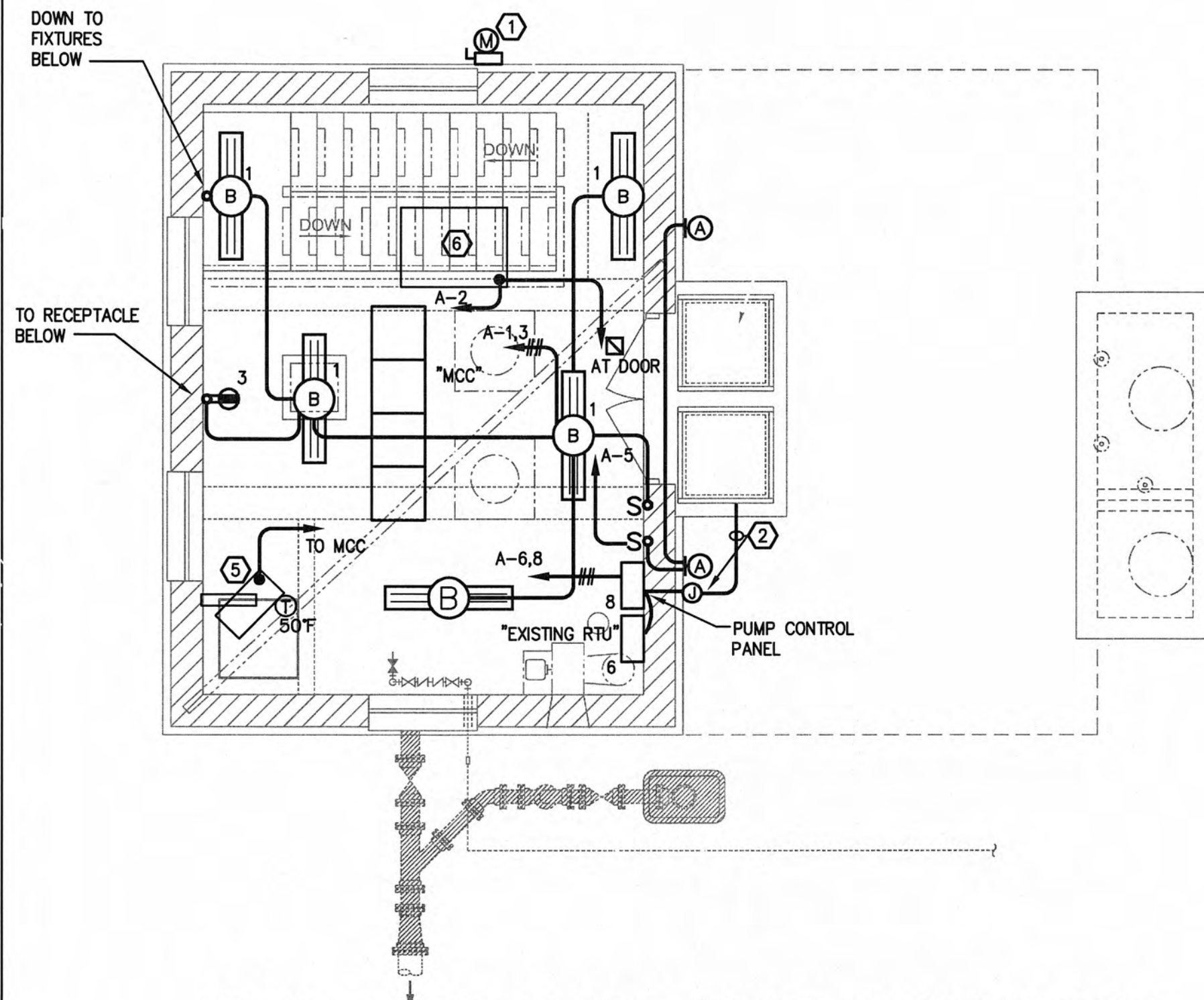




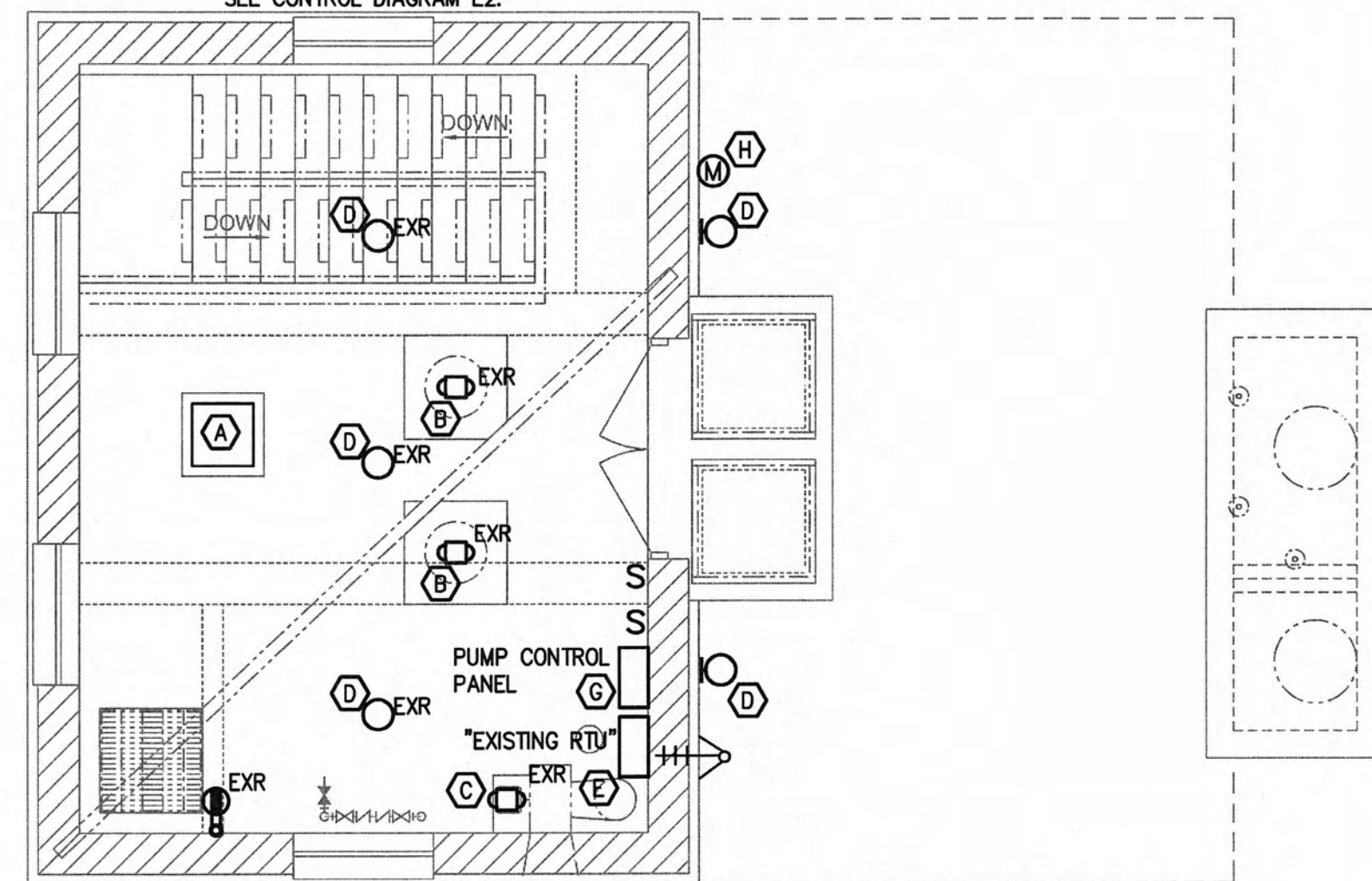
NEW WORK FLOOR PLAN - ENTRANCE

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

DRAWING NOTES:

- 1 LOCATION OF NEW ELECTRIC METER AND SERVICE DISCONNECT. SEE FEEDER DIAGRAM.
- 2 2" C, WITH FLOAT SWITCH AND PRESSURE TRANSDUCER. PROVIDE NEMA 4XSS JUNCTION BOX ON EXTERIOR OF BUILDING AND EXTEND UNDERGROUND TO WETWELL. PROVIDE BELL BUSHING ON CONDUIT PENETRATING WETWELL. SEAL OFF CONDUIT OUTSIDE OF WETWELL. INSTALL PER ARTICLE 500 OF NEC. PROVIDE STAINLESS STEEL SUPPORT BRACKET AND KELLUM STRAIN RELIEF CABLE GRIPS FOR CABLES.
- 3 PUMP DISCONNECT 30/3 NEMA 4XSS NON FUSED.
- 4 SUMP PUMP WITH NEMA 4XSS STARTER AND DISCONNECT 208V, 1PH. SEE CONTROL DIAGRAM E2.

- 5 UNIT HEATER 10KW, 480V, 3Ø, 3/4" C, 3#12, #12GND.
- 6 ERV, 2-1/2HP, 120V, 3/4" C, 2#10, #10GND. PROVIDE MANUAL MOTOR STARTER WITH OVERLOADS PER NAMEPLATE.



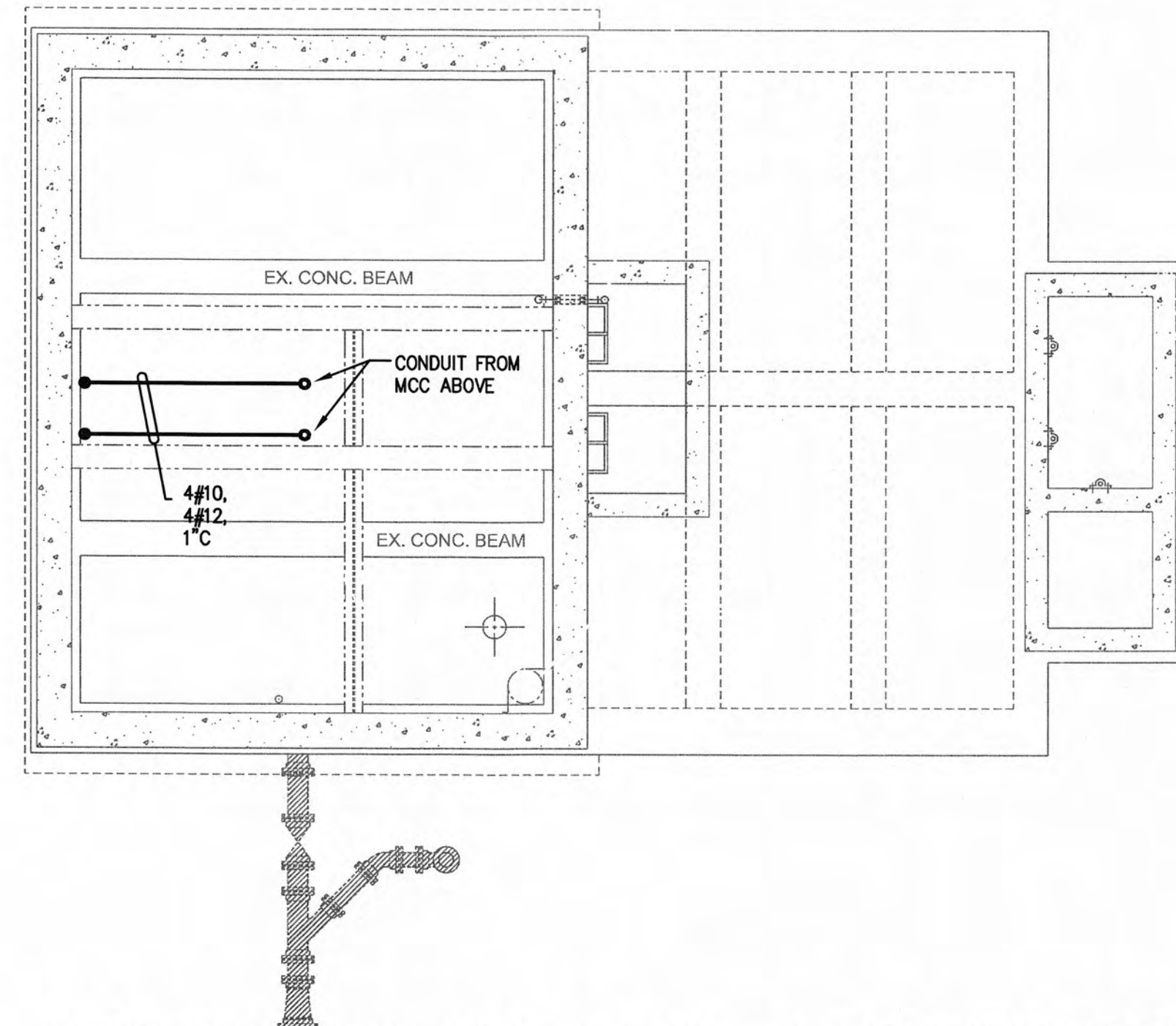
DEMOLITION FLOOR PLAN - ENTRANCE

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

DEMOLITION NOTES:

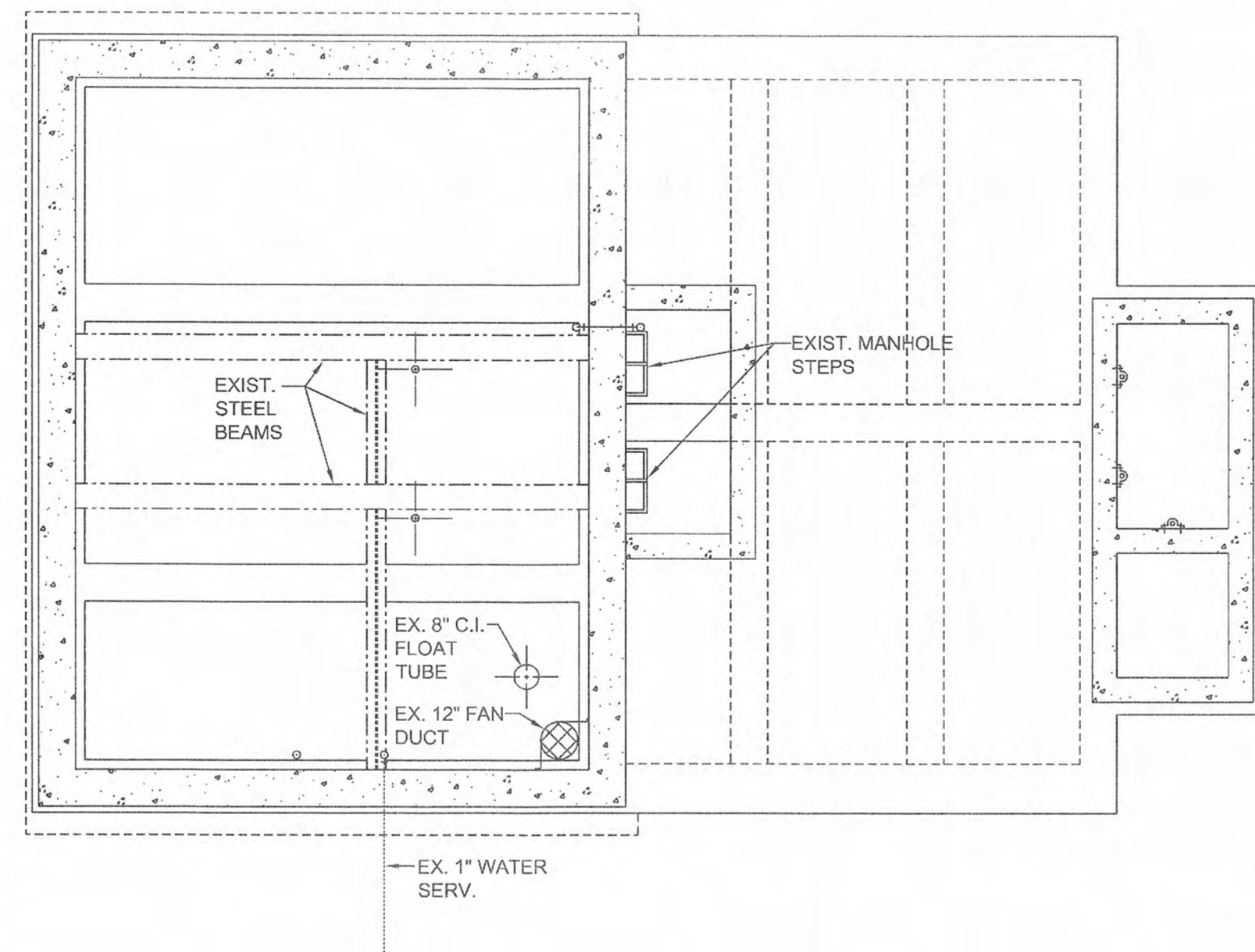
- A EXISTING MCC TO BE REMOVED AND REPLACED WITH NEW. REMOVE ALL ACCESSIBLE CONDUIT AND WIRING BACK TO SUPPLY SOURCE. ALL BRANCH WIRING FROM MCC TO BE REMOVED AND REPLACED WITH NEW.
- B EXISTING WASTEWATER PUMP MOTOR TO BE REMOVED AND REPLACED WITH NEW. REMOVE WIRING AND CONDUIT BACK TO SUPPLY SOURCE.
- C EXISTING EXHAUST FAN TO BE REMOVED AND REPLACED WITH NEW. REMOVE WIRING AND CONDUIT BACK TO SUPPLY SOURCE.
- D EXISTING LIGHTING TO BE REMOVED AND REPLACED WITH NEW. REMOVE WIRING AND ACCESSIBLE CONDUIT BACK TO SUPPLY SOURCE. PROVIDE NEW SWITCHES AS INDICATED.
- E EXISTING RTU TO REMAIN.
- F EXISTING SUMP PUMP TO BE REMOVED AND REPLACED WITH NEW. REMOVE STARTER, WIRING AND CONDUIT BACK TO SUPPLY SOURCE.

- G EXISTING PUMP CONTROL PANEL TO BE REPLACED.
- H EXISTING METER AND SECONDARY TO BE REPLACED WITH NEW. SEE FEEDER DIAGRAM AND SITE PLAN.
- I REMOTE HOA STATIONS TO BE REMOVED AND REPLACED WITH DISCONNECTS. REMOVED CONDUIT AND WIRING BACK TO SUPPLY SOURCE.



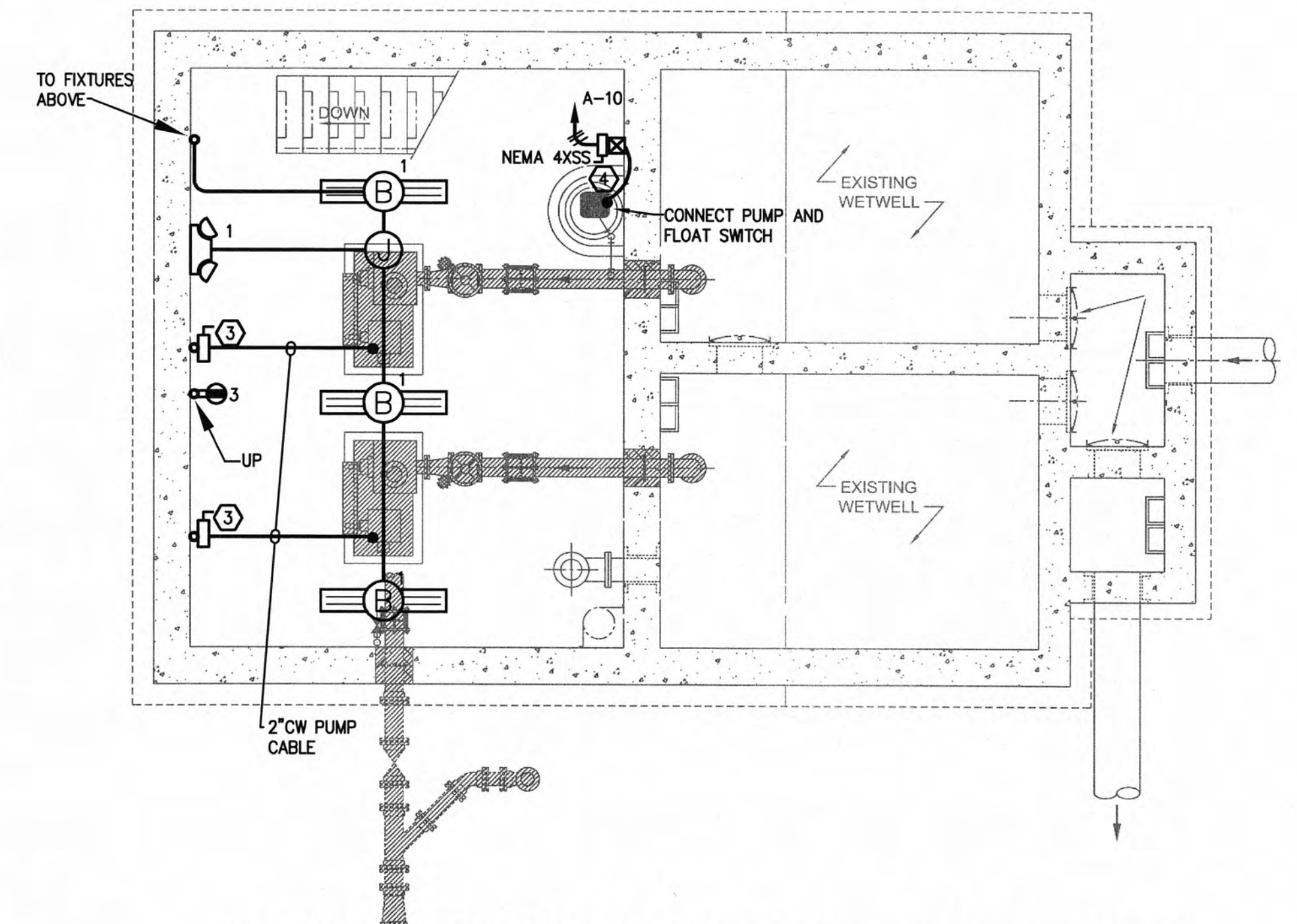
NEW WORK FLOOR PLAN - INTERMEDIATE

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



DEMOLITION FLOOR PLAN - INTERMEDIATE

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

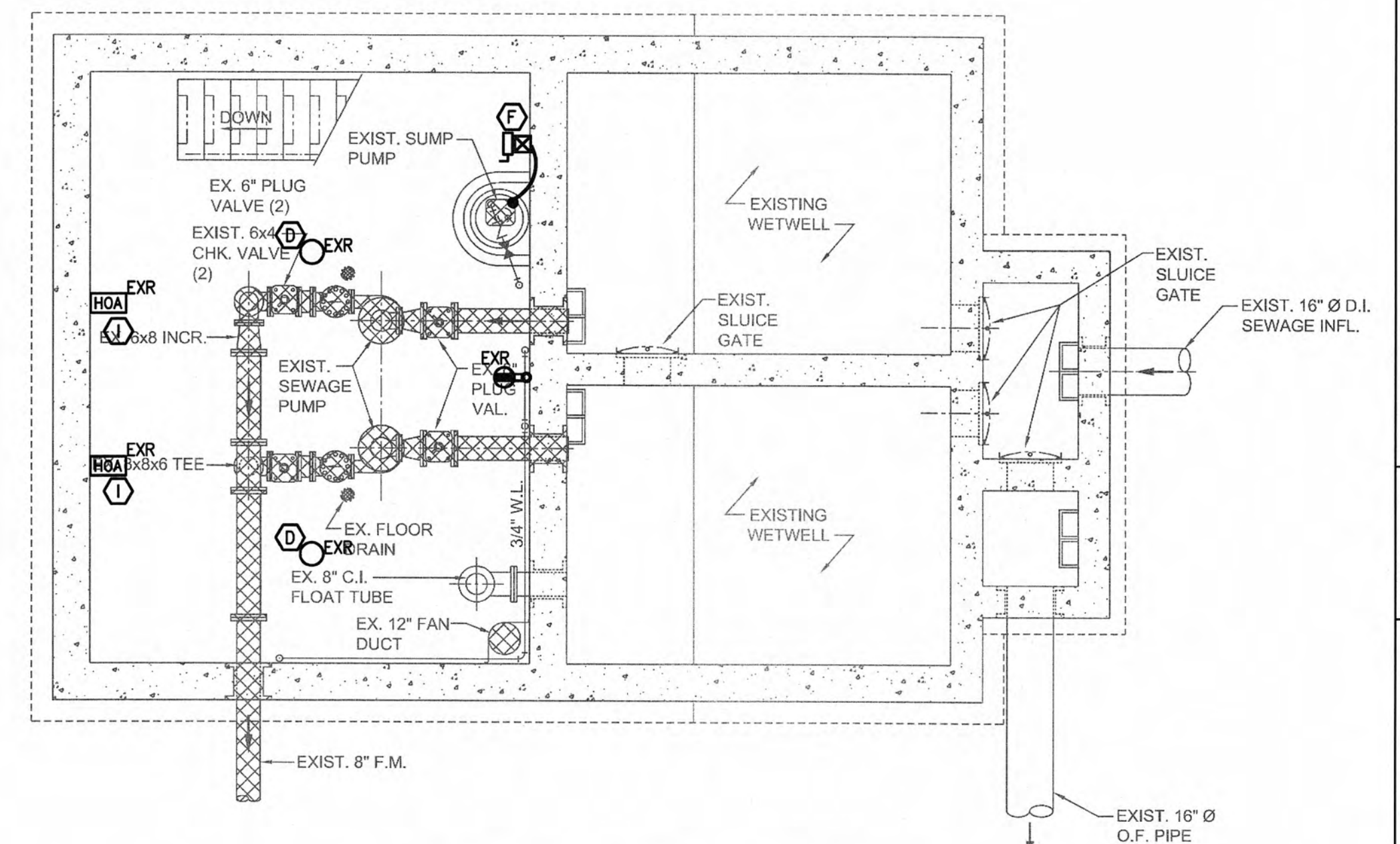


NEW WORK FLOOR PLAN - PUMP ROOM

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

GENERAL NOTES:

1. ALL SURFACE MOUNTED CONDUITS, FITTINGS, AND BOXES SHALL BE RIGID GALVANIZED STEEL.



DEMOLITION FLOOR PLAN - PUMP ROOM

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

WWR ENGINEERS INC.
 5417 Ball Camp Pike
 Knoxville, TN 37921
 Phone: (865) 588-2431
 Fax: (865) 588-2434
 West, Welch, Reed Engineers, Inc.
 WWR PROJECT# 109013

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"AS-BUILT"
DRAWINGS

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 CLIENT PROJECT NO. XXXX
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 WWW.GRWINC.COM

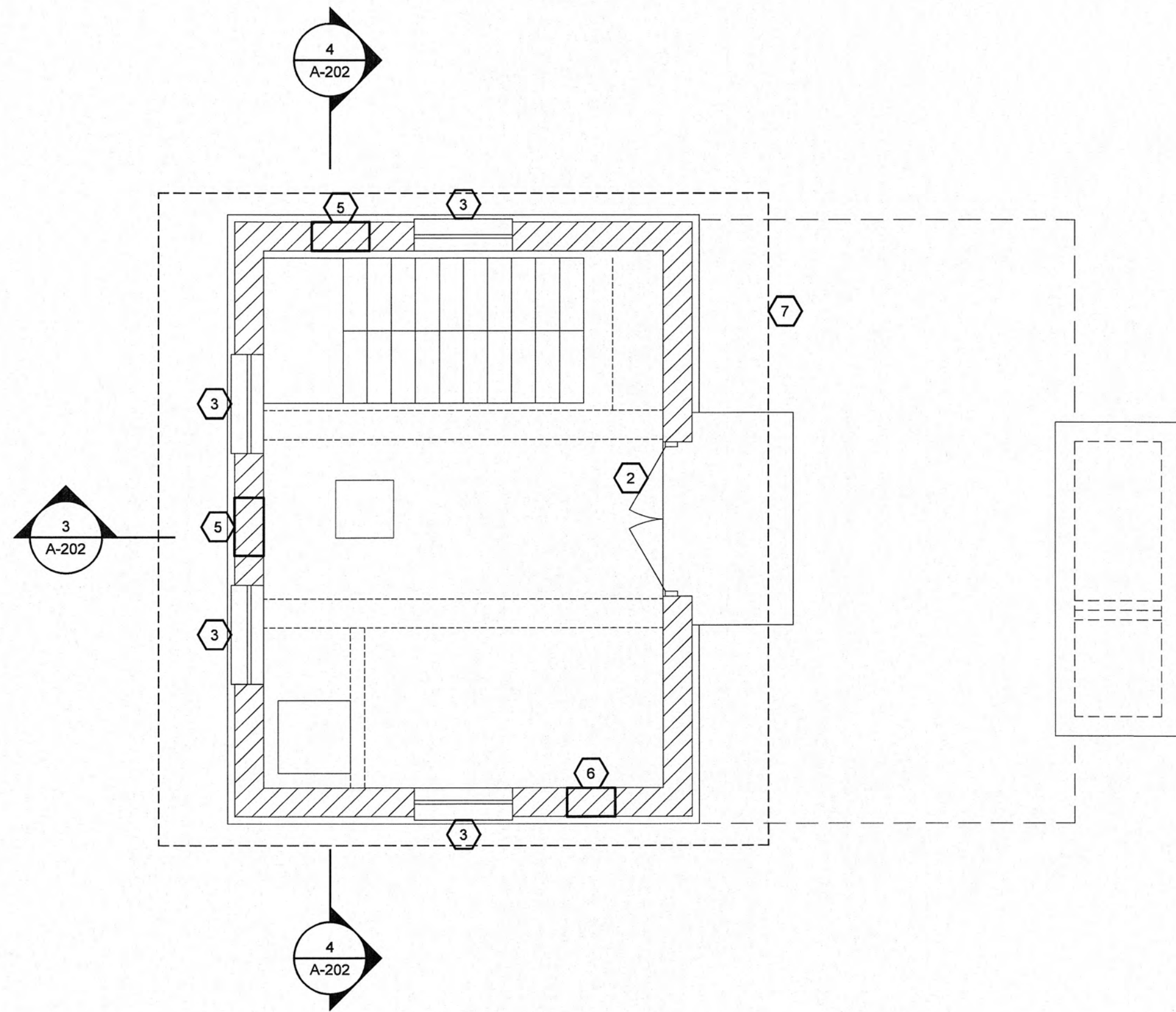
CHRISTMAS PUMP STATION NO. A-2
 FLOOR PLAN - ELECTRICAL
 PUMP STATION REHABILITATION
 CITY OF HARRIMAN, TENNESSEE

