WATER & SEWER SYSTEM IMPROVEMENTS - 2014
WATER TREATMENT PLANT NO. 1-PHASE 2 IMPROVEMENTS
MARSHES SIDING WATER BOOSTER PUMP STATION
WASTEWATER TREATMENT PLANT IMPROVEMENTS
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT FUNDING

U.S.D.A. RURAL DEVELOPMENT (RD)

COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
DOUG SEXTON, SECRETARY
MAYNARD NEW
COY TAYLOR
TONY JONES

MANAGER/SUPERINTENDENT

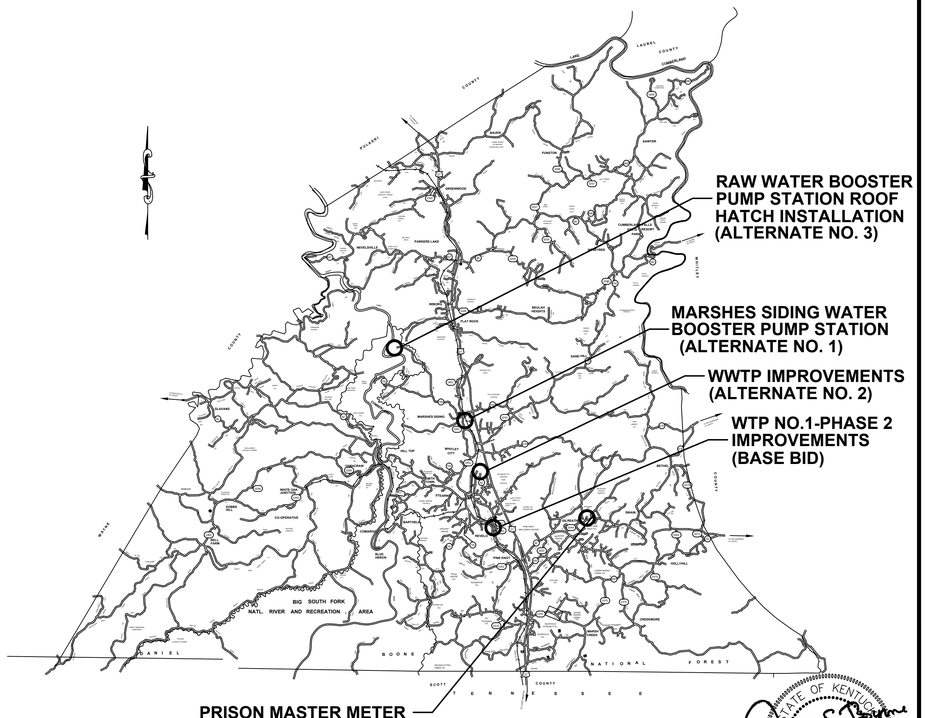
STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER

SEPTEMBER 2014

LOCATION MAP



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

STATE OF KENTUCKY
DEREK S. BYRNE
23122
LICENSED
PROFESSIONAL ENGINEER
02/19/2015

MASTER
TABLE OF CONTENTS

BASE BID
WATER TREATMENT PLANT NO. 1 - PHASE 2 IMPROVEMENTS

ALTERNATE NO. 1
MARSHES SIDING WATER BOOSTER PUMP STATION

ALTERNATE NO. 2
WASTEWATER TREATMENT PLANT IMPROVEMENTS

ALTERNATE NO. 3
RAW WATER BOOSTER PUMP STATION ROOF HATCH INSTALLATION

ALTERNATE NO. 4
FEDERAL PRISON MASTER METER

WATER TREATMENT PLANT NO. 1 - PHASE 2 IMPROVEMENTS (2014)
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY
BASE BID

TABLE OF CONTENTS

COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
DOUG SEXTON, SECRETARY
MAYNARD NEW
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TONY JONES

MANAGER/SUPERINTENDENT

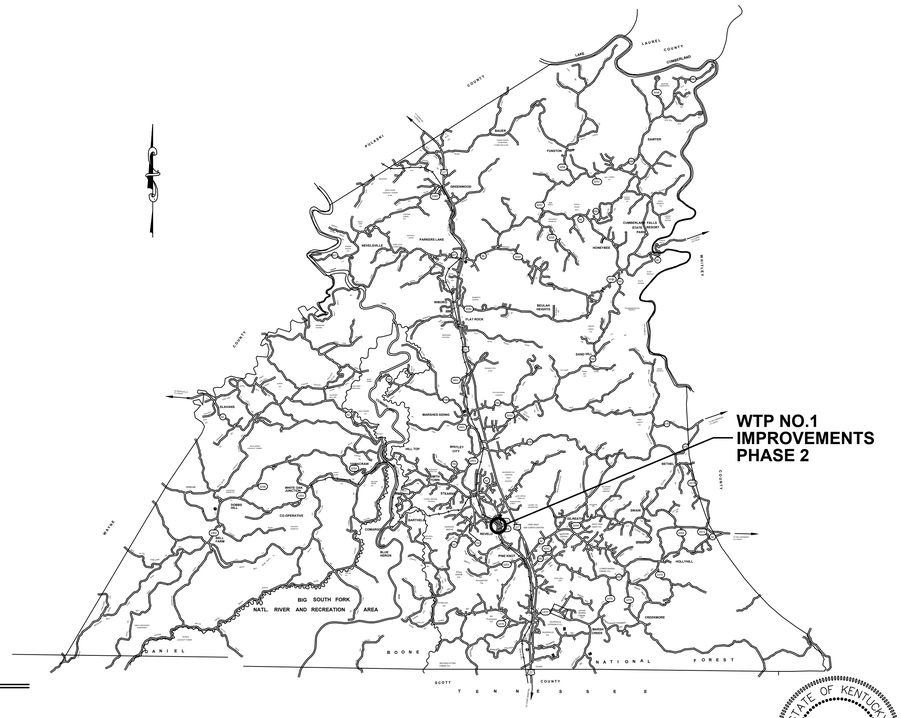
STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER

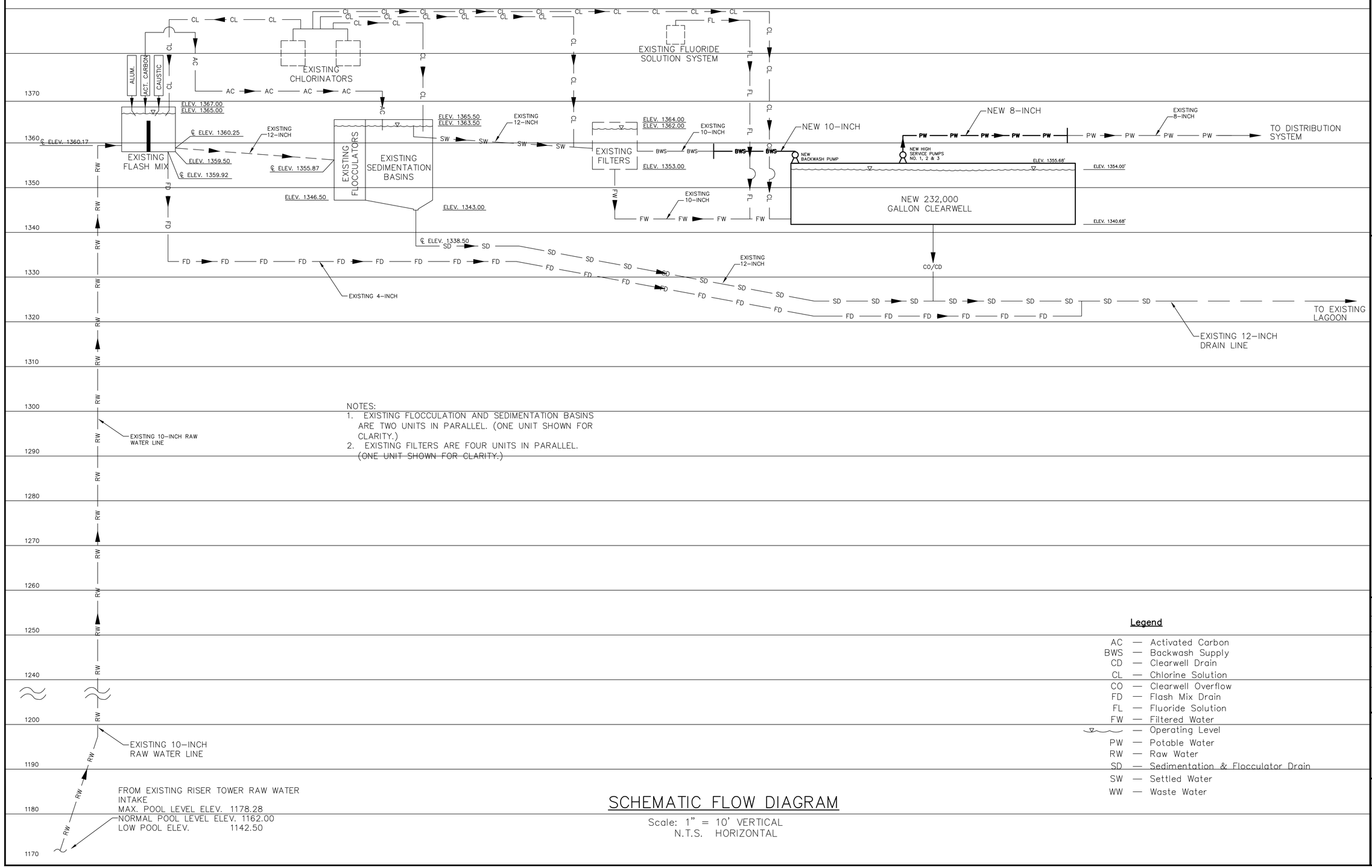
APRIL 2014

LOCATION MAP



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



NOTES:
1. EXISTING FLOCCULATION AND SEDIMENTATION BASINS ARE TWO UNITS IN PARALLEL. (ONE UNIT SHOWN FOR CLARITY.)
2. EXISTING FILTERS ARE FOUR UNITS IN PARALLEL. (ONE UNIT SHOWN FOR CLARITY.)

SCHEMATIC FLOW DIAGRAM

Scale: 1" = 10' VERTICAL
N.T.S. HORIZONTAL

Legend

AC	—	Activated Carbon
BWS	—	Backwash Supply
CD	—	Clearwell Drain
CL	—	Chlorine Solution
CO	—	Clearwell Overflow
FD	—	Flash Mix Drain
FL	—	Fluoride Solution
FW	—	Filtered Water
	—	Operating Level
PW	—	Potable Water
RW	—	Raw Water
SD	—	Sedimentation & Flocculator Drain
SW	—	Settled Water
WW	—	Waste Water

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

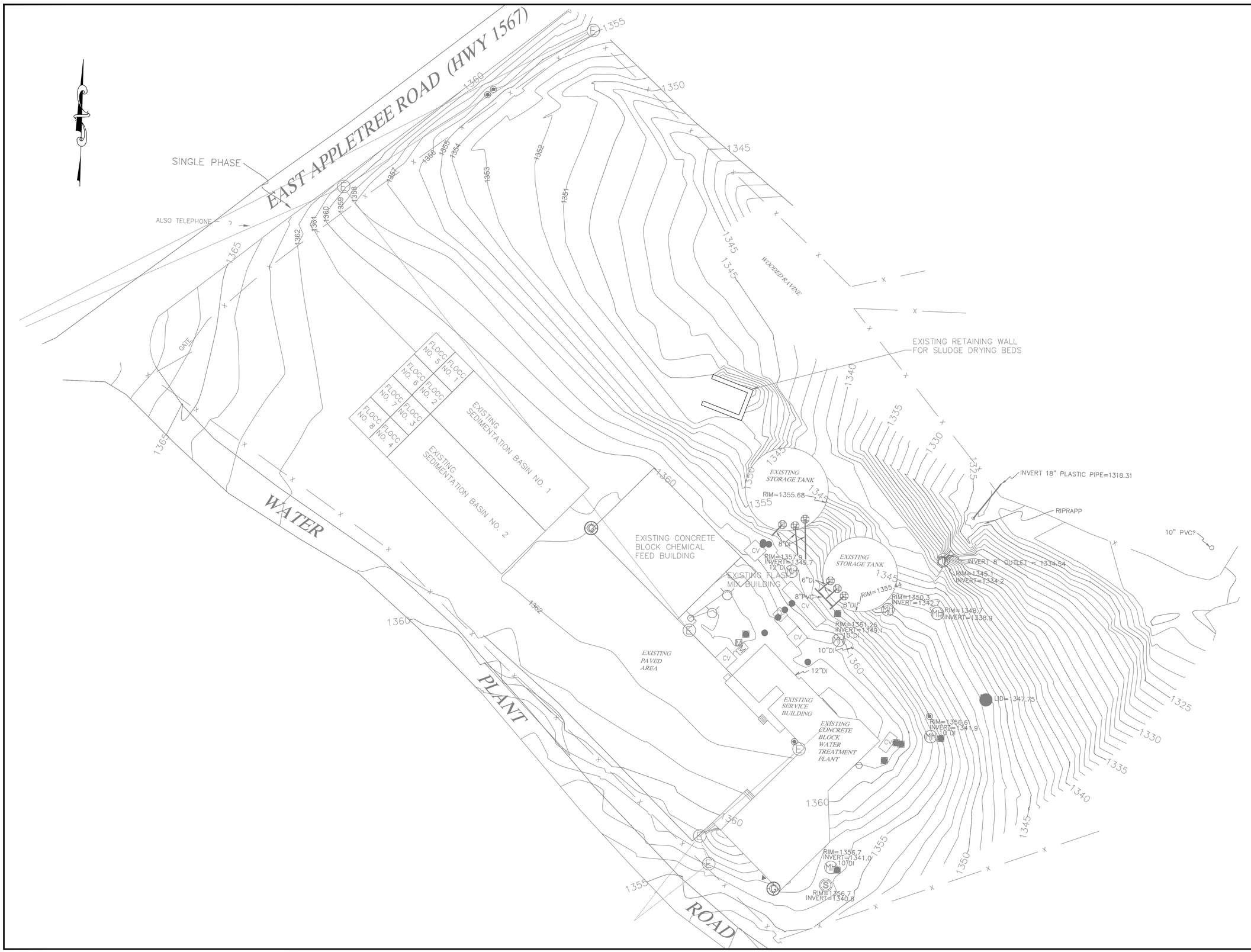
DESCRIPTION: SCHEMATIC FLOW DIAGRAM

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET: FD-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: EXISTING SITE PLAN
WATER TREATMENT PLANT NO. 1

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=20'-0"

SHEET: SP-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

EAST APPLETREE RD (HWY 1567)

SINGLE PHASE

ALSO TELEPHONE

EXISTING CHAIN LINK FENCE

GATE

EXISTING CHAIN LINK FENCE

WATER PLANT RD

EXISTING CONCRETE BLOCK CHEMICAL FEED BUILDING

EXISTING SERVICE BUILDING

BASEMENT

EXISTING CONCRETE BLOCK WATER TREATMENT PLANT

PAVED AREA

WOODED RAVINE

WOODED

POND

EXISTING SEDIMENTATION BASIN NO. 1

EXISTING SEDIMENTATION BASIN NO. 2

FLOCC NO. 1
FLOCC NO. 2
FLOCC NO. 3
FLOCC NO. 4
FLOCC NO. 5
FLOCC NO. 6
FLOCC NO. 7
FLOCC NO. 8

NO. 1
NO. 2
NO. 3
NO. 4
NO. 5
NO. 6
NO. 7
NO. 8
NO. 9
NO. 10

B-1
B-2
B-3
B-4

EXISTING RETAINING WALL FOR SLUDGE DRYING BEDS TO BE REMOVED

EXISTING CLEARWELL NO. 2 (132,000 GALLON)TO BE REMOVED

EXISTING CLEARWELL NO. 1 (100,000 GALLON) TO BE REMOVED, BUT LEFT IN SERVICE UNTIL NEW CLEARWELL IS PUT INTO SERVICE.

EXISTING VALVE VAULTS FOR CLEARWELL TO BE REMOVED. EXISTING CLEARWELL NO. 1 VALVE VAULT SHALL REMAIN IN SERVICE UNTIL NEW CLEARWELL IS PUT INTO SERVICE.

RIM 8" STANDPIPE = 1318.51

INVERT 18" PLASTIC PIPE=1318.31

INVERT 8" OUTLET = 1334.54
RIM=1345.1
INVERT=1334.2

RIM=1350.3
INVERT=1342.7

RIM=1348.7
INVERT=1338.9

RIM=1361.26
INVERT=1349.1
10"DI

RIM=1356.6
INVERT=1341.9
10"DI

LID=1347.75

RIM=1356.7
INVERT=1341.0
10"DI

RIM=1356.7
INVERT=1340.8

NEW TEST BORING LOCATION AUGUST 7, 2014

EXISTING TEST BORING LOCATION

TO BE REMOVED

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: PROPOSED SITE PLAN
WATER TREATMENT PLANT NO. 1

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=20'-0"

SHEET: SP-2

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

EAST APPLETREE RD (HWY 1567)

SINGLE PHASE

ALSO TELEPHONE

EXISTING CHAIN LINK FENCE

GATE

EXISTING CHAIN LINK FENCE

WATER PLANT RD

FLOCC NO. 1
FLOCC NO. 2
FLOCC NO. 3
FLOCC NO. 4
FLOCC NO. 5
FLOCC NO. 6
FLOCC NO. 7
FLOCC NO. 8

EXISTING SEDIMENTATION BASIN NO. 1

EXISTING SEDIMENTATION BASIN NO. 2

EXISTING CONCRETE BLOCK CHEMICAL FEED BUILDING

EXISTING FLASH MIX BUILDING

EXISTING SERVICE BUILDING

EXISTING CONCRETE BLOCK WATER TREATMENT PLANT

BASEMENT

PAVED AREA

WOODED RAVINE

WOODED

POND

HIGH SERVICE/ BACKWASH PUMP STATION

232,000 GALLON CLEARWELL

B-1
B-2
B-3
B-4

19'-0"

RIM 8" STANDPIPE = 1318.51

INVERT 18" PLASTIC PIPE=1318.31

RIPRAPP

10" PVC?

INVERT 8" OUTLET = 1334.54
RIM=1345.1
INVERT=1334.2

RIM=1350.3
INVERT=1342.7

RIM=1348.7
INVERT=1338.9

INVERT=1343.1

10"DI

12"DI

LID=1347.75

RIM=1356.6
INVERT=1341.9
10"DI

RIM=1356.7
INVERT=1341.0
10"DI

RIM=1356.7
INVERT=1340.8

EXISTING CHAIN LINK FENCE

PROPOSED

NEW CONTOURS

NEW TEST BORING LOCATION
AUGUST 7, 2014

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

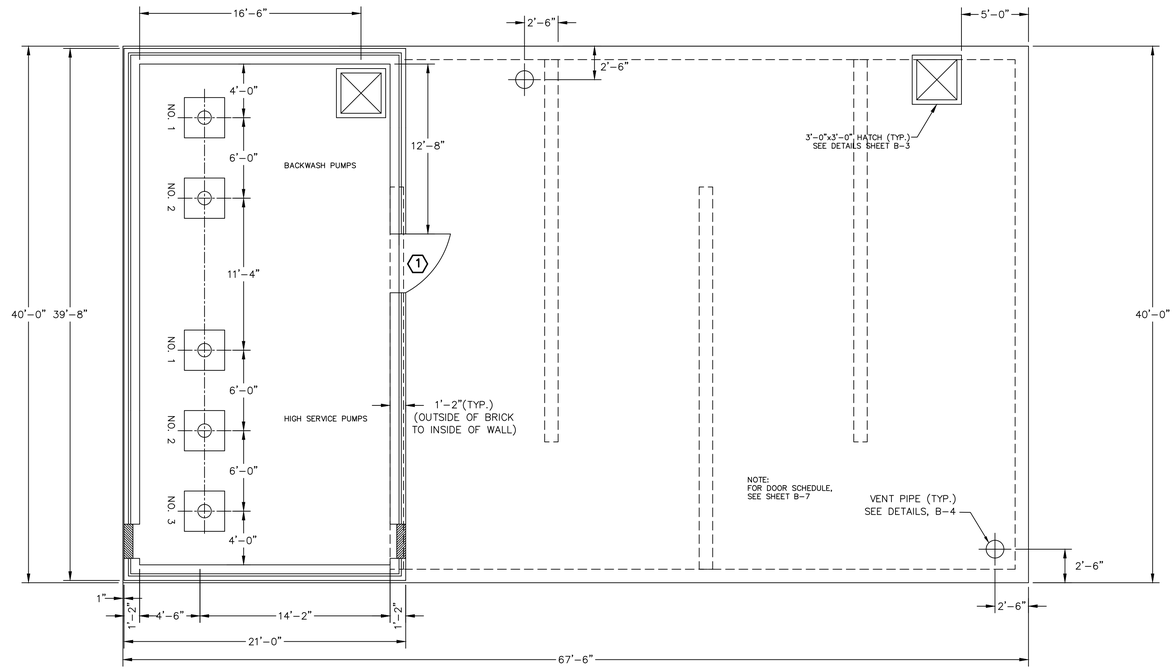
DESCRIPTION:
PROPOSED SITE PLAN
WATER TREATMENT PLANT NO. 1

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=20'-0"

SHEET:
SP-3

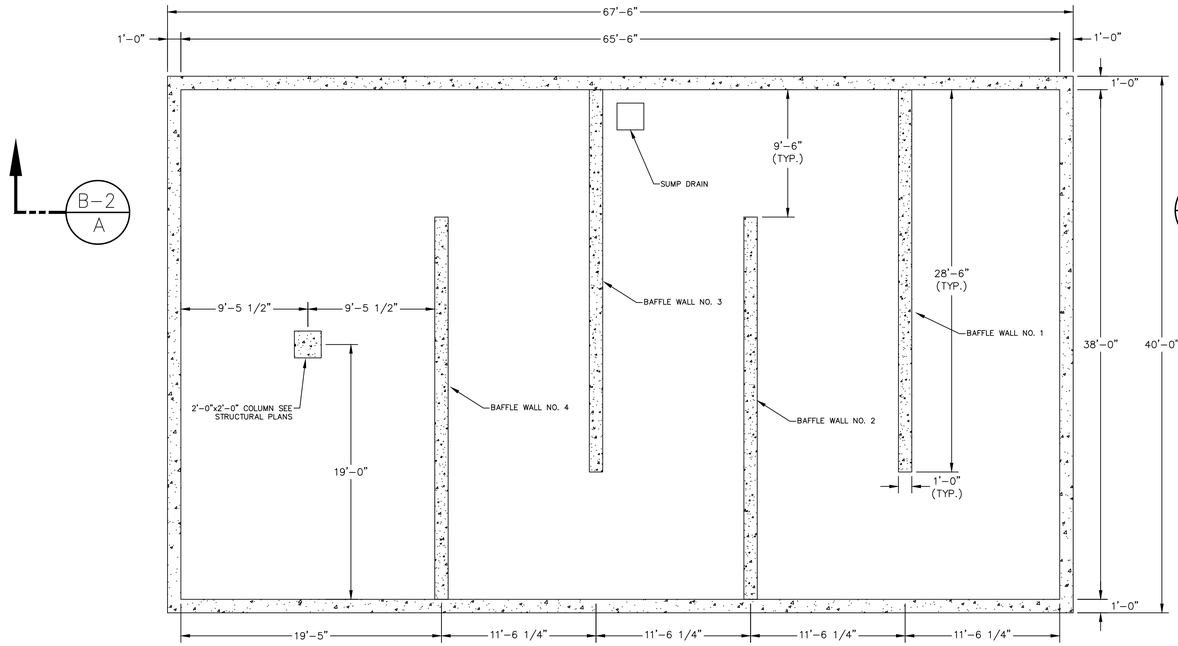
STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



B-2
B

CLEARWELL TOP SLAB PLAN

Scale: 3/16"=1'-0"



NOTE:
STRUCTURAL PLAN DIMENSIONING SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS.

B-2
B

CLEARWELL FOUNDATION PLAN

Scale: 3/16"=1'-0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

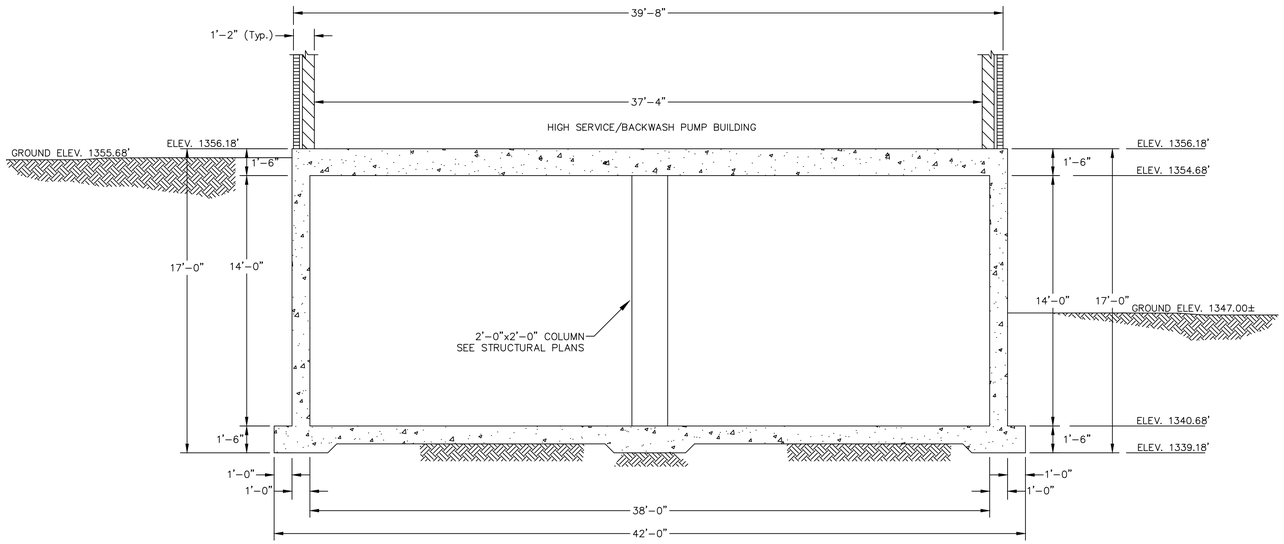
DESCRIPTION:
CLEARWELL FOUNDATION & TOP SLAB PLAN VIEWS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

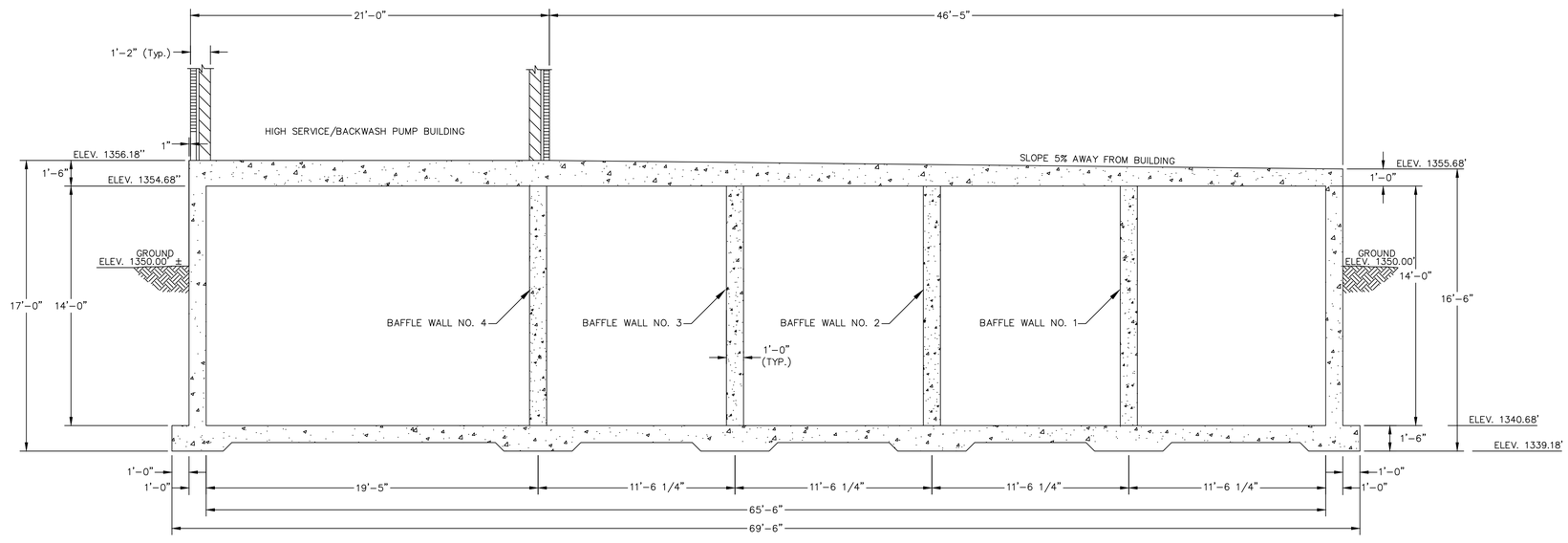
SHEET:
B-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



SECTION B / B-1

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



SECTION A / B-1

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

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

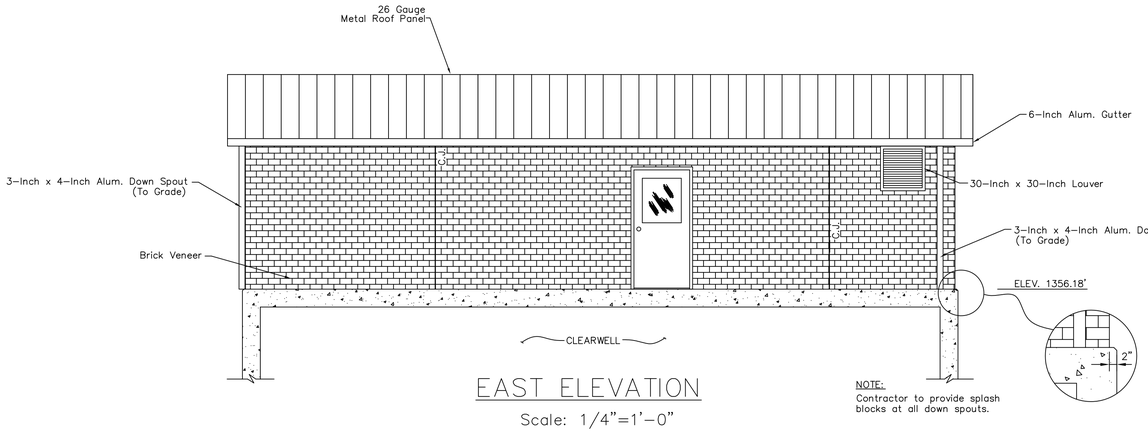
DESCRIPTION: CLEARWELL SECTIONS A & B

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: B-2

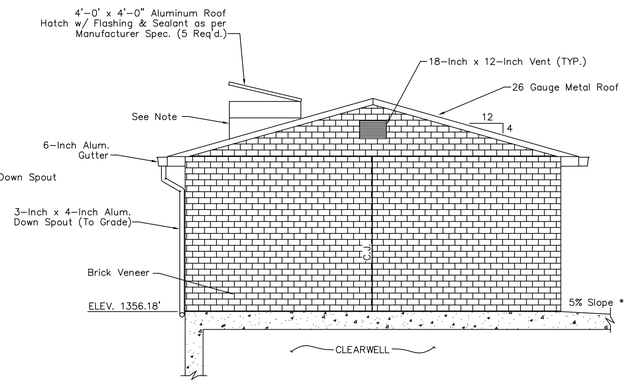
STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



EAST ELEVATION

Scale: 1/4"=1'–0"

NOTE:
Contractor to provide splash blocks at all down spouts.

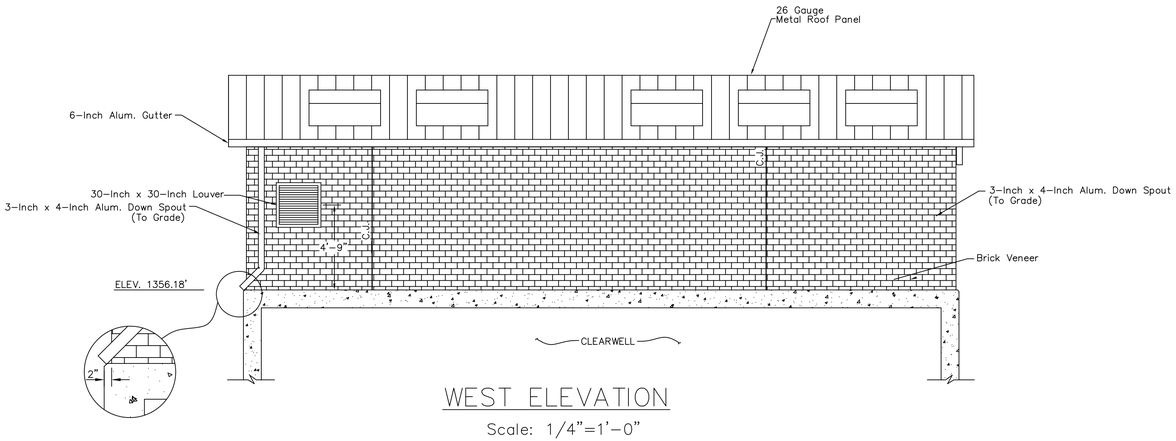


NORTH/SOUTH ELEVATIONS

Scale: 1/4"=1'–0"

NOTE:
It is the responsibility of the contractor to provide curb under aluminum roof hatch such that the hatch sits parallel with the floor slab. Curb to be fabricated with treated wood and flashing to match roof material with the exception of the standing seam.

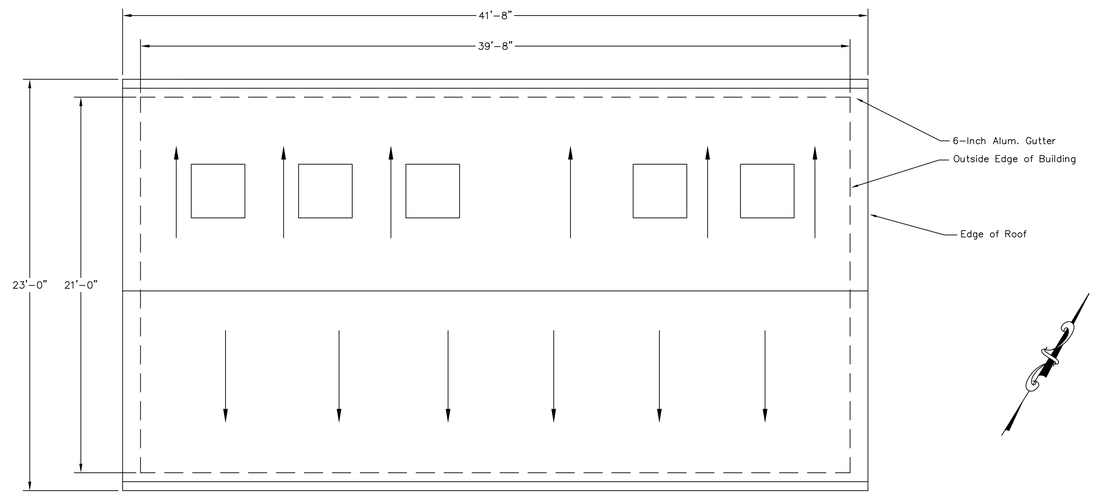
* Clearwell top to be sloped 5% away from High Service Pump Building to prevent water ponding.



WEST ELEVATION

Scale: 1/4"=1'–0"

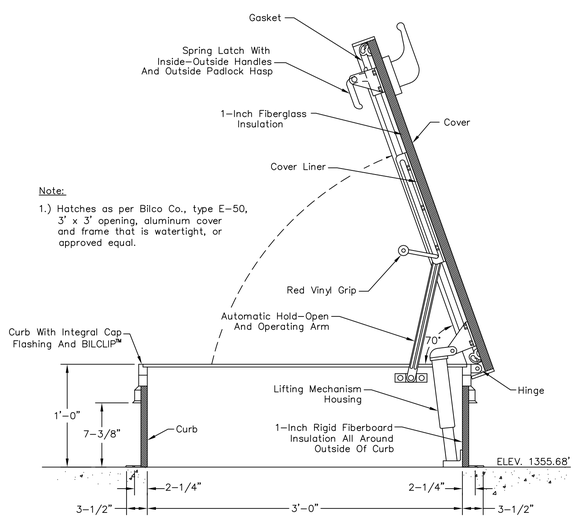
NOTE:
For typical Section/Block/Brick Wall & Truss Detail refer to Sheet A–8.



CLEARWELL ROOF PLAN

Scale: 1/4"=1'–0"

NOTE:
Dimensions shown are not building dimensions.



CLEARWELL HATCH DETAIL

N. T. S.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
HIGH SVC PUMP/BACKWASH PUMP BLDG
ELEVATION & HATCH DETAIL

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

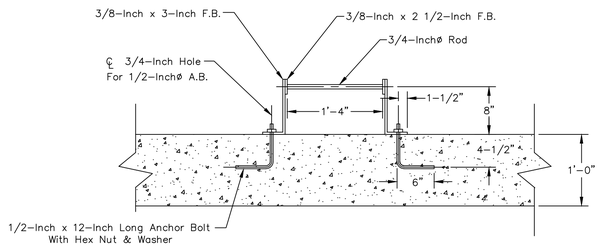
SHEET:
B–3

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

Note:

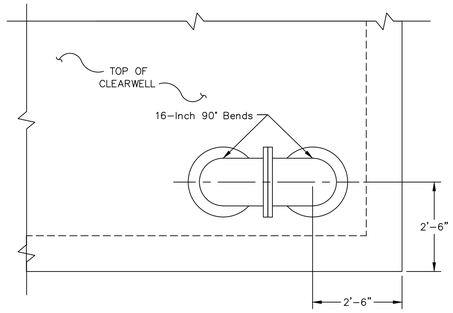
1.) Hatches as per Bilco Co., type E–50, 3' x 3' opening, aluminum cover and frame that is watertight, or approved equal.

2.) Ladders shall be aluminum with stainless steel hardware.



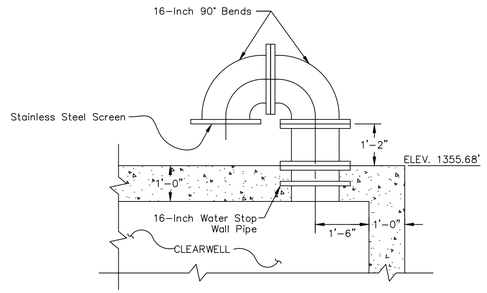
PLAN VIEW – LADDER/ANCHOR DETAIL

Scale: 1"=1'–0"



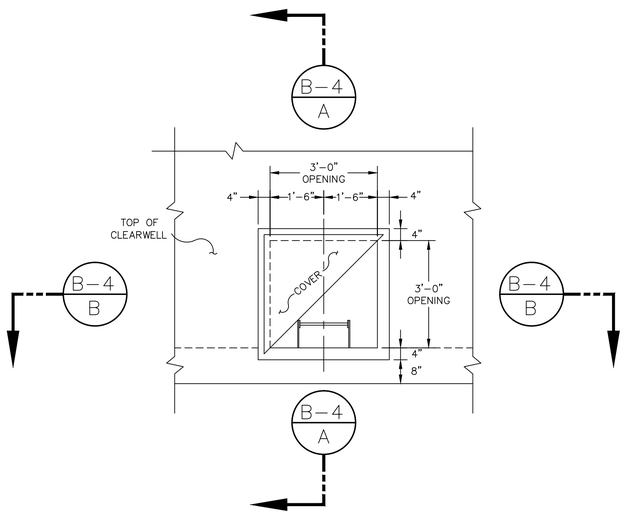
PLAN VIEW – VENT

Scale: 1/2"=1'–0"



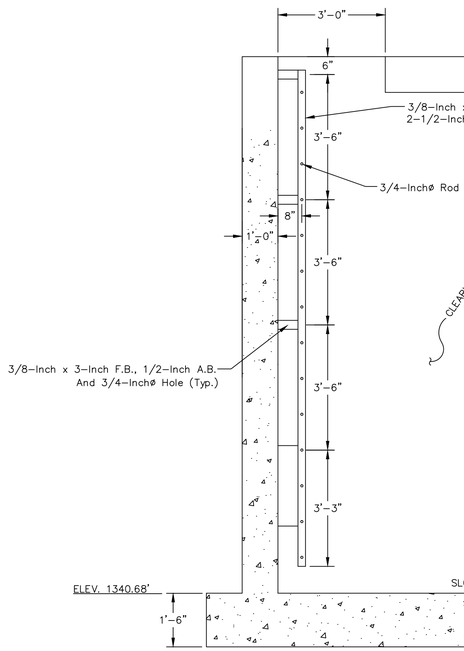
VENT DETAIL

Scale: 1/2"=1'–0"



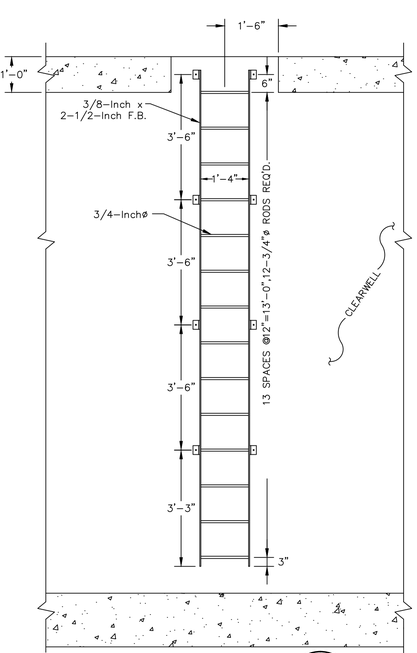
PLAN VIEW – HATCH & LADDER DETAIL (TYP.)

