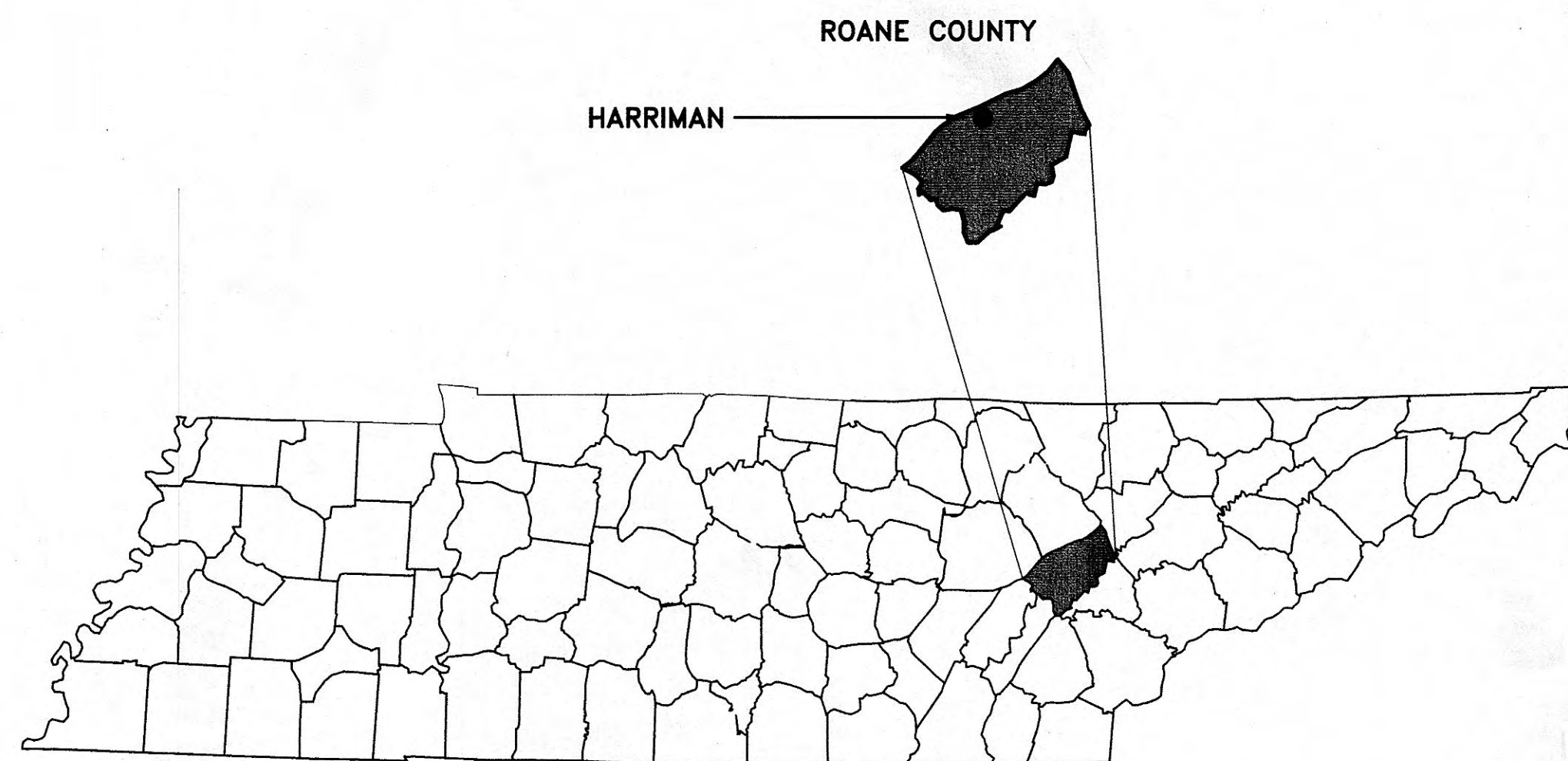


SEWER REHABILITATION MEADOWVIEW DRIVE PUMP STATION AND SEWER LINE FOR HARRIMAN UTILITY BOARD

ROANE COUNTY
HARRIMAN, TENNESSEE
CONTRACT: S07-01



DWG. No.	INDEX OF DRAWINGS
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C-2	PUMP STATION PLAN SHEET
C-3	PUMP STATION SECTIONS SHEET
C-4	FORCE MAIN - PLAN AND PROFILE SHEET
C-5	SANITARY SEWER STANDARD DETAILS
C-6	EROSION CONTROL STANDARD DETAILS
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A-3	EXISTING ELEVATIONS - MODIFIED ELEVATIONS
A-4	EXISTING SECTIONS - MODIFIED SECTIONS
A-5	DETAILS
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E-2.1	FLOOR PLANS - POWER AND COMM.
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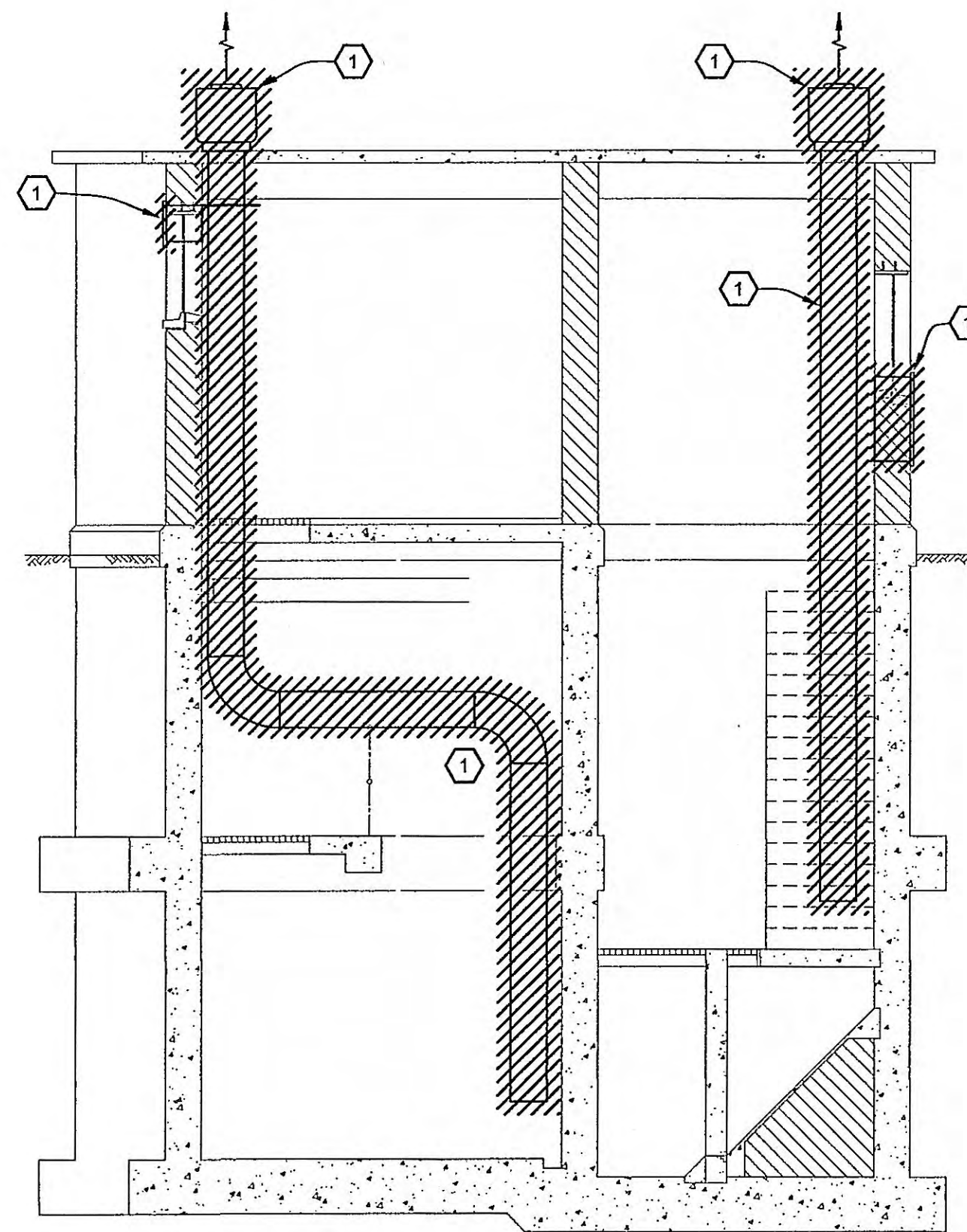
GRW Engineers, Inc.
Engineers, Architects, Planners

404 BNA DRIVE, SUITE 201 - NASHVILLE, TN 37217
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LEXINGTON LOUISVILLE NASHVILLE INDIANAPOLIS
FORT MITCHELL KNOXVILLE ARLINGTON



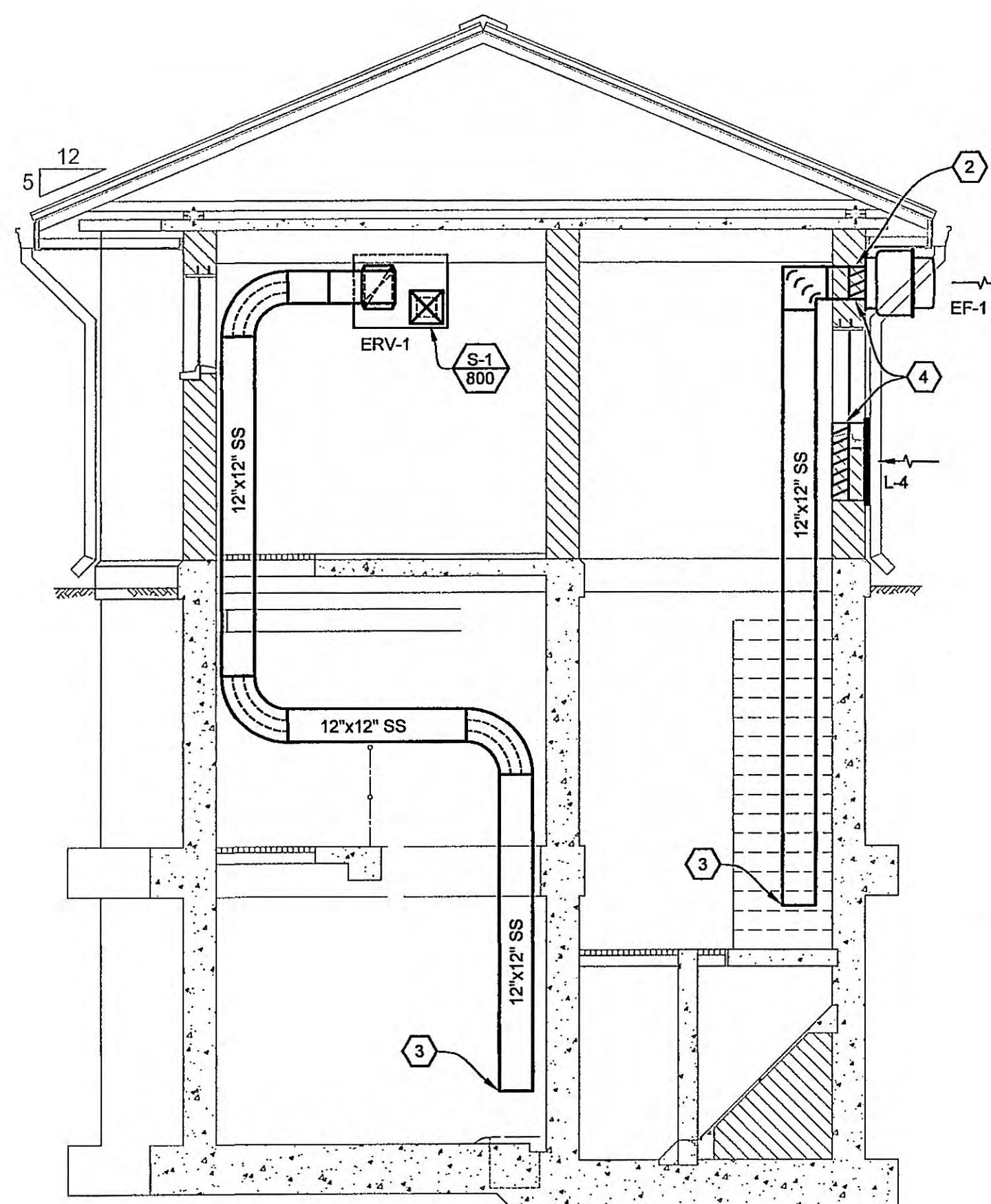
JUNE, 2007

GRW PROJECT NO. 3401-01



EXISTING CONDITIONS - SECTION
SCALE: 1/4" = 1'-0"

1
M-2



MODIFIED CONDITIONS - SECTION
SCALE: 1/4" = 1'-0"

2
M-2

GENERAL LEGEND

- APPEARS ON SHEET WHERE SECTION IS CUT
SECTION IDENTIFICATION LETTER
SHEET WHERE SECTION IS DRAWN
- APPEARS ON THE SHEET WHERE SECTION IS DRAWN
SECTION OR DETAIL IDENTIFICATION LETTER
SHEET WHERE DRAWN
- ENLARGED AREA OR PARTIAL PLAN SYMBOL
(ON SHEET WHERE INDICATED AND SHEET WHERE DRAWN)
IDENTIFICATION LETTER
SHEET WHERE DRAWN
- PLAN MATCH LINE SYMBOL
- CONNECTION OF NEW WORK TO EXISTING
- LINE OR EQUIPMENT TO BE REMOVED
- ROOM NUMBER
- CEILING HEIGHT
- ABOVE FINISHED FLOOR
- TOP OF STEEL, BOTTOM
- TOP OF BEAM, BOTTOM
- TOP OF JOIST, BOTTOM
- TOP OF CONCRETE, BOTTOM
- TOP OF PIPE, BOTTOM
- BOTTOM OF DUCT
- OPPOSED BLADE DAMPER
- STAINLESS STEEL

MECHANICAL LEGEND

- NEW DUCT - 1ST FIGURE IS DIMENSION SHOWN
- SUPPLY OR OUTSIDE AIR DUCTWORK; PLAN, UP & DOWN
- RETURN OR EXHAUST DUCTWORK
- ROUND DUCTWORK; PLAN, UP AND DOWN
- AIR FLOW; DIRECTION
- MOTOR OPERATED DAMPER; PLAN, ONE LINE DIAGRAM
- AIR TURNING VANES; PLAN, ONE LINE DIAGRAM
- DUCT TRANSITION; PLAN, ONE LINE DIAGRAM
- FLEXIBLE DUCT CONNECTOR; PLAN
- FLOW SWITCH
- THERMOSTAT, OR TEMP. CONTROLLER
- HORIZONTAL UNIT HEATER
- ROOF EXHAUST HOOD, EXHAUST FAN
- ROOF INTAKE HOOD, SUPPLY FAN

SHEET NOTES:

- REMOVE ALL EXISTING EQUIPMENT, ACCESSORIES, DUCTWORK, HANGARS, LOUVERS, AIR DEVICES, AND ANCILLARY COMPONENTS.
- CUT HOLE IN WALL AND INSTALL EF-1.
- ROUTE TO WITHIN 18-INCHES OF FLOOR.
- BACKDRAFT DAMPER.

EXHAUST FAN SCHEDULE

MARK	TYPE FAN	CFM	S.P. IN W.C.	RPM	DRIVE	HP	VOLTS/ PHASE	SONES	ACCESSORIES	REMARKS
EF-1	CENTRIFUGAL SIDEWALL	500	0.25	881	DIRECT	1/6	115/1	4.6	1-6	1-3

- ACCESSORIES:**
- FACTORY DISCONNECT.
 - HI-PRO POLYESTER COATING ON ENTIRE FAN AND ALL ACCESSORIES.
 - BACKDRAFT DAMPERS.
 - ALUMINUM BIRDSCREEN.
 - SPEED CONTROL.
 - STAINLESS STEEL FASTENERS.

- REMARKS:**
- SELECTION BASED ON GREENHECK MODEL CW-101-B.
 - SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 - PROVIDE AMCA CERTIFIED RATINGS.

AIR DEVICE SCHEDULE

MARK	SIZE-INCHES WxHxD	FREE AREA SQ. FT.	CFM	VELOCITY FPM	HEAD LOSS IN W.G.	ACCESSORIES	REMARKS
L-1 & L-2	24x16x6	1.08	800	743	0.085	3,4	1,2
L-3	24x28x6	2.13	500	234	0.05	1,2,3,4	1,2,3
S-1	12x12	-	800	-	-	-	4

- ACCESSORIES:**
- BACKDRAFT DAMPER.
 - BIRDSCREEN.
 - INSECT SCREEN.
 - KYNAR FINISH.

- REMARKS:**
- SELECTION BASED ON GREENHECK.
 - SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
 - FIELD MEASURE EXISTING OPENINGS FOR EXACT DIMENSION. SCHEDULED VALUES ARE APPROXIMATE.
 - HEAVY DUTY STAINLESS STEEL BAR GRILLE, KRUEGER 91610, OR EQUAL. PROVIDE DUCT EXTENSION AS NEEDED FOR MOUNTING.

ENERGY RECOVERY VENTILATOR SCHEDULE

MARK	E.S.P IN. WG.	CFM	DUCT SIZE	WHEEL % EFF.	NO. & TYPE BLOWERS	DRIVE	MOTOR H.P. EA	VOLTS/ PHASE	MIN. CIRC. AMPS	ACCESSORIES	REMARKS
ERV-1	0.50	800	10x16 IN 7x7 OUT	71.4	2, FC CENTRIFUGAL	DIRECT	1/3	230/1	9.6	1-9	1-2

- ACCESSORIES:**
- SOLID STATE SPEED CONTROL
 - DUCT FLANGES.
 - FACTORY DISCONNECT.
 - DOUBLE WALL WITH 1-INCH INSULATION.
 - SUPPLY AND EXHAUST FILTERS WITH 2 EXTRA SETS.
 - EXTRA ENERGY WHEEL BELT.
 - UNIT MOUNTED CONTROLS WITH DOOR INTERLOCK DISCONNECT.
 - DIRTY FILTER AND WHEEL ROTATION SENSOR CONTACTS.
 - FAN INTERLOCK CONTACTS.

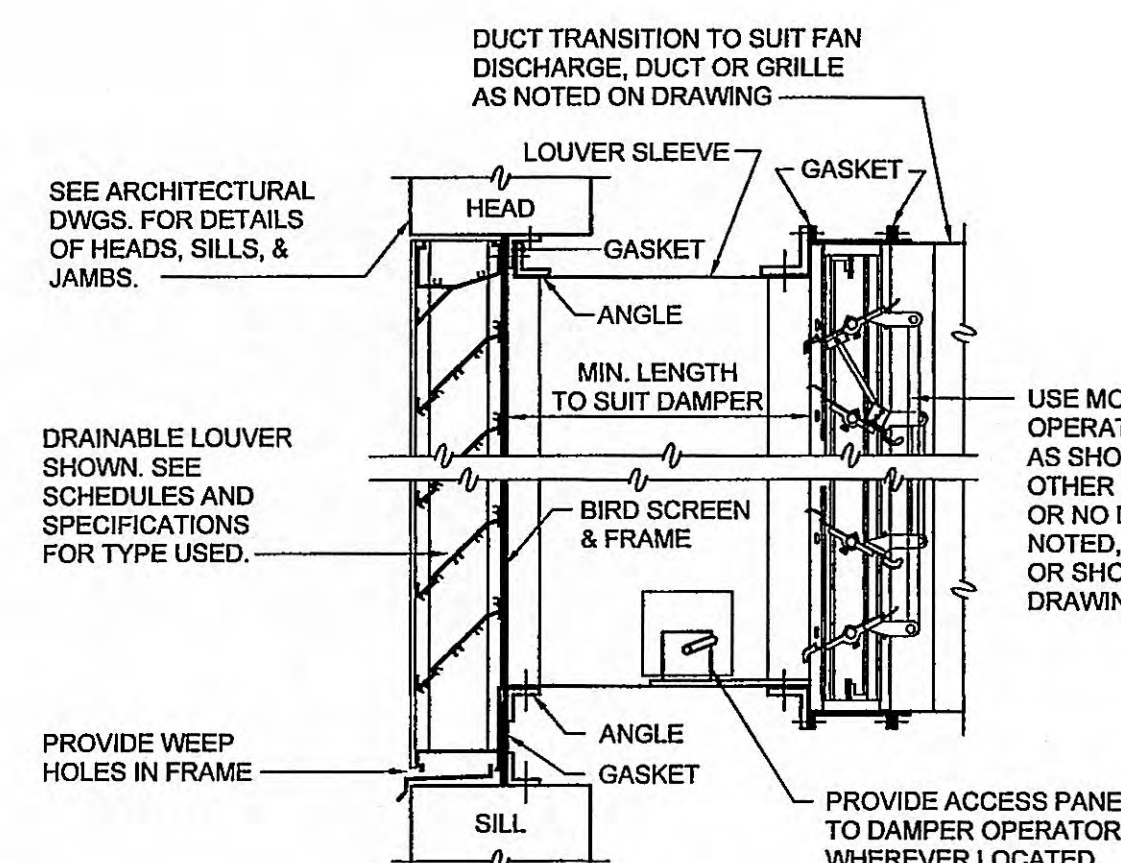
- REMARKS:**
- SELECTION BASED ON GREENHECK ERV-251S-20-A.
 - SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

ELECTRIC UNIT HEATER SCHEDULE

MARK	UNIT TYPE	MIN. BTUH.	CFM	KW	THROW FT.	F TEMP. RISE	VOLTS/ PHASE	MOTOR HP (W)	ACCESSORIES	REMARKS
EUH-1	WASHDOWN	34,130	700	10	28	45	460/3	(21)	1-4	1-2

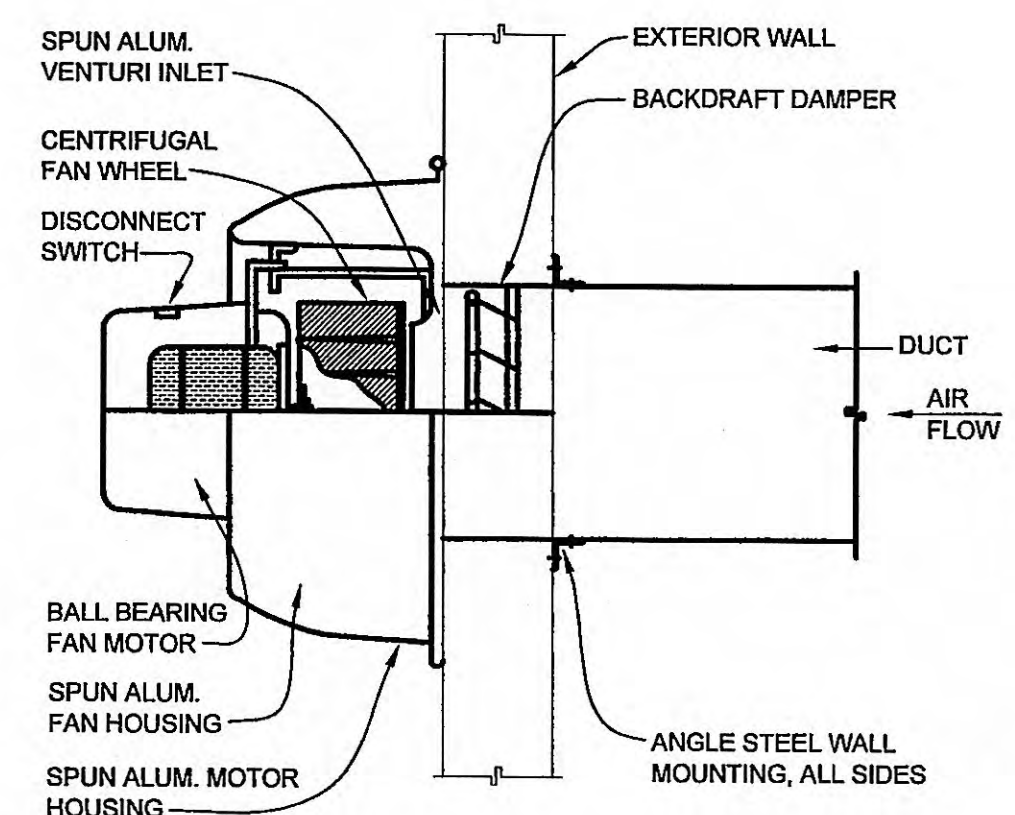
- ACCESSORIES:**
- BUILT-IN THERMOSTAT.
 - WALL/CEILING MOUNTING BRACKET, STAINLESS.
 - STAINLESS STEEL CONSTRUCTION.
 - FACTORY DISCONNECT.

- REMARKS:**
- SELECTION BASED ON TRANE MODEL UHRA 103DAAT.
 - SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



- NOTES:**
- PITCH SLEEVE TOWARD LOUVER. PROVIDE DRAIN IN LOW POINT IN DUCT. TERMINATE DRAIN LINES NEAR FLOOR DRAIN.
 - MIN. 16" GA. GALVANIZED STEEL SLEEVE

DETAIL FOR LOUVER & DAMPER
NO SCALE



WALL TYPE CENTRIFUGAL EXHAUST FAN DETAIL
NO SCALE



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CLIENT PROJECT NO. XXXX
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DEMO AND NEW MECHANICAL SECTIONS, SCHEDULES, DETAILS AND LEGEND
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED: DBC
DRAWN: EGR
REVIEWED: DBC
APPROVED: RGE

REVISIONS	DATE	DESCRIPTION
NO.		

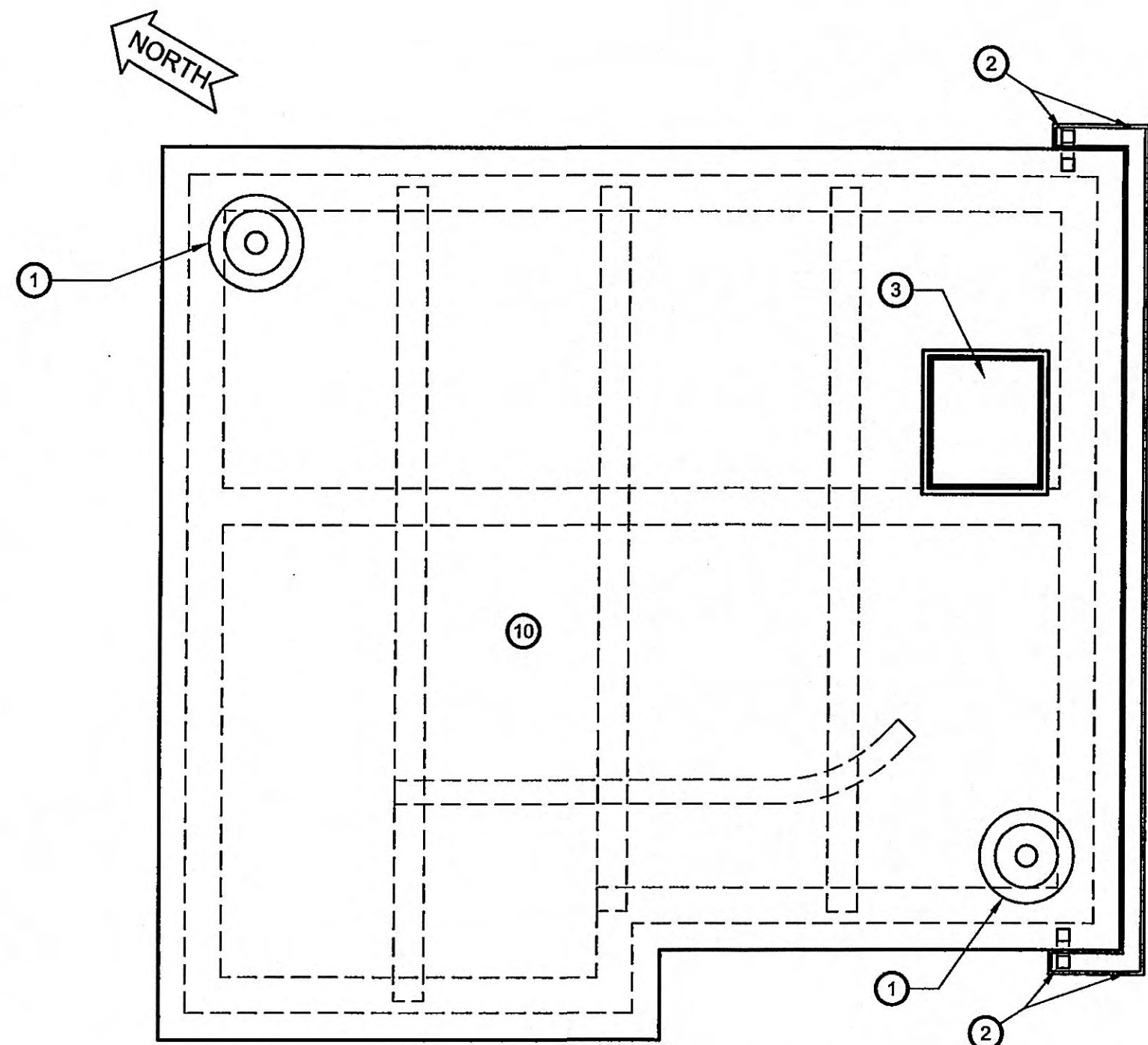
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SCALE: AS SHOWN
SHEET NO. M-2

PRINTED: 9/5/2007 @ 4:53PM

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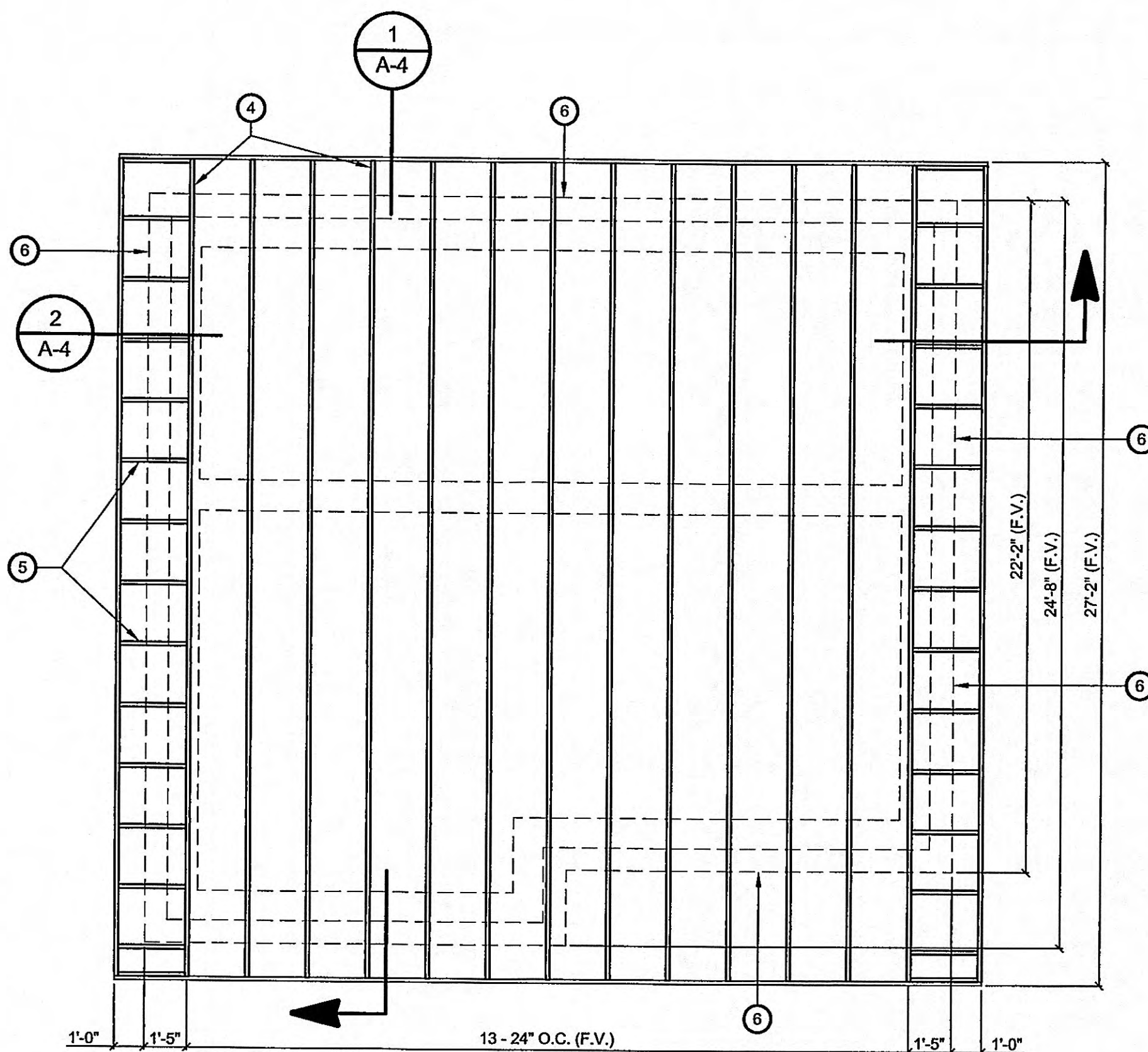
KEYNOTES:

- EXISTING EXHAUST FAN TO BE REMOVED. (SEE MECHANICAL.)
- EXISTING GUTTER AND DOWNSPOUT TO BE REMOVED.
- EXISTING ACCESS HATCHWAY TO REMAIN.
- PRE-ENGINEERED WOOD TRUSS @ 24" O.C., TYP.
- GABLE END FRAMING -SEE DTL. 2/A-5
- LINE OF EXISTING ROOF PERIMETER BELOW.
- NEW STANDING SEAM STEEL ROOF. -SEE SPEC.
- SEE ELECTRICAL SHEETS FOR INFO ON ELECTRICAL LINES AND WEATHERHEAD REMOVED FROM BLDG. AND REROUTED.
- NEW VENTED RIDGE CAP.
- REMOVE EXISTING ROOFING AND FLASHING DOWN TO EXISTING CONCRETE ROOF DECK, TYP.
- NEW GUTTER.
- DROP FOR DOWNSPOUT.
- NEW ROOF OVERHANG AT EAVE -SEE DTL. 1/A-5



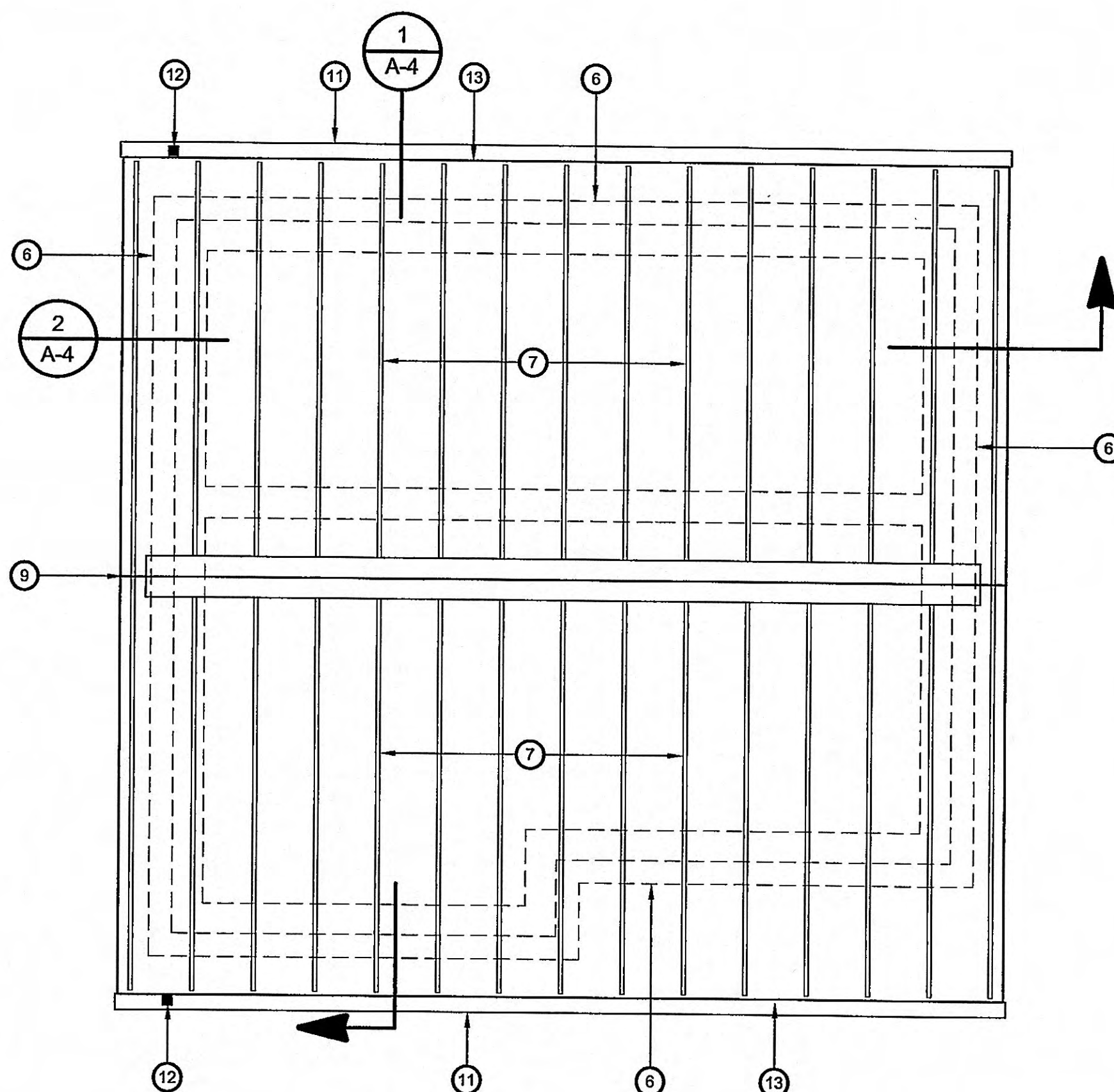
EXISTING ROOF PLAN
SCALE: 1/4" = 1'-0"

1
A-2



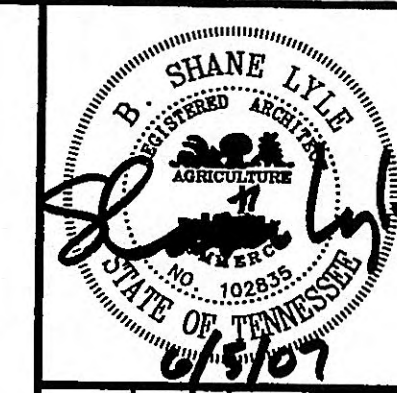
ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

2
A-2

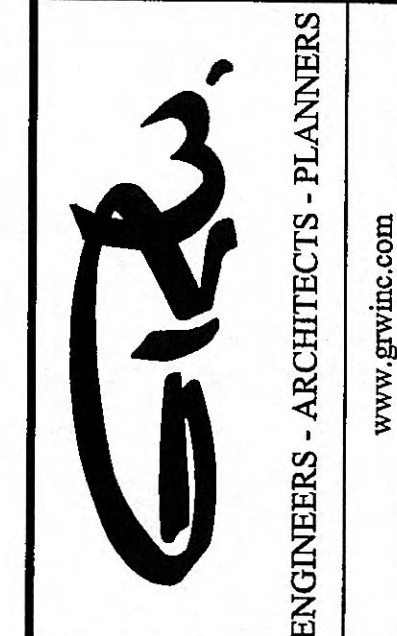


NEW ROOF PLAN
SCALE: 1/4" = 1'-0"

3
A-2



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EXISTING ROOF PLAN
FRAMING/MODIFIED ROOF PLAN
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED:	JEE
DRAWN:	JEE
REVIEWED:	XXX
APPROVED:	XXX

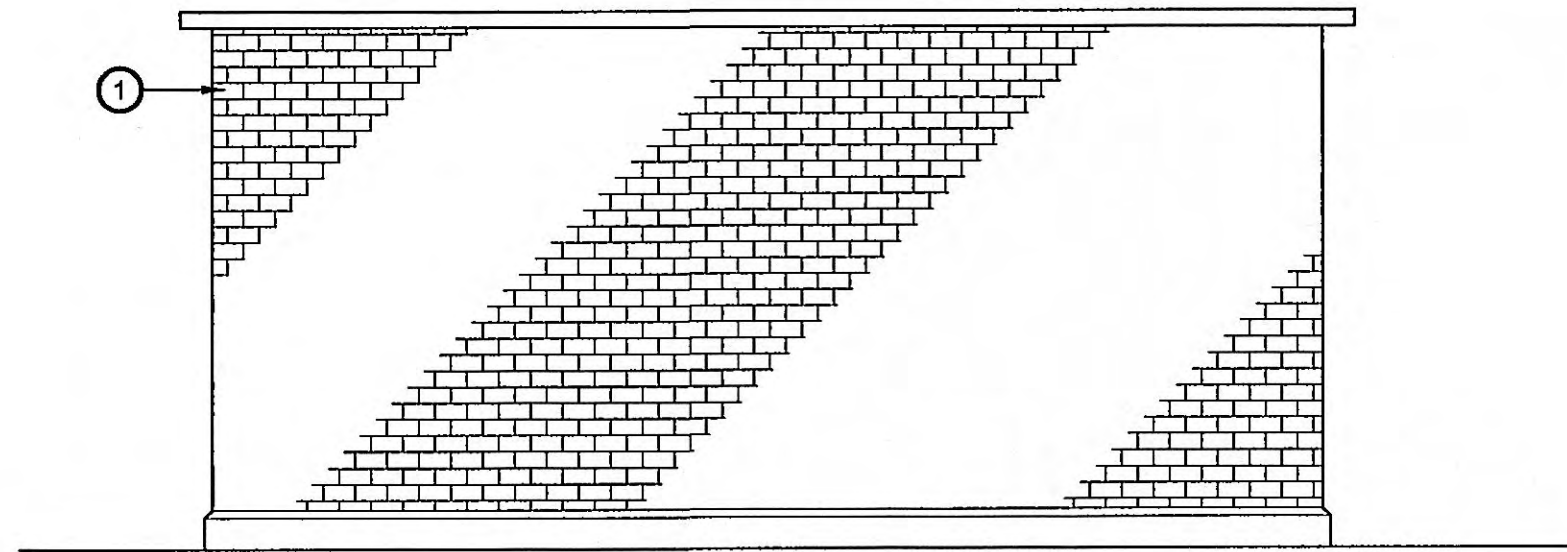
NO.	REVISIONS	DATE	BY

SCALE CHECK: _____ THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: JUNE 5, 2007
SCALE: 1/4" = 1'-0"
SHEET NO. A-2

