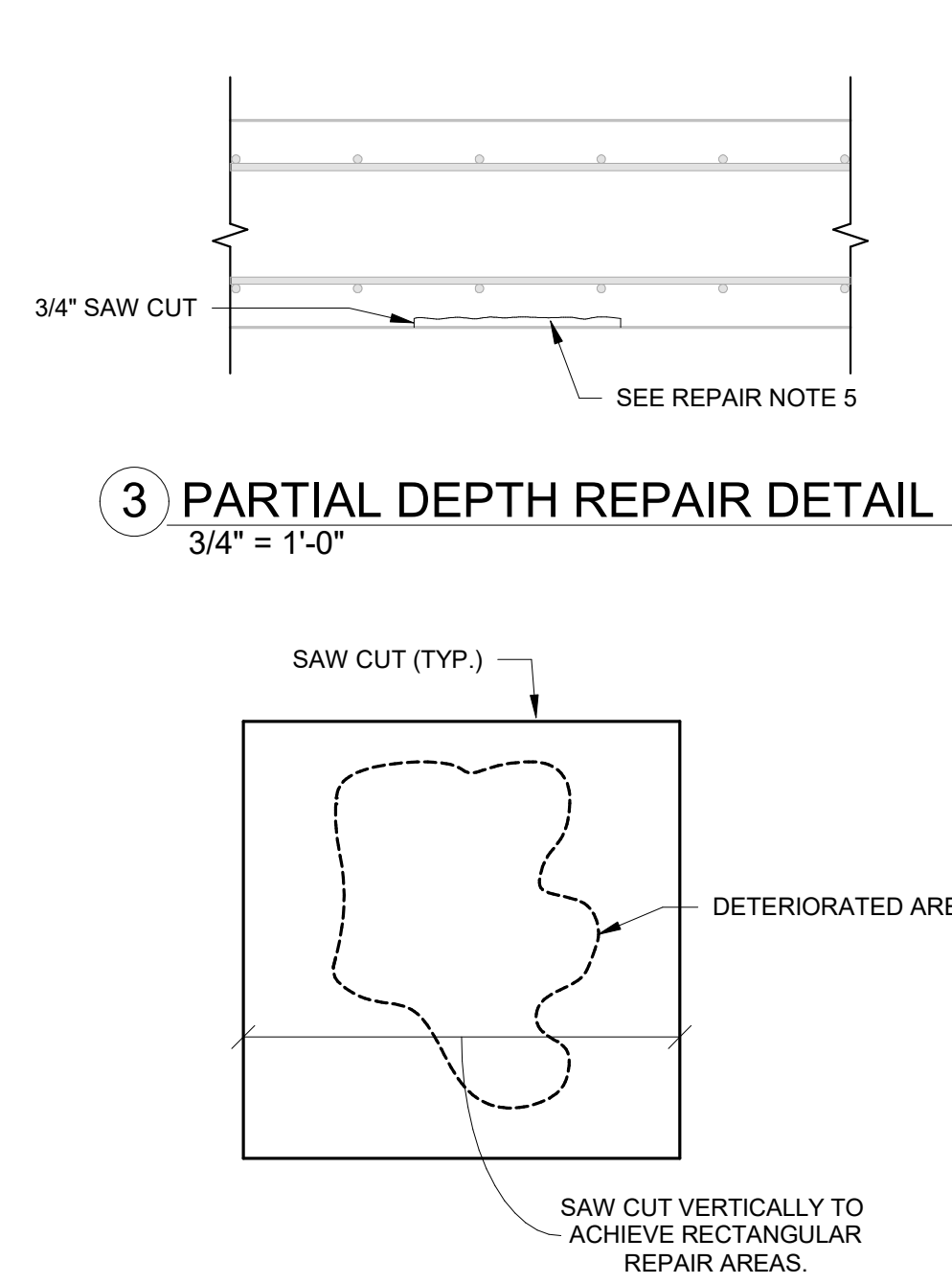
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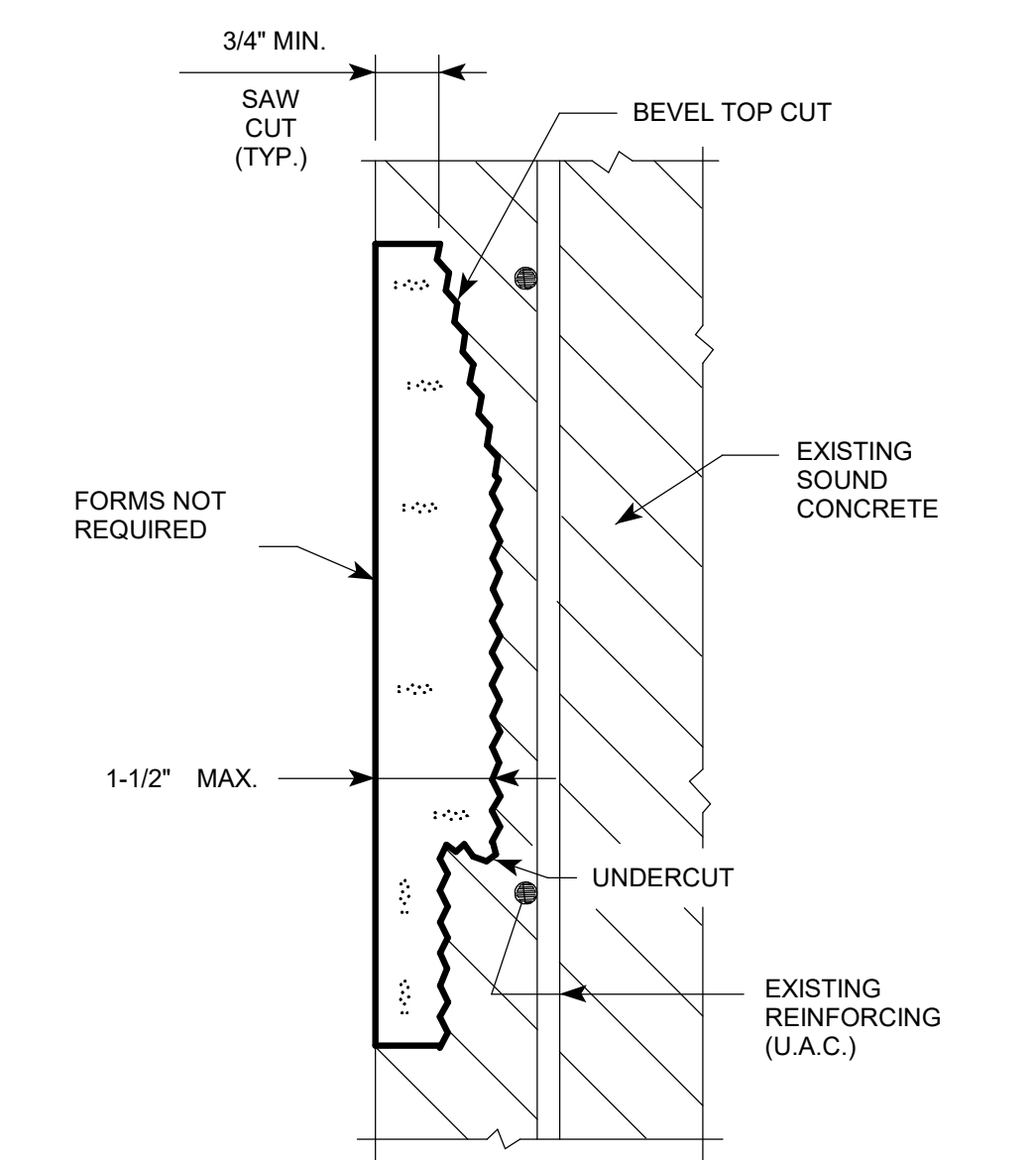
Table with columns: MARK, REVISION, DATE, PROJECT NUMBER, SHEET TITLE, SHEET NO.

REPAIR PROCEDURE

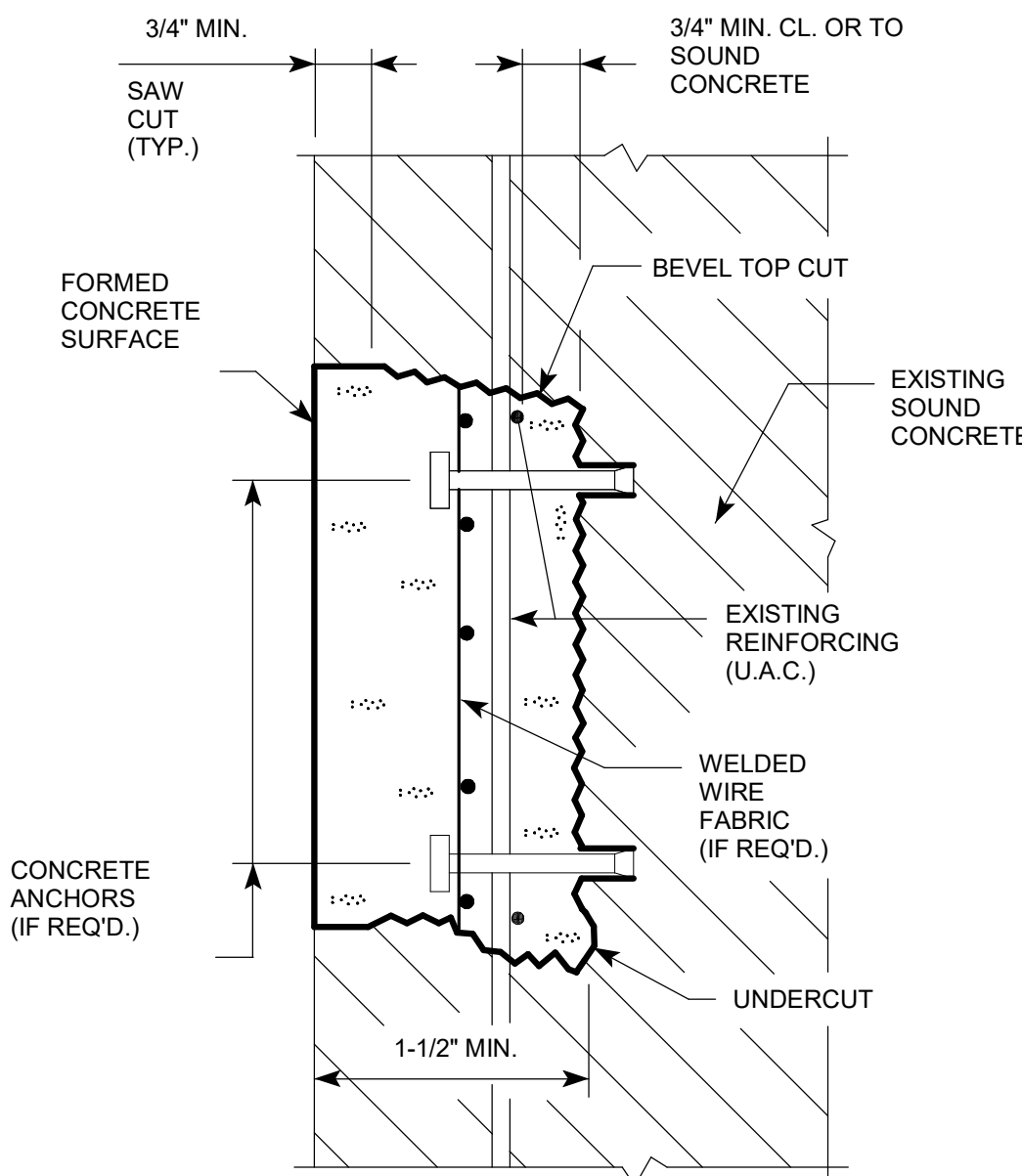
- 1. REPAIR ALL CONCRETE VOIDS WITH BASF/MASTER BUILDERS MASTEREMACO N425 OR APPROVED EQUAL. CONCRETE SHALL BE SATURATED SURFACE DRY PRIOR TO REPAIR. FILL ENTIRE VOID WITH WATER AND COMPLETELY DRAIN PRIOR TO REPAIR. INSTALL PER MANUFACTURER RECOMMENDATIONS
2. NEW PATCH SHALL MATCH EXISTING FINISH.
3. PATCH ALL TIE HOLES PER REPAIR NOTE 5.
4. FULL DEPTH CONCRETE REPAIRS SHALL BE REPAIRED WITH MASTEREMACO N425 OR APPROVED EQUAL. REMOVE ALL DETERIORATED CONCRETE, DIRT, OIL, GREASE AND OTHER BOND INHIBITING MATERIALS FROM THE SURFACE. REMOVE ALL CORROSION FROM THE REINFORCEMENT WITH A WIRE BRUSH. APPLY BONDING AGENT, MASTEREMACO P124 OR APPROVED EQUAL TO REINFORCEMENT AND SURFACES OF OLD CONCRETE. CONCRETE SHALL BE SATURATED SURFACE DRY PRIOR TO REPAIR. INSTALL PER MANUFACTURER RECOMMENDATIONS.
5. PARTIAL DEPTH CONCRETE REPAIRS SHALL BE REPAIRED WITH MASTEREMACO N425 OR APPROVED EQUAL. MOVE ALL DETERIORATED CONCRETE, DIRT, OIL, GREASE AND OTHER BOND INHIBITING MATERIALS FROM THE SURFACE. FOR OVERHEAD CONDITIONS, APPLY IN MAXIMUM 2" LIFTS. INSTALL PER MANUFACTURER RECOMMENDATIONS.
6. CLEAN AND PREP ALL SURFACES PER MANUFACTURERS RECOMMENDATIONS.
7. PROTECT EXISTING UTILITIES IN PLACE. DO NOT DAMAGE.
8. PROVIDE TEMPORARY SHORING AS REQUIRED.
9. CONTRACTOR TO IDENTIFY AREA TO BE REMOVED BY HAMMER SOUNDING.
10. INITIATE REMOVAL OF UNSOUND CONCRETE WITH 3/4" SAWCUTS AT PERIMETER. DO NOT CROSS CUT AT CORNERS, BUT STOP SHORT AND REMOVE CORNERS BY HAND. ADJUST DEPTH OF SAWCUT AS NEEDED TO ENSURE NO CUTTING OF EXISTING REINFORCING.
11. REMOVE DETERIORATED AREAS TO SOUND CONCRETE. IF REINFORCING IS ENCOUNTERED EITHER OF TWO CONDITIONS SHOULD BE MET. IF LESS THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, REMOVE CONCRETE WITHOUT DAMAGING BARS. IF MORE THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, CAREFULLY REMOVE CONCRETE AROUND BAR TO A DEPTH OF 3/4" UNDER THE BAR.
12. IF THE BAR EXHIBITS SECTION LOSS GREATER THAN 20%, REPLACE THE BAR. DRILL AND EPOXY IF REQUIRED.
13. CLEAN SURFACE BY MECHANICAL MEANS. (REINFORCING TO BARE METAL)
14. PREPARE SOUND CONCRETE AND REINFORCING SURFACES IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
15. PLACE PATCH REPAIR MIX INTO PATCH AREA AND THOROUGHLY CONSOLIDATE.
16. CURE PATCH THOROUGHLY TOP AND BOTTOM. BOTTOM TO BE CURED IF FORM IS REMOVED.
17. ALL WORK SHALL BE PERFORMED AS INDICATED BY PRODUCT MANUFACTURER INCLUDING ANY COLD WEATHER CONCRETE PRACTICES.
18. PROVIDE FORMS WHERE NECESSARY TO CONFINE PATCH TO REQUIRED SHAPE.
19. WET SUBSTRATE AND FORMS THOROUGHLY AND THEN REMOVE STANDING WATER.
20. GENERAL TROWEL PLACEMENT: PLACE PATCHING MORTAR BY TROWELLING TOWARD EDGES OF PATCH TO FORCE INTIMATE CONTACT WITH EDGE SURFACES. FOR LARGE PATCHES, FILL EDGES FIRST AND THEN WORK TOWARD CENTER, ALWAYS TROWELLING TOWARD EDGES OF PATCH. AT FULLY EXPOSED REINFORCING BARS, FORCE PATCHING MORTAR TO FILL SPACE BEHIND BARS BY COMPACTING WITH TROWEL FROM SIDES OF BARS.
21. VERTICAL PATCHING: PLACE MATERIAL IN LIFTS OF NOT MORE THAN 1 INCH OR AS INDICATED BY MANUFACTURER, OR LESS THAN 1/4 INCH. DO NOT FEATHER EDGE.
22. CONSOLIDATION: AFTER EACH LIFT IS PLACED, CONSOLIDATE MATERIAL AND SREED SURFACE.
23. MULTIPLE LIFTS: WHERE MULTIPLE LIFTS ARE USED, SCORE SURFACE OF LIFTS TO PROVIDE A ROUGH SURFACE FOR PLACING SUBSEQUENT LIFTS AND INSTALL PER MANUFACTURERS RECOMMENDATIONS.
24. FINISHING: ALLOW SURFACES OF LIFTS THAT ARE TO REMAIN EXPOSED TO BECOME FIRM AND THEN FINISH TO A SURFACE MATCHING ADJACENT CONCRETE.
25. CURE IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
26. ALL PRODUCTS LISTED ARE THE BASIS-OF-DESIGN AND NOT REQUIRED PRODUCTS, CONTRACTOR MAY USE PRODUCTS THAT ARE SIMILAR OR BETTER IN PERFORMANCE.



4 TYPICAL REMOVAL DETAIL

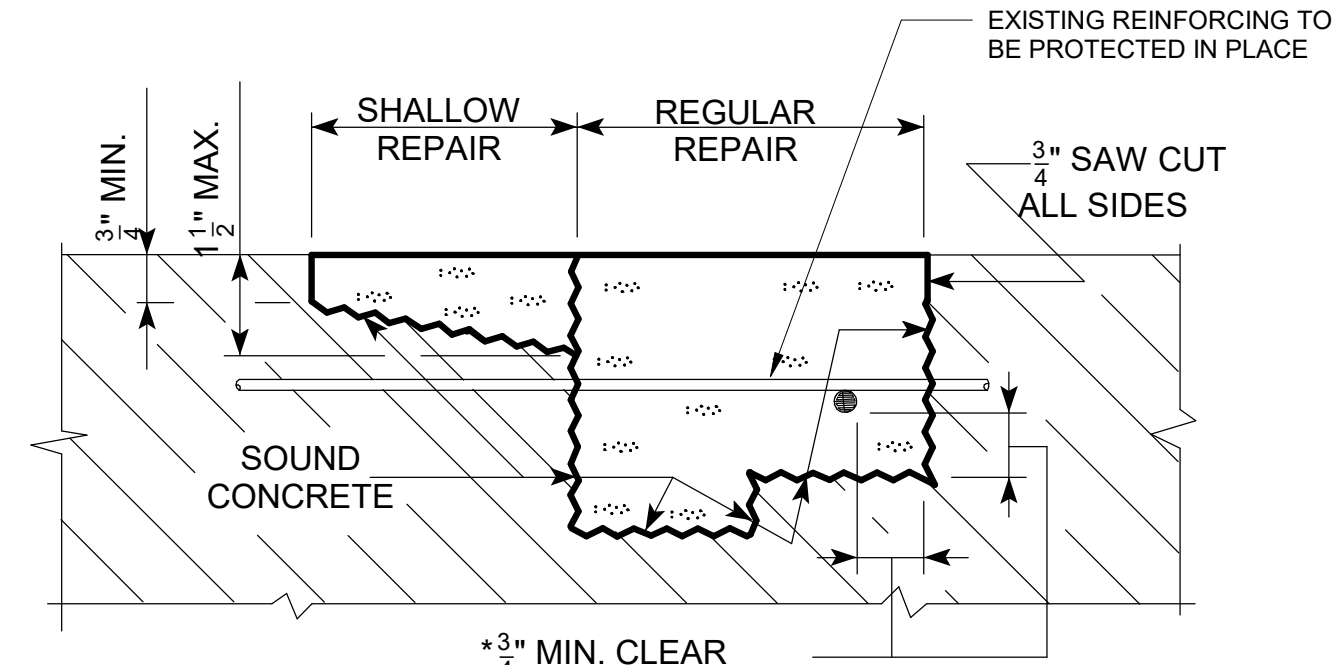


SHALLOW REPAIR VERTICAL FACE



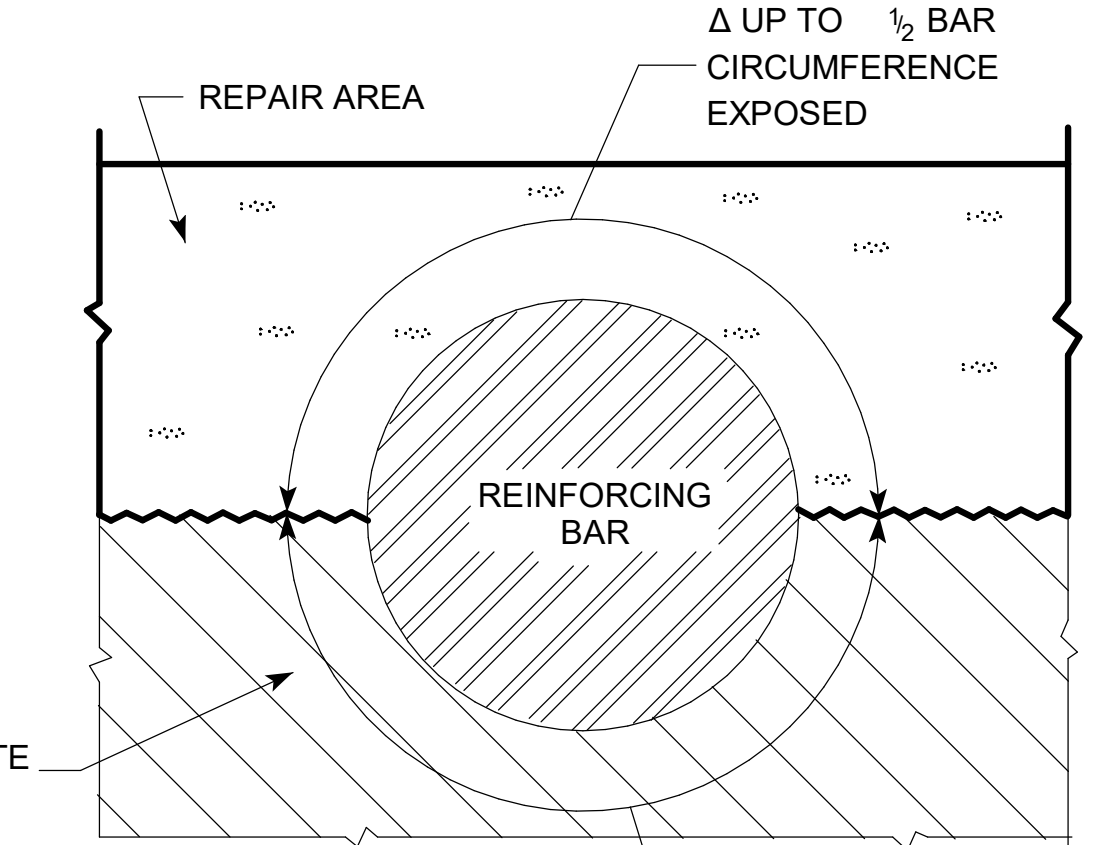
REGULAR REPAIR VERTICAL FACE

2 CONC REPAIR DETAIL - VERT FACE 1\"/>

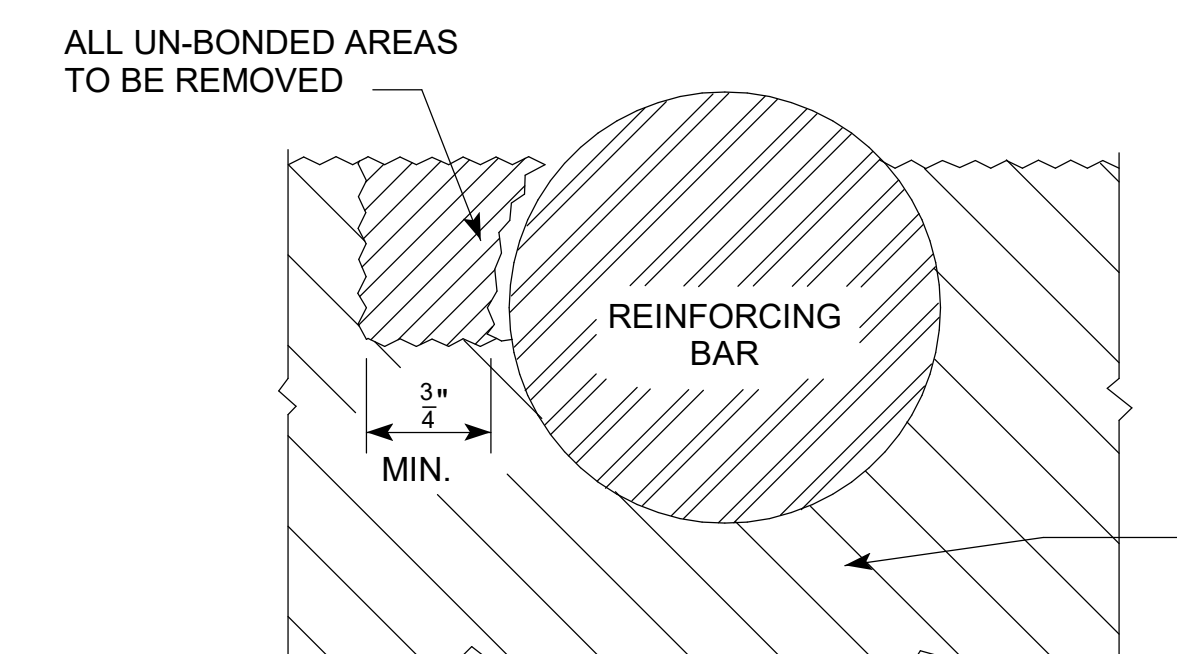


CONCRETE REPAIR DETAIL

*INDICATES CLEARANCE FOR AN UN-BONDED REBAR.



Δ IF MORE THAN 1/2 THE REBAR IS EXPOSED IT SHALL BE TREATED AS AN UN-BONDED REBAR.

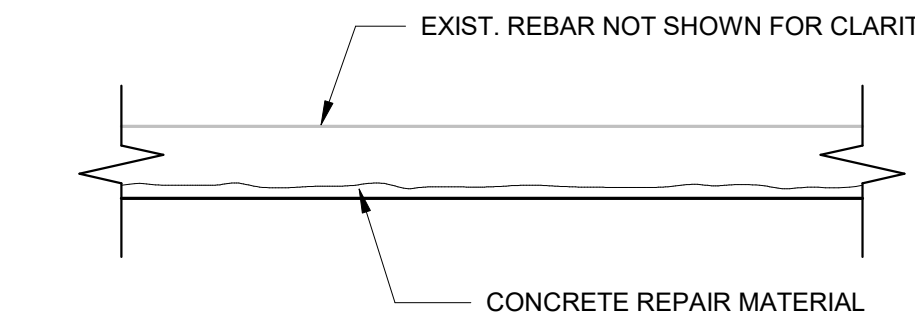


CONCRETE REMOVAL ADJACENT TO REINFORCING

1 CONCRETE REPAIR DETAILS 1\"/>

RESURFACING PROCEDURE:

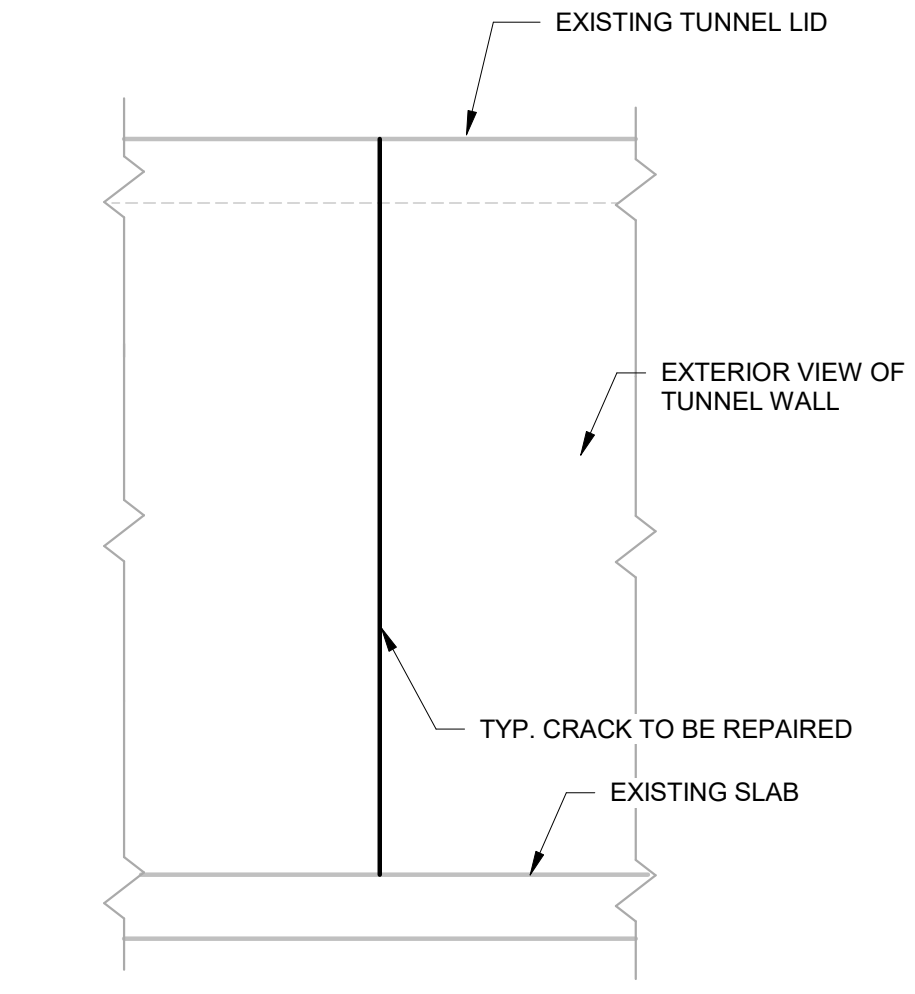
- 1. PROTECT EXISTING UTILITIES IN PLACE. DO NOT DAMAGE.
2. PROVIDE TEMPORARY SHORING AS REQUIRED.
3. REMOVE SCALED CONCRETE AREAS TO SOUND CONCRETE. IF REINFORCING IS ENCOUNTERED EITHER OF TWO CONDITIONS SHOULD BE MET. IF LESS THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, REMOVE CONCRETE WITHOUT DAMAGING BARS. IF MORE THAN 1/2 OF BAR IS EXPOSED TO REACH SOUND CONCRETE, CAREFULLY REMOVE CONCRETE AROUND BAR TO A DEPTH OF 3/4" UNDER THE BAR.
4. IF THE BAR EXHIBITS SECTION LOSS GREATER THAN 20%, REPLACE THE BAR. DRILL AND EPOXY IF REQUIRED.
5. CLEAN SURFACE BY MECHANICAL MEANS. (NOT SAND BLAST) (REINFORCING TO BARE METAL)
6. PREPARE SOUND CONCRETE AND REINFORCING SURFACES IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. APPLY BONDING AGENT.
8. PLACE REPAIR MATERIAL. FULLY CONSOLIDATE.
9. CURE PER MANUFACTURER RECOMMENDATIONS.



