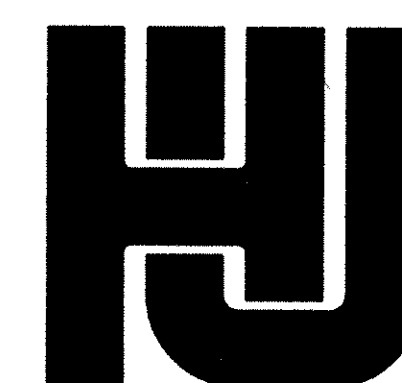
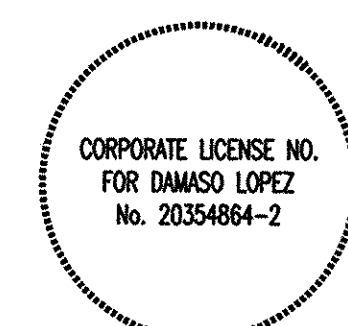
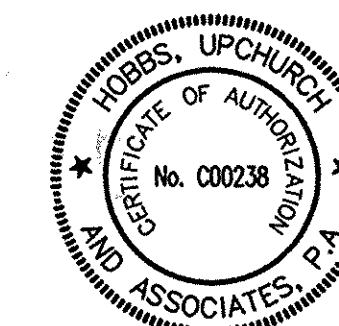


BIG BLOCK PUMP STATION

GRAND STRAND WATER AND SEWER AUTHORITY

CONWAY, SOUTH CAROLINA

THESE DRAWINGS REFLECT AS-BUILT CONDITIONS	
REVIEWED BY: <i>[Signature]</i>	DATE: 1-29-02
INSPECTIONS	
REVIEWED BY: <i>[Signature]</i>	DATE: 1/29/02
ENGINEERING	
GRAND STRAND WATER AND SEWER AUTHORITY	



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MYRTLE BEACH, SOUTH CAROLINA 29577

14-159-001/017

NOTE:
FOR ELECTRICAL ABBREVIATIONS
SEE SHEET E-1.

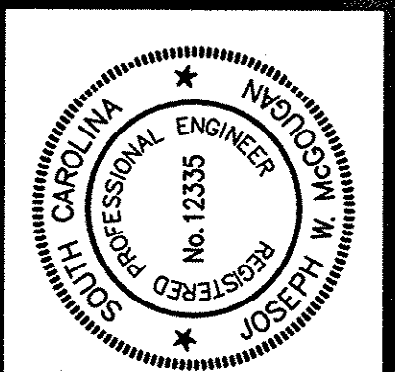
THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS

REVIEWED BY: [Signature] 1-29-02 DATE _____
INSPECTIONS

REVIEWED BY: [Signature] 1/19/02 DATE _____
ENGINEERING

GRAND STRAND WATER AND SEWER AUTHORITY

- G-1 COVER SHEET
- G-2 VICINITY MAP AND INDEX
- G-3 SITE PLAN
- G-4 MECHANICAL FLOOR PLAN AND
PUMP ELEVATIONS
- G-5 MISCELLANEOUS DETAILS
- G-6 FLOOR PLAN/ EXTERIOR ELEVATIONS/
DOOR SCHEDULE
- G-7 WALL SECTIONS AND DETAILS
- G-8 REINFORCED CELL LOCATIONS
AND BUILDING DETAILS
- G-9 FOUNDATION PLAN AND DETAILS
- G-10 ROOF FRAMING PLAN AND DETAILS
- G-11 PRECAST MANHOLE/ CHECK VALVE
VAULT DETAILS
- E-1 SYMBOL SCHEDULE, EQUIPMENT
SCHEDULE AND DETAILS
- E-2 EXISTING SOUTH PUMP STATION PLAN
- E-3 SOUTH PUMP STATION POWER RISER
DIAGRAM
- E-4 NEW ENGINE GENERATOR SET INSTALLATION
DETAILS AT SOUTH PUMP STATION
- E-5 NEW BIG BLOCK PUMP STATION
ELECTRICAL PLAN AND SITE PLAN
- E-6 NEW BIG BLOCK PUMP STATION
ONE-LINE-POWER DIAGRAM



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VICINITY MAP
AND INDEX

BIG BLOCK PUMP STATION
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

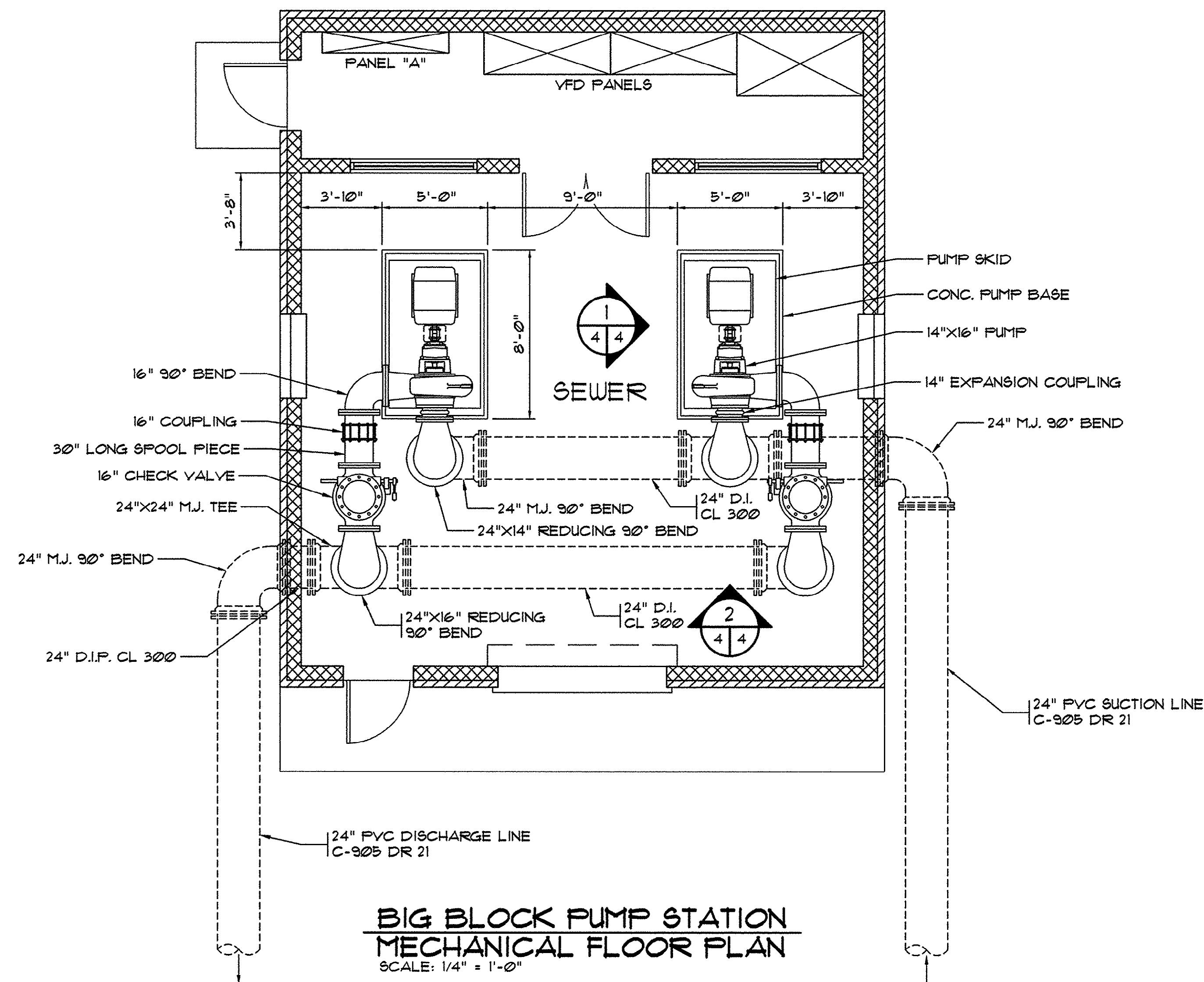
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DRAWN:	DC
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SCALE:	AS SHOWN
SHEET NO.	

G-2

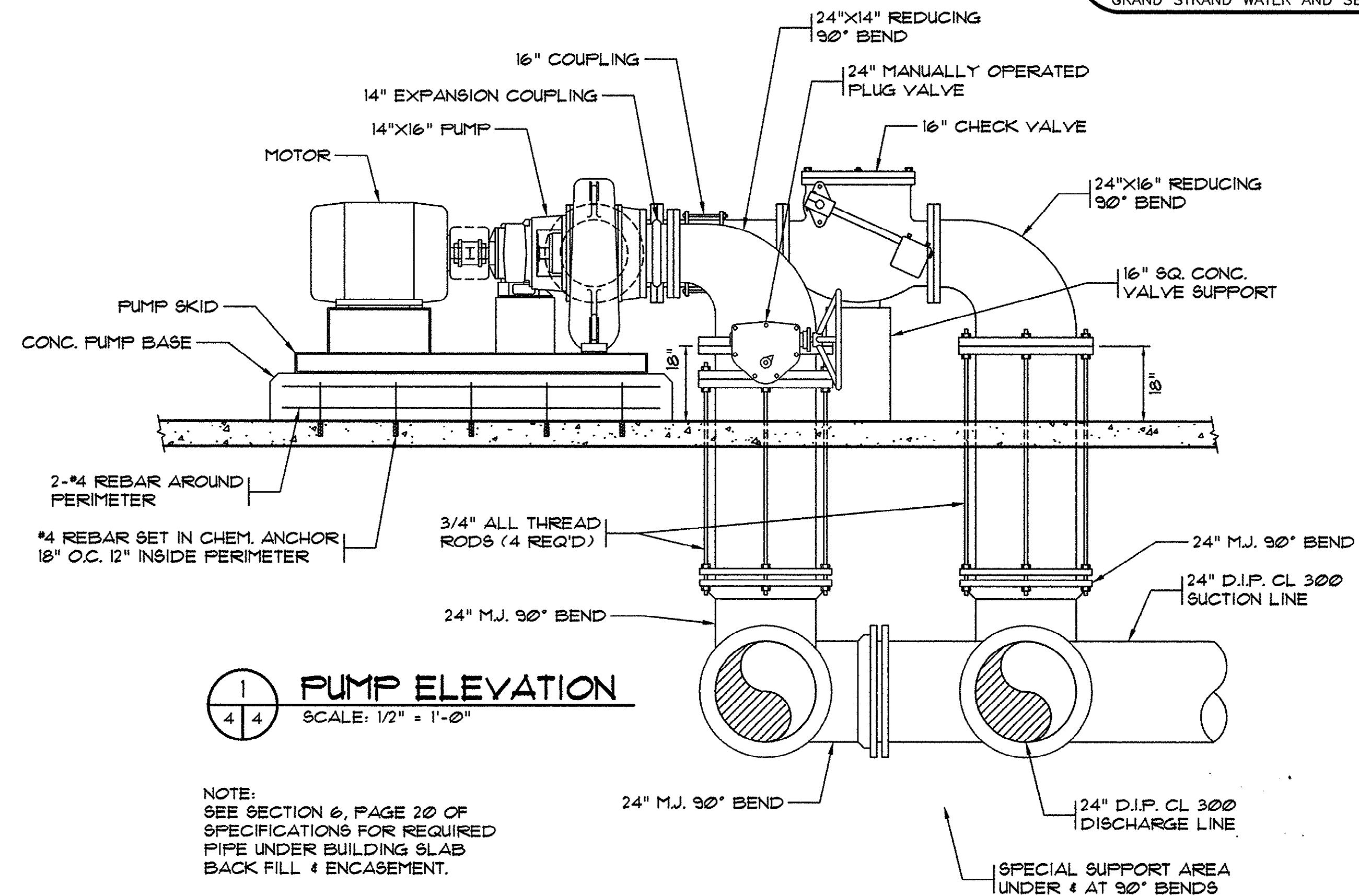
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14-159-002/017

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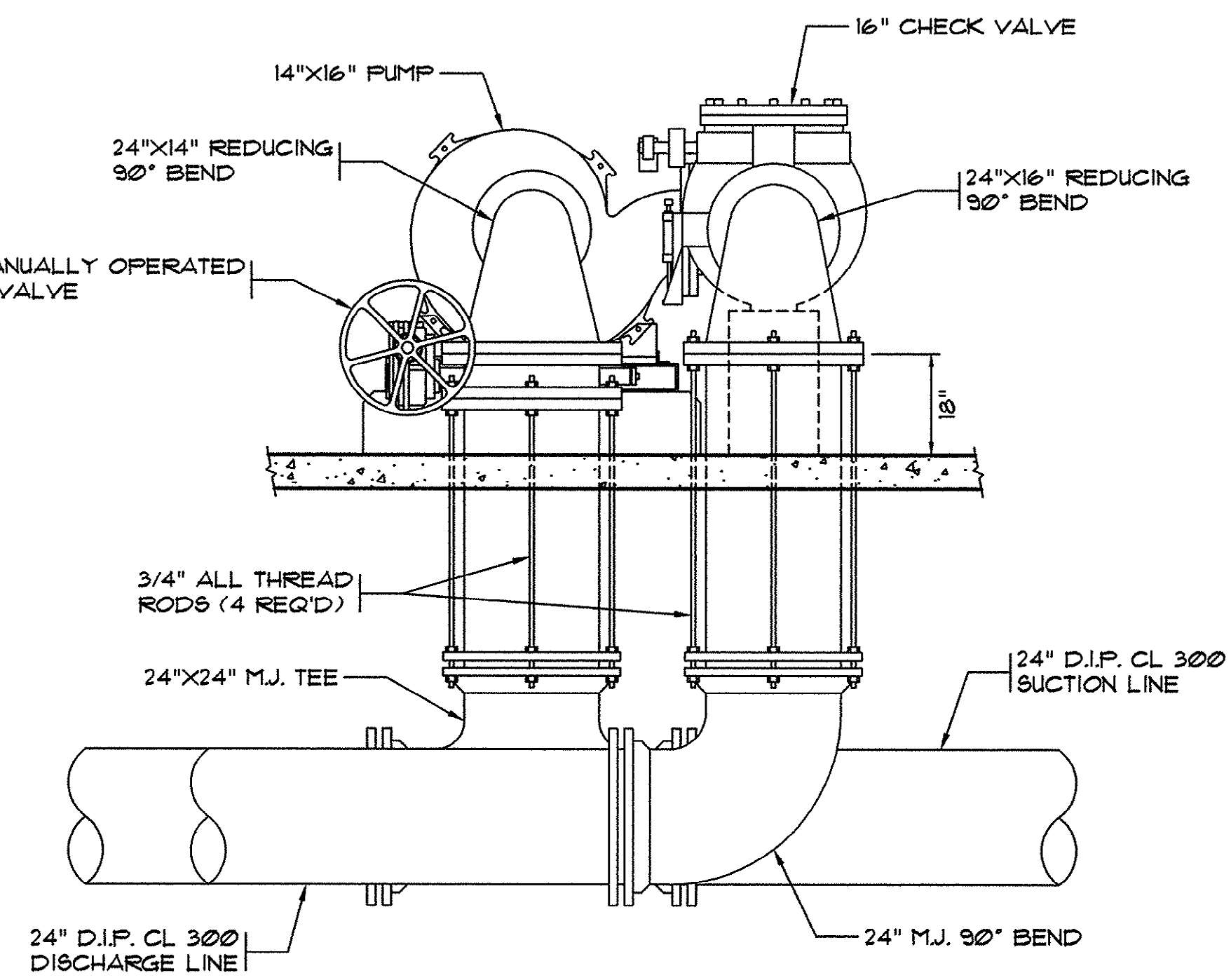


**BIG BLOCK PUMP STATION
MECHANICAL FLOOR PLAN**
SCALE: 1/4" = 1'-0"



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

NOTE:
SEE SECTION 6, PAGE 20 OF
SPECIFICATIONS FOR REQUIRED
PIPE UNDER BUILDING SLAB
BACK FILL & ENCASEMENT.



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

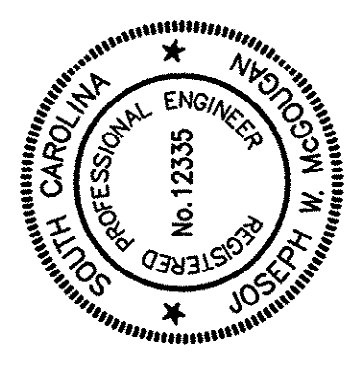
THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS

REVIEWED BY: *[Signature]* 1-29-02 DATE
INSPECTIONS

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ENGINEERING

GRAND STRAND WATER AND SEWER AUTHORITY

REV	DESCRIPTION	DATE	BY
1	AS-BUILT	1/29/02	JWM



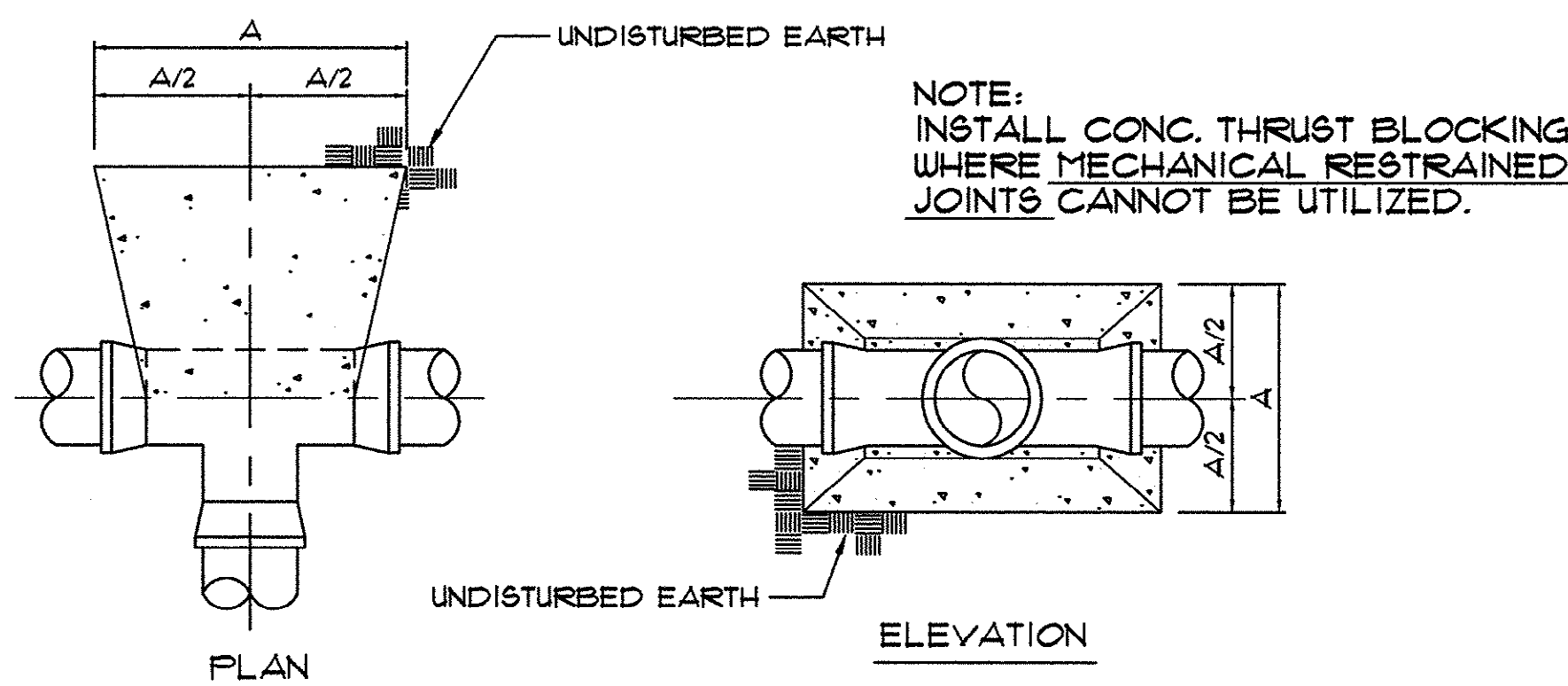
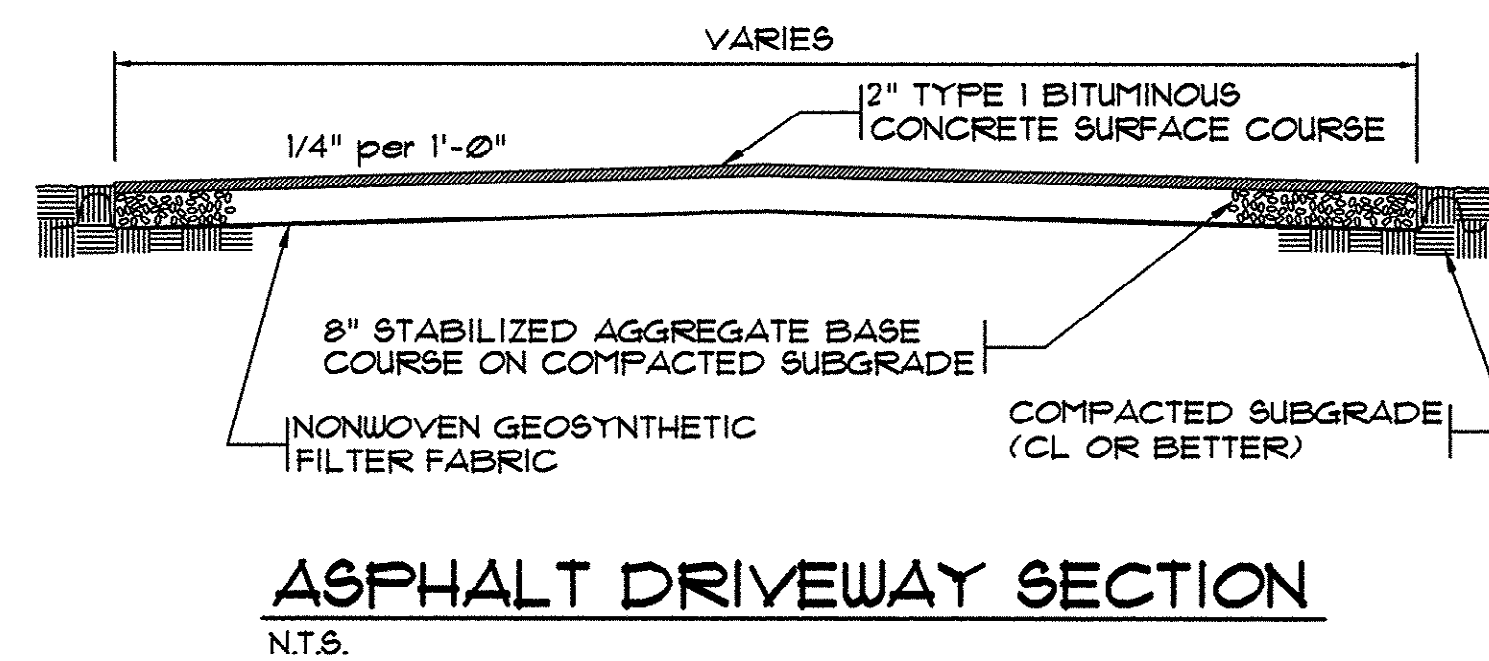
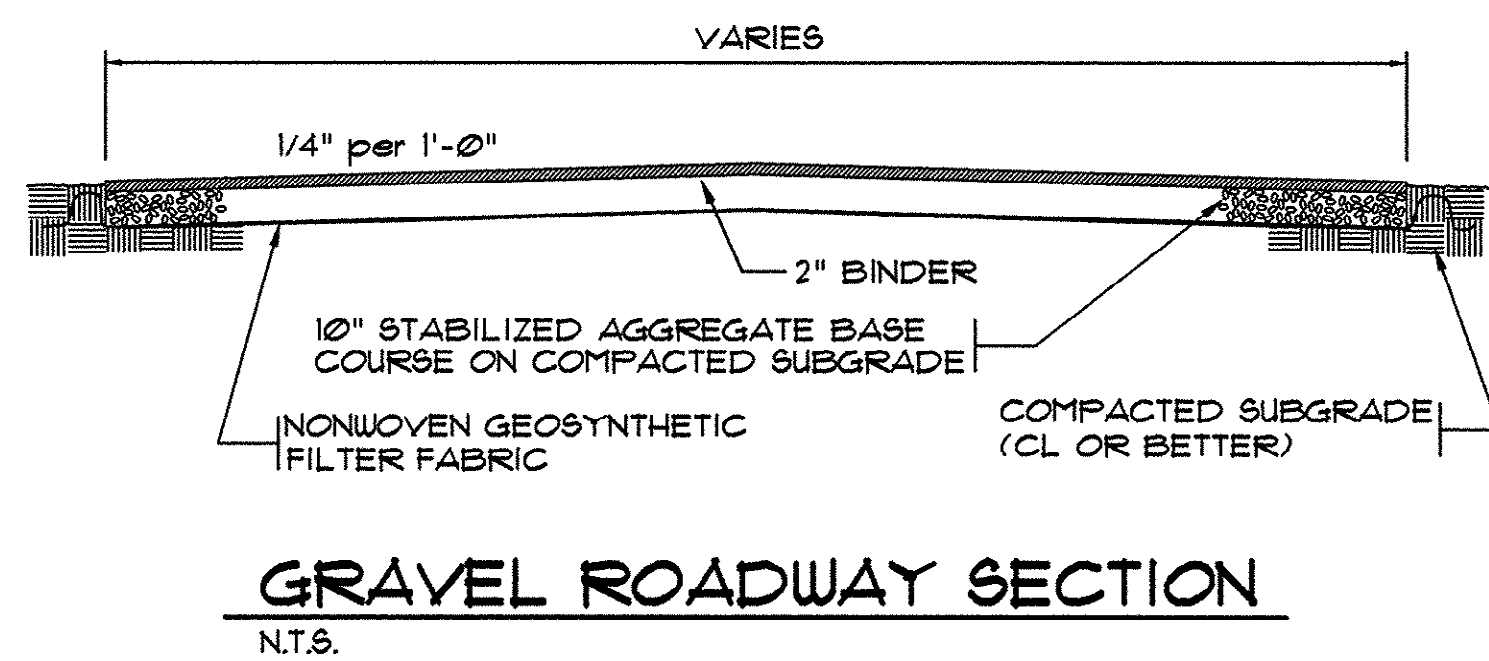
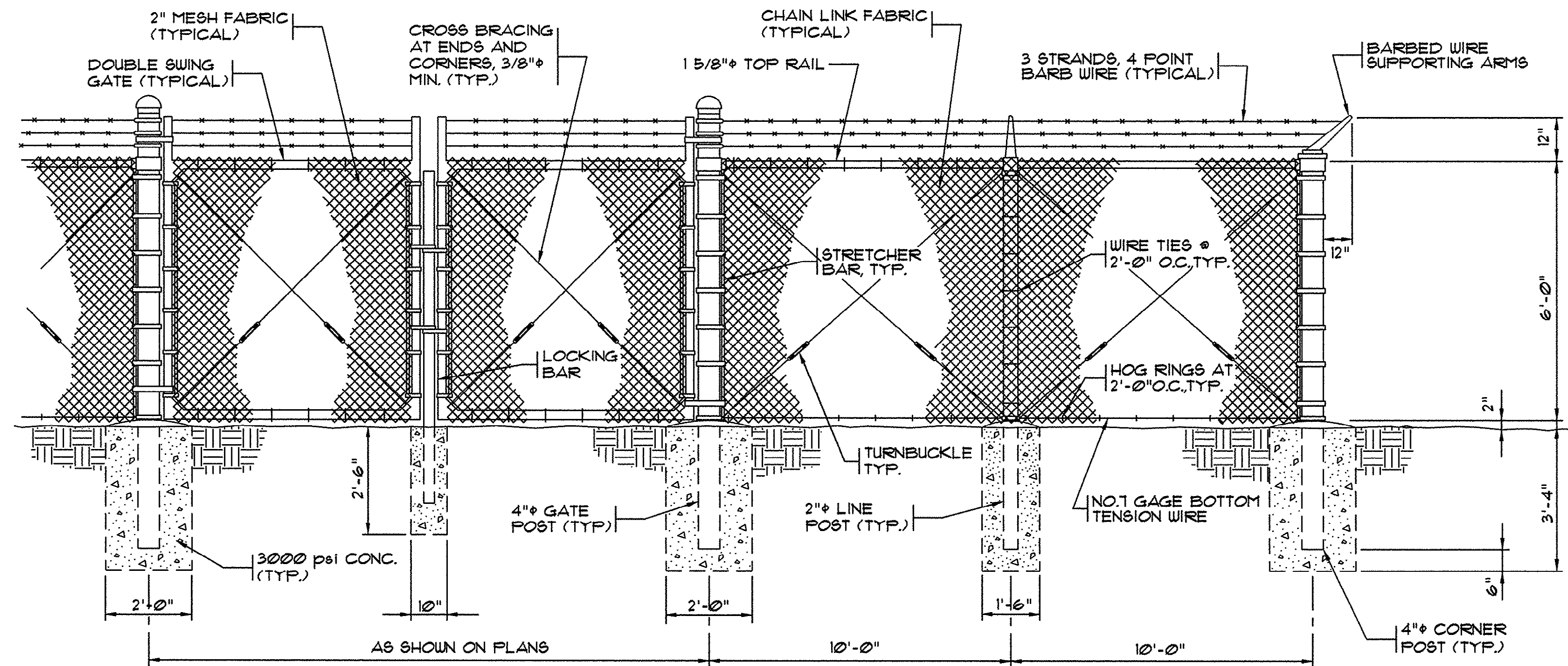
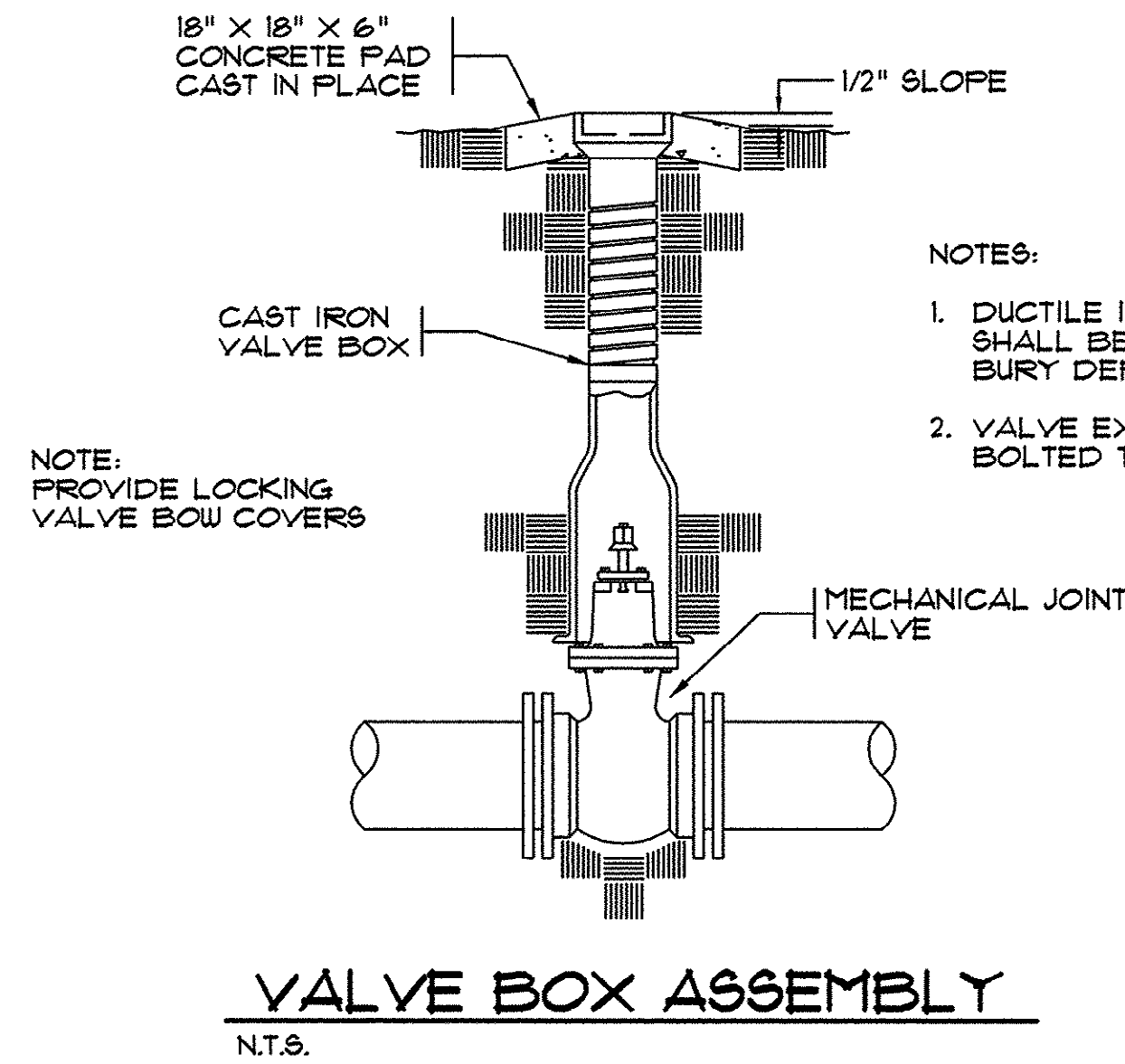
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**MECHANICAL FLOOR
PLAN AND PUMP
ELEVATIONS**