PRINTED: 6/7/2007 @ 9:16AM

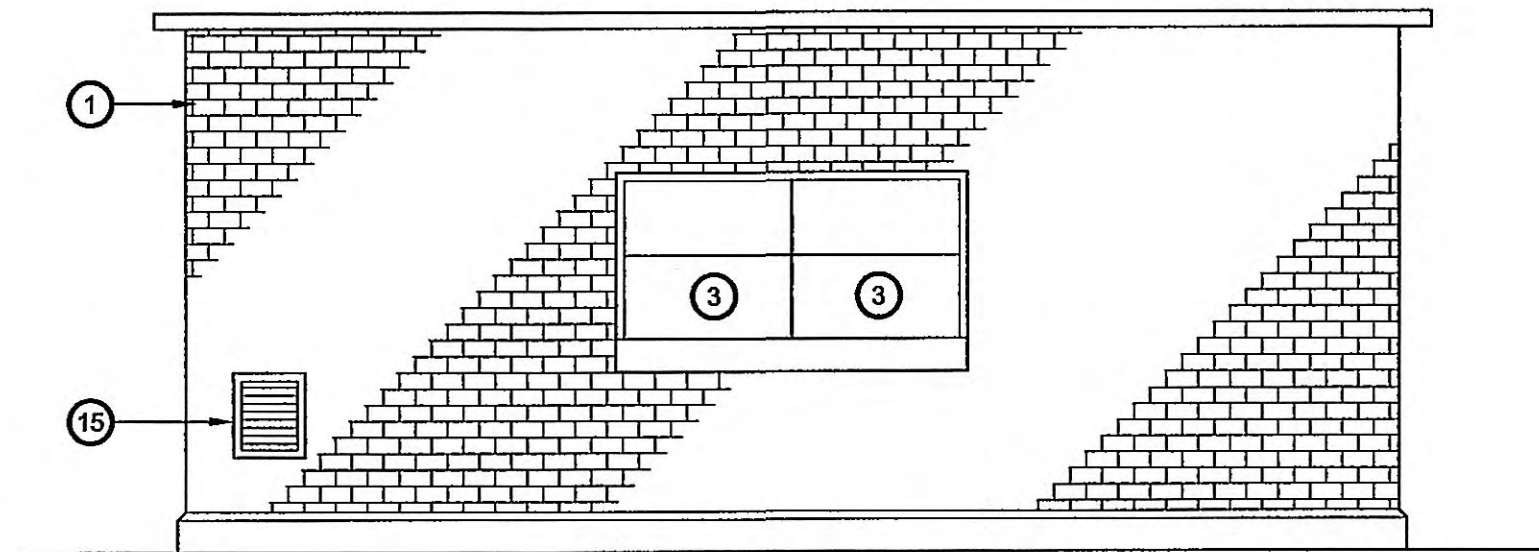
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EXISTING NORTH ELEVATION

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

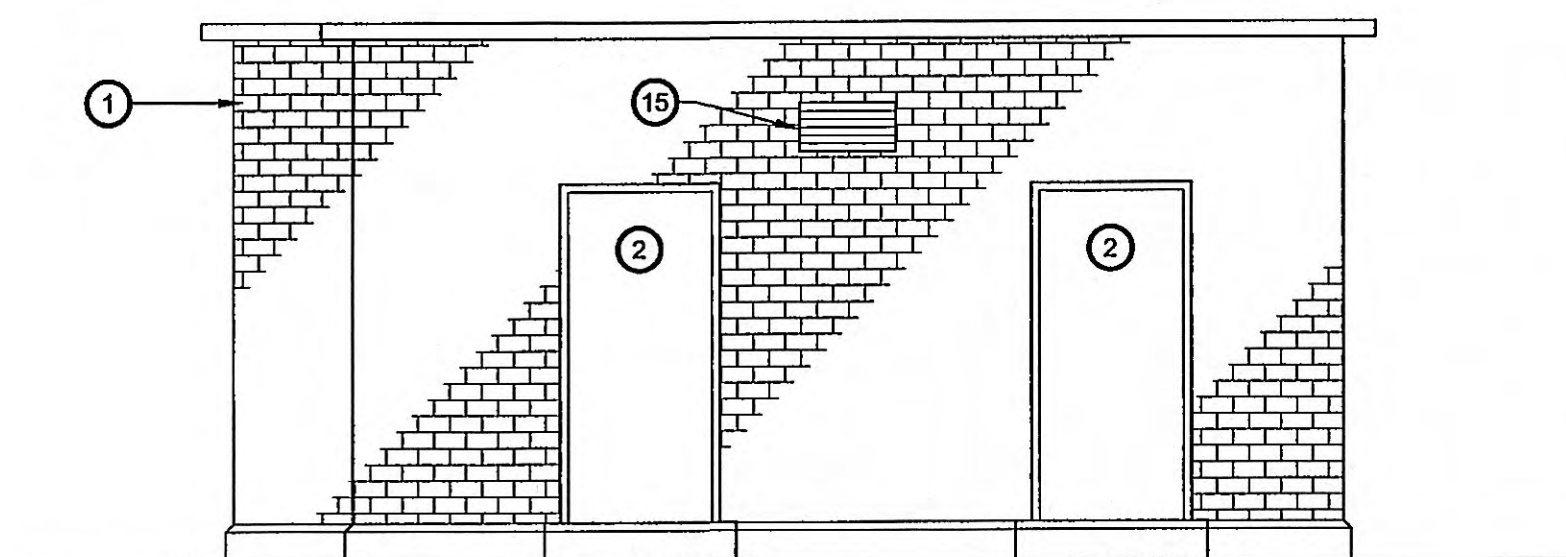
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A-3



EXISTING EAST ELEVATION

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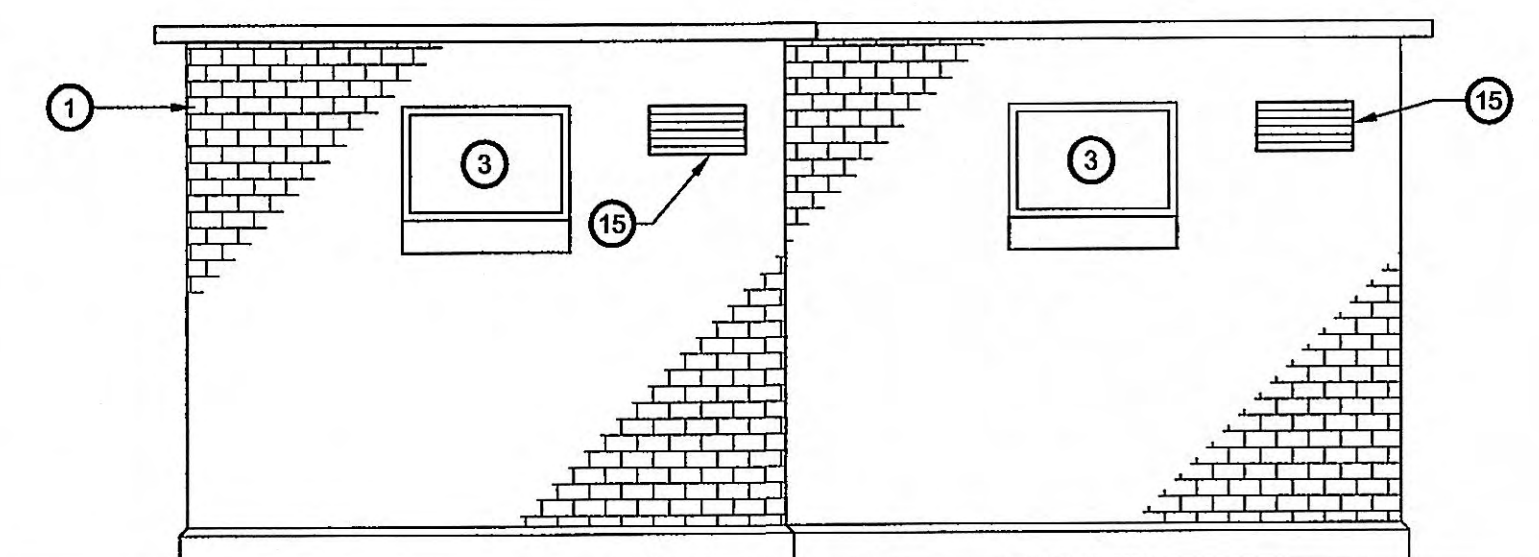
2
A-3



EXISTING SOUTH ELEVATION

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

3
A-3



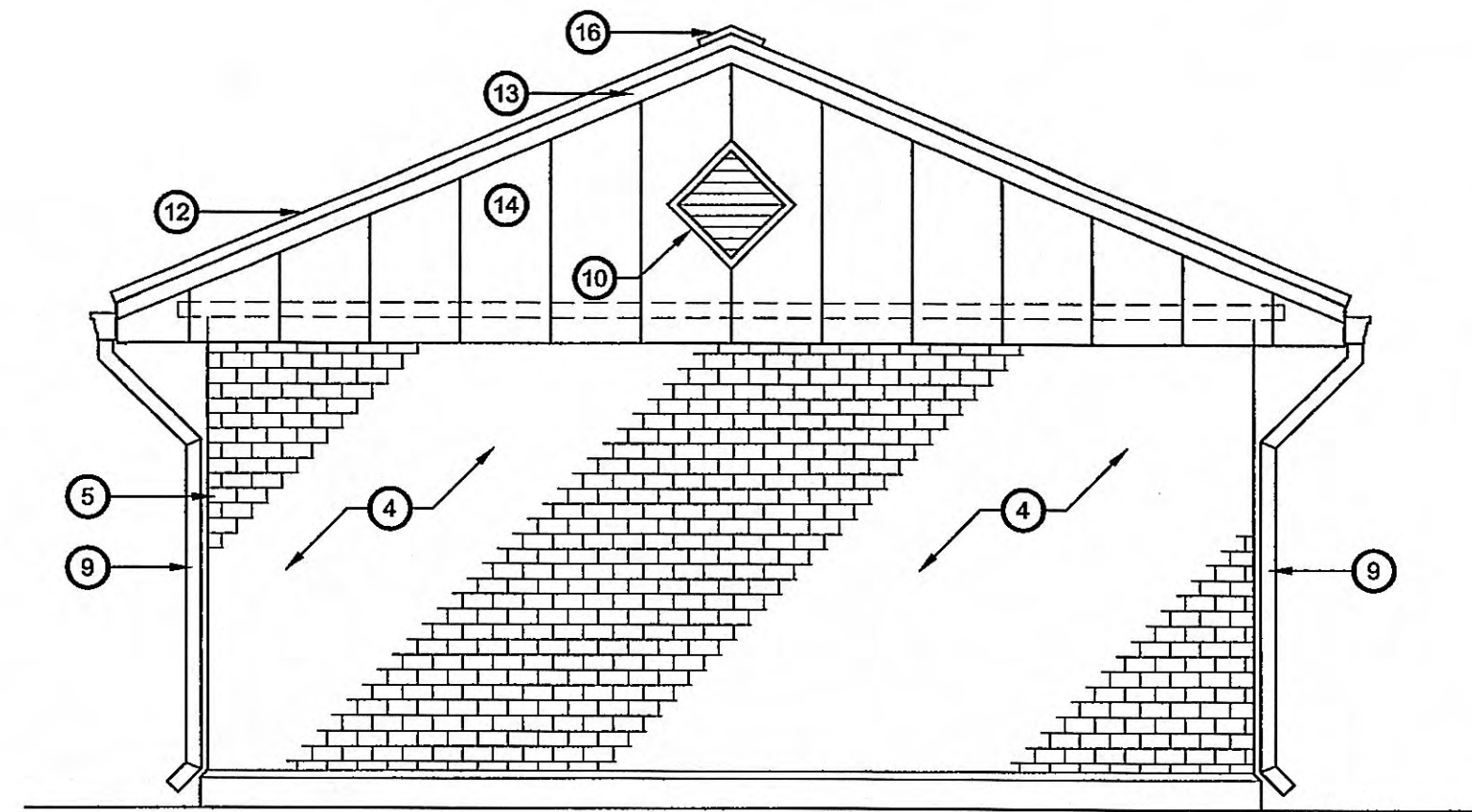
EXISTING WEST ELEVATION

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

4
A-3

KEYNOTES:

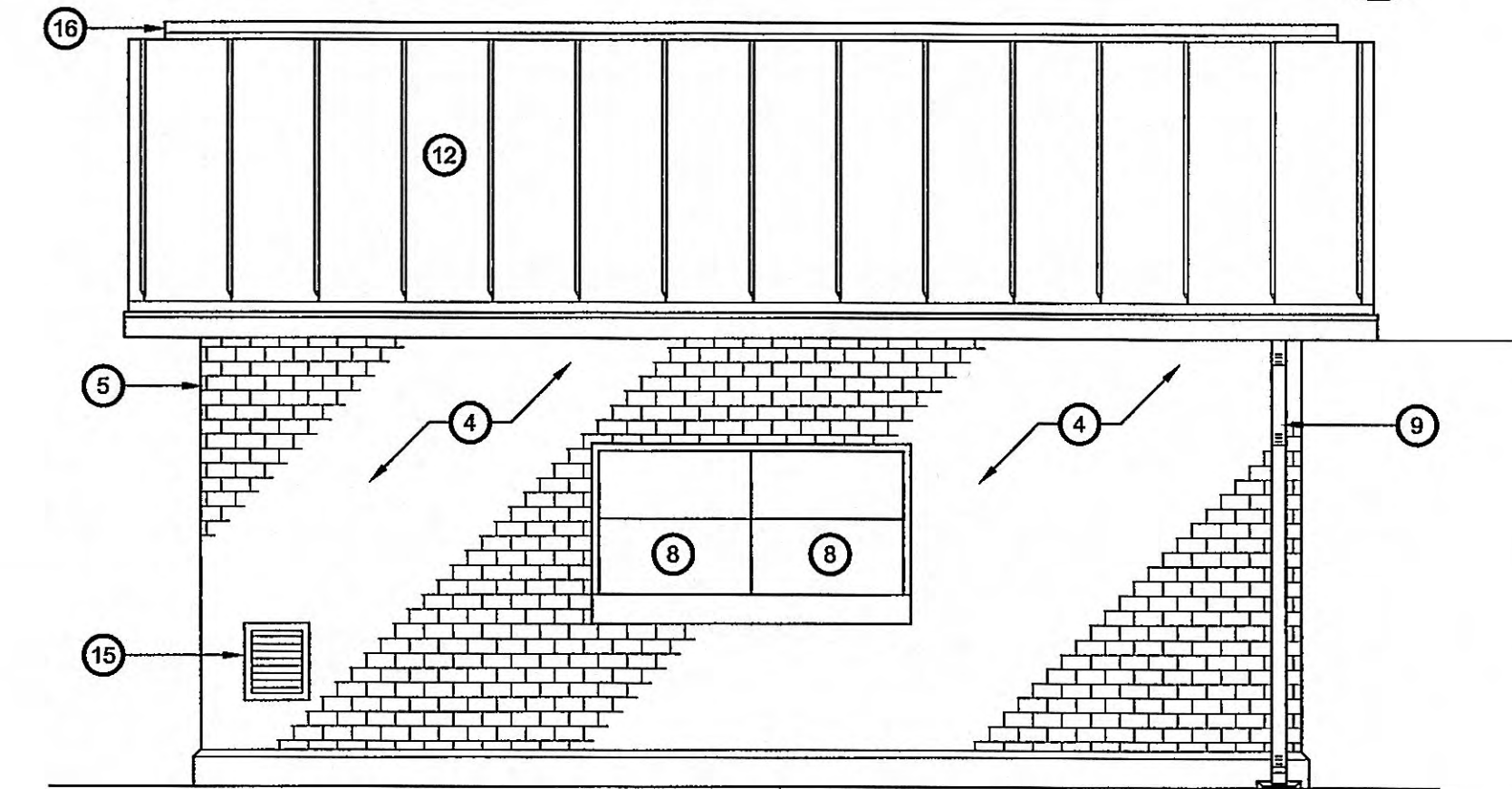
- EXISTING BRICK COMPOSITE WALL.
- EXISTING DOOR AND FRAME TO BE REMOVED. REMOVE SILL & HARDWARE. PATCH OPENING TO RECEIVE NEW DOOR AND FRAME.
- EXISTING WINDOWS TO BE REMOVED. PATCH OPENING AS REQUIRED TO RECEIVE NEW WINDOWS.
- EXISTING EXTERIOR WALLS TO BE PRESSURE WASHED AND SEALER APPLIED.
- REPOINT ALL CRACKS IN MORTAR JOINTS, AND PATCH HOLES WHERE EQUIP. OR PIPES HAVE BEEN REMOVED, TYP. @ EXTERIOR WALLS.
- PROVIDE NEW OUT - SWINGING FLOOD DOOR WITH NEW FRAME. VERIFY MASONRY OPENING. -SEE SPEC. PAINT.
- PROVIDE NEW IN - SWINGING FIBERGLASS DOOR AND FRAME. VERIFY MASONRY OPENING. PAINT.
- PROVIDE NEW WINDOWS (FIELD VERIFY SIZE AND CONFIGURATION) -SEE SPEC.
- NEW 4"x4" PREFINISHED ALUMINUM DOWNSPOUT AND SPLASHBLOCK.
- INSTALL NEW PREFINISHED ALUMINUM GABLE VENT LOUVRE.
- NEW 5" PREFINISHED ALUMINUM OGEE GUTTER.
- NEW STANDING SEAM METAL ROOFING. -SEE SPEC.
- ALUMINUM RAKE TRIM BY ROOFING MFR.
- METAL GABLE END PANELS W/1 1/4" DEEP CORRUGATIONS. PREFINISHED.
- SEE "M" SHEETS FOR INFO ON LOUVRES.
- CONTINUOUS VENTED RIDGE VENT.



MODIFIED NORTH ELEVATION

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

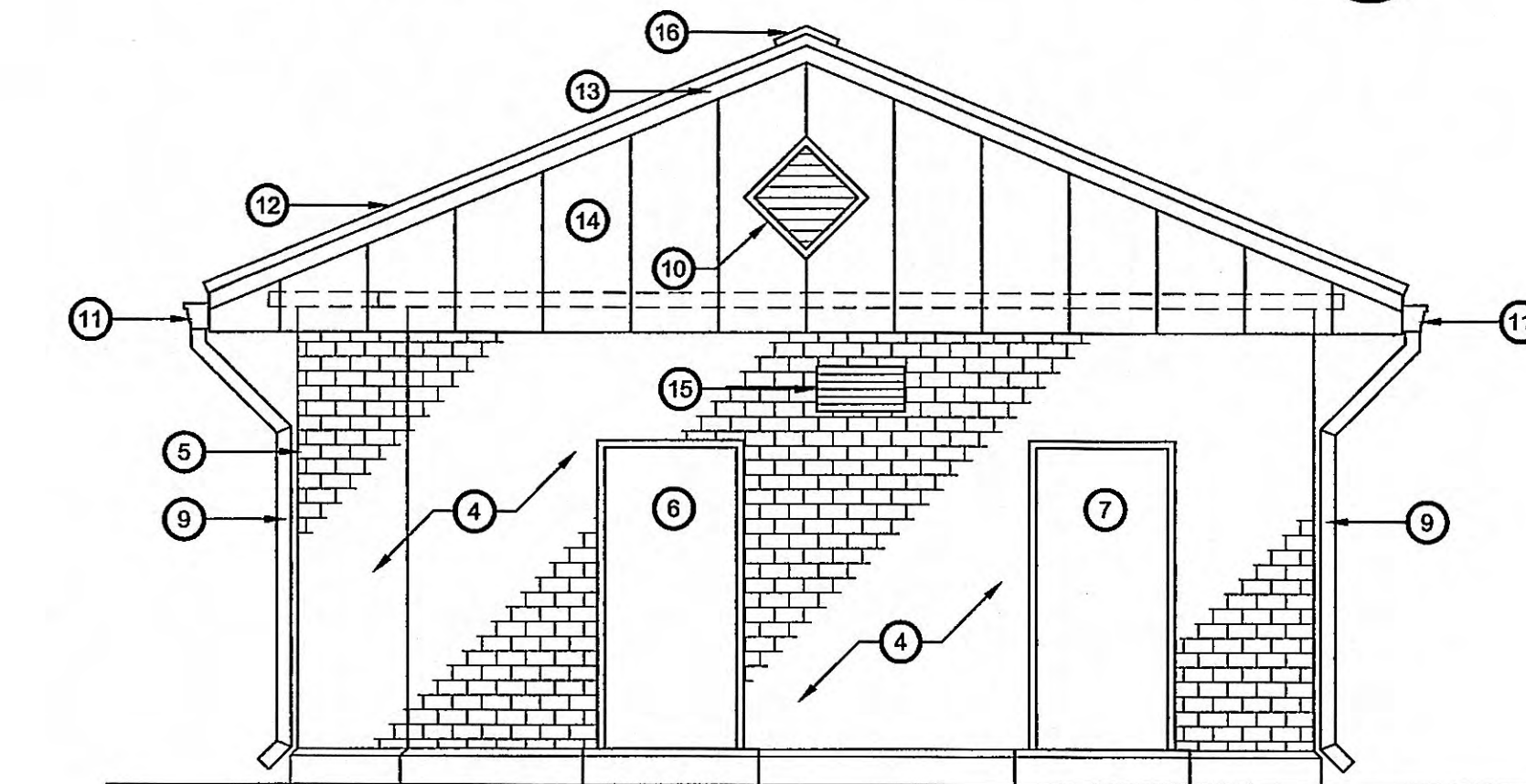
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A-3



MODIFIED EAST ELEVATION

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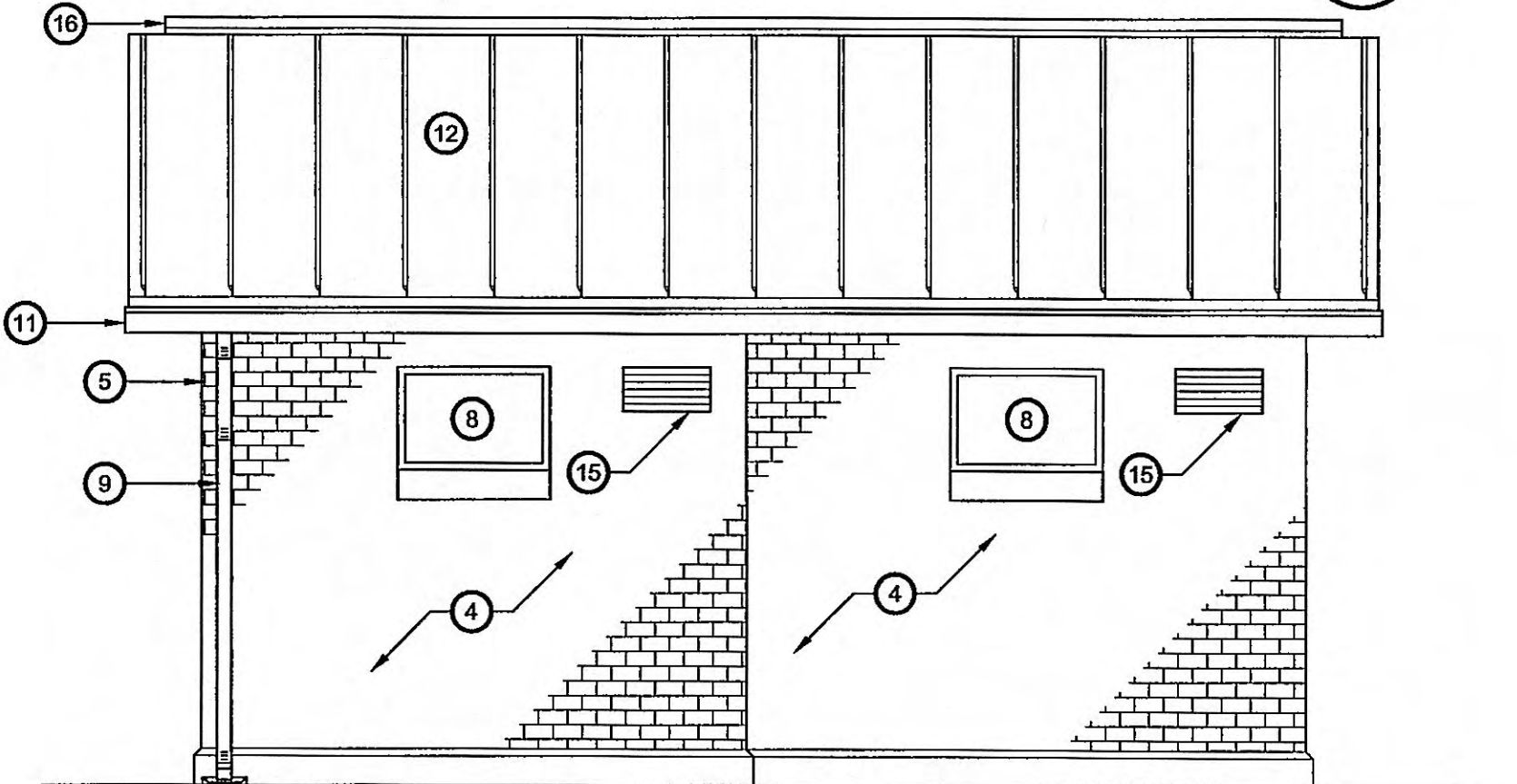
6
A-3



MODIFIED SOUTH ELEVATION

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

7
A-3



MODIFIED WEST ELEVATION

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

8
A-3



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EXISTING ELEVATIONS
MODIFIED ELEVATIONS
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED: JEE
DRAWN: JEE
REVIEWED: XXX
APPROVED: XXX

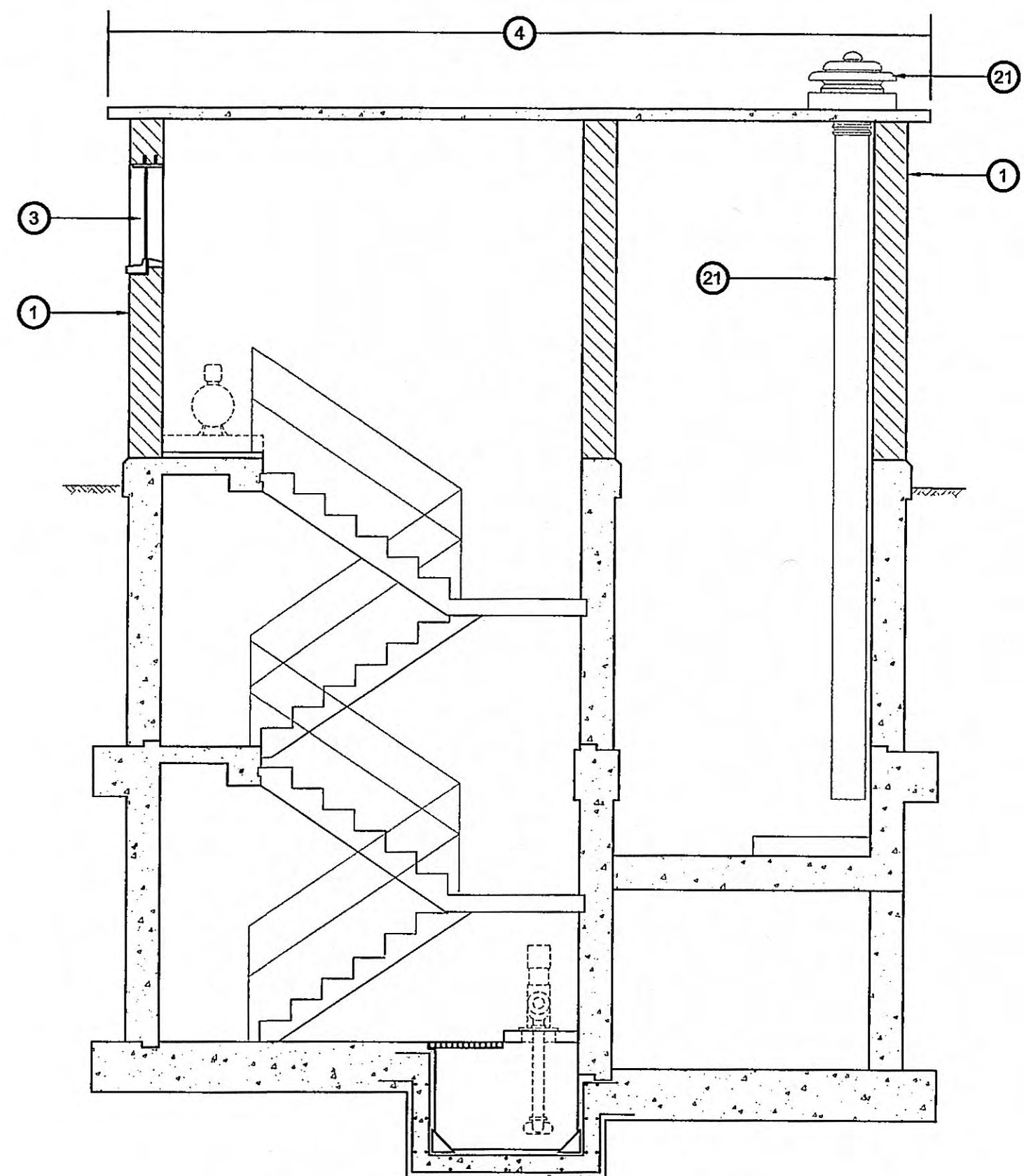
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	DESCRIPTION		

DATE: JUNE 5, 2007

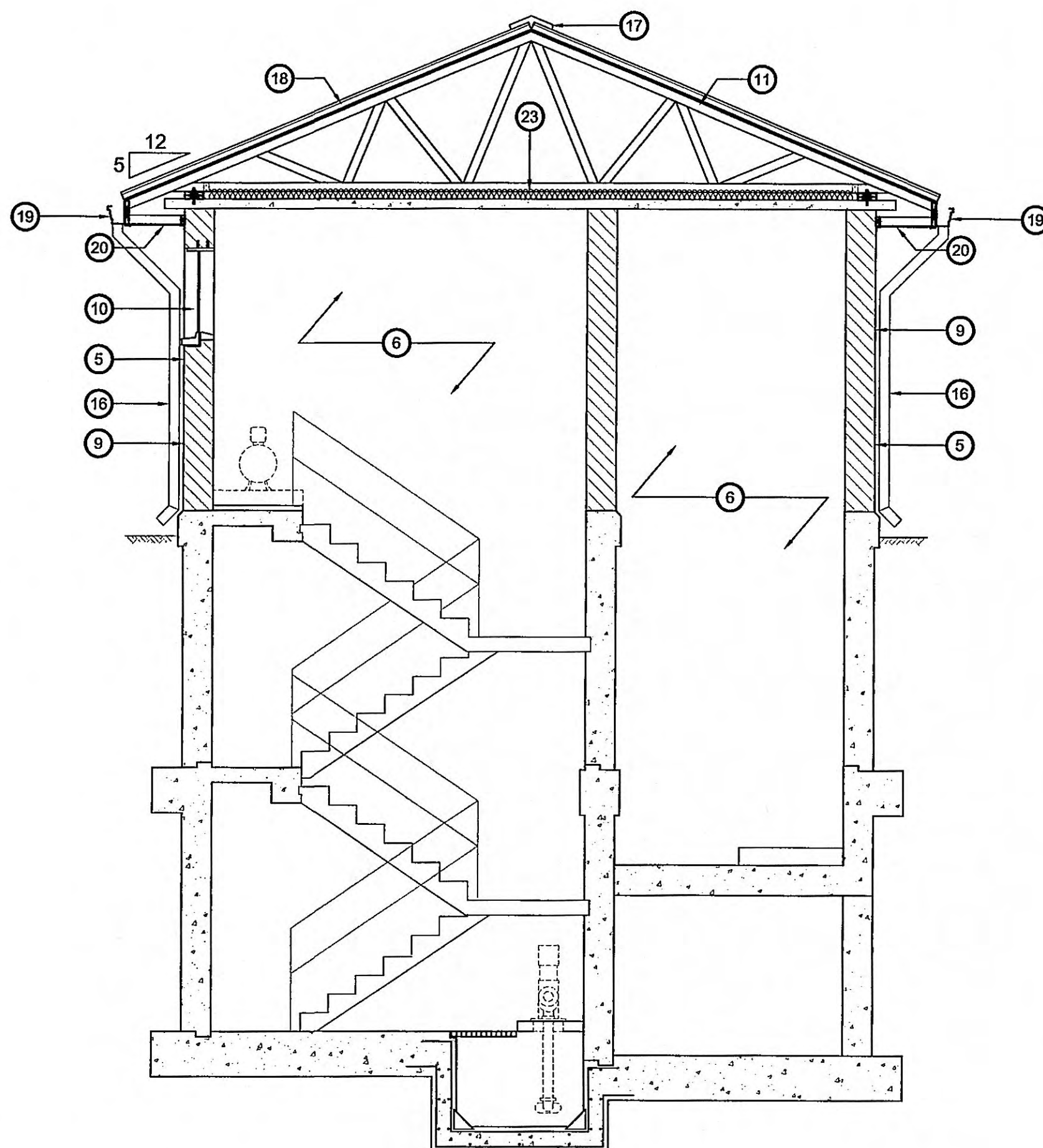
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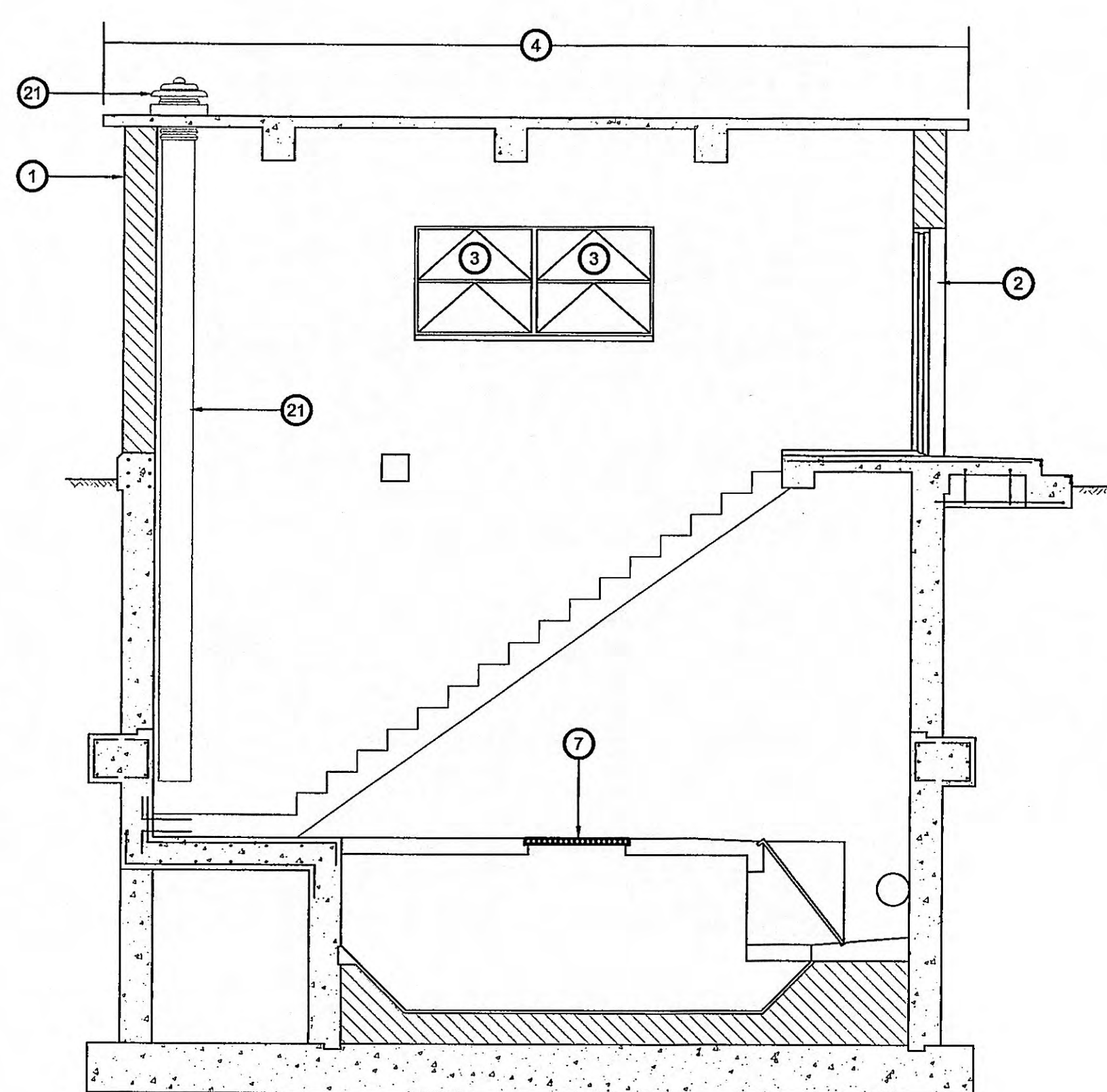
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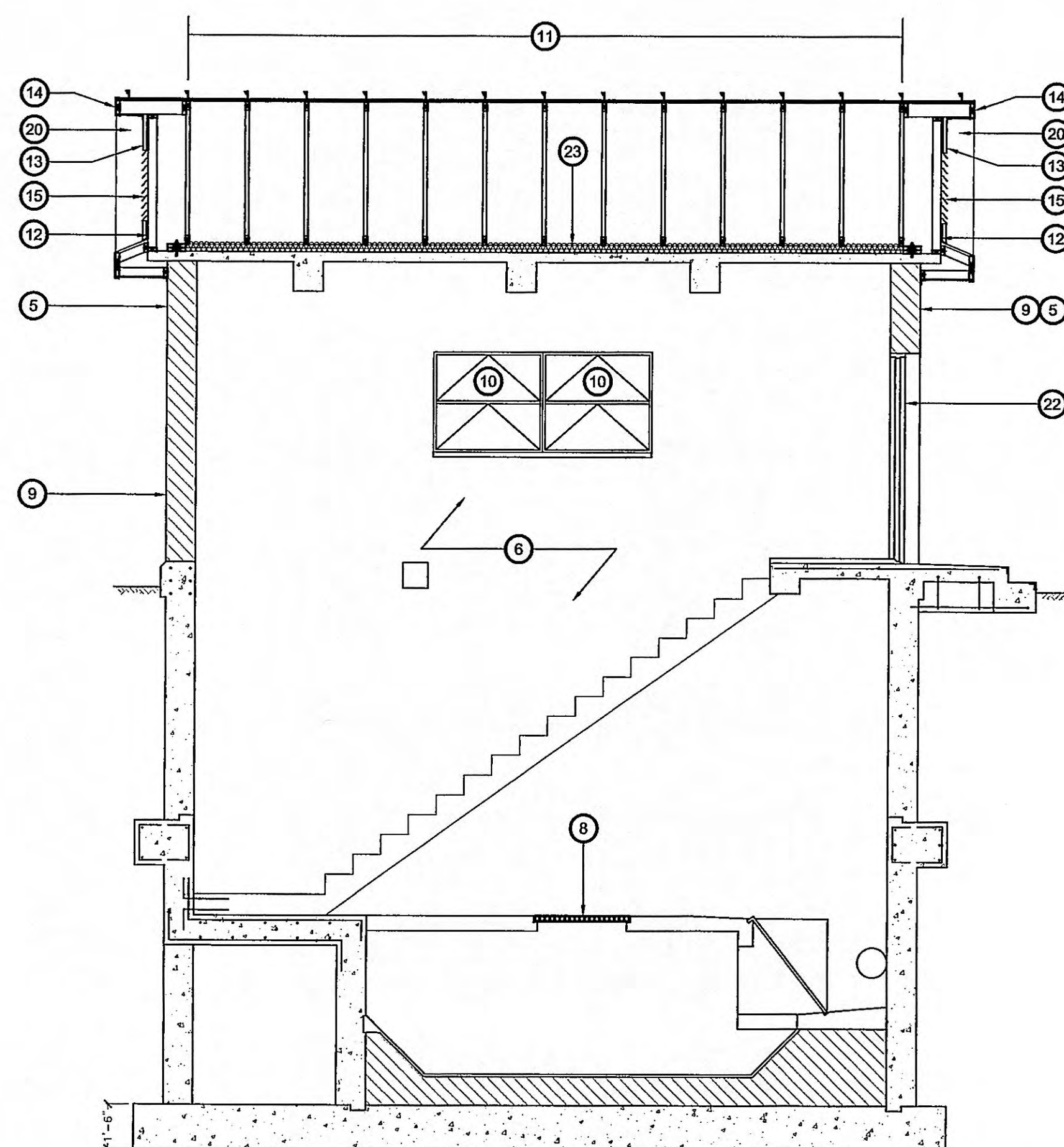
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SCALE: 1/4" = 1'-0"



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



EXISTING CONDITIONS - SECTION
SCALE: 1/4" = 1'-0"



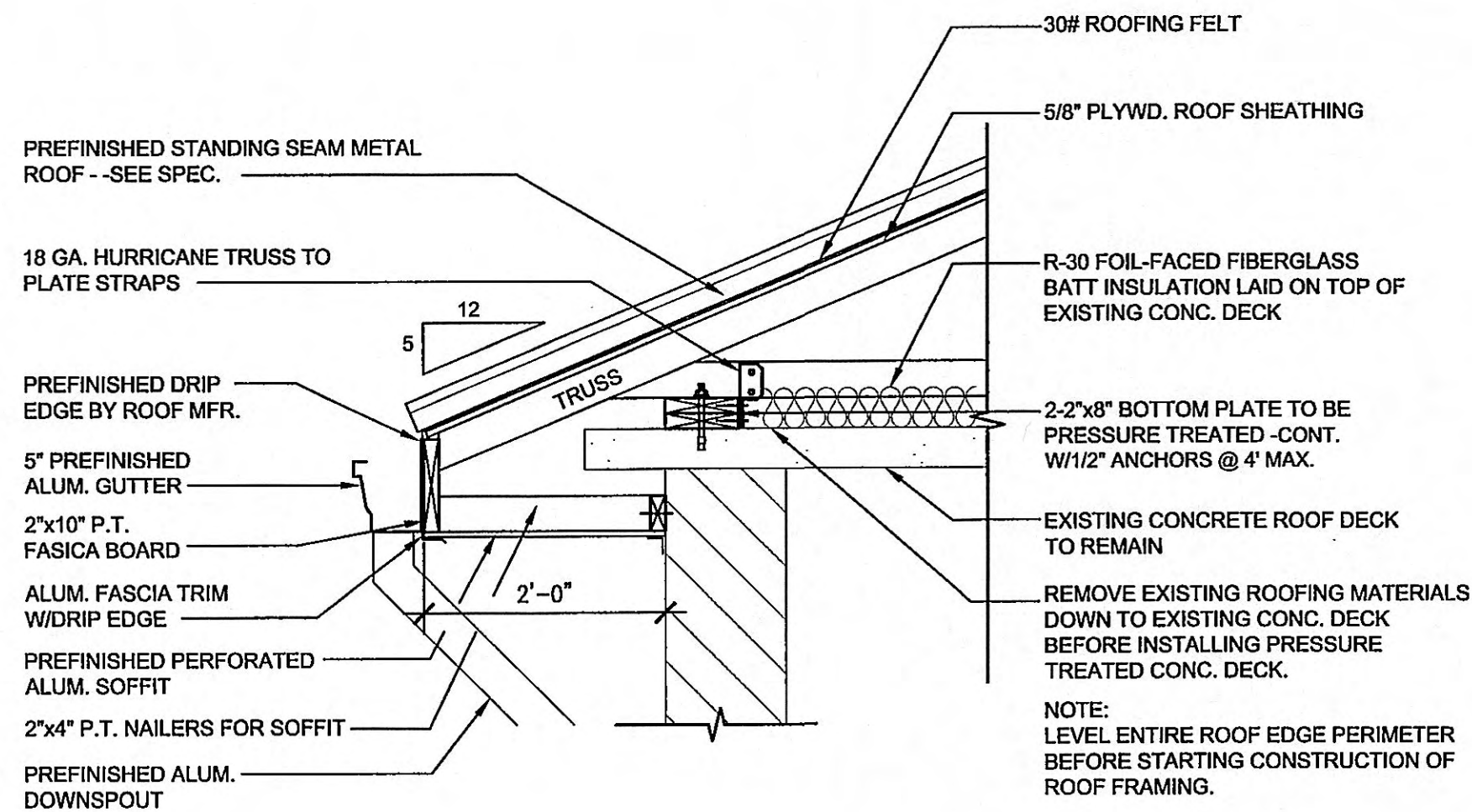
MODIFIED SECTION
SCALE: 1/4" = 1'-0"

KEYNOTES

- 1 EXISTING WALL TO REMAIN.
- 2 EXISTING DOOR AND FRAME TO BE REMOVED. REMOVE SILL. PATCH OPENINGS AS REQUIRED TO RECEIVE NEW DOOR AND FRAME.
- 3 EXISTING WINDOWS TO BE REMOVED. PATCH OPENINGS AS REQUIRED TO RECEIVE NEW WINDOWS.
- 4 REMOVE EXISTING ROOFING MATERIAL DOWN TO EXISTING CONCRETE ROOF DECK. PATCH AND LEVEL IF/AS REQUIRED FOR NEW ROOF STRUCTURE INSTALLATION.
- 5 CLEAN AND SEAL EXTERIOR MASONRY. -SEE SPECS.
- 6 SEE FLOOR PLANS FOR NOTES REGARDING PREPPING AND PAINTING INTERIOR SURFACES.
- 7 REMOVE ALL EXISTING GRATING, TYP. ALL THROUGHOUT.
- 8 PROVIDE NEW GRATING THROUGHOUT INTERIOR WHERE GRATING ORIGINALLY EXISTED.
- 9 REPOINT CRACKS IN MORTAR JOINTS, AND REPAIR HOLES WHERE EQUIP. OR PIPES HAVE BEEN REMOVED. TYPICAL ALL EXTERIOR MASONRY.
- 10 PROVIDE NEW WINDOWS (FIELD VERIFY SIZE AND CONFIGURATION). -SEE SPEC
- 11 PRE-ENGINEERED WOOD TRUSS @ 24" O.C. -SEE ROOF PLAN SHEET A-2
- 12 GABLE END FRAMING -SEE DETAIL 2/A-5
- 13 METAL GABLE END PANELS -SEE DETAIL 2/A-5. PREFINISHED.
- 14 METAL RAKE TRIM BY ROOFING MFR.
- 15 PROVIDE NEW ALUMINUM GABLE VENT LOUVRE. PREFINISHED.
- 16 NEW 4"x4" PREFINISHED ALUMINUM DOWNSPOUT AND SPLASHBLOCK.
- 17 NEW CONTINUOUS RIDGE VENT BY ROOFING MFR.
- 18 NEW STANDING SEAM METAL ROOF PANELS.
- 19 NEW 5" PREFINISHED ALUMINUM GUTTER.
- 20 PERFORATED METAL SOFFIT -SEE DETAIL 1/A-5, PREFINISHED.
- 21 SEE "M" SHEETS FOR MORE INFO ON EXISTING AND NEW MECHANICAL EQUIPMENT.
- 22 NEW DOOR AND FRAME. SEE FLOOR PLAN FOR ADDITIONAL NOTES.
- 23 R-30 FOIL-FACED BATT INSULATION LAID OVER TOP OF EXISTING ROOF DECK.