REVISIONS	DESCRIPTION	DATE	BY	DESIGNED	RAC	DRAWN	RAC	REVIEWED	RAC	APPROVED	RAC
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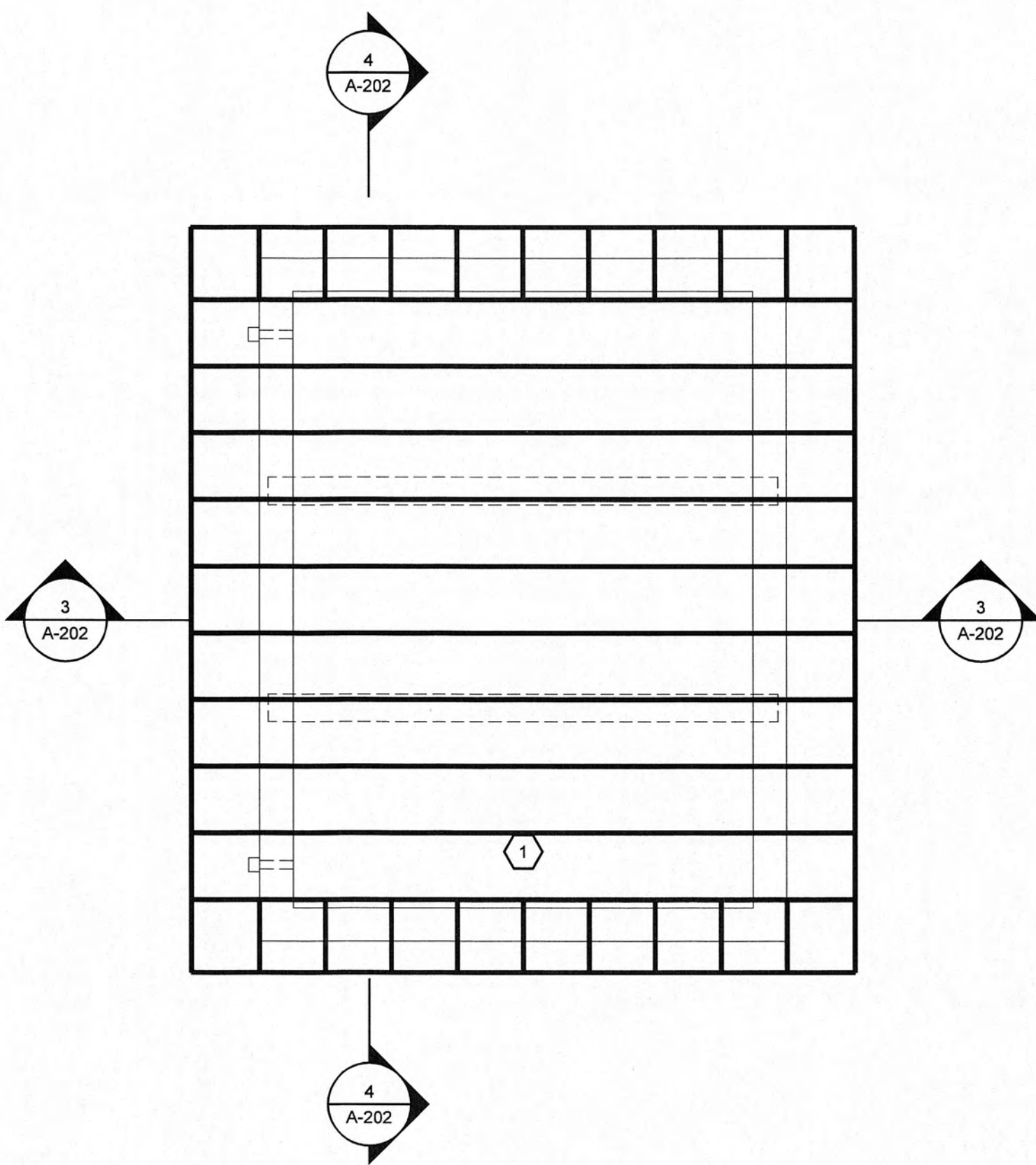
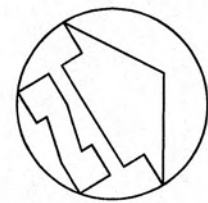
DATE: March 23, 2009
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 SHEET NO. **E-4**

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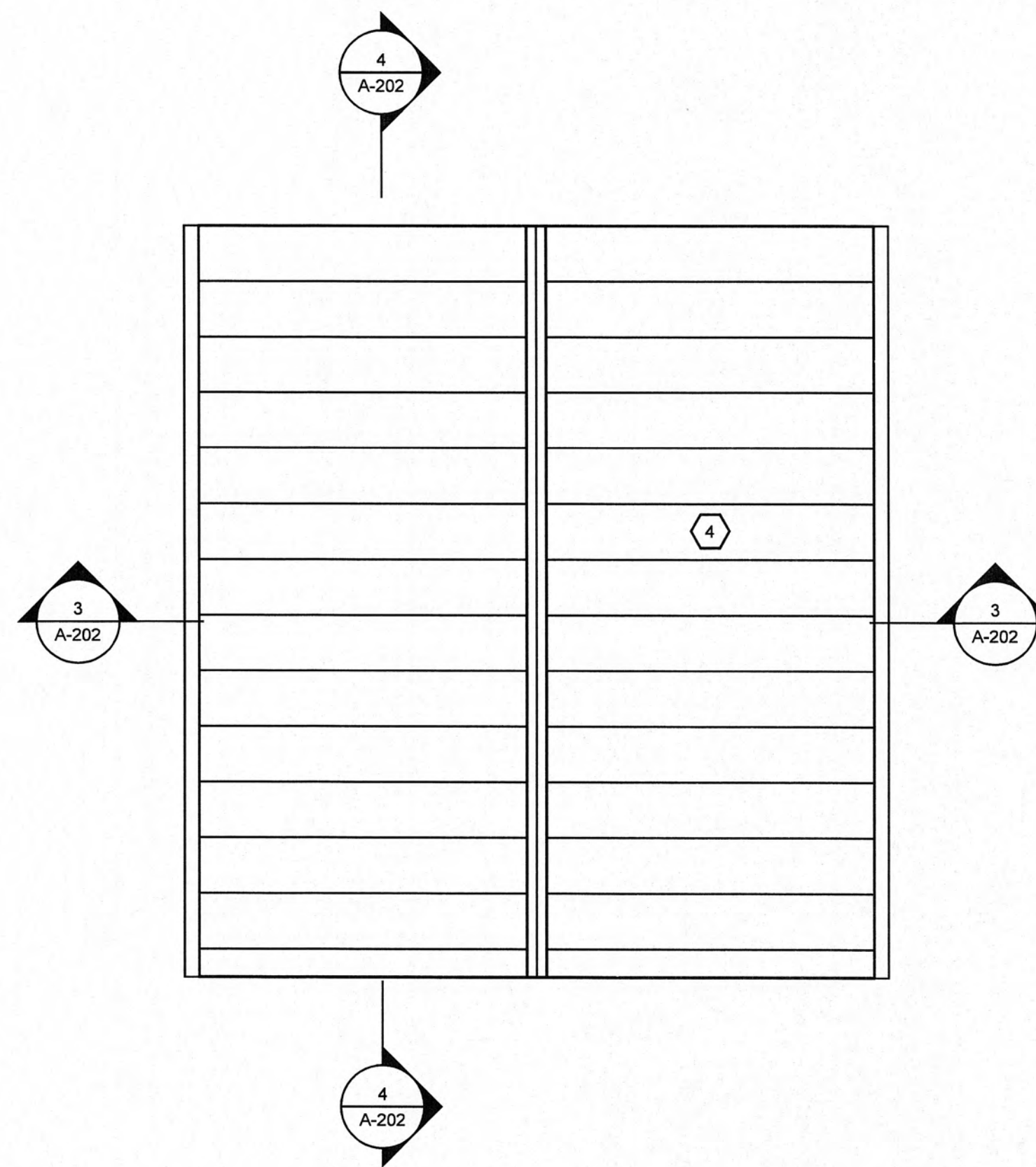
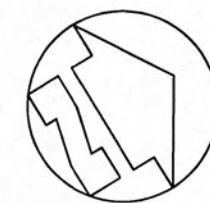
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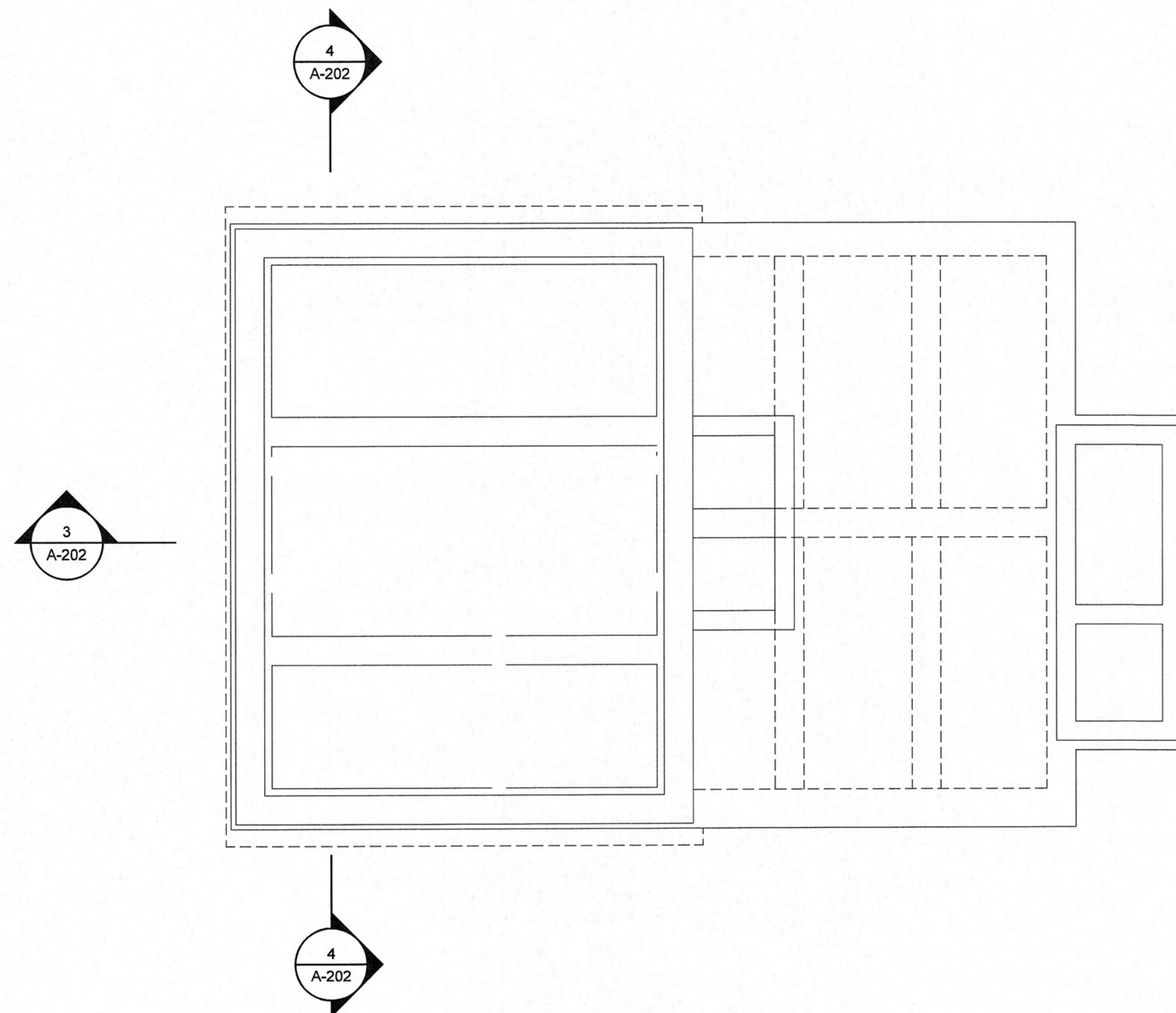
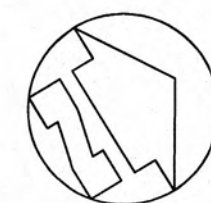
1 ENTRANCE FLOOR PLAN - UPGRADE
SCALE: 1/4"=1'-0"



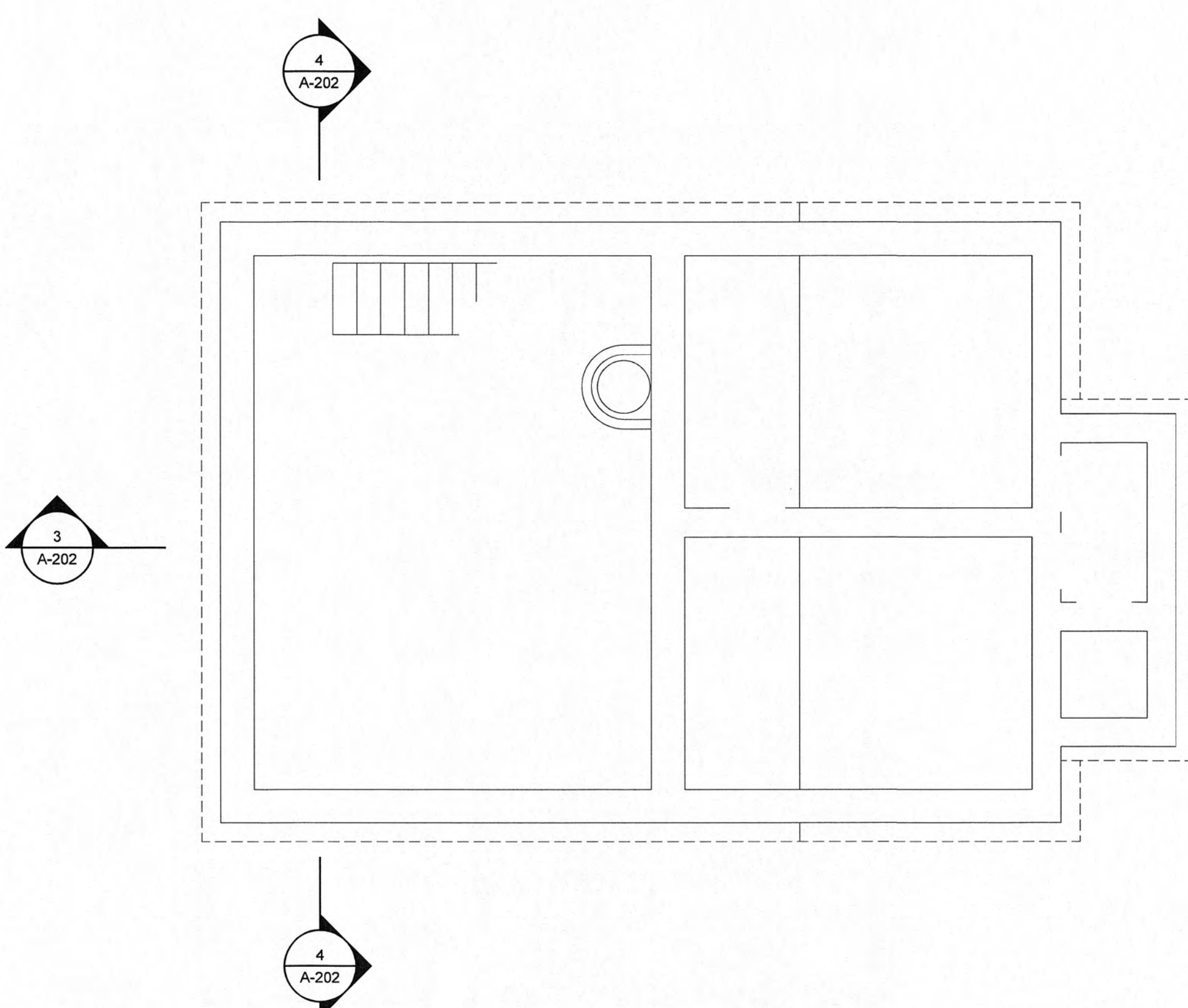
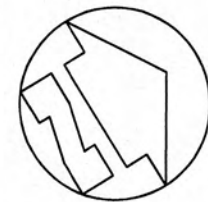
4 ROOF FRAMING PLAN - UPGRADE
SCALE: 1/4"=1'-0"



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



2 INTERMEDIATE FLOOR PLAN - UPGRADE
SCALE: 1/4"=1'-0"



3 PUMP ROOM PLAN - UPGRADE
SCALE: 1/4"=1'-0"



GENERAL NOTES:

1. PAINT INTERIOR WALLS, CEILINGS, STAIRS, RAILINGS, DOORS AND FRAMES - SEE SPEC SECTIONS 09900 & 09910
2. REPOINT ALL CRACKS IN MORTAR JOINTS AND PATCH HOLES WHERE EQUIPMENT, SCUPPERS OR PIPING HAS BEEN REMOVED - APPLY FINISH SEALANT - SEE SPEC SECTIONS 04500 & 07190
3. PATCH HOLES WHERE EQUIPMENT, SCUPPERS, OR PIPING HAS BEEN REMOVED - SEE SPEC SECTION 01731

SYMBOL KEY:

0-000 DETAIL INDICATOR

RECORD DRAWINGS
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CHECKED BY: *S. Greaves* 2/16/2010
ENGINEER'S REPRESENTATIVE DATE

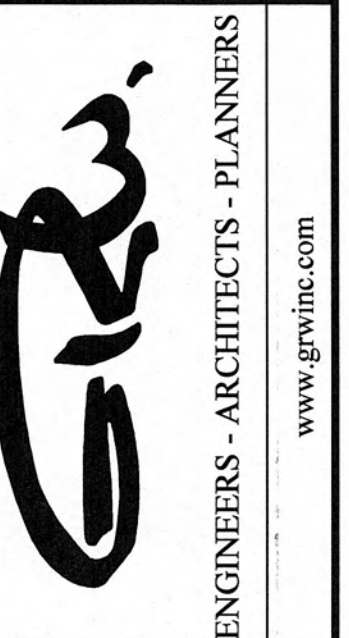
KEYNOTES:

1. PROVIDE PRE-ENGINEERED WOOD TRUSS @ 24" O.C. TYPICAL - SEE SPEC SECTION 06176
2. PROVIDE NEW FIBERGLASS DOOR, TRANSOM AND FRAME - FIELD VERIFY MASONRY OPENING - SEE SHEET A-301 FOR DETAILS
3. PROVIDE NEW WINDOWS AND WINDOW GUARDS - SEE SHEET A-301 FOR DETAILS
4. PROVIDE STANDING SEAM METAL ROOF
5. PROVIDE WALL OPENING FOR MECHANICAL LOUVER - SEE MECHANICAL FOR LOUVER LOCATIONS - SEE SHEET A-301 FOR DETAILS
6. INFILL DEMO LOUVER OPENING WITH BRICK TO MATCH EXISTING WALL
7. NEW ROOF LINE ABOVE

GRW PROJECT NO. 3796-01

CLIENT PROJECT NO. XXXX

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CHRISTMAS PUMP STATION NO. A-2
UPGRADE - PLAN VIEWS
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

