

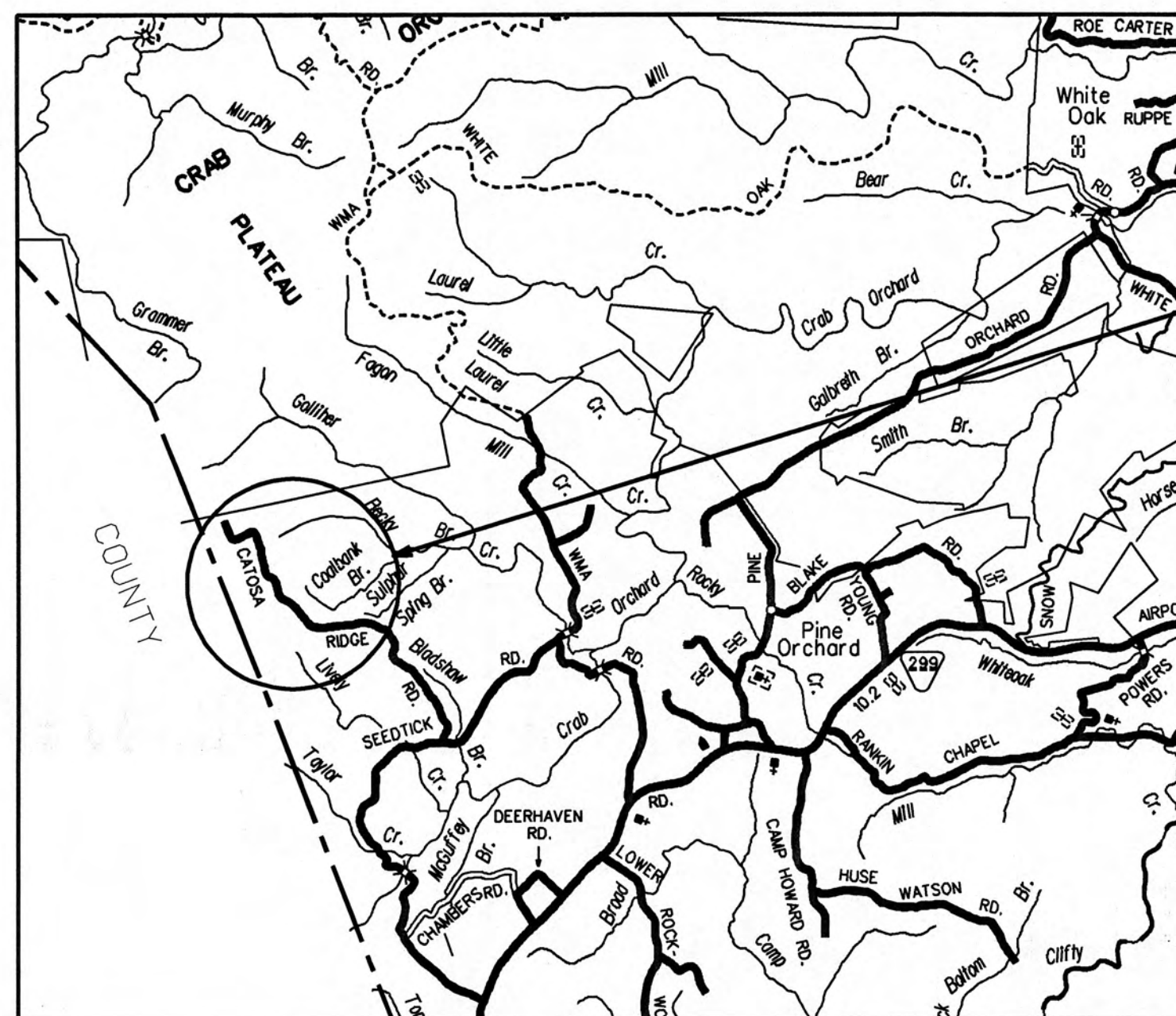
HARRIMAN UTILITY BOARD

Morgan County, Tennessee

WATER LINE AND PUMPING STATIONS CATOOSA RIDGE ROAD

CONTRACT 205

LOCATION MAP



PROJECT LOCATION

Project Engineer



RECORD DRAWING

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February, 2008
DATE

SHEET INDEX

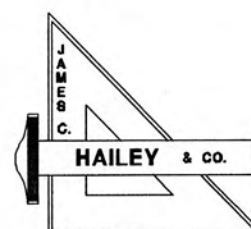
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PLANS REVIEWED AND APPROVED BY HARRIMAN UTILITY BOARD

Frankie Davis

1-11-05
DATE

SET NUMBER

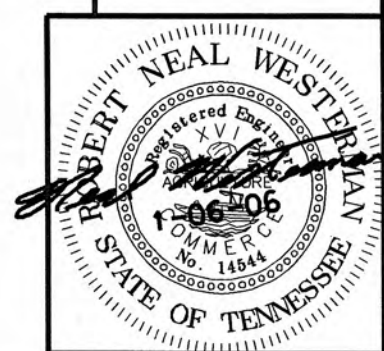
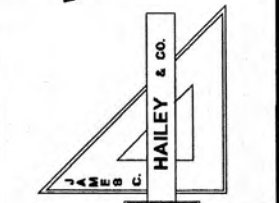


JAMES C. HAILEY & CO.

2622 OLD LEBANON ROAD - SUITE 200

NASHVILLE, TENNESSEE

JCH PROJECT NO. 03147

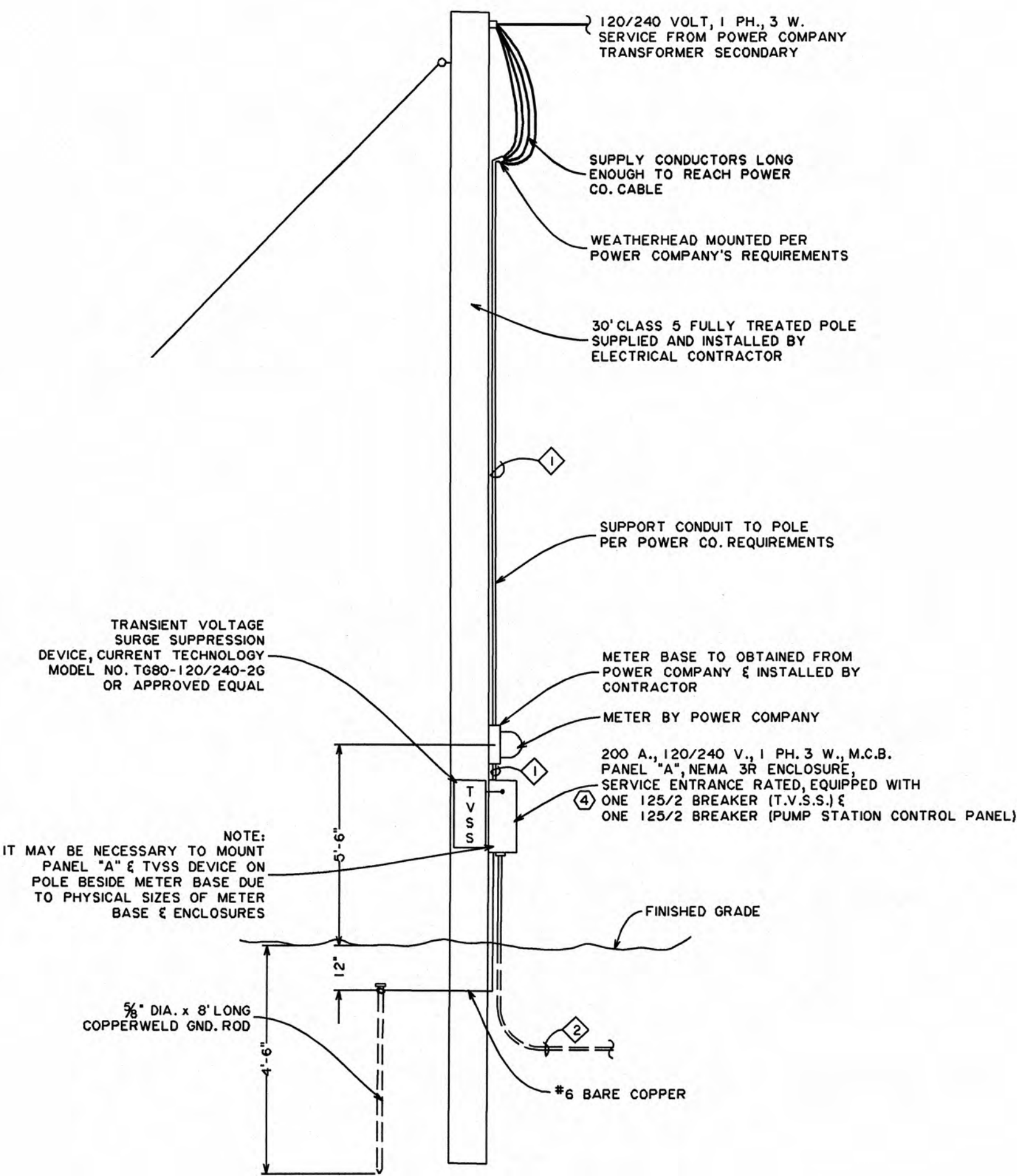


CONDUIT & WIRE DESIGNATION SCHEDULE	
DESIG.	DESCRIPTION
1	1 1/4" C., 3 - #4 THHN/THWN CU.
2	1 1/4" C., 3 - #3/0 THHN/THWN CU. & 1 - #4 THHN/THWN CU. GND.