Scale: 1/2"=1'–0"



SECTION A B–4

Scale: 1/2"=1'–0"



SECTION B B–4

Scale: 1/2"=1'–0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

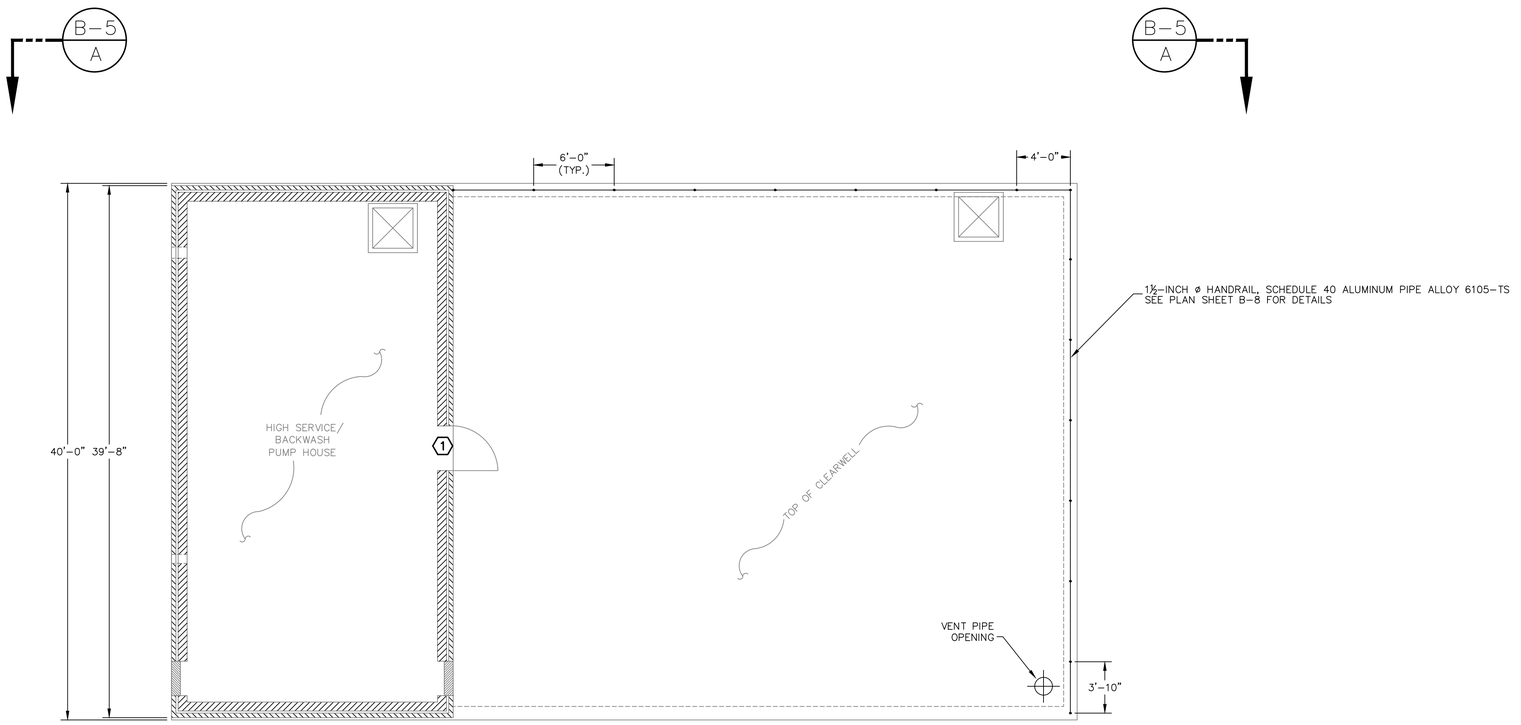
DESCRIPTION:
CLEARWELL DETAILS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

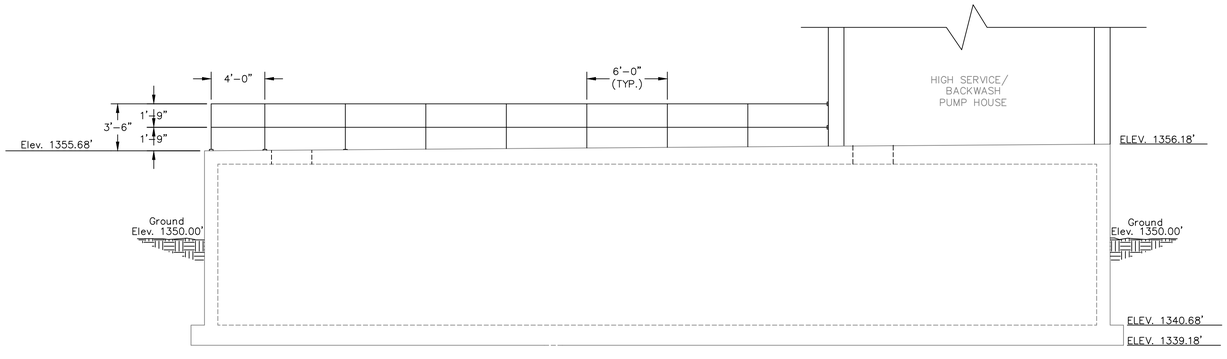
SHEET:
B–4

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED
PROFESSIONAL ENGINEER



CLEARWELL PLAN VIEW

Scale: 3/16"=1'-0"



SECTION A/B-5

Scale: 3/16"=1'-0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

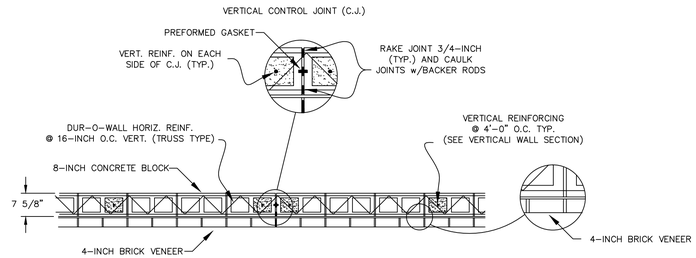
DESCRIPTION: CLEARWELL HANDRAIL LAYOUT

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: B-5

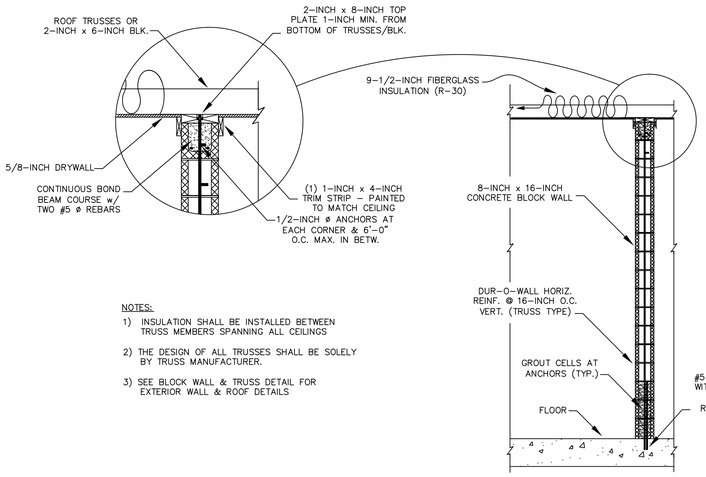
STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



NOTE:
SEE BUILDING ELEVATIONS AND SPECIFICATIONS FOR CONTROL JOINT(C.J.) LOCATIONS

TYPICAL C.M.U./ BRICK VENEER WALL CONTROL JOINT (C.J.) DETAIL

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

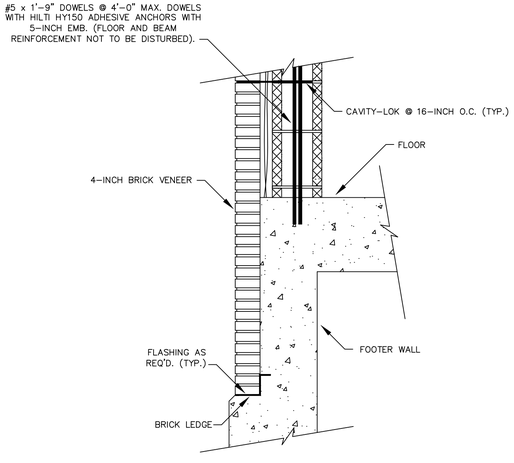


NOTES:

1) INSULATION SHALL BE INSTALLED BETWEEN TRUSS MEMBERS SPANNING ALL CEILINGS
2) THE DESIGN OF ALL TRUSSES SHALL BE SOLELY BY TRUSS MANUFACTURER.
3) SEE BLOCK WALL & TRUSS DETAIL FOR EXTERIOR WALL & ROOF DETAILS

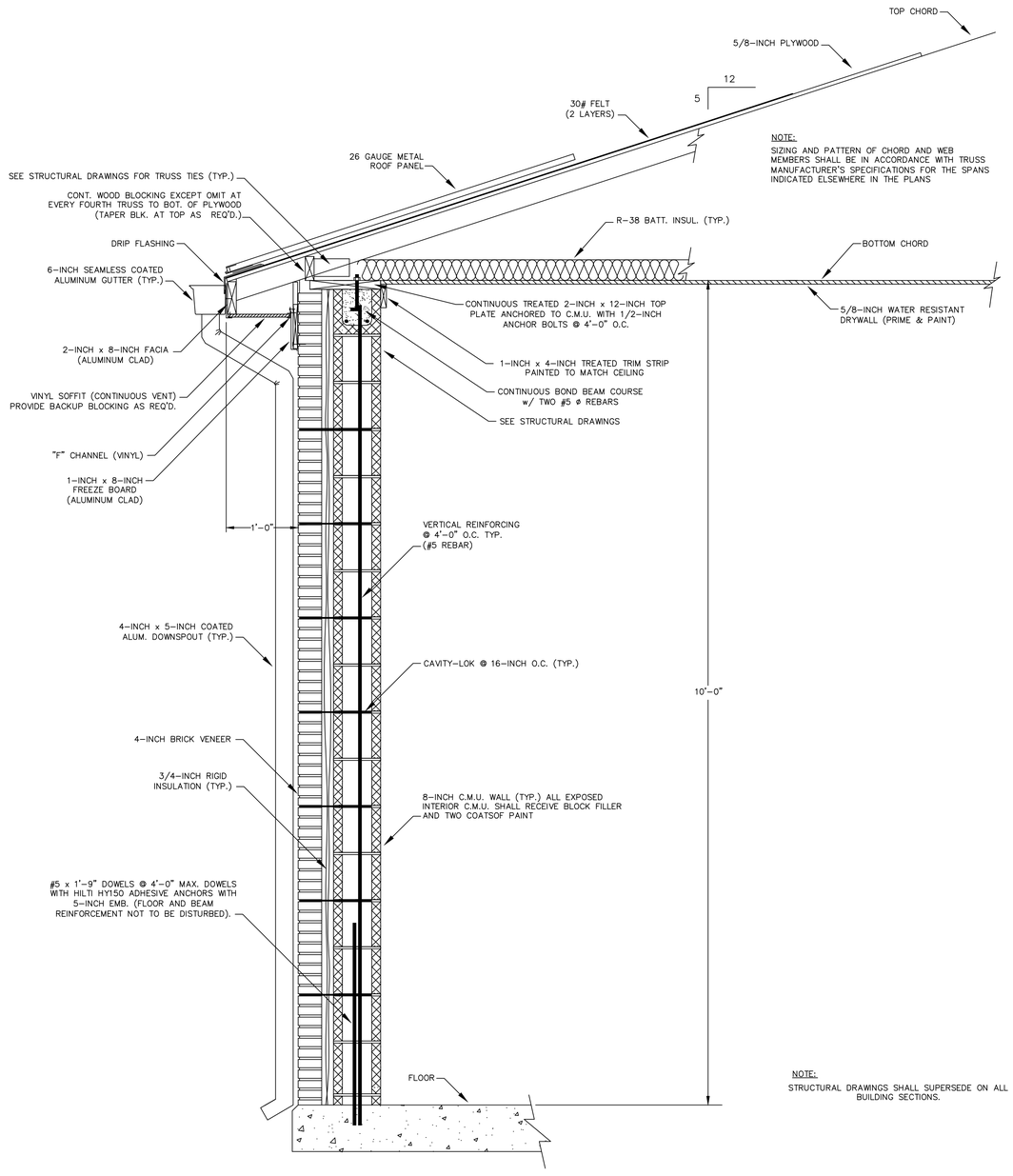
TYPICAL CEILING/WALL DETAIL

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



TYPICAL FOOTER WALL W/ BRICK LEDGE

Scale: 1"=1'-0"



NOTE:
SIZING AND PATTERN OF CHORD AND WEB MEMBERS SHALL BE IN ACCORDANCE WITH TRUSS MANUFACTURER'S SPECIFICATIONS FOR THE SPANS INDICATED ELSEWHERE IN THE PLANS

NOTE:
STRUCTURAL DRAWINGS SHALL SUPERSEDE ON ALL BUILDING SECTIONS.

TYPICAL SECTION
C.M.U./ BRICK VENEER WALL & TRUSS ROOF

Scale: 1"=1'-0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: HIGH SERVICE/BACKWASH PUMP BUILDING CONSTRUCTION DETAILS
WATER TREATMENT PLANT NO. 1

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
B-6

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

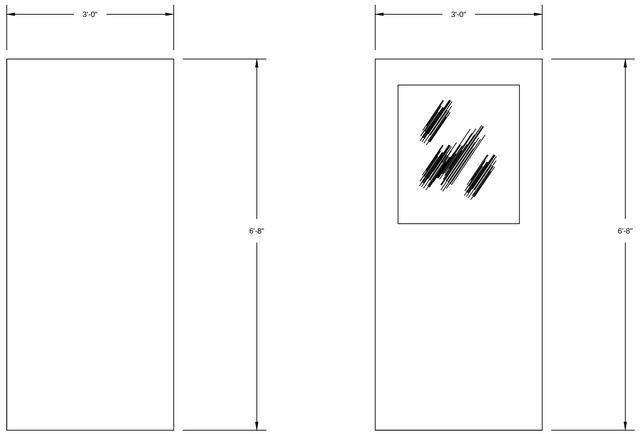
DOOR SCHEDULE (1)

NO.	DOOR SIZE (W x H x T)	DOOR MATERIAL	DOOR TYPE	FRAME MATERIAL	ELEV.	SECT. DETAIL	HARDWARE / FINISH
1	3'-0" x 6'-8" x 1 3/4"	STEEL (PAINTED)	HG HALF GLASS	STEEL (PAINTED)	S	FS-634	SARGENT 9G37, US32D

NOTE: SEE PLANS FOR CORRECT DOOR SWING AND HANGING FOR DOOR CLOSURES. ALL EXTERIOR DOORS TO HAVE DOOR CLOSURES.

FINISH SCHEDULE

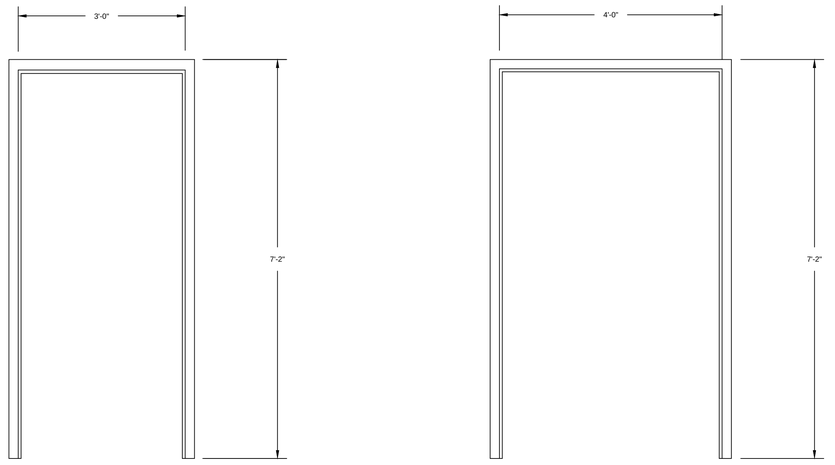
NO.	SPACE	FLOOR	FINISH	BASE	WALLS	FINISH	CEILING	FINISH	CLG. HGT.	REMARKS
1	HIGH SVC/BACKWASH PUMP ROOM	CONCRETE	PAINT	N/A	CMU	PAINT	GYP. BD.	PT. EXP. ST.	10'-0"	



F
FLUSH

G
HALF GLASS

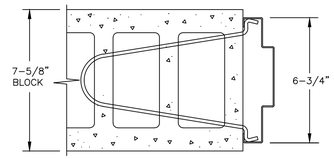
DOOR ELEVATIONS
Scale: 3/4"=1'-0"



S
SINGLE
FS-634

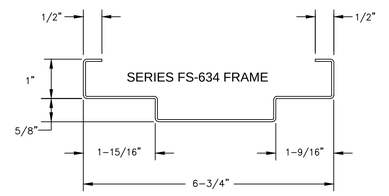
S1
SINGLE
FS-634

DOOR FRAME ELEVATIONS
Scale: 3/4"=1'-0"



SERIES FS-634 FRAME W/ WIRE TYPE ANCHOR

TYPICAL FRAME ANCHOR DETAIL
Scale: N.T.S.



TYPICAL FRAME SECTION
Scale: N.T.S.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
HIGH SVC PUMP/BACKWASH PUMP BLDG
DOOR & FINISH SCHEDULES
WATER TREATMENT PLANT NO. 1

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
B-7

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

TO EXISTING SILT POND

EXISTING 1¼–INCH SEWER FORCE MAIN

TOP ELEV.= 1337.40'

INSTALL 12-INCHx4-INCH D.I. M.J. TEE

10-INCH D.I. FLANGED 90° BEND

TOP ELEV.= 1336.43'

EXISTING 12" DRAIN LINE

8-INCH D.I. M.J. 90° I.E. 1337.51'

8-INCH SUMP DRAIN LINE

3'–6"

4-INCH MJ GATE VALVE

10-INCH D.I. M.J. 90° I.E. 1337.34'

BACKWASH PUMP LINE

8-INCH M.J. GATE VALVE

8-INCH SUMP DRAIN LINE

CAP EXISTING 4-INCH FLASH MIX DRAIN WITH MJ CAP AND THRUST RESTRAINT

EXISTING 4" FLASH MIX DRAIN LINE TO BE REMOVED

7'–0"

5'–0"

RELOCATED 4-INCH FLASH MIX DRAIN LINE

CONTRACTOR SHALL VERIFY ELEVATION OF EXISTING 12-INCH CMP DRAIN LINE PRIOR TO CLEARWELL OVERFLOW AND SUMP DRAIN ARE INSTALLED.

12-INCH D.I. M.J. 22½°

EXISTING 12" CMP DRAIN (TO BE REMOVED)

CONNECT NEW 12-INCH DRAIN LINE INTO EXISTING 12-INCH CMP DRAIN LINE WITH 12-INCH D.I. M.J. 22½° BEND AND TRANSITION COUPLING.

12-INCH D.I. M.J. 22½°

16-INCHx12-INCH D.I. M.J. REDUCER

16-INCHx8-INCH D.I. M.J. TEE I.E. 1336.33'

16-INCH D.I. FLG. 90° BEND

CAP EXISTING 12-INCH DRAIN LINE FROM EXSITING CLEARWELL NO. 1 ONCE NEW CLEARWELL IS IN SERVICE.

EXISTING 12" CMP DRAIN TO BE REMOVED

M.H. 3

FINISHED WATER SAMPLE POINT. CONTRACTOR SHALL FURNISH AND INSTALL SAMPLE PUMP AND ½-INCH PIPE FROM SAMPLE POINT TO EXISTING SERVICE BUILDING LABORATORY. SAMPLE PUMP TO BE INSTALLED AT LOCATION AS DIRECTED BY ENGINEER.

5'–0"

10-INCH D.I. M.J. 90° BEND ℄ I.E. 1341.68'

½-INCH SCHEDULE 80 PVC FINISHED WATER SAMPLE LINE TO LABORATORY SINK.

EXISTING 10" INTERCONNECT (TO BE REMOVED)

10-INCH CLEARWELL INFLUENT LINE

EXISTING 6" HIGH SVC DISCHARGE (TO BE REMOVED)

EXISTING 6" HIGH SVC DISCHARGE (TO BE REMOVED)

INSTALL 10-INCH M.J. DUCTILE IRON 90° BEND ON EXISTING 10-INCH CLEARWELL INFLUENT ONCE NEW CLEARWELL IS IN SERVICE

CONNECT NEW 10-INCH CLEARWELL INFLUENT LINE TO EXISTING 10-INCH CLEARWELL INFLUENT LINE BY REMOVING EXISTING 10-INCH 45° BEND AND INSTALLING A 10-INCH D.I. M.J. 90° BEND.

EXISTING 10" CLEARWELL INF.

HIGH SERVICE PUMP LINE

10-INCH D.I. M.J. 90° I.E. 1350.58'

NEW 10-INCH BACKWASH FLOW LINE

5'–0"

NEW 8-INCH HIGH SERVICE DISCHARGE LINE

NEW 10-INCH BACKWASH FLOW LINE

8-INCH D.I. M.J. 90° BEND

4-INCH D.I. M.J. 90°

EXISTING 1–INCH ø CARBON FEED LINE

INSTALL 4-INCH D.I. M.J. 45° ON EXISTING 4-INCH FLASH MIX DRAIN LINE

NEW 10-INCH BACKWASH FLOW LINE

8-INCH HIGH SERVICE DISCHARGE LINE

EXISTING 4" FLASH MIX DRAIN

EXISTING 1–INCH PLANT WATER SUPPLY LINE

EXISTING CLEARWELL NO. 2 VALVE VAULT TO BE REMOVED

EXISTING CLEARWELL NO. 1 VALVE VAULT TO BE REMOVED

EXISTING 4" PVC DRAIN

EXISTING 10" CLEARWELL INFLUENT

EXISTING 12" WASTE LINE

CONNECT NEW 8-INCH HIGH SERVICE DISCHARGE LINE TO EXISTING 8-INCH HIGH SERVICE LINE BY REMOVING EXISTING 8-INCH 90° BEND AND INSTALLING A NEW 8-INCH D.I. M.J. 45°.

EXISTING 4 ø M.H. FOR CHLORINE INJECTION FOR CLEARWELL NO. 1

INSTALL 8-INCH M.J. DUCTILE IRON 90° BEND ON EXISTING 8-INCH HIGH SERVICE LINE ONCE NEW CLEARWELL IS IN SERVICE.

EXISTING CONCRETE METER VAULT

EXISTING 6" HIGH SVC DISCHARGE

EXISTING 6" HIGH SVC DISCHARGE

EXISTING BACKWASH METERING VAULT

INSTALL 10-INCH M.J. DUCTILE IRON 90° BEND ON EXISTING 10-INCH BACKWASH LINE FROM CLEARWELL NO. 1 ONCE NEW CLEARWELL IS IN SERVICE.

EXISTING 1–INCH ø CHLORINE FEED LINE

FLASH MIX

EXISTING GRINDER LIFT STATION

EXISTING RAW WATER LINE

EXISTING 8" HIGH SVC DISCHARGE LINE

CONNECT NEW 10-INCH BACKWASH FLOW LINE TO EXISTING 10-INCH BACKWASH LINE BY REMOVING EXISTING 10-INCH 90° BEND AND INSTALLING A NEW 10-INCH D.I. M.J. TEE.

REMOVE EXISTING 8-INCHx8-INCH TEE AND INSTALL AN 8-INCH M.J. SPOOL PIECE ON EXISTING 8-INCH HIGH SERVICE LINE ONCE NEW CLEARWELL IS IN SERVICE

EXISTING CHEMICAL FEED BUILDING

EXISTING HYDRANT

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

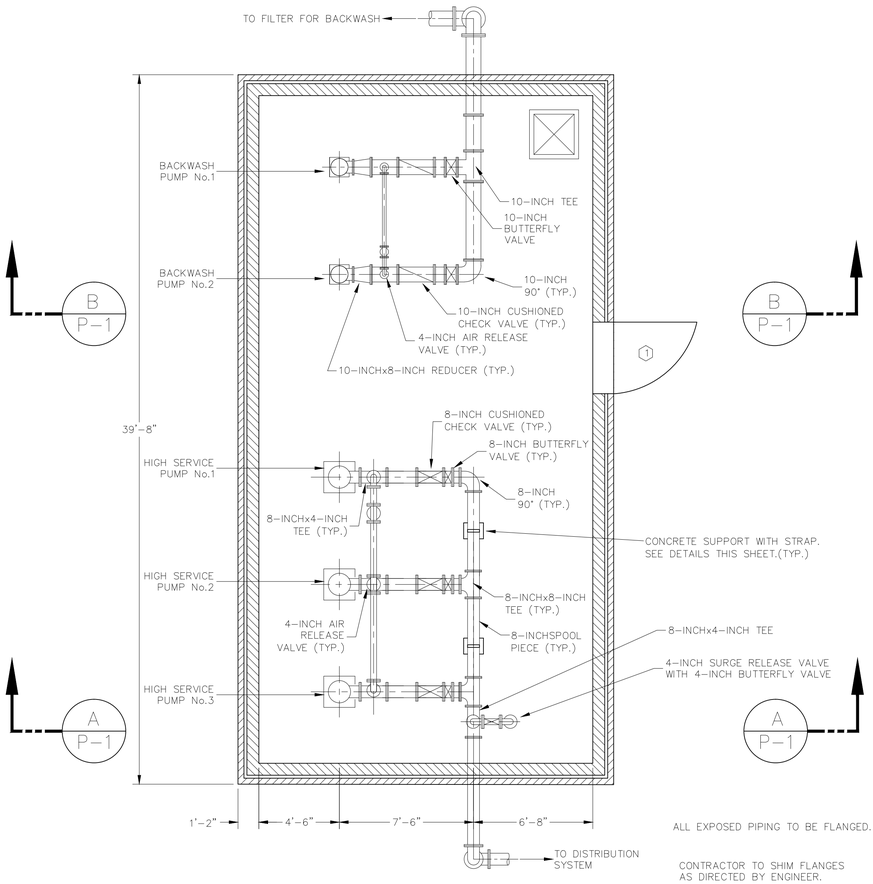
DESCRIPTION: PROPOSED YARD PIPING

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=5'–0"

SHEET: YP–1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

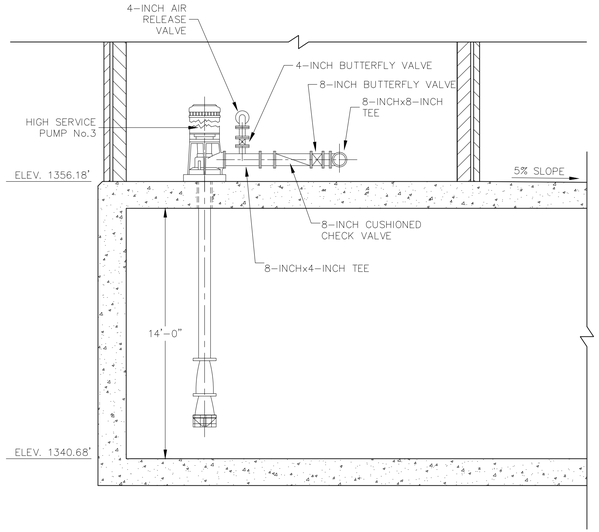


ALL EXPOSED PIPING TO BE FLANGED.

CONTRACTOR TO SHIM FLANGES AS DIRECTED BY ENGINEER.

PUMP BUILDING PLAN VIEW

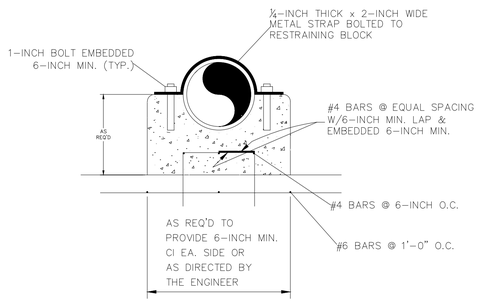
Scale: 1/4"=1'-0"



CONTRACTOR TO INSULATE ALL EXPOSED EXTERIOR PIPING WITH FIBERGLASS ALL SERVICE JACKET WITH A MINIMUM R-VALUE OF 7.0

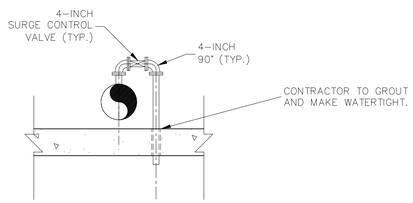
PUMP BUILDING SECTION (A P-1)

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



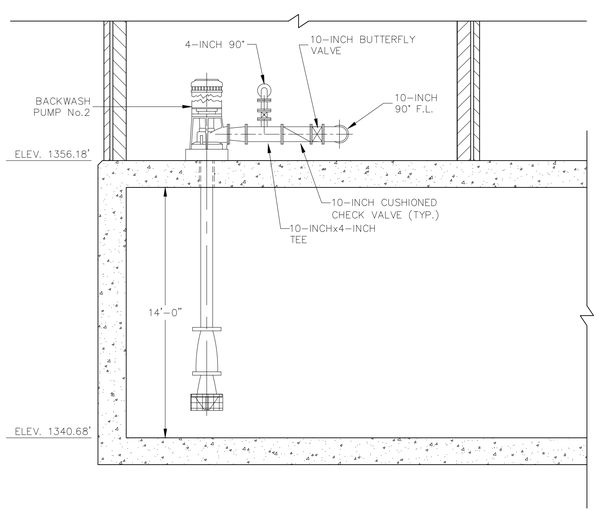
CONCRETE RESTRAINING BLOCK DETAIL

Scale: 1"=1'-0"



SURGE CONTROL VALVE DETAIL

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



CONTRACTOR TO INSULATE ALL EXPOSED EXTERIOR PIPING WITH FIBERGLASS ALL SERVICE JACKET WITH A MINIMUM R-VALUE OF 7.0

PUMP BUILDING SECTION (B P-1)

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

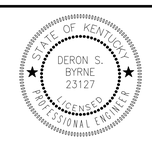
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

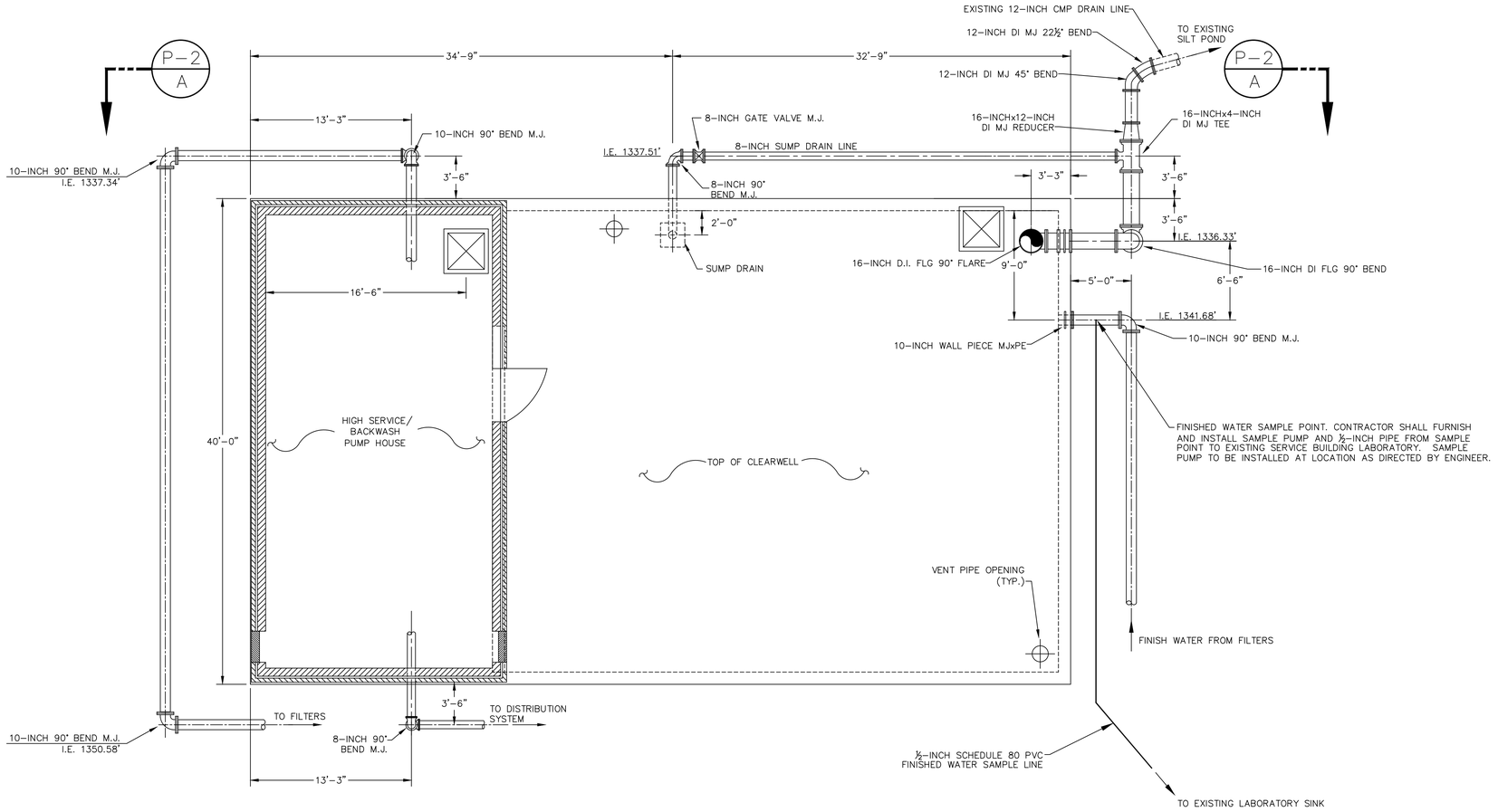
DESCRIPTION: HIGH SERVICE/BACKWASH PUMP BUILDING PLAN VIEW & SECTIONS

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

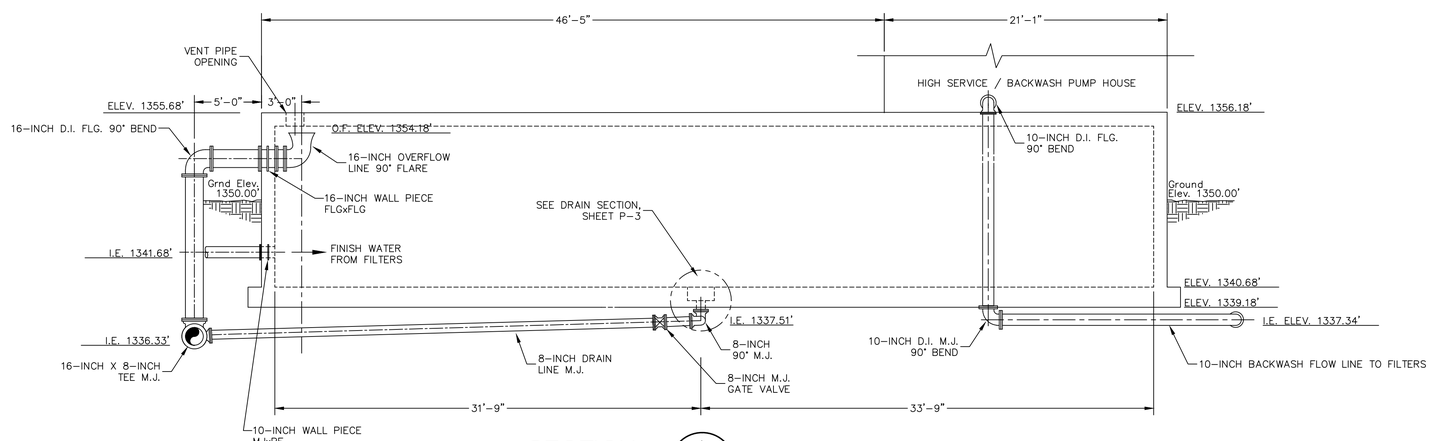
SHEET: P-1





CLEARWELL PLAN VIEW

Scale: 3/16"=1'-0"



SECTION

A / P-2

Scale: 3/16"=1'-0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

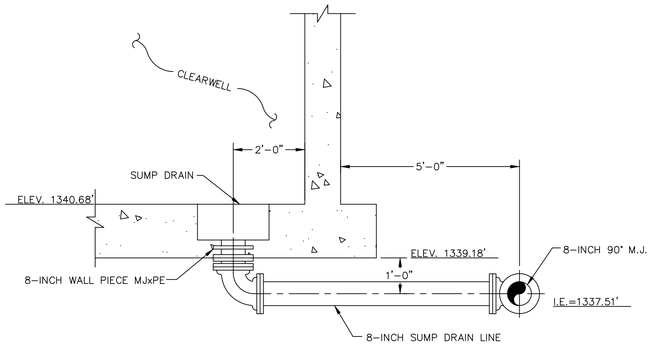
DESCRIPTION: CLEARWELL YARD PIPING & SECTION

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

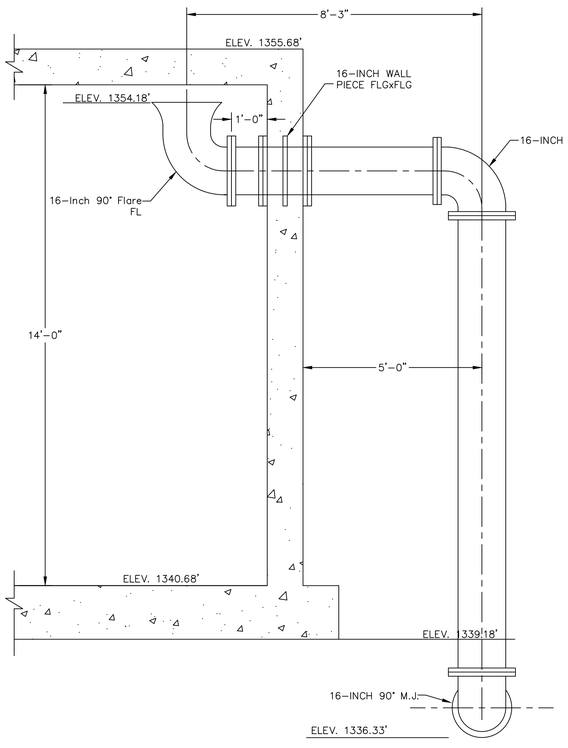
SHEET: P-2

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED
PROFESSIONAL ENGINEER



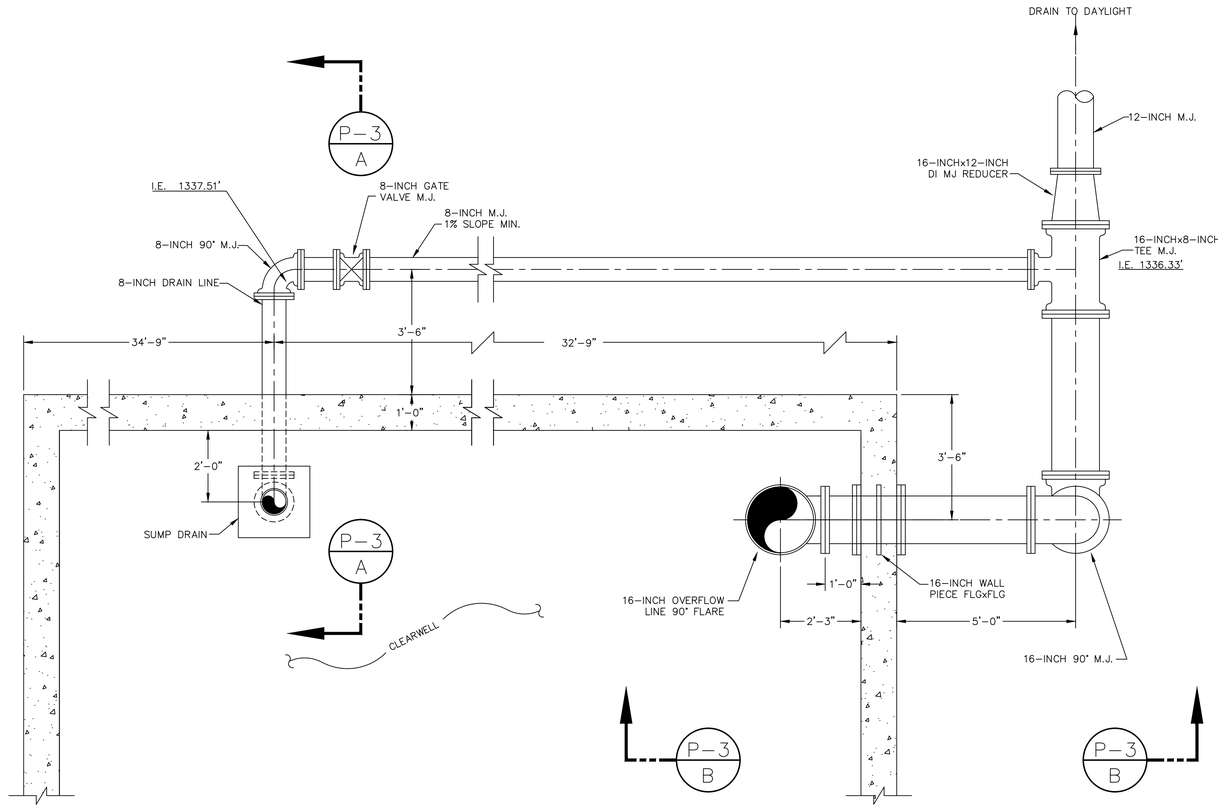
DRAIN SECTION (A / P-3)

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



OVERFLOW SECTION (B / P-3)

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



DRAIN & OVERFLOW PLAN VIEW

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

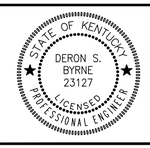
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

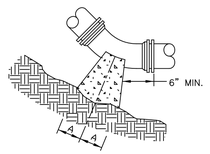
DESCRIPTION:
CLEARWELL DRAIN & OVERFLOW
PLAN VIEW & SECTIONS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

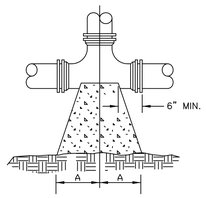
PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET:
P-3

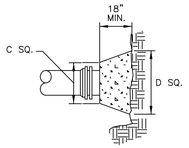




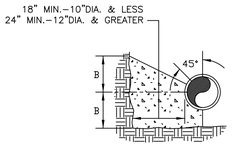
PLAN (HORIZONTAL BENDS)



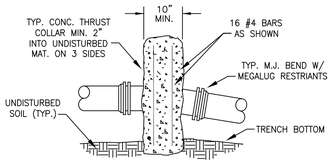
PLAN (TEES)



PLAN (PLUGS & CAPS)



SECTION (HORIZONTAL BENDS & TEES)



SECTION (VERTICAL BENDS)

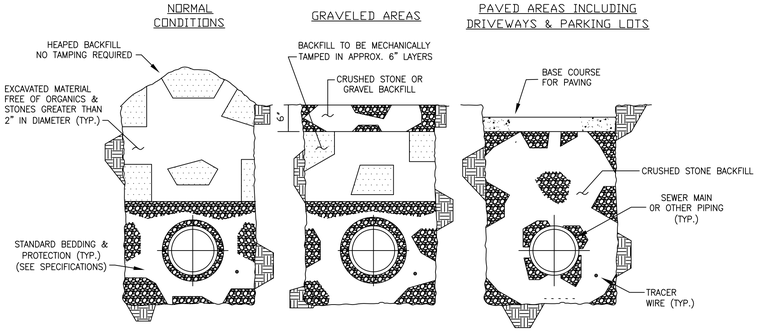
DIMENSION CHART												
PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	11"	9"	10"	6"
6"	18"	12"	8"	10"	8"	8"	8"	8"	11"	10"	12"	18"
8"	18"	13"	10"	10"	8"	8"	8"	8"	11"	12"	12"	24"
10"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
16"	26"	20"	16"	18"	11"	13"	11"	13"	18"	20"	20"	36"
24"	82"	42"	62"	30"	44"	22"	22"	16"	82"	42"	82"	42"
30"	185"	42"	100"	42"	52"	42"	40"	30"	185"	42"	185"	42"

NOTES:

1. FOR VERT. BEND DOWN IN EXCESS OF 11 1/4° BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
2. FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND
3. GLANDS & BOLTS SHALL REMAIN ACCESSIBLE AND MUST BE PROTECTED FROM CONCRETE BY PLASTIC SHEETING OR OTHERWISE.
7. ALL THRUST BLOCK & SUPPORT CONCRETE SHALL BE 3000 PSI READY MIX
8. THRUST BLOCKS WITH "B" DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4' OF COVER.
9. DESIGN CRITERIA: LINE PRESSURE = 200 PSI
   SOIL BEARING CAPACITY = 2000 PSF
   FACTOR OF SAFETY = 1.5

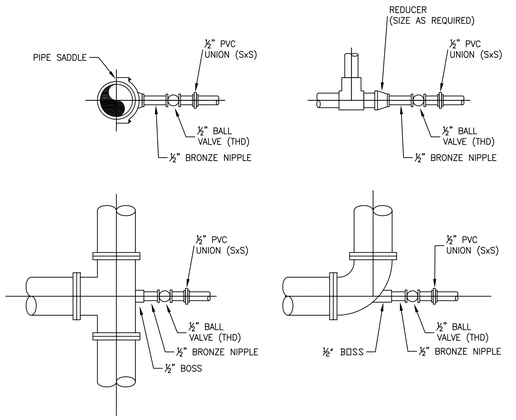
THRUST BLOCK DETAILS

Scale: N.T.S.