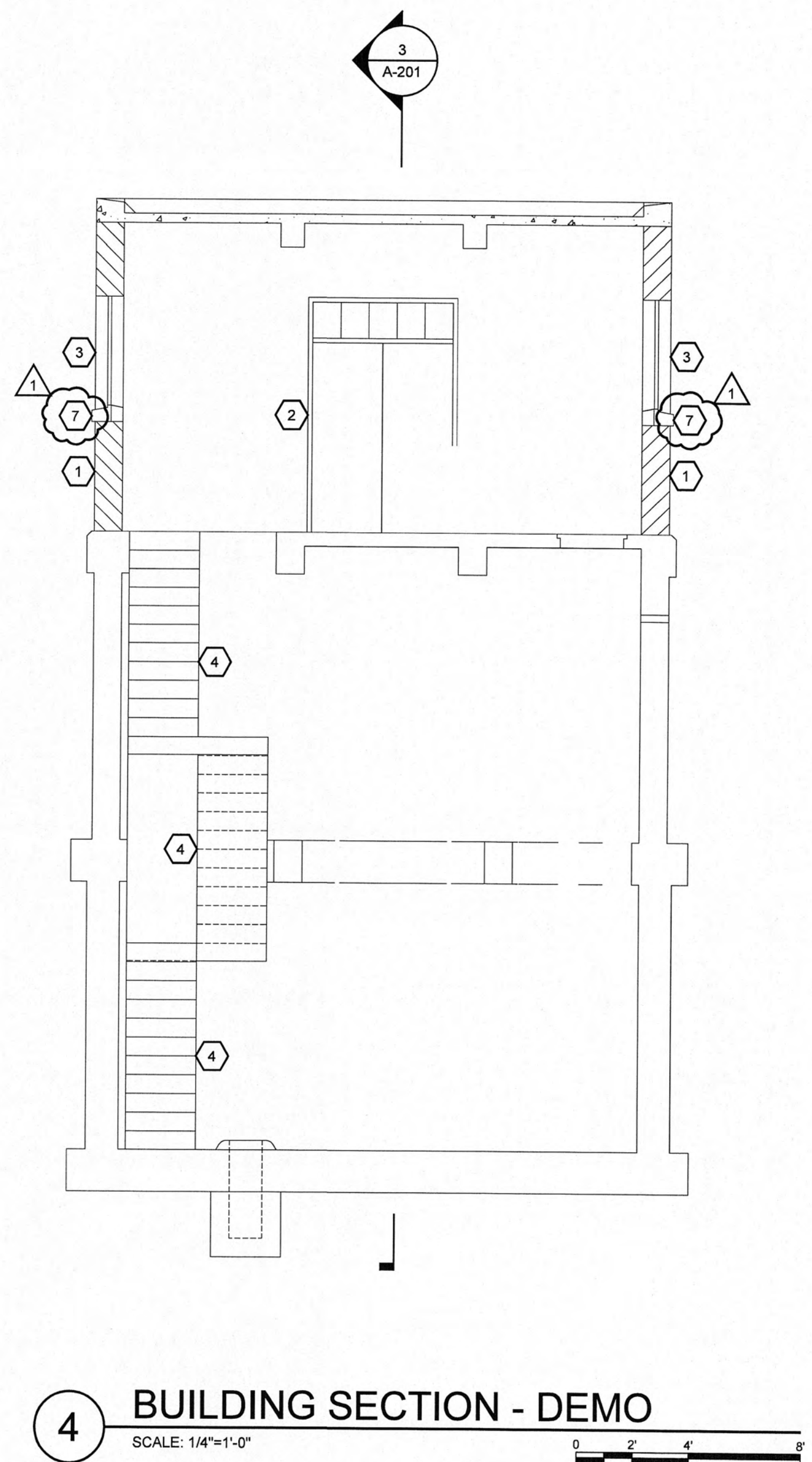
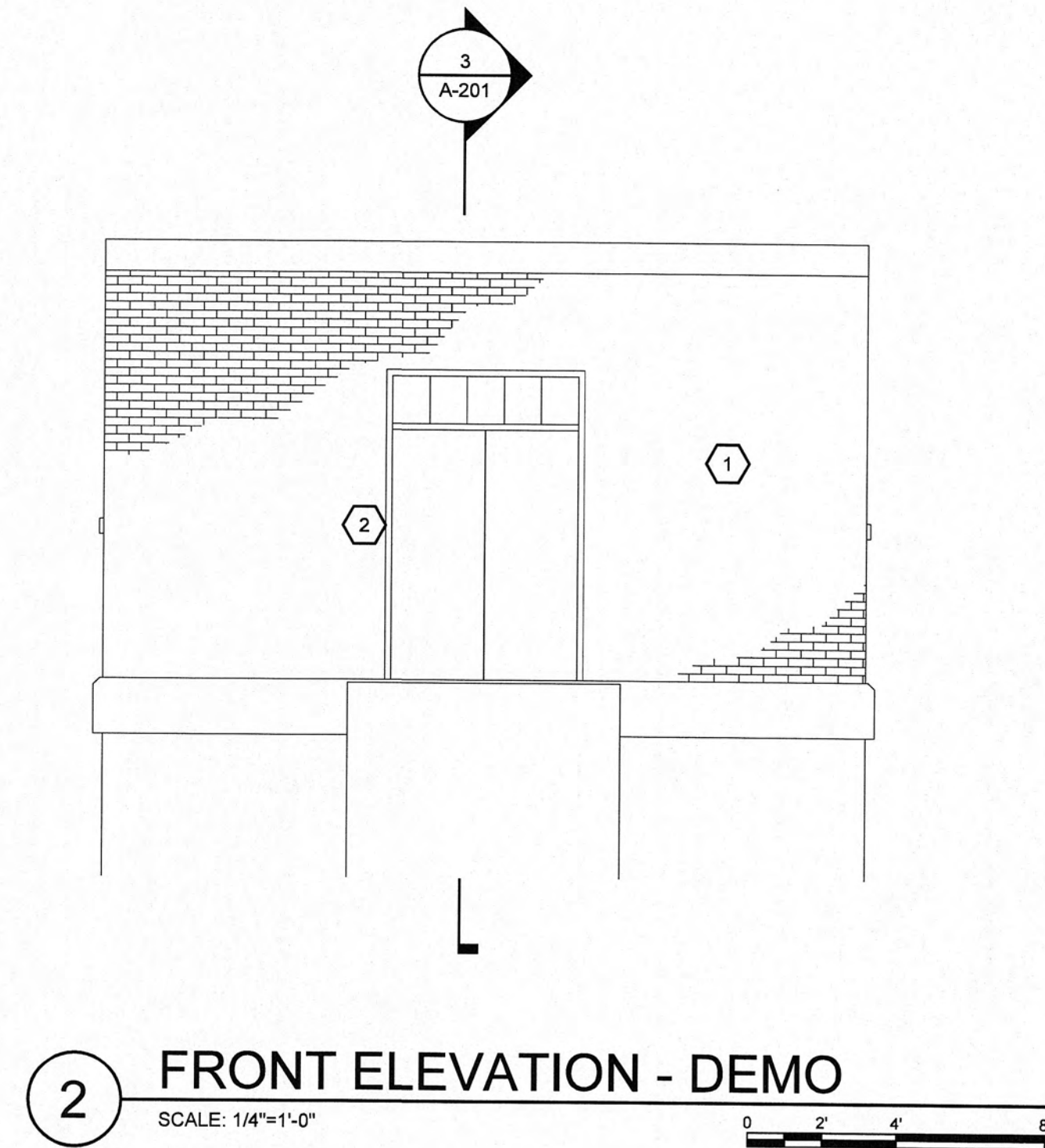
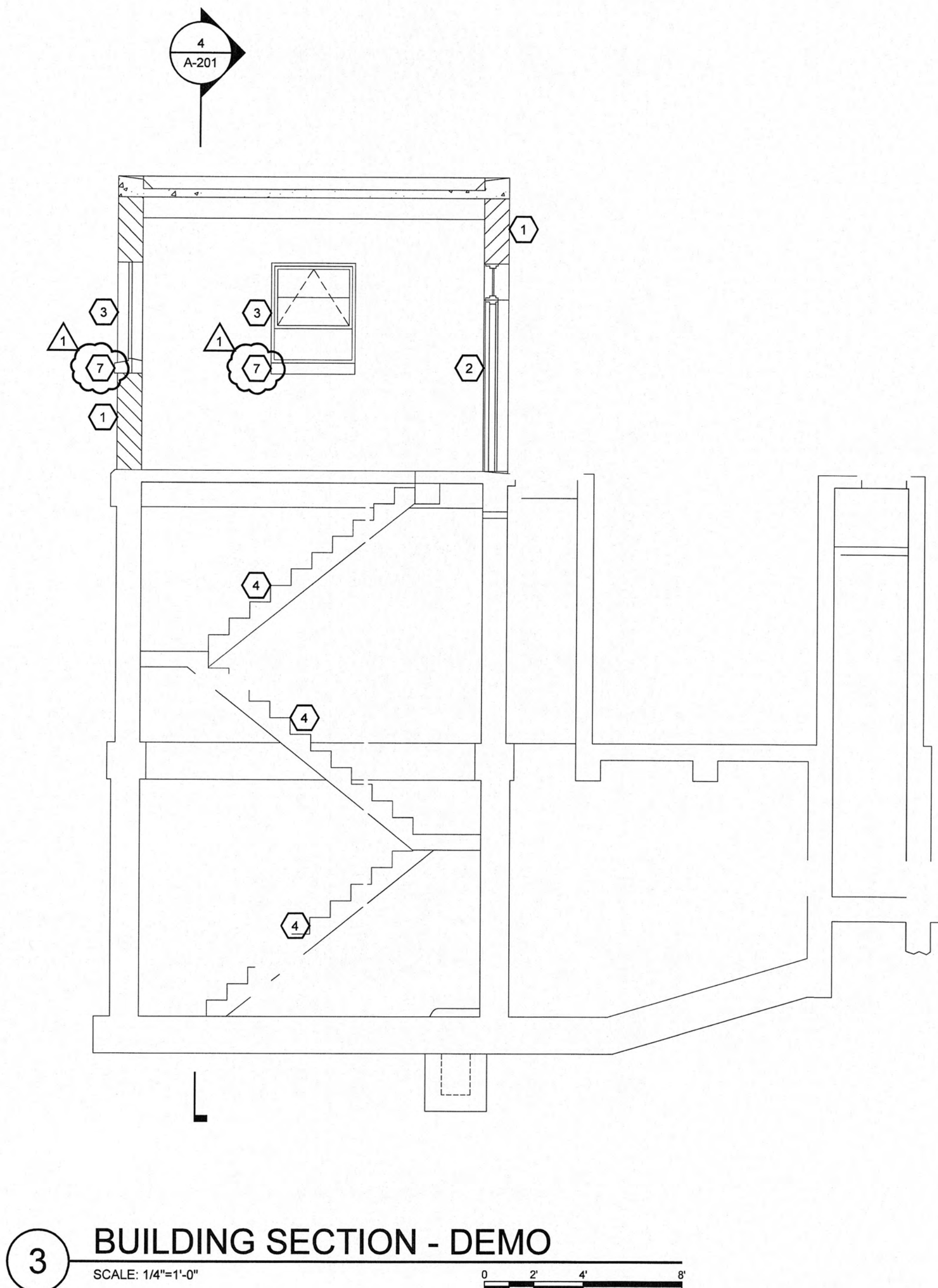
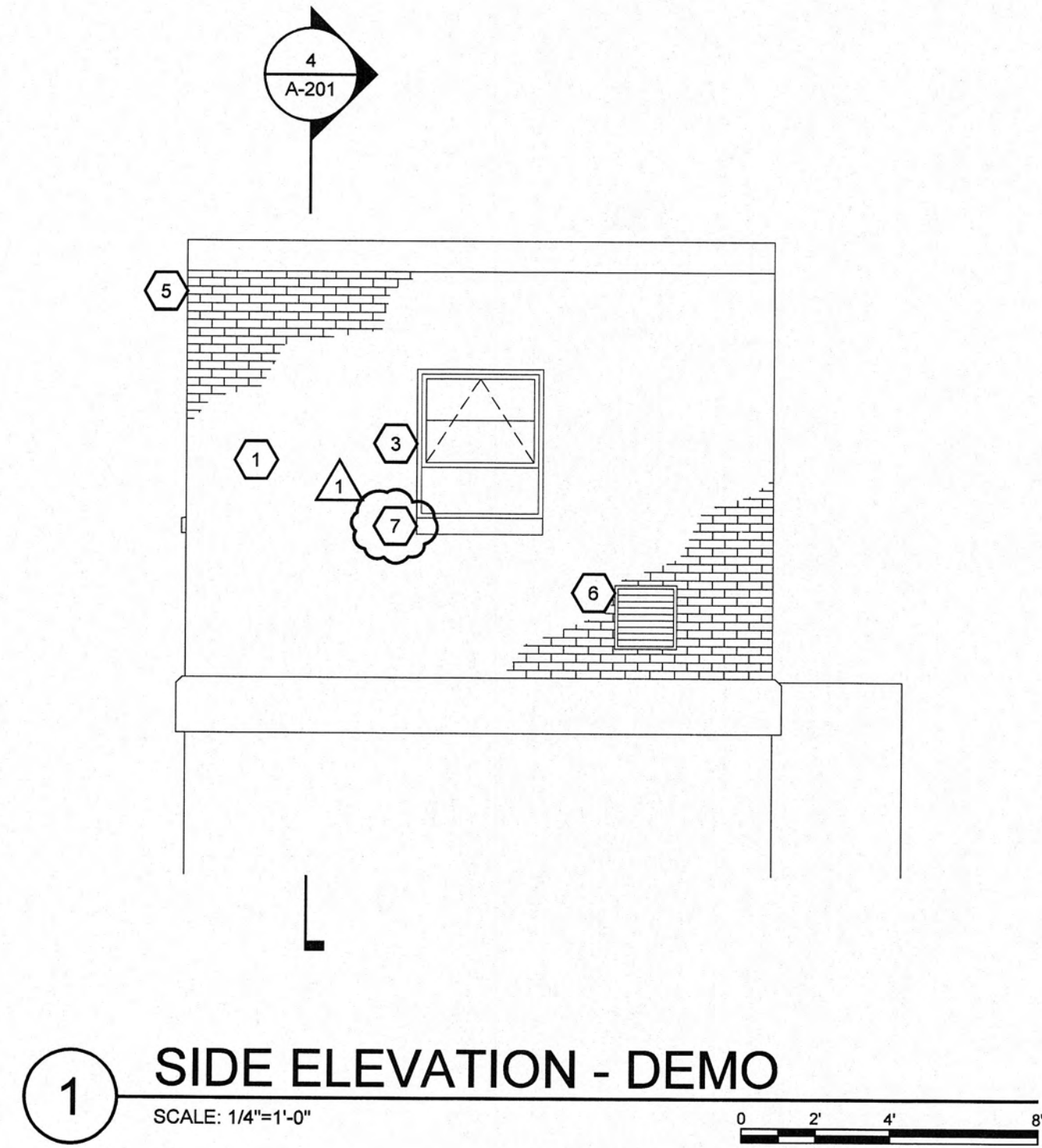
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DATE: APRIL 10, 2009

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

SHEET NO.

A-102



GENERAL NOTES:

1. SANDBLAST EXISTING INTERIOR WALLS, STAIRS, RAILINGS AND CEILINGS AT ALL LEVELS - PREP FOR PAINTING
2. EXISTING EXTERIOR WALLS TO BE CLEANED AND SEALER APPLIED - SEE SPEC SECTIONS 04500 & 07190
3. REMOVE EXISTING ROOFING MATERIAL DOWN TO EXISTING CONCRETE ROOF DECK - PATCH AND LEVEL AS REQUIRED FOR NEW ROOF STRUCTURE INSTALLATION

SYMBOL KEY:



KEYNOTES:

1. EXISTING BRICK COMPOSITE WALL - REMOVE BRICK AT LOCATIONS DESIGNATED FOR NEW LOUVER OPENINGS - SEE MECHANICAL
2. EXISTING DOOR, FRAME, AND THRESHOLD TO BE REMOVED - PATCH OPENING AS REQUIRED TO RECEIVE NEW DOOR, FRAME AND THRESHOLD
3. EXISTING WINDOWS TO BE REMOVED - PATCH OPENING AS REQUIRED TO RECEIVE NEW WINDOWS
4. EXISTING STAIR AND RAILING TO REMAIN
5. EXISTING SCUPPERS TO BE REMOVED
6. EXISTING LOUVER TO BE REMOVED
7. REMOVE EXISTING PRE-CAST CONCRETE WINDOW SILL FOR REUSE

RECORD DRAWINGS

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CHECKED BY: *S. Grooms* DATE: 2/16/2010
ENGINEER'S REPRESENTATIVE

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CLIENT PROJECT NO. XXXX

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CHRISTMAS PUMP STATION NO. A-2
DEMO - SECTIONS & ELEVATIONS
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

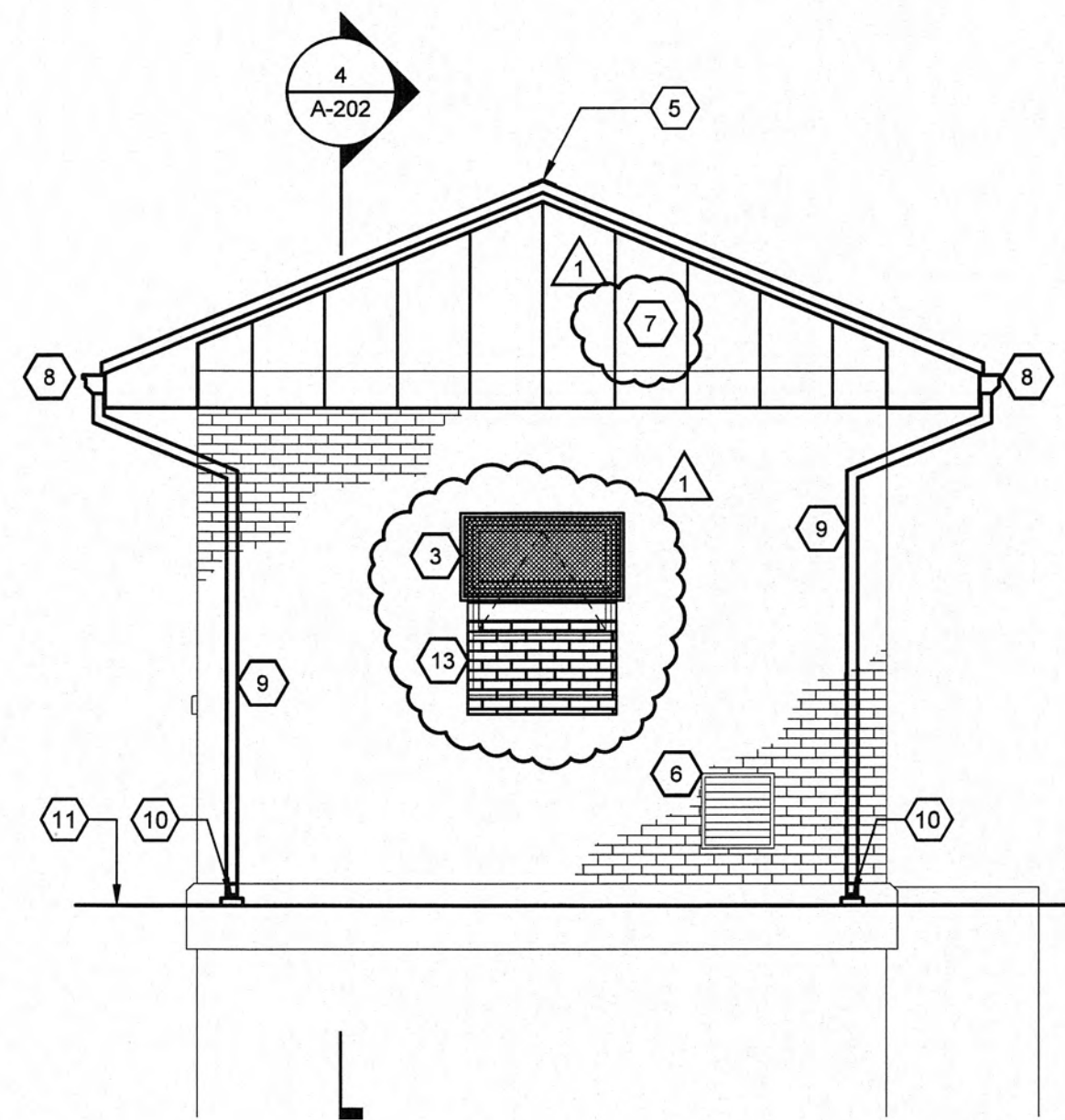
NO.	REVISIONS	DATE	BY	DESIGNED	DRAWN	REVIEWED	APPROVED
1	REVISED WINDOW DEMOLITION	6-12-09	JEE	JEE	JEE	BSL	BSL

DATE: APRIL 10, 2009

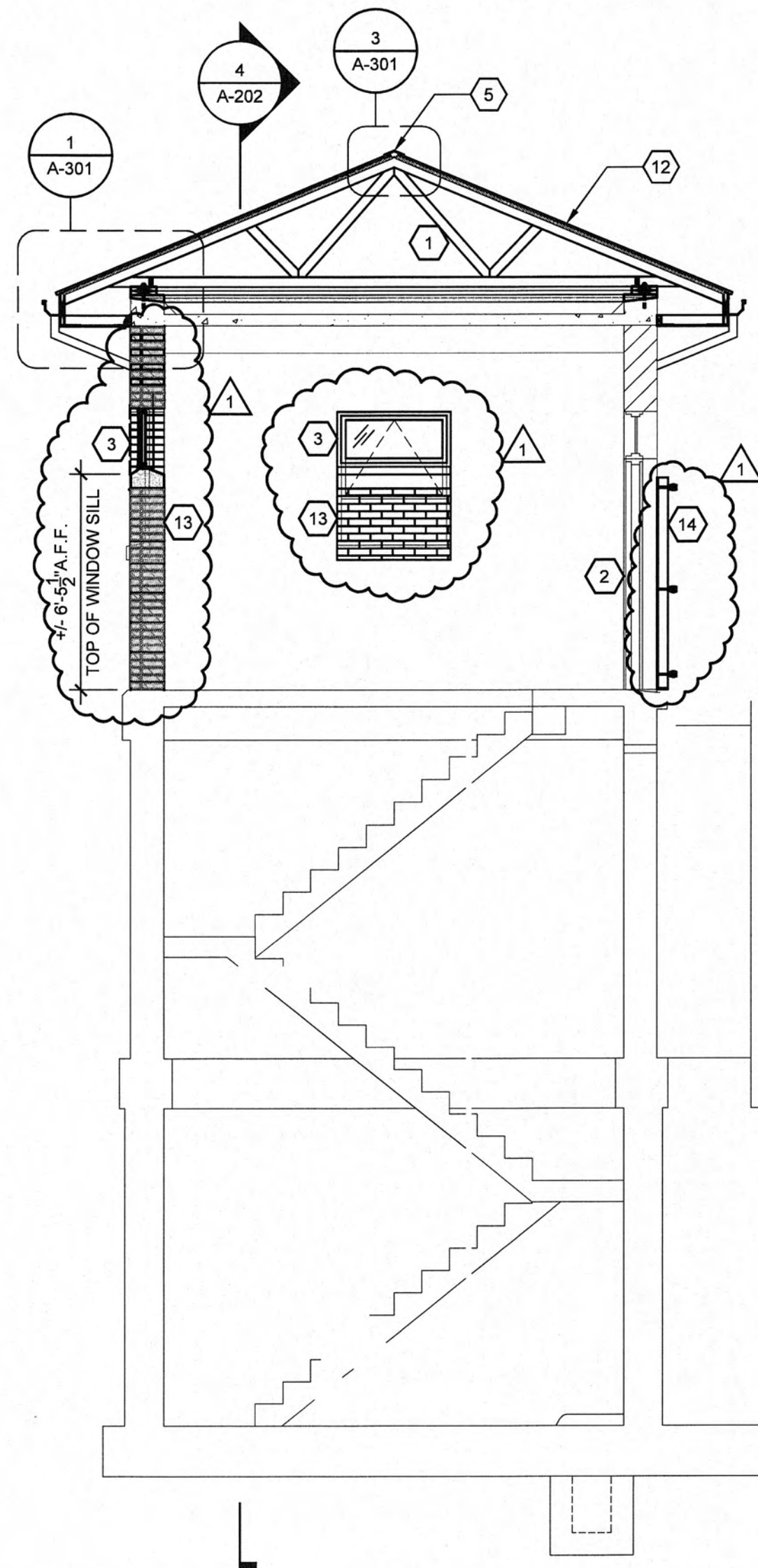
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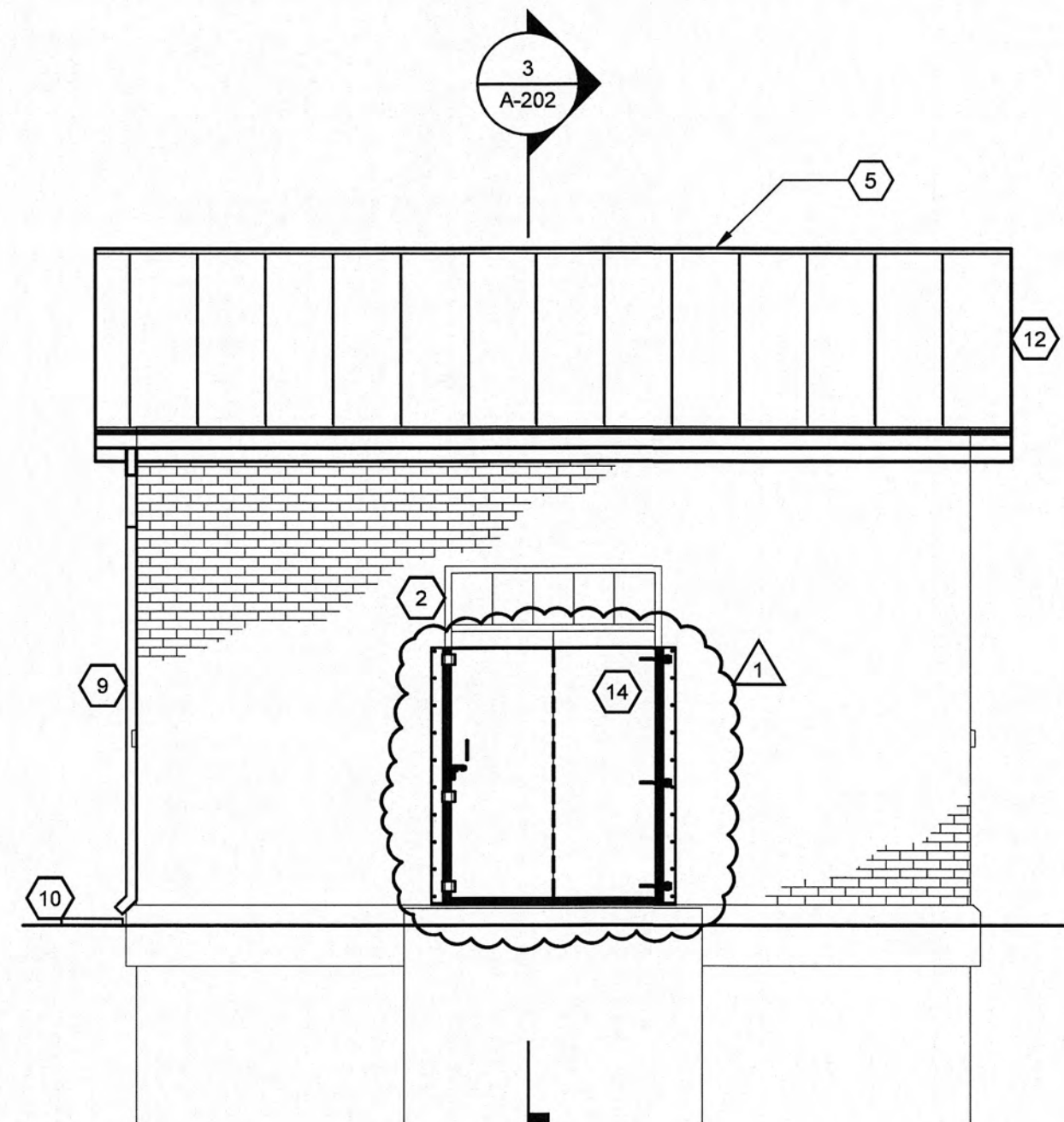
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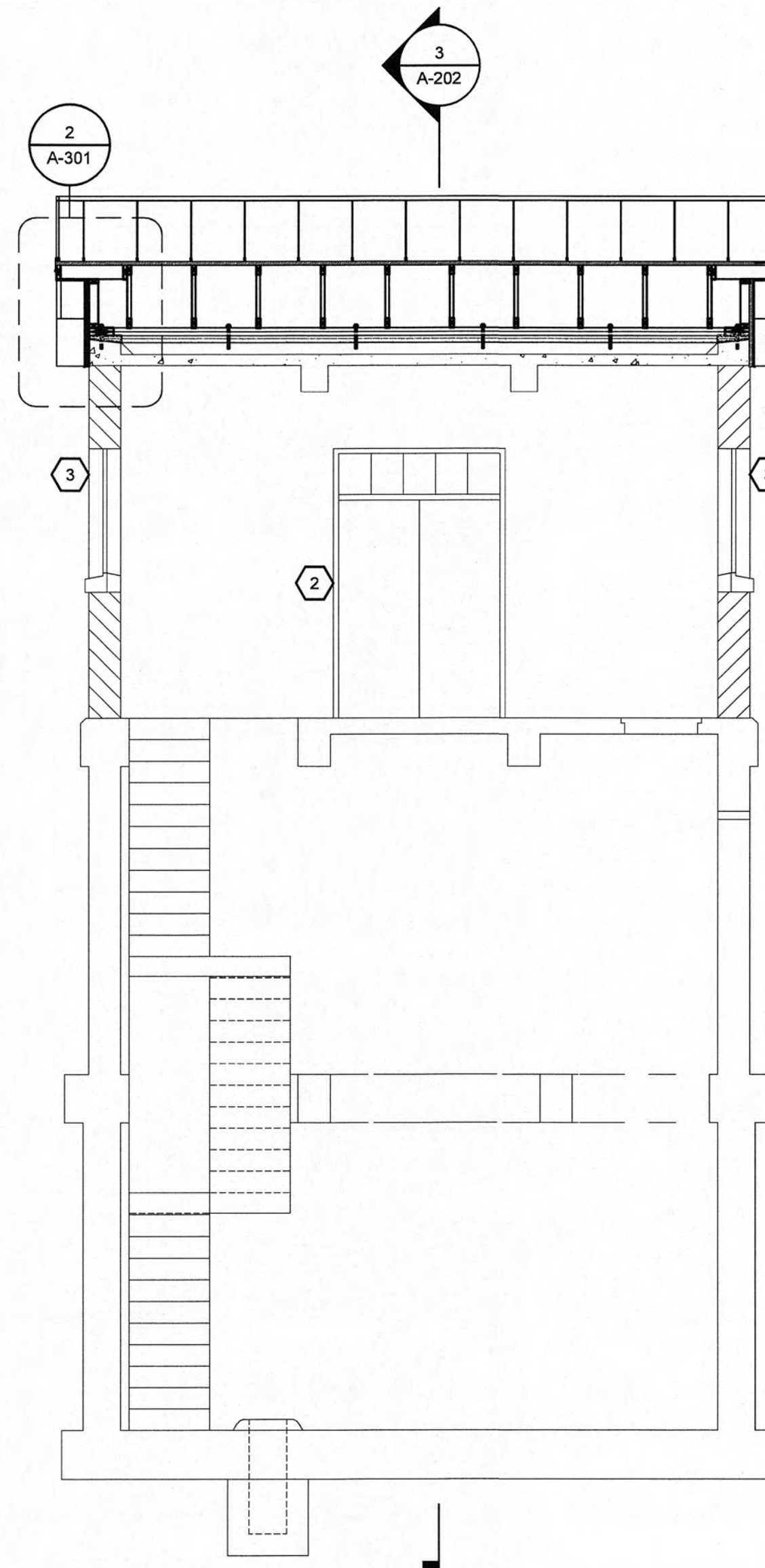
1 SIDE ELEVATION - UPGRADE
SCALE: 1/4"=1'-0"



3 BUILDING SECTION - UPGRADE
SCALE: 1/4"=1'-0"



2 FRONT ELEVATION - UPGRADE
SCALE: 1/4"=1'-0"



4 BUILDING SECTION - UPGRADE
SCALE: 1/4"=1'-0"

GENERAL NOTES:

1. PAINT INTERIOR WALLS, CEILINGS, STAIRS, RAILINGS, DOORS AND FRAMES - SEE SPEC SECTIONS 09900 & 09910
2. REPOINT ALL CRACKS IN MORTAR JOINTS AND PATCH HOLES WHERE EQUIPMENT, SCUPPERS OR PIPING HAS BEEN REMOVED - APPLY FINISH SEALANT - SEE SPEC SECTIONS 04500 & 07190
3. PATCH HOLES WHERE EQUIPMENT, SCUPPERS, OR PIPING HAS BEEN REMOVED - SEE SPEC SECTION 01731

SYMBOL KEY:



KEYNOTES:

1. PROVIDE PRE-ENGINEERED WOOD TRUSS @ 24" O.C. TYPICAL - SEE SPEC SECTION 06176
2. PROVIDE NEW FIBERGLASS DOOR, TRANSOM AND FRAME - FIELD VERIFY MASONRY OPENING - SEE SHEET A-301 FOR DETAILS
3. PROVIDE NEW WINDOWS AND WINDOW GUARDS - SEE SHEET A-301 FOR DETAILS
4. PROVIDE STANDING SEAM METAL ROOF
5. PROVIDE NEW CONTINUOUS RIDGE VENT
6. INFILL DEMO LOUVER OPENING WITH BRICK TO MATCH EXISTING WALL
7. PROVIDE PRE-FINISHED METAL GABLE END PANELS
8. PROVIDE PRE-FINISHED METAL GUTTERS
9. PROVIDE PRE-FINISHED 3" X 3" METAL DOWNSPOUT
10. PROVIDE NEW SPLASHBLOCK
11. EXISTING GROUND LINE
12. PROVIDE PRE-FINISHED STANDING SEAM METAL ROOF
13. PROVIDE BRICK INFILL TO WINDOW OPENING UP TO HEIGHT NOTED IN DRAWING - INSTALL PRE-CAST CONCRETE WINDOW SILL FROM DEMOLITION - BRICK TO MATCH EXISTING WALL - TYPICAL ALL WINDOWS
14. PROVIDE NEW FLOOD BARRIER

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CHECKED BY:

S. Grooms
ENGINEER'S REPRESENTATIVE

2/16/2010
DATE

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CHRISTMAS PUMP STATION NO. A-2
UPGRADE - SECTIONS & ELEVATIONS
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

