BABY FARMS LIFT STATION
AND FORCE MAIN IMPROVEMENTS

FALL CREEK REGIONAL WASTE DISTRICT - PENDLETON, INDIANA

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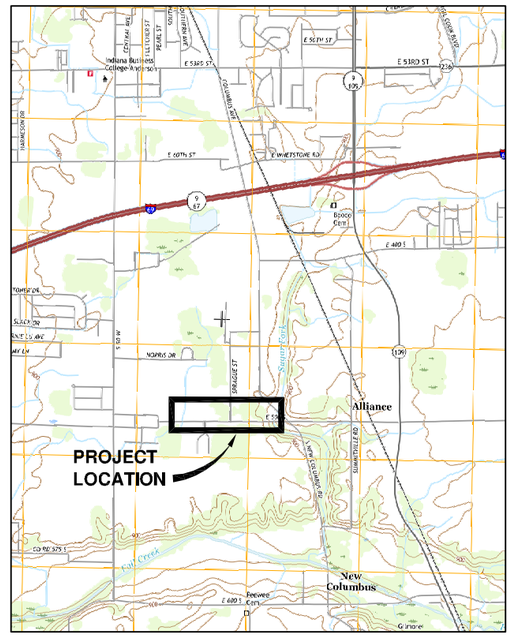
ENGINEER/ARCHITECT: GEORGE LEWIS

CONSTRUCTION COMPANY: R.L. BROWN CONSTRUCTION

DATE: 11/2017



SCALE: 1" = 2,000'

PLAN SET IS FULL SCALE ON 24"X36"
AND HALF SCALE ON 12"X18"

This document, originally issued, sealed, and signed by George W. Lewis, Indiana Professional Engineer, No. 10403303, on 11.17.2017, shall not be used in lieu of a certified document.

GEORGE W. LEWIS, P.E.
INDIANA REG. NO. 10403303
DATE:

This document, originally issued, sealed, and signed by Joseph P. Tierney, Indiana Professional Engineer, No. 19300407, on 11.17.2017, shall not be used in lieu of a certified document.

JOSEPH P. TIERNEY, P.E.
INDIANA REG. NO. 19300407
DATE:

FALL CREEK REGIONAL WASTE DISTRICT
DISTRICT OFFICE
9378 COUNTY ROAD SOUTH 650 WEST
PENDLETON, INDIANA 46064

NOVEMBER 2017

GRW PROJECT NO. 4625
SRF PROJECT NO. WW16074803

PRINTED: 7/9/2019 @ 3:27PM

FILE NAME: G:\4625--FCRWD--BFLS\Working Drawings\AutoCAD\4625--G--00 COVER.dwg

GENERAL NOTES

THE FOLLOWING GENERAL NOTES ARE APPLICABLE TO THE ENTIRE SET OF PLANS, AND ARE NOT SHOWN ON EACH INDIVIDUAL SHEET. HOWEVER, THIS DOES NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY FOR THESE ITEMS IN ALL AREAS.

GENERAL NOTES

1. THE UTILITIES AND THEIR LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND VERIFY ALL UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING UTILITY WORK, INCLUDING POLE RELOCATION, AS REQUIRED TO MEET THE PROJECT SCHEDULE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO AVOID EXISTING UTILITIES AND PERFORM ANY REQUIRED REPAIRS. IN ADDITION TO ALL UTILITY LINES, THE CONTRACTOR SHALL AVOID AND REPAIR ANY DAMAGE TO BURIED FIBER OPTIC CABLE, FIELD DRAINAGE TILES, AND PRIVATE IRRIGATION SYSTEMS. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN UTILITIES OR OTHER SUBSURFACE LINES ARE DAMAGED.

2. UTILITY POLES ARE SHOWN ON THE PLANS, BUT OVERHEAD LINES HAVE BEEN OMITTED FOR CLARITY. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE LOCATION OF OVERHEAD OBSTRUCTIONS, ESPECIALLY OVERHEAD ELECTRIC LINES.

3. THE CONTRACTOR IS RESPONSIBLE FOR RELOCATING, ADJUSTING, AND/OR HOLDING ANY UTILITY LINE AND/OR ASSOCIATED SERVICE POLE, OR DOWN GUY AT HIS OWN EXPENSE. HE SHALL ALSO BE RESPONSIBLE TO CONTACT ANY UTILITY OWNER AS NECESSARY TO RESOLVE ALL UTILITY CONFLICTS INCURRED DURING THE COMPLETION OF HIS CONSTRUCTION OPERATIONS

4. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID DISTURBANCE, DAMAGE, OR REMOVAL OF EXISTING TREES/VEGETATION WITHIN CONSTRUCTION LIMITS, INCLUDING CANOPIES, TRUNKS, AND ROOTS. IF DAMAGE OR REMOVAL IS NON-AVOIDABLE, CONTRACTOR SHALL OBTAIN APPROVAL FROM OWNER PRIOR TO INSTALLATION WITHIN AFFECTED AREA.

5. ALL DISTURBED GRASS AREAS SHALL BE RESTORED WITH TOPSOIL, SEED MIX AND STRAW AS PER SPECIFICATIONS SECTION 02920. ALL DISTURBED AREAS SHALL BE RESTORED TO EQUAL TO OR BETTER THAN ORIGINAL CONDITIONS. RESTORATION SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER, THE ENGINEER, OR THEIR REPRESENTATIVES.

6. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS, AND UTILITY COMPANY REGULATIONS.

7. HORIZONTAL OR VERTICAL BENDS, WHERE NOTED ON THE DRAWINGS, ARE PROVIDED FOR CLARIFICATION PURPOSES ONLY, AND ARE NOT ALL-INCLUSIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING QUANTITY, LOCATION, AND ORIENTATION OF BENDS AND OFFSETS ALONG FORCE MAIN ROUTE TO MAINTAIN ALIGNMENT, MINIMUM DEPTH OF COVER AND MINIMUM REQUIRED CLEARANCES FROM EXISTING AND PROPOSED UTILITIES. AS WELL AS MINIMUM PIPE BENDING RADIUS AND JOINT DEFLECTION REQUIREMENTS FOR THE PIPE AND FITTINGS BEING USED.

8. CONTRACTOR SHALL CLEAN STREETS OF CONSTRUCTION DEBRIS DAILY TO THE SATISFACTION OF THE OWNER AND ENGINEER. CONTRACTOR SHALL FURTHER ENSURE THAT AT LEAST ONE LANE OF TRAFFIC IS OPEN AT ALL TIMES DURING CONSTRUCTION ALONG ROADWAYS UNLESS THE CONTRACTOR HAS WRITTEN APPROVAL AND AN APPROVED TRAFFIC MAINTENANCE PLAN. CONTRACTOR SHALL NOT CLOSE ANY LANE OF A STATE HIGHWAY WITHOUT INDOT APPROVAL.

9. CONTRACTOR SHALL NOTIFY OWNER, ENGINEER, LAW ENFORCEMENT & EMERGENCY SERVICES, SCHOOL DISTRICT, TRASH PICK-UP SERVICE, AND AFFECTED RESIDENTS 48 HOURS PRIOR TO TEMPORARILY CLOSING ANY LANES OF TRAFFIC, INCLUDING PRIVATE DRIVEWAYS. PRIVATE DRIVEWAYS TO BE DISTURBED AND REPAIRED SHALL NOT BE SHUT DOWN LONGER THAN 8 HOURS. TRAFFIC SHALL BE BARRICADED FROM DRIVEWAY OR DRIVEWAY SHALL BE STEEL PLATE SPANNED TO ALLOW FOR MINIMUM CURING TIME. COMPLY WITH CITY REQUIREMENTS TO RECEIVE PERMIT APPROVAL FOR ALL WORK WITHIN CITY RIGHT-OF-WAY.

10. STREET LINES AND PROPERTY LINES SHOWN ON THIS PLAN ARE NOT THE RESULT OF DEED RESEARCH BUT TO BE CONSIDERED APPROXIMATE AND FOR REFERENCE ONLY.

11. UNLESS OTHERWISE NOTED, HORIZONTAL DIMENSIONING OF NEW FORCEMAIN ARE REFERENCED OFF THE EXISTING CENTERLINE OF ROAD (OR TRAIL OR RAILROAD) AND NEW FORCE MAIN SHALL BE INSTALLED AT THE UNIFORM HORIZONTAL DISTANCE BETWEEN SUCCESSIVE HORIZONTAL DIMENSIONS AS SHOWN ON THE PLANS. BASELINE STATIONING IS ALONG THE CENTERLINE OF THE NEW FORCEMAIN.

12. LIMITS OF CONSTRUCTION SHALL BE MAINTAINED WITHIN RIGHT-OF-WAY, DENOTED EASEMENTS AND PERMITTED AREAS. THERE ARE FOUR (4) DENOTED AREAS ALONG THE ROUTE OF THE 16" FORCEMAIN THAT ARE WITHIN IDENTIFIED ARCHEOLOGICAL AREAS. IN THESE AREAS THE CONTRACTOR SHALL ERECT SILT FENCES AT THE CONSTRUCTION LIMITS NOTED AND ONLY DISTURB THE SURFACE WITHIN THE CONSTRUCTION LIMIT AREA. THE CONTRACTOR SHALL INSURE THAT CONSTRUCTION DOES NOT DAMAGE ADJACENT PUBLIC OR PRIVATE PROPERTY. MAIN LINE EASEMENTS SHOWN ON THE DRAWINGS TYPICALLY INCLUDE TEMPORARY CONSTRUCTION EASEMENTS. OTHER TEMPORARY EASEMENTS, IF NECESSARY, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

13. VERTICAL DATUM = NAVD 1988, U.S. SURVEY FEET; HORIZONTAL DATUM = NAD 1983 INDIANA STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET. ALL INFORMATION REGARDING HORIZONTAL AND VERTICAL CONTROL ARE BASED ON BEST INFORMATION AVAILABLE UTILIZING RECORD DRAWINGS OF THE SITE. THE ENGINEER DOES NOT GUARANTEE OR ASSURE THAT SUCH INFORMATION IS TRUE. THE CONTRACTOR SHALL DETERMINE WHICH CONTROLS CONFLICT WITH HIS WORK AND VERIFY THOSE ELEVATIONS, ETC. AND ADJUST HIS WORK ACCORDINGLY TO MAINTAIN PROPOSED ELEVATIONS RELATIVE TO THOSE VERIFIED, AND NOTIFY THE ENGINEER OF ANY SUCH CHANGE FOR APPROVAL.

14. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE APPROPRIATE AGENCY HAVING AUTHORITY SUCH AS MADISON COUNTY HIGHWAY DEPARTMENT. AND ANY OTHER UNDERGROUND UTILITIES WITHIN THE PROJECT AREA.

15. UNLESS OTHERWISE NOTED ON THE PROFILE DRAWINGS AS A MINIMUM CLEARANCE, THE DEPTHS INDICATED ARE FOR REFERENCE ONLY. MINIMUM DEPTH OF COVER OF PROPOSED FORCEMAIN IS 5 FEET FOR ALL OPEN CUT INSTALLATIONS AND 5 FEET FOR ALL HORIZONTAL DIRECTIONAL DRILLING INSTALLATIONS. CONTRACTOR SHALL VARY DEPTH OF PROPOSED FORCEMAIN (NOT TO EXCEED 7 FT. MAX. COVER. DEPTH WITHOUT PRIOR APPROVAL FROM ENGINEER AND OWNER) AS NECESSARY TO AVOID EXISTING UTILITIES, TRANSITION BETWEEN OPEN CUT TO HORIZONTAL DIRECTIONAL DRILLING AND OTHERWISE AVOID CREATION OF HIGH SPOTS ALONG ROUTE, EXCEPT WHERE AIR RELEASE VALVES ARE SHOWN ON DRAWINGS.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN 18" MINIMUM VERTICAL SEPARATION OR A 10' MINIMUM HORIZONTAL SEPARATION BETWEEN STORM SEWER LINES, SANITARY SEWER LINES AND WATER MAINS, UNLESS OTHERWISE NOTED. PRIOR TO ANY COMPROMISE OF THESE REQUIREMENTS, WRITTEN APPROVAL SHALL BE OBTAINED FROM THE OWNER. IN THE EVENT THE SPECIFIED SPACING CANNOT BE IMPLEMENTED, PROPOSED JOINTS SHALL BE LOCATED AS FAR AS POSSIBLE FROM THE CONFLICT WHENEVER POSSIBLE. ALL UTILITY CROSSINGS SHOULD MAINTAIN MINIMUM OF 12" CLEARANCE..

17. ALL BENDS, VALVES, TEES AND FITTINGS SHALL BE RESTRAINED AS NEEDED PER THE FIELD CONDITIONS, SOIL TYPES AND PIPE MATERIAL BEING USED.

18. CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING FLOW AND PROVIDING BYPASS PUMPING AS REQUIRED DURING CONSTRUCTION OPERATIONS. SUCH FLOW SHALL BE MONITORED SO AS NOT TO ALLOW SEWAGE BACK-UP WHICH MAY CAUSE PROPERTY DAMAGE. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGE INCURRED AND MUST MAKE RESTITUTION WITH ANY AFFECTED PROPERTY OWNER(S).

19. THE EXISTING GRAVITY SEWERS, LIFT STATIONS & FORCEMAINS SHALL REMAIN IN CONTINUOUS SERVICE THROUGHOUT THE CONSTRUCTION PERIOD UNTIL SUCCESSFUL START-UP OF THE PROPOSED FACILITIES. CONTRACTOR SHALL PROVIDE CONTINUOUS ON-SITE SUPERVISION OF ANY BYPASS PUMPING OPERATIONS THAT OCCUR DURING CONSTRUCTION & NON-CONSTRUCTION HOURS. PROPOSED BYPASS SYSTEM SHALL INCLUDE EMERGENCY STANDBY/BACK-UP PROVISIONS AND SHALL BE APPROVED BY THE OWNER AT LEAST TWO (2) FULL WORKING DAYS IN ADVANCE OF INITIATING ANY BYPASS OPERATIONS. REFER TO SPEC. SECTION 01125.

20. EXISTING PIPELINE MATERIALS ARE NOT KNOWN FOR ALL LOCATIONS OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL NECESSARY FITTINGS, GASKETS, APPURTENANCE, ETC. WHICH ARE REQUIRED TO MAKE A COMPLETE CONNECTION.

21. FCRWD WILL BE RESPONSIBLE FOR CLOSING ALL VALVES ON EXISTING SYSTEM. THE CONTRACTOR SHALL COORDINATE ALL WORK EFFORTS WITH THE OWNER.

21. THE CONTRACTOR SHALL REPAIR ANY DAMAGES CAUSED BY CONSTRUCTION EQUIPMENT, TRUCKS, ETC. THIS INCLUDES BUT IS NOT LIMITED TO ASPHALT TRAIL, ROADS, SIDEWALKS, ETC.

UTILITIES

ELECTRIC
CITY OF ANDERSON LIGHT AND POWER
765-648-6480

GAS
VECTREN ENERGY
1-800-227-1376

CABLE/PHONE/INTERNET
COMCAST
317-774-3384

AT&T DISTRIBUTION
260-358-4507

ROADS
MADISON CO HIGHWAY DEPT: 765-646-9240

SEWER
FALL CREEK REGIONAL WASTE DISTRICT
765-778-7544

DRAWING INDEX

SHEET NUMBER	SHEET TITLE
	GENERAL
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G-00-003	SYMBOLS LEGEND
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C-05	PLAN AND PROFILE LINE "FM-1:
C-06	PLAN AND PROFILE LINE "FM-1:
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	INSTRUMENTATION
I-001	INSTRUMENTATION STANDARD SYMBOLS AND LEGEND
I-501	INSTRUMENTATION DETAILS
I-601	LOOP DIAGRAMS I

Indiana Underground Plant Protection Service

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811

GEORGE W. LEWIS
REGISTERED
No. 10403303
STATE OF INDIANA
PROFESSIONAL ENGINEER

GRW PROJECT NO. 4625

CLIENT PROJECT NO. --

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DRAWING INDEX
AND GENERAL NOTES
BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED: GWL
DRAWN: JAJ
REVIEWED: JPT
APPROVED: GWL

REVISIONS

NO.	DESCRIPTION	DATE	BY
----		----	----

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

DATE: NOVEMBER 2017

SCALE: N.T.S.

SHEET NO. G-01

PLOTTED BY: jjohnson

PRINTED: 1/12/2018 @ 8:04AM

FILE NAME: G:\4625-FCRWD-BFLS\Working Drawings\AutoCAD\4625-G-01 INDEX.dwg

ABBREVIATIONS

AB	ANCHOR BOLT
ABAND	ABANDONED
ABS	ABSOLUTE
ACOUST	ACOUSTICAL
ADD	ADDENDUM
ADDL	ADDITIONAL
ADM	ADMINISTRATION
AFF	ABOVE FINISH FLOOR
AGG	AGGREGATE
AHR	ANCHOR
AL	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASB	ASBESTOS
AUX	AUXILIARY
AVG	AVERAGE
AWG	AMERICAN WIRE GAGE
BC	BOLT CIRCLE
BD	BOARD
BETW	BETWEEN
B'FLY	BUTTERFLY
BHP	BRAKE HORSEPOWER
BIT	BITUMINOUS
BL	BASE LINE, BUILDING LINE
BLDG	BUILDING
BLK	BLOCK
BM	BENCH MARK, BEAM
BOT	BOTTOM
BP	BASE PLATE
BRG	BEARING
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BU	BUILT UP
BW	BOTH WAYS
BYP	BYPASS
C	CENTIGRADE
CAP	CAPACITY
CB	CATCH BASIN
CE	CLARIFIER EFFLUENT
CER	CERAMIC
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER
CHK	CHECK
CHKR	CHECKERED
CI	CLARIFIER INFLUENT
CIP	CAST IRON PIPE
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	COMPANY
COL	COLUMN
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CPLG	COUPLING
CJ	CONTROL JOINT
CTR	CENTER
CU	CUBIC
CW	CLOCKWISE
D	DEPTH
DBL	DOUBLE
DET	DETAIL
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISTR	DISTRIBUTION
DIV	DIVISION
DL	DEAD LOAD
DN	DOWN
DR	DRAIN
DWG	DRAWING
E	EAST
EA	EACH
EF	EACH FACE
EFL	EFFLUENT
EJ	EXPANSION JOINT
ELEC	ELECTRIC
ELEV	ELEVATION
ELL	ELBOW
ENCL	ENCLOSE
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FIN	FINISH
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE, FLANGED
FR	FRAME
FT	FOOT
FTG	FOOTING
G	GROUNDED
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GENL	GENERAL
GL	GLASS
GND	GROUND
GR	GRADE
GRTG	GRATING
GSKT	GASKET
GYP	GYPSUM
GYP	GYPSUM WALLBOARD

HB	HOSE BIBB
HCS	HOLLOW CORE SLAB
HD	HEAD, HEAVY DUTY
HDN	HARDEN
HDW	HARDWARE
HDWL	HEADWALL
HGR	HANGER
HM	HOLLOW METAL
HOL	HOLLOW
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPT	HIGH POINT
HR	HOUR
HT	HEIGHT
HTR	HEATER
HVY	HEAVY
HW	HOT WATER
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYD	HYDRAULIC
IAS	INTERCHANGE ACTIVATED SLUDGE
IASFM	INTERCHANGE ACTIVATED SLUDGE FORCE MAIN
ID	INSIDE DIAMETER
IFM	INFLUENT FORCE MAIN
IFMA	INFLUENT FORCE MAIN ALTERNATE
ILLUM	ILLUMINATE
ILLUS	ILLUSTRATE
IN	INCH
INCR	INCREASER
INFL	INFLUENT
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
ITI	INTERCHANGE TANK INFLUENT
JT	JOINT
JCT	JUNCTION
KG	KILOGRAM
KM	KILOMETER
KV	KILOVOLT
KVA	KILOVOLT - AMPERE
KVAH	KILOVOLT - AMPERE HOUR
KW	KILOWATT
KWH	KILOWATT HOUR
L	LEFT, LONG
LAB	LABORATORY
LAM	LAMINATE
LBS	POUNDS
LDG	LOADING
LF	LINEAR FOOT
LG	LENGTH
LH	LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LPT	LOW POINT
LS	LUMP SUM
LW	LONG WAY
MATL	MATERIAL
MAX	MAXIMUM
ME	MATCH EXISTING
MECH	MECHANICAL
MED	MEDIUM
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MO	MASONRY OPENING
MP	MELTING POINT
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
N	NORTH
NATL	NATIONAL
NEG	NEGATIVE
NET	NETWORK
NEUT	NEUTRAL
NIC	NOT IN CONTRACT
NO.	NUMBER
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NPW	NON-POTABLE WATER
NR	NITRATE RECYCLE
NRFM	NITRATE RECYCLE FORCE MAIN
NTS	NOT TO SCALE
OBS	OBSOLETE
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODE	OXIDATION DITCH EFFLUENT
ODI	OXIDATION DITCH INFLUENT
OF	OUTSIDE FACE
OH	OVAL HEAD
OPER	OPERATED
OPNG	OPENING
OPP	OPPOSITE
ORF	ORIFICE
ORG	ORIGINAL
OVHD	OVERHEAD
OVLD	OVERLOAD
OZ	OUNCE
PC	PIECE
PCF	POUNDS PER CUBIC FOOT
PE	PLAIN END
PEJ	PREMOLDED EXPANSION JOINT
PERM	PERMANENT
PERP	PERPENDICULAR
PH	PHASE
PI	PLANT INFLUENT
PKG	PACKING
PL	PLATE
PNEU	PNEUMATIC

PO	PUSH ON
POL	POLISH
POS	POSITION
PREFAB	PREFABRICATED
PRESS	PRESSURE
PRI	PRIMARY
PS	PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
PWR	POWER
QT	QUART
QTY	QUANTITY
RAN	RANGE
RAD	RADIUS
RAS	RETURN ACTIVATED SLUDGE
RASFM	RETURN ACTIVATED SLUDGE FORCE MAIN
RASFMA	RETURN ACTIVATED SLUDGE FORCE MAIN ALTERNATE
RCPT	RECEPTACLE
RD	ROOF DRAIN
RDCR	REDUCER
RECD	RECEIVED
REF	REFERENCE
REFG	REFRIGERATOR
REINF	REINFORCE
REM	REMAINDER
REPL	REPLACE
REQD	REQUIRED
RESIL	RESILIENT
REV	REVISION
RJ	RESTRAINED JOINT
RM	ROOM
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
S	SOUTH
SC	SCUM
SCFM	SCUM FORCE MAIN
SCH	SCHEDULE
SEC	SECOND
SECT	SECTION
SEQ	SEQUENCE
SFT	SHAFT
SHLD	SHIELD
SHT	SHEET
SIM	SIMILAR
SK	SKETCH
SOL	SOLENOID
SPCS	SPACES
SPEC	SPECIFICATIONS
SP GR	SPECIFIC GRAVITY
SP HT	SPECIFIC HEAT
SPRT	SUPPORT
SQ	SQUARE
SST	STAINLESS STEEL
S/S	SERVICE SINK
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
STIR	STIRRUP
STL	STEEL
STM	STORM
STRUCT	STRUCTURE
SUSP	SUSPENDED
SW	STORM WATER
SYM	SYMBOL
SYMM	SYMMETRICAL
T	TOP
T&B	TOP AND BOTTOM
TECH	TECHNICAL
TEMP	TEMPERATURE, TEMPERED
THEO	THEORETICAL
THD	THREAD
THRES	THRESHOLD
THRU	THROUGH
TOF	TOP OF FOOTING
TOL	TOLERANCE
TOS	TOP OF STEEL
TOT	TOTAL
TRANS	TRANSFER
TW	TOP OF WALL
TYP	TYPICAL
UNIF	UNIFORM
UON	UNLESS OTHERWISE NOTED
UV	ULTRAVIOLET
V	VOLT
VAC	VACUUM
VCT	VINYL COMPOSITION TILE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VISC	VISCOSITY
VLR	VERTICAL LOOP REACTOR
VLRE	VERTICAL LOOP REACTOR EFFLUENT
VS	VERSUS
VTR	VENT THROUGH ROOF
W	WEST, WIDTH
W/	WITH
WAS	WASTE ACTIVATED SLUDGE
WD	WOOD
WDW	WINDOW
WG	WIRE GAGE
WL	WATER LEVEL
WPG	WATERPROOFING
WR	WATER RESISTANT
WS	WASTE SLUDGE
WSDR	WASTE SLUDGE DRAIN
WSE	WATER SURFACE ELEVATION
WWF	WELDED WIRE FABRIC
YD	YARD
YP	YIELD POINT
YR	YEAR

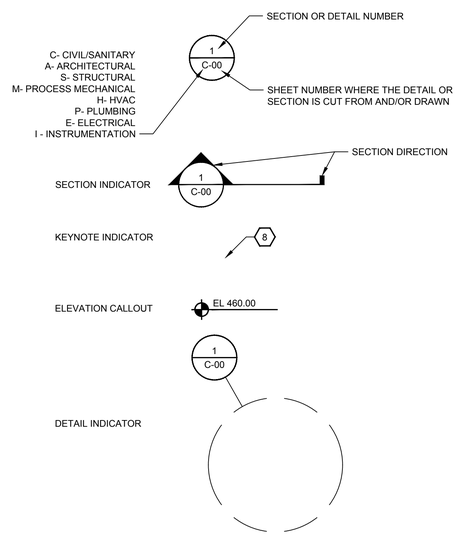
LINETYPES

	EXISTING	NEW
FENCE	X	
PROPERTY LINE	P/L	
RIGHT OF WAY	R/W	
UNDERGROUND ELECTRIC	UGE	
OVERHEAD UTILITY LINE	OHU	
UNDERGROUND COMMUNICATION	T	
UNDERGROUND FIBER OPTICS	F/O	
CREEK / SWALE		
SILT FENCE		SF
NATURAL GAS	G	
RAILROAD TRACKS		
SANITARY SEWERS	S	
STORM SEWERS		
WATER LINE	W	
CONTOUR LINE	800	800
SPOT ELEVATION	+800.00	800.00
YARD PIPING		
STORM CULVERT		
PERMANENT EASEMENT		
EXISTING YARD PIPING TO BE ABANDONED IN PLACE	-X-X-X-X-X-X-X-X-X-X-X-	

MATERIALS - PLAN/SECTION

- EARTH
- CRUSHED STONE
- STRUCTURAL CONCRETE
- GROUT, PLASTER OR SAND
- ASPHALT PAVEMENT

BUBBLE & SECTIONING CONVENTIONS



SYMBOLS

	EXISTING	NEW
WATER METER	WM	WM
LIFT STATION	LS	
FIRE HYDRANT		
AIR RELEASE VALVE	A	
BLOW OFF VALVE	BO	
WATER MAIN BEND		
WATER MAIN CAP/PLUG		
WATER MAIN TEE		
WATER MAIN CROSS		
REDUCER		
WATER VALVE	WV	
WATER MAIN MARKER	W	
PUMP STATION	PS	
WATER SERVICE	WS	
IN LINE CONTROL VALVE	ICV	
SANITARY MANHOLE	S	
CORPORATION STOP	CSS	
SANITARY SEWER MARKER	SA	
SANITARY SEWER VALVE	SV	
SANITARY SEWER VALVE VAULT	V	
SANITARY SEWER WET WELL	WW	
SEPTIC TANK	ST	
CLEAN OUT	C	
CATCH BASIN		
DOUBLE CATCH BASIN		
CURB INLET		
CIRCULAR INLET		
STORM SEWER MANHOLE	ST	
NATURAL GAS METER	GM	
NATURAL GAS PRESSURE VALVE	GPV	
NATURAL GAS STOP	GS	
NATURAL GAS VALVE	GV	
NATURAL GAS MARKER	G	
NATURAL GAS VENT	GV	
NATURAL GAS WELL	GW	
ELECTRIC MANHOLE	E	
ELECTRIC METER	EM	
ELECTRIC PEDESTAL	E	
ELECTRIC TRANSFORMER PAD	ET	
ELECTRIC HAND HOLE BOX	H	
DOWN GUY WIRE		
LIGHT POLE		
UTILITY POLE		
ELECTRIC MARKER	E	
UNDERGROUND FIBER MARKER	FO	
FIBER MANHOLE	FO	

	EXISTING	NEW
COMMUNICATIONS PEDESTAL	C	
UNDERGROUND TELEPHONE MARKER	T	
TELEPHONE MANHOLE	T	
TELEPHONE PEDESTAL	T	
BOLLARD		
SECTION CORNER		
SURVEY CONTROL POINT		
SURVEY BENCHMARK		
TELEVISION ANTENNA		
FIELD DRAIN	FD	
FLAG POLE		
HEADSTONE		
MAILBOX		
PARKING METER	PM	
PLANTER BOX		
RAILROAD SIGNAL		
RAILROAD GATE		
RIGHT OF WAY MONUMENT	R/W	
PROPERTY CORNER		
ROCK SOUNDING	RS	
SOIL BORING	SB	
ROCK ELEVATION (PROFILE)		
SATELLITE DISH		
SIGN		
SIGN WITH MAST ARM		
SINK HOLE		
IRRIGATION SPRINKLER HEAD		
STEAM MANHOLE	SM	
TRAFFIC LIGHT CONTROL BOX	TR	
TRAFFIC LIGHT MAST POLE		
TRAFFIC LIGHT LOOP DETECTOR		
TRAFFIC LIGHT MANHOLE	TR	
WELL	W	
YARD LIGHT		
MONITORING WELL	MW	
VEGETATION		
DECIDUOUS TREE		
PINE TREE		
TREE STUMP		

NOTE: SYMBOLS, MATERIALS AND ABBREVIATIONS MAY NOT BE ALL-INCLUSIVE. SYMBOLS USED BUT NOT LISTED HEREIN MAY BE DEFINED ELSEWHERE. IF NOT, CONTACT THE ENGINEER FOR CLARIFICATION PRIOR TO BIDDING. SYMBOLS, MATERIALS AND ABBREVIATIONS MISSING FROM THE DRAWINGS DO NOT EXCUSE THE CONTRACTOR FROM PROVIDING THE WORK.

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SYMBOLS LEGEND AND ABBREVIATIONS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTEWATER DISTRICT

DESIGNED:	GWL
DRAWN:	JAJ
REVIEWED:	JPT
APPROVED:	GWL

REVISIONS

NO.	DESCRIPTION	DATE	BY
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PROPERTY LEGAL DESCRIPTION

PARCEL ONE:
A PART OF LOT 19 IN BABY FARMS SUBDIVISION, A SUBDIVISION IN THE EAST HALF OF THE SOUTHWEST QUARTER AND IN THE WEST HALF OF THE SOUTHEAST QUARTER, ALL IN SECTION 6, TOWNSHIP 18 NORTH, RANGE 8 EAST, MADISON COUNTY, INDIANA, THE PLAT OF WHICH SUBDIVISION IS RECORDED IN PLAT BOOK 7, PAGE 100, IN THE OFFICE OF THE RECORDER OF MADISON COUNTY, INDIANA, DESCRIBED AS FOLLOWS:

BEGINNING ON THE NORTHEASTERN LINE OF SAID LOT 19 AT A POINT 14.51 FEET SOUTHEASTERLY OF THE NORTHEAST CORNER OF SAID LOT; THENCE SOUTHEASTERLY 20.00 FEET ALONG SAID NORTHEASTERN LINE; THENCE SOUTHWESTERLY 10.00 FEET AT RIGHT ANGLES TO SAID NORTHEASTERN LINE; THENCE NORTHWESTERLY 20.00 FEET PARALLEL TO SAID NORTHEASTERN LINE; THENCE NORTHEASTERLY 10.00 FEET AT RIGHT ANGLES TO SAID NORTHEASTERN LINE TO THE POINT OF BEGINNING AND CONTAINING 0.005 ACRES, MORE OR LESS.