**BIG BLOCK PUMP STATION
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA**

DATE:	AUGUST 1997
DESIGNED:	JWM
DRAWN:	DC
CHECKED:	JWM
SCALE:	AS SHOWN
SHEET NO.	G-4

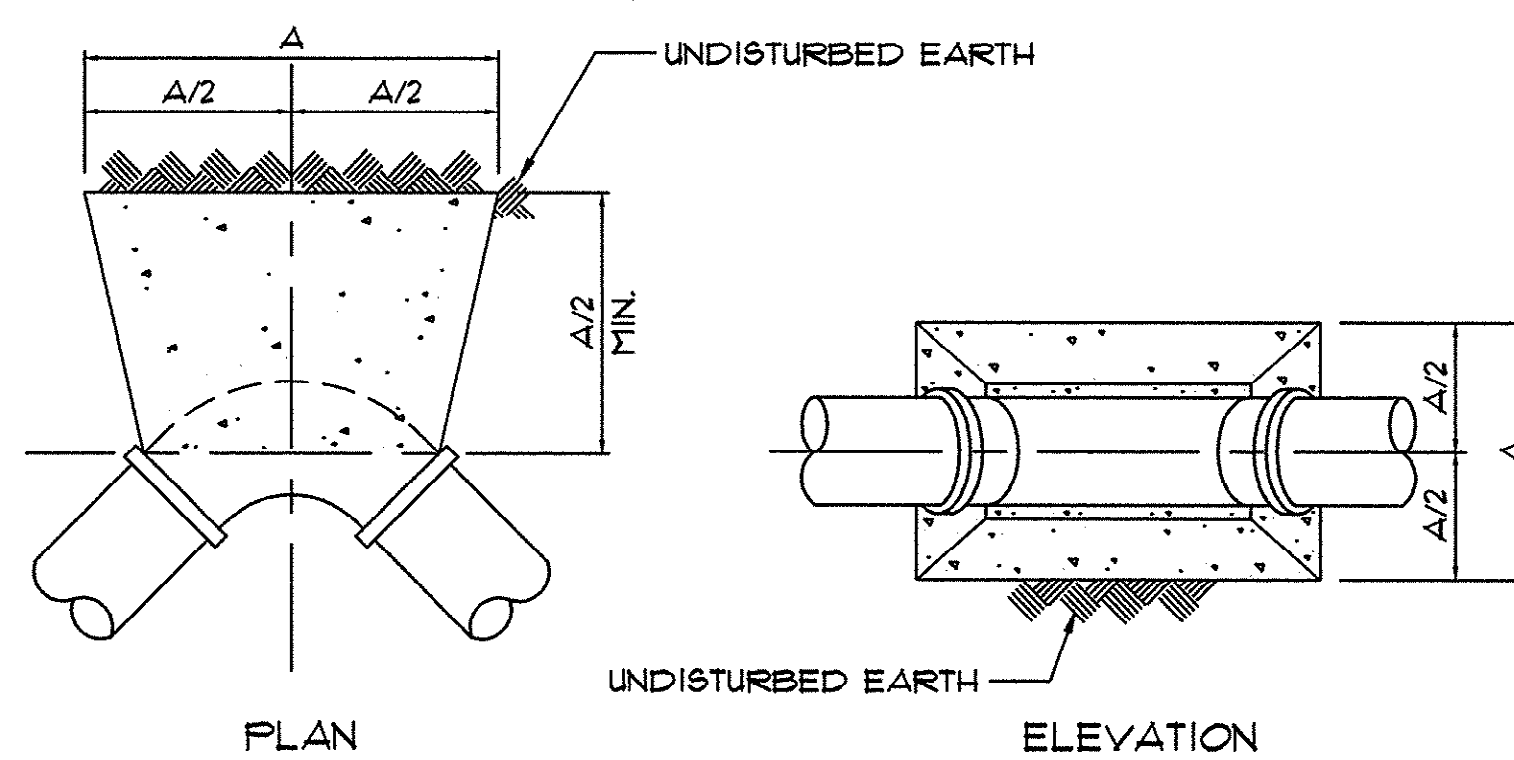
14-159-004/017



NOTE: THRUST BLOCK SIZE DETERMINED BY SMALLEST DIA. OF TEE

DIM. (IN INCHES)	PIPE SIZE (INCHES)							
	6"	8"	12"	16"	20"	24"	30"	48"
A	5	9	19	35	53	71	120	320

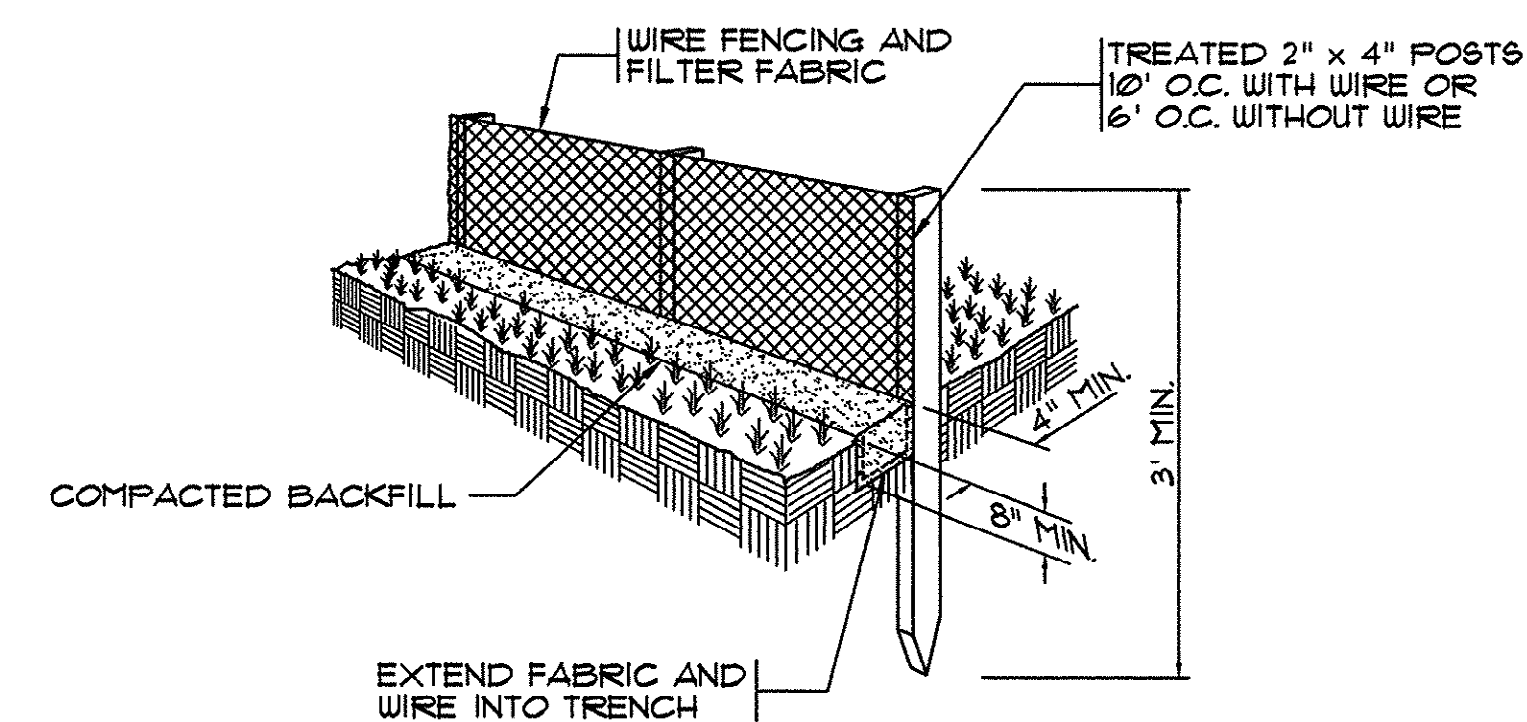
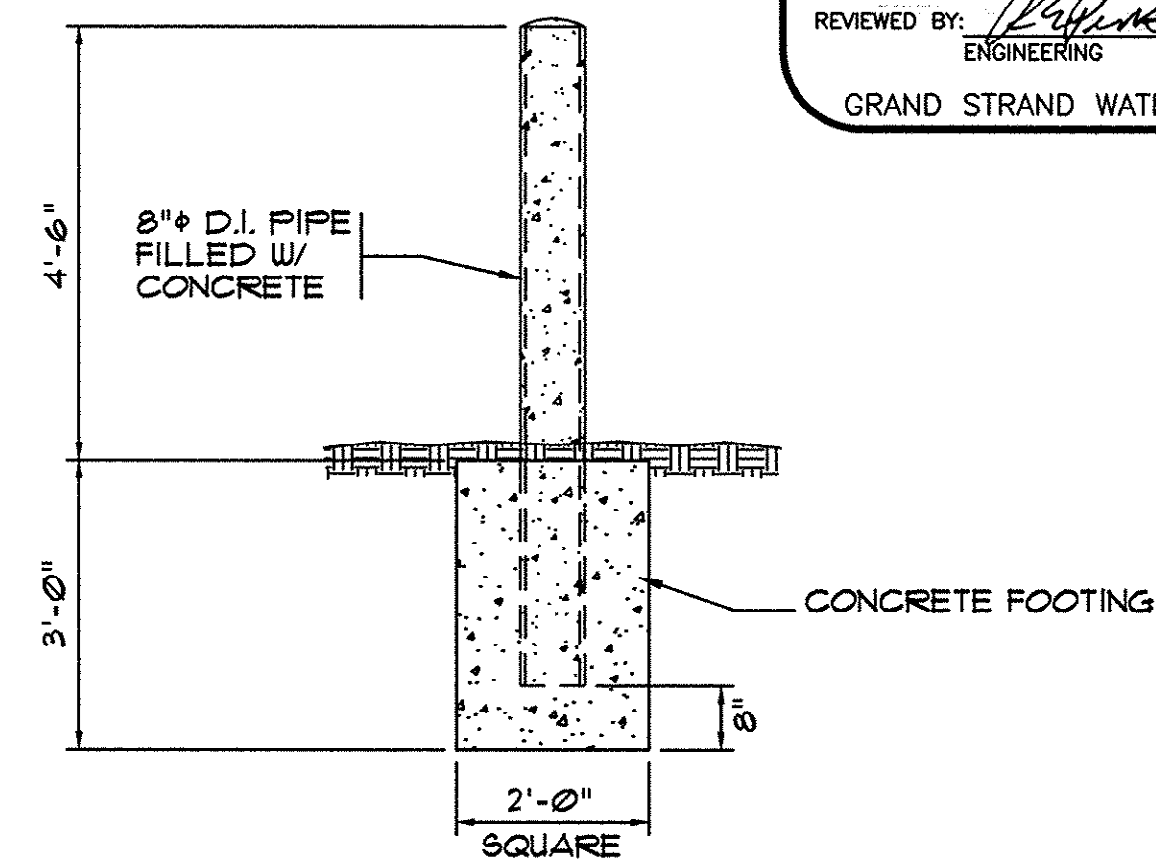
NOTE: THRUST BLOCKING DIMENSIONS ARE BASED ON A TEST PRESSURE OF 200 PSI. CONTRACTOR SHALL SUBMIT CALCULATIONS TO ENGINEER FOR REDUCED BLOCKING DIMENSIONS BASED ON ACTUAL OPERATING PRESSURES.



NOTE: THRUST BLOCKS SHALL BE CONSTRUCTED OF 2000 P.S.I. CONCRETE

TABLE "A" DIMENSIONS (IN FEET)

BEND	PIPE SIZE (NOM. DIA. IN INCHES)							
	6"	8"	12"	16"	20"	24"	30"	48"
90°	5	9	19	35	53	71	120	320
45°	3	5	11	19	29	42	65	166
22 1/2°	2	3	6	10	15	22	34	85
11 1/4°	1	2	3	5	8	11	17	43



THESE DRAWINGS REFLECT AS-BUILT CONDITIONS

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REVIEWED BY: *[Signature]* 1/29/02 DATE
ENGINEERING

GRAND STRAND WATER AND SEWER AUTHORITY

REVISIONS

SYMBOL	DESCRIPTION	DATE	BY

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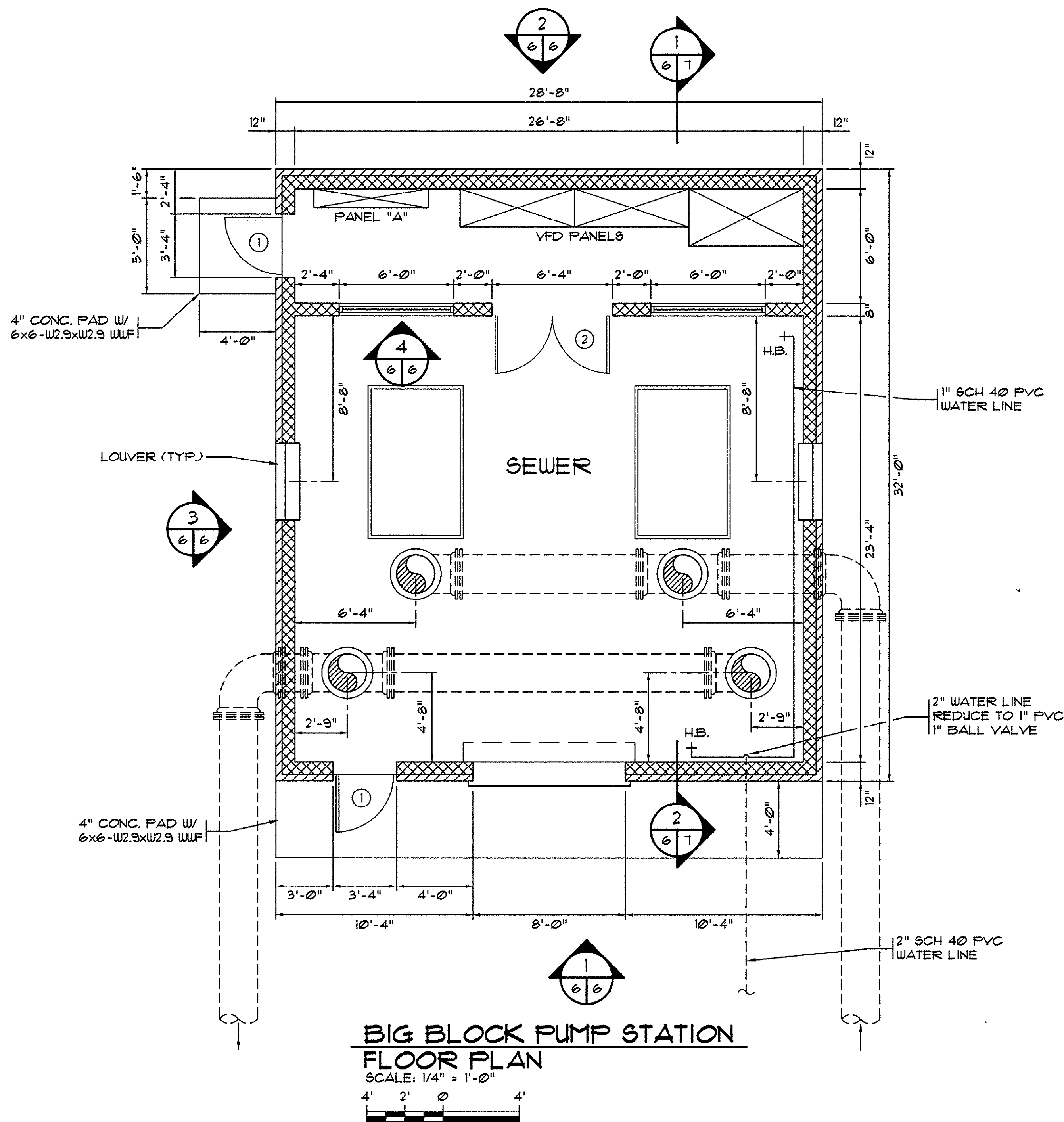
MISCELLANEOUS DETAILS

BIG BLOCK PUMP STATION
GRAND STRAND WATER AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

DATE: AUGUST 1997
DESIGNED: JWM
DRAWN: DC
CHECKED: JWM
SCALE: AS SHOWN
SHEET NO. G-5
OF 11

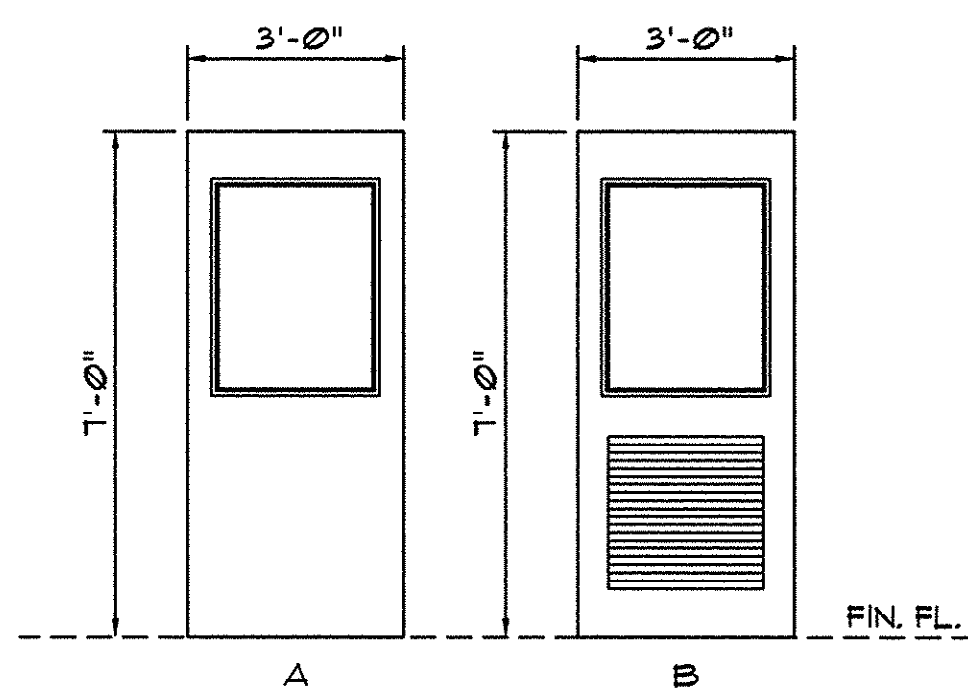
14-159-005/017

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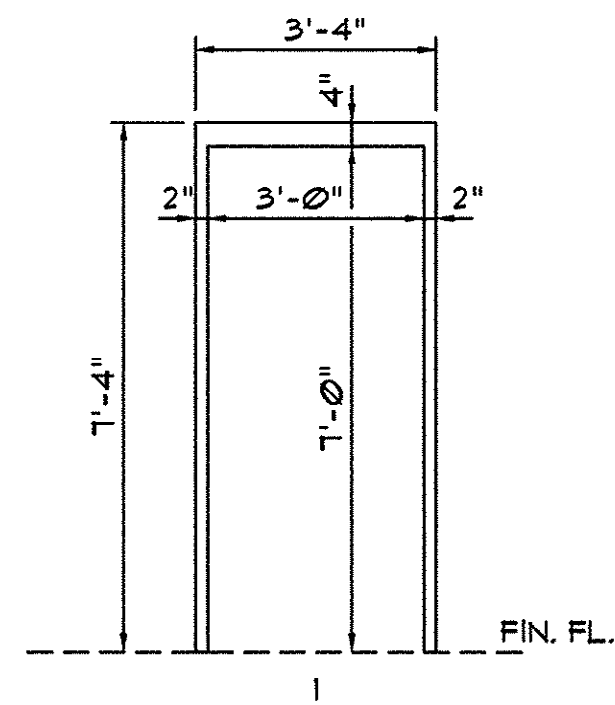


**BIG BLOCK PUMP STATION
FLOOR PLAN**
SCALE: 1/4" = 1'-0"
4' 2' 0' 4'

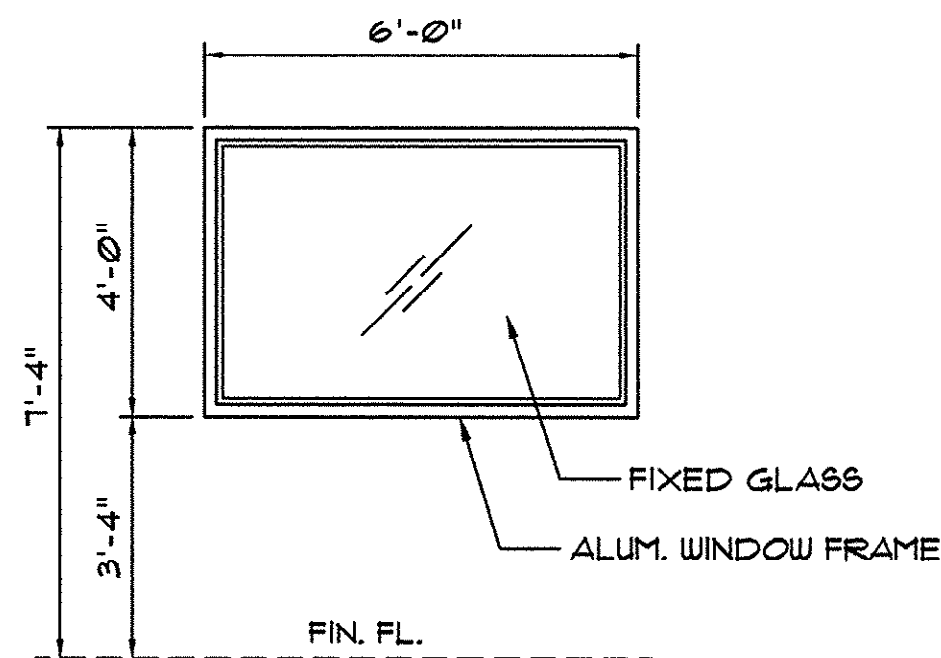
DOOR SCHEDULE									
NO.	DOOR						FRAME		REMARKS
	SIZE	TYPE	MTL.	GLASS	LOUVER	LABEL	TYPE	MTL.	
①	3'X1'X1.75"	A	INSUL. H.M.	1/4" TEMP.	NONE	NONE	1	H.M.	PAINT DOOR + FRAME
②	FR 3'X1'X1.75"	B	INSUL. H.M.	1/4" TEMP.	NONE	NONE	1	H.M.	PAINT DOOR + FRAME