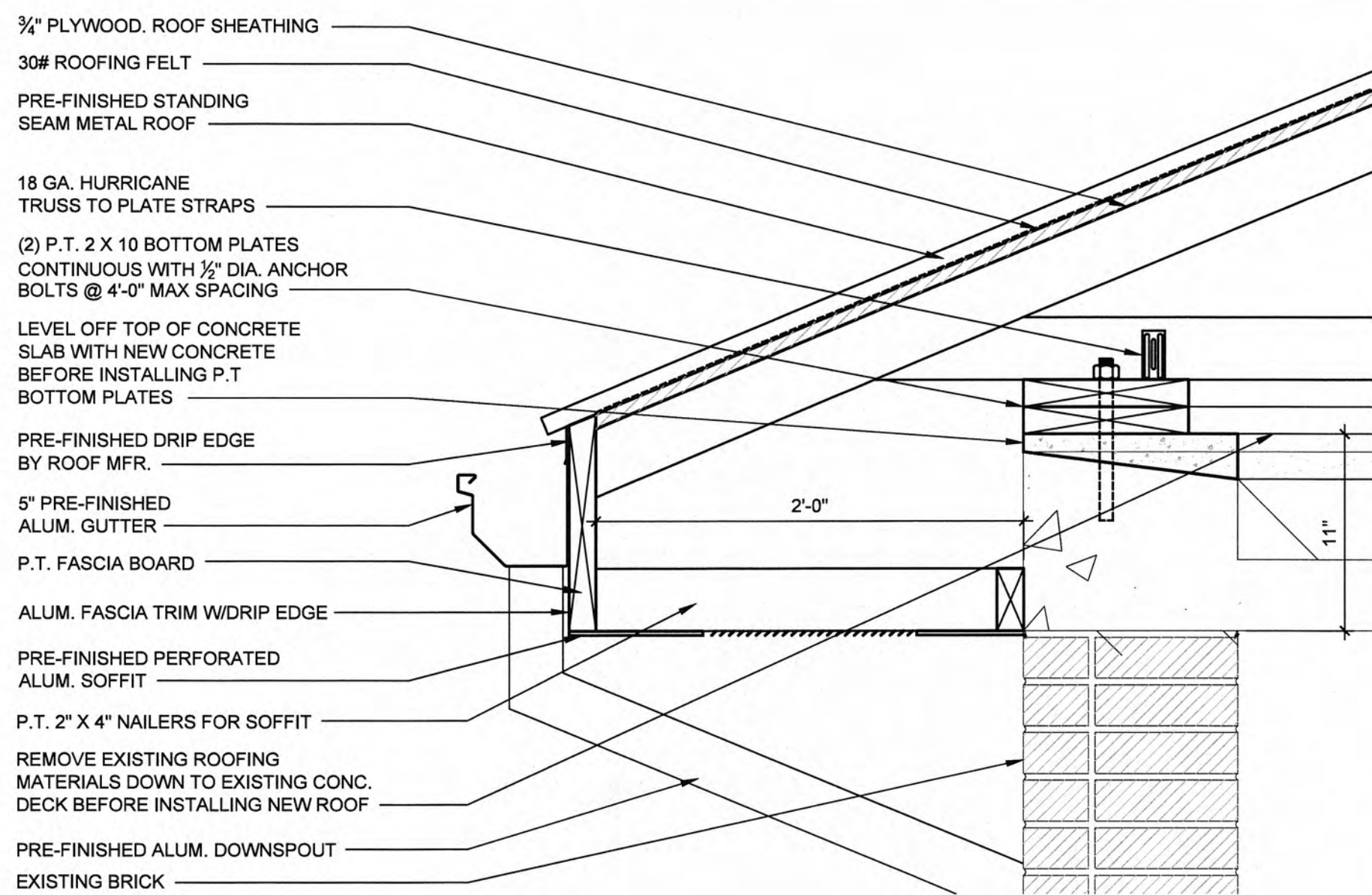
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BSL		BSL							
BSL		BSL							

DATE:
APRIL 10, 2009

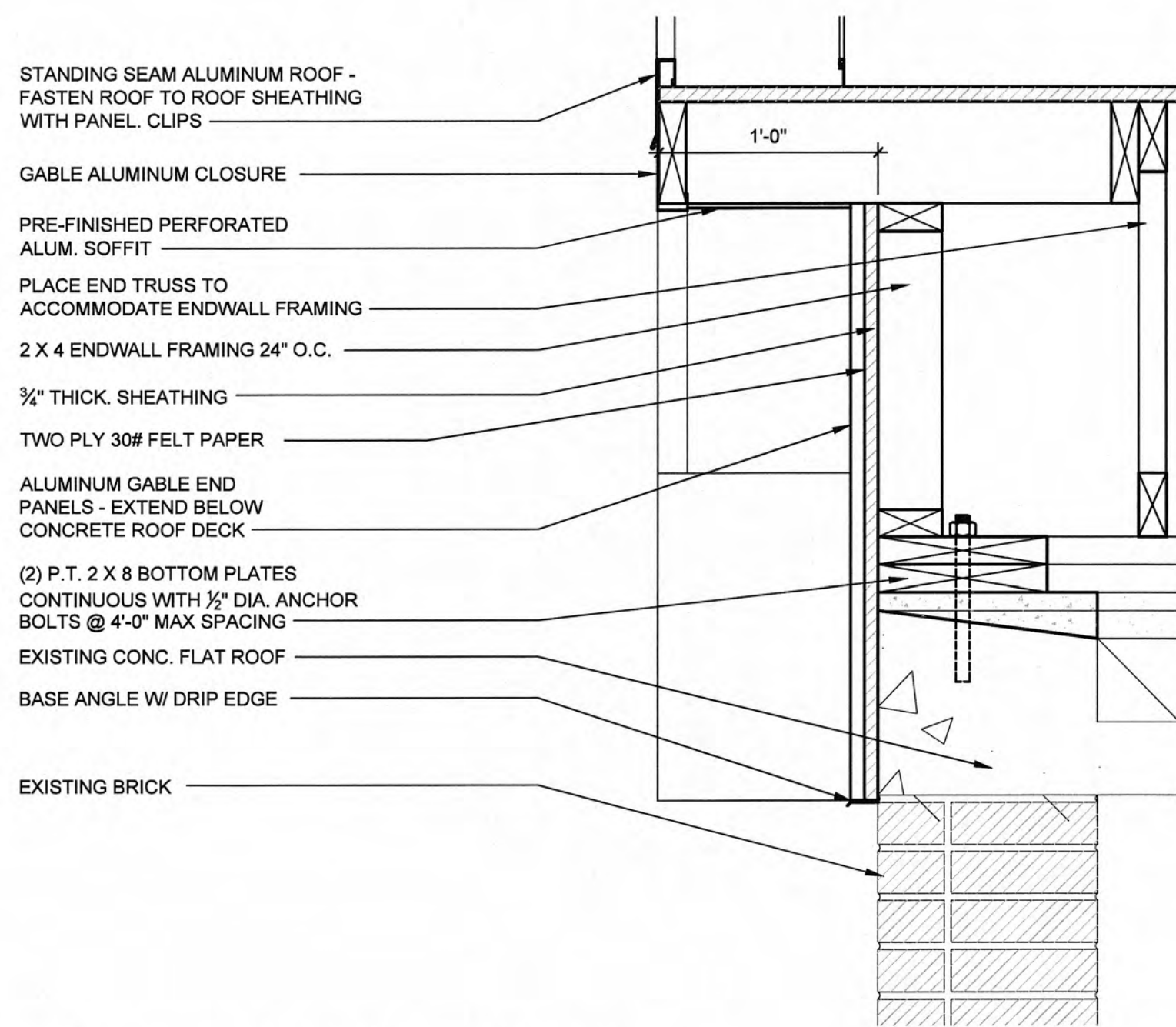
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1/4" = 1'-0"

SHEET NO.

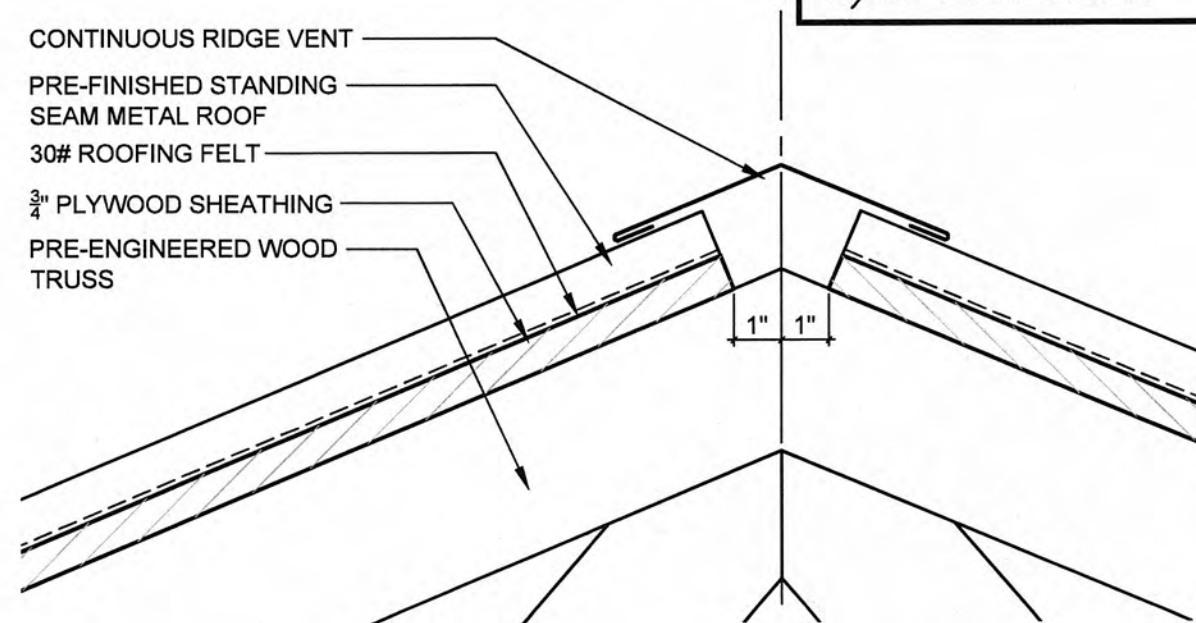
A-202R



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



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



3 RIDGE VENT DETAIL
SCALE: 3"=1'-0"

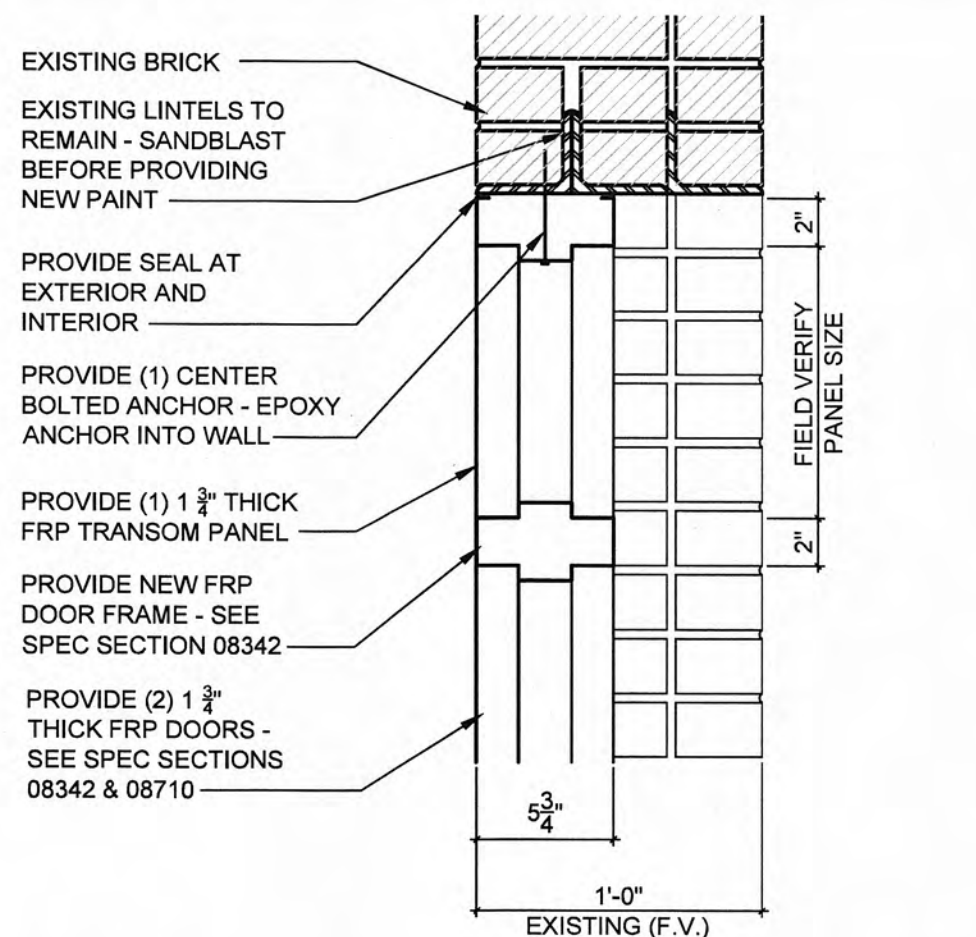
RECORD DRAWINGS

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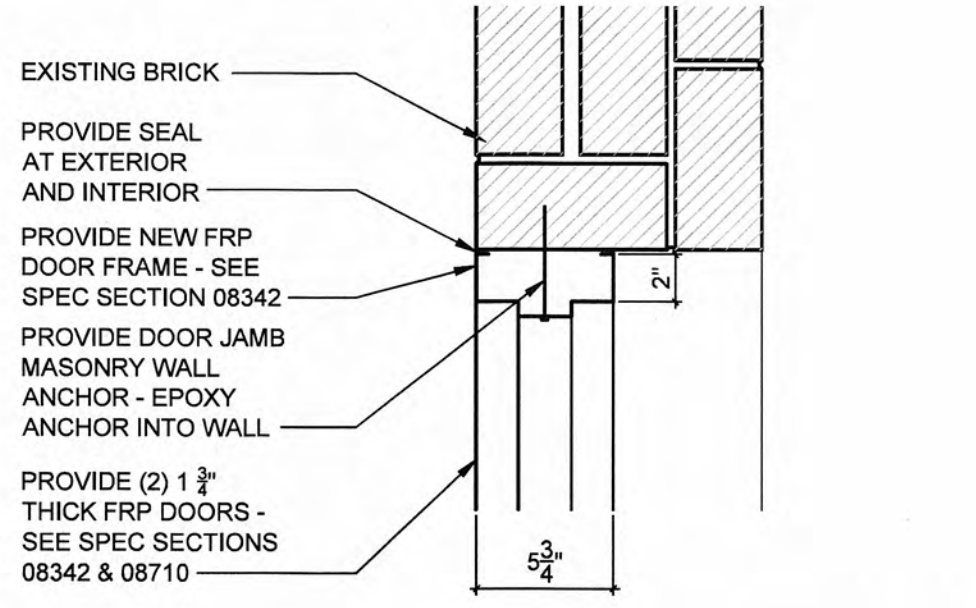
CHECKED BY:

Shannon Brown 2/16/2010
ENGINEER'S REPRESENTATIVE DATE

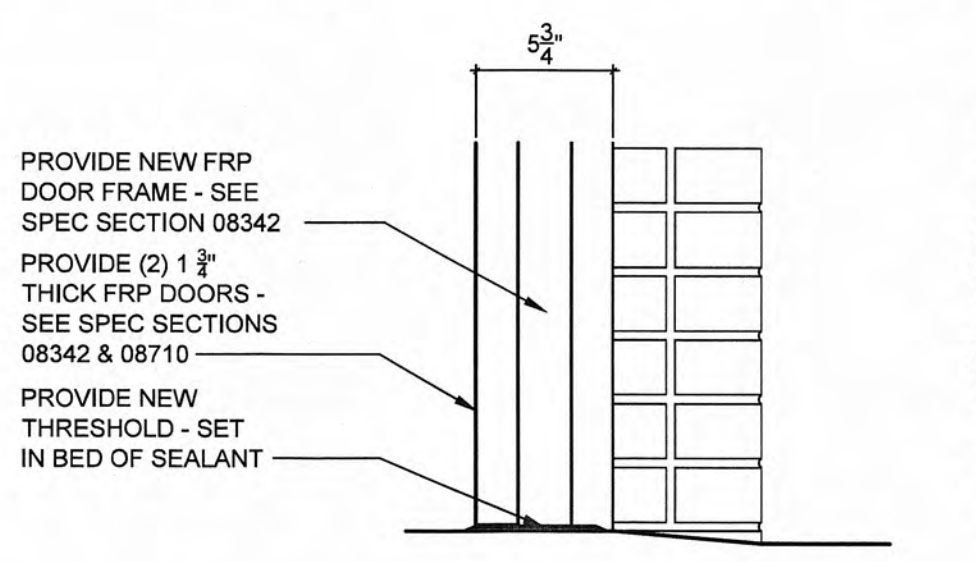
4 DOOR HEAD & TRANSOM DETAIL
SCALE: 1 1/2"=1'-0"



5 DOOR JAMB DETAIL
SCALE: 1 1/2"=1'-0"

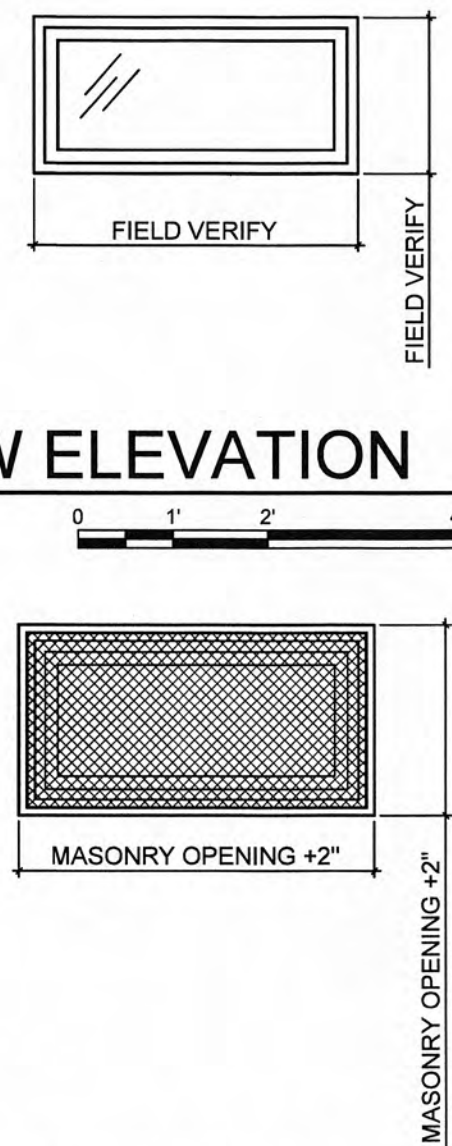


6 DOOR THRESHOLD DETAIL
SCALE: 1 1/2"=1'-0"



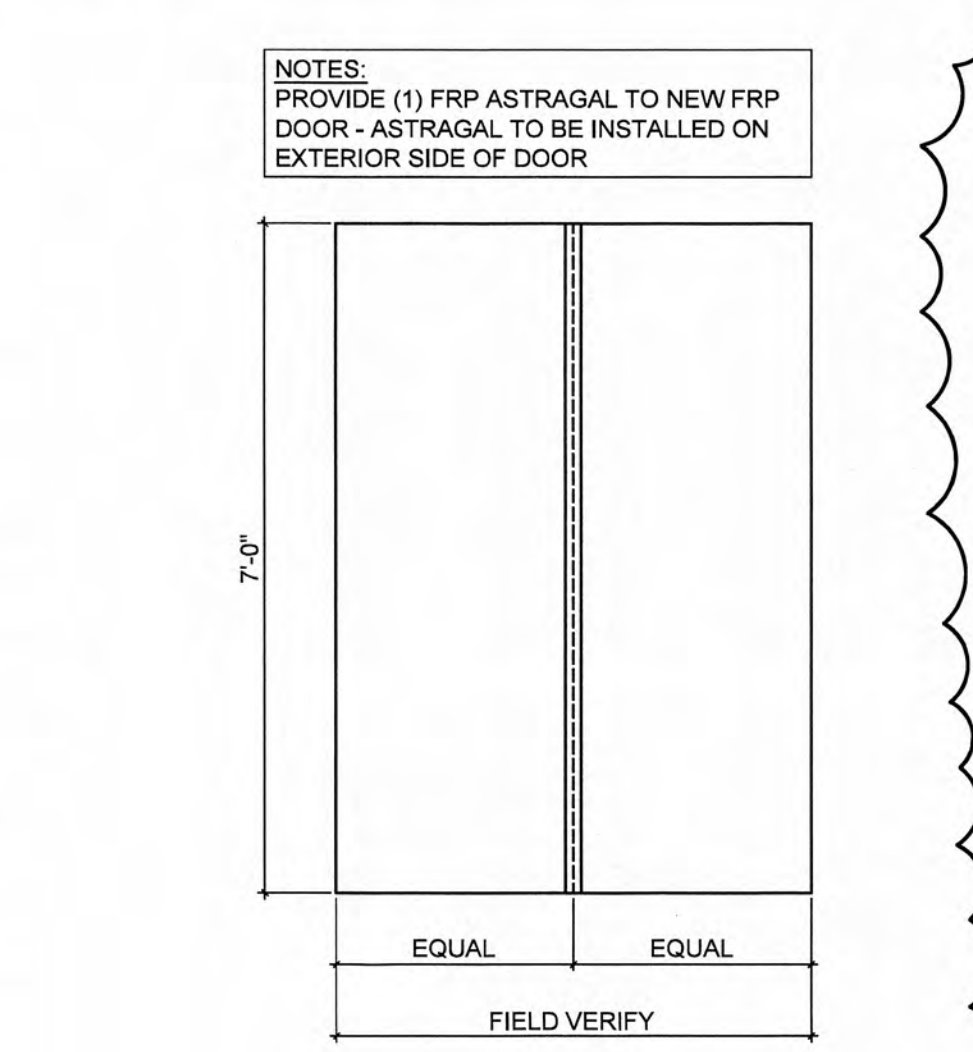
7 NEW WINDOW ELEVATION
SCALE: 1/2"=1'-0"

NOTES:
REMOVE EXISTING WINDOW GUARD - ATTACH NEW WINDOW GUARD AFTER PROVIDING ALL NECESSARY REHABILITATION TO EXISTING BRICK WALL - SEE SPEC SECTIONS 01731, 04500, 10605.

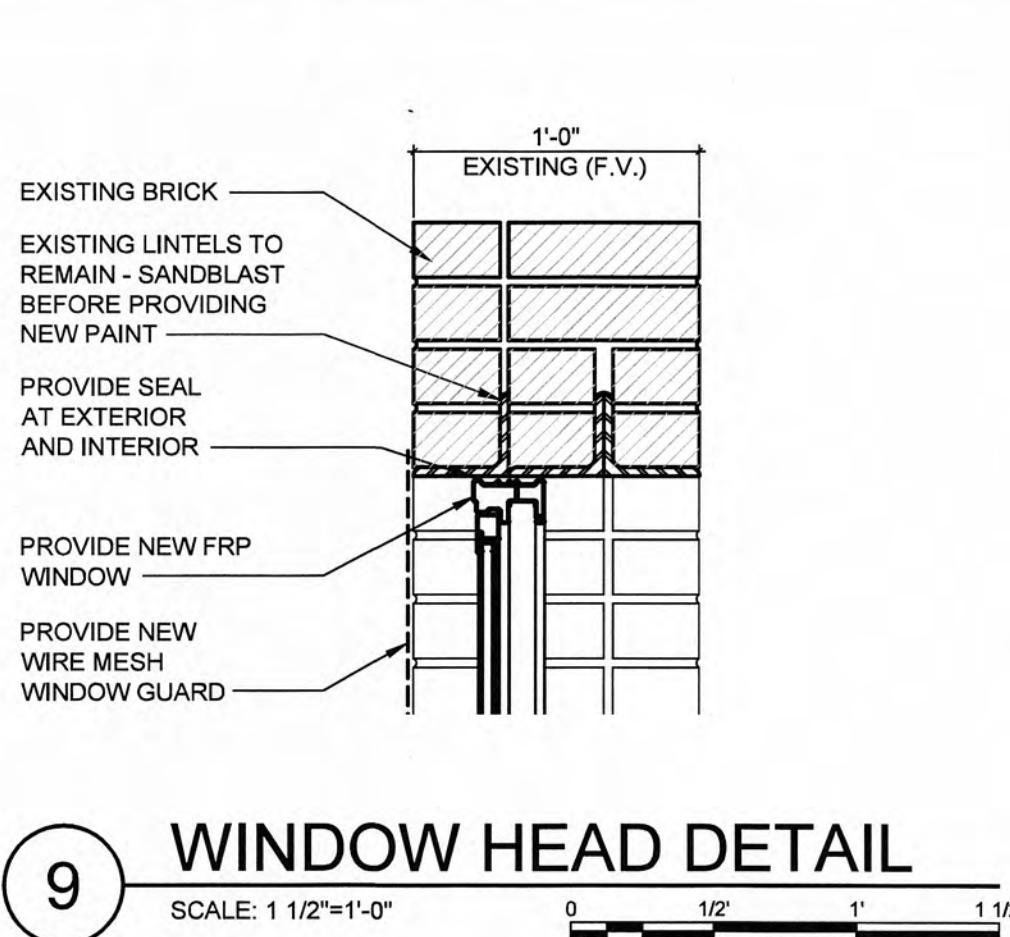


8 WINDOW GUARD DETAIL
SCALE: 1/2"=1'-0"

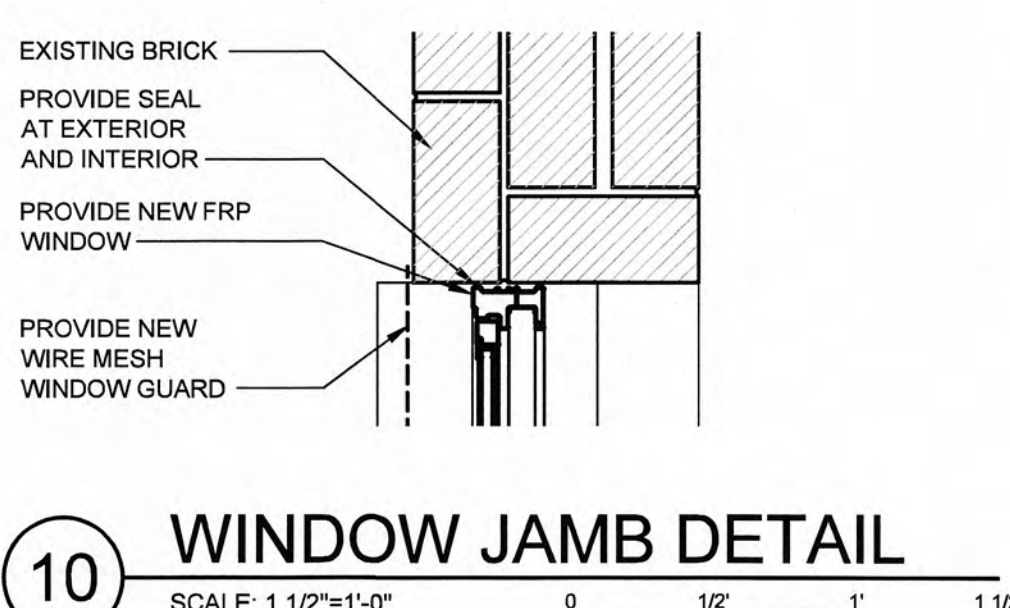
12 NEW DOOR ELEVATION
SCALE: 1/2"=1'-0"



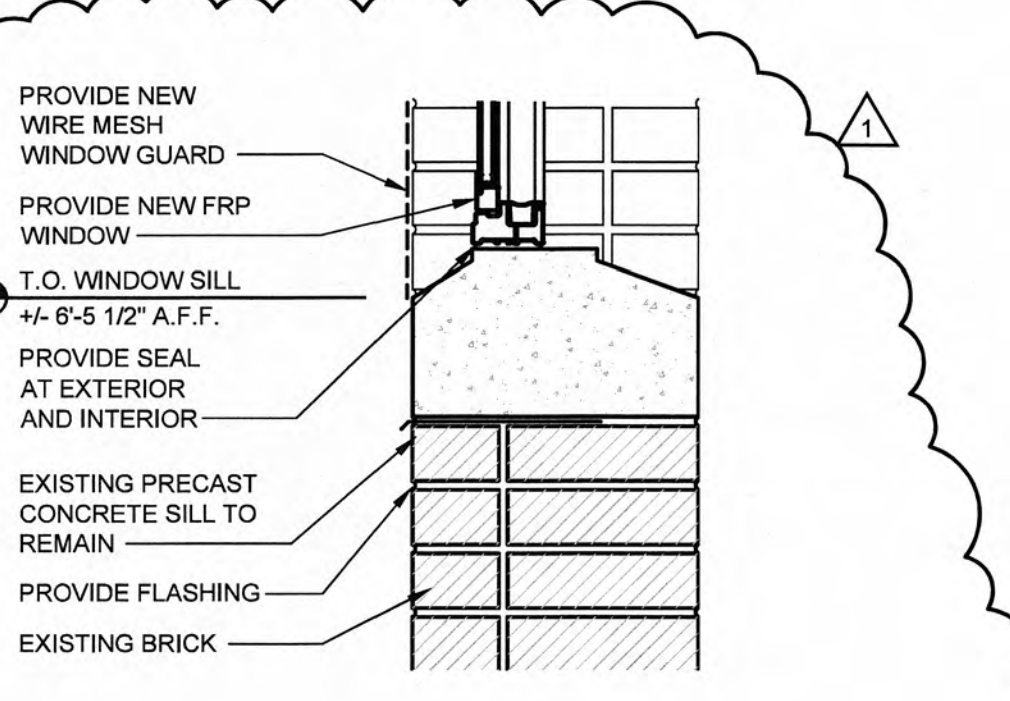
9 WINDOW HEAD DETAIL
SCALE: 1 1/2"=1'-0"