PARCEL TWO:
A PART OF LOT 19 OF BABY FARMS SUBDIVISION, THE PLAT OF WHICH IS RECORDED IN PLAT BOOK 7, PAGE 100 IN THE OFFICE OF THE RECORDER OF MADISON COUNTY, INDIANA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID LOT 19; THENCE SOUTH 89 DEGREES 53 MINUTES 20 SECONDS EAST (BASIS OF BEARINGS IS THE INDIANA STATE PLANE COORDINATE SYSTEM - EAST ZONE) 41.50 FEET ALONG THE NORTH LINE OF SAID LOT TO THE NORTHEAST CORNER THEREOF; THENCE SOUTH 47 DEGREES 14 MINUTES 27 SECONDS EAST 14.51 FEET ALONG THE NORTHEASTERN LINE OF SAID LOT TO THE NORTHEAST CORNER OF THE TRACT OF LAND CONVEYED TO FALL CREEK REGIONAL WASTE DISTRICT BY THE WARRANTY DEED RECORDED IN DEED BOOK 616, PAGE 152 IN THE OFFICE OF SAID RECORDER; THENCE SOUTH 42 DEGREES 45 MINUTES 33 SECONDS WEST 10.00 FEET ALONG THE NORTHWESTERN LINE OF SAID TRACT TO THE NORTHWEST CORNER THEREOF; THENCE SOUTH 47 DEGREES 14 MINUTES 27 SECONDS EAST 20.00 FEET ALONG THE SOUTHWESTERN LINE OF SAID TRACT OF LAND TO THE SOUTHWEST CORNER THEREOF; THENCE NORTH 42 DEGREES 45 MINUTES 33 SECONDS EAST 10.00 FEET ALONG THE SOUTHEASTERN LINE OF SAID TRACT TO THE SOUTHEAST CORNER THEREOF AND THE NORTHEASTERN LINE OF SAID LOT 19; THENCE SOUTH 47 DEGREES 14 MINUTES 27 SECONDS EAST 50.00 FEET ALONG SAID NORTHEASTERN LINE; THENCE SOUTH 30 DEGREES 25 MINUTES 05 SECONDS WEST 198.28 FEET TO THE WEST LINE OF SAID LOT 19; THENCE NORTH 00 DEGREES 47 MINUTES 28 SECONDS WEST 228.47 FEET ALONG SAID WEST LINE TO THE POINT OF BEGINNING, CONTAINING 0.292 ACRES, MORE OR LESS.

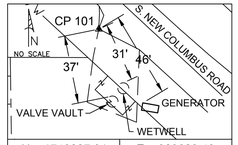
BENCHMARK INFORMATION

TBM-201 TEMPORARY BENCHMARK
ELEVATION: 890.35 FEET (NAVD 88)

CHISELED "X" ON TOP SLAB WEST SIDE OF EXISTING VALVE VAULT

SHEET NOTES

1. CONSTRUCTION ACCESS DRIVE FOR ALL CONSTRUCTION PERSONNEL, VEHICLES, AND DELIVERIES. CONTRACTOR SHALL NOT BE ALLOWED TO ACCESS EXISTING PARKING LOT OR ACCESS DRIVE BEYOND LIMITS SHOWN (DENOTED BY "XXXX") WITHOUT PRIOR AUTHORIZATION FROM OWNER.
2. CONTRACTOR STAGING AREA, EQUIPMENT STOCKPILES, AND TRAILERS. RESTORE AREA TO ORIGINAL CONDITION FOLLOWING CONSTRUCTION OPERATIONS.



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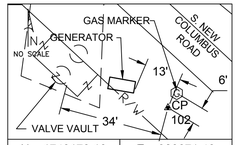
CP 101 REBAR / EL. = 889.554	



N = 1743178.16	E = 329671.46
CP 102 REBAR / EL. = 888.745	

Indiana 811
Indiana Underground Plant Protection Service

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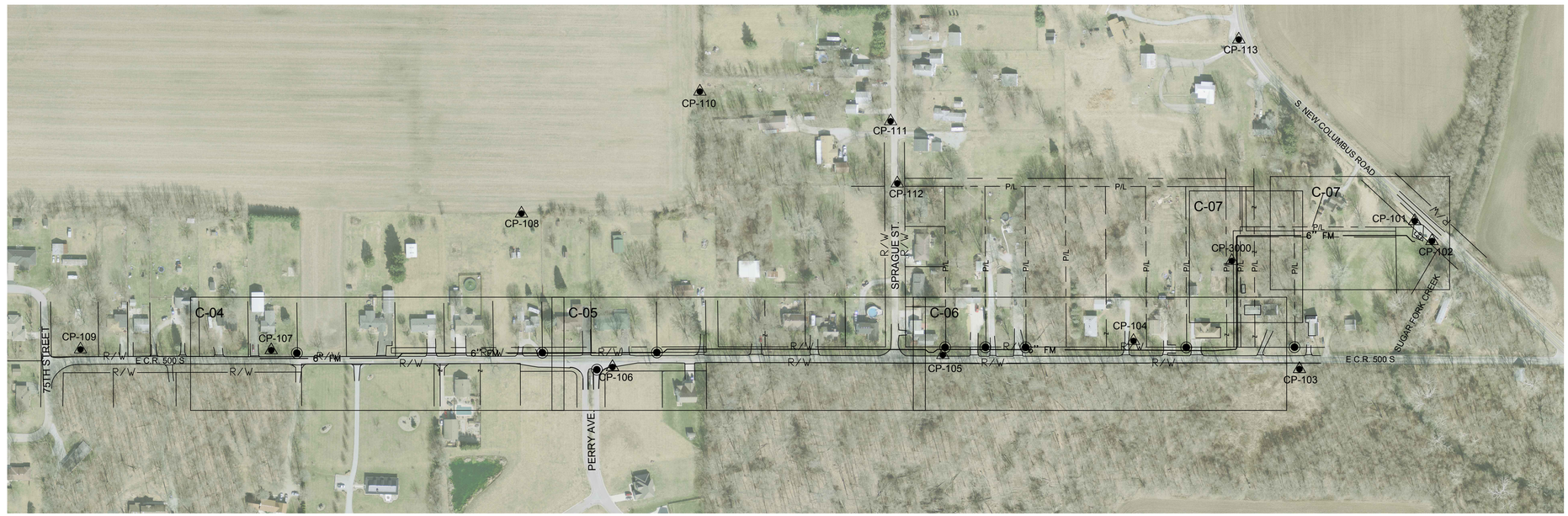

SURVEY CONTROL
NOT TO SCALE

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SURVEY CONTROL

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED: GWL
DRAWN: JAJ
REVIEWED: JPT
APPROVED: GWL

REVISIONS

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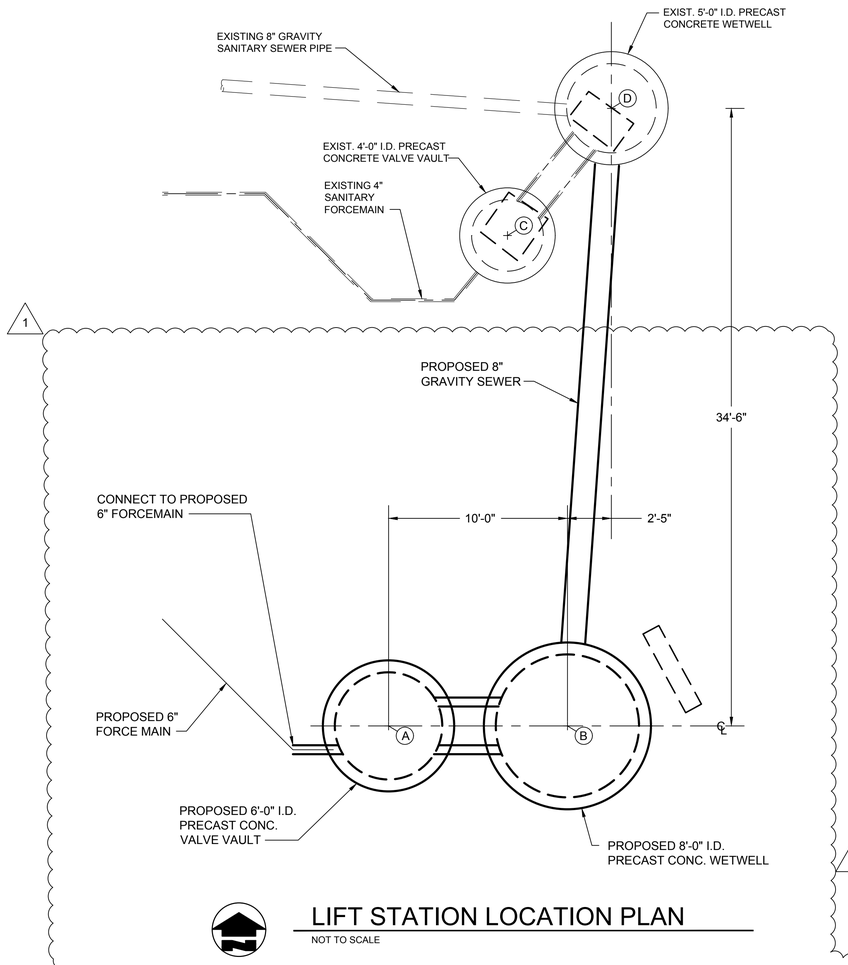

LIFT STATION LOCATION PLAN

NOT TO SCALE

L.S. DEMOLITION NOTES

1. EXISTING WETWELL - CONTRACTOR SHALL REMOVE EXIST. PUMPING EQUIPMENT AND PIPING AND CONVERT TO MANHOLE AS SHOWN ON SHEET C-03. SEE SHT. C-03 FOR ADDITIONAL RECONSTRUCTION REQUIREMENTS.
2. EXISTING VALVE VAULT - CONTRACTOR SHALL REMOVE ALL PIPING FROM STRUCTURE, PLUG PIPE OPENINGS AND REMOVE LID AT TOP OF STRUCTURE TO 2 FT BELOW GRADE AND BACKFILL WITH COMPACTED GRANULAR MATERIAL UP TO BOTTOM OF STONE PAVEMENT.
3. REFER TO ELECTRICAL DRAWINGS FOR EXISTING PUMP ELECTRICAL CONTROLS DEMOLITION AND REPLACEMENT REQUIREMENTS.

SHEET NOTES

1. EXISTING SURFACES SHALL BE RESTORED TO CONDITIONS EQUAL TO OR BETTER THAN ORIGINAL CONDITIONS USING NEW MATERIALS ONLY. ALL DISTURBED GRASS AREAS OUTSIDE OF PROPOSED PAVEMENT LIMITS SHALL BE RE-SEEDED PER SPECIFICATIONS.
2. PROVIDE POSITIVE SURFACE WATER DRAINAGE RELIEF AROUND ALL LIFT STATION AND MANHOLE STRUCTURES.
3. CONTRACTOR SHALL INSTALL TEMPORARY SILT FENCE AROUND ALL DISTURBED AREAS, INCLUDING STAGING AREAS. REFER TO SPEC. SECTION 02370 AND EROSION CONTROL DETAILS FOR EROSION CONTROL REQUIREMENTS.
4. REFER TO ELECTRICAL DRAWINGS FOR SITE ELECTRICAL UPGRADES.

SITE LOCATION COORDINATES			
MARK	NORTHING	EASTING	DESCRIPTION
A	1743161.70	329629.05	PROPOSED VALVE VAULT CENTER
B	1743161.70	329639.05	PROPOSED WETWELL CENTER
C	1743189.12	329635.70	EXISTING VALVE VAULT CENTER
D	1743196.23	329641.51	EXISTING WETWELL CENTER

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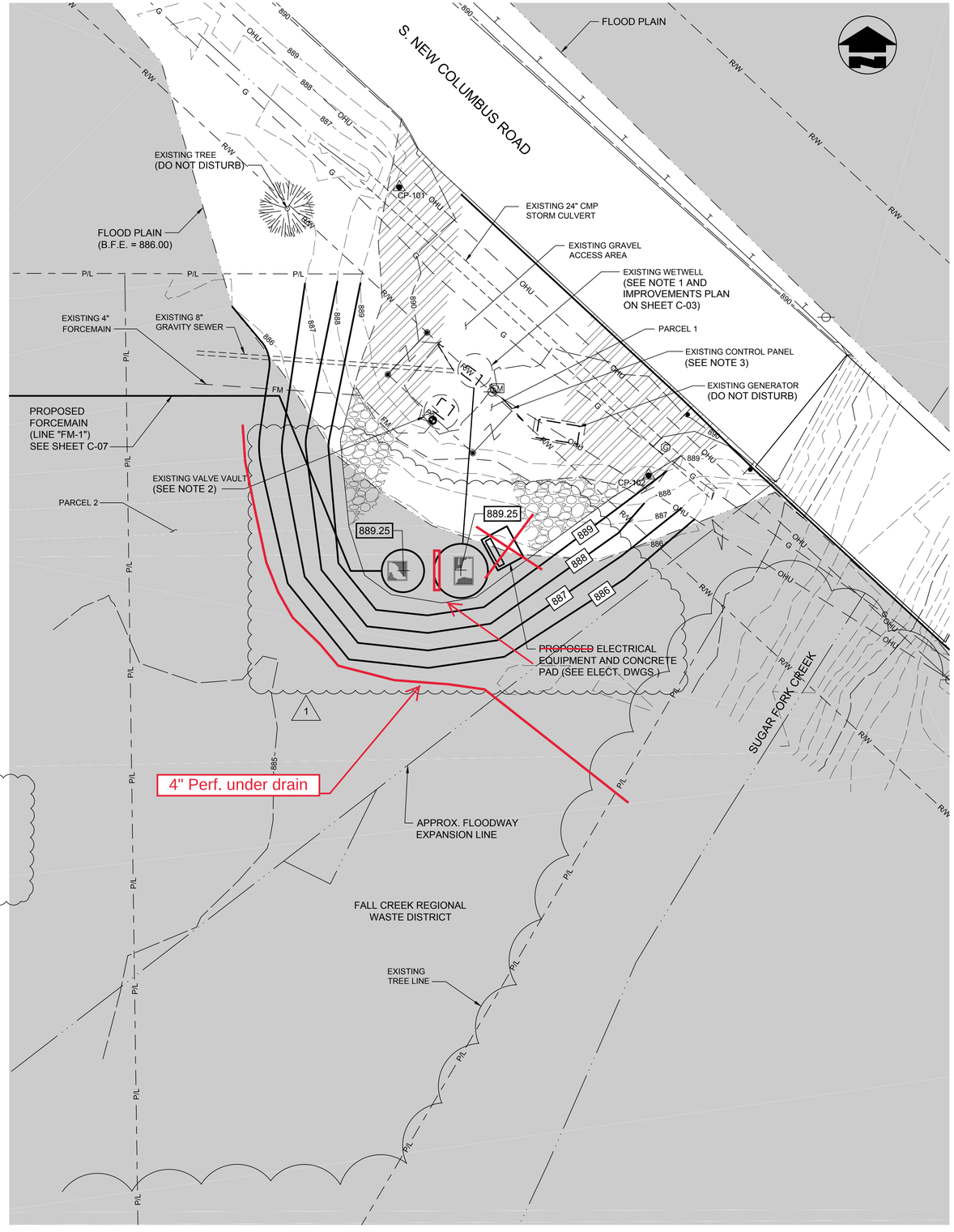
SURFACE LEGEND

- EXISTING FLOODPLAIN AREA
- EXISTING GRAVEL DRIVE AREA
- PROPOSED ADDITIONAL GRAVEL DRIVE AREA



1 LIFT STATION SITE PLAN

SCALE: 1"=10'-0"

0 10' 20'

PLOTTED BY: jjohnson

PRINTED: 1/31/2018 @ 8:41AM

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SITE PLAN

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS

FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
GWL	JAJ	JPT	GWL

REVISIONS

NO.	DESCRIPTION	DATE:	BY
1	RELOCATE PROPOSED LIFT STATION	1/2018	GWL

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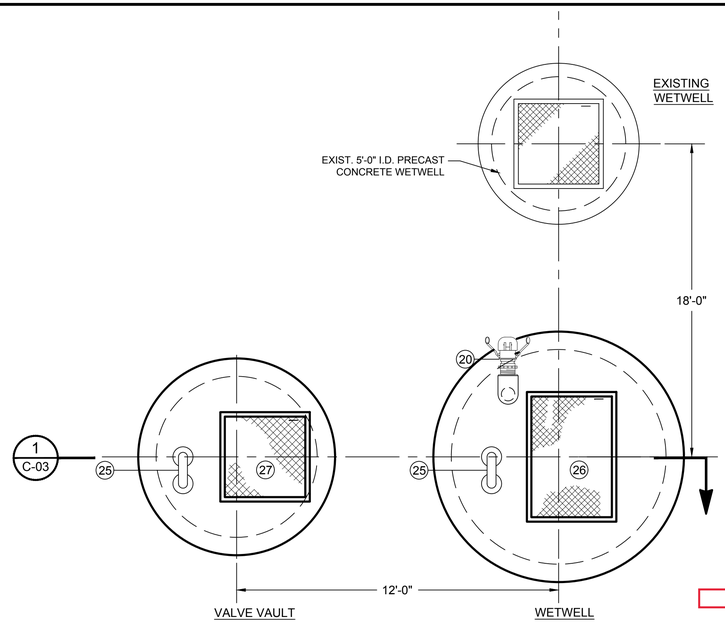
SCALE: 1"=10'

SHEET NO. C-02



UPPER IMPROVEMENTS PLAN

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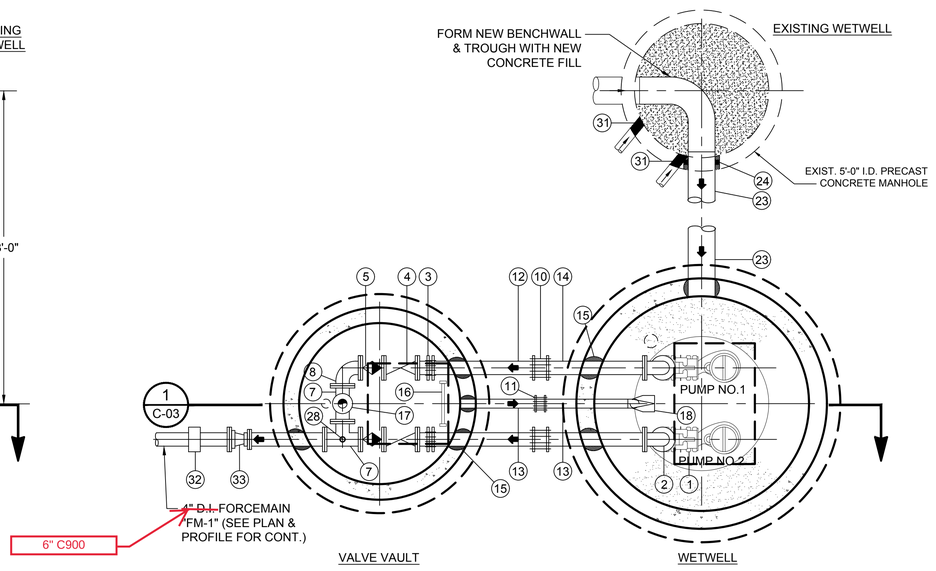
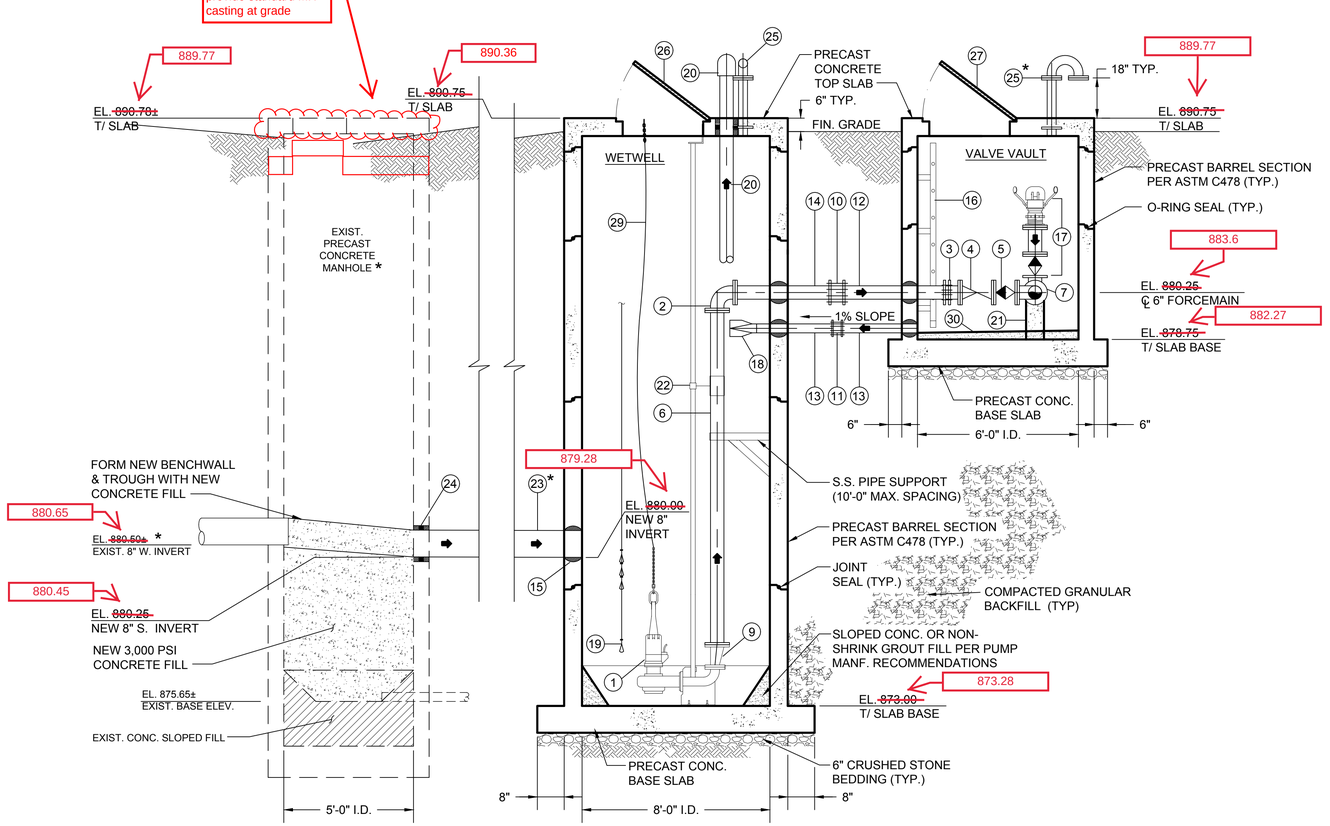


LOWER IMPROVEMENTS PLAN

NOT TO SCALE



1 SECTION

NOT TO SCALE

NOTES

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PUMP/GUIDE RAIL LOCATION WITH RESPECT TO THE ACCESS HATCH OPENING AND TO ENSURE THE HATCH IS OF ADEQUATE SIZE TO ALLOW FOR THE PROPER REMOVAL OF THE PUMP ASSEMBLY.
2. VENT SHALL BE COMPRISED OF (1) 4" FLG. D.I. RETURN BEND ATTACHED TO 4" FLG. X P.E. D.I. WALL PIPE WITH COLLAR CAST IN TOP SLAB. OPEN END OF RETURN BEND SHALL EXTEND 18" ABOVE TOP OF SLAB. AND RECEIVE ¼" BRONZE SCREEN ATTACHED BY ½" FLG. FILLER. VENT ASSEMBLY SHALL NOT CONFLICT WITH HATCH IN 90° OPEN POSITION.
3. PUMP BYPASS CONNECTION SHALL CONSIST OF 6" SCH. 80 PVC 90° BEND WITH 6" S.S. FEMALE QUICK-CONNECT "CAM-LOCK" FITTING & CAP ATTACHED TO 6" SCH. 80 PVC PIPE - CORE DRILL, LINK SEAL & NON-SHRINK GROUT FLUSH. EXTEND PIPE DOWN TO 2 FT. ABOVE BOTTOM SLAB; PROVIDE S.S. PIPE SUPPORTS PER SPECS. BYPASS ASSEMBLY SHALL NOT CONFLICT WITH HATCH IN 90° OPEN POSITION.
4. BYPASS DISCHARGE CONNECTION SHALL CONSIST OF 4" FLG. PLUG VALVE, D.I. PIPE (12" LONG), AND 4" S.S. FEMALE QUICK-CONNECT "CAM-LOCK" FITTING & CAP INSTALLED IN VERTICAL POSITION.

KEYNOTES

1	SUBMERSIBLE RAW SEWAGE PUMP (TYP.)
2	4" FLG. D.I. 90° BEND (TYP.)
3	4" FLG. COUPLING ADAPTER (TYP.)
4	4" FLG. SWING CHECK VALVE (TYP.)
5	4" FLG. PLUG VALVE (TYP.)
6	4" FLG. D.I. PIPE (TYP.)
7	4"X4" FLG. D.I. TEE (TYP.)
8	4" FLG. D.I. 90° BEND
9	FLG. D.I. ECCENTRIC REDUCER (IF NEEDED)
10	4" FLEX. COUPLING
11	4" FLEX. COUPLING
12	4" D.I. PIPE; PE X PE
13	4" D.I. PIPE; PE X PE
14	4" D.I. PIPE; FLG. X PE
15	PIPE TO MANHOLE CONNECTOR PER SPECS (TYP.)
16	ALUM. ACCESS LADDER WITH SAFETY EXTENSION POST
17	DISCHARGE BYPASS CONNECTION (SEE NOTE 4)
18	4" SLIP-ON ELASTOMERIC CHECK VALVE
19	FLOAT LEVEL SENSORS (SEE ELECT. DRAWINGS)
20	PUMP BYPASS CONNECTION (SEE NOTE 3)
21	CONCRETE PIPE SUPPORT
22	S.S. GUIDE RAIL SUPPORT; SPACING PER PUMP MANF.
23	8" PVC SDR 26 GRAVITY SEWER
24	CORE DRILL, LINK SEAL AND NON-SHRINK GROUT FLUSH
25	4" VENT ASSEMBLY (SEE NOTE 2)
26	3'-0" X 4'-6" ALUM. ACCESS HATCH W/ SAFETY GRATING (SEE NOTE 1)
27	3'-0" X 3'-0" ALUM. ACCESS HATCH W/ SAFETY GRATING
28	PRESSURE GAUGE
29	S.S. LIFT CHAIN TO TOP OF WETWELL
30	SLOPED CONC. OR NON-SHRINK GROUT FILL (MIN. ¼" PER FOOT TO DRAIN)
31	SEAL EXISTING PIPE OPENINGS WITH NON-SHRINK GROUT.
32	TRANSITION COUPLING TO FORCEMAIN
33	6"X4" D.I. M.J. REDUCER
*	SHOWN OUT OF SECTION

PUMP DATA TABLE

DESCRIPTION	VALUE
PUMP TYPE	NON-CLOG SUBMERSIBLE
MANUFACTURER	HYDROMATIC; OR EQUAL
MODEL NUMBER	S4M
IMPELLER SIZE (IN.)	7.5
DESIGN CAPACITY (GPM)	185
MAX. STATIC HEAD (FT.)	28 +/-
TOTAL DYNAMIC HEAD (FT.) **	47
PUMP DISCHARGE FLG. CONNECTION (IN.)	4 X 4
MOTOR HORSEPOWER (HP)	7.5
PUMP SPEED (RPM)	1,750
HIGH WATER ALARM ELEVATION	879.50
LAG PUMP ON ELEVATION	878.00
LEAD PUMP ON ELEVATION	876.93
PUMPS OFF ELEVATION ***	875.33
VOLTS/PHASE/HERTZ	230 / 3 / 60
WETWELL HAZARDOUS CLASSIFICATION	CLASS 1, DIV. 1, GROUPS C & D

** BASED ON C=120 AT MAX. STATIC HEAD CONDITIONS.

*** COORDINATE/VERIFY WITH PUMP MANF. RECOMMENDATIONS; ADJUST REMAINING FLOATS TO MAINTAIN ELEVATION DIFFERENCE SHOWN IN SCHEDULE.