DOOR ELEVATION

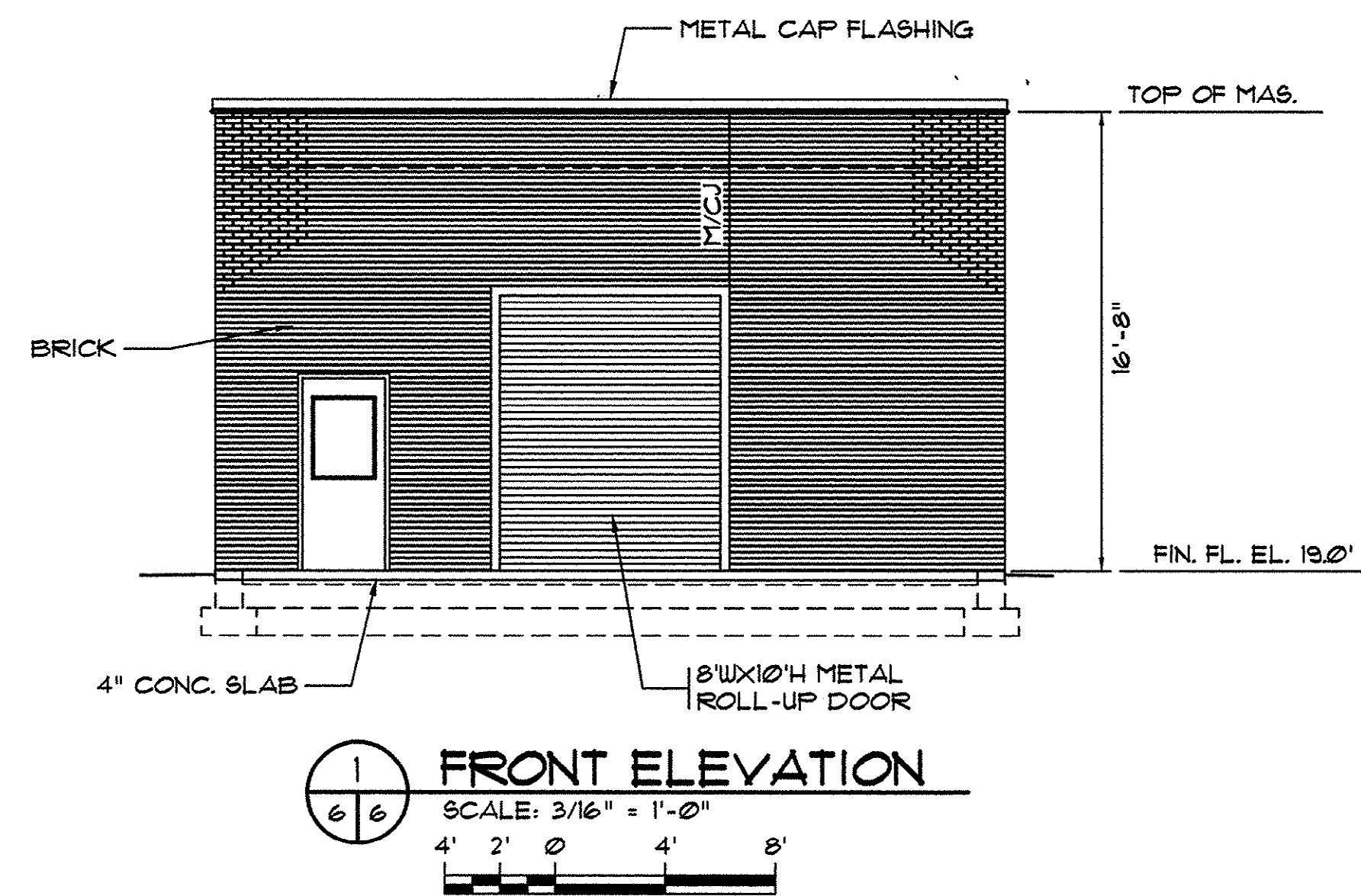


FRAME ELEVATIONS

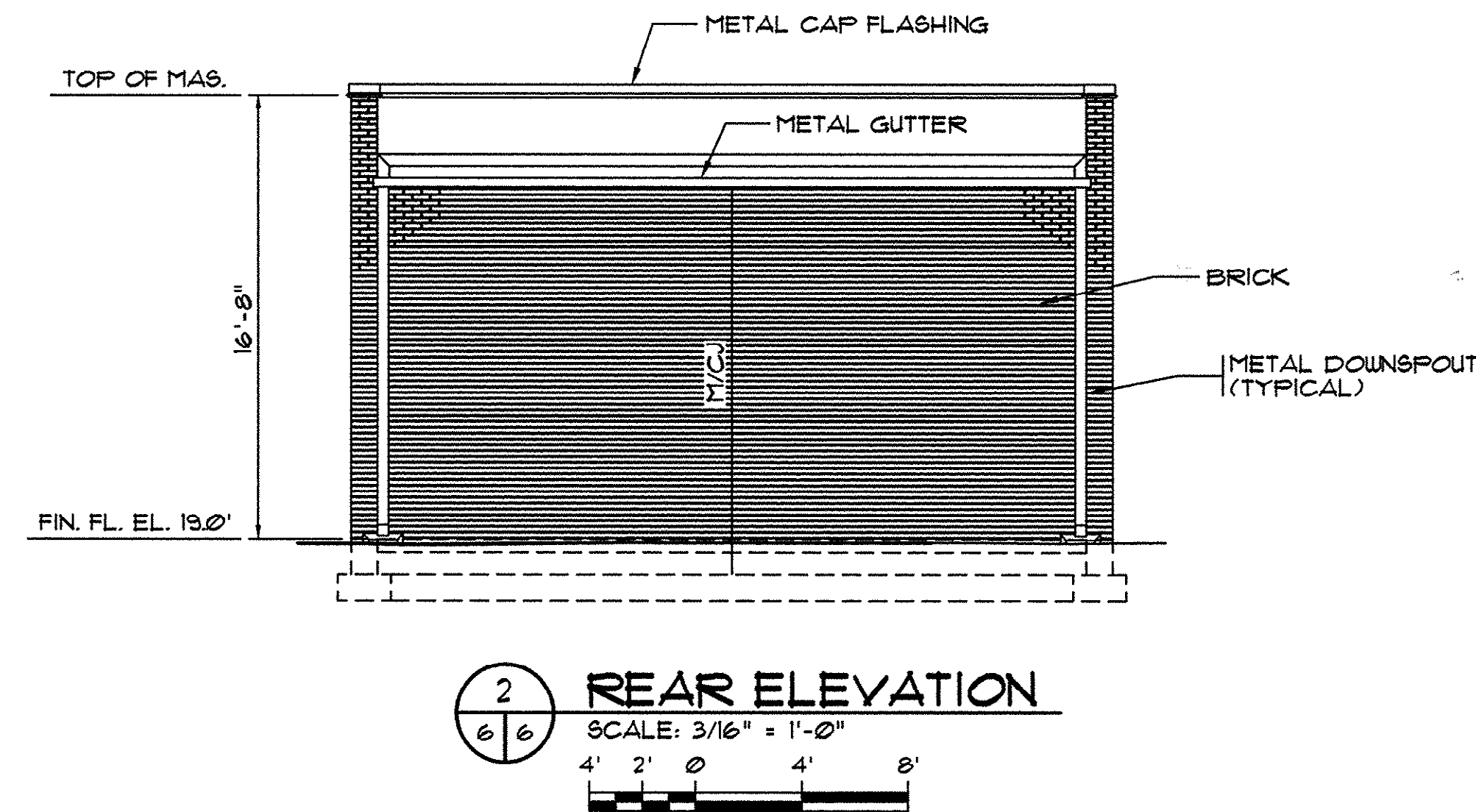


WINDOW ELEVATION
SCALE: 3/8" = 1'-0"

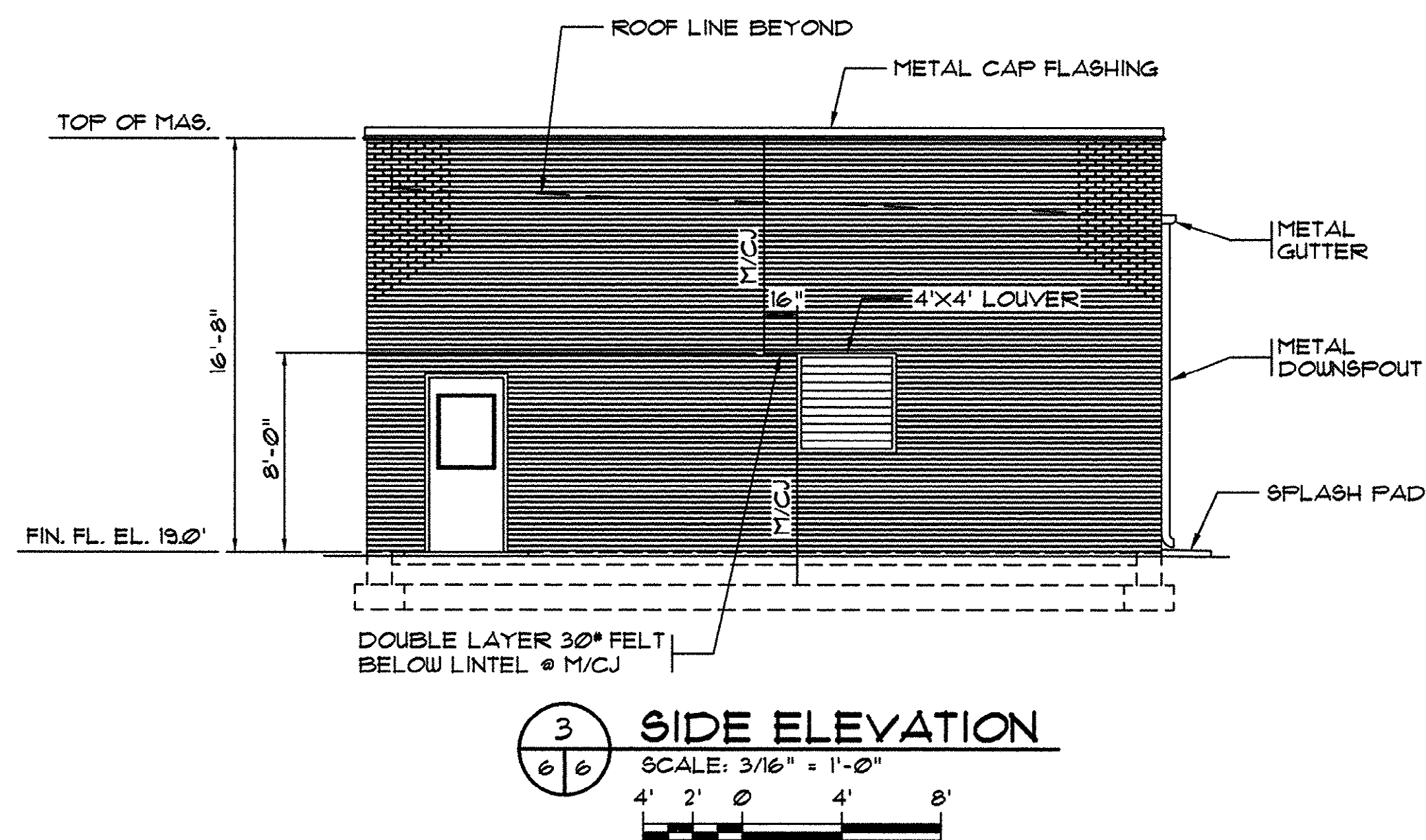
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AS-BUILT
CONDITIONS
REVIEWED BY: *[Signature]* 1-29-02 DATE
INSPECTIONS
REVIEWED BY: *[Signature]* 1/29/02 DATE
ENGINEERING
GRAND STRAND WATER AND SEWER AUTHORITY



FRONT ELEVATION
SCALE: 3/16" = 1'-0"
4' 2' 0' 4' 8'

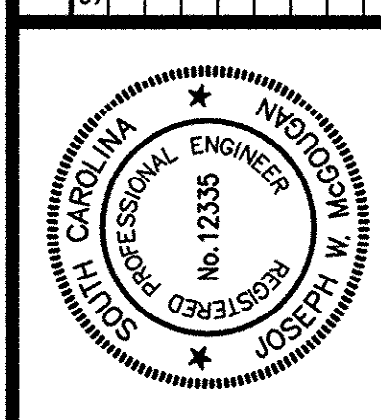


REAR ELEVATION
SCALE: 3/16" = 1'-0"
4' 2' 0' 4' 8'



SIDE ELEVATION
SCALE: 3/16" = 1'-0"
4' 2' 0' 4' 8'

REV.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		



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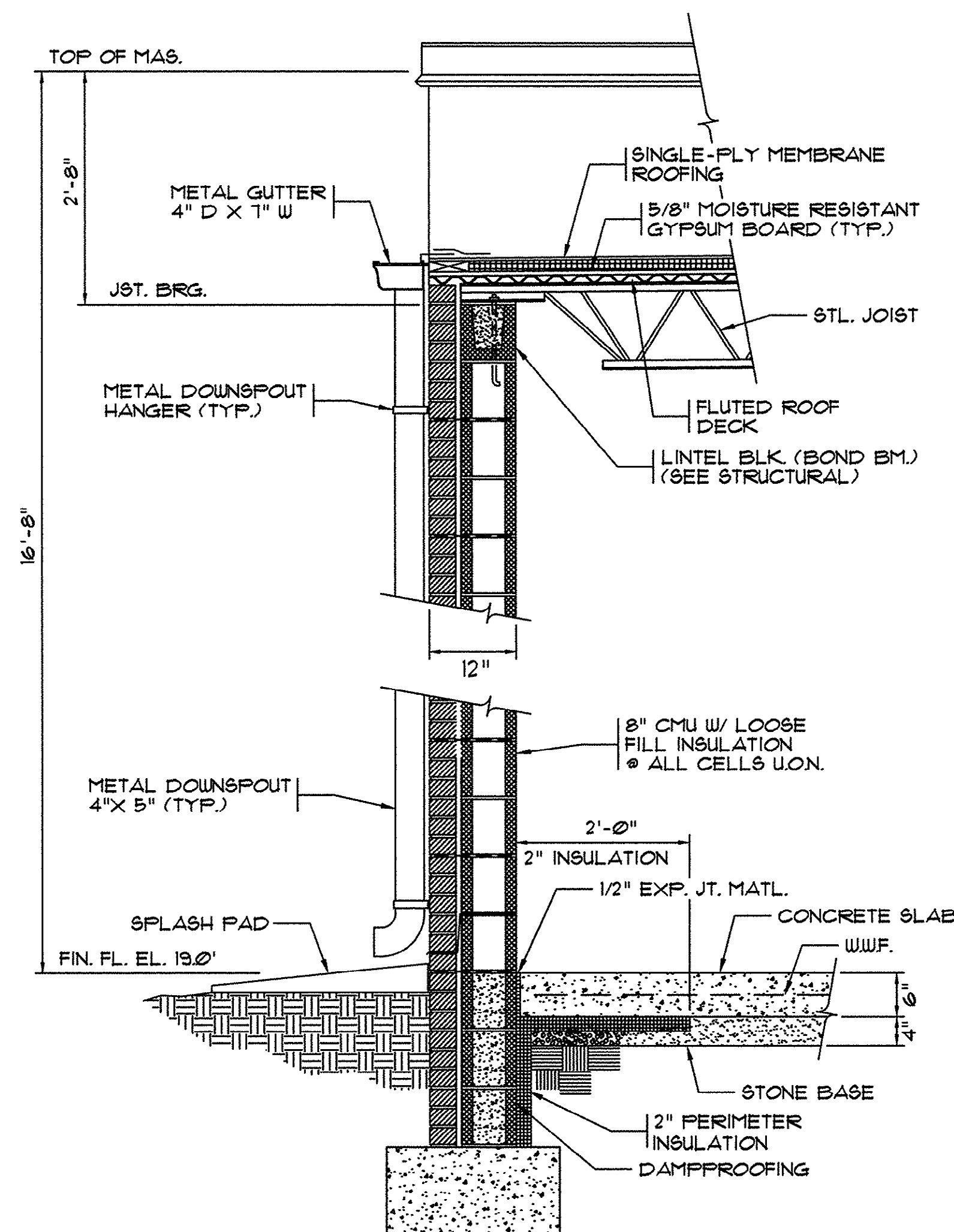
**FLOOR PLAN
EXTERIOR ELEVATIONS
DOOR SCHEDULE**

**BIG BLOCK PUMP STATION
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA**

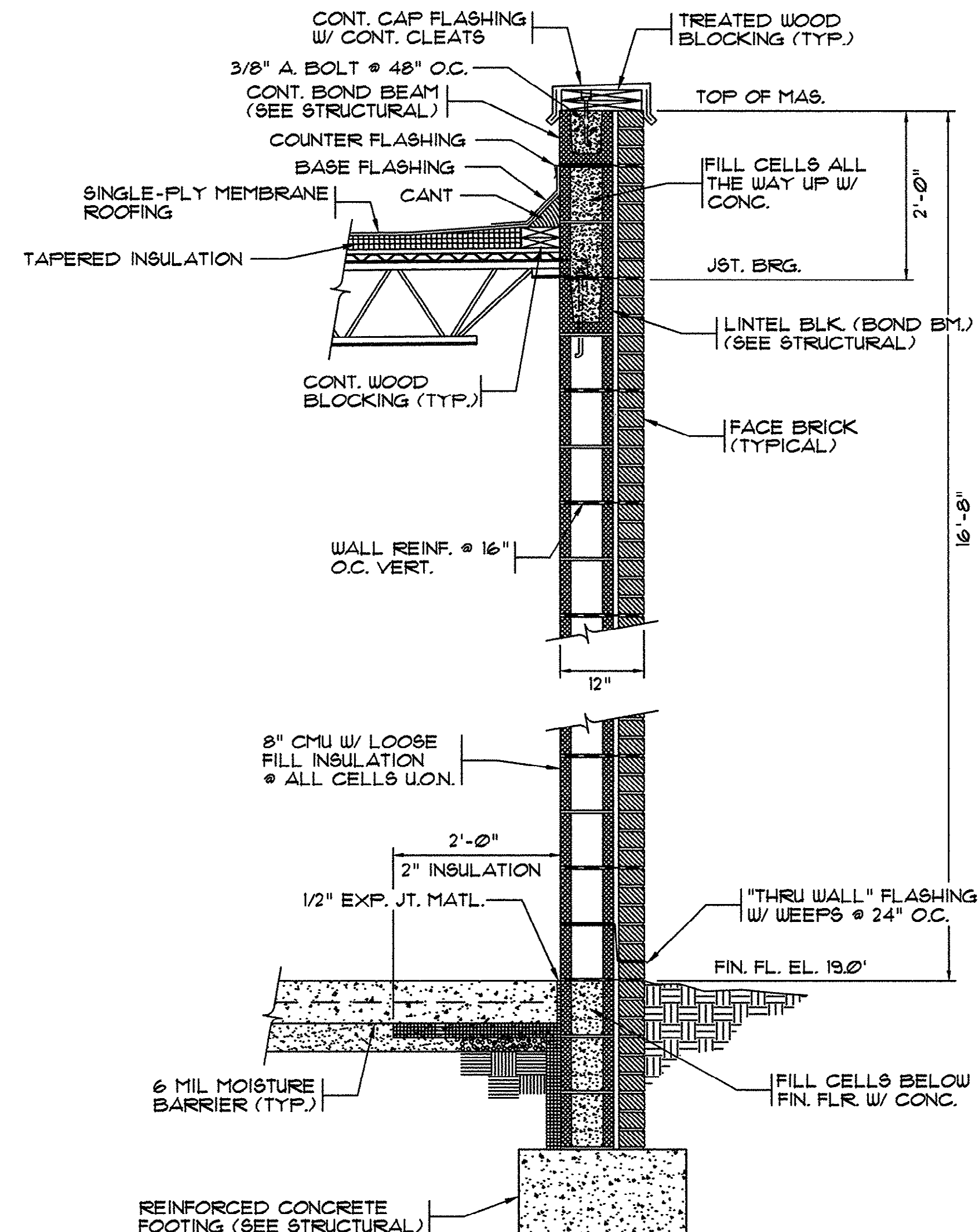
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DRAWN:	DC
CHECKED:	JWM
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SHEET NO.	G-6
OF:	11

14-159-006/017

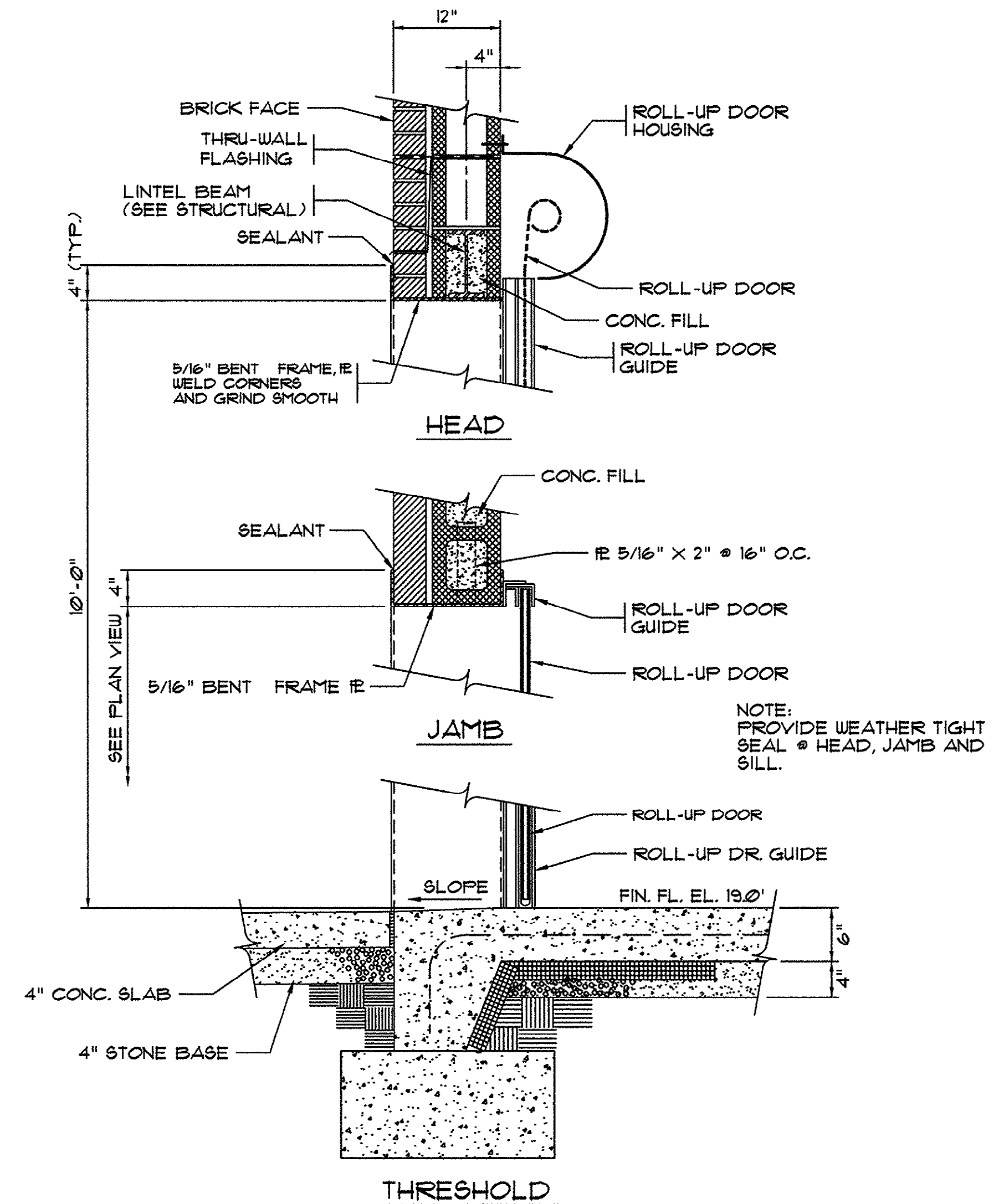
HOBBS, UPCHURCH & ASSOC. MB J:\GSP\02\800\820\GSD-07.dwg EDITED BY: ARABON DATE: 01/25/02 TIME: 11:10 Layout: Model



1 TYP. WALL SECTION
SCALE: 3/4" = 1'-0"
1' 6" 0 1' 2'



2 TYP. WALL SECTION
SCALE: 3/4" = 1'-0"
1' 6" 0 1' 2'



TYPICAL SECTION THRU ROLL-UP DOOR
SCALE: 1" = 1'-0"

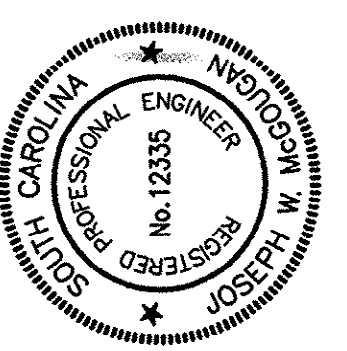
THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS

REVIEWED BY: *Fuel* 1-29-02 DATE
INSPECTIONS

REVIEWED BY: *Robinson* 1/29/02 DATE
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GRAND STRAND WATER AND SEWER AUTHORITY