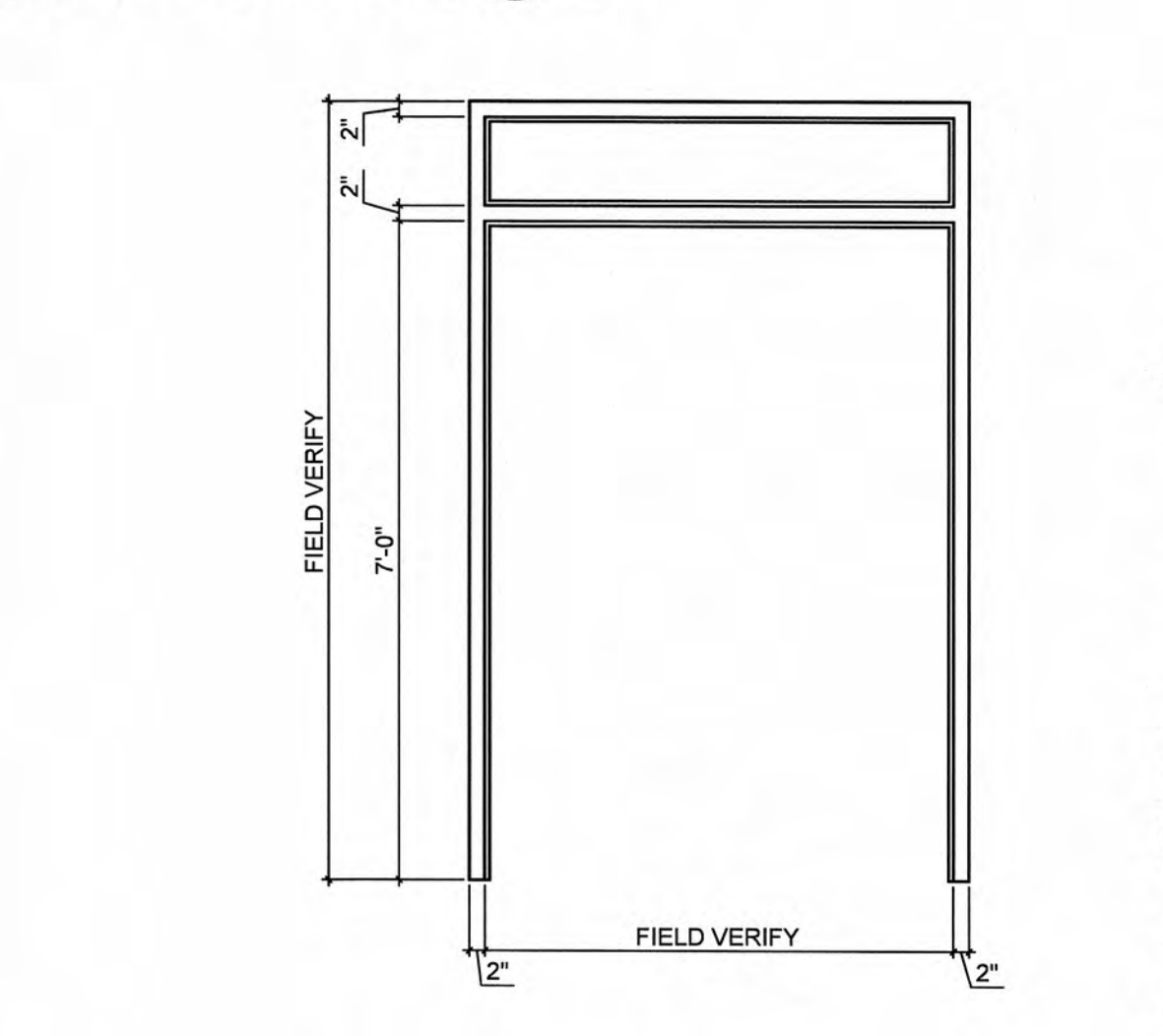
10 WINDOW JAMB DETAIL
SCALE: 1 1/2"=1'-0"



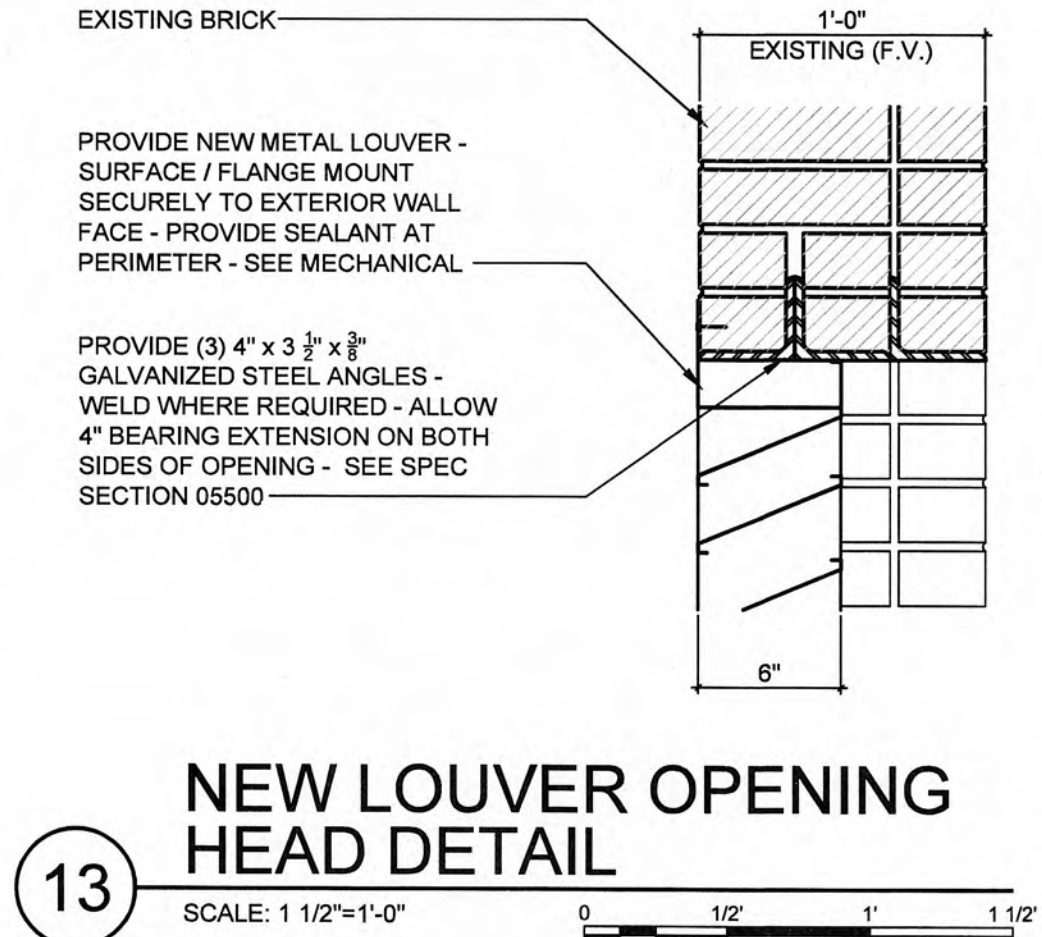
11 WINDOW SILL DETAIL
SCALE: 1 1/2"=1'-0"



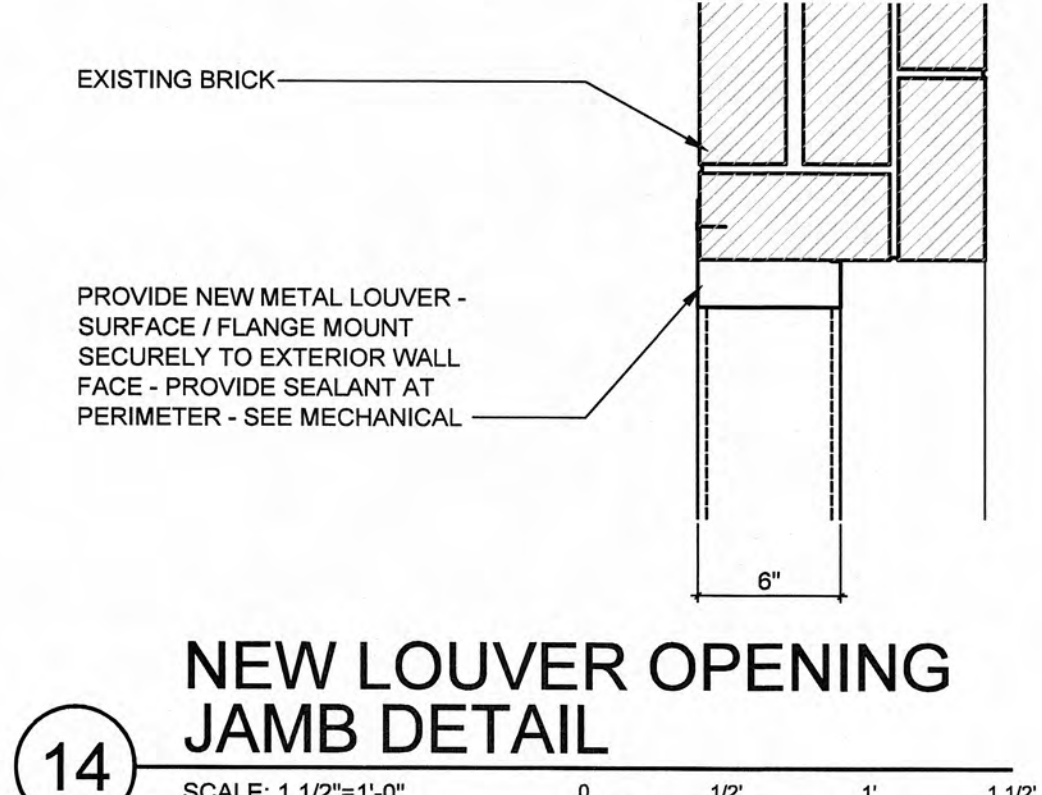
16 NEW DOOR FRAME ELEVATION
SCALE: 1/2"=1'-0"



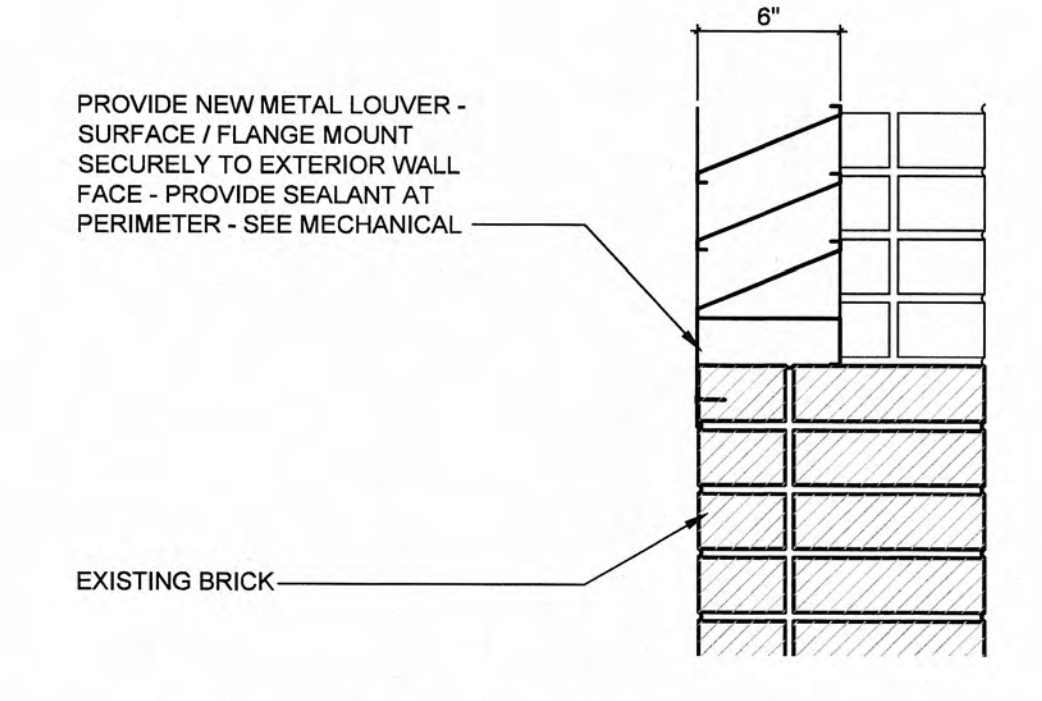
13 NEW LOUVER OPENING HEAD DETAIL
SCALE: 1 1/2"=1'-0"



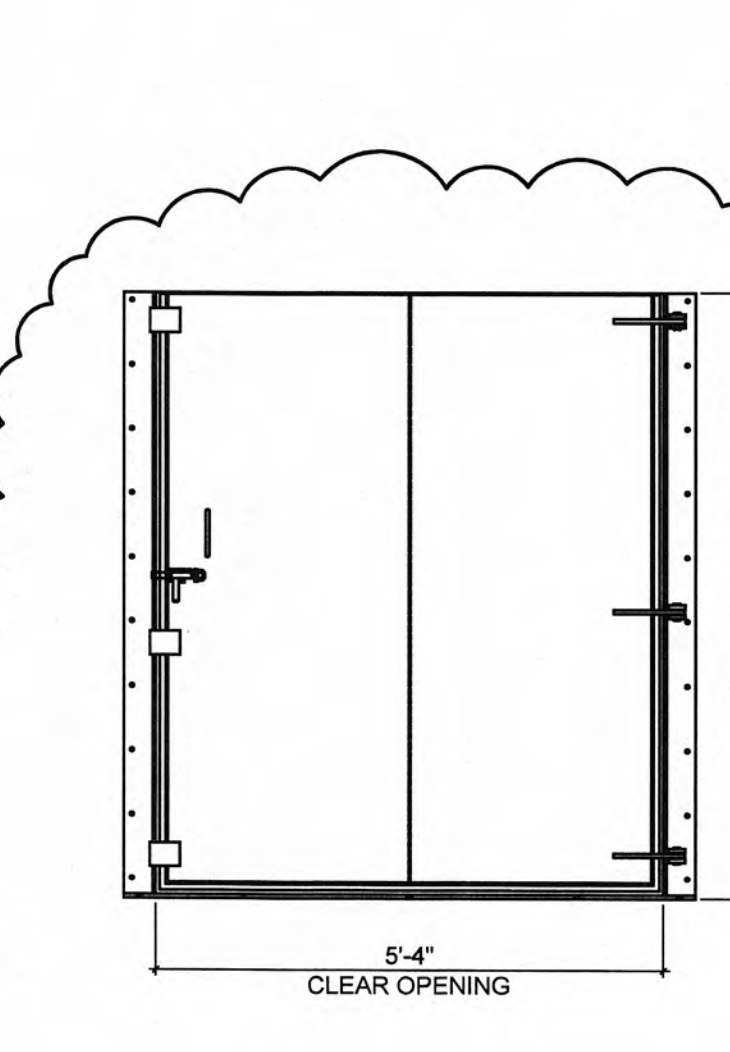
14 NEW LOUVER OPENING JAMB DETAIL
SCALE: 1 1/2"=1'-0"



15 NEW LOUVER OPENING SILL DETAIL
SCALE: 1 1/2"=1'-0"



17 FLOOD BARRIER ELEVATION
SCALE: 1/2"=1'-0"



GRV PROJECT NO. 3796-01

CLIENT PROJECT NO. XXXX

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CHRISTMAS PUMP STATION NO. A-2

PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

DESIGNED: JEE		DRAWN: JEE		REVIEWED: BSL		APPROVED: BSL	
NO.	REVISIONS	DATE	BY	DATE	BY	DATE	BY
1	REVISED WINDOW SIZE AND SILL HEIGHT + ADDITION OF NEW FLOOD BARRIER + ASTRAGAL ADDITION TO NEW FRP DOORS	8-12-09	JEE				

DATE: APRIL 10, 2009

SCALE: AS NOTED

SHEET NO.

A-301R

LOUVER SCHEDULE						
DRAWING SYMBOL	LOUVER SIZE (WIDTH X HEIGHT)	CFM	MINIMUM SQ/FT FREE AREA	MAXIMUM PRESSURE DROP (IN. WG)	MANUFACTURER AND MODEL NUMBER	NOTES
	24x24	850	1.92	0.05	RUSKIN ELF 375DXH	SEE BELOW
	24x24	850	1.92	0.05	RUSKIN ELF 375DXH	SEE BELOW

NOTES AND FEATURES:

- * LOUVERS SHALL BE BEAR AMCA SEAL AND SHALL BE TESTED IN ACCORDANCE WITH AMCA 511.
- * KYNAR COATING
- * WATER PENETRATION THROUGH LOUVER SHALL NOT OCCUR BELOW 1000 FPM (FREE AREA)
- * ALUMINUM CONSTRUCTION

ELECTRIC HEATER SCHEDULE							
DRAWING SYMBOL	TYPE	KW	CFM	VOLTAGE/PHASE	FAN R.P.M.	FAN WATTS	MANUFACTURER & MODEL NO.
	HOSE-DOWN	10	700	480/3	1550	21	TRANE UHRA

HEATERS

- * TRANSFORMER FOR 24V. THERMOSTAT
- * LOW VOLTAGE THERMOSTAT WITH HEAT-OFF-FAN SWITCH, MOUNTED ON UNIT.
- * THERMAL OVERLOAD PROTECTION.
- * 16-GAUGE, 304 STAINLESS STEEL CASING.
- * DISCONNECT SWITCH.
- * CONTROLS SHALL BE IN A NEMA 4x ENCLOSURE ON UNIT.
- * MOUNT 7"-0" A.F.F.
- * STAINLESS STEEL WALL/CEILING MOUNTING BRACKET.

ENERGY RECOVERY VENTILATION SCHEDULE													
DRAWING SYMBOL	SUPPLY SIDE				EXHAUST SIDE				VOLT/PHASE	MCA	MOCP	WEIGHT	MANUFACTURER MODEL NUMBER
	CFM	E.S.P.	HP	WHEEL EFFICIENCY	CFM	E.S.P.	HP	WHEEL EFFICIENCY					
	850	0.5	1/2	70.8%	850	0.5	1/2	70.8%	120/1	23.8	30.0	350	GREENHECK ERV-251H-20-A

NOTES AND FEATURES:

- * DUCT FLANGES.
- * REMOTE PANEL WITH HAND-OFF-AUTO SWITCH.
- * OUTSIDE AIR AND EXHAUST AIR FILTERS, 2" PLEATED, 30% EFFICIENCY.
- * TIMED EXHAUST FROST CONTROL.

* OUTDOOR AIR TEMPERATURE:
 -SUMMER: 92.0/74.0 F.
 -WINTER: 5.0 F.

* INDOOR AIR TEMPERATURE:
 -SUMMER: 85.0 F.
 -WINTER: 50.0 F.

3			
STANDARD ABBREVIATIONS AND NOTATIONS			
FFE	FINISHED FLOOR ELEVATION	NIC	NOT IN CONTRACT
FA	FROM ABOVE	SU	SUPPLY DUCTWORK
DN	DOWN	RE	RETURN DUCTWORK
CD	CEILING DIFFUSER	EX	EXHAUST DUCTWORK
CR	CEILING RETURN	OA	OUTDOOR AIR DUCTWORK
CE	CEILING EXHAUST		
SR	SUPPLY REGISTER		
RR	RETURN REGISTER		
ER	EXHAUST REGISTER		

SYMBOL	DESCRIPTION
	RECTANGULAR DUCT: MANUAL OPPOSED BLADE DAMPER WITH LOCKING QUADRANT. LEVER OPERATOR, OF STEEL CONSTRUCTION. LOUVERS & DAMPERS MODEL CD-400; KRUEGER MODEL OBD-DM TYPE 2 OPERATION FOR LESS THAN 10" WIDE.
	ROUND DUCT: ROUND BLADE CONTROL DAMPER OF STEEL CONSTRUCTION WITH MANUAL OPERATOR LOUVERS AND DAMPERS MODEL CD-600.
	SHEET METAL CONNECTORS, INC. HIGH EFFICIENCY TAKEOFF WITH DAMPER AND LOCKING QUADRANT FOR ROUND DUCT TAKEOFFS FROM RECTANGULAR DUCTWORK. INCREASE MAIN DUCT SIZE AT FITTING TO ACCOMMODATE ITS INSTALLATION IF REQUIRED TO MEET SMACNA AND MANUFACTURER'S INSTRUCTIONS. ALL BRANCH TAKEOFFS SHALL HAVE BALANCING DAMPERS FOR BALANCING PURPOSES. DIMENSION: D = RUNOUT DIAMETER (6"-14")
	RECTANGULAR ELBOW WITH SINGLE THICKNESS TURNING VANES OF STEEL CONSTRUCTION.
	EQUIPMENT TAG
	ELECTRICAL PANEL - AVOID INSTALLING EQUIPMENT IN PANEL BOARD SPACE PER ARTICLE 110 OF THE NATIONAL ELECTRIC CODE.
	WALL SWITCH - XXX-1

GRW PROJECT NO. 3798-01

CLIENT PROJECT NO. XXXX

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CHRISTMAS PUMP STATION NO. A-2 LEGEND, SCHEDULES, AND DETAILS

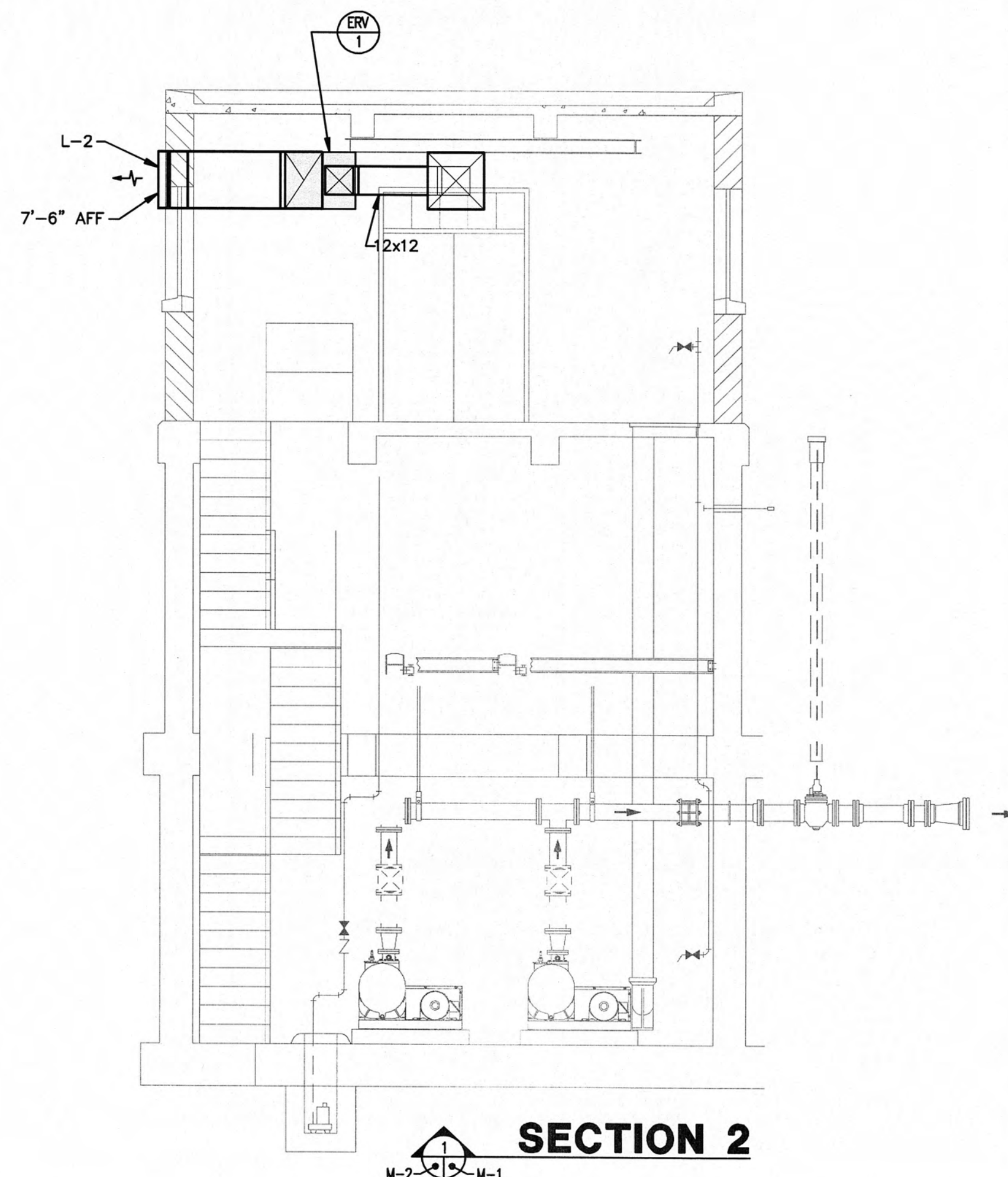
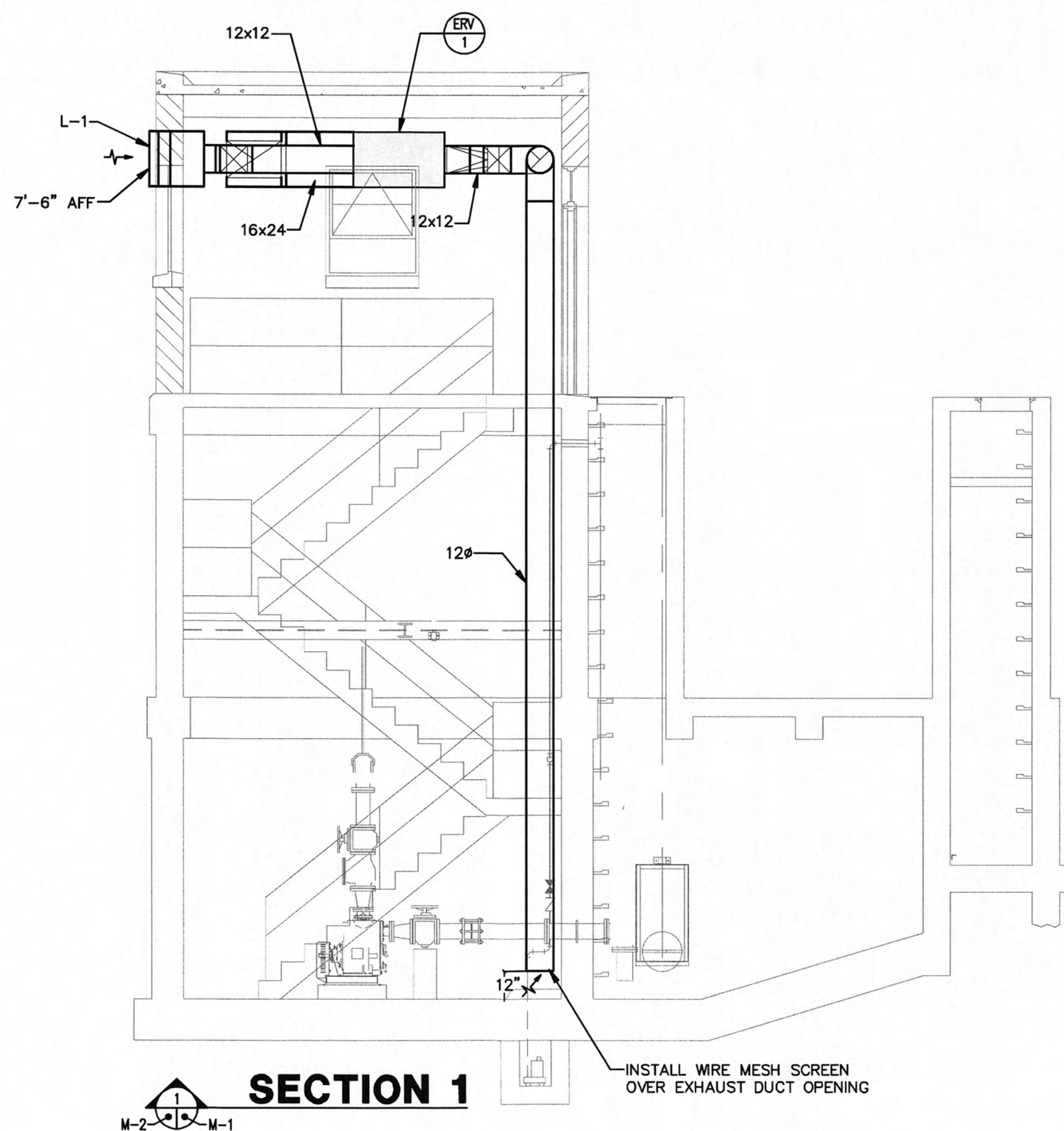
**PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE**

[illegible]

DATE: **March 23, 2009**

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

M-1





- WWR**
ENGINEERS INC.
- 5417 Ball Camp Pike
Knoxville, TN 37921
Phone: (865) 588-2431
Fax: (865) 588-2434
- West, Welch, Reed Engineers, Inc.**
WWR PROJECT# 109013
- 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 NEAR AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY TO COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.