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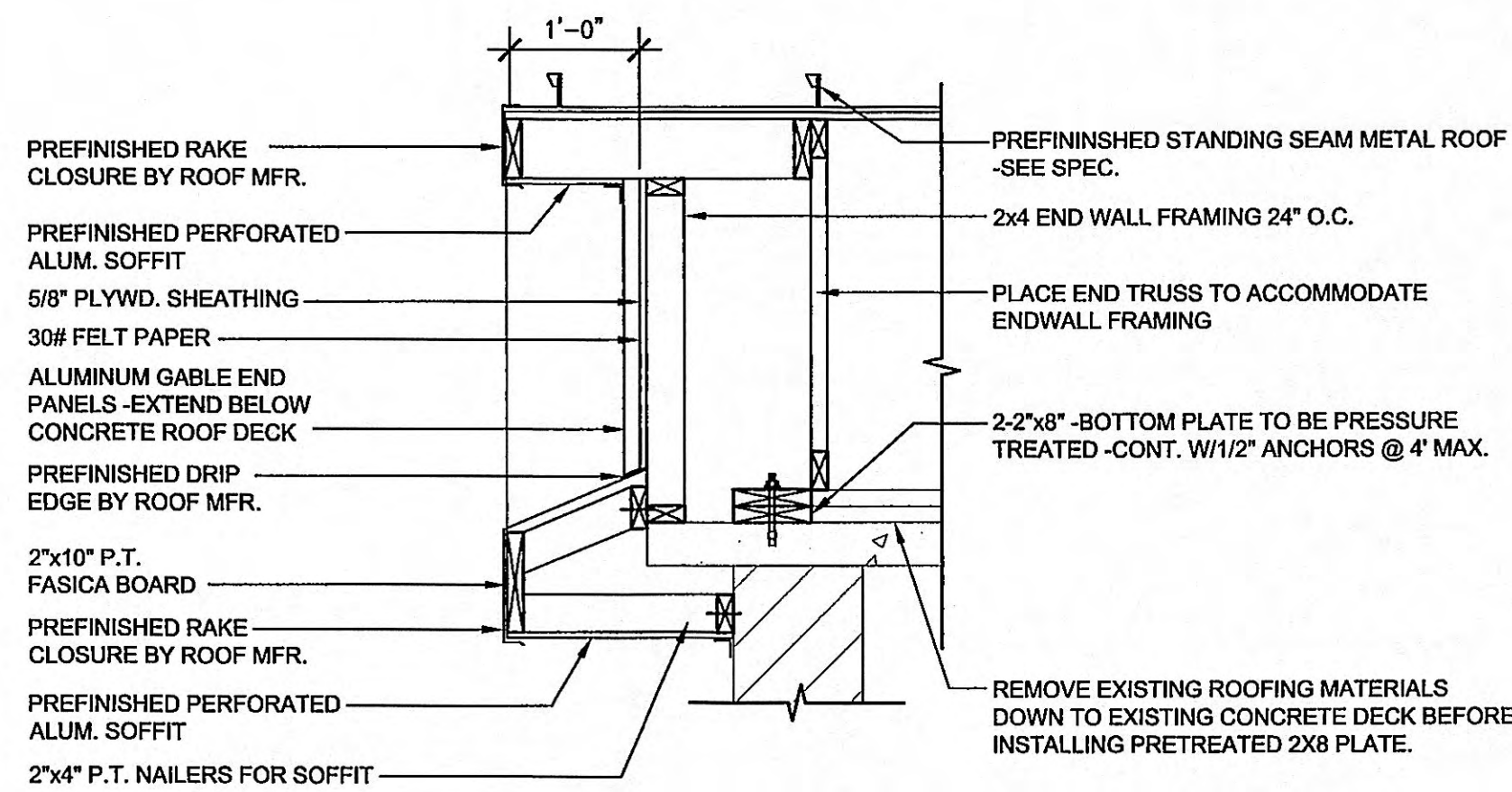
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TYPICAL EAVE DETAIL

SCALE: 3/4" = 1'-0"

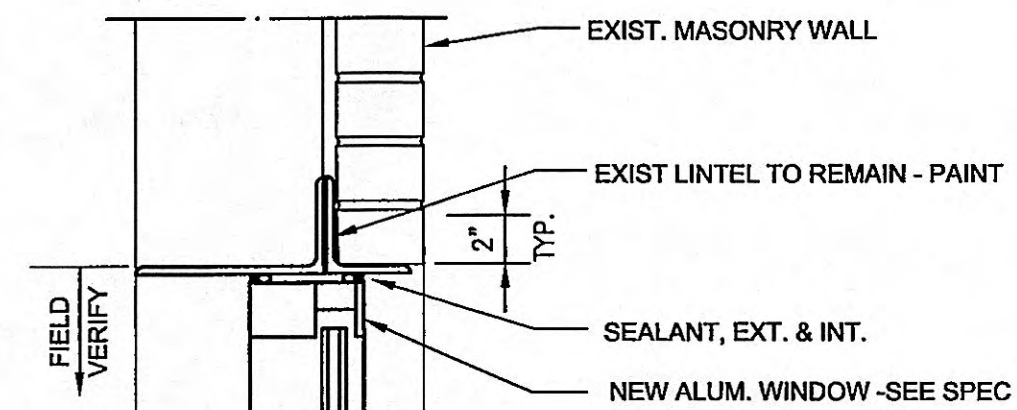
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A-5



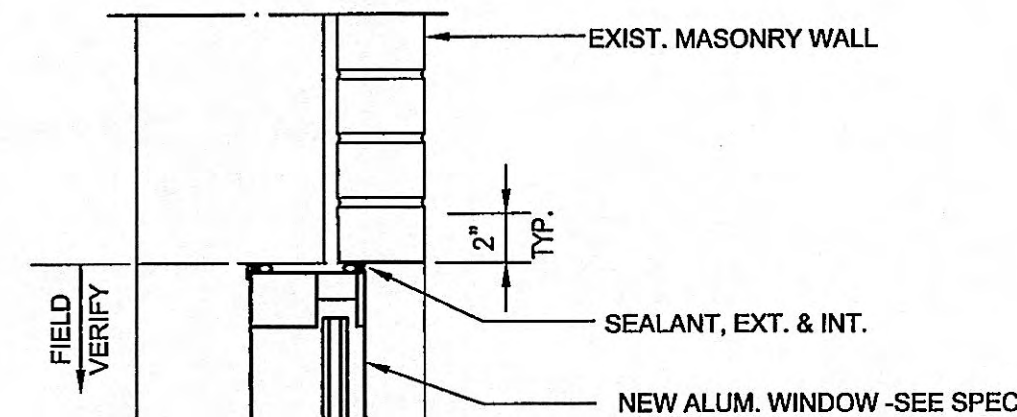
ENDWALL DETAIL

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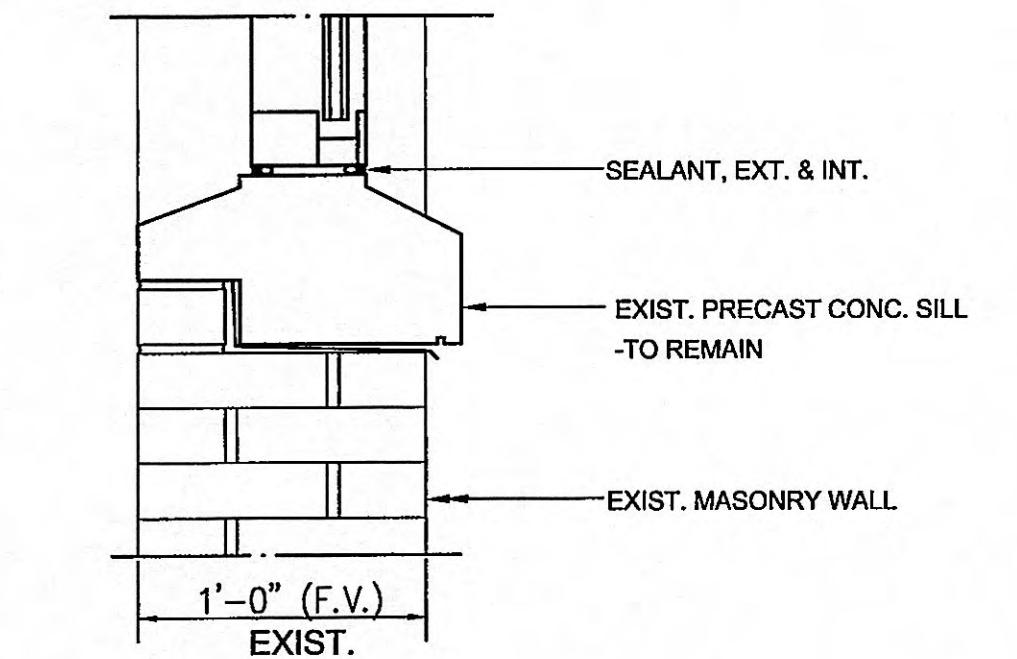
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A-5



HEAD



JAMB

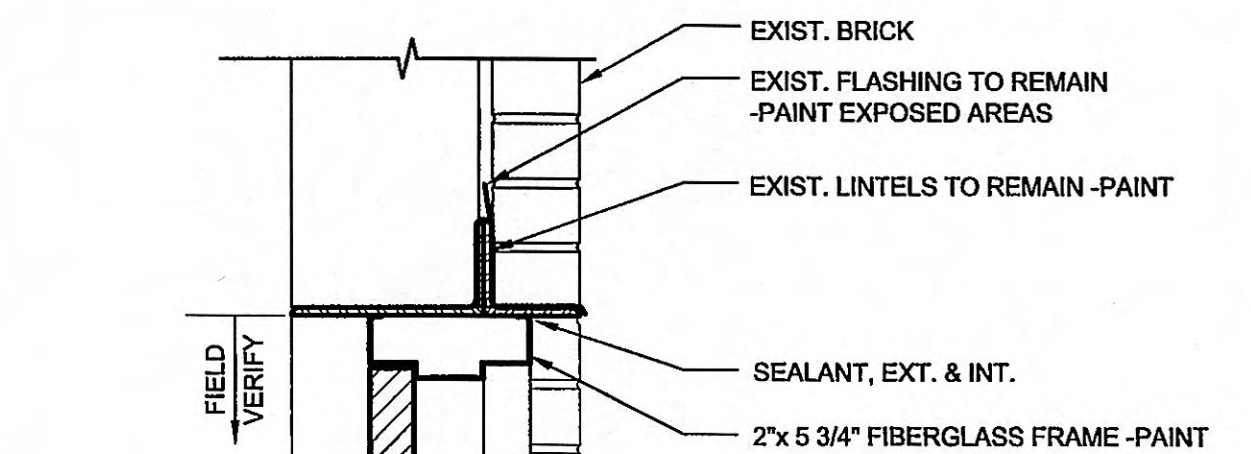


SILL

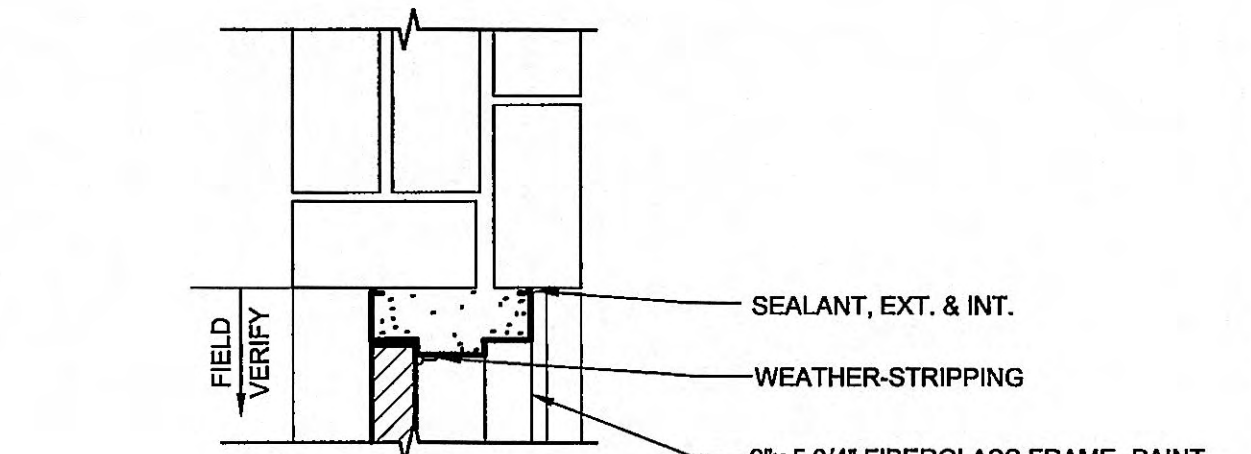
WINDOW DETAILS

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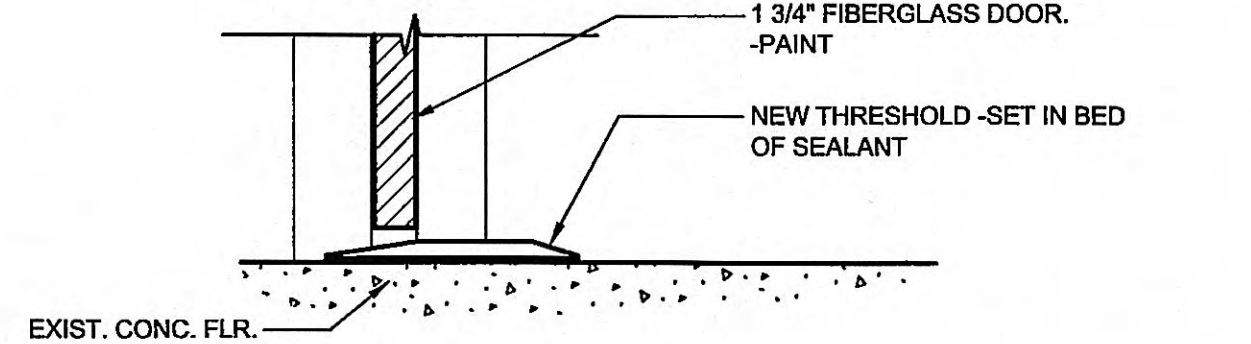
3
A-5



HEAD



JAMB



THRESHOLD

DOOR DETAILS

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

4
A-5

DETAILS

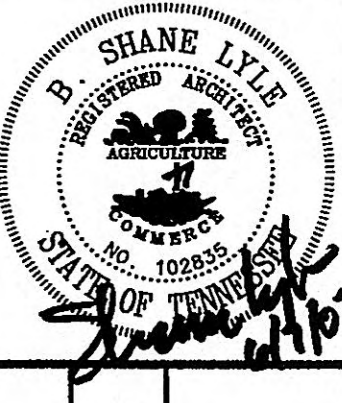
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNER: XXX
BY: JEE
DATE: JEE
REVIEWED: XXX
APPROVED: XXX

NO.	REVISIONS	DATE	BY

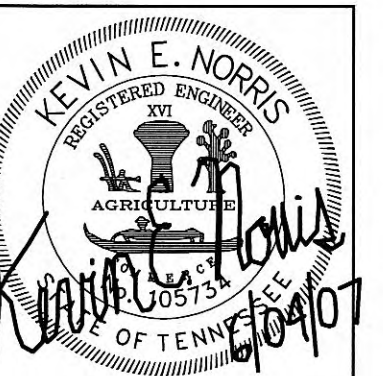
DATE: JUNE 5, 2007
SCALE: AS SHOWN
SHEET NO.

A-5



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CLIENT PROJECT NO. XXXX
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GRW PROJECT NO. 3401-01
CLIENT PROJECT NO. 07042



FLOOR PLANS - LIGHTING & DEMO
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED:	D. DOBBS
DRAWN:	C. HUSKEY
REVIEWED:	K. NORRIS
APPROVED:	K. NORRIS
DATE:	
BY:	
DATE:	
DESCRIPTION:	
REVISIONS:	
DATE:	
DESCRIPTION:	
DATE:	
DESCRIPTION:	

DATE: JUNE, 2007
SCALE: AS SHOWN
SHEET NO. E-1.1

LIGHTING PLAN NOTES:

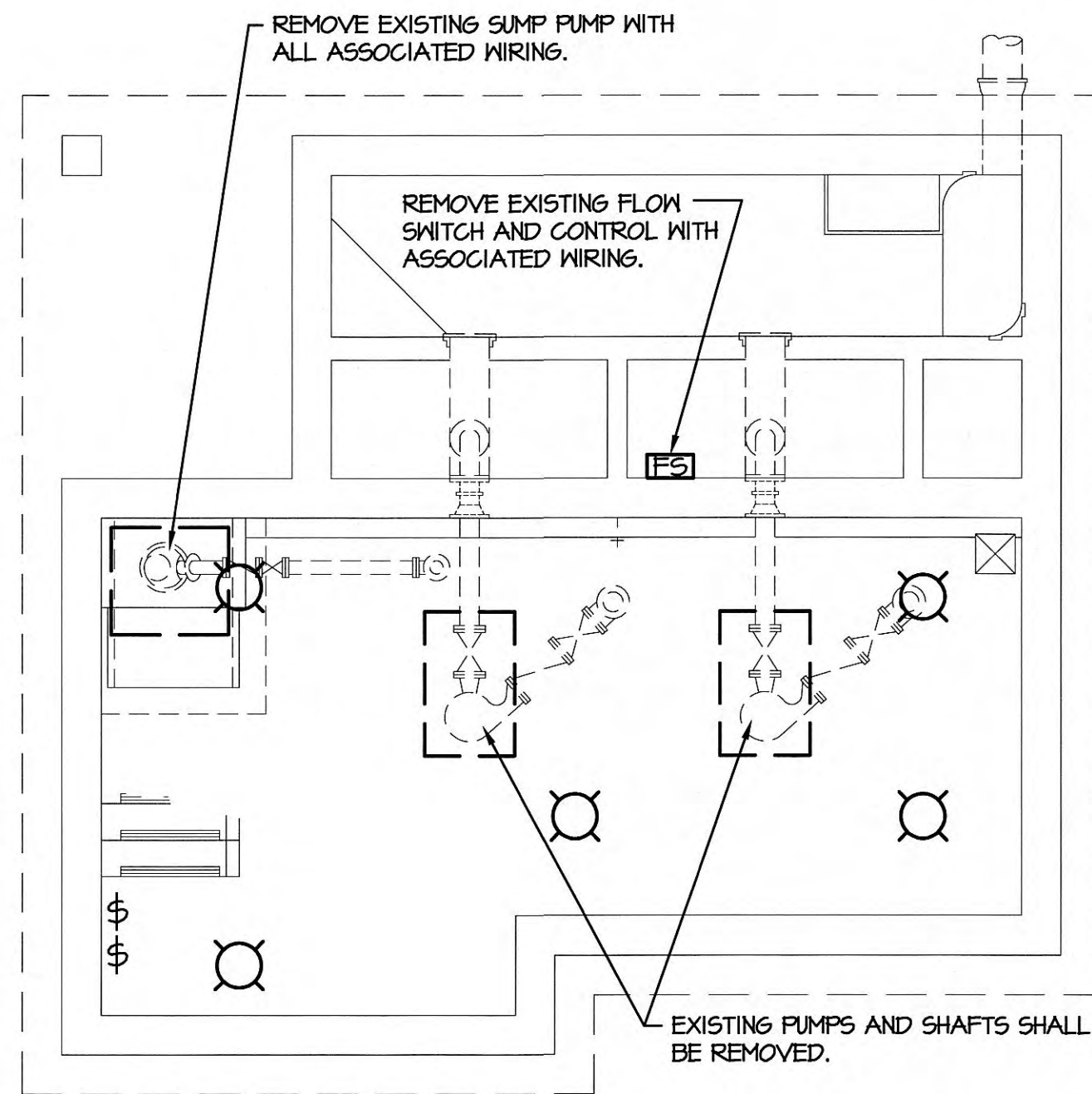
1. ALL WIRING SHALL BE SURFACE MOUNTED IN RIGID METAL (ALUMINUM) CONDUIT WITH SURFACE MOUNTED LIGHT FIXTURES AND SURFACE MOUNTED CASE BOXES WITH THREADED HUBS FOR LIGHT SWITCHES.
2. ASTERISK (*) INDICATES EXTERIOR FIXTURES ARE CONTROLLED BY PHOTO CELL ONLY.

DEMO PLAN NOTES:

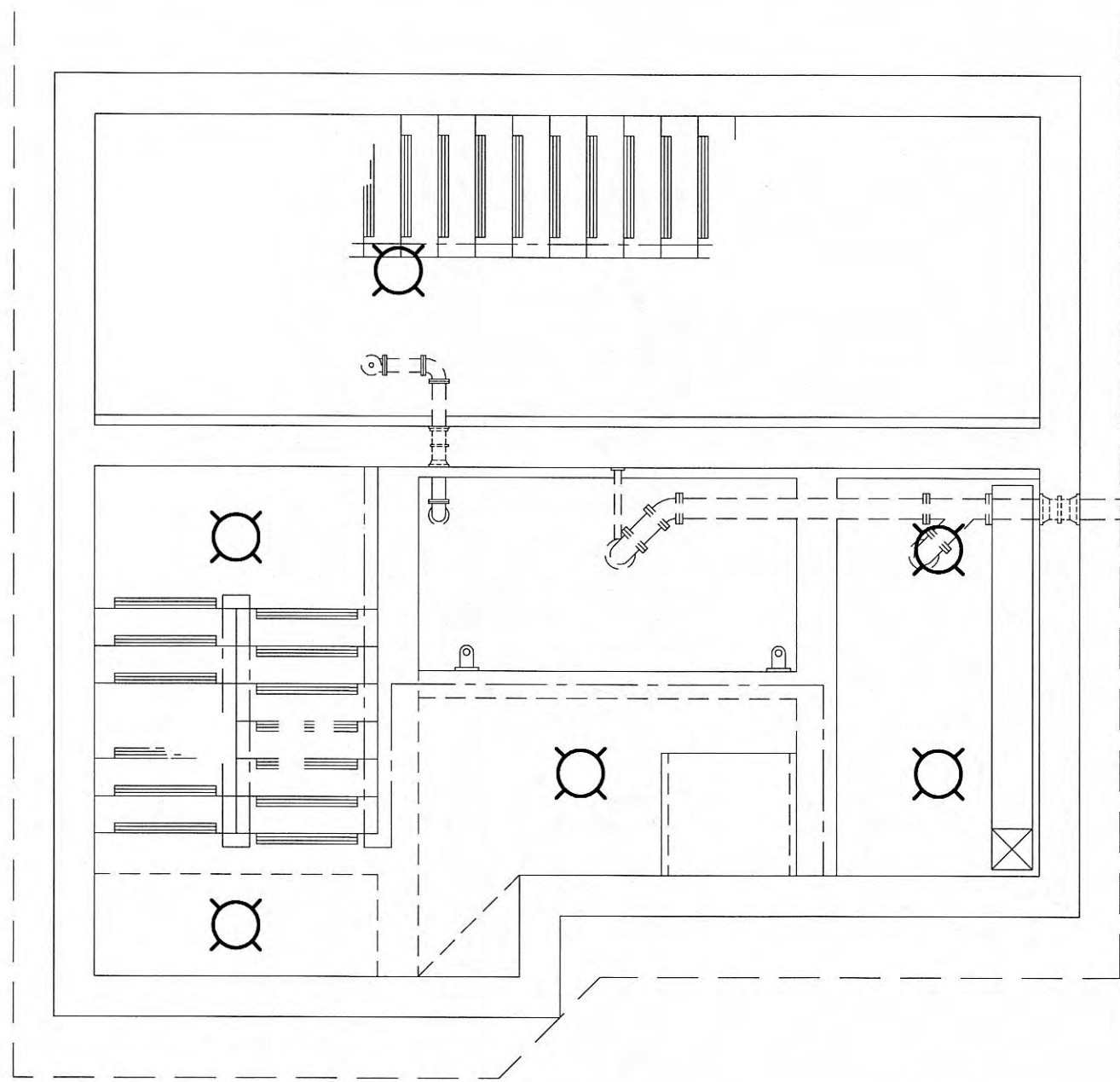
1. THE CONTRACTOR MUST VISIT THE SITE AS TO HAVE A FULL UNDERSTANDING OF THE WORK IN CONNECTION WITH THE EXISTING BUILDING, DEMO WORK AND NEW WIRING AS SHOWN.
2. THE CONTRACTOR MUST PROVIDE TEMPORARY POWER AND WIRING AS NECESSARY DURING THE CONSTRUCTION PHASE TO MAINTAIN PUMP STATION AND TEMPORARY PUMPS.

LIGHTING FIXTURE SCHEDULE

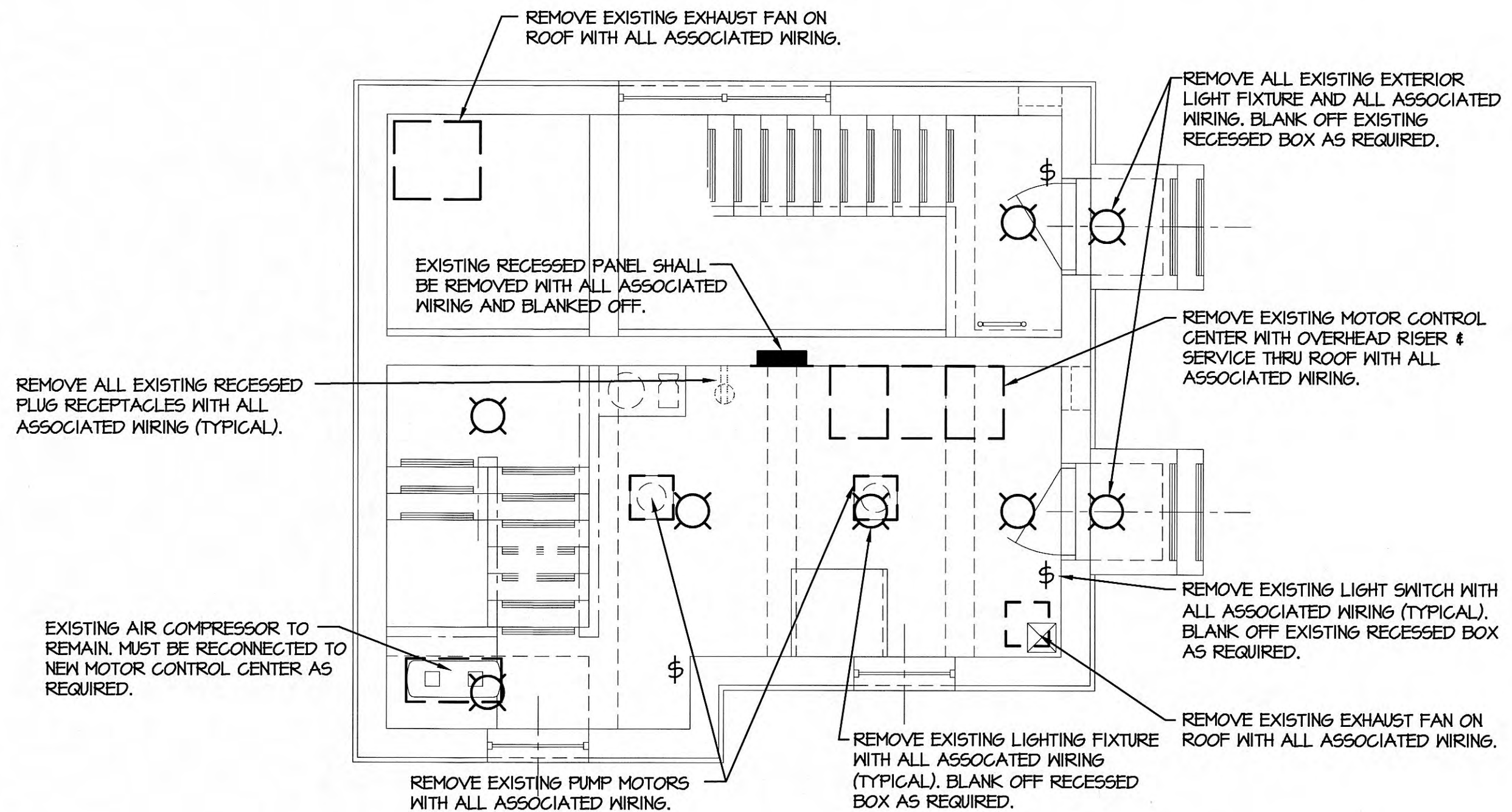
DESIGNATION	DESCRIPTION
A	SURFACE MOUNTED FLUORESCENT WITH HIGH IMPACT ACRYLIC LENS, MET LOCATION 1X4" SIZE, LITHONIA CO. NO. DMH-3-32-AR-MVOLT-1/3.
B	WALL MOUNTED EXTERIOR FULL CUTOFF WITH DIE CAST ALUMINUM CONSTRUCTION GLASS LENS, BRONZE FINISH AND 150 WATT HPS LAMP, LITHONIA CO. NO. WST-100-NT-15-LP-1-P-250T. MOUNT AS HIGH AS POSSIBLE ON WALL BELOW SOFFIT OVERHANG.



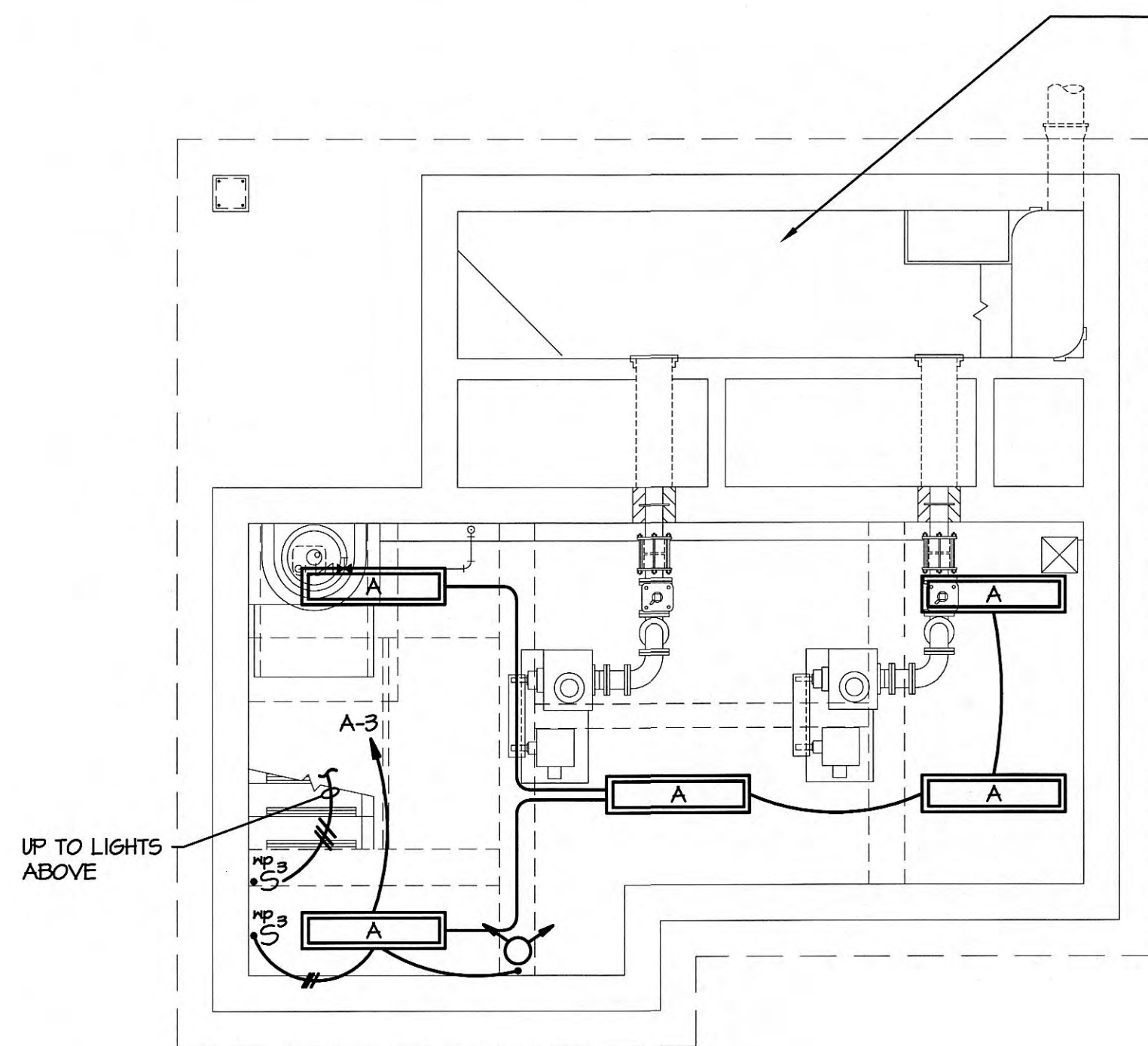
DEMO FLOOR PLAN - PUMP LEVEL
SCALE: 1/4" = 1'-0"



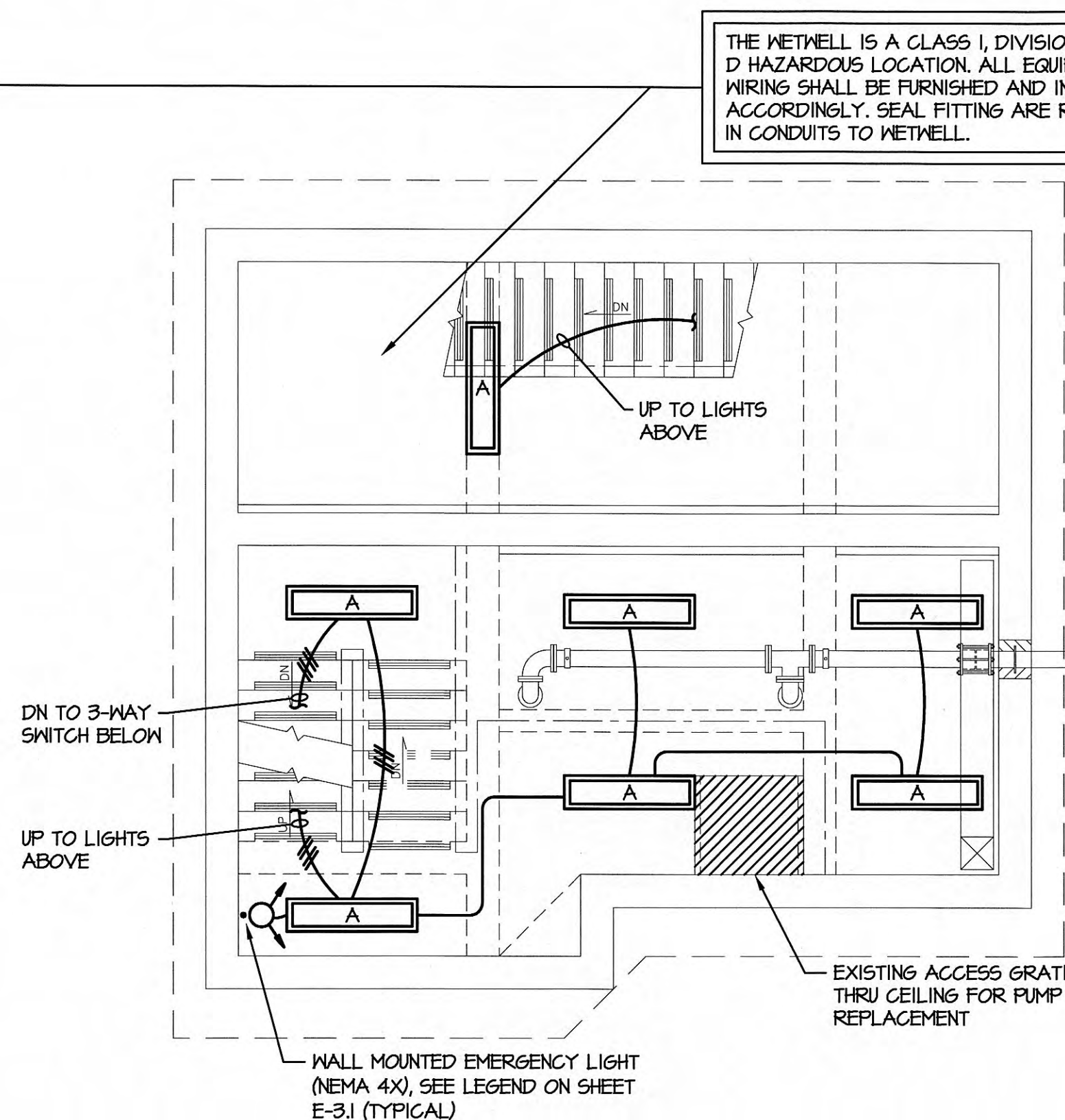
DEMO FLOOR PLAN AT ELEVATION 741.75
SCALE: 1/4" = 1'-0"



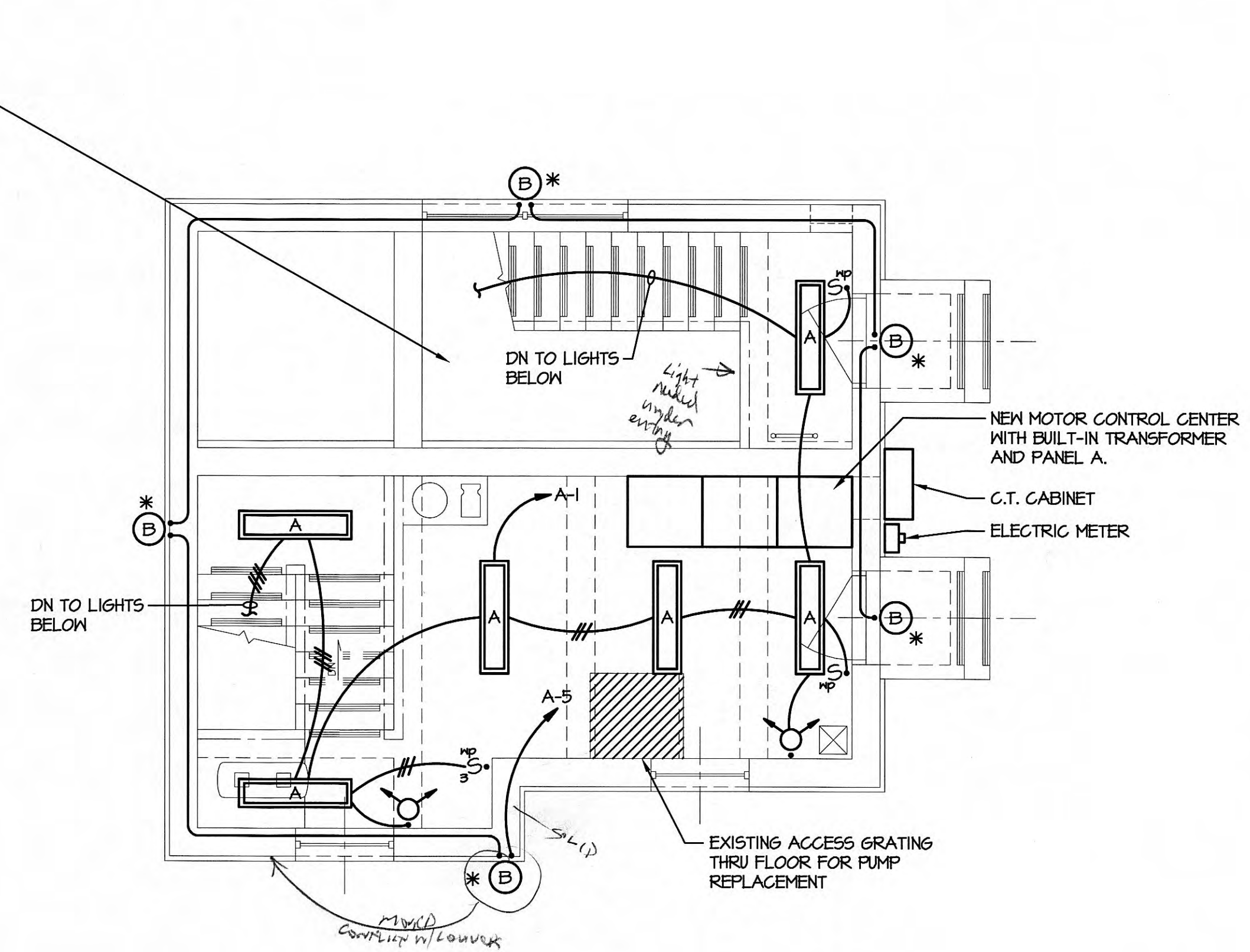
DEMO FLOOR PLAN - ENTRANCE LEVEL
SCALE: 1/4" = 1'-0"



FLOOR PLAN PUMP LEVEL - LIGHTING
SCALE: 1/4" = 1'-0"



FLOOR PLAN AT ELEVATION 741.75 - LIGHTING
SCALE: 1/4" = 1'-0"



FLOOR PLAN ENTRANCE LEVEL - LIGHTING
SCALE: 1/4" = 1'-0"

NORRIS & ASSOCIATES
ENGINEERS
INC.
209 WINDLEBORNE RUN
SUITE 100
KNOXVILLE, TN 37909
PHONE NUMBERS:
865-684-3063
865-684-3064
FAX NUMBER:
865-684-3066



MEMBER:
NATIONAL FIRE PROTECTION ASSOCIATION

THIS DRAWING IS GENERALLY DIAGRAMMATIC AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, INDICATES THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEARLY AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN. COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.
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3. EXTEND TWO 1 1/2" CONDUITS BETWEEN "SCADA" TRANSMITTER/CONTROLLER AND NEW MOTOR CONTROL SYSTEM FOR CONTROL WIRING. SEE DETAILS ON SHEET E-3.2 & E-3.3.
14. FLOAT SWITCHES, VERIFY EXACT LOCATION PRIOR TO ROUGH-IN WITH PROJECT MANAGER WITH ARCHITECT/ENGINEERS. EXTEND 2" RIGID METAL (ALUMINUM) CONDUIT TO MOTOR CONTROL CENTER WITH CONDUCTORS AS REQUIRED. SEE WIRING DIAGRAMS ON SHEET E-3.2.
15. EXTEND 1" RIGID METAL (ALUMINUM) CONDUIT TO MOTOR CONTROL CENTER FROM NEW ERV UNIT TO VFD STARTER FOR PUMPS #1 & #2, WITH CONDUCTORS AS REQUIRED. SEE WIRING DIAGRAMS ON SHEET E-3.2.
16. CONNECT LEVEL CONTROL PANEL AS REQUIRED AT 120VOLTS. EXTEND 1" RIGID METAL (ALUMINUM) CONDUIT TO LEVEL TRANSMITTER & TRANSDUCER IN WET WELL AS REQUIRED. VERIFY EXACT LOCATION PRIOR TO ROUGH-IN WITH PROJECT MANAGER WITH ARCHITECT & ENGINEERS.
17. EXTEND 1" RIGID METAL (ALUMINUM) CONDUIT TO SCADA SYSTEM TRANSMITTER/CONTROL W/CONDUCTORS AS REQUIRED.
18. EXTEND 1" PVC CONDUIT TO NEW UTILITY COMPANY RISER POLE FOR FUTURE TELEPHONE SERVICE.
19. TELEPHONE COMPANY APPROVED TERMINAL CABINET.
20. EXTEND 3/4" CONDUIT WITH R659A/U TO NEW "SCADA" ANTENNA. VERIFY EXACT LOCATION OF ANTENNA WITH PROJECT MANAGER PRIOR TO BID DAY.
21. PROVIDE AND INSTALL REMOTE "RUN" LIGHT @ 120 VOLTS, ON WALL AT 80" AFF FOR ERV UNIT. CONTRACTOR SHALL PROVIDE AND INSTALL AUX RUN CONTACTS WITH-IN ERV TO OPERATE REMOTE "RUN" LIGHT AS REQUIRED .
22. EMERGENCY FLOOD FLOAT SWITCH LOCATED AT THE TOP OF SUMP PUMP DRY WELL TO ACTIVE EMERGENCY ALARM VIA THE UTILITY "SCADA" SYSTEM. VERIFY EXACT LOCATION PRIOR TO INSTALLATION WITH FIELD INSPECTOR. EXTEND 3/4" CONDUIT WITH 4.20 MA CONDUCTORS FOR CONNECTION TO "SCADA" CONTROL PANEL.