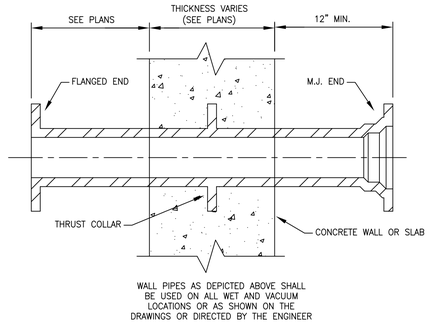
BACKFILLING DETAILS

Scale: N.T.S.



TYPICAL SAMPLING CONNECTION DETAILS

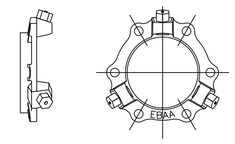
Scale: N. T. S.



WALL PIPES AS DEPICTED ABOVE SHALL BE USED ON ALL WET AND VACUUM LOCATIONS OR AS SHOWN ON THE DRAWINGS OR DIRECTED BY THE ENGINEER

WALL PIPE DETAIL

Scale: N.T.S.



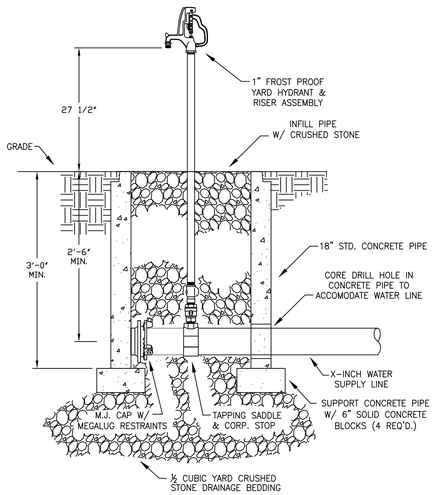
MEGA LUG JOINT RESTRAINT

N.T.S

NOTE:
WATER WORKING PRESSURE 250 PSI MIN.

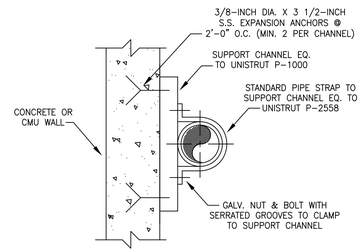
SIZES 3" - 48"

PRODUCT OF EBAA IRON, INC. OR APPROVED EQUAL.



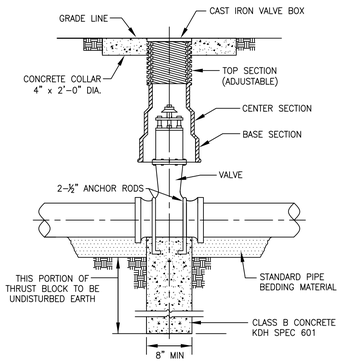
YARD HYDRANT DETAIL

Scale: N.T.S.



WALL MOUNTED PIPE SUPPORT DETAIL

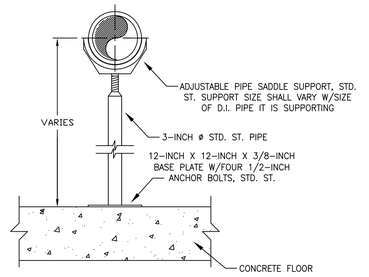
Scale: N.T.S.



NOTE: SEE SPECIFICATION FOR PIPING MATERIALS AND PIPING JOINTS

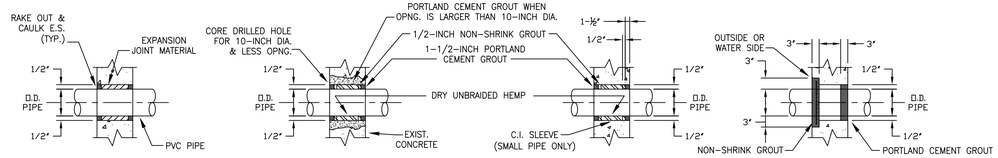
BURIED GATE VALVE DETAIL

Scale: N.T.S.

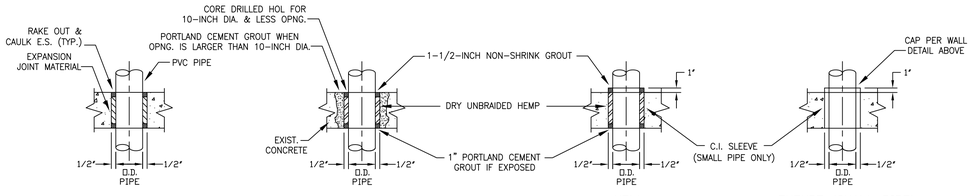


FLOOR MOUNTED PIPE SUPPORT DETAIL

Scale: N.T.S.



PIPE THROUGH WALLS



PIPE THROUGH SLABS

NOTES:

1. ONLY SMALL PIPE (STEEL, W.I., COPPER, HARD RUBBER OR RUBBER HOSE) IN NEW CONSTRUCTION SHALL HAVE C.I. SLEEVE. LARGE & SMALL PIPE SHALL BE CAULKED W/DRY BRAIDED OR UNBRAIDED HEMP & GROUTED PER DETAILS AND SPECIFICATIONS.
2. PORTLAND & NON-SHRINK GROUT MIX SHALL BE PROPORTIONED PER GROUP CB OF THE SPECIFICATIONS. OPENINGS THROUGH SLABS FOR FUTURE LARGE PIPE SHALL BE AS LOCATED & DETAILED ON THE PLANS.

TYPICAL PIPE PENETRATIONS THROUGH CONCRETE

Scale: N.T.S.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

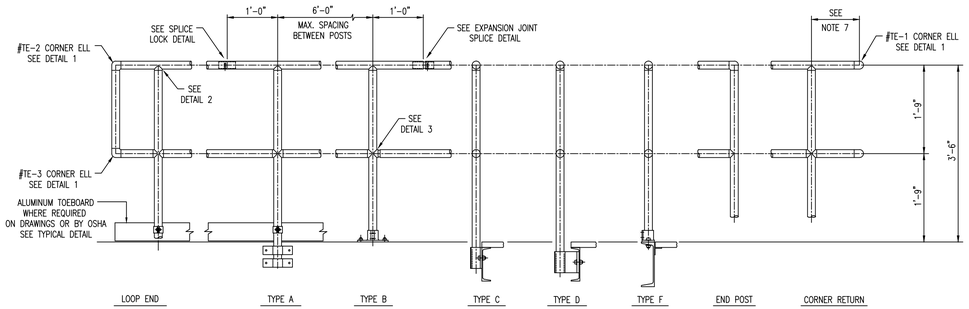
DESCRIPTION: MISCELLANEOUS DETAIL DRAWINGS
WATER TREATMENT PLANT NO. 1

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

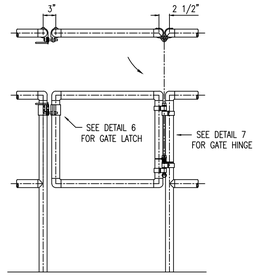
PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
MD-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

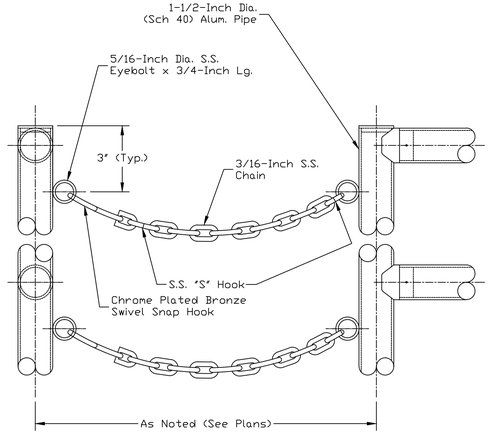


TYPICAL HANDRAIL



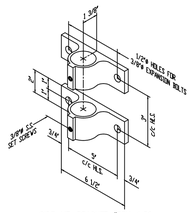
TYPICAL GATE

LEFT HAND GATE SHOWN



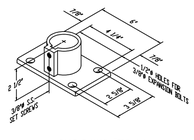
CHAIN OPENING

Scale: N. T. S.



SIDE-MT. BRACKET #TSM-1.50

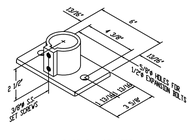
TYPE A



BASE FLANGE #TBF-1.4

TYPE B (4-HOLE)

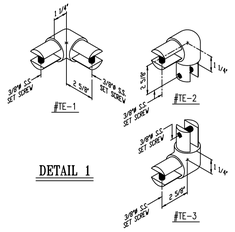
LOCATE SET SCREWS IN BASE FLANGE AT 90° FROM CENTERLINE OF HANDRAIL RUN AND ON SIDE AWAY FROM WALKING SURFACE.



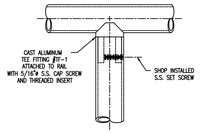
BASE FLANGE #TBF-1.2

TYPE B (2-HOLE)

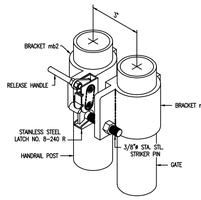
LOCATE SET SCREWS IN BASE FLANGE AT 90° FROM CENTERLINE OF HANDRAIL RUN AND ON SIDE AWAY FROM WALKING SURFACE.



DETAIL 1



DETAIL 2



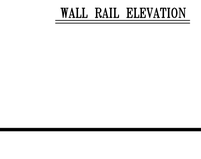
DETAIL 6

SIDE-MT. BRACKET #TSM-1.50

TYPE C

SIDE-MT. BRACKET #SMB-2

TYPE D

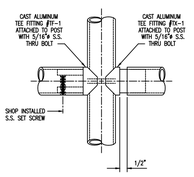


SIDE-MT. BRACKET #SMB-3

TYPE E

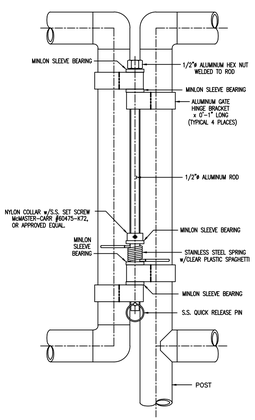
EXPANSION JOINT SPLICE #ES-1

LOCATED AT 60'-0" MAXIMUM INTERVALS

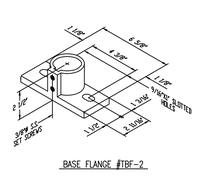


DETAIL 3

MIDRAIL EXPANSION SPLICE LOCATED AT 60'-0" MAXIMUM INTERVALS



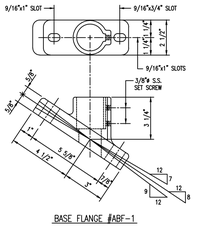
DETAIL 7



BASE FLANGE #TBF-2

TYPE F

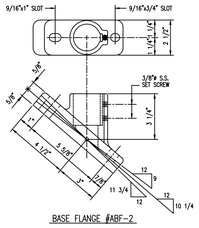
LOCATE SET SCREWS IN BASE FLANGE AT 90° FROM CENTERLINE OF HANDRAIL RUN AND ON SIDE AWAY FROM WALKING SURFACE.



BASE FLANGE #ABF-1

TYPE G

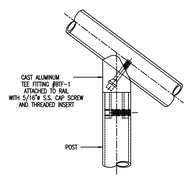
Ranges from 30° to 37°



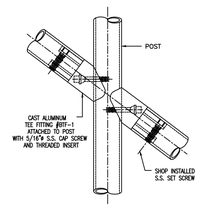
BASE FLANGE #ABF-2

TYPE G

Ranges from 37° to 44°

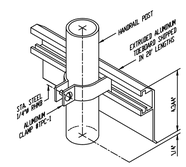


DETAIL 4

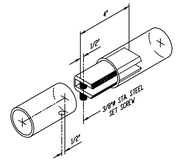


DETAIL 5

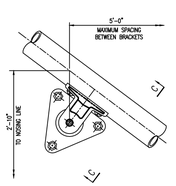
DETAIL 7



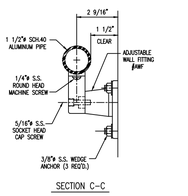
TOEBOARD DETAILS



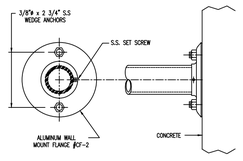
SPLICE LOCK #SL-1



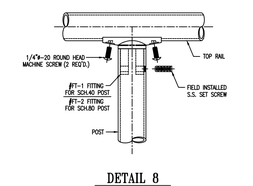
WALL RAIL ELEVATION



SECTION C-C



WALL FLANGE DETAIL



DETAIL 8

FOR FIELD ASSEMBLED HANDRAIL

OSHA DESIGN SPECIFICATIONS

1. Handrail shall be the product of a company normally engaged in the manufacture of pipe railing. Railing shall be shop assembled in lengths not to exceed 24 feet for field erection.

2. Handrails shall be designed to withstand 200# concentrated load applied in any direction to the top rail.

3. The manufacturer shall submit calculations to the Engineer for approval. Testing of base castings or base extrusions by an independent lab or manufacturer's lab (if manufacturer's lab meets the requirements of the Aluminum Association) will be an acceptable substitute for calculations. Calculations will be required for approval of all other design aspects.

4. Post spacing shall be a maximum of 6'–0". Posts and railings shall be a minimum of 1–1/2" Schedule 40 aluminum pipe alloy 6105–T5, ASTM–B–429 or ASTM–B–221. The handrail manufacturer shall show that their posts are of adequate strength to meet the loading requirements. If the manufacturer's posts are not of adequate strength, the manufacturer may reduce the post spacing or add reinforcing dowels or may do both in order to meet the loading requirements.

5. The handrail shall be made of pipes joined together with component fittings. Samples of all components, bases, toe plate and pipe must be submitted for approval. ***Components that are pop–riveted or glued at the joints will not be acceptable.*** All components must be mechanically fastened with stainless steel hardware. Handrail and components shall be ***TUF*** Rail, as manufactured by Thompson Fabricating Company (Birmingham, Alabama) or an approved equal.

6. Posts shall not interrupt the continuation of the top rail at any point along the railing, including corners and end terminations (OSHA 1910.23). The top surface of the top railing shall be smooth and shall not be interrupted by projected fittings.

7. The midrail at a corner return shall be able to withstand a 200# load without loosening. The manufacturer is to determine this dimension for their system. Provide physical tests from a laboratory to confirm compliance.

8. Expansion bolts shall be spaced 10d apart and 5d edge distance for no reduction in pullout strength. A safety factor of 4 shall be used on expansion bolt pullout values published by the manufacturer. Expansion bolts shall be stainless steel type 18–8 wedge bolts and shall be furnished by the handrail manufacturer.

9. Toe plate shall conform to OSHA standards. Toe plate shall be a minimum of 4" high and shall be an extrusion that attaches to the posts with clamps which will allow for expansion and contraction between posts. Toe plates shall be set 1/4" above the walking surface. Toe plates shall be provided on handrails as required by OSHA and/or as shown on drawings. Toe plates shall be shipped loose in stock lengths with pre–manufactured corners for field installation.

10. Openings in the railing shall be guarded by a self–closing gate (OSHA 1910.23). Safety chains shall not be used unless specifically shown on the drawings.

11. Finish shall be Aluminum Association M10–C22–A41 (215–R1). The pipe shall be plastic–wrapped. The plastic wrap is to be removed after erection.

12. Aluminum surfaces in contact with concrete, grout or dissimilar metals will be protected with a coat of bituminous paint, mylar isolators or other approved material.

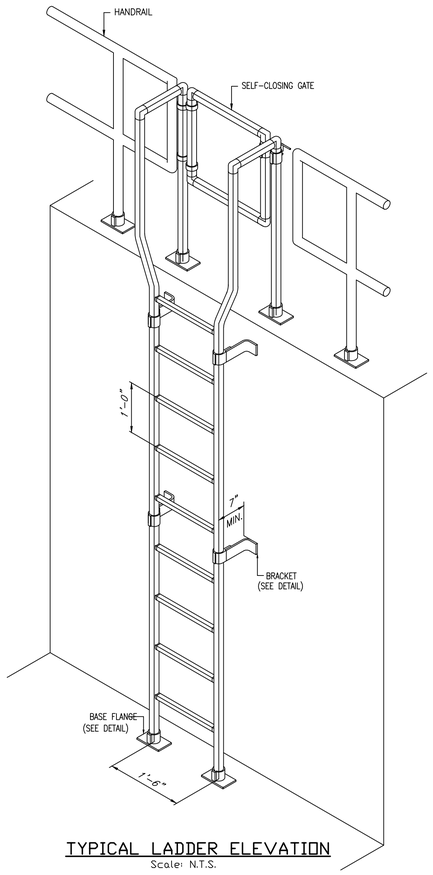
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: ALUMINUM HANDRAIL DETAILS

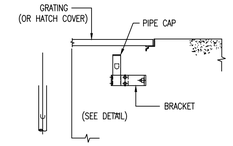
CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

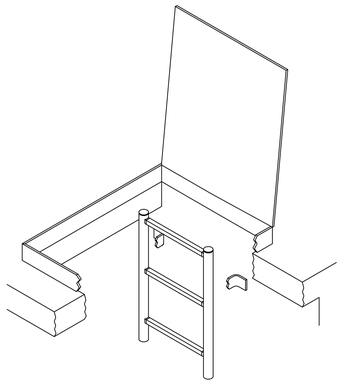
SHEET: MD–2



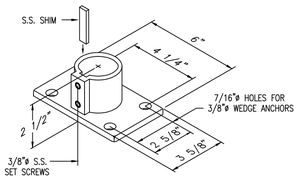
TYPICAL LADDER ELEVATION
Scale: N.T.S.



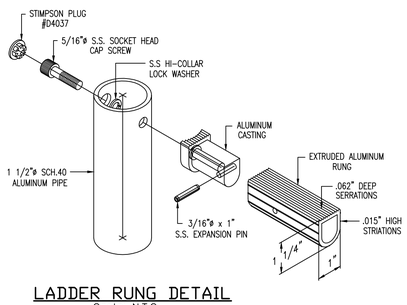
LADDER DETAIL
Scale: N.T.S.



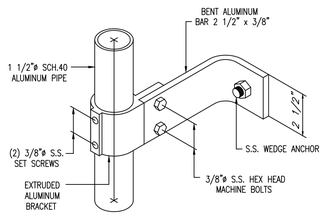
LADDER DETAIL
Scale: N.T.S.



BASE FLANGE DETAIL
Scale: N.T.S.



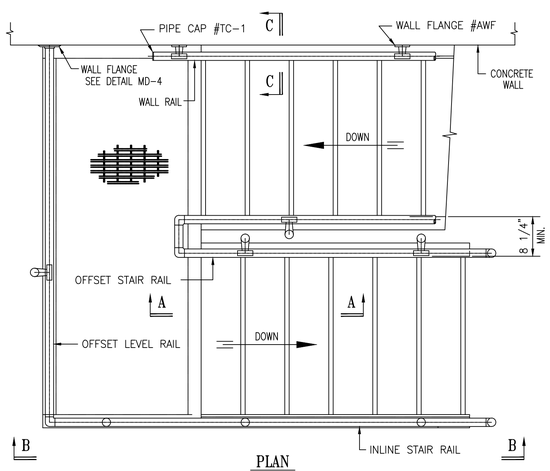
LADDER RUNG DETAIL
Scale: N.T.S.



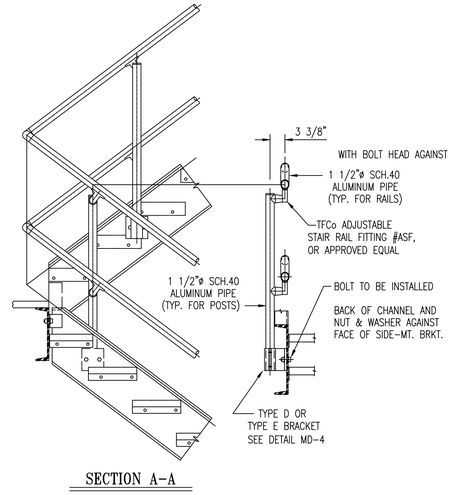
LADDER BRACKET DETAIL
Scale: N.T.S.

NOTE:
ALL ALUMINUM LADDERS SHALL BE TUF LADDER AS MANUFACTURED BY THOMPSON FABRICATING COMPANY (BIRMINGHAM, ALABAMA) OR APPROVED EQUAL.

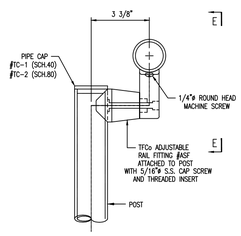
ACCESS LADDER DETAILS
Scale: N.T.S.



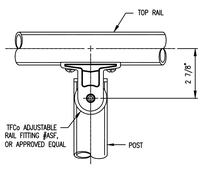
PLAN
TYPICAL HANDRAIL AT METAL STAIRS; HANDRAIL AT CONCRETE STEPS SIMILAR



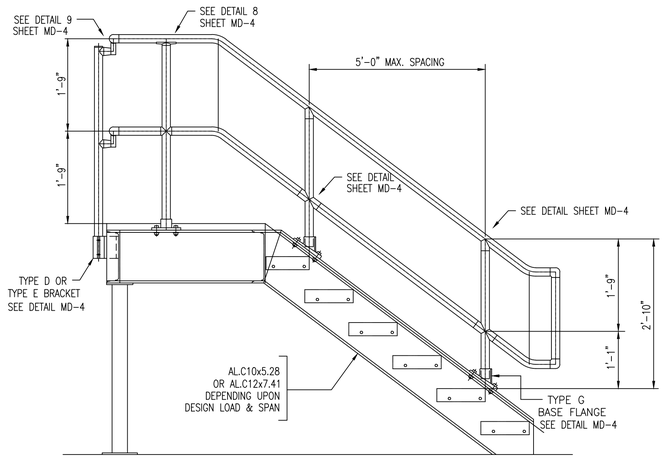
SECTION A-A



DETAIL 9



VIEW E-E



VIEW B-B

STAIR DETAILS
Scale: N.T.S.

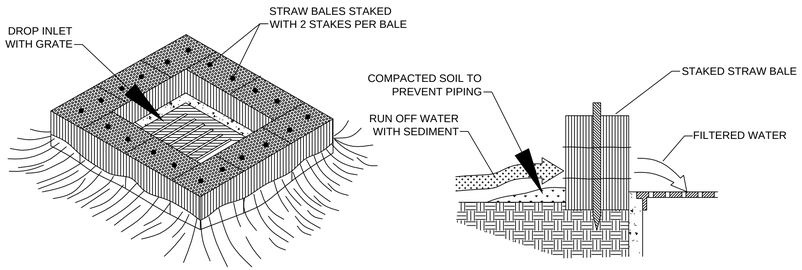
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: ALUMINUM STAIR AND LADDER DETAILS

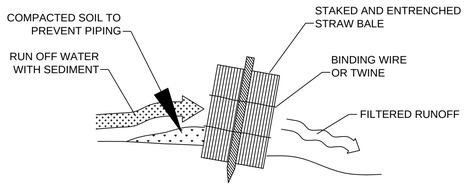
CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1010
DATE: APRIL 2010
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

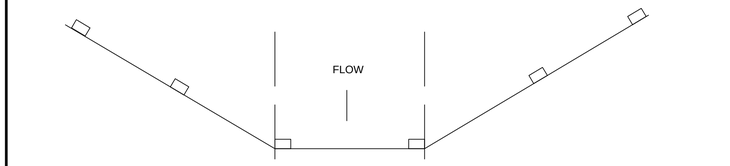
SHEET: MD-3



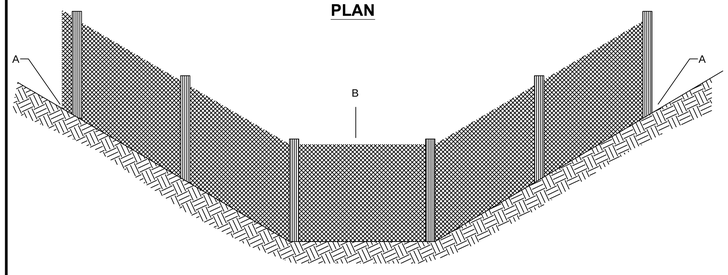
STRAW BALE DROP INLET SEDIMENT FILTER
N.T.S.



STRAW BALE INSTALLATION PROCEDURES
N.T.S.



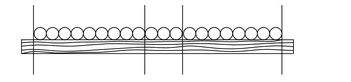
PLAN



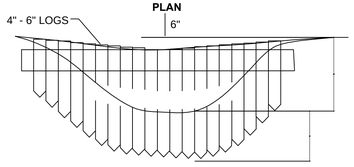
ELEVATION

POINT A SHOULD BE HIGHER THAN POINT B

PLACEMENT OF FILTER BARRIER
N.T.S.

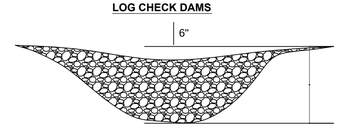


PLAN

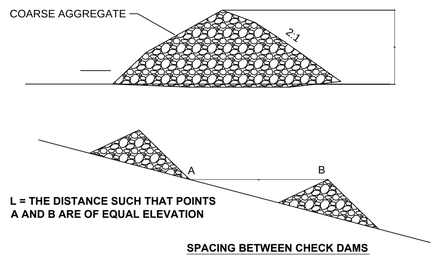


SECTION

LOG CHECK DAMS



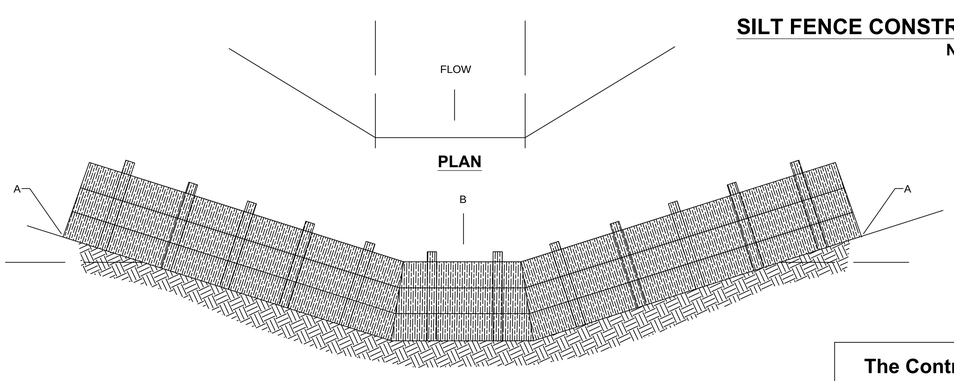
ROCK CHECK DAMS



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

SPACING BETWEEN CHECK DAMS

CHECK DAM DETAILS
N.T.S.

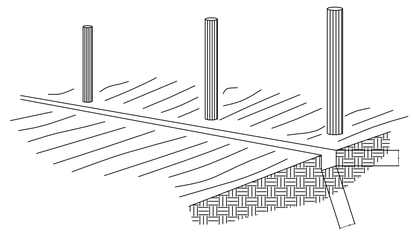


PLAN

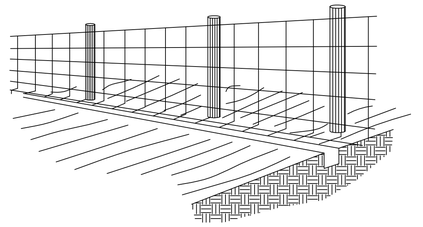
ELEVATION

POINT A SHOULD BE HIGHER THAN POINT B

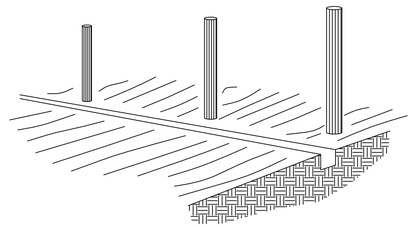
PLACEMENT OF STRAW BALE BARRIER
N.T.S.



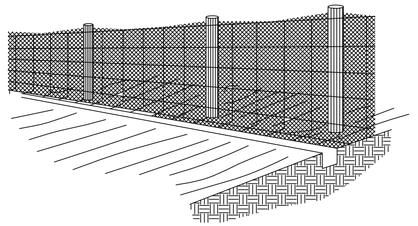
1. SET POSTS AND EXCAVATE A 4" x 4" TRENCH UPSLOPE ALONG THE LINE OF POSTS



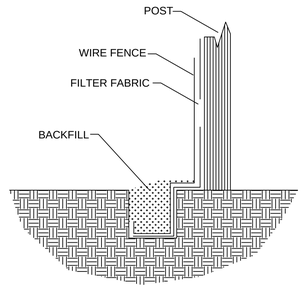
2. STAPLE WIRE FENCING TO POSTS



3. ATTACH THE FILTER FABRIC TO TEH WIRE FENCE AND EXTEND IT INTO THE TRENCH



4. BACKFILL AND COMPACT THE EXCAVATED SOIL



EXTENSION OF FABRIC AND WIRE INTO THE TRENCH

SILT FENCE CONSTRUCTION PROCEDURES
N.T.S.

The Contractor shall do all work and take all measures necessary to control soil erosion resulting from construction operations, and shall prevent the flow of sediment from the construction site, and shall contain construction materials (including excavation and backfill) within their protected working area so as to prevent damage to the adjacent wetlands and water courses. The Contractor shall use any of the acceptable methods necessary to control soil erosion and prevent the flow of sediment to the maximum extent possible. These methods shall include, but not be limited to, the use of water diversion structures, diversion ditches, and settling basins.

EROSION CONTROL DETAILS
N.T.S.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: EROSION CONTROL DETAILS

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: EC-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

STRUCTURAL NOTES

GENERAL

G1. DESIGN LOADS

A. LIVE LOADS:
CLEARWELL ROOF – 60 psf
PUMP ROOM FLOOR – 150 psf

B. WIND LOAD:
BASIC WIND SPEED – 70 mph
EXPOSURE – C
IMPORTANCE FACTOR– 1

C. SEISMIC LOAD:
PEAK VELOCITY ACCELERATION, Av – 0.07
PEAK ACCELERATION, Aa – 0.05
HAZARD EXPOSURE GROUP – I
PERFORMANCE CATEGORY – B
SOIL PROFILE TYPE (ROCK BEARING)– 1
SOIL PROFILE TYPE (SOIL BEARING) – 2

G2. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF KENTUCKY BUILDING CODES AND LOCAL CODES AND REGULATIONS.

G3. ANY MODIFICATIONS TO THESE DRAWINGS SHALL BE PROHIBITED WITHOUT WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD.

G4. COORDINATE WITH ALL DRAWINGS FOR PERTINENT INFORMATION RELATED TO STRUCTURAL WORK. ANY CHANGES TO THE STRUCTURAL SYSTEMS SHALL BE REDESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF KENTUCKY AT NO COST TO THE OWNER OR THE ENGINEER AND SUBMITTED TO THE ENGINEER FOR REVIEW. SUBMITTAL SHALL BE ACKNOWLEDGED IN WRITING PRIOR TO BEGINNING CONSTRUCTION.

G5. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AFFECTING THE WORK COVERED ON THESE DRAWINGS.

G6. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION.

G7. SHOP AND FIELD WELDING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION" BY THE AMERICAN WELDING SOCIETY (AWS).

G8. WELDING OF REINFORCING BARS IS NOT PERMITTED EXCEPT, WHERE SPECIFICALLY INDICATED ON THESE DRAWINGS AND SHALL CONFORM TO AWS D1.4.

G9. SHOP AND FIELD WELDING SHALL BE CARRIED OUT BY CERTIFIED WELDERS. WELDERS' CERTIFICATIONS SHALL MEET ALL THE REQUIREMENTS SET FORTH BY THE AMERICAN WELDING SOCIETY SPECIFICATIONS.

G10. CONTRACTOR TO VERIFY FINAL SITE PLAN AGAINST SHOWN FOOTING ELEVATIONS AND ASSURE THAT THE BOTTOM OF THE FOOTINGS ARE A MINIMUM OF 2'–6" BELOW FINISH GRADE ELEVATIONS.

G11. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS CONFORM TO THOSE SHOWN ON THE OTHER DRAWINGS PRIOR TO ANY FABRICATION AND CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.

G12. CONTRACTOR SHALL FIELD VERIFY OR DETERMINE ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN OR NOT SHOWN WHICH AFFECT THE NEW CONSTRUCTION PRIOR TO ANY FABRICATION.

G13. SLAB ON GRADE IS NOT DESIGNED FOR ANY SPECIAL CONCENTRATED LOADS (UNO). ANY CONCENTRATED LOAD SHALL BE DISTRIBUTED AT ITS BASE SUCH THAT THE FINAL PRESSURE ON SLAB NOT TO EXCEED THE ALLOWABLE PRESSURE STATED IN THE DESIGN LOADS.

G14. ALL BASINS DESIGN FOR CONTAINING LIQUID SHALL BE TESTED AGAINST LEAKAGE PER ACI 350.

STEEL DECK

D1. STEEL DECK FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST DECK INSTITUTE (SDI) SPECIFICATIONS. DECK MANUFACTURER SHALL BE A MEMBER OF SDI.

D2. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR THE A/E TO REVIEW PRIOR TO ANY FABRICATION. SHOP DRAWINGS SHALL INDICATE THE LAYOUTS, DECK TYPE(S), DECK UNCOATED THICKNESS, FASTENING METHODS, CONNECTION PATTERNS, CUT OPENING FRAMING, ACCESSORIES, ETC.

D3. PLACE DECK UNITS ON SUPPORTING STEEL FRAMEWORK IN THE LENGTHS OVER 4 OR MORE SUPPORTS (3 SPAN CONTINUOUS). LAP END OF DECK NOT LESS THAN 2" (UNO). SIDE LAP INTERLOCKS SHALL BOT BE STRETCHED OR CONTRACTED.

D4. DECK SHALL BE FASTENED TO SUPPORTING MEMBERS TO DEVELOP A MINIMUM OF 300 lb/ft DIAPHRAGM ACTION IN ACCORDANCE WITH SDI SPECIFICATIONS.

D5. A MINIMUM ⅝" DIAMETER PUDDLE WELD SHALL BE REQUIRED AT ALL EDGE RIBS AT MAXIMUM SPACING OF 6" OC, AND ALL INTERIOR RIBS OVER SUPPORTS AT 12" OC MAXIMUM. SIDE LAPS SHALL BE SCREWED WITH MINIMUM OF #14 SELF TAPPING SCREWS 24" OC MAXIMUM (U.N.O.).

D6. FIELD WELDING OF DECK SHALL BE IN ACCORDANCE WITH AWS D1.3 STRUCTURAL WELDING CODE – SHEET STEEL.

D7. MECHANICAL FASTENERS MAY BE UTILIZED IN LIEU OF DECK WELDING. FASTENER MANUFACTURER MUST SUBMIT TO THE A/E FOR REVIEW OF THE DOCUMENTS IN THE FORM OF TEST DATA, DESIGN CALCULATIONS, OR DESIGN CHARTS MEETING THE MINIMUM DIAPHRAGM FORCE INDICATED HEREIN.

D8. DECK SHALL INCLUDE ANY MISCELLANEOUS CLOSURE PIECES, METAL SCREEDS, ROOF CURBS, DRAIN SUMP PANS, REINFORCING AROUND OPENINGS, ETC., REQUIRED TO MAKE A COMPLETE JOB. ALL MISCELLANEOUS ITEMS SHALL BE COMPATIBLE WITH ROOF DECK SPECIFIED.

D9. ROOF DECK OPENINGS NOT SHOWN ON THE DRAWINGS, SUCH AS THOSE REQUIRED FOR STACKS, CONDUITS, PLUMBING, VENT, ETC. SHALL BE REINFORCED IF NECESSARY IN ACCORDANCE WITH THE REINFORCING SCHEDULE SHOWN IN SDI "MANUAL OF CONSTRUCTION WITH STEEL DECK".

D10. NO LOAD SHALL BE HUNG FROM ROOF DECK.

FOUNDATION

F1. FOR GEOTECHNICAL INFORMATION, SEE REPORTS PREPARED BY AMERICAN GEOTECHNICAL & ENVIRONMENTAL, INC. DATED _____

F2. FOUNDATIONS ARE DESIGNED FOR ALLOWABLE BEARING PRESSURES AS FOLLOWS:

F3. CLEARWELL BASIN:
ALLOWABLE ROCK BEARING PRESSURE = 6,000 psf

F4. FOUNDATION TYPE (SOIL/ROCK) BEARING MIXING IS NOT PERMITTED EXCEPT, AS INDICATED ABOVE.

F5. IN ROCK BEARING FOUNDATIONS, WHERE ROCK ELEVATIONS ARE LOWER THAN THE SHOWN BOTTOM OF FLOOR/FOOTING ELEVATIONS, ADDITIONAL SOIL EXCAVATIONS SHALL BE REQUIRED TO SOLID ROCK AND CONCRETE FILL TO BOTTOM OF FLOOR/FOOTING ELEVATIONS SHALL BE PROVIDED.

F6. IN SOIL BEARING FOUNDATIONS, WHERE ROCK ELEVATIONS ARE HIGHER THAN BOTTOM OF FLOOR/FOOTING ELEVATIONS, ADDITIONAL ROCK EXCAVATIONS SHALL BE REQUIRED TO 2'–0" MINIMUM BELOW BOTTOM OF FLOOR/FOOTING ELEVATIONS AND COMPACTED FILL TO PROPER ELEVATIONS SHALL BE PROVIDED.

F7. FOUNDATIONS EXCAVATIONS SHALL BE INSPECTED BY A REGISTERED GEOTECHNICAL ENGINEER TO VERIFY THAT THE MATERIALS AT THE BASE OF THE FOOTINGS ARE SUITABLE AND MEET THE DESIGN BEARING PRESSURE INDICATED. IF UNSUITABLE MATERIALS ARE ENCOUNTERED, FOLLOW THE INSTRUCTIONS AND RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER AND NOTIFY THE ENGINEER INFORMING THE CONDITIONS ENCOUNTERED. GEOTECHNICAL ENGINEER SHALL BE OBTAINED BY THE CONTRACTOR.

F8. CONTRACTOR SHALL DETERMINE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND EXISTING FOUNDATIONS PRIOR TO ANY EXCAVATIONS. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DAMAGES.

F9. CARE SHALL BE TAKEN NOT TO DISTURB THE BOTTOM OF EXCAVATION. EXCAVATION TO FINAL GRADE SHALL NOT BE MADE UNTIL JUST PRIOR TO PLACING CONCRETE.

F10. BACKFILL AND FILL MATERIALS SHALL BE FREE OF CLAY, DEBRIS, WASTE, FROZEN MATERIALS, VEGETABLE, AND OTHER DELETERIOUS MATTER. GEOTECHNICAL ENGINEER TO DECIDED IF EXCAVATION MATERIAL IS AN ACCEPTABLE BACKFILL.

F11. IF FOUNDATION WALLS ARE BASEMENT WALLS, BACKFILL SHALL BE PLACED AGAINST THE WALLS AFTER PROPER BRACING IS PROVIDED BY THE TOP FLOOR CONSTRUCTION REACHING ITS FULL SPECIFIED STRENGTH.

F12. IF FOUNDATION WALLS ARE CANTILEVER RETAINING WALLS, BACKFILL SHALL BE PLACED AGAINST THE WALLS AFTER THE WALLS HAVE CURED AND REACHED THEIR FULL DESIGN STRENGTHS.

F13. BACKFILL AND FILL SHALL BE PLACED IN LEFTS OF 8" MAXIMUM LOOSE DEPTH. EACH LIFT SHALL BE COMPACTED WITH A POWER VIBRATING COMPACTOR OR SIMILAR EQUIPMENT AND SHALL BE TESTED FOR (100% FOR BACKFILL UNDER FLOOR AND 95% FOR BACKFILL AGAINST FOUNDATION WALLS) STANDARD PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D–698, (UNO).

F14. CONTRACTOR SHALL REMOVE ALL EXCESS EXCAVATION MATERIALS FROM THE SITE.

CONCRETE

C1. ALL CONCRETE RELATED WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF THE LATEST EDITIONS OF THE AMERICAN CONCRETE INSTITUTE (ACI) MANUAL OF CONCRETE PRACTICE PART 1 THROUGH 5, INCLUDING, BUT NOT LIMITED TO ACI 350, ACI 301, ACI 301 SUPPLEMENTARY REQUIREMENTS, ACI 305R, ACI 315, ACI 318 AND ACI 347.

C2. TESTING LABORATORY FOR TESTING SERVICES SHALL BE OBTAINED BY THE CONTRACTOR. AT THE SITE, LABORATORY PERSONNEL SHALL MAKE 4 CYLINDERS PER 50 CUBIC YARDS OF CONCRETE OR PART THEREOF. TESTING LABORATORY SHALL PERFORM STRENGTH TEST (ASTM C39) AND MEASURE SLUMP (ASTM C143), AIR CONTENT FOR AIR ENTRAINED CONCRETE (ASTM C231 OR C173), TEMPERATURE, AND UNIT WEIGHT (ASTM C138). SUBMIT TEST AND MEASUREMENT RESULTS TO THE ENGINEER FOR REVIEW (U.N.O.)

C3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR FABRICATION, BENDING AND PLACEMENT OF REINFORCING STEEL IN CONCRETE ALONG WITH MANUFACTURERS' PRODUCT DATA TO THE ENGINEER FOR REVIEW (3 SETS OF PRINTS & 1 SET OF SEPIA).

C4. CORNER BARS SHALL BE PROVIDED IN FOOTINGS AND WALLS TO MATCH SIZES AND SPACING OF FOOTING/WALL HORIZONTAL REINFORCEMENT WITH MINIMUM LAP = THE LARGER OF 40 x BAR DIAM. OR 2'–0" IN EACH DIRECTION (U.N.O.).

C5. DOWELS IN FOOTINGS TO MATCH VERTICAL COLUMN.WALL REINFORCING (U.N.O.).

C6. MINIMUM NOMINAL 2"x4" SHEAR KEY SIZES AT CONSTRUCTION JOINTS BETWEEN WALLS AND FLOORS SHALL BE PROVIDED.