- GENERAL NOTES:
1. 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.
 2. CONTRACTOR SHALL MAINTAIN AS 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 VARIANCES IN EXISTING CONDITIONS.
 3. 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 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.
 4. NO CONCRETE RIBS OR JOISTS SHALL BE CUT WITHOUT SPECIFIC PERMISSION FROM THE ENGINEER ALL ROOF OR FLOOR DECKS PENETRATIONS IN WAFFLE STRUCTURE SHALL BE IN THIN SLAB DEPRESSIONS IN THE STRUCTURE UNLESS NOTED OTHERWISE
 5. NO STEEL STRUCTURAL MEMBERS SHALL BE CUT, BURNED, WELDED OR DRILLED WITHOUT SPECIFIC PERMISSION OF THE ENGINEER
 6. NO WOODEN STRUCTURE MEMBERS SHALL BE CUT OR DRILLED EXCEPT AS INDICATED IN THE CONTRACT DOCUMENTS OR AS APPROVED BY THE ENGINEER.
 7. DO NOT CHANGE PATH OF DUCT RUNS, ADD TURNS OR OFFSETS OR CHANGE DUCT DIMENSION OR PIPE SIZE WITHOUT FIRST CONSULTING THE ENGINEER. ALL DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE DIMENSIONS FOR SHOP OR FIELD-FABRICATED DUCT AND NOMINAL SIZES FOR FACTORY FABRICATED DUCT.
 8. ALL EXISTING EQUIPMENT SHUTDOWNS OR INTERRUPTIONS OF UTILITY SERVICES REQUIRED FOR COMPLETION OF THE WORK SHALL BE SCHEDULED IN ADVANCE, AS REQUIRED BY THE OWNER
 9. COORDINATE ALL DUCTWORK WITH BOTH NEW AND EXISTING MECHANICAL AND ELECTRICAL WORK INCLUDING HVAC, PLUMBING, ELECTRICAL, FIRE ALARM, AND COMMUNICATIONS
 10. FANS SHALL BE PROVIDED AS INDICATED GREENHECK, CARNES, COOK OR APPROVED EQUAL. LOUVERS, HOODS, AND PENTHOUSES SHALL BE PROVIDED AS INDICATED BY GREENHECK, AIRSTREAM LOUVERS AND DAMPERS, CARNES, RUSKIN OR APPROVED EQUAL.
 11. 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 OF THE OWNER.

[illegible]

M-2

"AS-BUILT" DRAWINGS

GRW PROJECT NO. 3788-01

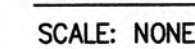
CLIENT PROJECT NO. XXXX

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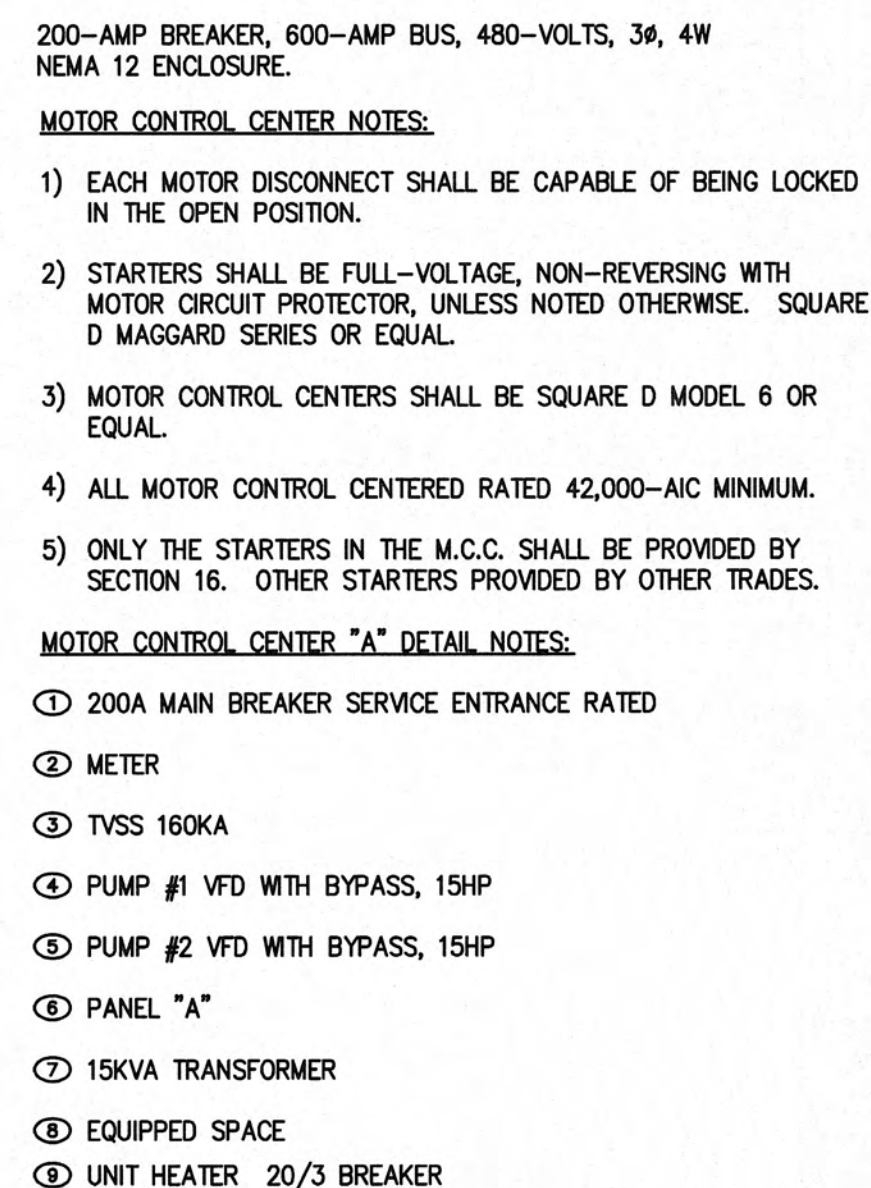
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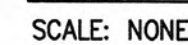
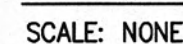
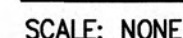
**CHRISTMAS PUMP STATION NO. A-2
FLOOR PLANS - HVAC
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE**



WWR
ENGINEERS INC.
5417 Ball Camp Pike
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Fax: (865) 588-2434
West, Welch, Reed Engineers, Inc.
WWR PROJECT# 109013
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SCALE: NONE



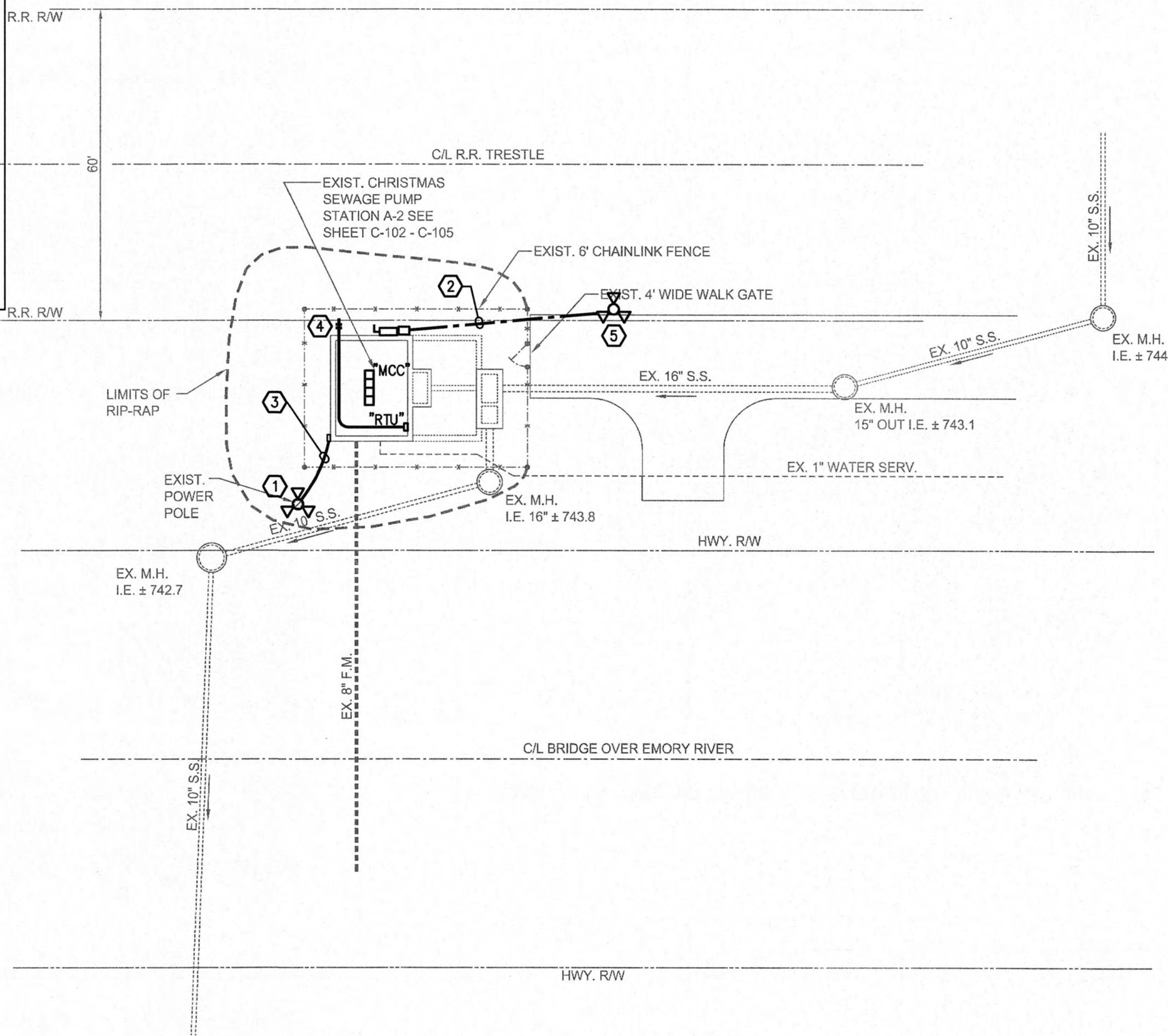
WWR
ENGINEERS INC.
5417 Ball Camp Pike
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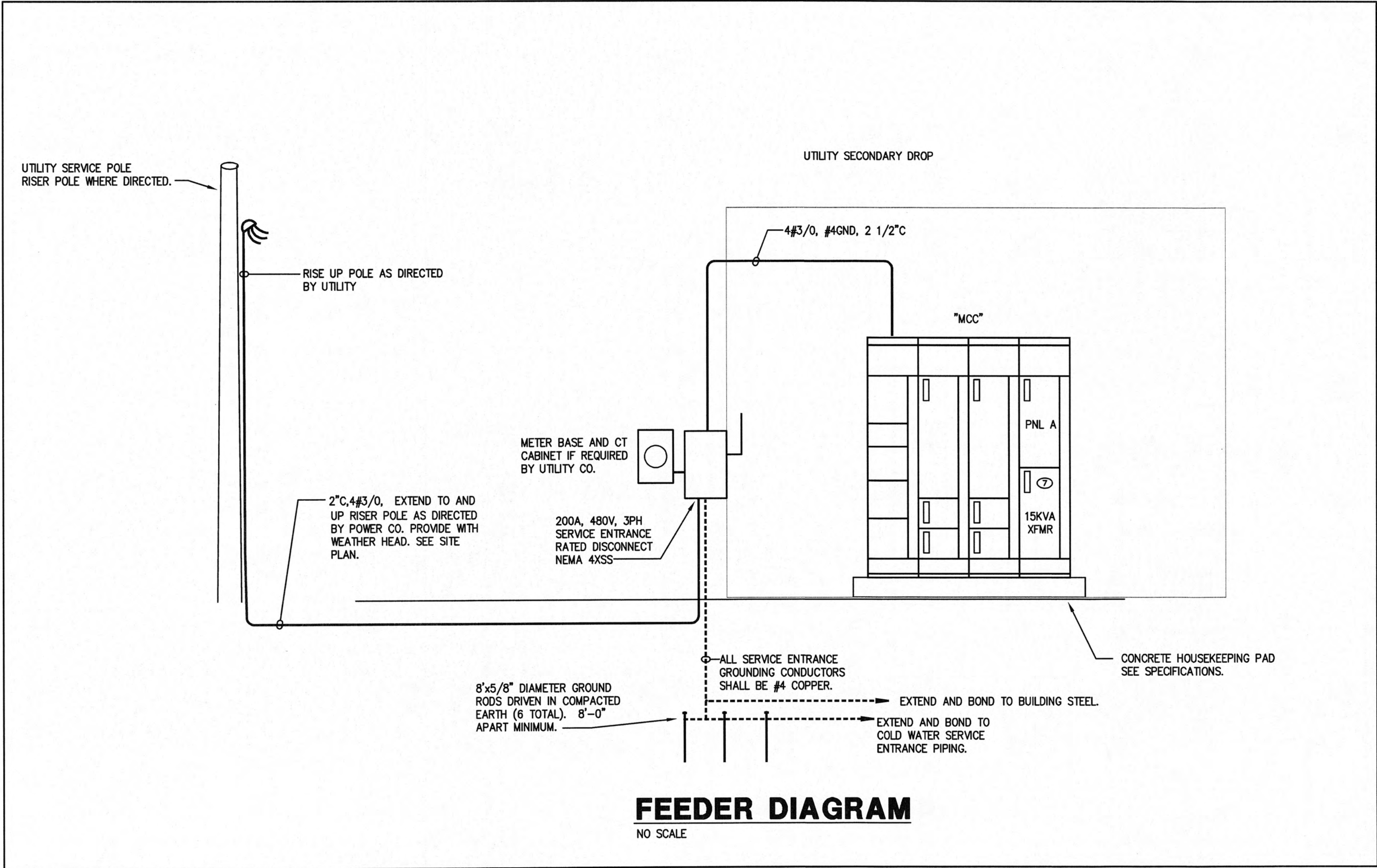
CHRISTMAS PUMP STATION NO. A-2
CONTROL DIAGRAMS
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

REVISIONS						DESIGNED:
NO.	DESCRIPTION	DATE	BY			RAC
						DRAWN:
						RAC
						REVIEWED:
						RAC
						APPROVED:
DATE: March 23, 2009 SCALE: NONE SHEET NO. _____						

- NOTES - SITE PLAN
- ① LOCATION OF EXISTING SERVICE POLE TO BE REMOVED. COORDINATE WITH UTILITY COMPANY.
 - ② NEW UNDERGROUND SECONDARY BY CONTRACTOR. SEE FEEDER DIAGRAM.
 - ③ EXISTING OVERHEAD TELEPHONE SERVICE TO BE REMOVED
 - ④ EXTEND RG59/U, 2" C TO NEW ANTENNA PROVIDED BY OWNER. VERIFY EXACT LOCATION PRIOR TO ROUGHIN.
 - ⑤ LOCATION OF NEW SERVICE POLE TO PUMP STATION COORDINATE WITH UTILITY COMPANY.



PUMP STATION - SITE PLAN
SCALE: 1"=20'-0"



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WWR PROJECT# 109013

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"AS-BUILT" DRAWINGS

GRW PROJECT NO. 3796-01

CLIENT PROJECT NO. XXXX

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CHRISTMAS PUMP STATION NO. A-2
SITE PLAN - ELECTRICAL
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

DESIGNED	RAC	DATE	BY
DESIGNED	RAC	DATE	BY
REVIEWED	RAC	DATE	BY
APPROVED	RAC	DATE	BY

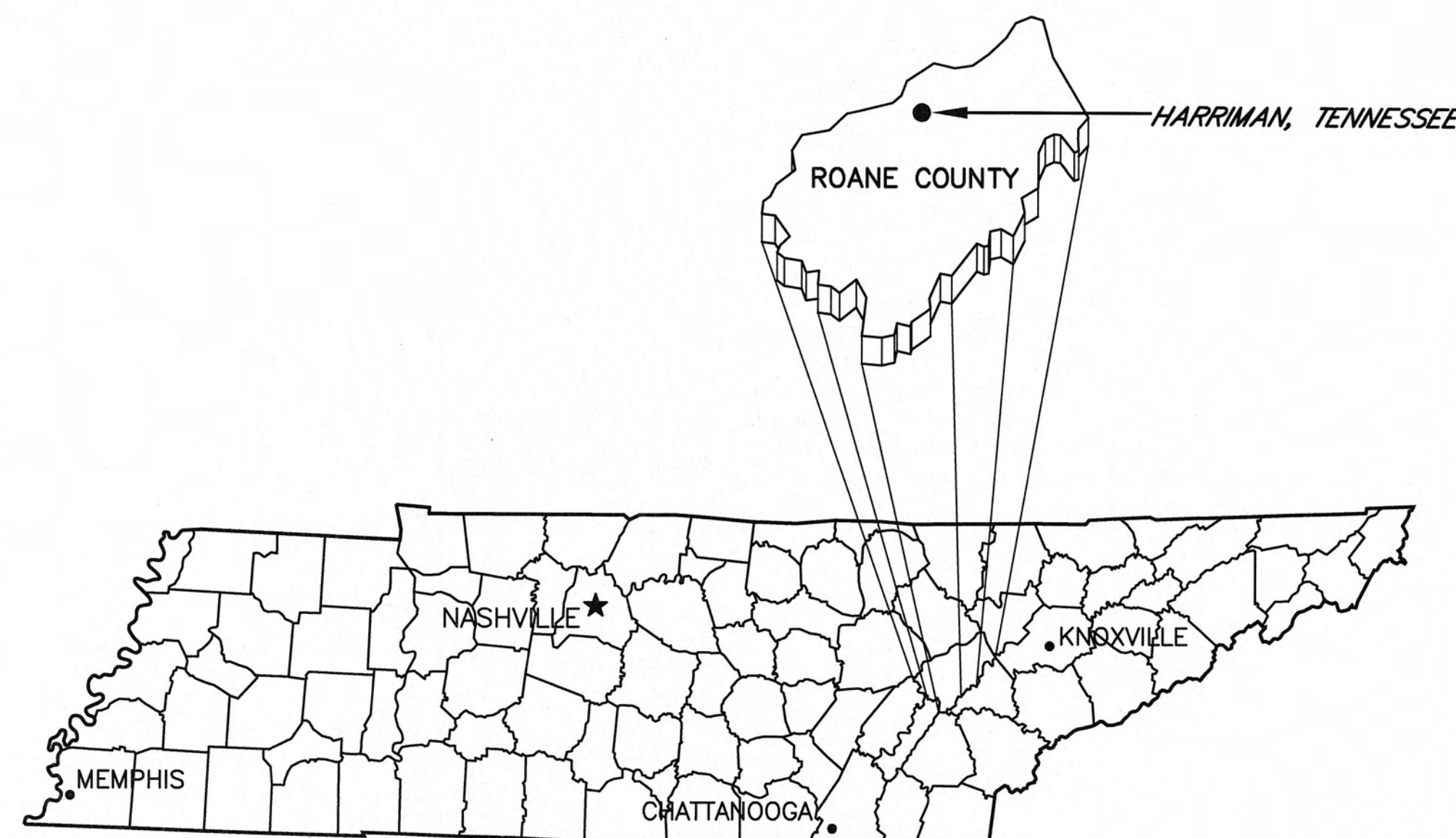
REVISIONS
DESCRIPTION
NO. 1
THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: March 23, 2009
SCALE: 1" = 20'
SHEET NO.

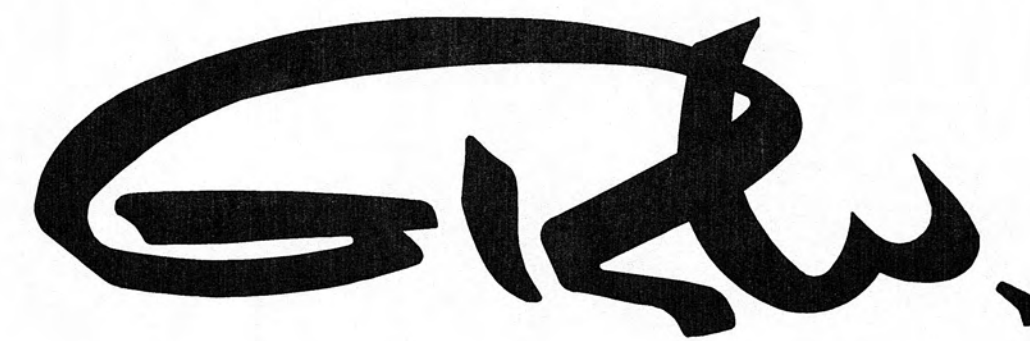
E-3

SEWER REHABILITATION CHRISTMAS PUMP STATION (P.S. A-2) FOR HARRIMAN UTILITY BOARD

ROANE COUNTY
HARRIMAN, TENNESSEE
CONTRACT: S09-01



TENNESSEE VICINITY MAP
NOT TO SCALE



GRW Engineers, Inc.
Engineers, Architects, Planners

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LEXINGTON LOUISVILLE NASHVILLE INDIANAPOLIS
FORT MITCHELL KNOXVILLE ARLINGTON

DWG. No.	INDEX OF DRAWINGS
G-100	COVER SHEET
G-101	LOCATION MAP, GENERAL NOTES
C-101	SITE PLAN
C-102	DEMOLITION-PLAN VIEWS
C-103	DEMOLITION-SECTIONS
C-104	UPGRADE-PLAN VIEWS
C-105	UPGRADE-SECTIONS
C-106	SANITARY SEWER REHABILITATION
A-101	DEMOLITION-PLAN VIEWS
A-102	UPGRADE-PLAN VIEWS
A-201	DEMOLITION-SECTIONS & ELEVATIONS
A-202	UPGRADE-SECTIONS & ELEVATIONS
A-301	DETAILS
M-1	LEGENDS, SCHEDULES AND DETAILS
M-2	FLOOR PLANS - HVAC
E-1	LEGENDS, SCHEDULES AND DETAILS
E-2	CONTROL DIAGRAMS
E-3	FLOOR PLAN - ELECTRICAL
E-4	SITE PLAN - ELECTRICAL

RECORD DRAWINGS

THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" PROJECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE. ALTHOUGH PREPARED FROM THE CONSTRUCTION RECORD, THEY CANNOT BE GUARANTEED TO BE EXACT IN EVERY DETAIL.

CHECKED BY:

Spencer Grooms
ENGINEER'S REPRESENTATIVE

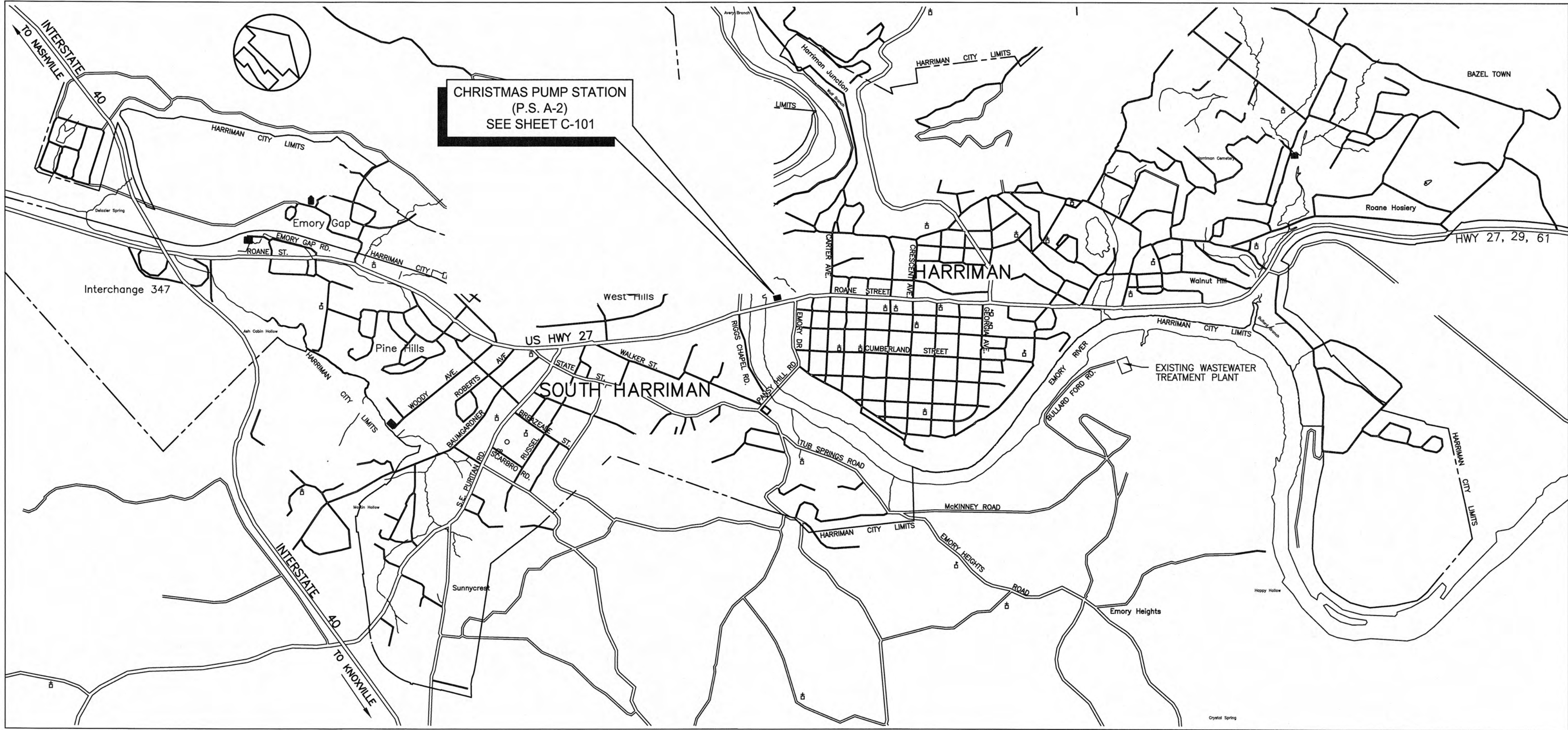
2/4/2010
DATE

APRIL 2009

GRW PROJECT NO. 3796-01

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

TENNESSEE ONE CALL SYSTEM
IN
TENNESSEE
CALL
1 - 800 - 351 - 1111
THREE WORKING DAYS BEFORE YOU DIG
IT IS THE CONTRACTORS 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.

RECORD DRAWINGS

THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" PROJECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE. ALTHOUGH PREPARED FROM THE CONSTRUCTION RECORD, THEY CANNOT BE GUARANTEED TO BE EXACT IN EVERY DETAIL.