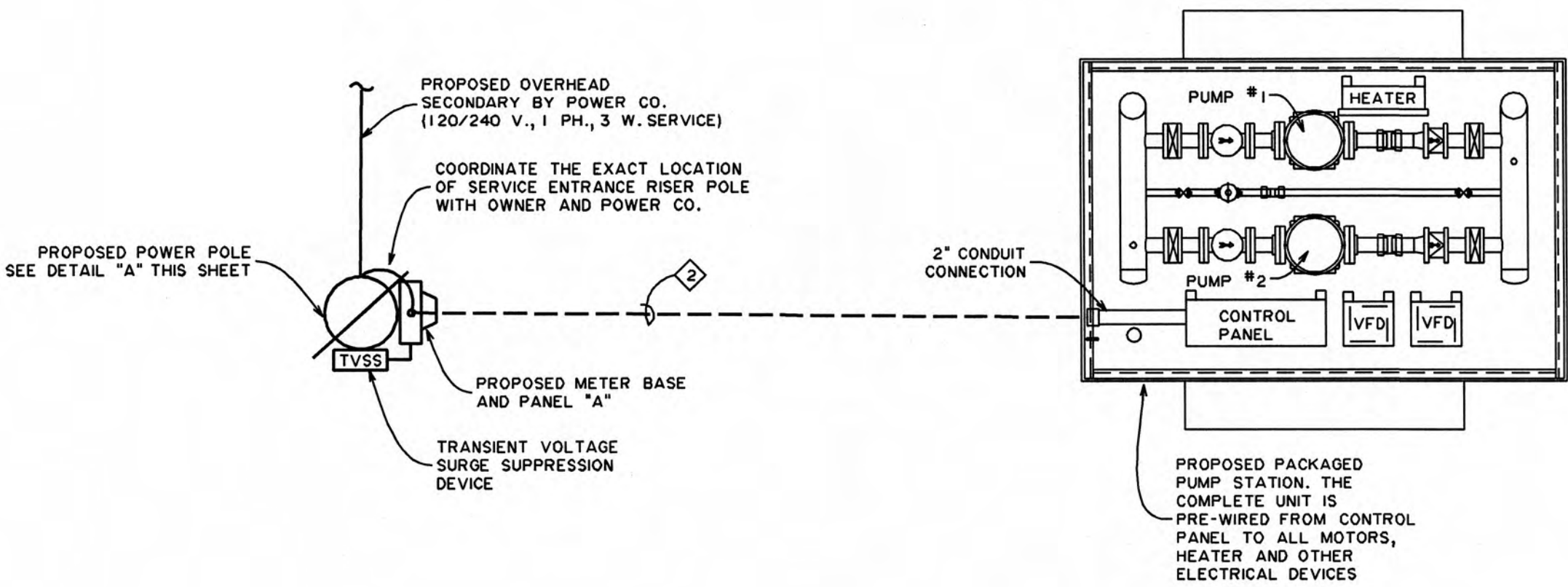
ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	CONDUIT CONCEALED IN WALL OR CEILING
	CONDUIT CONCEALED IN FLOOR SLAB OR UNDERGROUND
	CONDUIT EXPOSED ON WALL OR CEILING
	FLEXIBLE CONDUIT
	WEATHERPROOF CABLE
	JUNCTION BOX
	SINGLE POLE SWITCH, 20 AMP, MTD. HT. PER SPECS.
	MANUAL MOTOR SWITCH W/ THERMAL PROTECTION
	DUPLEX RECEPTACLE - MTD. HT. PER SPECS.
	WEATHERPROOF DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTER TYPE
	DISCONNECT SWITCH, FUSIBLE, 30 AMP / 3 POLE
	DISCONNECT SWITCH, NON-FUSIBLE, RAIN TIGHT, 30 AMP / 3 POLE
	DISTRIBUTION PANEL
	MOTOR CONTROLLER OR STARTER, MAGNETIC
	COMBINATION STARTER AND DISCONNECT
	MOTOR W/ APPROXIMATE HORSEPOWER
	WOOD POLE
	DESIGNATES NOTE NUMBER
	DESIGNATES CONDUIT & WIRE DESCRIPTION PER SCHEDULE

NOTES:

- ALL EQUIPMENT AND APPURTENANCES SHOWN IN POWER POLE DETAIL SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
- ALL CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL OF THE RACEWAY INSTALLATIONS WITH OTHER TRADES TO AVOID INTERFERENCES WITH STRUCTURES AND PIPING. MAINTAIN APPROX. 24" CLEARANCE BETWEEN BURIED CONDUIT AND ALL STRUCTURES.
- CONFIRM SERVICE ENTRANCE INSTALLATION WITH POWER CO. AND COMPLY WITH NECESSARY REQUIREMENTS. POWER COMPANY IS ROCKWOOD ELECTRIC.
- THE EXACT AIC RATING OF PANEL "A" SHALL BE COORDINATED WITH THE POWER COMPANY'S AVAILABLE FAULT CURRENT AND ADJUSTED ACCORDINGLY.
- ALL ELECTRICAL WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES.



POWER POLE DETAIL "A"
SCALE: NONE



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

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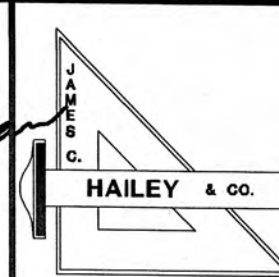
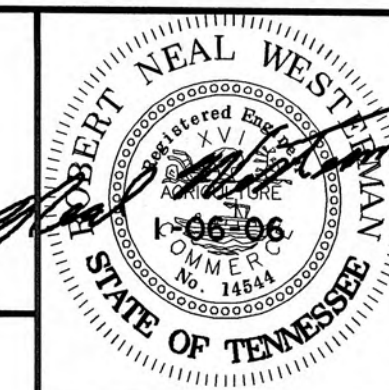


GENERAL NOTES

1. ALL SERVICES ON OPPOSITE SIDE OF ROAD FROM WATER LINE ARE TO BE 1" COPPER WITH A 3/4" x 3/4 x 1" WYE AND TWO 3/4" SERVICES AS SHOWN ON PLANS.
2. ALL SERVICES CROSSING THE ROAD ARE TO BE OPEN CUT AND PLACED IN A 4-INCH PVC CASING. CASING IS TO BE PROVIDED BY THE OWNER. TRENCHES FOR SERVICE CROSSINGS ARE TO BE BACKFILLED WITH CRUSHED STONE, IN ACCORDANCE WITH THE SPECIFICATIONS. PAVEMENT REPLACEMENT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
3. COORDINATE TIE-INS TO EXISTING WITH OWNER.
4. SERVICE INSTALLATIONS SHALL BE PROVIDED TO ALL LOTS.
5. CONTRACTOR TO PROVIDE ALL PERMITS AND ACCEPTABLE REROUTING PATHS, MEANS AND METHODS FOR ROAD CLOSURES AT OPEN CUTS.
6. CONTRACTOR SHALL CONFIRM ALL QUANTITIES PRIOR TO ORDERING MATERIALS. QUANTITIES ON BID FORM ARE APPROXIMATE.
7. WATER LINE SHALL BE INSTALLED GENERALLY AS SHOWN ON PLANS. DEVIATIONS MAY BE DIRECTED TO AVOID STRUCTURES OR OBSTRUCTIONS.
8. PROVIDE CONCRETE CAP OR CASEMENT AS DIRECTED ON CREEKS AND DRAINAGE DITCHES.
9. CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF RAILROAD, HIGHWAY, AND WATER QUALITY PERMITS AND STANDARDS.
10. CONTRACTOR SHALL LOCATE ALL EXISTING FACILITIES AT CONNECTIONS OR TIE-INS PRIOR TO COMMENCEMENT OF CONSTRUCTION OF NEW FACILITIES IN AREA TO ALLOW FOR POSSIBLE MODIFICATIONS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL UTILITIES INCLUDING EXISTING WATER LINES AND CONSIDERATION OF SUCH IN BIDDING CONTRACT. CONTRACTOR SHALL COORDINATE EXCAVATION TO AVOID EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR DAMAGE TO ALL UTILITIES.
12. LOCATIONS AND TYPE OF PROPOSED LINES, VALVES, AND FITTINGS ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE EXACT TYPE AND LOCATION IN FIELD WITH ASSISTANCE AND APPROVAL FROM ENGINEER AND OWNER.
13. CONTRACTOR SHALL REMOVE, STORE, AND REPLACE ALL TOPSOIL IN AFFECTED AREA. ANY DEFICIENCY SHALL BE PROVIDED BY CONTRACTOR.
14. CONTRACTOR SHALL PERFORM AN APPROVED PRE-BLAST SURVEY WITH APPROPRIATE SEISMOGRAPHS.
15. CONTRACTOR SHALL CONFORM TO ALL CONDITIONS AND TERMS OF THE AQUATIC RESOURCE ALTERATION PERMIT, WHERE NEEDED. THE CONTRACTOR SHALL OBTAIN FROM THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC) A CONSTRUCTION STORM WATER PERMIT AND DEVELOP A STORM WATER POLLUTION PREVENTION PLAN. SAID PLAN SHALL BE COMPLETED, IMPLEMENTED AND MAINTAINED IN ACCORDANCE WITH TDEC. CONTRACTOR TO PAY ALL FEES AND COSTS ASSOCIATED WITH THIS AND ALL PERMITS.

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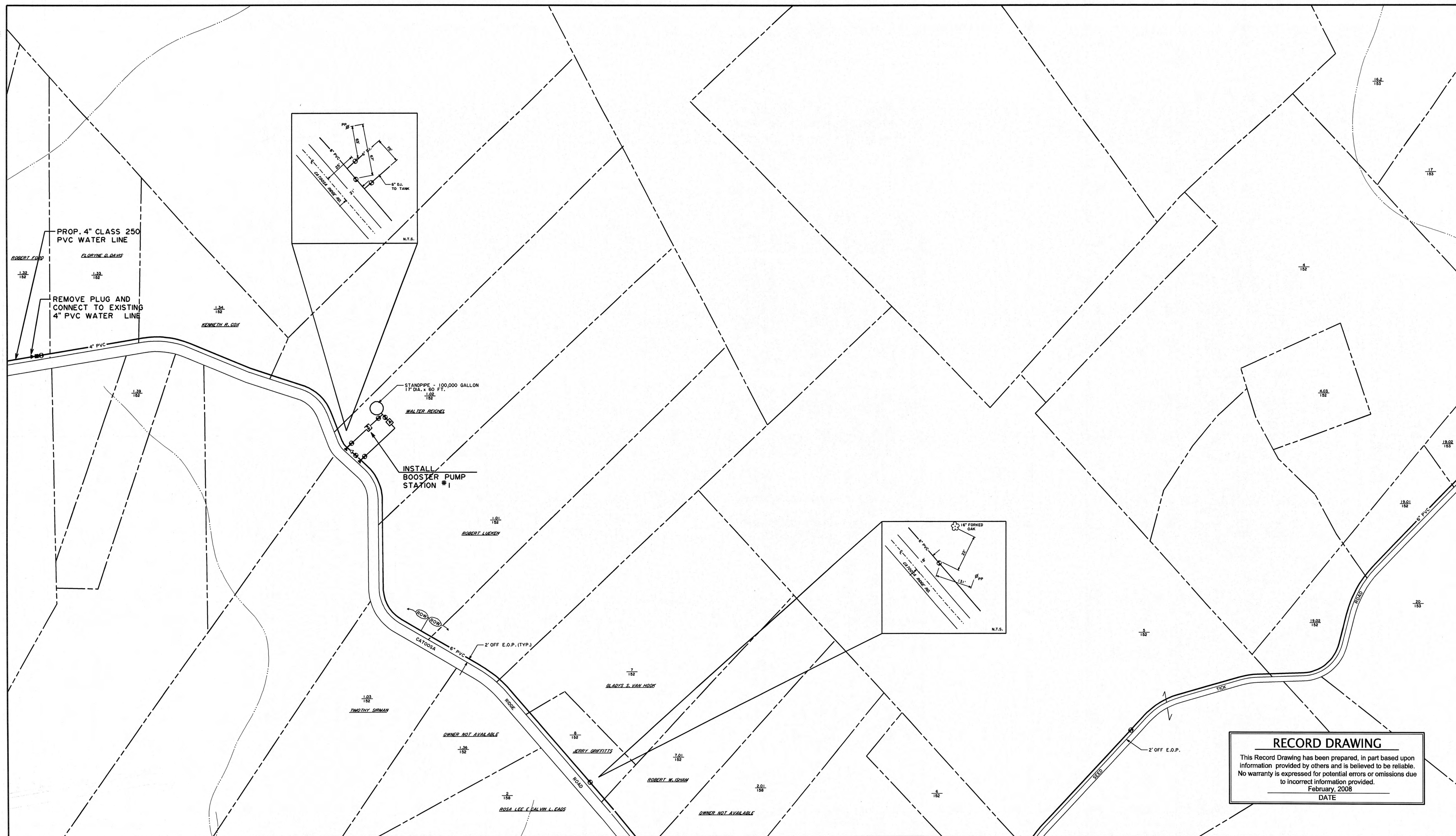
HARRIMAN
UTILITY BOARD
Morgan County, Tennessee