6 RESURFACING DETAIL 3/4\"/>

CRACK INJECTION PROCEDURE:

- 1. PROTECT EXISTING UTILITIES IN PLACE. DO NOT DAMAGE
2. LOCATIONS INDICATED ARE BASED ON WHAT IS VISIBLE FROM THE INTERIOR. INJECTIONS TO BE INSTALLED FROM THE EXTERIOR AFTER PROPER CLEANING IS COMPLETE. INTERIOR INJECTIONS TO BE USED WHEN EXTERIOR IS NOT AVAILABLE.
3. ALL MATERIALS SHALL BE MIXED AND USED EXACTLY AS RECOMMENDED BY THE MANUFACTURER.
4. EPOXY CRACK INJECTION IS TO BE ACCOMPLISHED BY "VEEING" TOPS OF CRACKS: BLOW OUT THOROUGHLY AND CLEAN WITH OIL-FREE COMPRESSED AIR. INSTALL POLYETHYLENE VALVES. SEAL CRACKS WITH EPOXY GEL AND THEN PUMP EPOXY RESIN INTO THE VALVES STARTING AT THE LOWEST ELEVATION. WHEN THE EPOXY REACHES THE NEXT HIGHER VALVE, CRIMP THE LOWER VALVE SHUT AND FOLLOW THE SAME PROCEDURE ON THE NEXT HIGHER VALVE UNTIL THE ENTIRE LENGTH OF CRACK IS INJECTED.
5. WHEN THE EPOXY INJECTING IS COMPLETE, REMOVE THE GEL FROM VALVES BY HEATING AND SCRAPING VALVE OFF SURFACE. FILL HOLES WITH EPOXY RESIN. GRIND SURFACES TO REMOVE IRREGULARITIES.
6. EPOXY ADHESIVE FOR PRESSURE INJECTION OF CRACKS TO BE BASF MASTER INJECT 1380 OR APPROVED EQUAL. EPOXY GEL TO BE BASF MASTER EMACO ADH 1090 RS OR APPROVED EQUAL
7. ALL PRODUCTS LISTED ARE THE BASIS-OF-DESIGN AND NOT REQUIRED PRODUCTS, CONTRACTOR MAY USE PRODUCTS THAT ARE SIMILAR OR BETTER IN PERFORMANCE.



5 CRACK INJECTION DETAIL 1/2\"/>

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1 PHOTO 1



2 PHOTO 2



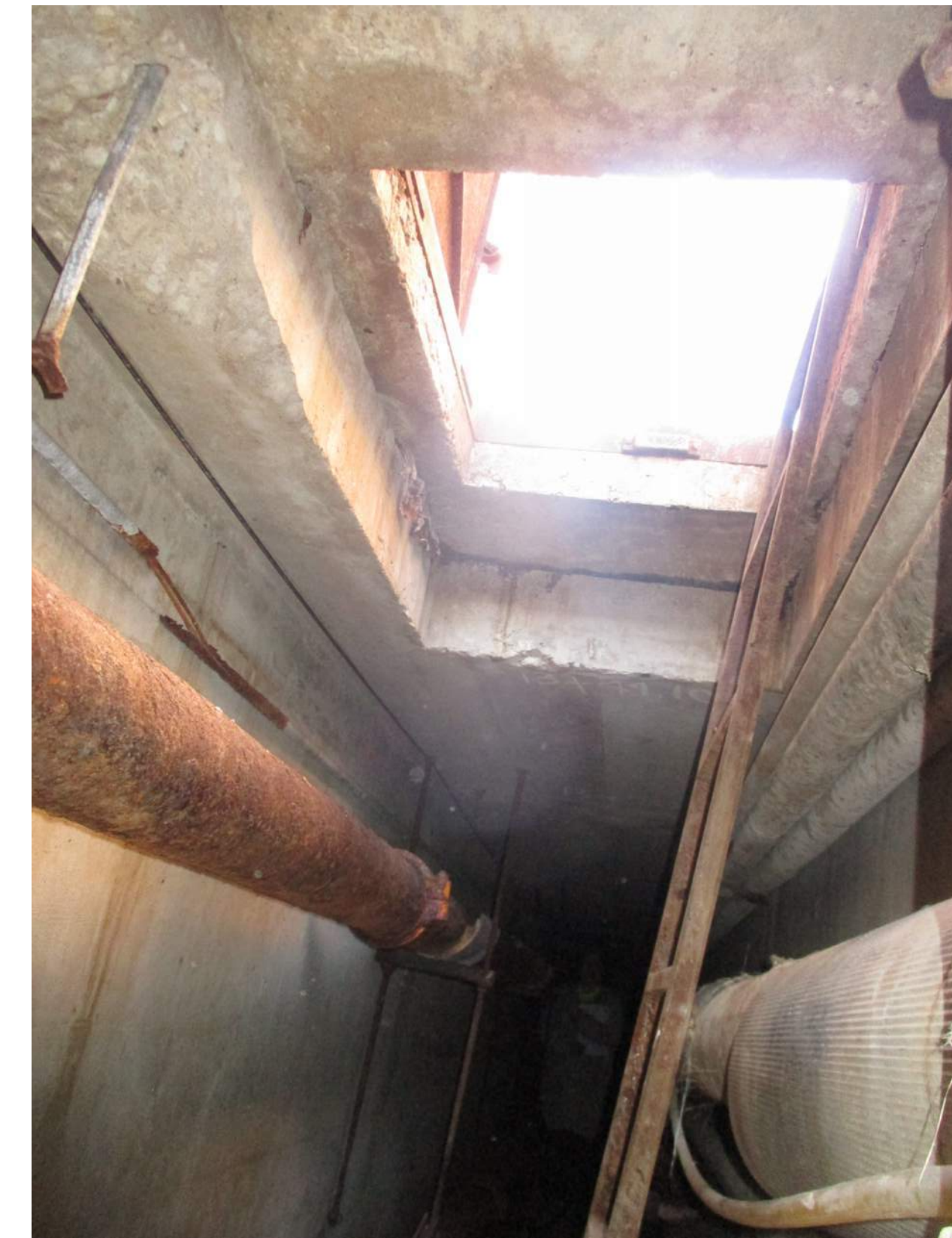
3 PHOTO 3



4 PHOTO 4



5 PHOTO 5



6 PHOTO 6



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2000 N 16th St, Clarinda, IA 51632

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PROJECT NUMBER 125.0278.10

DATE 10/10/2025

PHOTOS SHEET TITLE

SHEET NO.

S3.01



1 PHOTO 7



2 PHOTO 8



3 PHOTO 9



4 PHOTO 10



5 PHOTO 11



6 PHOTO 12



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SHEET TITLE

PHOTOS

SHEET NO.

S3.02



1 PHOTO 13



2 PHOTO 14



3 PHOTO 15



4 PHOTO 16



5 PHOTO 17



6 PHOTO 18

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SHEET TITLE

PHOTOS

SHEET NO.

S3.03



1 PHOTO 19



2 PHOTO 20



3 PHOTO 21



4 PHOTO 22



5 PHOTO 23



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SHEET TITLE

PHOTOS

SHEET NO.

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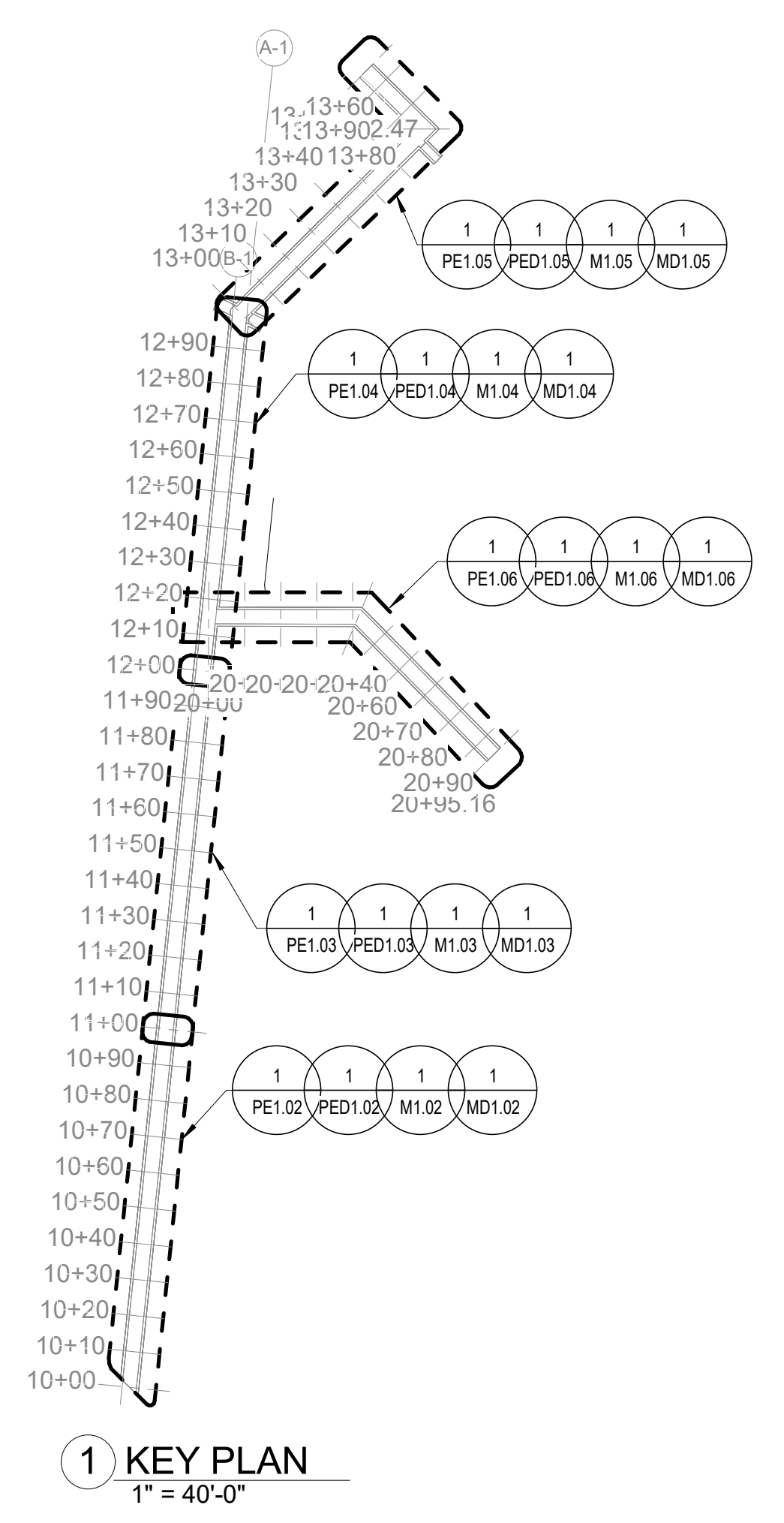
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PIPING GENERAL NOTES:

A. DO NOT RUN PIPING PLUMBING OR EQUIPMENT ABOVE ELECTRICAL OR TELECOMMUNICATION PANELS AND ASSOCIATED EQUIPMENT OR IN CODE-REQUIRED CLEARANCE SPACES. COORDINATE ALL ROUTING WORK WITH ALL OTHER TRADES.

B. DRAWINGS, PLANS, SCHEMATICS, AND DIAGRAMS INDICATE THE GENERAL LOCATIONS AND THE ARRANGEMENT OF SYSTEMS. WHEREVER PRACTICAL, INSTALL SYSTEMS AS INDICATED. PROVIDE OFFSETS AND ELEVATION CHANGES TO PLUMBING PIPING, AND DUCTWORK AS REQUIRED TO MEET THE LAYOUT AND COORDINATION PROCESS AS WELL AS MEET ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.

C. ALL PIPING INSULATION SHALL MEET THE ENERGY CODES INSTALLED R VALUE REQUIREMENTS.

D. INDICATED SIZES FOR PIPE AND PIPING SPECIALTY CONNECTIONS FOR EQUIPMENT AND COILS ARE INTENDED TO ROUTE TO THE EQUIPMENT CONNECTION POINT. WHEN CONTROL VALVE SIZES ARE SMALLER THAN INDICATED PIPE OR EQUIPMENT CONNECTION SIZE PROVIDE ECCENTRIC REDUCERS ON INLET AND OUTLET OF CONTROL VALVE.

E. ROUTE ALL HORIZONTAL HVAC PIPING IN MECHANICAL ROOMS AT A MINIMUM OF 7'-6" ABOVE FINISHED FLOOR.

F. PIPING AND EQUIPMENT SHOWN WITH THIN LINES INDICATES EXISTING TO REMAIN. PIPING AND EQUIPMENT SHOWN WITH BOLD LINES INDICATES NEW.

G. DIELECTRIC NIPPLES OR FLANGE INSULATION KITS SHALL BE UTILIZED FOR ALL DISSIMILAR PIPE CONNECTIONS. DIELECTRIC UNIONS WILL NOT BE ACCEPTED.

H. FOR DRAWING CLARITY PIPING IN TUNNEL IS NOT SHOWING REQUIRED SLOPE OR EXACT ELEVATION OF PIPING IN TUNNEL. REFER TO SPECIFICATIONS FOR SLOPING REQUIREMENTS. REPLACE RETURN PIPING SHALL BE INSTALLED IN A SIMILAR MANNER AND SLOPE TO THE PIPING BE REMOVED. PIPING TO SLOPE TO STEAM TRAPS AT LOCATIONS INDICATED FOR A FULLY FUNCTIONAL SYSTEM. ELEVATION OF PIPING WILL NEED TO BE FIELD VERIFIED TO MAINTAIN REQUIRED SLOPES AND TO ALLOW NEW TO EXISTING CONNECTIONS AT ENDS OF TUNNELS.

MECHANICAL DEMOLITION NOTES:

A. THE OWNER SHALL HAVE THE FIRST RIGHT OF SALVAGE FOR ALL MECHANICAL, ELECTRICAL, AND PLUMBING ITEMS BEING REMOVED. IF OWNER DECLINES, THE CONTRACTOR SHALL REMOVE FROM THE PREMISES DISPOSE OF PROPERLY. VERIFY OWNER'S INTENT PRIOR TO REMOVAL OR DEMOLITION.

B. INFORMATION PERTAINING TO THE EXISTING BUILDING HAS BEEN OBTAINED THROUGH THE BUILDINGS ORIGINAL DRAWINGS WHERE AVAILABLE. REPORT DISCREPANCIES TO THE ARCHITECT/ENGINEER PRIOR TO ANY DEMOLITION. CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.

C. COORDINATE SHUT DOWN OF ALL UTILITIES FOR DEMOLITION WORK WITH THE OWNER.

D. DISCONNECT AND REMOVE MECHANICAL SYSTEMS, EQUIPMENT, AND COMPONENTS AS INDICATED TO BE REMOVED.
 PIPING TO BE REMOVED: REMOVE PORTION OF PIPING INDICATED TO BE REMOVED AND CAP REMAINING PIPING WITH THE SAME OR COMPATIBLE PIPING MATERIAL.
 PIPING TO BE ABANDONED IN PLACE: DRAIN PIPING AND CAP WITH THE SAME OR COMPATIBLE PIPING MATERIAL.
 DUCTS TO BE REMOVED: REMOVE PORTIONS OF DUCT AND CAP REMAINING DUCTS WITH THE SAME OR COMPATIBLE DUCTWORK MATERIAL.
 DUCTS TO BE ABANDONED IN PLACE: CAP DUCTS WITH THE SAME OR COMPATIBLE DUCTWORK MATERIAL.
 EQUIPMENT TO BE REMOVED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT.
 EQUIPMENT TO BE REMOVED AND REINSTALLED: DISCONNECT AND CAP SERVICES AND REMOVE. CLEAN AND STORE EQUIPMENT. WHEN APPROPRIATE, REINSTALL, RECONNECT, AND MAKE EQUIPMENT FULLY OPERATIONAL.
 EQUIPMENT TO BE REMOVED AND SALVAGED: DISCONNECT AND CAP SERVICES AND REMOVE EQUIPMENT AND DELIVER TO OWNER.

E. IF PIPE OR EQUIPMENT INSULATION TO REMAIN IS DAMAGED IN APPEARANCE OR IS UNSERVICEABLE, REMOVE DAMAGED OR UNSERVICEABLE PORTIONS AND REPLACE WITH NEW PRODUCTS OF EQUAL CAPACITY AND QUALITY.

F. CONTRACTOR IS REQUIRED TO VISIT SITE AND FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING PROJECT.

G. COORDINATE DEMOLITION WITH THE WORK OF OTHER TRADES. PROVIDE TEMPORARY UTILITIES AS REQUIRED TO ALLOW THE WORK OF OTHER TRADES TO PROCEED.

H. PIPING, PLUMBING, AND EQUIPMENT SHOWN (BOLD) SHALL BE REMOVED TO THE EXTENTS INDICATED.

DETAIL NOTE:

A. PROJECT DETAILS ARE PROVIDED ON DESIGNATED DETAIL SHEETS. DETAILS APPLY TO THE ENTIRE PROJECT IN ALL LOCATIONS WHERE DETAILED CONDITION EXISTS AND ARE ONLY REFERENCED TO PROVIDE CLARITY IF NECESSARY.

MISCELLANEOUS MECHANICAL GENERAL NOTES:

A. COORDINATE SCHEDULE OF SHUTDOWN FOR EXISTING HVAC SYSTEMS, FOR INSTALLATION OF NEW HVAC SYSTEMS, WITH THE OWNER'S REPRESENTATIVE PRIOR TO SHUT DOWN.

B. THIN LINE ITEMS INDICATE EXISTING TO REMAIN. BOLD LINE ITEMS INDICATE NEW WORK.

C. CONTRACTOR IS RESPONSIBLE FOR ANY CUTTING AND PATCHING NEEDED FOR MECHANICAL INSTALLATION. PATCHING MUST MATCH EXISTING.

D. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ISOLATION VALVES, VENTS AND PIPE CONNECTIONS NECESSARY FOR FLUSHING, CLEANING AND FILLING NEW PIPE SYSTEMS AND ISOLATING THEM FROM EXISTING SYSTEMS TO ALLOW THIS WORK TO TAKE PLACE. EXISTING FILL ASSEMBLIES FOR SYSTEMS MODIFIED CAN BE UTILIZED TO FILL SYSTEMS AFTER WORK IS COMPLETE WHERE COORDINATED WITH OWNER.

KEY PLAN
 1" = 40'-0"

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NOTE:
 DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS and clearances from ARCHITECTURAL, STRUCTURAL, SHOP and other appropriate drawing or at site. Lay out and coordinate all work prior to installation to provide clearances required for operation, maintenance, and codes and verify non-interference with other work. DO NOT FABRICATE PRIOR TO VERIFICATION OF CLEARANCE FOR ALL TRADES. READ SPECIFICATIONS.

MECHANICAL SYMBOLS

MECHANICAL PIPING AND PLUMBING SYMBOLS		MECHANICAL PIPING AND PLUMBING SYSTEMS	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	AUTOMATIC CONTROL VALVE, 2-WAY		FLEXIBLE PIPING
	AUTOMATIC CONTROL VALVE, 3-WAY		UNION
	BALANCING VALVE		PIPE IN SLEEVE
	ISOLATION VALVE (BALL OR BUTTERFLY)		CONCENTRIC REDUCER
	CHECK VALVE (ARROW INDICATED FLOW)		ECCENTRIC REDUCER INVERT
	GLOBE VALVE		ECCENTRIC REDUCER CROWN
	GAS COCK		PIPE PITCH DOWN
	MANUAL AIR VENT		F AND T TRAP CAP LBS/HR
	ARROW INDICATED FLOW DIRECTION		BUCKET TRAP CAP LBS/HR
	PIPE CONTINUATION		NEW TO EXISTING CONNECTION
	PRESSURE GAUGE WITH GAUGE COCK		MECH EQUIPMENT WITH ELEC CONNECTION, SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE.
	PRESSURE OR TEMPERATURE MEASURING POINTS		POINT OF DISCONNECT
	PRESSURE RELIEF VALVE		
	PRESSURE REGULATING VALVE (PRV)		
	PRESSURE REDUCING VALVE		
	PRESSURE / TEMPERATURE TEST PORT		
	DESIGNATES UTILITIES AND EQUIPMENT MARKS WHICH ARE EXISTING		
	AUTOMATIC AIR VENT		
	MANUAL AIR VENT WITH ISOLATION VALVE		
	STRAINER WITH DRAIN VALVE AND HOSE END		

SYMBOLS INDICATED HERE AND NOT USED IN THE CONTRACT DOCUMENTS DO NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS AND ABBREVIATIONS MAY BE INDICATED IN THE CONTRACT DOCUMENTS.

PLUMBING GENERAL NOTES:

- A. DO NOT RUN PLUMBING PIPING OR EQUIPMENT ABOVE ELECTRICAL OR TELECOMMUNICATION PANELS AND ASSOCIATED EQUIPMENT OR IN CODE-REQUIRED CLEARANCE SPACES. COORDINATE ALL ROUTING WORK WITH ALL OTHER TRADES.
- B. DRAWINGS, PLANS, SCHEMATICS, AND DIAGRAMS INDICATE THE GENERAL LOCATIONS AND THE ARRANGEMENT OF SYSTEMS. WHEREVER PRACTICAL, INSTALL SYSTEMS AS INDICATED. PROVIDE OFFSETS AND ELEVATION CHANGES TO PLUMBING PIPING, AND DUCTWORK AS REQUIRED TO MEET THE LAYOUT AND COORDINATION PROCESS AS WELL AS MEET ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- C. PIPING AND FIXTURES SHOWN WITH THIN LINES INDICATE EXISTING TO REMAIN. PIPING AND FIXTURES SHOWN WITH BOLD LINES INDICATES NEW.
- D. COORDINATE SHUT DOWN OF EXISTING WATER SERVICE WITH OWNER'S REPRESENTATIVE.
- E. SAW CUT AND REMOVE FLOOR AS REQUIRED FOR INSTALLATION OF NEW PIPING.

ELECTRICAL DEMOLITION NOTES:

- A. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS TO ALL FIXTURES, DEVICES AND EQUIPMENT REMOVED. COORDINATE WITH OWNER PRIOR TO DEMOLITION.
- B. WHERE EXISTING CIRCUITS ARE NOT REUSED, REMOVE CONDUCTORS AND ASSOCIATED ACCESSIBLE RACEWAYS BACK TO THE SOURCE. WHERE AN EXISTING DEVICE IS REMOVED FROM AN EXISTING CIRCUIT, PROVIDE NEW WIRING AS REQUIRED TO MAINTAIN CONTINUITY OF EXISTING CIRCUIT. UNLESS NOTED OTHERWISE, ABANDON CONCEALED CONDUITS IN WALLS WHICH ARE NOT REMOVED. WHERE AN EXISTING RACEWAY TO BE REMOVED IS STUBBED FROM A CONCRETE FLOOR OR WALL, CHISEL 2 INCHES BELOW SURFACE OF FLOOR, CUT CONDUIT, AND GROUT FLOOR TO MATCH ADJACENT SURFACE. PROVIDE BLANK PLATES FOR ABANDONED BOXES.
- C. REPAIR OR REPLACE BUILDING ELEMENTS WHICH ARE DAMAGED AS PART OF DEMOLITION WORK.
- D. DEMOLITION DRAWINGS INDICATE FIXTURES, DEVICES AND MAJOR PIECES OF EQUIPMENT WHICH ARE TO BE REMOVED OR RECONNECTED. REMOVE INDICATED ITEMS AND ASSOCIATED ITEMS NOT INDICATED BUT WHICH MUST BE REMOVED TO ACCOMMODATE REMODELING. THE ITEMS INDICATED SPECIFICALLY ON THE DRAWINGS TO BE REMOVED ARE ONLY TO INDICATE IN GENERAL TO THE CONTRACTOR THE AMOUNT OF DEMOLITION WORK REQUIRED. THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE EXTENT OF DEMOLITION REQUIRED AND SHALL BECOME FAMILIAR WITH EXISTING CONDITIONS PRIOR TO THE BID DATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ELECTRICAL GENERAL NOTES:

- A. INSTALL GREEN INSULATED GROUND WIRE WITH EACH LIGHTING, RECEPTACLE, AND EQUIPMENT BRANCH CIRCUIT.
- B. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT REQUIRING A NEUTRAL, UNLESS OTHERWISE NOTED.
- C. REPAIR OR REPLACE BUILDING ELEMENTS THAT ARE DAMAGED AS PART OF ELECTRICAL WORK.
- D. SPECIFICATIONS LIST ACCEPTABLE WIRING METHODS AND MATERIALS. OTHER WIRING METHODS AND MATERIALS NOT LISTED IN THE SPECIFICATIONS (SUCH AS MC CABLE, ETC.) ARE NOT ACCEPTABLE.

ELECTRICAL SYMBOLS			
LIGHTING			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SURFACE MOUNTED LUMINAIRE		DUPLEX RECEPTACLE "G" SUBSCRIPT INDICATES GFCL, "T" SUBSCRIPT INDICATES TAMPER RESISTANT TYPE, "U" SUBSCRIPT INDICATES COMBINATION USB CHARGING STATION
	SURFACE MOUNTED WALL LUMINAIRE		MOTOR
	LIGHTING ZONE CIRCUIT DESIGNATION, "XX" INDICATES PANEL NAME, "##" INDICATES CIRCUIT NUMBER (PART) INDICATES PARTIAL CIRCUIT		JUNCTION BOX ("F" INDICATES FLOOR, "C" INDICATES CEILING)
	CEILING MOUNTED OCCUPANCY SENSOR ("F" INDICATES SENSOR TYPE IN SCHEDULE)		BRANCH CIRCUIT
	SINGLE POLE SWITCH		SPECIAL PURPOSE HOMERUN AS INDICATED
	3-WAY SWITCH		HOMERUN TO PANEL (NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS)
	4-WAY SWITCH		BRANCH CIRCUIT FEEDER TAG - SEE BRANCH CIRCUIT FEEDER SCHEDULE
	FOR LUMINAIRES, X INDICATES MARK IN LUMINAIRE SCHEDULE		LIGHTING PANEL - SURFACE MOUNTED LIGHTING PANEL - FLUSH MOUNTED
			DOUBLE DUPLEX RECEPTACLE
			SPECIAL PURPOSE RECEPTACLE (NEMA CONFIGURE AS NOTED)
			WALL MOUNTED JUNCTION BOX
			PULL BOX
			GROUND BAR
			DISTRIBUTION PANEL, SWITCHBOARD, OR MOTOR CONTROL CENTER
			MECH EQUIPMENT WITH ELEC CONNECTION, SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE
			SAFETY SWITCH (FUSED UNLESS OTHERWISE NOTED)
			"A"=AMP RATING, "B"=POLES, "C"=FUSE SIZE, "D"=NEMA ENCLOSURE, FOR FUSE SIZE, "MR"=MFRGR RECOMMENDATIONS AND "NF"=NON-FUSE

ABBREVIATIONS					
AFB ABOVE FINISHED FLOOR	DCVC DOUBLE DETECTOR CHECK VALVE	GA GAUGE	NIC NOT IN CONTRACT	SCHD SCHEDULE	
AHJ AUTHORITY HAVING JURISDICTION	ASSEMBLY BACKFLOW PREVENTER	GALV GALVANIZED	NO NORMALLY OPEN	SCW SOFT COLD WATER	
ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS	DISC DISCONNECT	GEN GENERAL CONTRACTOR	NOM NOMINAL	SHW SOFT HOT WATER	
ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS	DIST DISTRIBUTION	GM GENERATOR	NPW NON-POTABLE WATER	SIM SIMILAR	
ASTM STANDARD SPECIFICATIONS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS	DN DOWN	GPM GALLONS PER MINUTE	NTS NOT TO SCALE	SM SPRINKLER MAIN	
AUX AUXILIARY	DPAC DRY PIPE AIR COMPRESSOR	GW GARAGE WASTE	OA OUTDOOR AIR	SMACNA SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION	
AV ACID VENT	DPV DOOR POSITION SWITCH	HGT HEIGHT	OC ON CENTER	SPV POST INDICATOR VALVE	
AVG AVERAGE	DPV DRY PIPE VALVE	HP HORSEPOWER	PERP PERPENDICULAR	SPECS SPECIFICATIONS	
AW ACID WASTE	DWG DRAWING	HTG HEATING	PIV PLUMBING	SS STAINLESS STEEL	
AWG AMERICAN WIRE GAUGE	DX DIRECT EXPANSION	HVAC HEATING, VENTILATING AND AIR CONDITIONING	PLBS PANEL	STD STANDARD	
BMSC BUILDING MANAGEMENT CONTROL SYSTEM	EA EXHAUST AIR	HZ HERTZ, HIGH ZONE WET STANDPIPE	PS PLASTER SINK	TEMP TEMPERATURE	
BFP DOUBLE CHECK BACKFLOW PREVENTER	EHC ELECTRIC HEATING COIL	IE INVERT ELEVATION	PSF POUNDS PER SQUARE FOOT	TYP TYPICAL	
BLDG BUILDING	EL ELEVATION	IP INTERNET PROTOCOL	PSI POUNDS PER SQUARE INCH	UG UNDERGROUND	
BTU BRITISH THERMAL UNIT	ELEC ELECTRICAL	KW KILOWATT	PVC POLYVINYL CHLORIDE	UL UNDERWRITERS LABORATORY	
BTUH BRITISH THERMAL UNIT PER HOUR	EMS ENERGY MANAGEMENT SYSTEM	LBS POUNDS	PWR POWER	UNO UNLESS NOTED OTHERWISE	
CFM CUBIC FEET PER MINUTE	EOA ECONOMIZER OUTDOOR AIR	LZ LOW ZONE WET STANDPIPE	RA RETURN AIR	UPS UNINTERRUPTIBLE POWER SUPPLY	
CL CENTER LINE	EPO EMERGENCY POWER OFF	MA MIXED AIR	RCD REQUIRED	VA VOLT-AMPS	
CLG CEILING	EQUIP EQUIPMENT	MAX MAXIMUM	RGS RIGID GALVANIZED STEEL	VERT VERTICAL	
CLR CLEAR	EXH EXHAUST	MBH 1000 BTU/HOUR	RH RELATIVE HUMIDITY	VFC VARIABLE FREQUENCY CONTROL	
CPVC CHLORINATED POLYVINYL CHLORIDE	EXIST EXISTING	MECH MECHANICAL	RLFA RELIEF AIR	VTR VENT THROUGH ROOF	
CRAC COMPUTER ROOM AIR CONDITIONER	F FIRE WATER	MERV MINIMUM EFFICIENCY REPORTING VALUE	RM ROOM	W WATT	
CV CONSTANT VOLUME	FA FIRE ALARM	MIN MINIMUM	RO REVERSE OSMOSIS WATER	WG WATER GAUGE	
	FOC FLOOR CLEAN OUT	MISC MISCELLANEOUS	RPBFP REDUCED PRESSURE BACKFLOW PREVENTER	WP WETTERPROOF	
	FD FIRE DEPARTMENT CONNECTION	MOA MINIMUM OUTDOOR AIR	RPZ REDUCED PRESSURE ZONE BACKFLOW PREVENTER	XFMR TRANSFORMER	
	FHC FIRE HOSE CABINET	MTD MOUNTED	SA SUPPLY AIR		
	FHV FIRE HOSE VALVE	NC NORMALLY CLOSED	SAN SANITARY		
	FL FLOOR	NFPA NATIONAL FIRE PROTECTION ASSOCIATION			
	FT FEET				
	FW FILTERED WATER				

SUBSCRIPTS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
EP	SUBSCRIPT "EP" APPLIED TO ANY SYMBOL INDICATES EXPLOSION PROOF, CLASS, GROUP & DIVISION AS NOTED	K	SUBSCRIPT "K" ADDED TO ANY SYMBOL INDICATES KEY OPERATED	WP	SUBSCRIPT "WP" APPLIED TO ANY SYMBOL INDICATES WEATHERPROOF NEMA 3R OR EQUIVALENT
E	SUBSCRIPT "E" ADDED TO ANY SYMBOL INDICATES EXISTING	WG	SUBSCRIPT "WG" ADDED TO ANY SYMBOL INDICATES WIRE GUARD	P	SUBSCRIPT "P" ADDED TO ANY SYMBOL INDICATES PILOT LIGHT
PD	SUBSCRIPT "PD" ADDED TO ANY FLOOR OUTLET INDICATES PEDESTAL MOUNTED	NL	SUBSCRIPT "NL" ADDED TO ANY SYMBOL INDICATES AN UNSWITCHED LUMINAIRE OPERATING AS A NIGHT LIGHT		
AC	SUBSCRIPT "AC" ADDED TO ANY SYMBOL INDICATES ABOVE COUNTER. LOCATE CENTER OF DEVICE 4" ABOVE COUNTER SURFACE OR WHERE PRESENT, 4" ABOVE BACKSPASH, WHERE INDICATED ADJACENT TO LAVATORY WITHOUT COUNTER, LOCATE CENTER OF DEVICE 8" ABOVE RIM OF LAVATORY.				