CHECKED BY: *Shannon Grooms* 2/4/2010
ENGINEER'S REPRESENTATIVE DATE

LOCATION MAP AND GENERAL NOTES

PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

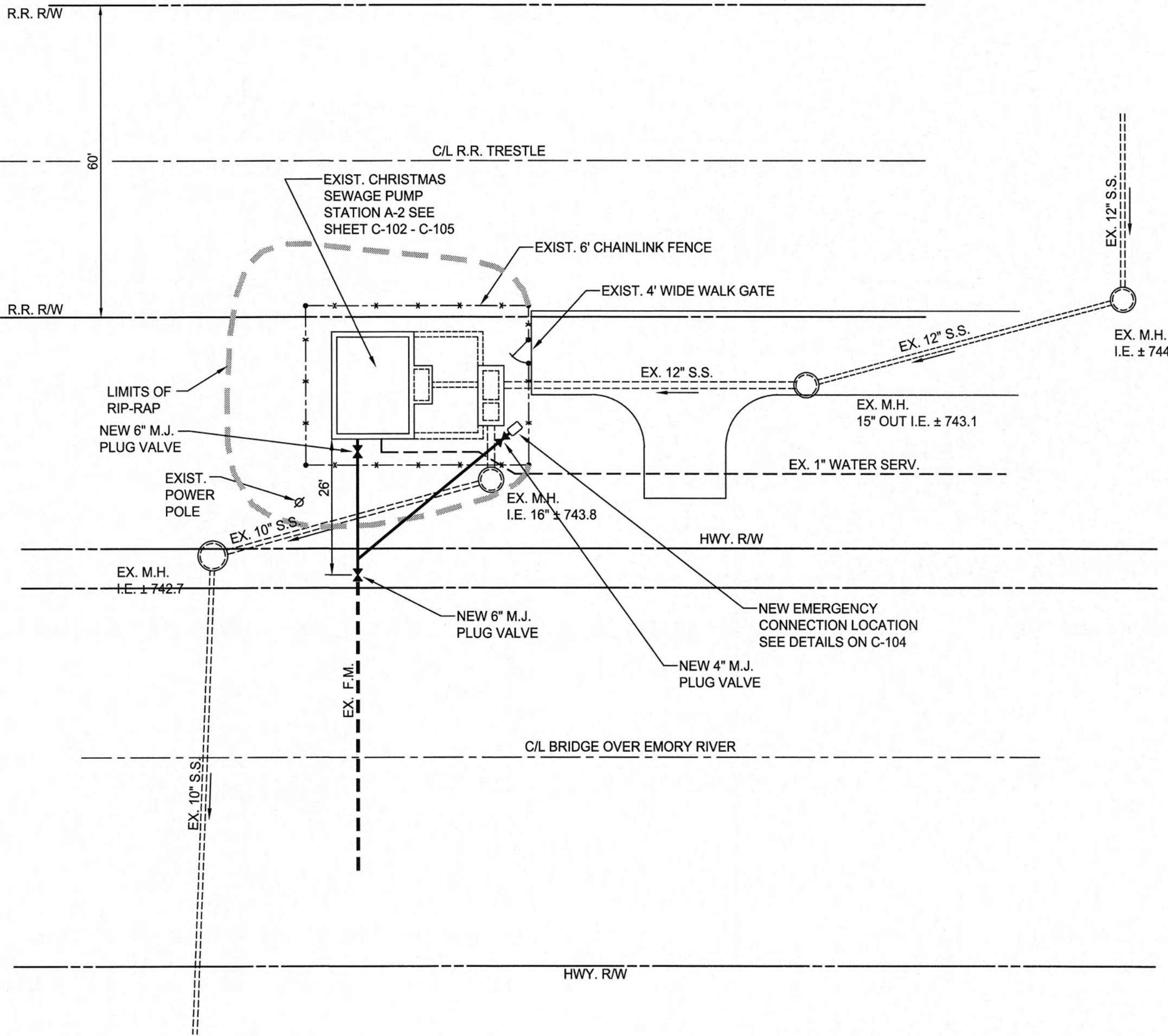
GRW PROJECT NO. 3796-01
CLIENT PROJECT NO. XXXX

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REVISIONS	NO.	DESCRIPTION	DATE	BY	DESIGNED	DRAWN	REVIEWED	APPROVED
					SG	SG	RGT	RGT

DATE: APRIL, 2009
SCALE: AS NOTED
SHEET NO.

1. INSTALL RIP-RAP TO STABILIZE EMBANKMENT IN AREA SHOWN.
2. REMOVE EXISTING CHAINLINK FENCE AND RETURN MATERIALS TO OWNER FOR REUSE. INSTALL NEW CHAINLINK FENCE AND WALK GATE. (SEE DETAIL ON THIS SHEET).
3. RESTORE GRAVEL LAYER WITHIN FENCED AREA OF P.S. TO APPROX. 4" THICKNESS.



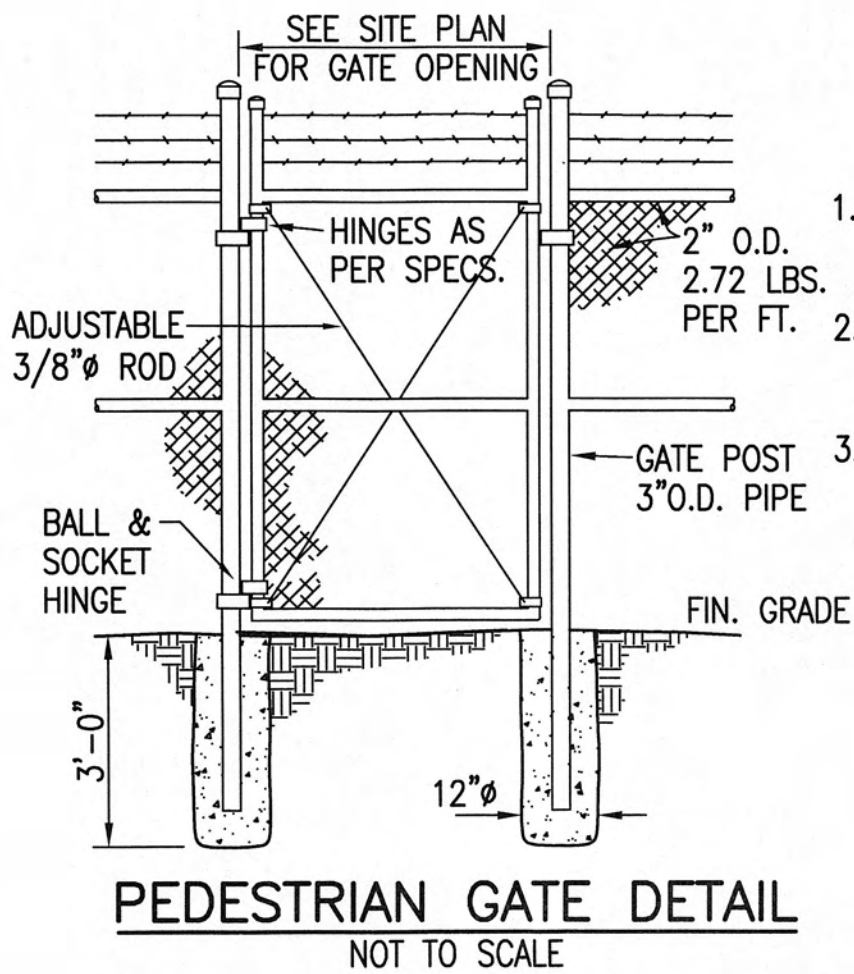
EXISTING CHRISTMAS PUMP STATION (P.S. A-2) - SITE PLAN
SCALE: 1" = 20' - 0"

RECORD DRAWINGS

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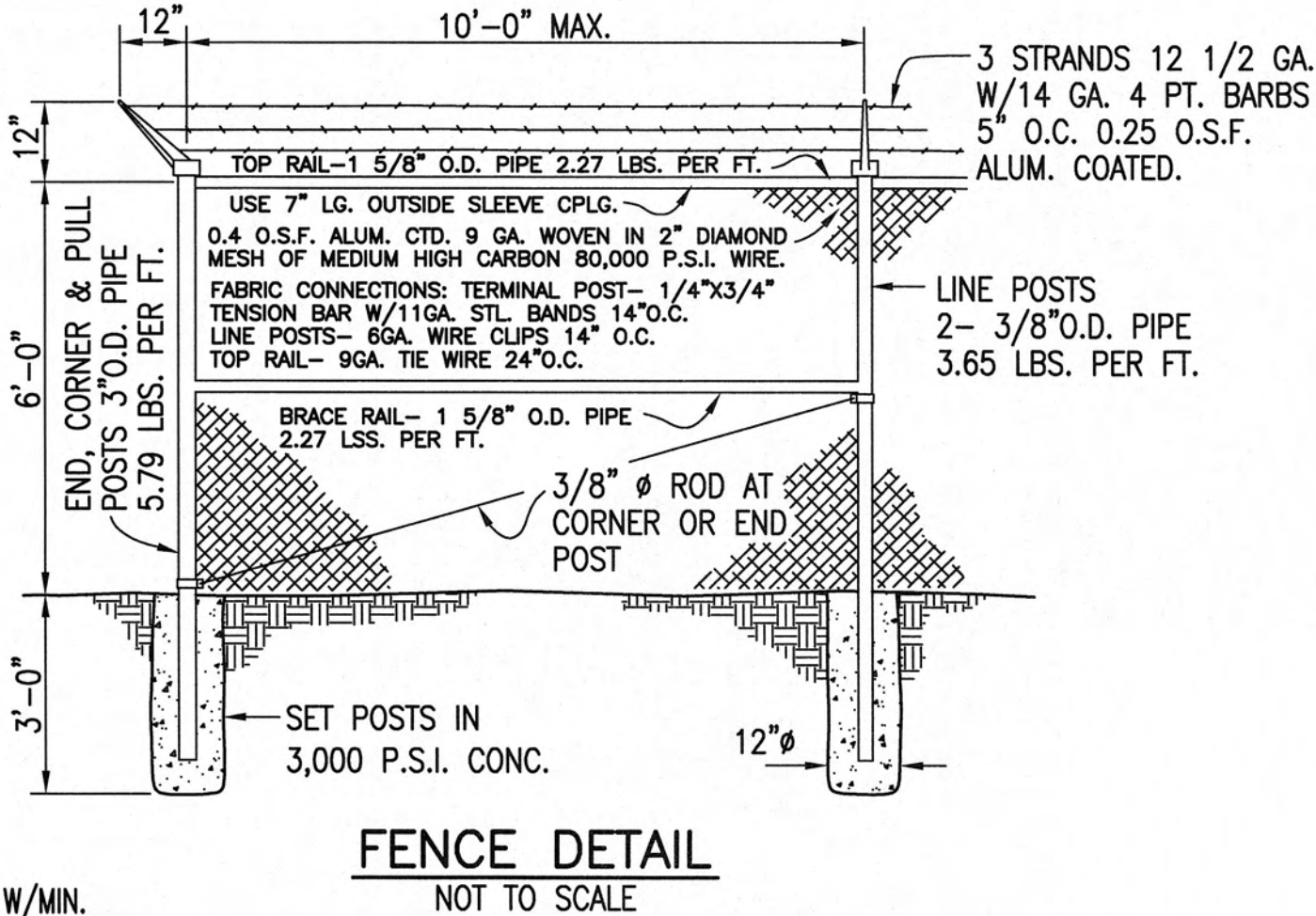
CHECKED BY:
Spencer Grimes
ENGINEER'S REPRESENTATIVE

2/4/2010
DATE



1. TENSION BARS & HOOK BOLTS ON BOTH SIDES & AT END OF FABRIC
2. GATE LATCHING MECHANISM - AS PER SPECIFICATIONS
3. ALL POSTS & OTHER APPURTENANCES SHALL BE HOTDIP GALVANIZED W/MIN. 2.0 O.S.F. ZINC. ALL FITTINGS SHALL BE MALLABLE CAST IRON OR PRESSED STEEL.

ALL POSTS & OTHER APPURTENANCES SHALL BE HOT DIP GALVANIZED W/MIN. 2.0 O.S.F. ZINC. ALL FITTINGS SHALL BE MALLABLE CAST IRON OR PRESSED STEEL.



GRW PROJECT NO. 3796-01

CLIENT PROJECT NO. XXXX

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CHRISTMAS PUMP STATION (P.S. NO. A2)
SITE PLAN
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

REVISIONS	DESIGNED	BY	DATE	DESCRIPTION	APPROVED
NO.					

DATE:
APRIL, 2009

SCALE:
AS NOTED

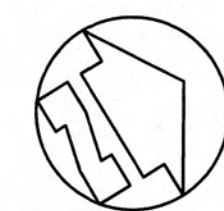
SHEET NO.
C-101



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



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



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

2/4/2016
DATE



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[illegible]

SHEET NO.

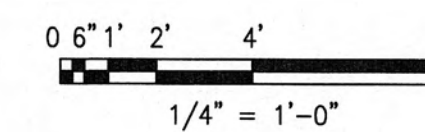
C-102

FILE NAME: I:\Harriman UB - 3796-01 (2008 CDBG)\CADD\ CADD Christmas PS A-2\Record Drawings\C-102 PS Demo.dwg

INDICATES EQUIPMENT / PIPING TO BE REMOVED

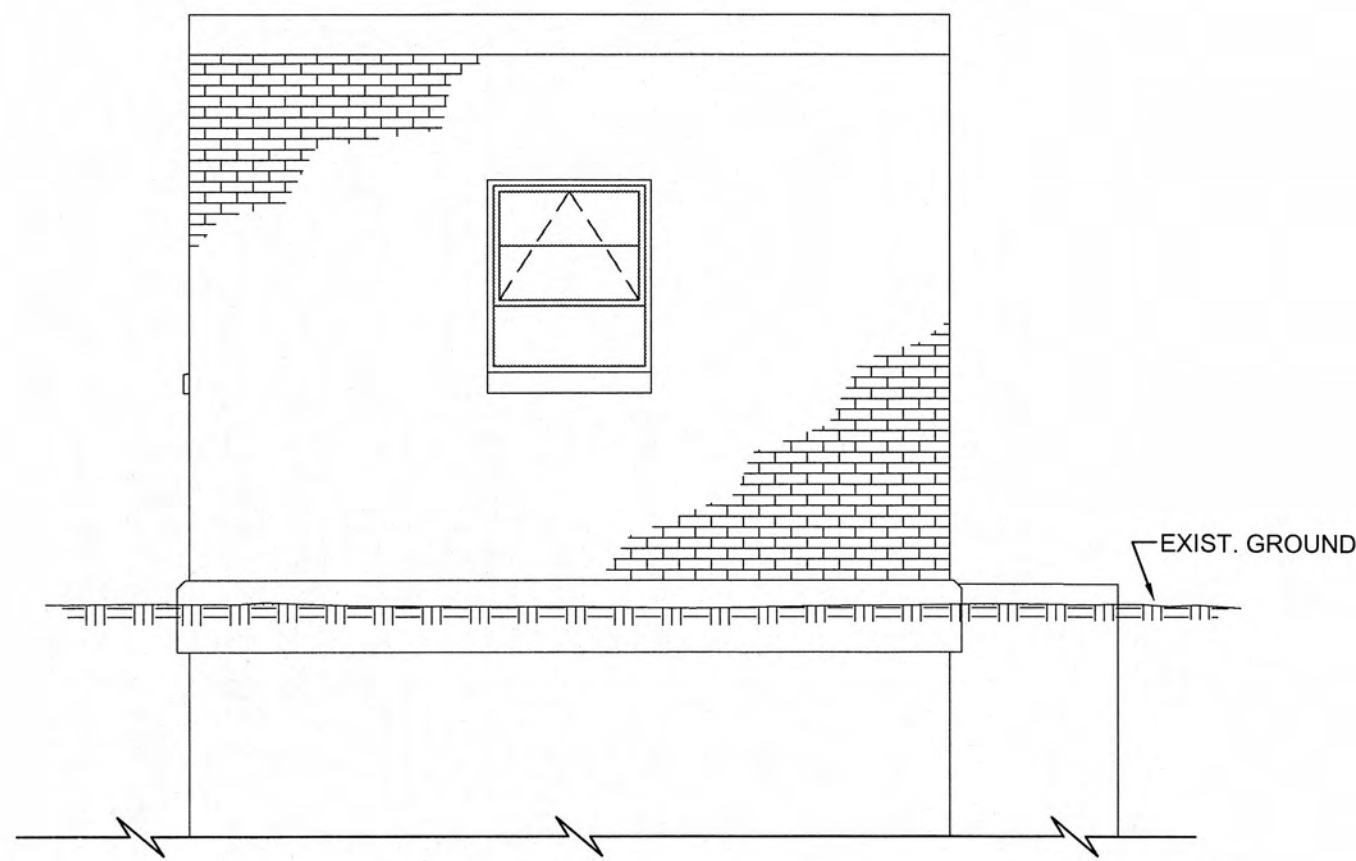
INDICATES EXISTING CONCRETE STRUCTURE

INDICATES EXISTING EQUIPMENT TO REMAIN



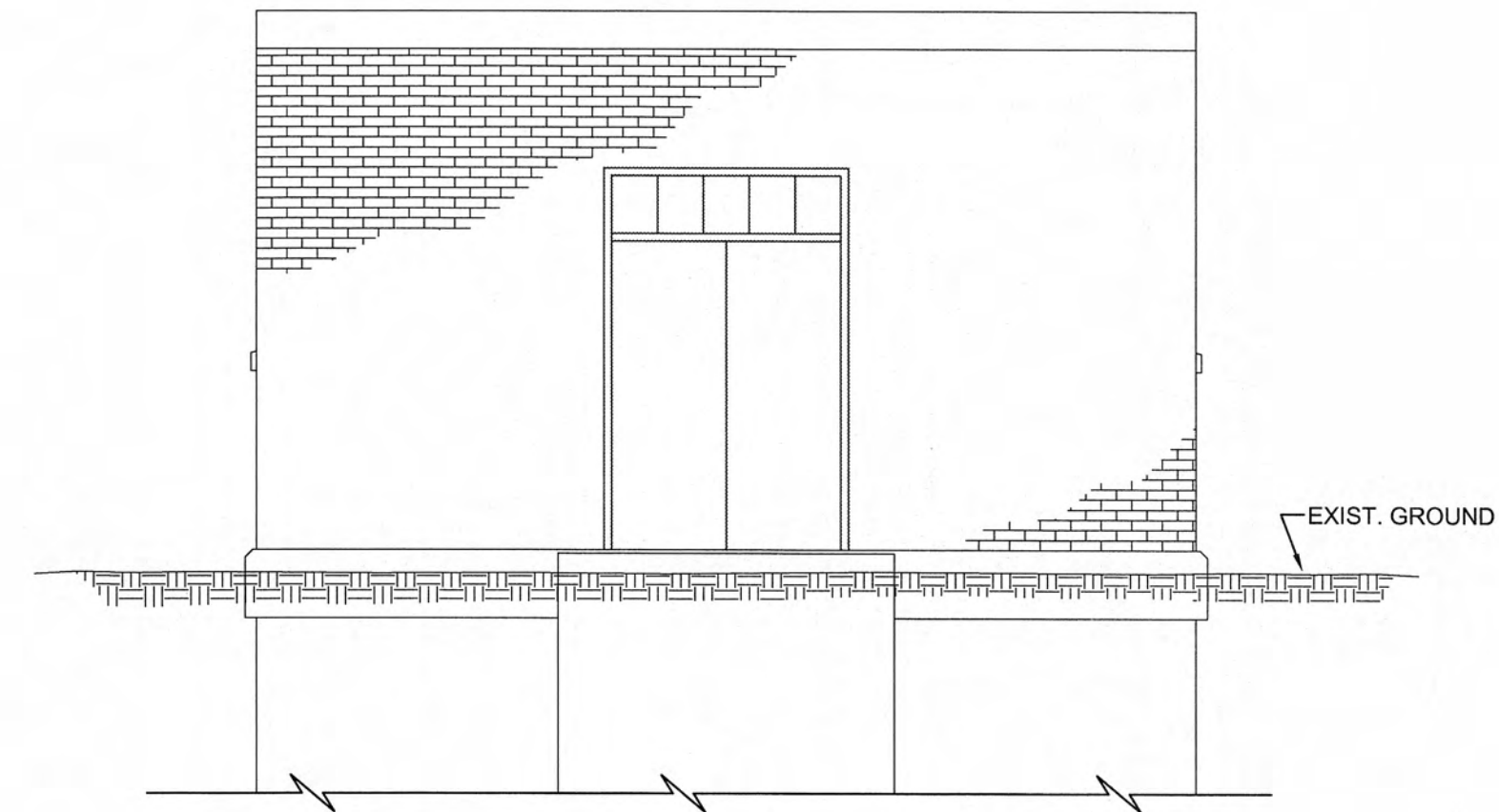
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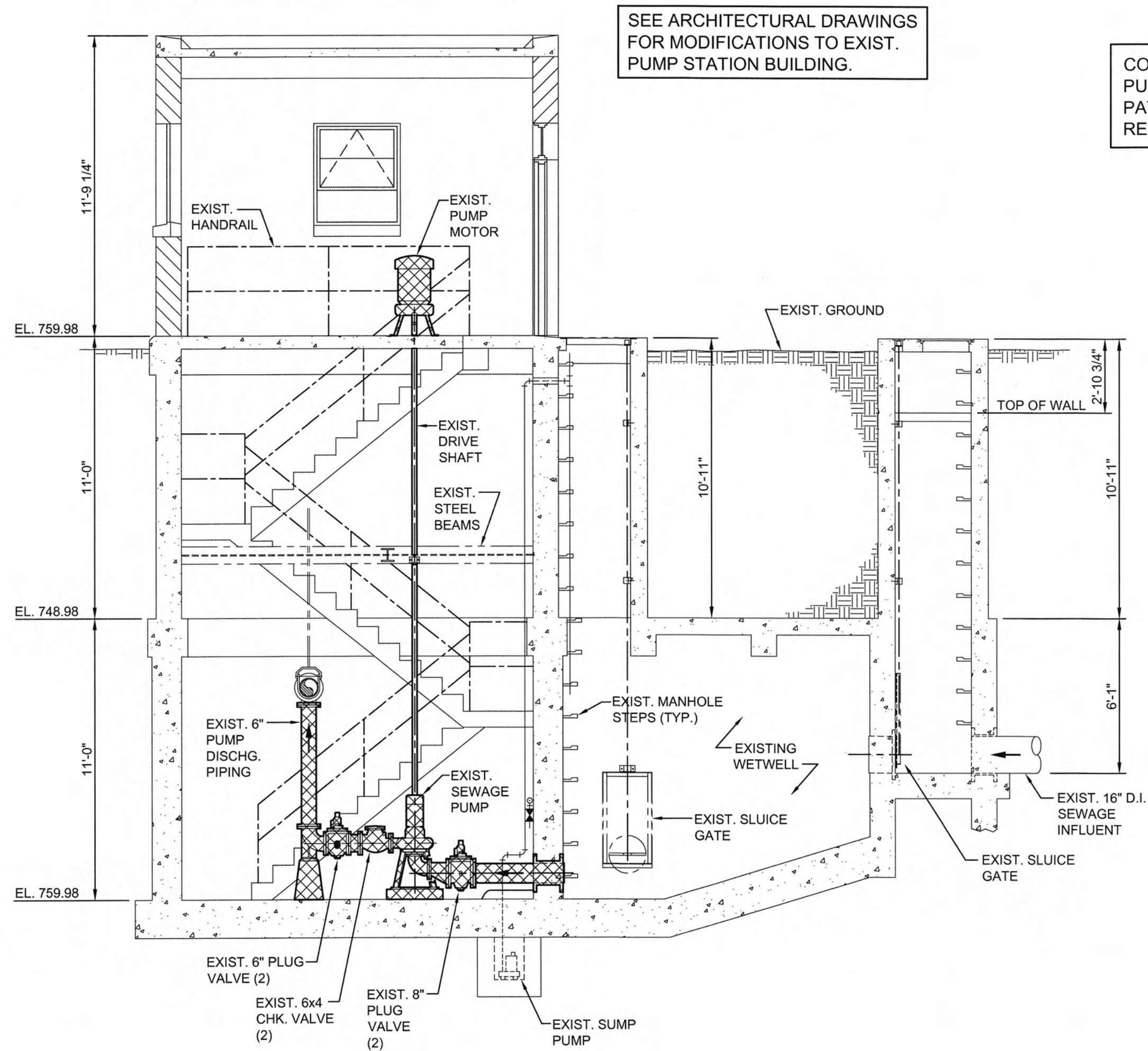


EXISTING EAST SIDE ELEVATION
SCALE: 1/4" = 1'-0"

SEE ARCHITECTURAL DRAWINGS
FOR MODIFICATIONS TO EXIST.
PUMP STATION BUILDING.



EXISTING FRONT ELEVATION
SCALE: 1/4" = 1'-0"



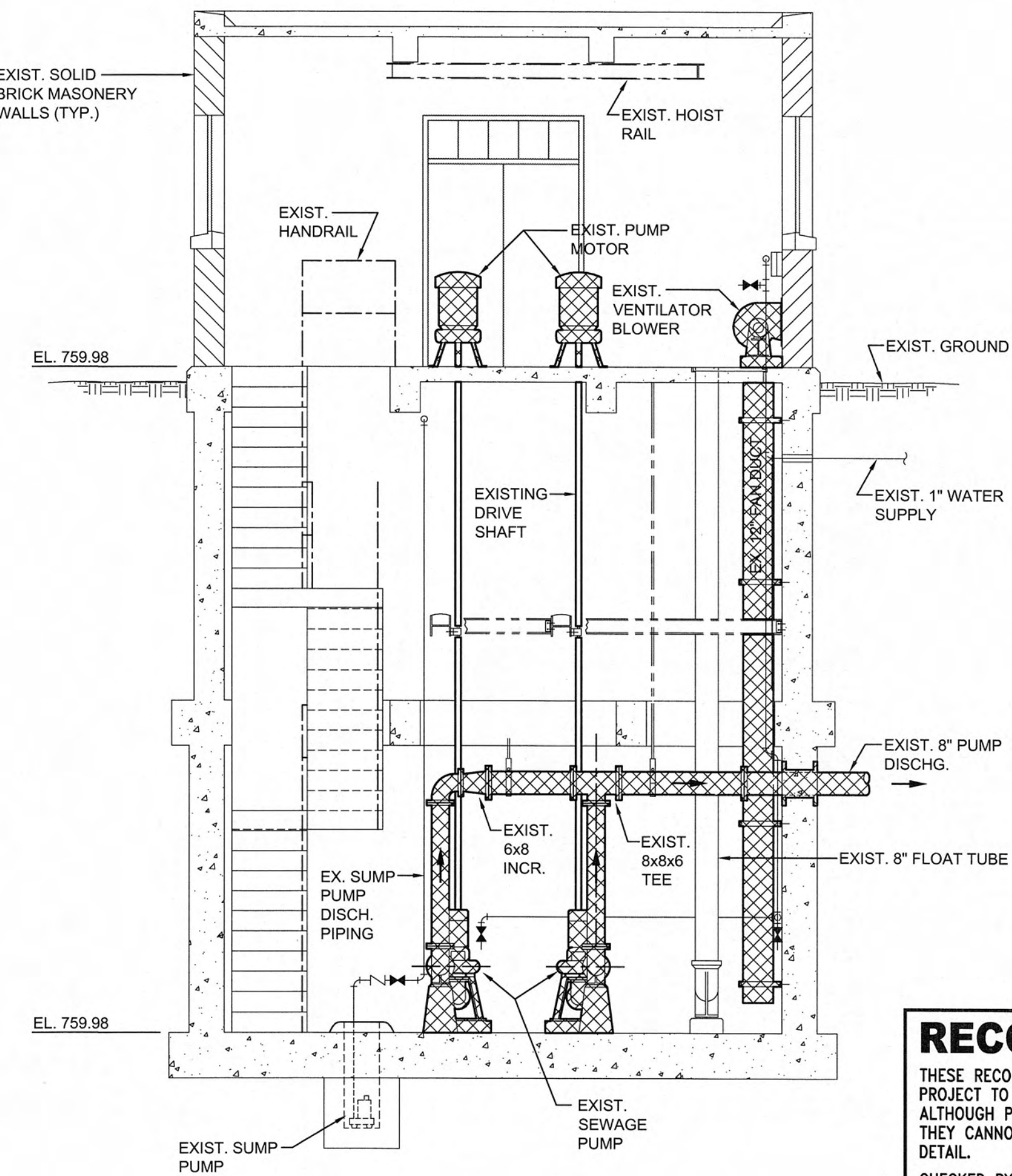
1 SECTION - DEMO
C-103 SCALE: 1/4" = 1'-0"

CONTRACTOR SHALL REMOVE EXISTING
PUMP MOTORS AND STEEL BASE PLATES,
PATCH, CLEAN AND SEAL FLOOR AFTER
REMOVAL OF MOTORS AND PLATES.

CONTRACTOR SHALL REMOVE
EXISTING SEWAGE PUMPS,
PIPING, VALVES, BASE SLABS
AND PIERS.