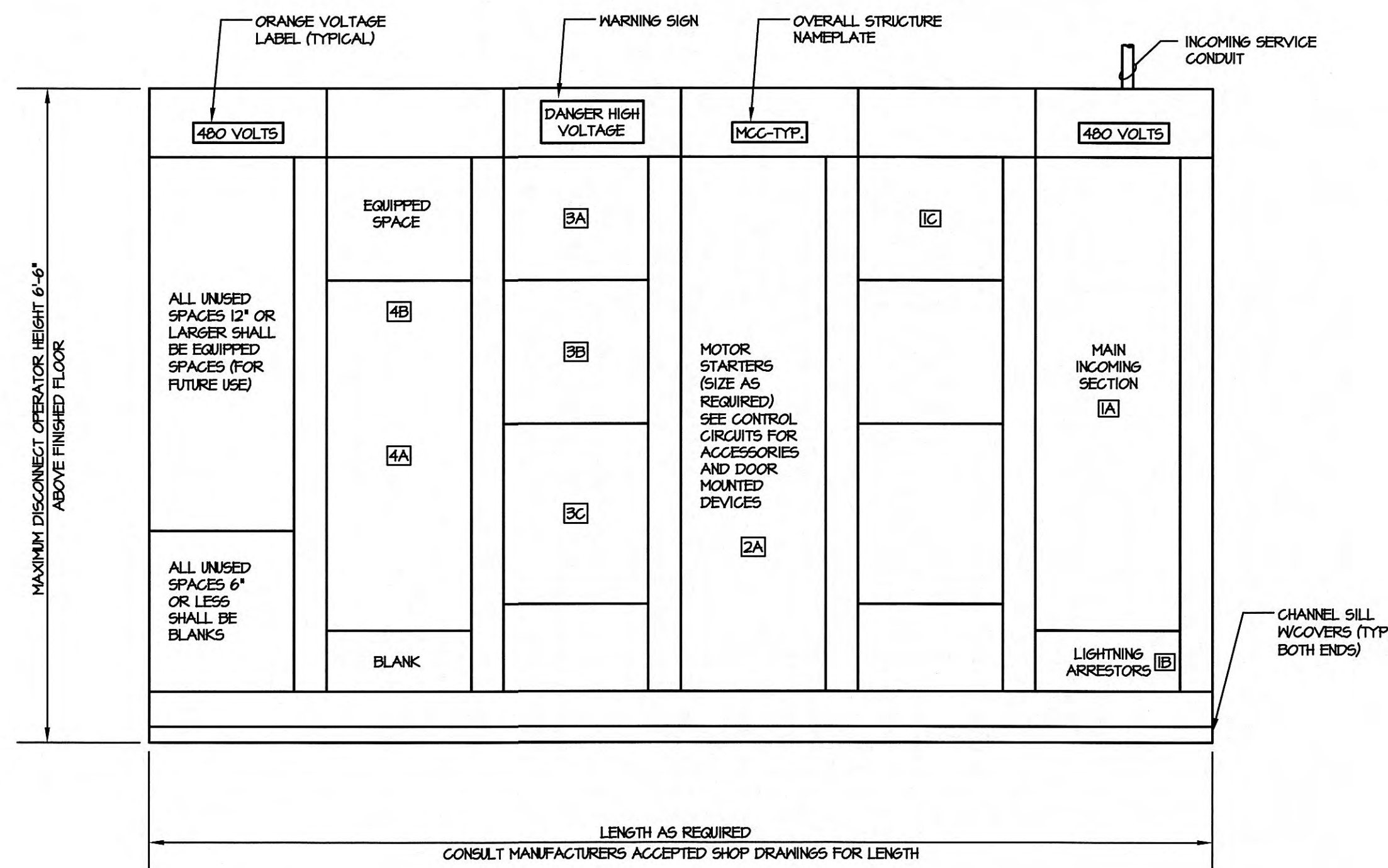
MEMBER:
ASSOCIATION

 **NFPA**
INTERNATIONAL

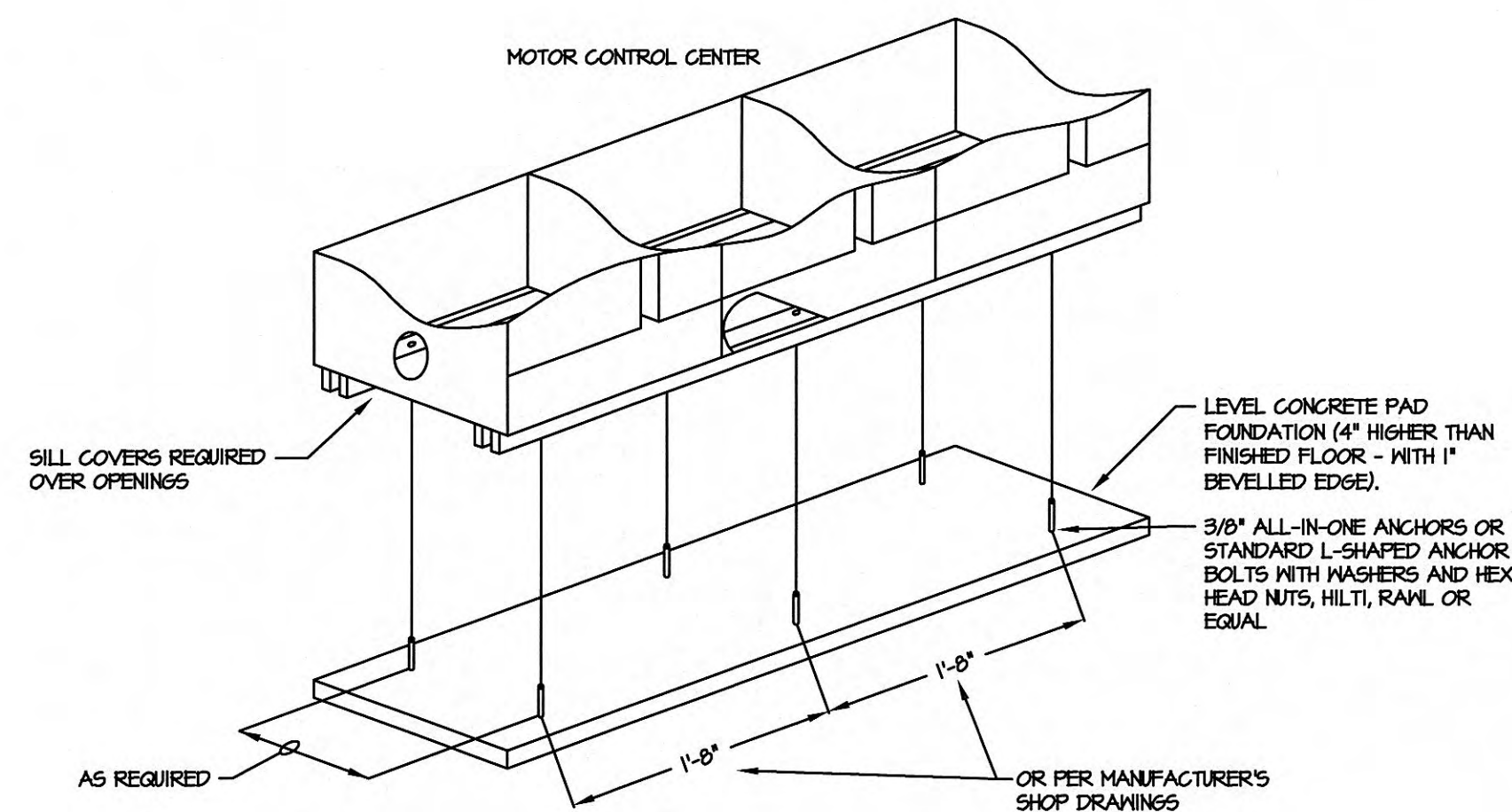
THIS DRAWING IS GENERALLY DIAGRAMMATIC AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, INDICATES THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEARLY AS POSSIBLE TO THE DIMENSIONS AND LOCATIONS SHOWN. COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.

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E-2.1

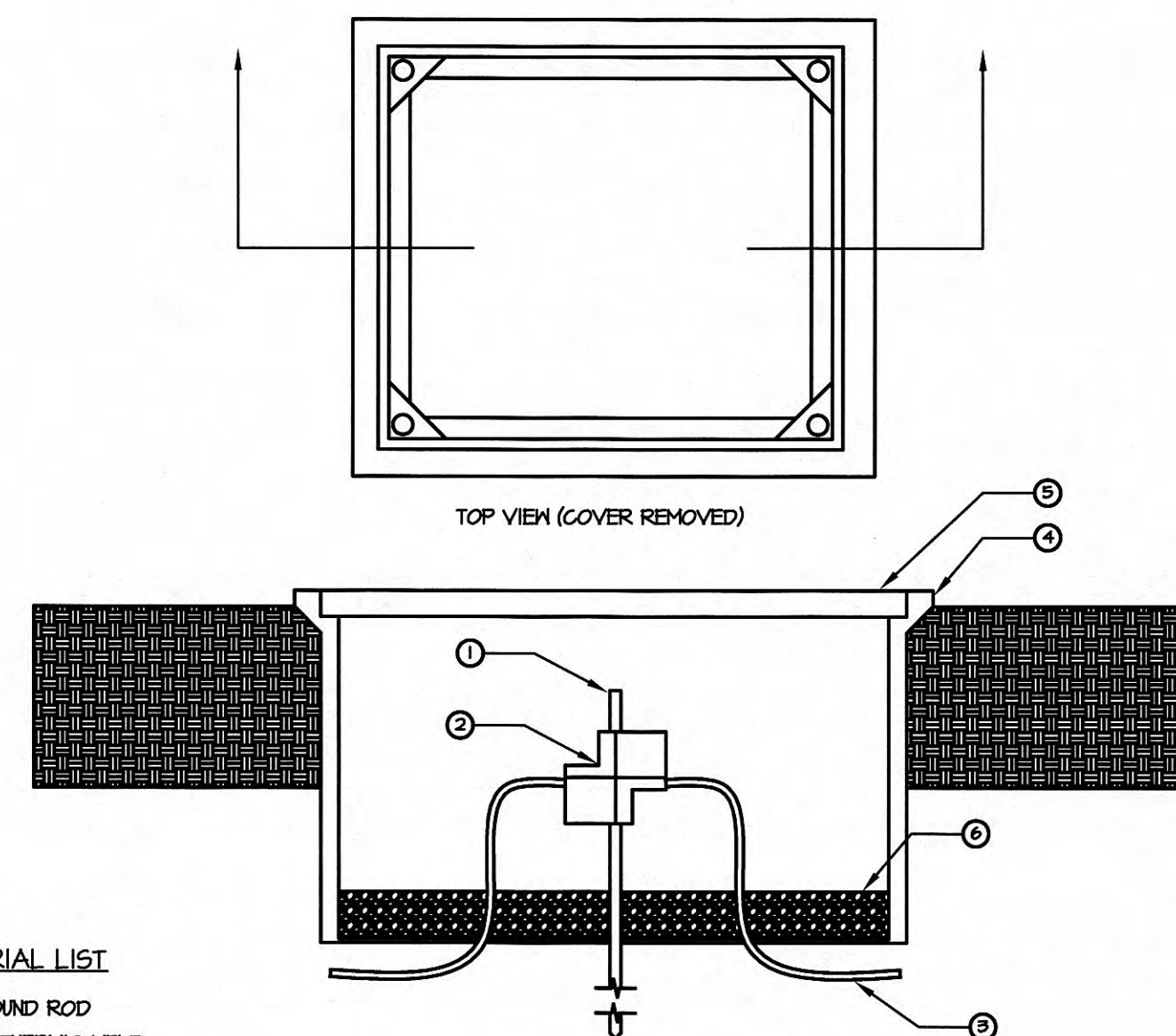
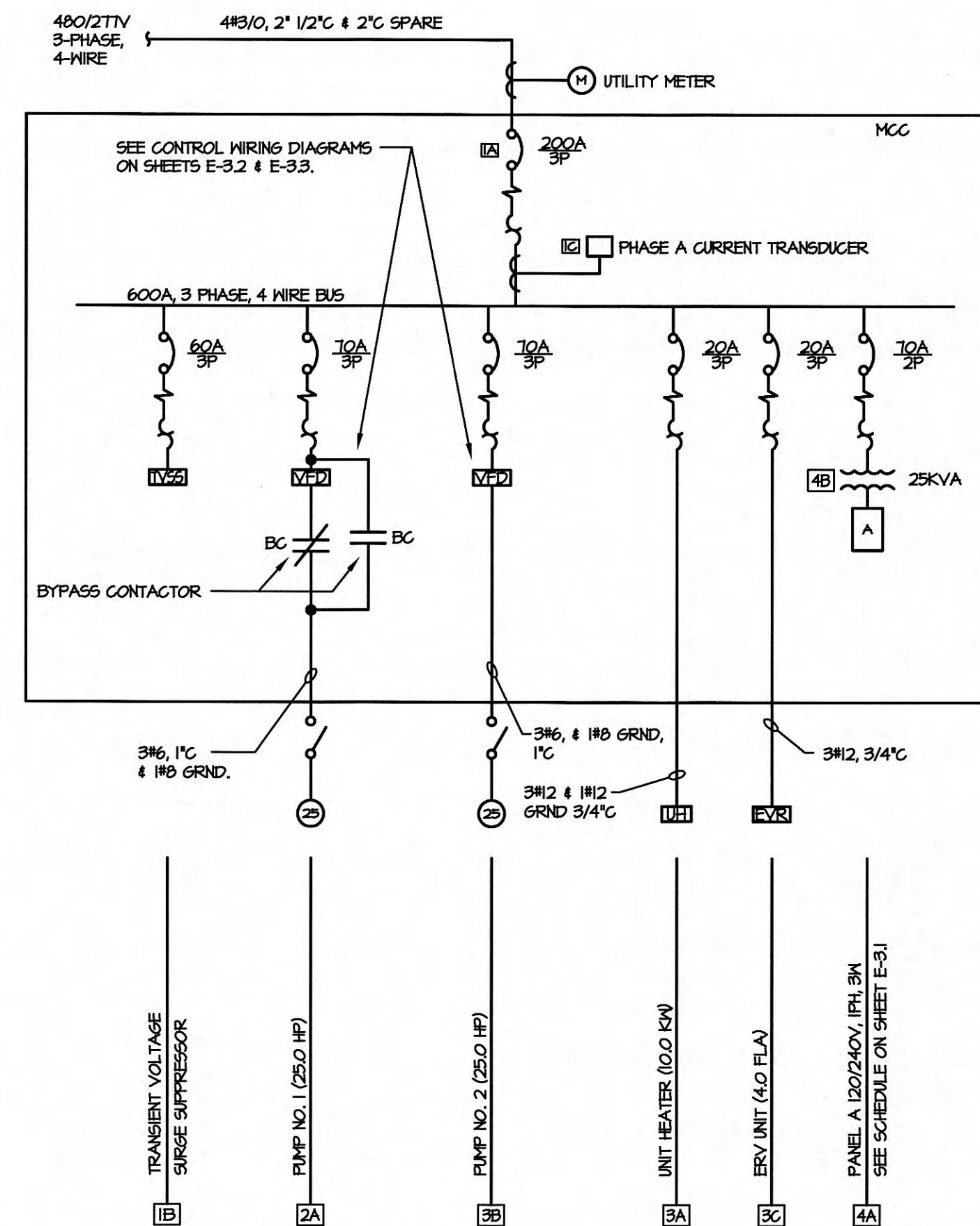


TYPICAL MOTOR CONTROL CENTER-FRONT ELEVATION
NOT TO SCALE



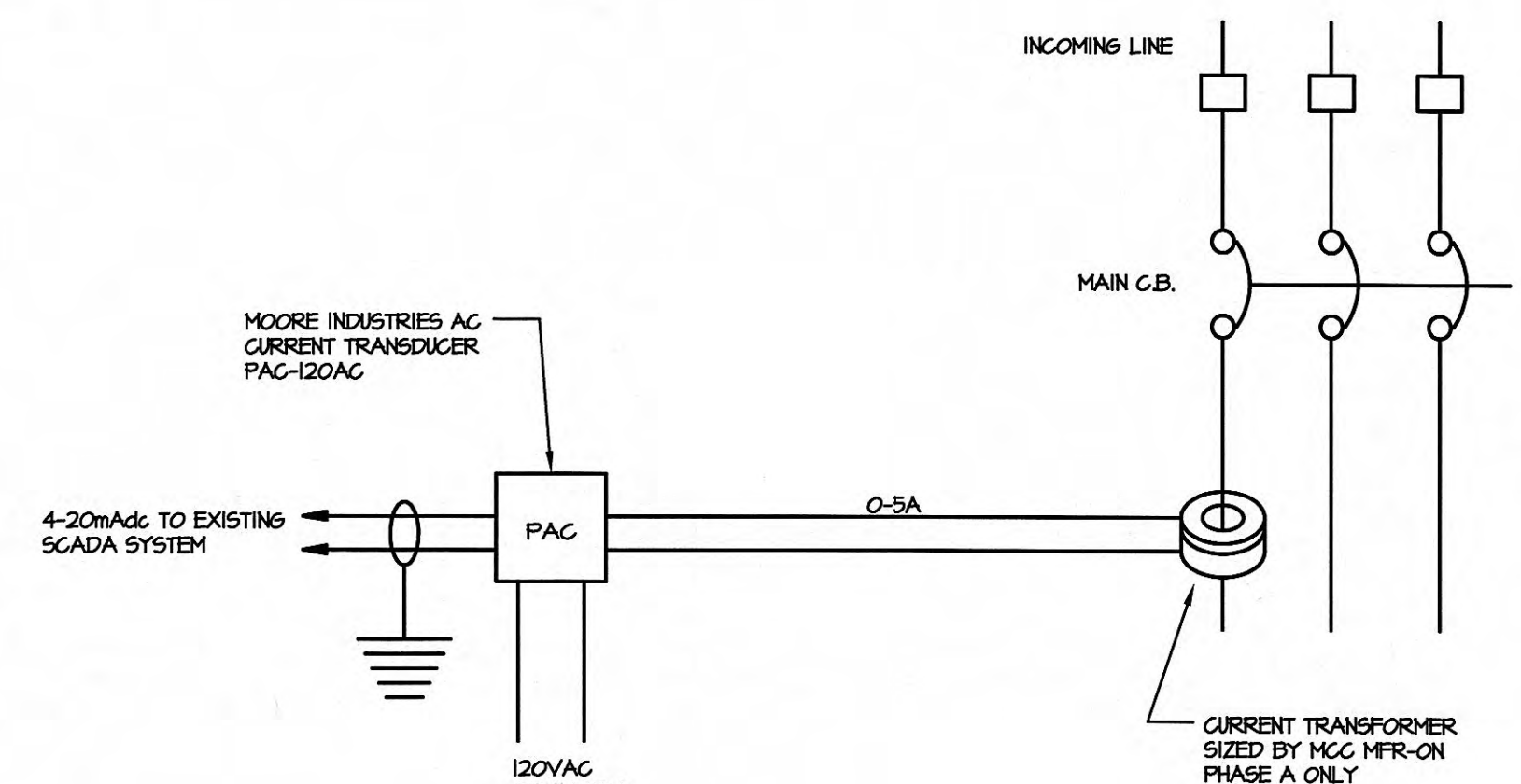
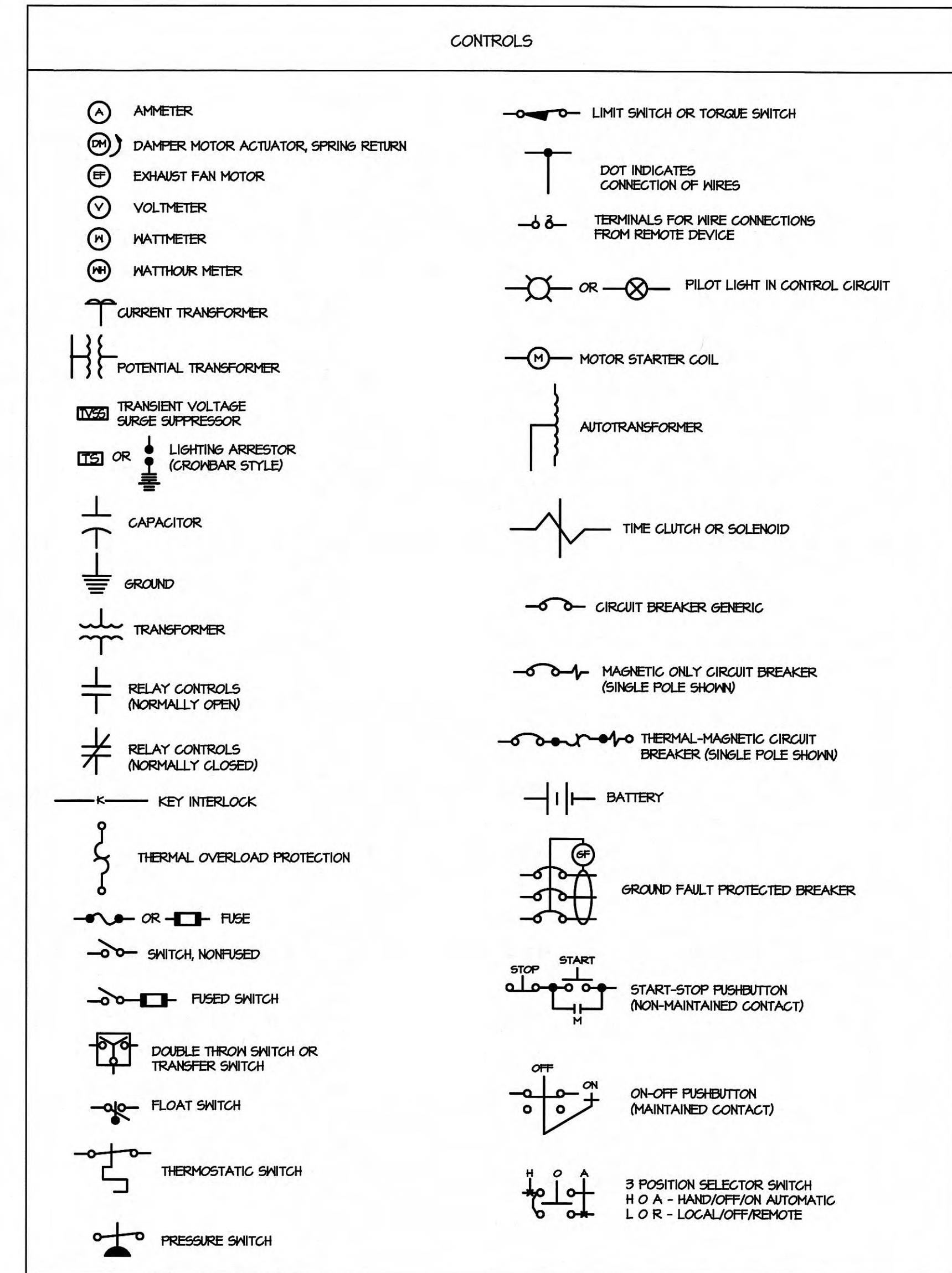
TYPICAL STRUCTURE ANCHORING DETAIL

- NOT TO SCALE
- FOR ALL MOTOR CONTROL CENTERS AND FREE STANDING ELECTRICAL CABINETS
- USE EPOXY SET ANCHORS WHERE REQUIRED TO PREVENT SPALLING OF CONCRETE

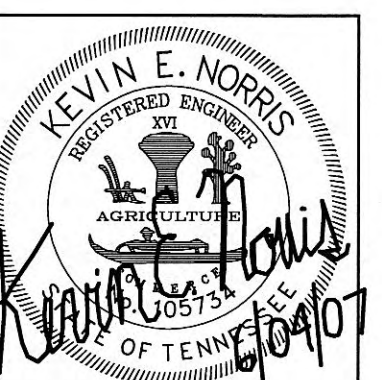


- MATERIAL LIST**
- GROUND ROD
 - EXOTHERMIC WELD
 - GROUNDING CONDUCTOR #10 COPPER (VARIES)
 - POLYMER CONCRETE FIBERGLASS REINFORCED BOX
 - COVER FOR ABOVE BOX
 - GRAVEL OR CRUSHED STONE

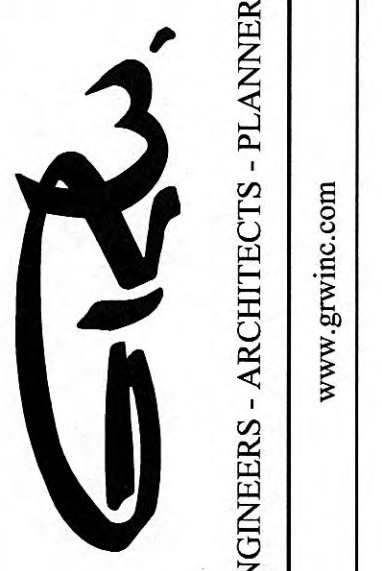
TYPICAL GROUND ROD TEST WELL INSTALLATION
NOT TO SCALE (TYPICAL OF THREE)



PHASE A CURRENT MONITORING
NOT TO SCALE



GRW PROJECT NO. 3401-01
CLIENT PROJECT NO. 07042



DETAILS & SCHEDULES

MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED:	D. DOBBS
DRAWN:	C. HUSKEY
REVIEWED:	K. NORRIS
APPROVED:	K. NORRIS
DATE:	
BY:	
DATE:	
DESCRIPTION:	
NO.	

DATE: JUNE, 2007
SCALE: AS SHOWN
SHEET NO. E-3.2

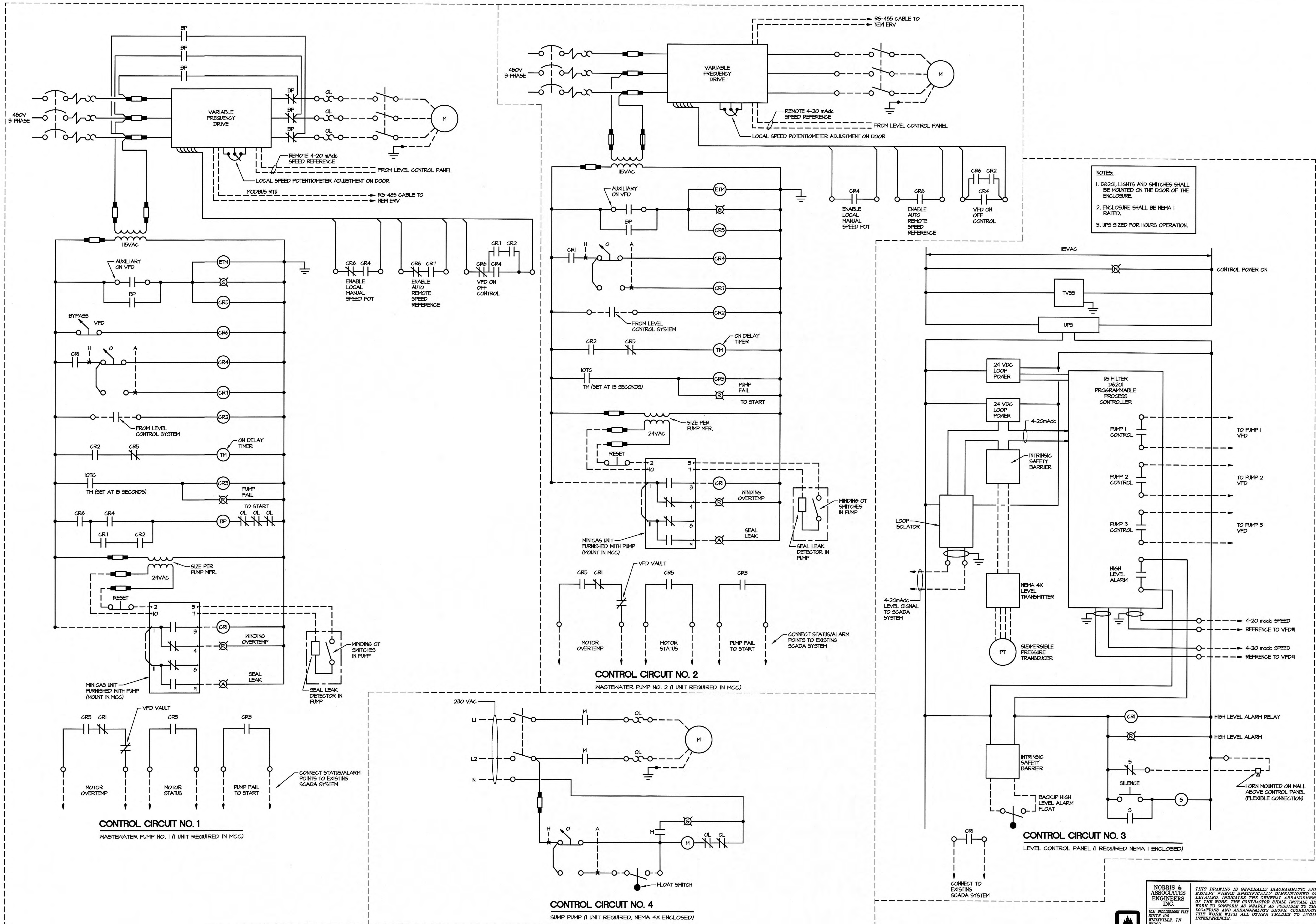
NORRIS & ASSOCIATES ENGINEERS INC.
100 WINDMILL CREEK SUITE 100 KNOXVILLE, TN 37909
PHONE NUMBERS: 865-584-3063 865-584-3064 865-584-3065
FAX NUMBER: 865-584-3066

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MEMBER:
NATIONAL FIRE PROTECTION ASSOCIATION





KEVIN E. NORRIS
REGISTERED PROFESSIONAL ENGINEER
STATE OF TENNESSEE
LICENSE NO. 00497

GRW PROJECT NO. 3401-01

CLIENT PROJECT NO. 07042

G.R.B.
ENGINEERS - ARCHITECTS - PLANNERS
www.grbinc.com

DETAILS & SCHEDULES

MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION

HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

REVISIONS	DATE	BY	DRAWN	CHECKED	APPROVED	SCALE	SHEET NO.
1							

DESIGNED: D. DOBBS

DRAWN: C. HUSKEY

REVIEWED: K. NORRIS

APPROVED: K. NORRIS

DATE: JUNE, 2007

SCALE: AS SHOWN

SHEET NO. E-3.3

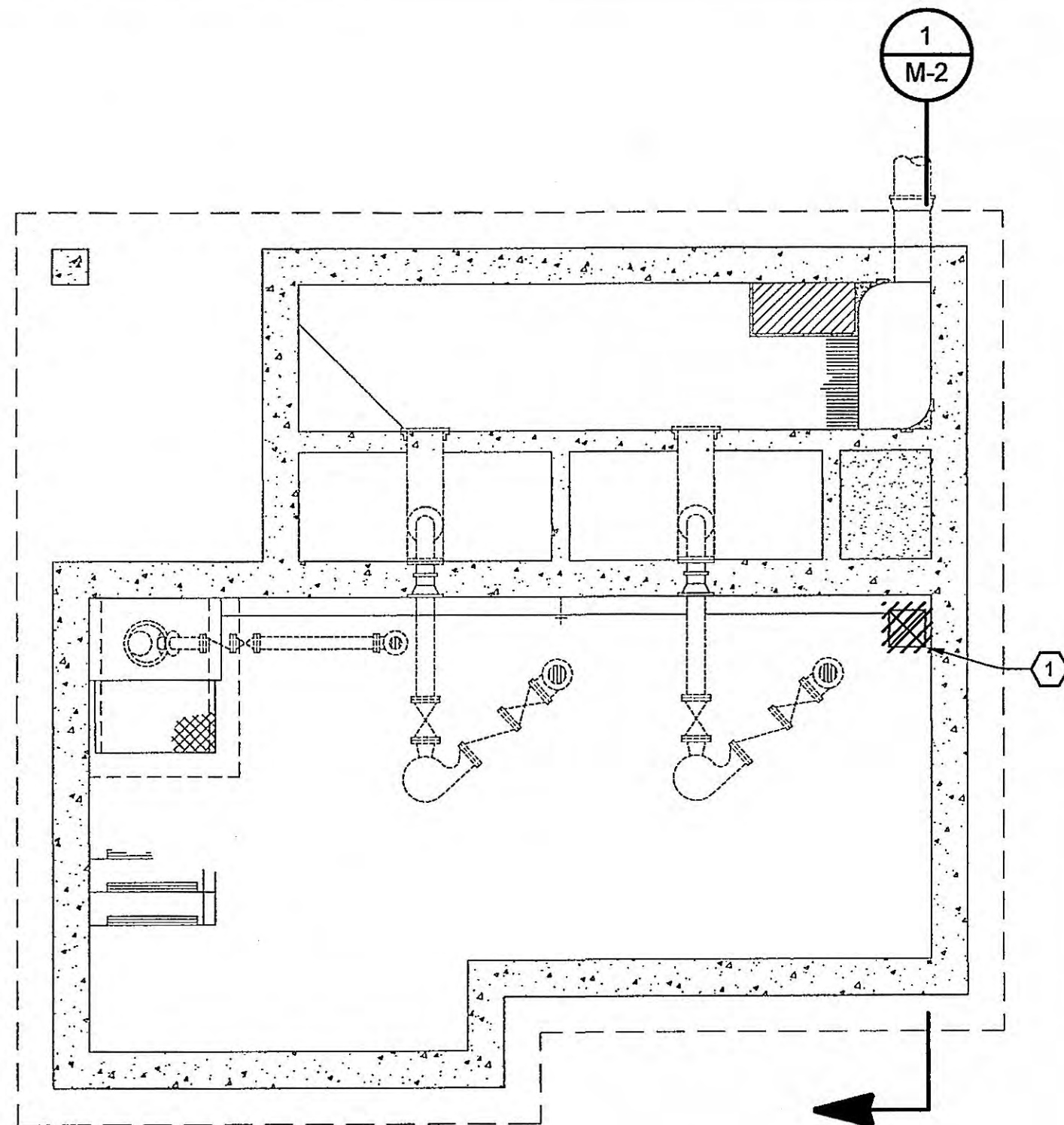
THIS DRAWING IS GENERALLY DIAGRAMMATIC AND EXCEPT WHERE SPECIFICALLY DIMENSIONED OR OTHERWISE INDICATED, INDICATES THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEARLY AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN. COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCE.