WATER LINE ADDITIONS
CATOOSA RIDGE ROAD

DESIGN RNW	DRAWN LLB	CHECKED RNW	DATE JUN. 2005	SCALE NONE	PROJECT NO. 03147
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SHEET

1



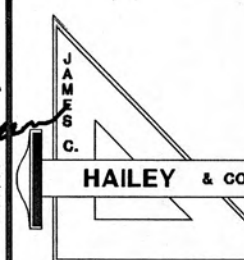
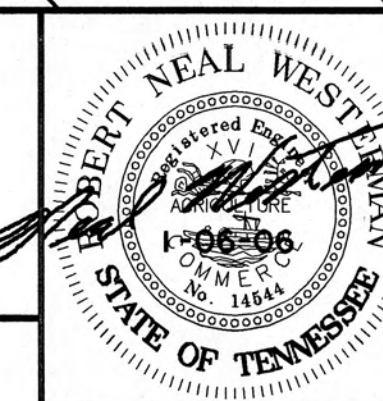
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February, 2008

DATE

4		
3	2	



HARRIMAN
UTILITY BOARD
Morgan County, Tennessee

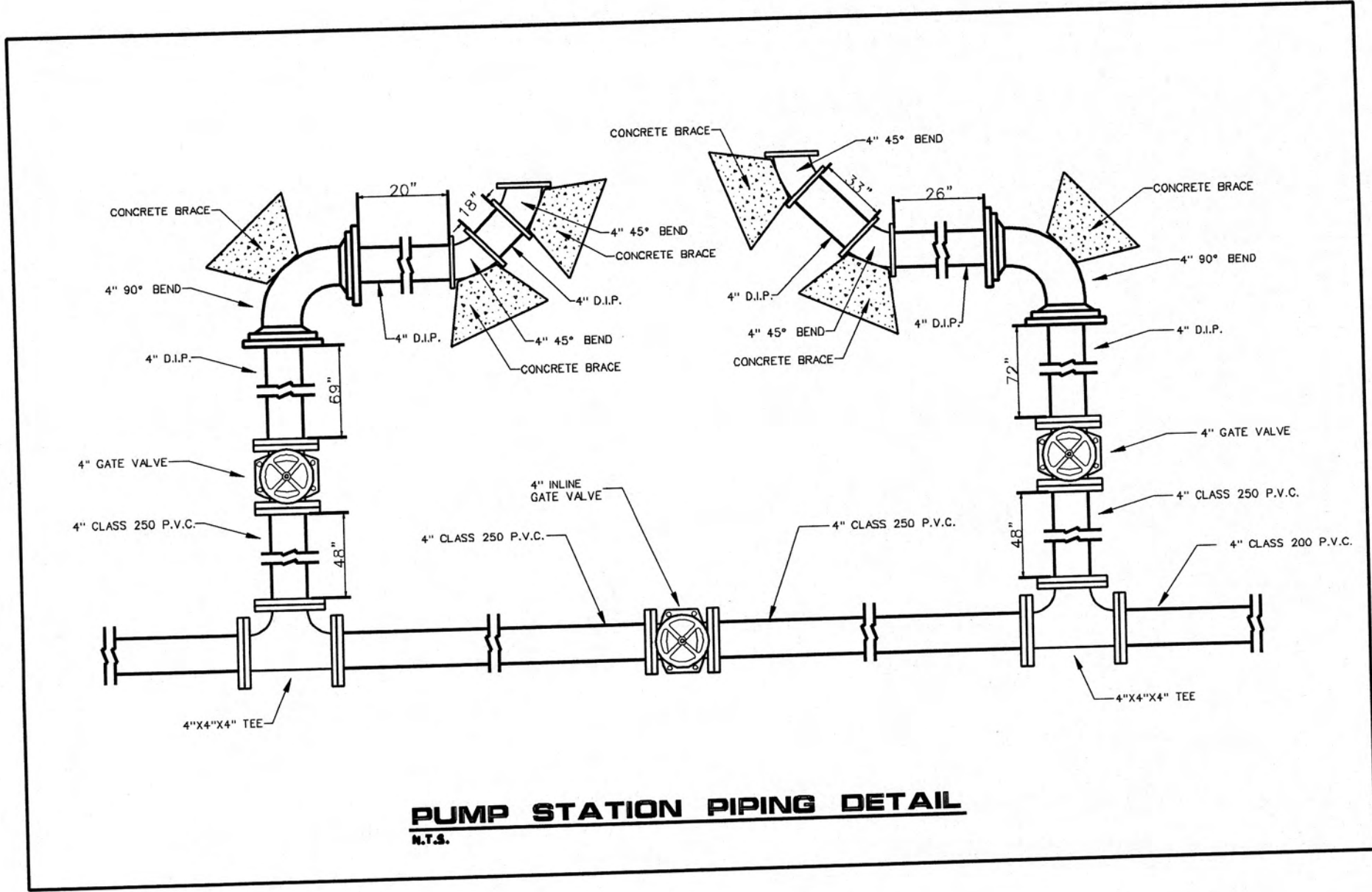
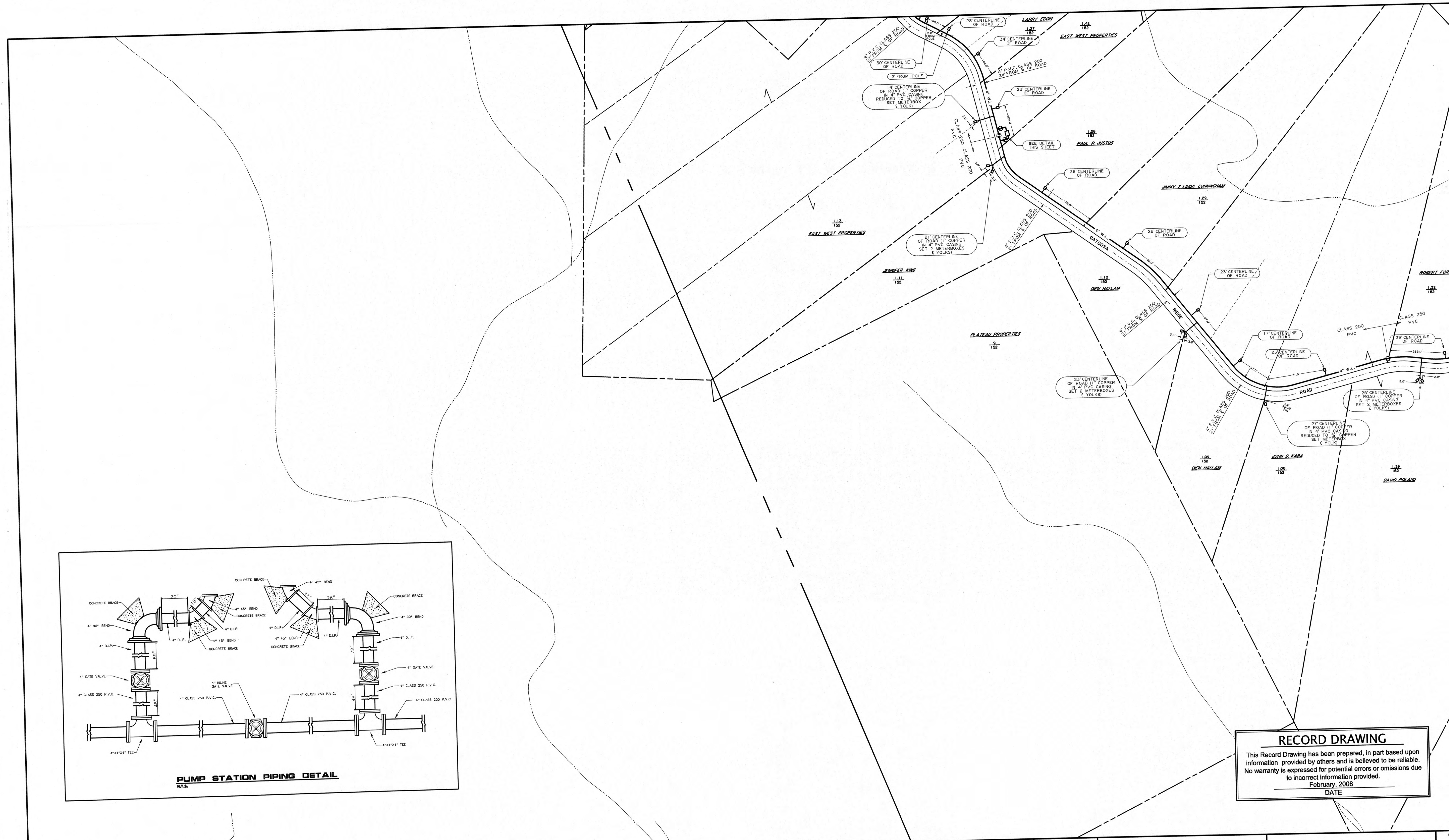
WATER LINE ADDITIONS
CATOOSA RIDGE ROAD