C7. ¾" x 45° CHAMFER SHALL BE PROVIDED ON ALL EXPOSED EDGES OF CONCRETE.

C8. CONTRACTOR SHALL REVIEW ALL DRAWINGS FOR SIZE AND LOCATION OF EMBEDDED ITEMS, SLEEVES, SLAB DEPRESSIONS, OPENINGS, ETC. REQUIRED BY OTHER TRADES. RECONCILE THEIR EXACT SIZES AND LOCATIONS PRIOR TO PROCEEDING WITH THIS WORK. ALL ITEMS SHALL BE FURNISHED AND INSTALLED PRIOR TO PLACEMENT OF CONCRETE.

C9. ANY ALUMINUM EMBEDDED ITEMS SHALL HAVE PROTECTIVE COVER SUCH THAT THERE WILL BE NO CONTACT BETWEEN CONCRETE AND ALUMINUM AT ANY TIME.

C10. CONCRETE SHALL BE DISCHARGED AT THE SITE WITHIN 1½ HOURS AFTER WATER HAS BEEN ADDED TO THE CEMENT AND AGGREGATES. ADDITION OF WATER TO THE MIX AT THE PROJECT SITE SHALL NOT BE PERMITTED.

C11. ALL CONCRETE SHALL CONTAIN A WATER REDUCING ADMIXTURE CONFORMING TO ASTM C494, TYPE A, F OR G.

C12. CALCIUM CHLORIDE OR ANY ADMIXTURE CONTAINING CALCIUM CHLORIDE SHALL NOT BE PERMITTED.

C13. ALUMINUM PIPES SHALL NOT BE USED WITH CONCRETE PUMPS.

C14. ALL CONSTRUCTION JOINTS SHALL HAVE WATERSTOPS.

C15. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT AS APPLICABLE (U.N.O.):

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH–3"
BEAMS, COLUMNBS/PIERS MAIN REINFORCEMENT–2½"
BEAM STIRRUPS AND COLUMN PIER TIES – 2"
WALLS INTERIOR FACE – 2"
WALL EXTERIOR FACE – 2"
SLABS (T & B), #5 & SMALLER – 1½"
SLABS (T & B), #6 & LARGER – 2"

MASONRY

M1. ALL MASONRY RELATED WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES, ACI 530.

M2. ALL BOND BEAMS SHALL BE REINFORCED WITH 2 – #5 CONTINUOUS WITH MINIMUM LAP=2'–6" (U.N.O.). CORNER BARS SHALL BE PROVIDED WITH THE SAME MINIMUM LAP.

M3. TWO CELLS EACH SIDE OF CMU OPENING LINTEL BEARING SHALL BE GROUTED WITH 1–#5 IN EACH CELL (U.N.O.).

M4. ALL MASONRY CELLS CONTAINING STEEL REINFORCEMENT SHALL BE FULLY GROUTED.

M5. VERTICAL REINFORCEMENT IN MASONRY WALLS SHALL BE SUPPORTED AGAINST DISPLACEMENT AT INTERVALS NOT EXCEEDING 192xBAR DIAMETER NOR 10'–0".

M7. MASONRY WALL GROUTING SHALL BE PROVIDED IN LIFTS NOT EXCEEDING 5'–0".

M8. MASONRY BUILDING SHALL BE RUNNING BOND.

M9. CALCIUM CHLORIDE OR ANY ADDITIVE CONTAINING CALCIUM CHLORIDE SHALL NOT BE PERMITTED IN THE MORTAR OR GROUT.

M10. MASONRY SHALL BE PROTECTED FROM FREEZING WHEN THE TEMPERATURE IS 40 DEGREES FAHRENHEIT AND FALLING. COMPLY WITH THE "CONSTRUCTION AND PROTECTION RECOMMENDATIONS FOR COLD WEATHER MASONRY CONSTRUCTION" BY THE BRICK INSTITUTE OF AMERICA (BIA).

M11. LINTELS SHALL BE PROVIDED OVER ALL OPENINGS IN MASONRY WALLS. REFER TO ARCHITECTURAL AND HVAC DRAWINGS FOR LOCATIONS AND SIZES OF OPENINGS.

M12. PILASTERS BONDING TO ADJOINING MASONRY WALLS SHALL BE WITH INTERLOCKING UNITS.

M13. MASONRY CONTROL JOINTS SHALL BE PROVIDED AT A MAXIMUM SPACING OF 25'–0". ONE CELL EACH SIDE OF CONTROL JOINTS SHALL BE GROUTED WITH 1–#5 FULL HEIGHT.

PLYWOOD SHEATHING

P1. PLYWOOD SHALL BE GRADED IN ACCORDANCE WITH AMERICAN PLYWOOD ASSOCIATION (APA) RULES.

P2. ROOF AND WALL SHEATHING SHALL BE APA STRUCTURAL I RATED SHEATHING EXPOSURE 1. PERMANENTLY EXPOSED PANEL EDGES SHALL BE RATED "EXTERIOR".

P3. FASTENERS SHALL BE 8d GALVANIZED NAILS AT 4" OC MAXIMUM AROUND THE ROOF BOUNDARIES AND AT 12" OC MAXIMUM OVER INTERMEDIATE SUPPORTS (U.N.O.) WOOD BLOCKING SHALL BE PROVIDED AT PANELS' UNSUPPORTED EDGES.

MATERIALS

1. CONCRETE: f'c = 4,000 psi MIN. AT 28 DAYS, ACI 214, MAX. SLUMP = 3", ASTM C143. CONCRETE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE AIR ENTRAINED 3% TO 6%.
2. CEMENT: PORTLAND CEMENT TYPE 1, ASTM C150. AIR ENTRAINED PORTLAND CEMENT SHALL NOT BE USED. AIR ENTRAINED SHALL BE OBTAINED BY USE OF ADMIXTURE.
3. AGGREGATE: MAX. SIZE 1½" FOR FOOTING CONCRETE AND MAX. SIZE ¾" FOR ALL OTHER CONCRETE, ASTM C33. FINE AGGREGATE, ASTM C33.
4. REINFORCEMENT: DEFORMED BILLET STEEL WITH FY = 60,000 psi, ASTM A615.
5. ANCHOR BOLTS: ASTM A307 WITH HEAVY HEXAGON NUTS AND WASHERS (UNO).
6. STRUCTURAL STEEL: ASTM A36 WITH Fy = 36,000 psi.
7. BOLTS: ASTM 325 SLIP CRITICAL (SC), ¾"ø HIGH STRENGTH (HS) BOLTS (UNO).
8. WELDING ELECTRODES: E70XX (UNO).
9. CRUSHED STONE: NO. 57, ASTM C33.
10. VAPOR BARRIER MEMBRANE: 0.008" THICK, MIN. LAP = 4" WITH WATERPROOFING ADHESIVE PLACED PER MFR.'S INSTRUCTIONS. "VIS–QUEEN" BY VISKING CORP. OR APP. EQ.
11. PERIMETER FOUNDATION WALL INSULATION: MIN. "R" FACTOR OF 10. "STYROFOAM SM" BY DOW CHEMICAL OR APP. EQ.
12. EXPANSION JOINTS: PRE FORMED EXPANSION JOINT FILLER SHALL BE COMPOSED OF GRANULATED CORK WITH PHENOLIC RESIN "CORK" BY W.R. MEADOW, INC. OR APP.EQ. HOLD FILLER DOWN ½" FROM TOP AND FILL WITH "VULKEM 45" BY MASTER MECHANIC CO. OR APP. EQ.
13. MINIMUM MASONRY ASSEMBLY COMPRESSIVE STRENGTH: F'm = 1350 psi, ASTM E447.
14. CONCRETE MASONRY UNIT: HOLLOW LOAD BEARING UNITS, ASTM C90, GRADE N TYPE 1, SOLID LOAD BEARING UNIT: ASTM C145, GRADE N, TYPE 1, CMU MINIMUM COMPRESSIVE STRENGTH OF 2000 psi ON NET CROSS SECTIONAL AREA.
15. MASONRY MORTAR: TYPE "s" FOR ABOVE GRADE, ASTM C270.
16. MASONRY GROUT: MINIMUM COMPRESSIVE STRENGTH F'c = 3000 psi, ASTM C476.
17. HORIZONTAL TRUSSED WIRE REINFORCEMENT: HOT–DIPPED GALV. 3/16" SIDE RODS AND 9 GAGE CROSS RODS PLACED AT MAX SPACING OF 16" O.C. BY DUR–O–WAL OR APPROVED EQ.
18. EXPANSION ANCHORS SHALL BE "HIT HY 150 SYSTEM" FOR SOLID BASE MATERIAL, "HIT HY 20 SYSTEM" FOR HOLLOW BASE MATERIAL BY HILTI (U.N.O.).
19. WATERSTOP: (SEE SPECIFICATION).
20. STEEL DECK: ASTM A653 STRUCTURAL QUALITY GRADE 33 OR HIGHER. GALVANIZED ASTM 924 WITH MIN. COATING OF G90. DECK SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:
ROOF DECK: 1½" DEEP, 20 GA., WIDE RIB, GALVANIZED STEEL DECK WITH: 1=0.212 in4/ft, Sp=0.234 in3/ft, Sn=0.247 in3/ft

STEEL JOIST

J1. ALL OPEN WEB STEEL JOIST SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS" BY THE STEEL JOIST INSTITUTE (SJI).

J2. STEEL JOIST MANUFACTURER SHALL BE A MEMBER OF THE STEEL JOIST INSTITUTE.

J3. CONTRACTOR SHALL PROVIDE STEEL JOIST SHOP DRAWINGS FOR THE A/E TO REVIEW PRIOR TO ANY FABRICATION. SHOP DRAWINGS SHALL INDICATE: JOIST TYPES, NUMBERS, SIZES, SPACING, BRIDGING, CONNECTIONS, HEADERS, ANCHORAGE, BEARING PLATES, ETC.

J4. JOISTS SHALL BE CONNECTED AT EACH END TO STEEL SUPPORTS, JOISTS SHALL BEAR A MINIMUM OF 4" ON GROUTED MASONRY OR CONCRETE AND 2½" ON STEEL BEAMS/COLUMNS. IF THIS MINIMUM BEARING CANNOT BE MET, THE JOIST PLACEMENT MUST BE STAGGERED TO ACHIEVE THESE MINIMUM REQUIRED BEARING LENGTHS.

J5. ALL JOISTS ON COLUMN LINES TO HAVE BOTTOM CHORDS EXTENDED AND BOLTED TOP AND BOTTOM TO COLUMNS. TOP AND BOTTOM CHORDS OF JOISTS AT COLUMN LINES SHALL BE DESIGNED FOR A MINIMUM OF 8,000 lbs. AXIAL LOAD IN EITHER TENSION OR COMPRESSION. IF SHOWN, JOIST BOTTOM CHORDS EXTENDED AND CONNECTED TO EXTERIOR WALLS, BOTTOM CHORDS SHALL BE DESIGNED FOR A MINIMUM OF 1,000 lbs. AXIAL LOAD IN EITHER TENSION OR COMPRESSION. JOIST BOTTOM CHORDS SHALL BE CONNECTED AFTER ROOF/FLOOR DEAD LOADS ARE APPLIED.

J6. STEEL JOIST SHALL BE WELDED TO SUPPORTING STEEL AS SHOWN ON THE DRAWING, AND IN ACCORDANCE WITH SJI SPECIFICATIONS AND AWS D1.1 AS A MINIMUM.

J7. TOP AND BOTTOM CHORD OF JOISTS SHALL BE CONTINUOUS WITHOUT ANY SPLICES OF MATERIAL.

J8. JOIST BRIDGING SHALL BE FURNISHED AND INSTALLED TO MEET THE DESIGN AND SPACING REQUIREMENTS OF THE SJI STANDARD SPECIFICATIONS FOR OPEN WEB STEEL JOISTS. IF SHOWN BRIDGING IS CONNECTED TO EXTERIOR WALLS, BRIDGING SHALL BE DESIGNED FOR A MINIMUM OF 2,300 lbs> AXIAL LOAD IN EITHER TENSION OR COMPRESSION. ALL BRIDGING AND BRIDGING ANCHORS SHALL BE COMPLETELY INSTALLED PRIOR TO CONSTRUCTION LOADS ARE PLACED ON THE JOISTS.

J9. END OF JOIST BRIDGING LINES SHALL BE ANCHORED TO MASONRY WALLS OR STEEL BEAMS/COLUMNS. ALL BRIDGING SHALL BE WELDED TO JOISTS UNLESS OTHERWISE SHOWN OR INDICATED IN SJI SPECIFICATIONS. WELDING SHALL BE IN SUCH A MANNER AS NOT TO IMPAIR THE STRUCTURAL INTEGRITY OF THE JOIST.

J10. X–BRIDGING SHALL BE BOLTED OF WELDED AT THE INTERSECTION OF THE TWO ANGLES BETWEEN THE JOIST.

J11. REFER TO SJI SPECIFICATION REQUIREMENTS FOR WHEN TO PROVIDE BOLTED DIAGONAL BRIDGING PRIOR TO SLACKENING OF THE HOISTING LINES.

J12. ALL HANGERS TO SUPPORT MECHANICAL EQUIPMENT, ETC. SHALL BE SUPPORTED BY THE BOTTOM CHORD OF JOISTS AND SHALL BE LOCATED AT THE PANEL POINTS. JOIST STIFFENERS SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS. ALL HANGERS SHALL BE LOCATED AT THE CENTER LINE OF THE BOTTOM CHORD MEMBER. IF HANGING LOADS ARE NOT SHOWN ON THE DRAWINGS, CONTRACTOR SHALL PROVIDE THE INFORMATION TO THE A/E FOR REVIEW PRIOR TO ANY FABRICATION.

J13. VERIFY THE EXACT SIZE AND LOCATION OF ALL OPENINGS PRIOR TO ANY FABRICATION.

J14. JOIST MANUFACTURER SHALL PROVIDE HEADERS OF ADEQUATE STRENGTH FOR JOIST SUPPORT AT OPENINGS (UNO).

J15. JOIST AND ACCESSORIES SHALL HAVE ONE SHOP COAT OF PRIME PAINT MEETING THE MINIMUM PERFORMANCE REQUIREMENTS OF THE SJI SPECIFICATIONS (UNO). BITUMASTIC PRIME COAT IS NOT ACCEPTABLE.

J16. JOISTS SHALL BE ERECTED STRAIGHT , SWEEPS SHALL BE A MAXIMUM OF 1" MEASURED AT CENTER.

PREFABRICATED WOOD TRUSS

W1. THE DESIGN, DETAILING, FABRICATION, AND ERECTION OF WOOD TRUSSES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (NFPA), TIMBER CONSTRUCTION MANUAL BY THE AMERICAN INSTITUTE OF TIMER CONSTRUCTION (AITC), AND THE LATEST EDITION OF "DESIGN SPECIFICATION FOR METAL CONNECTED WOOD TRUSSES" BY THE TRUSS PLATE INSTITUTE (TPI).

W2. DESIGN SHALL BE APPROVED AND CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF KENTUCKY.

W3. CONTRACTOR SHALL PROVIDE SIGNED AND STAMPED SHOP DRAWINGS INCLUDING LAYOUTS, DESIGN CALCULATIONS, LUMBER GRADE(S), ETC. FOR THE ENGINEER TO REVIEW PRIOR TO ANY FABRICATION.

W4. TRUSSES SHALL BE DESIGNED FOR THE APPLIED ROOF LOADING AS INDICATED BELOW. TOP AND BOTTOM CHORDS SHALL ALSO BE DESIGNED FOR FLEXURE. DESIGN LOADS ARE AS FOLLOWS:
A. LIVE LOAD (TOP CHORD) –20 psf
B. DEAD LOAD (TOP CHORD) –15 psf
C. DEAD LOAD (BOTTOM CHORD) –15 psf
D. WIND LOAD (PER KBC) –20 psf (MIN.)
E. WIND NET UPLIFT –10 psf

W5. TRUSSES SHALL BE SPACED WITH A MAXIMUM SPACING OF 2'–0" OC.

W6. PREFABRICATED WOOD TRUSS LUMBER GRADE(S) SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.

W7. ALL CONNECTOR PLATES SHALL BE HOT–DIPPED GALVANIZED AND CONFORMING TO ASTM A446, GRADE A.

W8. TRUSS MEMBERS SHALL NOT BE CUT OR REMOVED EXCEPT UNDER WRITTEN DIRECTIONS OF THE TRUSS MANUFACTURER'S STRUCTURAL ENGINEER.

W9. PERMANENT CONTINUOUS HORIZONTAL AND DIAGONAL BRACING SHALL BE DETERMINED BY THE TRUSS MANUFACTURER IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE TRUSS PLATE INSTITUTE. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING AND PROPER PLACING OF THE TEMPORARY AND PERMANENT BRACING.

W10. TRUSS GIRDER LOCATIONS IF SHOWN, MAY BE REVISED BY THE TRUSS MANUFACTURER UPON WRITTEN APPROVAL OF THE ENGINEER.

W11. LOADS ON TRUSS GIRDERS SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.

W12. SIMPSON STRONG TIES SHALL BE UTILIZED TO CONNECT TRUSS ENDS TO SUPPORTING MEMBERS IN ADDITION TO STANDARD TOE NAILING, USE H4, 20 GA. (U.N.O.).

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

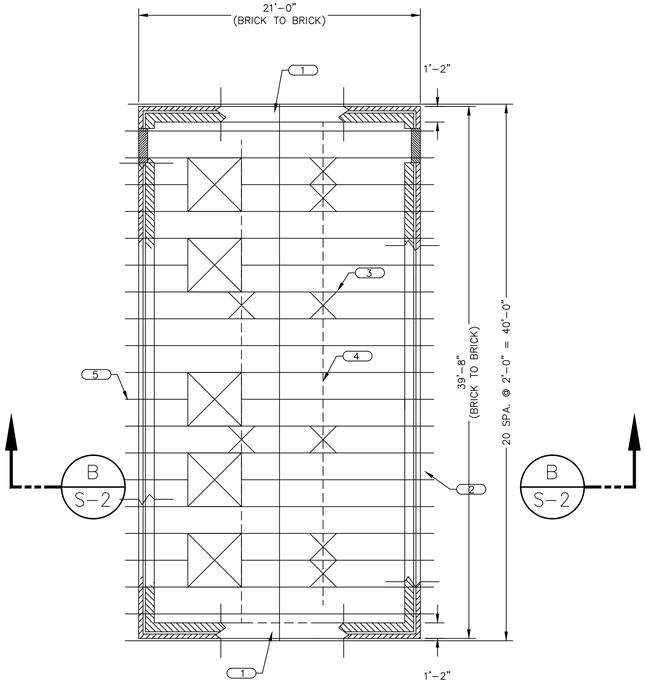
DESCRIPTION: STRUCTURAL NOTES

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET: S–0

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

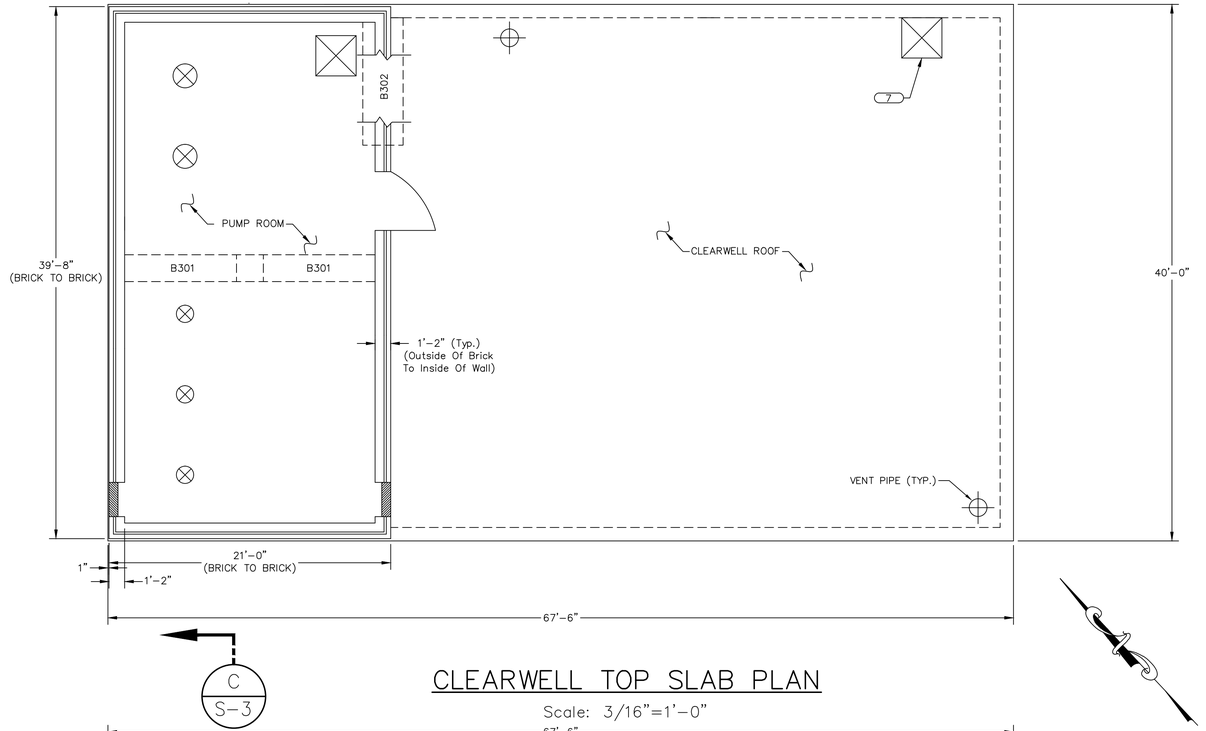


PUMP BUILDING ROOF PLAN

Scale: 3/16"=1'-0"

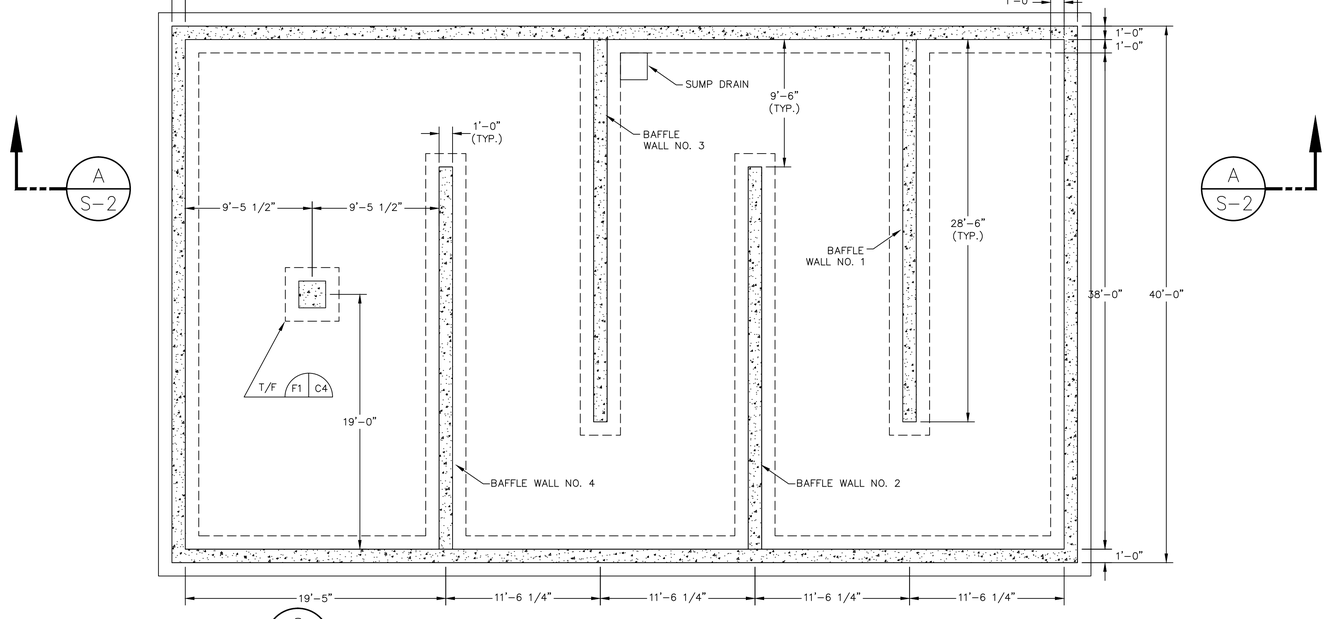
CODED NOTES

1. 2x6 @ 16" O.C. STUD END WALL FROM CMU TO ROOF TO ALIGN WITH TRUSS PROFILE (TYP. E.E.)
2. ROOF TRUSS (SEE STRUCT. NOTES).
3. VERT X-BRIDGING T/B CHORDS (TYP.)
5. GIRDER TRUSS (TYP.)
6. HEADER FRAME AS REQUIRED (TYP.)
7. ROOF HATCH, SEE MONARCH DWGS. (TYP.)



CLEARWELL TOP SLAB PLAN

Scale: 3/16"=1'-0"



CLEARWELL FOUNDATION PLAN

Scale: 3/16"=1'-0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

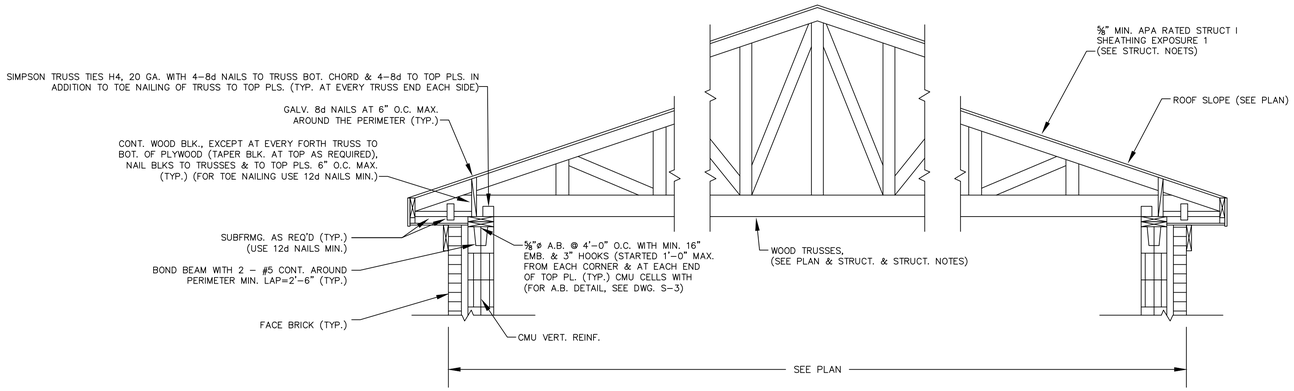
DESCRIPTION:
CLEARWELL FOUNDATION & TOP SLAB PLAN VIEWS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

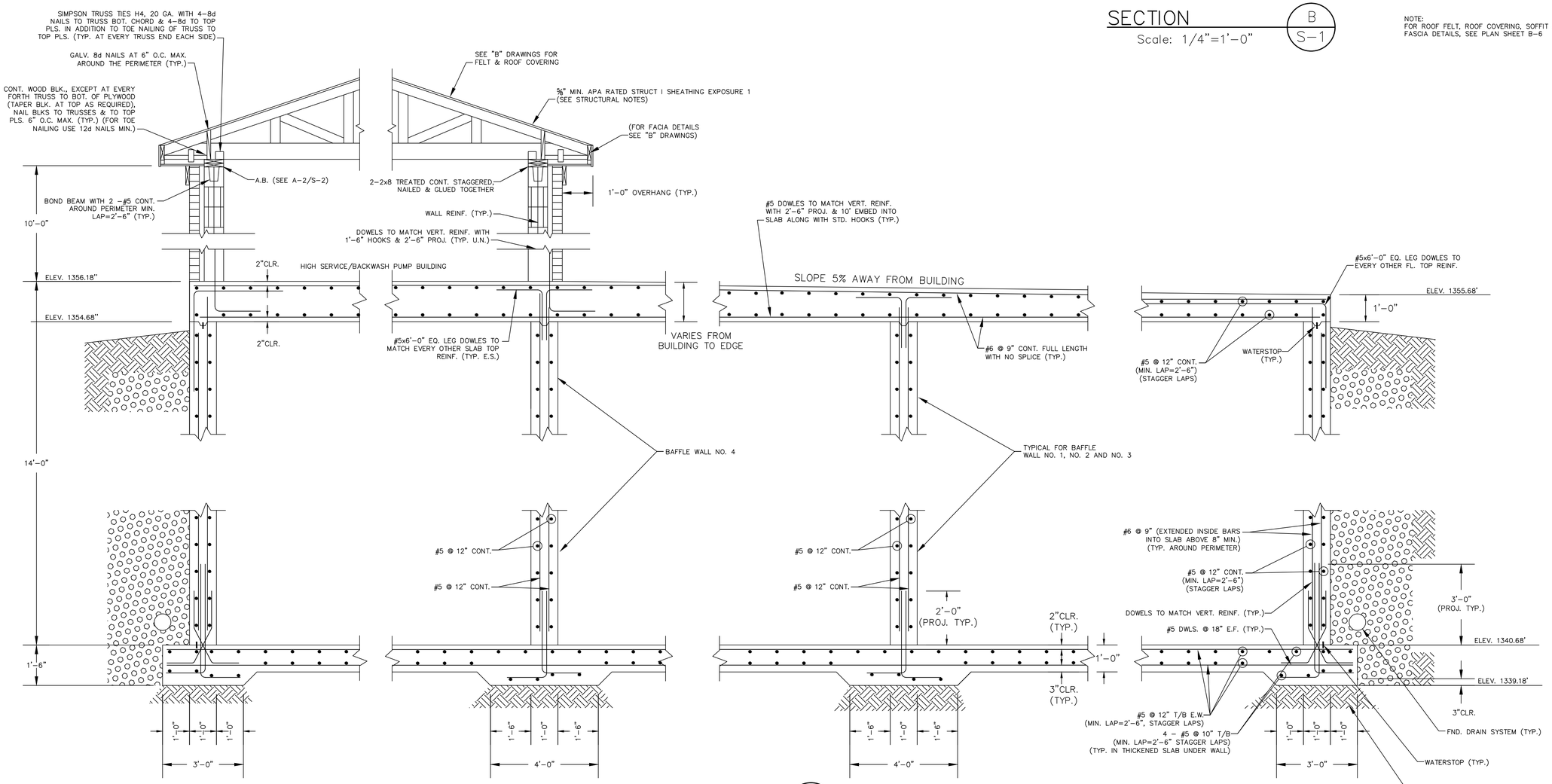
SHEET:
S-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



SECTION B / S–1
Scale: 1/4"=1'–0"

NOTE:
FOR ROOF FELT, ROOF COVERING, SOFFIT & FASCIA DETAILS, SEE PLAN SHEET B–6



SECTION A / S–1
Scale: 1/2"=1'–0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

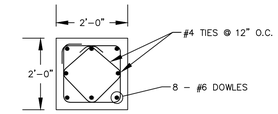
DESCRIPTION:
CLEARWELL & PUMP ROOM
SECTION / DETAILS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

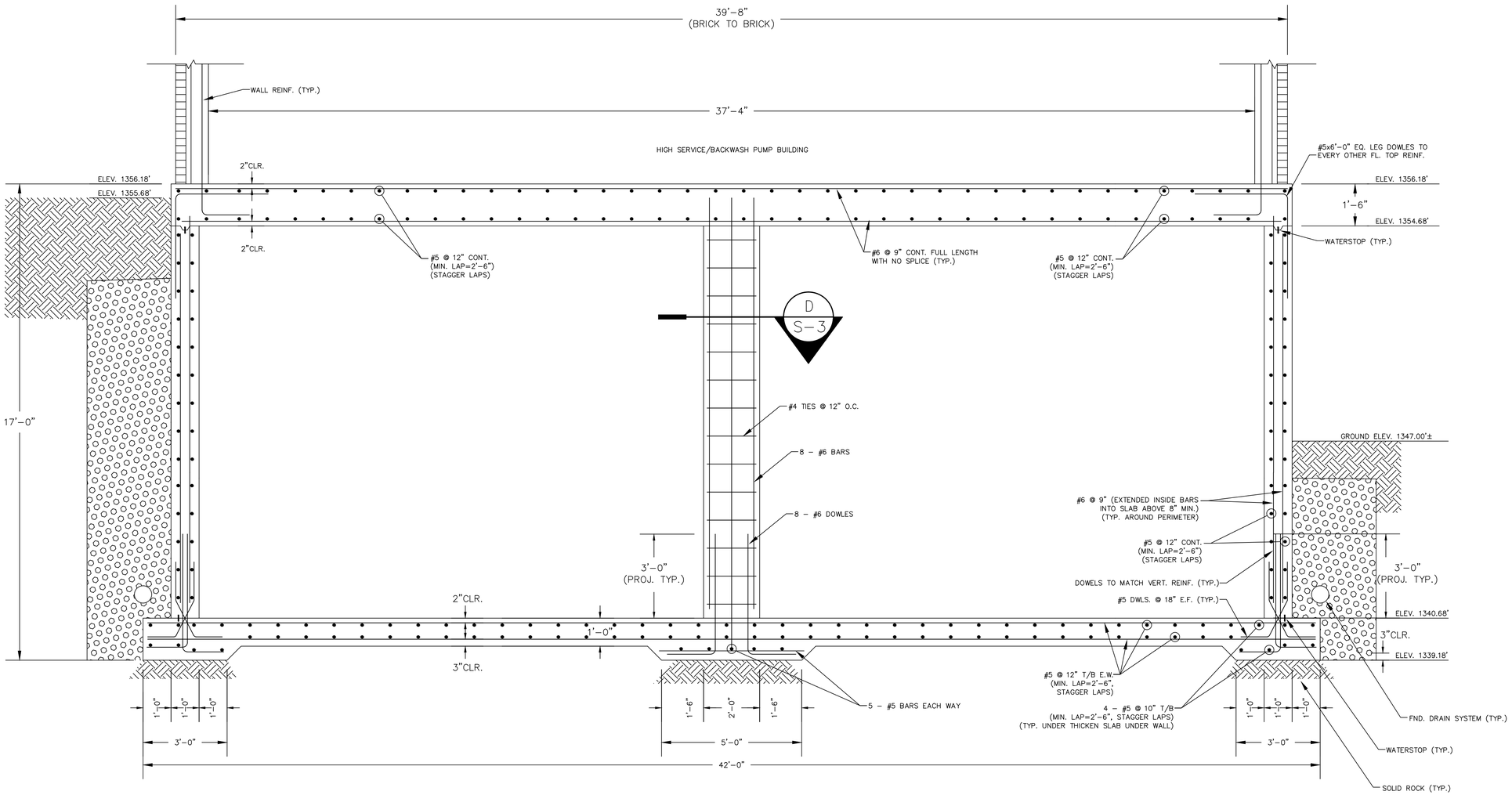
SHEET:
S–2

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



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

D
S-3



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

C
S-1

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

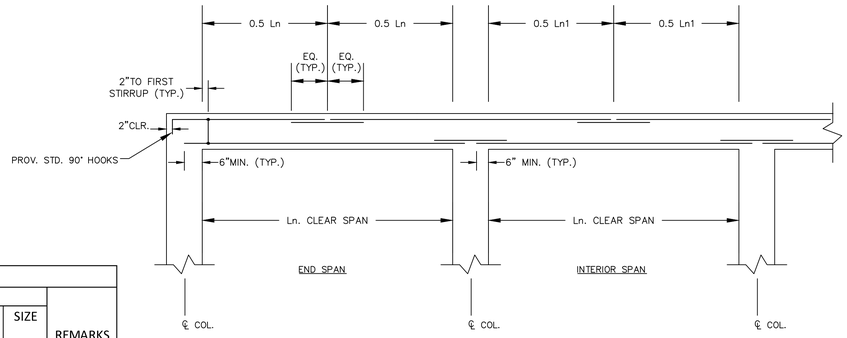
DESCRIPTION:
CLEARWELL
SECTION / DETAILS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

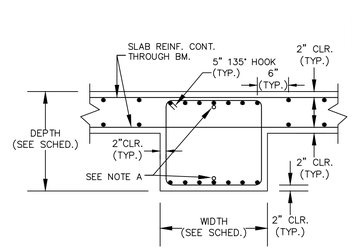
SHEET:
S-3

BEAM SCHEDULE									
		SIZE		REINFORCING			STIRRUPS		
MARK	TYPE	WIDTH (IN)	DEPTH (IN)	LEFT TOP*	BOT.	RIGHT TOP	SPACING	SIZE	REMARKS
B301	1	24	24	4-#5	5-#6	4-#5	10" O.C. FULL LENGTH	#4	
B302	1	24	24	4-#5	5-#6	4-#5	10" O.C. FULL LENGTH	#5	
* LEFT TOP REINFORCING CORRESPONDS TO THE WEST/SOUTH END OF THE BEAM.									



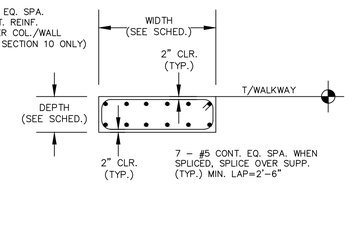
TYP. BEAM REINFORCEMENT DETAIL

Scale: N.T.S.



TYPE 1

NOTE:
IN BEAMS, LAP BARS SHALL BE PLACED DIRECTLY UNDERNEATH TOP BARS OR ABOVE BOTTOM BARS WHICH ARE BEING LAPPED.



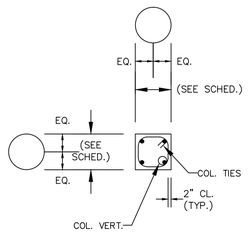
TYPE 2

NOTE:
HANDRAIL NOT SHOWN, SEE "B" DWGS.

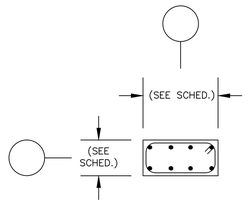
FOOTING & COLUMN SCHEDULE				
FOOTINGS	MARKS	F1	F2	
	SIZE (bxdxt)	5'-0" x 5'-0" x 1'-6"	3'-0" x 3'-0" x 1'-0"	
	REINFORCING	10 - #5 E.W. BOT.	5 - #5 E.W. BOT.	

COLUMN	MARKS	C1	C2	C3	C4	C5	
	SIZE (IN)	14x14	12x36	12x12	24x24		
	TYPE	A	B	A	B	18x18	
	VERT. REINF.	4 - #7	8 - #5	4 - #6	8 - #7	A (3 E.F.)	
	DOWELS	MATCH VERT.	MATCH VERT.	MATCH VERT.	MATCH VERT.	8 - #6	
	TIES	#4 @ 12"	#4 @ 12"	#4 @ 12"	#4 @ 12"	#4 @ 12"	

NOTES:
1. VERT. COL. REINF. SHALL BE SPACED EQUALLY ON EACH FACE.
2. FOOTINGS & COLUMNS ARE SYMMETRICAL ABOUT COL. CENTER LINES (TYP. U.N.)

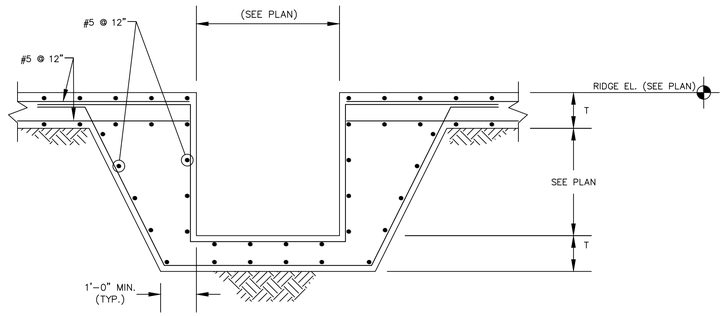


TYPE A

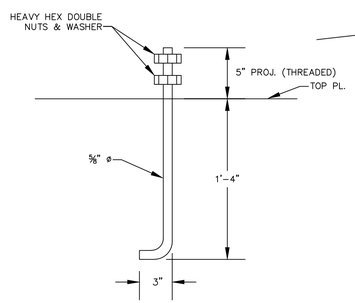


TYPE B

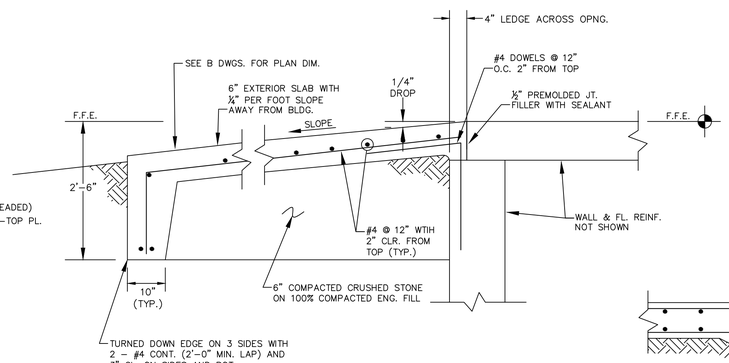
NOTE:
FOR REMAINING INFORMATION, SEE TYPE A



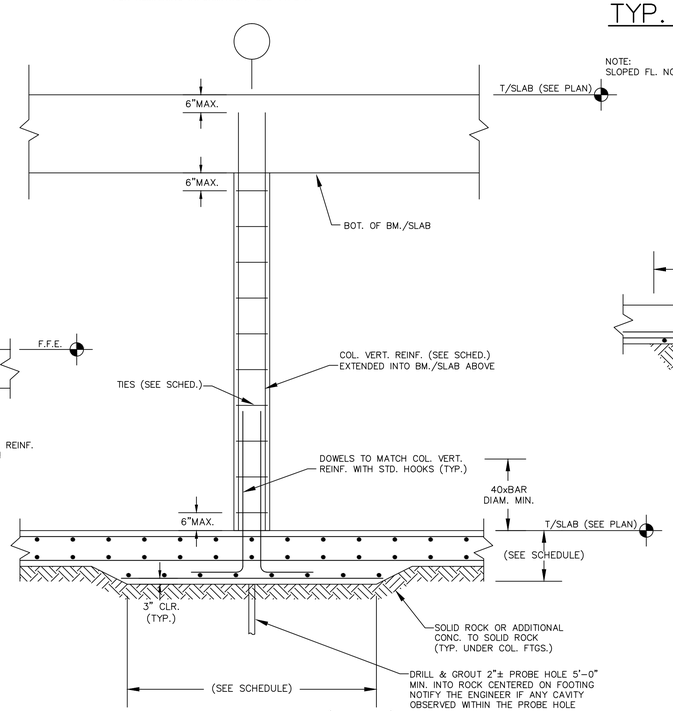
TYP. SUMP DETAIL



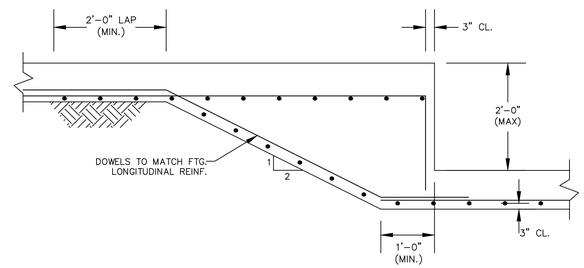
TYP. ANCHOR BOLT DETAIL



TYP. SECTION AT MAN DOOR



TYP. COLUMN DETAIL (U.N.)–SECTION



TYP. STEPPED WALL FOOTING

NOTE:
SUCCESSIVE STEP FTGS. SHALL BE AT LEAST TWICE THE DROP APART.