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LIFT STATION PLANS AND SECTION

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS

FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
GWL	JAJ	JPT	GWL

REVISIONS

NO.	DESCRIPTION	DATE	BY
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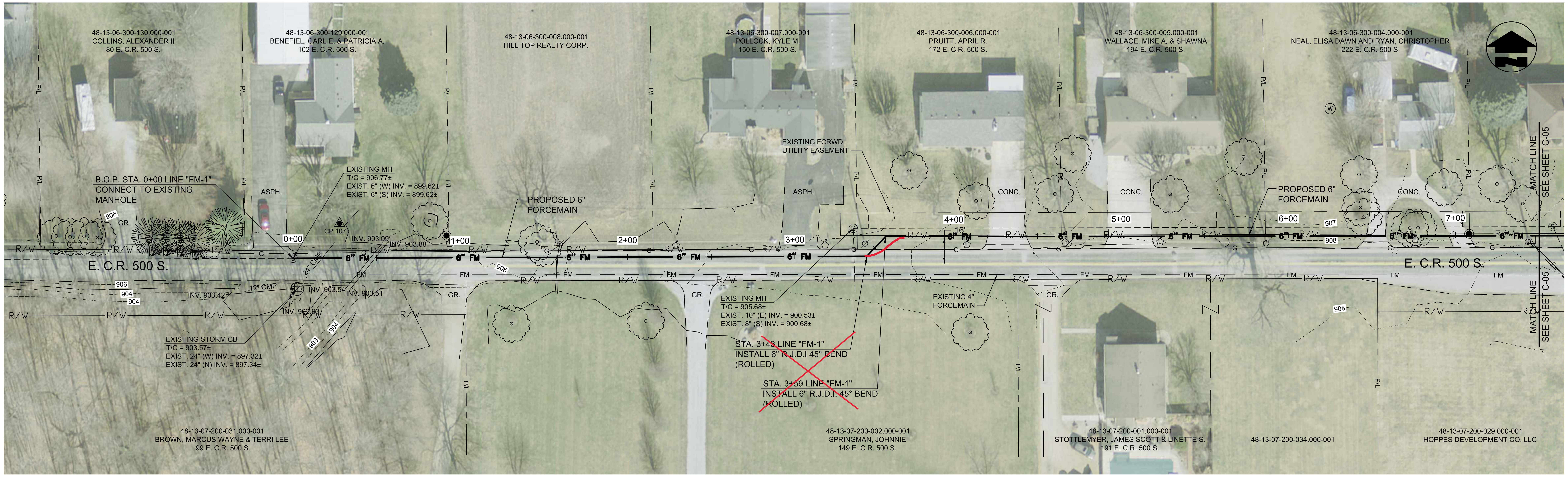
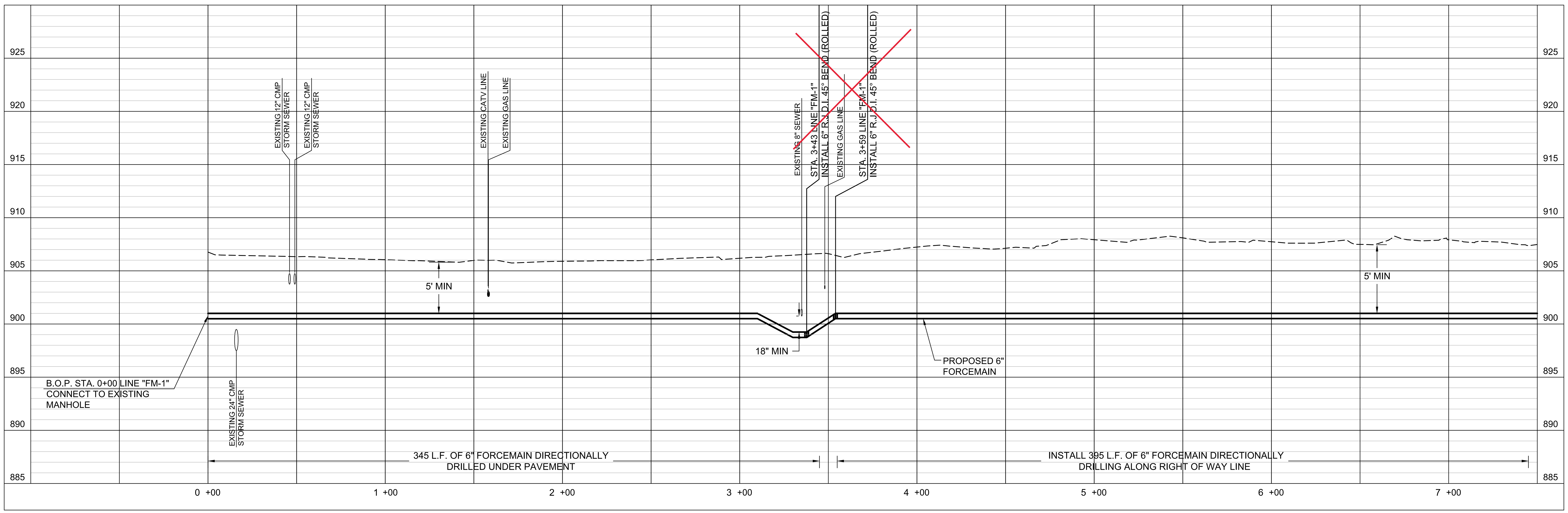


PLAN VIEW - B.O.P. STA. 0+00 TO STA. 7+50 LINE "FM-1"



PROFILE VIEW - B.O.P. STA. 0+00 TO STA. 7+50 LINE "FM-1"

NOTE:
1. INSTALL FORCEMAIN FROM STA. 0+00 TO 21+50
AT CONSISTENT TOP OF PIPE ELEVATION = 901.00
TO AVOID CREATING HIGH POINTS

SCALE: 1"=30' HORIZONTAL

SCALE: 1"=5' VERTICAL

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PLAN AND PROFILE

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED: GWL
DRAWN: JAJ
REVIEWED: JPT
APPROVED: GWL

REVISIONS

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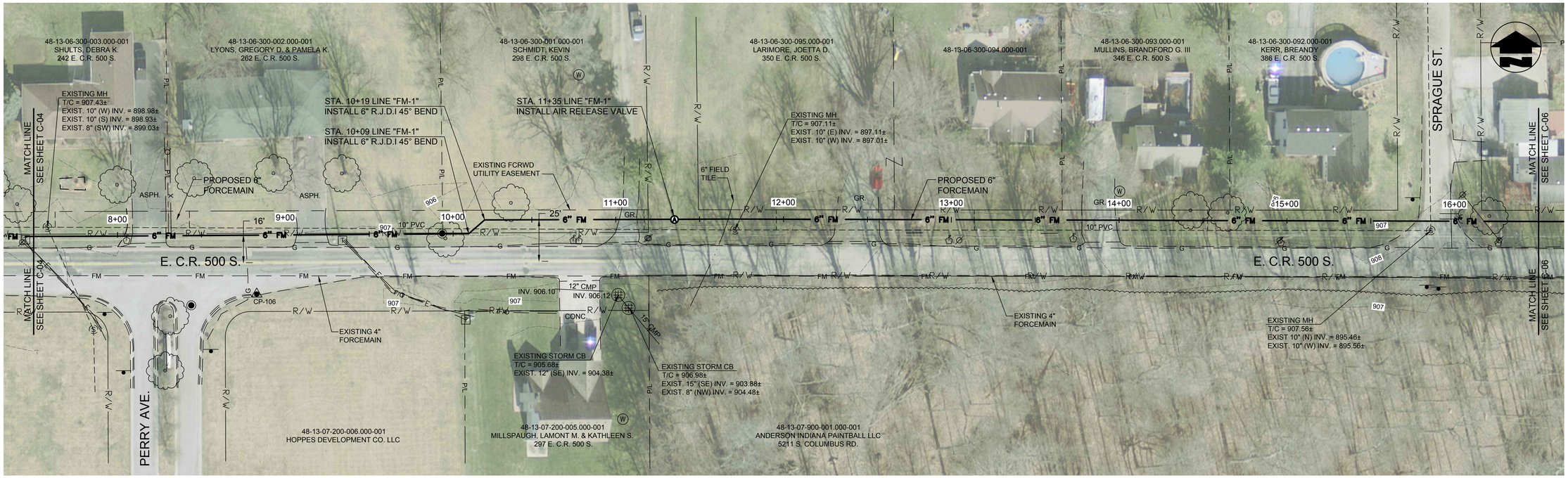
SCALE CHECK

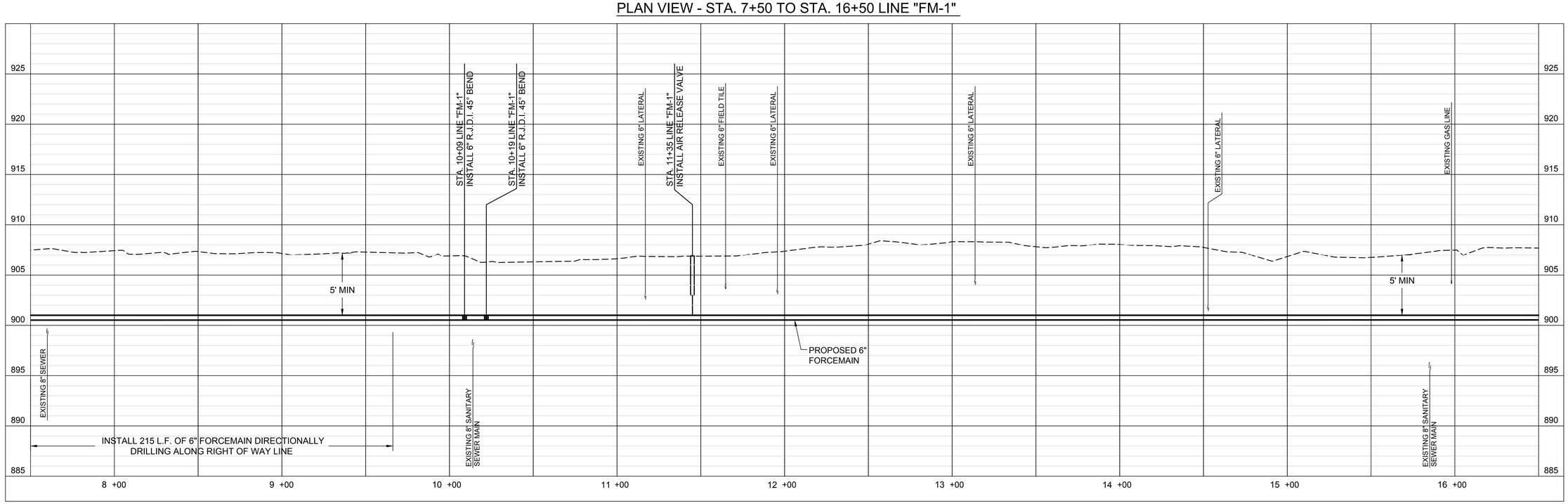
DATE: NOVEMBER 2017

SCALE: H: 1"=30' V: 1"=5'

SHEET NO. C-04



PLAN VIEW - STA. 7+50 TO STA. 16+50 LINE "FM-1"



PROFILE VIEW - STA. 7+50 TO STA. 16+50 LINE "FM-1"

NOTE:
1. INSTALL FORCEMAIN FROM STA. 0+00 TO 21+50 AT CONSISTENT TOP OF PIPE ELEVATION = 901.00 TO AVOID CREATING HIGH POINTS

SCALE: 1"=30' HORIZONTAL (0, 30, 60)

SCALE: 1"=5' VERTICAL (5, 0)

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PLAN AND PROFILE

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
GWL	JAJ	JPT	GWL

REVISIONS

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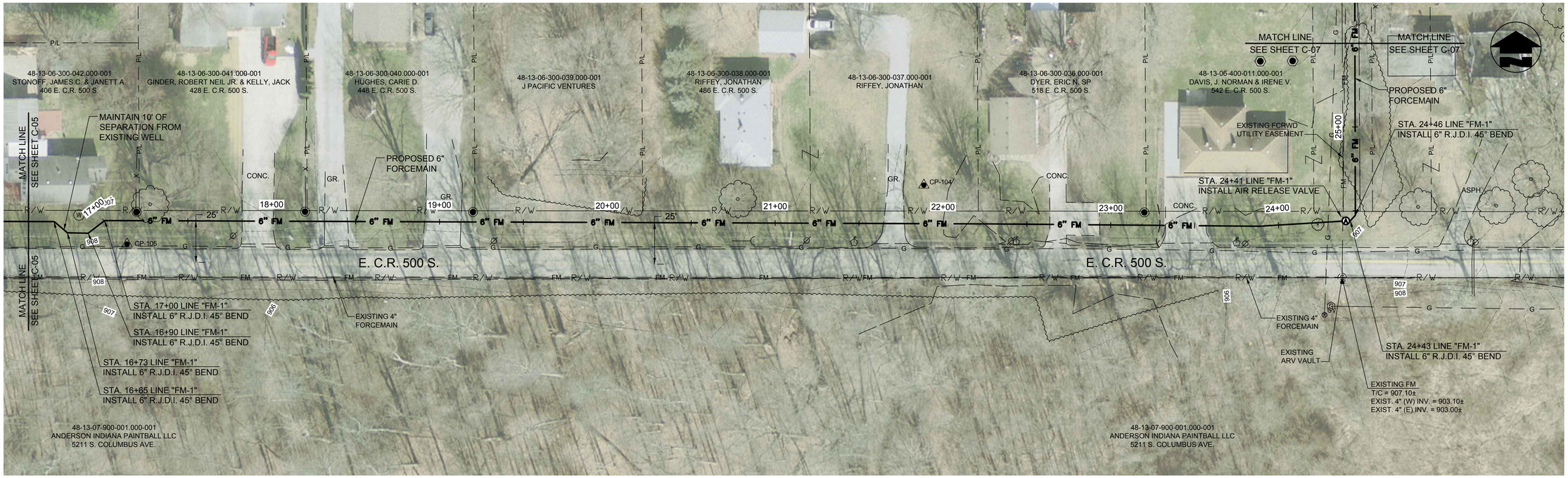
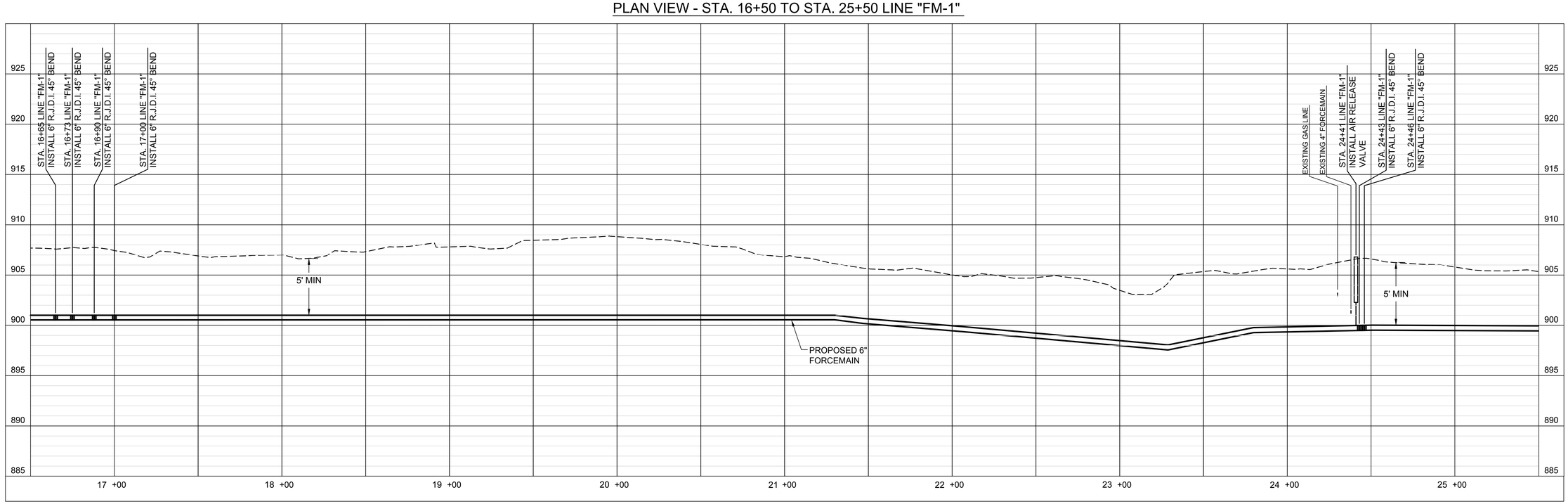


PLAN VIEW - STA. 16+50 TO STA. 25+50 LINE "FM-1"



PROFILE VIEW - STA. 16+50 TO STA. 25+50 LINE "FM-1"

NOTE:
1. INSTALL FORCEMAIN FROM STA. 0+00 TO 21+50 AT CONSISTENT TOP OF PIPE ELEVATION = 901.00 TO AVOID CREATING HIGH POINTS

0 30 60
SCALE: 1"=30' HORIZONTAL

5 0
SCALE: 1"=5' VERTICAL

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PLAN AND PROFILE

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED: GWL
DRAWN: JAJ
REVIEWED: JPT
APPROVED: GWL

REVISIONS

NO	DESCRIPTION	DATE	BY

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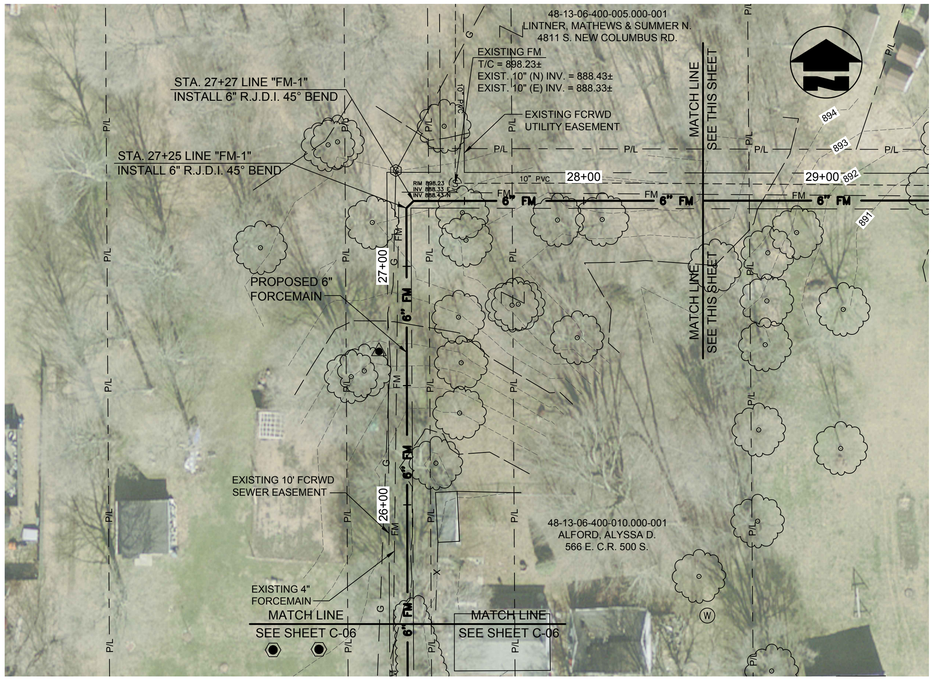
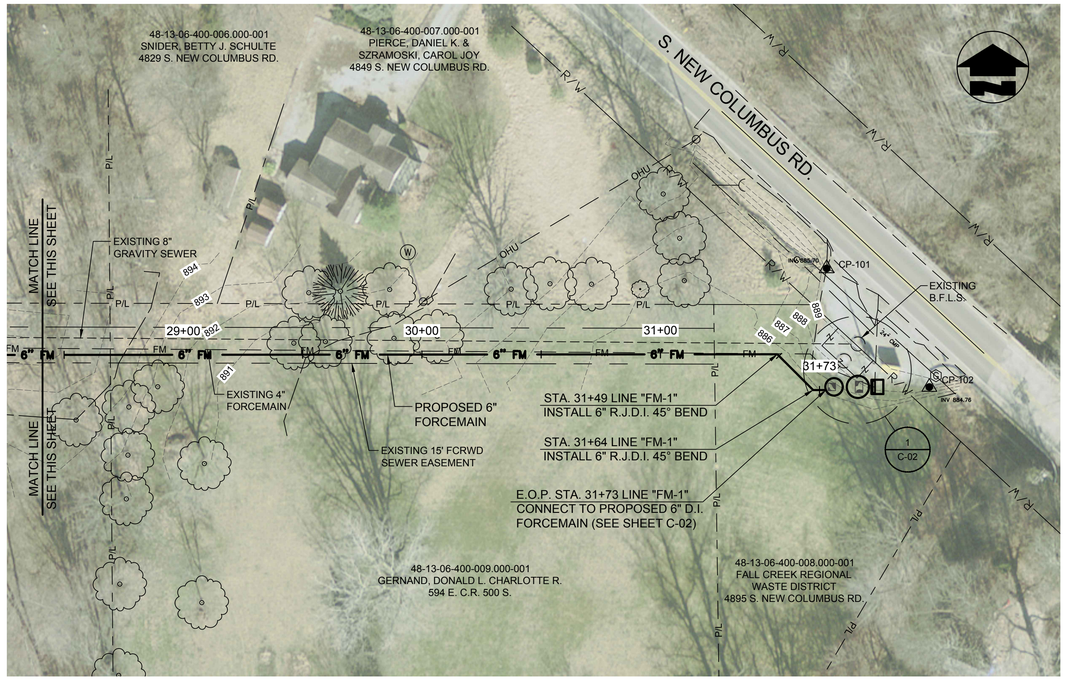
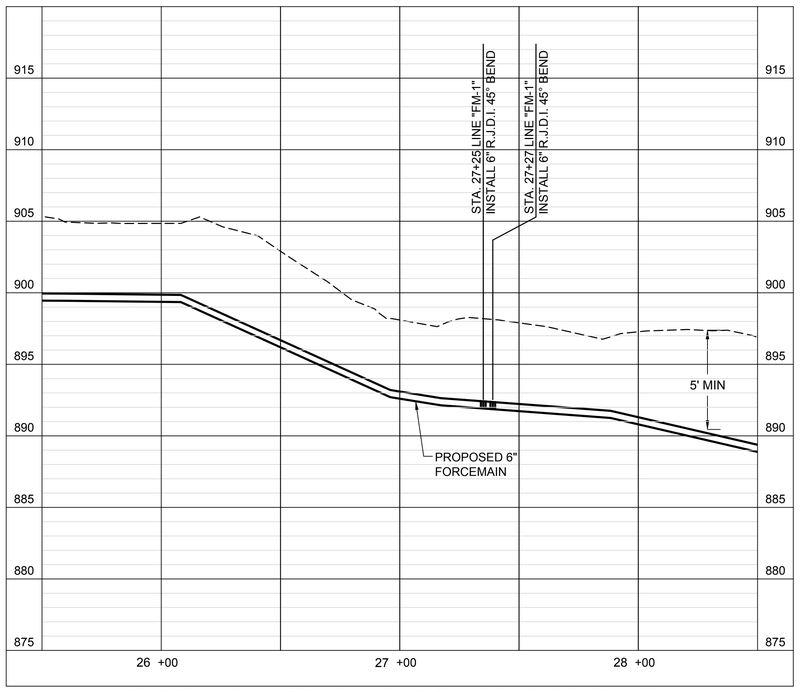


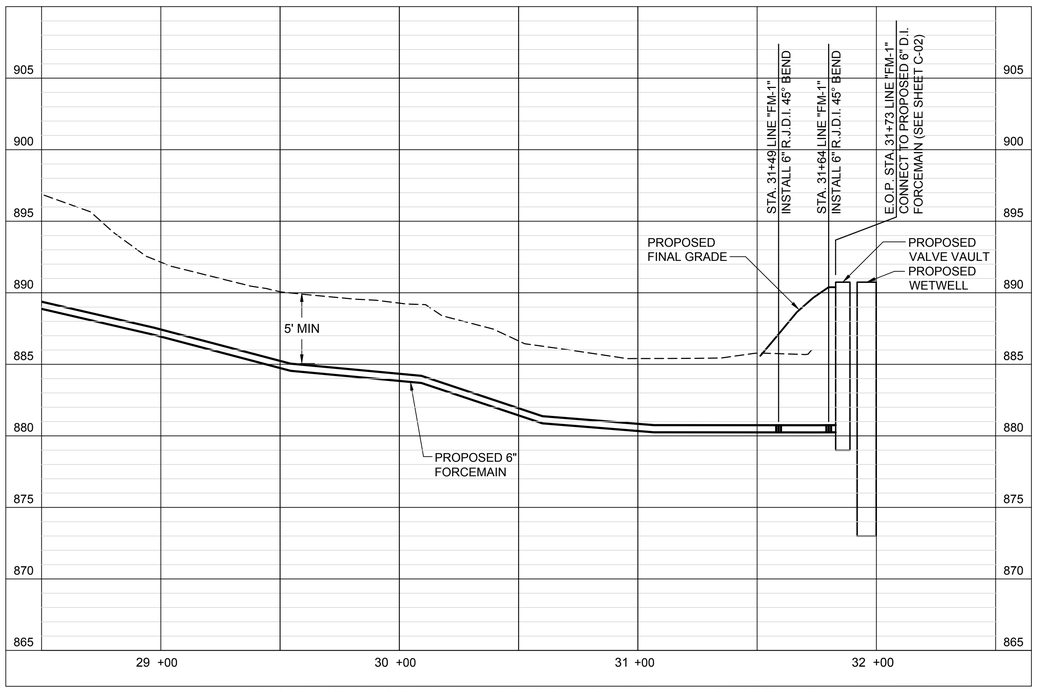
PLAN VIEW - STA. 25+50 TO E.O.P. STA. 28+50 LINE "FM-1"



PLAN VIEW - STA. 28+50 TO E.O.P. STA. 31+73 LINE "FM-1"



PROFILE VIEW - STA. 25+50 TO STA. 28+50 LINE "FM-1"



PROFILE VIEW - STA. 28+50 TO E.O.P. STA. 31+73 LINE "FM-1"

0 30 60
SCALE: 1"=30'
HORIZONTAL

5 0
SCALE: 1"=5'
VERTICAL

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GRW PROJECT NO. 4625
CLIENT PROJECT NO. --

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PLAN AND PROFILE

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	GWL
DRAWN:	JAJ
REVIEWED:	JPT
APPROVED:	GWL

REVISIONS

NO	DESCRIPTION	DATE	BY

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

DATE:
NOVEMBER 2017

SCALE:
H: 1"=30' V: 1"=5'

SHEET NO.
C-07

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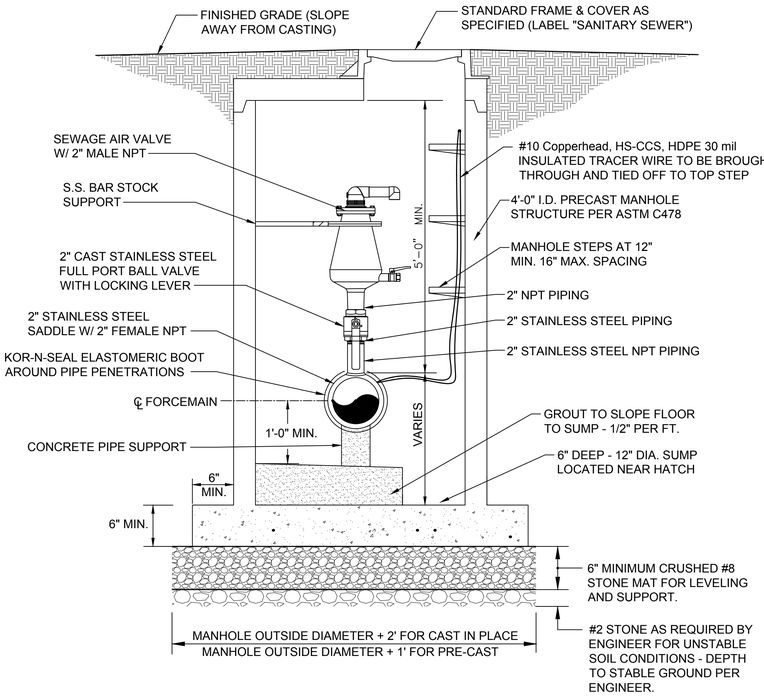
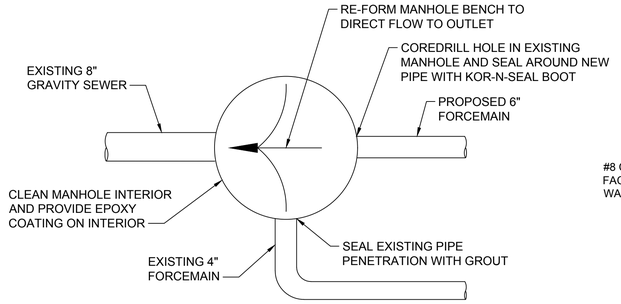


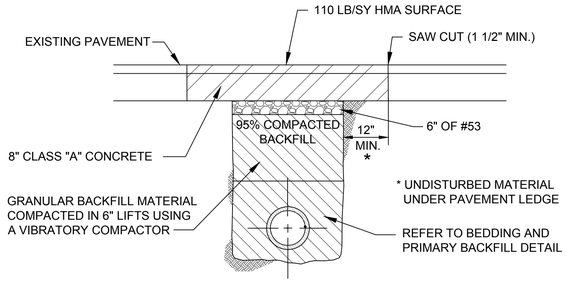
CLOSED BOTTOM AIR RELEASE VALVE VAULT (PIPE 3" AND LARGER)

NOT TO SCALE



CONNECTION MANHOLE DETAIL

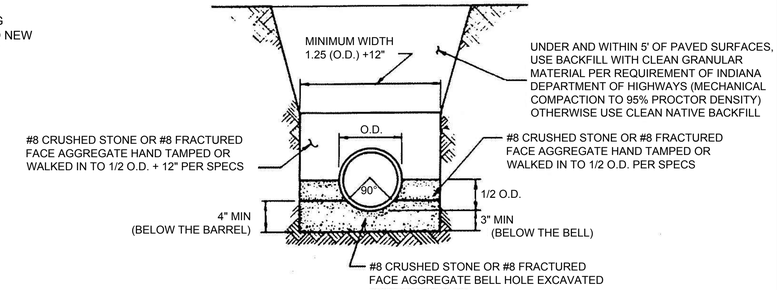
NOT TO SCALE



* TO BE USED ON PENDELETON AVENUE AND STATE STREET

PRIMARY ROADWAY PATCHING - METHOD "C"

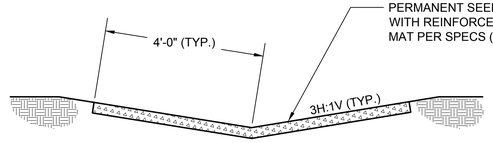
NOT TO SCALE



PIPE SIZE	8" TO 15"	18" & OVER
BEDDING BELOW THE PIPE BARREL	O.D. / 4 MIN. = 4"	O.D. / 4 MAX. = 8"

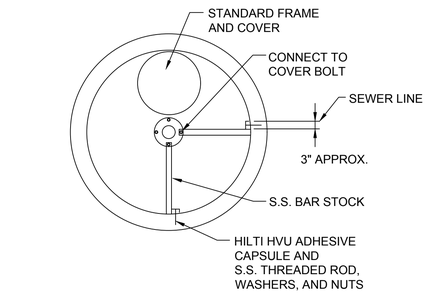
FLEXIBLE PIPE BEDDING AND PRIMARY BACKFILL DETAIL - PVC AND HDPE PIPE

NOT TO SCALE



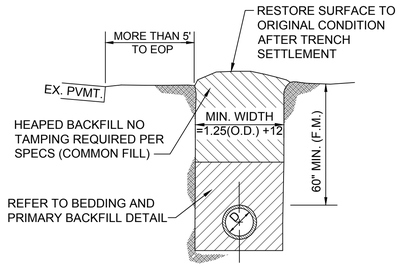
DETAIL - V-DITCH & SWALE

NOT TO SCALE



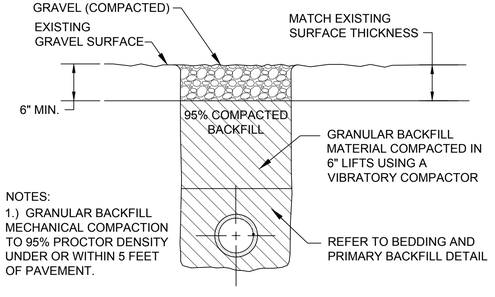
AIR RELEASE VALVE PLAN VIEW

NOT TO SCALE



OPEN TERRAIN - METHOD "A"

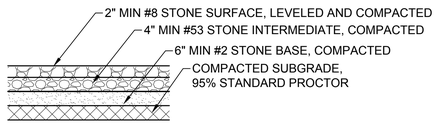
NOT TO SCALE



NOTES:
1.) GRANULAR BACKFILL MECHANICAL COMPACTION TO 95% PROCTOR DENSITY UNDER OR WITHIN 5 FEET OF PAVEMENT.

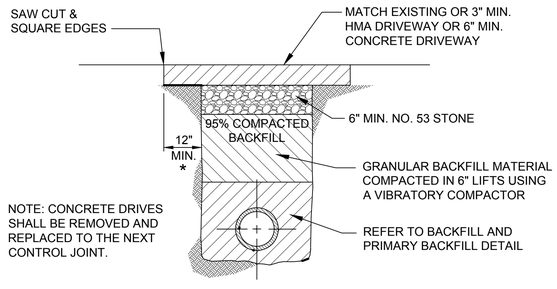
GRAVEL DRIVEWAYS - METHOD "B"

NOT TO SCALE



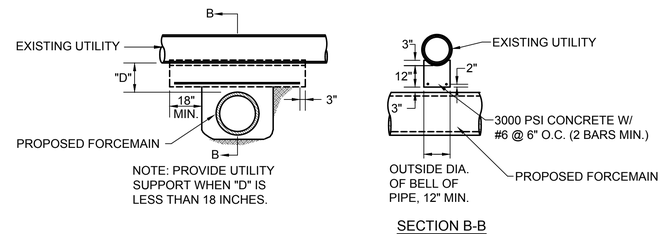
GRAVEL AREA DETAIL AROUND LIFT STATION

NOT TO SCALE



PAVED DRIVEWAY - METHOD "D1"

NOT TO SCALE



NOTES:
1. PROVIDE UTILITY SUPPORT WHEN "D" IS LESS THAN 12 INCHES.
2. EXISTING UTILITIES SHALL MEAN: STEEL GAS MAINS, WATER MAINS, ELECTRIC/TELEPHONE CONDUITS, FIBER OPTIC BANKS, SANITARY SEWER PIPING, STORM SEWER PIPING, ETC.