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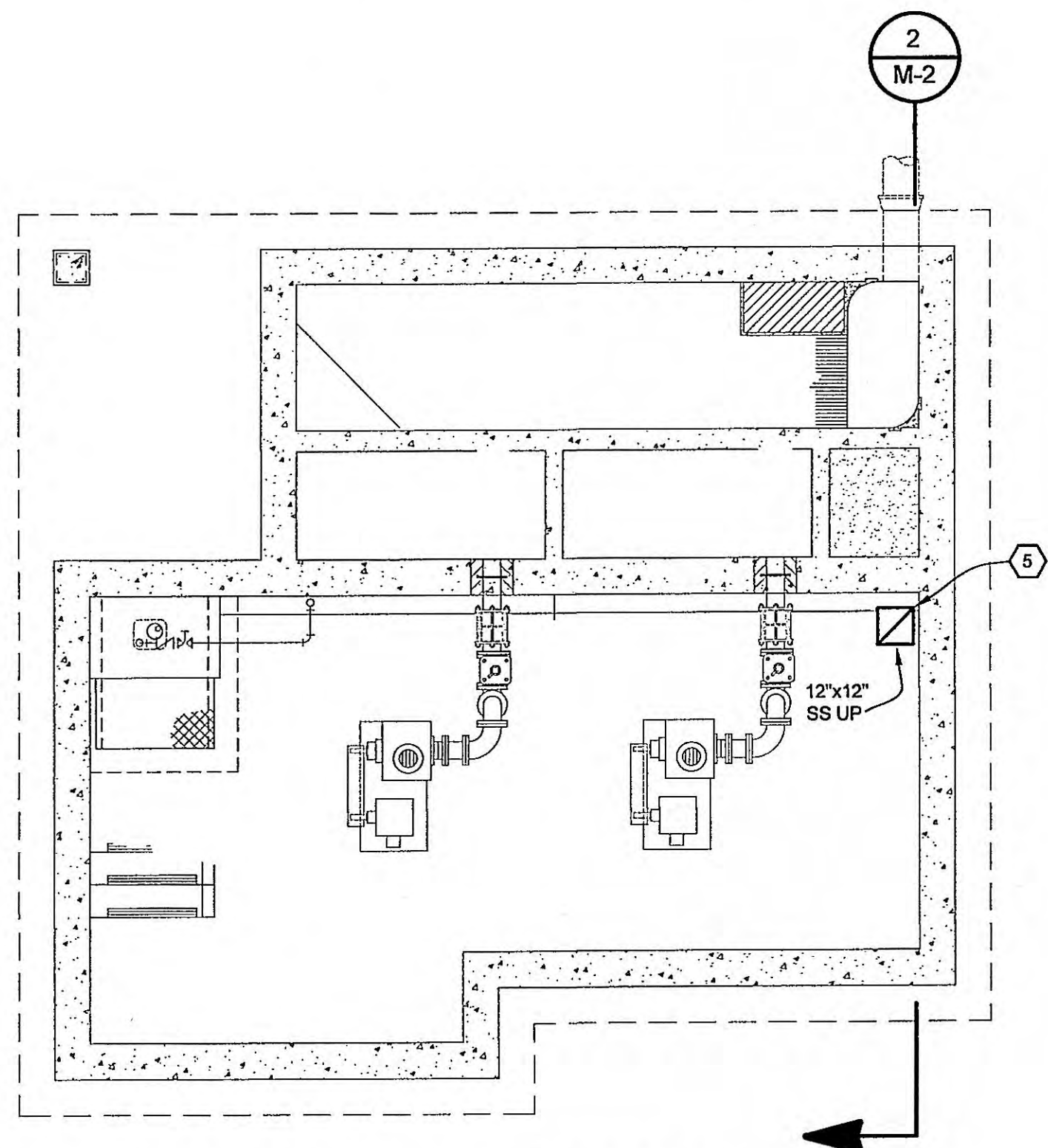
MEMBER:
NATIONAL FIRE PROTECTION ASSOCIATION

PRINTED: 7/2/2007 @ 8:21 AM

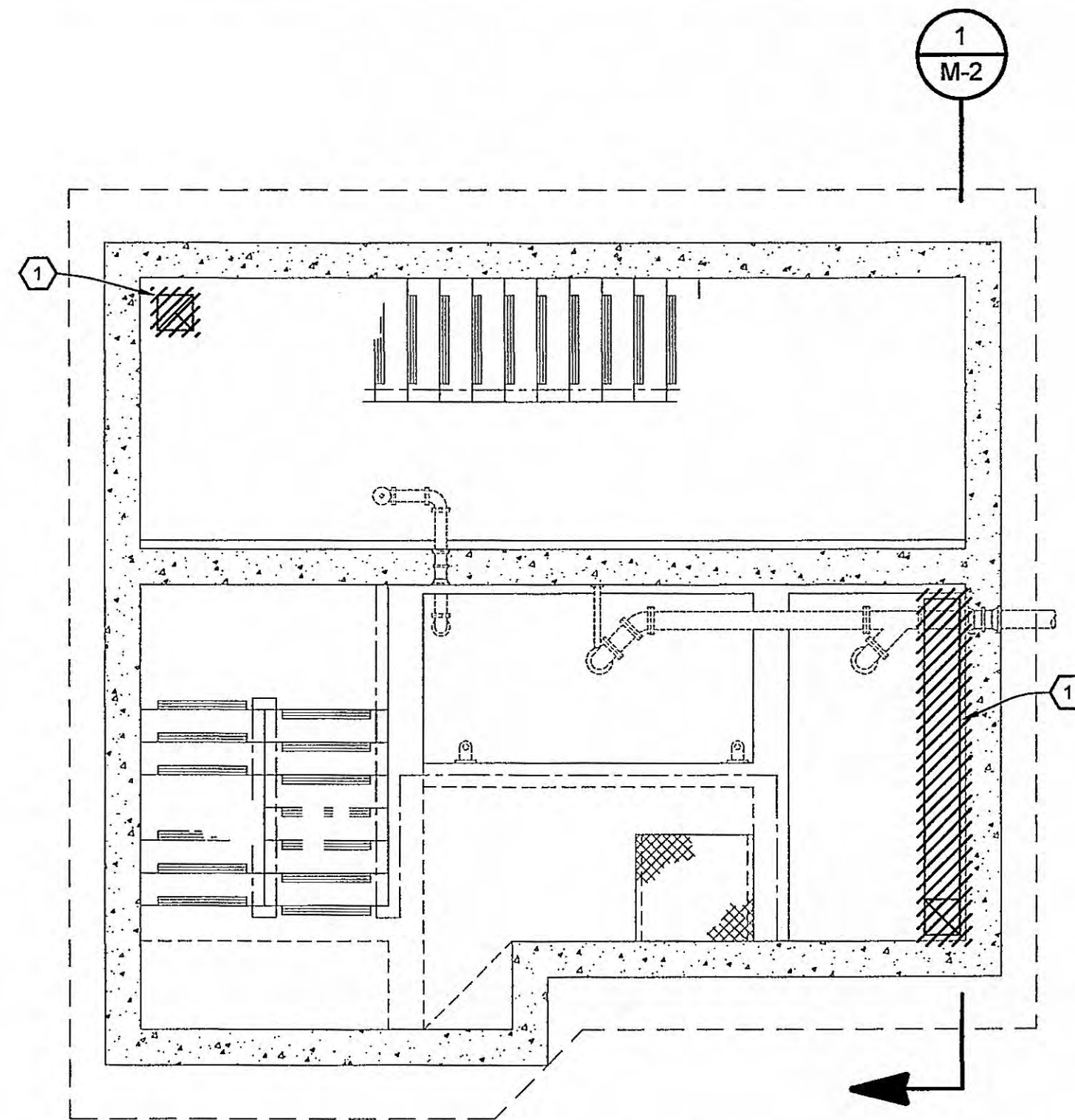
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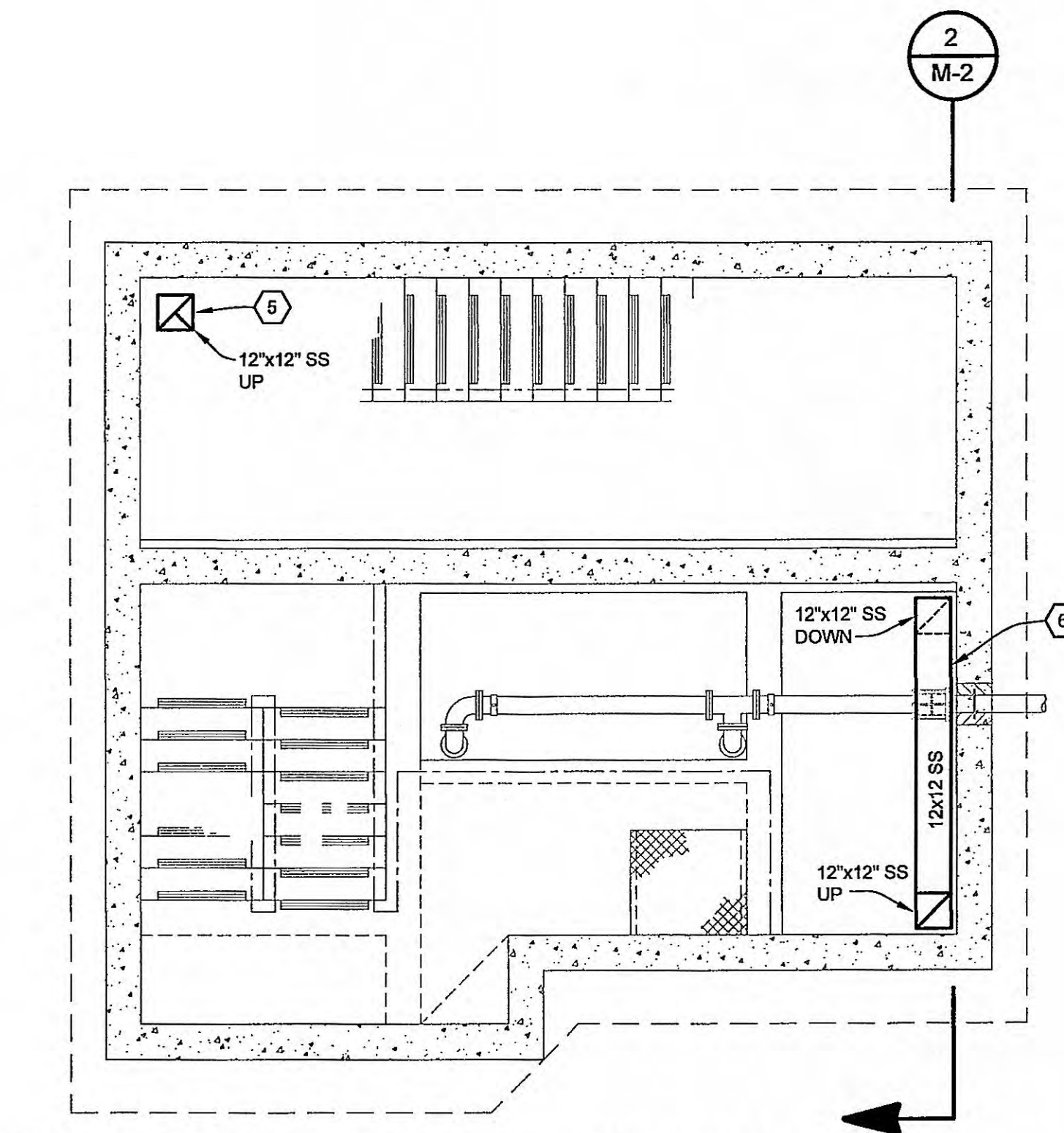
DEMO MECHANICAL PLAN - PUMP LEVEL
SCALE: 1/4" = 1'-0"



NEW MECHANICAL PLAN - PUMP LEVEL
SCALE: 1/4" = 1'-0"



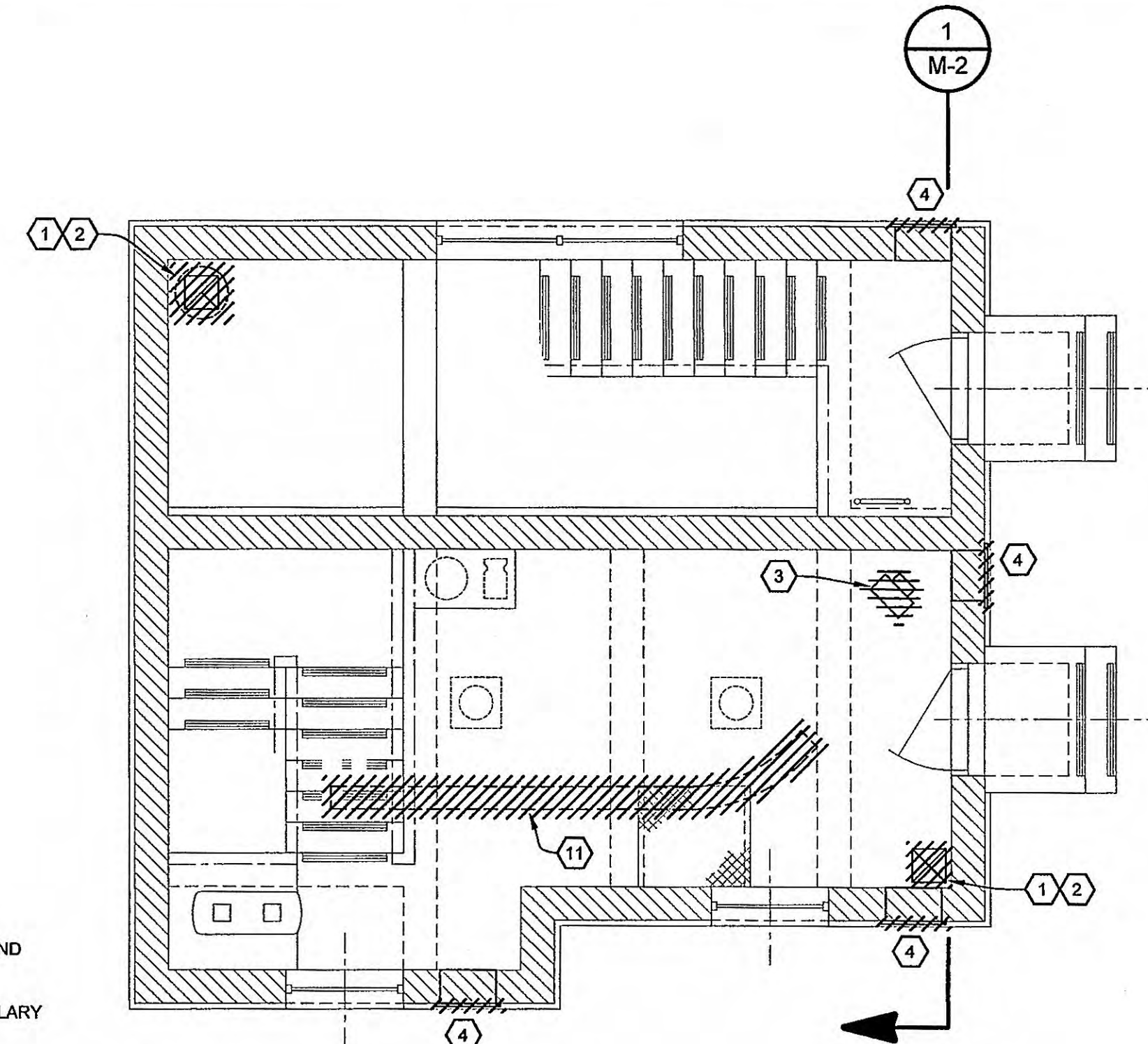
DEMO MECHANICAL PLAN AT ELEVATION 741.75
SCALE: 1/4" = 1'-0"



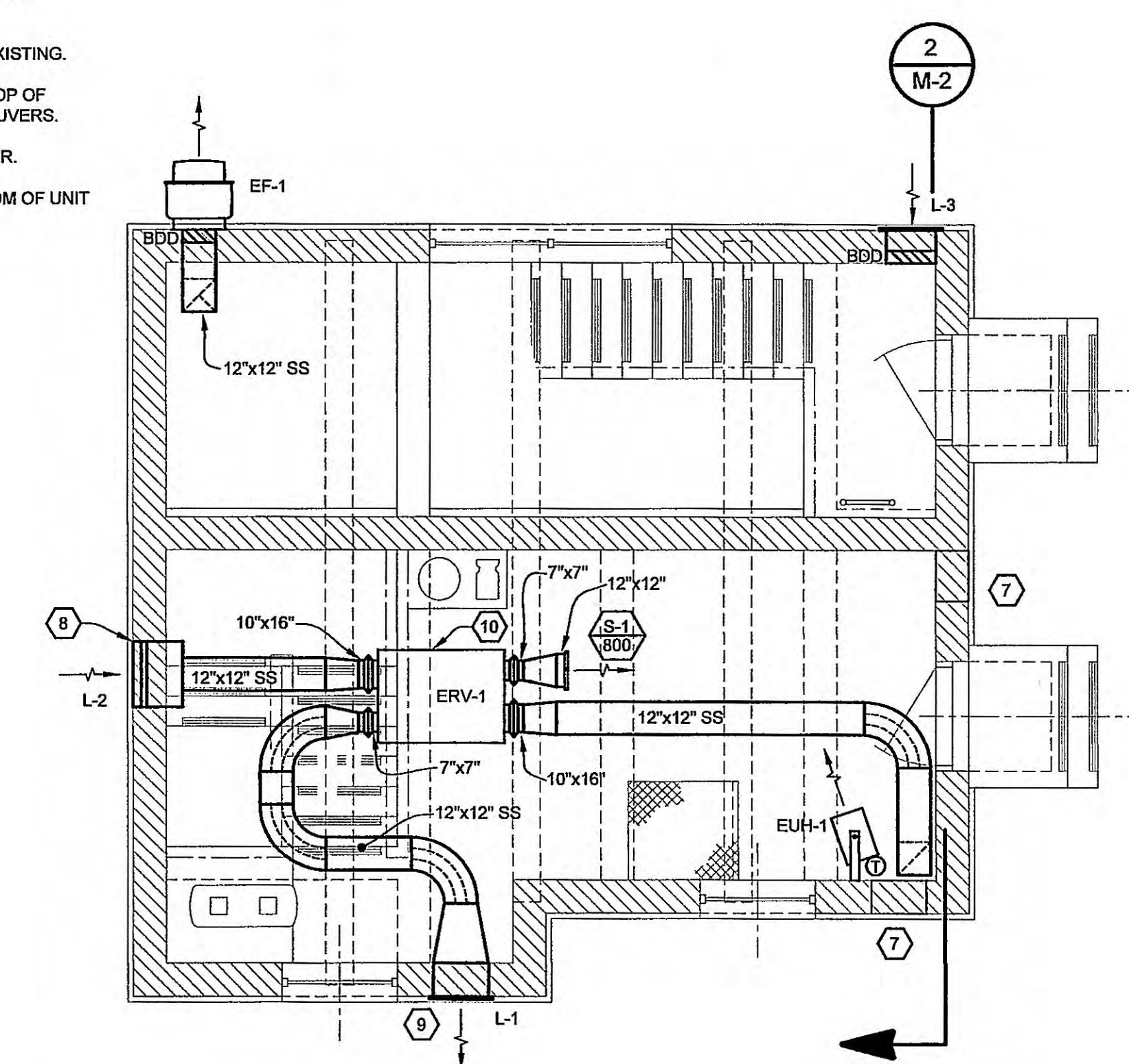
NEW MECHANICAL PLAN AT ELEVATION 741.75
SCALE: 1/4" = 1'-0"

SHEET NOTES:

1. REMOVE EXISTING DUCTWORK, HANGARS, AND ACCESSORIES.
2. REMOVE EXISTING EXHAUST FAN AND ANCILLARY COMPONENTS ON ROOF.
3. REMOVE EXISTING UNIT HEATER AND ANCILLARY COMPONENTS.
4. REMOVE EXISTING LOUVER.
5. DUCT EXHAUST INLET TO WITHIN 18-INCHES AFF. PROVIDE STAINLESS BIRDSCREEN AT INLET.
6. COORDINATE DUCT ELEVATION WITH NEW PIPE PENETRATION.
7. INFILL LOUVER WITH MASONRY TO MATCH EXISTING.
8. CUT HOLE IN WALL AND INSTALL LOUVER. TOP OF LOUVER ELEVATION TO MATCH EXISTING LOUVERS.
9. ENLARGE WALL OPENING TO FIT NEW LOUVER.
10. MOUNT ERV BETWEEN ROOF BEAMS. BOTTOM OF UNIT TO BE 7' A.F.F.
11. REMOVE CRANE RAIL.



DEMO MECHANICAL PLAN - ENTRANCE LEVEL
SCALE: 1/4" = 1'-0"



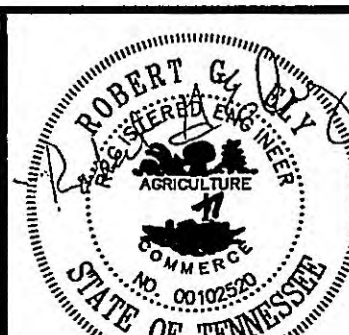
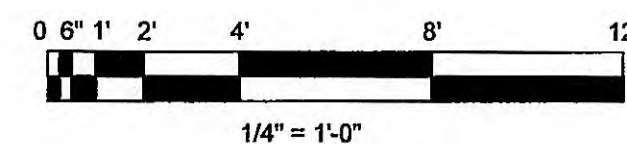
NEW MECHANICAL PLAN - ENTRANCE LEVEL
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. GENERAL NOTES, WHEREVER THEY ARE FOUND, APPLY TO ALL WORK IN THE PROJECT, UNLESS OTHERWISE INDICATED. SHEET NOTES, UTILIZING NOTE SYMBOLS, APPLY ONLY TO THE SHEET ON WHICH THEY ARE FOUND, UNLESS OTHERWISE STATED. THE MEANING OF NOTE SYMBOLS AND NUMBERS VARIES FROM SHEET TO SHEET.
2. CONTRACTOR SHALL UTILIZE ALL INFORMATION IN THE CONTRACT DOCUMENTS FOR PROVIDING THE WORK. CONTRACTOR SHALL UTILIZE DETAILS AND FLOW DIAGRAMS FOR THE WORK WHERE APPROPRIATE, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED ON THE PLANS OR SUPPORTING DRAWINGS.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND CONTRACT DOCUMENTS ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ANY WORK RELATING TO THOSE CONDITIONS IS PERFORMED.
4. LEGENDS OR LISTS OF SYMBOLS AND ABBREVIATIONS ARE GENERAL IN NATURE AND MAY CONTAIN ITEMS NOT USED IN THE CONTRACT DOCUMENTS. IF ANY SUCH ITEMS ARE FOUND WHICH ARE NOT DEFINED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER SHALL BE CONTACTED FOR CLARIFICATION BEFORE THE BID.
5. CONTRACTOR SHALL MAINTAIN A SET OF PROJECT RECORD DRAWINGS AT THE JOB SITE AND SHALL BE RESPONSIBLE FOR MAKING CLEAR, NEAT CHANGES TO THE DRAWINGS, REFLECTING CHANGES TO THE WORK AND VARIANCE IN EXISTING CONDITIONS.
6. PROVIDE ALL MISCELLANEOUS STEEL, AS REQUIRED, TO SUPPORT ALL MECHANICAL DUCT AND PIPING SYSTEMS AND EQUIPMENT. HANG ALL EQUIPMENT FROM STRUCTURE WITH MINIMUM OF TWO TRAPEZE ASSEMBLIES OR FOUR INTEGRAL MOUNTING POINTS WITH VIBRATION ISOLATORS ON ALL FOUR SUPPORTS. DO NOT HANG ANYTHING FROM STEEL, COMPOSITION OR WOODEN DECKS. NON-ROOF CONCRETE DECKS MAY BE USED ONLY WITH PERMISSION OF THE ENGINEER. DO NOT HANG ANYTHING FROM MECHANICAL OR ELECTRICAL ITEMS.
7. NO CONCRETE RIBS OR JOISTS SHALL BE CUT WITHOUT SPECIFIC PERMISSION FROM THE ENGINEER. ALL ROOF OR FLOOR DECK PENETRATIONS IN WAFFLE STRUCTURE SHALL BE IN THE THIN-SLAB DEPRESSIONS IN THE STRUCTURE UNLESS OTHERWISE SHOWN.
8. NO STEEL STRUCTURAL MEMBERS SHALL BE CUT, BURNED, WELDED OR DRILLED WITHOUT SPECIFIC PERMISSION OF THE ENGINEER.
9. NO WOODEN STRUCTURAL MEMBERS SHALL BE CUT OR DRILLED EXCEPT AS INDICATED IN THE CONTRACT DOCUMENTS OR AS APPROVED BY THE ENGINEER.
10. ALL EQUIPMENT, DUCT, PIPING AND ACCESSORIES INSTALLED OUTSIDE OR OTHERWISE EXPOSED TO THE ELEMENTS SHALL BE ADEQUATELY WEATHERPROOFED, IN KEEPING WITH THE SPECIFICATIONS. ALL FERROUS METAL FRAMING COMPONENTS SHALL BE STAINLESS STEEL OR HOT-DIP GALVANIZED.

11. DO NOT CHANGE PATH OF PIPING OR DUCT RUNS, ADD TURNS OR OFFSETS OR CHANGE DUCT DIMENSIONS OR PIPE SIZE WITHOUT FIRST CONSULTING THE ENGINEER. PIPE SIZES SHOWN ON DRAWINGS ARE NOMINAL UNLESS OTHERWISE INDICATED. ALL DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE DIMENSIONS FOR SHOP OR FIELD-FABRICATED DUCT AND NOMINAL SIZES FOR FACTORY FABRICATED DUCT.
12. CONTRACTOR SHALL CERTIFY AT THE TIME OF OWNER OCCUPANCY THAT ALL BELT-DRIVEN EQUIPMENT HAS BEEN CHECKED FOR BELT TIGHTNESS AFTER WEAR-IN PERIOD.
13. ALL EXISTING EQUIPMENT SHUTDOWNS OR INTERRUPTIONS OF UTILITY SERVICE REQUIRED FOR COMPLETION OF THE WORK SHALL BE SCHEDULED IN ADVANCE, AS REQUIRED BY THE OWNER.
14. COORDINATE ALL PIPING AND DUCTWORK WITH BOTH NEW AND EXISTING MECHANICAL AND ELECTRICAL WORK, INCLUDING HVAC, PLUMBING, ELECTRICAL, FIRE ALARM AND COMMUNICATIONS.
15. CONTRACTOR IS RESPONSIBLE FOR MAKING ALL REQUIRED CONNECTIONS FOR A COMPLETE SYSTEM. CONNECTIONS OF NEW WORK TO EXISTING IS USUALLY INDICATED BY SPECIAL SYMBOL (SEE LEGEND). SYMBOLS MISSING FROM THE DRAWINGS DO NOT EXCUSE THE CONTRACTOR FROM PROVIDING THE WORK.

16. ALL DUCTWORK AND SHEET METAL SHALL BE PROVIDED AS INDICATED AND SHALL BE MANUFACTURED AND SHOP- OR FIELD-FABRICATED, AS A MINIMUM, IN ACCORDANCE WITH THE RECOMMENDATIONS AND DETAILS OF SMACNA, UNLESS SPECIFICALLY INDICATED OTHERWISE.
17. USE TURNING VANES, PER SMACNA CONSTRUCTION GUIDELINES, FOR ALL MITERED RECTANGULAR TURNS OF 45 DEGREES OR MORE.
18. PROVIDE ALL CONTROLS NECESSARY TO OPERATE EQUIPMENT AS SHOWN OR DESCRIBED, INCLUDING VALVES, ACTUATORS, THERMOSTATS, DAMPERS, ALL ACCESSORY DEVICES, AND/OR POWER.
19. PROVIDE DISCONNECTS AND MAGNETIC STARTERS (OR RELAYS WITH OVERLOAD PROTECTION FOR SINGLE PHASE) FOR ALL EQUIPMENT SUPPLIED UNDER DIVISION 15 WHICH IS SPECIFIED TO HAVE FACTORY CONTROL PANEL. POWER WIRING AND CONDUIT TO THESE DEVICES AND BETWEEN THESE DEVICES AND MECHANICAL EQUIPMENT, IF REQUIRED, SHALL BE SUPPLIED UNDER DIVISION 16.
20. ANY AND ALL DAMAGE DUE TO DEMOLITION OR CONSTRUCTION IS TO BE REPAIRED OR REPLACED AS APPROPRIATE, SUBJECT TO ENGINEERS APPROVAL, AND AT NO ADDITIONAL COST TO THE OWNER.



GRW PROJECT NO. 3401-01
CLIENT PROJECT NO. XXXX
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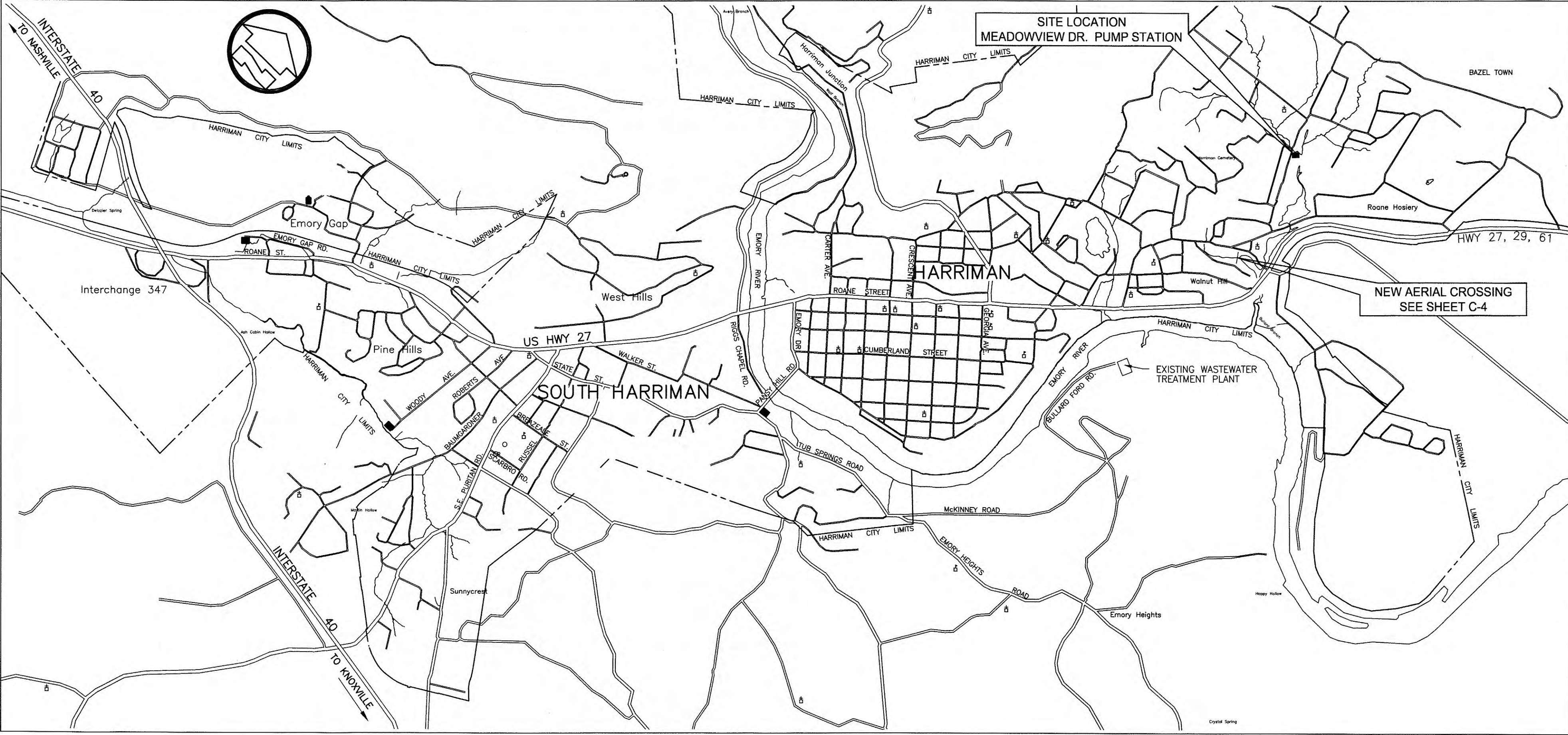
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ENGINEERS - ARCHITECTS - PLANNERS
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**DEMO AND NEW
MECHANICAL FLOOR PLAN**
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED	DBC	BY	
DRAWN	EGR	DATE	
REVIEWED	DBC	DESCRIPTION	
APPROVED	RGE	NO.	
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED			
DATE: JUNE 1, 2007			
SCALE: 1/4" = 1'-0"			
SHEET NO.			
M-1			

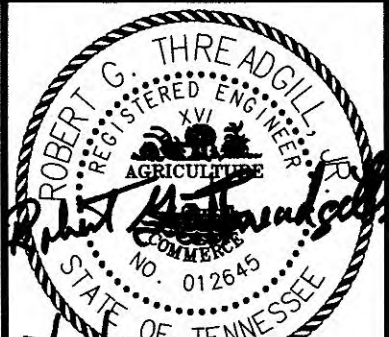
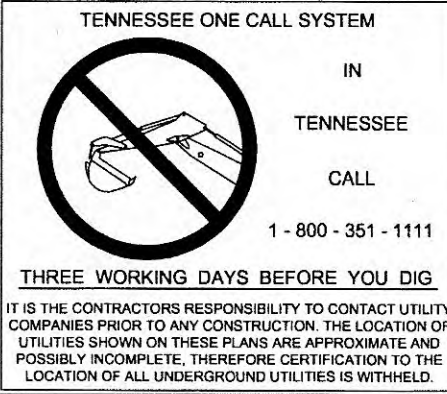
GENERAL NOTES

- 1) THE CONTRACTOR SHALL RESTORE ALL CULVERTS, FENCES, WALLS, SMALL ORNAMENTAL TREES, CULTIVATED SHRUBS, FLOWERS, SIGNS, LIGHTS AND POWER POLES, STREET MARKERS, MAIL BOXES, WATER AND GAS LINES, WATER AND GAS METERS AND BOXES INCLUDING SHUT-OFFS, AND LAWNS DISTURBED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITIONS. THE COST OF THIS WORK SHALL BE MERGED IN THE UNIT BID AND CONTRACT PRICES FOR THE PROPOSED WORK.
- 2) WHERE IN EASEMENTS THE CONTRACTOR SHALL PROTECT AND RESTORE SAID PROPERTY TO CONDITION SIMILAR OR EQUAL TO THAT EXISTING AT THE COMMENCEMENT OF CONSTRUCTION, EXCEPT AS NOTED.
- 3) THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES. BEFORE CONSTRUCTION.
- 4) CONTRACTOR SHALL NOT PLACE ANY VALVES OR OTHER ABOVE GRADE DEVICES IN ANY DITCH LINE ON STATE HIGHWAY RIGHT OF WAY.
- 5) SUFFICIENT PRECAUTIONS SHALL BE TAKEN DURING CONSTRUCTION TO MINIMIZE THE RUN-OFF OF POLLUTING SUBSTANCES SUCH AS SILT, CLAY, FULES, OILS, BITUMENS, CALCIUM CHLORIDE, OR OTHER POLLUTING MATERIALS HARMFUL TO HUMANS, FISH OR OTHER LIFE, INTO THE SUPPLIES AND SURFACE WATERS OF THE STATE. POLLUTION SEDIMENT AND EROSION CONTROL MEASURES MUST BE IN OCCORDANCE WITH THE BMP's OUTLINED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION IN THE MARCH 2002 EROSION AND SEDIMENT CONTROL HANDBOOK AND MUST BE ADEQUATE TO ASSURE THAT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS ARE MET. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT THE LAWS AND REGULATIONS ARE MET AND IS RESPONSIBLE FOR ENSURING THAT CONSTRUCTION DOES NOT HARM THE WATERS OF TENNESSEE. THE PROTECTION OF THE SITE SHALL CONTINUE THROUGHOUT THE CONSTRUCTION PERIOD. SPECIAL PRECAUTIONS SHALL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT OPERATIONS WHICH PROMOTE EROSION. THE TEMPORARY POLLUTION CONTROL PROVISIONS SHALL BE COORDINATED WITH THE PERMANENT REOSION CONTROL MEASURES, TO ENSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION CONTROL THROUGHOUT THE CONSTRUCTION AND POST-CONSTRUCTION PERIOD OF THE PROJECT. NATURAL COVER SHOULD BE MAINTAINED AS LONG AS POSSIBLE AND GRADED AREAS SHOULD BE STABILIZED AS SOON AS POSSIBLE. CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND IN IT IDENTIFYING LOCATIONS FOR BMP'S, AND TYPES OF BMP'S INSTALLED. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S. CONTRACTOR SHALL EXECUTE THE NOTICE OF INTENT, IN CONJUNCTION WITH THE OWNER PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 6) THE CONTRACTOR SHALL OBTAIN ALL PERMITS FROM THE STATE AND/OR COUNTY HIGHWAY DEPARTMENT TO CROSS ALL HIGHWAYS AND STREETS.
- 7) IF ANY EXISTING STORM SEWERS ARE SUBSTANTIALLY DAMAGED AS DETERMINED BY THE A/E AND OR OWNER. THE REPAIR SHALL BE MADE WITH R.C.P. PIPE FROM STRUCTURE-TO-STRUCTURE. PIPE SIZE SHALL BE EQUAL TO EXISTING.
- 8) CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING ALL LIVE SERVICES TO THE NEW SEWER.



LOCATION MAP
SCALE: 1" = 1500'

CALL BEFORE YOU DIG



GRW PROJECT NO. 3401-01
CLIENT PROJECT NO. 807-01
ALL RIGHTS RESERVED. THE PROPERTY OF GRW ENGINEERS, INC. AND SHALL NOT BE USED FOR CONSTRUCTION OF ANY PROJECT WITHOUT WRITTEN PERMISSION.



LOCATION MAP AND GENERAL NOTES
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

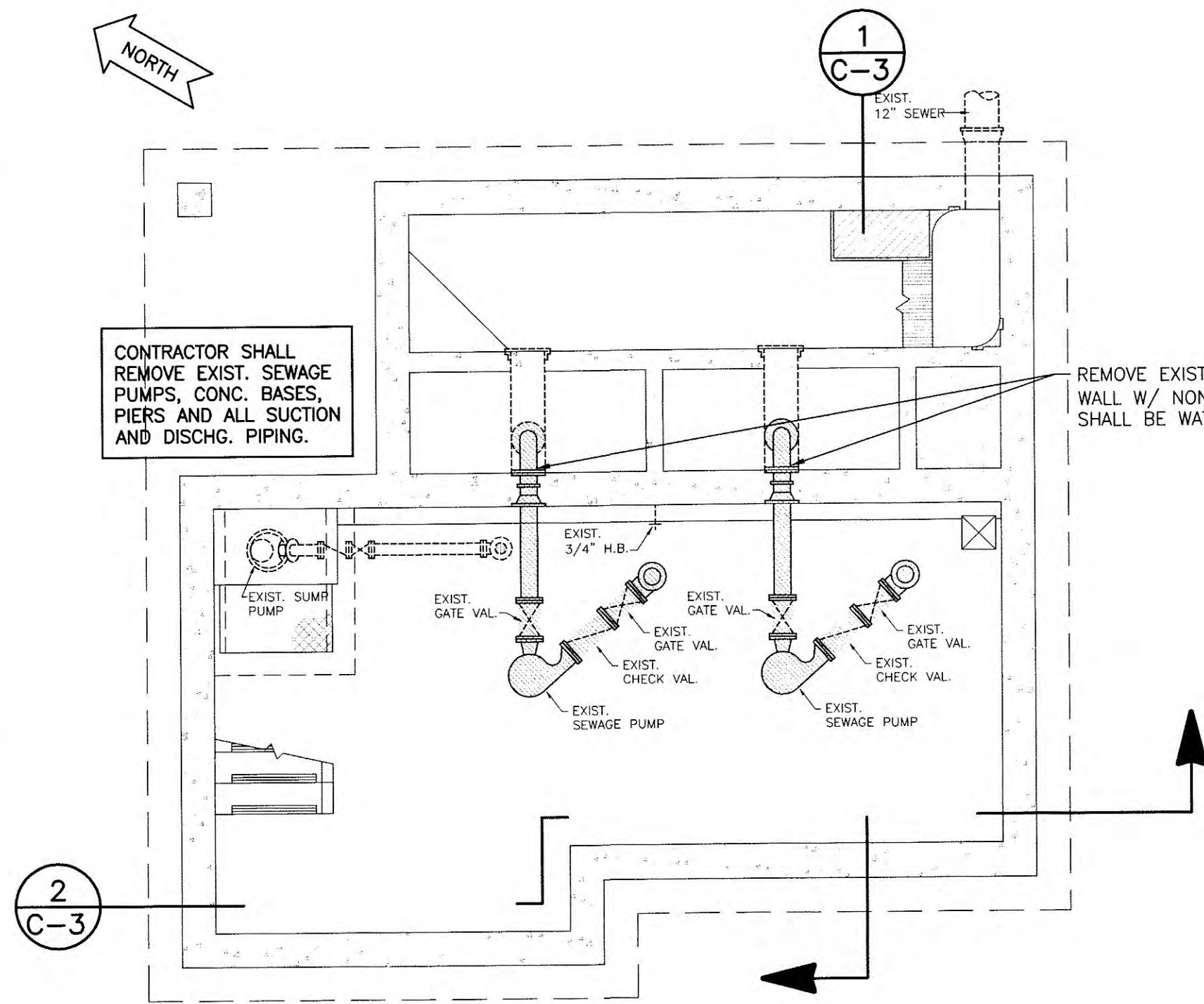
REVISIONS					DESIGNED:	CAJ
NO.	DESCRIPTION	DATE	BY			
					DRAWN	CAJ
					REVIEWED	RGT
					APPROVED	RGT
SCALE CHECK				THIS MARK SHOULD MEASURE EXACTLY WHEN PLOTTED		

DATE: JUNE, 2007
SCALE: VARIES
SHEET NO.

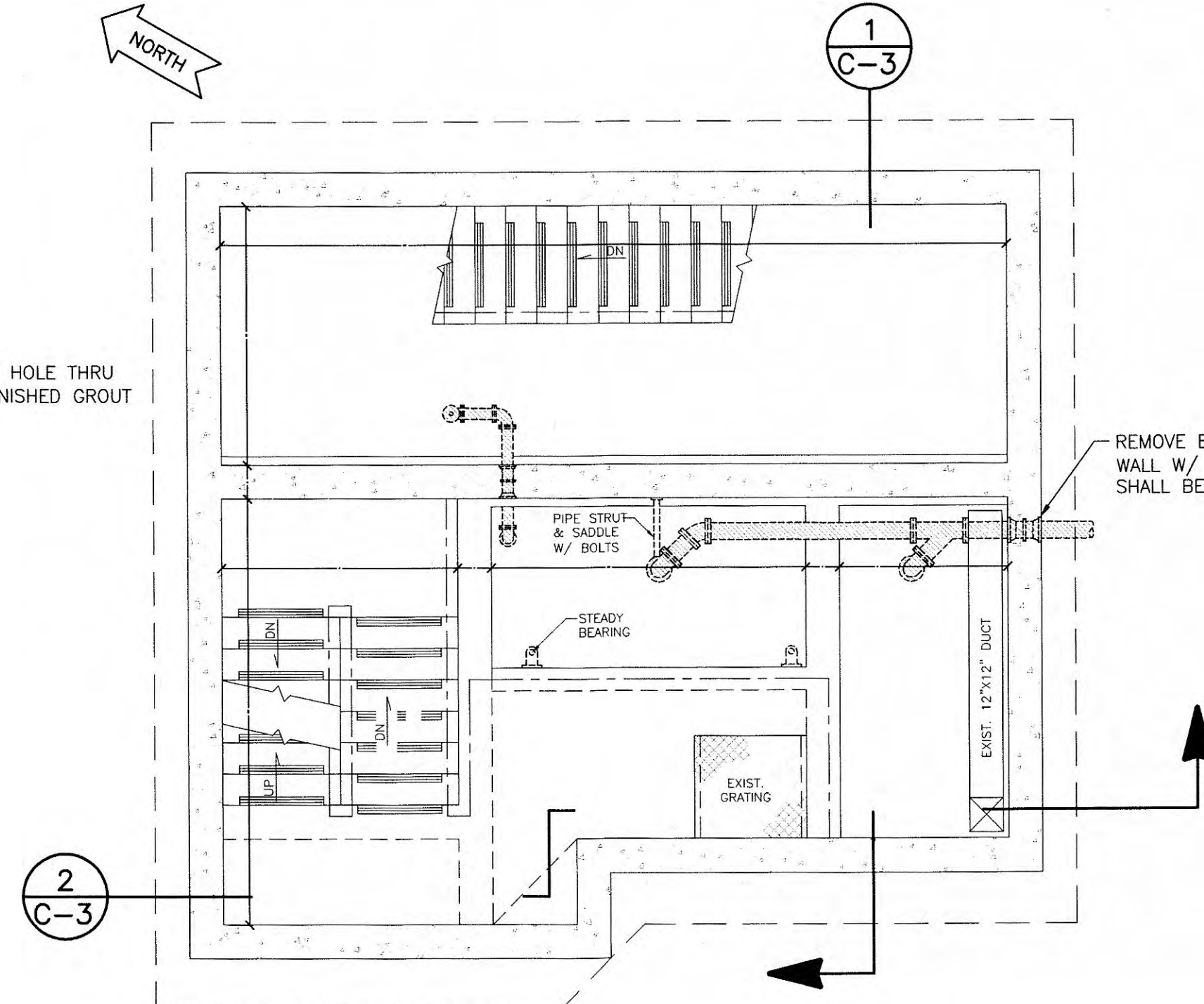
C-1

PRINTED: 7/10/2007 @ 2:47PM

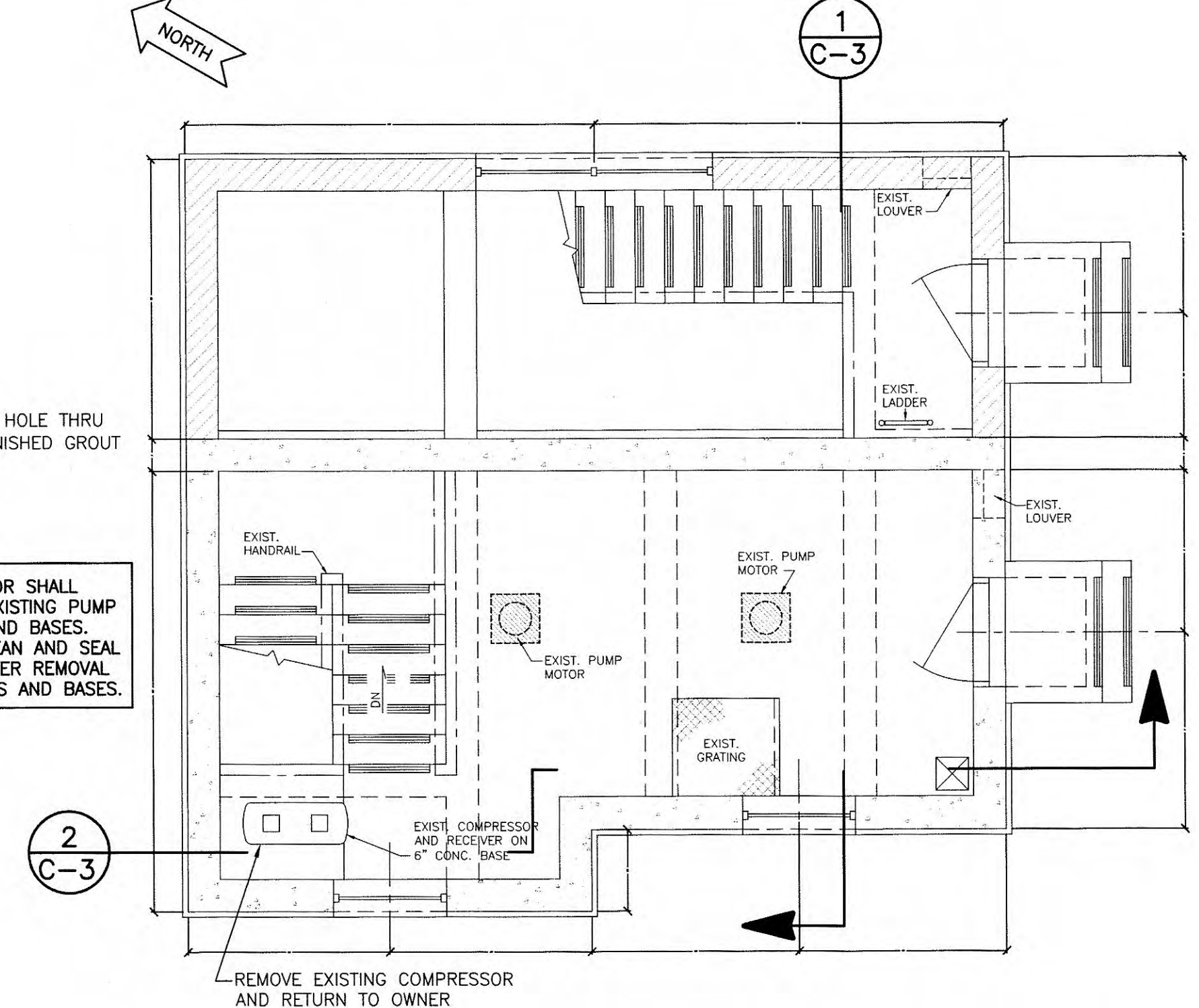
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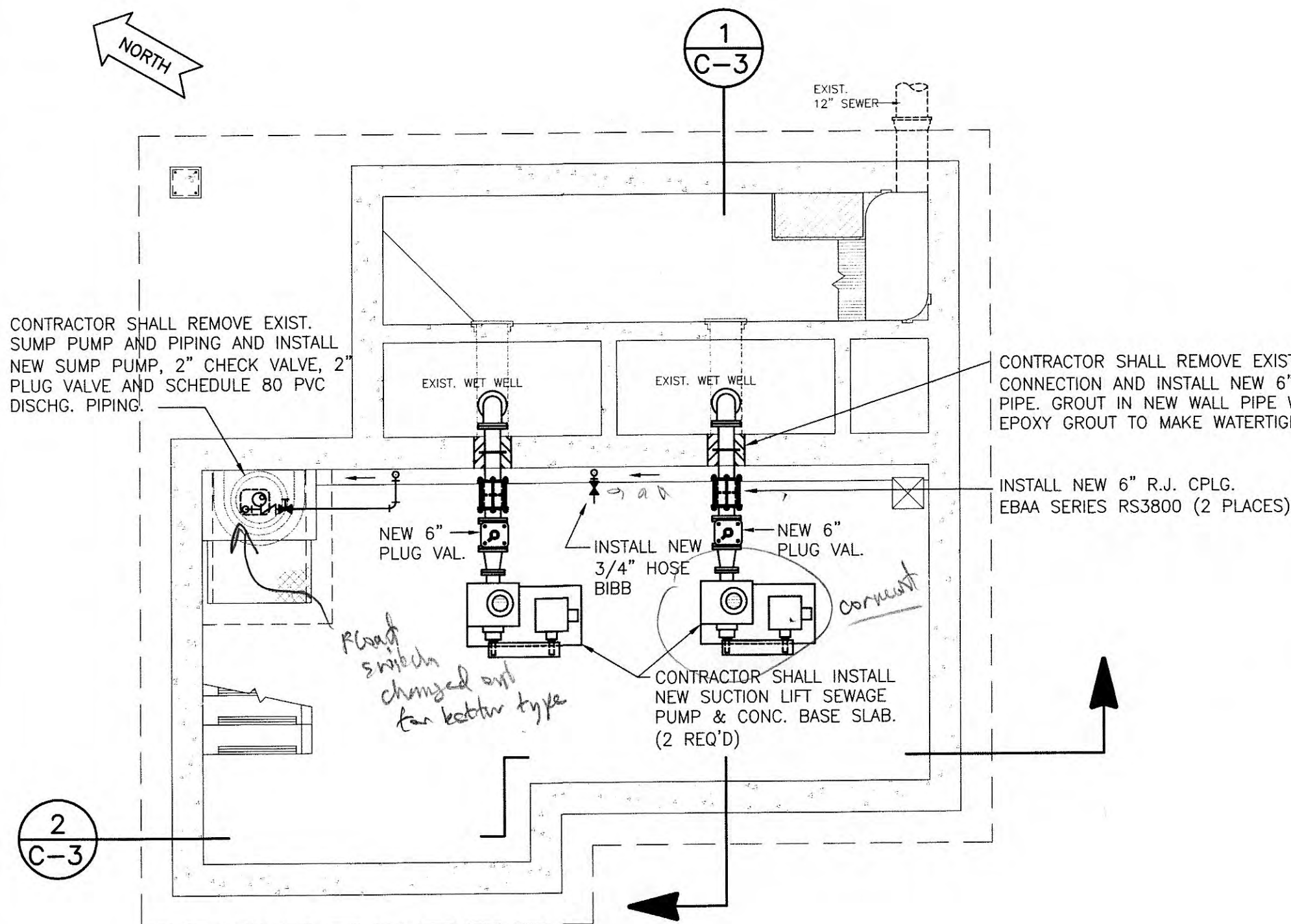
EXISTING FLOOR PLAN - PUMP LEVEL
SCALE: 1/4" = 1'-0"