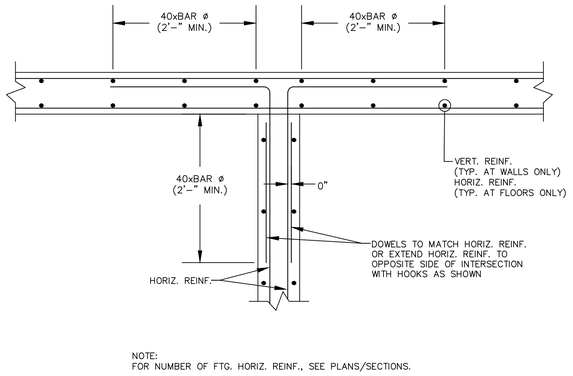
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: CLEARWELL SECTION / DETAILS

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

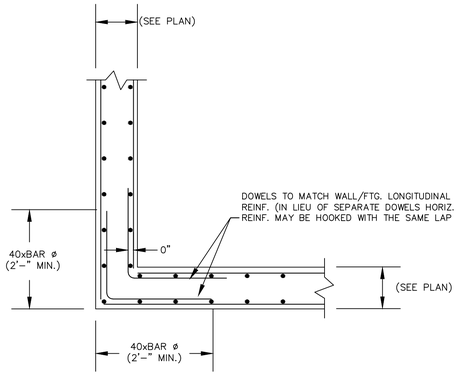
PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET: S–4

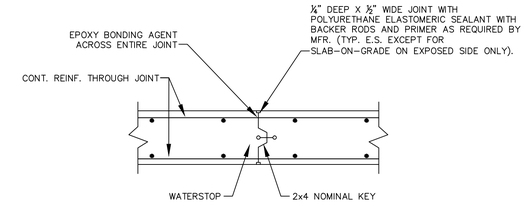


NOTE:
FOR NUMBER OF FTG. HORIZ. REINF., SEE PLANS/SECTIONS.

TYP. WALL & FTG. INTERSECTION – PLAN (U.N.)

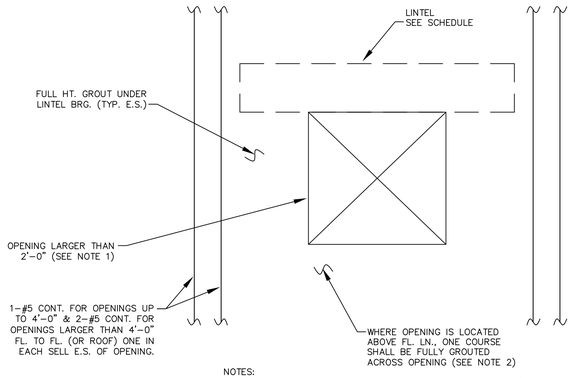


TYP. WALL & FTG. CORNER – PLAN



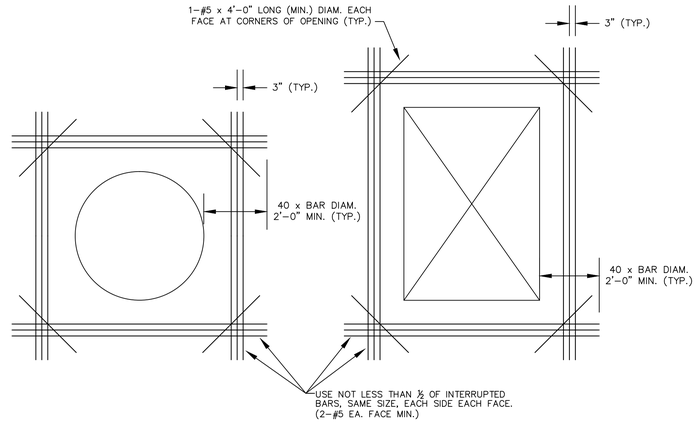
NOTES:
1. INDICATED JOINT SIZE FOR SEALANT SHALL BE VERIFIED BY THE MFR.
2. SEALANT WITH PRIMER AND EPOXY BONDING AGENT SHALL BE APPLIED PER MFR. INSTRUCTIONS.
3. ALL CONSTRUCTION JOINTS SHALL BE SHOWN ON THE SHOP DRAWINGS WITH MAX. SPA. OF 40'-0" (U.N.).
4. SEALANT AND WATERSTOP SHALL BE PLACED IN ALL WALL JOINTS AND OTHER JOINTS EXPOSED TO WATER AND EARTH.
5. SEALANT MFR. TO VERIFY THAT THE SEALANT DOES NOT HAVE ANY HARMFUL CHEMICAL REACTION WITH POTABLE WATER.

TYP. WALL & FLOOR CONSTRUCTION JOINT DETAIL (U.N.) 1



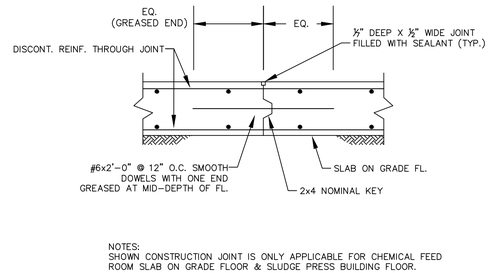
NOTES:
1. IF STD. VERT. REINF. SPACING PATTERN IS INTERRUPTED BY OPENINGS. 2'-0" OR SMALLER, VERT. REINF. SHALL BE RELOCATED FULL HT. WITH PROPER LAPS AS CLOSE AS POSSIBLE TO THE OPENING EDGES.
2. WHERE PRECAST OR CUT STONE SILLS ARE UTILIZED, GROUTING SHALL BE BELOW THE INDICATED SILLS.

ADDITIONAL REINF. FOR SLAB/WALL OPENINGS LARGER THAN 12"



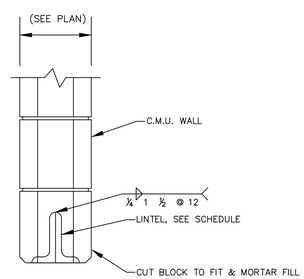
NOTES:
FOR OPENINGS 12" AND SMALLER, SPREAD BARS AROUND OPENINGS.

ADDITIONAL REINF. FOR SLAB/WALL OPENINGS LARGER THAN 12"

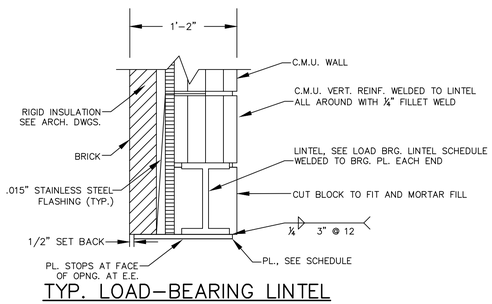


NOTES:
SHOWN CONSTRUCTION JOINT IS ONLY APPLICABLE FOR CHEMICAL FEED ROOM SLAB ON GRADE FLOOR & SLUDGE PRESS BUILDING FLOOR.

TYP. SLAB ON GRADE CONSTRUCTION JOINT DETAIL (ONLY WHERE INDICATED) 2



TYP. NON LOAD-BEARING LINTEL



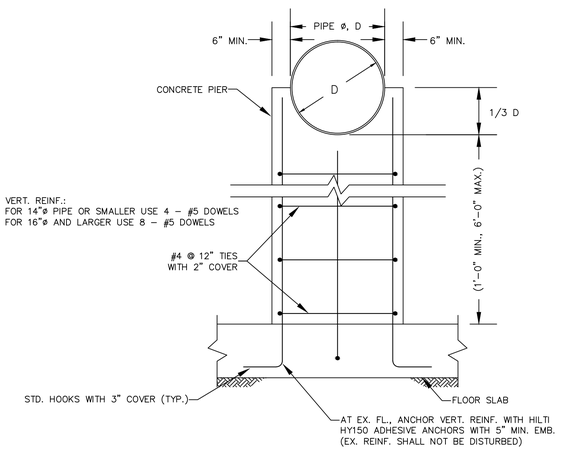
TYP. LOAD-BEARING LINTEL

NON-LOAD BEARING LINTEL SCHEDULE			
MASONRY OPENING	STEEL MEMBER	MIN. END BEARING	REMARK
UP TO 6'-0"	L3 1/2 x3 1/2x1/4	8"	
6'-0" TO 8'-6"	LS 1/2x3 1/2x3/8 LLV	8"	

NOTES:
1. NON-LOAD BEARING LINTEL SCHEDULE SHALL BE UTILIZED FOR ALL INTERIOR PARTITION WALLS.
2. LINTELS ARE SCHEDULED FOR EACH 4" OF WALL THICKNESS. i.e. 8" CMU REQUIRE TWO PIECE LINTEL.
3. LINTELS SHALL BE HOT DIPPED GALVANIZED.

LOAD BEARING LINTEL SCHEDULE			
MASONRY OPENING	STEEL MEMBER	MIN. END BEARING	REMARK
UP TO 8'-6"	W8x25 with 3/8" PL.	8"	

NOTES:
1. LOAD BEARING LINTEL SCHEDULE SHALL BE UTILIZED FOR ALL EXTERIOR WALLS.
2. BRG. PL. 1/2"x7"x7" WITH 2 - 1/2"Øx5" HEADED STUDS WITH 4" SPA. PLACED 1" FROM OPNG. FACE PROTECTED 1/4" ABOVE C.M.U. FOR LINTEL BRG. AND END ANCHORAGE AT EACH END. LINTEL SHALL BE WELDED ON E.S. OF FLANGE TO BRG. PL. AT EACH END (3"-3/16" FILLET WELD E.S. OF FLANGE, TYPE. E.E.)
3. LINTELS SHALL BE HOT DIPPED GALVANIZED. ANY WELD LOCATIONS SHALL BE TOUCHED UP (TYP.)
4. FOR MASONRY OPNGS. UP TO 2'-8", STD. BOND BM. TYPE C.M.U. LINTEL WITH 2 - #5 BOT. REINF. & 8" E.E. MAY BE SUBSTITUTED FOR STEEL LINTEL.



TYP. CONCRETE PIPE SUPPORT PIER

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
CLEARWELL & PUMP HOUSE
SECTION / DETAILS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
S-5

SHEET NOTES

1. VERIFY EXACT POLE LOCATION WITH POWER CO. IN FIELD.
2. FURNISH AND INSTALL NEW UNDERGROUND SECONDARY SERVICE. SEE RISER ON SHEET E-3.
3. FURNISH AND INSTALL REMOVABLE BOLLARD TYPE GUARD POSTS. SEE DETAIL ON SHT. E-4. SET MIN. 54" FROM FRONT FACE OF EQUIPMENT. TWO REQUIRED.

GENERAL NOTES

1. ALL CONDUIT, ABOVE EXTERIOR GRADE TO 18" BELOW GRADE SHALL BE RIGID ALUMINUM UNLESS OTHERWISE NOTED.
2. ALL ELECTRICAL EQUIPMENT, WIRE AND CONDUIT REMOVED DURING CONSTRUCTION OF THIS PROJECT SHALL BECOME THE PROPERTY OF THE OWNER AND SHALL BE STORED AS DIRECTED.
3. THE EXISTING CONDITIONS AS SHOWN ON THESE PLANS HAVE BEEN FORMULATED THROUGH REVIEW OF OLD PLANS, DISCUSSIONS WITH CITY PERSONNEL AND DATA GATHERED BY FIELD SURVEYS.
4. THE CONTRACTOR SHALL VERIFY EXISTING AND FINAL CONTOURS AND ELEVATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING LINES, ELECTRICAL CONDUITS AND ANY OTHER ITEMS THAT WILL BE EFFECTED BY THE CONSTRUCTION OF ELECTRICAL SYSTEMS FOR THIS PROJECT.
6. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES, BOTH INTERIOR AND EXTERIOR INCLUDING GRADE MOUNT, AS REQUIRED FOR ALL POWER AND CONTROL CIRCUITS.
7. CONTRACTOR SHALL REFER TO OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL ELECTRICAL REQUIREMENTS AND SITE PIPING & CONDITIONS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR POWER AND CONTROL CIRCUITS AND CONNECTION OF ALL MECHANICAL DAMPERS AT LOUVERS AND EXHAUST FANS AS REQUIRED FOR OPERATION WITH RESPECTIVE EXHAUST FAN.
9. SUBMISSION OF A PRICE FOR BIDDING SHALL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS VISITED THE SITE PRIOR TO BIDDING AND FAMILIARIZED HIMSELF WITH THE EXISTING SITE/BUILDING LOCATIONS AND CONDITIONS INVOLVED WITH THE NEW EQUIPMENT AND CIRCUITING INSTALLATIONS REQUIRED.

SITE PLAN - ELECTRICAL

Scale: 1"=20'

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

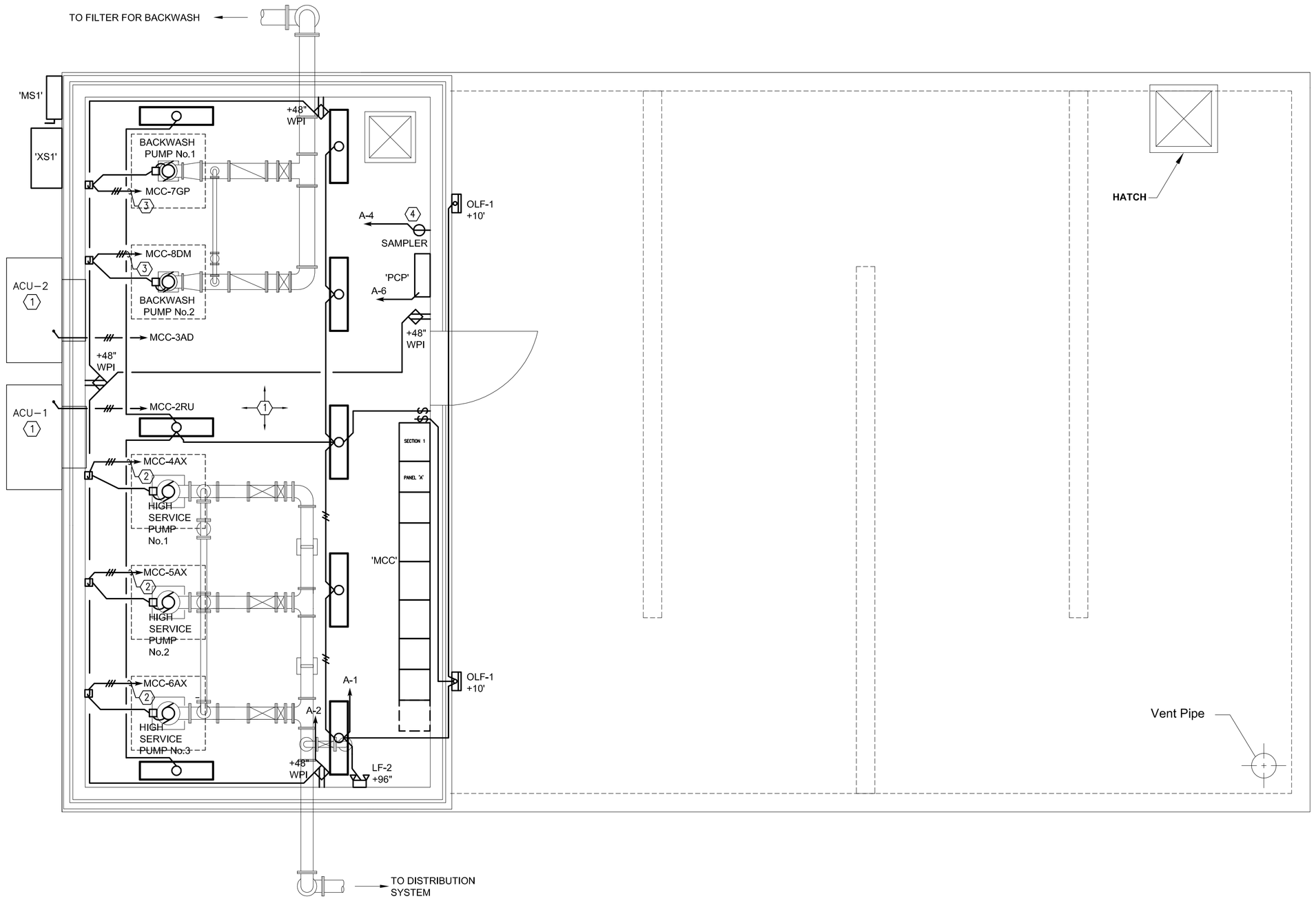
DESCRIPTION: HIGH SERVICE PUMP STATION
SITE PLAN – ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	
CHECKED BY:	
CHECKED BY:	
SCALE:	AS NOTED

SHEET: ES-1

STATE OF KENTUCKY
THOMAS B. WILSON, JR.
9017
LICENSED PROFESSIONAL ENGINEER



HIGH SERVICE PUMP BUILDING - ELECTRICAL

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

SHEET NOTES

1. NO CONDUITS SHALL BE RUN UNDER OR WITHIN FLOOR SLAB OF NEW PUMP ROOM. AREA BELOW FLOOR SLAB IS CLEARWELL SPACE.
2. 3 #3/0, 1 #6GRD., 2"C.
3. 3 #8, 1 #10GRD., 1"C.
4. SAMPLER RECEPTACLE. VERIFY EXACT LOCATION AND MOUNTING HEIGHT IN FIELD WITH OWNER.

PANEL 'A' (FED FROM 15KVA XFMR IN MCC)

VOLTAGE			1 PHASE	POLES	MAIN AMPS		MAIN TYPE		A. I. RATING	MOUNTING		
120/240			3 WIRE	18	80		BREAKER		10,000			
POLE	BREAKER		LOAD SERVED	PHASE LOADS				LOAD SERVED	BREAKER		POLE
NO.	TRIP	P		KVA	A	C	KVA		TRIP	P	NO.
1	20	1	LIGHTS	1.5	2.5		1.0	RECEPTS	20	1	2
3	20	1	SPARE	1.0		2.2	1.2	SAMPLER	20	1	4
5	20	1	SPARE	1.0	1.5		0.5	PUMP CONTROL PANEL	20	1	6
7	20	1	SPARE	1.0		1.0	0.0	SPACE			8
9			SPACE	0.0	0.0		0.0	SPACE			10
11			SPACE	0.0		0.0	0.0	SPACE			12
13			SPACE	0.0	0.0		0.0	SPACE			14
15			SPACE	0.0		0.0	0.0	SPACE			16
17			SPACE	0.0	0.0		0.0	SPACE			18
PHASE TOTALS:					4.0	3.2		TOTAL: 7.2 KVA			

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: HIGH SERVICE PUMP STATION ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: TN
CHECKED BY:
CHECKED BY: TW
SCALE: AS NOTED

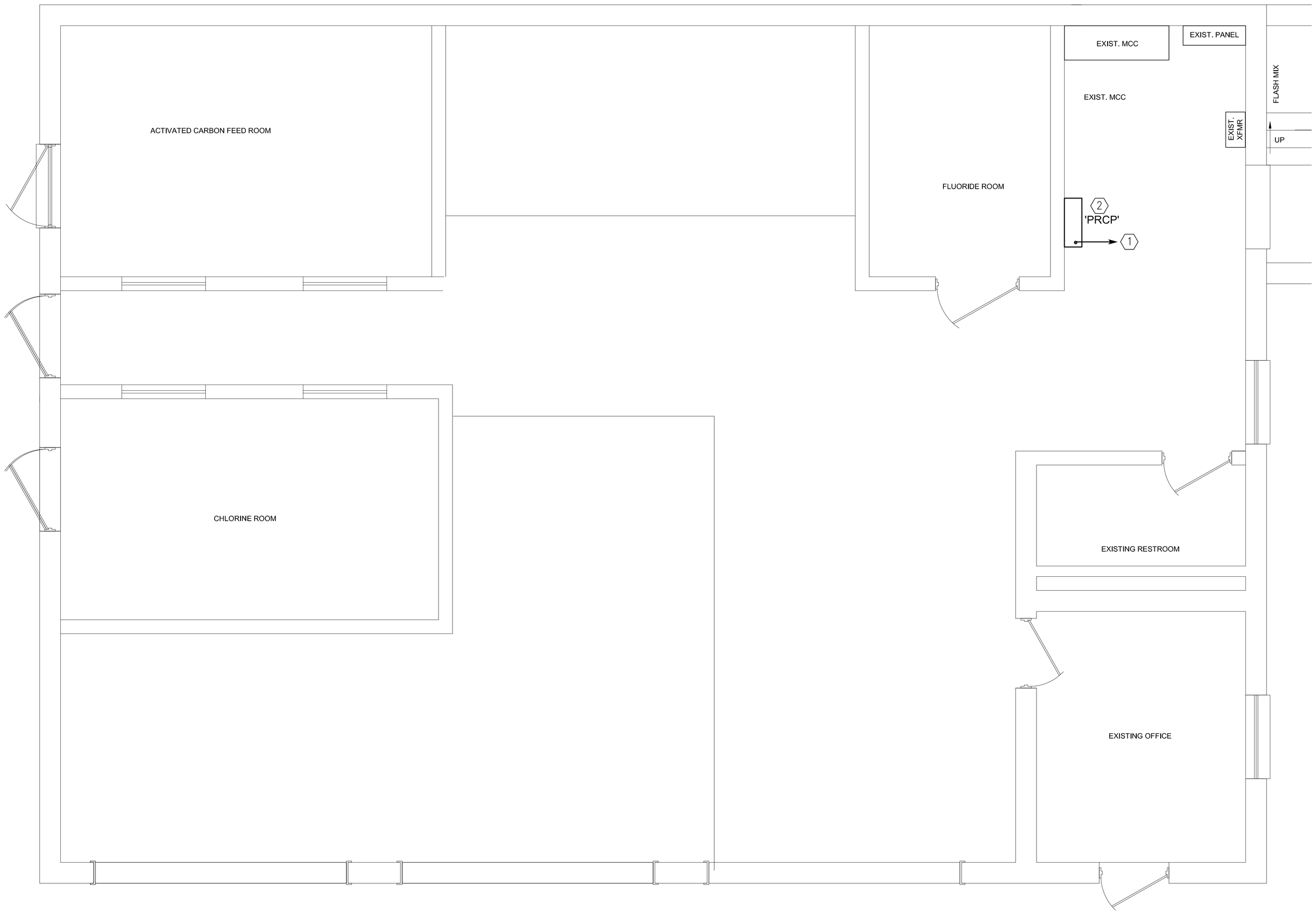
SHEET: E-1

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

STATE OF KENTUCKY
THOMAS B. WILSON, JR. 9017
LICENSED PROFESSIONAL ENGINEER

SHEET NOTES

1. CIRCUIT TO EXISTING 120VAC PANEL. FURNISH AND INSTALL 20A, 1P BREAKER IN PANEL AND CONNECT.
2. VERIFY EXACT LOCATION OF NEW PUMP REMOTE CONTROL PANEL WITH OWNER PRIOR TO INSTALLATION.



EXISTING CHEM. FEED BUILDING - ELECTRICAL

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

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
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Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: EXISTING CHEMICAL FEED BUILDING ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
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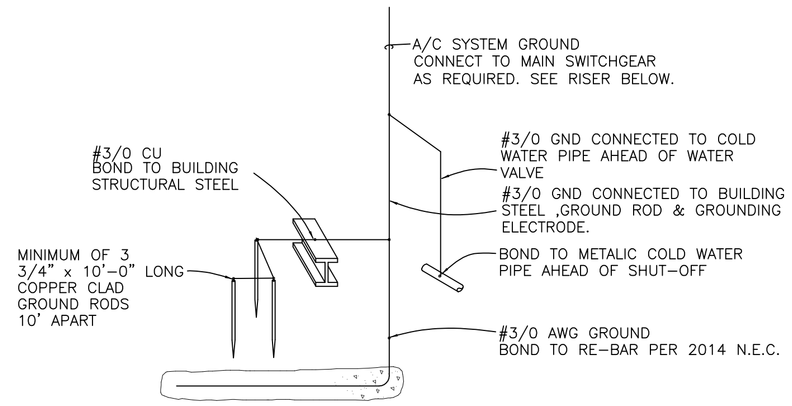
CHECKED BY:	TW
SCALE:	AS NOTED

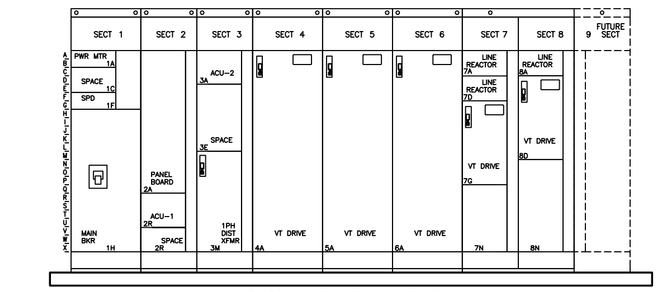
SHEET: E-2

STATE OF KENTUCKY THOMAS B. WILSON, JR. 9017 LICENSED PROFESSIONAL ENGINEER



MAIN SERVICE AC SYSTEM GROUND

Scale: NTS



MCCA ELEVATION

Scale: NTS

MCC SCHEDULE 'MCC'

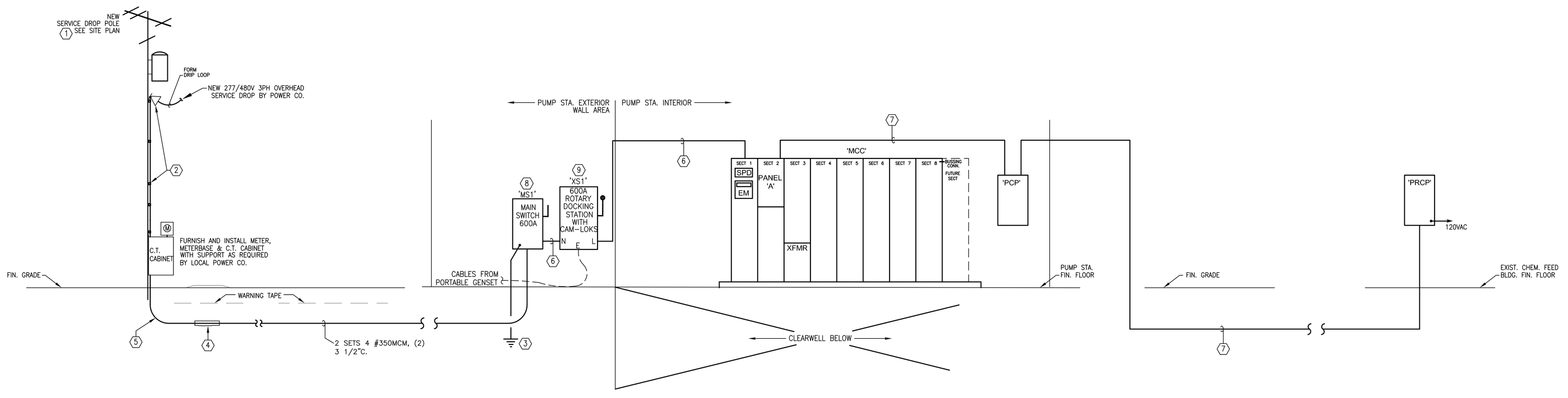
TAG	LOAD SERVED	HP	FLA	FS CB	SIZE FRAME	FUSE TRIP	STR. SIZE	STR. TYPE	NOTES
CONTROL CENTER: 600A 277/480VAC, 3PH, 4W; 65KAIC RATING									
FEEDERS: SEE ONE LINE RISER									
****	SECTION 1	****							
1AX	600A M.L.O.								1
----	SPD								
----	ELECTRONIC METERING								
****	SECTION 2	****							
2AQ	PANEL A (120/208; 3PH)	---	---	CB			---	---	FED FROM XFMR
2RU	ACU-1	---	12	CB	100	20			BREAKER ONLY
2VX	SPACE						---	---	
****	SECTION 3	****							
3AD	ACU-2	---	12	CB	100	20			BREAKER ONLY
3EL	SPACE								
3MX	TRANSFORMER	15KVA	18	CB					
****	SECTION 4	****							
4AX	HIGH SERVICE PUMP #1	125	156	CB				VSVT	3,4,5,6,10,13,15,16, 17,19,20,21,22
****	SECTION 5	****							
5AX	HIGH SERVICE PUMP #2	125	156	CB				VSVT	3,4,5,6,10,13,15,16, 17,19,20,21,22
****	SECTION 6	****							
6AX	HIGH SERVICE PUMP #3	125	156	CB				VSVT	3,4,5,6,10,13,15,16, 17,19,20,21,22
****	SECTION 7	****							
7AC	LINE REACTOR - HS #1								
7DF	LINE REACTOR - HS #2								
7GP	BACKWASH PUMP #1	25	34	CB	100			VSVT	3,4,5,6,10,13,15,16, 17,19,20,21,
7QX	SPACE						---	---	
****	SECTION 8	****							
8AC	LINE REACTOR - HS #3								
8DM	BACKWASH PUMP #2	25	34	CB	100			VSVT	3,4,5,6,10,13,15,16, 17,19,20,21
8NX	SPACE						---	---	

NOTES	
1. PROVIDE WITH POWER LOGIC METERING CM3250	13. PROVIDE ELAPSED TIME METER
2. PROVIDE WITH LIGHTNING ARRESTORS	14. PROVIDE BLOWN FUSE INDICATORS
3. PROVIDE RED RUN LAMP AND GREEN OFF LAMP	15. PROVIDE WITH BARRIERED BY-PASS
4. PROVIDE FAIL CONTACTS ON OVERLOAD RELAY	16. PROVIDE WITH PHASE FAILURE PROT.
5. PROVIDE 2 SETS AUX. CONTACTS	17. PROVIDE VFD WITH LINE REACTORS
6. PROVIDE 0 - 300 SEC. ADJ. DELAY TIMER RELAY	18. PROVIDE VFD WITH LOAD FILTERS
7. PROVIDE LOCAL START-STOP PUSHBUTTON	19. PROVIDE LOCAL HMI
8. PROVIDE WITH BJSSING FOR FUTURE SECTIONS	20. PROVIDE LOCAL 0-10V SPEED CONTROL
9. PROVIDE BELL FOR OVERTORQUE ALARM	21. PROVISION FOR 4-20ma SPEED CONTROL
10. PROVIDE H-O-A SWITCH	22. INTERLOCK FOR ONLY 2 RUNNING AT ONCE
11. PROVIDE H-O-R SWITCH	
12. PROVIDE ON-OFF SWITCH	

ABBREVIATIONS	
PFC = POWER FACTOR CAPACITOR	SSRV = SOLID STATE REDUCED VOLTAGE
FVNR = FULL VOLTAGE NON-REVERSING	VSVT = VARIABLE SPEED VARIABLE TORQUE
RVAT = REDUCED VOLTAGE AUTO-TRANSFORMER	VSCT = VARIABLE SPEED CONSTANT TORQUE

SHEET NOTES

1. VERIFY EXACT POLE LOCATION WITH POWER CO. IN FIELD. SEE SITE PLAN.
2. FURNISH AND INSTALL RISER WITH WEATHERHEAD TO HEIGHT AS REQUIRED BY LOCAL POWER CO. SECURE TO POLE AS REQUIRED.
3. FURNISH AND INSTALL AC SYSTEM GROUND PER 2014 N.E.C. SEE DETAIL THIS SHEET FOR ADDITIONAL REQUIREMENTS.
4. CONCRETE ENCASE CIRCUITS MIN. 6" ALL AROUND WHERE RUN BELOW DRIVES/ROADWAYS.
5. FURNISH AND INSTALL LONG SWEEP ELLS, TYPICAL.
6. 2 SETS 4 #350MCM, 1 #1 GRD., (2) 3 1/2"C.
7. FURNISH AND INSTALL CONTROL WIRING AND 4-20MA CABLES IN (2) 1 1/2"C. AS REQUIRED. DO NOT ROUTE 4-20MA CABLES IN SAME CONDUIT AS POWER WIRING.
8. FURNISH AND INSTALL 600A, 3P, 600V NEMA 4, S.E. RATED FUSIBLE MAIN DISCONNECT. FUSE AT 600A.
9. FURNISH AND INSTALL 600A, 3P, NEMA 3R ROTARY DOCKING STATION. SEE SPECIFICATION SECTION 16200.



ONE LINE POWER RISER DIAGRAM

Scale: NTS

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: HIGH SERVICE PUMP STATION
RISER & SCHEDULES - ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: TN
CHECKED BY:
CHECKED BY: TW
SCALE: AS NOTED

SHEET: E-3

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC - PLUMBING - ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

STATE OF KENTUCKY
THOMAS B. WILSON, JR. 9017
LICENSED PROFESSIONAL ENGINEER

ELECTRICAL LEGEND

- SURFACE MOUNTED FLUORESCENT LIGHT FIXTURE
- EMER. BATTERY PACK
- WALL MOUNTED LIGHT FIXTURE
- REMOTE MOUNTED EMERGENCY BATTERY PACK UNIT.
- LIGHT SWITCH - SINGLE POLE, 3-WAY, 4-WAY, KEY OPERATED
- MANUAL MOTOR STARTER SWITCH
- FAN SPEED CONTROL
- DUPLEX RECEPTACLE
- SINGLE RECEPTACLE; TL = TWIST LOCK TYPE
- DUPLEX G.F.I. RECEPTACLE
- JUNCTION BOX
- THERMOSTAT : HUMIDISTAT
- DISCONNECT SWITCH
- EXPLOSION PROOF DISCONNECT SWITCH
- COMBINATION MOTOR STARTER
- MOTOR STARTER
- VFD — VARIABLE FREQUENCY DRIVE
- EQUIPMENT CONNECTION
- MOTOR CONNECTION
- CONDUIT CONCEALED BELOW SLAB OR GRADE
- CLASS 1, DIVISION 1CONDUIT SEAL
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- CORD & PLUG CONNECTION TO RECEPTACLE
- CONDUIT CONCEALED IN WALL OR CEILING
  NO. SLASHES EQUALS NO. CONDUCTORS - MIN. #12 AWG
  WIRE SIZE IF OTHER THAN #12
  NO. ARROWS EQUALS NO. CIRCUITS
  1,3,5 - INDICATES POLE POSITIONS
  A - INDICATES PANEL NO.
- CIRCUIT TO PUMP CONTROL PANEL
  NO./TYPE CONTROL CONDUCTORS AS REQUIRED
- TRANSFORMER
- GROUND

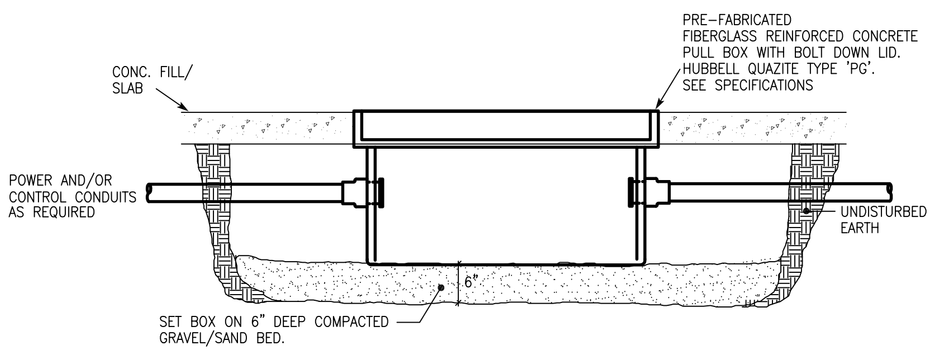
- MOTORIZED DAMPER
- CONTACTS
- CONCRETE PULL BOX
- TWISTED SHIELDED PAIR CABLE
  NUMBER = NO. CABLES IF MORE THAN ONE
  1"C. MINIMUM
- 4 PAIR CAT 5E ETHERNET CABLE
  NUMBER = NO. CABLES IF MORE THAN ONE
  1"C. MINIMUM
- TELEPHONE OUTLET BOX WITH FACEPLATE, (2) JACKS AND 1 INCH CONDUIT AND 2 CAT. 5E 4-PAIR CABLES
- COMBINATION TELEPHONE AND DATA OUTLET WITH (2) JACKS AND (2) 1"C. AND 4 CAT. 5E 4-PAIR CABLES
- CABLE REEL
- ALARM STROBE
- MANUAL TRANSFER SWITCH
- UTILITY CO. POWER POLE
- START-STOP PUSHBUTTON STATION, NEMA 4
- EQUIPMENT SUPPORT
- EXISTING POLE LIGHT WITH LIGHT FIXTURE
- POLE MOUNTED AREA LIGHT

- OPEN - CLOSE VALVE CONTROLLER
- MODULATING VALVE CONTROLLER
- VALVE ACTUATOR (INTEGRAL WITH VALVE)
- VALVE CONTROLLER
- LEVEL TRANSMITTER
- LOSS OF HEAD TRANSMITTER
- FLOW METER
- FLOW TRANSMITTER
- FLOW SWITCH
- VALVE WITH ACTUATOR
- TRANSIENT VOLTAGE SURGE SUPRESSOR, TYPE AS NOTED
- PHOTOCELL CONTROL
- WATER ON FLOOR LEAK DETECTOR
- WATER ON FLOOR REMOTE SENSOR
- SOLENOID VALVE
- PRESSURE TRANSDUCER
- FLOW TRANSMITTER DISPLAY
- PUMP CONTROL PANEL
- PUMP REMOTE CONTROL PANEL

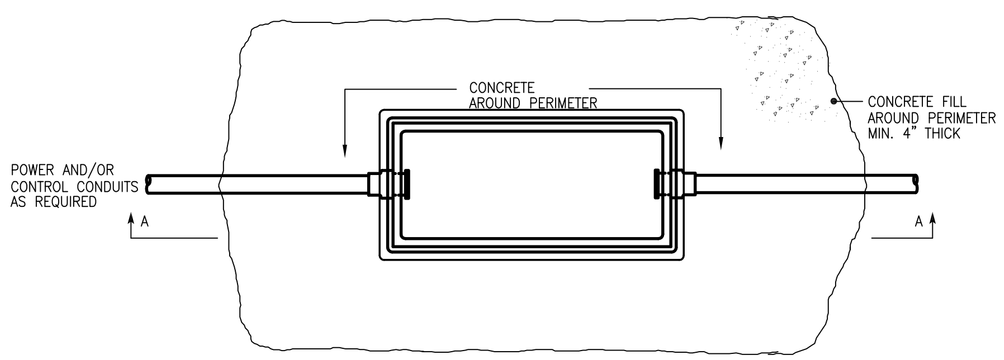
- OP — OVERHEAD PRIMARY
- UP — UNDERGROUND PRIMARY
- OHS — OVERHEAD SECONDARY
- US — UNDERGROUND SECONDARY
- OHT — OVERHEAD TELEPHONE
- UT — UNDERGROUND TELEPHONE
- UE — UNDERGROUND ELECTRIC

W	WIRE
PH	PHASE
EC	ELECTRICAL CONTRACTOR
CKT	CIRCUIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
WP	WEATHERPROOF
WPI	WEATHERPROOF IN-USE TYPE COVER
FUT.	FUTURE
S.E.	SERVICE ENTRANCE
TYP.	TYPICAL
CTRL	CONTROL
XFMR	TRANSFORMER
PNL	PANEL
SVC	SERVICE
V/V	VALVE VAULT
M/V	METER VAULT
W/W	WET WELL
GRD	GROUND
XP	EXPLOSION PROOF
LS	LEVEL SENSOR
SV	SOLENOID VALVE
MV	MOTORIZED VALVE
CR	CORROSION RESISTANT

ENCL	ENCLOSURE
CB	CIRCUIT BREAKER
SWD	SWITCHING DUTY
EUH	ELECTRIC UNIT HEATER
S.S.	STAINLESS STEEL
SMS	SCADA MAIN SYSTEM
SRS	SCADA REMOTE STATION
S-S	START - STOP
O-O	ON - 0FF
O-C	OPEN - CLOSE
RTU	REMOTE TERMINAL UNIT
MCP	MAIN CONTROL PANEL
FCC	FILTER CONTROL CONSOLE
ACP	ACTIFLO CONTROL PANEL
CP	CONTROL PANEL
TLR	TIME LAPSE RECORDER
H-O-A	HAND-OFF-AUTO SELECTOR SWITCH
H-O-R	HAND-OFF-REMOTE SELECTOR SWITCH
SL/OT	SEAL LEAK / OVER TEMP.
C.	CONDUIT
R/W	RAW WATER
TOF	TOP OF FILTER
C/EF	COMBINED EFFLUENT



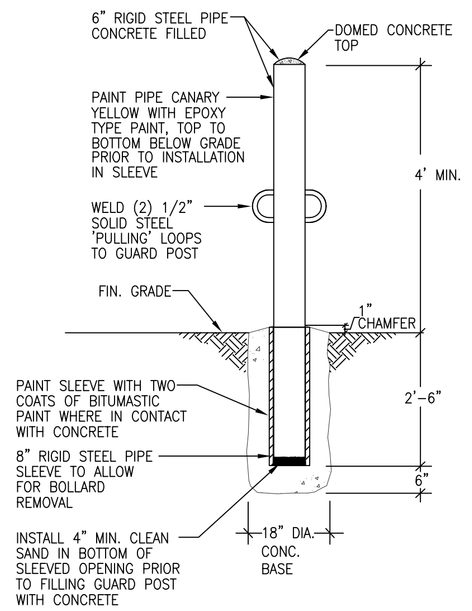
SECTION A–A



PLAN VIEW

TYPICAL PULL BOX INSTALLATION DETAILS

SCALE: NTS



TYPICAL REMOVABLE GUARD POST INSTALLATION DETAIL

SCALE: NTS

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: HIGH SERVICE PUMP STATION
LEGEND AND DETAILS – ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

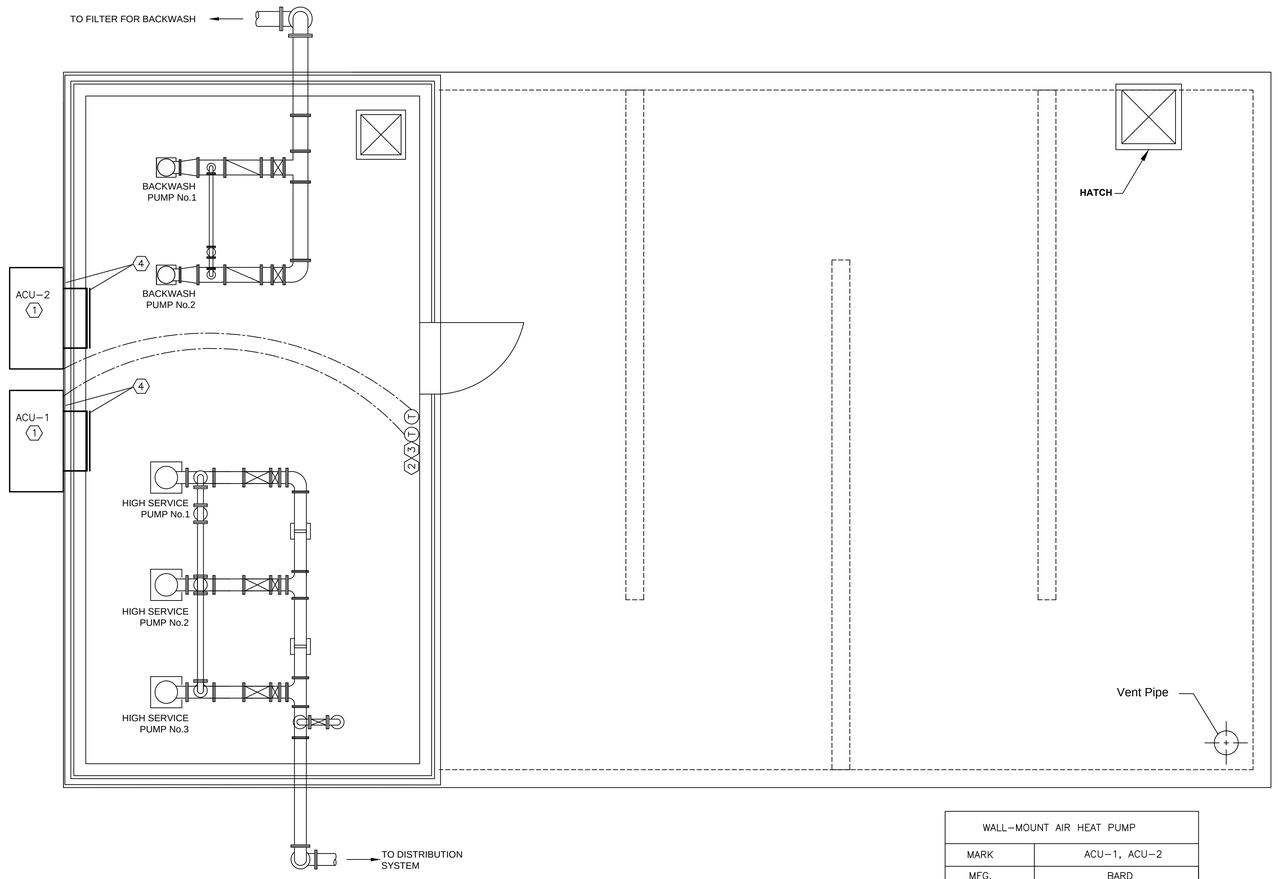
PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: TN
CHECKED BY:
CHECKED BY: TW
SCALE: AS NOTED

SHEET: E–4

STATE OF KENTUCKY THOMAS B. WILSON, JR. 9017 LICENSED PROFESSIONAL ENGINEER

HIGH SERVICE PUMP BUILDING - ELECTRICAL

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



HIGH SERVICE PUMP BUILDING - MECHANICAL

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

GRILLE/REGISTER/DIFFUSER/ SCHEDULE

ITEM	SIZE (NECK)	MFR.	MODEL	LOCATION	MAX CFM	REMARKS
S-1	24X16	KRUEGER	5880	SURFACE SIDEWALL	1400	1,2,4,5
R-1	24X12	KRUEGER	S580	SURFACE SIDEWALL	-	1,2,3

REMARKS:
1. FURNISH WITH WHITE FINISH.
2. ALUMINUM CONSTRUCTION.
3. FIXED HORIZONTAL FRONT BLADES.
4. ADJUSTABLE HORIZONTAL FRONT BLADES.
5. DOUBLE DEFLECTION.