DETAIL - UTILITY CROSSING (BELOW)

NOT TO SCALE

AIR RELEASE VALVE VAULT NOTES:

1. AIR RELEASE VALVE VAULT SHALL BE LOCATED AT HIGH POINTS ALONG FORCEMAINS. EXACT LOCATION TO BE FIELD DETERMINED.
2. CONTRACTOR SHALL PROVIDE ALL NECESSARY ADAPTER FITTINGS, SADDLES, ETC. IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS TO CONNECT TO NPT FITTINGS. CONTRACTOR SHALL SUBMIT CONNECTION SHOP DRAWINGS FOR ENGINEER'S REVIEW & APPROVAL.
3. CONTRACTOR IS RESPONSIBLE FOR DETERMINING VALVE VAULT OVERALL HEIGHT (MIN. 5'-0" FROM TOP OF FORCEMAIN) TO FACILITATE COMPLETE EQUIPMENT INSTALLATION.
4. AIR RELEASE VALVE SHALL BE ANCHORED TO VAULT WALL WITH (2) 2"x½" S.S. PIECES OF BAR STOCK PERPENDICULAR TO EACH OTHER TO PREVENT MOVEMENT OF VALVE PARALLEL AND PERPENDICULAR TO FORCEMAIN. S.S. BAR STOCK SHALL BE CONNECTED TO AIR RELEASE VALVE WITH COVER BOLT AND TO THE MANHOLE WALL USING HILTI HVU ADHESIVE CAPSULE OR APPROVED EQUAL WITH ALL S.S. COMPONENTS INCLUDING THREADED ROD, WASHERS AND NUTS. MINIMUM EMBEDMENT INTO CONCRETE SHALL BE 4". CONTRACTOR MAY SUBMIT ALTERNATE VALVE STABILAZATION PLAN WITH SHOP DRAWINGS FOR ENGINEER'S REVIEW AND APPROVAL.

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STANDARD DETAILS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
GWL	JAJ	JPT	GWL

REVISIONS

NO.	DESCRIPTION	DATE	BY
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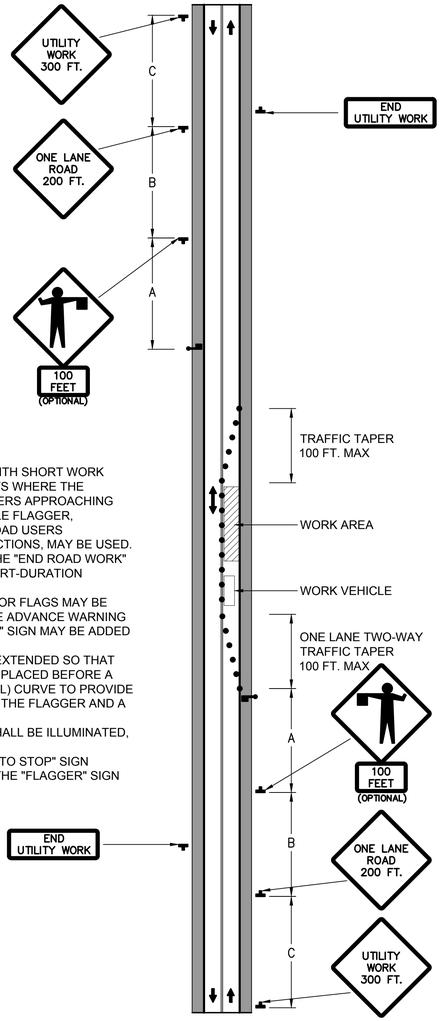


NOTES:

1. FOR LOW-VOLUME SITUATIONS WITH SHORT WORK ZONES ON STRAIGHT ROADWAYS WHERE THE FLAGGER IS VISIBLE TO ROAD USERS APPROACHING FROM BOTH DIRECTIONS, A SINGLE FLAGGER, POSITIONED TO BE VISIBLE TO ROAD USERS APPROACHING FROM BOTH DIRECTIONS, MAY BE USED.
2. THE "ROAD WORK AHEAD" AND THE "END ROAD WORK" SIGNS MAY BE OMITTED FOR SHORT-DURATION OPERATIONS.
3. FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED TO CALL ATTENTION TO THE ADVANCE WARNING SIGNS. A "BE PREPARED TO STOP" SIGN MAY BE ADDED TO THE SIGN SERIES.
4. THE BUFFER SPACE SHOULD BE EXTENDED SO THAT THE TWO-WAY TRAFFIC TAPER IS PLACED BEFORE A HORIZONTAL (OR CREST VERTICAL) CURVE TO PROVIDE ADEQUATE SIGHT DISTANCE FOR THE FLAGGER AND A QUEUE OF STOPPED VEHICLES.
5. AT NIGHT, FLAGGER STATIONS SHALL BE ILLUMINATED, EXCEPT IN EMERGENCIES.
6. WHEN USED, THE "BE PREPARED TO STOP" SIGN SHOULD BE LOCATED BETWEEN THE "FLAGGER" SIGN AND THE "ONE LANE ROAD" SIGN.

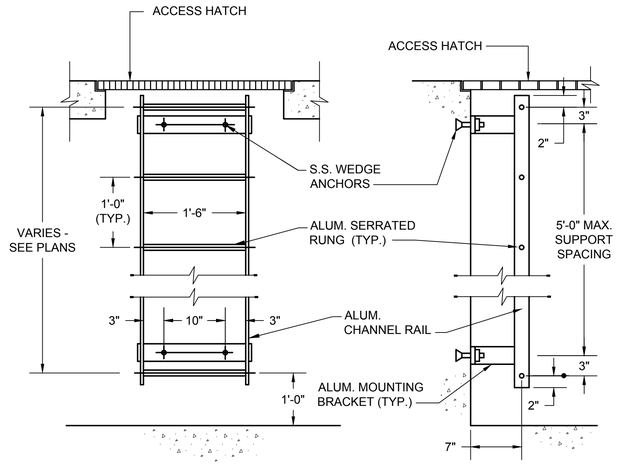
FOR LOW SPEED URBAN CONDITIONS

A=100 FT.
B=100 FT.
C=100 FT.

DETAIL - TRAFFIC CONTROL PLAN

NOT TO SCALE

NOTE: TRAFFIC CONTROL PLANS ARE GUIDELINES ONLY. ALL TRAFFIC CONTROL PLANS AND LANE CLOSURES MUST BE APPROVED BY THE OWNER AND ENGINEER.

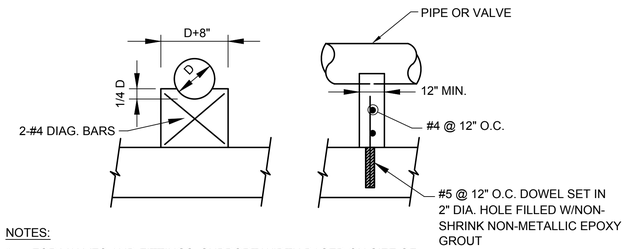


NOTE:

LADDER SHALL BE SUPPLIED WITH ALUM. LADDER SAFETY EXTENSION

DETAIL - ACCESS LADDER

NOT TO SCALE

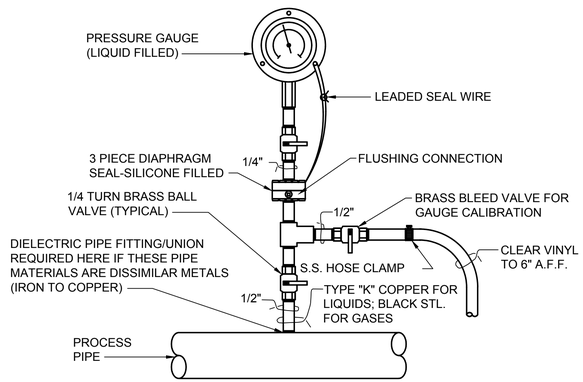


NOTES:

1. FOR VALVES AND FITTINGS, SUPPORT WIDTH BASED ON SIZE OF ITEM BEING SUPPORTED AS APPROVED BY THE ENGINEER. FOR WIDTHS GREATER THAN 12" PROVIDE TWO ROWS OF REINFORCING STEEL.
2. COAT PIPE/VALVE WITH BOND BREAKER WHERE IT COMES IN CONTACT WITH CONCRETE

DETAIL - VALVE & PIPE SUPPORT

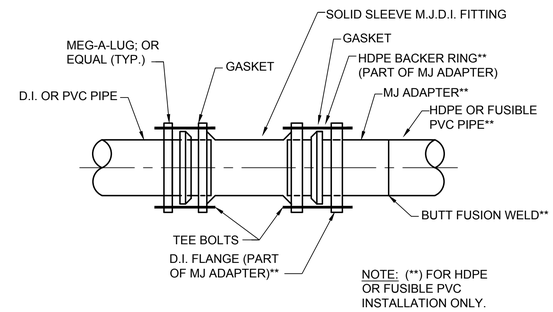
NOT TO SCALE



NOTE: A SADDLE IS REQUIRED FOR ALL TYPES OF PLASTIC PIPE OR THIN WALL DUCTILE IRON PIPE.

DETAIL - PRESSURE GAUGE

NOT TO SCALE



NOTE: (**) FOR HDPE OR FUSIBLE PVC INSTALLATION ONLY.

DETAIL - RESTRAINED PIPE TRANSITION COUPLING

NOT TO SCALE

LENGTH IN FT. TO BE RESTRAINED ON EACH SIDE OF FITTING FOR 6" PVC PIPE					
TYPE OF BEND	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	DEADENDS
HORIZ. BEND	12	5	3	2	34
VERT. BEND	---	14 UPPER 4 LOWER	7 UPPER 2 LOWER	4 UPPER 1 LOWER	

RESTRAINED JOINT NOTES

1. CONTRACTOR SHALL INSTALL RJDI FITTINGS FOR ALL VERTICAL AND HORIZONTAL BENDS.
2. RESTRAINED LENGTHS WERE CALCULATED ASSUMING A 1.5 FACTOR OF SAFETY, TYPE 5 TRENCH CONDITIONS, "SM" SOIL CLASSIFICATION, 5 FT. MIN. DEPTH OF BURY, AND 150 PSI HYDROSTATIC TEST PRESSURE (SOURCE: EBAA IRON RESTRAINT DESIGN CALCULATION SOFTWARE v.6.0).
3. ALL FORCEMAIN APPURTENANCES WITHIN RJDI LIMITS MUST BE RESTRAINED AT EACH JOINT.

RESTRAINED JOINT CALCULATIONS

NOT TO SCALE

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STANDARD DETAILS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS

FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
GWL	JAJ	JPT	GWL

REVISIONS

NO.	DESCRIPTION	DATE	BY
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PLOTTED BY: jjohnson

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EROSION CONTROL NOTES

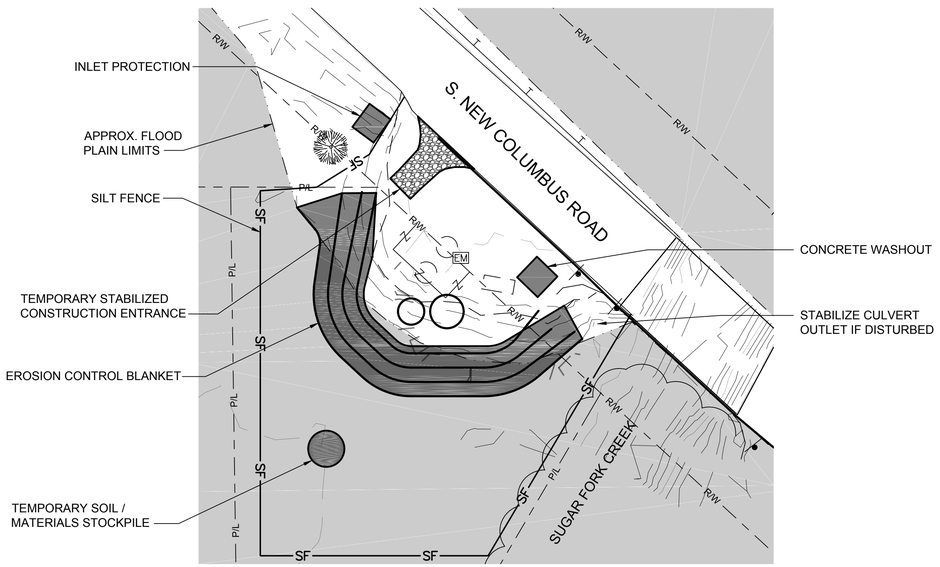
1. THE IDEM RULE 5 PERMIT REQUIRES THAT THE PERMITTEE SHALL MINIMIZE DISTURBANCE AND THE PERIOD OF TIME THAT THE DISTURBED AREA IS WITHOUT STABILIZATION PRACTICES.
2. FINAL STABILIZATION SHALL BEGIN WITHIN 14 DAYS ON AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE BEEN SUSPENDED FOR MORE THAN 180 DAYS. WHEN SNOW COVER CAUSES DELAYS, STABILIZATION SHALL BEGIN AS SOON AS POSSIBLE. STABILIZATION PRACTICES INCLUDE SEEDING, MULCHING, PLACING SOD. PLANTING TREES OR SHRUBS, AND USING GEOTEXTILE FABRICS AND OTHER APPROPRIATE MEASURES. SEEDING RATES, DATES AND MATERIALS MAY BE OBTAINED FROM THE LOCAL NATURAL RESOURCES CONSERVATION SERVICE FIELD OFFICE.
3. FOR ALL CRITICAL AREAS (WITHIN 25' OF A STREAM), SOIL STABILIZATION TECHNIQUES SHALL BE IMPLEMENTED WITHIN 24 HOURS OR AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OR DISTURBANCE. TEMPORARY STABILIZATION PRACTICES SHALL BE INITIATED WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION ACTIVITIES.
4. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE DEVELOPED AND IMPLEMENTED AS OUTLINED IN THE IDEM RULE 5 STORMWATER PERMIT REQUIREMENTS, IF NOT ALREADY INCLUDED IN THE SPECIFICATIONS. FOR THE LIFT STATION, SITE EROSION CONTROL MEASURES ARE SHOWN BELOW. FOR THE FORCE MAIN INSTALLATION, THE CONTRACTOR SHALL IMPLEMENT MEASURES AS NEEDED DEPENDING ON CONSTRUCTION SEQUENCE AND METHOD.
5. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE PROPERLY DESIGNED.
6. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE INSTALLED DURING INITIAL GRADING AT LOCATIONS THAT WILL PROVIDE THE BEST PROTECTION FROM OFF-SITE DAMAGES.
7. ALL SLOPES EXCEEDING 3:1 SHALL HAVE TURF REPLACEMENT MAT INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
8. INLET PROTECTION IS REQUIRED TO MINIMIZE DISCHARGE OF SEDIMENT LADEN WATER.
9. SITE PERIMETER CONTROLS ARE REQUIRED AND SHALL BE INSTALLED TO PREVENT THE DEPOSIT OF SOIL AND DEBRIS FROM GRADED SURFACES ONTO PUBLIC STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.
10. EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROLS AND REVISE THE CONTROLS AS NEEDED.

INSPECTIONS AND MAINTENANCE

1. ALL EROSION CONTROL MEASURES, DISCHARGE LOCATIONS, VEHICLE EXITS, DISTURBED AREAS OF THE SITE, AND MATERIALS STORAGE AREAS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. EACH INSPECTION MUST BE DOCUMENTED IN ACCORDANCE WITH THE IDEM GENERAL PERMIT FOR STORMWATER POINT SOURCE DISCHARGES FROM CONSTRUCTION ACTIVITIES.
2. SEDIMENT ACCUMULATED AT THE SILT FENCES, INLET PROTECTION AREAS, AND OTHER SILT CHECK DEVICES SHOULD BE REMOVED NO LATER THAN WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
3. SEDIMENT MUST BE REMOVED FROM ANY SEDIMENT BASINS WHEN THE NO MORE THAN 1/3 OF THE VOLUME HAS BEEN FILLED WITH COLLECTED SEDIMENT.
4. ALL REQUIRED REPAIRS ARE TO BE MADE IMMEDIATELY.
5. REMOVED SEDIMENT MUST BE SPREAD AND VEGETATED OR OTHERWISE STABILIZED IN A MANNER THAT DOES NOT RESULT IN MUDDY RUNOFF TO NEARBY DITCHES AND WATERBODIES.
6. INSPECT THE CONSTRUCTION ENTRANCE DAILY TO ENSURE NO TRACKING OF DIRT ONTO LOCAL ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROAD MUST BE REMOVED IMMEDIATELY. SEE NOTE 3 FOR HANDLING OF REMOVED SEDIMENT.
7. MAINTAIN THE ENTRANCE AS NECESSARY TO PREVENT TRACKING OF DIRT.
8. UNTIL THE OWNER PERFORMS A FINAL INSPECTION AND THE LAND DISTURBING PERMIT IS CLOSED, THE PERSON RESPONSIBLE SHALL TAKE SUCH MEASURES AS ARE NECESSARY TO PREVENT EROSION OF GRADED STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.

SEQUENCE OF EROSION CONTROL PLAN ACTIVITIES

1. IDENTIFY AND FLAG OFF AREAS NOT TO BE DISTURBED AND/OR COMPACTED.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
3. INSTALL UPGRADIENT DIVERSION SWALES AND BERMS.
4. INSTALL SEDIMENT BARRIERS (SILT FENCES).
5. CONSTRUCT OTHER SWALES.
6. CONSTRUCT STORM CONVEYANCE SYSTEM (INLETS AND STORM SEWERS)
7. BEGIN CLEARING AND GRADING FOR THE ROADS, BUILDINGS, TANKS, OR PIPES.
8. STABILIZE BARE AREAS AFTER FINAL GRADE IS REACHED.
9. CONSTRUCT ROADS, BUILDINGS, TANKS, OR PIPES.
10. INSTALL LANDSCAPING.
11. DREDGE SEDIMENT BASIN AND INSTALL TEMPORARY EROSION CONTROL BLANKET ON ALL SLOPES.
12. REMOVE ALL CONTROLS ONCE THE SITE HAS BEEN FULLY STABILIZED.
13. FINAL INSPECTION FOR LAND DISTURBANCE PERMIT.
14. TEMPORARY DIVERSION DITCHES MAY BE REQUIRED DURING CONSTRUCTION TO MITIGATE EROSION OF THE DISTURBED CONSTRUCTION AREA, BY DIRECTING OFF-SITE DRAINAGE AROUND THE DISTURBANCE AREAS.



EROSION CONTROL LIFT STATION SITE

SCALE: 1"=20'-0" 0 20' 40'

LEGEND

— SF — SILT FENCE

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
PERMANENT SEEDING				*//////////////*								
DORMANT SEEDING	———										———	
TEMPORARY SEEDING				———					———			
SODDING **				*//////////////*								
MULCHING	———										———	

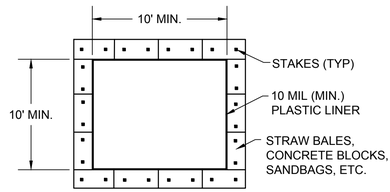
NOTE:
SEEDING TYPES AND MIXTURES SHALL BE PER INDIANA STORMWATER QUALITY MANUAL. NO TALL FESCUE SHALL BE USED IN FLOODPLAIN AREAS.

////// IRRIGATION NEEDED DURING JUNE, JULY, AND/OR AUGUST.

** IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.

SEASONAL SOIL PROTECTION CHART

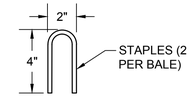
NOT TO SCALE



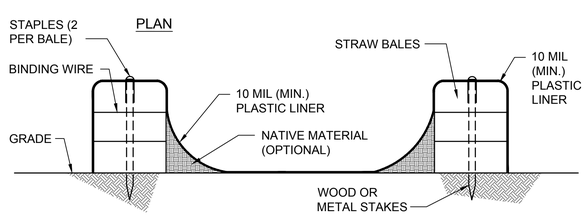
PLAN

NOTES:

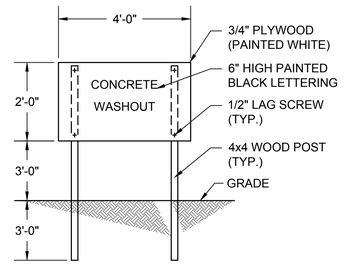
1. ACTUAL LAYOUT AND LOCATION TO BE DETERMINED IN FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.



STAPLE DETAIL



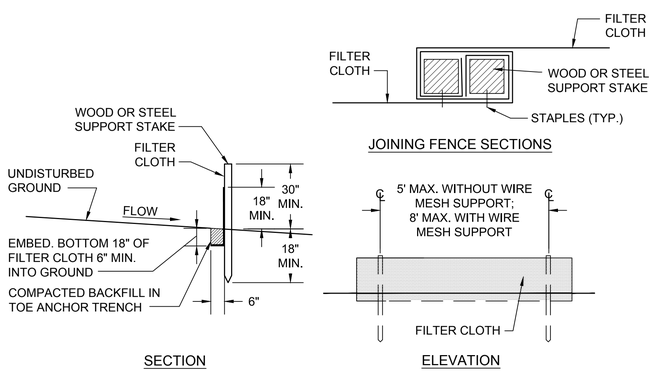
SECTION



SIGN DETAIL

CONCRETE WASHOUT DETAILS

NOT TO SCALE



STANDARD SILT FENCE REQUIREMENTS

NOTES:

1. GEOTEXTILE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER. WHEN JOINTS CANNOT BE AVOIDED, GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE AT LEAST 5 FEET IN LENGTH.
3. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE AND FABRIC.
4. WOOD POSTS SHALL BE 2 INCHES BY 2 INCHES OR EQUIVALENT. STEEL POSTS SHALL BE 1.33 LBS PER LINEAR FOOT.
5. IF REQUIRED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH IN LENGTH, WIRE TIES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
6. TURN SILT FENCE UP SLOPE AT ENDS.

FILTER FABRIC FENCE DETAILS

NOT TO SCALE

GEORGE W. LEWIS REGISTERED No. 10403303 STATE OF INDIANA PROFESSIONAL ENGINEER

GRW PROJECT NO. 4625
CLIENT PROJECT NO. --

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EROSION CONTROL DETAILS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
GWL	JAJ	JPT	GWL

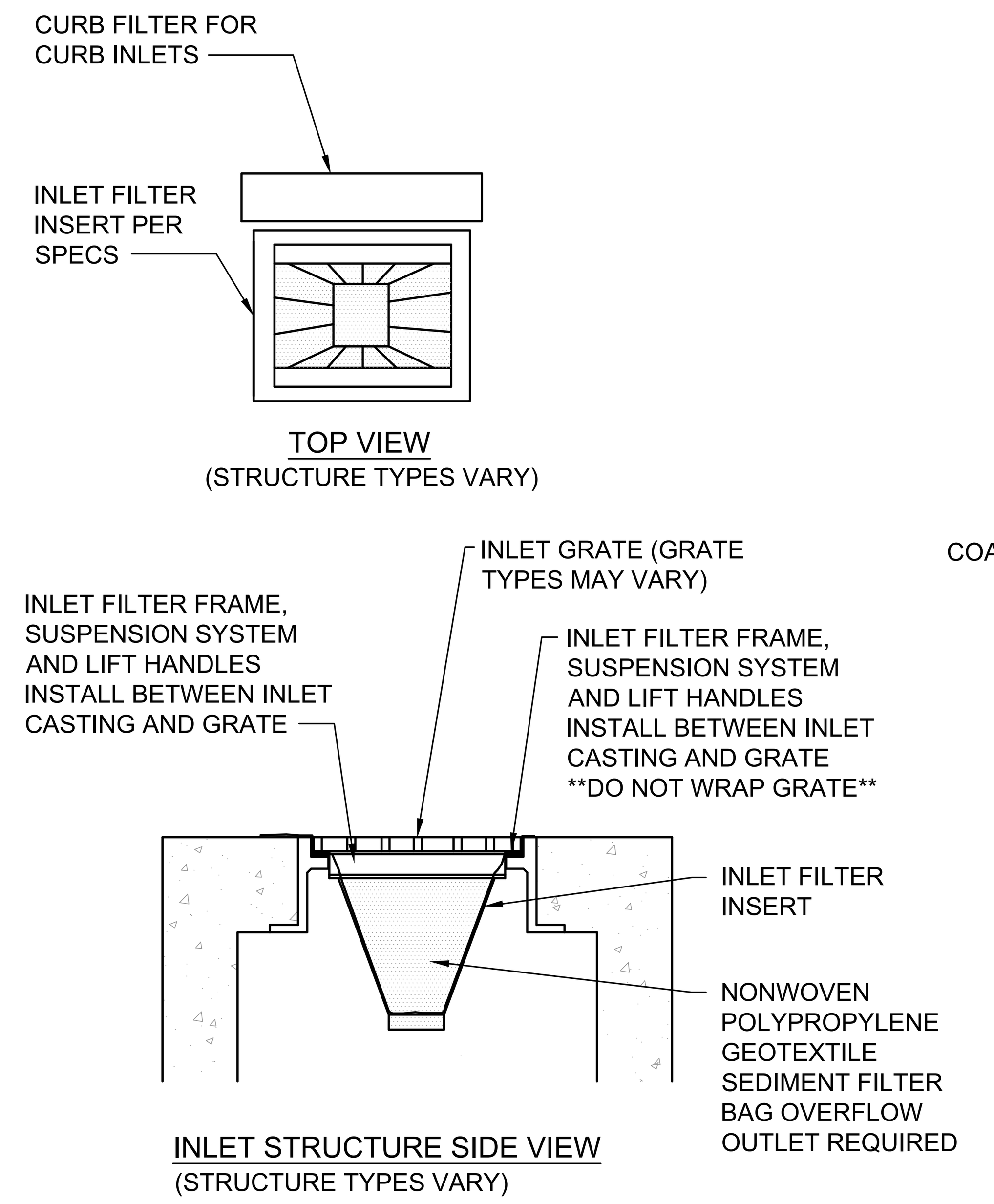
REVISIONS

NO.	DESCRIPTION	DATE

THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED
SCALE CHECK: 1" 0" 1/2" 1" 8"

DATE: NOVEMBER 2017
SCALE: NOTED
SHEET NO.
C-10

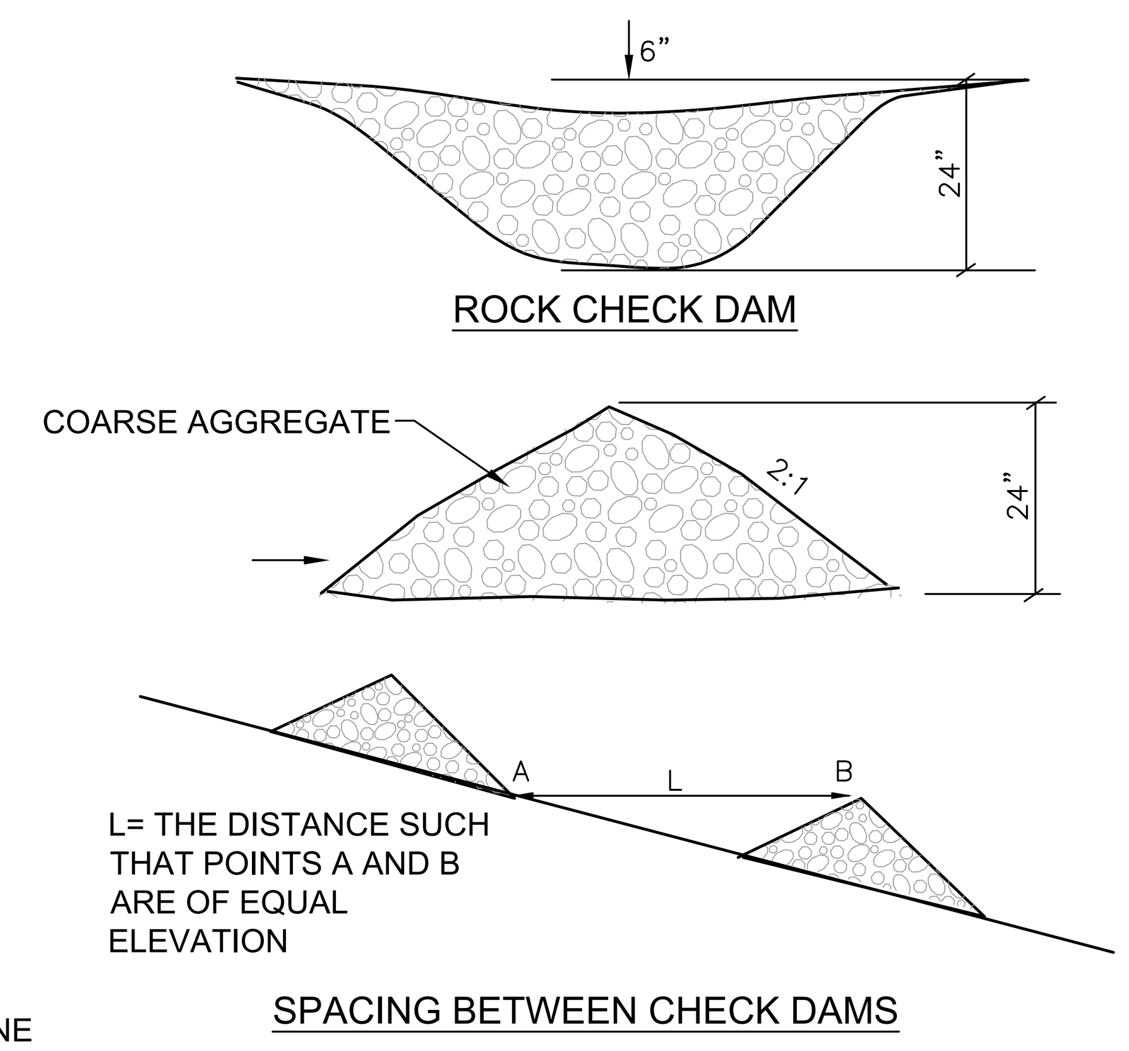
PLOTTED BY: jjohnson
PRINTED: 1/12/2018 @ 8:06AM
FILE NAME: G:\4625-FCRWD-BFLS\Working Drawings\AutoCAD\4625-C-10 EROSION CONTROL PLAN.dwg



FLEXSTORM OR APPROVED EQUAL

INLET FILTER INSERT

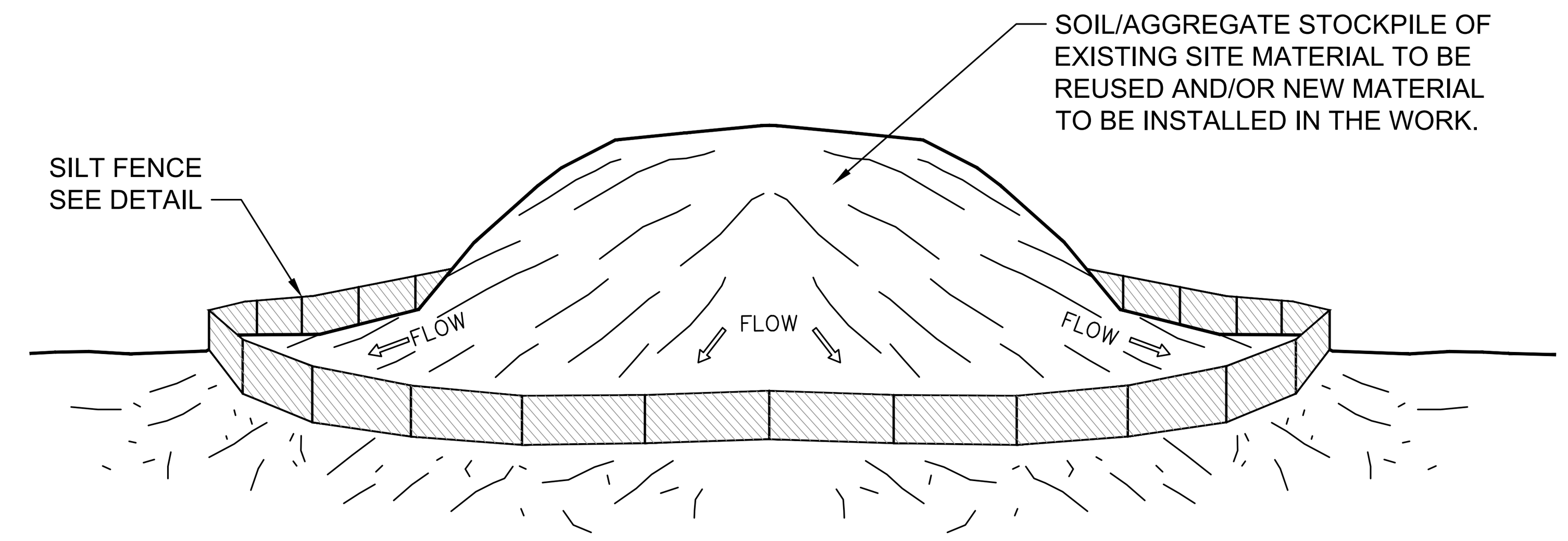
NOT TO SCALE



NOTE:
STONE BAGS MAY BE USED FOR TEMPORARY CHECK DAMS. INSTALL IN SAME CONFIGURATION.