DESIGN	DRAWN	CHECKED	DATE	SCALE	PROJECT NO.
RNW	LLB	RNW	JUN. 2005	1" = 200'	03147

SHEET

2

152 SF



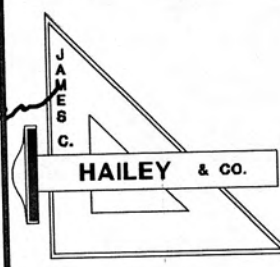
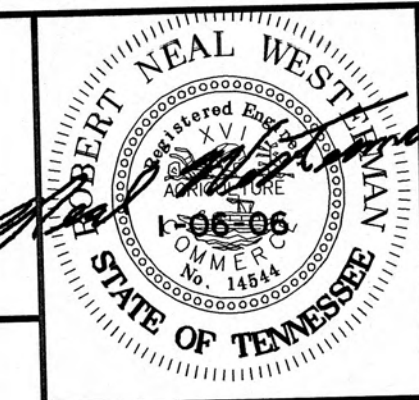
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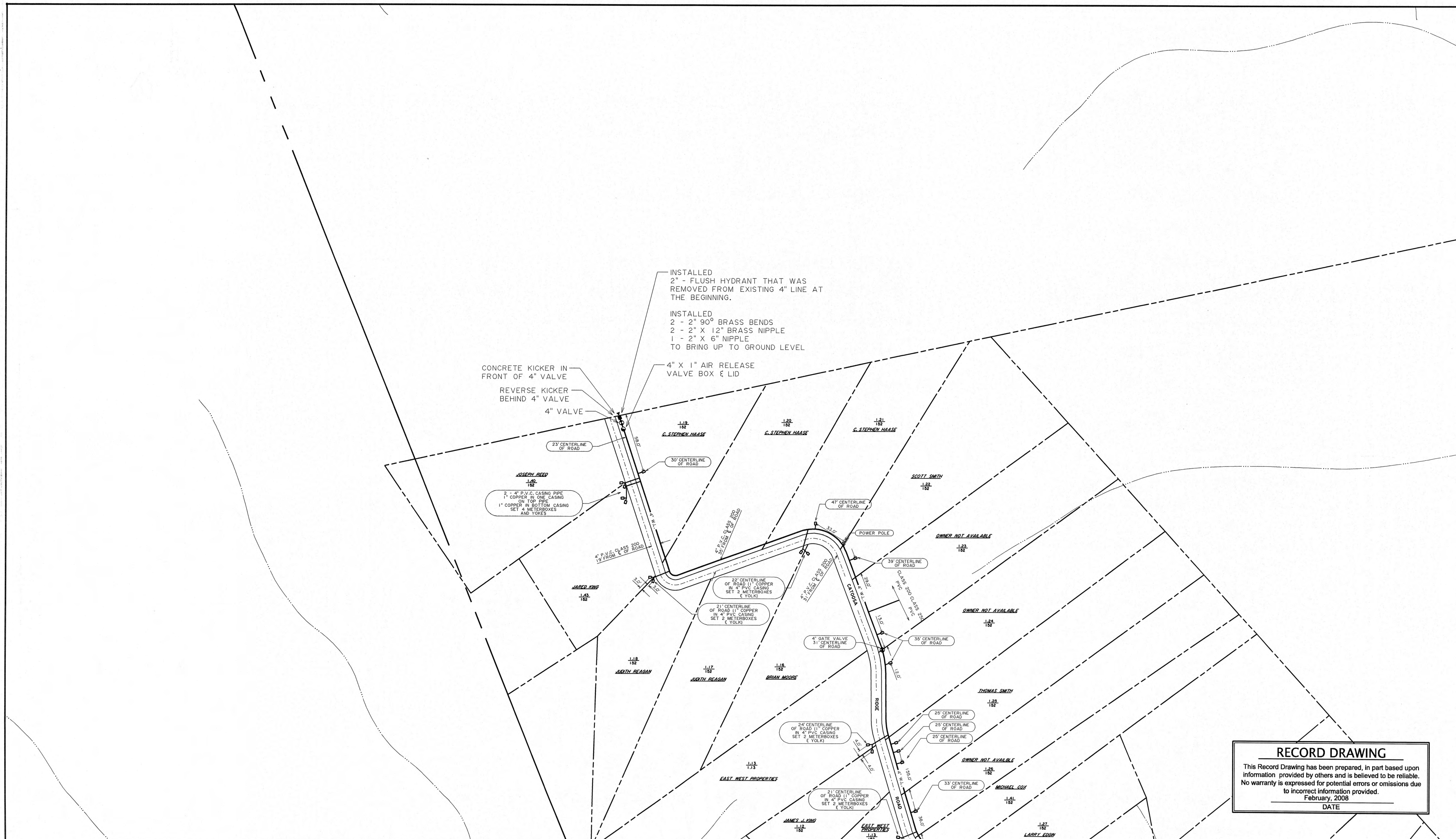
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HARRIMAN UTILITY BOARD Morgan County, Tennessee		
DESIGN RNW	DRAWN LLB	CHECKED RNW

WATER LINE ADDITIONS CATOOSA RIDGE ROAD		
DATE JUN. 2005	SCALE 1" = 200'	PROJECT NO. 03147

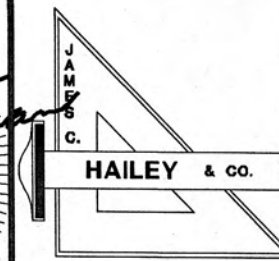
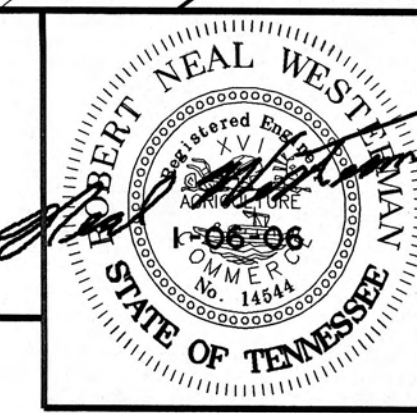
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152 SW



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Morgan/Tee Associates P.A.

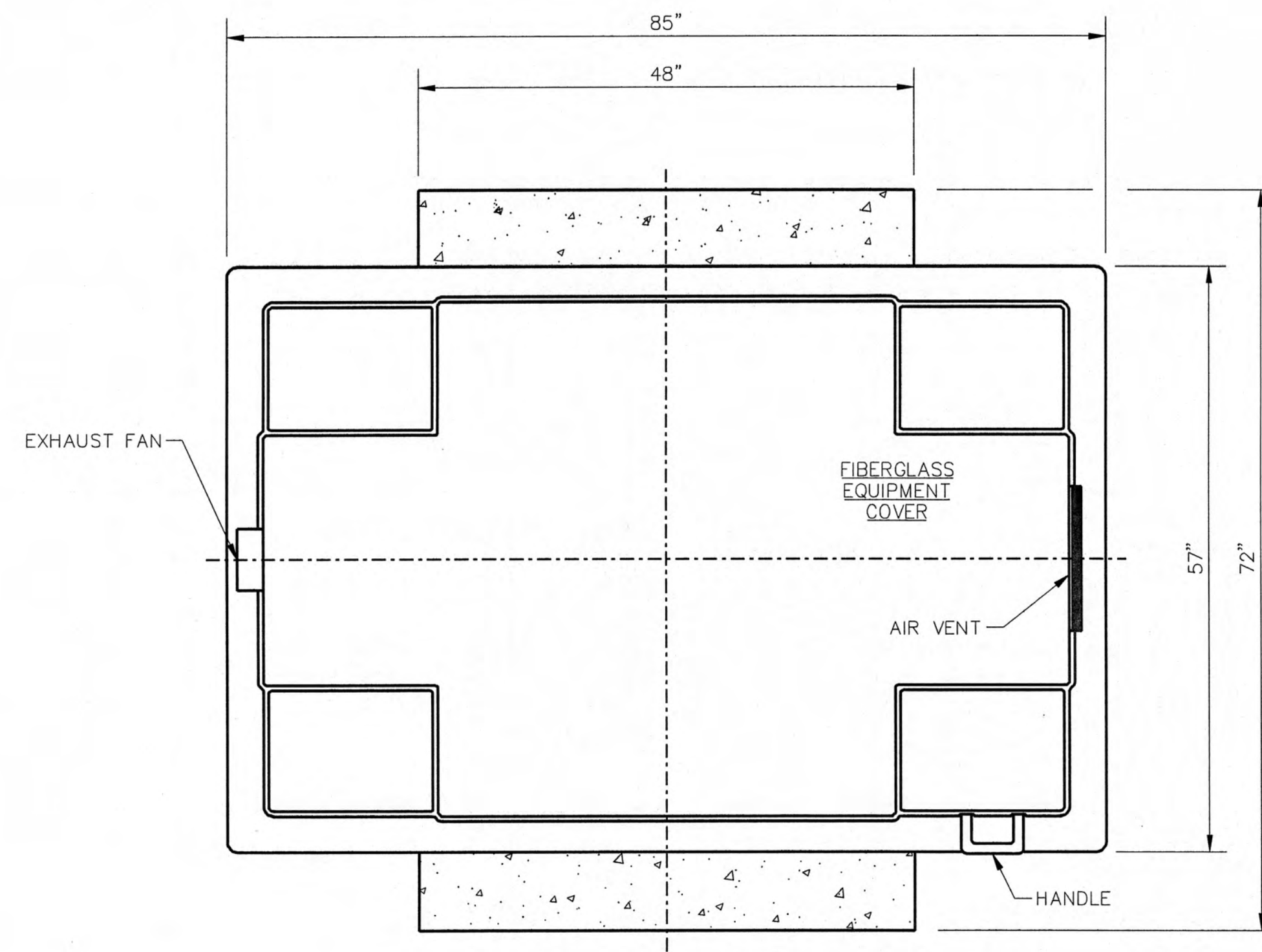
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3		2