SYMBOL	REVISIONS	DATE	BY



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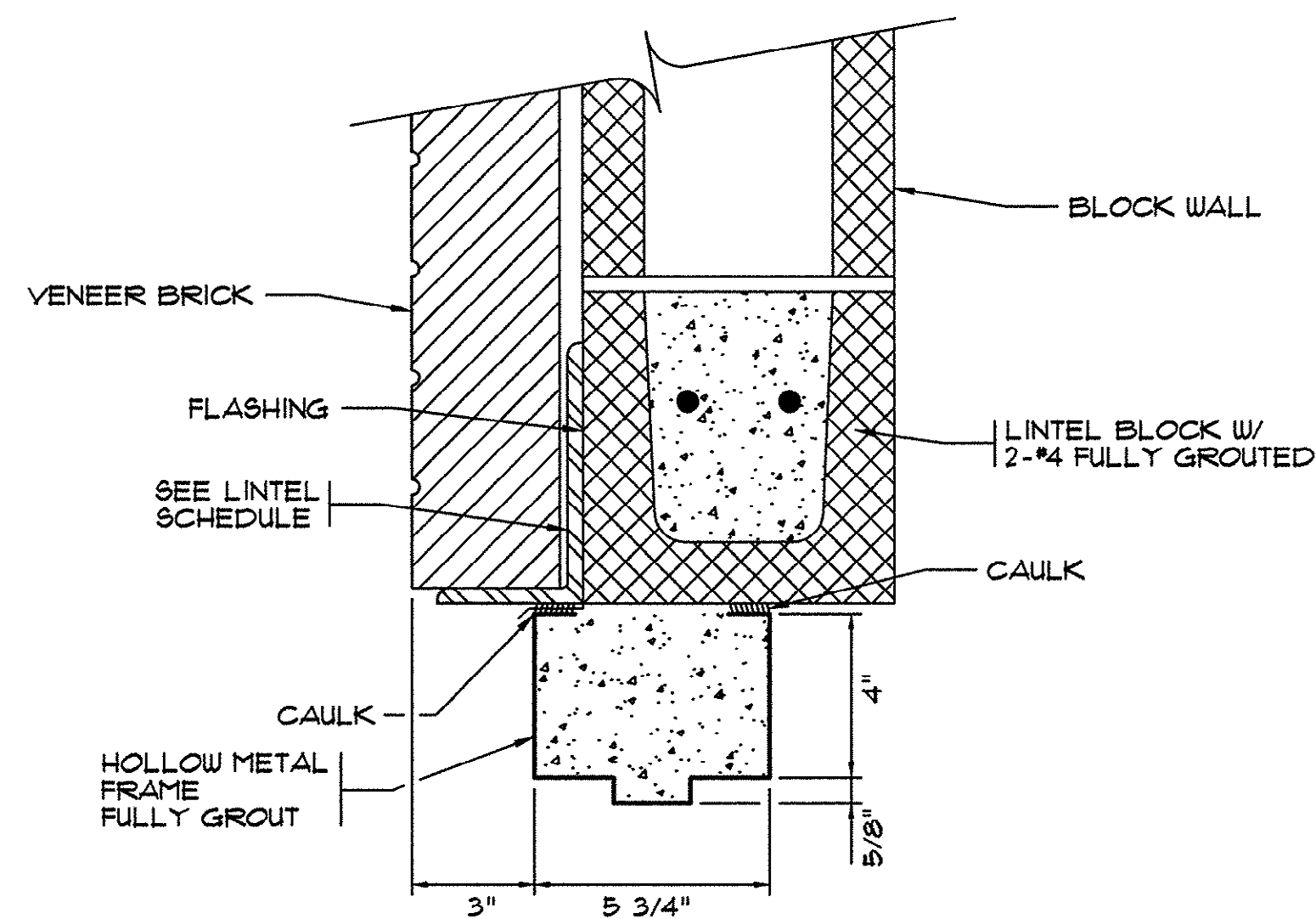
WALL SECTIONS
AND DETAILS

BIG BLOCK PUMP STATION
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

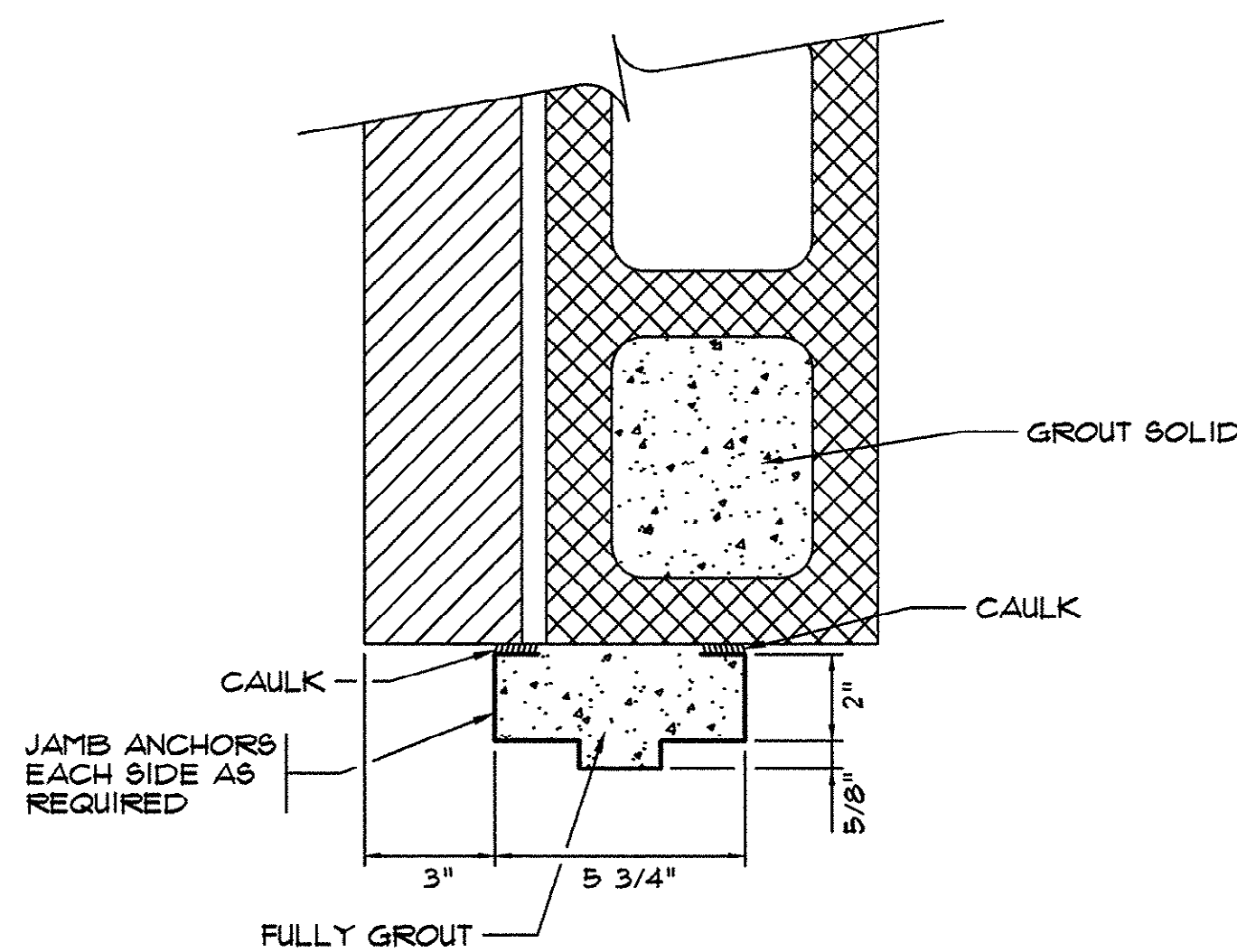
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CHECKED:	JWM
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OF:	11

14-159-007/017

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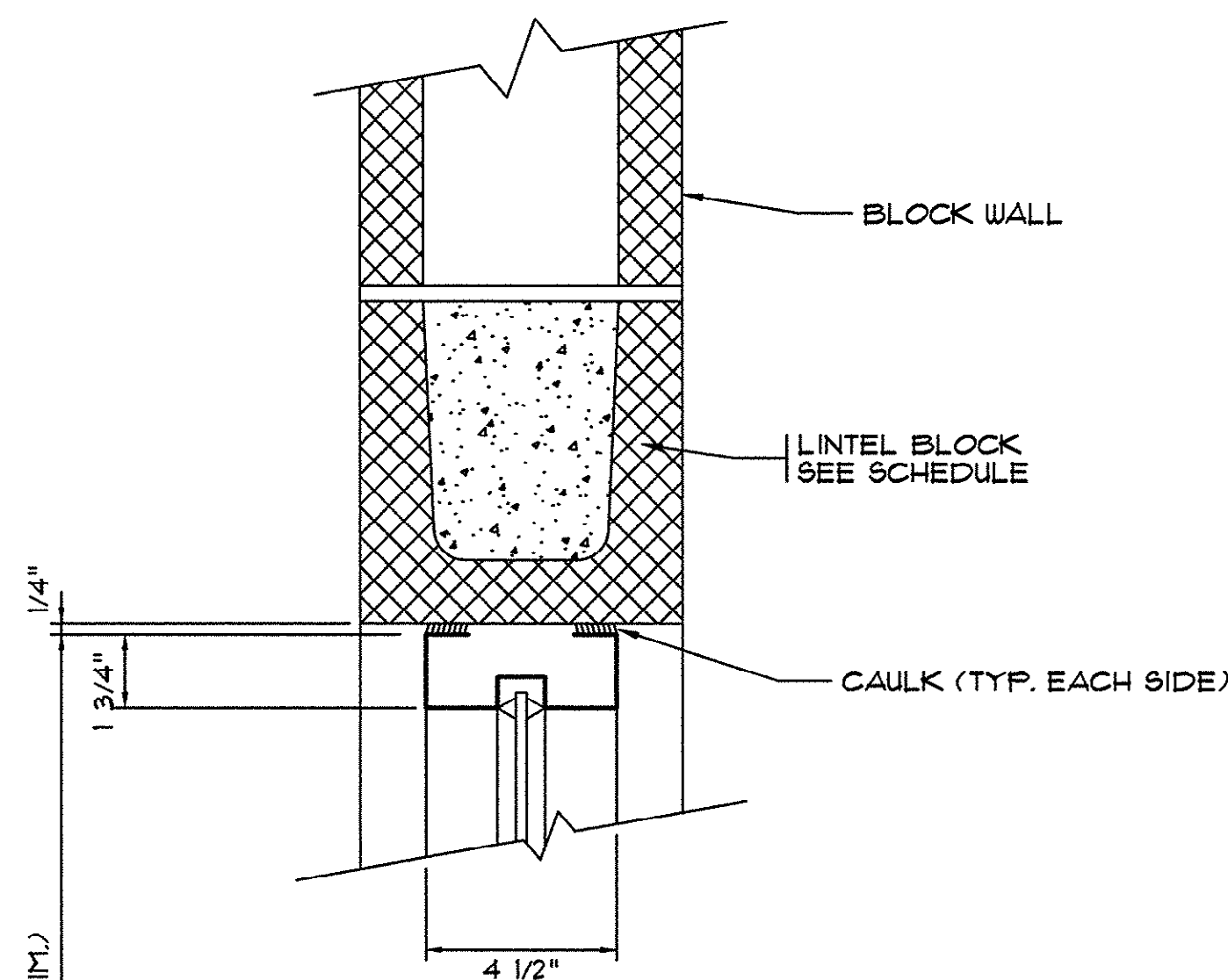
HEAD SECTION



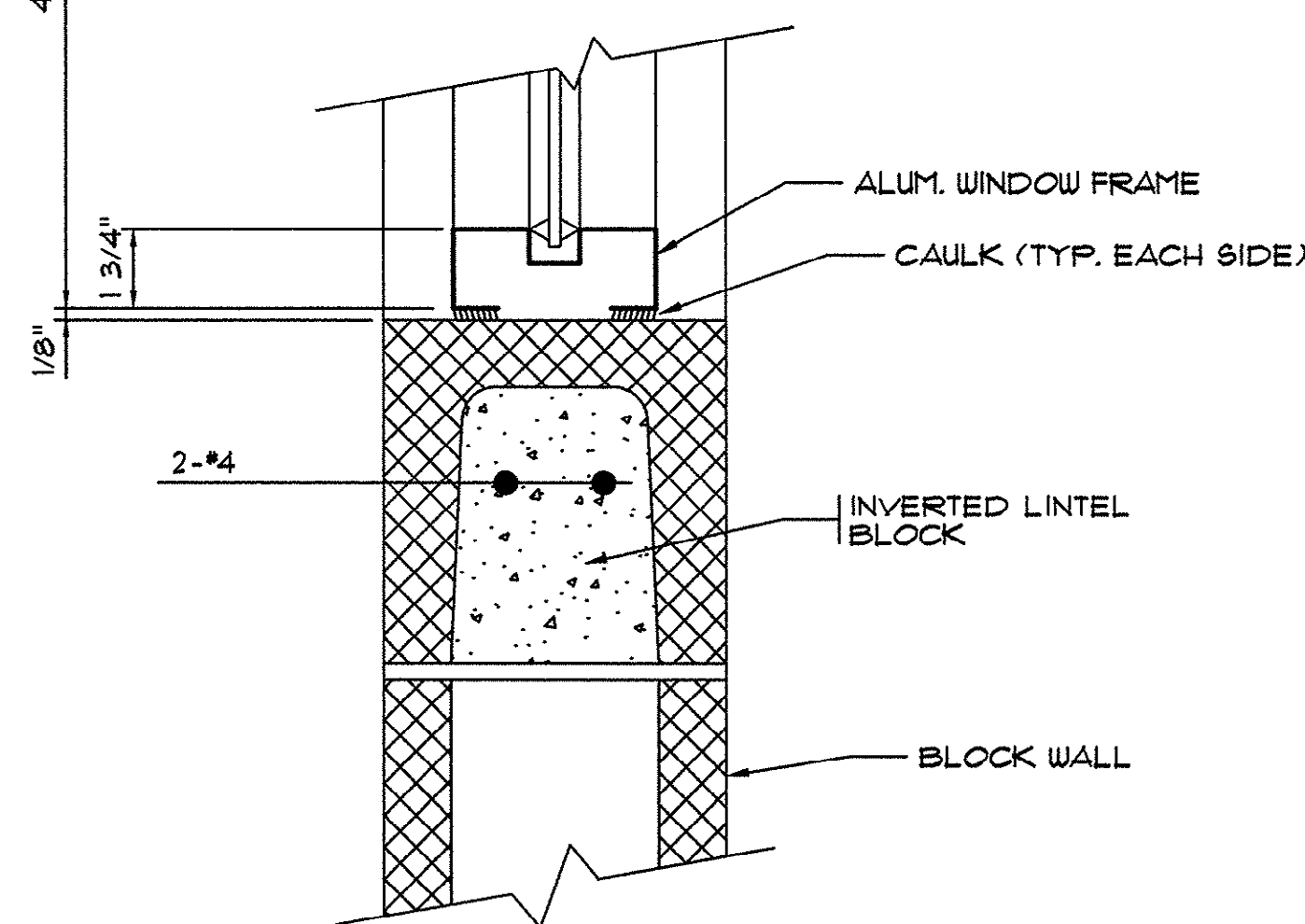
JAMB SECTION

DOOR DETAILS

SCALE: 3" = 1'-0"



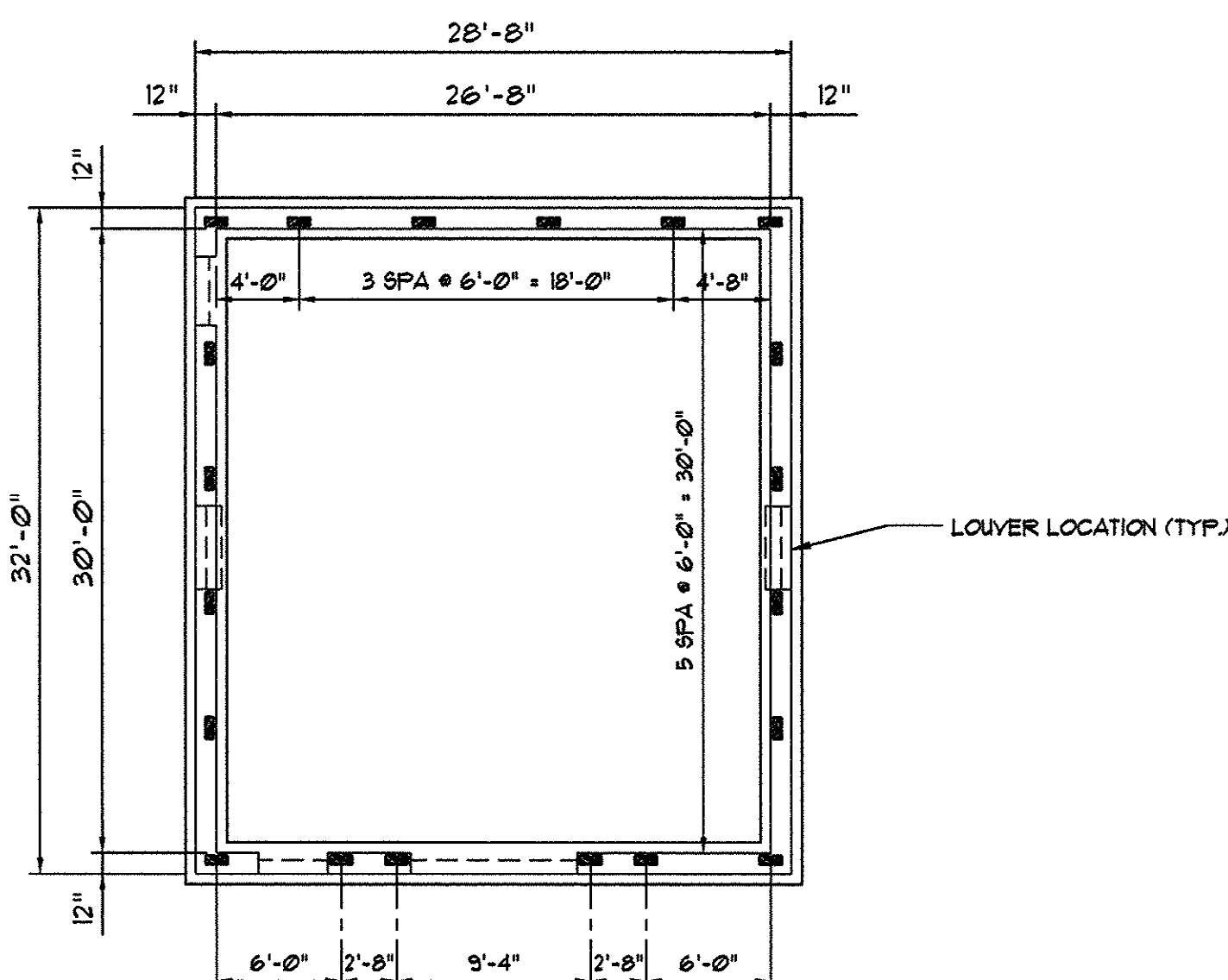
HEAD SECTION
(JAMB SIM.)



SILL SECTION

WINDOW DETAILS

SCALE: 3" = 1'-0"



REINFORCED CELL LOCATIONS
BIG BLOCK PUMP STATION

SCALE: 1/8" = 1'-0"



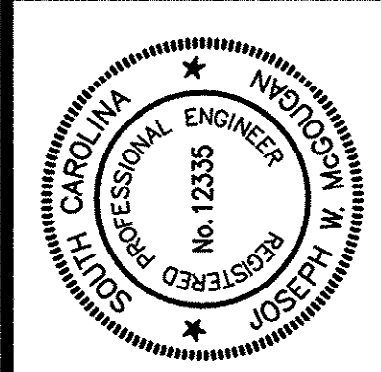
THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS

REVIEWED BY: *Amel* 1.29.02 DATE
INSPECTIONS

REVIEWED BY: *R. P. K.* 1/29/02 DATE
ENGINEERING

GRAND STRAND WATER AND SEWER AUTHORITY

SYMBOL	REVISIONS	DESCRIPTION	DATE	BY



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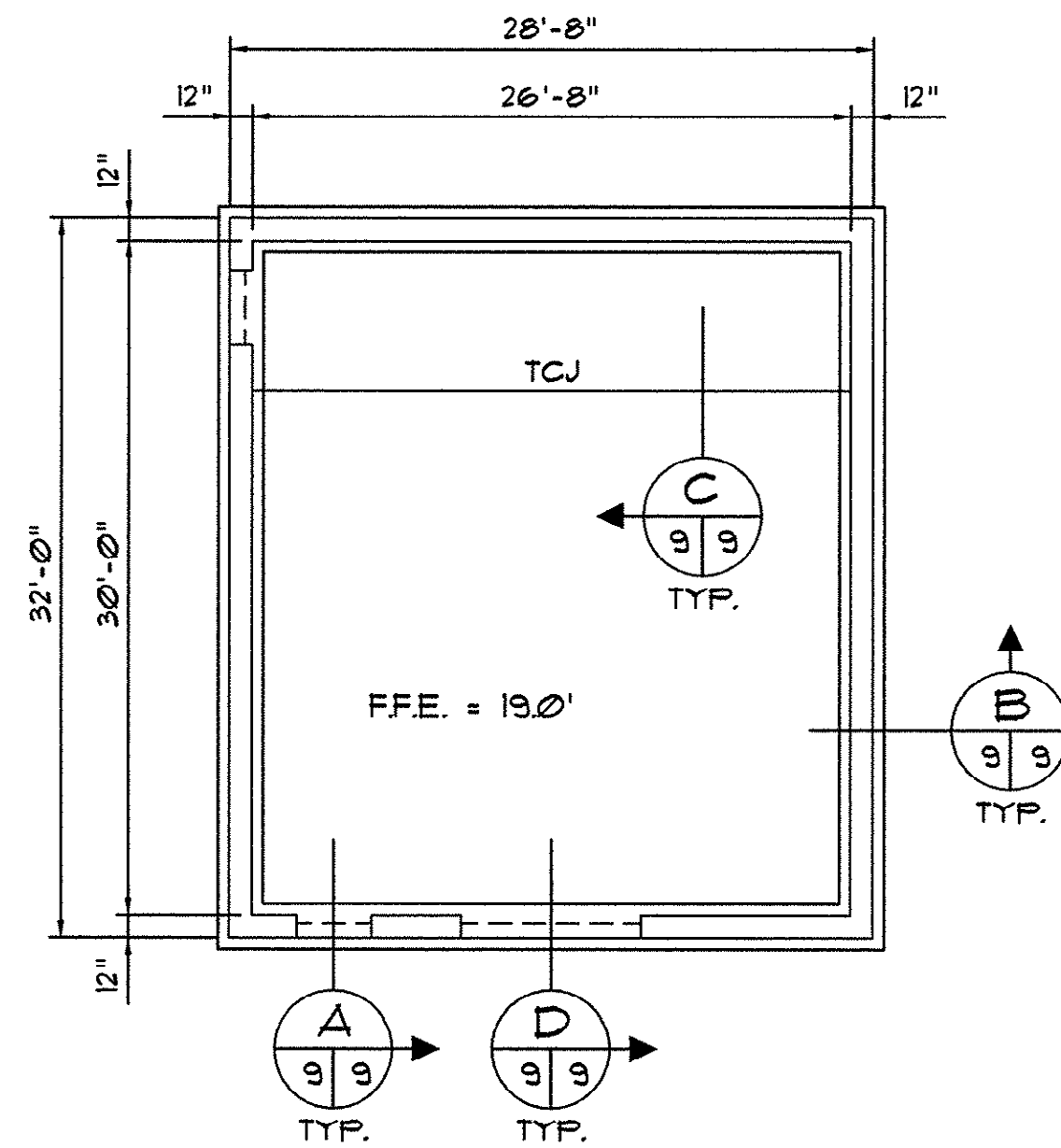
REINFORCED CELL
LOCATIONS AND
BUILDING DETAILS

BIG BLOCK PUMP STATION
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

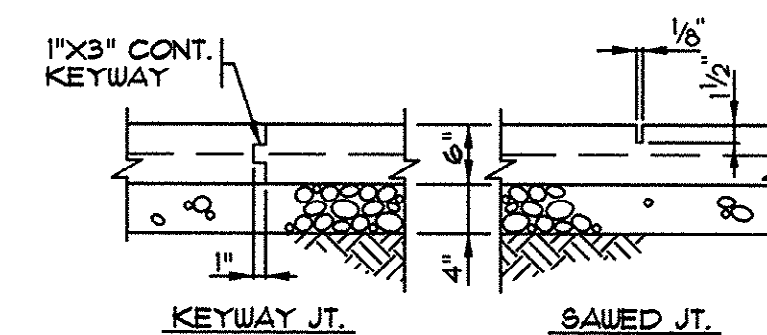
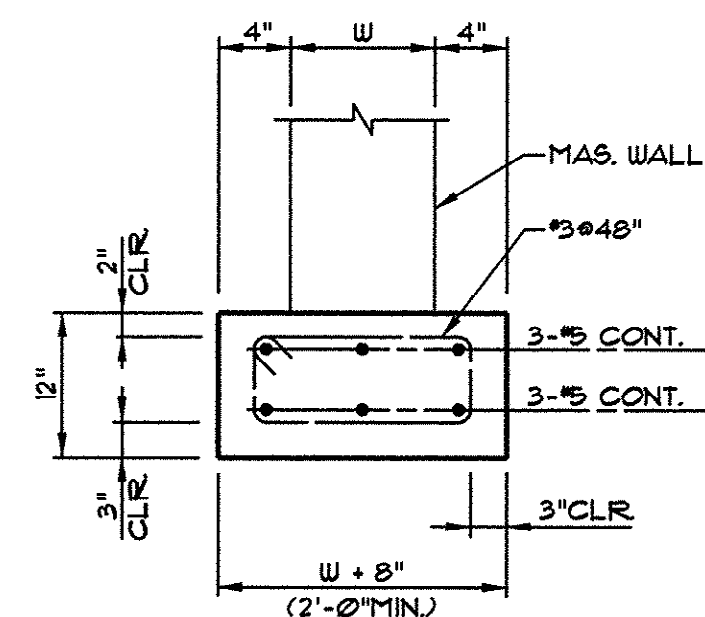
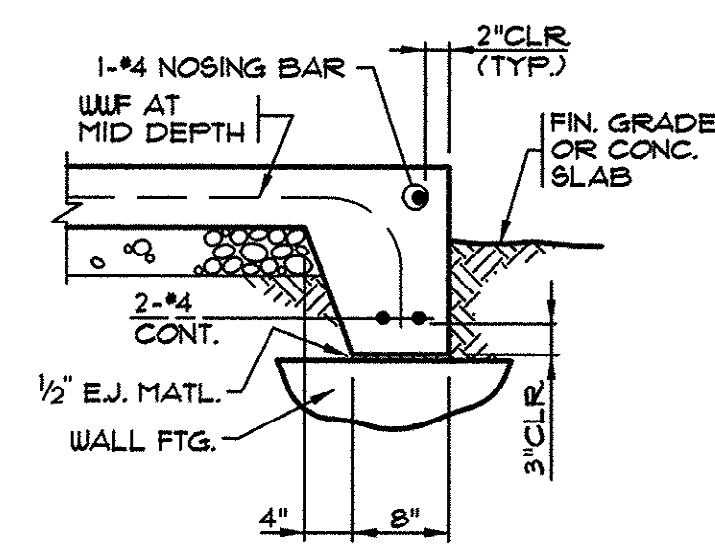
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CHECKED: JWM
SCALE: AS SHOWN