CHECK DAM DETAILS

NOT TO SCALE



NOTES:

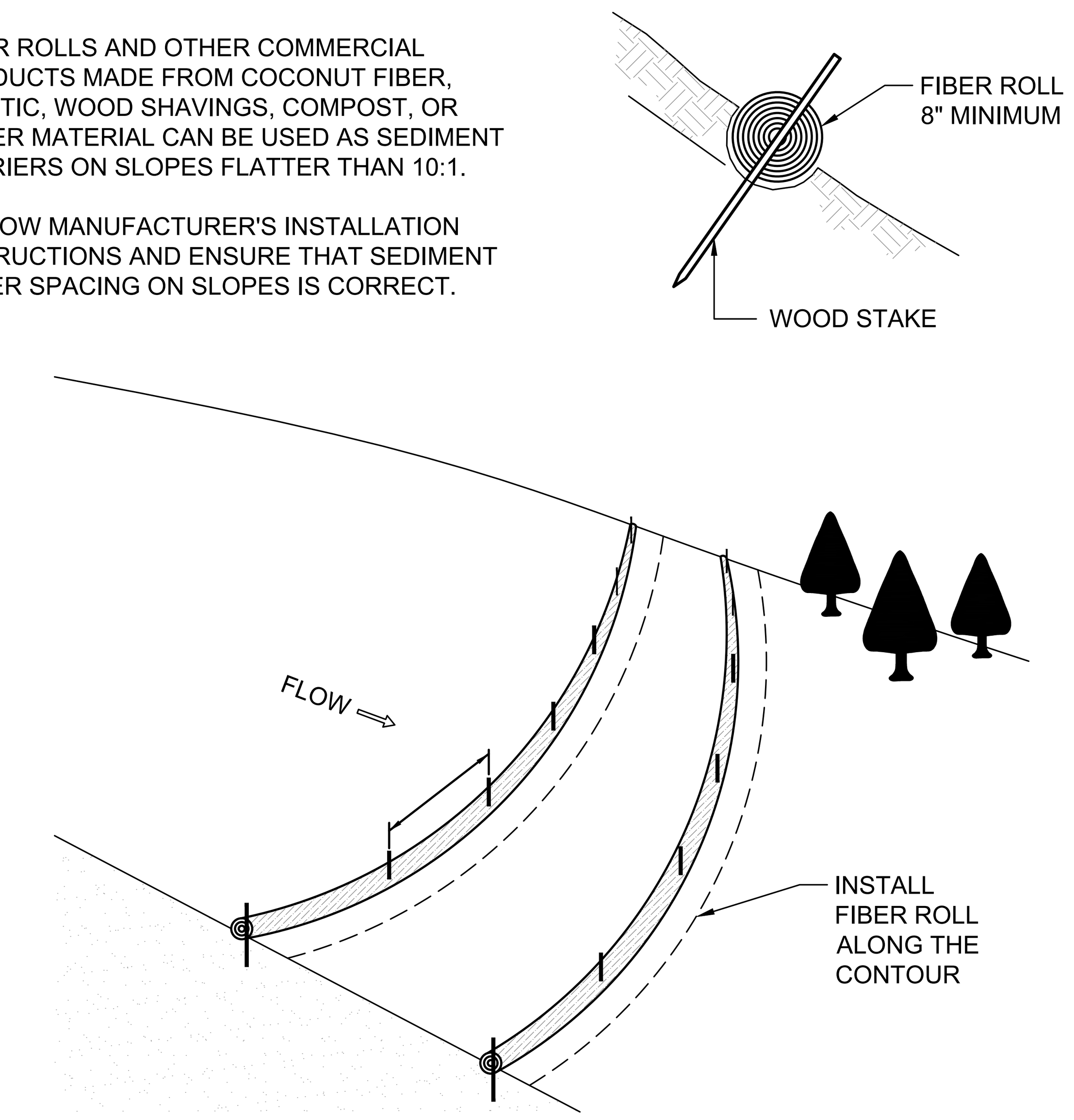
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

MATERIALS STOCKPILE

NOT TO SCALE

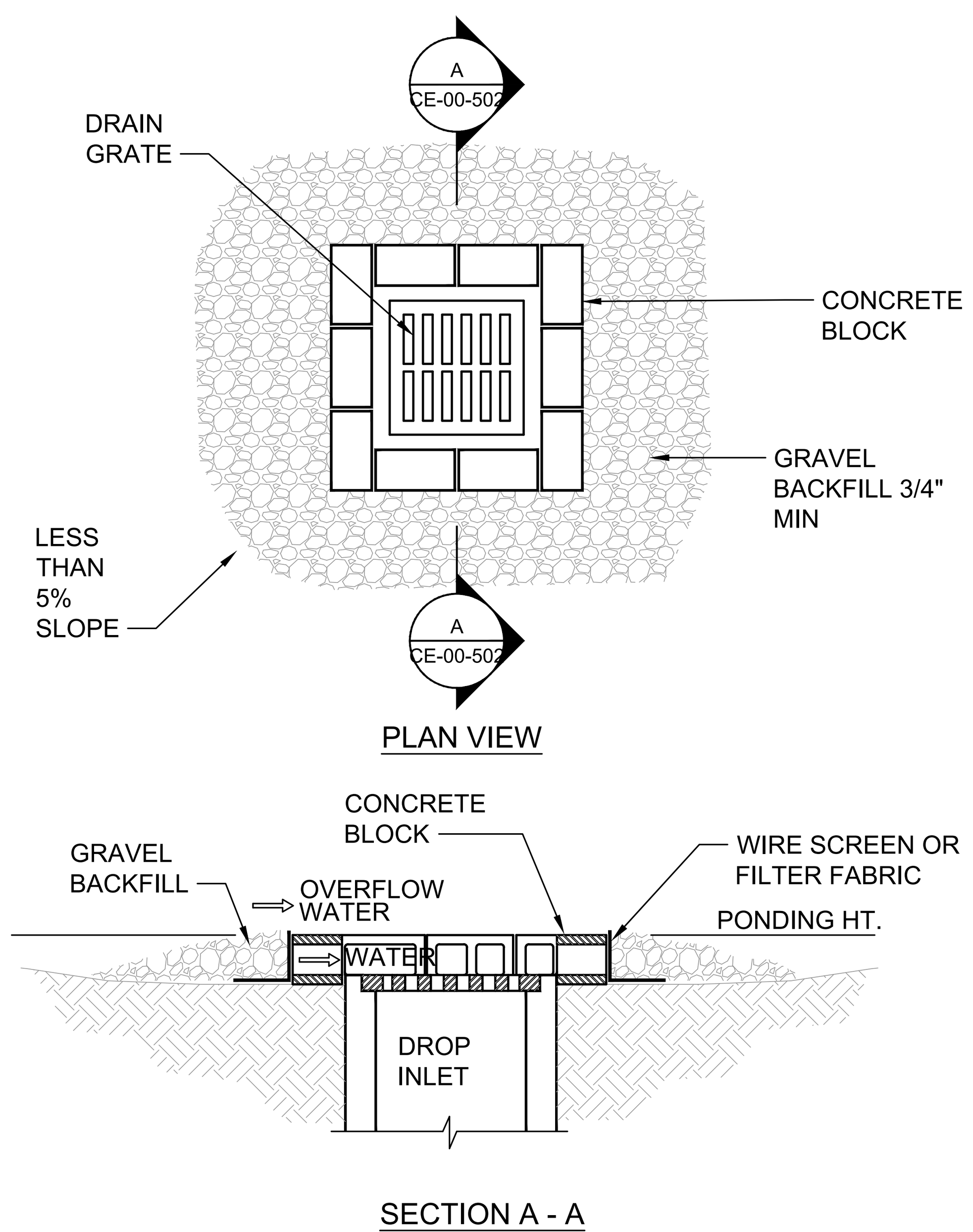
NOTES:

1. FIBER ROLLS AND OTHER COMMERCIAL PRODUCTS MADE FROM COCONUT FIBER, PLASTIC, WOOD SHAVINGS, COMPOST, OR OTHER MATERIAL CAN BE USED AS SEDIMENT BARRIERS ON SLOPES FLATTER THAN 10:1.
2. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ENSURE THAT SEDIMENT FILTER SPACING ON SLOPES IS CORRECT.



FIBER ROLLS

NOT TO SCALE

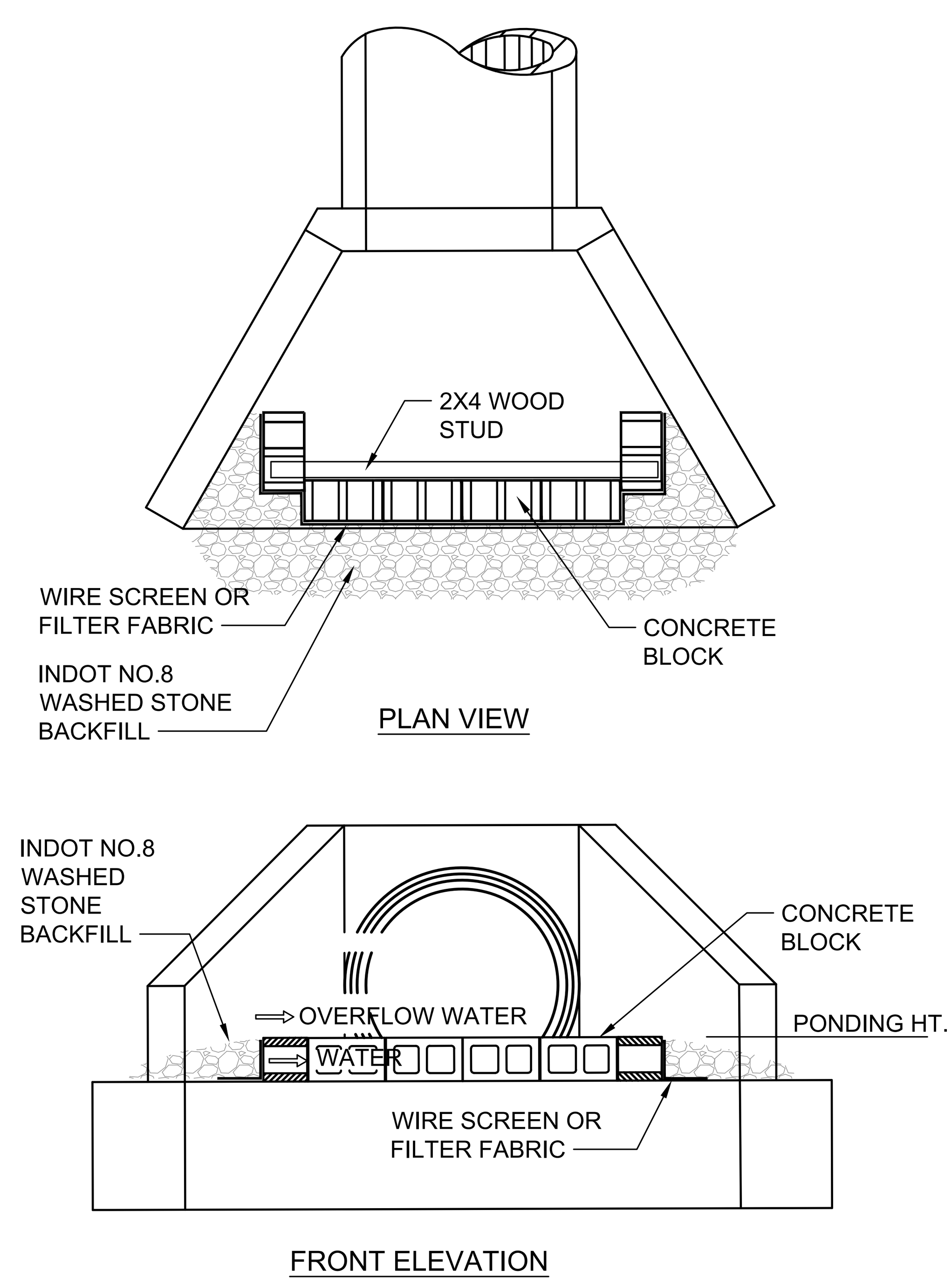


NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS (LESS THAN 5%).
2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.
3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

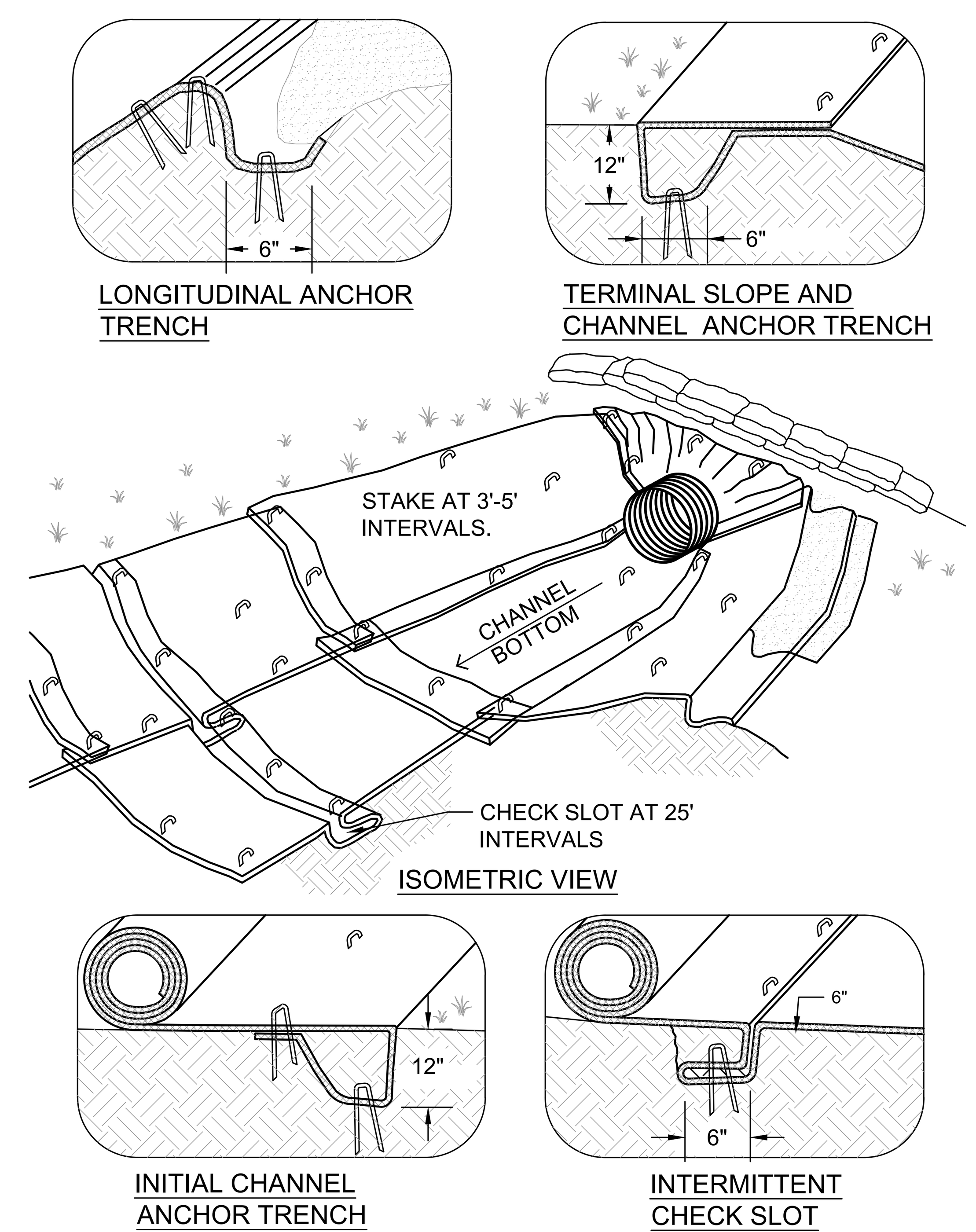
DROP INLET SEDIMENT BARRIER

NOT TO SCALE



CULVERT INLET SEDIMENT BARRIER

NOT TO SCALE

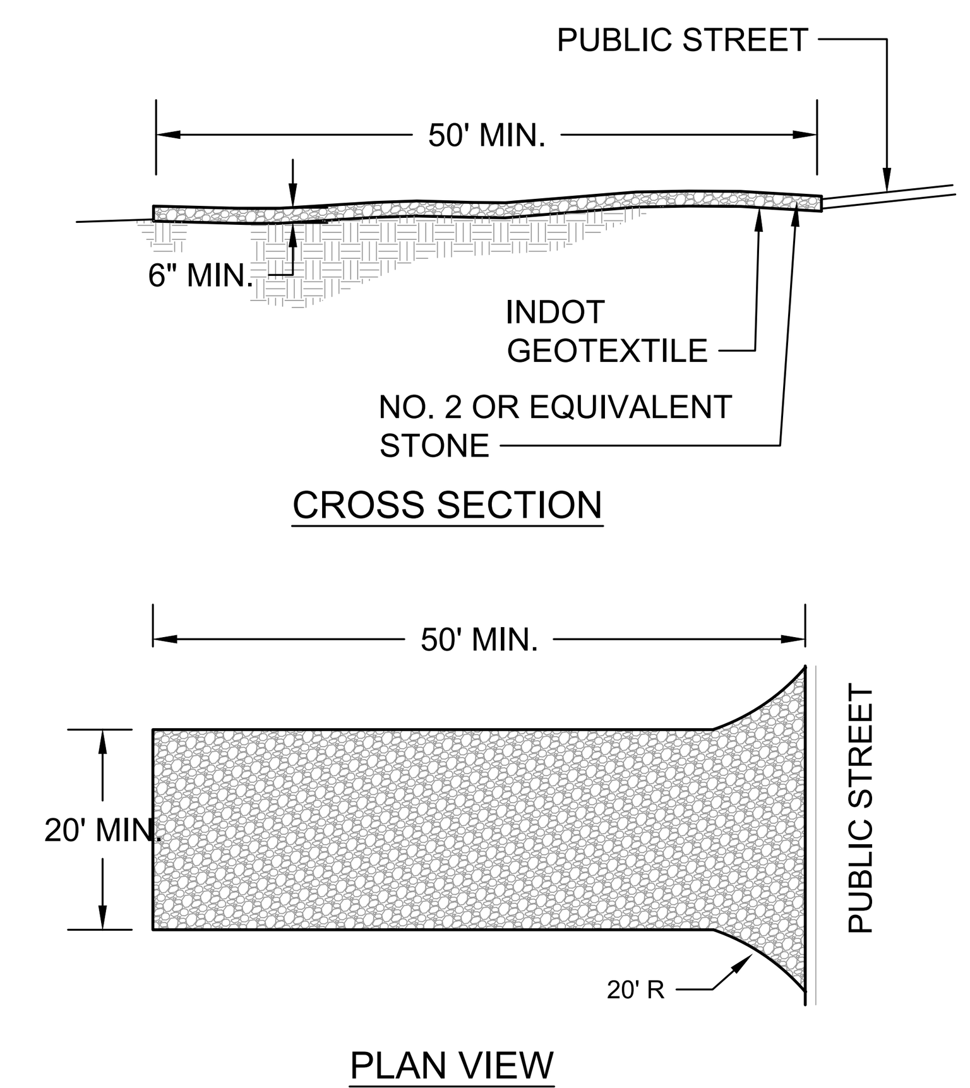


NOTES:

1. CHECK SLOTS TO BE CONSTRUCTED PER MANUFACTURER'S SPECIFICATIONS.
2. STAKING OR STAPLING LAYOUT PER MANUFACTURER'S SPECIFICATIONS.
3. OVERLAP ALL UPCHANNEL SECTIONS BY 12" MIN.
4. OVERLAP ALL SIDE BY SIDE SECTIONS BY 4" MIN.

EROSION BLANKETS & TURF REINFORCEMENT MATS

NOT TO SCALE

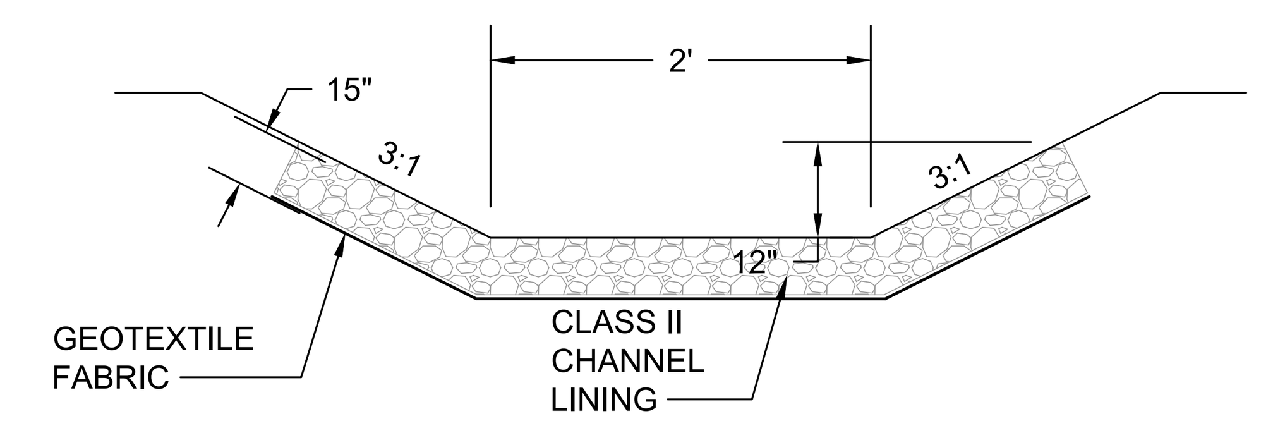


NOTES:

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. GEOTEXTILE SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

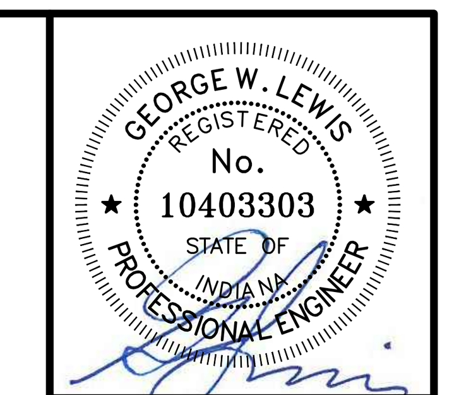
STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



RIPRAP CHANNEL LINING

NOT TO SCALE



GRW PROJECT NO. 4625
CLIENT PROJECT NO. --

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EROSION CONTROL DETAILS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED: GWL
DRAWN: JAJ
REVIEWED: JPT
APPROVED: GWL

REVISIONS

NO.	DESCRIPTION	DATE	BY
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SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: NOVEMBER 2017
SCALE: N.T.S.
SHEET NO. C-11

PLOTTED BY: jjohnson
PRINTED: 1/12/2018 @ 8:06AM
FILE NAME: G:\4625-FCRWD-BFLS\Working Drawings\AutoCAD\4625-C-11 EROSION CONTROL DETAILS.dwg

STANDARD ELECTRICAL SYMBOLS

INTERIOR LIGHTING

SUBSCRIPTS INDICATE THE FOLLOWING:

- LF-X = INDICATES LUMINAIRE TYPE
- E = INDICATES EMERGENCY BATTERY BACKUP
- a = DENOTES SINGLE SWITCH DESIGNATION
- a/b = DENOTES DUAL SWITCH DESIGNATION

CEILING MTD / WALL MTD

- 2' x 4' RECESSED LUMINAIRE
- 2' x 4' RECESSED LUMINAIRE WITH EMERGENCY BATTERY BACKUP
- 2' x 2' RECESSED LUMINAIRE
- 2' x 2' RECESSED LUMINAIRE WITH EMERGENCY BATTERY BACKUP
- 1' x 4' SURFACE MOUNTED OR SUSPENDED LUMINAIRE
- 1' x 4' SURFACE MOUNTED OR SUSPENDED LUMINAIRE WITH EMERGENCY BATTERY BACKUP
- 4' STRIP LUMINAIRE
- 8' STRIP LUMINAIRE
- EXIT LIGHT WITH ARROW
- RECESSED OR SURFACE MOUNTED LUMINAIRE
- RECESSED LUMINAIRE WITH EMERGENCY BATTERY BACKUP
- EMERGENCY LUMINAIRE BATTERY OPERATED
- EMERGENCY REMOTE HEAD

INTERIOR LIGHTING CONTROLS

SUBSCRIPTS INDICATE THE FOLLOWING:

- a = SWITCH DESIGNATION
- D = DIMMER
- 2 = DOUBLE-POLE
- 3 = THREE-WAY
- 4 = FOUR-WAY
- K = KEY-OPERATED
- OC = OCCUPANCY SENSOR
- P = PILOT LIGHT
- T = TIMER
- L = LOW-VOLTAGE
- M = MOTOR RATED WITH OVERLOAD PROTECTION
- IG = ISOLATED GROUND
- EXP = EXPLOSION PROOF
- WP = WEATHERPROOF
- DR = DOOR SWITCH

- S_x WALL SWITCH 120-277 VOLT, 20 AMP, SINGLE POLE
- SS_x MULTIPLE WALL SWITCHES 120-277 VOLT, 20 AMP, MTD IN A SINGLE BOX
- OC OR OC — OCCUPANCY SENSOR - CEILING MOUNTED
- OC OR OC — OCCUPANCY SENSOR - CEILING MOUNTED - WITH AUTOMATIC DIMMING CONTROL PHOTOCELL
- PP — POWER PACK
- PP_D — POWER PACK W/ 0-10V DIMMING OUTPUT

INTERIOR CONDUIT & WIRE

- CONDUIT CONCEALED IN WALL OR CEILING. TIC MARKS INDICATE NUMBER OF WIRES. #12 IF NOT OTHERWISE SHOWN. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
  - PHASE(S)
  - NEUTRAL
  - GROUND
- CONDUIT EXPOSED OR CONCEALED
- CONDUIT RUN UNDERGROUND OR IN CONCRETE
- HOMERUN TO PANEL (PANEL LP1 CIRCUIT 2 INDICATED) — LP1-2
- SIGNIFIES MULTIPLE CIRCUITS IN ONE CONDUIT
- EXPLOSION PROOF CONDUIT SEAL
- CONDUIT WITH END CAPPED
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN

POWER WIRING DEVICES

SUBSCRIPTS INDICATE THE FOLLOWING:

- WP = WEATHERPROOF, IN-USE COVER
- WR = WEATHER-RESISTANT WIRING DEVICE
- GFCI = GROUND FAULT CIRCUIT INTERRUPTER
- GF-BF = BLANK FACE GROUND FAULT INTERRUPTER
- IG = ISOLATED GROUND
- EXP = EXPLOSION PROOF
- ACT = ABOVE COUNTER TOP
- TR = TAMPER-RESISTANT WIRING DEVICE
- AFCI = ARC FAULT CIRCUIT INTERRUPTER
- SPD = SURGE PROTECTION DEVICE

- SINGLE RECEPTACLE, 125 VOLT, 2-POLE, 3-WIRE, NEMA 5-20R GROUNDING TYPE
- XXX — DUPLEX RECEPTACLE, 125 VOLT, 2-POLE, 3 WIRE, NEMA 5-20R GROUNDING TYPE
- XXX (6-60) — SPECIAL PURPOSE RECEPTACLE, NUMBER DENOTES NEMA CONFIGURATION
- XXX — QUADRUPLEX RECEPTACLE, 125 VOLT, 2-POLE, 3 WIRE, NEMA 5-20R GROUNDING TYPE
- SINGLE SPECIAL PURPOSE RECEPTACLE, NEMA CONFIGURATION NOTED
- FLOOR MOUNTED DUPLEX RECEPTACLE, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20R GROUNDING TYPE
- FLOOR MOUNTED QUADRAPLEX RECEPTACLE, 125-VOLT, 2-POLE, 3-WIRE, NEMA 5-20R GROUNDING TYPE
- RANGE RECEPTACLE, 125/250 VOLT, 3-POLE, 4-WIRE, NEMA 14-50R GROUNDING TYPE
- JUNCTION BOX WALL OR CLG MOUNTED FLUSH OR SURFACE AS NOTED, 4"X4" SQUARE UNLESS OTHERWISE NOTED
- (1) (3) (5) (3) — MULTI-OUTLET SURFACE RACEWAY, SIZE AND NUMBER OF RECEPTACLE AS SCHEDULED. # INDICATES CIRCUIT NUMBER
- WIREWAY
- CABLE TRAY
- PLUGIN OR FEEDER BUSWAY
- WALL MTD SINGLE FACE CLOCK
- WALL MTD DOUBLE FACE CLOCK

POWER DEVICES

- M OR 5 — MOTOR CONNECTION (5 HP INDICATED)
- DISCONNECT SWITCH (ENCLOSURE TYPE, SIZE, AND FUSING, IF REQUIRED, DESIGNATED ON DRAWINGS)
- PANELBOARD, SURFACE MOUNTED
- PANELBOARD, RECESSED
- ENCLOSED CIRCUIT BREAKER (ENCLOSURE TYPE, SIZE DESIGNATED ON DRAWINGS)
- MOTOR CONTROLLER (ENCLOSURE TYPE, SIZE DESIGNATED ON DRAWINGS)
- COMBINATION STARTER/CIRCUIT BREAKER (ENCLOSURE TYPE, SIZE DESIGNATED ON DRAWINGS)
- VARIABLE FREQUENCY DRIVE (ENCLOSURE TYPE, SIZE DESIGNATED ON DRAWINGS)
- DRY TYPE TRANSFORMER - FLOOR MOUNTED ON 4" HIGH HOUSEKEEPING PAD
- MCD — MAGNETIC CONTACT, DOOR MOUNTED
- MCW — MAGNETIC CONTACT, WINDOW MOUNTED
- M — PASSIVE INFRARED MOTION DETECTOR, ARROW DENOTES CURTAIN DIRECTION

TELECOMMUNICATIONS

SUBSCRIPTS INDICATE THE FOLLOWING:

- V = VOICE OUTLET
- D = DATA OUTLET

TYPE OF OUTLET — 1V/1D — # OF OUTLETS

- RJ-45 OUTLET - WALL-MOUNTED, MOUNT 18" AFF, UNLESS OTHERWISE NOTED
- FIBER OUTLET, DUPLEX LC CONNECTORS - WALL-MOUNTED, MOUNT 18" AFF, UNLESS OTHERWISE NOTED
- RJ-45 OUTLET - FLOOR MOUNTED
- FIBER OUTLET, DUPLEX LC CONNECTORS - FLOOR MOUNTED
- ONE POSITION VOICE OUTLET (RJ-45) - WHITE JACK - WALL-MOUNTED AT 48" AFF, UNLESS OTHERWISE NOTED
- CATV — CABLE TV OUTLET, MOUNT AT HEIGHT INDICATED ON FLOOR PLANS - REQUIRES A TYPE F COMPRESSION CONNECTOR
- AV — AUDIO VISUAL OUTLET, MOUNT AT HEIGHT INDICATED ON FLOOR PLANS - REQUIRES TYPE F COMPRESSION CONNECTOR + EMPTY BOX FOR OWNER PROVIDED DATA CABLING