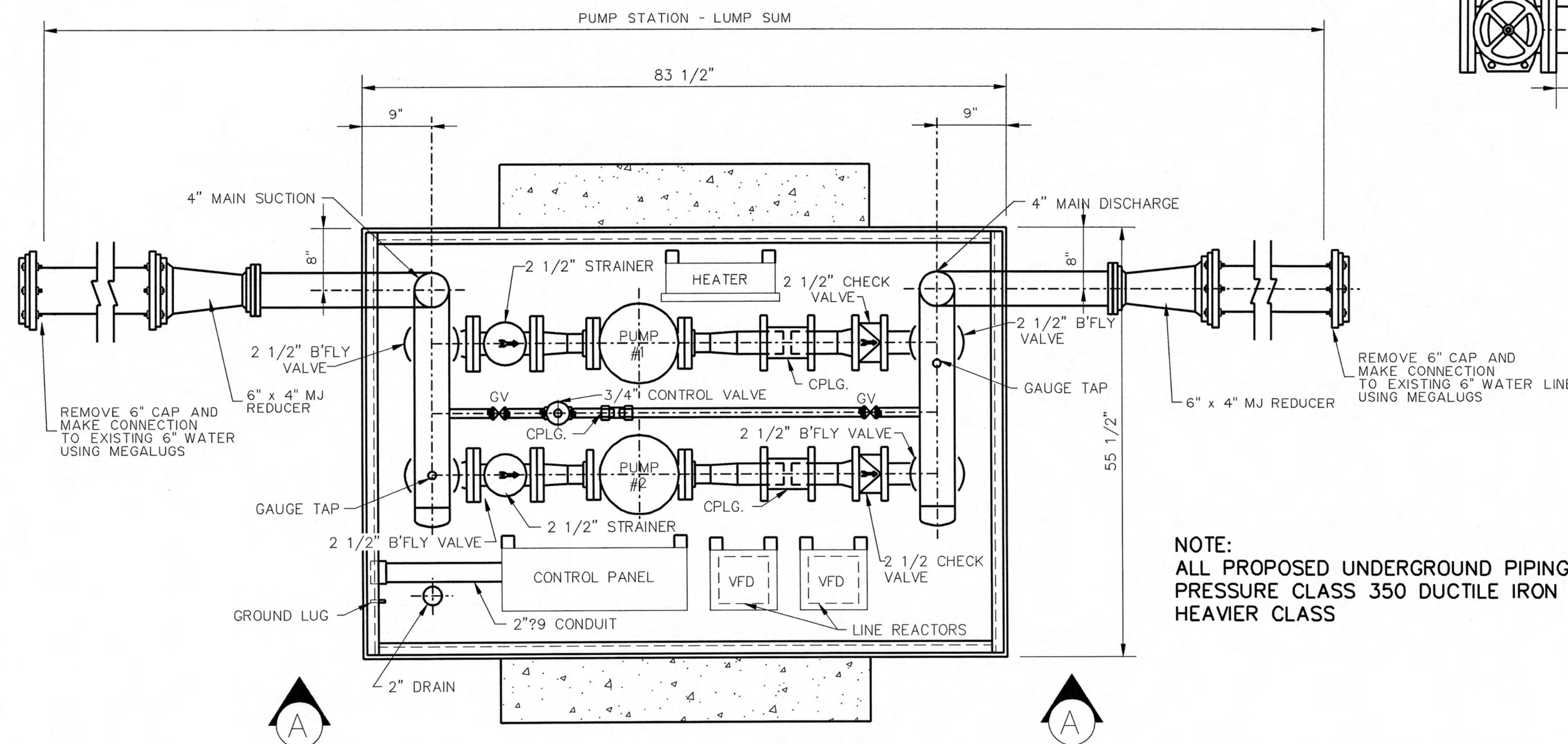
**HARRIMAN
UTILITY BOARD**
Morgan County, Tennessee
DESIGN: RNW
DRAWN: LLB
CHECKED: RNW

**WATER LINE ADDITIONS
CATOOSA RIDGE ROAD**
DATE: JUN. 2005
SCALE: 1" = 200'
PROJECT NO.: 03147

SHEET
4
152 NW

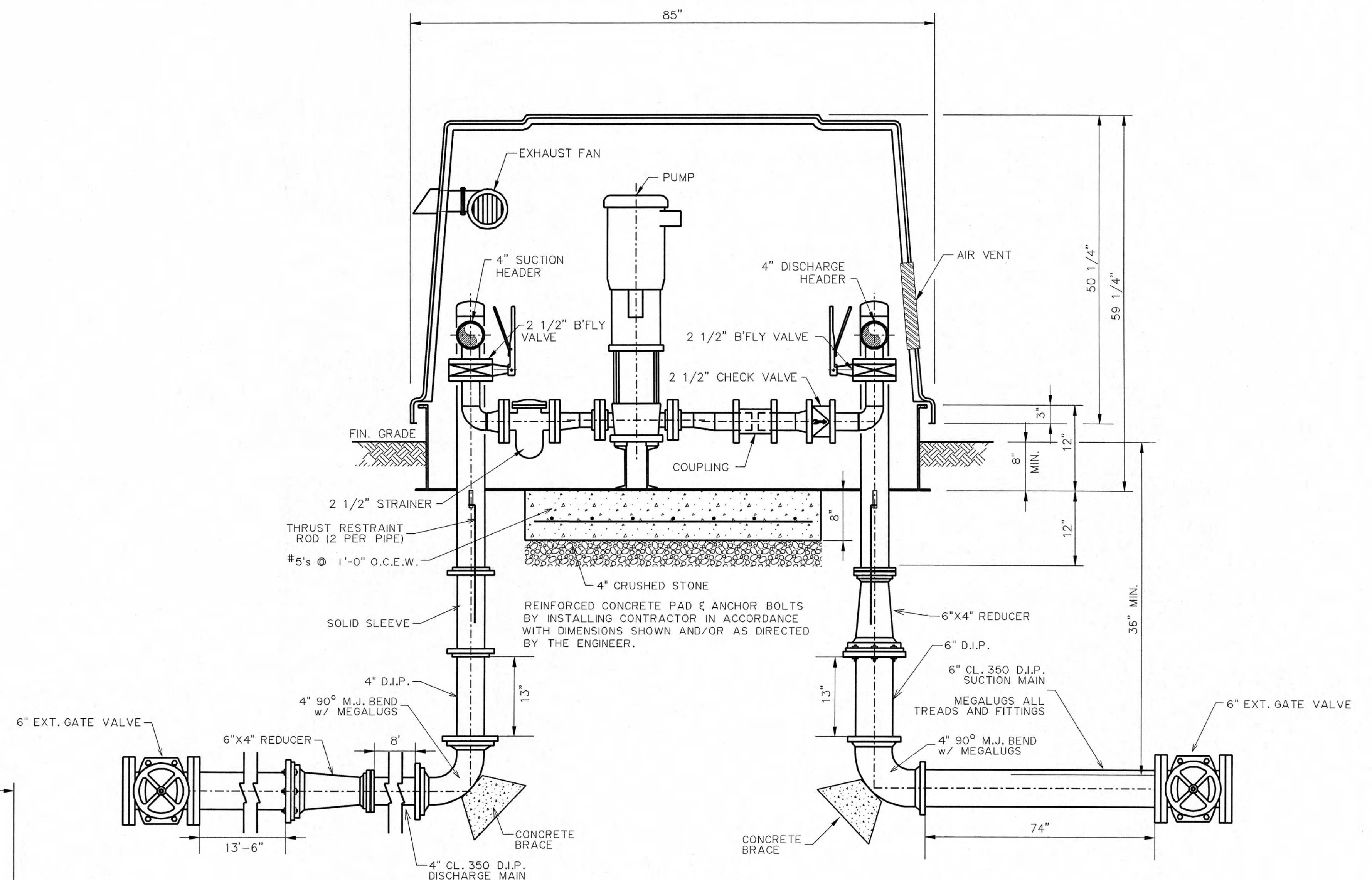


EXTERIOR PLAN



INTERIOR PLAN

NOTE:
ALL PROPOSED UNDERGROUND PIPING TO BE
PRESSURE CLASS 350 DUCTILE IRON OR
HEAVIER CLASS



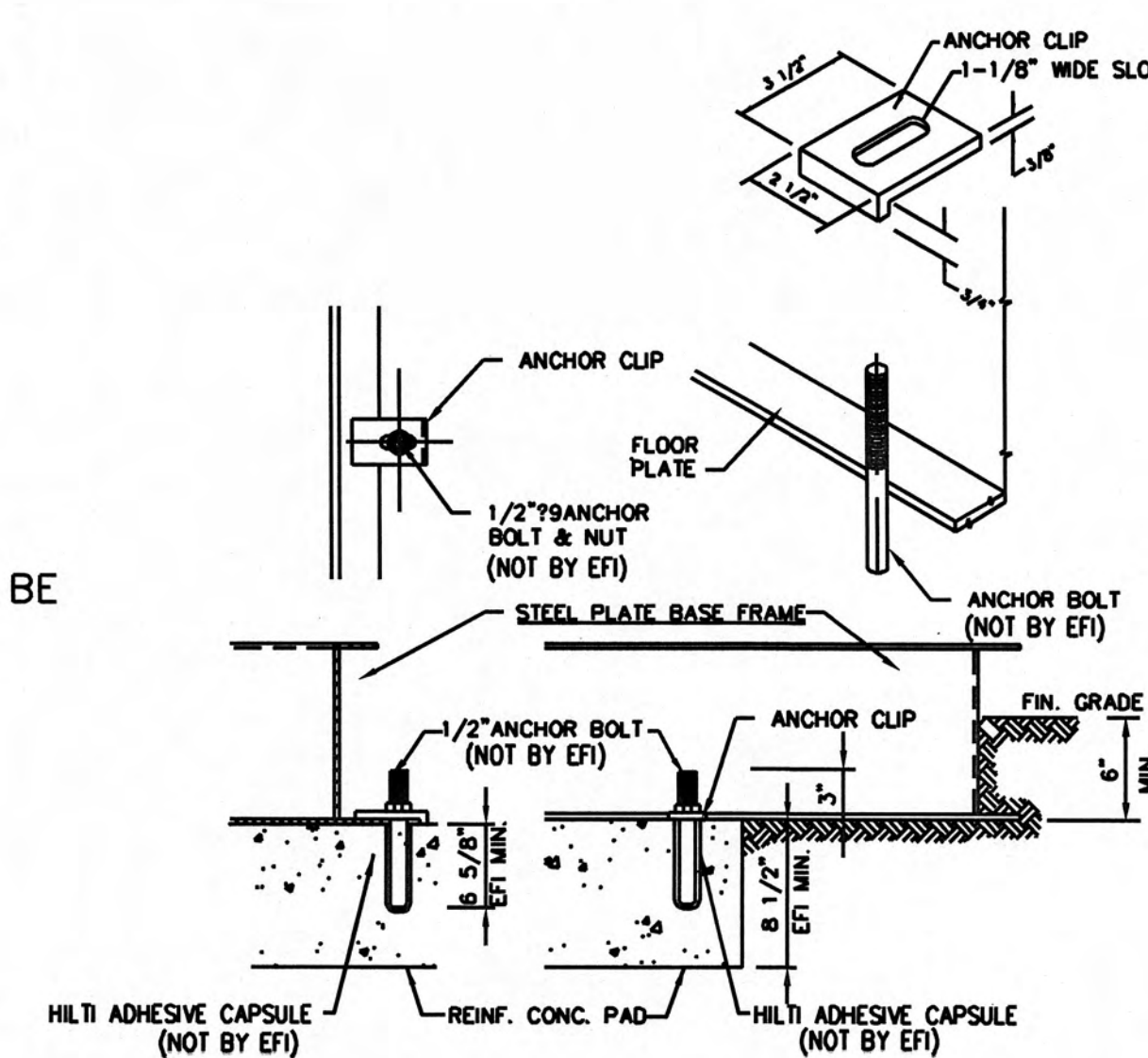
SECTION A-A

DESIGN CRITERIA

Controls CONSTANT PRESSURE
Power Service: 240 Volts, 1 Phase, 60 Cycle

PUMP DATA

Type: VERTICAL, MULTI-STAGE CENTRIFUGAL
Pump: 1 & 2
Capacity: 75 G.P.M. AT 330 FEET T.D.H.
Size: 2" x 2"
Motor: 10 H.P., 3500 R.P.M.