SHEET NO.
G-8
OF: 11

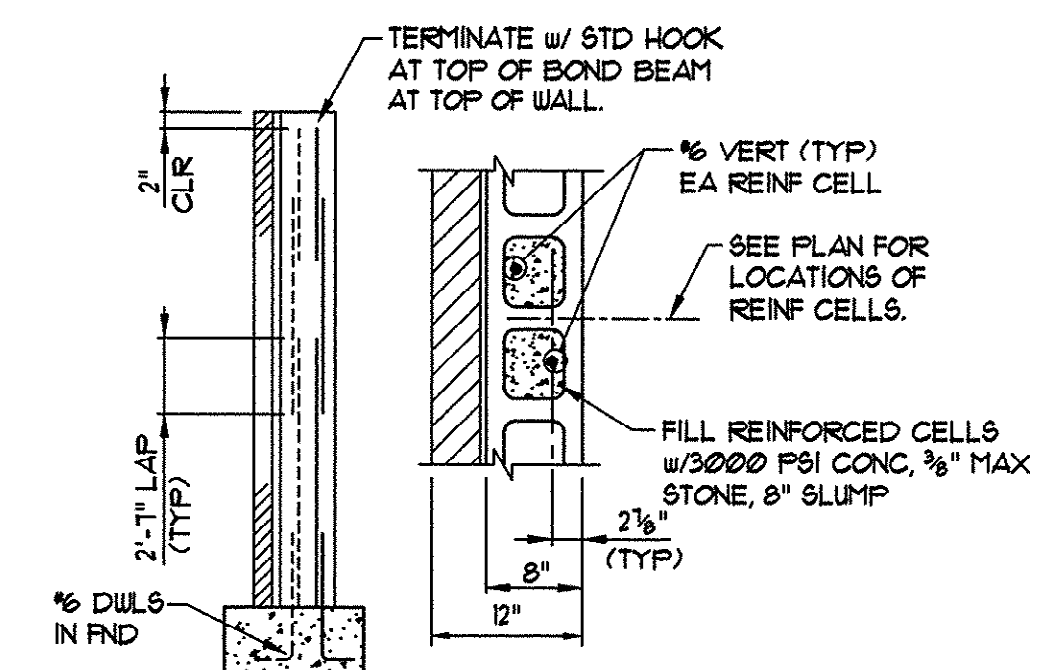
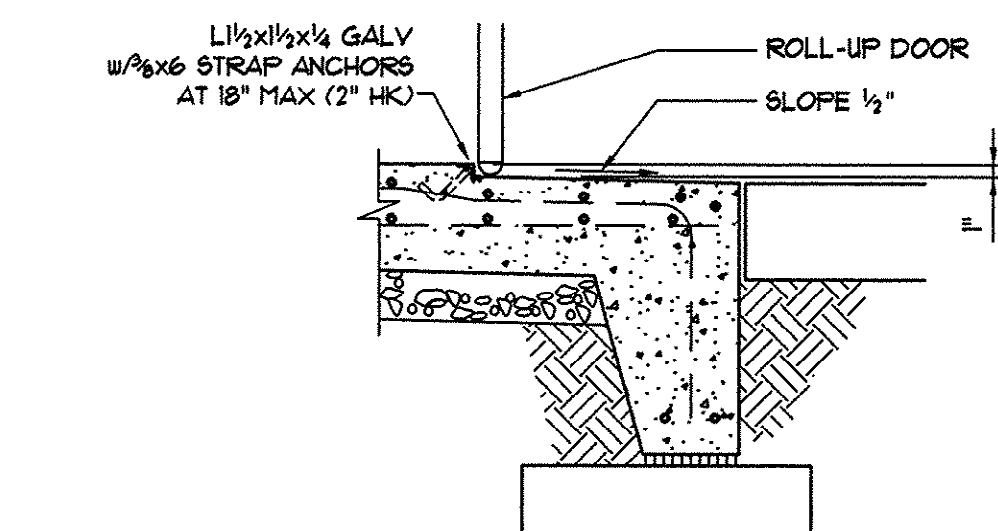
1A-159-008/017



- NOTES:
1. FIN. FLR. ELEV. = 19.20, U.O.N.
 2. ALL WALL DIMENSIONS SHOWN ARE NOMINAL DIMENSIONS.
SEE BUILDING DRAWINGS FOR ACTUAL DIMENSIONS.
 3. TOP OF WALL FTG. ELEV. = 17.00, U.O.N. THUS: XXXX
 4. ALL SLABS SHALL BE 6" THICKNESS, U.O.N.
 5. ALL SLABS SHALL BE PLACED OVER VAPOR BARRIER AND
4" COMPACTED STONE OR SAND AND REINFORCED
W/ 6x6-W2.9xW2.9 WLF, U.O.N.



- NOTE:
1. TYPE OF JOINT IS OPTIONAL WITH CONTRACTOR.
SAWED JOINT SHALL BE MADE WITHIN 24 HOURS AFTER PLACING CONCRETE.
 2. WHEN KEYWAY JOINT IS ELECTED, THE SLABS SHALL BE PLACED IN A CHECKERBOARD PATTERN.
 3. AT THE CONTRACTOR'S OPTION, A METAL PRE-FORMED JOINT OR APPROVED DESIGN WILL BE ACCEPTABLE AT EACH JOINT IN LIEU OF THE ABOVE JOINT TYPE.
 4. WHERE SAWED JOINT WILL BE LEFT PERMANENTLY EXPOSED TO VIEW, FILL THE JOINT FLUSH WITH "GARDOX" FLEXIBLE JOINT SEALING COMPOUND MANUFACTURED BY W.R. MEADOWS, INC. OR EQUIVALENT.



LINTEL SCHEDULE			
OPENING	LINTEL		BEARING
0'-0" to 1'-4"	1 FL - 3/8" X 3 1/2"	*	8"
1'-4" to 4'-0"	1 FL - 3 1/2" X 3 1/2" X 5/16"	*	8"
4'-0" to 6'-8"	1 FL - 4" X 3 1/2" X 5/16"	*	8"
6'-8" to 8'-0"	1 FL - 5" X 3 1/2" X 5/16"	*	8"

* PER 4" OF WALL THICKNESS

NOTE:
ALL UNSCHEDULED OPENINGS INCLUDING OPENINGS FOR MECHANICAL WORK SHALL BE PROVIDED WITH LINTELS IN ACCORDANCE WITH THIS SCHEDULE.

OPENING	6" OR 8" WALL	12" WALL	BEARING
2'-0" to 4'-0"			8"
4'-0" to 5'-4"			8"
5'-4" to 8'-0"			16"

REQUIRED LINTELS NOT OTHERWISE INDICATED ON THE DRAWINGS SHALL BE AS SHOWN IN THE ABOVE SCHEDULE.

CONCRETE MASONRY LINTELS SHALL BE FILLED WITH 3000 PSI CONCRETE.

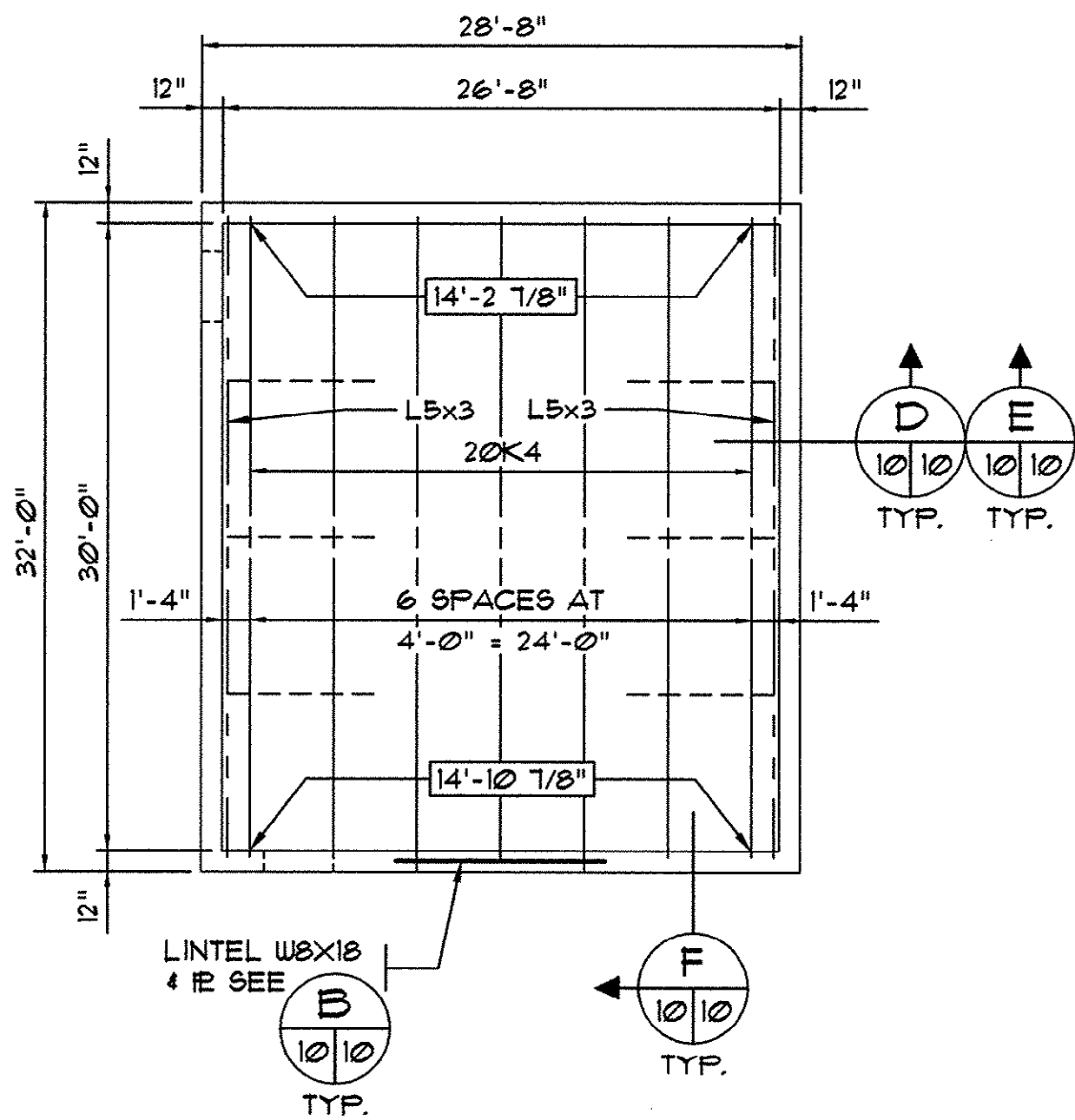
*PER 4" OF WALL THICKNESS

NOTE:
ALL UNSCHEDULED OPENINGS INCLUDING OPENINGS FOR MECHANICAL WORK SHALL BE PROVIDED WITH LINTELS IN ACCORDANCE WITH THIS SCHEDULE.

OPENING	6" OR 8" WALL	12" WALL	BEARING
2'-0" to 4'-0"			8"
4'-0" to 5'-4"			8"
5'-4" to 8'-0"			16"

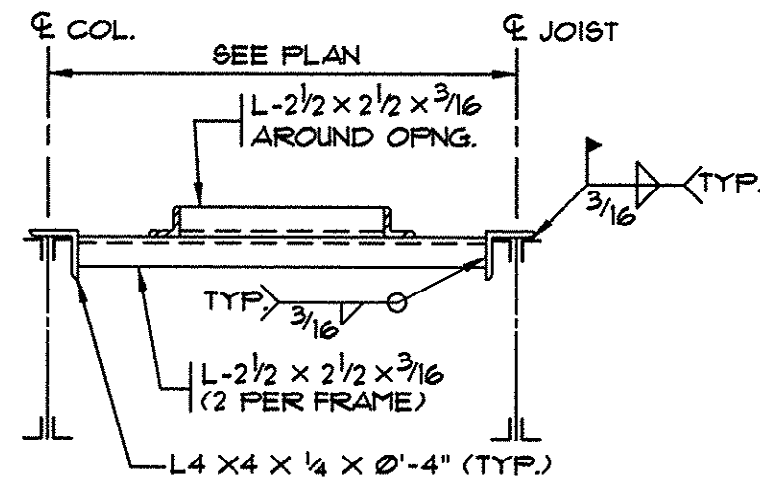
REQUIRED LINTELS NOT OTHERWISE INDICATED ON THE DRAWINGS
SHALL BE AS SHOWN IN THE ABOVE SCHEDULE.

CONCRETE MASONRY LINTELS SHALL BE FILLED WITH 3000 PSI CONCRETE.

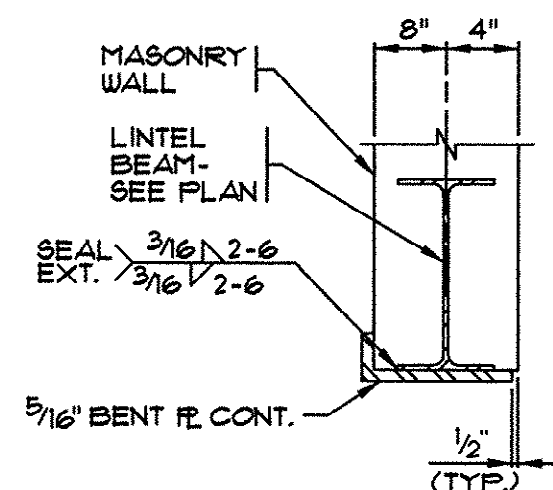


ROOF FRAMING PLAN - BIG BLOCK PUMP STATION
1/8" = 1'-0"

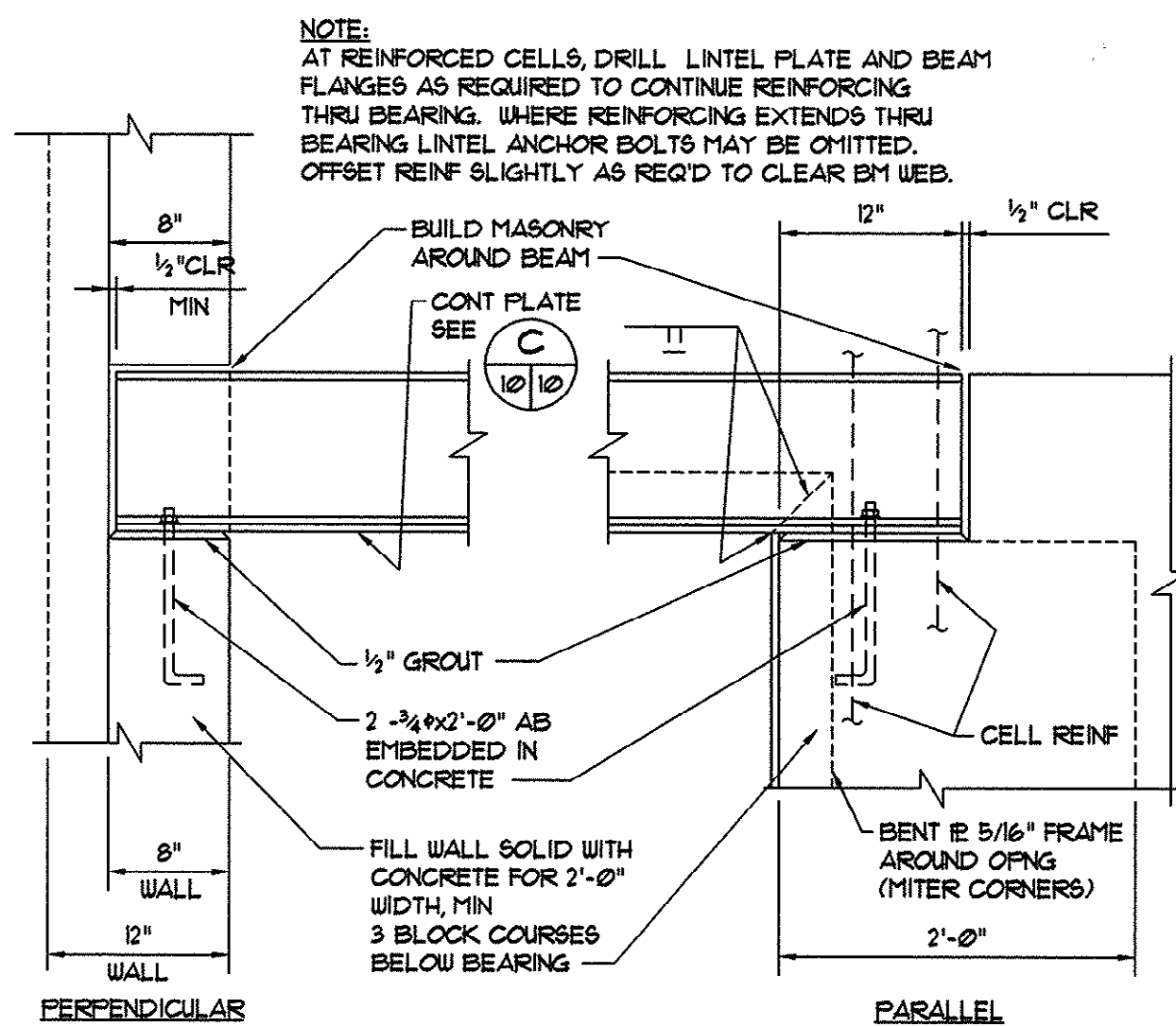
NOTE:
1. "XX'-X" DENOTES "REF. STEEL ELEV." AFF. LOCATIONS BETWEEN ARROWS UON THIS: (X'-X'-X")
2. --- DENOTES LOCATION OF ROUS OF CONT. HORIZ. BRIDGING.
3. SEE BUILDING DWGS. FOR LOCATION AND ELEVATION OF LINTELS.
4. SEE BUILDING AND MECH. DWGS. FOR LOCATION OF ROOF OPNGS. FOR DETAILS SEE A
5. "L5x3" DENOTES CONTINUOUS L5x3x3/8 (LLV).



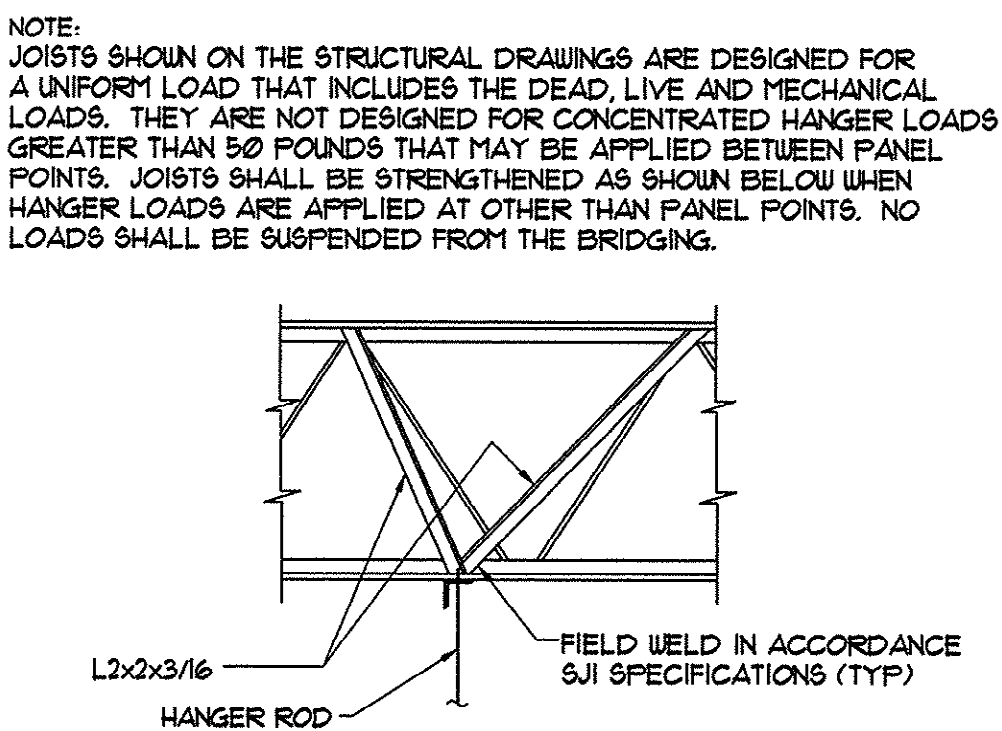
A TYP. FRAME AROUND ROOF OPENING
NO SCALE



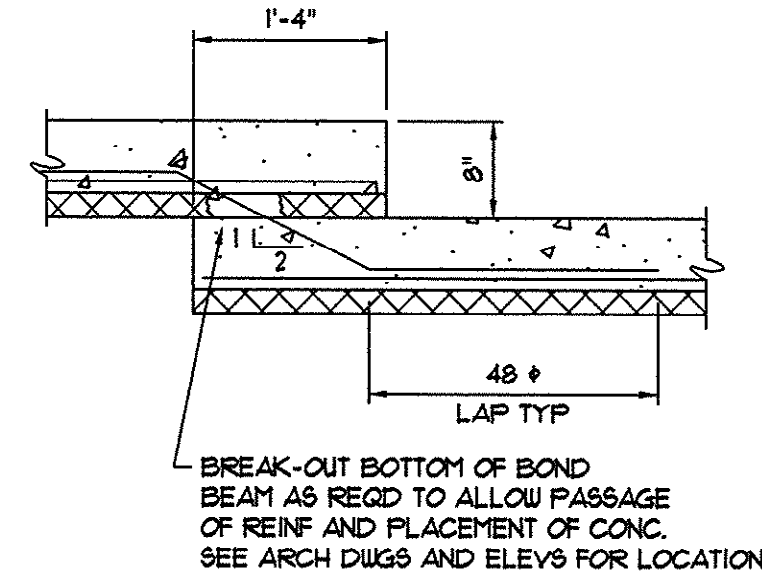
C TYP. LINTEL DETAIL
NO SCALE



B TYP. LINTEL BEARING DETAIL
NO SCALE



H TYP. JOIST REINFORCEMENT DETAIL
NO SCALE



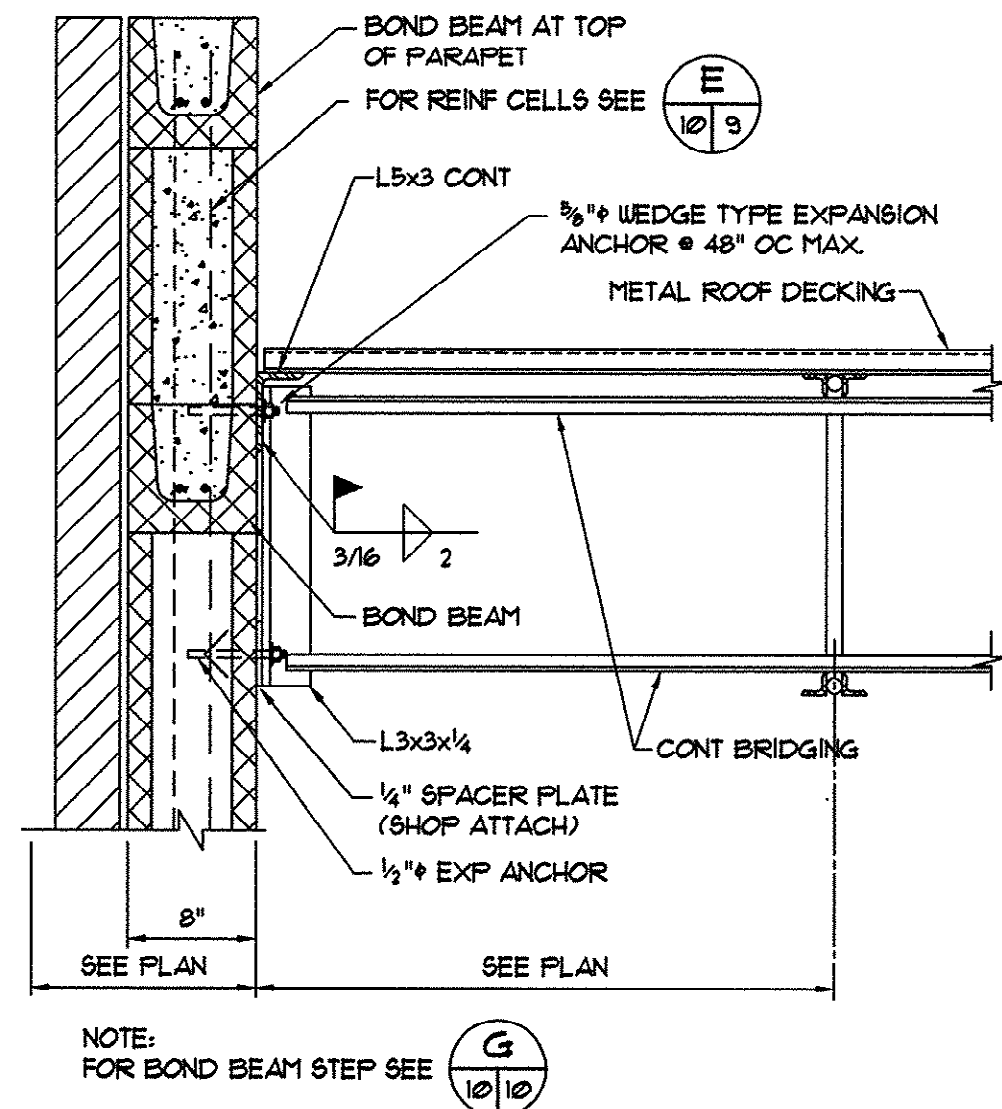
G TYP. BOND BEAM STEP DETAIL
NO SCALE

THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS

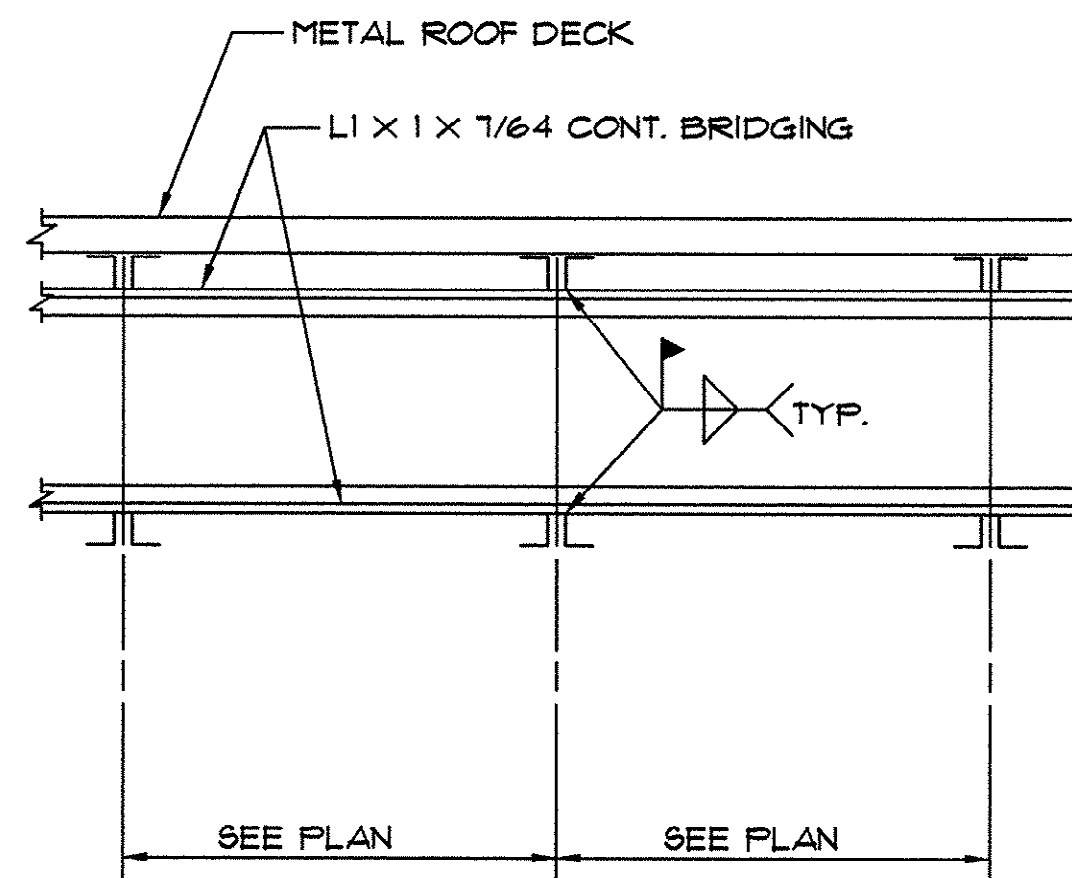
REVIEWED BY: *[Signature]* 1-29-02
INSPECTIONS DATE