FIRE ALARM/SUPPRESSION SYSTEM DEVICES

- EOL — END OF LINE RESISTOR
- FCP — FIRE ALARM CONTROL PANEL
- FSA — FIRE ALARM ANNUNCIATOR PANEL
- FAC — FIRE ALARM COMMUNICATOR
- MIC — REMOTE MIC
- X — FIRE ALARM MANUAL STATION
  - X= A- CLEAN AGENT; C- CARBON DIOXIDE; D- DRY CHEMICAL; F- FOAM; W- WET CHEMICAL; P- MANUAL PULL STATION
- FIRE ALARM SPEAKER-HORN/STROBE LIGHT
- FIRE ALARM HORN OR SPEAKER
- FIRE ALARM BELL/LIGHT
- WATER MOTOR GONG
- FIRE ALARM STROBE LIGHT
- X — SMOKE DETECTOR
  - X= P- PHOTOELECTRIC; I- IONIZATION; BT- BEAM TRANSMITTER; BR- BEAM RECEIVER
- OR — DUCT MOUNTED SMOKE DETECTOR
- X — HEAT DETECTOR, SUBSCRIPT DENOTES THE FOLLOWING
  - X= F-FIXED TEMPERATURE; R-RATE OF RISE; R/F-COMBINATION RATE OF RISE AND FIXED
- TAMPER SWITCH CONNECTION
- FLOW SWITCH CONNECTION
- DOOR HOLDER
- PRESSURE SWITCH
- LEVEL SWITCH
- VALVE WITH TAMPER SWITCH
- MUSHROOM HEAD EMERGENCY PUSHBUTTON SWITCH
- FIRE FIGHTER'S TELEPHONE STATION
- CO_2 FIRE EXTINGUISHER
- AMM — ADDRESSABLE MONITOR MODULE
- CO — CARBON MONOXIDE DETECTOR

EXTERIOR

EXISTING	EXTERIOR	NEW
35/3	POLE, LENGTH AND CLASS AS INDICATED	35/3
3-25	TRANSFORMER BANK POLE MOUNTED, SHOWN AS THREE PHASE 25 KVA TRANSFORMERS	3-25
25	SINGLE PHASE TRANSFORMER, POLE MOUNTED 25 KVA NOTED	25
T 100	PAD MOUNTED TRANSFORMER, 100 KVA NOTED	T 100
	FUSE CUTOUT WITH FUSE SIZE AND TYPE NOTED	
	DISCONNECT SWITCH OR SECTIONALIZING SWITCH	
EG	BURIED GROUND WIRE	G
EG	GROUND WIRE IN OR UNDER FLOOR SLAB	G
EG	GROUND WIRE EXPOSED	G
	GROUND CONNECTION OR EQUIPMENT BOND	
EG	ROOF CONDUCTOR	RC
	POLE MOUNTED LUMINAIRE	
XXX	MANHOLE, HANDHOLE, OR PULLBOX, SUBSCRIPT DENOTES THE FOLLOWING: EMH ELECTRICAL MANHOLE; CMH COMMUNICATIONS MANHOLE; EHH ELECTRICAL HANDHOLE; CHH COMMUNICATIONS HANDHOLE; EPB ELECTRICAL PULLBOX; CPB COMMUNICATIONS PULLBOX	XXX
XXX OR XXX	WALLPACK EXTERIOR LUMINAIRE	XXX OR XXX
XXX OR XXX	WALLPACK EXTERIOR LUMINAIRE WITH EMERGENCY BATTERY	XXX OR XXX
3/4-10 W	GROUND ROD, SIZE AS NOTED 3/4" X 10' (W DENOTES INSTALLATION IN WELL)	3/4-10 W
24	LIGHTNING ROD, (24 INCHES HIGH NOTED)	24

SINGLE LINE DIAGRAMS/CONTROLS

- ETM — ELAPSED TIME METER
- TM — TIMER MOTOR
- R OR CR# — CONTROL RELAY
- SV — SOLENOID VALVE CONNECTION
- LS — LIMIT SWITCH CONNECTION
- T — THERMOSTAT CONNECTION
- PC OR — PHOTOCELL
- PS — PRESSURE SWITCH CONNECTION
- A — AMMETER
- DM — DAMPER MOTOR ACTUATOR, SPRING RETURN
- EF — EXHAUST FAN MOTOR
- V — VOLTMETER
- W — WATTMETER
- WH — WATTHOUR METER
- M — MOTOR STARTER COIL
- M OL — MOTOR CONTACTOR / MOTOR OVERLOAD
- INDICATOR LIGHT (CONTROL CIRCUIT)
- PUSH TO TEST — INDICATOR LIGHT W/PUSH TO TEST (CONTROL CIRCUIT)
- ON OFF — 2 POSITION SELECTOR SWITCH: ON-OFF
- L O R — 3 POSITION SELECTOR SWITCH: LOCAL-OFF-REMOTE HAND-OFF-AUTOMATIC
- L O R A — 4 POSITION SELECTOR SWITCH: LOCAL-OFF-REMOTE-AUTOMATIC
- STOP START M — START-STOP PUSHBUTTON (NON-MAINTAINED CONTACT)
- OFF ON — ON-OFF PUSHBUTTON (MAINTAINED CONTACT)
- M — CONTROL PANEL HEATER/COOLING FAN
- E-STOP — EMERGENCY STOP PUSHBUTTON STATION
- SWITCH, NONFUSED
- FUSED SWITCH
- OR — FUSE
- MAGNETIC ONLY CIRCUIT BREAKER (SINGLE POLE SHOWN)
- THERMAL-MAGNETIC CIRCUIT BREAKER (SINGLE POLE SHOWN)
- CIRCUIT BREAKER GENERIC
- GF — GROUND FAULT PROTECTED BREAKER
- LINE REACTOR
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- SPD — SURGE PROTECTIVE DEVICE, TYPE 1 OR TYPE 2
- TS OR — LIGHTNING ARRESTOR (CROWBAR STYLE)
- CAPACITOR
- GROUND
- TRANSFORMER
- RELAY CONTACT (NORMALLY OPEN)
- RELAY CONTACT (NORMALLY CLOSED)
- N.O.T.C. — TIMER CONTACT - NORMAL OPEN, TIME CLOSE
- N.C.T.O. — TIMER CONTACT - NORMAL CLOSE, TIME OPEN
- N.O.T.O. — TIMER CONTACT - NORMAL OPEN, TIME OPEN
- N.C.T.C. — TIMER CONTACT - NORMAL CLOSE, TIME CLOSE
- K — KEY INTERLOCK
- THERMAL OVERLOAD PROTECTION
- BATTERY
- AUTOTRANSFORMER
- DOUBLE THROW SWITCH OR TRANSFER SWITCH
- FLOAT SWITCH (NORMALLY CLOSED)
- THERMOSTATIC SWITCH
- PRESSURE SWITCH
- LIMIT SWITCH OR TORQUE SWITCH
- DOT INDICATES CONNECTION OF WIRES
- 1 2 — TERMINALS FOR WIRE CONNECTIONS FROM REMOTE DEVICE

GENERAL NOTES:

1. THE MINIMUM STANDARD FOR ALL WORK SHALL BE THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE WITH IN STATE AMENDMENTS AND THE NATIONAL ELECTRICAL CODE (NEC).
2. ALL ELECTRICAL WORK SHALL BE PERFORMED BY AN IN-STATE LICENSED ELECTRICIAN.
3. ALL PERMITS NEEDED TO LEGALLY PERFORM THE ELECTRICAL WORK SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO START OF WORK. COST OF PERMITTING IS BY THE CONTRACTOR.
4. AT COMPLETION OF THE WORK, A CERTIFICATE OF COMPLIANCE FROM THE LOCAL AHJ OVER THE ELECTRICAL WORK SHALL BE PROVIDED TO THE ENGINEER AND OWNER. COST OF ELECTRICAL INSPECTION IS BY THE CONTRACTOR.
5. ALL MATERIALS USED IN THE PROJECT GENERALLY SHALL BE NEW AND UNUSED, UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL NEW MATERIALS SHALL BE LISTED AND LABELED BY UL OR OTHER ACCEPTABLE LISTING AGENCY, WHERE A LISTING EXISTS.
6. THE CONTRACTOR SHALL VISIT THE SITE(S) PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH PROJECT REQUIREMENTS AND EXISTING CONDITIONS.
7. FIRESTOP ALL NEW CONDUIT INSTALLED THROUGH EXISTING OR NEW FIRE RATED ASSEMBLIES.
8. SHOP DRAWINGS SHALL BE SUBMITTED ON ALL ELECTRICAL MATERIALS AND EQUIPMENT FOR ACCEPTANCE PRIOR TO PURCHASE BY THE CONTRACTOR.
9. WHEN AN ITEM DEMOLISHED IS REMOVED, REMOVE ALL CONCRETE PADS, FASTENERS, CONDUIT AND WIRING. SCARIFY SURFACE AND RESTORE TO MATCH EXISTING SURROUNDING SURFACE, INCLUDING PAINTING TO MATCH.
10. ALL NEW WIRING SHALL BE ENCLOSED IN AN APPROVED RACEWAY SYSTEM. OPEN WIRING IS PROHIBITED.
11. CIRCUIT BREAKERS USED FOR HVAC EQUIPMENT LOADS SHALL BE HACR TYPE.
12. ENSURE DEDICATED ELECTRICAL SPACE IS PROVIDED AT ELECTRICAL EQUIPMENT IN ACCORDANCE WITH NEC ARTICLE 110.26.
13. UP TO 3 CIRCUITS MAY BE COMBINED IN ONE CONDUIT, AS LONG AS NEC DERATING RULES ARE FOLLOWED.
14. ALL CIRCUITS SHALL HAVE A DEDICATED NEUTRAL. SHARED NEUTRALS AND MULTI-WIRE CIRCUITS ARE NOT TO BE USED EXCEPT POSSIBLY TO COORDINATE WITH SYSTEMS FURNITURE. SEE POWER PLAN.
15. 120 VOLT CIRCUITS THAT EXCEED 75 LINEAR CIRCUIT FEET SHALL BE INCREASED TO #10 AWG AS A GENERAL RULE. OTHER CIRCUITS WILL BE DESIGNED SPECIFICALLY WITH VOLTAGE DROP CONSIDERED IN CONDUCTOR SIZING.
16. COORDINATE ALL MOTOR STARTERS, FEEDERS AND DISCONNECT SWITCHES FOR HVAC AND OTHER UTILIZATION EQUIPMENT ACTUALLY PROVIDED IN ACCEPTED SHOP DRAWINGS.
17. IN ORDER TO COMPLY WITH OSHA REQUIREMENTS, NO OPERATOR DEVICE OF ANY PANEL OR DISCONNECT OR MOTOR CONTROL SHALL BE HIGHER THAN 6'-6" AFF.
18. PROVIDE AN EXTERIOR RATED SERVICE RECEPTACLE WITHIN 25 FEET HORIZONTALLY OF ANY EXTERIOR OR ROOFTOP HVAC OUTDOOR UNIT (HEATING OR AIR CONDITIONING ONLY).
19. SUPPORT ALL LUMINAIRES FROM THE STRUCTURE, NOT FROM THE SUSPENDED CEILING GRID. ALSO ATTACH THE LUMINAIRES TO THE GRID SYSTEM USING EARTHQUAKE CLIPS (SIMILAR TO ERICO/CADDY FASTENERS OR T&B/STEEL CITY).
20. DEVICE PLATES SHALL BE INSTALLED PLUMB. JUMBO OR OVERSIZED PLATES SHALL NOT BE USED.
21. NEW RECEPTACLES SHALL BE INSTALLED WITH GROUND PIN ORIENTATION TO MATCH EXISTING. IN NEW CONSTRUCTION, GROUND PIN DOWN ABOVE COUNTERS OR WORK BENCHES AND UP FOR LOW WALL MOUNTED DEVICES.
22. AT COMPLETION OF PROJECT, ALL ELECTRICAL, TELECOMMUNICATIONS, AND ELECTRONIC SAFETY SYSTEMS SHALL BE FULLY OPERATIONAL.
23. INSTALL A NYLON PULLSTRING IN ALL SPARE CONDUITS, ACCESSIBLE AT BOTH ENDS. CAP OFF SPARE CONDUITS ON BOTH ENDS.
24. EGRESS LUMINAIRES AND EXIT SIGNS REQU'RE UNSWITCHED LIGHTING CONDUCTOR.
25. WHERE DUPLEX RECEPTACLES ARE INDICATED GENERALLY BACK TO BACK ON OPPOSITE SIDES OF A PARTY WALL, THE RECEPTACLES SHALL NOT BE INSTALLED IN THE SAME STUD SPACE, BUT SHALL BE SEPARATED BY AT LEAST ONE STUD SPACE.
26. PROVIDE LABEL WITH ESTIMATED FAULT CURRENT AND DATE CALCULATED ON THE MAIN SERVICE DISCONNECT ENCLOSURE. PROVIDE COORDINATION STUDY AND ARC FLASH STUDY, AND APPLY JOB SPECIFIC ARC FLASH HAZARD WARNING LABELS ON ALL SWITCHBOARDS, SWITCHGEAR, MCC'S AND PANELBOARDS.
27. CIRCUIT BREAKERS, 1200 AMPERE OR LARGER, SHALL COMPLY WITH NEC ARTICLE 240.87, ARC ENERGY REDUCTION.

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STANDARD ELECTRICAL SYMBOLS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

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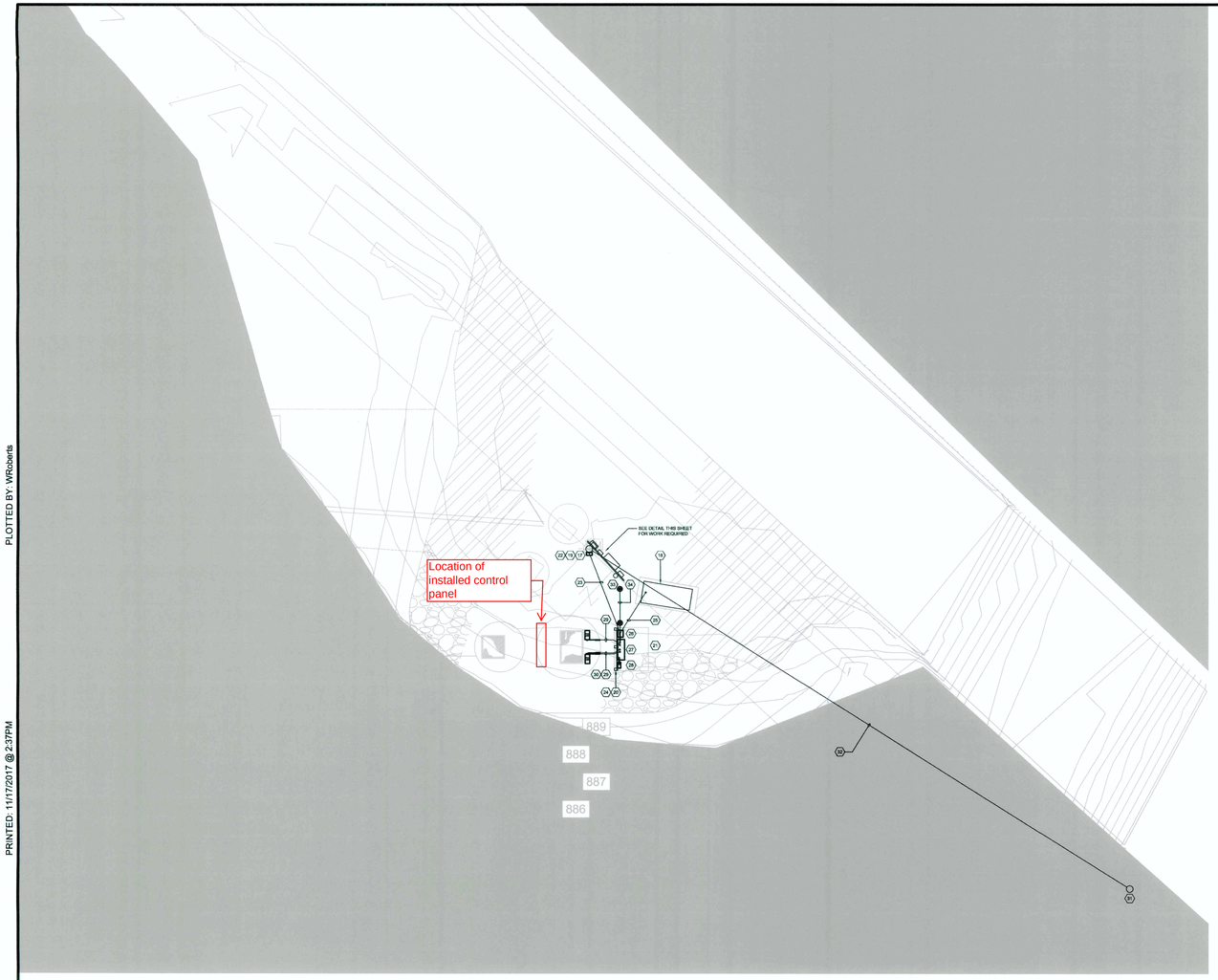

1 BABY FARMS LIFT STATION - ELECTRICAL SITE PLAN

SCALE: 1"=10'-0"

0 10' 20'

PLAN NORTH

2 EXISTING ELECTRICAL EQUIPMENT RACK - DEMOLITION

NOT TO SCALE

GENERAL NOTES:

1. LOCATE ALL EXISTING UNDERGROUND UTILITIES AND COORDINATE WITH GENERAL CONTRACTOR FOR ALL UNDERGROUND WORK PRIOR TO ANY EXCAVATION OR TRENCHING. MAINTAIN A MINIMUM 12" BETWEEN UTILITIES, UNLESS OTHERWISE NOTED.
2. MINIMUM BURY FOR ALL SITE CONDUITS SHALL BE 24", UNLESS OTHERWISE NOTED.
3. ALL EXPOSED CONDUITS SHALL BE ALUMINUM OR PVC COATED RIGID STEEL - NO EXCEPTIONS.
4. THE OWNER HAS THE OPTION TO KEEP ANY DEMOLISHED ELECTRICAL EQUIPMENT.

SHEET KEYNOTES:

1. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT RACK (WOODEN STRUCTURE). THIS INCLUDES THE ENTIRE STRUCTURE, EXCLUDING THE EXISTING UTILITY RISER POLE - UTILITY RISER POLE SHALL REMAIN UNDISTURBED.
2. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING METER/METER BASE. METER/METER BASE SHALL BE RELOCATED AND RE-INSTALLED AT THE RISER POLE AS INDICATED IN KEYNOTE 19. COORDINATE REMOVAL AND RELOCATION WITH ANDERSON MUNICIPAL LIGHT & POWER.
3. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING SERVICE CONDUIT/WEATHERHEAD/CONDUCTORS ROUTED UP THE RISER POLE, FROM METER BASE.
4. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING DOUBLE THROW TRANSFER SWITCH.
5. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CONDUCTORS/CONDUIT FROM METER BASE TO DOUBLE THROW TRANSFER SWITCH.
6. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING DISCONNECT SWITCH.
7. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CONDUCTORS/CONDUIT FROM DOUBLE THROW TRANSFER SWITCH TO PAD-MOUNTED STATIONARY GENERATOR.
8. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING NIPPLE/CONDUCTORS ENTERING/LEAVING DISCONNECT SWITCH.
9. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING PUMP CONTROL PANEL.
10. CONTRACTOR SHALL CAREFULLY REMOVE EXISTING SIGNAGE. EXISTING SIGNAGE SHALL BE RE-INSTALLED AT NEW ELECTRICAL EQUIPMENT RACK/PUMP CONTROL PANEL.
11. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING GROUNDING ELECTRODE CONDUCTOR AND CONDUIT.
12. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING PUMP POWER CABLES & CONTROL CABLES/CONDUIT FROM THE PUMP CONTROL PANEL TO THE LIFT STATION WETWELL.
13. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FLOAT CABLES/CONDUIT FROM THE PUMP CONTROL PANEL TO THE LIFT STATION WETWELL.
14. CONTRACTOR SHALL CAREFULLY DISCONNECT AND REMOVE EXISTING OMNI-SITE ENCLOSURE. EXISTING OMNI-SITE ENCLOSURE SHALL BE RE-INSTALLED AT THE NEW ELECTRICAL EQUIPMENT RACK.
15. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING CONDUCTORS (POWER)/CONDUIT FROM THE PUMP CONTROL PANEL TO THE OMNI-SITE ENCLOSURE.
16. CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING MULTI-CONDUCTOR (MONITORING SIGNALS)/CONDUIT FROM THE PUMP CONTROL PANEL TO THE OMNI-SITE ENCLOSURE.
17. EXISTING UTILITY RISER POLE SHALL REMAIN.
18. EXISTING STATIONARY GENERATOR SHALL REMAIN (CATERPILLAR D30P1, 208/120V, 3-PHASE OUTPUT, 125A MCB, 30KW - GENERATOR OUTPUT IS CURRENTLY SET AT 215V).
19. CONTRACTOR SHALL RE-INSTALL EXISTING METER BASE/METER AT EXISTING RISER POLE. COORDINATE INSTALLATION WITH ANDERSON MUNICIPAL LIGHT & POWER.
20. CONTRACTOR SHALL FURNISH AND INSTALL NEW ELECTRICAL EQUIPMENT RACK. SEE DRAWING E-501, DETAIL 3, FOR REQUIRED RACK/EQUIPMENT.
21. NEW CONCRETE EQUIPMENT PAD FOR ELECTRICAL EQUIPMENT RACK. SEE DRAWING E-501, DETAIL 7, FOR REQUIREMENTS.
22. NEW SERVICE ENTRANCE CONDUIT/WEATHERHEAD/CONDUCTORS FROM METER BASE. SEE DRAWING E-701 FOR REQUIRED CONDUIT/CONDUCTORS.
23. NEW ELECTRICAL FEEDER FROM METER BASE TO RACK-MOUNTED DOUBLE THROW DISCONNECT SWITCH.
24. SEE DRAWING E-701 FOR REQUIRED FEEDERS/BRANCH CIRCUITS BETWEEN EQUIPMENT LOCATED AT ELECTRICAL EQUIPMENT RACK.
25. NEW ELECTRICAL FEEDER FROM RACK-MOUNTED DOUBLE THROW DISCONNECT SWITCH TO EXISTING GENERATOR.
26. NEMA 4X, 100A, FUSED, DOUBLE THROW TRANSFER SWITCH. SEE DRAWING E-701 FOR REQUIRED FUSING.
27. NEMA 4X LIFT STATION CONTROL PANEL.
28. EXISTING OMNI-SITE XR-50 ENCLOSURE, RELOCATED FROM EXISTING WOODEN RACK, TO NEW ELECTRICAL EQUIPMENT RACK.
29. PUMP BRANCH CIRCUIT FROM LIFT STATION CONTROL PANEL - SEE DRAWING E-701 FOR REQUIRED CONDUIT/CONDUCTORS.
30. 8#12, 1#12 GND, 1"C FROM WETWELL JUNCTION BOX TO LIFT STATION CONTROL PANEL (FLOAT CABLES).
31. EXISTING UTILITY TRANSFORMER POLE (2 POLE TOP TRANSFORMERS - OPEN DELTA CONFIGURATION) SHALL REMAIN.
32. EXISTING OVERHEAD SECONDARY ELECTRICAL SERVICE SHALL REMAIN.
33. NEW 3/4" x 10'-0" DRIVEN GROUND ROD - TYPICAL OF 3.
34. NEW BARE #6 COPPER GROUNDING ELECTRODE CONDUCTOR - BURIED A MINIMUM OF 30" BELOW FINISHED GRADE.

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BABY FARMS LIFT STATION - ELECTRICAL SITE PLAN

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
WER	WER	WER	WLM

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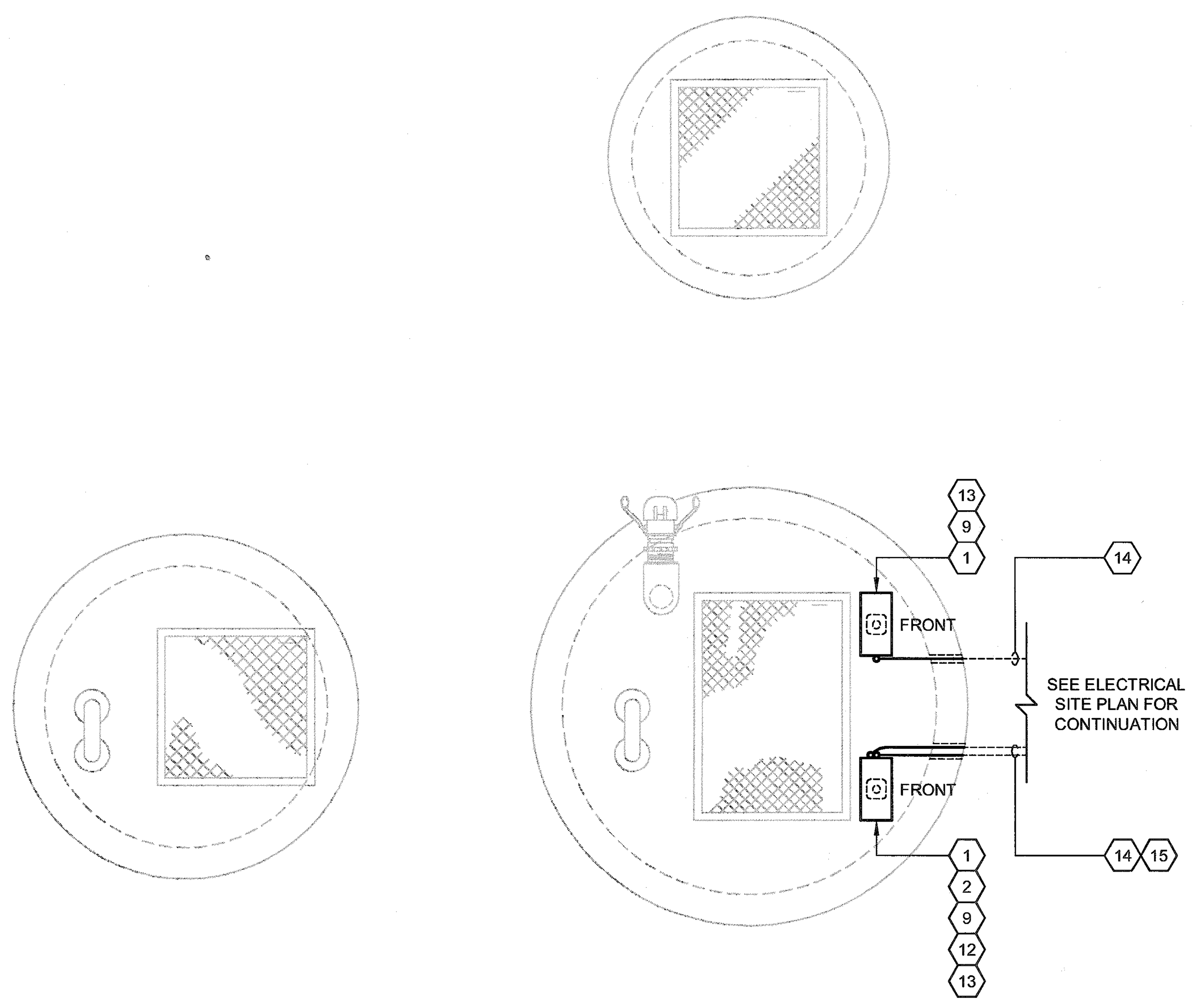
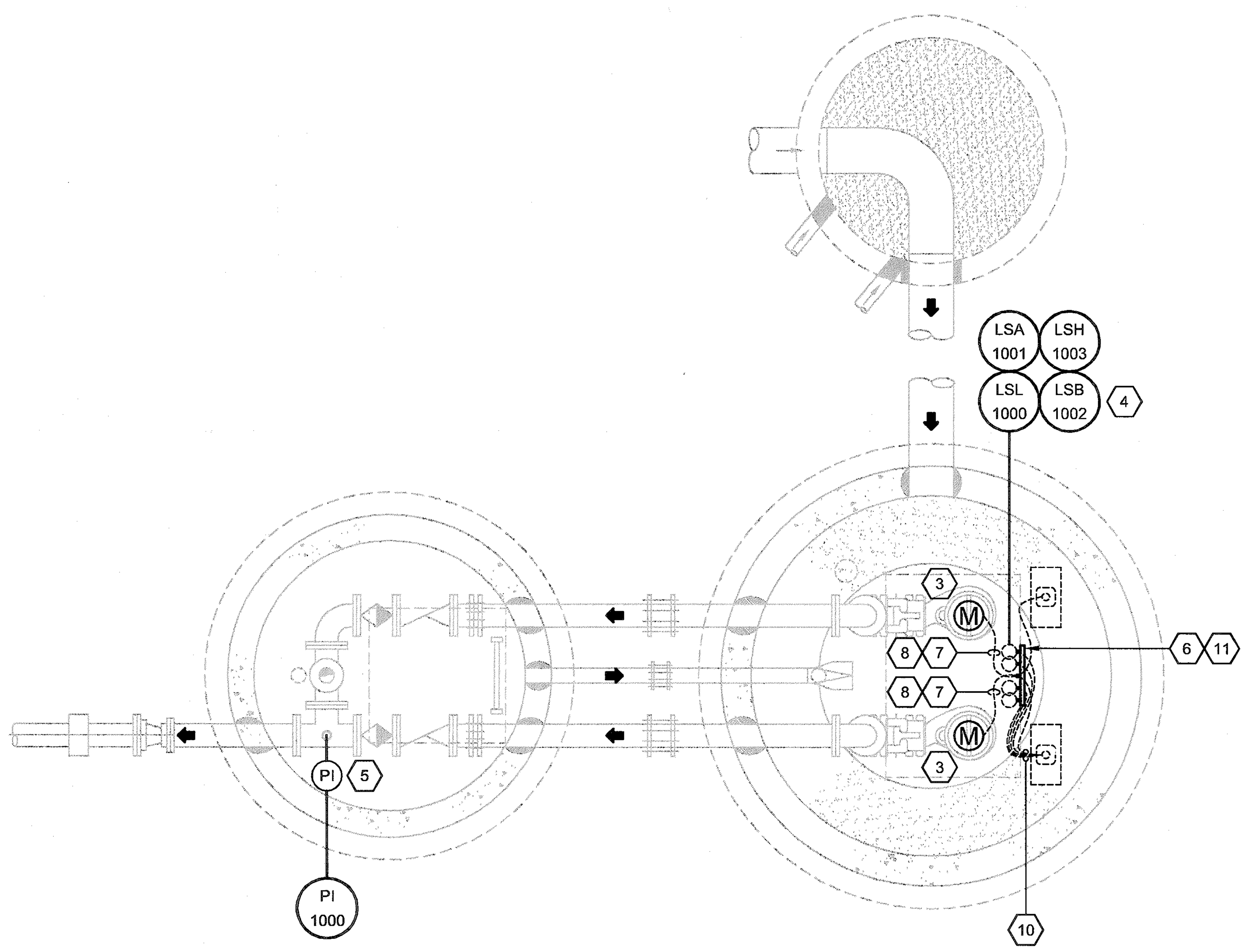


1 BABY FARMS LIFT STATION - ELECTRICAL PLAN - TOP SLAB

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

PLAN NORTH



2 BABY FARMS LIFT STATION - ELECTRICAL PLAN - LOWER LEVEL

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

PLAN NORTH

GENERAL NOTES:

1. THE PUMP STATION WETWELL IS CLASSIFIED AS CLASS I, DIVISION 1, GROUP D AREA PER NFPA 820. THE CLASS I, DIVISION 1 AREA EXTENDS TO 18" ABOVE THE PUMP STATION TOP SLAB AND EXTENDS 3' BEYOND ALL SIDES. ANY EQUIPMENT LOCATED WITHIN THE CLASSIFIED AREA SHALL BE UL LISTED FOR THAT AREA. ALL WIRING METHODS SHALL CONFORM TO THE REQUIREMENTS OF NEC ARTICLE 500 AND 501.
2. THE PUMP STATION VALVE VAULT IS CLASSIFIED AS CLASS I, DIVISION 2, GROUP C AND D AREAS PER NFPA 820. THE CLASS I, DIVISION 2 AREA EXTENDS TO 18" ABOVE THE TOP SLAB AND EXTENDS 3' BEYOND ALL SIDES. ANY EQUIPMENT LOCATED WITHIN THE CLASSIFIED AREA SHALL BE UL LISTED FOR THAT AREA. ALL WIRING METHODS SHALL CONFORM TO THE REQUIREMENTS OF NEC ARTICLE 500 AND 501.
3. ALL CONDUITS ENTERING HAZARDOUS LOCATIONS, AS NOTED IN PRECEDING NOTES, SHALL HAVE SEAL FITTINGS BEFORE ENTRANCE INTO AREA. CONDUITS LEAVING HAZARDOUS LOCATIONS SHALL HAVE SEAL FITTINGS AFTER LEAVING THE HAZARDOUS AREA.
4. ALL EXPOSED CONDUITS SHALL BE ALUMINUM ONLY (NO EXCEPTIONS).
5. ALL CONDUITS SHOWN AT THE WETWELL ARE ROUTED WITHIN THE SLAB. DO NOT ROUTE ANY EXPOSED CONDUITS WITHIN THE WETWELL AREA OR ON TOP OF THE WETWELL SLAB.
6. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4" SEPARATION BETWEEN ALL CONDUITS LARGER THAN 1" WHICH ARE ROUTED WITHIN THE TOP SLAB. SEPARATION SHALL BE MEASURED BETWEEN OUTER EDGE OF CONDUITS; NOT CENTERLINE.