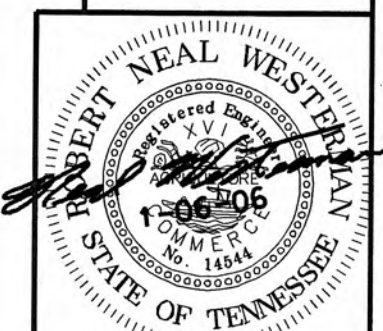
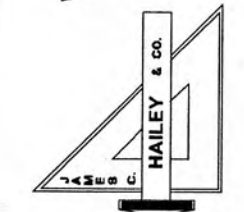


TYPICAL ANCHOR DETAIL

NOTE: ANCHOR CLIPS FURNISHED BY E.F.I.
ANCHOR BOLTS & NUTS BY INSTALLER

RECORD DRAWING

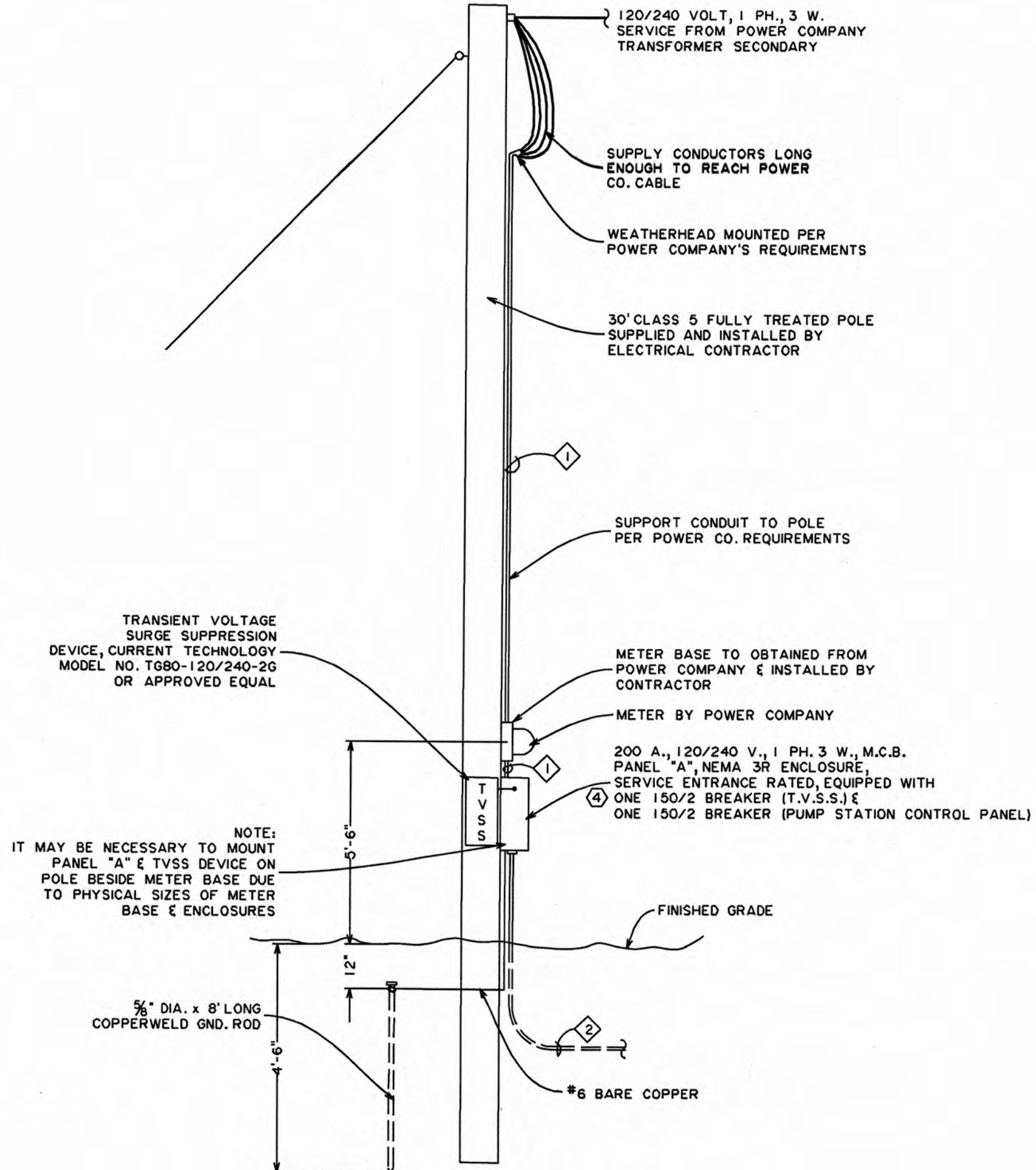
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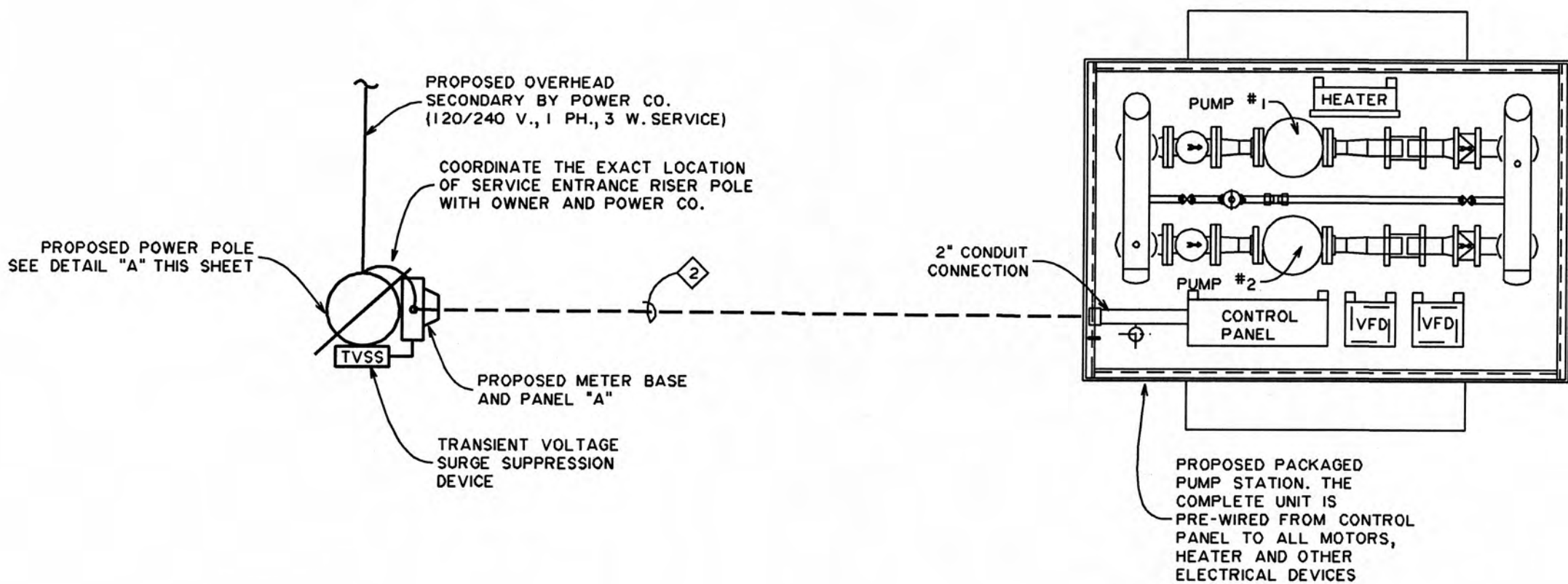
CONDUIT & WIRE DESIGNATION SCHEDULE	
DESIG.	DESCRIPTION
1	1 1/4" C., 3 - #4 THHN/THWN CU.
2	1 1/4" C., 3 - #3/0 THHN/THWN CU. & 1 - #4 THHN/THWN CU. GND.