REVIEWED BY: *[Signature]* 1/29/02
ENGINEERING DATE

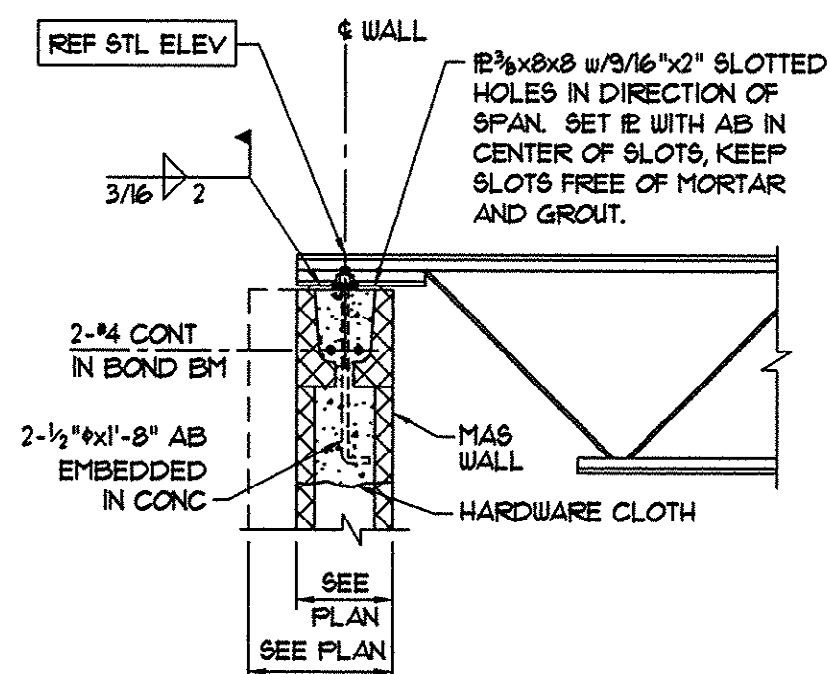
GRAND STRAND WATER AND SEWER AUTHORITY



D TYP. JOIST BRIDGING DETAIL
NO SCALE

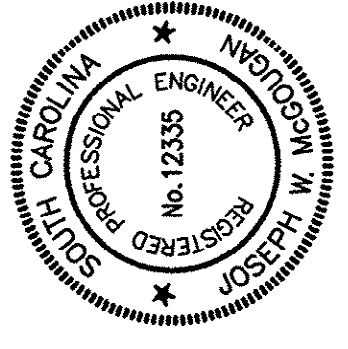


E TYP. HORIZONTAL BRIDGING DETAIL
NO SCALE



F TYP. JOIST BEARING DETAIL AT MASONRY WALL
NO SCALE

SYN.	DESCRIPTION	DATE	BY



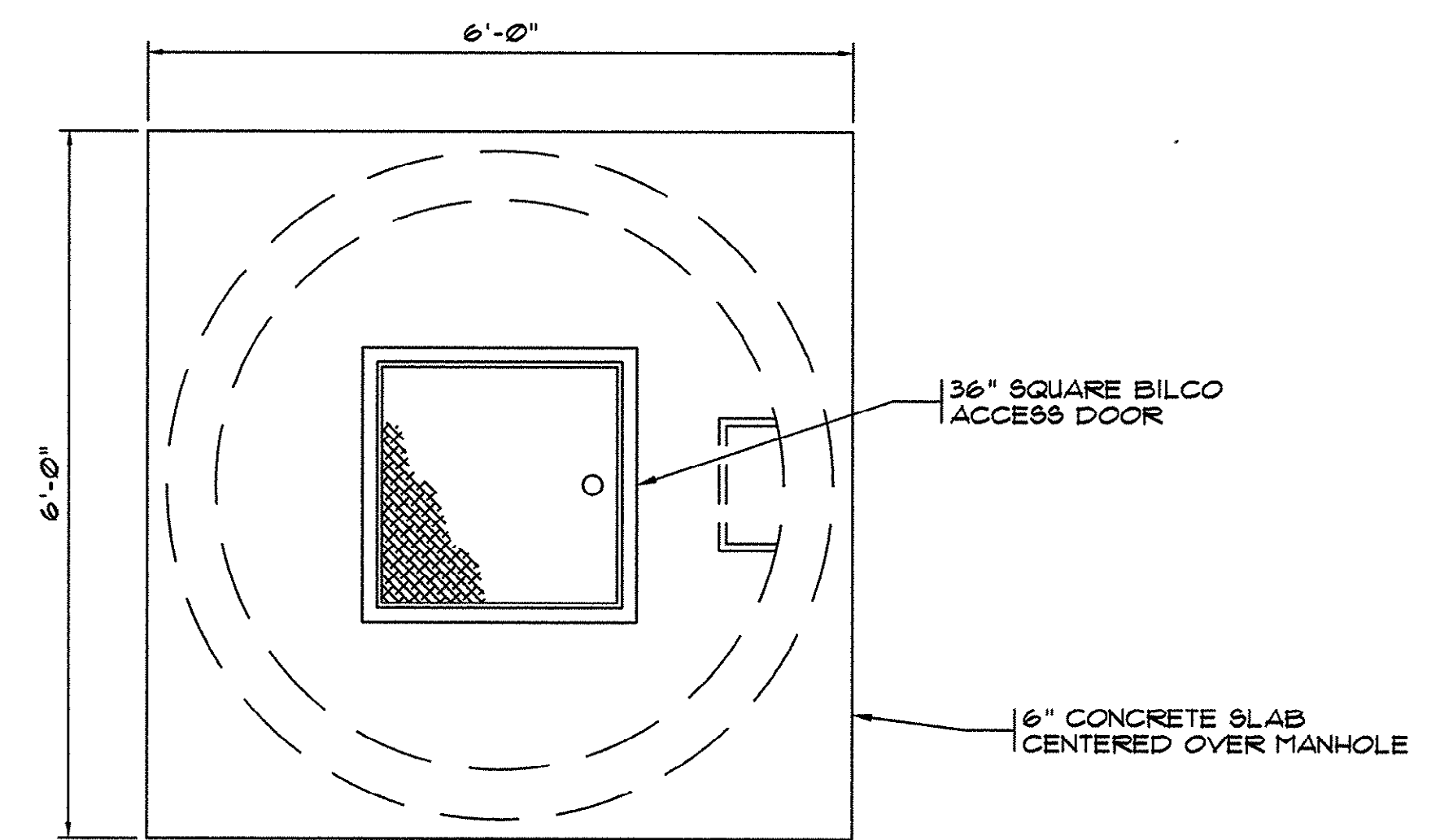
HOBBS, UPCHURCH & ASSOCIATES, P.A.
CONSULTING ENGINEERS
MYRTLE BEACH, SOUTH CAROLINA 29577

ROOF FRAMING PLAN AND DETAILS

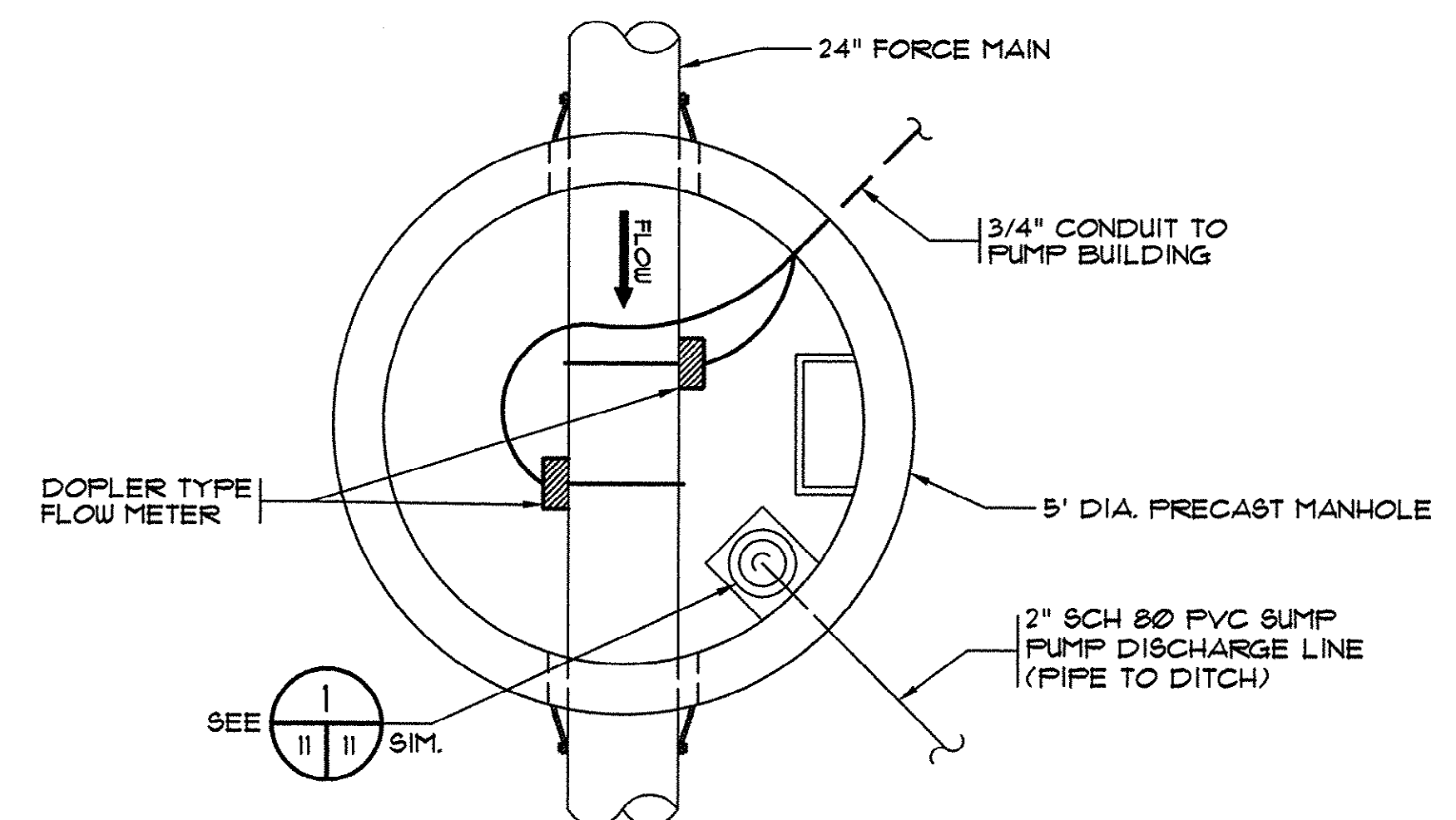
**BIG BLOCK PUMP STATION
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA**

DATE:	AUGUST 1997
DESIGNED:	JWM
DRAWN:	DC
CHECKED:	JWM
SCALE:	AS SHOWN
SHEET NO.	G-10
OF:	11

14-159-010/017



2 PRECAST MANHOLE DETAIL
3 11 UPPER PLAN VIEW
N.T.S.



LOWER PLAN VIEW
N.T.S.

2 - 3/4" CONDUIT TO PUMP BUILDING

36" SQ.

36" SQUARE BILCO ACCESS DOOR

6" CONCRETE SLAB

25'-0" MAX. WALL THICKNESS 4000 PSI CONCRETE

2'-0" 3'-0" OR 4'-0" VARIES

5'-0" DIA.

SEAL CONDUIT

15" MAX.

6"x6" 6 GAGE SINGLE MAT REINF. IN CENTER THIRD OF WALL AND IN TONGUE AND GROOVE

TAPERED LIFTING HOLE

CAST-IN-PLACE PLASTIC STEPS

RUBBER BOOT W/CLAMP (TYP.)

24" FORCE MAIN

DOGHOUSE BASE SECTION (TYP.)

12" DEEP 5x7 STONE BEDDING

5'-0" DIA.

12" MIN.

4'-0" OR LESS

6"

5"

ILLUSTRATIVE SECTION



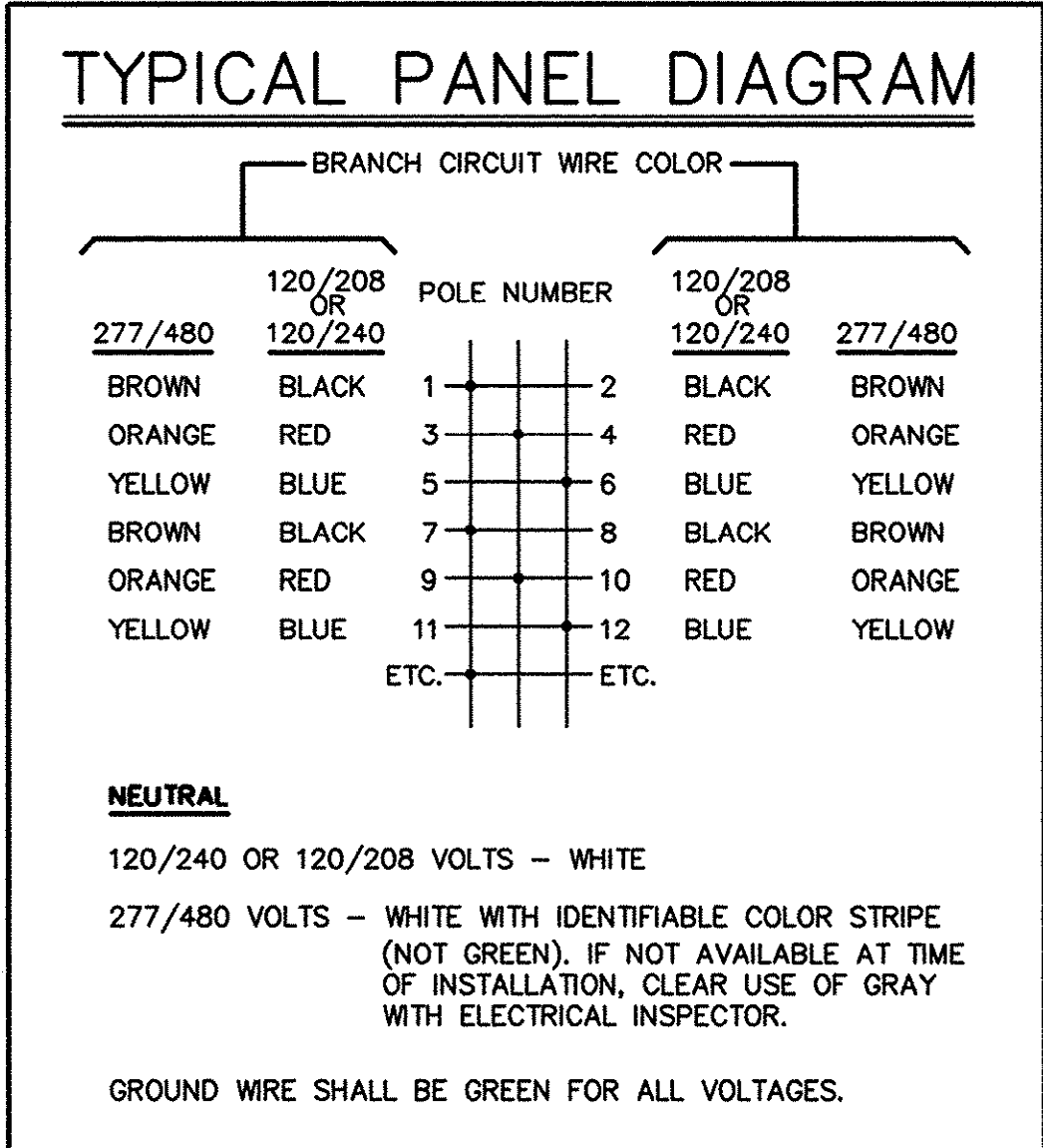
14-159-011/017

EET NO.

G-11

11

HEATING AND VENTILATION SCHEDULE	
TYPE	DESCRIPTION
VF-1	VENTILATION FAN FAN CFM SHALL BE 3,500, STATIC PRESSURE = 0.375 W.C., 1,000 RPM, 1 HORSEPOWER, 480 VOLTS, 3 PHASE. PROVIDE BACK DRAFT DAMPER DISCONNECT INSULATED ROOF CURB. FAN SHALL BE ROOF MOUNTED GREENHECK MODEL GB-180-7 OR APPROVED EQUAL. FAN SHALL BEAR THE AMCA CERTIFIED RATINGS SEALS FOR BOTH AIR AND SOUND PERFORMANCE.
EUH-1	ELECTRIC UNIT HEATERS HEATERS SHALL BE RATED 17,100 BTU/HR, 5 KW AT 480 VOLTS, 3 PHASE. FAN PANEL SHALL HAVE AN AIR VOLUME OF 420 CFM AND SHALL BE RATED 480 VOLTS, 3 PHASE. THE HEATER SHALL BE BOTH MOISTURE AND CORROSION RESISTANT AND CAPABLE OF BEING HOSED DOWN. ELEMENTS SHALL BE LONG LIFE MODEL FINETUBES WITH STAINLESS STEEL THREADED FITTINGS. MOTOR SHALL BE TOTALLY ENCLOSED, PERMANENTLY LUBRICATED BALL BEARING TYPE AND EPOXY PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER AND TWO COATS OF CORROSION RESISTANT PAINT. UNIT SHALL BE COMPLETELY SELF-CONTAINED WITH BUILT-IN CONTACTORS. OVER-TEMPERATURE CUT-OUT AND ADJUSTABLE THERMOSTAT WITH TEMPERATURE RANGE OF 40°-100°F. CEILING MOUNT 9'-0" ABOVE FINISHED FLOOR. CHROMALOX HDH-500 OR APPROVED EQUAL.
	LOUVERS ALUMINUM COMBINATION WALL LOUVERS WITH DRAINABLE BLADES. FRONT STATIONARY BLADES: 37 1/2" ANGLE, 0.081" BLADE THICKNESS, 4 1/2" BLADE SPACING. REAR ADJUSTABLE BLADES: 0.140" BLADE THICKNESS, VINYL BLADE EDGE SEALS, BIRDSCREEN, MOTORIZED DAMPERS INTERLOCKED TO VENT. FAN, 120V, 60 HZ. SIZE: 36"x 36"x 6" DEEP RUSKIN MODEL ELC63750 OR APPROVED EQUAL.
	AC UNIT COOLING CAPACITY - 14,800 BTUH, EER-9.0, 230V/208V, ELECTRIC HEAT CAPACITY - 12,900 BTUH, FUSE SIZE 30A. CARRIER GYA3153 OR APPROVED EQUAL



LIGHTING FIXTURE SCHEDULE									
FIXTURE TYPE	MANUFACTURER & CATALOG INFORMATION	LAMPS			BALLAST			TOTAL WATTS	DESCRIPTION
		QTY.	TYPE	WATTS	QTY.	TYPE	WATTS		
A	LITHONIA DM240	2	F32T8	32	1	ELECTRONIC	58	58	TOTALLY ENCLOSED CORROSION RESISTANT
B	LITHONIA TWL 705120-PE1	1	HPS	70	1	HRHPF	90	90	OUTDOOR WEATHERPROOF FIXTURE WITH POLYCARBONATE LENS, PE SWITH
E	LITHONIA ELUX-N-H	2	HALOGEN	8	-	-	-	16	EMERGENCY BATTERY LIGHT WITH 90-MINUTE NICKEL-CADMIUM BATTERY.

CONTROL SEQUENCE

HEATING:

EUH-1:
EUH-1 SHALL CYCLE FAN AND HEAT AS REQUIRED TO MAINTAIN SETPOINT OF THEIR BUILT-IN THERMOSTATS. SET AT 65°F.

VENTILATION:

VF-1:
FAN SHALL HAVE IT'S OWN WALL-MOUNTED THERMOSTAT. THE SETTING FOR VF-1 SHALL BE 80°F. WHEN THE FAN STARTS THE MOTOR OPERATED DAMPER IN THE INTAKE LOUVER SHALL OPEN.

GENERAL NOTES

- THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION, EXACT CONFIGURATION AND REQUIREMENTS OF INSTRUMENTS AND EQUIPMENT BEING FURNISHED BY THE CONTRACTOR NO. 1 AND THE OTHER CONTRACTORS PRIOR TO RUNNING ANY WIRING.
- ALL CIRCUITS RATED 115 VOLTS OR HIGHER SHALL BE PROVIDED WITH SEPARATE EQUIPMENT GROUNDING CONDUCTORS BONDED TO ALL ENCLOSURES AND BOXES ASSOCIATED WITH THE CIRCUIT.
- PVC CONDUIT IS NOT PERMITTED FOR SIGNAL (INSTRUMENTATION) CIRCUITS RUN OUTSIDE OF BUILDING - USE RMC CONDUIT.
- RMC INSTALLED UNDERGROUND IN DIRECT CONTACT WITH EARTH SHALL BE COATED WITH TWO COATS OF BITUMASTIC PAINT AND SHALL BE TOUCHED UP AFTER INSTALLATION.

ELECTRICAL DRAWING LIST

- | | |
|----|---|
| E1 | SYMBOL SCHEDULE, EQUIPMENT SCHEDULES AND DETAILS |
| E2 | EXISTING SOUTH PUMP STATION PLAN |
| E3 | SOUTH PUMP STATION POWER RISER DIAGRAMS |
| E4 | NEW ENGINE GENERATOR SET INSTALLATION DETAILS AT SOUTH PUMP STATION |
| E5 | NEW BIG BLOCK PUMP STATION ELECTRICAL PLAN AND DITE PLAN |
| E6 | NEW BIG BLOCK PUMP STATION - ONE LINE POWER DIAGRAM |

CIRCUITING LEGEND

HOMERUNS TO PANELBOARDS ARE SHOWN AS POLES RATHER THAN CIRCUITS. SIMILARLY, PANEL SCHEDULES LIST POLES RATHER THAN CIRCUITS, BUT INDICATE WHICH POLES ARE COMMON TRIP FORMING TWO AND THREE-POLE CIRCUITS. HOMERUN DESIGNATIONS INDICATE PANELBOARD AND POLES TO WHICH PHASE WIRES ARE TO BE CONNECTED. NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS INVOLVED. CROSS HATCHES, SHOWN ONLY WHEN THE NUMBER OF POLES EXCEEDS THE NUMBER OF CIRCUITS, INDICATE THE NUMBER OF WIRES. FOR EXAMPLE:

SYMBOL	NO. OF POLES	CIRCUITS	PHASE WIRES	NEUTRAL
→ LP-1	1	1	1	1
→ LP-1, 3	2	1	2	0
→ LP-1, 3	2	1	2	1
→ LP-1, 3, 5	3	1	3	0
→ LP-1, 3, 5	3	1	3	1
→ LP-5, 7	2	2	2	1
→ LP-5, 7, 9	3	3	3	1

FEEDERS:

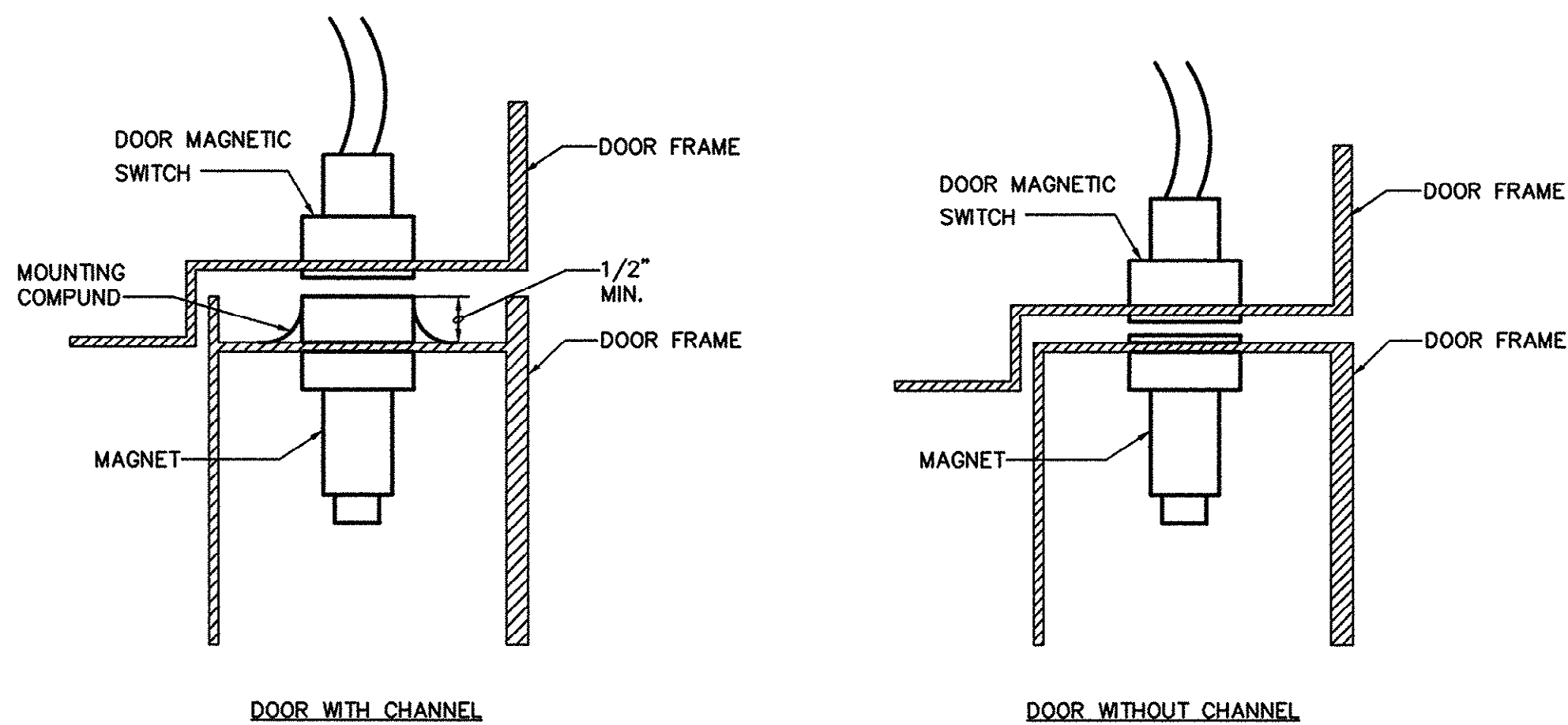
NO. () INDICATES QUANTITY OF CONDUITS AND CONDUCTORS IN PARALLEL. SEE NEC 250-790, 250-95, 300-20 AND 310-4 FOR SPECIAL REQUIREMENTS. EXAMPLE: 3(3 #3/0, 1 #1/0 N, 1 10, 2 1/2") REQUIRES THREE 2 1/2" CONDUITS EACH HAVING THREE NO. 3/0 PHASE CONDUCTORS, ONE NO. 1/0 NEUTRAL CONDUCTOR AND ONE NO. 1 GROUNDING CONDUCTOR.