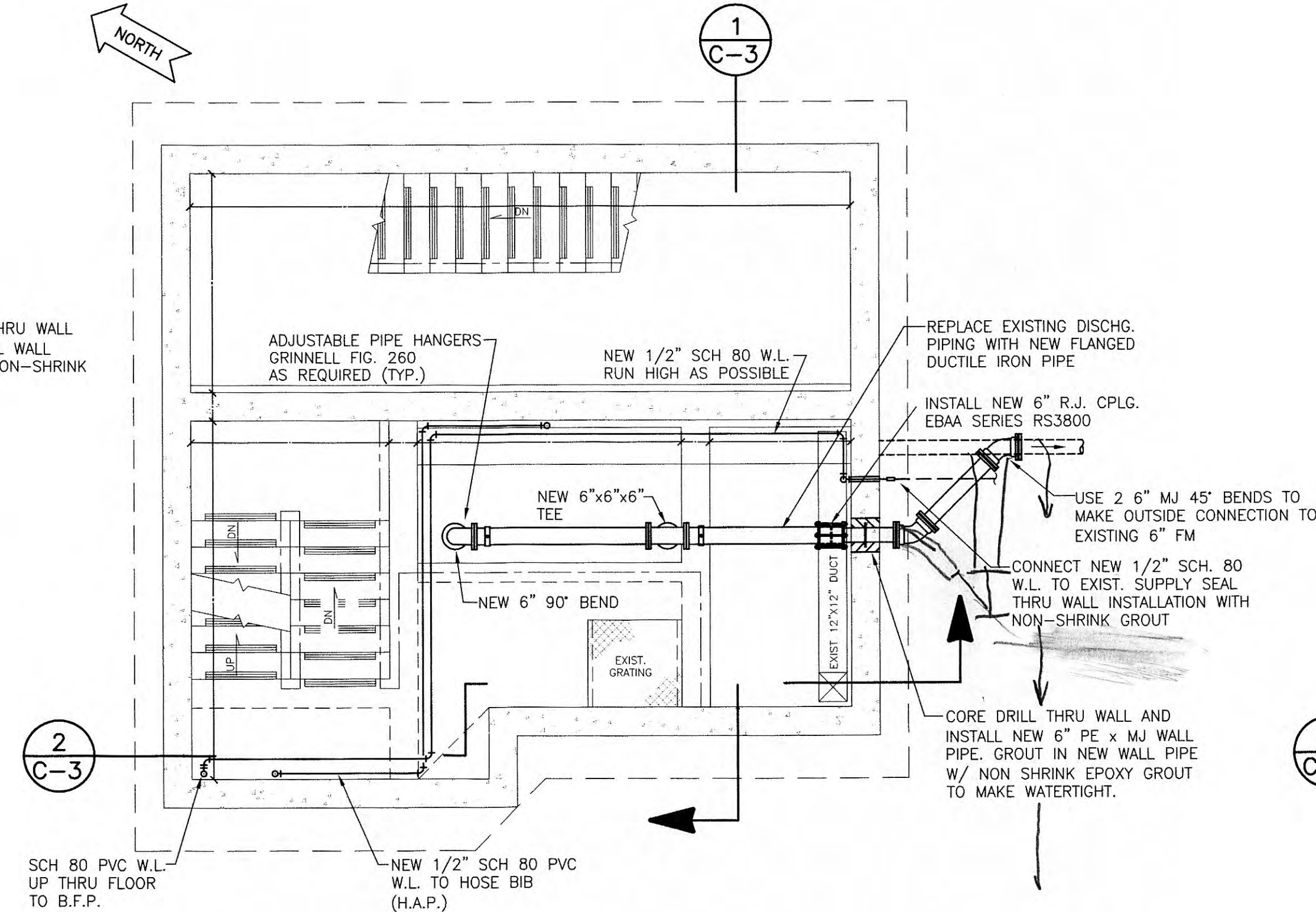
EXISTING FLOOR PLAN AT ELEVATION 751.14
SCALE: 1/4" = 1'-0"



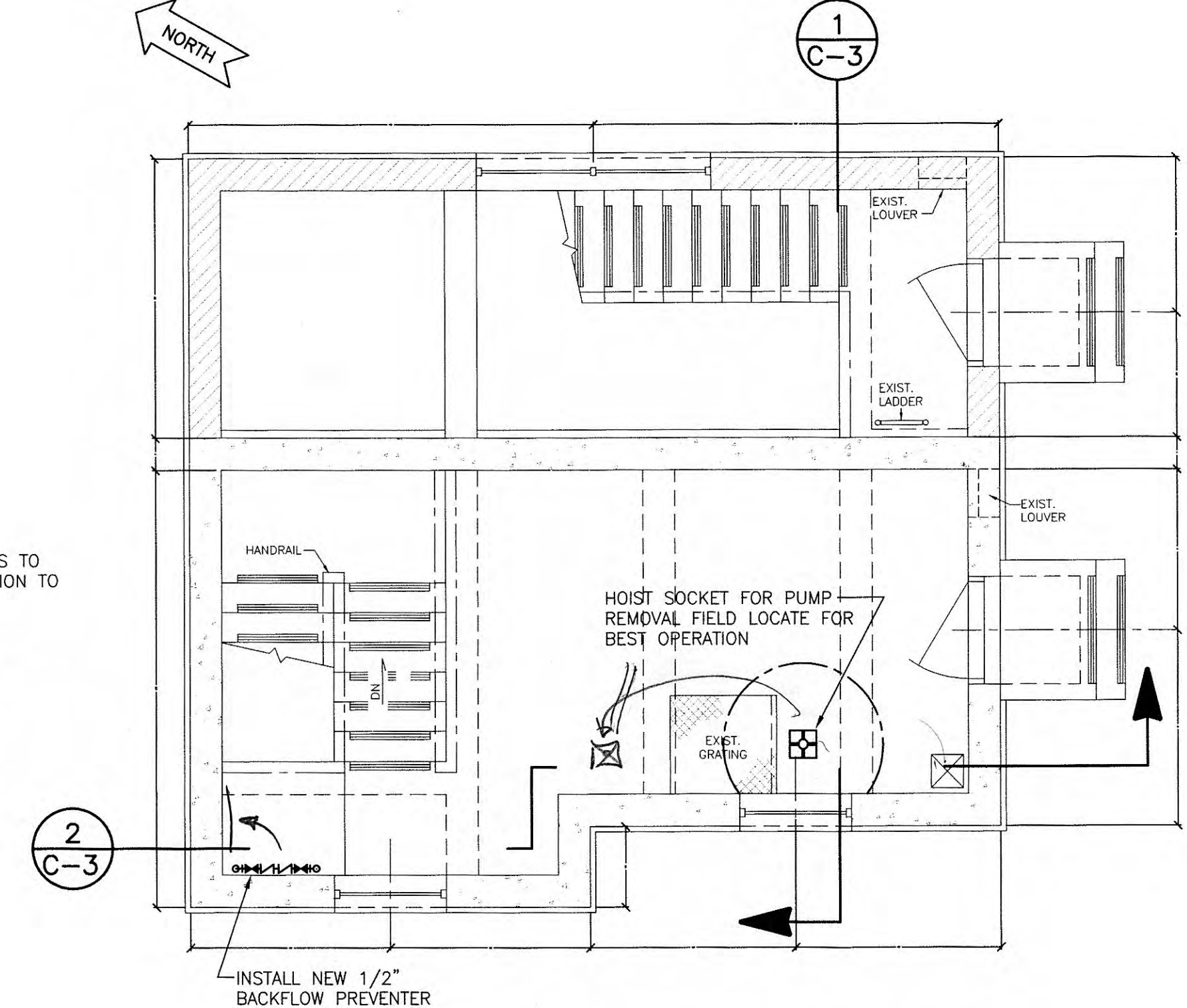
EXISTING FLOOR PLAN - ENTRANCE LEVEL
SCALE: 1/4" = 1'-0"



MODIFIED FLOOR PLAN - PUMP LEVEL
SCALE: 1/4" = 1'-0"



MODIFIED FLOOR PLAN AT ELEVATION 751.14
SCALE: 1/4" = 1'-0"



MODIFIED FLOOR PLAN - ENTRANCE LEVEL
SCALE: 1/4" = 1'-0"

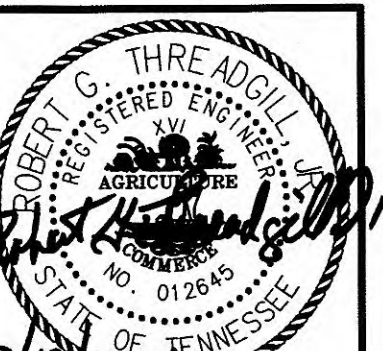
CONTRACTOR NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR BYPASS PUMPING WHILE REHABILITATING PUMP STATION. THIS INCLUDES ANY REQUIRED CONNECTIONS TO INFLUENT AND DISCHARGE LINES. H.U.B. WILL PROVIDE THE REQUIRED ELECTRICAL SERVICE FOR BYPASS PUMPING.
2. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS TO ALL EXISTING VALVES, PIPING AND EQUIPMENT. IF THE OWNER REJECTS SALVAGED MATERIALS, THE CONTRACTOR SHALL PROVIDE FINAL DISPOSAL OF ALL ITEMS.
3. CONTRACTOR SHALL REMOVE EXISTING PAINT FROM WALLS. WALLS INCLUDE ENTRANCE LEVEL; INTERMEDIATE LEVEL; AND PUMP LEVEL. A CLEAR SEALANT SHALL BE ADDED TO ALL BRICK INTERIOR WALLS. THE CONCRETE WALLS WILL BE COATED WITH A COLORED SEALANT APPROVED BY OWNER. STEEL BEAMS AND PIPE SHALL BE PAINTED WITH A HIGH PERFORMANCE PAINT, SEE SPECIFICATION SECTION 9901.

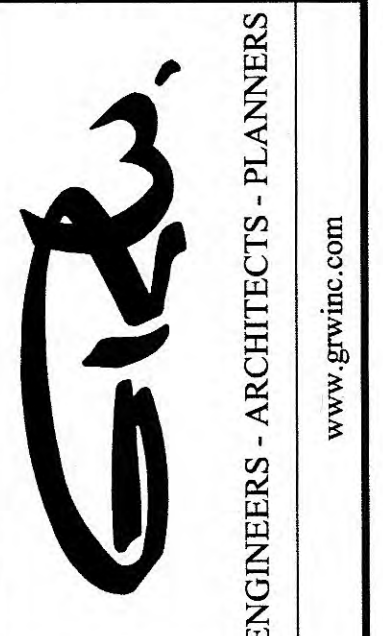
4. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS BEFORE ORDERING EQUIPMENT.
5. CONTRACTOR SHALL PRESSURE WASH AND REMOVE ALL DEBRIS FROM THE PUMP STATION WET WELL PRIOR TO PLACING STATION BACK INTO SERVICE.

PATTERN LEGEND

- EXISTING BRICK WALL
- EXISTING CUT CONCRETE
- INDICATES EQUIPMENT/PIPING TO BE REMOVED



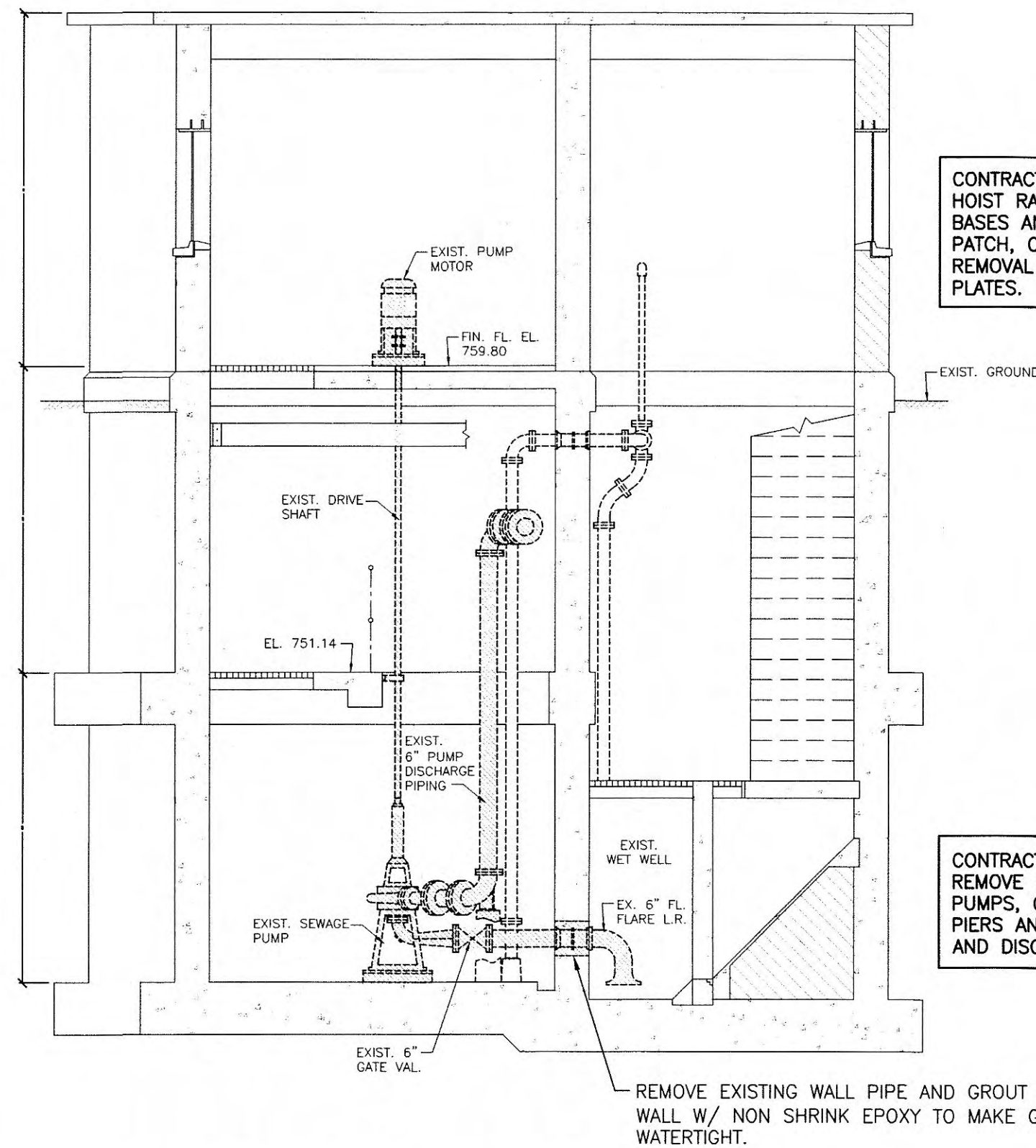
GRW PROJECT NO. 3401-01
CLIENT PROJECT NO. S07-01
ALL RIGHTS RESERVED. PROPERTY OF GRW ENGINEERING, INC. AND SHALL NOT BE USED FOR CONSTRUCTION OF ANY PROJECT WITHOUT WRITTEN PERMISSION.



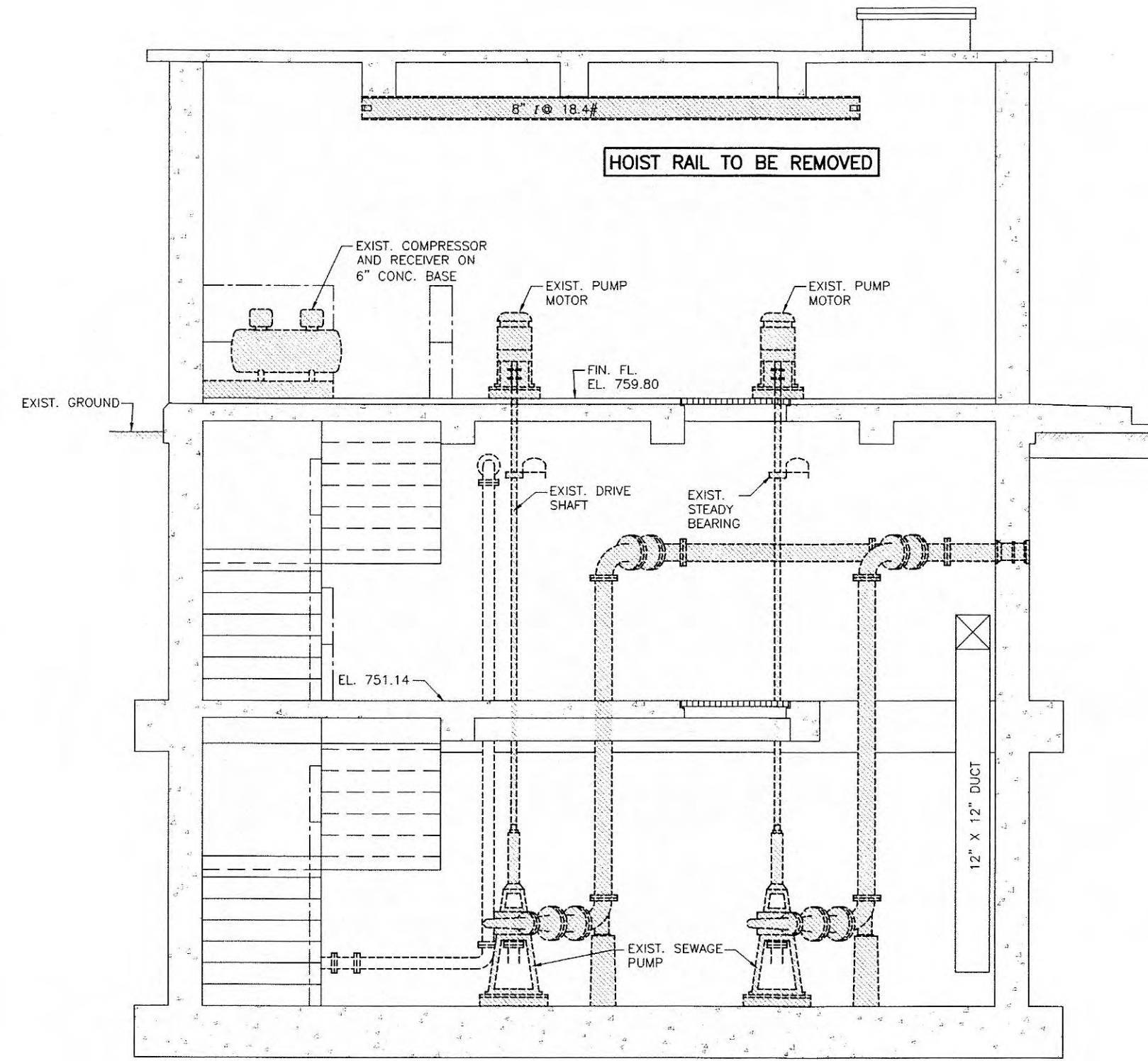
PUMP STATION PLAN SHEET
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED:					CAJ				
DRAWN:					CAJ				
REVIEWED:					RGT				
APPROVED:					RGT				
REVISIONS									
NO.	DESCRIPTION	DATE	BY						
1	ADDED H05T	6/22-07	SG						
SCALE CHECK:				THIS MARK SHOULD MEASURE EXACTLY 1" WHEN FORTIFIED					

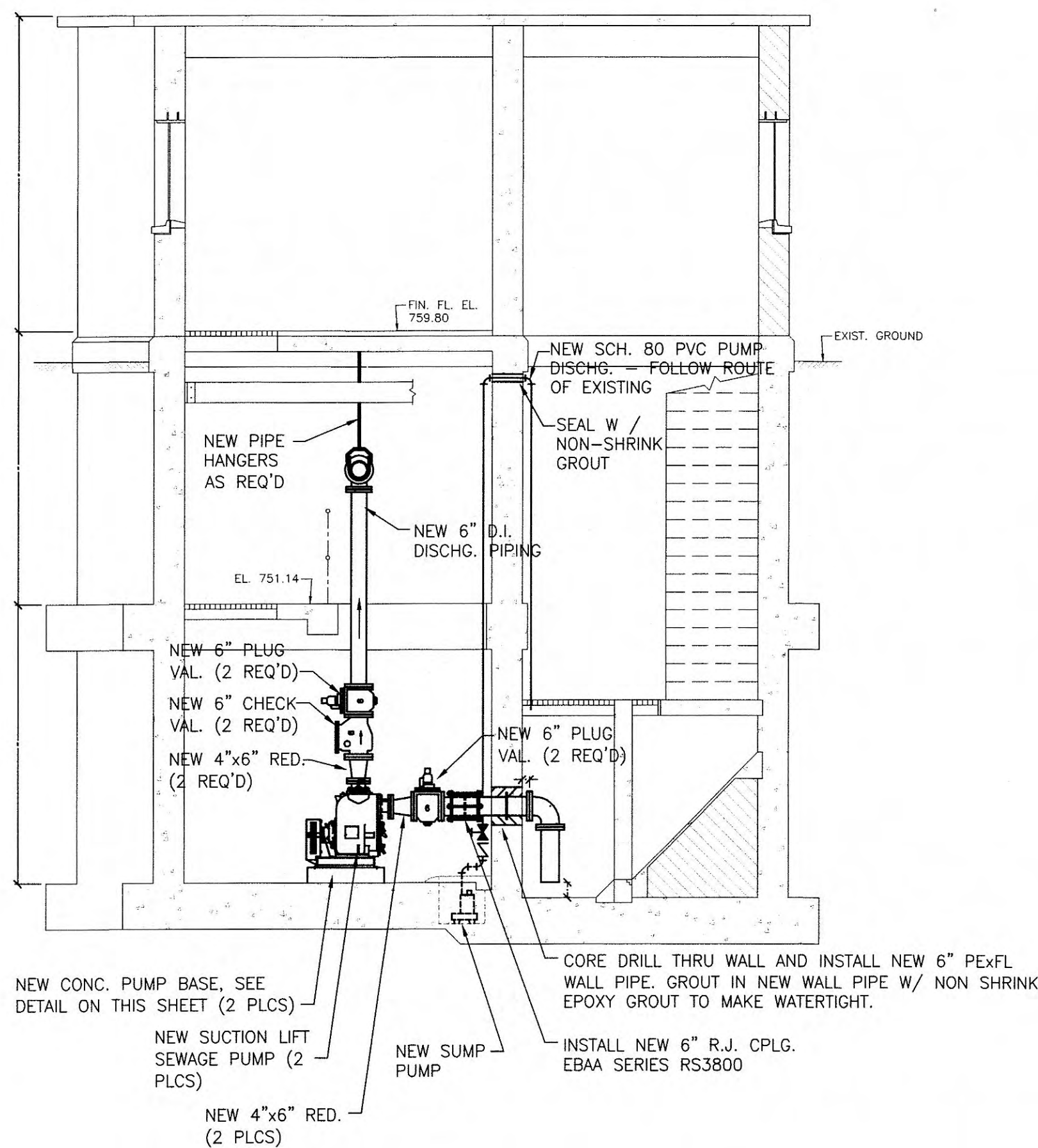
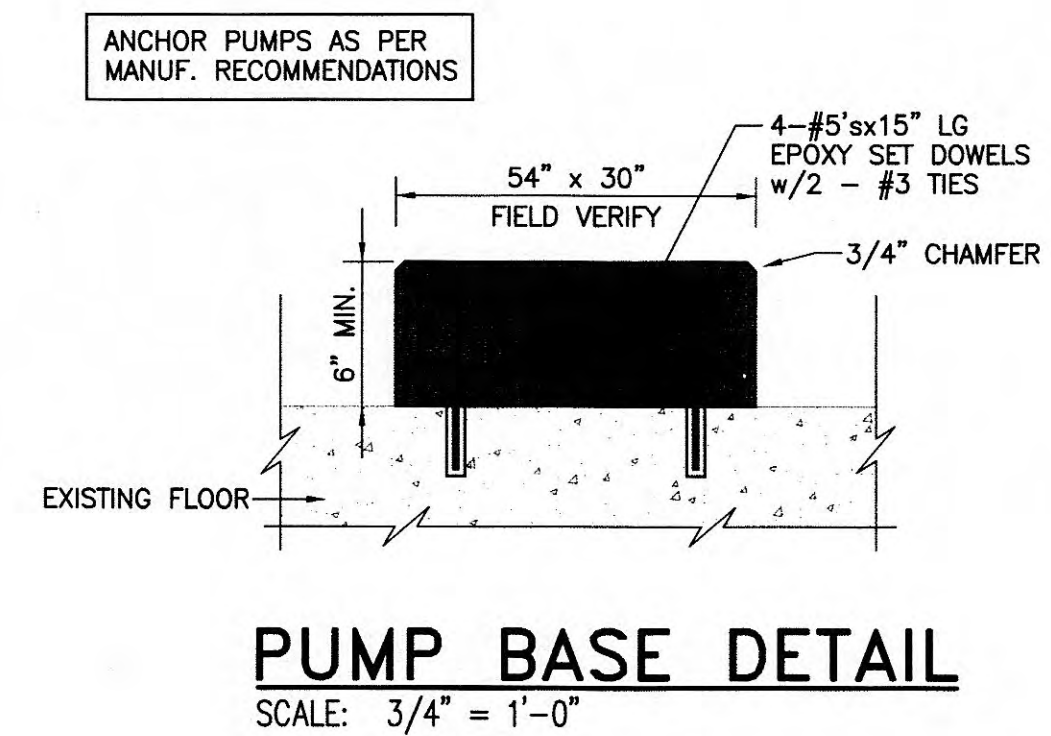
DATE: JUNE, 2007
SCALE: 1/4"=1'-0"
SHEET NO. C-2



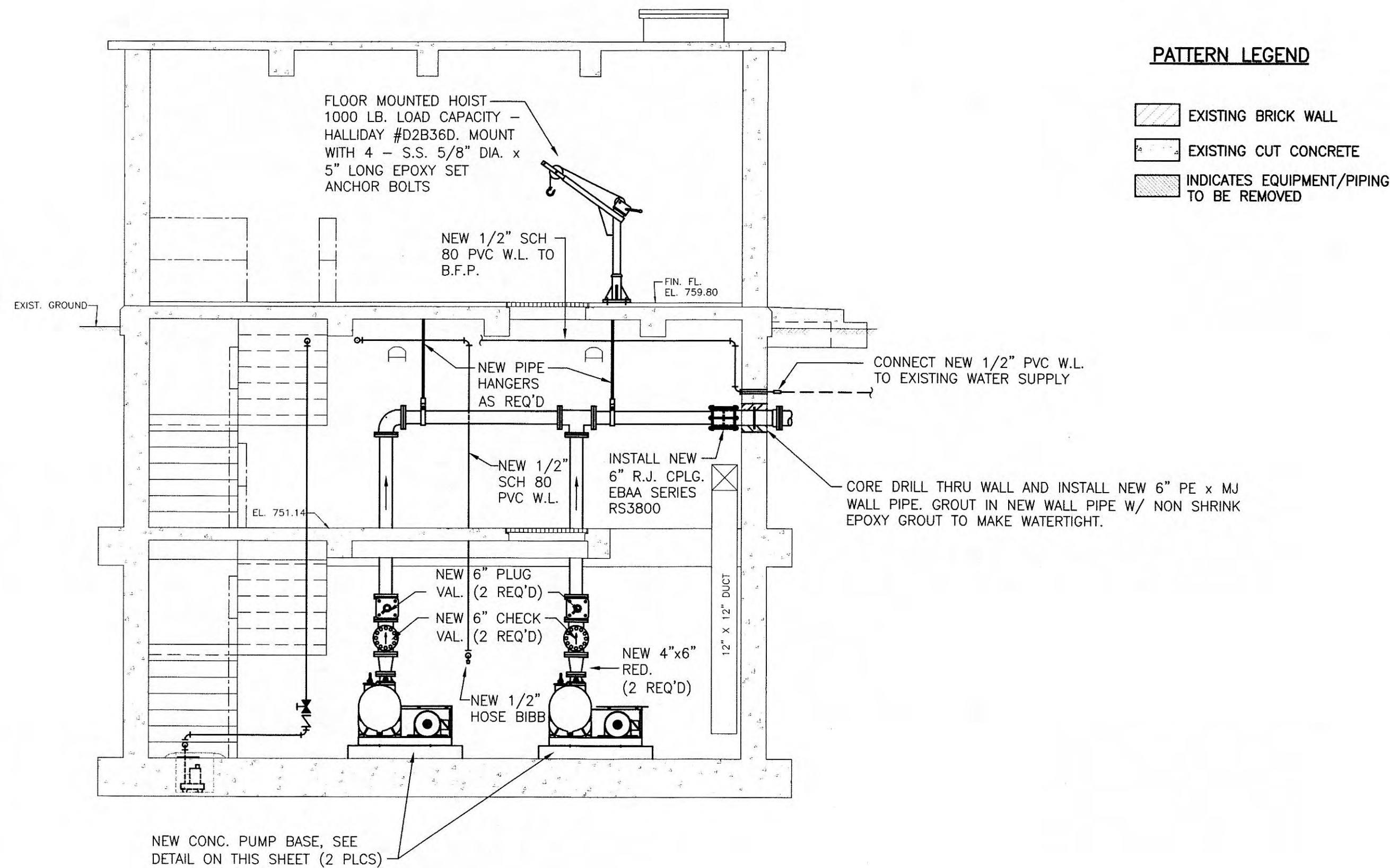
EXISTING CONDITIONS - SECTION 1
SCALE: 1/4" = 1'-0"



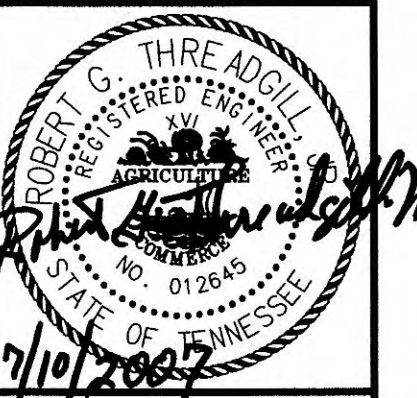
EXISTING CONDITIONS - SECTION 2
SCALE: 1/4" = 1'-0"



MODIFIED CONDITIONS - SECTION 1
SCALE: 1/4" = 1'-0"



MODIFIED CONDITIONS - SECTION 2
SCALE: 1/4" = 1'-0"



GRW PROJECT NO. 3401-01

CLIENT PROJECT NO. S07-01

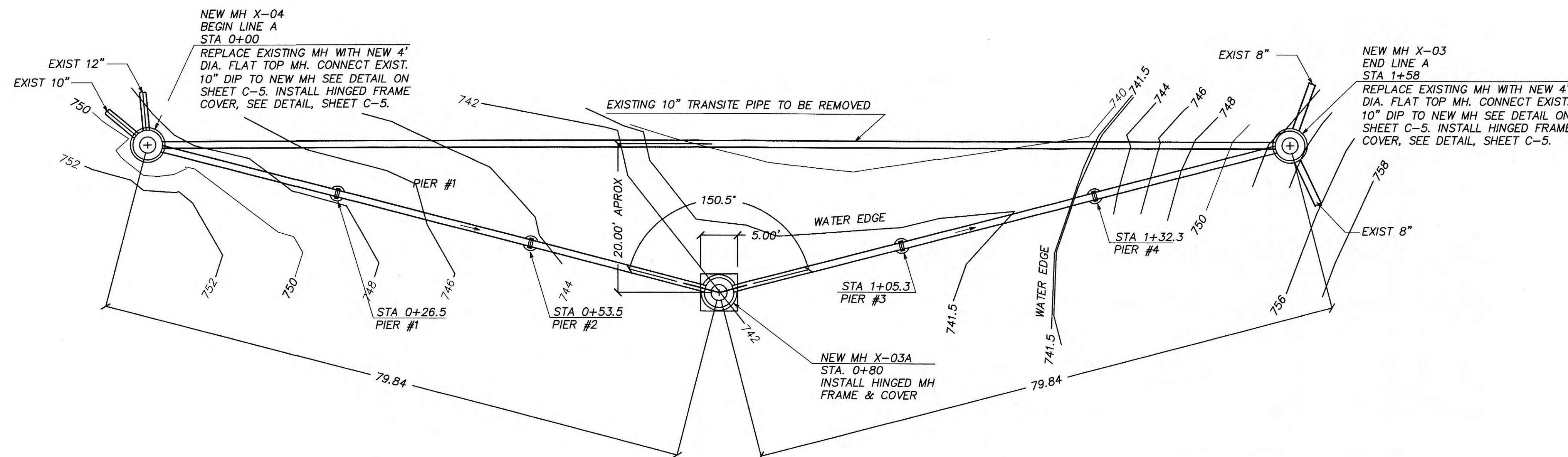
ALL RIGHTS RESERVED. THE PROPERTY OF GRW ENGINEERS, INC. AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT WRITTEN PERMISSION.



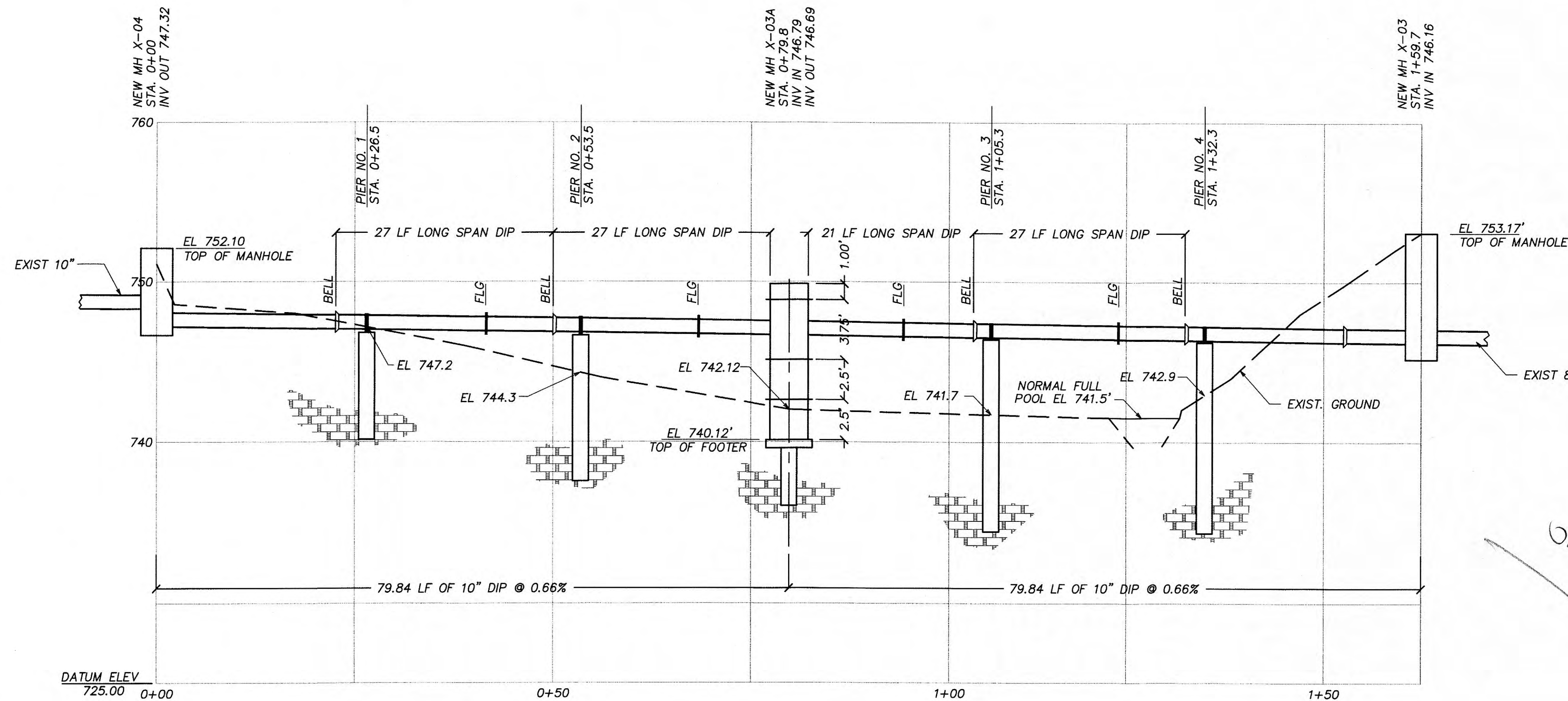
PUMP STATION SECTION SHEET
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED	CAJ	DRAWN	CAJ	REVIEWED	RGT	APPROVED	RGT
NO.	1	DATE	6/22-07	BY	SG	DESCRIPTION	ADDED HOIST
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN NOTED							

DATE	JUNE, 2007
SCALE	VARIES
SHEET NO.	C-3

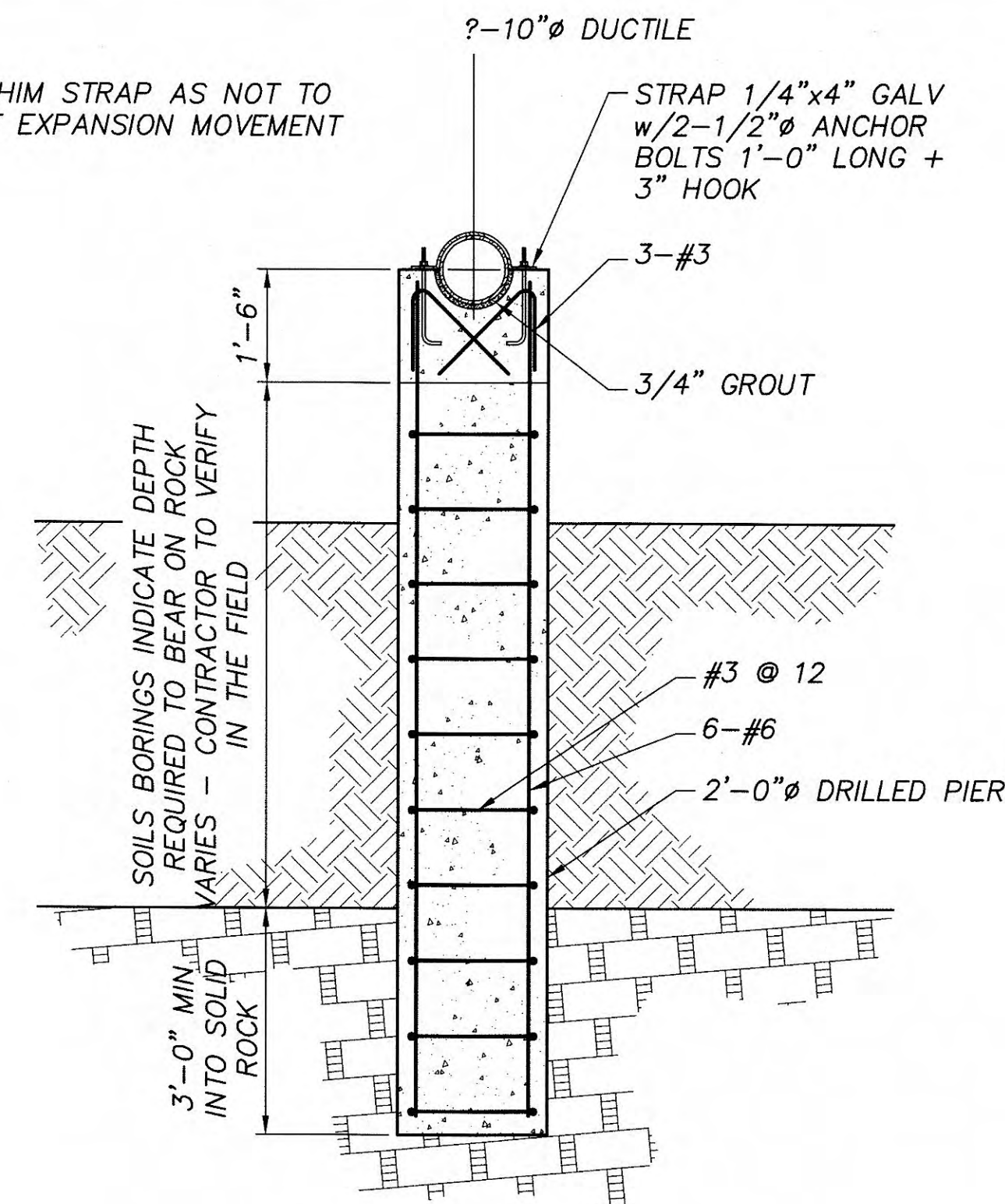


PLAN VIEW
SCALE: 1" = 10'



PROFILE
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'

NOTE: SHIM STRAP AS NOT TO PREVENT EXPANSION MOVEMENT OF PIPE

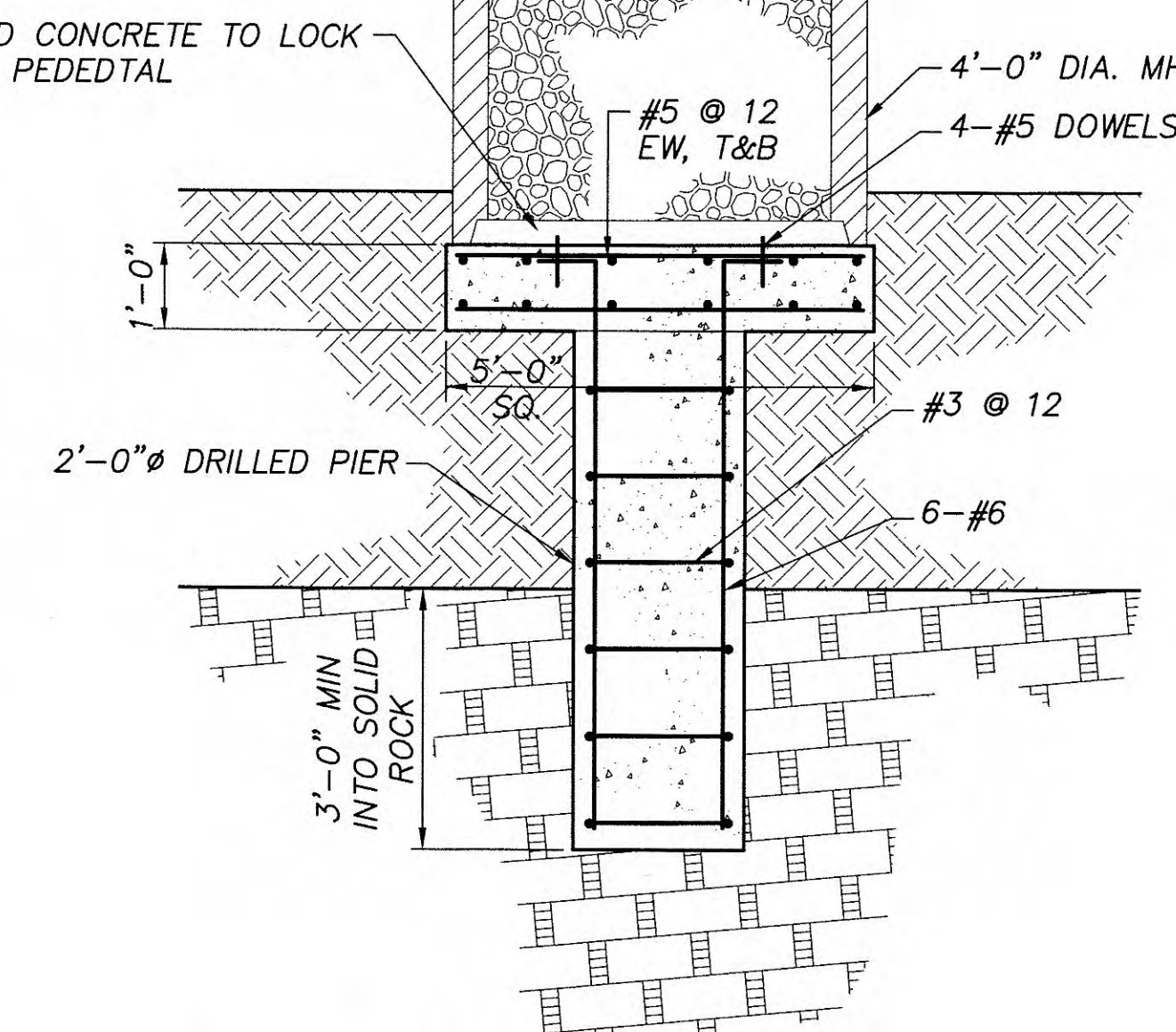


SECTION
SCALE: 1/2" = 1'-0"

FORM INVERT IN MANHOLE, PROVIDE 0.10' DROP THROUGH MH. SEE PROFILE FOR INVERT ELEVATIONS

FILL MANHOLE WITH GRAVEL

POURED CONCRETE TO LOCK MH TO PEDESTAL



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

PRECAST MANHOLE WALL

10" DIP S.S.