⬡ SHEET KEYNOTES:

1. NEMA 4X WETWELL JUNCTION BOX FOR CONVERSION OF PUMP POWER AND CONTROL CABLE TO SINGLE CONDUCTORS - TYPICAL OF 2. SEE DRAWING E-501, DETAIL 1, FOR REQUIREMENTS.
2. NEMA 4X WETWELL JUNCTION BOX FOR CONVERSION OF FLOAT CABLES TO SINGLE CONDUCTORS - THIS BOX IS COMMON TO THE WETWELL JUNCTION BOX NOTED IN KEYNOTE 1.
3. SUBMERSIBLE PUMP/MOTOR.
4. FLOATS - TYPICAL OF 4. CABLES SHALL BE ROUTED THROUGH WETWELL SLAB TO WETWELL JUNCTION BOX VIA SEALING CONNECTORS. COORDINATE FLOAT ELEVATIONS WITH SANITARY DRAWINGS AND SPECIFICATIONS.
5. NEW PRESSURE GAUGE. SEE SPECIFICATIONS FOR GAUGE REQUIREMENTS AND RANGES.
6. LEVEL SENSOR HOLDER. SEE DRAWING I-501 FOR DETAILS.
7. SUBMERSIBLE PUMP POWER/CONTROL CABLE FROM PUMP MOTOR TO WETWELL JUNCTION BOX.
8. CONTRACTOR SHALL FURNISH AND INSTALL STAINLESS STEEL STRAIN RELIEF CABLE GRIP AT EACH END OF PUMP CABLES.
9. CONTRACTOR SHALL FURNISH AND INSTALL SEALING CONNECTORS (CLASS I, DIVISION 2) FOR PUMP POWER/CONTROL CABLES.
10. SUBMERSIBLE FLOAT CABLES TO WETWELL JUNCTION BOX.
11. CONTRACTOR SHALL FURNISH AND INSTALL STAINLESS STEEL STRAIN RELIEF CABLE GRIPS FOR EACH FLOAT CABLE.
12. CONTRACTOR SHALL FURNISH AND INSTALL SEALING CONNECTORS (CLASS I, DIVISION 2) FOR EACH FLOAT CABLE.
13. CONTRACTOR SHALL CORE THROUGH SLAB TO ALLOW ROUTING OF PUMP POWER AND CONTROL CABLE (OR FLOAT CABLES).
14. PUMP BRANCH CIRCUIT FROM LIFT STATION CONTROL PANEL - SEE DRAWING E-701 FOR REQUIRED CONDUIT/CONDUCTORS.
15. 8#12, 1#12 GND, 1"C FROM WETWELL JUNCTION BOX TO LIFT STATION CONTROL PANEL (FLOAT CABLES).

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BABY FARMS LIFT STATION - ELECTRICAL PLAN

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS

FALL CREEK REGIONAL WASTE DISTRICT

DESIGNED: WER

DRAWN: WER

REVIEWED: WER

APPROVED: WLM

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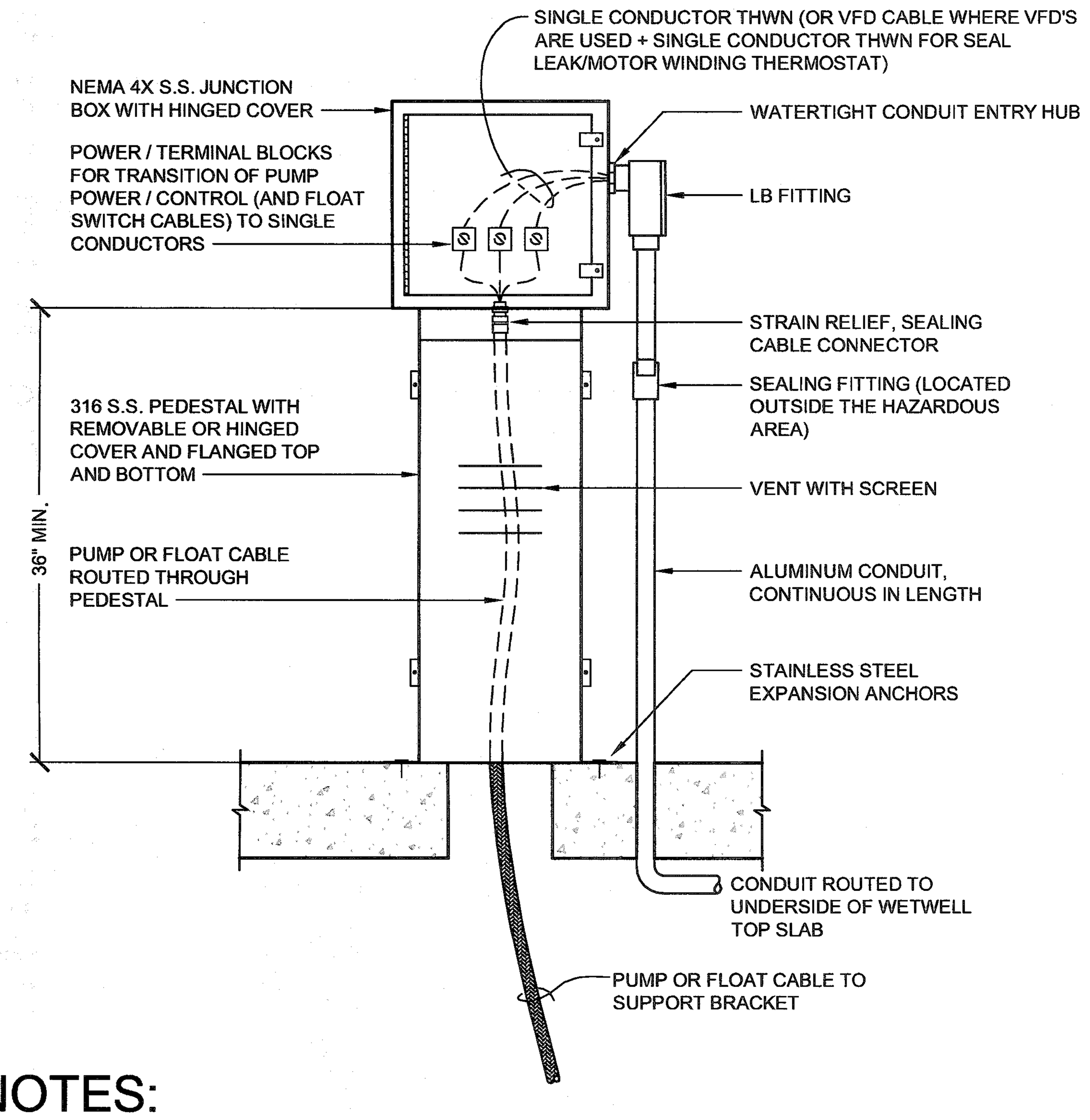
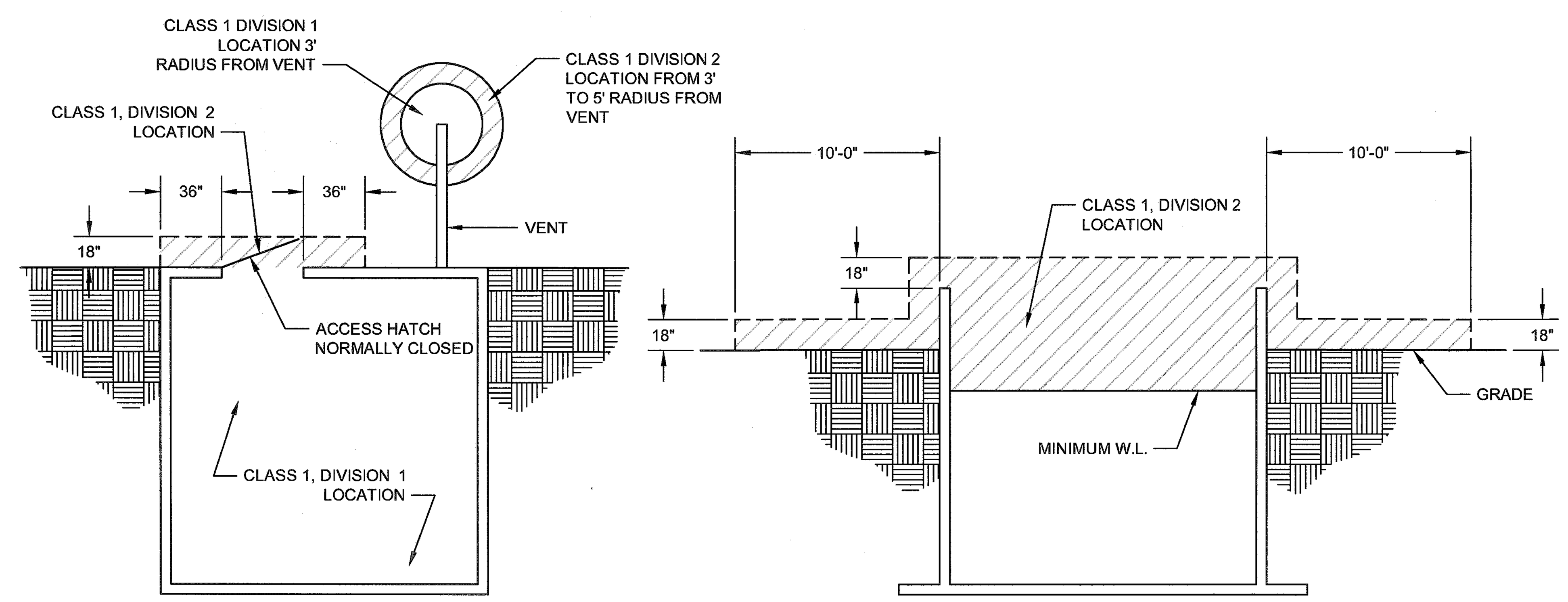


NOTES:

1. JUNCTION BOX SHALL BE SIZED AS REQUIRED TO ACCOMODATE POWER/TERMINAL BLOCKS AND NUMBER OF CABLES.
2. PROVIDE ADEQUATE POWER AND TERMINAL BLOCKS FOR TRANSITION OF PUMP POWER/CONTROL OR FLOAT CABLES TO SINGLE CONDUCTORS.
3. PROVIDE STRAIN RELIEF CABLE GRIP AND SEALING CABLE CONNECTORS FOR ALL CABLES ENTERING WETWELL.
4. SEALING CONNECTORS SHALL BE RATED FOR CLASS I, DIVISION 2, GROUP D HAZARDOUS LOCATIONS AND SHALL BE HAWKE 710, OR EQUAL.
5. GROUND LUG IS NOT SHOWN, HOWEVER, IS REQUIRED.
6. WETWELL JUNCTION BOX DETAIL ALSO APPLIES TO PRESSURE TRANSDUCER CABLE, WHERE APPLICABLE. PRESSURE TRANSDUCER CABLE IS COILED IN JUNCTION BOX WITH NO SPLICES.

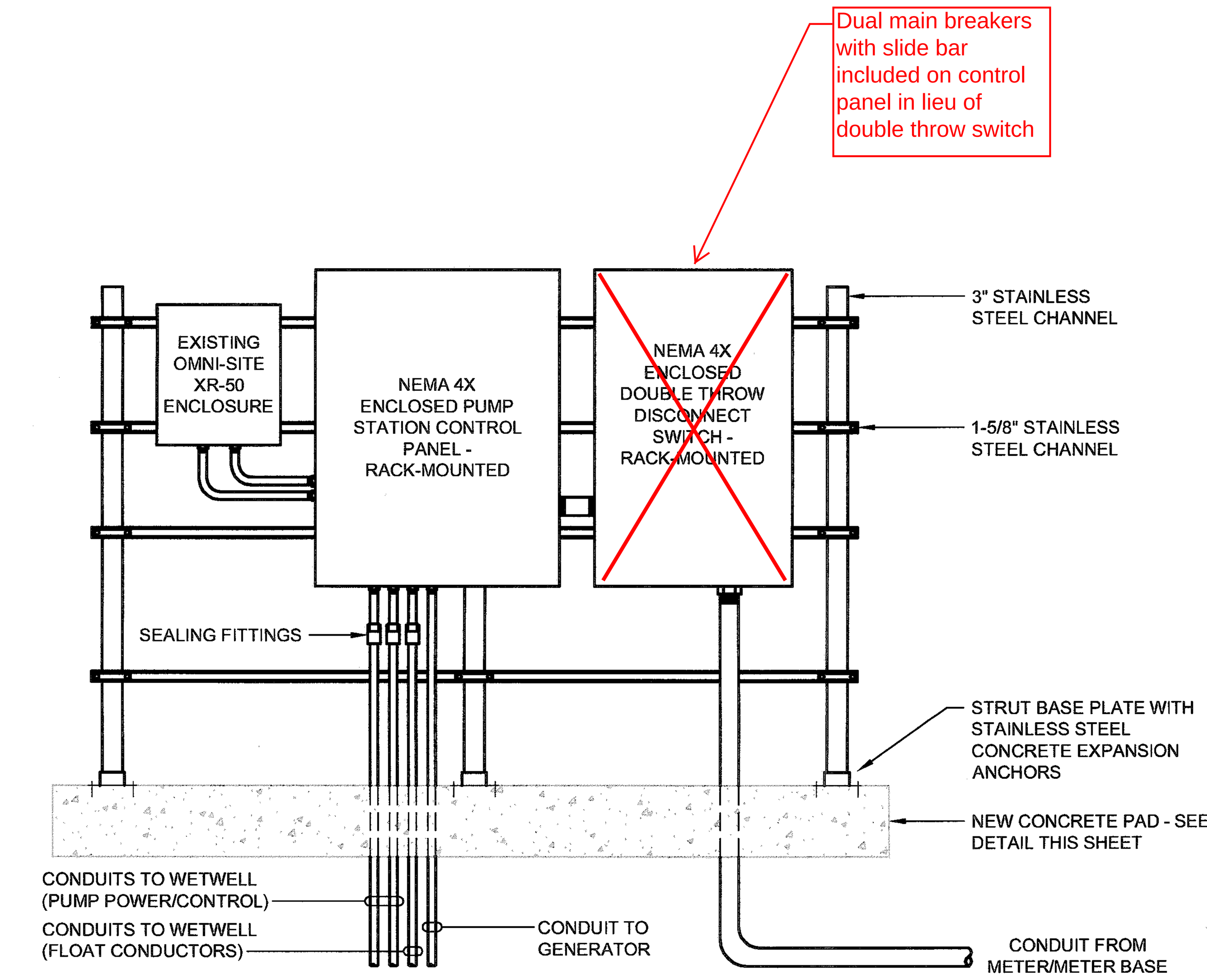
1 PUMP/FLOAT CABLE WETWELL JUNCTION BOX
NOT TO SCALE



ENCLOSED STRUCTURE

OPEN TANK

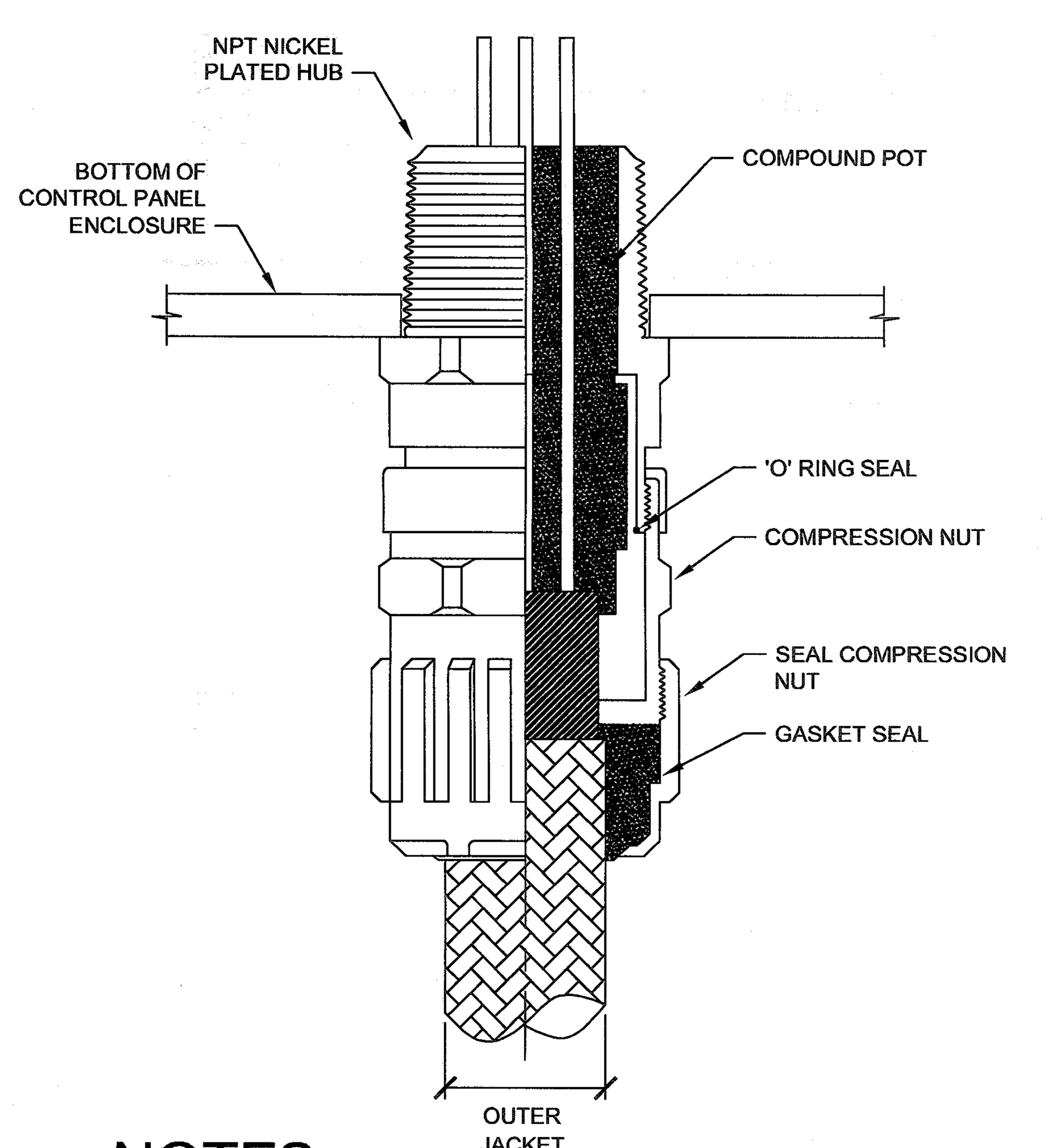
2 TYPICAL STRUCTURE EXPLOSIONPROOF LOCATION BOUNDARIES
NOT TO SCALE



NOTES:

1. ALL NUTS, BOLTS, WASHERS, ETC. SHALL BE STAINLESS STEEL.
2. CONTRACTOR SHALL PROVIDE ANGLED CROSS BRACING TO PREVENT LATERAL MOVEMENT AS REQUIRED (NOT SHOWN).
3. ALL EQUIPMENT SHALL BE BOLTED TO STRUT FRAME, UTILIZING STAINLESS STEEL ADAPTER PLATES AS REQUIRED.

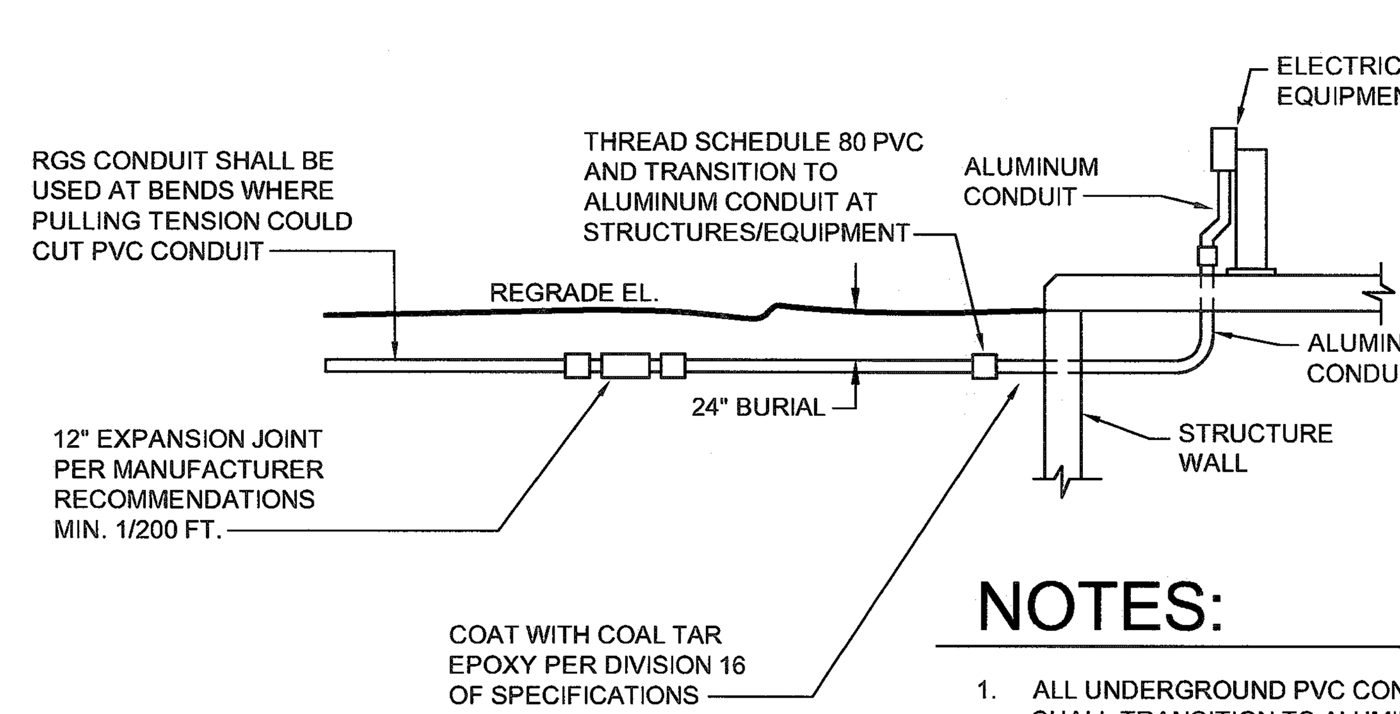
3 ELECTRICAL EQUIPMENT RACK - OUTDOOR EQUIPMENT
NOT TO SCALE



NOTES:

1. CONNECTORS SHALL BE HAWKE 710, OR EQUAL (CLASS 1, DIVISION 2 GROUP D HAZARDOUS LOCATION RATED).
2. PROVIDE SEALING WASHER FOR INGRESS PROTECTION WHERE SPECIFIED.

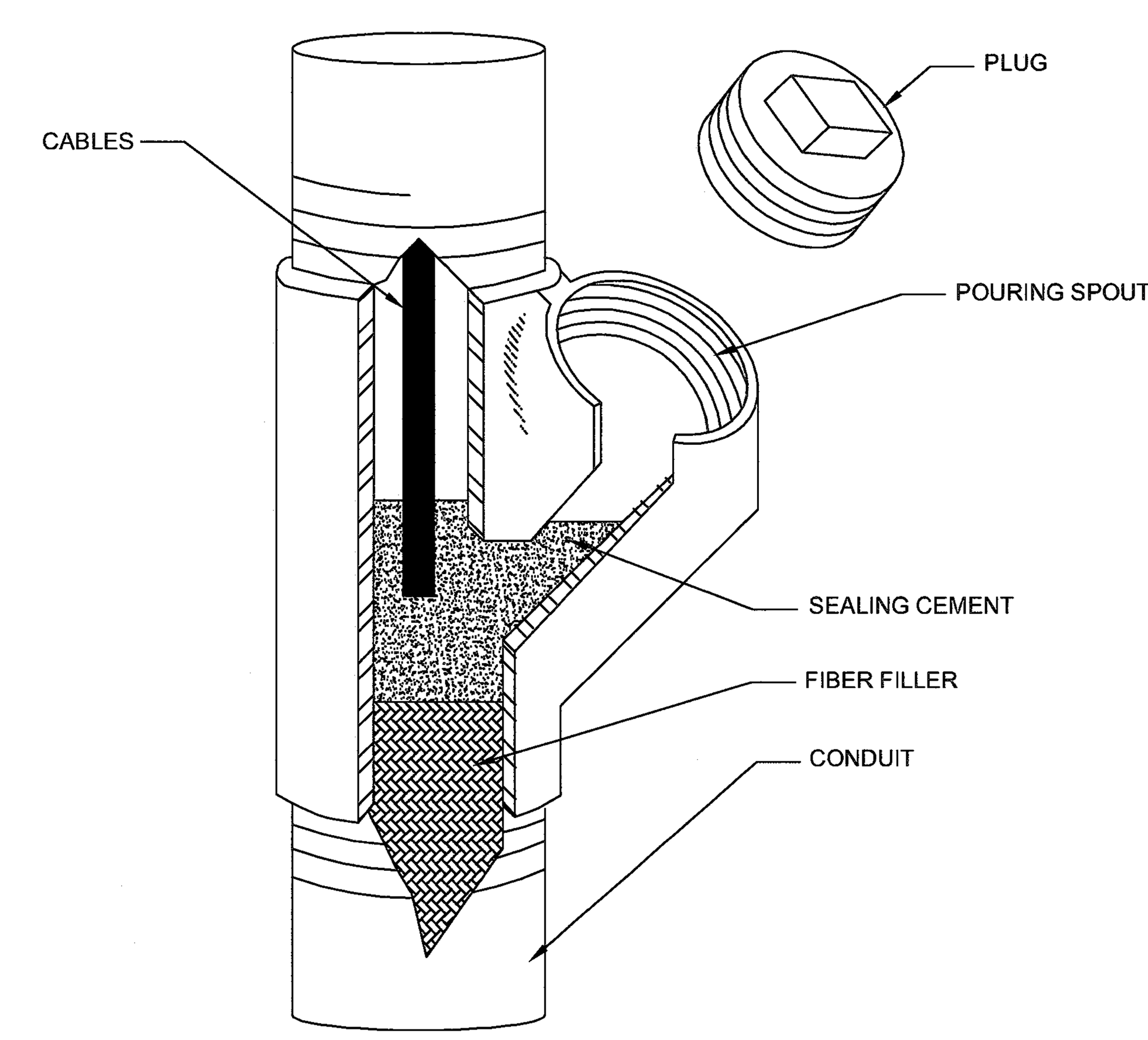
4 PUMP POWER AND CONTROL CABLE GLAND CONNECTION
NOT TO SCALE



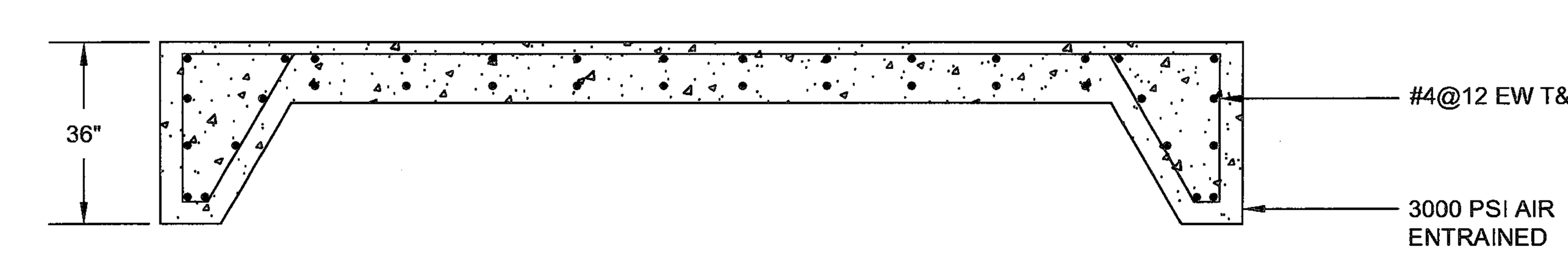
NOTES:

1. ALL UNDERGROUND PVC CONDUITS SHALL TRANSITION TO ALUMINUM CONDUIT WHERE POURED IN SLAB OR EXPOSED.

5 TYPICAL UNDERGROUND PVC CONDUIT TRANSITION TO ALUMINUM CONDUIT
NOT TO SCALE



6 CONDUIT SEAL FITTING
NOT TO SCALE



7 TYP. CONCRETE PAD - ELECTRICAL EQUIPMENT
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MISCELLANEOUS ELECTRICAL DETAILS I