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	CONDUIT CONCEALED IN WALL OR CEILING
	CONDUIT CONCEALED IN FLOOR SLAB OR UNDERGROUND
	CONDUIT EXPOSED ON WALL OR CEILING
	FLEXIBLE CONDUIT
	WEATHERPROOF CABLE
	JUNCTION BOX
	SINGLE POLE SWITCH, 20 AMP, MTD. HT. PER SPECS.
	MANUAL MOTOR SWITCH W/ THERMAL PROTECTION
	DUPLEX RECEPTACLE - MTD. HT. PER SPECS.
	WEATHERPROOF DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTER TYPE
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	DISCONNECT SWITCH, NON-FUSIBLE, RAIN-TIGHT, 30 AMP / 3 POLE
	DISTRIBUTION PANEL
	MOTOR CONTROLLER OR STARTER, MAGNETIC
	COMBINATION STARTER AND DISCONNECT
	MOTOR W/ APPROXIMATE HORSEPOWER
	WOOD POLE
	DESIGNATES NOTE NUMBER
	DESIGNATES CONDUIT & WIRE DESCRIPTION PER SCHEDULE

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POWER POLE DETAIL "A"
SCALE: NONE

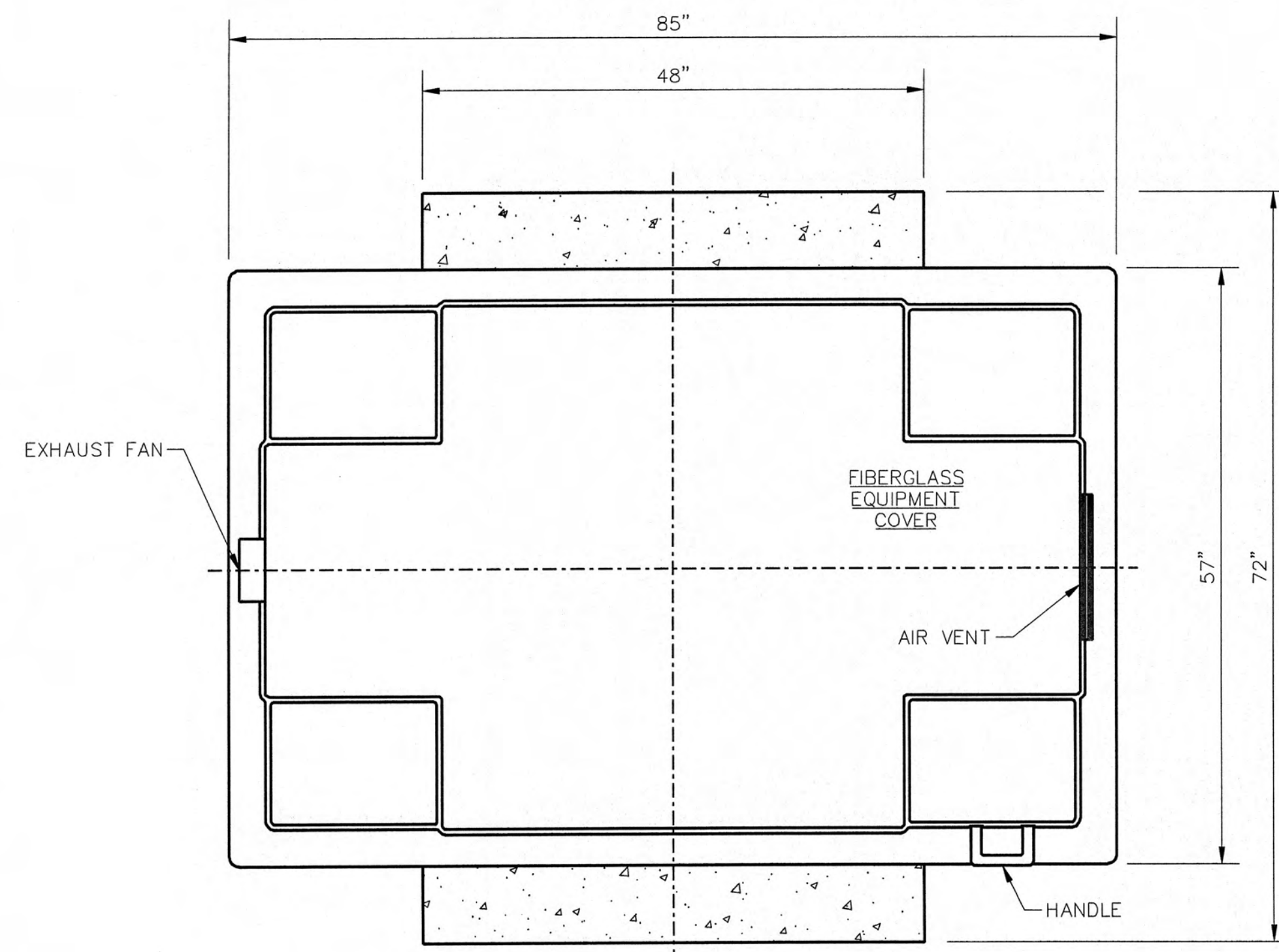


POWER LAYOUT
SCALE: 1/2" = 1'-0"

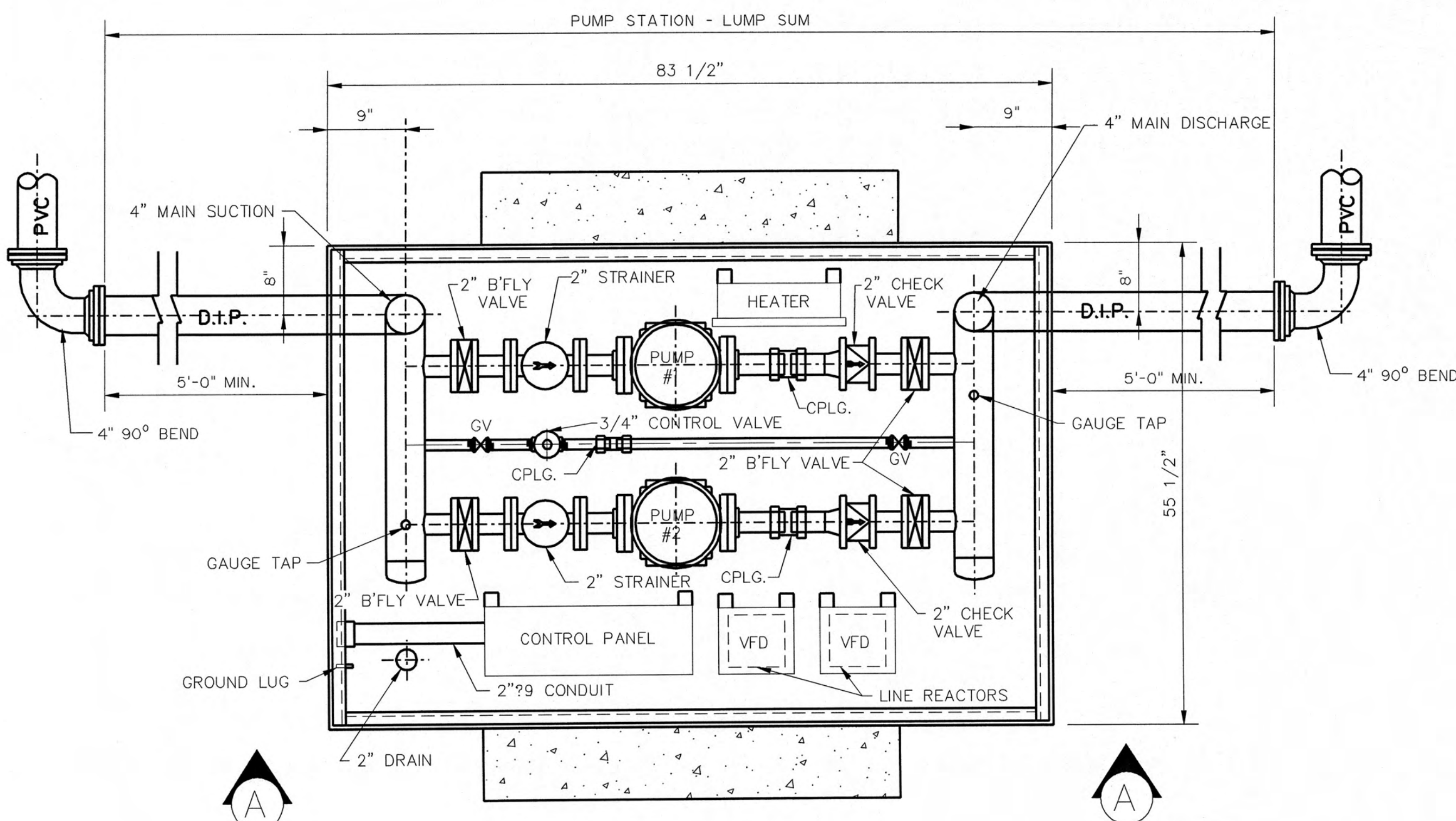
GENERAL SPECIFICATIONS

- THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF THE PROPOSED WORK. THE CONTRACTOR SHALL NOT SCALE DRAWINGS FOR THE EXACT LOCATION OF EQUIPMENT AND WORK. THE EXACT LOCATION OF ALL PANELS AND EQUIPMENT TO BE CONFIRMED BY THE OWNER. THE CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED WORK TO INSURE PROPER INSTALLATION BEFORE FABRICATING AND INSTALLING ANY WORK.
- ALL WIRING SHALL BE TYPE THHN/THWN (90° C.) COPPER CONDUCTORS.
- ALL CONDUIT SHALL BE STANDARD RIGID GALVANIZED STEEL EXCEPT WHERE NOTED OTHERWISE ON THE DRAWINGS AND SPECIFIED HEREIN. USE PVC SCHEDULE 40 WHEN RUN UNDERGROUND. USE ONLY RIGID GALVANIZED WHEN EXPOSED. WHEN PVC CONDUIT IS USED, TURN UP RIGID GALVANIZED ELBOWS AND PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ACCORDANCE WITH NEC ARTICLE 250.
- LIQUID TIGHT FLEXIBLE CONDUIT SHALL BE OF FLEXIBLE STEEL, SINGLE STRIP TYPE, MILD STEEL CONTINUOUS LENGTH OF UNIFORM WEIGHT AND THICKNESS WITH OUTER LIQUID TIGHT COVERING. MINIMUM SIZE SHALL BE 1/2", EXCEPT AS PERMITTED BY THE NEC.
- CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO WALLS, CELINGS, BEAMS OR COLUMNS, ETC. CONDUIT SHALL BE ADEQUATELY SUPPORTED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODES REQUIREMENTS. NO CONDUIT SHALL BE SUPPORTED BY THE EQUIPMENT TO WHICH IT IS CONNECTED.
- FINAL CONNECTION TO MOTORS SHALL BE MADE WITH FLEXIBLE STEEL CONDUIT. ALL WIRING SHALL BE COMPLETE TO MOTORS.
- FEEDED CABLES SHALL BE SPLICED ONLY AT TAP POINTS AS INDICATED ON THE DRAWINGS.
- ALL ELECTRICAL EQUIPMENT SUPPORTS AND CONDUIT SUPPORTS, ANCHORS, BOLTS, SCREWS, AND MOUNTING HARDWARE INCLUDING UNISTRUT, ANGLE IRON, AND STRUCTURAL MEMBERS SHALL BE STAINLESS STEEL OR ALUMINUM.
- SAFETY SWITCHES SHALL BE HEAVY DUTY TYPE, QUICK MAKE, QUICK BREAK WITH INTERLOCKING COVER. PROVIDE NEMA 4X, STAINLESS STEEL ENCLOSURE OR NEMA 3R ENCLOSURE AS NOTED ON THE PLANS. PROVIDE EQUIPMENT GROUND LUG IN EACH SWITCH.
- PANELBOARDS SHALL BE FACTORY ASSEMBLED, DEAD FRONT TYPE WITH COPPER BUS, LUGS, FINISH TRIM NEMA TYPE 3R AND THERMAL-MAGNETIC MOLDED CASE CIRCUIT BREAKERS OF FRAME AND TRIP RATINGS SHOWN ON THE PLANS AS MANUFACTURED BY SQUARE D, ITE OR CUTLER HAMMER.
- PANELBOARDS, POWER PANELS, SAFETY SWITCHES AND OTHER ELECTRICAL EQUIPMENT SHALL BE EQUIPPED WITH ENGRAVED LAMINATED PLATES SECURELY MOUNTED WITH SCREWS.
- PANELBOARDS SHALL BE LABELED PER THE DRAWING IDENTIFYING THE BRANCH CIRCUITS. ALL STARTERS, CIRCUIT BREAKERS, AND DISCONNECT SWITCHES, ETC. SHALL IDENTIFY THE LOAD BEING FED.
- THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING MATERIALS AND EQUIPMENT MADE OBSOLETE BY, AND INTERFERING WITH THE ADDITIONS, ALTERATIONS, OR RAZING AS SHOWN ON THE PLANS AND SPECIFIED. MAINTAIN SUCH EXISTING EQUIPMENT AND MATERIALS INTACT AND IN EXISTING CONDITION IN SO FAR AS POSSIBLE.
- ALL ELECTRICAL INSTALLATION SHALL BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SUPPLEMENTS. ALL MATERIALS SHALL BEAR UNDERWRITER'S OFFICIAL LABELS WHERE SUCH LABELING IS CUSTOMARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COORDINATION OF REQUIRED ELECTRICAL INSPECTIONS AND ANY FEES AND CHARGES ASSOCIATED WITH THE INSPECTIONS.
- THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROCURE ALL PERMITS, CERTIFICATES AND LICENSE REQUIRED OF HIM BY LAW FOR THE EXECUTION OF HIS WORK. HE SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS, ORDINANCES OR RULES AND ANY REGULATIONS RELATION TO THE PERFORMANCE OF THE WORK.
- ALL CONDUITS SHALL HAVE INSTALLED A GREEN EQUIPMENT GROUNDING CONDUCTOR WHICH SHALL BE ATTACHED TO ALL FIXTURES, PANELS, DEVICES, ETC.
- THE CONTRACTOR SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE BY THE OWNER.