ABBREVIATIONS					
A AMPERE	EC ELECTRICAL CONTRACTOR	KW KILOWATT	PNL PANEL	QTY QUANTITY	
AFB ABOVE FINISHED FLOOR	EGB ELECTRICAL GROUND BAR	LTG LIGHTING	QTY QUANTITY	RM ROOM	
AHJ AUTHORITY HAVING JURISDICTION	ELEC ELECTRICAL	MAX MAXIMUM	SBB SECONDARY BONDING BUSBAR	SCCR SHORT CIRCUIT CURRENT RATING	
AIC AMPERES INTERRUPTING CURRENT	EMD ESTIMATED MAXIMUM DEMAND	MCB MAIN CIRCUIT BREAKER	SCHD SCHEDULE	SPD SURGE PROTECTIVE DEVICE	
ATS AUTOMATIC TRANSFER SWITCH	EMI ELECTROMAGNETIC INTERFERENCE	MCC MOTOR CONTROL CENTER	SPD SURGE PROTECTIVE DEVICE	SS STAINLESS STEEL	
AUX AUXILIARY	EPO EMERGENCY POWER OFF	MECH MECHANICAL	SPECS SPECIFICATIONS	STD STANDARD	
AV AUDIOVISUAL	EXIST EXISTING	MGB MAIN GROUND BAR	SW SWITCH	SWB SWITCHBOARD	
AWG AMERICAN WIRE GAUGE	FA FIRE ALARM	MIN MINIMUM	SWG SWITCHGEAR	TELECOM TELECOMMUNICATIONS	
BMSC BUILDING MANAGEMENT CONTROL SYSTEM	FAA FIRE ALARM ANNUNCIATOR PANEL	MISC MISCELLANEOUS	TYP TYPICAL	UG UNDERGROUND	
C CONDUIT	FACP FIRE ALARM CONTROL PANEL	MLO MAIN LUGS ONLY	UNO UNLESS NOTED OTHERWISE	UPS UNINTERRUPTIBLE POWER SUPPLY	
CATV CABLE TELEVISION	FC FOOT CANDLES	N1 NEMA 1 ENCLOSURE	VA VOLT-AMPERES	W WATT	
CB CIRCUIT BREAKER	FLA FULL LOAD AMPS	N3R NEMA 3R ENCLOSURE	XFMR TRANSFORMER		
CCT CORRELATED COLOR TEMPERATURE	FT FEET	N4X NEMA 4X ENCLOSURE			
CCTV CLOSED CIRCUIT TELEVISION	FSAE FIRE SERVICE ACCESS ELEVATOR	NX NORMALLY CLOSED			
CKT CIRCUIT	GC GENERAL CONTRACTOR	NIC NOT IN CONTRACT			
CL CENTER LINE	GECC GROUNDING ELECTRODE CONDUCTOR	NO NORMALLY OPEN			
CLG CEILING	GFCI GROUND FAULT CIRCUIT INTERRUPTER	NTS NOT TO SCALE			
CR COLOR RENDERING INDEX	GND GROUND	OC ON CENTER			
DISC DISCONNECT	HP HORSEPOWER	OFCI OWNER FURNISHED CONTRACTOR INSTALLED			
DIST DISTRIBUTION	HZ HERTZ	PB PULLBOX			
DMX DIGITAL MULTI-PLEX	JB JUNCTION BOX	PBB PRIMARY BONDING BUSBAR			
DN DOWN	KMCL THOUSAND CIRCULAR MILS	PDU POWER DISTRIBUTION UNIT			
DWG DRAWING	KV KILOVOLT	PV POST INDICATOR VALVE			
	KVA KILOVOLT AMPERE				

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MARK	REVISION	DATE

100% CONSTRUCTION DOCUMENTS

PROJECT NUMBER	125.0278.10
DATE	10/10/2025
SHEET TITLE	
MECHANICAL ELECTRICAL & PLUMBING SYMBOLS AND ABBREVIATIONS	
SHEET NO.	
MEP0.00	



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DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) 2000 N 16 ST. CLARINDA, IA 51632

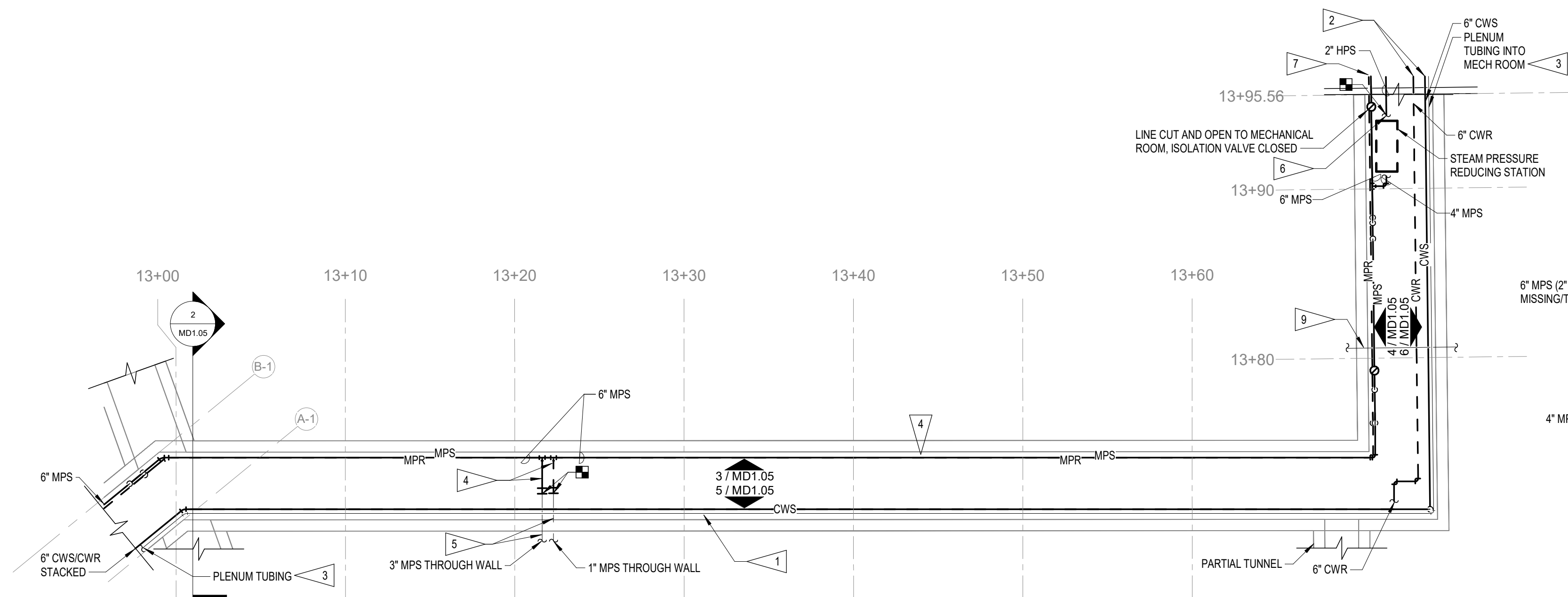
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GENERAL NOTES

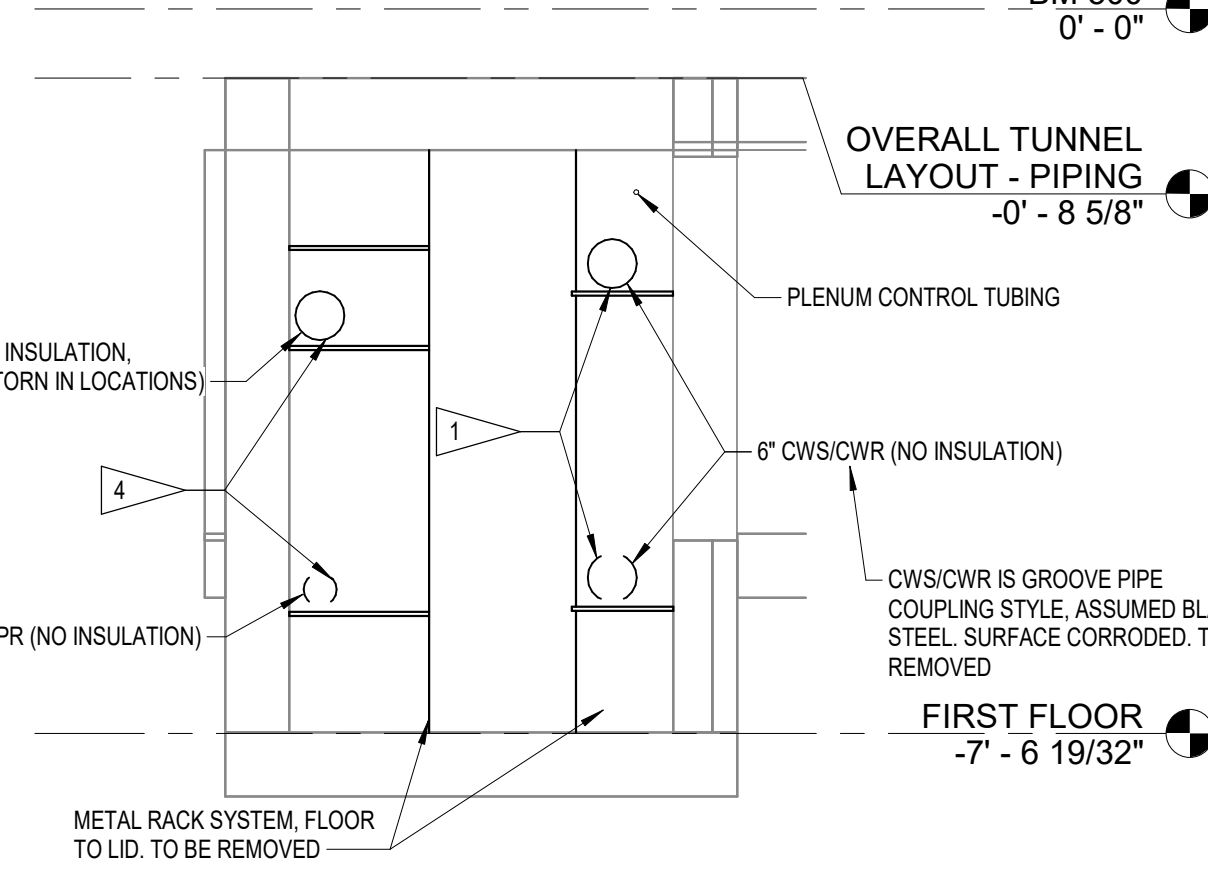
A. IT IS SUSPECTED THAT THE EXISTING ISOLATION VALVE(S) THAT SUPPLY STEAM AND STEAM CONDENSATE IN THE TUNNEL ARE COMPROMISED AND MAY NOT SHUT ENTIRELY. CONTRACTOR SHALL INCLUDE IN SCOPE ISOLATION OF TUNNEL SYSTEM FROM PLANT AND BUILDINGS TO ALLOW REMOVAL AND REPLACEMENT OF FAULTY VALVES PRIOR TO COMMENCING WORK IN TUNNEL. FIELD VERIFY AND COORDINATE VALVE LOCATIONS WITH OWNER. REPLACE VALVES IN A MANNER TO MINIMIZE DOWNTIME OF SYSTEMS NOT SERVING TUNNEL.

FLAG NOTES

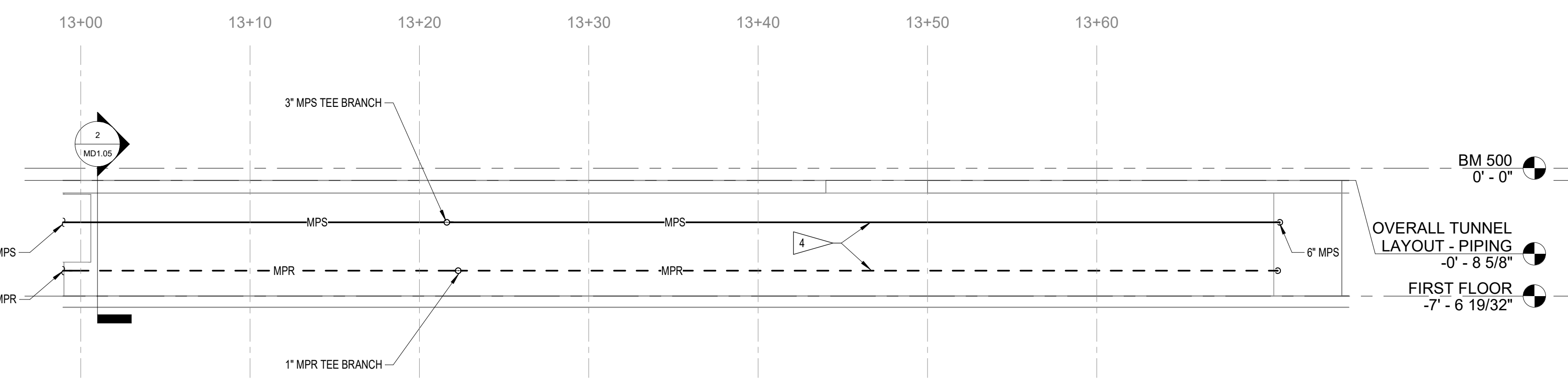
- 1. REMOVE CHILLED WATER PIPING FROM TUNNEL, INCLUDING ALL EXISTING HANGERS AND INSULATION.
2. FIELD VERIFY NEAREST CHILLED WATER SUPPLY AND RETURN FITTING PIPING CONNECTION LOCATED WITHIN ADJACENT BUILDING AND REMOVE ALL PIPING, INCLUDING FITTING, ON TUNNEL SIDE OF CONNECTION. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
3. EXISTING PLENUM CONTROL TUBING TO REMAIN. PROTECT DURING CONSTRUCTION.
4. REMOVE EXISTING MPS/MPR PIPING FROM TUNNEL, INCLUDING ALL EXISTING HANGERS AND INSULATION.
5. FIELD CUT MPS/MPR PIPING ON TUNNEL SIDE OF WALL PENETRATION LEAVING AN ADEQUATE LENGTH OF EXISTING PIPE THROUGH WALL TO EXTEND AND CONNECT TO AS PART OF NEW WORK.
6. REMOVE EXISTING PRV STATION. PROTECT ANY CONTROL TUBING/APURTENANCES FOR USE WITH NEW PRV STATION. FIELD VERIFY NEAREST 2" HPS PIPING CONNECTION LOCATED WITHIN ADJACENT BUILDING AND REMOVE ALL PIPING INCLUDING FITTING ON TUNNEL SIDE OF CONNECTION. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
7. FIELD VERIFY NEAREST STEAM CONDENSATE RETURN PIPE FITTING CONNECTIONS LOCATED WITHIN ADJACENT BUILDING AND REMOVE ALL PIPING, INCLUDING FITTING, ON TUNNEL SIDE OF CONNECTION. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
8. REMOVE EXISTING CONDENSATE STEAM TRAP ASSEMBLY AND DOCUMENT LOCATION AND SIZE OF ASSEMBLY FOR NEW ASSEMBLY LOCATION UNDER NEW WORK.
9. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS. COVER AND PROTECT DURING CONSTRUCTION.



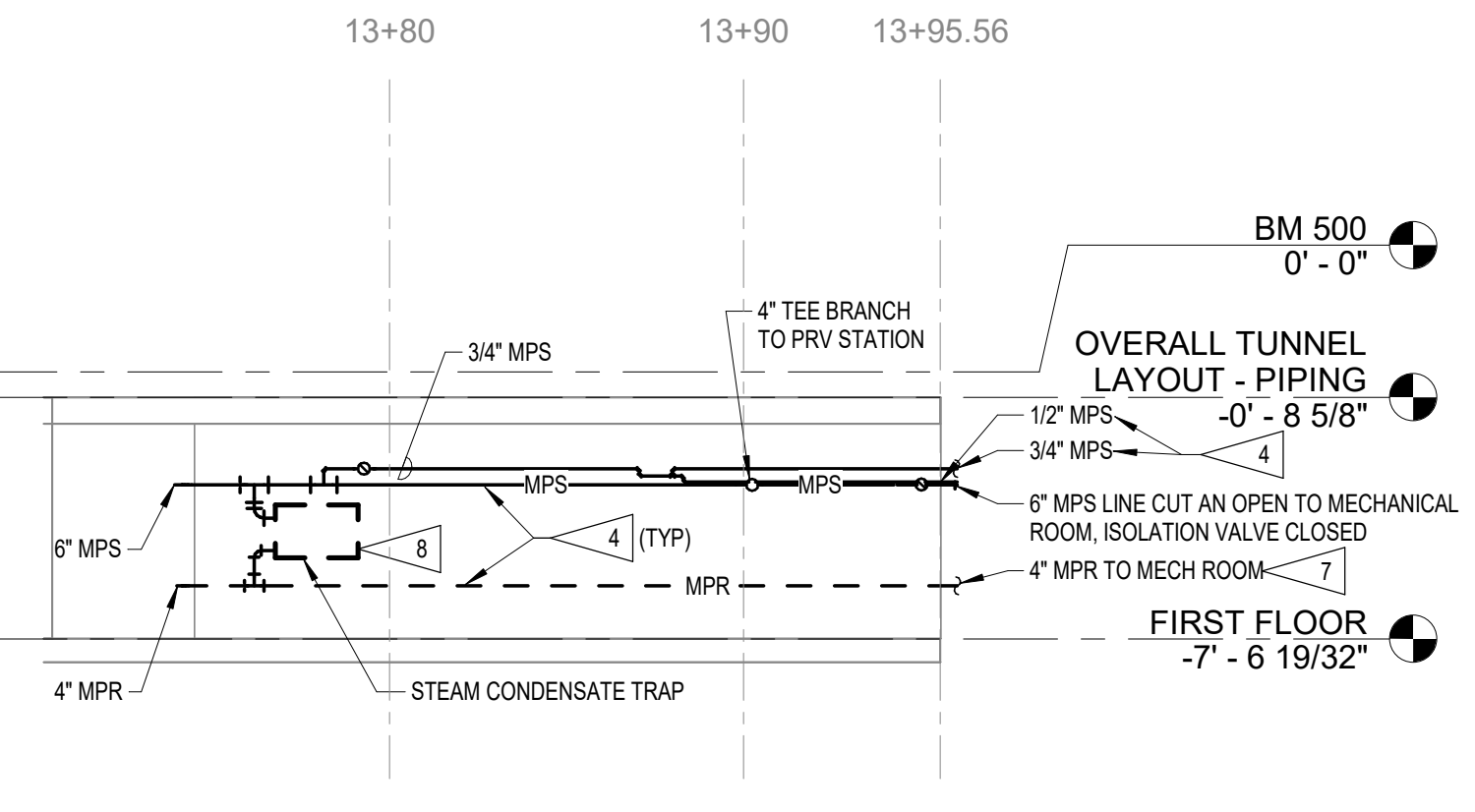
1 TUNNEL 1 - 13+00 TO 13+95.56 - PIPING DEMO FLOOR PLAN 3/16" = 1'-0"



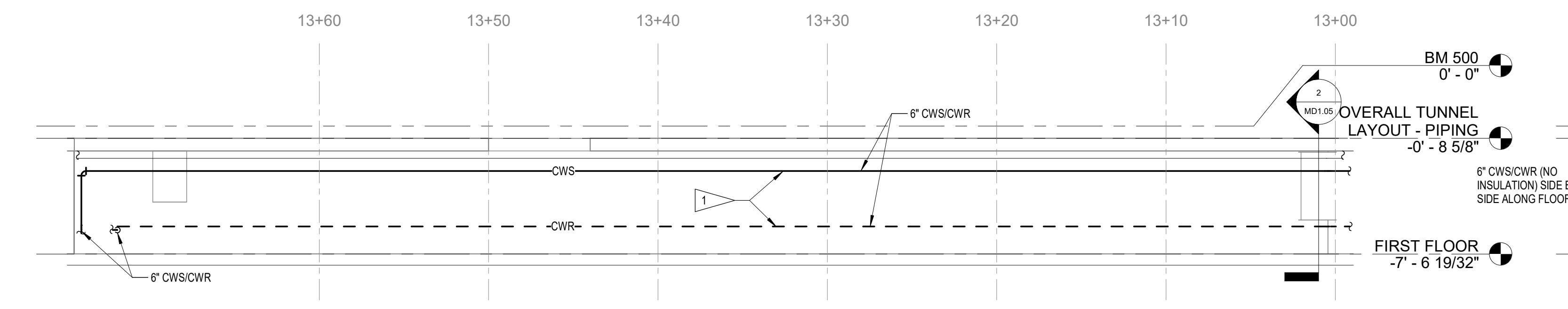
2 TUNNEL 1 - 13+00 TO 13+40 (LOOKING EAST) - PIPING DEMO SECTION 1/2" = 1'-0"



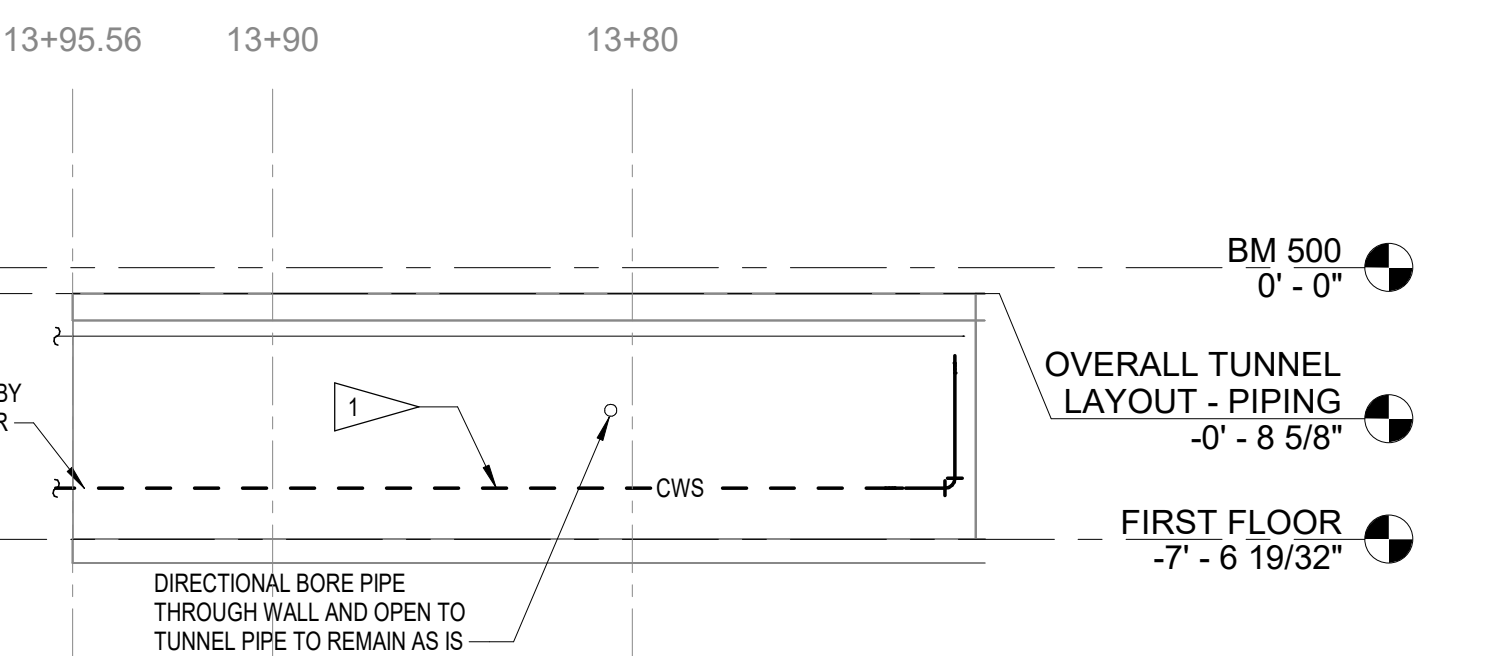
3 TUNNEL 1 - WEST WALL 13+00 TO 13+72.47 - PIPING DEMO ELEVATION 3/16" = 1'-0"



4 TUNNEL 1 - WEST WALL 13+72.47 TO 13+95.56 - PIPING DEMO ELEVATION 3/16" = 1'-0"



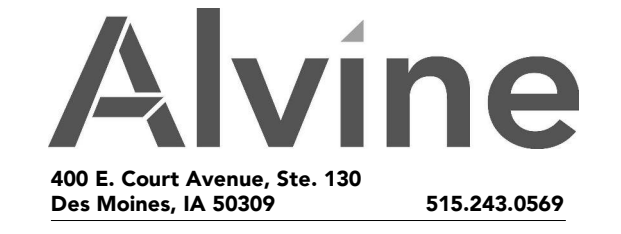
5 TUNNEL 1 - EAST WALL 13+00 TO 13+72.47 - PIPING DEMO ELEVATION 3/16" = 1'-0"



6 TUNNEL 1 - EAST WALL 13+72.47 TO 13+95.56 - PIPING DEMO ELEVATION 3/16" = 1'-0"

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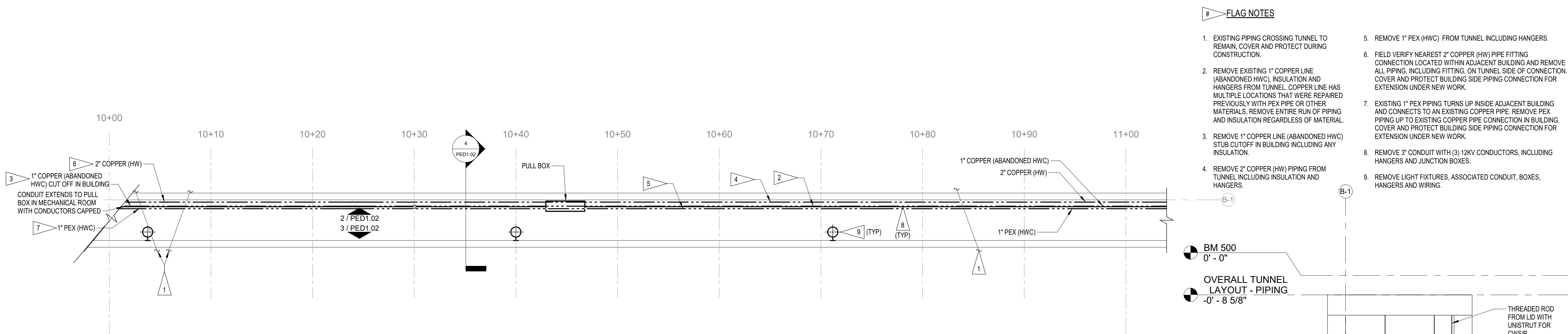
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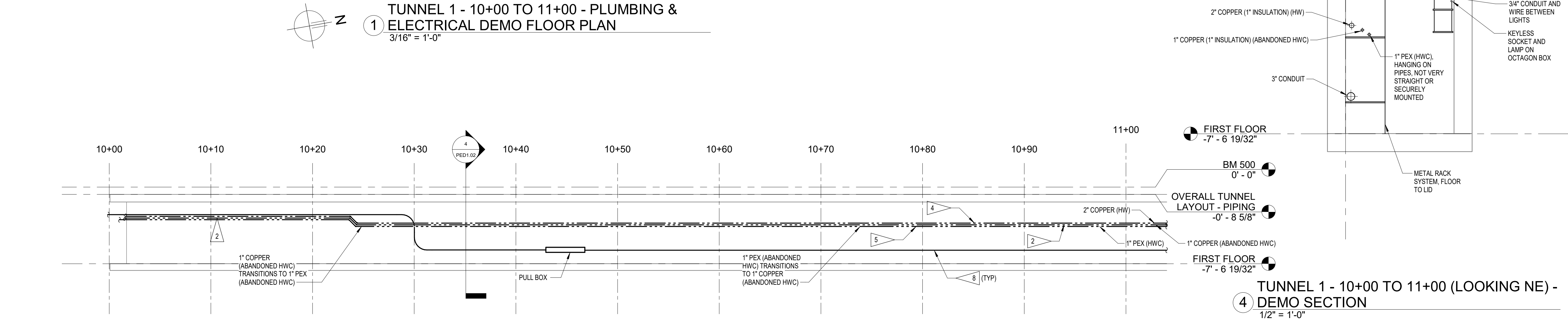
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MARK	REVISION	DATE

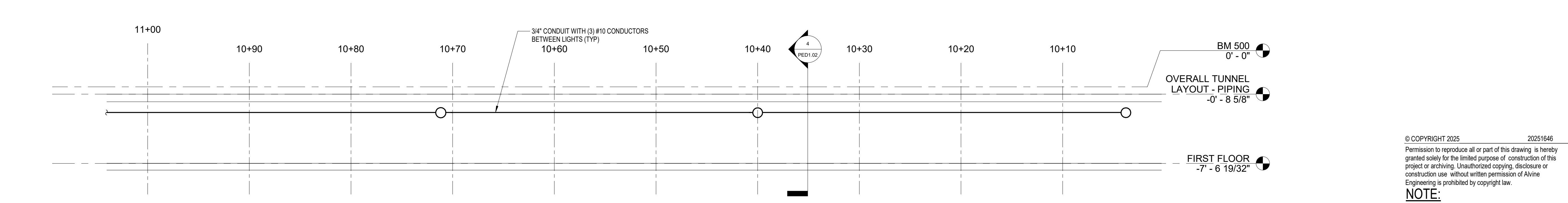
100% CONSTRUCTION DOCUMENTS
 PROJECT NUMBER 125.0278.10
 DATE 10/10/2025
 SHEET TITLE
TUNNEL PLANS AND ELEVATIONS - PLUMBING & ELECTRICAL DEMO
 SHEET NO.
PED1.02



1 TUNNEL 1 - 10+00 TO 11+00 - PLUMBING & ELECTRICAL DEMO FLOOR PLAN
 3/16" = 1'-0"

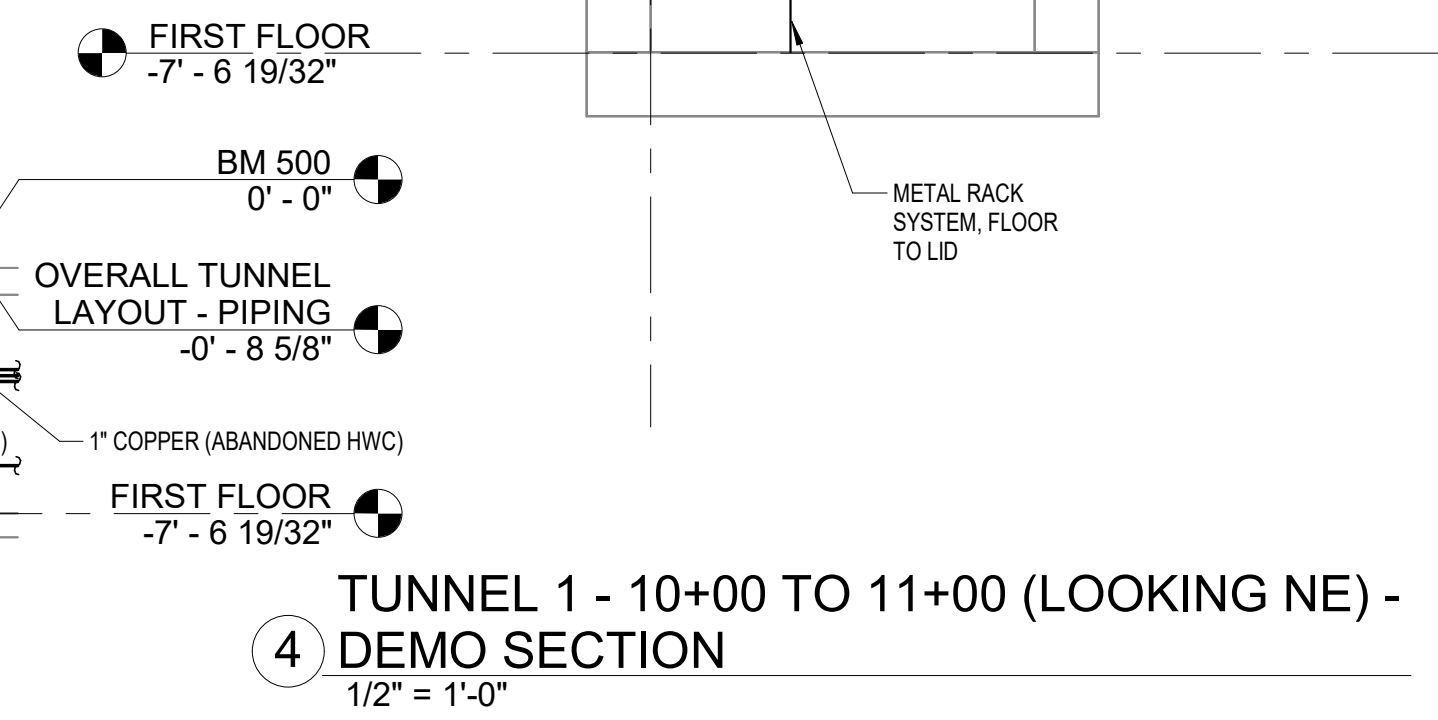


2 TUNNEL 1 - WEST WALL 10+00 TO 11+00 - PLUMBING & ELECTRICAL DEMO ELEVATION
 3/16" = 1'-0"



3 TUNNEL 1 - EAST WALL 10+00 TO 11+00 - PLUMBING & ELECTRICAL DEMO ELEVATION
 3/16" = 1'-0"

- FLAG NOTES**
- EXISTING PIPING CROSSING TUNNEL TO REMAIN, COVER AND PROTECT DURING CONSTRUCTION.
 - REMOVE EXISTING 1" COPPER LINE (ABANDONED HWC), INSULATION AND HANGERS FROM TUNNEL. COPPER LINE HAS MULTIPLE LOCATIONS THAT WERE REPAIRED PREVIOUSLY WITH PEX PIPE OR OTHER MATERIALS. REMOVE ENTIRE RUN OF PIPING AND INSULATION REGARDLESS OF MATERIAL.
 - REMOVE 1" COPPER LINE (ABANDONED HWC) STUB CUTOFF IN BUILDING INCLUDING ANY INSULATION.
 - REMOVE 2" COPPER (HW) PIPING FROM TUNNEL INCLUDING INSULATION AND HANGERS.
 - REMOVE 1" PEX (HWC) FROM TUNNEL INCLUDING HANGERS.
 - FIELD VERIFY NEAREST 2" COPPER (HW) PIPE FITTING CONNECTION LOCATED WITHIN ADJACENT BUILDING AND REMOVE ALL PIPING, INCLUDING FITTING, ON TUNNEL SIDE OF CONNECTION. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
 - EXISTING 1" PEX PIPING TURNS UP INSIDE ADJACENT BUILDING AND CONNECTS TO AN EXISTING COPPER PIPE. REMOVE PEX PIPING UP TO EXISTING COPPER PIPE CONNECTION IN BUILDING. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
 - REMOVE 3" CONDUIT WITH (3) 12KV CONDUCTORS, INCLUDING HANGERS AND JUNCTION BOXES.
 - REMOVE LIGHT FIXTURES, ASSOCIATED CONDUIT, BOXES, HANGERS AND WIRING.