DIVISION 15 SPECS

HEATING, VENTILATING AND HEAT PUMP

FURNISH AND INSTALL

A one-piece wall-mounted, factory-assembled, precharged, prewired, tested and ready-to-operate heat pump unit. This unit is to be manufactured by Bard Manufacturing Company. Model No. W42H-C09XPXXXX The unit shall be approved and listed by Underwriters Laboratories, Inc. and Canadian Underwriters Laboratories (CUL) for installation on combustible surfaces for zero clearance between the unit and wall. Unit Performance shall be certified in accordance with Air Conditioning and Refrigeration Institute Standard 390-2003 for Single Package Vertical Units.

PERFORMANCE

Total cooling capacity of the unit shall be 42,000 BTUH and the sensible cooling capacity shall be 32,100 BTUH when handling 1400 CFM of indoor air at entering conditions of 80°F DB and 67°F WB and 95°F DB outdoor ambient.
Efficiency shall be 9.00 EER cooling.
Electric supplemental heaters shall provide 28,260 BTUH at 460 volts. The heater shall be a nominal 9 KW, 3 phase, 460 volts. Each heater is to be equipped with an automatic reset limit switch and a one time high temperature cut out for additonal saftety back up protection.

COMPRESSOR

Shall be a welded hermetic type with internal vibration isolations, built-in thermal and over current protective devices. Compressor shall have a limited 5-year warranty, suction and discharge guage ports, crankcase heater on reciprocating compressor. Scroll compressor standard on 2.5 to 5 ton models, available option on 2 ton models. Scroll compressor does not require crankcae heater.

COILS

Shall be of copper tube construction with mechanically bonded aluminum plate fins. The refrigerant control shall be factory installed capillary tube type.

BLOWERS AND FANS

Twin indoor coils blowers shall have a centrifugal forward curved blower direct driven by a 2 speed 1/3 HP motor. Indoor blowers shall discharge horizontally and deliver 1000 CFM of air with an external static pressure of 0.40 WC inches or greater at high speed.
Propeller type outdoor coil fan shall discharge horizontally and be direct driven by a 1/5 HP motor.

CONDENSER FAN, MOTOR AND SHROUD

Condenser fan, motor and shroud shall be of "slide out" configuration for easy service and maintenance.

CONTROLS

Shall be factory-wired and located in a readily accessible location being on the right side of unit. Fan motors shall have both thermal and current sensitive overload devices. Control circuit transformer (24V) shall be factory installed. Line voltage circuit breaker or toggle disconnect with lockable cover shall be supplied on each unit and shall be easily accessible without removing any unit panels. Provide Carrier 7-day programmable thermostat, model number 33CS450-01. Thermostat shall have minimum adjustable 'swing' band of 5 degrees.

CABINET

Shall be a single, enclosed, weatherproof casing constructed of 20 gauge glavanized steel. Each exterior casing panel to be bonderized and finished with baked-on exterior polyester enamel paint prior to assembly. The baked-on, exterior polyester enamel finish shall be applied over a polyurethane primer coating and capable of resisting a minimum 1000 hour salt spray exposure per ASTM B117-03 and/or shall comply with the UL's Test Number ASTM D1654 for protection against carbon dioxide and sulfur dioxide. The baked-on cured paint finish shall pass the industry rub test with a minimum of 72 rubs MEK or standard rub test of a minimum of 100 rubs using Toluene. Cooling section shall be fully insulated with 1-inch fiberglass to prevent sweating and to muffle sounds. Openings shall be provided for power connections. Access openings appropriate for outside structure to all fan motors and compressor for making repairs and for removing internal components without removing unit from its permanent installation is required. Fresh air intake and outdoor coil shall be protected from intrusions by a sturdy metal grating with less than 1/4 inch openings.

MOUNTING BRACKETS

1. Full length side mounting brackets shall be an integral part of the cabinet.
2. 16 gauge metal bracket shall be provided for bottom.

RAIN PROTECTION

Top panel of unit should be sloped away from building to provide "rain hood" protection. Shall include top rain flashing to minimize water leaks.

MAXIMUM DIMENSIONS

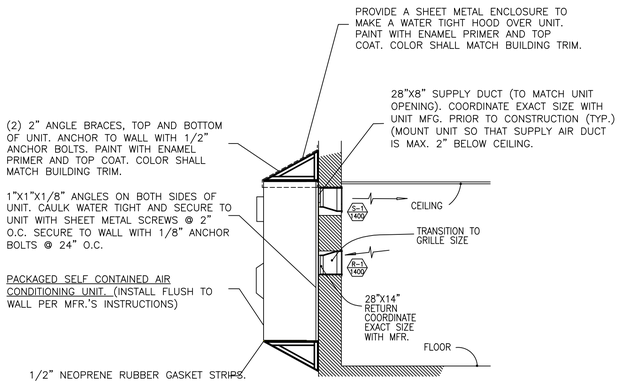
Width 33.3 inches Depth 17.125 inches Height 70.563 inches

ACCESSORIES

Shall include a solid state thermostat for heating and cooling applications and those additional items checked below.

OPTIONAL ACCESSORIES

Low Ambient control
Electric Heat Package
2 inch pleated filter



AIR CONDITIONING UNIT ACU-1 MOUNTING DETAIL

NTS

WALL-MOUNT AIR HEAT PUMP	
MARK	ACU-1, ACU-2
MFG.	BARD
MODEL	W42H-C09XPXXXX
COOLING	42.6 MBH
CFM	1400
HEATING	33.8 MBH
AUX. HEAT	9 KW
EER	9.0
VOLTAGE	460/3 PHASE
MCA	18

NOTES:
1. BLANK OF PLATE FOR FRESH-AIR OPENING.
2. 2" PLEATED FILTERS. MERV 8.
3. LOW AMBIENT CONTROLS.
4. FRONT SUPPLY.
5. AIR TO AIR HEAT PUMP.

KEYNOTES: ⬡

1. INSTALL PACKAGED EXTERIOR WALL-MOUNT HEAT PUMP UNIT PER MFR.'S INSTRUCTIONS AND PER DETAIL, THIS SHEET. UNIT SHALL BE BARD MODEL W42H OR APPROVED EQUIVALENT. UNIT SHALL BE RATED FOR 3.5 TONS OF COOLING, 1,400 CFM, 460V/3PH. UNIT SHALL INCLUDE 9KW, 460/3PH ELECTRIC HEATING COIL. UNIT SHALL BE SHIPPED COMPLETE WITH MFR.'S STANDARD THERMOSTAT (COOLING AND HEATING, AUTO-CHANGEOVER) AND ALL COMPONENTS REQUIRED FOR PROPER EXTERIOR INSTALLATION. CONTRACTOR SHALL VERIFY PROPER UNIT CONTROL.
2. MOUNT WALL THERMOSTAT 48" A.F.F. WHERE INDICATED. CONFIRM PROPER EQUIPMENT CONTROL.
3. PROVIDE THERMOSTAT AS NOTED IN SPECIFICATIONS, THIS SHEET. ROUTE WIRING BACK TO UNIT AND CONFIRM PROPER UNIT CONTROL.
4. INSTALL UNIT SUCH THAT BOTTOM OF RETURN AIR OPENING IS MIN. 6" ABOVE TOP OF SUCTION LINE.

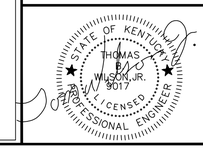
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: HIGH SERVICE PUMP STATION MECHANICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY:
CHECKED BY:
CHECKED BY: TW
SCALE: AS NOTED

SHEET: M-1



MARSHES SIDING BOOSTER PUMP STATION
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

ALTERNATE NO. 1

TABLE OF CONTENTS

COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
DOUG SEXTON, SECRETARY
MAYNARD NEW
COY TAYLOR
TONY JONES

MANAGER/SUPERINTENDENT

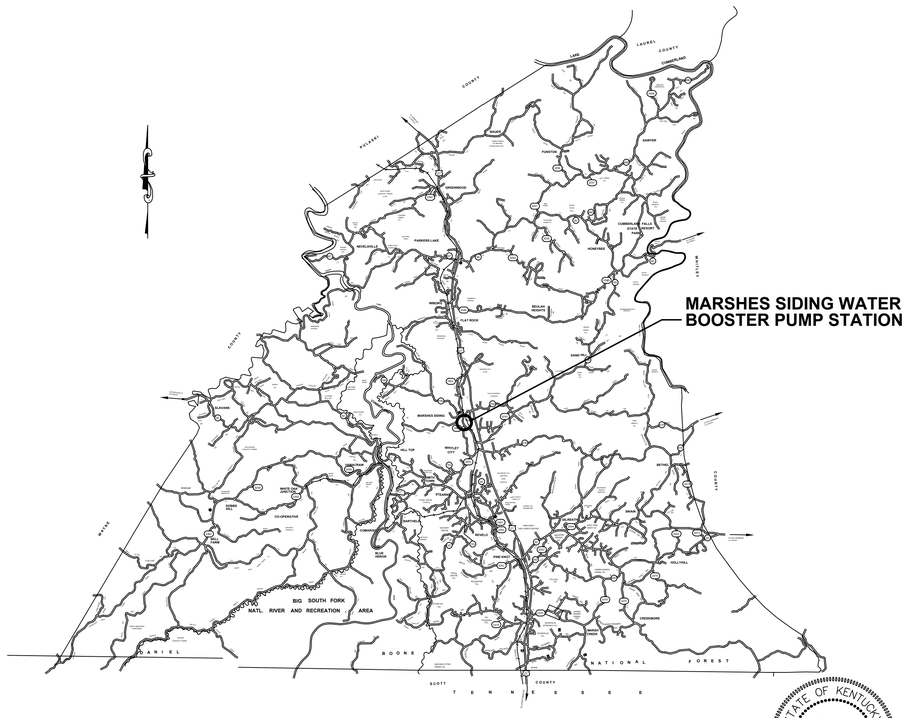
STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER

APRIL 2014

LOCATION MAP



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

ROGER & RITA PIERCE

ROBERT D. WATTERS

LORETTA NEW

G.W. HATFIELD, JR.

KENTUCKY HIGHWAY 1651

EXISTING 6-INCH WATER LINE

EXISTING 2 1/2-INCH SEWER FORCE MAIN

McCREARY COUNTY WATER DISTRICT

EXISTING 12-INCH DUCTILE IRON WATER LINE

30'-0" EASEMENT

EXISTING DRIVE

BENCHMARK
CONCRETE NAIL IN 4-INCH
CONCRETE FILLED PIPE
ELEV: 1368.09'

BOOSTER PUMP STATION
SEE DETAILS, SHEET BPS-3

12-INCH DUCTILE IRON CL
350 PUMP SUCTION PIPE

12-INCH DUCTILE IRON CL 350
PUMP DISCHARGE PIPE

INSTALL 12-INCH
GATE VALVE

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

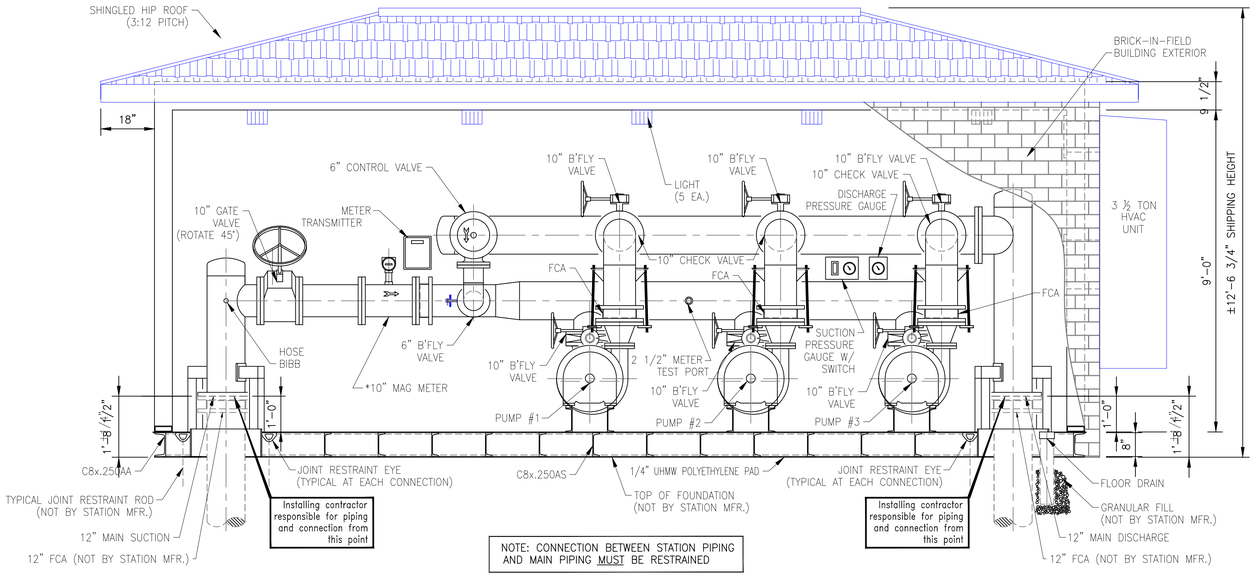
DESCRIPTION: BOOSTER PUMP STATION

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=50'

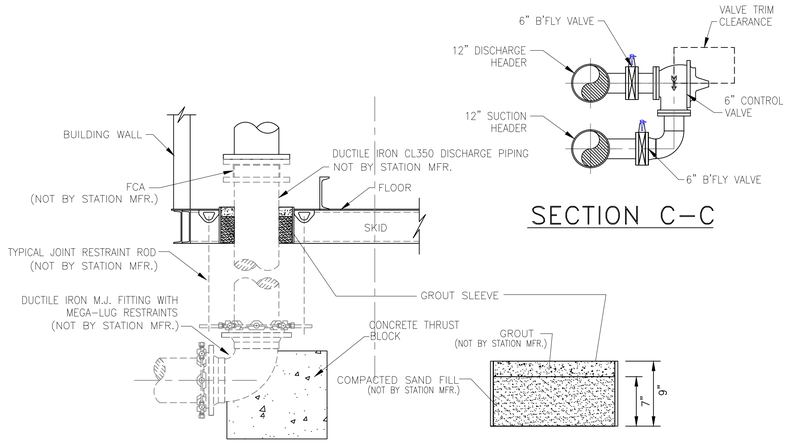
SHEET: BPS-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



NOTE: CONNECTION BETWEEN STATION PIPING AND MAIN PIPING MUST BE RESTRAINED

SECTION B–B



SECTION C–C

TYPICAL PIPING CONNECTION DETAIL

NOT TO SCALE

DESIGN CRITERIA

CONTROLS: TELEMETRY (BY OTHERS)
POWER SERVICE: 480 VOLTS, 3 PHASE, 60 CYCLE

PUMP DATA

TYPE: HORIZ., CLOSE CPLD., END SUCTION
PUMP: 1, 2 & 3
CAPACITY: 1400 G.P.M., AT 124 FEET T.D.H.
SIZE: 5" x 8" x 12"
MOTOR: 60 H.P., 1780 R.P.M.

* THIS DESIGN IS BASED ON THE SPARLING MODEL 656 MAGNETIC FLOW METER, REQUIRING 3 UPSTREAM AND ZERO DOWNSTREAM STRAIGHT PIPE DIAMETER LENGTHS FOR MAINTAINING STATED ACCURACY LIMITS. SPECIFICATION OR USE OF ANY OTHER MANUFACTURERS FLOW METER WILL NOT KEEP THIS DESIGN WITHIN THE ACCURACY LIMITS OF THAT FLOW METER.

* EXCEPT FOR PIPE END SUPPORTS, WHICH ARE SHOWN, VERTICAL AND ANGLE PIPE BRACES ARE NOT SHOWN FOR DRAWING CLARITY

GENERAL NOTES:

ALL STATION PIPING SHALL BE SCHEDULE 40 STEEL PIPE

MAIN SUCTION & DISCHARGE SHALL BE ANSI STNADARD B16.5, CLASS 150 FLANGE

ALL PIPING AND EQUIPMENT SHALL BE ADEQUATELY SUPPORTED AND BRACED

PLATE AND STRUCTURAL STEEL SHALL BE ASTM A-36

STRUCTURAL TUBING SHALL BE A500, GRADE B

FCA – FLANGED COUPLING ADAPTER
EPC – ELASTOMER PIPE CONNECTOR
SRC – SELF RESTRAINED COUPLING

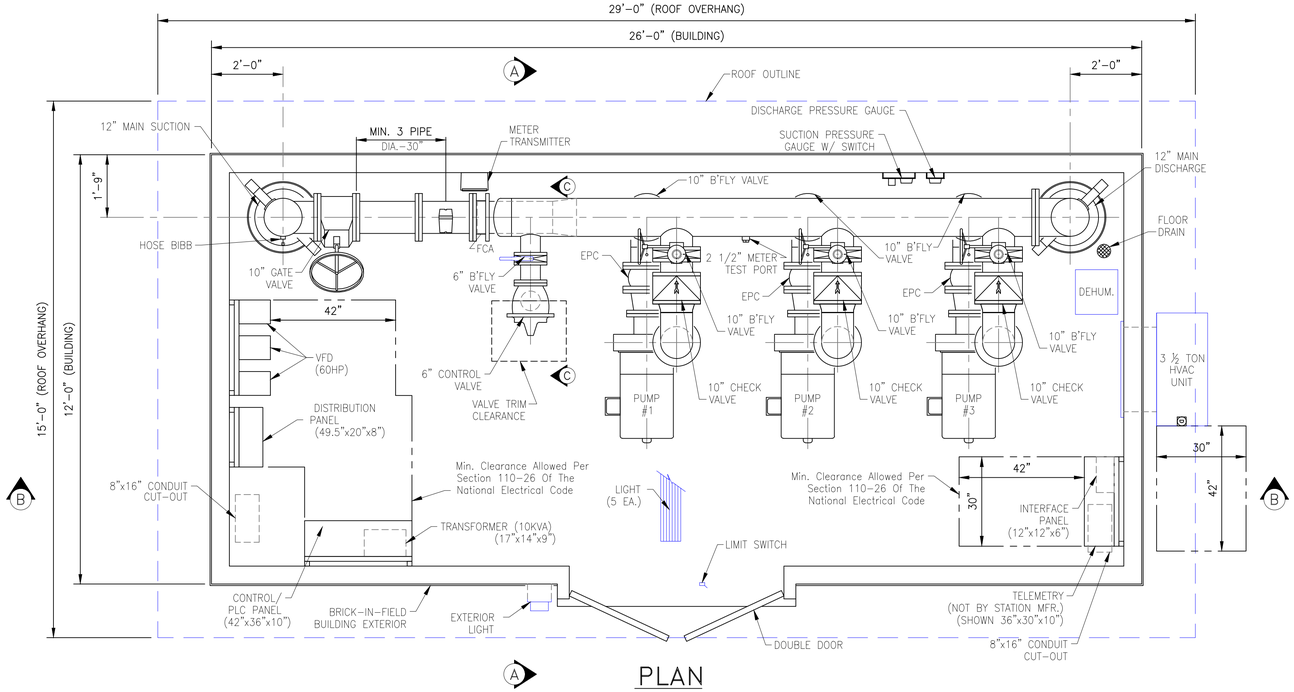
CONTRACTOR NOTES:

DEHUMIDIFIER MUST BE POWERED UP AND TURNED ON IMMEDIATELY AFTER THIS STATION IS SET IN PLACE.

SHIMS MAY BE REQUIRED AROUND PERIMETER OF THE STATION TO ENSURE PROPER LEVEL. THIS IS CRITICAL FOR PROPER DOOR OPERATION.

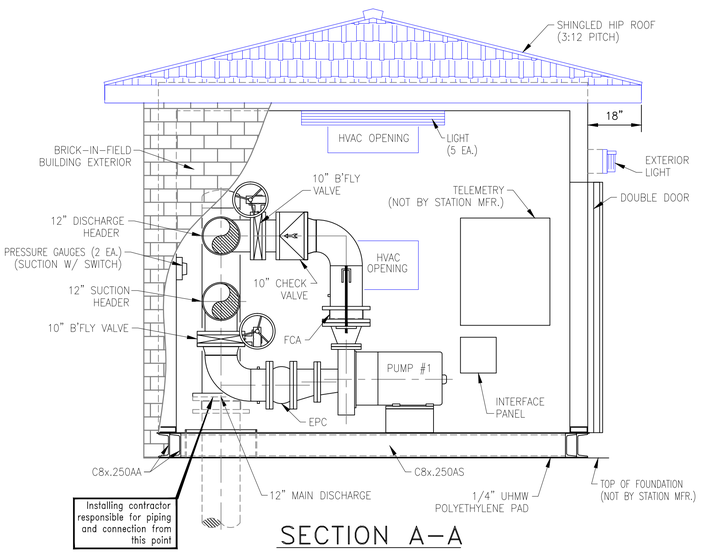
PLEASE NOTE ORIENTATION OF THE INLET AND OUTLET PIPE AND ELECTRICAL/TELEMETRY LOCATIONS IN REFERENCE TO THE JOBSITE LAYOUT.

THE STATION IS NOT DESIGNED TO ACCEPT PIPELINE FORCES THRUST BLOCKING MUST BE PROVIDED EXTERNAL TO THE STATION



PLAN

NOTE: "EXCEPT FOR PIPE END SUPPORTS, WHICH ARE SHOWN, VERTICAL AND ANGLE PIPE BRACES ARE NOT SHOWN FOR DRAWING CLARITY"



SECTION A–A

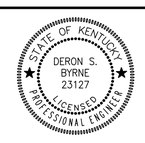
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

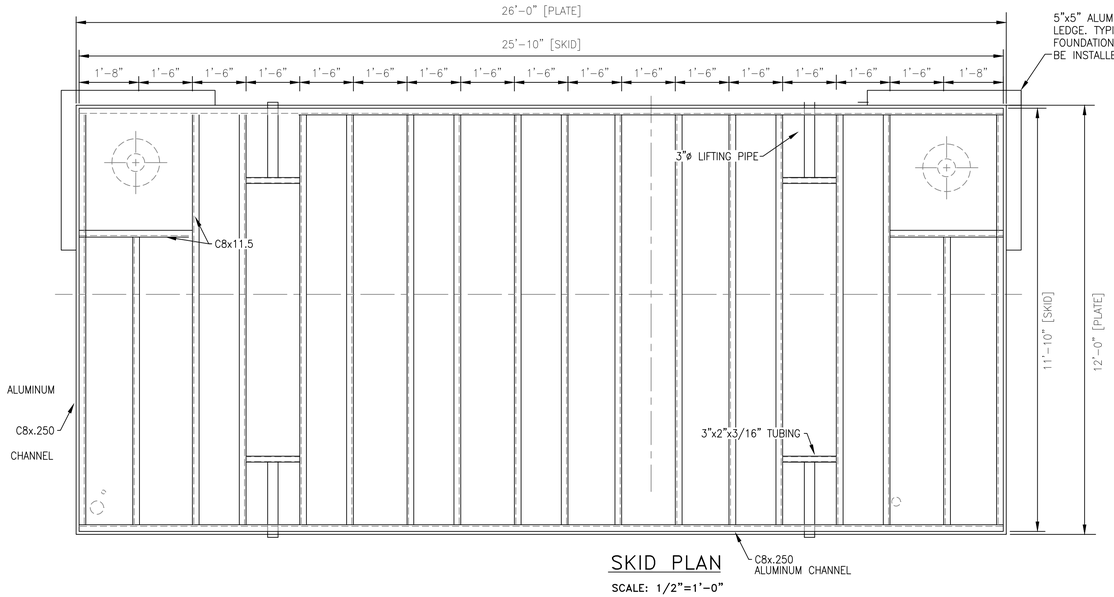
DESCRIPTION: MARSHES SIDINGS BOOSTER PUMP STATION

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: 1/2"=1'-0"

SHEET: BPS-2

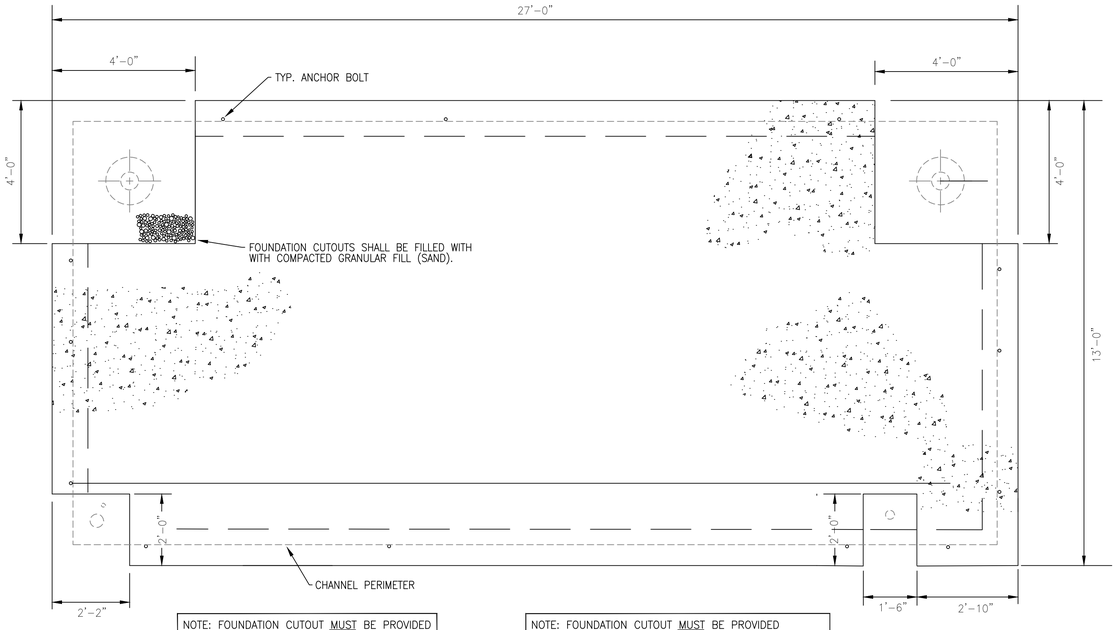




SKID PLAN

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

NOTE: FOUNDATION CUTOUT MUST BE PROVIDED TO ACCOMMODATE ADEQUATE SPACE TO CONNECT MAIN PIPING



NOTE: FOUNDATION CUTOUT MUST BE PROVIDED TO ACCOMMODATE ADEQUATE SPACE TO CONNECT DRAIN PIPING

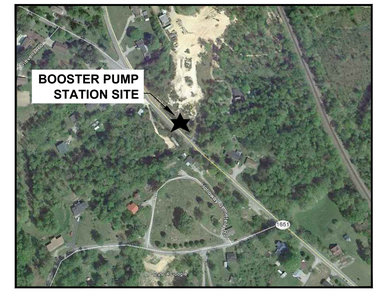
NOTE: FOUNDATION CUTOUT MUST BE PROVIDED TO ACCOMMODATE ADEQUATE SPACE TO CONNECT ELECTRICAL/ TELEMETRY CONDUIT(S)

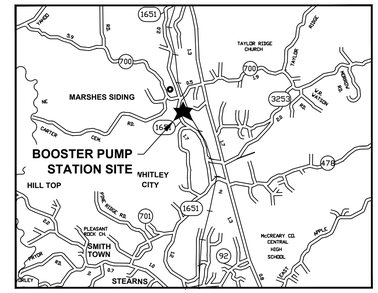
FOUNDATION LAYOUT

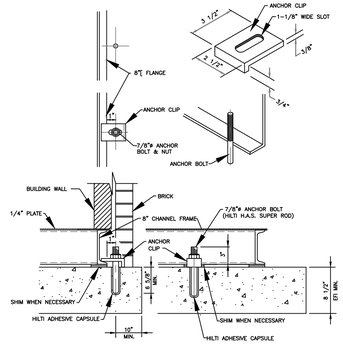
SCALE: 1/2"=1'-0"

VICINITY MAP

N.T.S.







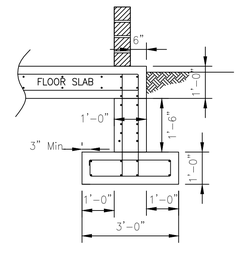
NOTE: ANCHOR CLIPS FURNISHED BY STATION MANUFACTUER
ANCHOR BOLTS AND NUTS BY INSTALLER
FOUNDATION AND ANCHOR BOLT DESIGN AND DIMENSIONS AS DIRECTED BY ENGINEER

SHIMS MAY BE REQUIRED AROUND PERIMETER OF STATION TO ENSURE PROPER LEVEL. WITHOUT PROPER LEVEL DOOR OPERATION MAY NOT FUNCTION CORRECTLY.

TYPICAL ANCHOR DETAIL

NOT TO SCALE

NOTE: ALL CONCRETE SHALL HAVE #4 BARS 12-INCHES ON CENTER, EACH WAY, BOTH FACES.



TYPICAL SECTION
FOUNDATION & REINFORCING DETAIL

NOT TO SCALE

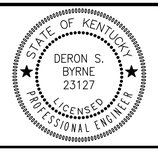
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

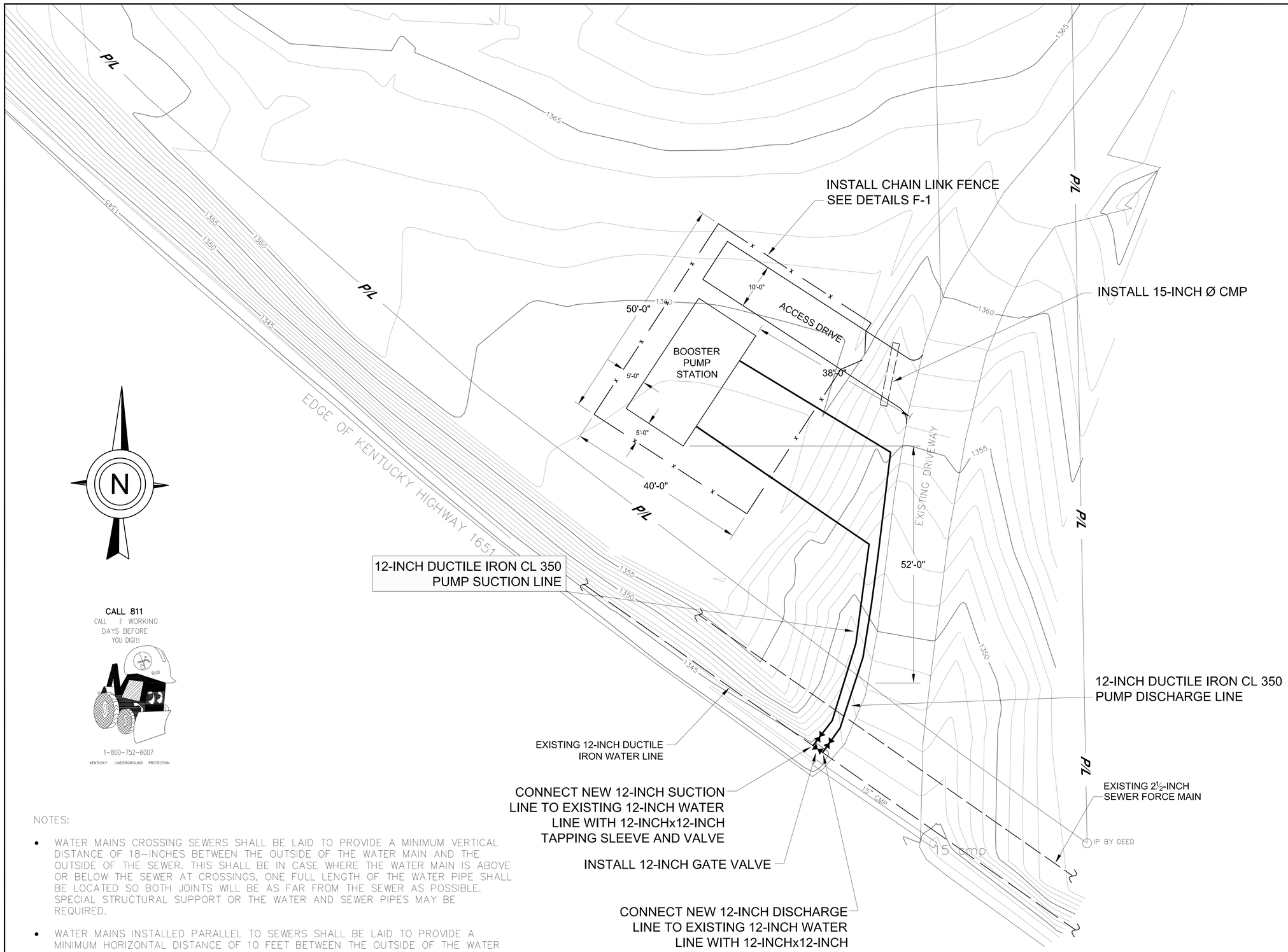
DESCRIPTION: MARSHES SIDING BOOSTER PUMP STATION

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: BPS-3





CALL 811
CALL 2 WORKING DAYS BEFORE YOU DIG!!!

1-800-752-6007
KENTUCKY UNDERGROUND PROTECTION

NOTES:

- WATER MAINS CROSSING SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18–INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE IN CASE WHERE THE WATER MAIN IS ABOVE OR BELOW THE SEWER AT CROSSINGS, ONE FULL LENGTH OF THE WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. SPECIAL STRUCTURAL SUPPORT OR THE WATER AND SEWER PIPES MAY BE REQUIRED.
- WATER MAINS INSTALLED PARALLEL TO SEWERS SHALL BE LAID TO PROVIDE A MINIMUM HORIZONTAL DISTANCE OF 10 FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER MAIN.
- ACCESS DRIVE TO BOOSTER PUMP STATION SHALL BE CRUSHED STONE (DGA).

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

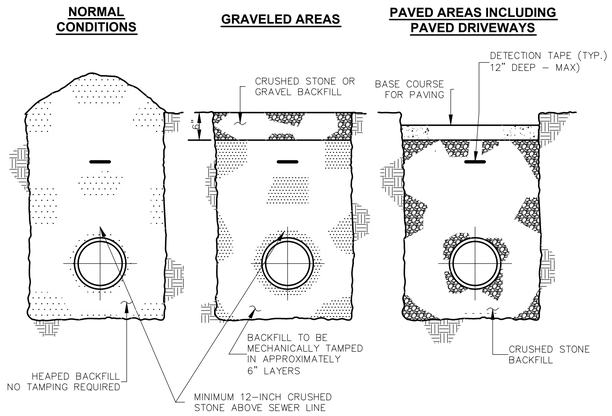
DESCRIPTION: MARSHES SIDINGS
BOOSTER PUMP STATION

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

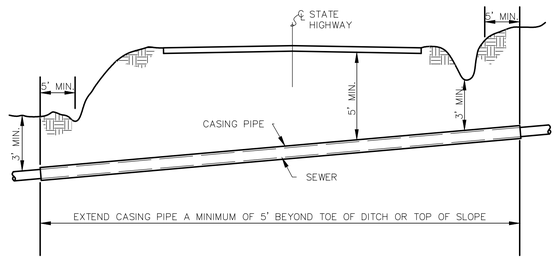
PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=10'

SHEET: BPS–4

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

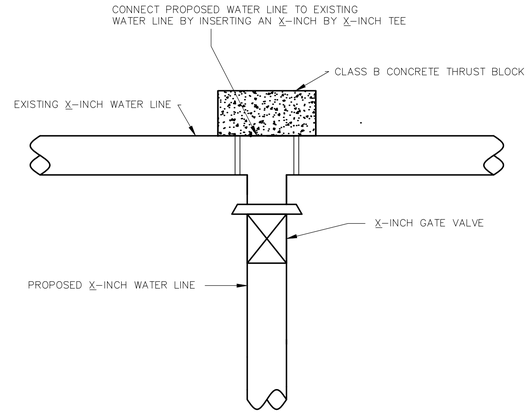


BACKFILLING
N.T.S

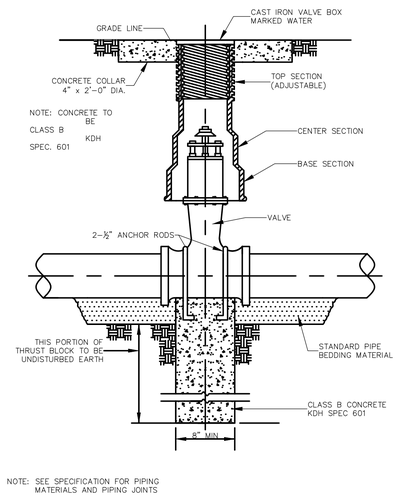


TYP. STATE HIGHWAY ENCASED BORE CROSSING

STATE HIGHWAY ENCASED BORE CROSSING
N.T.S



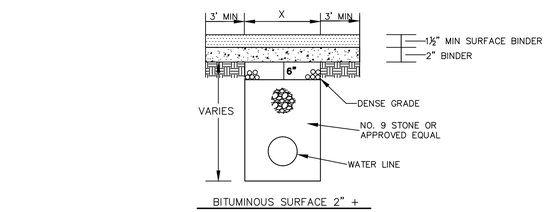
WATER LINE CONNECTION
N.T.S

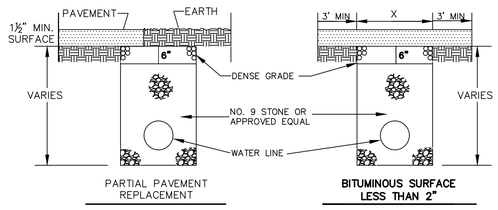


NOTE: SEE SPECIFICATION FOR PIPING MATERIALS AND PIPING JOINTS

GATE VALVE DETAIL
N.T.S

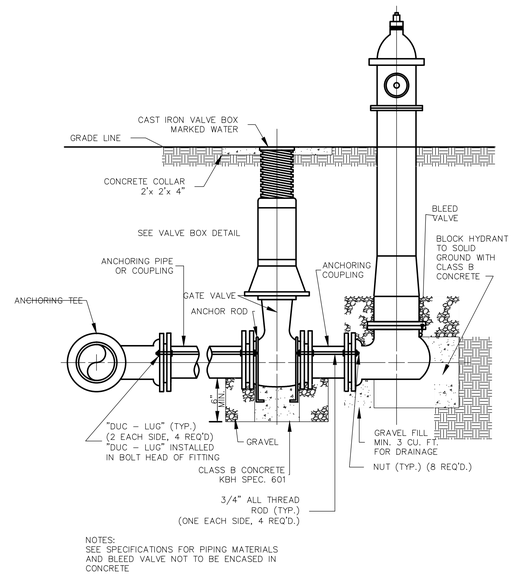
REPLACE BITUMINOUS PAVEMENT WITH SAME TYPE AND DEPTH AS EXISTING PAVEMENT





ANY TRENCH THAT DISTURBS PAVEMENT SHALL BE BACKFILLED WITH STONE

BITUMINOUS PAVEMENT REPLACEMENT
N.T.S



NOTES:
SEE SPECIFICATIONS FOR PIPING MATERIALS AND BLEED VALVE NOT TO BE ENCASED IN CONCRETE

FLUSH HYDRANT ASSEMBLY
N.T.S

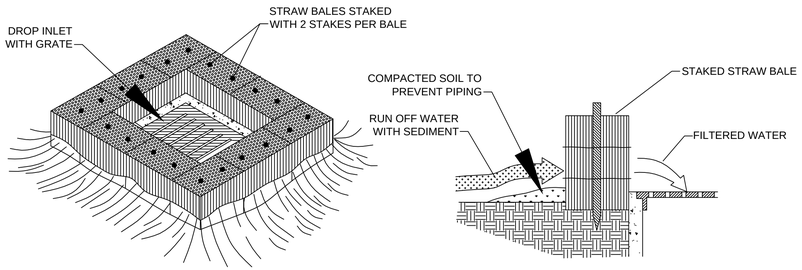
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: MISCELLANEOUS DRAWINGS

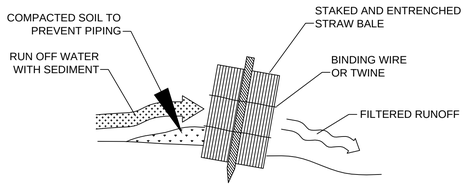
CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

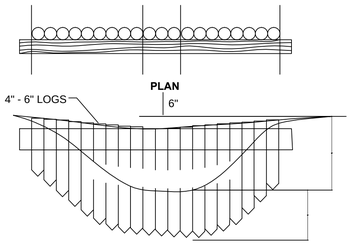
SHEET: MD–1



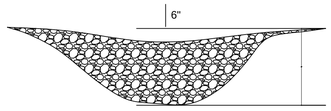
STRAW BALE DROP INLET SEDIMENT FILTER
N.T.S.