EQUIPMENT GROUNDING CONDUCTORS:

EQUIPMENT GROUNDING CONDUCTORS ARE GENERALLY NOT SHOWN ON CIRCUITING PLANS BUT SHALL BE PROVIDED IN THE SIZES AS SCHEDULED ON N.E.C. TABLE 250-95 ON ALL CIRCUITS.

ELECTRICAL SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
	CONDUIT CONCEALED IN OR ABOVE CEILING: IN OVERHEAD SLAB: OR IN WALL
	CONDUIT CONCEALED IN OR BELOW FLOOR: BELOW GRADE: OR IN WALL
	CONDUIT RUN EXPOSED AS HIGH AS POSSIBLE
	IF SHOWN, CROSS LINES INDICATE NUMBER OF CURRENT CARRYING CONDUCTORS. EQUIPMENT GROUNDING CONDUCTORS ARE GENERALLY NOT INCLUDED IN THE QUANTITY INDICATED.
	#1/0 THHW/THWN COPPER - 24" BELOW GRADE
	HOME RUN TO PANEL - WITH PANEL AND CIRCUIT DESIGNATION.
	CONDUIT STUB-IN WITH CONNECTION TO EQUIPMENT
	JUNCTION OR PULL BOX. SIZE PER N.E.C.
	FLUORESCENT FIXTURE, CEILING, WALL OR RECESS MOUNTED AS SCHEDULED DRAWN APPROXIMATELY TO SCALE
	WALL OUTLET - INCANDESCENT, COMPACT FLUORESCENT, OR HID FIXTURE AS SCHEDULED.
	WALL MOUNTED, STANDBY BATTERY POWERED FIXTURE AS SCHEDULED - MOUNT 12" BELOW JOIST.
	S SINGLE POLE SWITCH - 20A, 120-277V. MOUNT 46" AFF TO TOP AND 2" FROM STRIKE SIDE OF DOOR FRAME.
	BRANCH CIRCUIT OR DISTRIBUTION PANELBOARD, AS INDICATED
	CONTROL PANEL
	CONVENIENCE RECEPTACLE - MOUNT 18" AFF. NEMA 5-20R, DUPLEX
	SPECIAL CONFIGURATION OUTLET - NEMA 6-20R CONFIGURATION MOUNT TO FIT AC UNIT.
	WALL TELEPHONE OUTLET, 54" AFF.
	NONFUSIBLE DISCONNECT SWITCH.
	FUSIBLE DISCONNECT SWITCH.
	ENCLOSED CIRCUIT BREAKER.
	COMBINATION MAGNETIC STARTER WITH NONFUSIBLE DISCONNECT.
	THERMOSTAT, LINE VOLTAGE
	Δ-Y DRY TYPE TRANSFORMER - THREE PHASE, 480-120/208 VOLTS.
	460 VOLT, 3 PHASE MOTOR - NUMERAL INDICATES HORSEPOWER.
	INDICATES GROUNDING ELECTRODE CONDUCTOR AS REQUIRED BY ARTICLES 250-26 OR 250-81 OF THE NATIONAL ELECTRICAL CODE.
	SA SURGE ARRESTER
	*GR GROUND ROD
	FAC FIRE ALARM CONTROL PANEL
	CEILING MOUNTED SMOKE DETECTOR, PHOTOELECTRIC TYPE
	H CEILING MOUNTED COMBINATION RATE-OF-RISE/FIXED TEMPERATURE FIRE DETECTOR
	FP FIRE ALARM COMBINATION ADA CHIME/STROBE APPLIANCE - MOUNT 6'-8" AFF. FROM BOTTOM OF APPLIANCE, OR 0'-6" BELOW CEILING, WHICHEVER IS LESS.
	END OF LINE DEVICE
	A AMPERE
	AFF ABOVE FINISHED FLOOR - MEASURED FROM FLOOR TO CENTER OF DEVICE, EXCEPT AS OTHERWISE SPECIFICALLY NOTED.
	ATS AUTOMATIC TRANSFER SWITCH
	B BELDEN #83702, TWO-CONDUCTOR, 16 GAUGE SHIELDED CABLE, TEFLON JACKETED, SUITABLE FOR USE IN WET LOCATIONS.
	C CONDUIT
	C-FVNR COMBINATION FVNR AND FUSED SWITCH
	F FUSE
	FVNR FULL VOLTAGE NON-REVERSIBLE MAGNETIC MOTOR STARTER
	G GROUND
	MCM Kcmil (THOUSAND CIRCULAR MILS)
	NEC NATIONAL ELECTRICAL CODE
	N NEUTRAL
	NC NORMALLY CLOSED
	NO NORMALLY OPEN
	P POLE
	PH PHASE
	RMC RIGID SCHEDULE 40 METAL CONDUIT
	RTU REMOTE TERMINAL DATA UNIT
	SCIR SHORT CIRCUIT INTERRUPTING RATING
	SO SPACE ONLY (WITH PROVISIONS FOR FUTURE OVERCURRENT PROTECTIVE DEVICE)
	WP INDICATES DEVICE TO HAVE WEATHERPROOF COVER
	MS DOOR SECURITY MAGNETIC SWITCH, SENTROL 1078 SERIES WITH CLOSED CONTACTS. WHEN DOOR IS CLOSED. SEE DETAILS THIS SHEET. WIRE TOGETHER WITH 2#14, 1/2" C. TO RTU IN PUMP STATION.
	RS ROLL UP DOOR MONITORING SWITCH. MICRO SWITCH BL2N SERIES ENCLOSED SWITCH WITH STRAIGHT PLUNGER OR ROLLER ARM ACTUATOR AS REQUIRED. MOUNT AT FLOOR ON INSIDE OF FRAME. SWITCH TO BE 'CLOSED' WHEN DOOR IS CLOSED.
	RTU CONTROLS AND TELEMETRY PANEL BY OTHERS. RUN CONDUCTORS AND CABLES, AS SHOWN ON THE DRAWINGS, TO PANEL FOR CONNECTION BY OTHERS. TAG EACH TO INDICATE DEVICE OR EQUIPMENT SERVED.
	FMT FLOWMETER TRANSMITTER
	Normally OPEN AUXILIARY CONTACT
	Normally CLOSED AUXILIARY CONTACT



TYPICAL 'OS' MOUNTING

- NOT TO SCALE
NOTES:
1. USE SWITCHES FROM SENTROL, WIDE GAP TYPE, OR APPROVED EQUAL.

REVISIONS
DATE
DESCRIPTION
SYMBOL

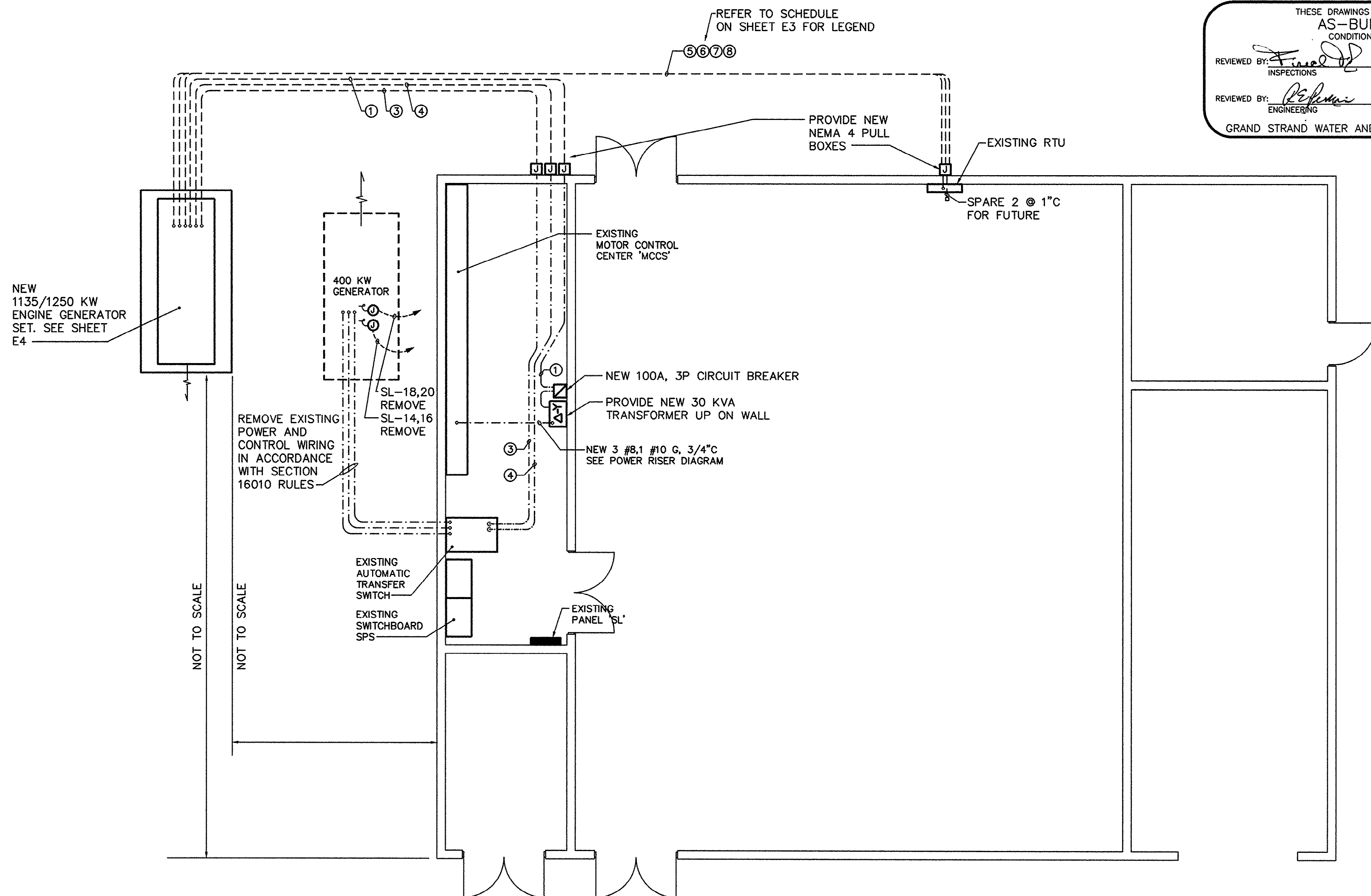
HOBBES, UPCHURCH & ASSOCIATES, P.A.
CONSULTING ENGINEERS
MYRTLE BEACH, SOUTH CAROLINA 29577

SYMBOL SCHEDULE,
EQUIPMENT SCHEDULE
AND DETAILS

BOOSTER PUMP STATIONS
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

DATE: JULY 24, 1998
DESIGNED: DL
DRAWN: DBM
CHECKED: DL
SCALE: AS SHOWN
SHEET NO. 1
OF 1

14-159-012/017



1 EXISTING SOUTH PUMP STATION

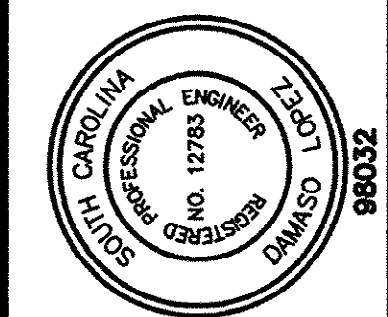
E2 SCALE: 3/16" = 1'-0"

NOTES:

1. ALL WORK IS NEW EXCEPT AD OTHERWISE NOTED.

THESE DRAWINGS REFLECT AS-BUILT CONDITIONS	
REVIEWED BY: <i>[Signature]</i>	DATE: 1-29-02
INSPECTIONS	
REVIEWED BY: <i>[Signature]</i>	DATE: 1/29/02
ENGINEERING	
GRAND STRAND WATER AND SEWER AUTHORITY	

SYMBOL	DESCRIPTION	DATE	BY



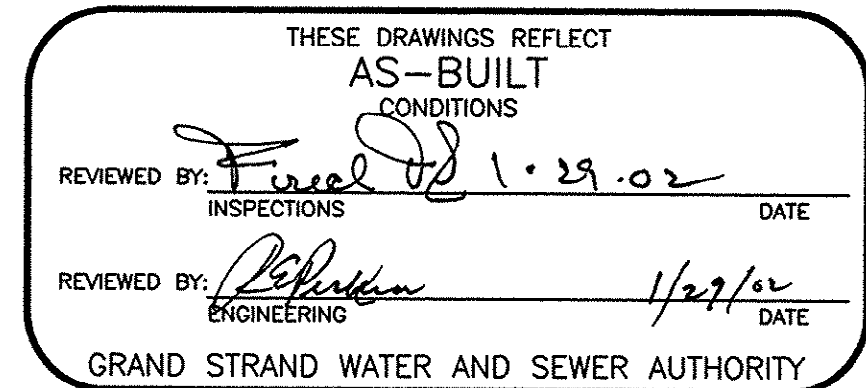
HOBBS, UPCHURCH & ASSOCIATES, P.A.
CONSULTING ENGINEERS
MYRTLE BEACH, SOUTH CAROLINA 29577

**EXISTING SOUTH
PUMP STATION
PLAN**

**BOOSTER PUMP STATIONS
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA**

DATE:	JULY 24, 1998
DESIGNED:	DL
DRAWN:	DBM
CHECKED:	DL
SCALE:	AS SHOWN
SHEET NO.	E2
OF:	6

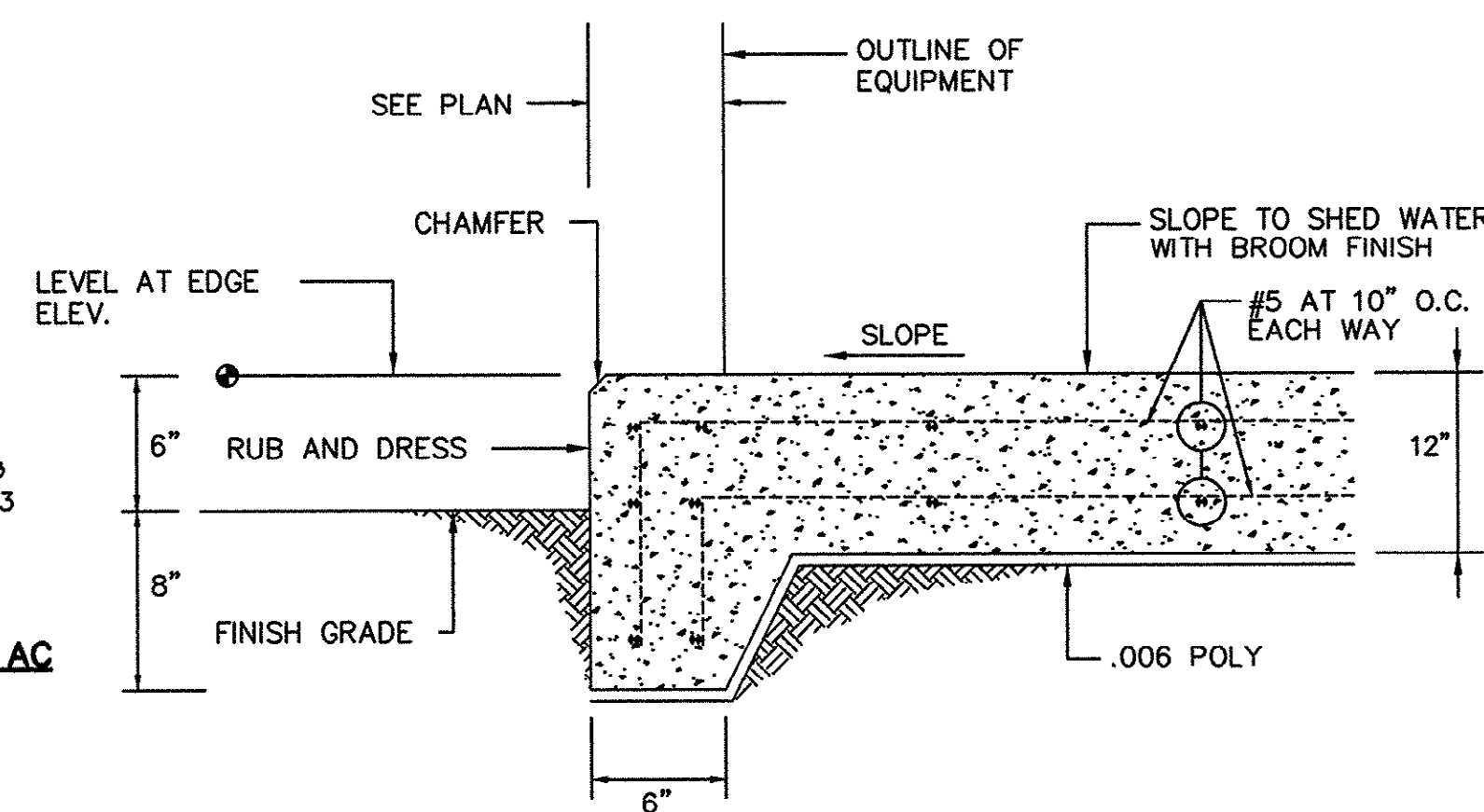
14-159-013/017



1
E3

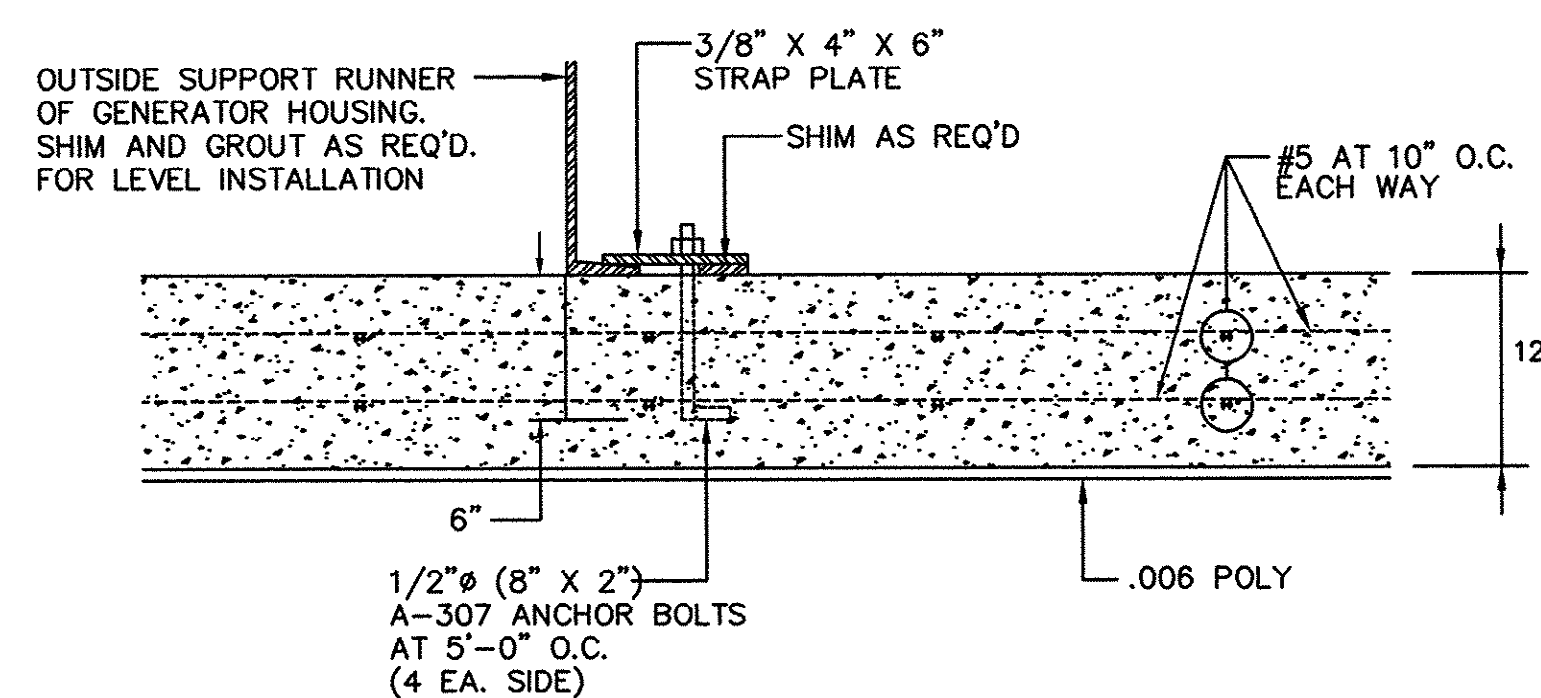


- | SYMBOL | FROM | TO | FUNCTION | CONDUIT | WIRED |
|---------------|-------------------------------------|------------------------------------|---|----------------|--|
| ① | NEW 100A, 3P CIRCUIT BREAKER "GHCB" | PANEL 98GP | GENERATOR SET HOUSE LOAD | 1 1/4" | 4 #3, 1 #8 G, |
| ② | GROUNDING RING | PANEL 98GP | GROUNDING RING | 1/2" | 1 #8 G |
| ③ | 2000A ATS | 2000A GENERATOR BREAKER | GENERATOR POWER OUTPUT | 4 @ 3 1/2"C | 4(3-600 MCM, 1-250 MCM, 4"C) |
| ④ | 2000A ATS | GENERATOR SET CONTROL PANEL | ENGINE START CIRCUIT | 3/4" | TWO SHIELDED PAIR CABLES, BALDEN 8720 #14 (ONE IS SPARE) |
| ⑤ | EXISTING RTU | GENERATOR SET CONTROL PANEL | NOTIFICATION: GENERATOR SET - ON | * | 2 #14 |
| ⑥ | EXISTING RTU | GENERATOR SET CONTROL PANEL | SUMMARY ALARM:
-OVERCRANK
-OVERSPEED
-HIGH WATER TEMP.
-LOW OIL PRESS.
-FUEL LEAK
-GENERATOR BREAKER OPEN
- LOW BATTERY VOLTAGE
-BATTERY CHARGER FAILURE
-HIGH FUEL TANK | 3/4" | 2 #14 + 6 #14 SPARE - NOTE 1 |
| ⑦ | EXISTING RTU | GENERATOR SET CONTROL PANEL | -LOW FUEL ALARM | * | 2 #14 |
| ⑧ | BUILDING | GENERATOR SET CONTROL PANEL | SPARE | 2 @ 1"C | NYLON PULL CORD |
| ⑨ | GENERATOR SET OUTPUT NEUTRAL | GROUNDING ELECTRODE GROUNDING LOOP | GROUNDING ELECTRODE CONDUCTOR - BOND NEUTRAL CONDUCTOR | 2 @ 3/4"C | TWO #3/0G |
| ⑩ | EXISTING RTU | 2000A ATS | MODIFICATION OF POWER FAILURE AND POWER TRANSFER | 1 @ 3/4"C | 4 # 14, 1 #14 G |



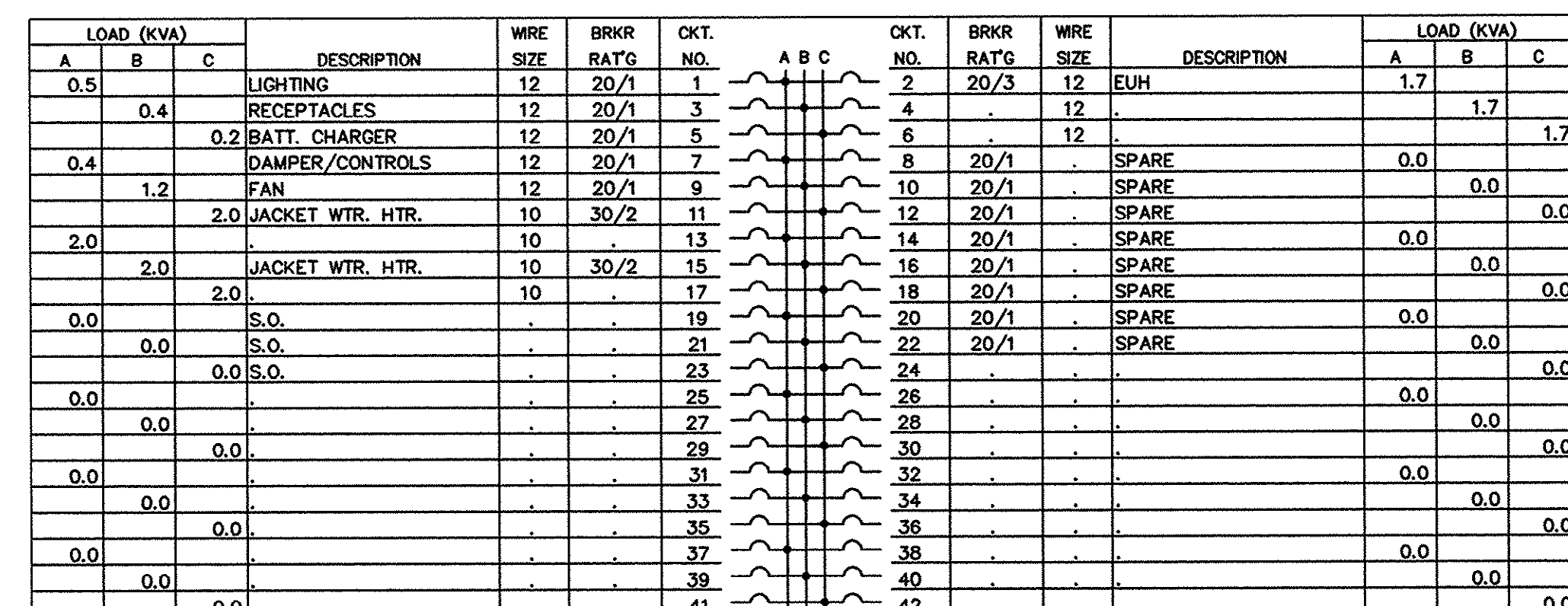
CONCRETE EQUIPMENT PAD

E4 NOT TO SCALE



ANCHOR DETAIL

E4 NOT TO SCALE



TYPE: BRANCH CIRCUIT		<u>GROSS PHASE TOTALS</u>		<u>CONNECTED LOAD</u>	
MOUNTING: SURFACE	A=	4.6 KVA	LIGHTING		0.5 KVA
SUPPLY: 120/208V, 3Ø, 4W	B=	5.3 KVA	HEATING		0.0 KVA
MAINS: 100A MAIN BREAKER	C=	5.9 KVA	A/C MOTORS & HEAT PUMPS		1.2 KVA
SCIR: 10,000A			AIR HANDLING & EXH FANS		5.0 KVA
<u>NOTES:</u>			RECEPTACLES		0.4 KVA
1. WITH EQUIPMENT GROUNDING BUS.			ELECTRIC WATER HEATING		0.0 KVA
			ELEVATORS		8.0 KVA
			FOOD PROCESSING		0.0 KVA
			PROCESS		0.0 KVA
			MISCELLANEOUS		0.6 KVA
PANEL '98GP'			TOTAL		15.7 KVA

PANEL '98GP'

- THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS
- REVIEWED BY: Paul J. [Signature] 1/29/02
INSPECTIONS DATE
- REVIEWED BY: [Signature] 1/29/02
ENGINEERING DATE
- GRAND STRAND WATER AND SEWER AUTHORITY

TYPE: BRANCH CIRCUIT		<u>GROSS PHASE TOTALS</u>		<u>CONNECTED LOAD</u>	
MOUNTING: SURFACE	A=	4.6 KVA	LIGHTING		0.5 KVA
SUPPLY: 120/208V, 3Ø, 4W	B=	5.3 KVA	HEATING		0.0 KVA
MAINS: 100A MAIN BREAKER	C=	5.9 KVA	A/C MOTORS & HEAT PUMPS		1.2 KVA
SCIR: 10,000A			AIR HANDLING & EXH FANS		5.0 KVA
<u>NOTES:</u>			RECEPTACLES		0.4 KVA
1. WITH EQUIPMENT GROUNDING BUS.			ELECTRIC WATER HEATING		0.0 KVA
			ELEVATORS		8.0 KVA
			FOOD PROCESSING		0.0 KVA
			PROCESS		0.0 KVA
			MISCELLANEOUS		0.6 KVA
PANEL '98GP'			TOTAL		15.7 KVA

HOBBS, UPCHURCH & ASSOCIATES, P.A.
CONSULTING ENGINEERS
MYRTLE BEACH, SOUTH CAROLINA 29577

NEW ENGINE GENERATOR SET INSTALLATION DETAILS AT SOUTH PUMP STATION

BOOSTER PUMP STATIONS
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

DATE:	JULY 24, 1998
DESIGNED:	DL
DRAWN:	DBM
CHECKED:	DL
SCALE:	AS SHOWN
SHEET NO.	