4 TUNNEL 1 - 10+00 TO 11+00 (LOOKING NE) - DEMO SECTION
 1/2" = 1'-0"

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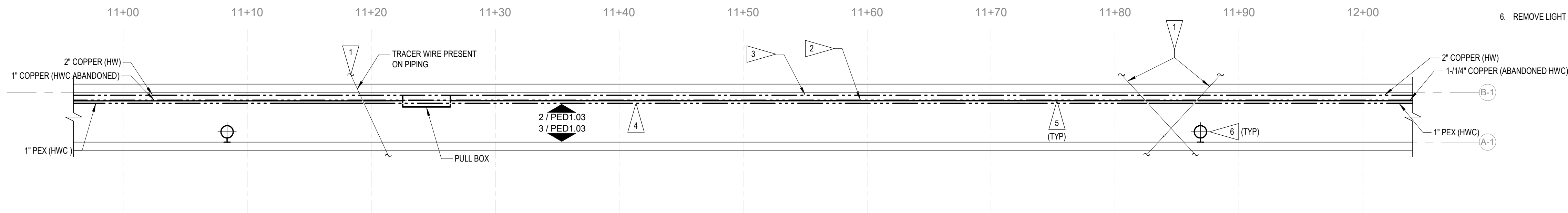
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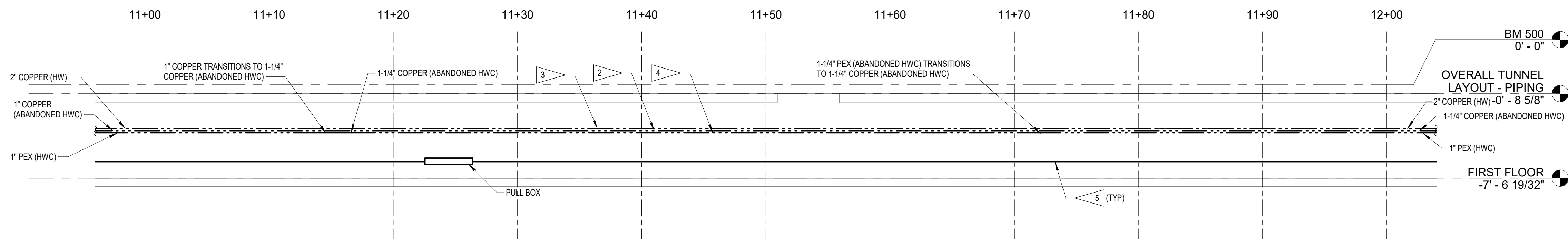
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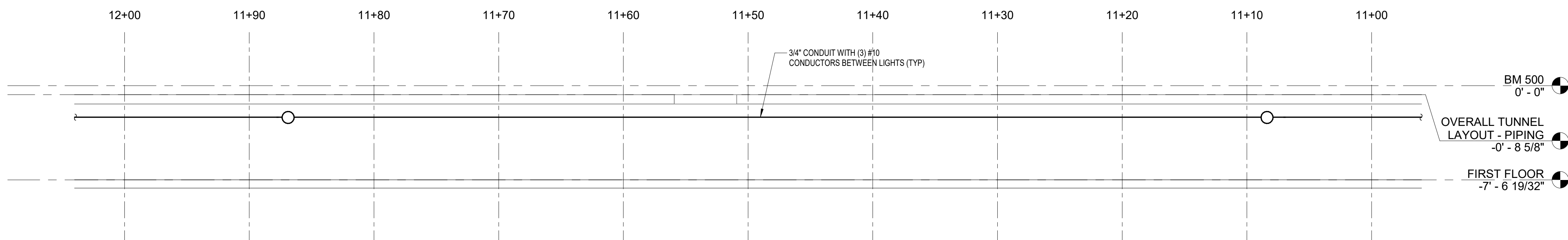
- 1. EXISTING PIPING CROSSING TUNNEL TO REMAIN, COVER AND PROTECT DURING CONSTRUCTION.
2. REMOVE EXISTING 1" AND 1-1/4" COPPER LINE (ABANDONED HWC), INSULATION AND HANGERS FROM TUNNEL. COPPER LINE HAS MULTIPLE LOCATIONS THAT WERE REPAIRED PREVIOUSLY WITH PEX PIPE OR OTHER MATERIALS. REMOVE ENTIRE RUN OF PIPING AND INSULATION REGARDLESS OF MATERIAL.
3. REMOVE 2" COPPER (HW) PIPING FROM TUNNEL INCLUDING INSULATION AND HANGERS.
4. REMOVE 1" PEX (HWC) FROM TUNNEL INCLUDING HANGERS.
5. REMOVE 3" CONDUIT WITH (3) 12KV CONDUCTORS, INCLUDING HANGERS AND JUNCTION BOXES.
6. REMOVE LIGHT FIXTURES, ASSOCIATED CONDUIT, BOXES, HANGERS AND WIRING.



TUNNEL 1 - 11+00 TO 12+00 - PLUMBING & ELECTRICAL DEMO FLOOR PLAN 3/16" = 1'-0"



TUNNEL 1 - WEST WALL 11+00 TO 12+00 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16" = 1'-0"



TUNNEL 1 - EAST WALL 11+00 TO 12+00 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16" = 1'-0"

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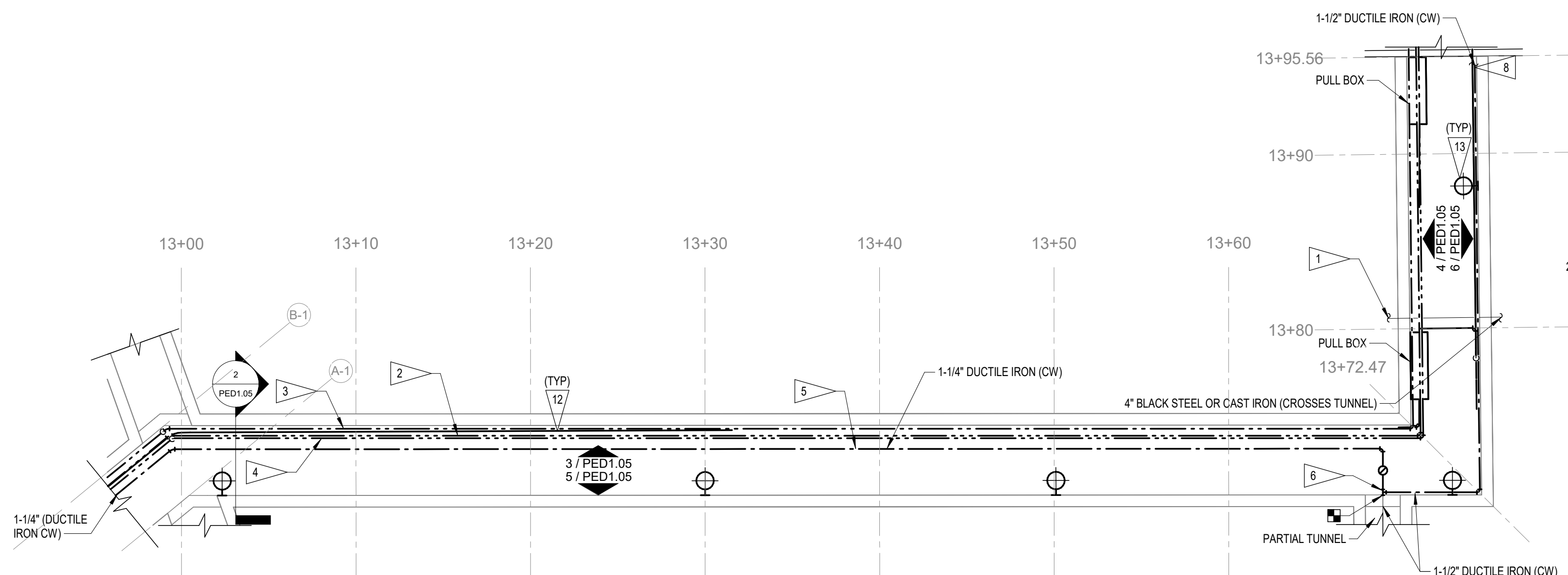
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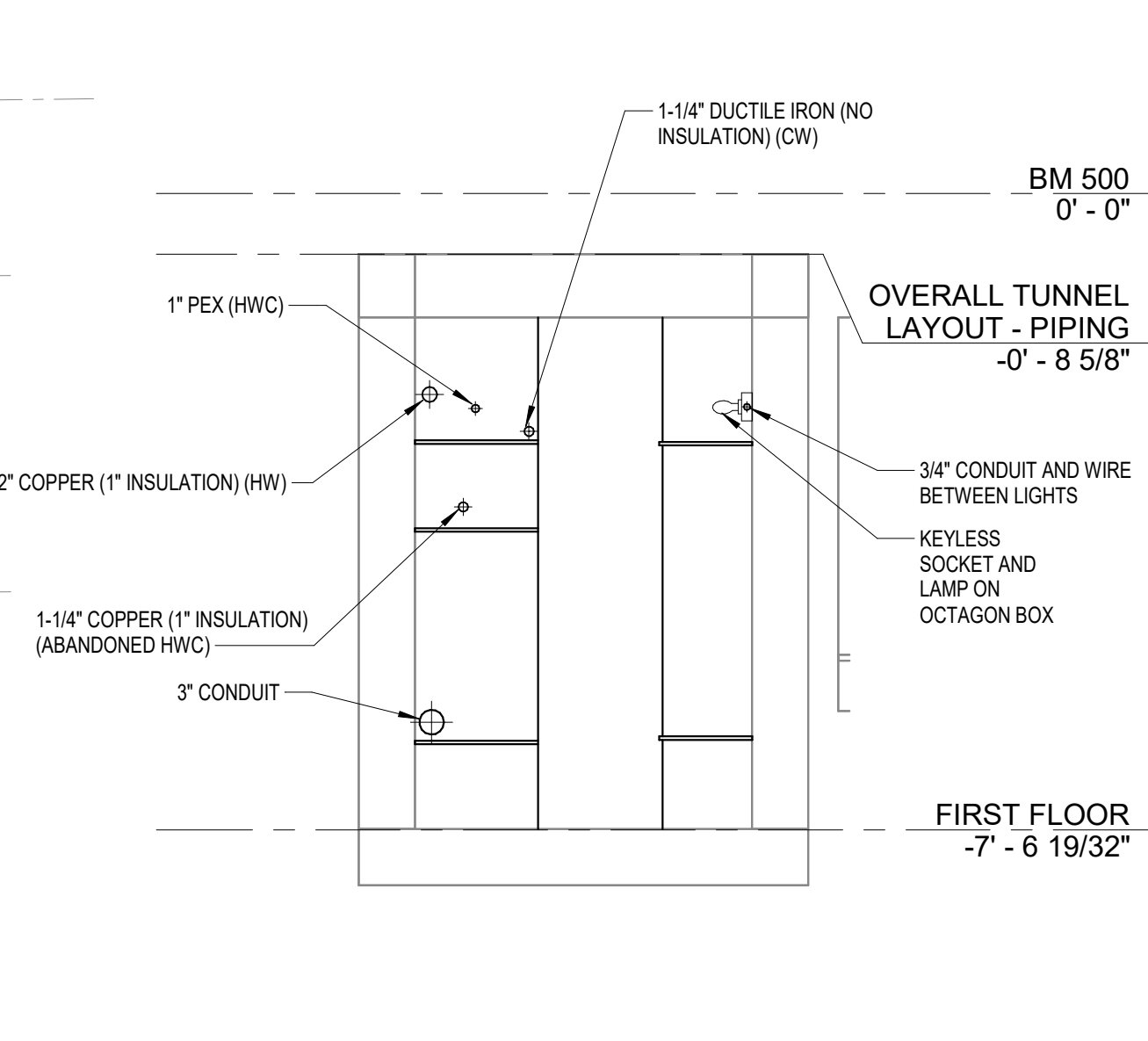
DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) 2000 N 16 ST. CLARINDA, IA 51632

FLAG NOTES

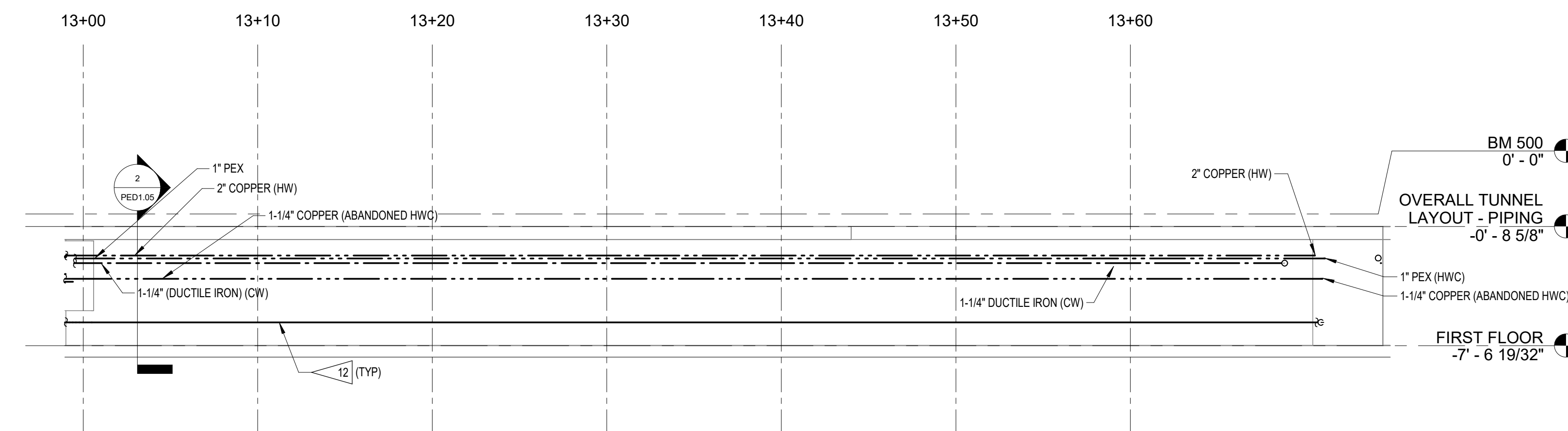
- 1. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS. COVER AND PROTECT DURING CONSTRUCTION.
2. REMOVE EXISTING COPPER LINE (ABANDONED HWC), INSULATION AND HANGERS FROM TUNNEL. COPPER LINE HAS MULTIPLE LOCATIONS THAT WERE REPAIRED PREVIOUSLY WITH PEX PIPE OR OTHER MATERIALS. REMOVE ENTIRE RUN OF PIPING AND INSULATION REGARDLESS OF MATERIAL.
3. REMOVE COPPER (HW) PIPING FROM TUNNEL INCLUDING INSULATION AND HANGERS.
4. REMOVE 1" PEX (HWC) FROM TUNNEL INCLUDING HANGERS.
5. REMOVE DUCTILE IRON (CW) PIPING, INCLUDING HANGERS FROM TUNNEL.
6. REMOVE DUCTILE IRON PIPING ON TUNNEL SIDE OF TEE. TEE BRANCH ROUTED INTO PARTIAL TUNNEL TO REMAIN. PROTECT FOR EXTENSION UNDER NEW WORK.
7. EXISTING 1" PEX PIPING TURNS DOWN INSIDE ADJACENT BUILDING AND CONNECTS TO AN EXISTING COPPER PIPE. REMOVE PEX PIPING UP TO EXISTING COPPER PIPE CONNECTION UNDER NEW WORK.
8. EXISTING 1-1/2" DUCTILE IRON PIPING TURNS DOWN INSIDE ADJACENT BUILDING AND CONNECTS TO AN EXISTING COPPER PIPE. REMOVE DUCTILE IRON PIPING UP TO EXISTING COPPER PIPE CONNECTION IN BUILDING. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
9. FIELD VERIFY NEAREST 2" COPPER (HW) PIPE FITTING CONNECTION LOCATED WITHIN ADJACENT BUILDING AND REMOVE ALL PIPING, INCLUDING FITTING, ON TUNNEL SIDE OF CONNECTION. COVER AND PROTECT BUILDING SIDE PIPING CONNECTION FOR EXTENSION UNDER NEW WORK.
10. REMOVE COPPER LINE (ABANDONED HWC) AT NEAREST FITTING IN BUILDING INCLUDING ANY INSULATION. CAP ANY EXISTING CONNECTIONS ON BUILDING SIDE.
11. REMOVE PVC PIPING AND CAP CONNECTION ON EXISTING STEEL PIPE.
12. REMOVE 3" CONDUIT WITH (3) 12KV CONDUCTORS, INCLUDING HANGERS AND JUNCTION BOXES.
13. REMOVE LIGHT FIXTURES, ASSOCIATED CONDUIT, BOXES, HANGERS AND WIRING.



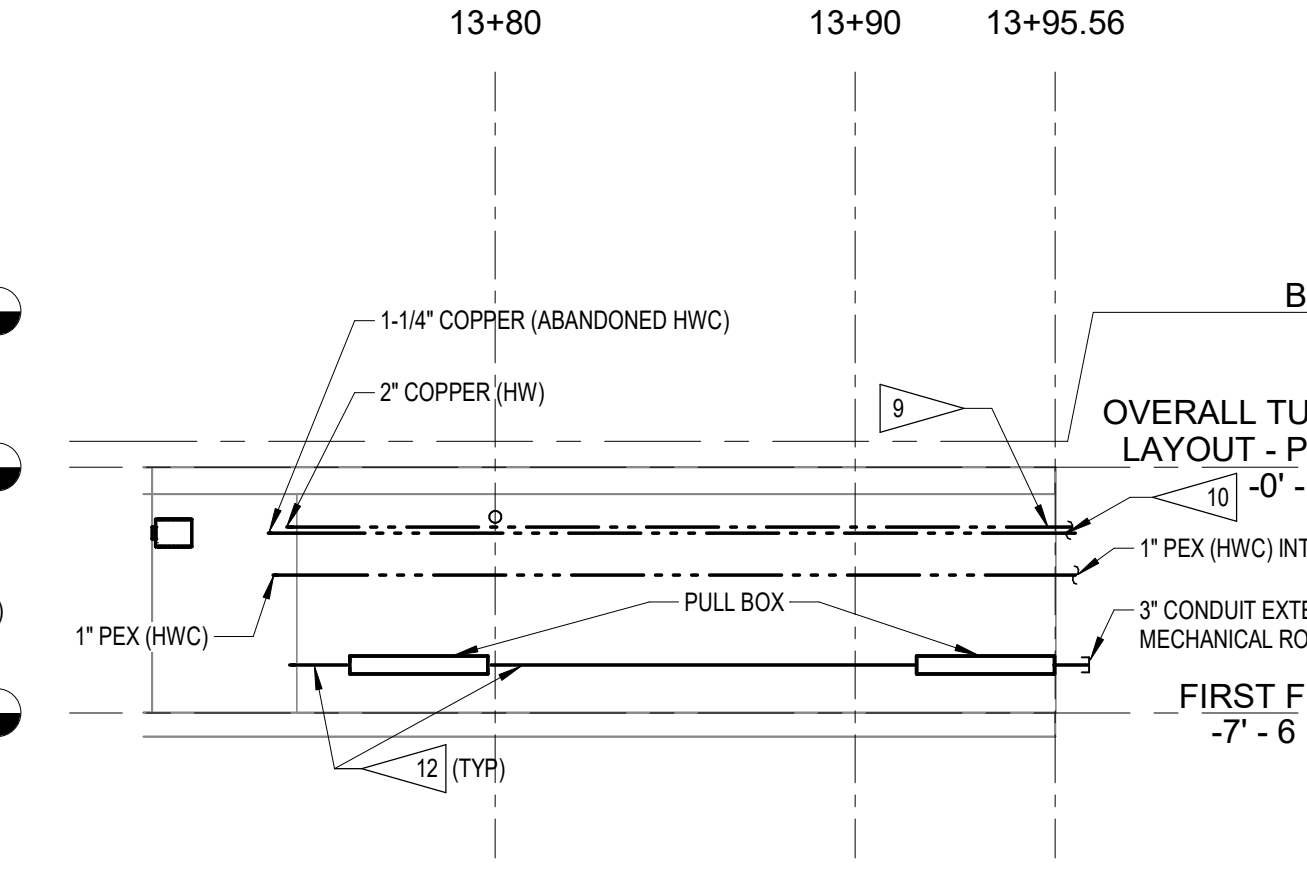
1 TUNNEL 1 - 13+00 TO 13+95.56 - PLUMBING & ELECTRICAL DEMO FLOOR PLAN 3/16\" = 1'-0\"



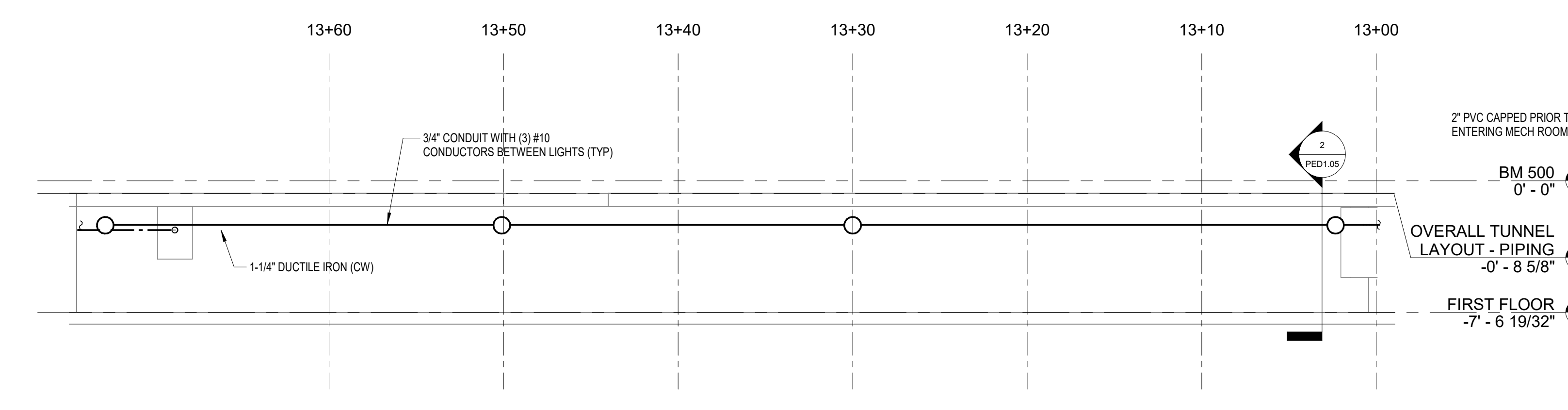
2 TUNNEL 1 - 13+00 TO 13+40 (LOOKING EAST) - PLUMBING & ELECTRICAL DEMO SECTION 1/2\" = 1'-0\"



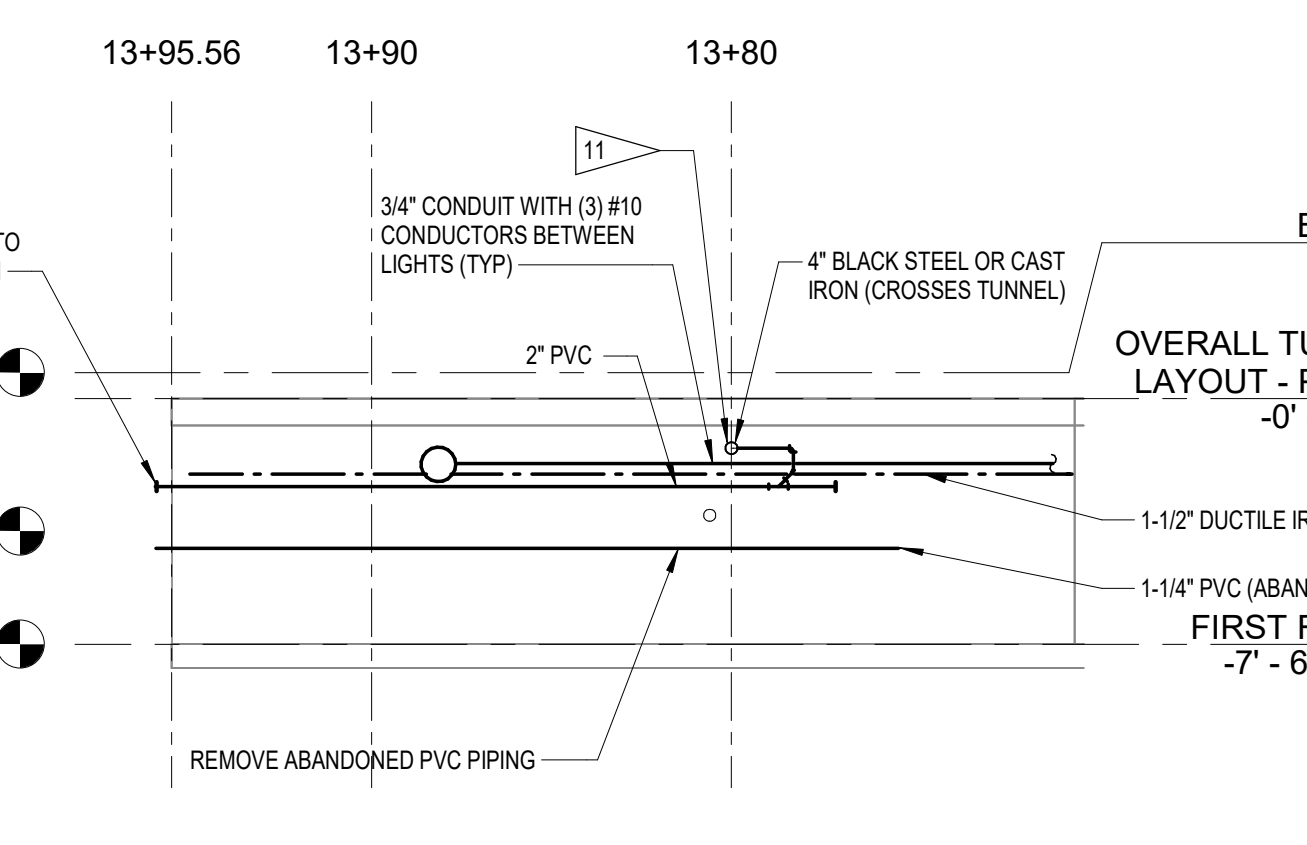
3 TUNNEL 1 - WEST WALL 13+00 TO 13+72.47 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\" = 1'-0\"



4 TUNNEL 1 - WEST WALL 13+72.47 TO 13+95.56 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\" = 1'-0\"



5 TUNNEL 1 - EAST WALL 13+00 TO 13+72.47 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\" = 1'-0\"



6 TUNNEL 1 - EAST WALL 13+72.47 TO 13+95.56 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\" = 1'-0\"

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Table with columns: MARK, REVISION, DATE. Includes project information: 100% CONSTRUCTION DOCUMENTS, PROJECT NUMBER 125.0278.10, DATE 10/10/2025, SHEET TITLE TUNNEL PLANS AND ELEVATIONS DEMO, SHEET NO. PED1.05

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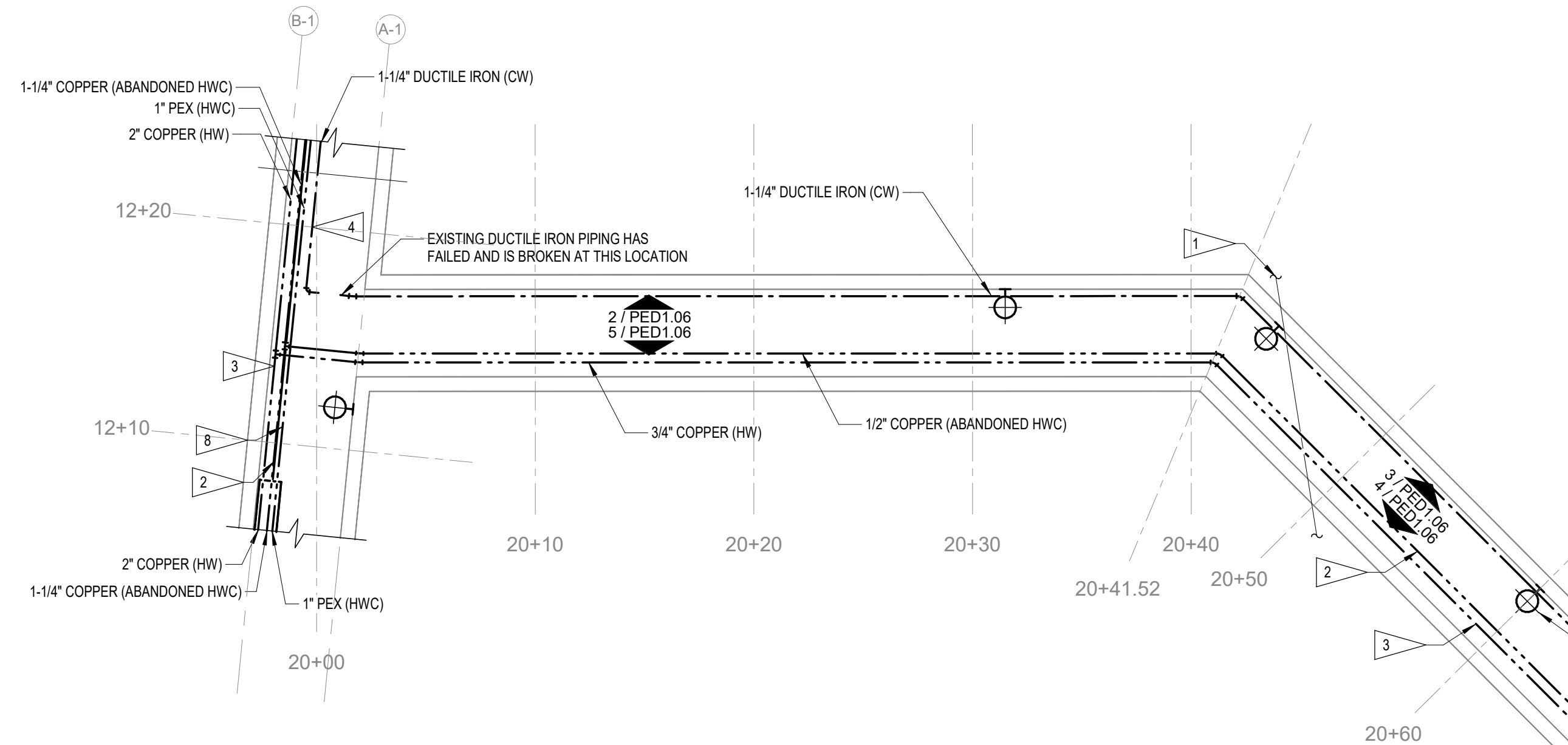
Project Engineer SNYDER & ASSOCIATES, INC. 231 BENNETT AVE. COUNCIL BLUFFS, IOWA 51503 P. 712-322-3202 www.snyder-associates.com