GREASE PIPE BEFORE GROUTING TO ALLOW EXPANSION MOVEMENT IN PIPE

INSIDE MH

GROUT W/ NON SHRINK EPOXY GROUT FOR PIPE SUPPORT

ELEVATED MANHOLE CONNECTION DETAIL
SCALE: 3/4" = 1'-0"

GRW PROJECT NO. 3401-01

CLIENT PROJECT NO. S07-01

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ENGINEERS - ARCHITECTS - PLANNERS

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PLAN AND PROFILE SHEET

MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION

HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED		DRAWN		REVIEWED		APPROVED	
NO.	DATE	BY	DATE	BY	DATE	BY	DATE
1	6/07	SG					

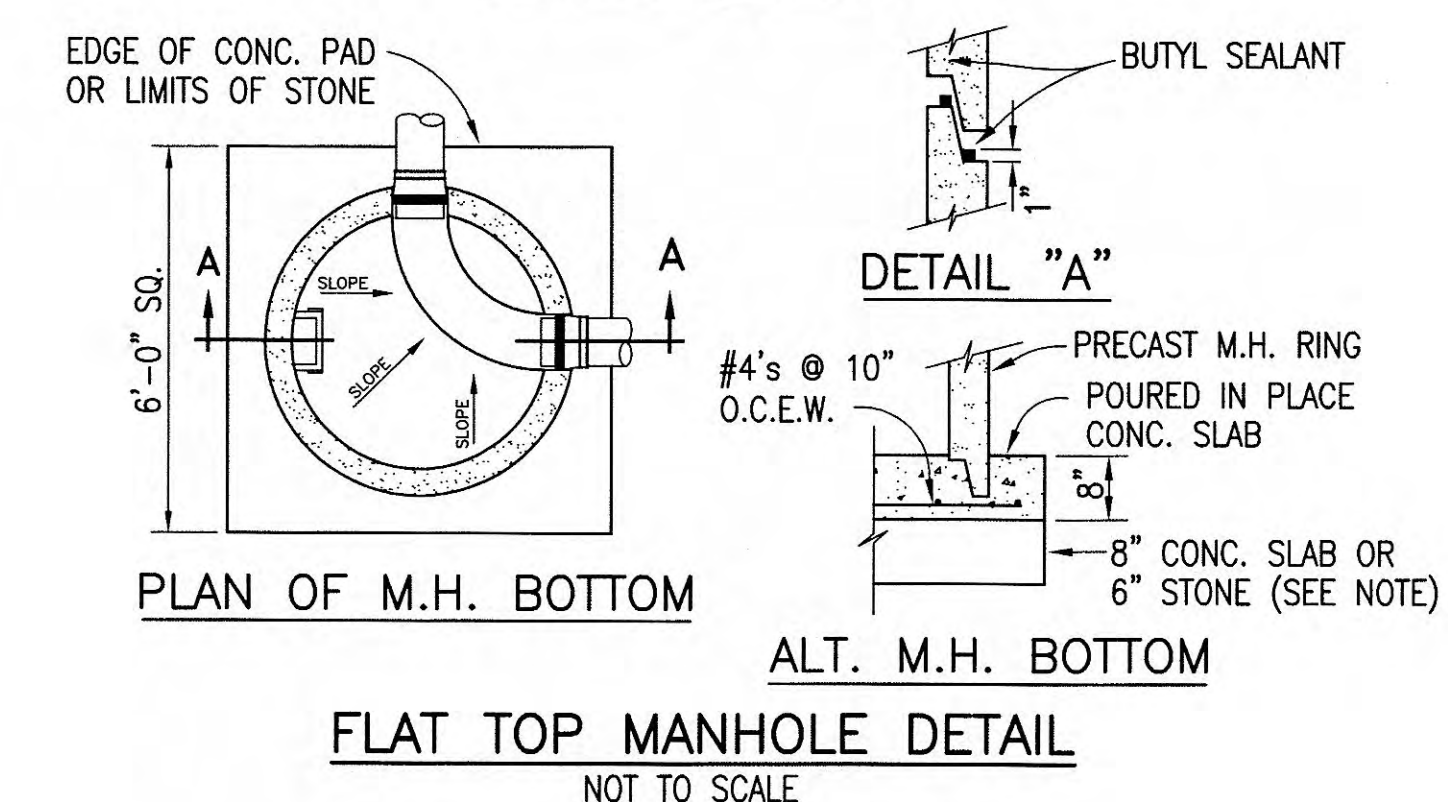
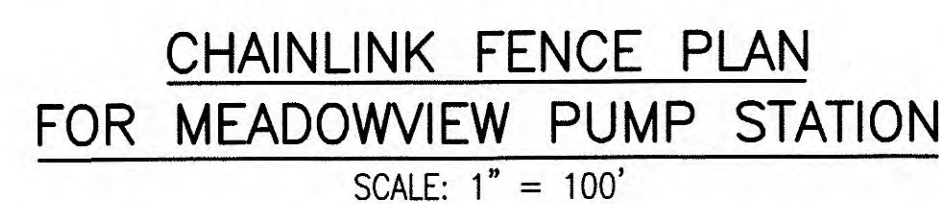
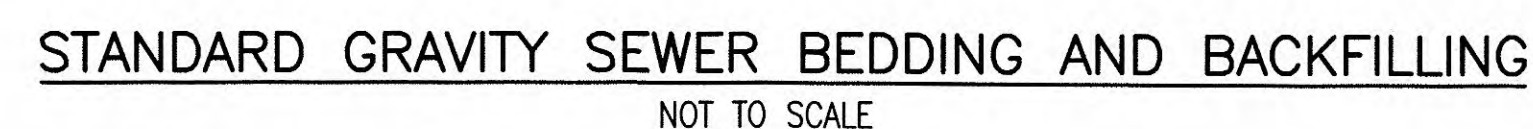
DATE: JUNE, 2007

SCALE: VARIES

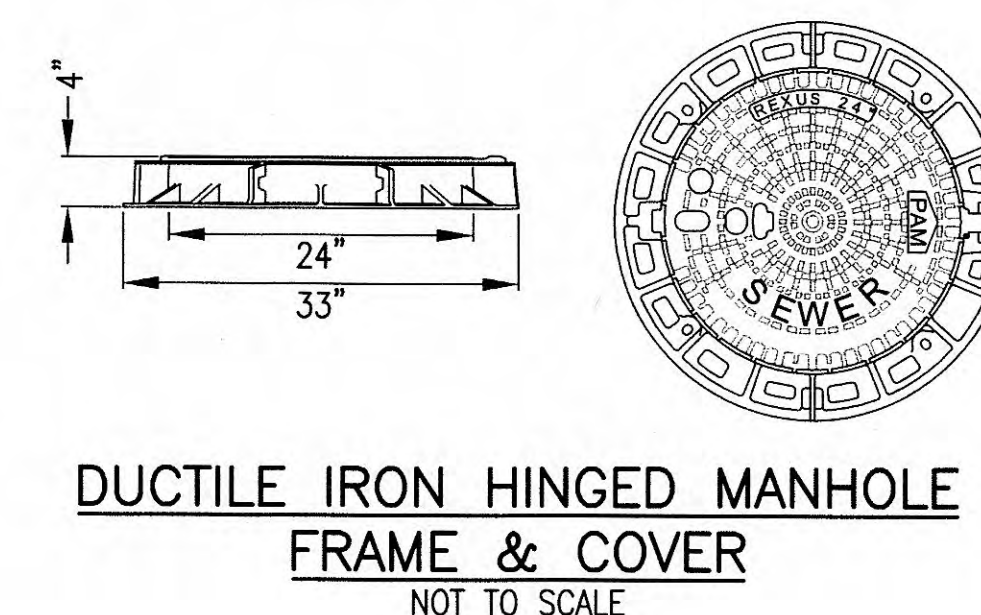
SHEET NO.

C-4

FILE NAME: I:\Harriman UB - 3401 - CDBG2006\CADD\Bid Drawings\3401-01_C05.dwg



- FRAME WEIGHT: 64 LBS.
COVER WEIGHT: 91 LBS.
TOTAL WEIGHT: 155 LBS.
REFERENCE NUMBER: RE 60 R8 FD

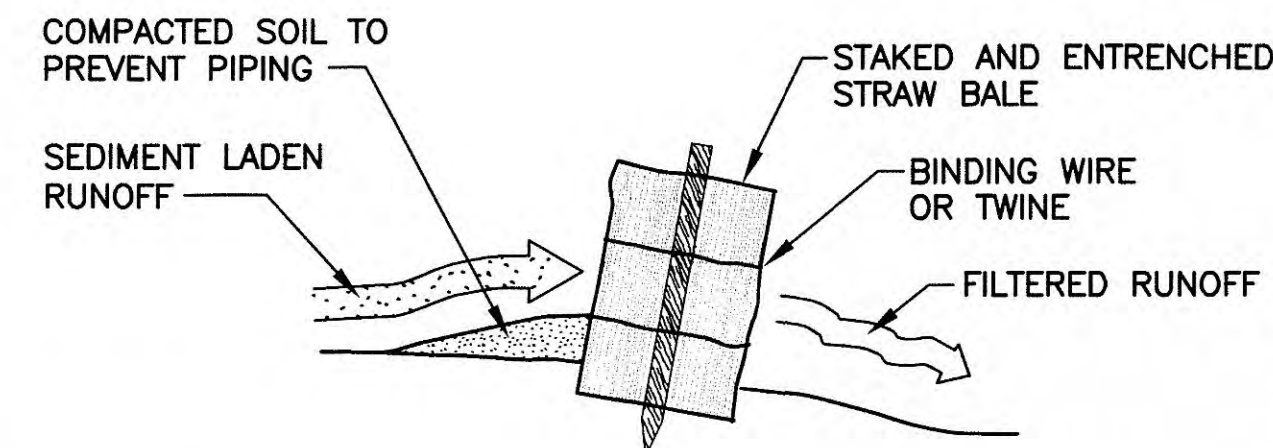
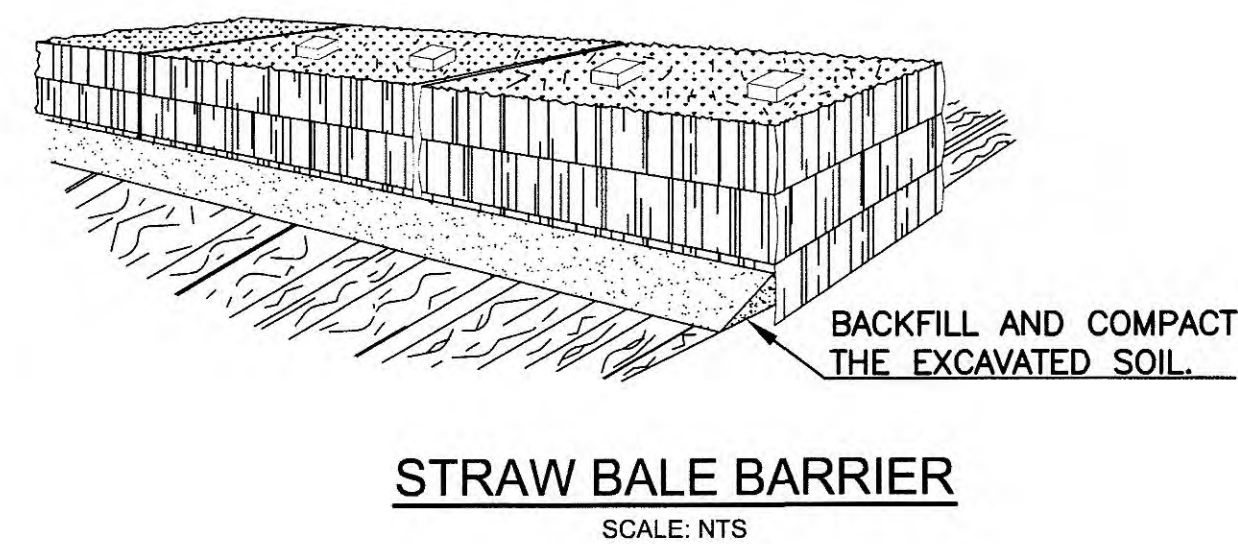
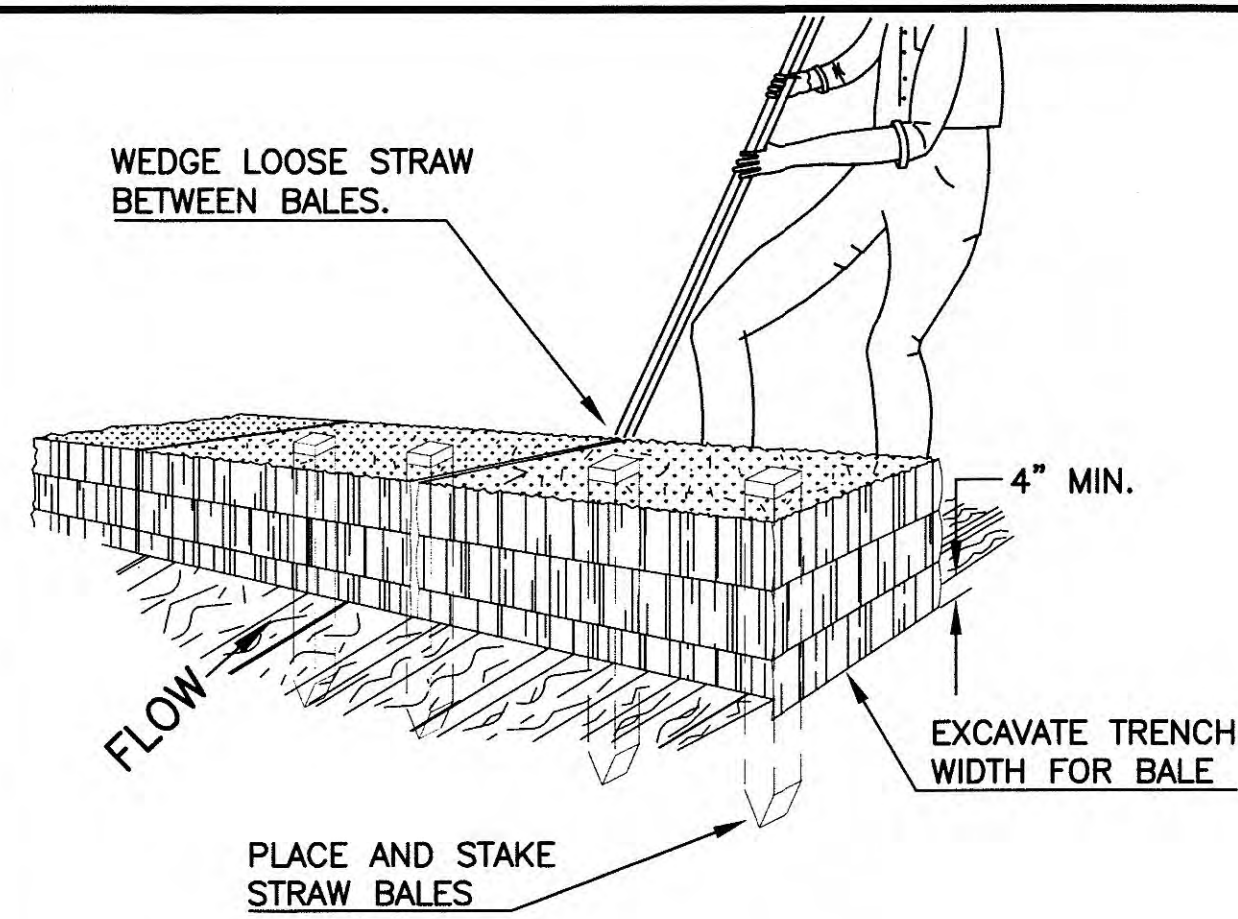


MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

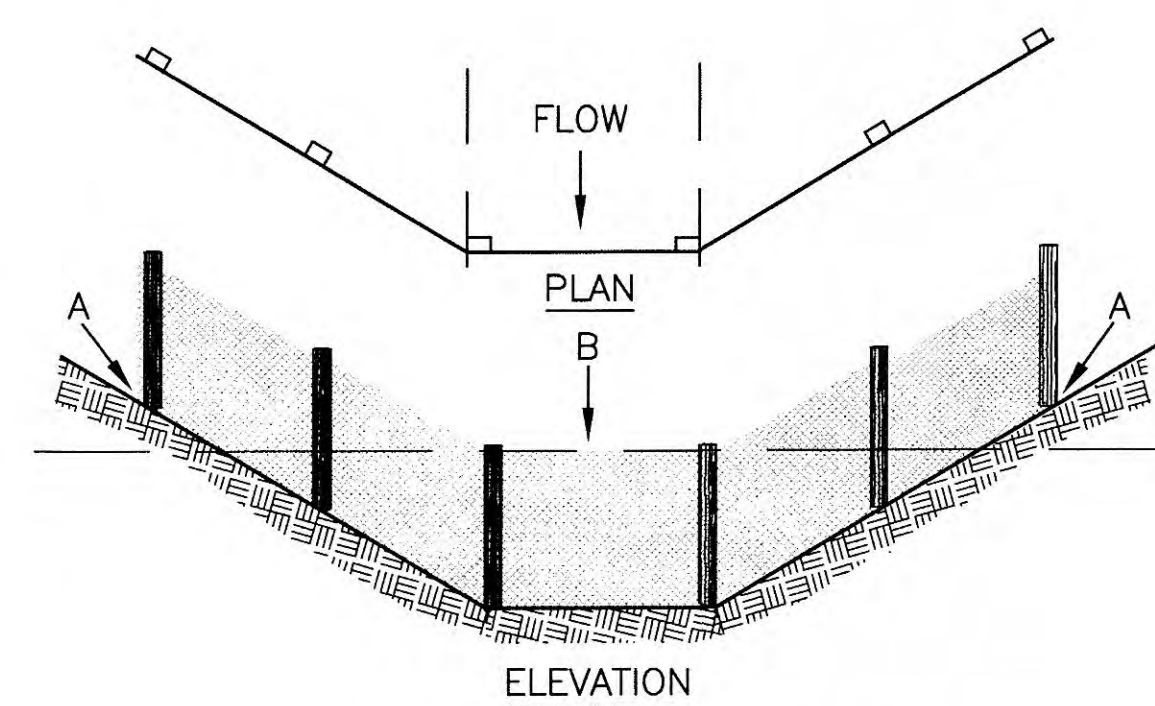
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NO.	DESCRIPTION	DATE	BY	28MANN	SG
				REVIEWED:	SGO
				APPROVED:	SGO

DATE:	JUNE, 2007
SCALE:	AS NOTED
SHEET NO.	

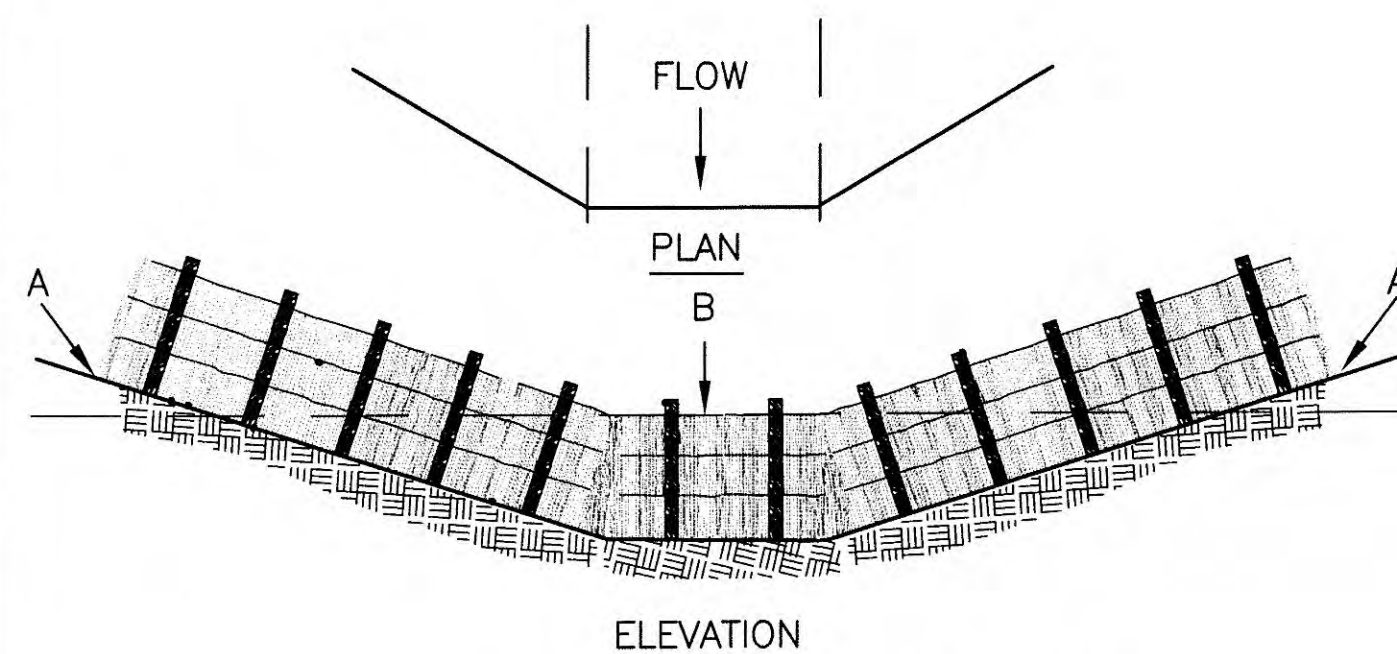
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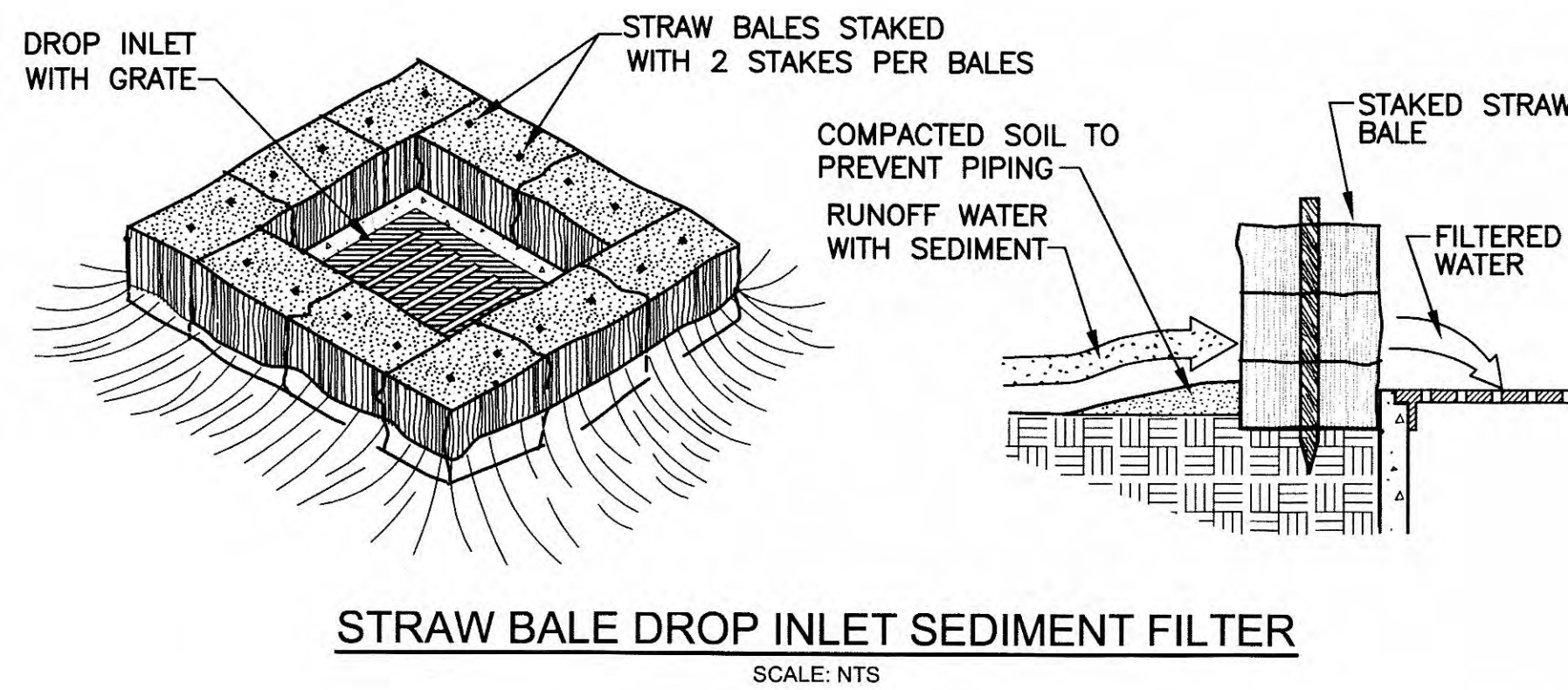
STRAW BALE INSTALLATION PROCEDURES
SCALE: NTS



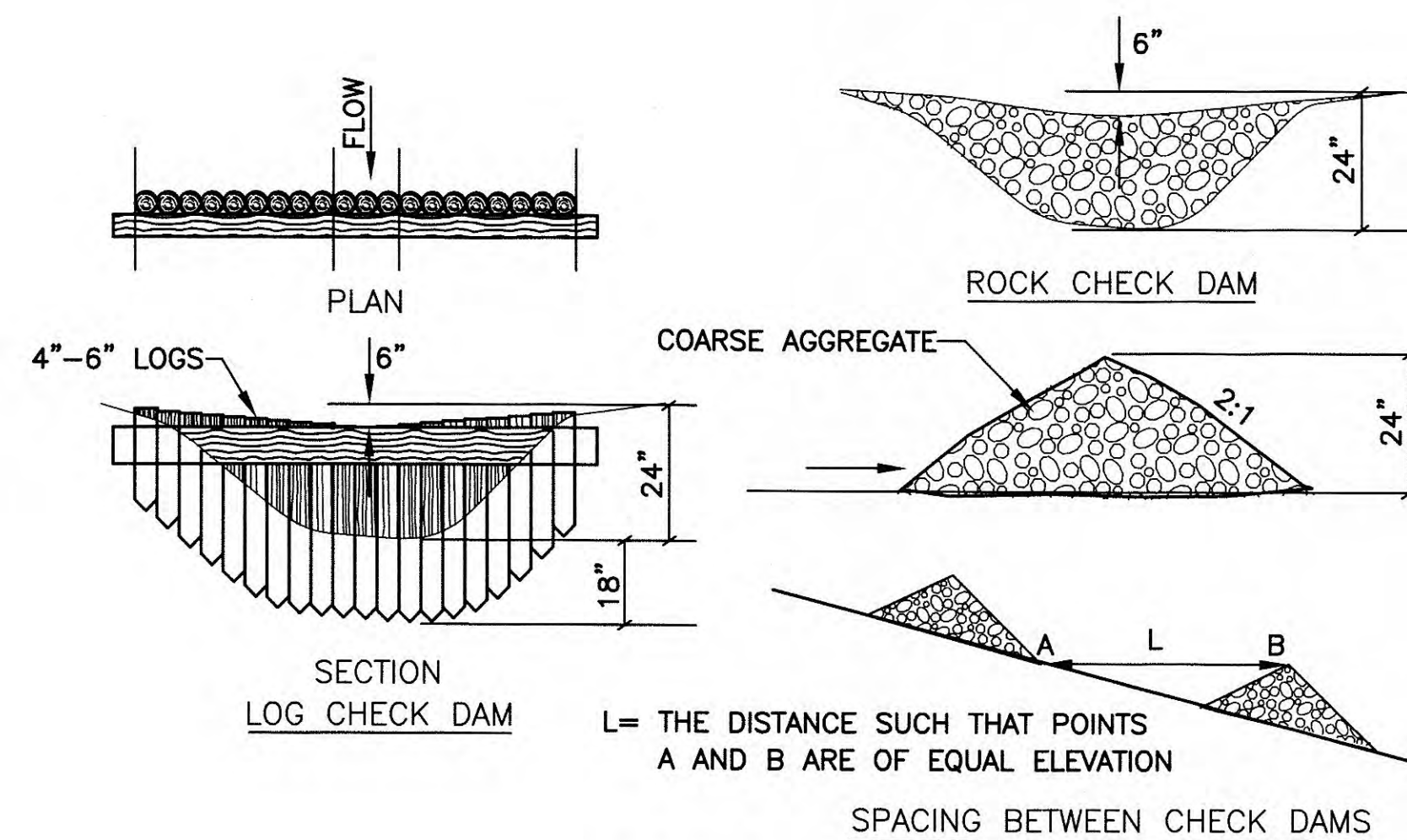
POINT A SHOULD BE HIGHER THAN POINT B
PLACEMENT OF FILTER BARRIER
SCALE: NTS



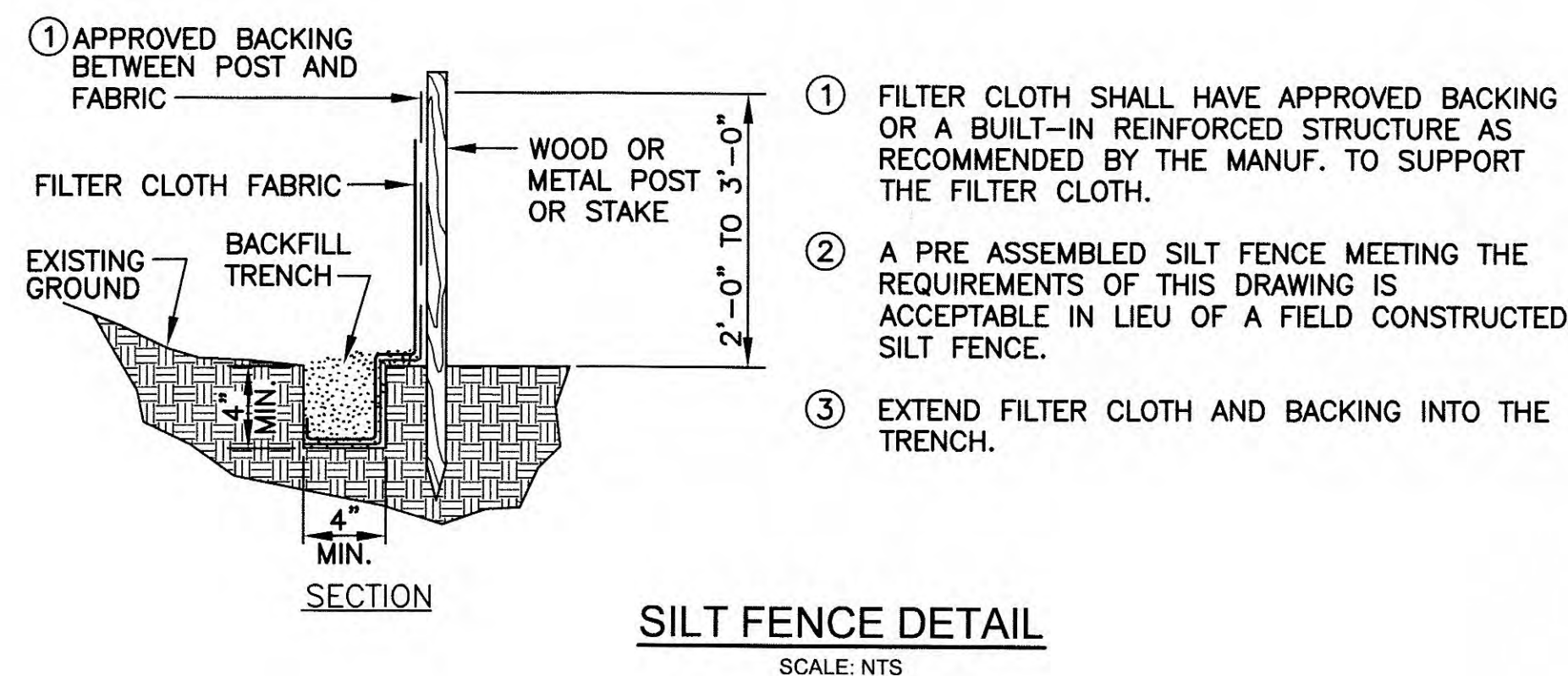
PLACEMENT OF STRAW BALE BARRIER
SCALE: NTS



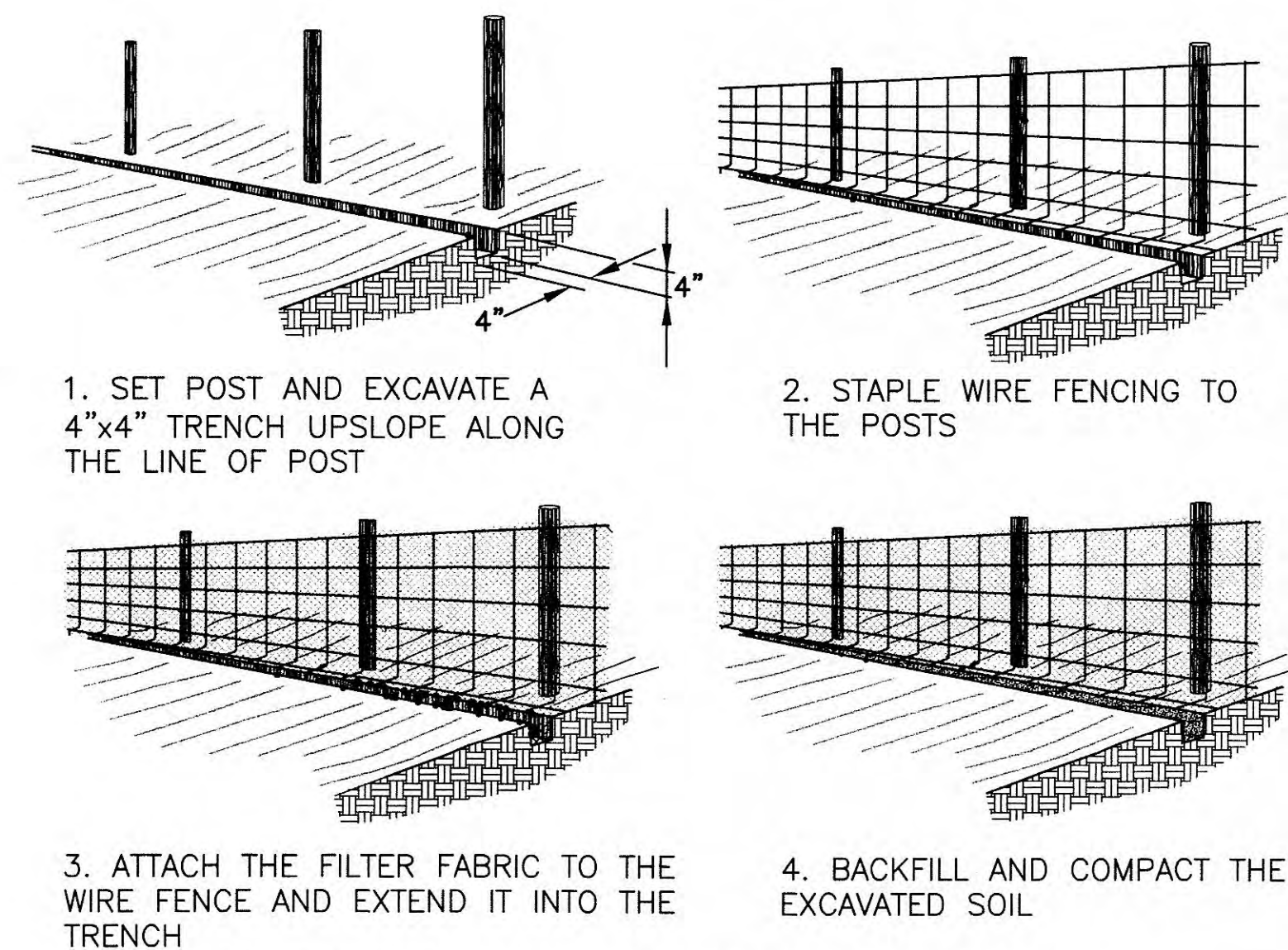
STRAW BALE DROP INLET SEDIMENT FILTER
SCALE: NTS



CHECK DAM DETAILS
SCALE: NTS



SILT FENCE DETAIL
SCALE: NTS



SILT FENCE CONSTRUCTION PROCEDURES
SCALE: NTS

MINIMUM TOP WIDTH (W) REQUIRED FOR SEDIMENT TRAP EMBANKMENTS ACCORDING TO HEIGHT OF EMBANKMENT (FEET)