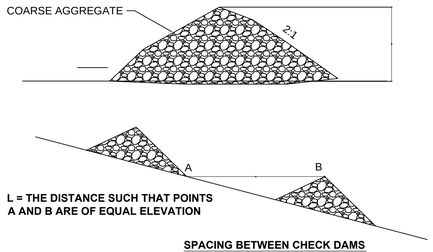
STRAW BALE INSTALLATION PROCEDURES
N.T.S.



LOG CHECK DAMS



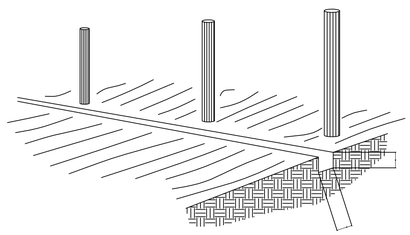
ROCK CHECK DAMS



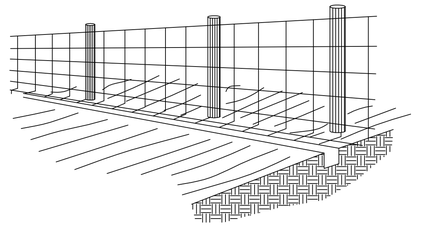
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

SPACING BETWEEN CHECK DAMS

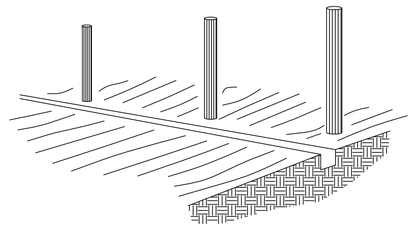
CHECK DAM DETAILS
N.T.S.



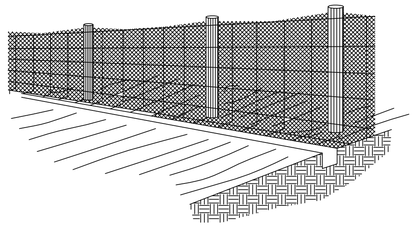
1. SET POSTS AND EXCAVATE A 4" x 4" TRENCH UPSLOPE ALONG THE LINE OF POSTS



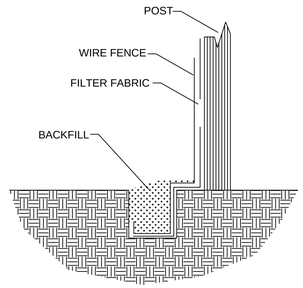
2. STAPLE WIRE FENCING TO POSTS



3. ATTACH THE FILTER FABRIC TO TEH WIRE FENCE AND EXTEND IT INTO THE TRENCH

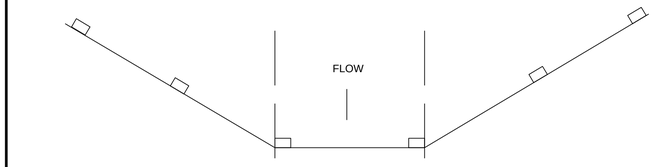


4. BACKFILL AND COMPACT THE EXCAVATED SOIL

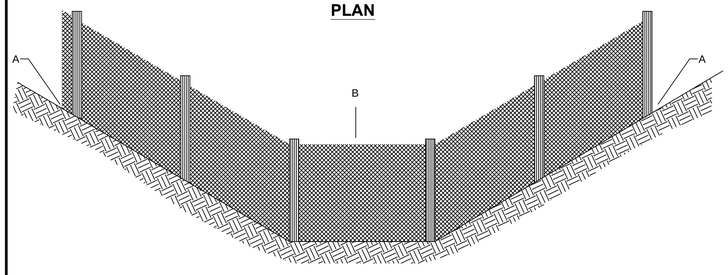


EXTENSION OF FABRIC AND WIRE INTO THE TRENCH

SILT FENCE CONSTRUCTION PROCEDURES
N.T.S.



PLAN

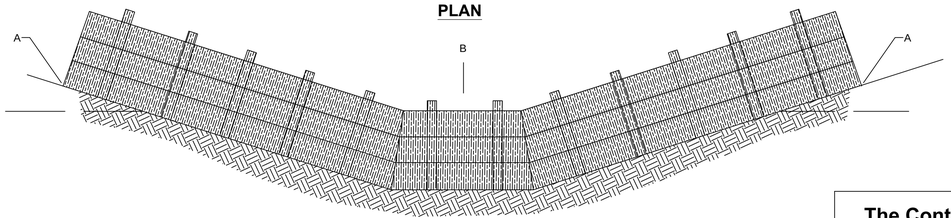


ELEVATION

POINT A SHOULD BE HIGHER THAN POINT B

PLACEMENT OF FILTER BARRIER
N.T.S.

PLAN



ELEVATION

POINT A SHOULD BE HIGHER THAN POINT B

PLACEMENT OF STRAW BALE BARRIER
N.T.S.

The Contractor shall do all work and take all measures necessary to control soil erosion resulting from construction operations, and shall prevent the flow of sediment from the construction site, and shall contain construction materials (including excavation and backfill) within their protected working area so as to prevent damage to the adjacent wetlands and water courses. The Contractor shall use any of the acceptable methods necessary to control soil erosion and prevent the flow of sediment to the maximum extent possible. These methods shall include, but not be limited to, the use of water diversion structures, diversion ditches, and settling basins.

EROSION CONTROL DETAILS
N.T.S.

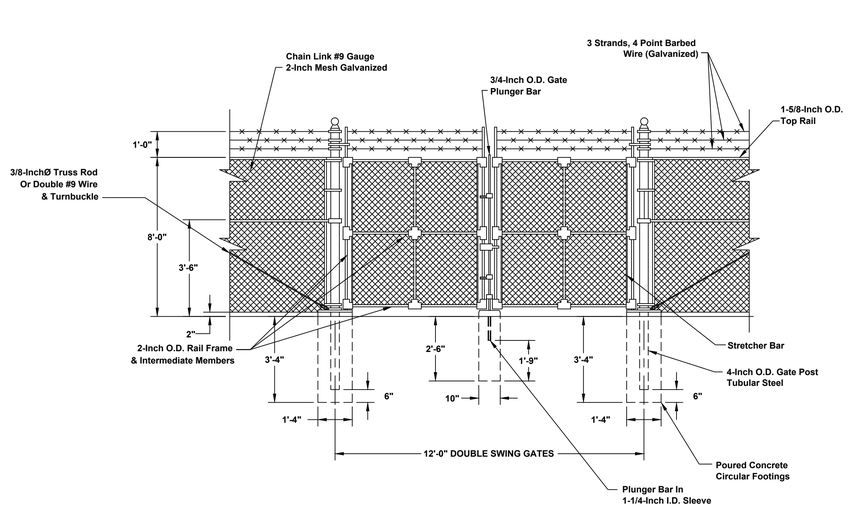
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

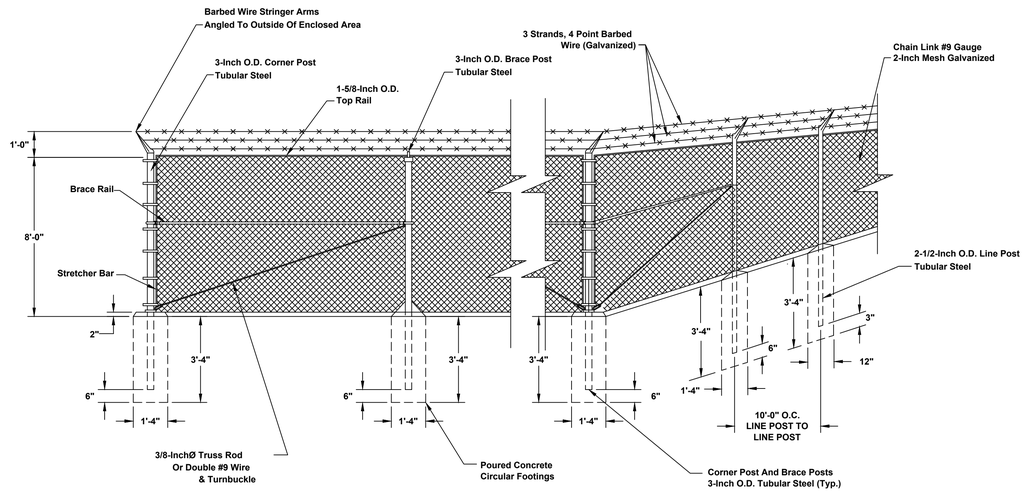
DESCRIPTION: EROSION CONTROL DETAILS

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: EC-1





CHAIN LINK FENCE ELEVATION

Scale: N. T. S.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: FENCING DETAILS

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: F-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

WASTEWATER TREATMENT PLANT IMPROVEMENTS
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

ALTERNATE NO. 2

TABLE OF CONTENTS

COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
DOUG SEXTON, SECRETARY
MAYNARD NEW
COY TAYLOR
TONY JONES

MANAGER/SUPERINTENDENT

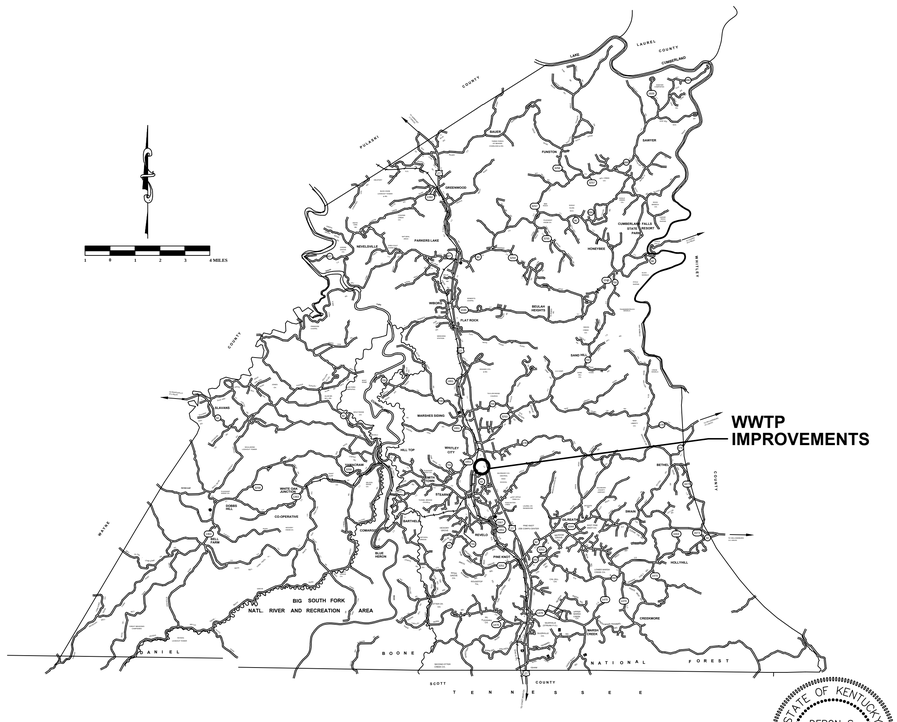
STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER

APRIL 2014

LOCATION MAP



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER

PROPOSED FLOW METER VAULTS
(SEE PLAN SHEET FM-1)

LEGEND:

= EXISTING VALVE BOX

= EXISTING LIGHT POLE

= TBM NO.1
RR SPIKE IN POWER POLE
ELEVATION = 1341.83

= EXISTING HYDRANT

= EXISTING CLEANOUT

= OVERHEAD UTILITY LINES

= EXISTING CHAIN LINK FENCE

= PROPERTY LINE

= NEW CHAIN LINK FENCE

= EXISTING GRAVEL

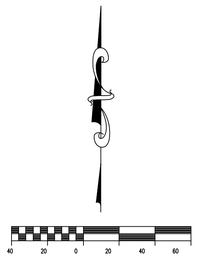
= PROPOSED GRAVEL

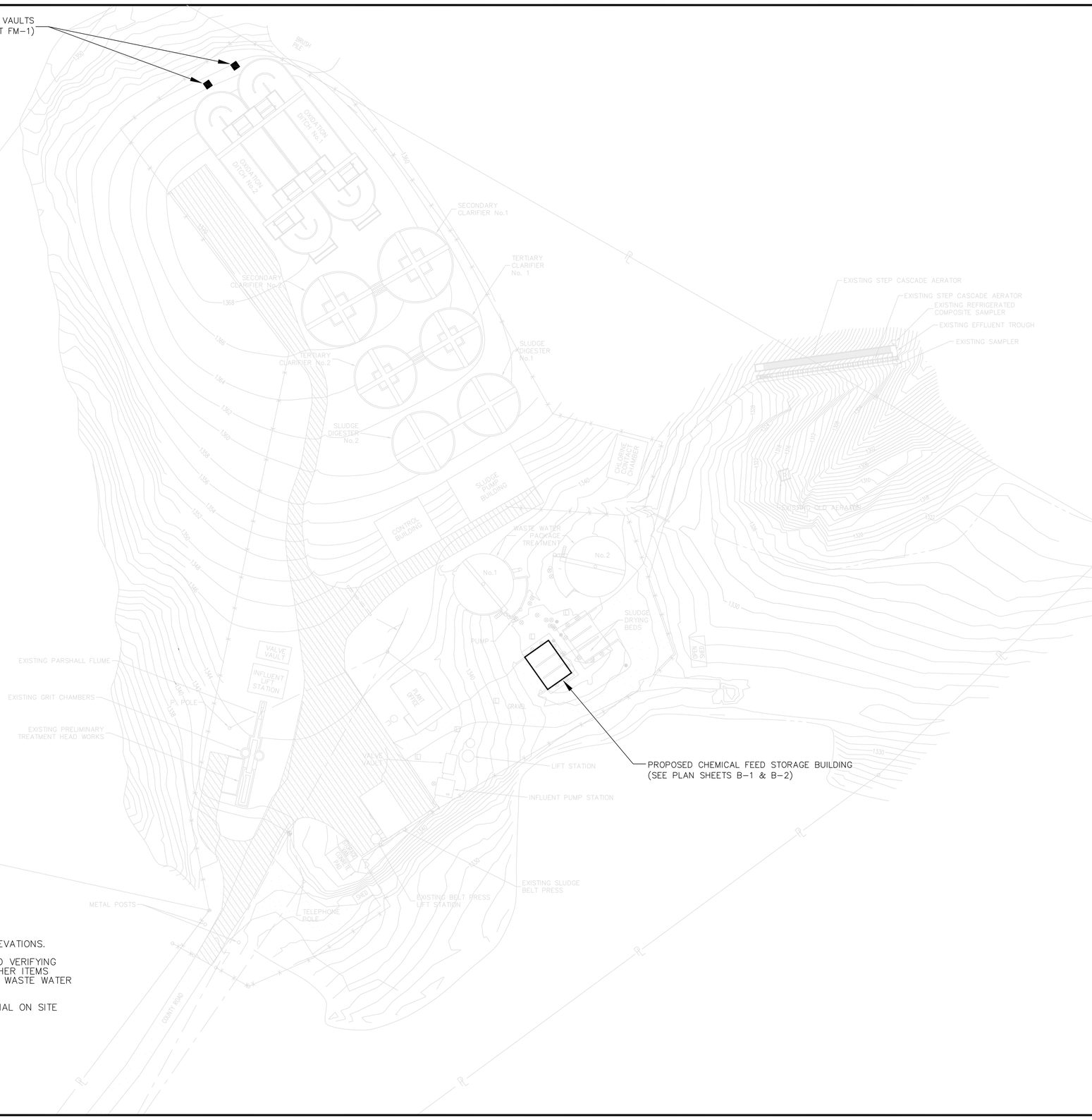
= PROPOSED BLACKTOP

= EXISTING CONTOURS

= NEW CONTOURS

EXISTING CONTOUR INTERVAL : 1.0'
NEW CONTOUR INTERVAL : 2.0'





NOTES:

1.) CONTRACTOR SHALL VERIFY EXISTING CONTOURS AND ELEVATIONS.

2.) CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING LINES, ELECTRICAL CONDUITS AND ANY OTHER ITEMS THAT WILL BE AFFECTED BY THE CONSTRUCTION OF THE WASTE WATER TREATMENT PLANT IMPROVEMENTS.

3.) CONTRACTOR SHALL DISPOSE OF ALL EXCAVATED MATERIAL ON SITE AS DIRECTED BY ENGINEER.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

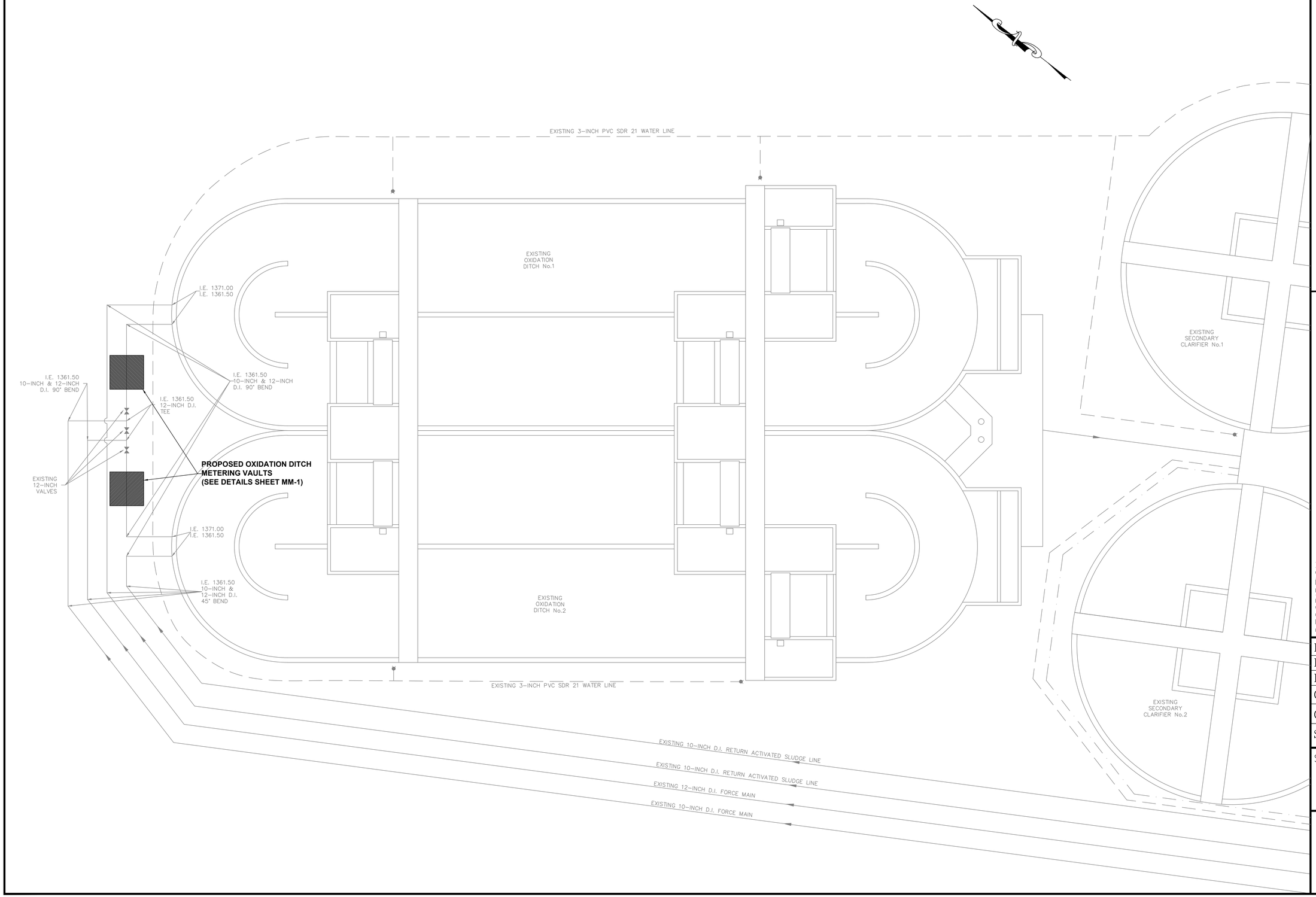
DESCRIPTION: WASTEWATER TREATMENT PLANT IMPROVEMENTS
EXISTING & PROPOSED SITE PLAN

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1315
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: 1"=40'

SHEET:
SP-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

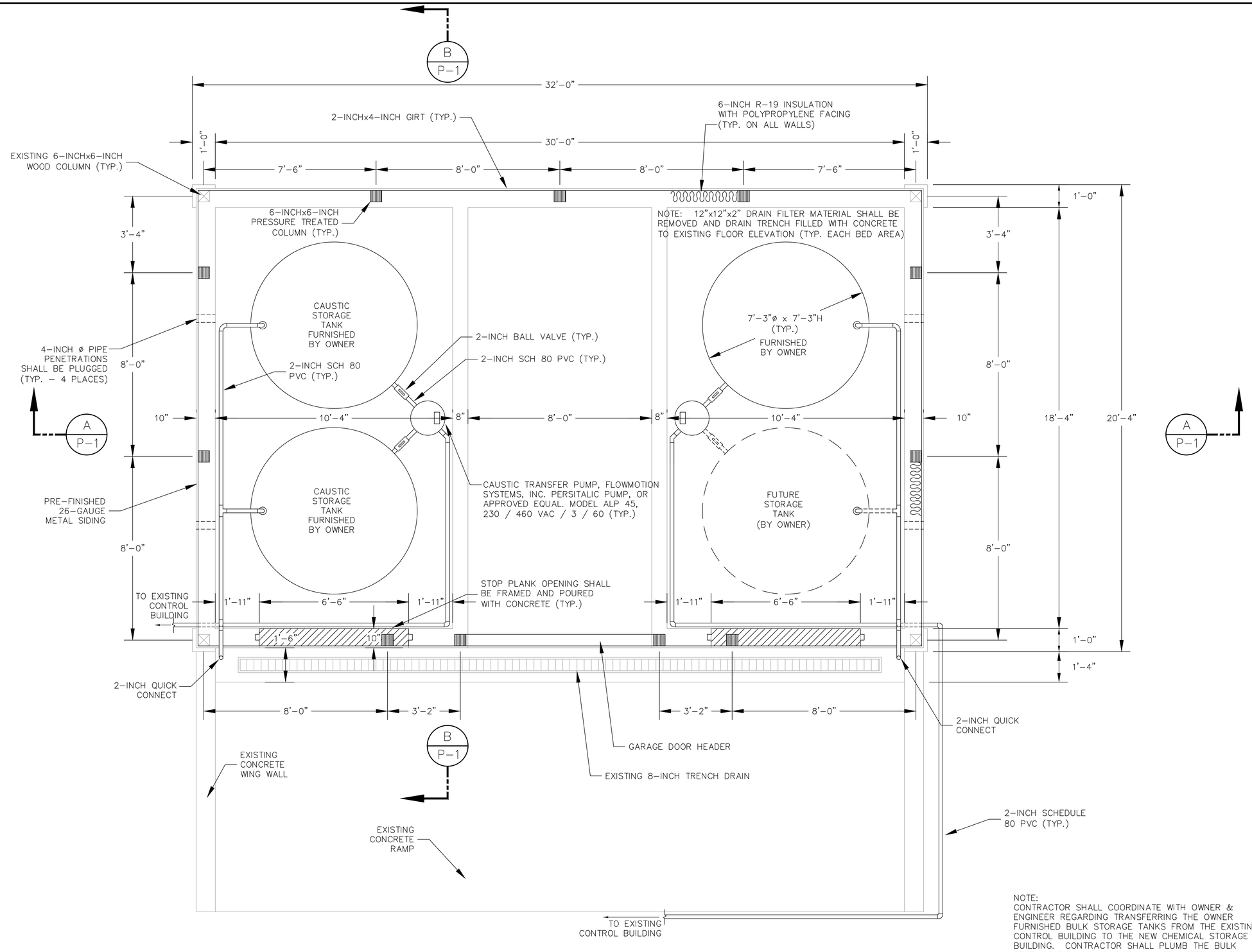
DESCRIPTION:
WASTEWATER TREATMENT PLANT IMPROVEMENTS
PROPOSED FLOW METER VAULT SITE PLAN

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1–1/2"=1–0'

SHEET:
SP–2

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



NOTE:
CONTRACTOR SHALL COORDINATE WITH OWNER & ENGINEER REGARDING TRANSFERRING THE OWNER FURNISHED BULK STORAGE TANKS FROM THE EXISTING CONTROL BUILDING TO THE NEW CHEMICAL STORAGE BUILDING. CONTRACTOR SHALL PLUMB THE BULK STORAGE TANKS AND CHEMICAL TRANSFER PUMPS AND MAKE READY FOR COMPLETE OPERATION.

CHEMICAL STORAGE BUILDING – PLAN VIEW

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

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

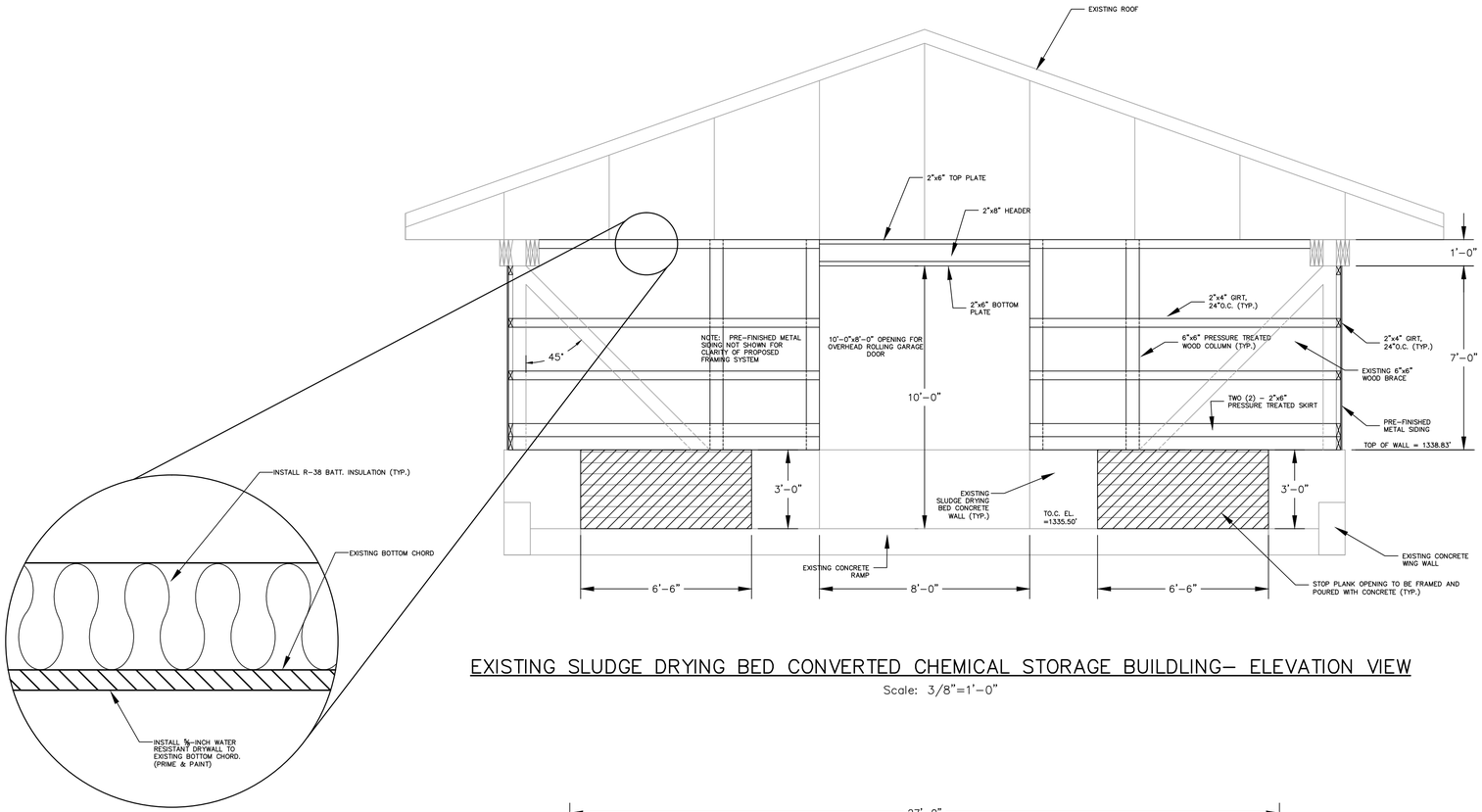
DESCRIPTION: CHEMICAL FEED STORAGE BUILDING
PLAN VIEW

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

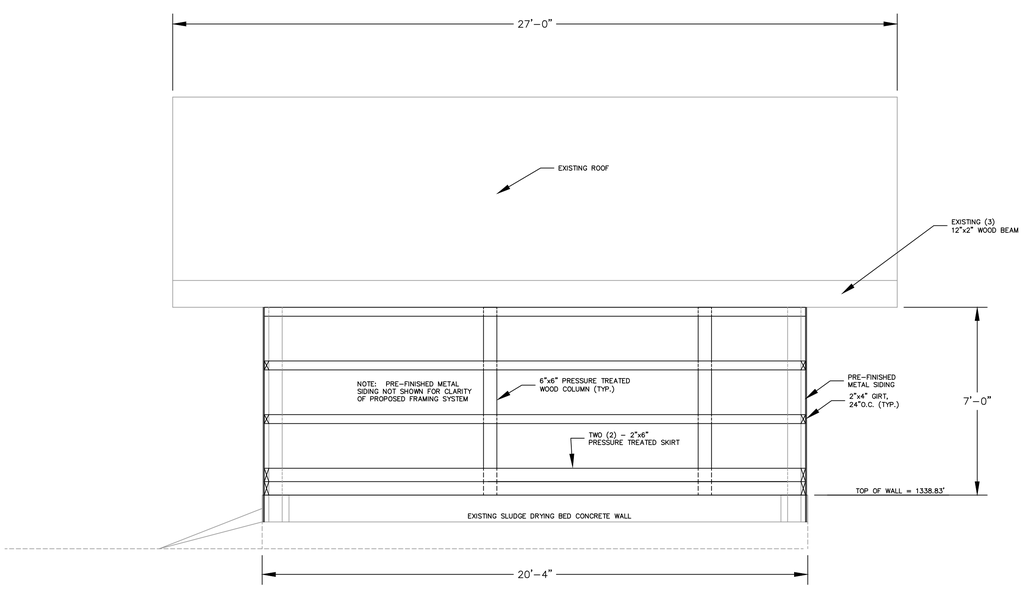
SHEET: B-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



EXISTING SLUDGE DRYING BED CONVERTED CHEMICAL STORAGE BUILDLING– ELEVATION VIEW

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



EXISTING SLUDGE DRYING BED CONVERTED CHEMICAL STORAGE BUILDING– SIDE ELEVATION

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

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

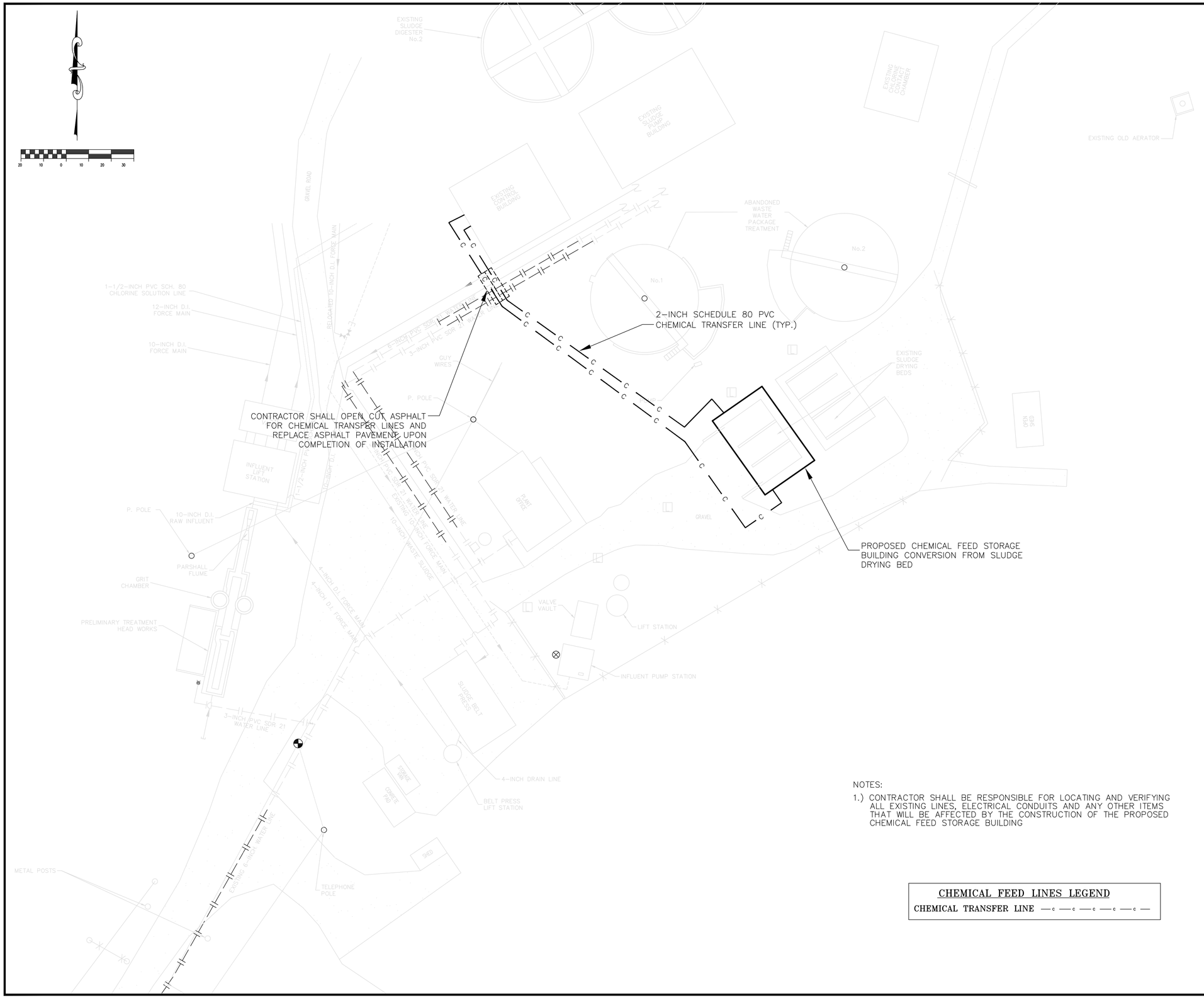
DESCRIPTION:
CHEMICAL FEED STORAGE BUILDING
ELEVATION PLAN VIEWS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET:
B–2

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



NOTES:

1.) CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING LINES, ELECTRICAL CONDUITS AND ANY OTHER ITEMS THAT WILL BE AFFECTED BY THE CONSTRUCTION OF THE PROPOSED CHEMICAL FEED STORAGE BUILDING

CHEMICAL FEED LINES LEGEND

CHEMICAL TRANSFER LINE —c —c —c —c —c —

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

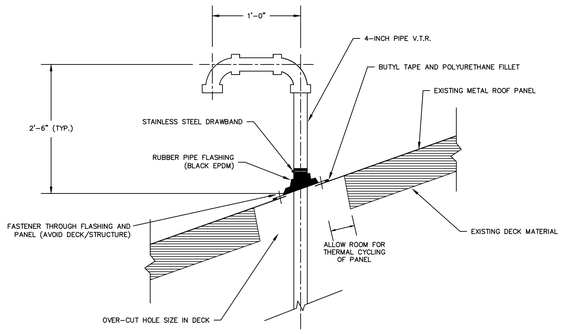
DESCRIPTION: YARD PIPING

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	1"=20'

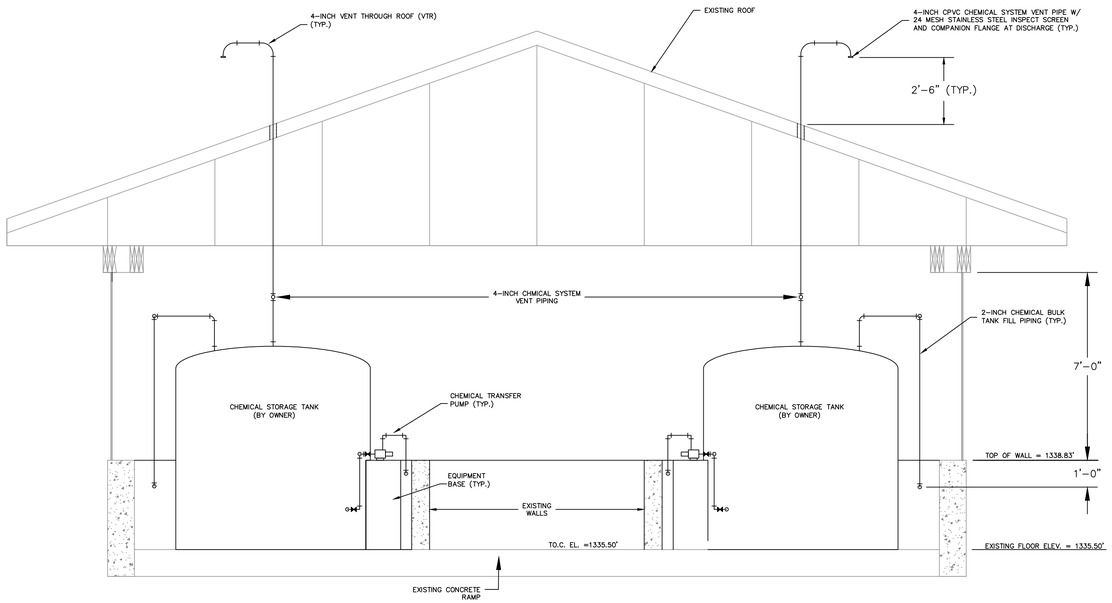
SHEET: YP-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



VENT THROUGH ROOF DETAIL

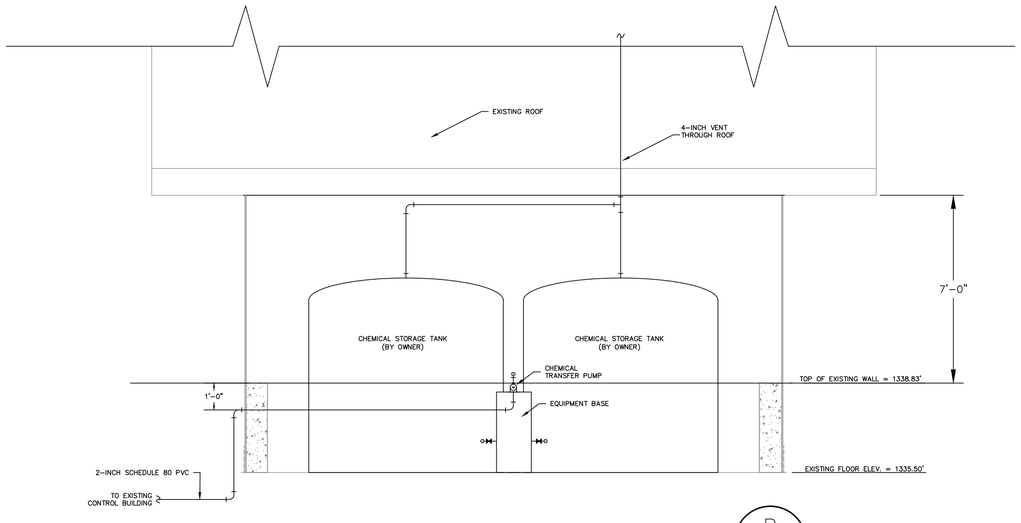
Scale: N.T.S.