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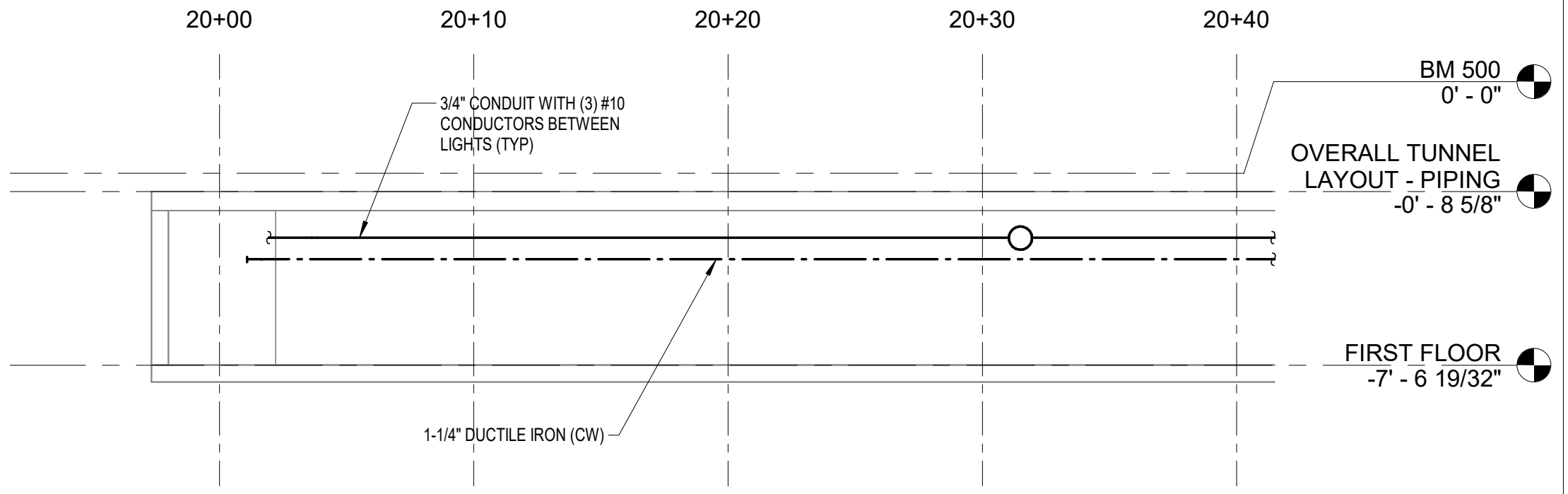
DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) 2000 N 16 ST. CLARINDA, IA 51632

FLAG NOTES

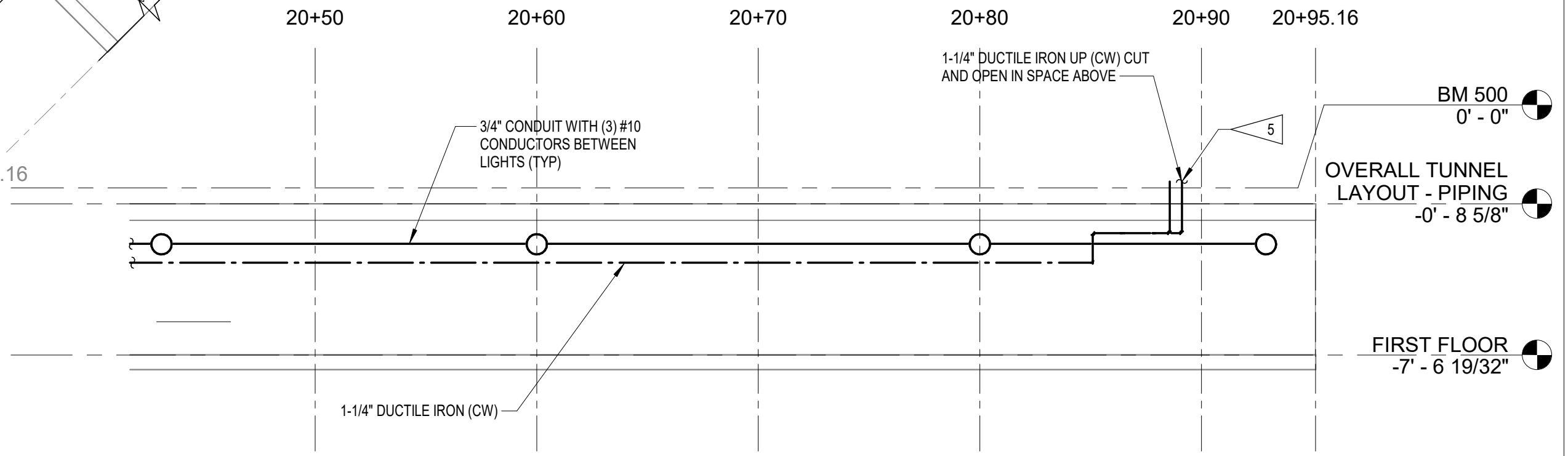
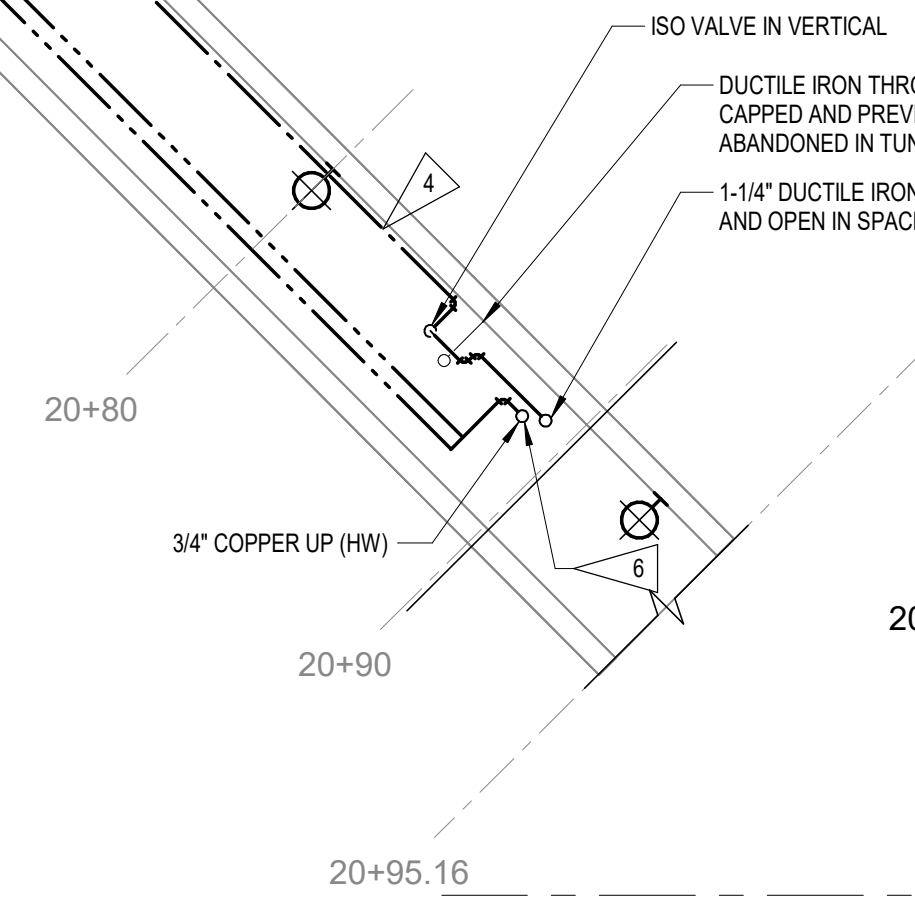
- 1. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.
2. REMOVE EXISTING COPPER LINE (ABANDONED HWC), INSULATION AND HANGERS FROM TUNNEL. COPPER LINE HAS MULTIPLE LOCATIONS THAT WERE REPAIRED PREVIOUSLY WITH PEX PIPE OR OTHER MATERIALS, REMOVE ENTIRE RUN OF PIPING AND INSULATION REGARDLESS OF MATERIAL.
3. REMOVE COPPER (HW) PIPING FROM TUNNEL INCLUDING INSULATION AND HANGERS.
4. REMOVE DUCTILE IRON (CW) PIPING, INCLUDING HANGERS FROM TUNNEL.
5. REMOVE DUCTILE IRON PIPING UP INTO SPACE ABOVE WHERE PIPE IS ALREADY CUT. PATCH FLOOR PENETRATION TO MATCH EXISTING.
6. FIELD VERIFY NEAREST COPPER (HW) PIPE FITTING CONNECTION LOCATED ABOVE FLOOR IN BUILDING ABOVE AND REMOVE ALL PIPING, INCLUDING FITTING, ON TUNNEL SIDE OF CONNECTION. CAP BUILDING SIDE CONNECTION OUTSIDE OF TUNNEL AND ABANDON ANY REMAINING BUILDING SIDE PIPING IN PLACE. PATCH FLOOR PENETRATION TO MATCH EXISTING.
7. REMOVE LIGHT FIXTURES, ASSOCIATED CONDUIT, BOXES, HANGERS AND WIRING.
8. REMOVE 1" PEX (HWC) FROM TUNNEL INCLUDING HANGERS.



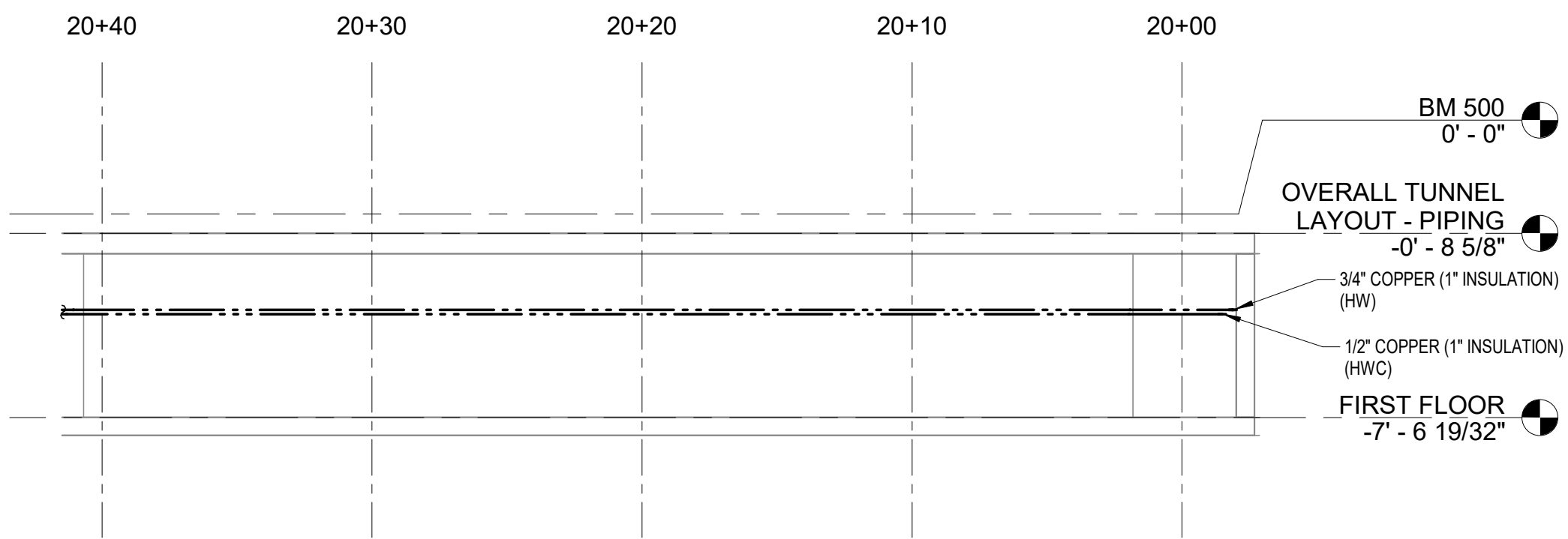
1 TUNNEL 2 20+00 TO 20+95.16 - PLUMBING & ELECTRICAL DEMO FLOOR PLAN 3/16\"/>



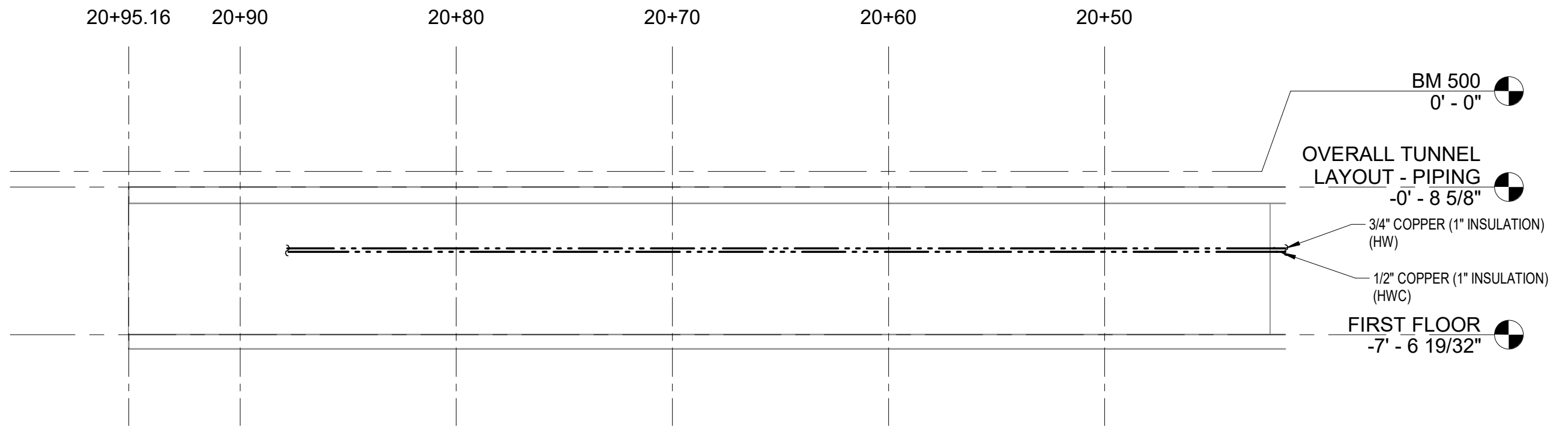
2 TUNNEL 2 - WEST WALL 20+00 TO 20+41.52 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\"/>



3 TUNNEL 2 - WEST WALL 20+41.52 TO 20+95.16 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\"/>



5 TUNNEL 2 - EAST WALL 20+00 TO 20+41.52 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\"/>



4 TUNNEL 2 - EAST WALL 20+41.52 TO 20+95.16 - PLUMBING & ELECTRICAL DEMO ELEVATION 3/16\"/>

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MARK	REVISION	DATE

100% CONSTRUCTION DOCUMENTS

PROJECT NUMBER	125.0278.10
DATE	10/10/2025

SHEET TITLE
TUNNEL PLANS AND ELEVATIONS

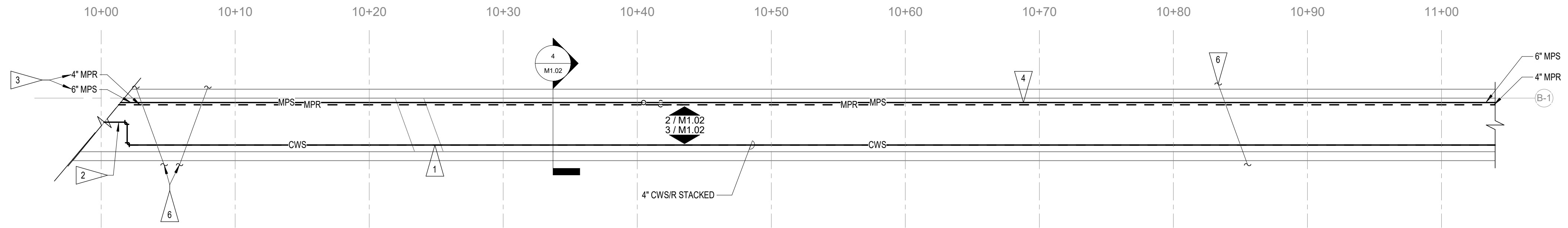
SHEET NO.
M1.02

GENERAL NOTES

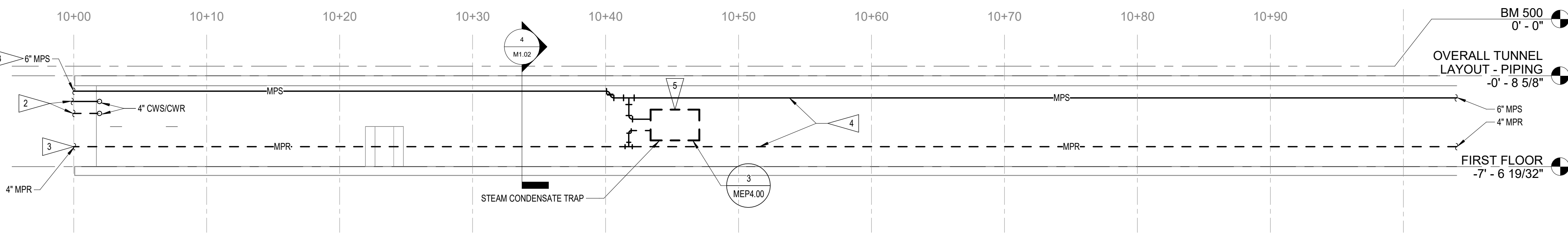
- A. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.
- B. IT IS SUSPECTED THAT THE EXISTING ISOLATION VALVE(S) THAT SUPPLY STEAM AND STEAM CONDENSATE IN THE TUNNEL ARE COMPROMISED AND MAY NOT SHUT ENTIRELY. CONTRACTOR SHALL INCLUDE IN SCOPE ISOLATION OF TUNNEL SYSTEM FROM PLANT AND BUILDINGS TO ALLOW REMOVAL AND REPLACEMENT OF FAULTY VALVES PRIOR TO COMMENCING WORK IN TUNNEL. FIELD VERIFY AND COORDINATE VALVE LOCATIONS WITH OWNER. REPLACE VALVES IN A MANNER TO MINIMIZE DOWNTIME OF SYSTEMS NOT SERVING TUNNEL.

FLAG NOTES

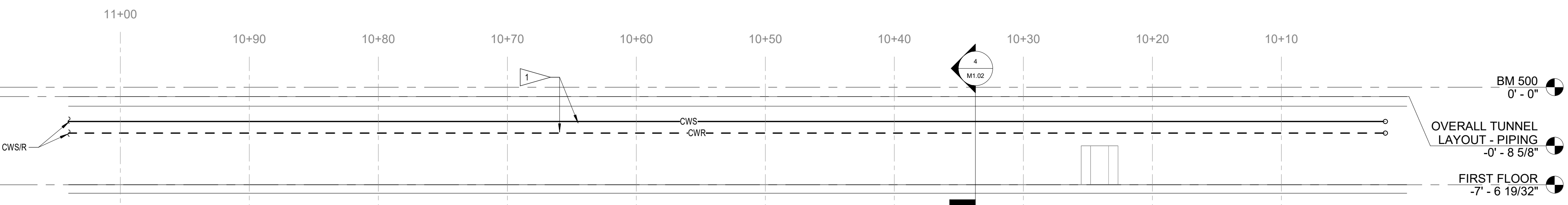
- 1. PROVIDE AND INSTALL NEW CWS/CWR PIPING IN TUNNEL, INCLUDING NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS CWS/CWR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
- 2. MODIFY AND EXTEND EXISTING CWS/CWR BUILDING SIDE CONNECTIONS THAT REMAIN AFTER DEMO WORK IS COMPLETE WITH NEW CWS/CWR PIPING. NEW PIPING TO PASS INTO TUNNEL IN SIMILAR MANNER TO CWS/CWR PIPING THAT WAS REMOVED.
- 3. MODIFY AND EXTEND EXISTING MPS/MPR BUILDING SIDE CONNECTIONS THAT REMAIN AFTER DEMO WORK IS COMPLETE WITH NEW MPS/MPR PIPING. NEW PIPING TO PASS INTO TUNNEL IN SIMILAR MANNER TO MPS/MPR PIPING THAT WAS REMOVED.
- 4. PROVIDE AND INSTALL NEW MPS/MPR PIPING IN TUNNEL, INCLUDING NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS MPS/MPR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
- 5. PROVIDE AND INSTALL NEW STEAM TRAP ASSEMBLY AT APPROXIMATE LOCATION WHERE EXISTING TRAP ASSEMBLY WAS REMOVED. NEW ASSEMBLY SHALL MATCH PIPE SIZING AND CAPACITY OF EXISTING ASSEMBLY THAT WAS REMOVED.
- 6. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.



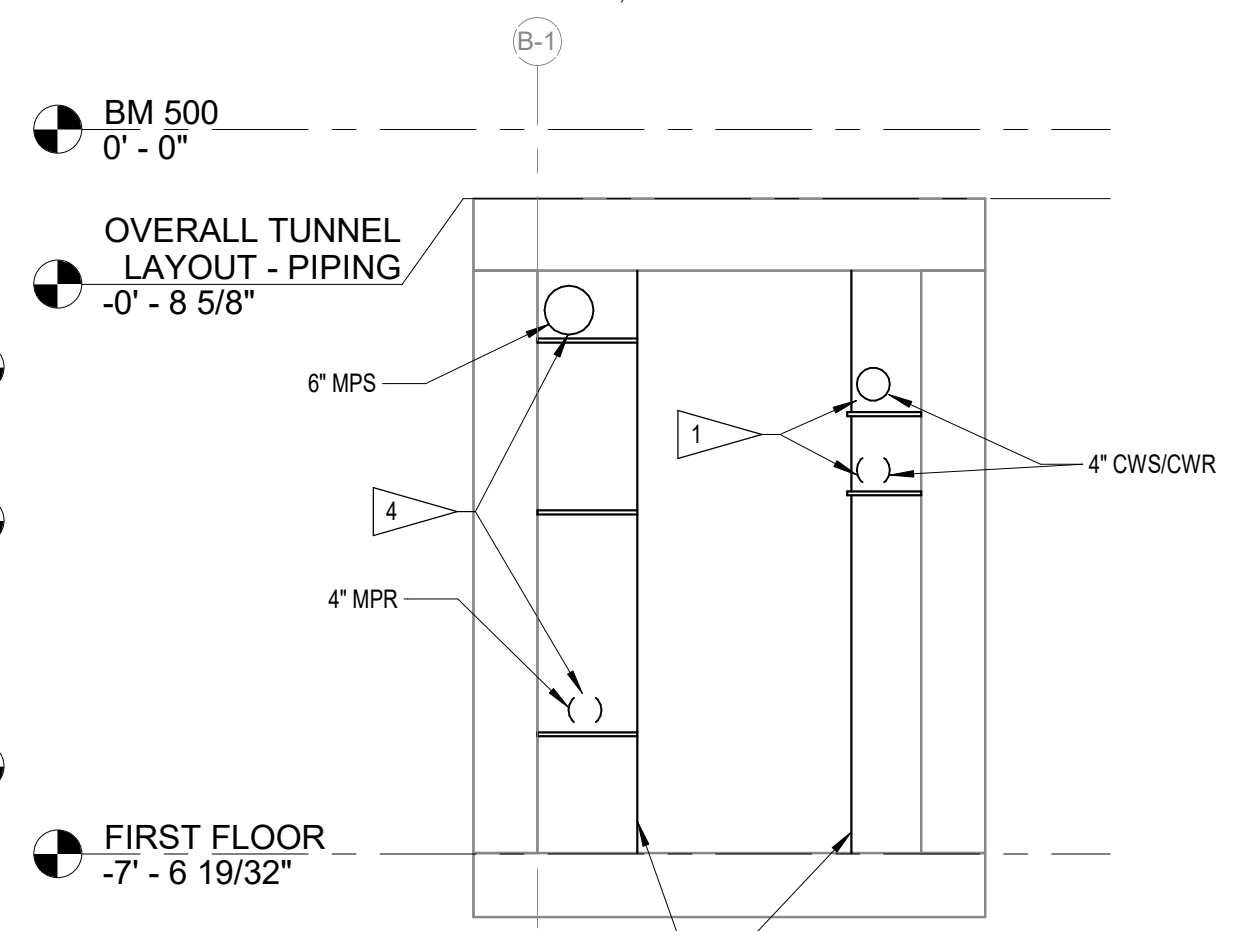
TUNNEL 1 - 10+00 TO 11+00 - PIPING FLOOR PLAN
3/16" = 1'-0"



TUNNEL 1 - WEST WALL 10+00 TO 11+00 - PIPING ELEVATION
3/16" = 1'-0"



TUNNEL 1 - EAST WALL 10+00 TO 11+00 - PIPING ELEVATION
3/16" = 1'-0"



TUNNEL 1 - 10+00 TO 11+00 (LOOKING NE) - PIPING SECTION
1/2" = 1'-0"

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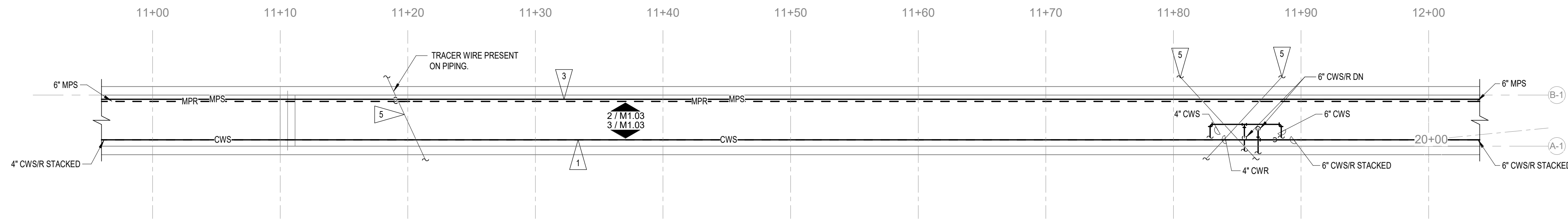
DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) 2000 N 16 ST. CLARINDA, IA 51632

GENERAL NOTES

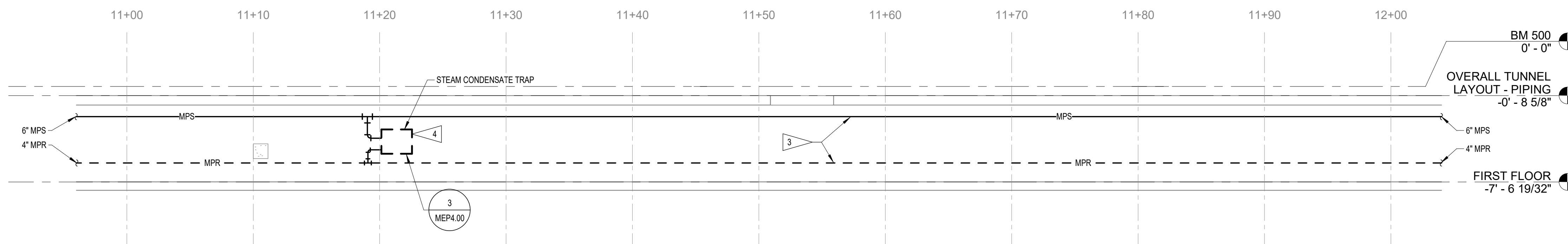
A. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR, MECHANICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.

FLAG NOTES

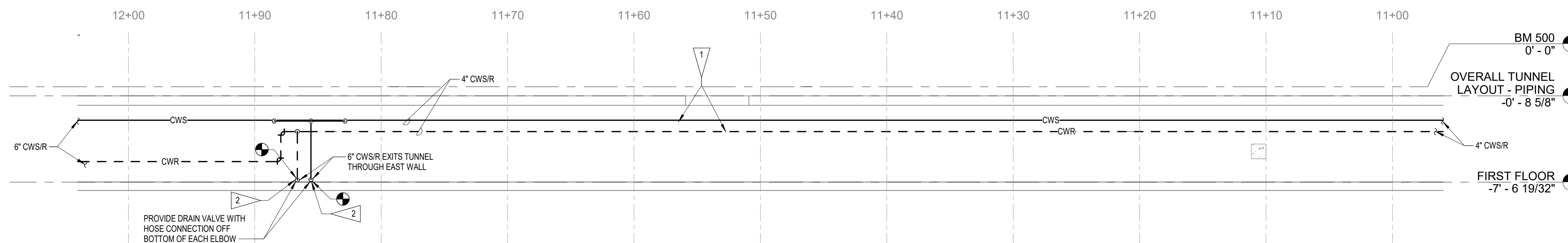
- 1. PROVIDE AND INSTALL NEW CWS/CWR PIPING IN TUNNEL, INCLUDING NEW INSULATION ROUTE IN SIMILAR MANNER TO PREVIOUS CWS/CWR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
2. CONNECT NEW 6" CWS/CWR TO EXISTING THROUGH WALL PIPING STUB THAT REMAINS AFTER DEMO WORK IS COMPLETE. MODIFY AND EXTEND EXISTING CONNECTION AS REQUIRED FOR NEW WORK.
3. PROVIDE AND INSTALL NEW MPS/MPR PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS MPS/MPR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
4. PROVIDE AND INSTALL NEW STEAM TRAP ASSEMBLY AT APPROXIMATE LOCATION WHERE EXISTING TRAP ASSEMBLY WAS REMOVED. NEW ASSEMBLY SHALL MATCH PIPE SIZING AND CAPACITY OF EXISTING ASSEMBLY THAT WAS REMOVED.
5. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS. COVER AND PROTECT DURING CONSTRUCTION.