SHEET NO. _____

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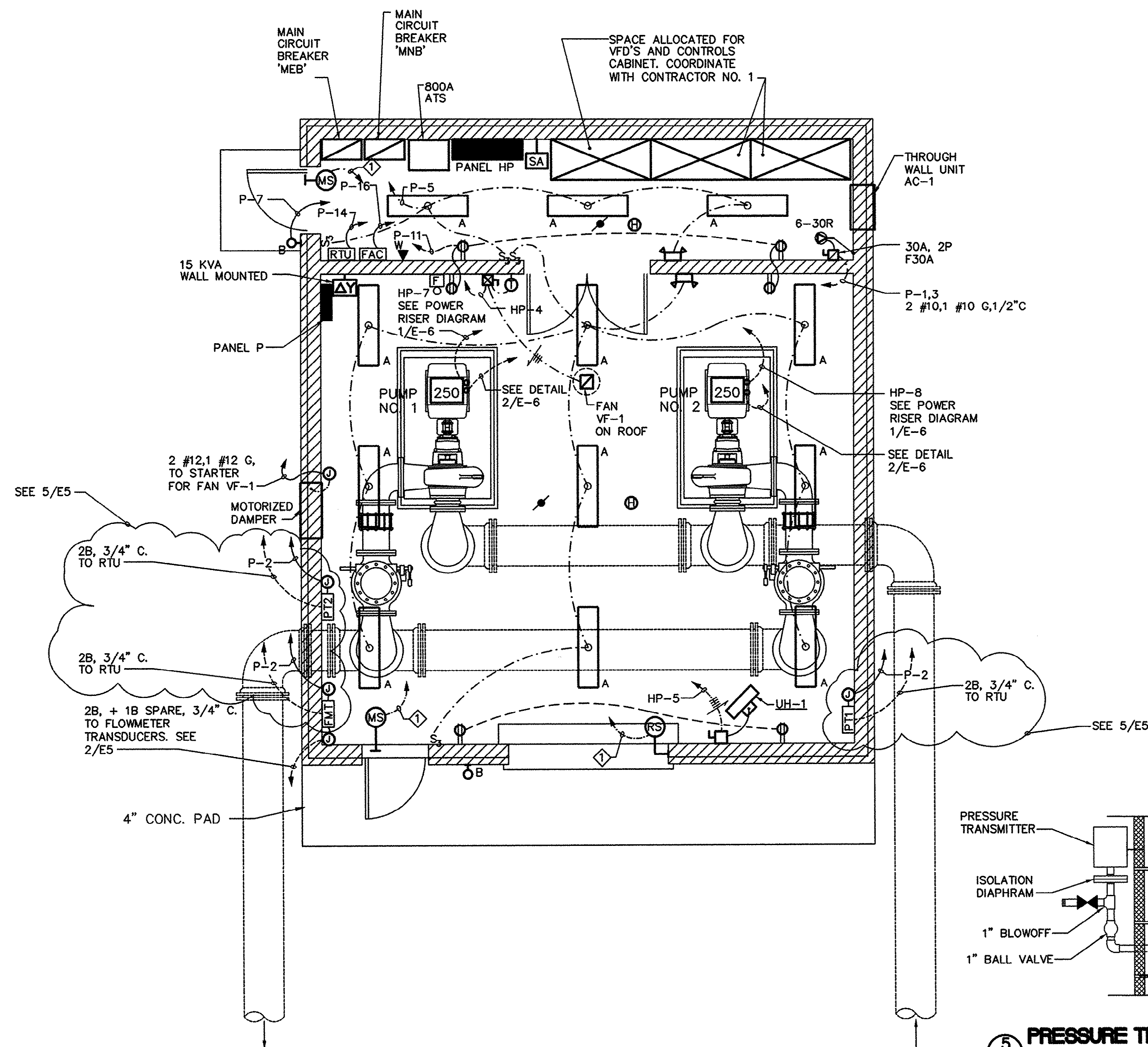
E4

L4

1

OF: _____

HOBBS, UPCHURCH & ASSOC. MB J:\GS970A\800\820\ES.dwg EDITED BY: ARABON DATE: 01/25/02 TIME: 11:41 XREFS: X-TITLE.dwg Layout: Model

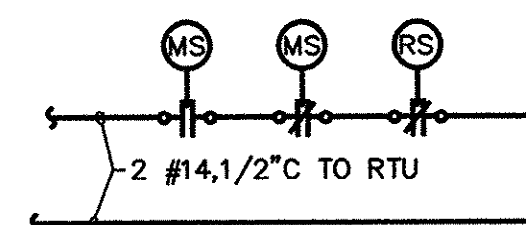


NEW BIG BLOCK PUMP STATION
FLOOR PLAN - ELECTRICAL ITEMS

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

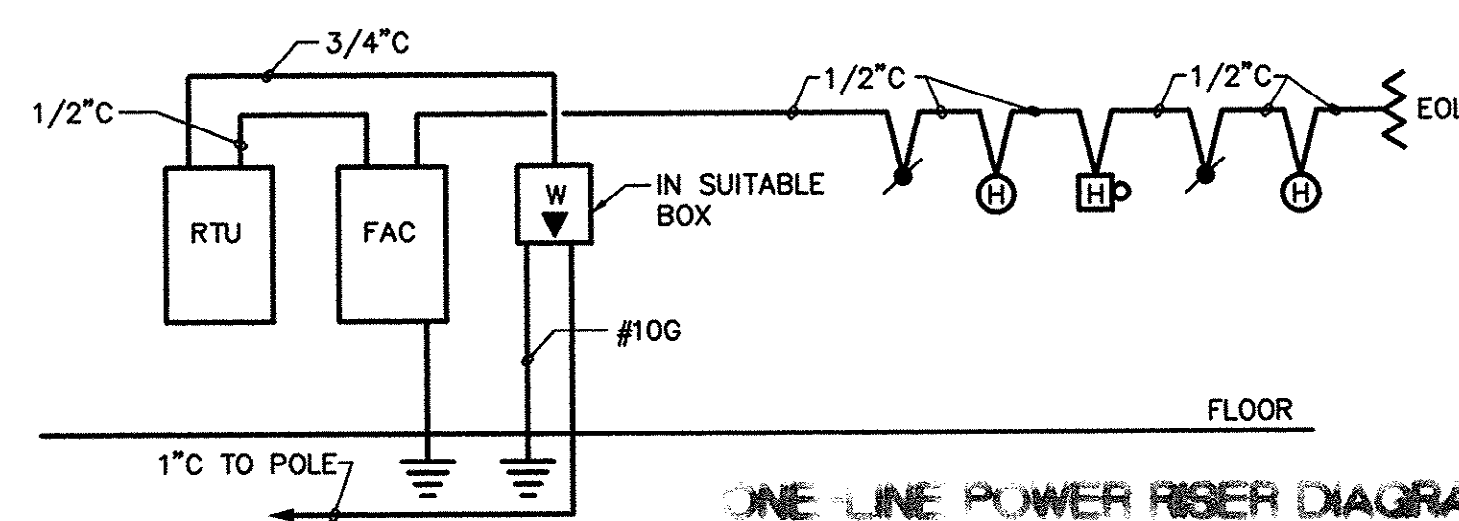
ACTION NOTES

CONNECT TO RTU



PUMP STATION DOOR SECURITY WIRING DIAGRAM

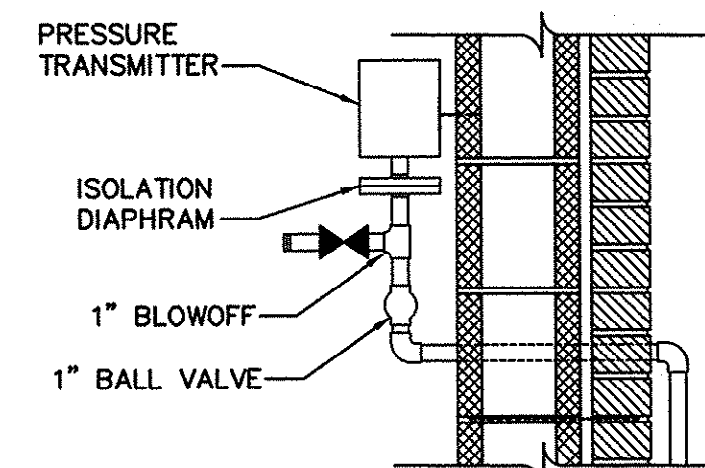
NOT TO SCALE



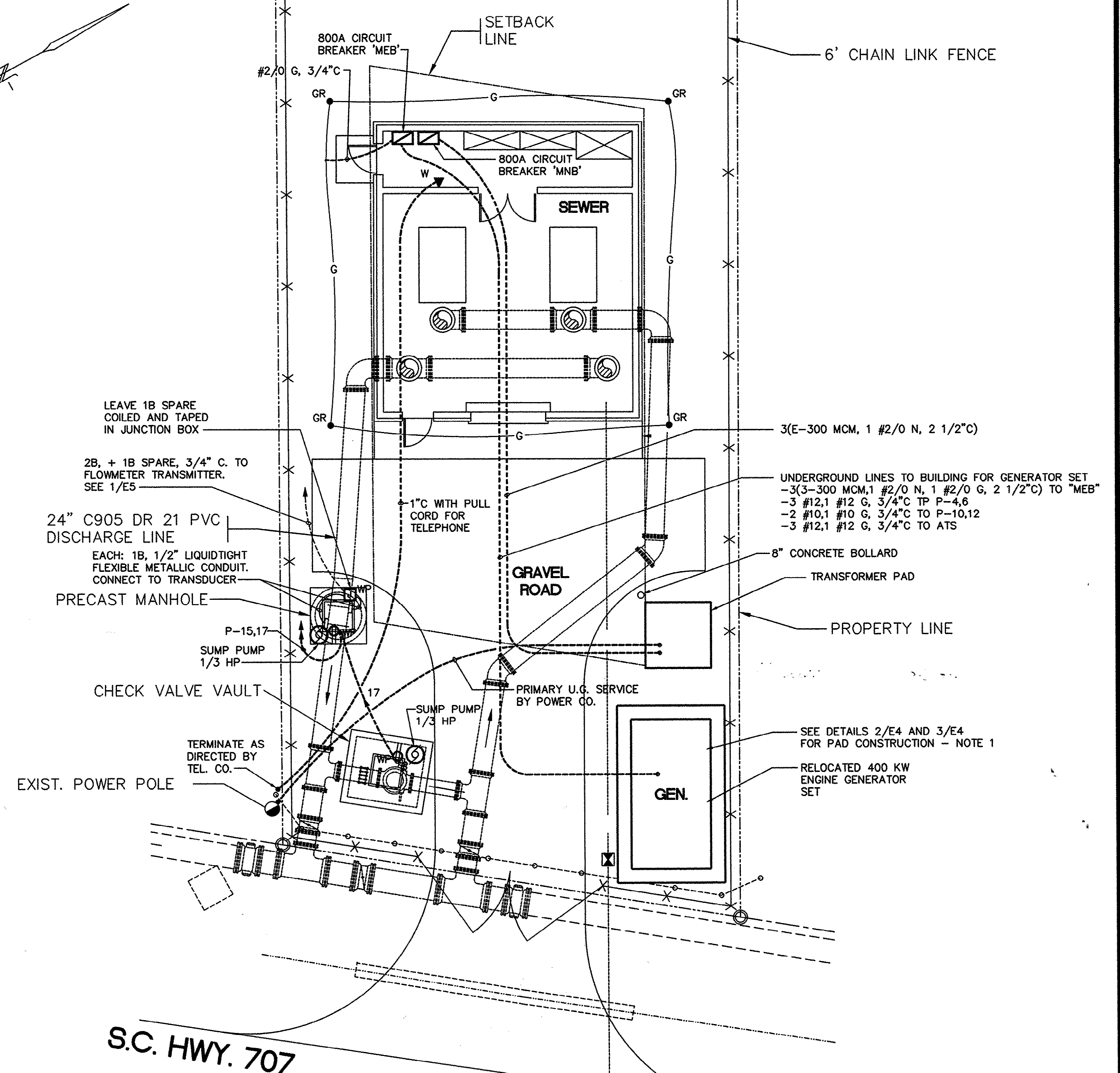
FIRE DETECTION TEL. CONDUIT SYSTEM RISER DIAGRAM

NOT TO SCALE

NOTES:
1. FIRE ALARM SYSTEM SHALL BE U.L. AND F.M. APPROVED, 24V. DC POWER. PROVIDE 8-HOUR BATTERY POWER BACKUP. PROVIDE MANUFACTURERS FIELD CHECK AND START-UP SERVICE TO ASSURE PROPER OPERATION. PROVIDE A COMPLETE FIRE ALARM SYSTEM INCLUDING ALL REQUIRED EQUIPMENT AND WIRING IN CONDUIT FOR A COMPLETE INSTALLATION. WIRING SHALL BE AS DIRECTED BY SYSTEM MANUFACTURER.



PRESSURE TRANSMITTER
NOT TO SCALE



BIG BLOCK PUMP STATION - ELECTRICAL SITE PLAN

SCALE: 1/8\" = 1'-0"

NOTE:

1. NEW CONCRETE PAD SHALL BE CONSTRUCTED AS DETAILED ON SHEET E4 FOR NEW GENERATOR SET. PAD SHALL BE DIMENSIONED NOT LESS THAN 18\"/>

THESE DRAWINGS REFLECT AS-BUILT CONDITIONS	
REVIEWED BY: <i>[Signature]</i>	DATE: 1/29/02
INSPECTED BY: <i>[Signature]</i>	DATE: 1/29/02
GRAND STRAND WATER AND SEWER AUTHORITY	

TYPICAL CONTROL WIRING FOR
PUMPS NO 1 AND NO 2

14-159-016/017

REVISIONS	DATE	BY

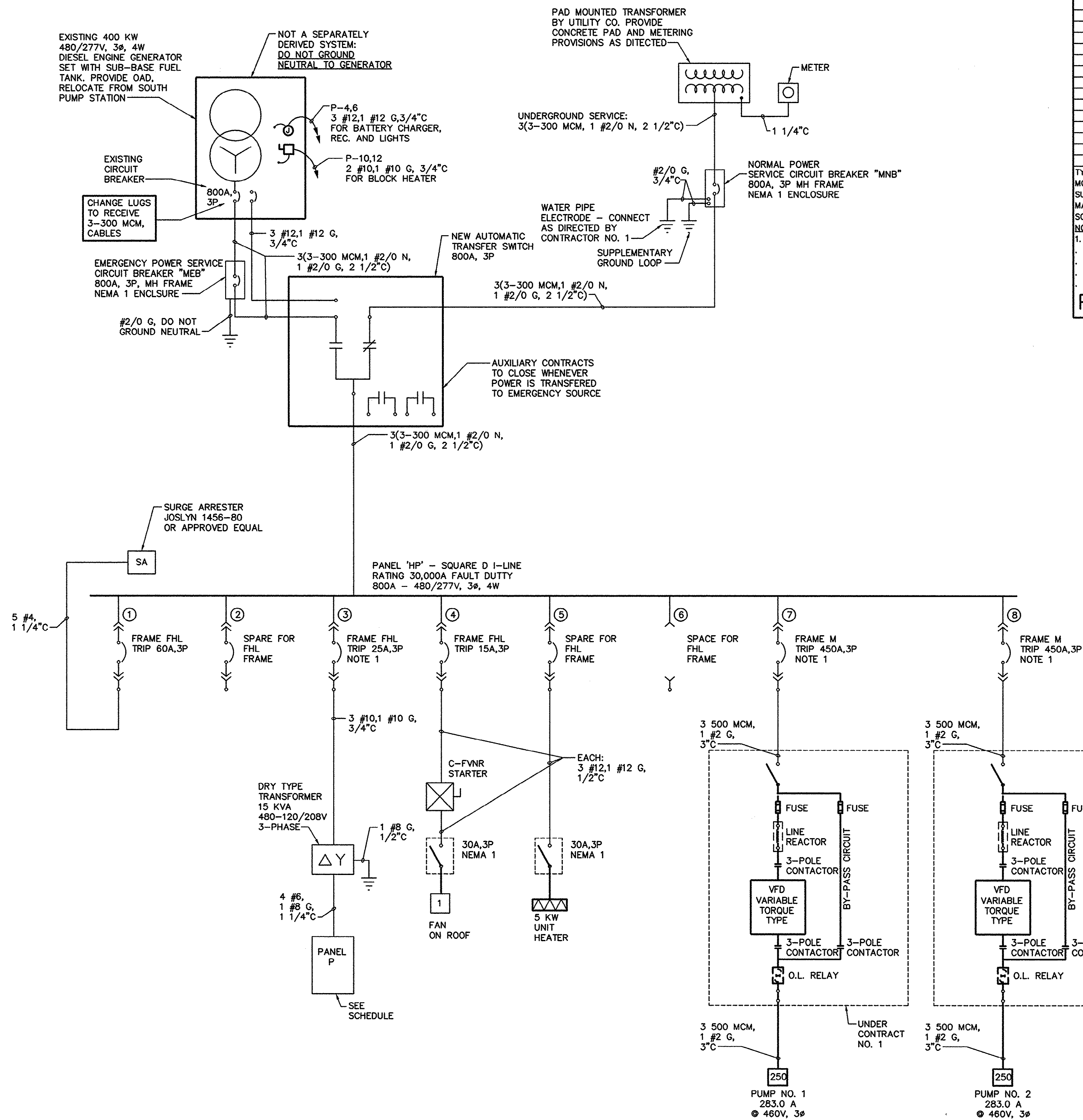
HOBBS, UPCHURCH & ASSOCIATES, P.A.
CONSULTING ENGINEERS
MYRTLE BEACH, SOUTH CAROLINA 29577

NEW BIG BLOCK PUMP STATION ELECTRICAL PLAN AND SITE PLAN

BOOSTER PUMP STATIONS
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

DATE:	JULY 24, 1998
DESIGNED:	DL
DRAWN:	DBM
CHECKED:	DL
SCALE:	AS SHOWN
SHEET NO.	E5

6



1 ONE-LINE POWER RISER DIAGRAM

E-6 NOT TO SCALE

NOTE:
1. BREAKERS FOR BOTH PUMPS AND FANS SHALL HAVE PROVISIONS FOR PAD LOCKING IN "OFF" POSITION.

LOAD (KVA)			DESCRIPTION	WIRE SIZE	BRKR RATIO	CKT. NO.	A B C	CKT. NO.	BRKR RATIO	WIRE SIZE	DESCRIPTION	LOAD (KVA)		
A	B	C										A	B	C
2.5	2.5		AC-1	10	30/2	1		2	20/1	12	FLOWMETER	0.2		
						3		4	20/1	12	GEN. BATT. CHARGER	0.2		
			0.7	12	20/1	5		6	20/1	12	GEN. LTG. + REC.		0.4	
0.3	0.0		EXTERIOR LIGHTING	12	20/1	7		8	20/1		SPARE	0.0		
			SPARE		20/1	9		10	30/2	10	GEN. BLOCK HEATER		1.5	
			1.2	12	20/1	11		12		10				1.5
0.9			SUMP PUMP	12	20/1	13		14	20/1		SPARE	0.0		
	0.9		SUMP PUMP	12	20/1	15		16	20/1		SPARE		0.0	
			0.0		20/1	17		18	20/1		SPARE			0.0
TYPE: BRANCH CIRCUIT												CONNECTED LOAD		
MOUNTING: SURFACE												LIGHTING		
SUPPLY: 120/208V, 3-PH, 4W												HEATING		
MAINS: 60A MAIN BREAKER												A/C MOTORS & HEAT PUMPS		
SCIR: 10,000A												AIR HANDLING & EXH FANS		
NOTES:												RECEPTACLES		
1. WITH EQUIPMENT GROUND BUS.												ELECTRIC WATER HEATING		
												ELEVATORS		
												FOOD PROCESSING		
												PROCESS		
												MISCELLANEOUS		
												TOTAL		

PANEL 'P'

ONE-LINE POWER DIAGRAM

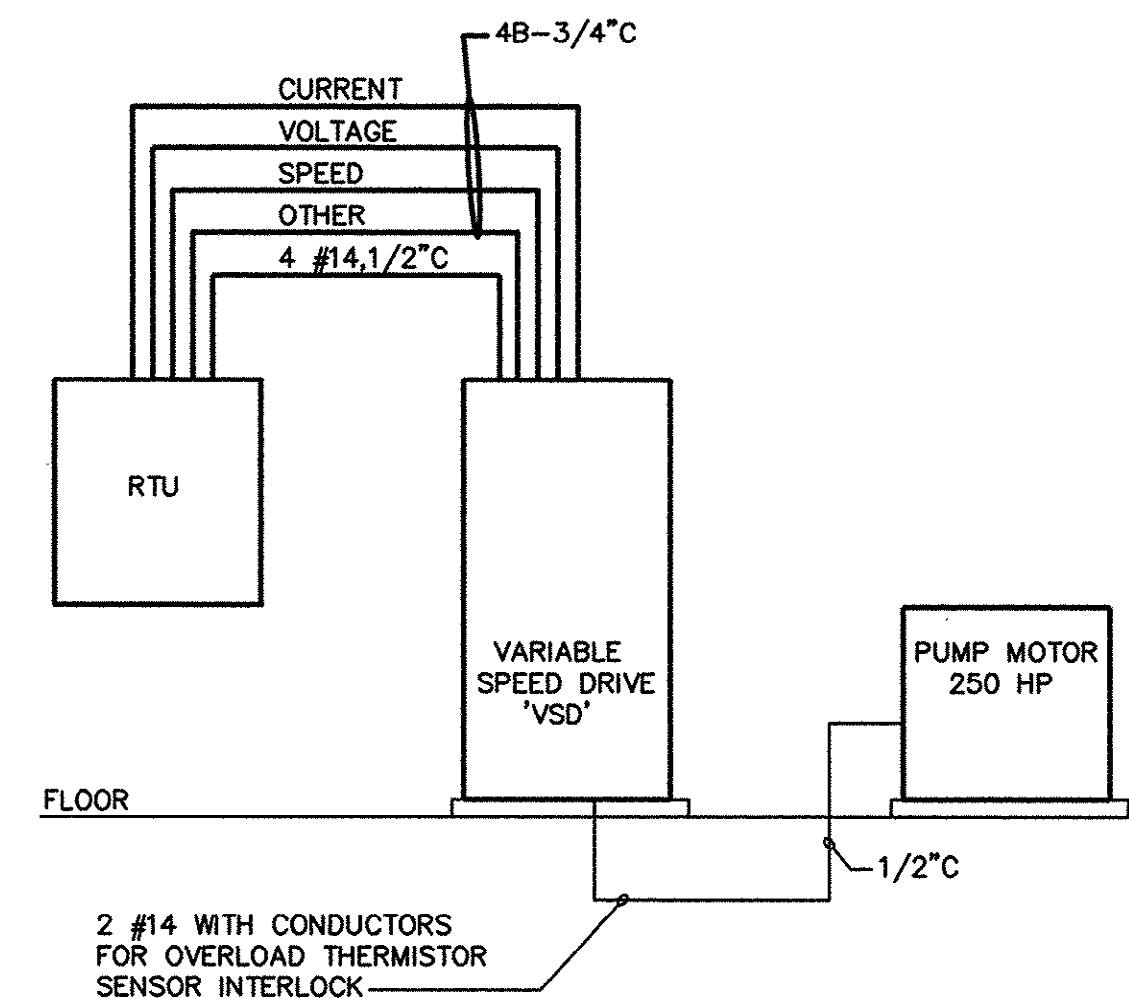
- INDIVIDUALLY MOUNTED CIRCUIT BREAKER
- SQUARE D - PLUG-IN TYPE PANELBOARD CIRCUIT BREAKER
- GROUNDING ELECTRODE
- SWITCH, 3-POLE
- FUSE
- SURGE ARRESTER
- NORMALLY CLOSED CONTACT
- NORMALLY OPEN CONTACT

THESE DRAWINGS REFLECT
AS-BUILT
CONDITIONS

REVIEWED BY: *[Signature]* 1/29/02 DATE
INSPECTIONS

REVIEWED BY: *[Signature]* 1/29/02 DATE
ENGINEERING

GRAND STRAND WATER AND SEWER AUTHORITY

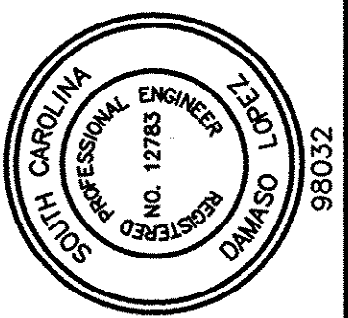


2 TYPICAL CONTROL WIRING RISER DIAGRAM
PUMPS NO. 1 AND NO. 2

E-6 NOT TO SCALE

14-159-017/017

REV.	DATE	DESCRIPTION
1		
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HOBBS, UPCHURCH & ASSOCIATES, P.A.
CONSULTING ENGINEERS
MYRTLE BEACH, SOUTH CAROLINA 29577



NEW BIG BLOCK PUMP
STATION ONE-LINE-
POWER DIAGRAM

BOOSTER PUMP STATIONS
GRAND STRAND WATER
AND SEWER AUTHORITY
CONWAY, SOUTH CAROLINA

DATE:	JULY 24, 1998
DESIGNED:	DL
DRAWN:	DBM
CHECKED:	DL
SCALE:	AS SHOWN

SHEET NO.

E6

6