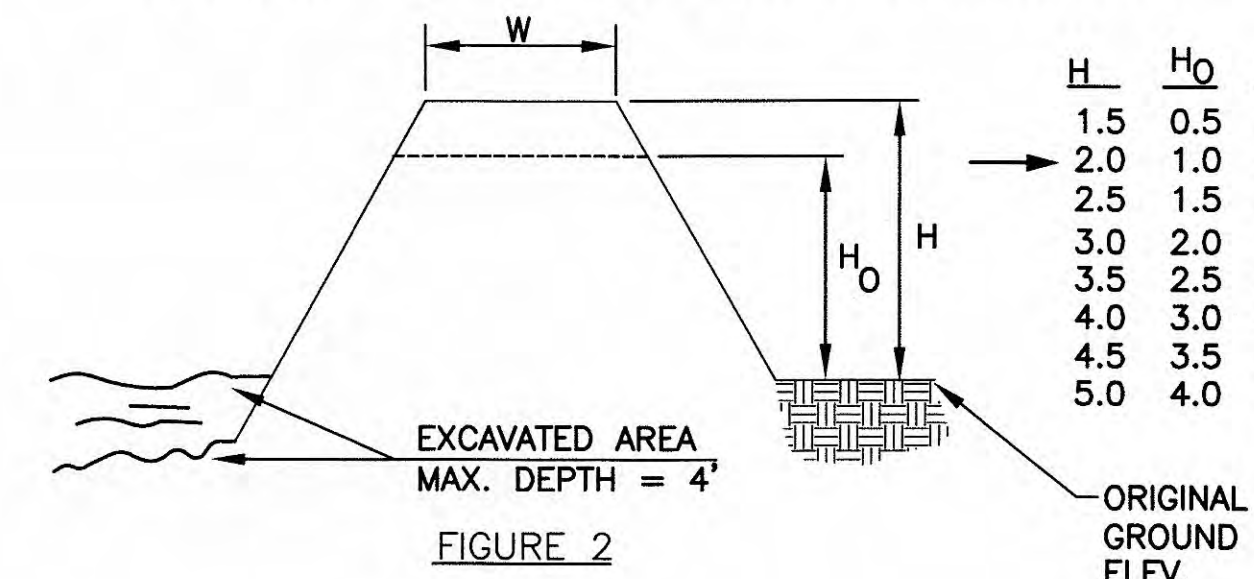
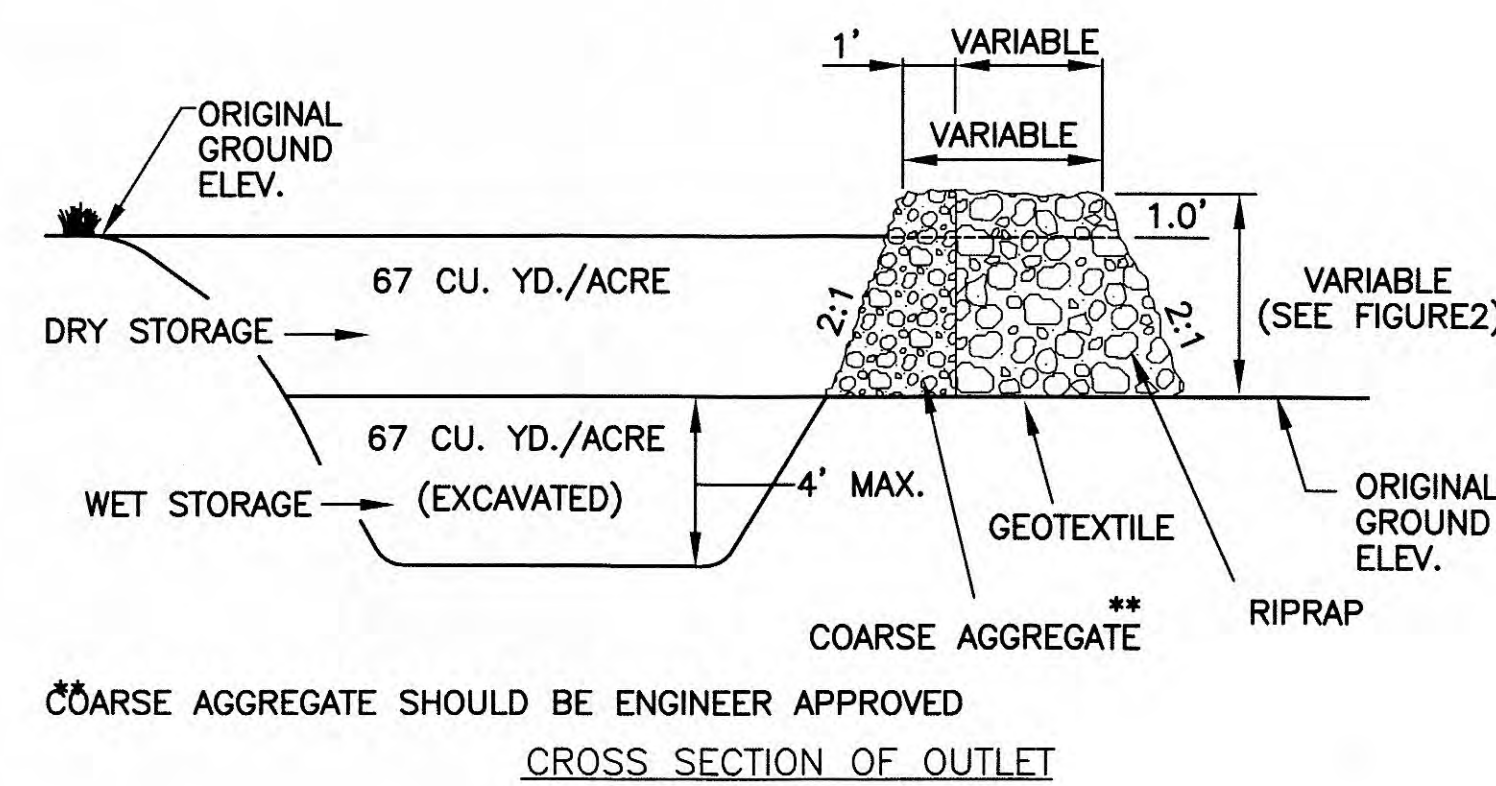
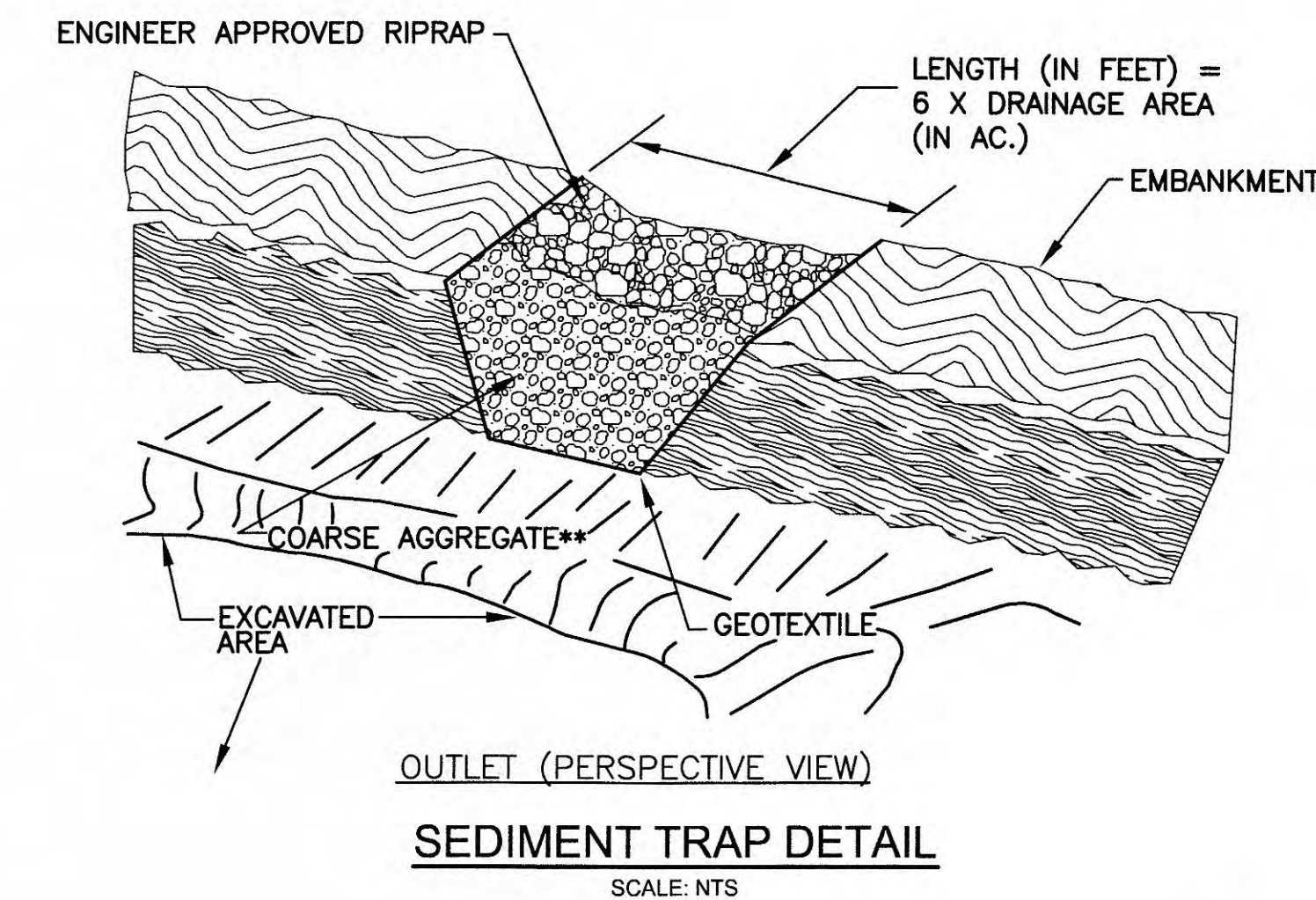


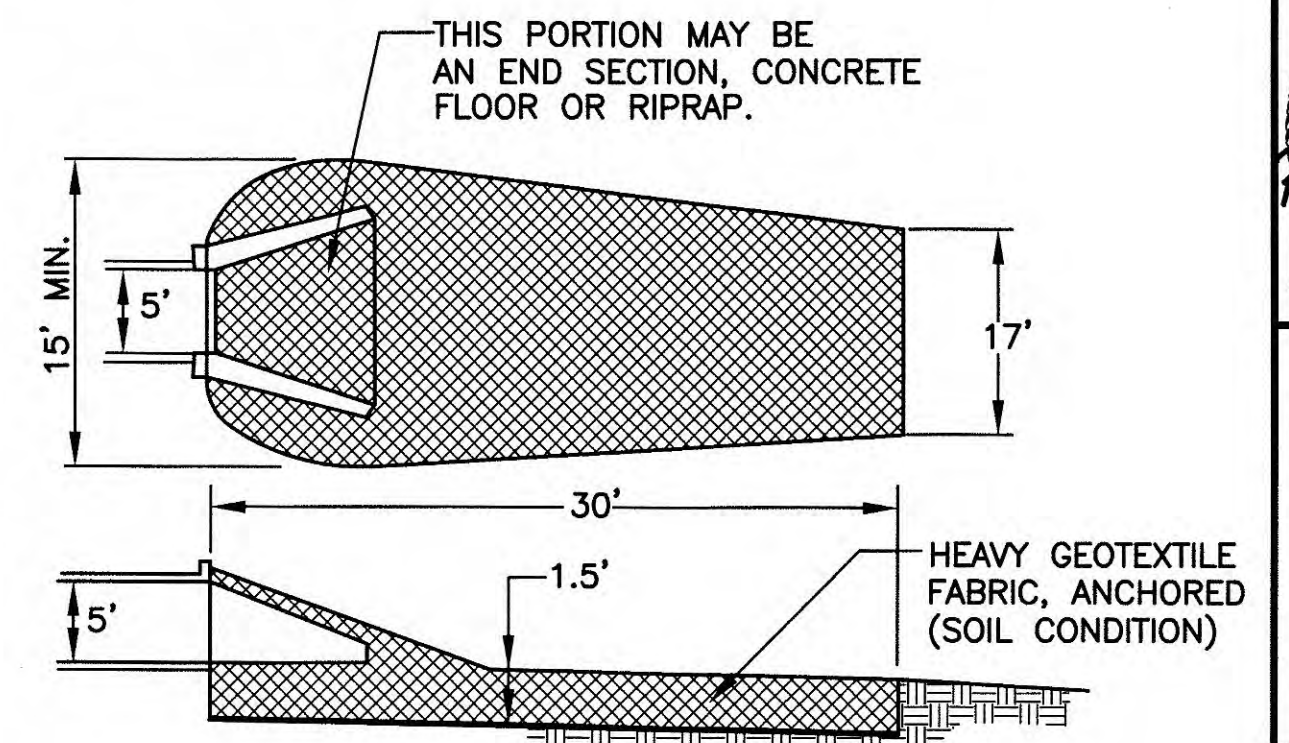
FIGURE 2



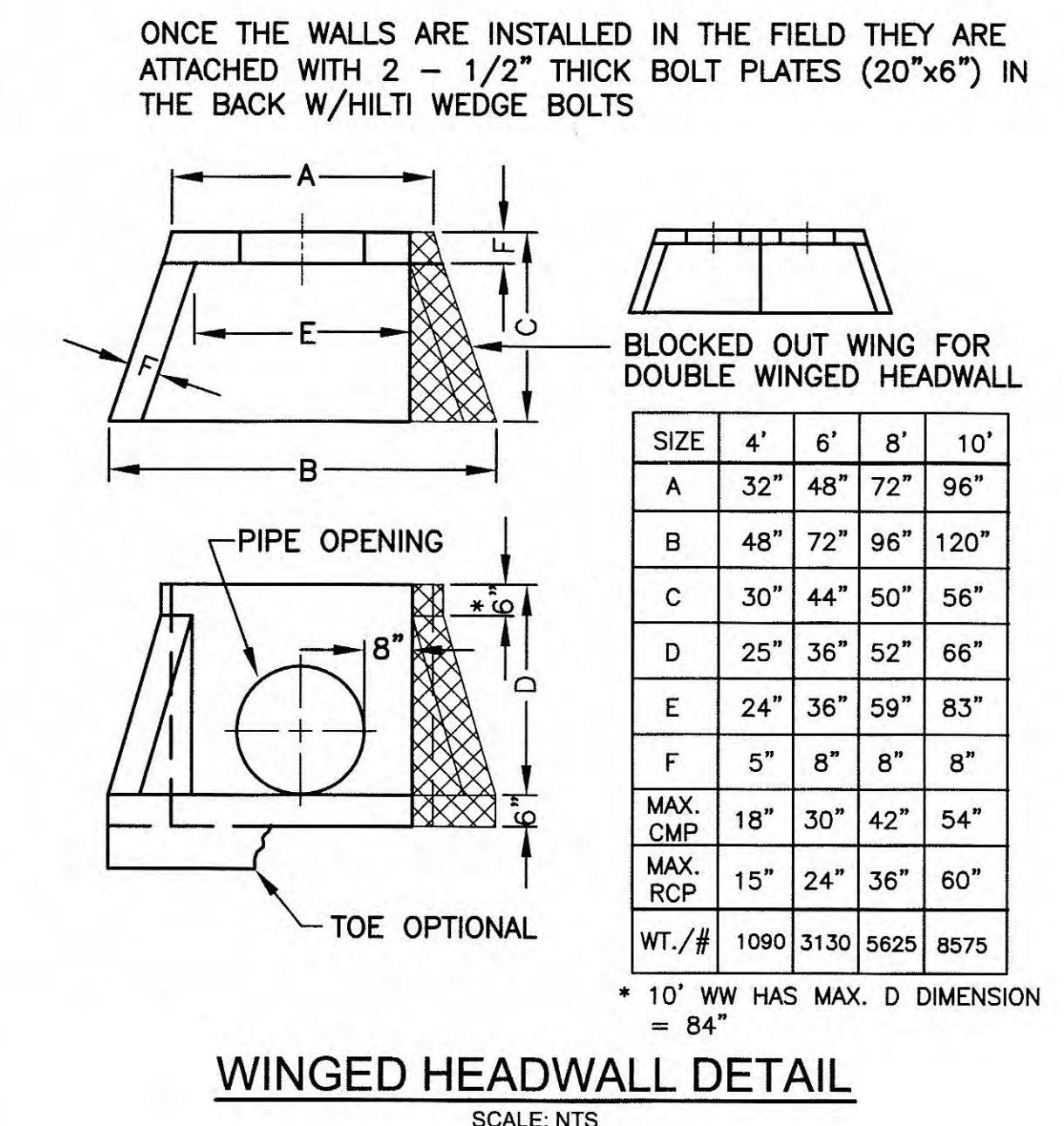
CROSS SECTION OF OUTLET



OUTLET (PERSPECTIVE VIEW)
SEDIMENT TRAP DETAIL
SCALE: NTS



RIPRAP OUTLET PROTECTION DETAIL
SCALE: NTS



WINGED HEADWALL DETAIL
SCALE: NTS

SIZE	4'	6'	8'	10'
A	32"	48"	72"	96"
B	48"	72"	96"	120"
C	30"	44"	50"	56"
D	25"	36"	52"	66"
E	24"	36"	59"	83"
F	5"	8"	8"	8"
MAX. CMP	18"	30"	42"	54"
MAX. RCP	15"	24"	36"	60"
WT./#	1090	3130	5625	8575

* 10' WW HAS MAX. D DIMENSION = 84"

NOTES:

1. MAXIMUM SLOPE HEIGHT BETWEEN TERRACES SHALL BE 30 FEET FOR CUT SLOPES AND 25 FEET FILL SLOPES.
2. TERRACE WIDTH(S) SHOULD BE AT LEAST 6 FEET WIDE. DESIGN TERRACE DITCHES TO DRAIN AT NON-EROSIVE VELOCITIES.
3. TERRACED SLOPES SHOULD BE DESIGNED BY A PROFESSIONAL, BASED UPON ACTUAL SITE CONDITIONS.

TERRACED SLOPE DETAIL
SCALE: NTS

CALL BEFORE YOU DIG
TENNESSEE ONE CALL SYSTEM
IN
TENNESSEE
CALL
1-800-351-1111
THREE WORKING DAYS BEFORE YOU DIG
IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT UTILITY COMPANIES PRIOR TO ANY CONSTRUCTION. THE LOCATION OF UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND POSSIBLY INCOMPLETE. THEREFORE CERTIFICATION TO THE LOCATION OF ALL UNDERGROUND UTILITIES IS WITHHELD.

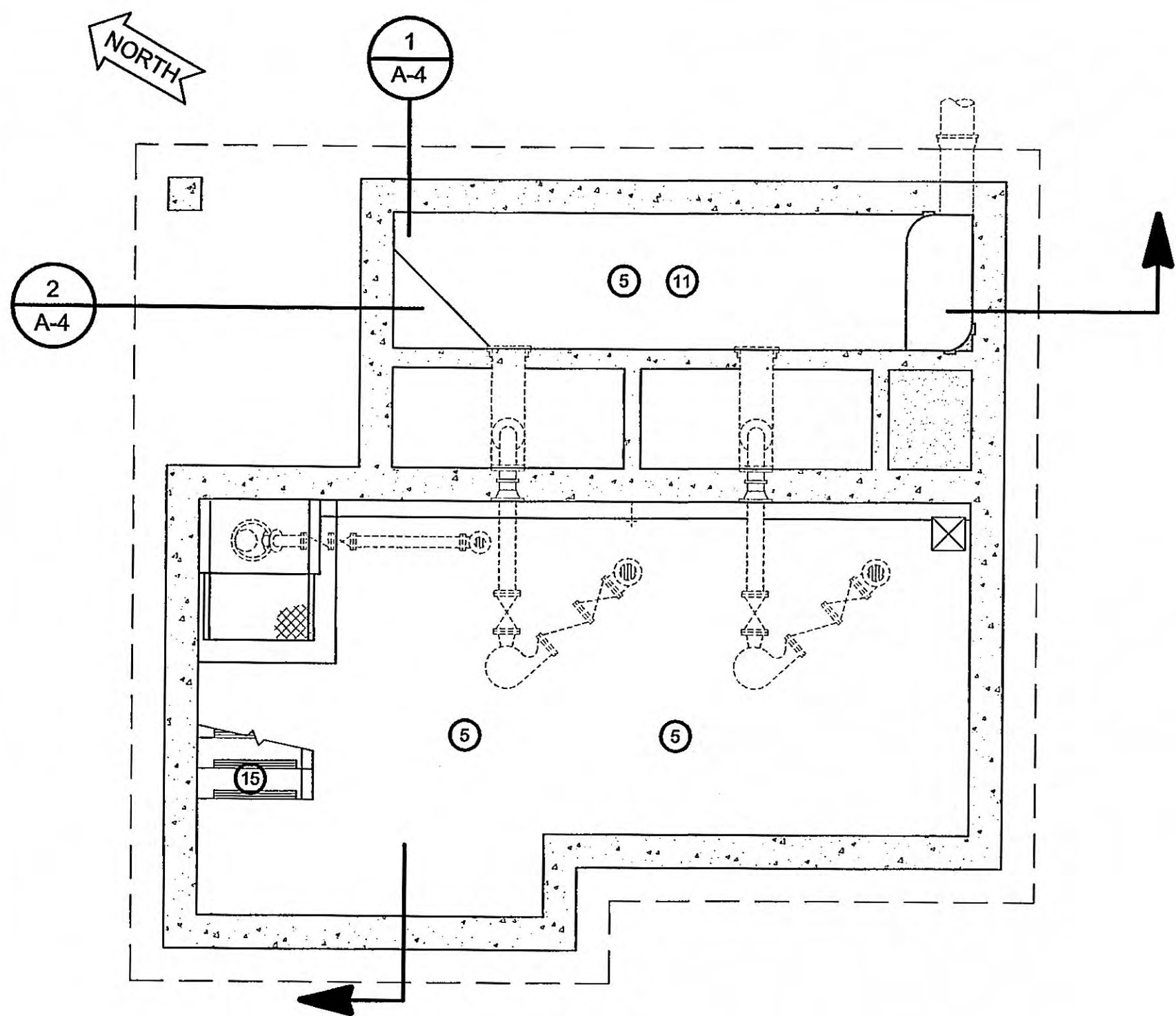
EROSION CONTROL STANDARD DETAILS
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNED: RGT
DRAWN: SG
REVIEWED: RGT
APPROVED: RGT

DATE: JUNE, 2007
SCALE: AS NOTED
SHEET NO. C-6

PRINTED: 6/7/2007 @ 9:17AM

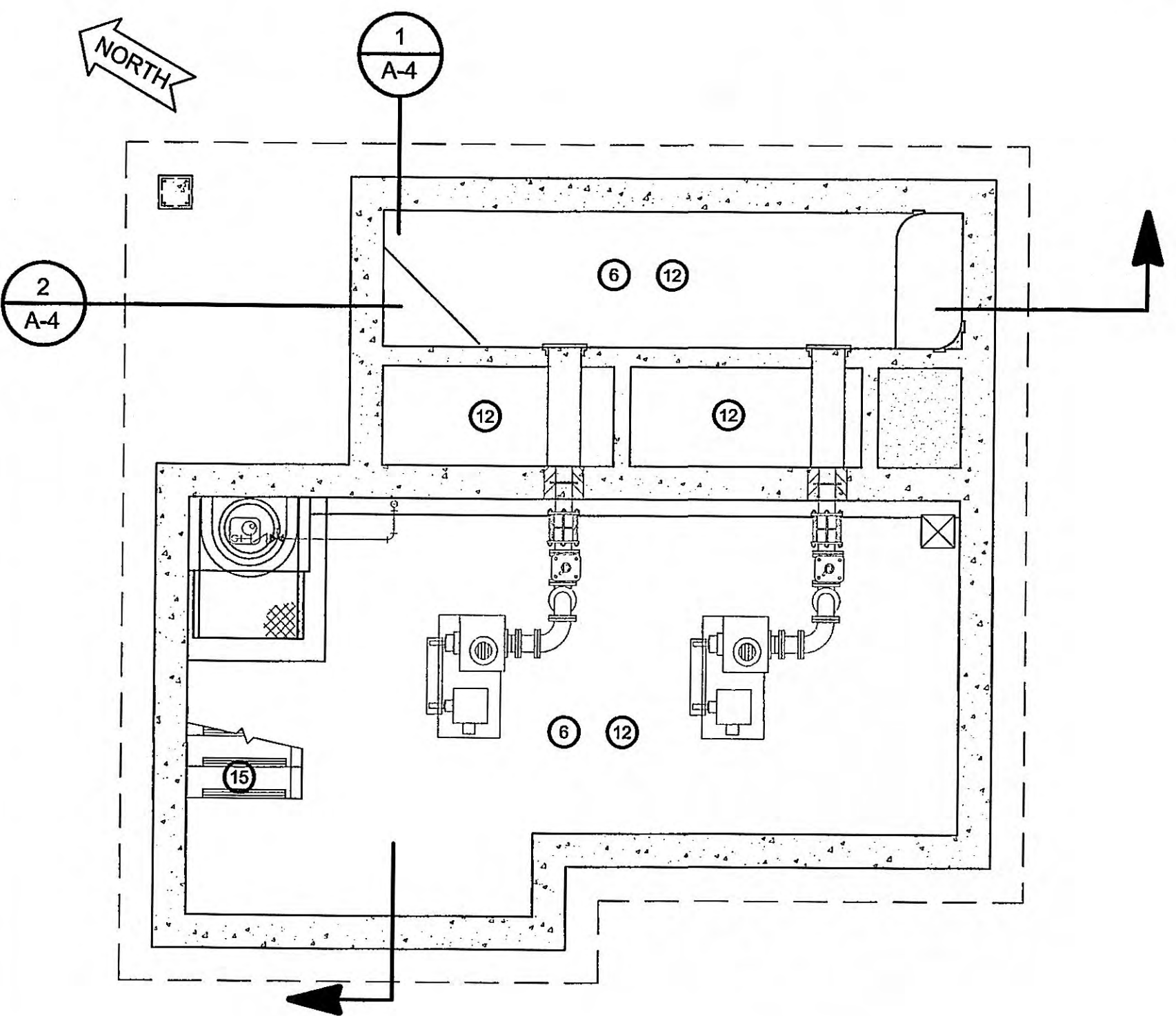
FILE NAME: U:\3401\1\Card\WORKING\3401-01_A01.dwg



EXISTING FLOOR PLAN- PUMP LEVEL

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

1
A-1



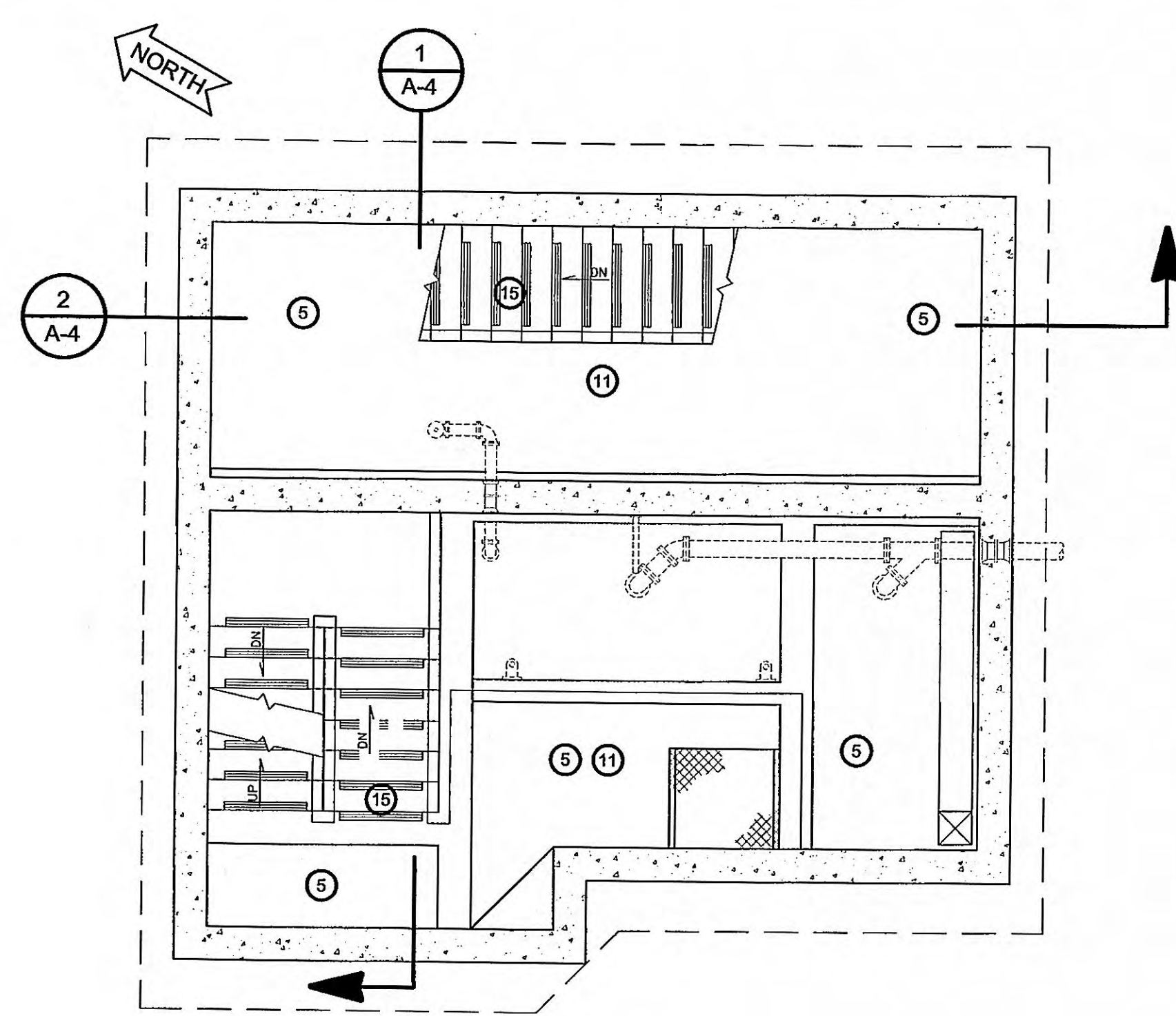
MODIFIED FLOOR PLAN- PUMP LEVEL

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

4
A-1

KEYNOTES

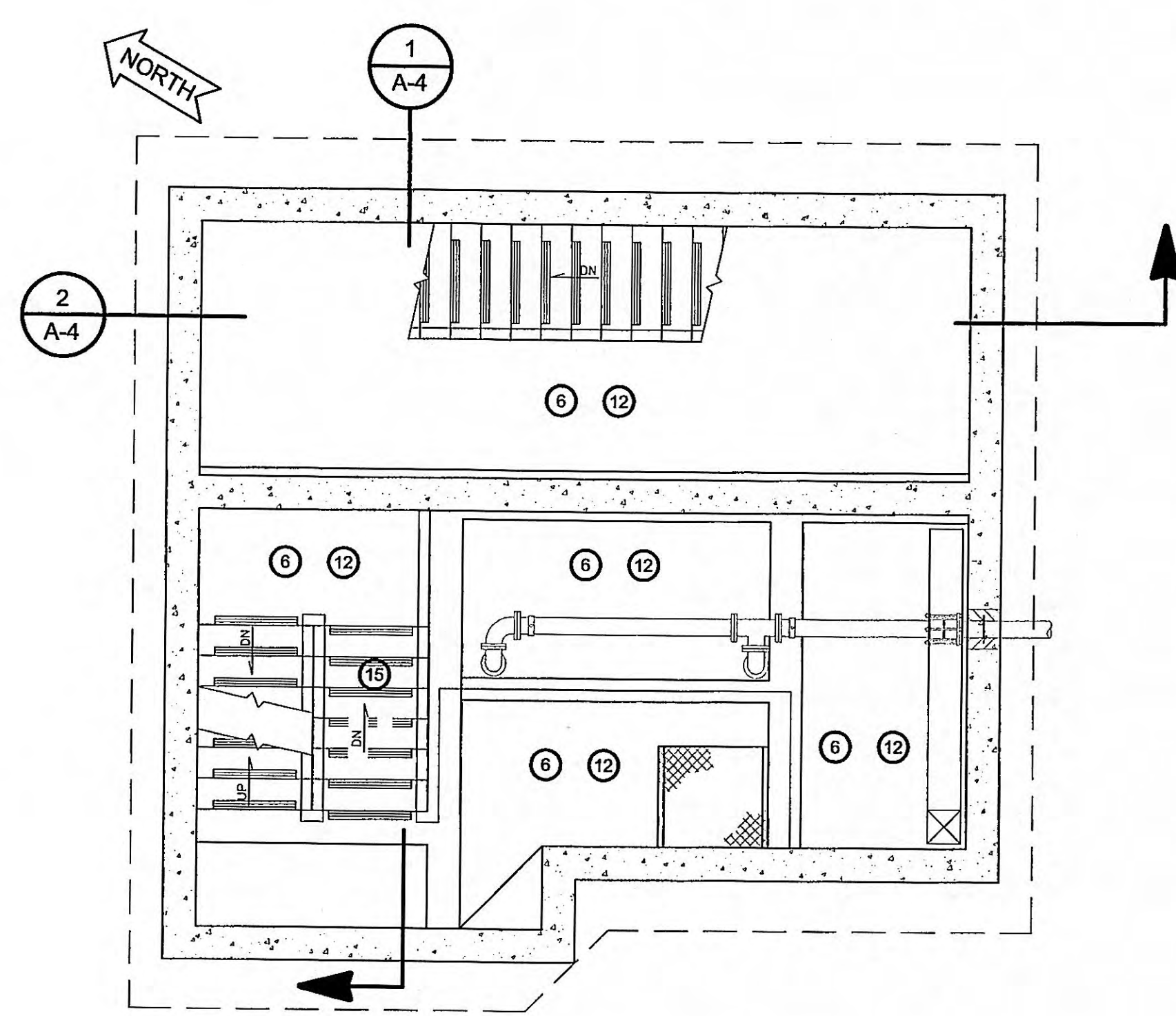
- 1 EXISTING BRICK COMPOSITE WALL.
- 2 EXISTING DOOR AND FRAME TO BE REMOVED. REMOVE EXISTING SILL. PATCH OPENING AS REQUIRED TO RECEIVE NEW DOOR AND FRAME.
- 3 EXISTING WINDOWS TO BE REMOVED. PATCH OPENING AS REQUIRED TO RECEIVE NEW WINDOWS.
- 4 EXISTING EXTERIOR WALLS TO BE CLEANED AND SEALER APPLIED. SEE SPEC SECTIONS 04500 AND 07190.
- 5 SANDBLAST EXISTING INTERIOR WALLS, STAIRS, RAILINGS AND CEILINGS AT ALL LEVELS, AND PREP FOR PAINTING. DO NOT SANDBLAST RESERVOIR AT WET WELL SIDE. Why?
- 6 PAINT INTERIOR WALLS, CEILINGS, STAIRS, RAILINGS, DOORS, AND FRAMES. DO NOT PAINT WET WELL RESERVOIR.
- 7 ALL CRACKS IN MORTAR JOINTS TO BE REPOINTED.
- 8 PROVIDE NEW OUT-SWINGING FLOOD DOOR WITH NEW FRAME. VERIFY MASONRY OPENING. SEE SPECS. PAINT.



EXISTING FLOOR PLAN AT ELEVATION 751.14

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

2
A-1

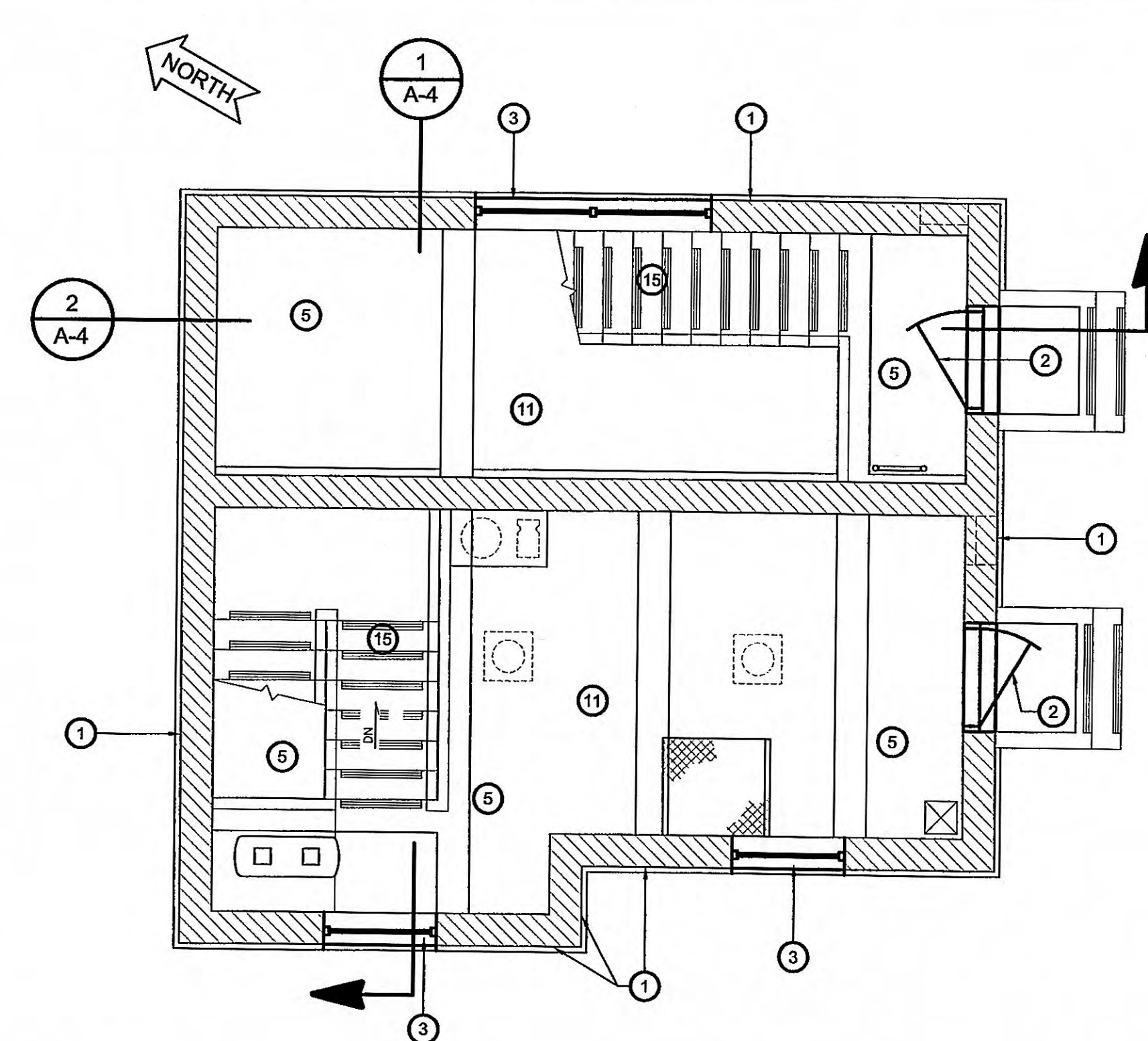


MODIFIED FLOOR PLAN AT ELEVATION 751.14

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

5
A-1

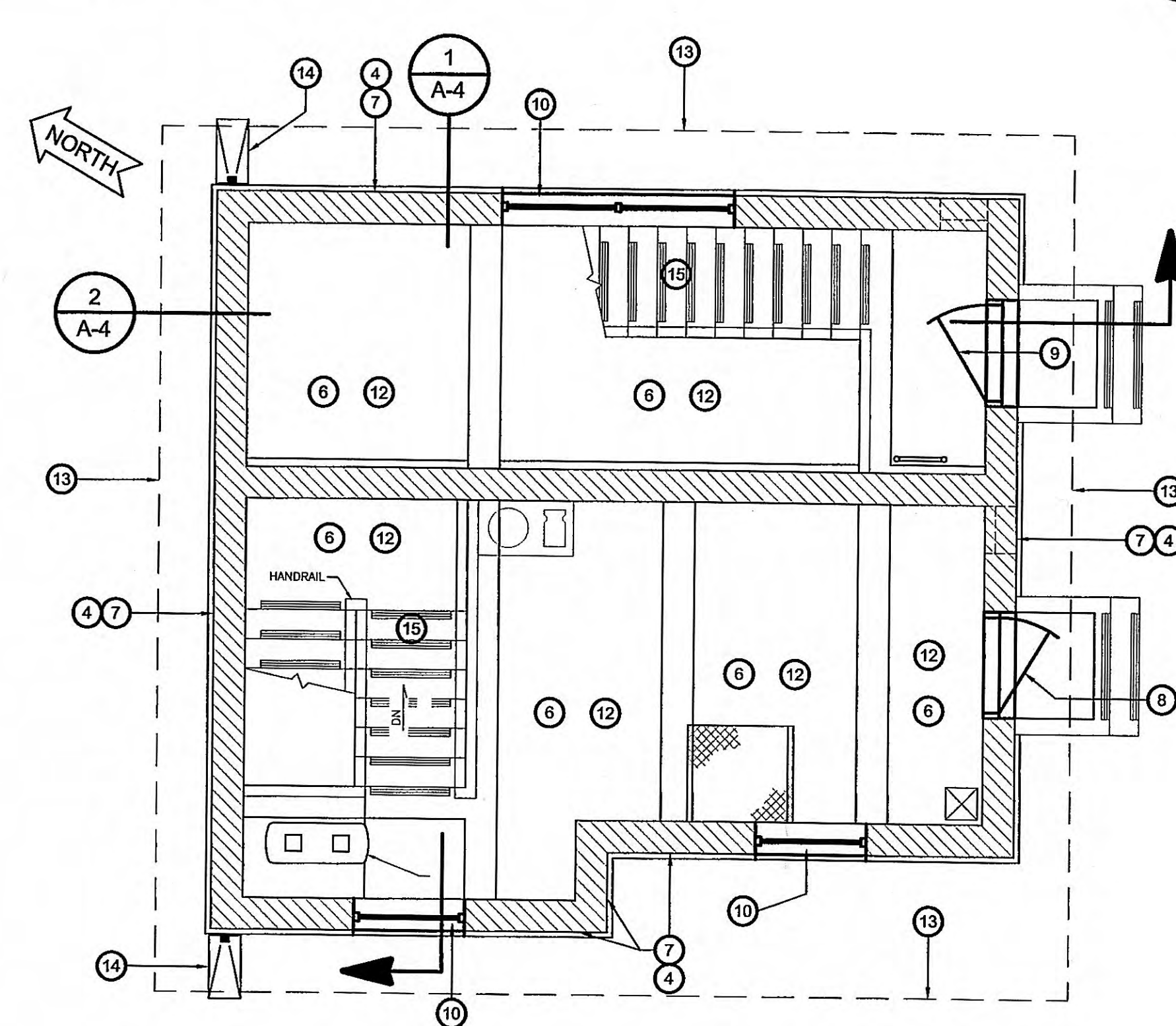
- 9 PROVIDE NEW IN-SWINGING FIBERGLASS DOOR AND FRAME. VERIFY MASONRY OPENING. SEE SPEC & DETAIL 4/A-5. PAINT.
- 10 PROVIDE NEW WINDOWS (FIELD VERIFY SIZE AND CONFIGURATION)-SEE DETAIL 3/A-5.
- 11 REMOVE ALL EXISTING GRATINGS AT ALL LEVELS, TYP. THROUGHOUT.
- 12 PROVIDE NEW GRATINGS TO REPLACE EXISTING GRATINGS AT ALL LEVELS, TYP. THROUGHOUT. SEE SPEC.
- 13 NEW ROOF LINE ABOVE.
- 14 NEW 4"x4" DOWNSPOUT AND SPLASHBLOCK.
- 15 EXISTING STAIR AND RAILING TO REMAIN.



EXISTING FLOOR PLAN- ENTRANCE LEVEL

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

3
A-1



MODIFIED FLOOR PLAN- ENTRANCE LEVEL

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

6
A-1

EXISTING FLOOR PLANS
MODIFIED FLOOR PLANS

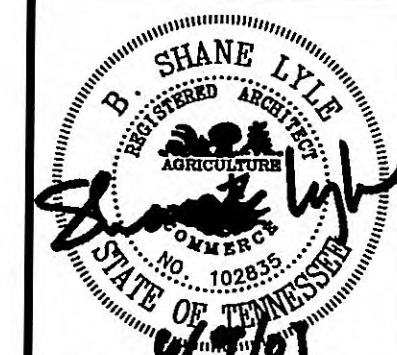
MEADOWVIEW DR. SEWAGE PUMP STATION REHABILITATION
HARRIMAN UTILITY BOARD - HARRIMAN, TENNESSEE

DESIGNER: XXX
DRAWN: JEE
REVIEWED: XXX
APPROVED: XXX

NO.	DATE	DESCRIPTION

DATE: JUNE 5, 2007
SCALE: 1/4" = 1'-0"
SHEET NO.

A-1



GRW PROJECT NO. 3401-01
CLIENT PROJECT NO. XXXX
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