DEMO LEGEND

- INDICATES EQUIPMENT / PIPING TO BE REMOVED
- INDICATES EXISTING CONC. STRUCTURE
- INDICATES EXISTING EQUIPMENT / PIPING TO REMAIN



2 SECTION - DEMO
C-103 SCALE: 1/4" = 1'-0"

RECORD DRAWINGS
THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" PROJECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE. ALTHOUGH PREPARED FROM THE CONSTRUCTION RECORD, THEY CANNOT BE GUARANTEED TO BE EXACT IN EVERY DETAIL.
CHECKED BY: *Spencer Grooms* 2/4/2010
ENGINEER'S REPRESENTATIVE DATE

0 6" 1' 2' 4' 8'
1/4" = 1'-0"

GRW PROJECT NO. 3796-01

CLIENT PROJECT NO. XXXX

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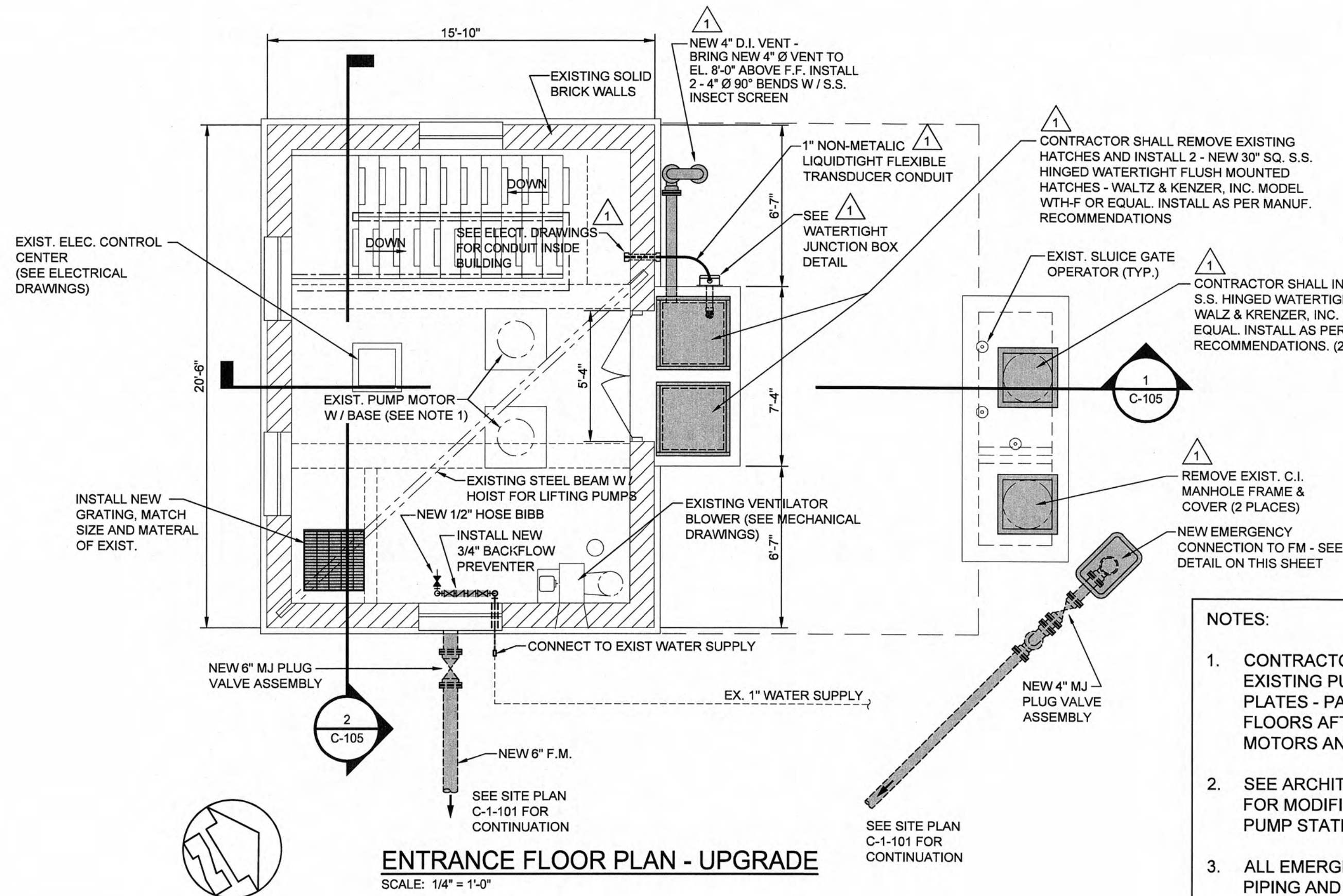
www.grwdnc.com

CHRISTMAS PUMP STATION NO. A2
DEMOLITION - SECTIONS
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

DESIGNED	RG	RG	RG	RG
BY	DATE	DATE	DATE	DATE
NO.				

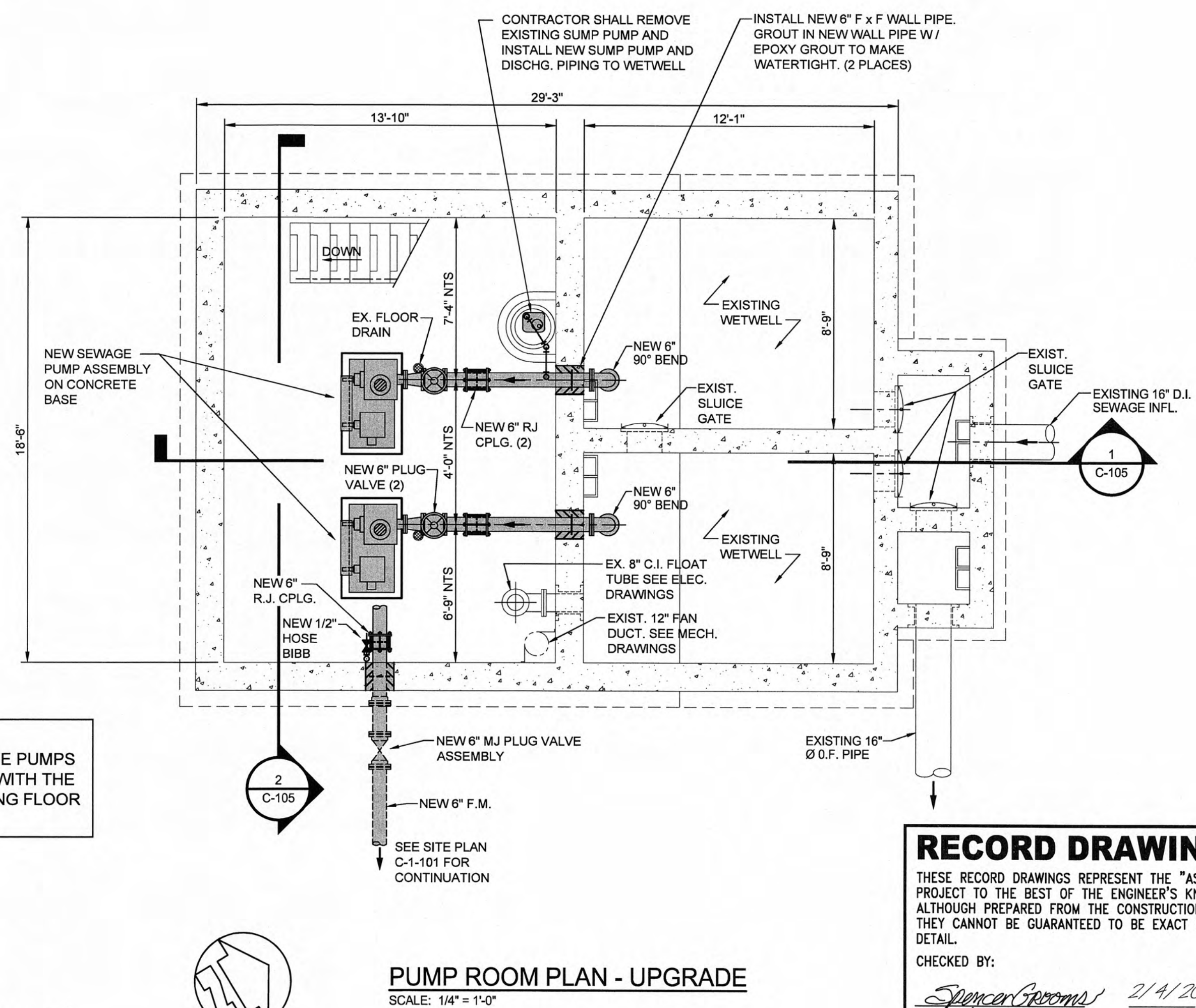
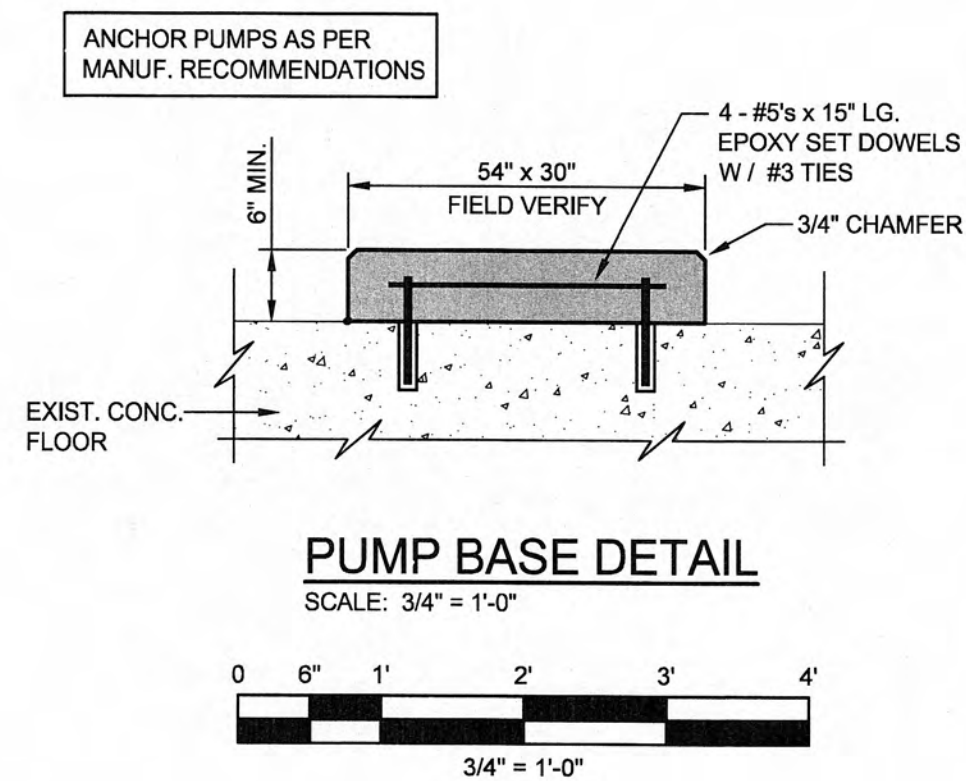
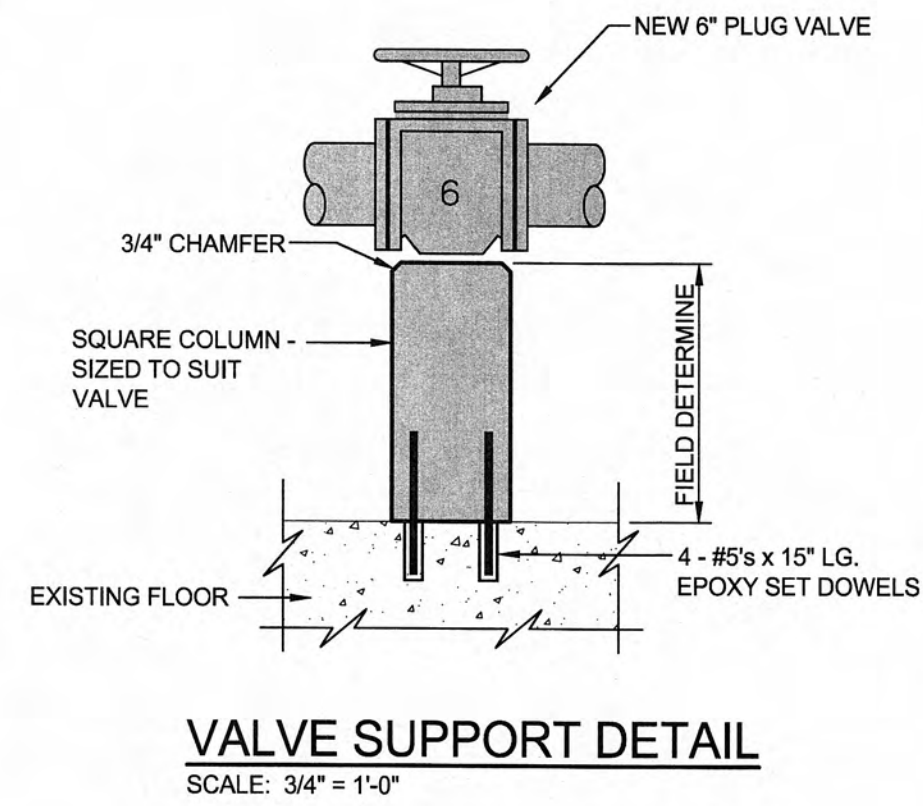
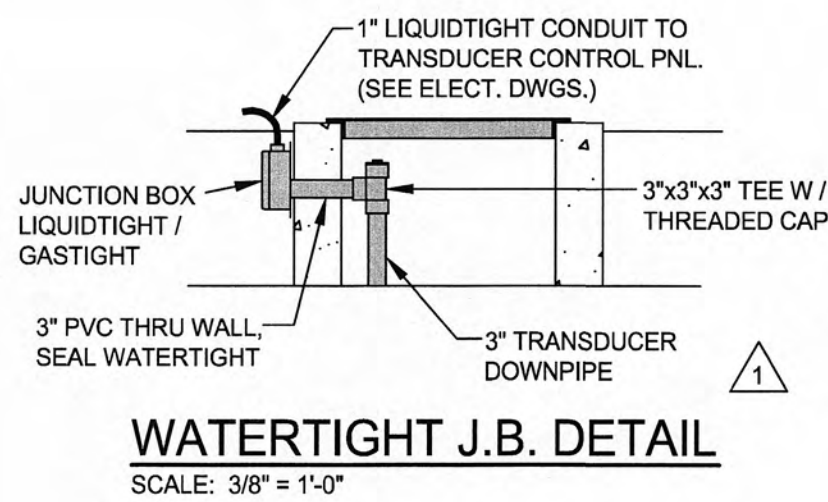
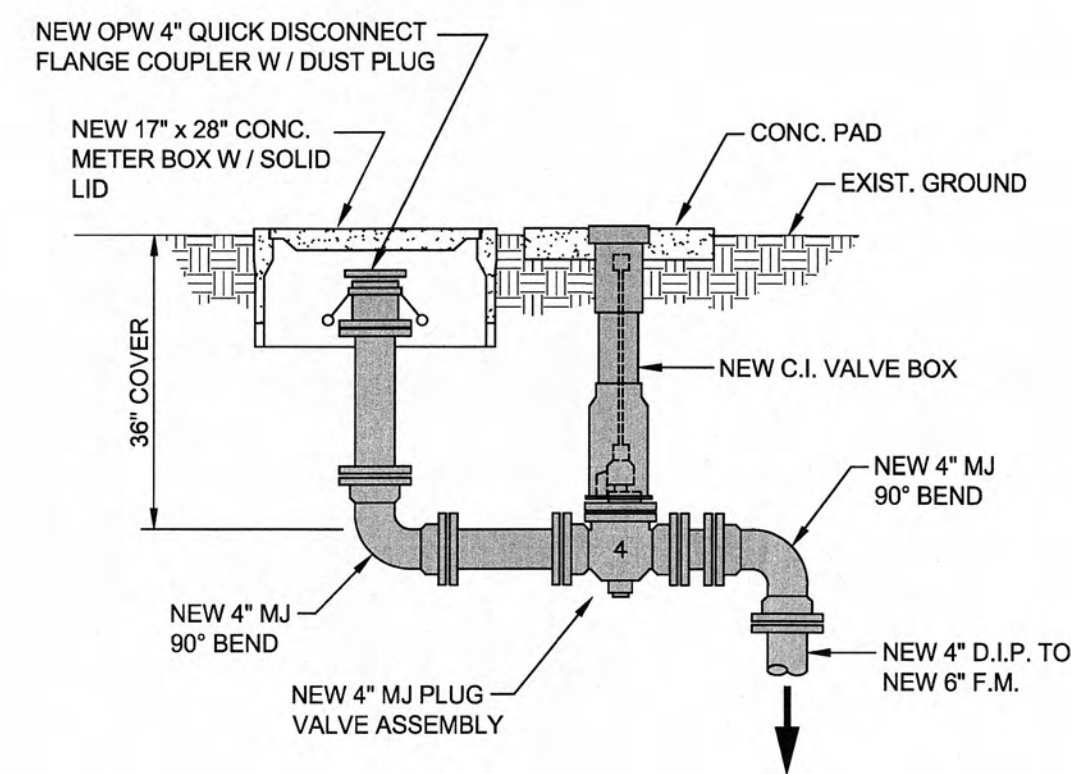
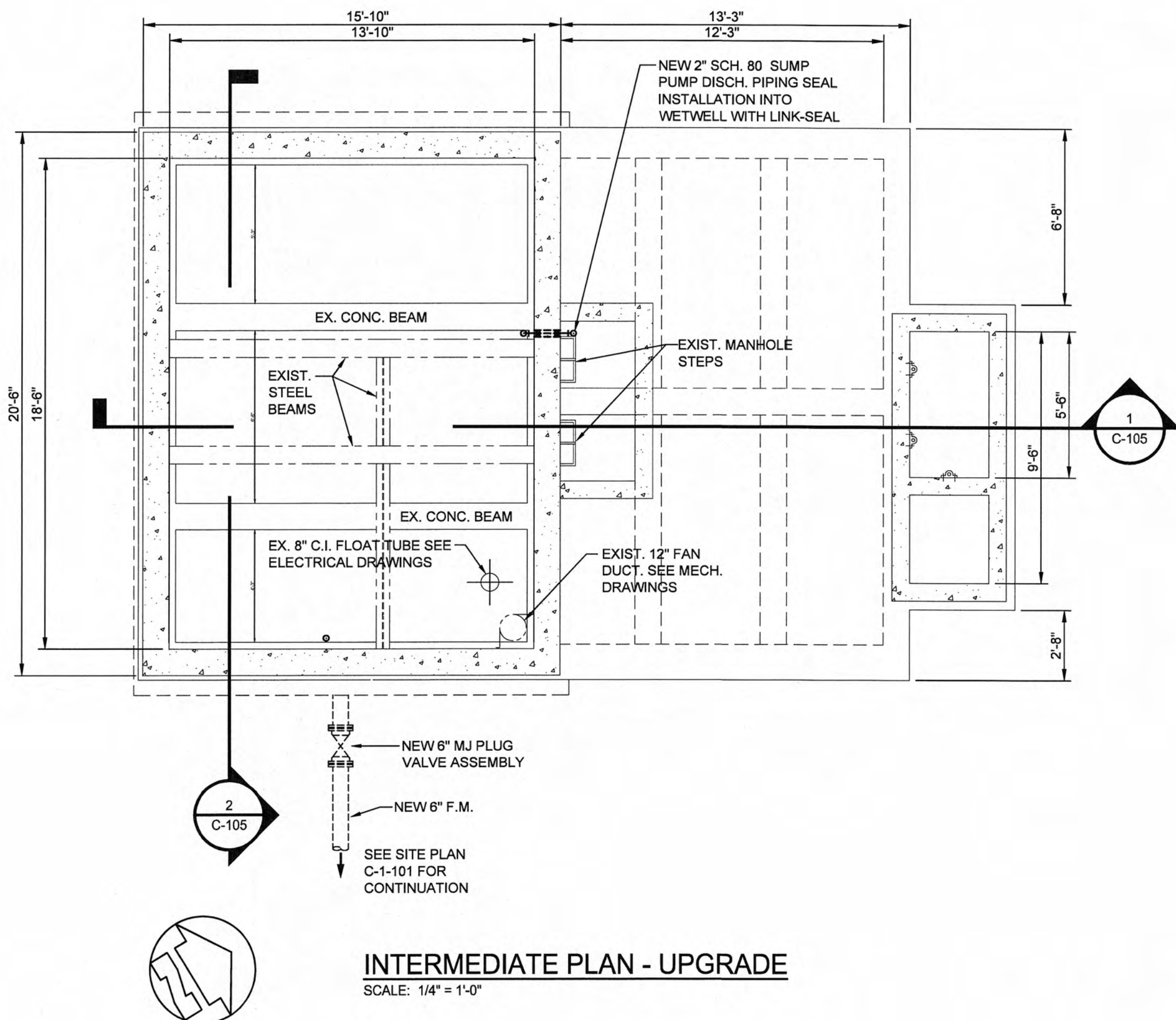
DATE: APRIL, 2009
SCALE: AS NOTED
SHEET NO.

C-103



NOTES:

1. CONTRACTOR SHALL REMOVE EXISTING PUMP MOTORS AND BASE PLATES - PATCH, CLEAN AND SEAL FLOORS AFTER REMOVAL OF PUMP MOTORS AND BASE PLATES.
2. SEE ARCHITECTURAL DRAWINGS FOR MODIFICATIONS TO EXISTING PUMP STATION BUILDING.
3. ALL EMERGENCY CONNECTION PIPING AND CONNECTION TO EXISTING F.M. SHALL BE RESTRAINED JOINT.



NOTE:
FIELD LOCATE NEW SEWAGE PUMPS
SO AS TO NOT INTERFERE WITH THE
OPERATION OF THE EXISTING FLOOR
DRAINS.

UPGRADE LEGEND

- INDICATES NEW EQUIPMENT / PIPING
- INDICATES EXISTING CONC. STRUCTURE
- INDICATES EXISTING EQUIPMENT / PIPING TO REMAIN

RECORD DRAWINGS

THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" PROJECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE. ALTHOUGH PREPARED FROM THE CONSTRUCTION RECORD, THEY CANNOT BE GUARANTEED TO BE EXACT IN EVERY DETAIL.

CHECKED BY: *James Brown* 2/4/2010
ENGINEER'S REPRESENTATIVE DATE

0 6" 1' 2' 4' 8' 12'
1/4" = 1'-0"

GRV PROJECT NO. 3796-01

CLIENT PROJECT NO. XXXX

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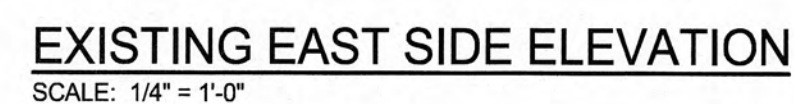
GRV
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CHRISTMAS PUMP STATION NO. A-2
UPGRADE - PLAN VIEWS
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

DESIGNED:	RG	TH
DRAWN:	SG	TH
REVIEWED:	RG	TH
APPROVED:	RG	TH
DATE:	6/17/09	SG
DESCRIPTION:	ADENDUM NO. 2	
NO.	1	

DATE: APRIL, 2009
SCALE: AS NOTED
SHEET NO.

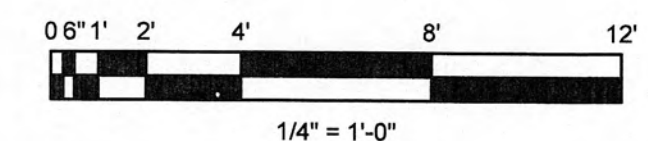
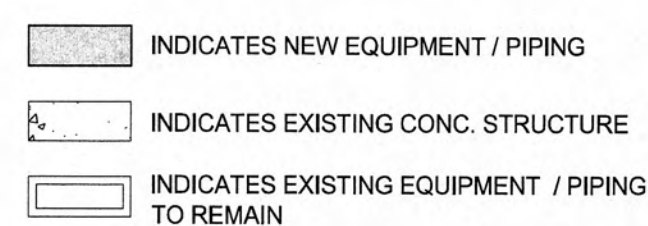
C-104



EXISTING FRONT ELEVATION
SCALE: 1/4" = 1'-0"

THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" PROJECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE. ALTHOUGH PREPARED FROM THE CONSTRUCTION RECORD, THEY CANNOT BE GUARANTEED TO BE EXACT IN EVERY DETAIL.

CHECKED BY: Spencer Grooms 2/4/2010
ENGINEER'S REPRESENTATIVE DATE



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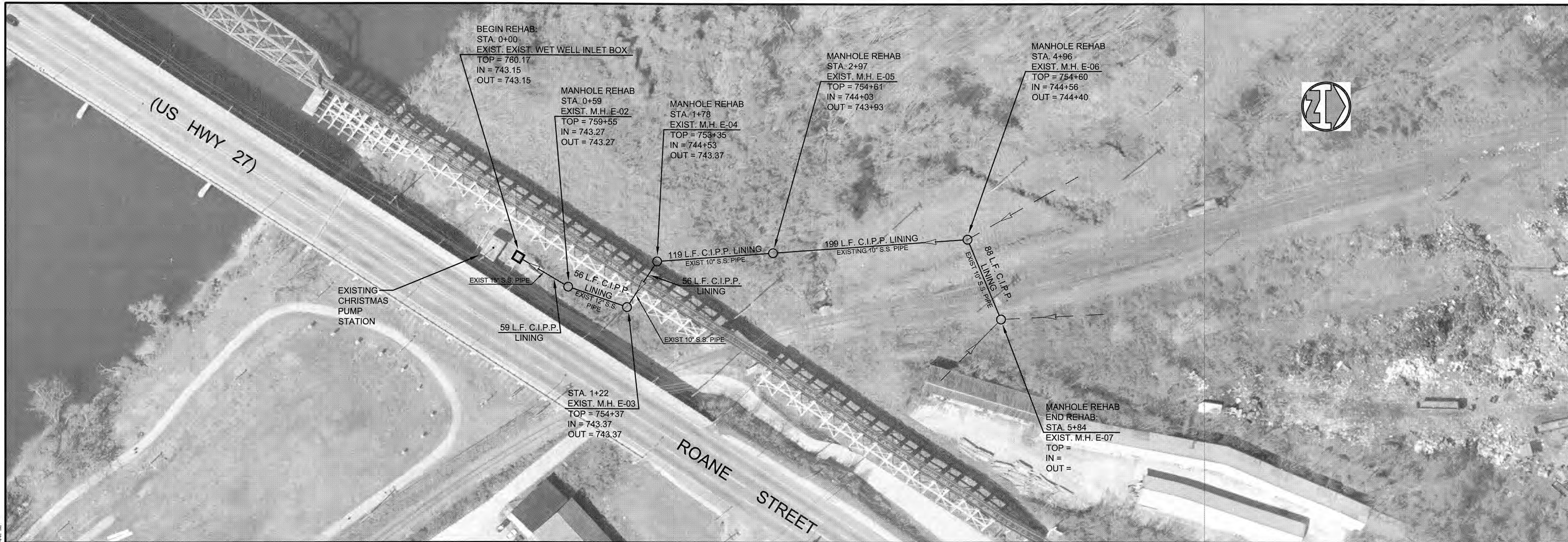
						RGT
					DRAWN:	SG
					REVIEWED:	RGT
					APPROVED:	RGT

SCALE CHECK | THIS MARK SHOULD MEASURE EXACTLY 1 WHEN FLOTTED

C-105

PRINTED: 2/4/2010 @ 2:44PM

FILE NAME: \\Harriman UB - 3796-01 (2008 CDBG)(CADD) CADD Christmas PS A-2\\Record Drawings\\C-106 SRehabChristmas.dwg



0 25' 50' 100' 150'
PLAN SCALE: 1" = 50'-0"

RECORD DRAWINGS

THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" PROJECT TO THE BEST OF THE ENGINEER'S KNOWLEDGE. ALTHOUGH PREPARED FROM THE CONSTRUCTION RECORD, THEY CANNOT BE GUARANTEED TO BE EXACT IN EVERY DETAIL.

CHECKED BY:

Samuel Brown
ENGINEER'S REPRESENTATIVE

2/4/2010
DATE

REVISIONS		DATE	BY	DESIGNED
NO.	DESCRIPTION			

DATE:
APRIL, 2009

SCALE:
AS NOTED

SHEET NO.

C-106

CHRISTMAS PUMP STATION NO. A-2
SANITARY SEWER REHABILITATION
PUMP STATION REHABILITATION
CITY OF HARRIMAN, TENNESSEE

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