1 TUNNEL 1 - 11+00 TO 12+00 - PIPING FLOOR PLAN 3/16" = 1'-0"



2 TUNNEL 1 - WEST WALL 11+00 TO 12+00 - PIPING ELEVATION 3/16" = 1'-0"



3 TUNNEL 1 - EAST WALL 11+00 TO 12+00 - PIPING ELEVATION 3/16" = 1'-0"

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www.snyder-associates.com

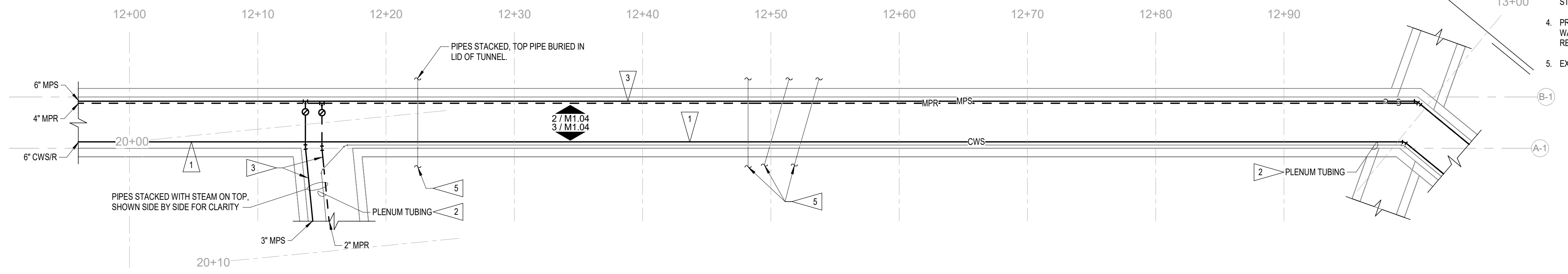
Mechanical, Electrical and Plumbing Engineer
ALVINE ENGINEERING
400 E. COURT AVE
SUITE 130
DES MOINES, IA 50309
www.alvine.com

GENERAL NOTES

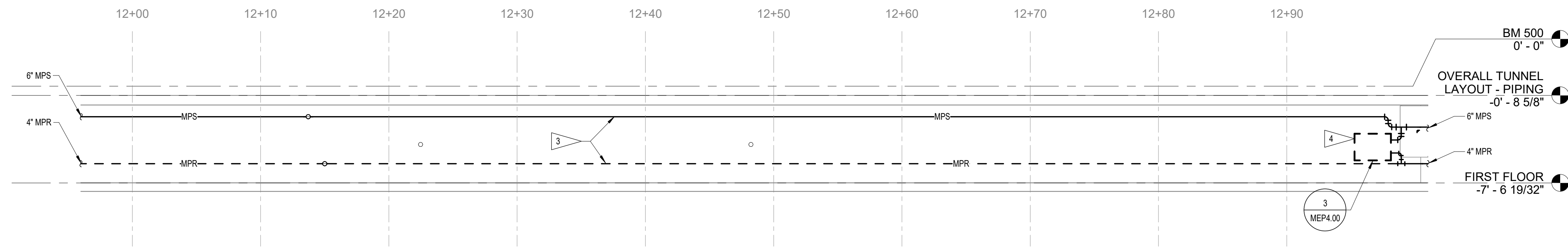
A. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.

FLAG NOTES

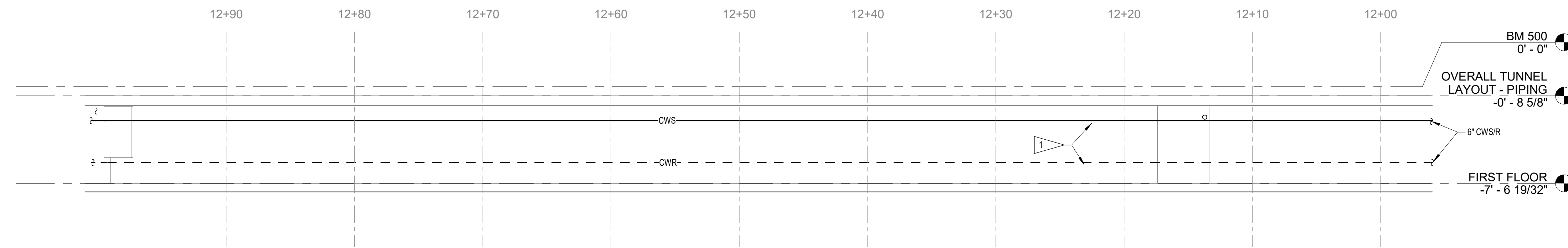
1. PROVIDE AND INSTALL NEW CWS/CWR PIPING IN TUNNEL, INCLUDING NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS CWS/CWR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
2. EXISTING PLENUM CONTROL TUBING TO REMAIN, PROTECT DURING CONSTRUCTION.
3. PROVIDE AND INSTALL NEW MPS/MPR PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS MPS/MPR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
4. PROVIDE AND INSTALL NEW STEAM TRAP ASSEMBLY AT APPROXIMATE LOCATION WHERE EXISTING TRAP ASSEMBLY WAS REMOVED. NEW ASSEMBLY SHALL MATCH PIPE SIZING AND CAPACITY OF EXISTING ASSEMBLY THAT WAS REMOVED.
5. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.



1 TUNNEL 1 - 12+00 TO 13+00 - PIPING FLOOR PLAN
3/16" = 1'-0"



2 TUNNEL 1 - WEST WALL 12+00 TO 13+00 - PIPING ELEVATION
3/16" = 1'-0"



3 TUNNEL 1 - EAST WALL 12+00 TO 13+00 - PIPING ELEVATION
3/16" = 1'-0"

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MARK	REVISION	DATE

100% CONSTRUCTION DOCUMENTS
 PROJECT NUMBER 125.0278.10
 DATE 10/10/2025
 SHEET TITLE
TUNNEL PLANS AND ELEVATIONS
 SHEET NO.
M1.04



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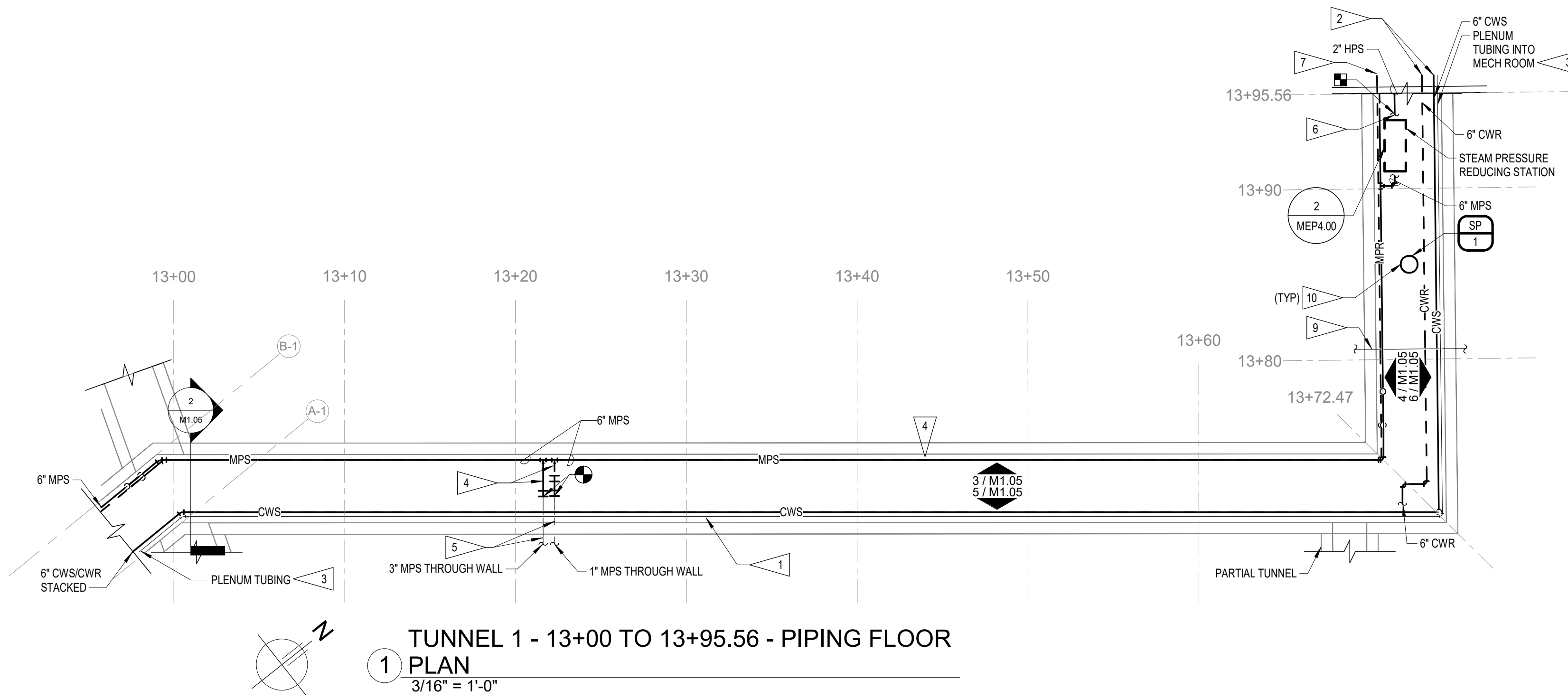
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DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) 2000 N 16 ST. CLARINDA, IA 51632

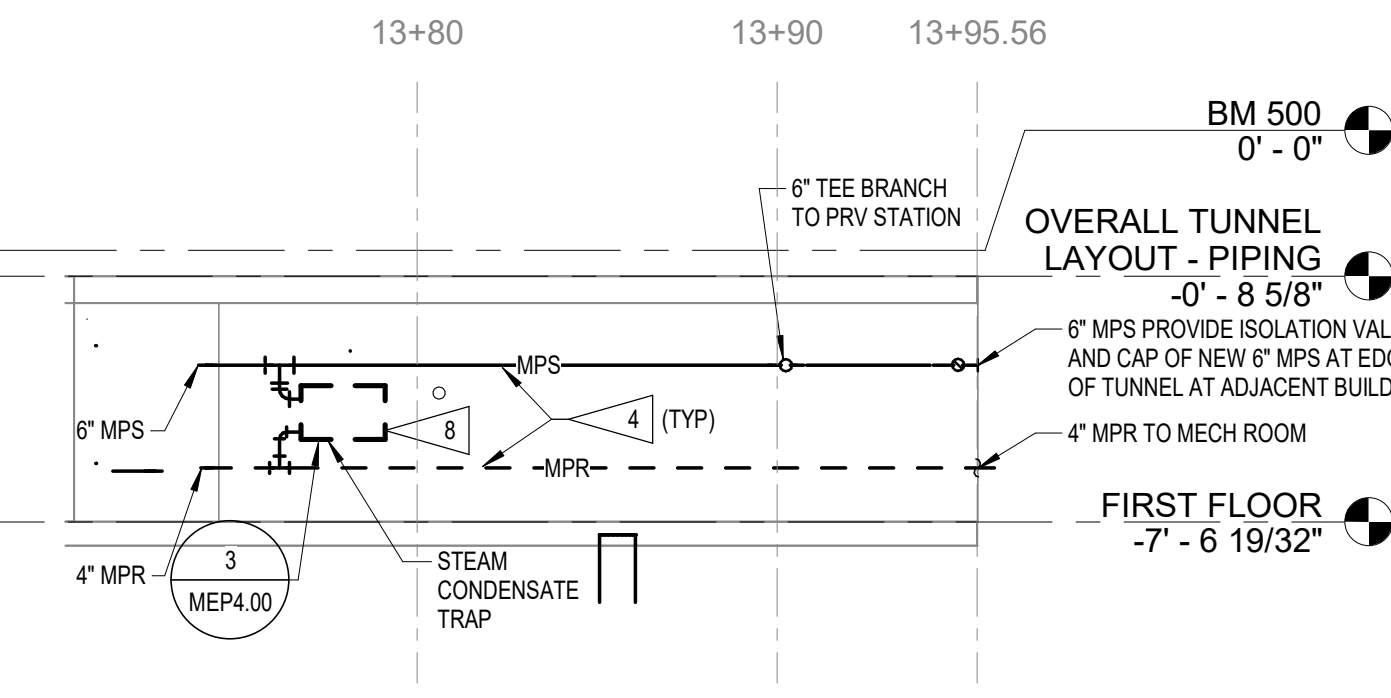
Table with columns: MARK, REVISION, DATE. Includes project information: 100% CONSTRUCTION DOCUMENTS, PROJECT NUMBER 125.0278.10, DATE 10/10/2025, SHEET TITLE TUNNEL PLANS AND ELEVATIONS, SHEET NO. M1.05

GENERAL NOTES

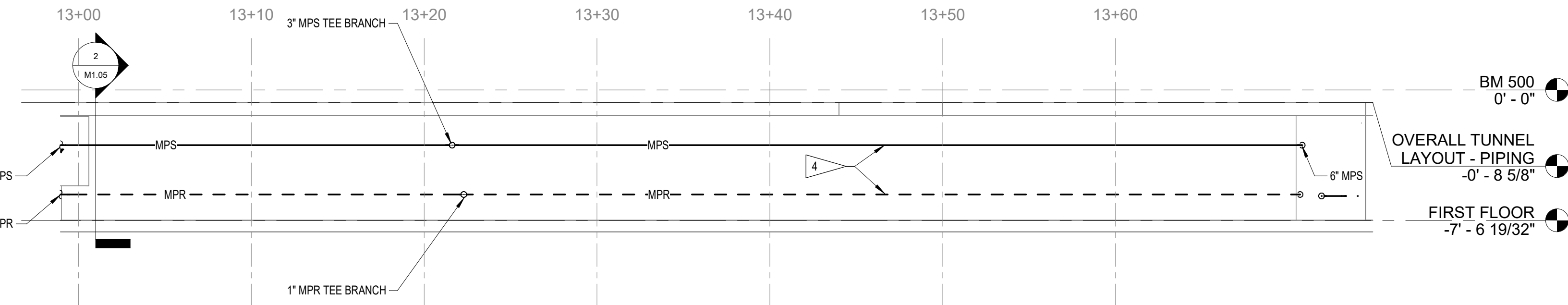
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B. IT IS SUSPECTED THAT THE EXISTING ISOLATION VALVE(S) THAT SUPPLY STEAM AND STEAM CONDENSATE IN THE TUNNEL ARE COMPROMISED AND MAY NOT SHUT ENTIRELY. CONTRACTOR SHALL INCLUDE IN SCOPE ISOLATION OF TUNNEL SYSTEM FROM PLANT AND BUILDINGS TO ALLOW REMOVAL AND REPLACEMENT OF FAULTY VALVES PRIOR TO COMMENCING WORK IN TUNNEL FIELD VERIFY AND COORDINATE VALVE LOCATIONS WITH OWNER. REPLACE VALVES IN A MANNER TO MINIMIZE DOWNTIME OF SYSTEMS NOT SERVING TUNNEL.
FLAG NOTES
1. PROVIDE AND INSTALL NEW CWS/CWR PIPING IN TUNNEL, INCLUDING NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS CWS/CWR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
2. MODIFY AND EXTEND EXISTING CWS/CWR BUILDING SIDE CONNECTIONS THAT REMAIN AFTER DEMO WORK IS COMPLETE WITH NEW CWS/CWR PIPING. NEW PIPING TO PASS INTO TUNNEL IN SIMILAR MANNER TO CWS/CWR PIPING THAT WAS REMOVED.
3. EXISTING PLENUM CONTROL TUBING TO REMAIN, PROTECT DURING CONSTRUCTION.
4. PROVIDE AND INSTALL NEW MPR/MPR PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS MPR/MPR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
5. CONNECT NEW MPR/MPR PIPING TO EXISTING THROUGH WALL PIPING STUB THAT REMAINS AFTER DEMO WORK IS COMPLETE. MODIFY AND EXTEND EXISTING CONNECTION AS REQUIRED FOR NEW WORK.
6. PROVIDE AND INSTALL NEW PRV STATION AT APPROXIMATE LOCATION WHERE EXISTING PRV STATION WAS REMOVED. NEW STATION SHALL MATCH SIZING AND CAPACITY OF EXISTING STATION THAT WAS REMOVED. EXTEND AND MODIFY EXISTING CONTROL WIRING, CONTROL TUBING AND ALL CONTROL APPURTENANCES TO NEW PRV STATION. MODIFY AND EXTEND EXISTING MPR BUILDING SIDE CONNECTION THAT REMAINS AFTER DEMO WORK IS COMPLETE WITH NEW MPR PIPING. NEW PIPING TO PASS INTO TUNNEL IN SIMILAR MANNER TO MPR PIPING THAT WAS REMOVED.
7. MODIFY AND EXTEND EXISTING MPR BUILDING SIDE CONNECTION THAT REMAINS AFTER DEMO WORK IS COMPLETE WITH NEW MPR PIPING. NEW PIPING TO PASS INTO TUNNEL IN SIMILAR MANNER TO MPR PIPING THAT WAS REMOVED.
8. PROVIDE AND INSTALL NEW STEAM TRAP ASSEMBLY AT APPROXIMATE LOCATION WHERE EXISTING TRAP ASSEMBLY WAS REMOVED. NEW ASSEMBLY SHALL MATCH PIPE SIZING AND CAPACITY OF EXISTING ASSEMBLY THAT WAS REMOVED.
9. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.
10. COORDINATE ROUTING OF PIPES IN THIS AREA TO ALLOW CLEAR SPACE FOR NEW SUMP PUMP AND PIT IN THIS APPROXIMATE LOCATION. PIPES SHOULD BE ROUTED IN A MANNER TO ALLOW PROPER ACCESS TO SUMP. REFER TO PLUMBING AND STRUCTURAL PLANS.



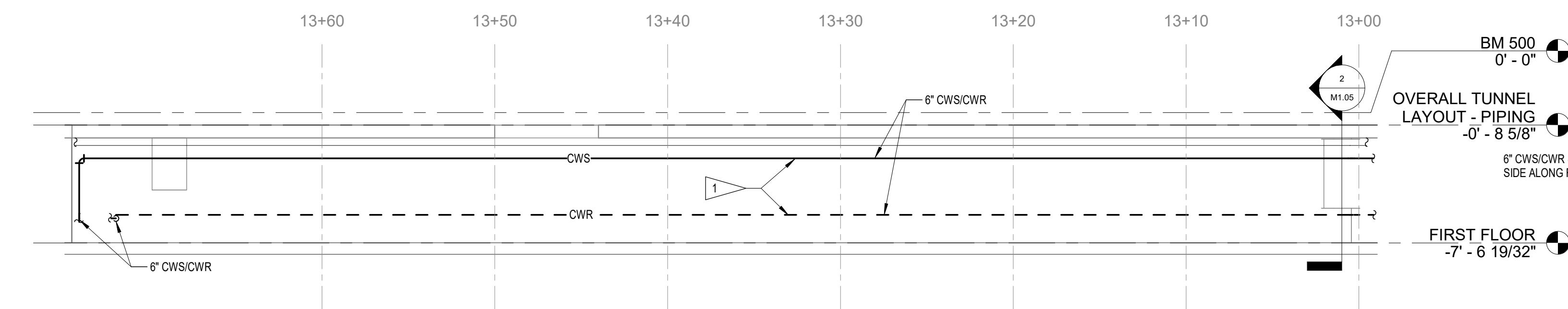
TUNNEL 1 - 13+00 TO 13+40 (LOOKING EAST) - PIPING SECTION. 1/2\"/>



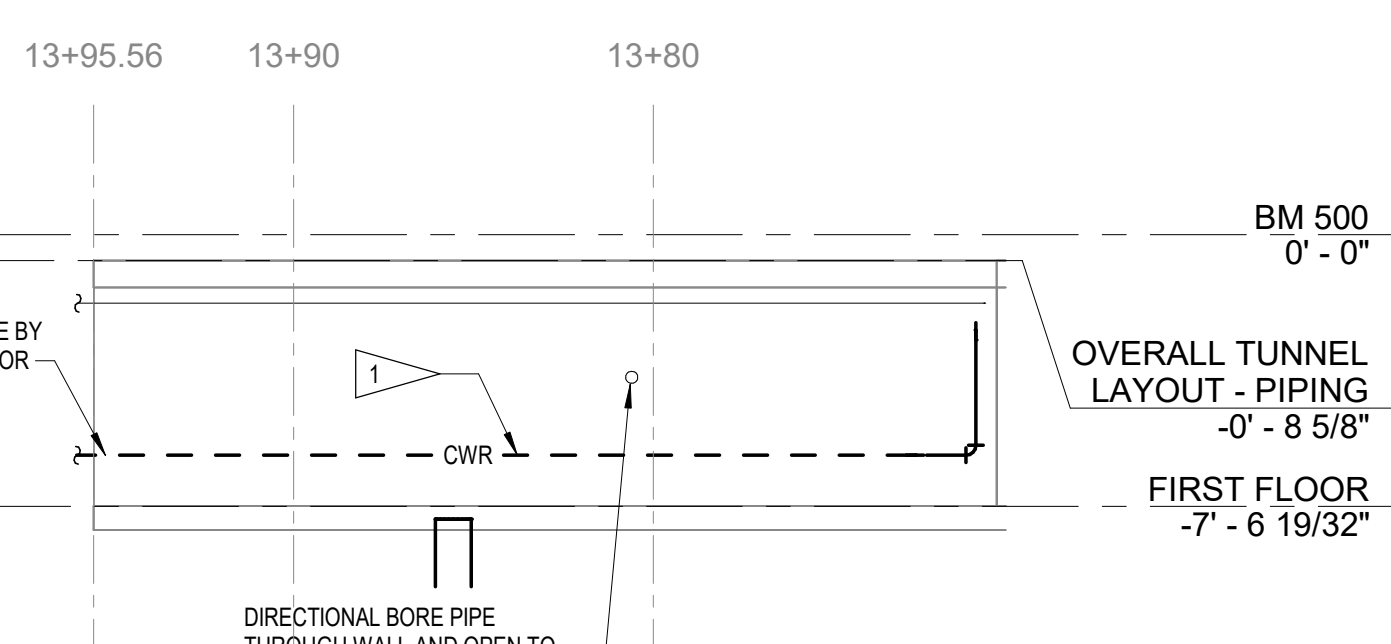
TUNNEL 1 - WEST WALL 13+72.47 TO 13+95.56 - PIPING ELEVATION. 3/16\"/>



TUNNEL 1 - WEST WALL 13+00 TO 13+72.47 - PIPING ELEVATION. 3/16\"/>



TUNNEL 1 - EAST WALL 13+00 TO 13+72.47 - PIPING ELEVATION. 3/16\"/>



TUNNEL 1 - EAST WALL 13+72.47 TO 13+95.56 - PIPING ELEVATION. 3/16\"/>

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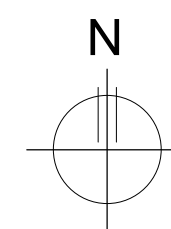
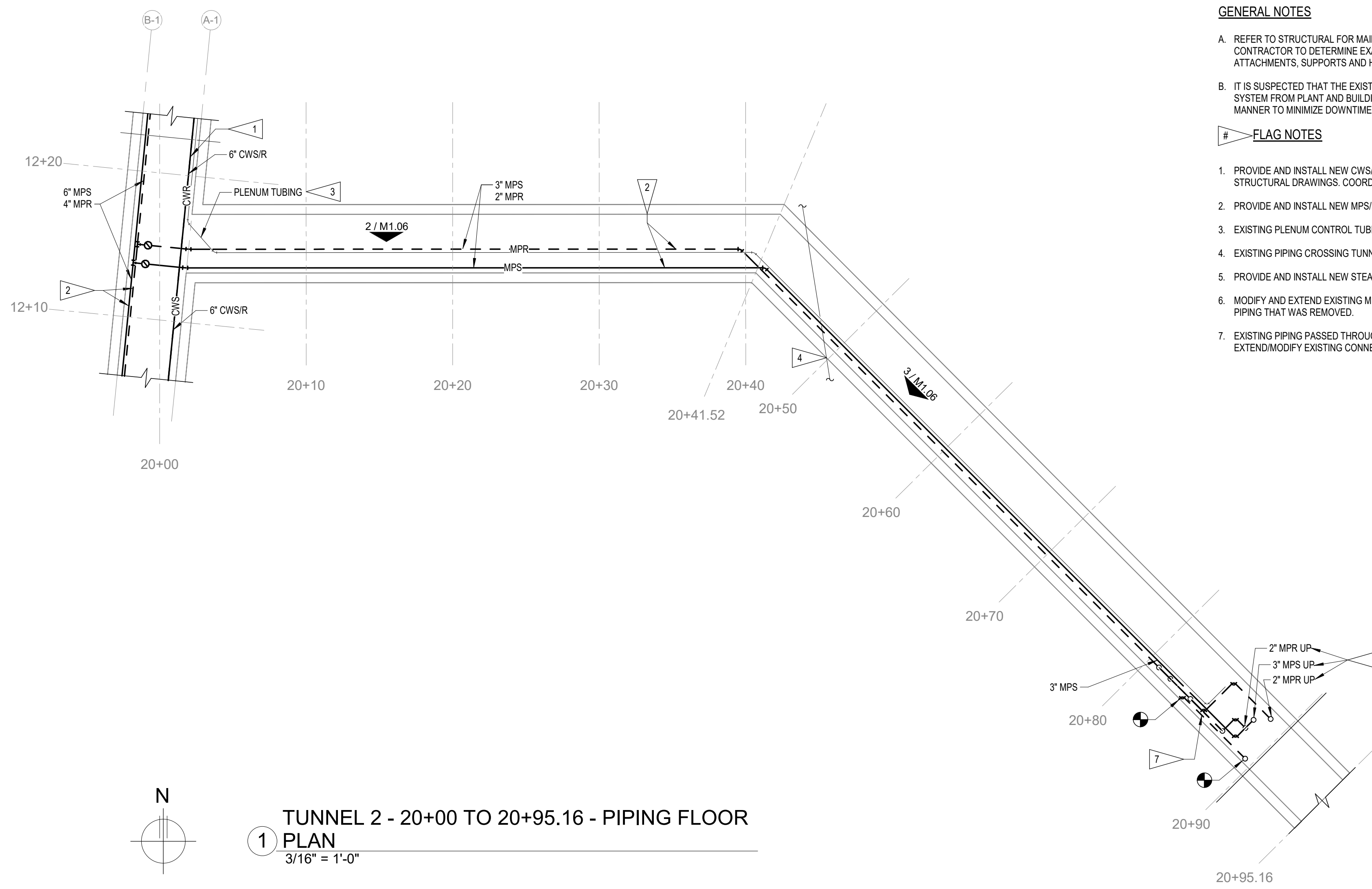
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GENERAL NOTES

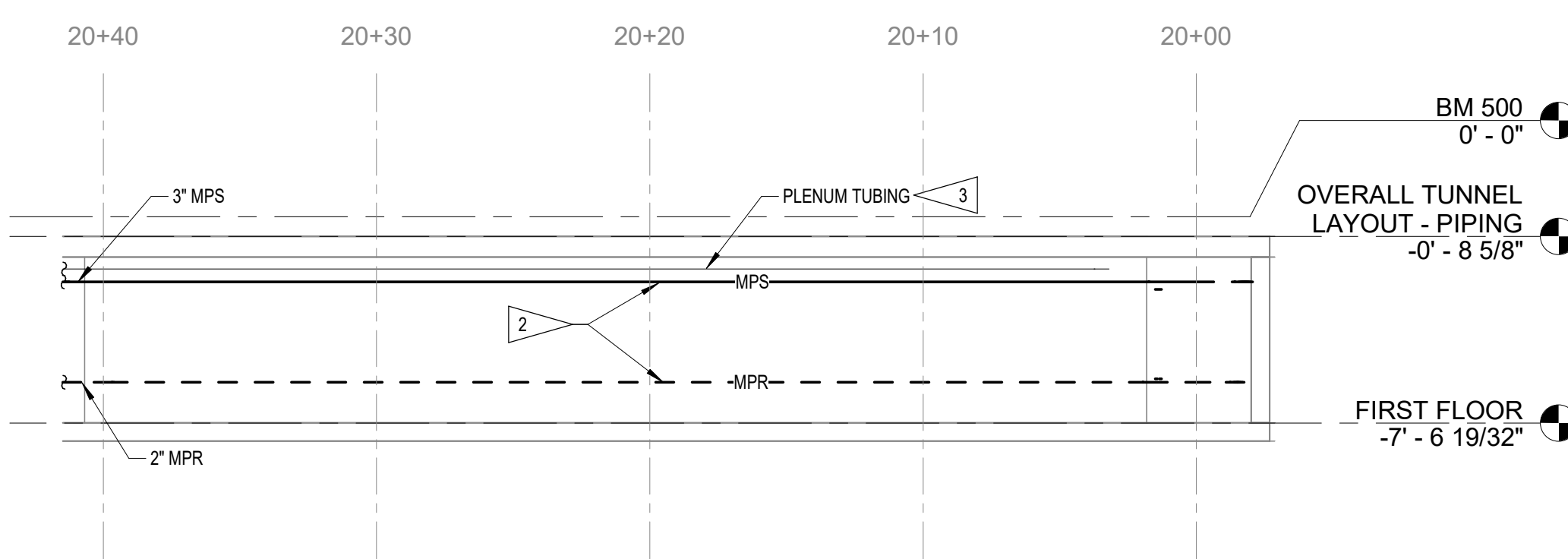
- A. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. MECHANICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.
- B. IT IS SUSPECTED THAT THE EXISTING ISOLATION VALVE(S) THAT SUPPLY STEAM AND STEAM CONDENSATE IN THE TUNNEL ARE COMPROMISED AND MAY NOT SHUT ENTIRELY. CONTRACTOR SHALL INCLUDE IN SCOPE ISOLATION OF TUNNEL SYSTEM FROM PLANT AND BUILDINGS TO ALLOW REMOVAL AND REPLACEMENT OF FAULTY VALVES PRIOR TO COMMENCING WORK IN TUNNEL. FIELD VERIFY AND COORDINATE VALVE LOCATIONS WITH OWNER. REPLACE VALVES IN A MANNER TO MINIMIZE DOWNTIME OF SYSTEMS NOT SERVING TUNNEL.

FLAG NOTES

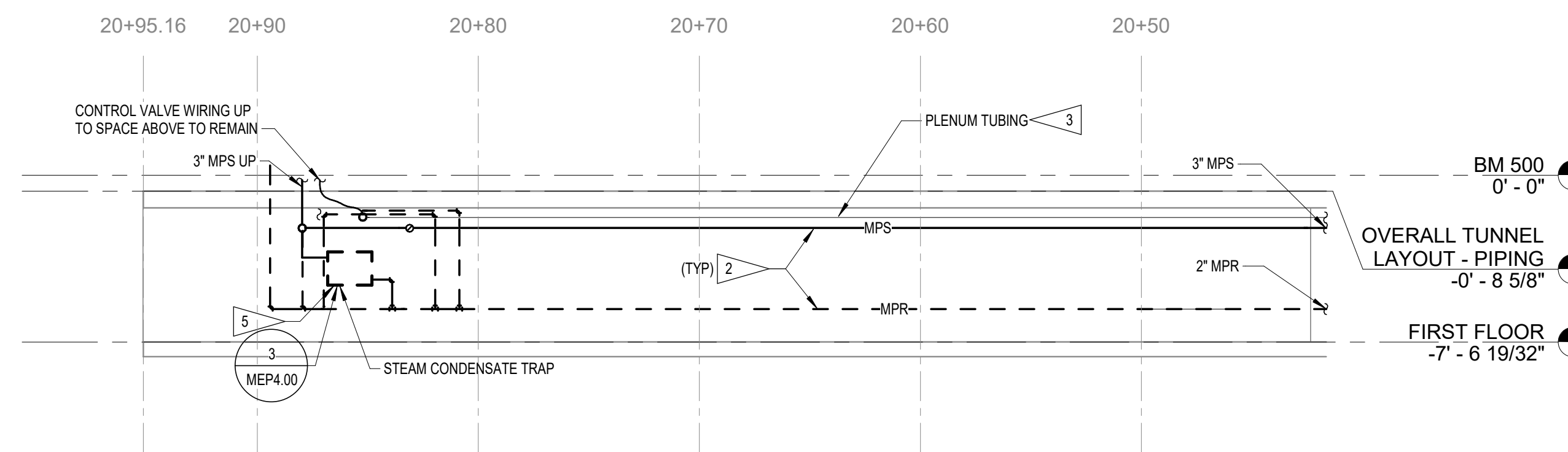
- 1. PROVIDE AND INSTALL NEW CWS/CWR PIPING IN TUNNEL, INCLUDING NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS CWS/CWR PIPING THAT WAS REMOVED. PIPING TO BE MOUNTED ON PIPE SUPPORTS AS SHOWN ON STRUCTURAL DRAWINGS. COORDINATE EXACT PLACEMENT, SIZE AND SPACING OF SUPPORTS WITH STRUCTURAL PRIOR TO INSTALLATION.
- 2. PROVIDE AND INSTALL NEW MPS/MPR PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS MPS/MPR PIPING THAT WAS REMOVED.
- 3. EXISTING PLENUM CONTROL TUBING TO REMAIN, PROTECT DURING CONSTRUCTION.
- 4. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.
- 5. PROVIDE AND INSTALL NEW STEAM TRAP ASSEMBLY AT APPROXIMATE LOCATION WHERE EXISTING TRAP ASSEMBLY WAS REMOVED. NEW ASSEMBLY SHALL MATCH PIPE SIZING AND CAPACITY OF EXISTING ASSEMBLY THAT WAS REMOVED.
- 6. MODIFY AND EXTEND EXISTING MPS/MPR BUILDING SIDE CONNECTIONS THAT REMAIN ABOVE FLOOR AFTER DEMO WORK IS COMPLETE WITH NEW MPS/MPR PIPING. NEW PIPING TO PASS INTO TUNNEL IN SIMILAR MANNER TO MPS/MPR PIPING THAT WAS REMOVED.
- 7. EXISTING PIPING PASSED THROUGH TUNNEL WALL AND UP THROUGH FLOOR AT THIS APPROXIMATE LOCATION. THIS IS ASSUMED TO BE MPR PIPING THAT IS STILL ACTIVE. INSTALL NEW MPR PIPING AT SAME SIZE AS PIPING REMOVED. EXTEND/MODIFY EXISTING CONNECTIONS AT TUNNEL WALL AND LID FOR NEW PIPING TO REPLACE WHAT WAS REMOVED.