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

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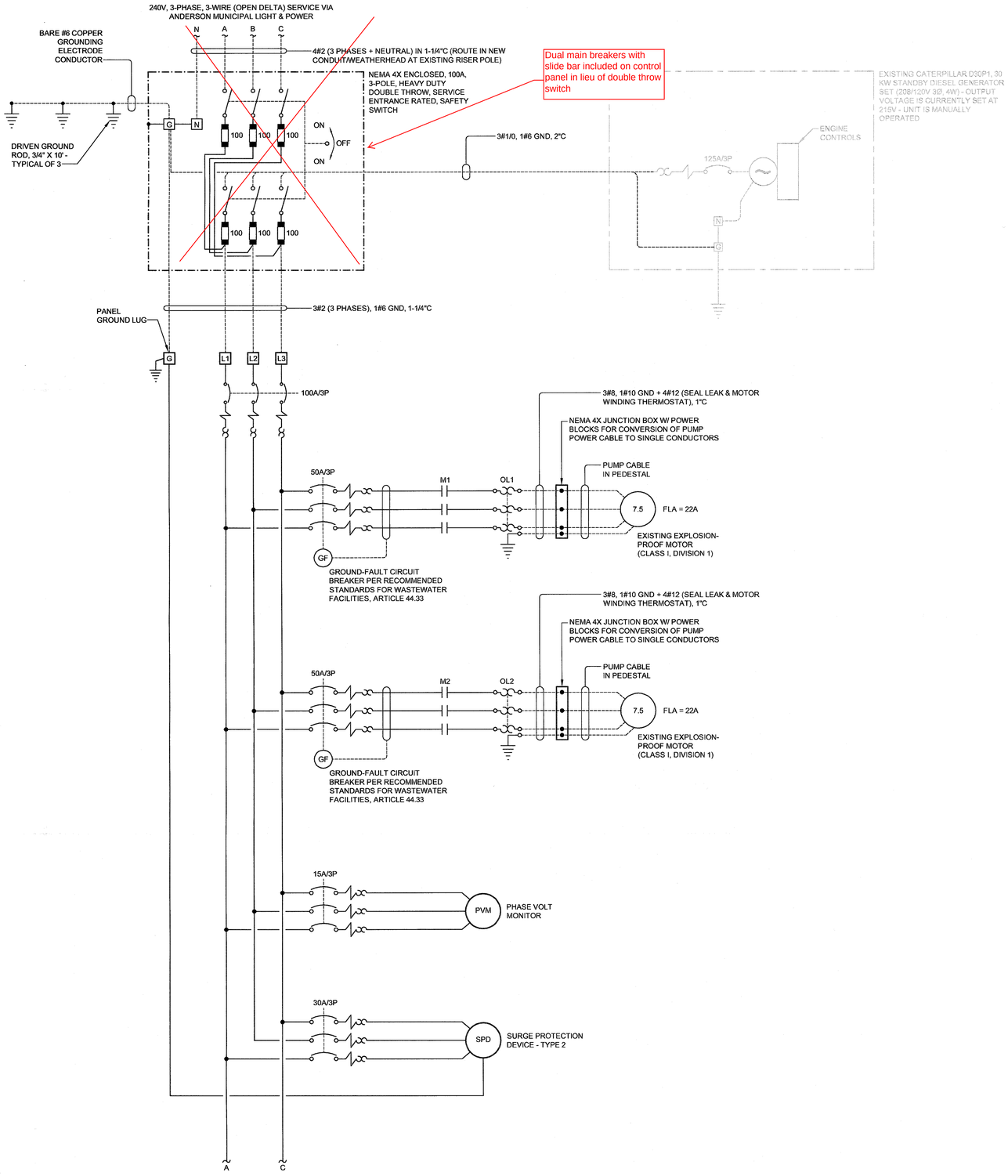

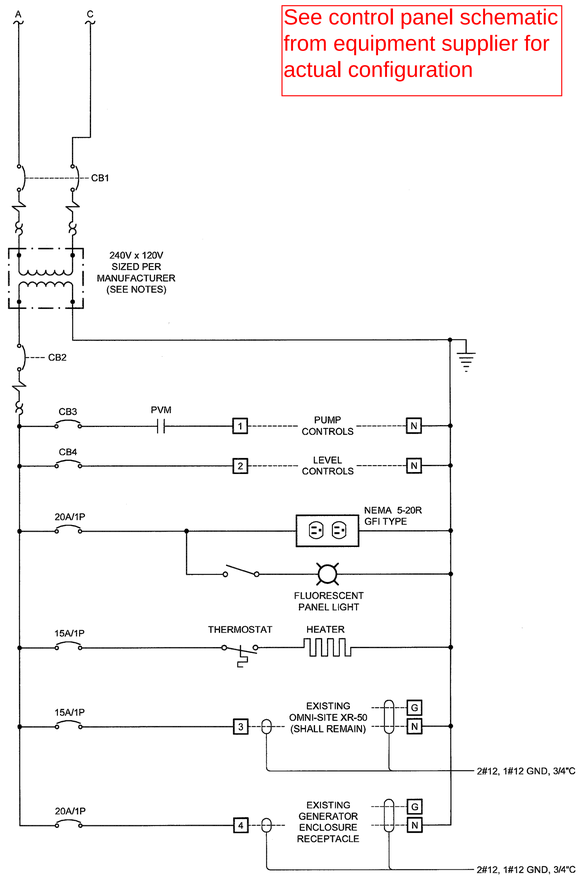

GENERAL NOTES:

1. THE PUMP CONTROLS (FVNR MOTOR STARTER, OVERCURRENT DEVICES, SEAL LEAK/MOTOR WINDING RELAY, FEEDERS) ARE BASED ON HYDROMATIC PUMPS/MOTORS - 7.5 HP, 22A FULL LOAD.
2. CONTROL PANEL MANUFACTURER SHALL PROVIDE CONDENSATE HEATER OF SUFFICIENT SIZE TO ACCOMMODATE PANEL.
3. MANUFACTURER SHALL SIZE UPS, POWER SUPPLIES, PANEL LIGHTING, ETC. AS REQUIRED. UPS SHALL BE SIZED FOR MINIMUM 30 MIN. BACKUP.
4. MANUFACTURER SHALL SIZE ALL POWER SUPPLIES AS REQUIRED.
5. MANUFACTURER SHALL SIZE ALL OVERCURRENT DEVICES PER THEIR PANEL DESIGN, WHERE INDICATED.
6. THE CONTROL PANEL MAIN BREAKER SHALL BE OF SUFFICIENT SIZE TO ALLOW BOTH PUMPS TO OPERATE SIMULTANEOUSLY.
7. CONTROL PANEL MANUFACTURER SHALL PROVIDE 240V x 120V SINGLE PHASE TRANSFORMER INCLUDING PRIMARY AND SECONDARY OVERCURRENT PROTECTION (SIZE AS REQUIRED).
8. PLEASE NOTE THE MOTOR STARTER OVERLOADS SHOULD BE SIZED ON A WORST CASE SCENARIO WHERE THE SUPPLY VOLTAGE IS VIA THE EXISTING GENERATOR. THE EXISTING GENERATOR OUTPUT VOLTAGE IS CURRENTLY SET AT 215 VOLTS.

1 CONTROL CIRCUIT - BABY FARMS LIFT STATION

NOT TO SCALE

- 1 REQUIRED (NEMA 4X STAINLESS STEEL ENCLOSED)

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11/17/17

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CIRCUIT CONTROLS I
BABY FARMS LIFT STATION

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

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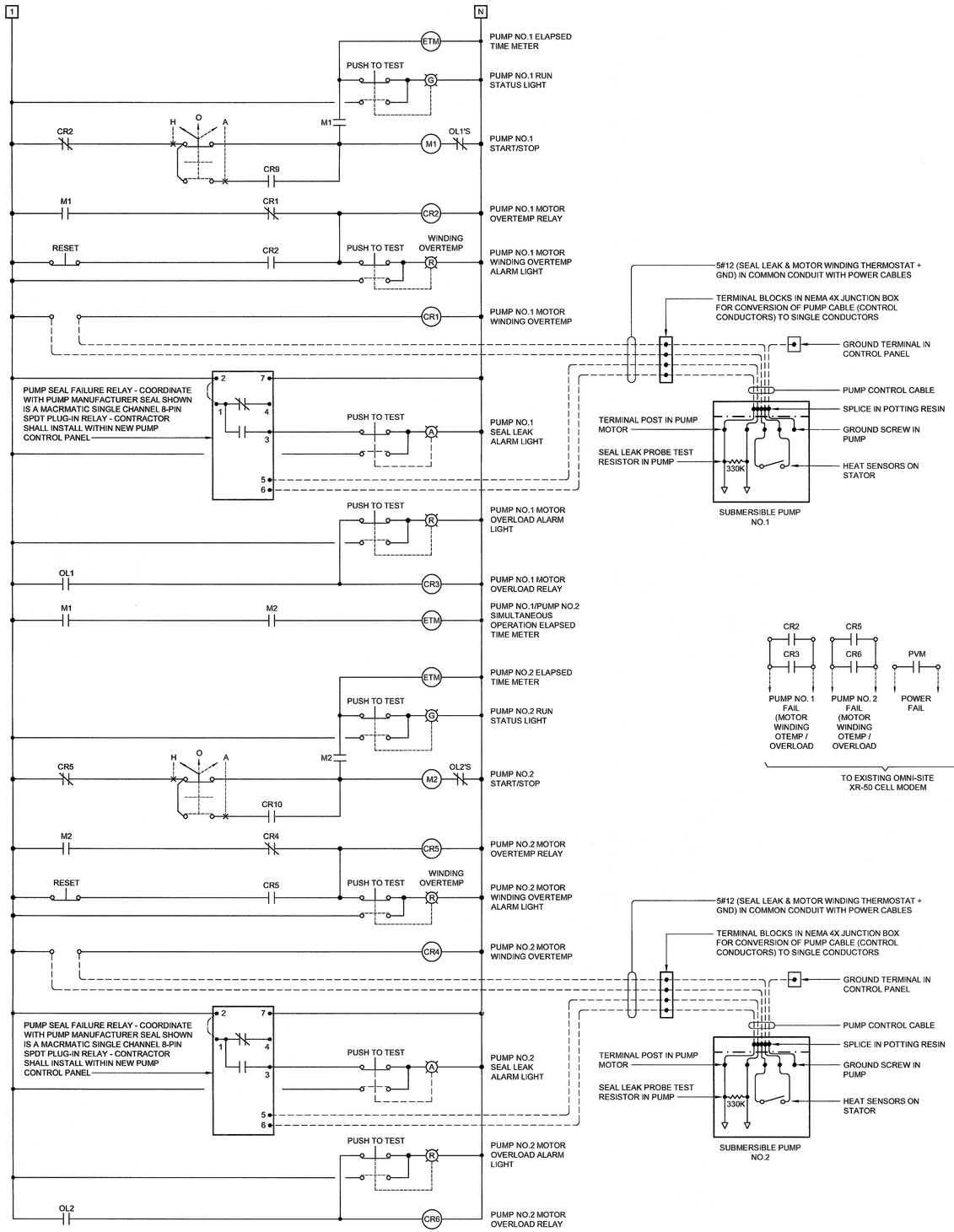

1 CONTROL CIRCUIT - BABY FARMS LIFT STATION (CONT.)

NOT TO SCALE

- 1 REQUIRED (NEMA 4X STAINLESS STEEL ENCLOSED)

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CIRCUIT CONTROLS II

BABY FARMS LIFT STATION

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS

FALL CREEK REGIONAL WASTE DISTRICT

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E-702

INSTRUMENT SYMBOL IDENTIFICATION LETTERS TABLE

	FIRST-LETTER		SUCCEEDING-LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION			CLOSE, STOP, DECREASE	
C	CONTROL			CONTROL	
D		DIFFERENTIAL		OPEN, START, INCREASE	
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			FAIL
G			GLASS, VIEWING DEVICE		
H	HAND				HIGH OR OPEN
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW OR CLOSE
M	MOTOR, MOTION	MOMENTARY		MOTOR	MIDDLE INTERMEDIATE
N					STATUS (ON-OFF)
O			ORIFICE, RESTRICTION		OVERLOAD
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION	PUMP	
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		RELAY
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS	VELOCITY		VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X		X AXIS			
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR FINAL CONTROL ELEMENT	

EXPLANATORY NOTATIONS

SIGNAL CONVERTERS

1Y 2/3

NOTE :

1: PROCESS OR INITIATING VARIABLE

2/3: A = ANALOG, D = DIGITAL, E = VOLTAGE, F = FREQUENCY, H = HYDRAULIC, I = CURRENT, M = MOTOR, O = ELECTROMAGNETIC, SONIC, P = PNEUMATIC, PF = PULSE FREQUENCY, PD = PULSE DURATION, R = RESISTANCE

SMALL CIRCLE SIGNIFIES SIGNAL INVERSION

HAND SWITCHES

HS XXX — SELECTOR SWITCH (MAINTAINED CONTACT)

HMS XXX — SPRING RETURN SWITCH OR PUSHBUTTONS (MOMENTARY CONTACT)

XXX:
AM = AUTO/MANUAL
CAM = COMPUTER/AUTO/MANUAL
FR = FOWARD/REVERSE
FS = FAST/SLOW
HOA = HAND/OFF/AUTO
LOS = LOCKOUT/STOP
MOC = MODULATE OPEN/CLOSE
OO = ON/OFF
SS = START/STOP
CM = COMPUTER/MANUAL
CL = COMPUTER/LOCAL
FOR = FOWARD/OFF/REVERSE
FOS = FAST/OFF/SLOW
LOR = LOCAL/OFF/REMOTE
MFS = MODULATE fASTER/SLOWER
OC = OPEN/CLOSE
OSC = OPEN/STOP/CLOSE

ANALYSIS INSTRUMENTS

AE XXX — EXPOSED PROBE OR GAS DETECTOR

AE XXX — TAPPED OR SAMPLED

AE XXX — IN-LINE (FLOW THROUGH)

XXX:
COL = COLOR
CG = COMBUSTIBLE GAS
CLG = CHLORINE GAS
COG = CARBON MONOXIDE GAS
HC = HYDROCARBONS
H2S = HYDROGEN SULFIDE
NH4 = AMMONIA
OG = OXYGEN GAS
PH = pH
SO2 = SULPHUR DIOXIDE GAS
TOC = TOTAL ORGANIC CARBON
CDG = CARBON DIOXIDE GAS
CH4 = METHANE
CLR = CHLORINE RESIDUAL
DO = DISSOLVED OXYGEN
HUM = HUMIDITY
MHO = CONDUCTIVITY
N2G = NITROGEN GAS
OZG = OZONE GAS
SD = SOLIDS DENSITY
SS = SUSPENDED SOLIDS
TRB = TURBIDITY

INSTRUMENT TAG NUMBER

FIRST-LETTER — SUCCEEDING-LETTERS — TIC 1001 — INSTRUMENT SYMBOL — INSTRUMENT LOOP NUMBER

COMMONLY USED INSTRUMENT FUNCTIONAL IDENTIFICATION LETTER COMBINATIONS DEVELOPED FROM CHART AT LEFT (UNLESS NOTED AS CUSTOM SYMBOL):

COMBINATION	DESCRIPTION
AE	ANALYZER PRIMARY ELEMENT
FE	FLOW PRIMARY ELEMENT
LE	LEVEL PRIMARY ELEMENT
PE	PRESSURE PRIMARY ELEMENT
FCV	FLOW CONTROL VALVE (FINAL ELEMENT)
FIT	FLOW INDICATING TRANSMITTER
LIT	LEVEL INDICATING TRANSMITTER
AIT	ANALYSIS INDICATING TRANSMITTER
PIT	PRESSURE INDICATING TRANSMITTER
FAL	FLOW ALARM LOW
LAH	LEVEL ALARM HIGH
FI	FLOW INDICATOR
PI	PRESSURE INDICATOR
LI	LEVEL INDICATOR
FIR	FLOW INDICATING RECORDER
FIRQ	FLOW INDICATING RECODER WITH TOTALIZER
FIC	FLOW INDICATING CONTROLLER
KC	TIMER
CR	CONTROL RELAY
I/I	CURRENT TO CURRENT CONVERTER (LOOP ISOLATOR)
FY	FLOW COMPUTING RELAY
UT	TELEPHONE DIALER
MN	MOTOR STATUS
MO	MOTOR OVERLOAD
FMR	FM RADIO (CUSTOM SYMBOL)
RTU	REMOTE TERMINAL UNIT (CUSTOM SYMBOL)
MTU	MASTER TERMINAL UNIT (CUSTOM SYMBOL)
PS	POWER SUPPLY (CUSTOM SYMBOL)
I/O	INPUT/OUTPUT MODULE (CUSTOM SYMBOL)
PT	PRESSURE TRANSDUCER (CUSTOM SYMBOL)
A/D	ANALOG TO DIGITAL CONVERTER (CUSTOM SYMBOL)
D/A	DIGITAL TO ANALOG CONVERTER (CUSTOM SYMBOL)
PCM	PUMP CONTROL MODULE (CUSTOM SYMBOL)
TSG	THUMBWHEEL SETPOINT GENERATOR (CUSTOM SYMBOL)
MNC	MOTOR CALL
MNF	MOTOR FAILED
DFA	DATA FAIL ALARM
MTS	MOTOR TEMPERATURE SWITCH

EQUIPMENT SYMBOLS

- CENTRIFUGAL PUMP (DRY PIT)
- BLOWER
- CENTRIFUGAL PUMP (WET PIT)
- COMPRESSOR (PISTON TYPE)
- PROGRESSIVE CAVITY PUMP
- GEAR PUMP OR BLOWER (PD)
- SCREW CONVEYOR/PUMP
- SUBMERSIBLE PUMP
- METERING PUMP
- VERTICAL TURBINE
- MOTOR
- MIXER
- EJECTOR
- HEAT EXCHANGER

XX: BLANK = CONSTANT SPEED
2S = TWO SPEED
VS = VARIABLE SPEED

MISCELLANEOUS SYMBOLS

- DIAPHRAGM SEAL
- TRANSIENT SUPPRESSOR
- RUPTURE DISK (PRESSURE RELIEF)
- SIGHT GLASS X: W = WATER, A = AIR
- RUPTURE DISK (VACUUM RELIEF)
- FLOW STRAIGHTENER
- (REGULATED SIDE) PRESSURE REGULATOR
- DIFFERENTIAL PRESSURE REGULATOR
- PRESSURE GAUGE
- ANTENNA (GENERIC)
- INTERLOCK LOGIC
- VENT TO ATMOSPHERE
- RESET
- AIR GAP
- SQUARE ROOT EXTRACTOR
- SNUBBER
- SIGNAL CONTINUATION WHERE X = 1,2,3,ETC.

GENERAL INSTRUMENT OR FUNCTION SYMBOLS

	DISCRETE INSTRUMENT	SHARED DISPLAY/ SHARED CONTROL	COMPUTER FUNCTION	PROGRAMMABLE LOGIC CONTROLLER
OPERATOR ACCESSIBLE				
NOT ACCESSIBLE TO OPERATOR				
FIELD MOUNTED				
FRONT OF PANEL MOUNTED				
INTERIOR OF PANEL MOUNTED				
MOTOR CONTROL CENTER MOUNTED				
INSTRUMENTS SHARING A COMMON HOUSING				
ANNUNCIATOR				

PRIMARY ELEMENT SYMBOLS

FLOW

- ELECTROMAGNETIC
- ULTRASONIC IN-LINE OR DOPPLER
- ULTRASONIC CLAMP-ON
- VENTURI
- ORIFICE PLATE
- PROPELLER OR TURBINE
- VORTEX SHEDDING
- TARGET
- PITOT TUBE
- ROTAMETER
- FLUME
- WEIR
- UNCLASSIFIED FLOW ELEMENT: X = E SWITCH: X = S

LEVEL

- BUBBLE TUBE
- ULTRASONIC/RADAR
- CAPACITANCE
- ELECTRODES (WITH HOLDER)
- FLOAT
- UNCLASSIFIED LEVEL ELEMENT: X = E SWITCH: X = S

TEMPERATURE

- TEMPERATURE WITH WELL

ACTUATOR SYMBOLS

- PNUEMATIC
- ELECTROPNEUMATIC
- HYDRAULIC
- ELECTROHYDRAULIC
- SOLENOID
- NOTE XX: PZ, HZ OR MZ INDICATES ACTUATOR WITH POSITIONER
- PRESSURE OR VACUUM RELIEF SPRING OR WEIGHT LOADED
- MANUAL

NOTE: ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL)

XX: FO = FAIL OPEN
FC = FAIL CLOSED
FI = FAIL TO INTERMEDIATE POSITION
BLANK = FAIL TO LAST POSITION

VALVE & GATE SYMBOLS

- BUTTERFLY VALVE, DAMPER OR LOUVER
- CHECK VALVE
- GLOBE, GATE, PINCH OR OTHER IN-LINE VALVE
- BALL VALVE
- THREE WAY VALVE (ARROWS INDICATE FLOW PATTERN)
- TELESCOPING VALVE
- SLUICE GATE
- PREFABRICATED SLIDE GATE
- MUD VALVE

INSTRUMENT LINE SYMBOLS

(LINES TO BE DRAWN FINE IN RELATION TO PROCESS PIPING LINES)

- CONNECTION TO PROCESS
- PNEUMATIC SIGNAL
- ELECTRIC (OR)
- HYDRAULIC SIGNAL
- CAPILLARY TUBE
- ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)
- ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)
- INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
- MECHANICAL LINK

ABBREVIATIONS/ACRONYMS

AS	AIR SUPPLY	ES	ELECTRIC SUPPLY
GS	GAS SUPPLY	HS	HYDRAULIC SUPPLY
WS	WATER SUPPLY	CO	CONTACT OUTPUT
CI	CONTACT INPUT	PD	POSITIVE DISPLACEMENT
FMR	FM RADIO	MTU	MASTER TERMINAL UNIT
RTU	REMOTE TERMINAL UNIT		

GENERAL NOTES

1. SEE DIVISION 40 OF THE SPECIFICATIONS FOR FURTHER INSTRUMENTATION REQUIREMENTS.
2. THIS IS A GUIDE TO READING INSTRUMENT SOCIETY OF AMERICA (ISA) FORMAT P&ID OR LOOP DIAGRAMS. THESE SYMBOLS AND TECHNIQUES HAVE MOSTLY EXTRACTED FROM ISA STANDARD S5.1. THIS IS NOT HOWEVER, A COMPLETE OR EXACT DUPLICATION OF S5.1. NOT ALL SYMBOLS SHOWN ARE USED ON THIS PROJECT. SOME SYMBOLS MAY BE USED THAT ARE NOT SHOWN. CONTACT THE ENGINEER OR REFER TO ISA STANDARD S5.1 FOR CLARIFICATIONS.
3. POWER SUPPLIES SHALL BE FURNISHED BY THE INSTRUMENT SUPPLIER AS REQUIRED TO MEET THE VOLTAGE AND CURRENT REQUIREMENTS OF THE COMPONENTS IN EACH LOOP OR SYSTEM.

COMMUNICATION & PROCESS SYMBOLS

- FLOW STREAM CONNECTION NOT SHOWN ON OTHER DRAWINGS
- XXXX — FLOW STREAM CONNECTION SHOWN ON ANOTHER DRAWING. XXXX IS SHEET NUMBER WHERE SHOWN.
- DIGITAL INPUT (DISCRETE)
- DIGITAL OUTPUT (DISCRETE)
- PULSE TRAIN INPUT
- PULSE OUTPUT (MOMLENTARY UNLESS F IS PRESENT - F MEANS PULSE TRAIN OUTPUT)
- ANALOG INPUT
- ANALOG OUTPUT

GENERAL NOTE:

1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WIRING WITH INSTRUMENTATION EQUIPMENT PROVIDED IN DIVISION 40.

INSTRUMENTATION STANDARD SYMBOLS AND LEGEND

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

GRW PROJECT NO. 4625
CLIENT PROJECT NO.

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No. 19300315 STATE OF INDIANA

DESIGNED: WER | DRAWN: WER | REVIEWED: WER | APPROVED: WLM

REVISIONS: NO. | DESCRIPTION | DATE | BY

THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED — SCALE CHECK

DATE:

SCALE: NOT TO SCALE

SHEET NO. I-001

PLOTTED BY: WRoberts
PRINTED: 11/17/2017 @ 2:45PM
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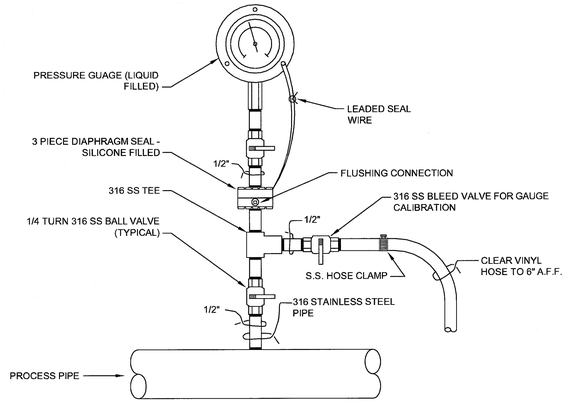
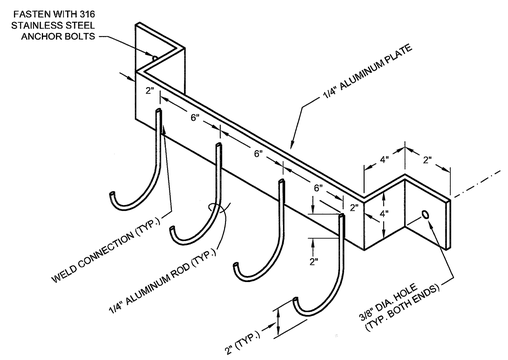


NOTES:

1. A SADDLE IS REQUIRED FOR ALL TYPES OF PLASTIC PIPE OR THIN WALL DUCTILE IRON PIPE.

1 TYPICAL PRESSURE GAUGE PIPING DETAIL

NOT TO SCALE



NOTES:

1. RACKS FURNISHED WITH PUMPS MAY BE UTILIZED IN LIEU OF THIS DETAILED BRACKET, AS LONG AS SUITABLY PROTECTED FROM CORROSION.

2 LEVEL SENSOR HOLDER

NOT TO SCALE

WILLIAM LAMONT ROBERTS
PE
19203315
STATE OF INDIANA
REGISTERED PROFESSIONAL ENGINEER

GRW PROJECT NO. 4625

CLIENT PROJECT NO.

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INSTRUMENTATION DETAILS

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

REVISIONS			
NO.	DESCRIPTION	DATE	BY

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

DESIGNED: WER
DRAWN: WER
REVIEWED: WER
APPROVED: WLM

DATE:

SCALE: NOT TO SCALE

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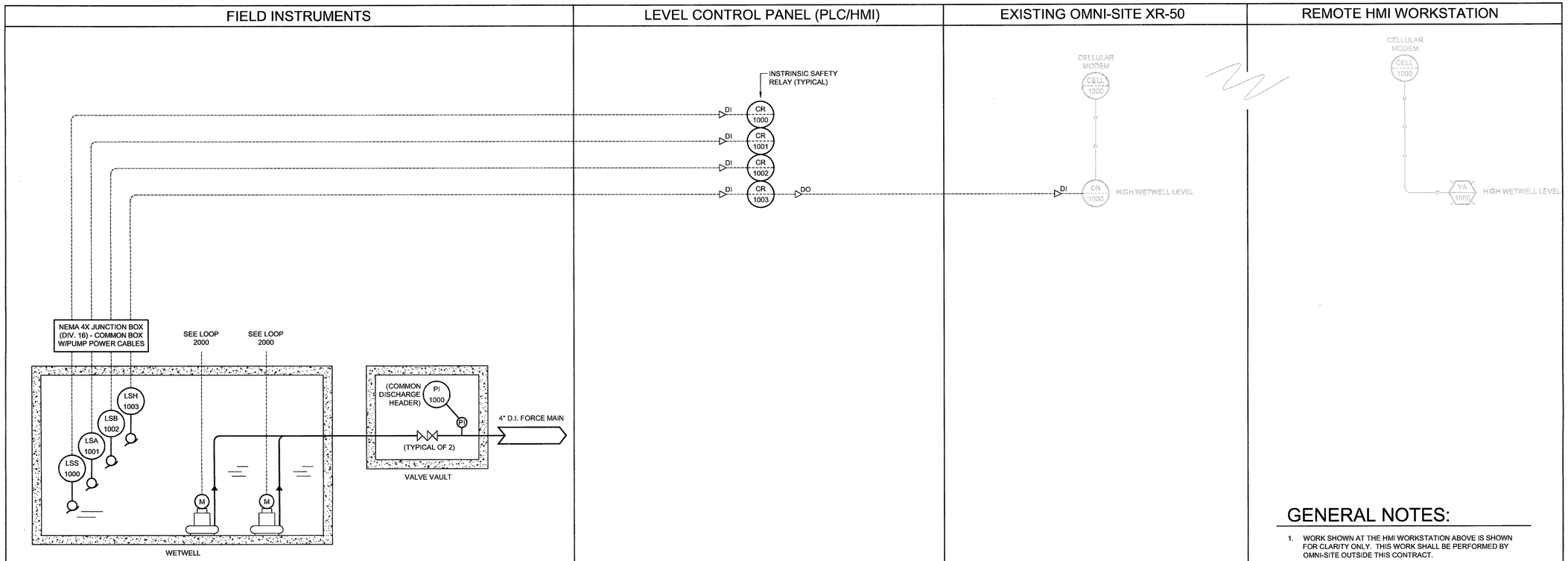
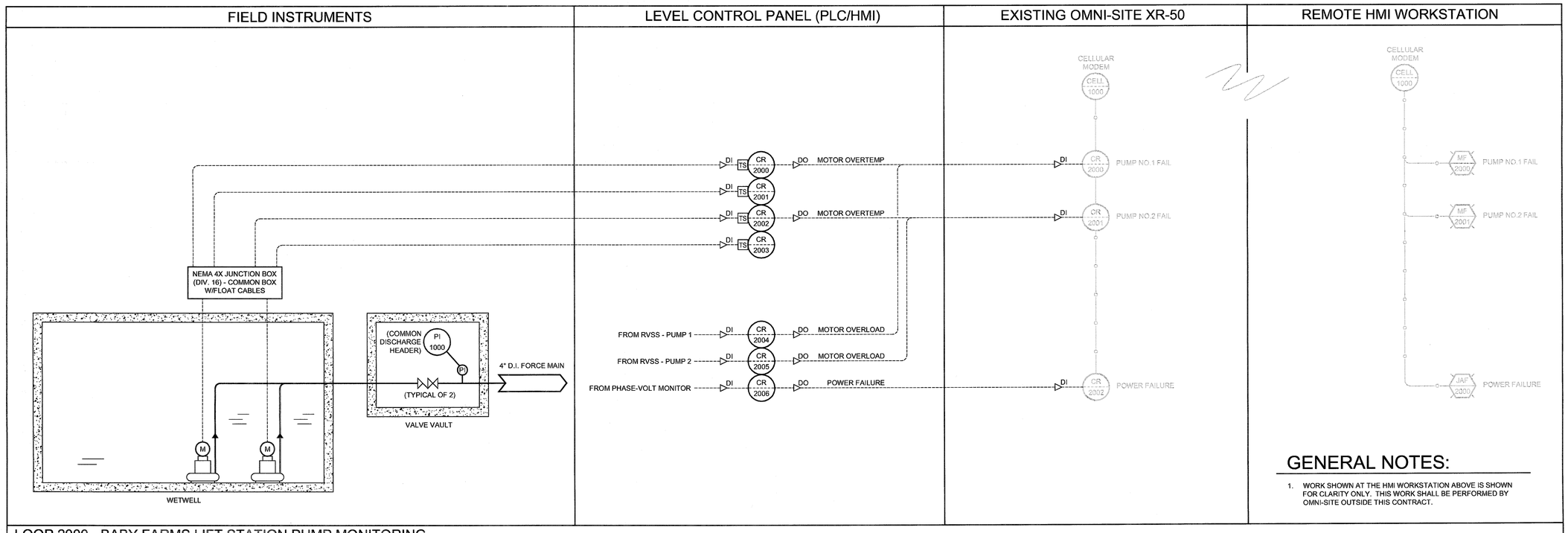


LOOP 1000 - BABY FARMS LIFT STATION CONTROL / LEVEL MONITORING

- 1 SYSTEM REQUIRED



LOOP 2000 - BABY FARMS LIFT STATION PUMP MONITORING

- 1 SYSTEM REQUIRED

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LOOP DIAGRAMS I

BABY FARMS LIFT STATION AND FORCE MAIN IMPROVEMENTS
FALL CREEK REGIONAL WASTE DISTRICT

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WER	WER	WER	WLM

REVISIONS

NO.	DESCRIPTION	DATE	BY

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

DATE:

SCALE: NONE

SHEET NO.

I-601

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