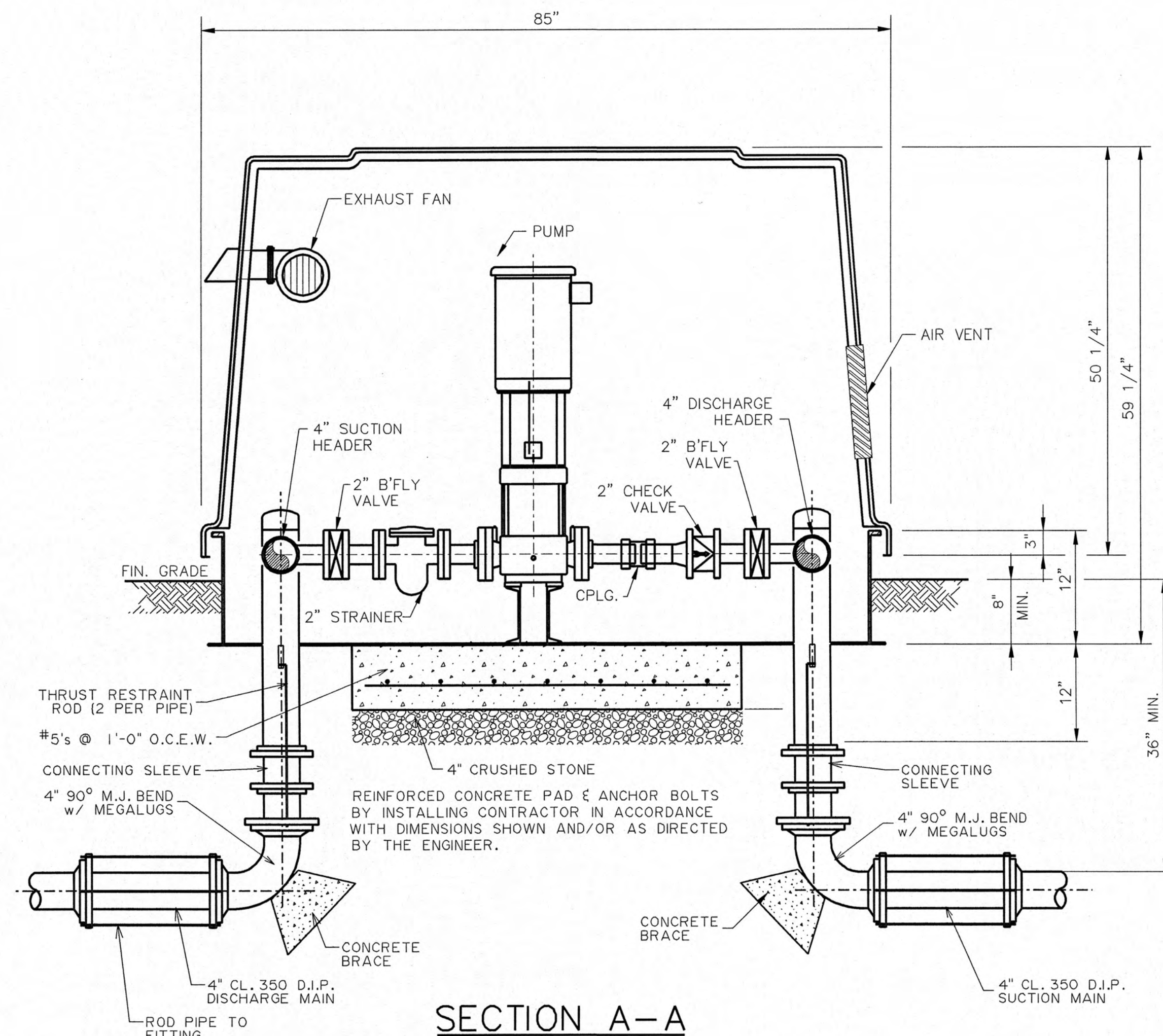
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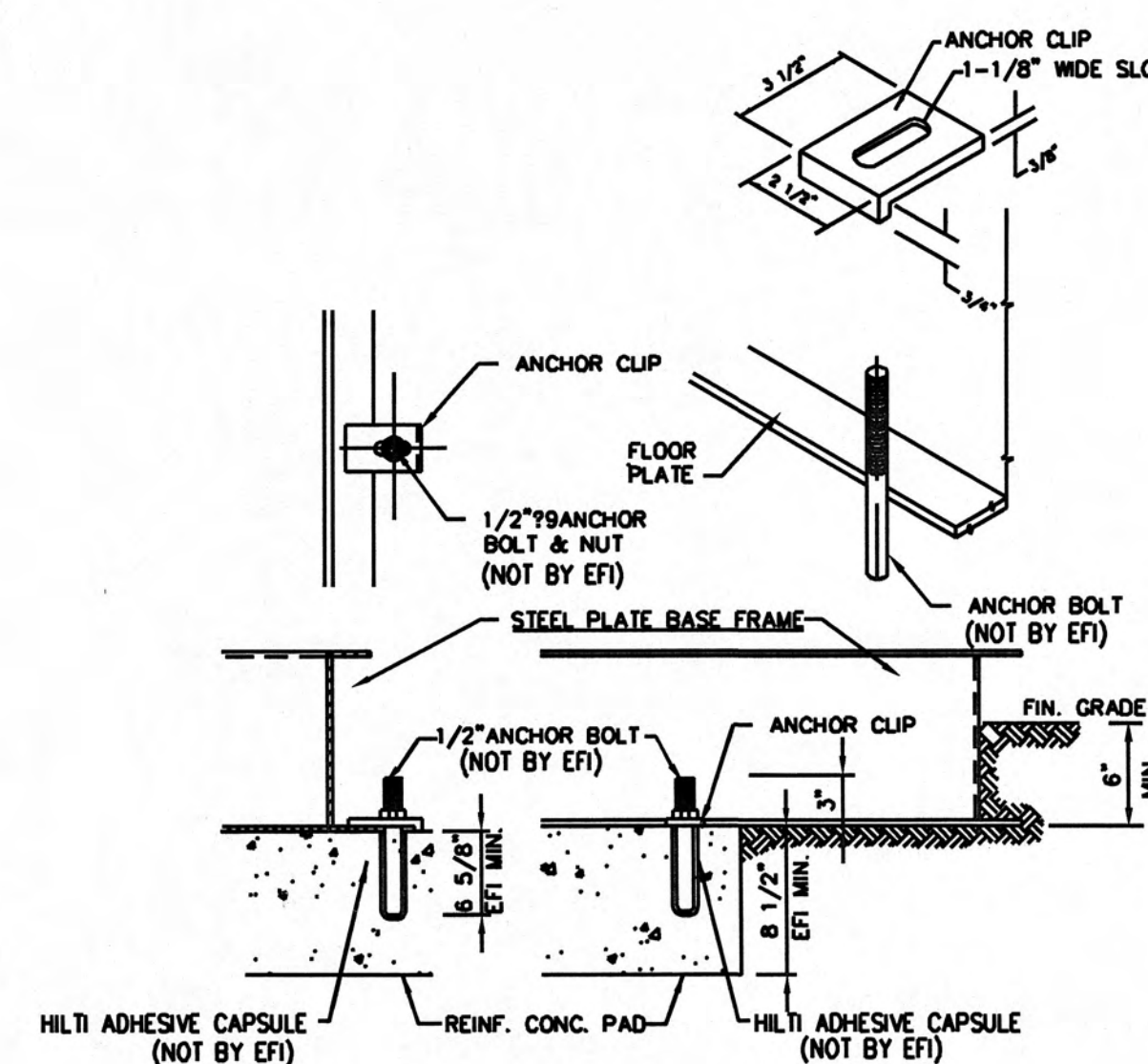
EXTERIOR PLAN



INTERIOR PLAN



SECTION A-A



TYPICAL ANCHOR DETAIL

NOTE: ANCHOR CLIPS FURNISHED BY E.F.I.
ANCHOR BOLTS & NUTS BY INSTALLER

DESIGN CRITERIA

Controls CONSTANT PRESSURE
Power Service: 240 Volts, 1 Phase, 60 Cycle

PUMP DATA

Type: VERTICAL, MULTI-STAGE CENTRIFUGAL
Pump: 1 & 2
Capacity: 54 G.P.M. AT 300 FEET T.D.H.
Size: 2" x 2"
Motor: 7 1/2 H.P., 3500 R.P.M.

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