1 TUNNEL 2 - 20+00 TO 20+95.16 - PIPING FLOOR
PLAN
3/16\" = 1'-0\"



2 TUNNEL 2 - EAST WALL 20+00 TO 20+41.52 - PIPING ELEVATION
3/16\" = 1'-0\"



3 TUNNEL 2 - EAST WALL 20+41.52 TO 20+95.16 - PIPING ELEVATION
3/16\" = 1'-0\"

MARK	REVISION	DATE

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PROJECT NUMBER	125.0278.10
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TUNNEL PLANS AND ELEVATIONS	
SHEET NO.	
M1.06	



PICTURE 1
NO SCALE

1
M3.01



PICTURE 2
NO SCALE

2
M3.01



PICTURE 3
NO SCALE

3
M3.01



PICTURE 4
NO SCALE

4
M3.01



PICTURE 5
NO SCALE

5
M3.01



PICTURE 6
NO SCALE

6
M3.01

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SHEET NO.		
M3.01		



PICTURE 7
NO SCALE

2
M3.02



PICTURE 8
NO SCALE

3
M3.02



PICTURE 9
NO SCALE

4
M3.02



PICTURE 10
NO SCALE

5
M3.02



PICTURE 11
NO SCALE

6
M3.02



PICTURE 12
NO SCALE

1
M3.02

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PICTURES		
SHEET NO.		
M3.02		

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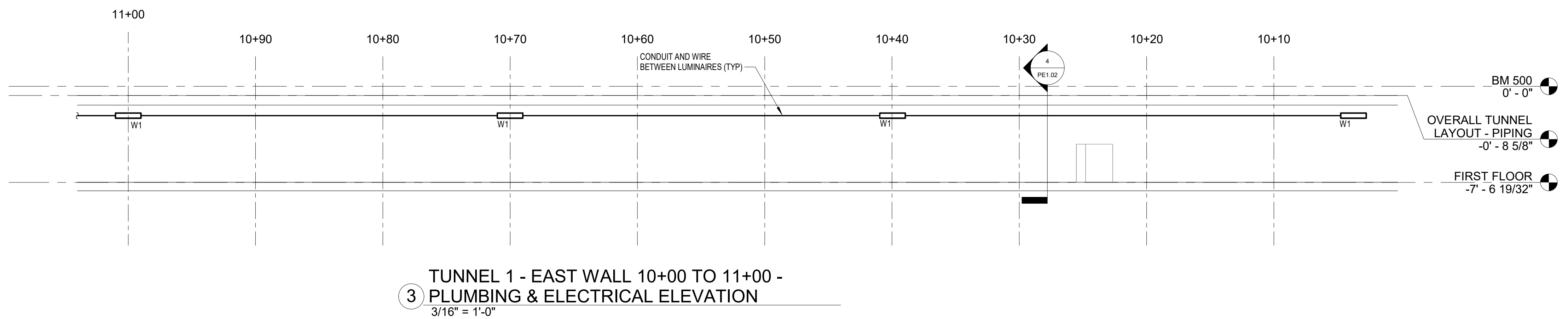
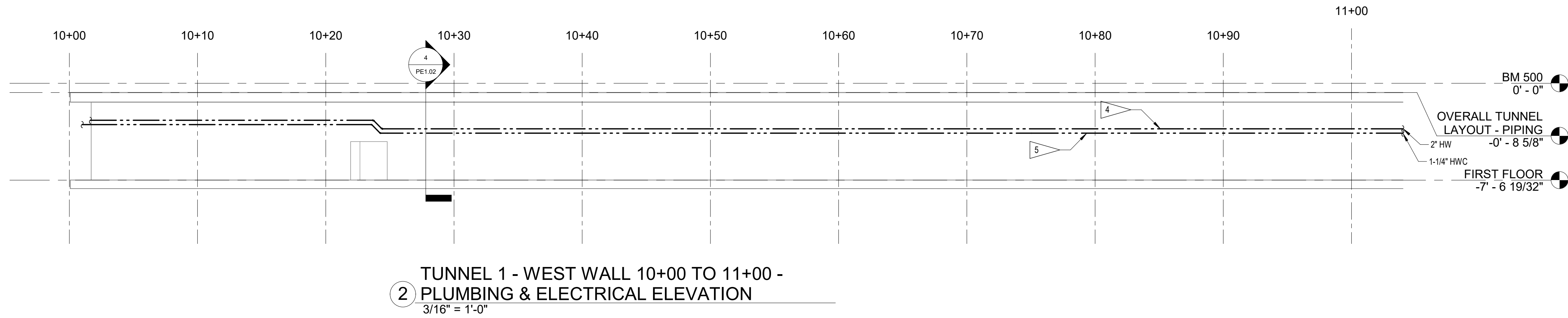
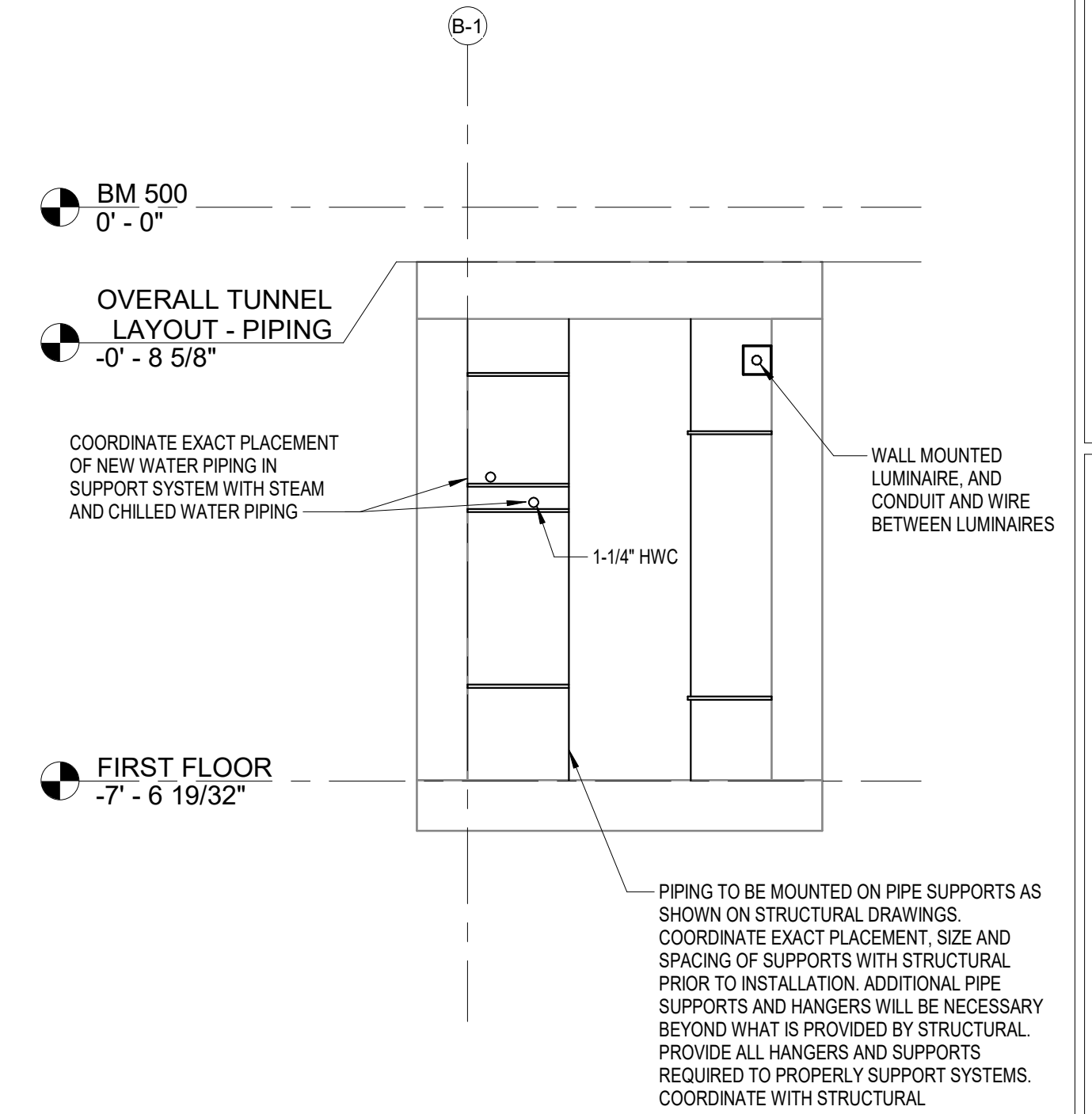
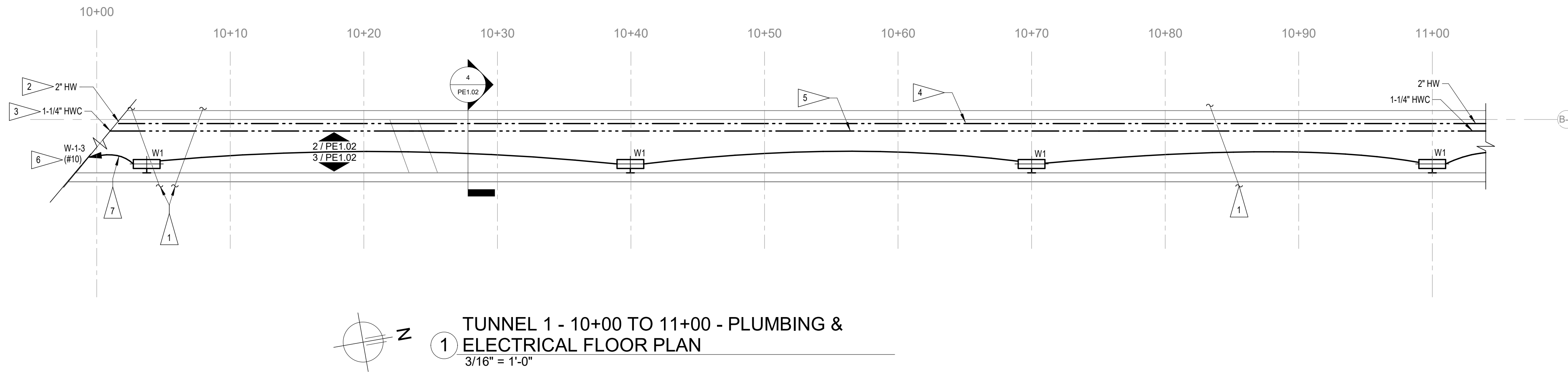
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GENERAL NOTES

- A. ALL NEW PLUMBING PIPING TO BE SCHEDULE 80 CPVC RATED FOR DOMESTIC HOT WATER AND COLD WATER SYSTEMS. PROVIDE APPROPRIATE TRANSITION FITTINGS AT LOCATIONS WHERE CONNECTING TO EXISTING PIPING SYSTEMS OF DISSIMILAR MATERIALS.
- B. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.
- C. MAIN STRUCTURAL PIPE SUPPORTS ARE LOCATED EVERY 12', REFER TO STRUCTURAL FOR ADDITIONAL INFORMATION. PLUMBING PIPING WILL REQUIRE ADDITIONAL WALL SUPPORTS BETWEEN THESE MAIN SUPPORTS AT MAXIMUM 6' INTERVALS. PLUMBING CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF PLUMBING PIPING ON MAIN STRUCTURAL SUPPORTS TO ALLOW INTERMEDIATE INSTALLATION OF STAND ALONE WALL SUPPORTS WHERE REQUIRED BETWEEN MAIN STRUCTURAL SUPPORT LOCATIONS. PROVIDE ALL HANGER AND ATTACHMENTS NECESSARY TO PROPERLY SUPPORT SYSTEMS.

FLAG NOTES

1. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.
2. MODIFY AND EXTEND EXISTING PIPE CONNECTION IN BUILDING THAT PREVIOUSLY CONNECTED TO HW COPPER PIPING. INSTALL NEW HW PIPING FROM BUILDING CONNECTION INTO TUNNEL IN SIMILAR MANNER TO EXISTING PIPES THAT WERE REMOVED.
3. MODIFY AND EXTEND EXISTING PIPE CONNECTION IN BUILDING THAT PREVIOUSLY CONNECTED TO PEX PIPING. INSTALL NEW HWC PIPING FROM BUILDING CONNECTION INTO TUNNEL IN SIMILAR MANNER TO EXISTING PIPES THAT WERE REMOVED.
4. PROVIDE AND INSTALL NEW HW PIPING IN TUNNEL, INCLUDING NEW HANGERS/SUPPORTS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HW PIPING THAT WAS REMOVED.
5. PROVIDE AND INSTALL NEW HWC PIPING IN TUNNEL, INCLUDING NEW HANGERS/SUPPORTS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HWC PIPING THAT WAS REMOVED.
6. PROVIDE INDICATED SIZE CONDUCTORS, INCLUDING GROUND, FOR ENTIRE LENGTH OF CIRCUIT.
7. ROUTE CIRCUIT TO EXISTING PANEL W-1 IN BUILDING APPROXIMATELY 50' BEYOND END OF TUNNEL. PROVIDE NEW 20'1 CIRCUIT BREAKER IN EXISTING QO LOAD CENTER. NEW BREAKERS SHALL MATCH TYPE AND AIC RATING OF EXISTING BREAKERS.



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DATE 10/10/2025

SHEET TITLE

TUNNEL PLANS AND ELEVATIONS

SHEET NO.

PE1.02



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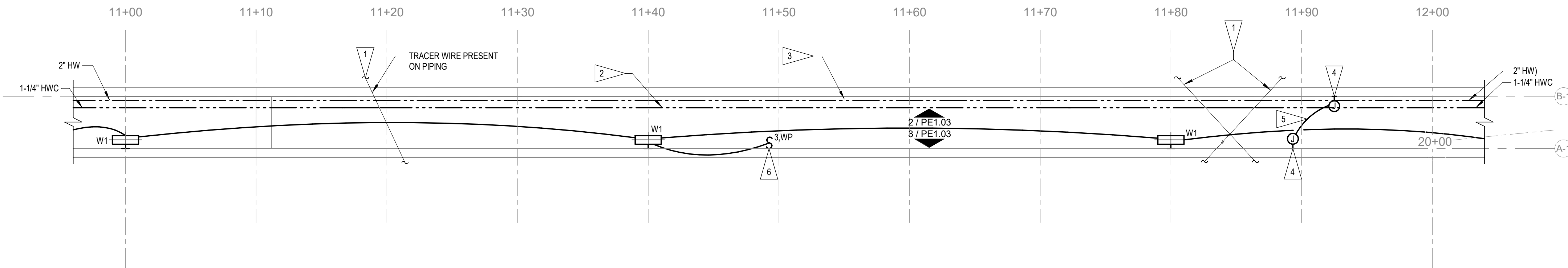
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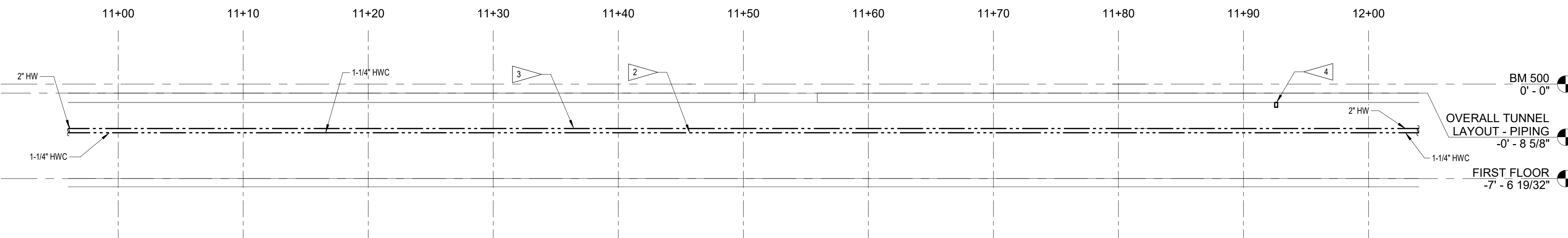
- A. ALL NEW PLUMBING PIPING TO BE SCHEDULE 80 CPVC RATED FOR DOMESTIC HOT WATER AND COLD WATER SYSTEMS. PROVIDE APPROPRIATE TRANSITION FITTINGS AT LOCATIONS WHERE CONNECTING TO EXISTING PIPING SYSTEMS OF DISSIMILAR MATERIALS.
- B. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.
- C. MAIN STRUCTURAL PIPE SUPPORTS ARE LOCATED EVERY 12', REFER TO STRUCTURAL FOR ADDITIONAL INFORMATION. PLUMBING PIPING WILL REQUIRE ADDITIONAL WALL SUPPORTS BETWEEN THESE MAIN SUPPORTS AT MAXIMUM 6' INTERVALS. PLUMBING CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF PLUMBING PIPING ON MAIN STRUCTURAL SUPPORTS TO ALLOW INTERMEDIATE INSTALLATION OF STAND ALONE WALL SUPPORTS WHERE REQUIRED BETWEEN MAIN STRUCTURAL SUPPORT LOCATIONS. PROVIDE ALL HANGER AND ATTACHMENTS NECESSARY TO PROPERLY SUPPORT SYSTEMS.

FLAG NOTES

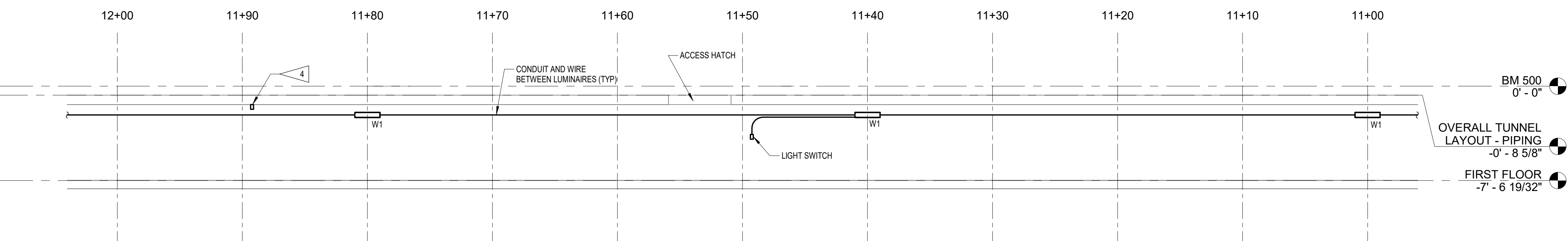
- 1. EXISTING PIPING CROSSING TUNNEL TO REMAIN, COVER AND PROTECT DURING CONSTRUCTION.
- 2. PROVIDE AND INSTALL NEW HWC PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HW PIPING THAT WAS REMOVED.
- 3. PROVIDE AND INSTALL NEW HW PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HW PIPING THAT WAS REMOVED.
- 4. INSTALL NEW JUNCTION BOX ON WALL WHERE EXISTING CONDUIT ENTERS/EXITS TUNNEL WALL.
- 5. INSTALL (3) #10 CONDUCTORS IN 3/4" CONDUIT BETWEEN JUNCTION BOXES. CONNECT NEW CONDUCTORS TO EXISTING CONDUCTORS ENTERING/EXITING THE TUNNEL WALL.
- 6. NEW SWITCH FOR CONTROL OF LIGHTS IN MAIN TUNNEL. FIELD COORDINATE EXACT LOCATION TO BE ON WALL NEAR TUNNEL ID.



1 TUNNEL 1 - 11+00 TO 12+00 - PLUMBING & ELECTRICAL FLOOR PLAN
3/16" = 1'-0"



2 TUNNEL 1 - WEST WALL 11+00 TO 12+00 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"



3 TUNNEL 1 - EAST WALL 11+00 TO 12+00 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"

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SHEET TITLE

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SHEET NO.

PE1.03



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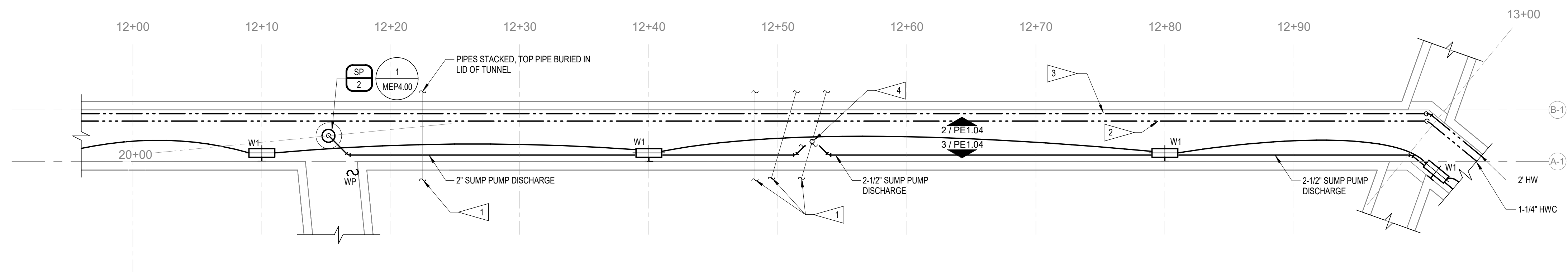
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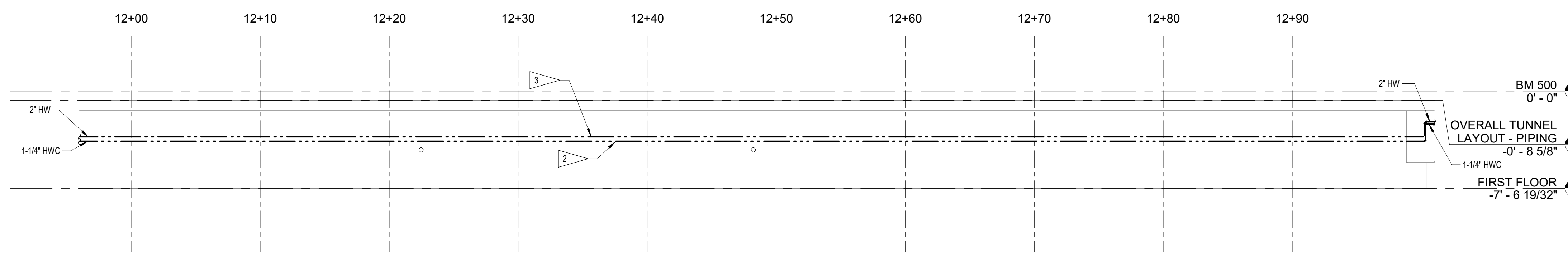
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- B. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.
- C. MAIN STRUCTURAL PIPE SUPPORTS ARE LOCATED EVERY 12'. REFER TO STRUCTURAL FOR ADDITIONAL INFORMATION. PLUMBING PIPING WILL REQUIRE ADDITIONAL WALL SUPPORTS BETWEEN THESE MAIN SUPPORTS AT MAXIMUM 6' INTERVALS. PLUMBING CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF PLUMBING PIPING ON MAIN STRUCTURAL SUPPORTS TO ALLOW INTERMEDIATE INSTALLATION OF STAND ALONE WALL SUPPORTS WHERE REQUIRED BETWEEN MAIN STRUCTURAL SUPPORT LOCATIONS. PROVIDE ALL HANGER AND ATTACHMENTS NECESSARY TO PROPERLY SUPPORT SYSTEMS.

FLAG NOTES

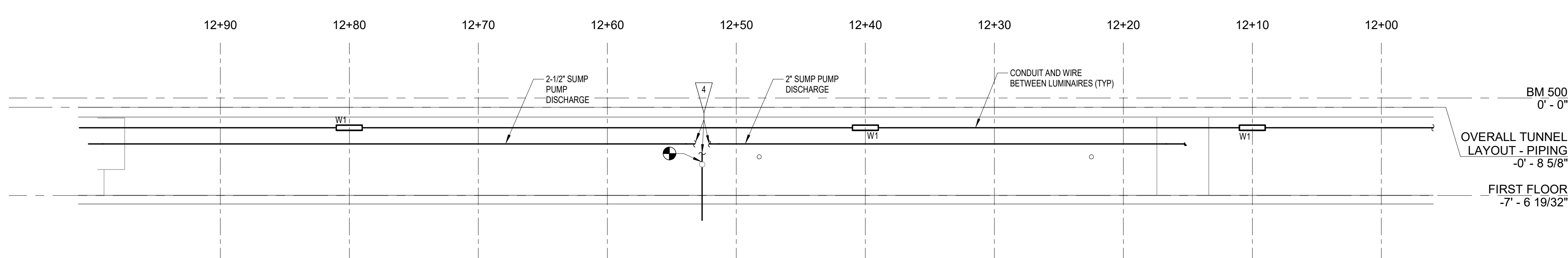
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- 3. PROVIDE AND INSTALL NEW HW PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HW PIPING THAT WAS REMOVED.
- 4. PROVIDE 3" DIAMETER STANDPIPE TIED INTO TOP OF EXISTING 4" STORM LINE CROSSING TUNNEL. NEW 3" STANDPIPE SHALL MATCH MATERIAL OF EXISTING STORM PIPING CROSSING TUNNEL. PROVIDE MINIMUM 18" TALL STANDPIPE TO ACCEPT DISCHARGE FROM SP-1 AND SP-2. CONNECT EACH SUMP DISCHARGE PIPING TO STAND PIPE SEPARATELY.



1 TUNNEL 1 - 12+00 TO 13+00 - PLUMBING & ELECTRICAL FLOOR PLAN
3/16" = 1'-0"



2 TUNNEL 1 - WEST WALL 12+00 TO 13+00 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"



3 TUNNEL 1 - EAST WALL 12+00 TO 13+00 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"

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DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING
 IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS)
 2000 N 16 ST. CLARINDA, IA 51632

MARK	REVISION	DATE

100% CONSTRUCTION DOCUMENTS
 PROJECT NUMBER 125.0278.10
 DATE 10/10/2025
 SHEET TITLE TUNNEL PLANS AND ELEVATIONS
 SHEET NO. PE1.04



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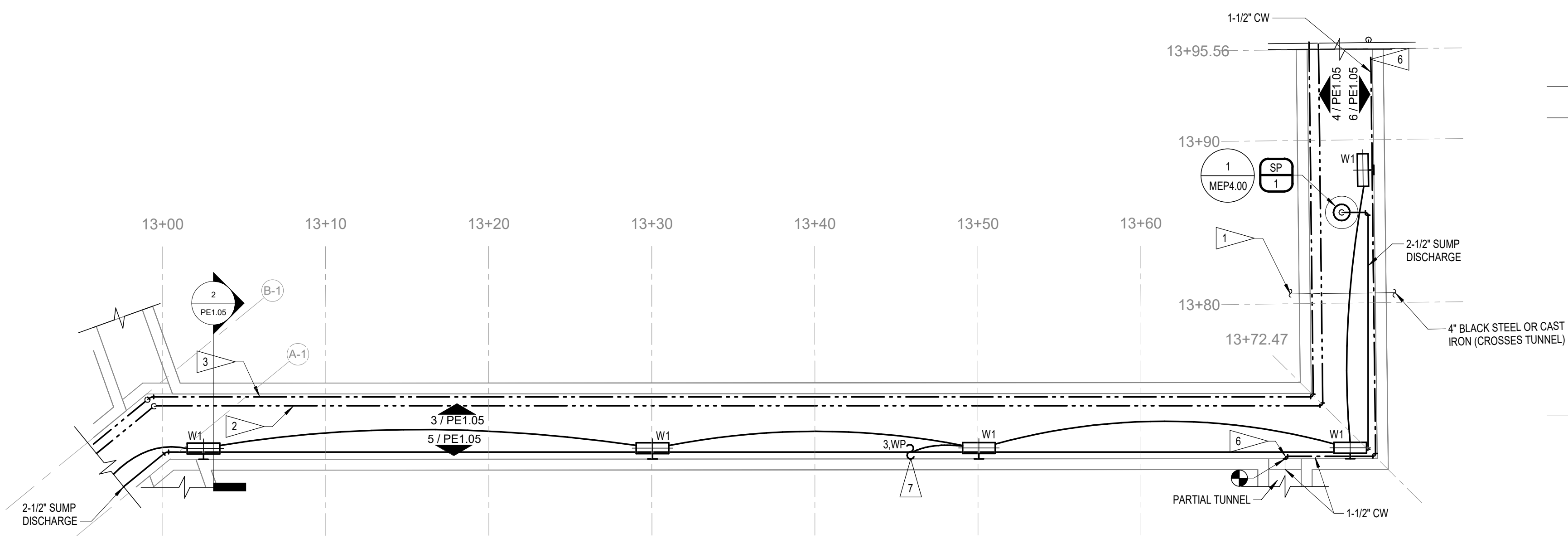
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GENERAL NOTES

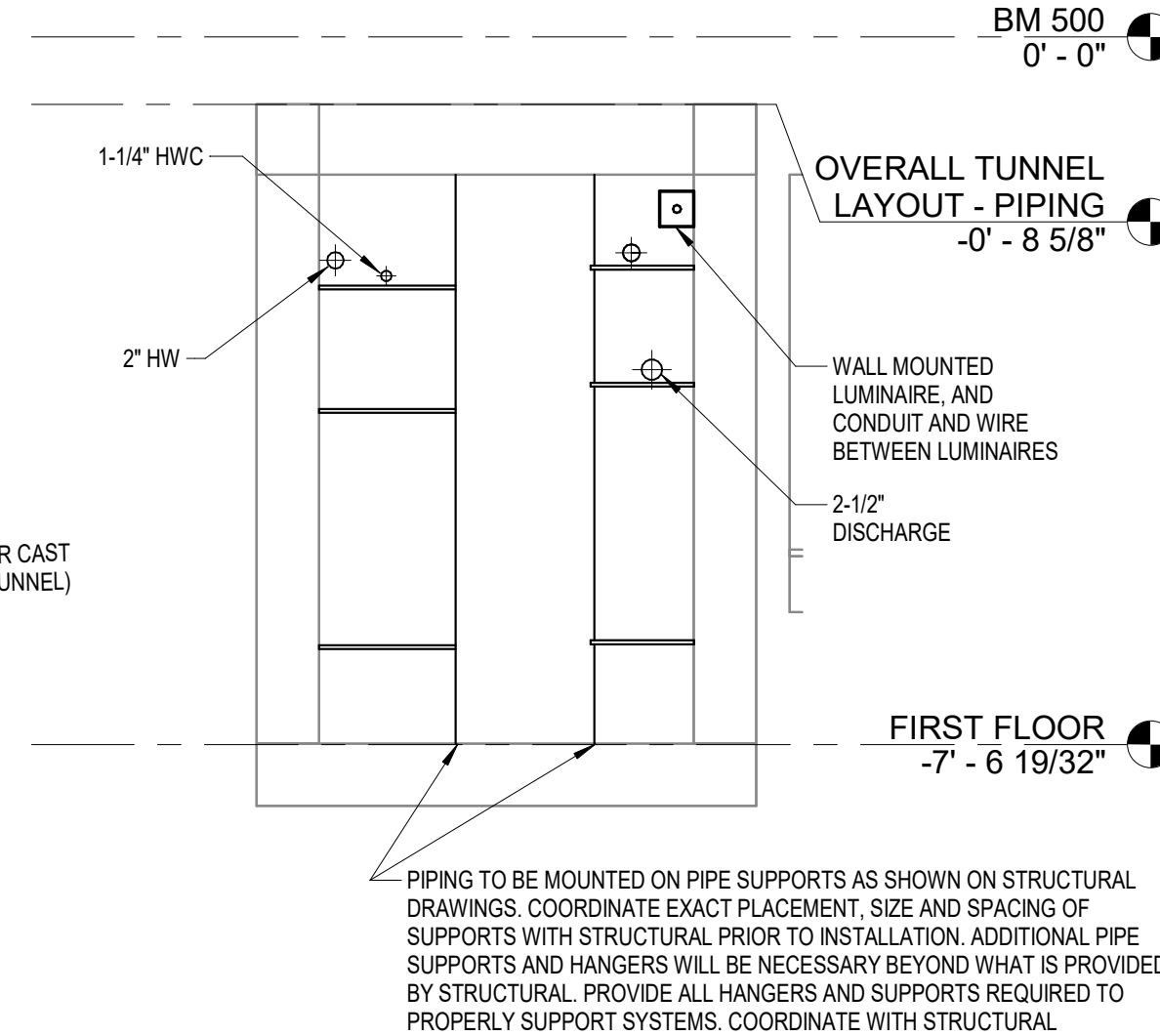
- A. ALL NEW PLUMBING PIPING TO BE SCHEDULE 80 CPVC RATED FOR DOMESTIC HOT WATER AND COLD WATER SYSTEMS. PROVIDE APPROPRIATE TRANSITION FITTINGS AT LOCATIONS WHERE CONNECTING TO EXISTING PIPING SYSTEMS OF DISSIMILAR MATERIALS.
- B. REFER TO STRUCTURAL FOR MAIN PIPE SUPPORTS AT 12' INTERVALS TO BE USED TO SUPPORT NEW SYSTEMS. PLUMBING CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR AND STRUCTURAL CONTRACTOR TO DETERMINE EXACT ELEVATION OF PIPE SUPPORTS TO ALLOW ALL SYSTEMS TO COEXIST AND BE ROUTED AT CORRECT SLOPES. PLUMBING CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PIPE ATTACHMENTS, SUPPORTS AND HANGERS NECESSARY TO ATTACH TO STRUCTURAL SUPPORTS SHOWN.
- C. MAIN STRUCTURAL PIPE SUPPORTS ARE LOCATED EVERY 12'. REFER TO STRUCTURAL FOR ADDITIONAL INFORMATION. PLUMBING PIPING WILL REQUIRE ADDITIONAL WALL SUPPORTS BETWEEN THESE MAIN SUPPORTS AT MAXIMUM 6' INTERVALS. PLUMBING CONTRACTOR SHALL COORDINATE EXACT PLACEMENT OF PLUMBING PIPING ON MAIN STRUCTURAL SUPPORTS TO ALLOW INTERMEDIATE INSTALLATION OF STAND ALONE WALL SUPPORTS WHERE REQUIRED BETWEEN MAIN STRUCTURAL SUPPORT LOCATIONS. PROVIDE ALL HANGER AND ATTACHMENTS NECESSARY TO PROPERLY SUPPORT SYSTEMS.

FLAG NOTES

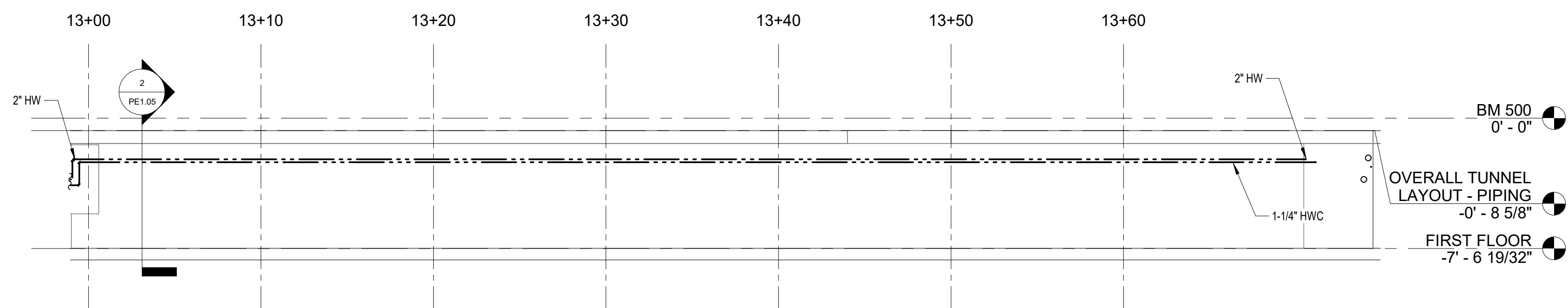
- 1. EXISTING PIPING CROSSING TUNNEL TO REMAIN AS IS, COVER AND PROTECT DURING CONSTRUCTION.
- 2. PROVIDE AND INSTALL NEW HWC PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HW PIPING THAT WAS REMOVED.
- 3. PROVIDE AND INSTALL NEW HW PIPING IN TUNNEL, INCLUDING NEW HANGERS AND NEW INSULATION. ROUTE IN SIMILAR MANNER TO PREVIOUS HW PIPING THAT WAS REMOVED.
- 4. MODIFY AND EXTEND EXISTING PIPE CONNECTION IN BUILDING THAT PREVIOUSLY CONNECTED TO HW PIPING. INSTALL NEW HW PIPING FROM BUILDING CONNECTION INTO TUNNEL IN SIMILAR MANNER TO EXISTING PIPES THAT WERE REMOVED.
- 5. MODIFY AND EXTEND EXISTING CONNECTION IN BUILDING THAT PREVIOUSLY CONNECTED TO PEX PIPING. INSTALL NEW HWC PIPING FROM BUILDING CONNECTION INTO TUNNEL IN SIMILAR MANNER TO EXISTING PIPES THAT WERE REMOVED.
- 6. MODIFY AND EXTEND EXISTING PIPE CONNECTION IN BUILDING THAT PREVIOUSLY CONNECTED TO CW PIPING. INSTALL NEW PIPING FROM BUILDING CONNECTION INTO TUNNEL IN SIMILAR MANNER TO EXISTING PIPES THAT WERE REMOVED.
- 7. NEW SWITCH FOR CONTROL OF LIGHTS IN MAIN TUNNEL. FIELD COORDINATE EXACT LOCATION TO BE ON WALL NEAR TUNNEL LID.



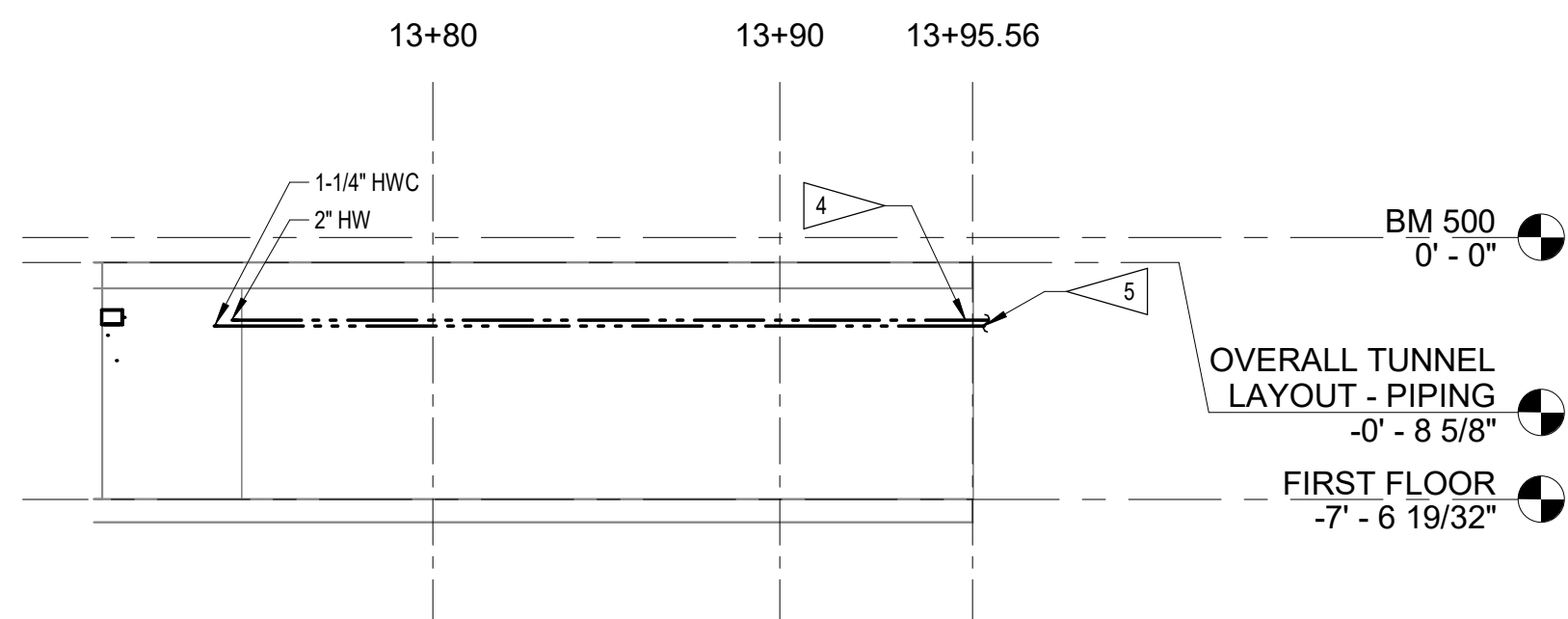
1 TUNNEL 1 - 13+00 TO 13+95.56 - PLUMBING & ELECTRICAL FLOOR PLAN
3/16" = 1'-0"



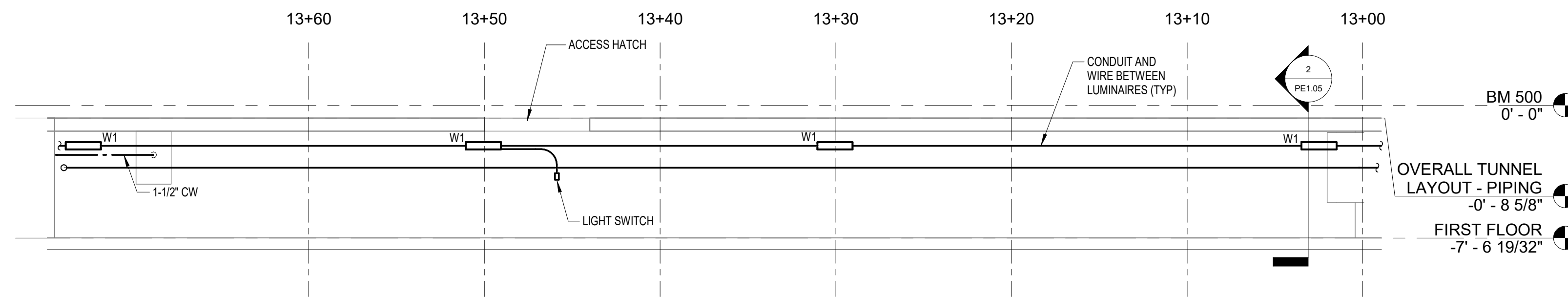
2 TUNNEL 1 - 13+00 TO 13+40 (LOOKING EAST) - PLUMBING & ELECTRICAL SECTION
1/2" = 1'-0"



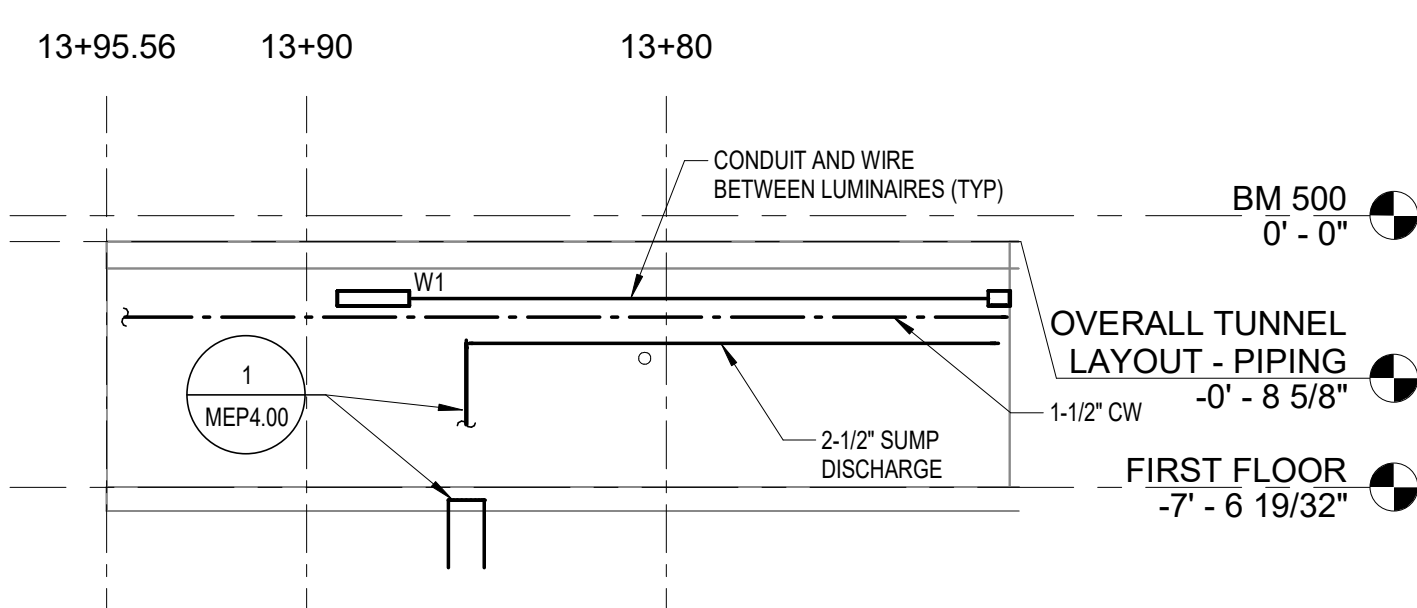
3 TUNNEL 1 - WEST WALL 13+00 TO 13+72.47 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"



4 TUNNEL 1 - WEST WALL 13+72.47 TO 13+95.56 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"



5 TUNNEL 1 - EAST WALL 13+00 TO 13+72.47 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"



6 TUNNEL 1 - EAST WALL 13+72.47 TO 13+95.1 - PLUMBING & ELECTRICAL ELEVATION
3/16" = 1'-0"

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DOC CCF TUNNEL REPAIR / REPLACEMENT MAIN BLDG. SW WING
IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS)
2000 N 16 ST. CLARINDA, IA 51632

MARK	REVISION	DATE

100% CONSTRUCTION DOCUMENTS

PROJECT NUMBER 125.0278.10
DATE 10/10/2025
SHEET TITLE TUNNEL PLANS AND ELEVATIONS
SHEET NO. PE1.05

LUMINAIRE SCHEDULE													
MARK	DESCRIPTION	MANUFACTURER	CATALOG NO.	SOURCE DATA			DIMMING PROTOCOL	COLOR TEMP (K)	VOLTAGE	MOUNTING	FINISH	ALTERNATE MANUFACTURER	REMARKS
				LUMENS	LOAD (VA)	PER FOOT							
W1	2'-0" LOW PROFILE ENCLOSED AND GASKETED VAPOR TIGHT, FIBERGLASS HOUSING, WET LOCATION, IMPACT RESISTANT FROSTED ACRYLIC LENS, WIDE DISTRIBUTION, 80 CRI	LITHONIA	FEM	3000	20		0-10 V	4000	120 V	SURFACE, WALL	WHITE		

GENERAL NOTES

- A. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- B. CONTRACTOR TO VERIFY LUMINAIRE CATALOG NUMBER AND INSTALLATION REQUIREMENTS PRIOR TO ORDERING.
- C. LUMINAIRE MARKS WITH THE LETTER "E" SUFFIX SHALL BE PROVIDED WITH AN EMERGENCY BATTERY PACK.
- D. LUMINAIRE MARKS WITH THE LETTER "S" SUFFIX SHALL BE PROVIDED WITH INTEGRAL SENSOR(S).
- E. LISTED ALTERNATE MANUFACTURERS ARE PERMITTED TO BID AN EQUIVALENT LUMINAIRE WHICH COMPLIES WITH THE PRODUCT REQUIREMENTS IDENTIFIED IN THIS SCHEDULE AND THE SPECIFICATIONS WITHOUT SUBMITTING A PRIOR APPROVAL REQUEST. ALTERNATE LUMINAIRES WILL BE REVIEWED DURING THE SUBMITTAL PROCESS AND THE MANUFACTURER WILL BE RESPONSIBLE TO PROVIDE A LUMINAIRE WHICH MEETS THE PRODUCT REQUIREMENTS.
- F. ELECTRICAL CONTRACTOR SHALL PROVIDE THE SPECIFIED LUMINAIRES DEFINED WITHIN THIS SCHEDULE AND ASSOCIATED CONTRACT DOCUMENTS. IF REQUIRED, THE ELECTRICAL CONTRACTOR MAY UTILIZE MULTIPLE DISTRIBUTORS AND/OR DISTRIBUTORS MAY UTILIZE MULTIPLE LIGHTING MANUFACTURER REPRESENTATIVES TO COMPLY WITH THE CONTRACT DOCUMENTS FOR THIS PROJECT.

MECHANICAL / ELECTRICAL COORINATION SCHEDULE												
ABBREVIATIONS:												
A	AMPS	C	COMBINATION STARTER AND SAFETY SWITCH	S	SWITCH	N1	NEMA 1					
ENCL	ENCLOSURE	CB	CIRCUIT BREAKER	SF	SWITCH AND FUSTAT	N3R	NEMA 3R					
HP	HORSEPOWER	CP	CONTROL PANEL	SS	SAFETY SWITCH	N4X	NEMA 4X					
KW	KILOWATTS	C+P	CORD AND PLUG	T	LINE VOLTAGE THERMOSTAT							
PH	PHASE	I	INTEGRAL WITH EQUIPMENT	VFC	VARIABLE FREQUENCY CONTROLLER	SCCR	SHORT CIRCUIT CURRENT RATING					
V	VOLTAGE	NF	NON-FUSED	EC	ELECTRICAL CONTRACTOR							
W	WATTS	OS	OCCUPANCY SENSOR	MC	MECHANICAL CONTRACTOR							

MARK	DESCRIPTION	LOAD	V	PH	ELECTRICAL SYSTEM			DISCONNECT			LINE VOLTAGE CONTROLLER			AVAILABLE FAULT CURRENT (AMPS)	REMARKS
					FEEDER OR BRANCH CIRCUIT	PANEL - CIRCUIT	FURNISHED BY/ INSTALLED BY	TYPE	RATING (AMPS)	ENCL	FURNISHED BY/ INSTALLED BY	TYPE	ENCL		
SP-1	SUMP PUMP	1/2 HP	120 V	1	2 - #12, 1 - #12 GND, IN 3/4" C	BP	EC/EC	C+P	20	N3R	MCI-	-	-	-	1
SP-2	SUMP PUMP	1/2 HP	120 V	1	2 - #8, 1 - #8 GND, IN 1" C	BP	EC/EC	C+P	20	N3R	MCI-	-	-	-	1

GENERAL NOTES

- A. VERIFY/COORDINATE RATINGS FOR EQUIPMENT SUPPLIED BY THE SELECTED MANUFACTURER. WHERE RATINGS ARE OTHER THAN AS REQUIRED FOR SPECIFIED UNIT, DISCONNECTS, MOTOR STARTERS, OVERCURRENT DEVICES AND RELATED REVISIONS SHALL BE PROVIDED ACCORDINGLY. THE CONTRACTOR THAT FURNISHES EQUIPMENT WITH RATINGS OTHER THAN AS NOTED SHALL BE RESPONSIBLE FOR COORDINATION AND COSTS FOR REVISIONS TO ACCOMMODATE SELECTED EQUIPMENT.
- B. SHORT CIRCUIT CURRENT RATING (SCCR) OF EQUIPMENT SHALL BE EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT LISTED. SHORT CIRCUIT CURRENT RATING APPLIES TO EQUIPMENT AND DISCONNECT.
- C. FRACTIONAL HORSEPOWER SINGLE PHASE MOTORS SHALL BE PROVIDED WITH INTEGRAL OVERLOAD PROTECTION.
- D. DISCONNECTS SHALL BE FUSIBLE UNLESS NOTED OTHERWISE.
- E. ELECTRICAL CONTRACTOR SHALL PROVIDE CIRCUIT TO EQUIPMENT AS INDICATED.
- F. WHERE DISCONNECT IS NOT INDICATED ON PLANS, LOCATE AT EQUIPMENT PER NEC.
- G. EQUIPMENT IDs THAT END IN ".X" INDICATE THAT THERE ARE MULTIPLE UNITS THAT ARE IDENTICAL AND PROVIDED ON THE PROJECT. SEE PLANS FOR THE UNIQUE SEQUENTIAL DESIGNATION.

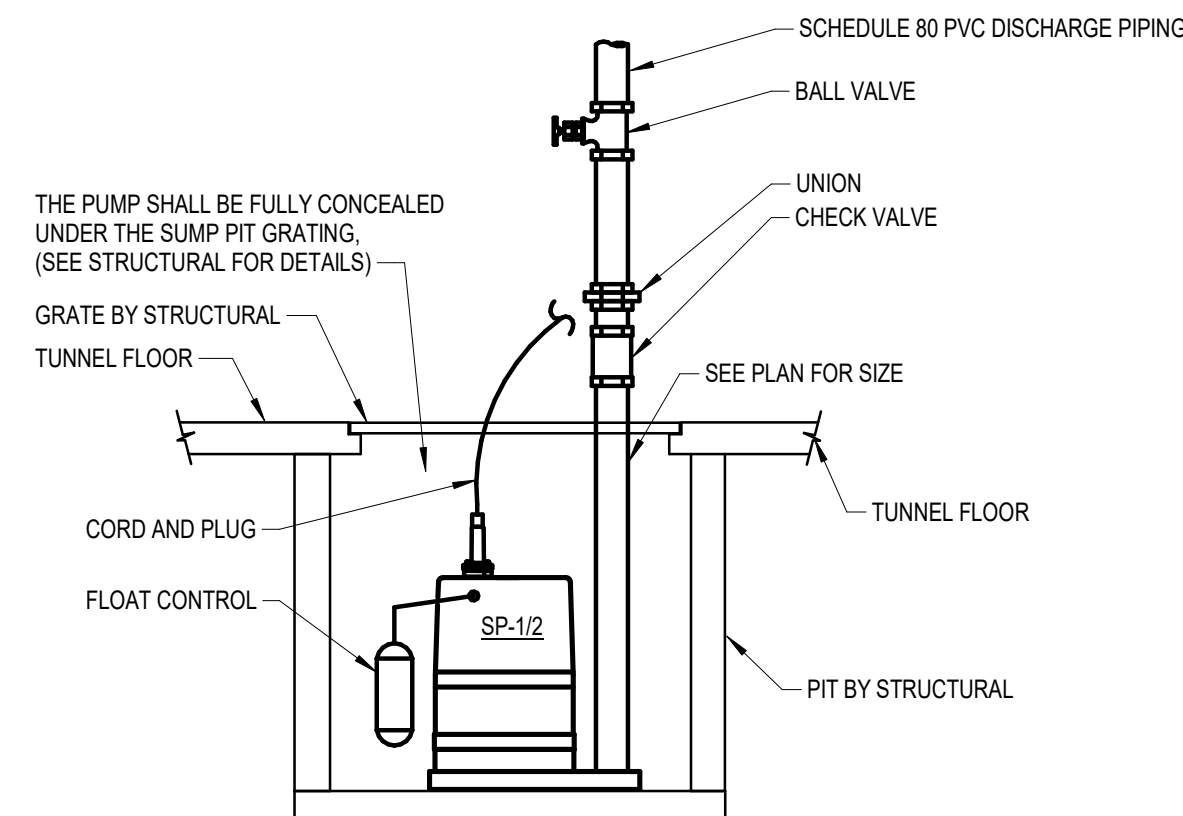
REMARKS

- 1. CONNECT TO NEW 20'1 BREAKER IN PANEL INDICATED. PANEL IS LOCATED ON 2ND FLOOR OF THE PLANT APPROXIMATELY 100' BEYOND THE 13+95.56 TUNNEL MARKER. NEW BREAKERS TO MATCH TYPE AND AIC RATING OF EXISTING BREAKERS.

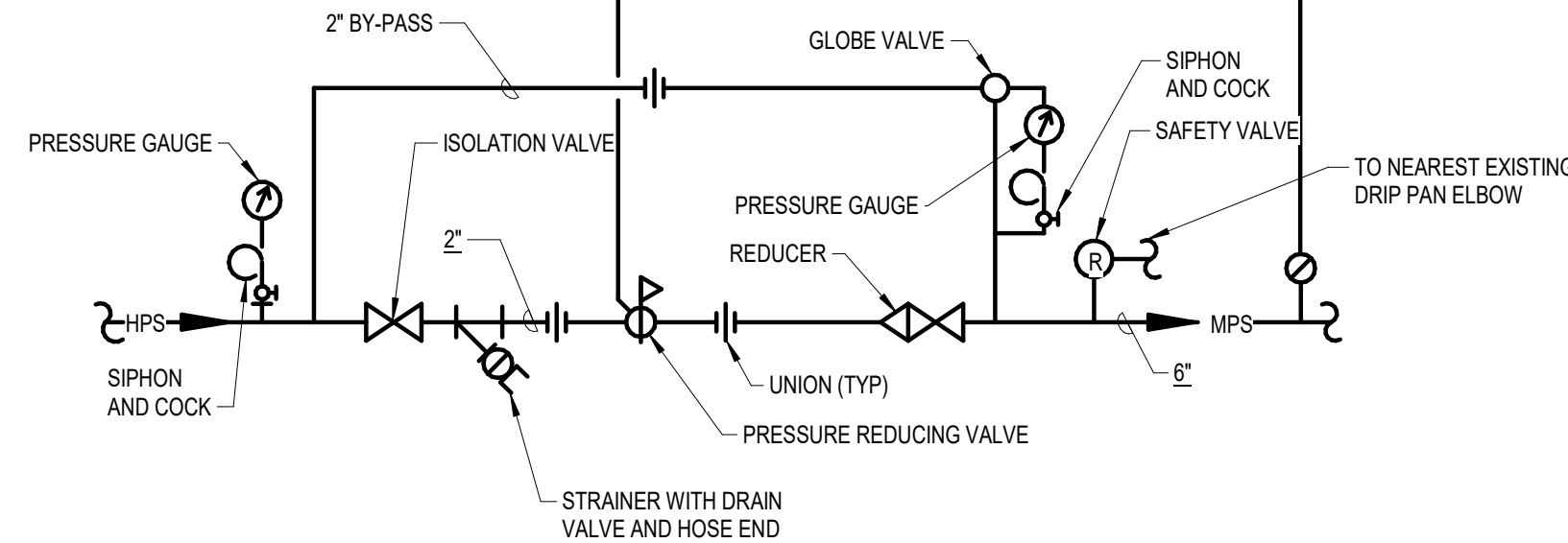
PLUMBING PUMP SCHEDULE												
MARK	SERVES	LOCATION	TYPE	FLOW (GPM)	TOTAL HEAD (FT)	MAX FLUID TEMP (F)	HP	MAX RPM	MANUFACTURER	MODEL	REFERENCE SPECIFICATION	REMARKS
SP-1/SP-2	SUMP PIT	SEE PLANS	SUBMERSIBLE	50	17	130	1/2	1750	ZOELLER	282	22 1429	1, 2

REMARKS:

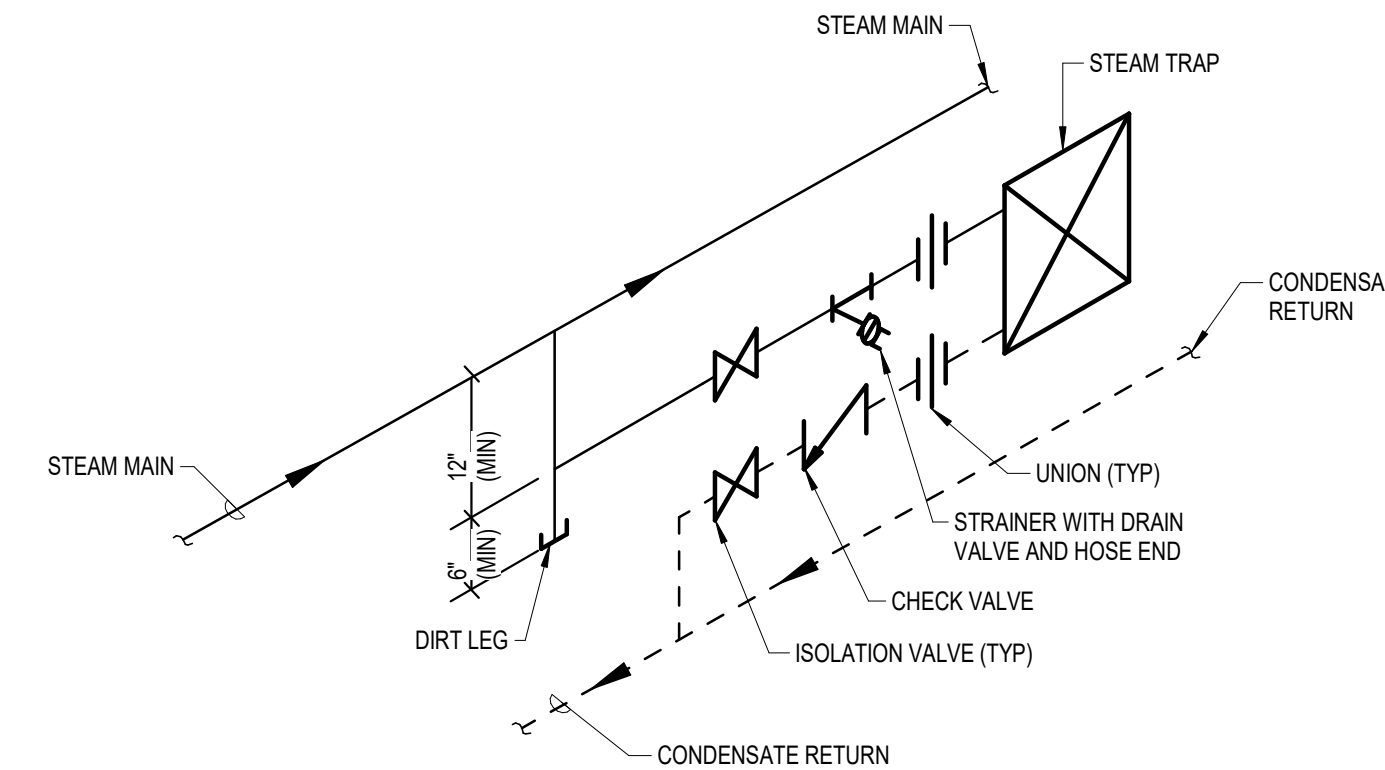
- 1. SEE MECHANICAL/ELECTRICAL COORDINATION SCHEDULE ON SHEET MEP4.00 FOR ELECTRICAL DATA
- 2. PROVIDE WITH FACTORY FLOAT AND AUTOMATIC OPERATION.



1 SUMP PUMP
MEP4.00 NO SCALE
Std. 06/27/2023



2 STEAM PRESSURE REDUCING STATION
MEP4.00 NO SCALE
Std. 03/16/2022



3 TRAP AT STEAM MAIN
MEP4.00 NO SCALE
Std. 03/16/2022

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100% CONSTRUCTION DOCUMENTS
PROJECT NUMBER 125.0278.10
DATE 10/10/2025
SHEET TITLE
MECHANICAL ELECTRICAL & PLUMBING SCHEDULES & DETAILS
SHEET NO.
MEP4.00



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BLDG. SW WING
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