ELEVATION CHEMICAL PIPING VIEW

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

A / P-1



ELEVATION CHEMICAL PIPING VIEW

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

B / P-1

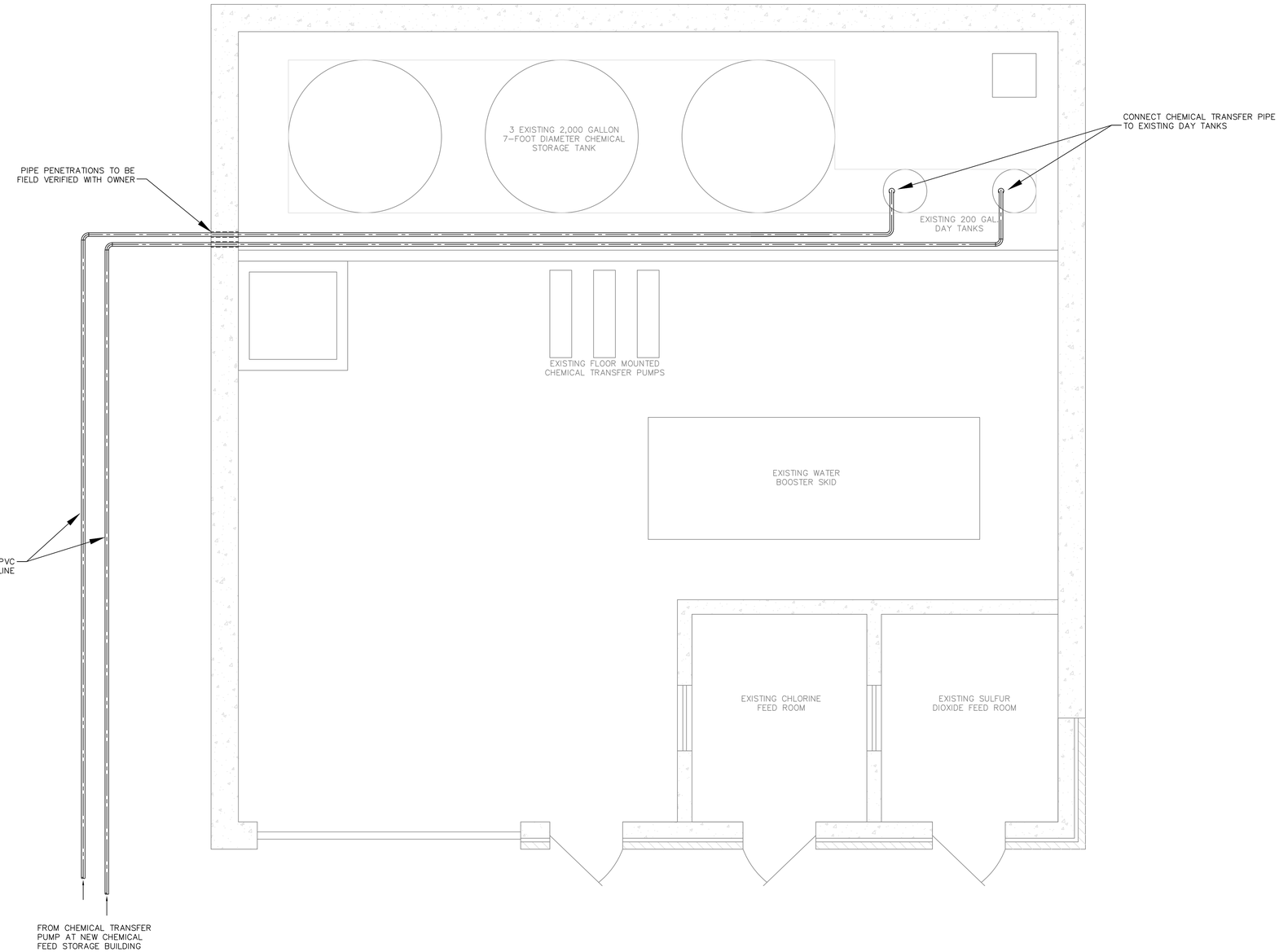
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
CHEMICAL FEED STORAGE BUILDING
ELEVATION PIPE VIEWS

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1315
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
P-1



EXISTING CONTROL BUILDING CHEMICAL TRANSFER PIPING

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

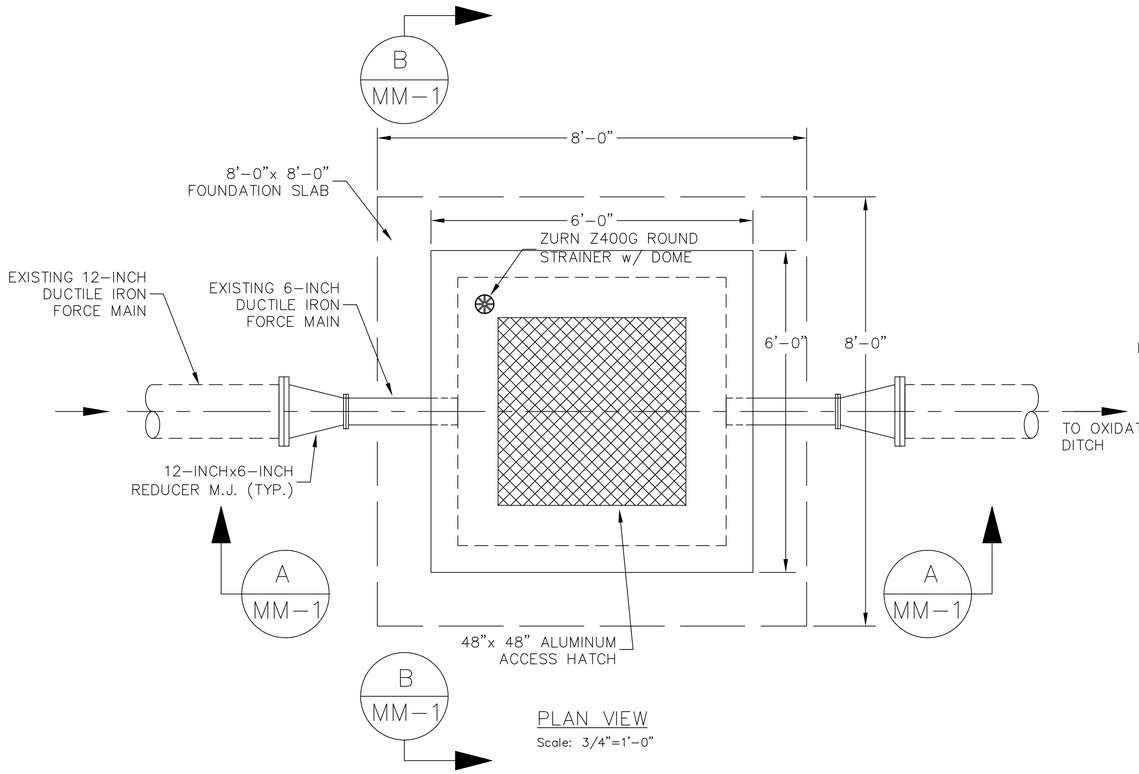
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
EXISTING CONTROL BUILDING
CHEMICAL TRANSFER PIPE

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

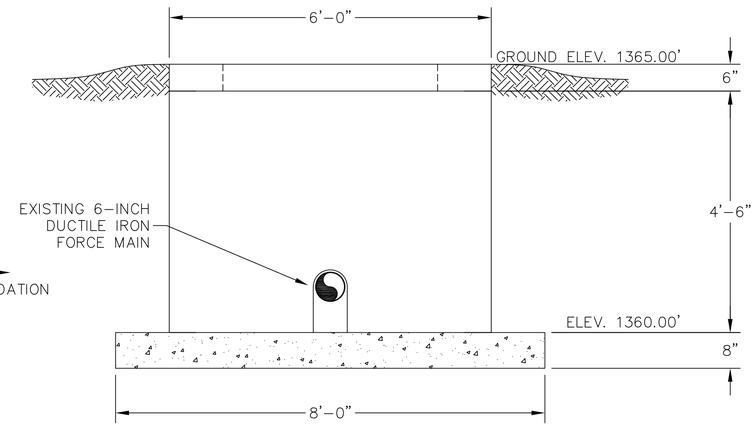
PROJECT NO. 1315
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
P-2



PLAN VIEW

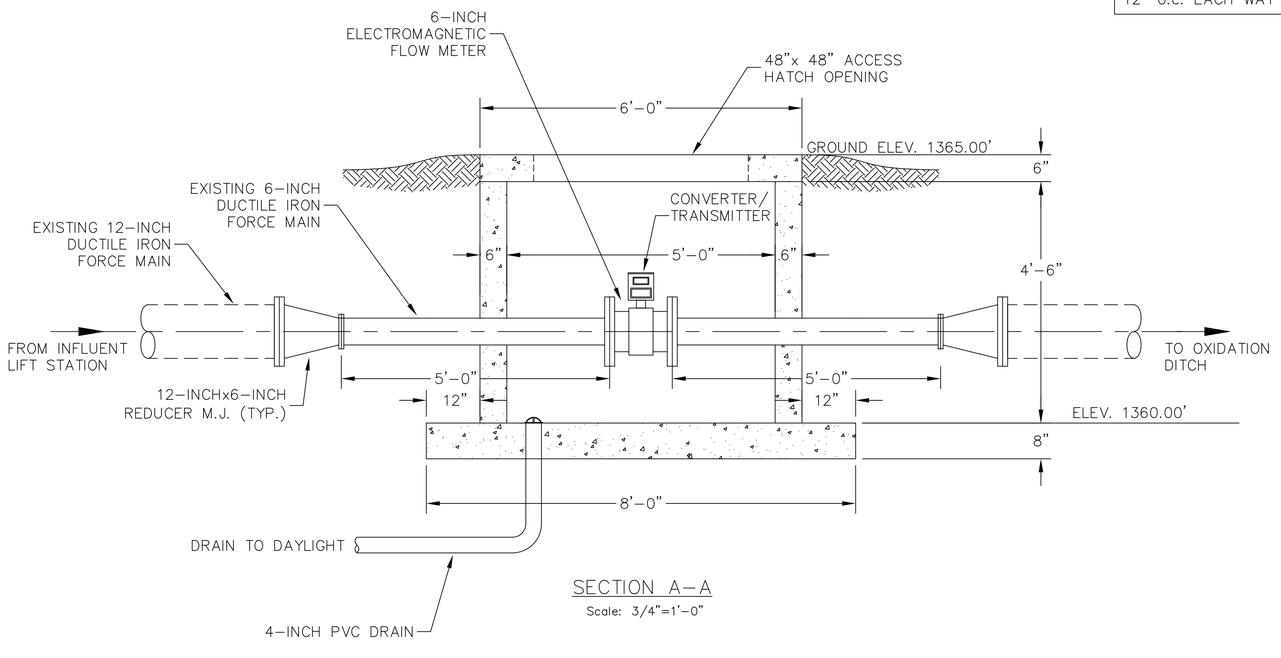
Scale: 3/4"=1'–0"



SECTION B–B

Scale: 3/4"=1'–0"

NOTE: ALL CONCRETE TO HAVE #4 REINFORCEMENT BARS @ 12" o.c. EACH WAY



SECTION A–A

Scale: 3/4"=1'–0"

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

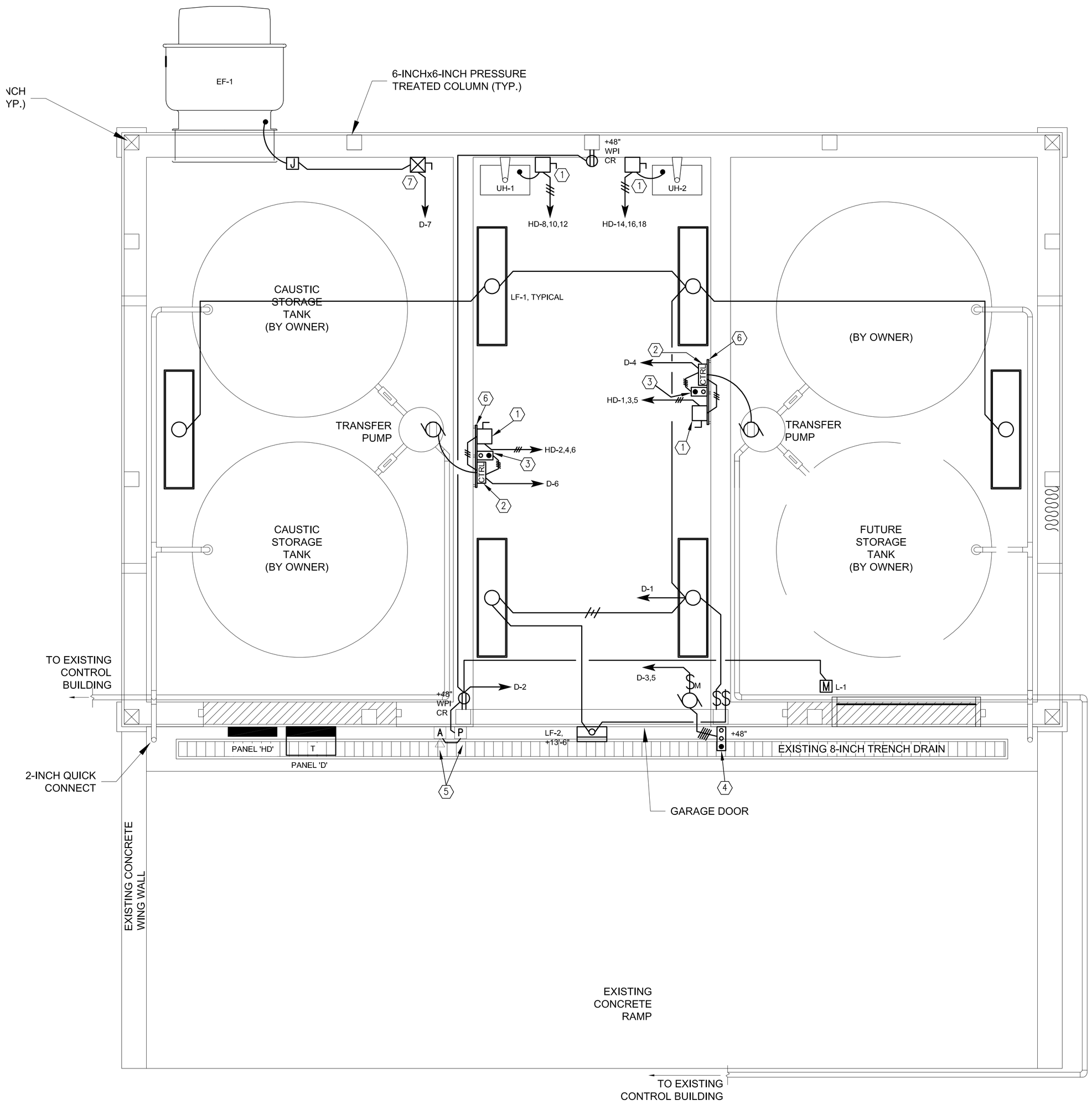
DESCRIPTION: FLOW METER VAULT DETAILS

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: FM–1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



CHEMICAL STORAGE BUILDING - ELECTRICAL

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

SHEET NOTES

1. FURNISH AND INSTALL 600V, 3P, 30A NEMA 4 NON-METALLIC FUSIBLE DISC. FUSE AS REQUIRED.
2. INSTALL PUMP SPEED CONTROLLER/SPEED CONTROL FURNISHED WITH PUMP EQUIPMENT. COORDINATE WITH G.C.
3. FURNISH AND INSTALL NEMA 4 MANUAL START-STOP STATION AS REQUIRED. COORDINATE TYPE AND CONTACT WIRING WITH PUMP SPEED CONTROL REQUIREMENTS.
4. INSTALL AND CIRCUIT UP-DN-STOP CONTROLLER FOR OVERHEAD DOOR OPERATOR.
5. FURNISH AND INSTALL CHEMICAL SPILL PULL STATION (+48") AND ALARM (+96").
6. FURNISH AND INSTALL EQUIPMENT SUPPORT TYPE 'A'.
7. FURNISH AND INSTALL 240V, 2P, NEMA SIZE 0, NEMA 4 NON-METALLIC COMBINATION STARTER WITH H-O-A SWITCH AND 2 SETS AUXILIARY CONTACTS. FURNISH ADDITIONAL CONTACTS AND CIRCUITS AS NECESSARY TO PROVIDE EF-1 OPERATION SUCH THAT WHEN OVERHEAD DOOR IS OPENED OR LIGHTS ARE TURNED ON, THE EXHAUST FAN WILL RUN. DOOR/LIGHT ACTIONS SHALL OVER-RIDE THERMOSTAT SETTING OPERATION (i.e. ALL CONTACTS PARALLED)

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: CHEMICAL STORAGE BUILDING
FLOOR PLAN – ELECTRICAL

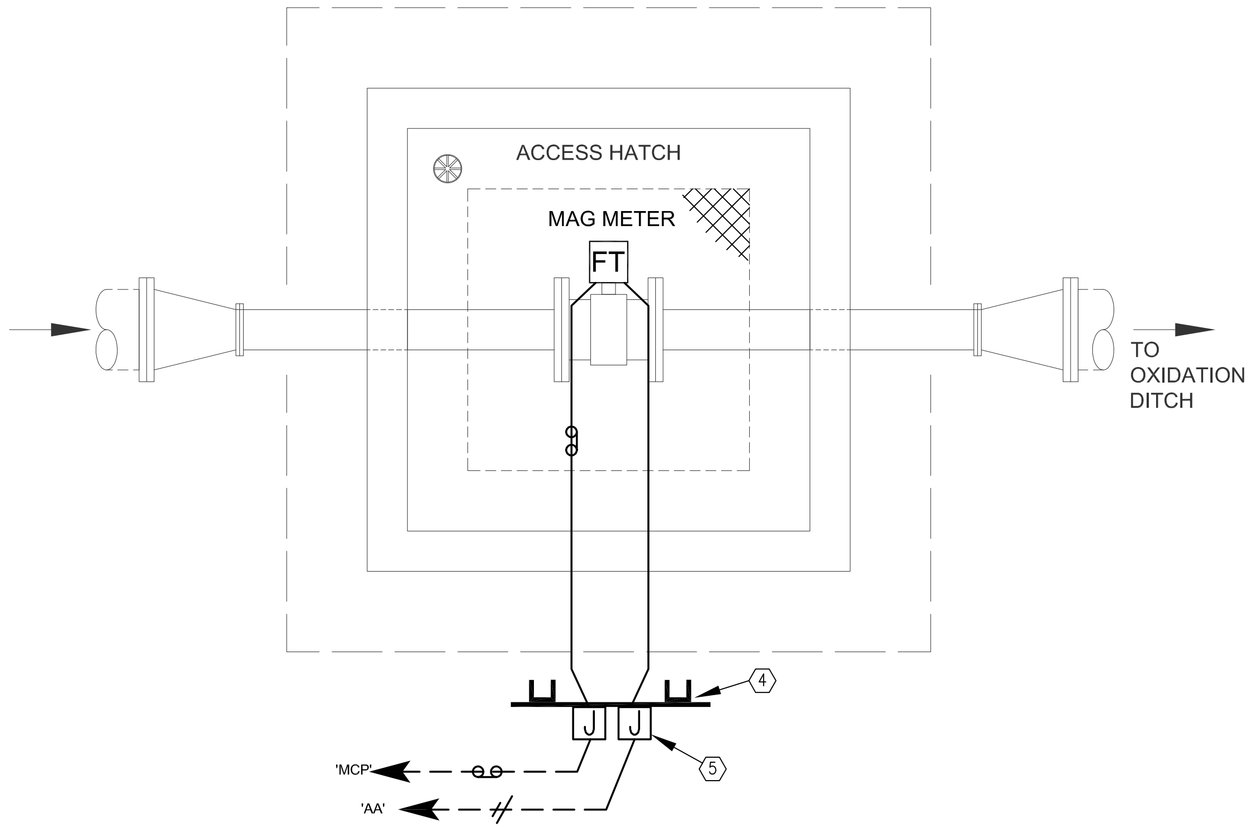
CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	TN
CHECKED BY:	
CHECKED BY:	TW
SCALE:	AS NOTED

SHEET: E–1

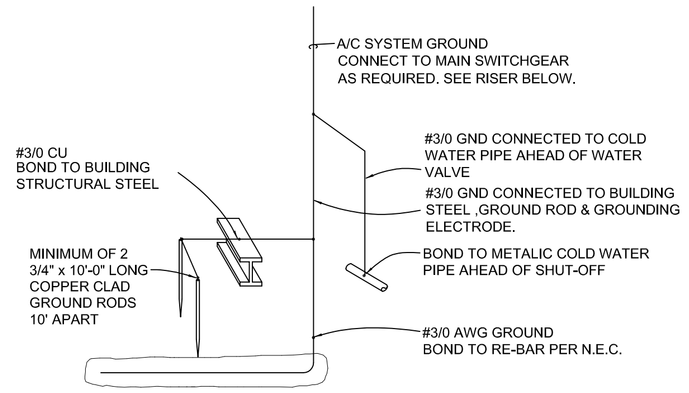
AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
708 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255–4437

STATE OF KENTUCKY
THOMAS B. WILSON, JR. 9017
LICENSED PROFESSIONAL ENGINEER



METER VAULT PLAN - ELECTRICAL

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

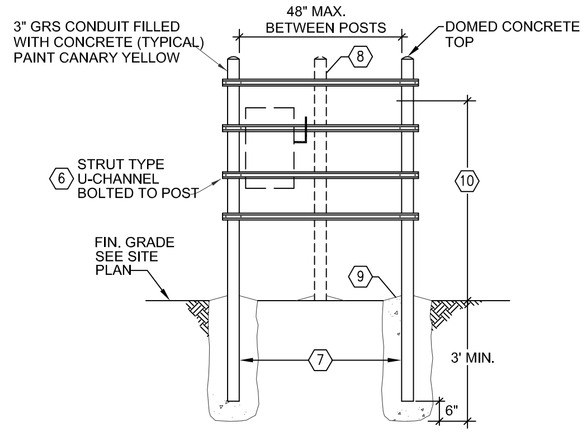


MAIN SERVICE AC SYSTEM GROUND

SCALE: NTS

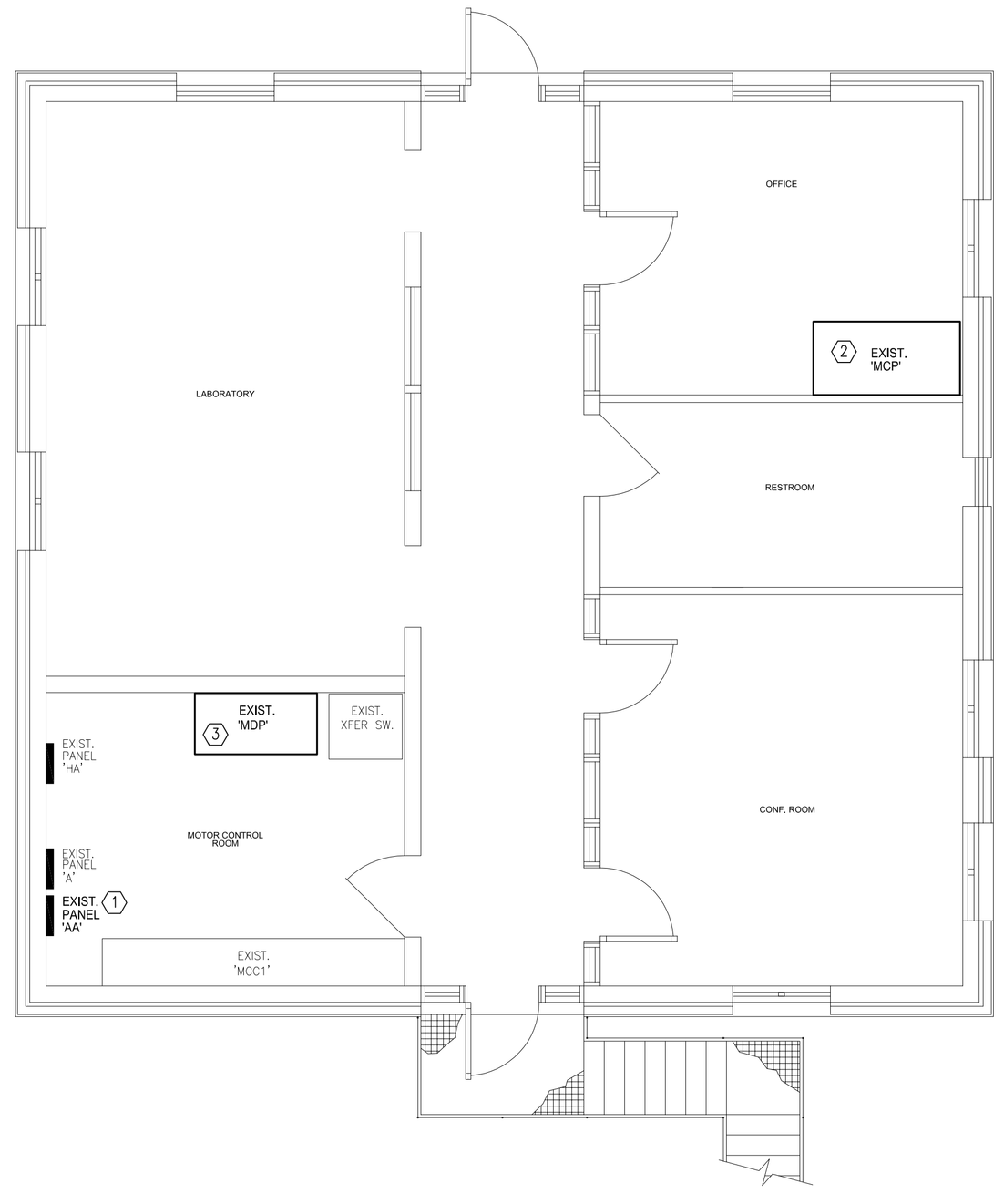
SHEET NOTES

1. FURNISH AND INSTALL 240V, 20A, 1P BREAKER IN EXISTING PANEL SPACE AND CONNECT NEW FLOW METER POWER CIRCUIT.
2. CUT OPENINGS AS REQUIRED IN EXISTING 'MCP' FRONT PANEL AND INSTALL NEW REMOTE FLOW DISPLAY UNITS (2) AND CONNECT NEW METER 4-20MA CIRCUITS AS REQUIRED.
3. FURNISH AND INSTALL NEW 100A, 3P, 600V BREAKER IN PANEL AND CONNECT NEW PANEL 'HD' FEEDER AS REQUIRED. NEW BREAKER A.I.C. SHALL MATCH RATING OF EXISTING BREAKERS IN PANEL.
4. FURNISH AND INSTALL EQUIPMENT SUPPORT. SEE DETAIL BELOW.
5. FURNISH AND INSTALL WATER TIGHT JUNCTION/PULL BOXES AS REQUIRED FOR CIRCUITS TO NEW FLOW METERS.
6. FURNISH AND INSTALL MINIMUM (4) U-CHANNEL SPANS BETWEEN POSTS AND ADD ADDITIONAL AS REQUIRED FOR SUPPORT OF EQUIPMENT AND CONDUITS.
7. PAINT RGS POSTS WITH MIN. 2 COATS OF BITUMASTIC WHERE IN CONTACT WITH CONCRETE.
8. FURNISH AND INSTALL ADDITIONAL SUPPORT POST WITH CONCRETE BASE WHERE SPAN EXCEEDS 48" AND ADDITIONAL POSTS AS REQUIRED SUCH THAT NO SPAN BETWEEN POSTS EXCEEDS 48".
9. FURNISH AND INSTALL 18" DIAMETER BY 30" DEEP CONCRETE BASE FOR EACH SUPPORT POST REQUIRED. BASES SHALL BE A SINGLE HOMOGENEOUS CONCRETE POUR.
10. 6'-6" MAXIMUM HEIGHT TO TOP OF ELECTRICAL EQUIPMENT.



TYPICAL EQUIPMENT SUPPORT DETAIL

SCALE: NTS



EXISTING CONTROL BLDG. UPPER LEVEL PLAN - ELECTRICAL

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

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
METER VAULT & EXIST. CONTROL BLDG.
PLANS – ELECTRICAL

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	TN
CHECKED BY:	
CHECKED BY:	TW
SCALE:	AS NOTED

SHEET:
E-2

STATE OF KENTUCKY
THOMAS B. WILSON, JR. 9017
LICENSED PROFESSIONAL ENGINEER

ELECTRICAL LEGEND

- SURFACE MOUNTED FLUORESCENT LIGHT FIXTURE
- EMER. BATTERY PACK
- RECESSED FLUOR. LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- WALL MOUNTED CIRCULATOR FAN
- $,$3,$4,$K LIGHT SWITCH - SINGLE POLE, 3-WAY, 4-WAY, KEY OPERATED
- $M MANUAL MOTOR STARTER SWITCH
- $F FAN SPEED CONTROL
- DUPLEX RECEPTACLE
- TL SINGLE RECEPTACLE; TL = TWIST LOCK TYPE
- DUPLEX G.F.I. RECEPTACLE
- JUNCTION BOX
- T:H THERMOSTAT : HUMIDISTAT
- DISCONNECT SWITCH
- XP EXPLOSION PROOF DISCONNECT SWITCH
- COMBINATION MOTOR STARTER
- VFD VARIABLE FREQUENCY DRIVE
- EQUIPMENT CONNECTION
- MOTOR CONNECTION
- CONDUIT CONCEALED BELOW SLAB OR GRADE
- CLASS 1, DIVISION 1CONDUIT SEAL
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- CORD & PLUG CONNECTION TO RECEPTACLE
- CONDUIT CONCEALED IN WALL OR CEILING
  NO. SLASHES EQUALS NO. CONDUCTORS - MIN. #12 AWG
  #10 WIRE SIZE IF OTHER THAN #12
  NO. ARROWS EQUALS NO. CIRCUITS
  1,3,5 - INDICATES POLE POSITIONS
  A - INDICATES PANEL NO.
  (A-1,3,5)
- MCP CIRCUIT TO MAIN CONTROL PANEL
  NO./TYPE CONTROL CONDUCTORS AS REQUIRED
- T1 TRANSFORMER
- HEAT TRACE CABLE
- GROUND

- M MOTORIZED DAMPER
- C CONTACTS
- E GRADE MOUNTED PULL BOX
- 3/T/S TWISTED SHIELDED PAIR CABLE
  NUMBER = NO. CABLES IF MORE THAN ONE
  1"C. MINIMUM
- ALARM STROBE
- P UTILITY CO. POWER POLE
- START-STOP PUSHBUTTON STATION, NEMA 4
- EQUIPMENT SUPPORT
- FT FLOW TRANSMITTER
- FS FLOW SWITCH
- UE UNDERGROUND ELECTRIC
- P CHEMICAL EMERGENCY ALARM PULL STATION
- A CHEMICAL EMERGENCY ALARM HORN

W	WIRE
PH	PHASE
EC	ELECTRICAL CONTRACTOR
CKT	CIRCUIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
WP	WEATHERPROOF
WPI	WEATHERPROOF IN-USE TYPE COVER
FUT.	FUTURE
S.E.	SERVICE ENTRANCE
TYP.	TYPICAL
CTRL	CONTROL
XFMR	TRANSFORMER
PNL	PANEL
SVC	SERVICE
V/V	VALVE VAULT
M/V	METER VAULT
W/W	WET WELL
GRD	GROUND
XP	EXPLOSION PROOF
LS	LEVEL SENSOR
SV	SOLENOID VALVE
MV	MOTORIZED VALVE
CR	CORROSION RESISTANT

ENCL	ENCLOSURE
CB	CIRCUIT BREAKER
SWD	SWITCHING DUTY
EUH	ELECTRIC UNIT HEATER
S.S.	STAINLESS STEEL
SMS	SCADA MAIN SYSTEM
SRS	SCADA REMOTE STATION
S-S	START - STOP
O-O	ON - 0FF
O-C	OPEN - CLOSE
RTU	REMOTE TERMINAL UNIT
MCP	MAIN CONTROL PANEL
FCC	FILTER CONTROL CONSOLE
ACP	ACTIFLO CONTROL PANEL
CP	CONTROL PANEL
TLR	TIME LAPSE RECORDER
H-O-A	HAND-OFF-AUTO SELECTOR SWITCH
H-O-R	HAND-OFF-REMOTE SELECTOR SWITCH
SL/OT	SEAL LEAK / OVER TEMP.
C.	CONDUIT
R/W	RAW WATER
TOF	TOP OF FILTER
C/EF	COMBINED EFFLUENT

PANEL 'D' (SQUARE D MINI POWER-ZONE; 15KVA)

VOLTAGE 480V TO 120/240V | 1 PHASE 3 WIRE | POLES 18 | MAIN AMPS 60A PRI/80A SEC | MAIN TYPE BREAKER | A. I. RATING 14,000 | MOUNTING NEMA 3R

POLE NO.	BREAKER TRIP	BREAKER P	LOAD SERVED	PHASE LOADS KVA	PHASE LOADS A	PHASE LOADS C	PHASE LOADS KVA	LOAD SERVED	BREAKER TRIP	BREAKER P	POLE NO.
1	20	1	LIGHTS	1.0	2.0		1.0	RECEPTS.	20	1	2
3	20	2	OVERHEAD DOOR	0.6		1.1	0.5	PUMP CONTROLLER	20	1	4
5	---	---	---	0.6	1.1		0.5	PUMP CONTROLLER	20	1	6
7	20	1	EF-1	1.7		2.7	1.0	SPARE	20	1	8
9			SPACE	0.0	1.0		1.0	SPARE	20	1	10
11			SPACE	0.0		0.0	0.0	SPACE			12
13			SPACE					SPACE			14
15			SPACE	0.0	0.0		0.0	SPACE			16
17			SPACE	0.0		0.0	0.0	SPACE			18
				0.0	0.0		0.0				
PHASE TOTALS:					4.1	3.8	TOTAL: 7.9 KVA				

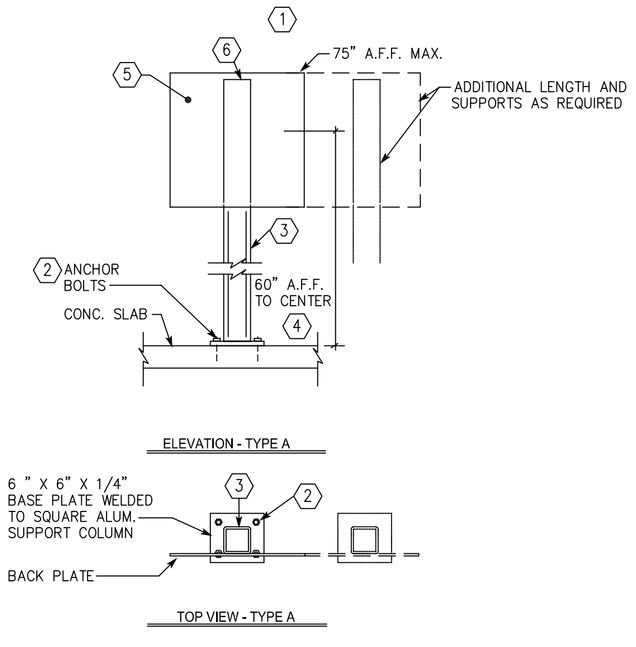
PANEL 'HD'

VOLTAGE 277/480 | 3 PHASE 4 WIRE | POLES 24 | MAIN AMPS 100 | MAIN TYPE BREAKER | A. I. RATING 22,000 | MOUNTING NEMA 3R

POLE NO.	BREAKER TRIP	BREAKER P	LOAD SERVED	PHASE LOADS KVA	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	PHASE LOADS KVA	LOAD SERVED	BREAKER TRIP	BREAKER P	POLE NO.
1	20	3	TRANSFER PUMP	1.4	2.8			1.4	TRANSFER PUMP	20	3	2
3	---	---	---	1.4		2.8		1.4	---	---	---	4
5	---	---	---	1.4			2.8	1.4	---	---	---	6
7	60	3	PANEL 'D' THRU XFMR	7.5	10.0			2.5	UH-1	20	3	8
9	---	---	---	7.5		10.0		2.5	---	---	---	10
11				0.0			2.5	2.5	---	---	---	12
13				0.0	2.5			2.5	UH-2	20	3	14
15				0.0		2.5		2.5	---	---	---	16
17				0.0			2.5	2.5	---	---	---	18
19				0.0	0.0			0.0				20
21				0.0		0.0		0.0				22
23				0.0			0.0	0.0				24
PHASE TOTALS:					15.3	15.3	7.8	TOTAL: 38.4 KVA				

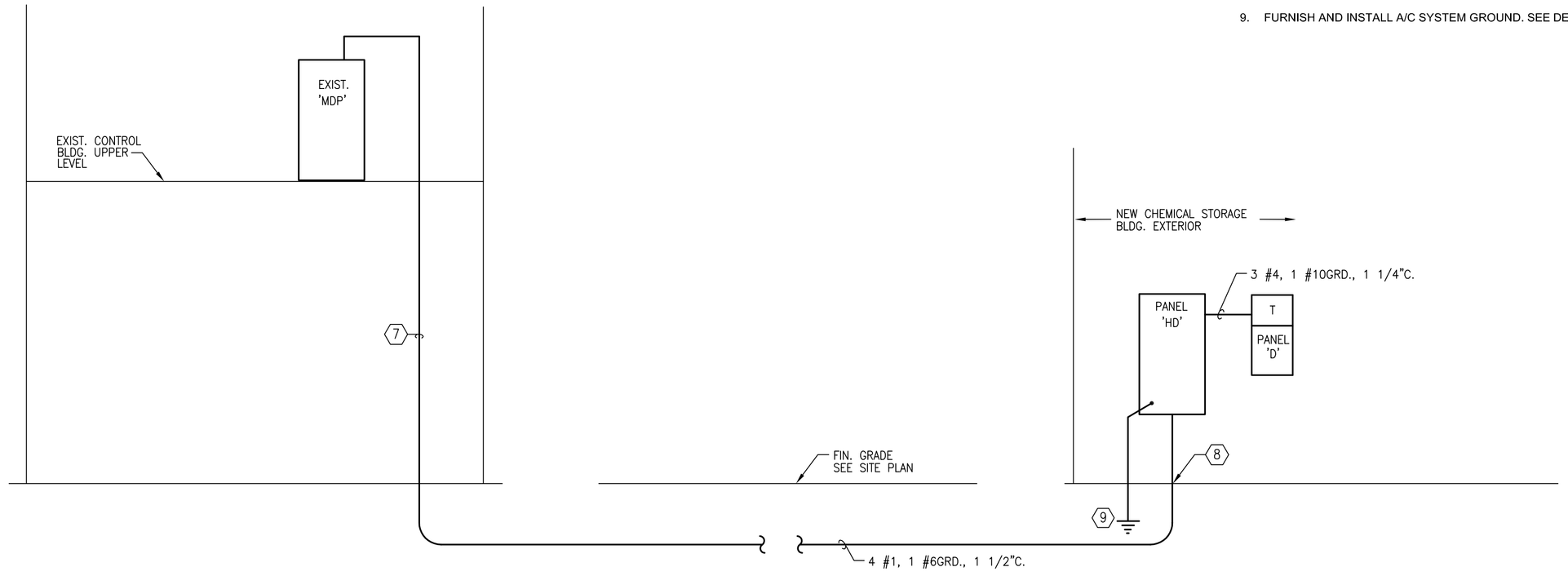
SHEET NOTES

1. ALL PLATES, CHANNELS AND ANGLES SHALL BE ALUMINUM AND SHALL BE WELDED TOGETHER AT ALL EXPOSED JUNCTIONS BETWEEN SEPARATE PIECES USING CONTINUOUS FILLET WELDS.
2. USE 3/8"X4" CADMIUM PLATED ANCHOR BOLTS TO SECURE BASE PLATE TO SLAB. MIN. FOUR ANCHORS PER PLATE.
3. 4"WX4"DX.188"T ALUMINUM COLUMN.
4. BOTTOM OF BASE PLATE SHALL BE PAINTED WITH MIN. 2 COATS OF ASPHALT VARNISH BEFORE INSTALLATION ON CONC. SURFACE.
5. MINIMUM 1/4" THICK ALUMINUM PLATE, SIZE AS REQUIRED PLUS MINIMUM 6" ALL AROUND EQUIPMENT.
6. FURNISH AND INSTALL ALUMINUM TOP CAP AS REQUIRED.
7. COORDINATE ROUTING OF NEW FEEDER UP/THRU EXISTING BUILDING WITH OWNER.
8. CUT AND PATCH EXIST. CONC. SLAB AS REQUIRED. COORDINATE WITH G.C.
9. FURNISH AND INSTALL A/C SYSTEM GROUND. SEE DETAIL ON SHT. E-2.



EQUIPMENT MOUNTING SUPPORT TYPE A

NO SCALE



ONE LINE RISER DIAGRAM

NO SCALE

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

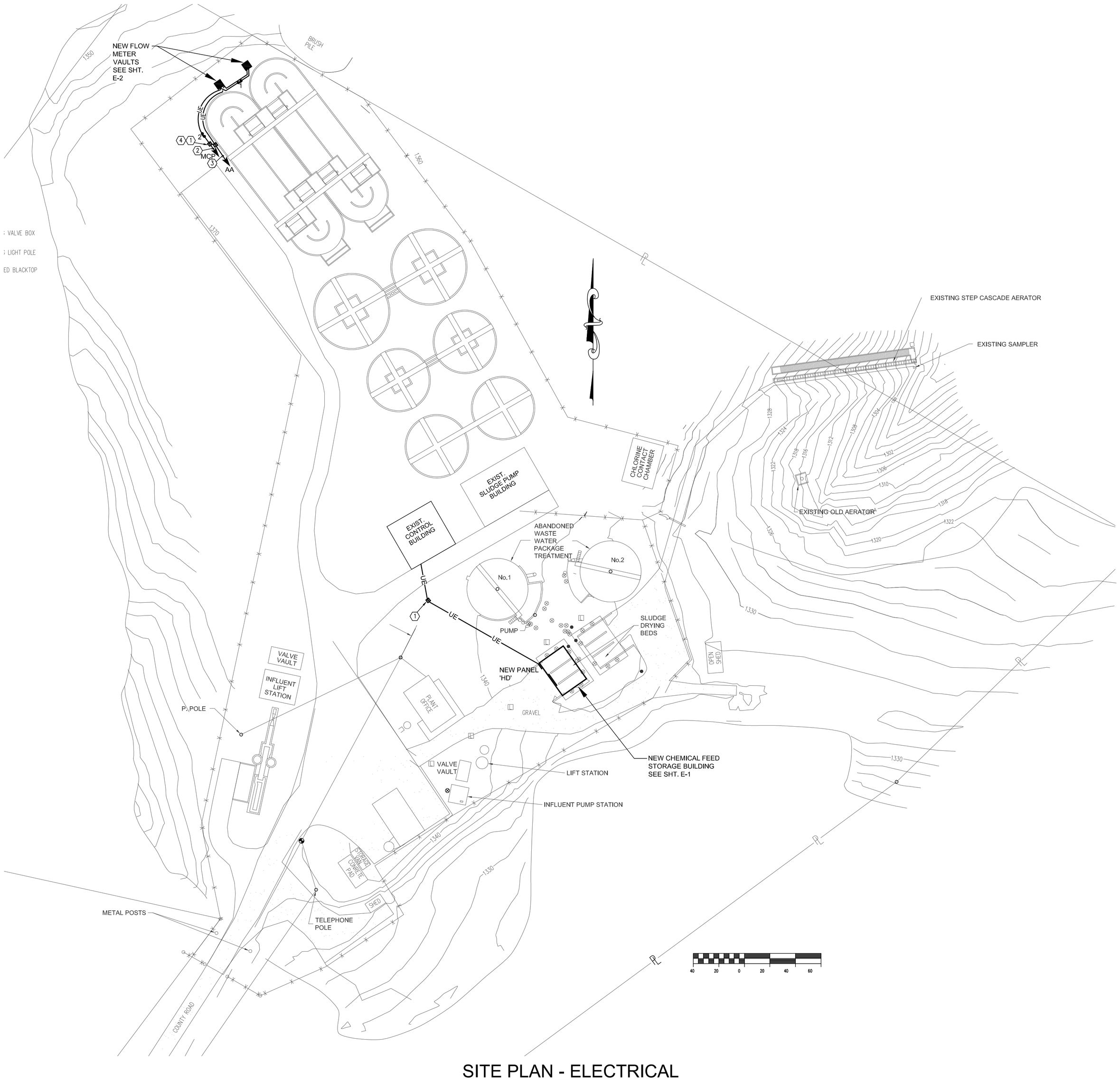
DESCRIPTION: LEGEND, SCHEDULES & RISER ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO.	1315
DATE:	APRIL 2014
DRAWN BY:	TN
CHECKED BY:	
CHECKED BY:	TW
SCALE:	AS NOTED

SHEET: E-3

STATE OF KENTUCKY THOMAS B. WILSON, JR. 9017 LICENSED PROFESSIONAL ENGINEER



SHEET NOTES

1. FURNISH AND INSTALL PULL BOXES AS REQUIRED.
2. 2 T/S PAIR CABLES, 1 1/4"C TO 'MCP' IN CONTROL BUILDING.
3. 2 #8, 1 #10GRD., 1"C. TO EXISTING PANEL IN CONTROL BUILDING.
4. CONTRACTOR MAY AT HIS OPTION RUN CONDUITS EXPOSED ALONG SIDEWALL OF EXISTING OXIDATION DITCH, INSTALL EXPANSION FITTINGS EVERY 75' C.C. (MIN. 2 REQUIRED).

GENERAL NOTES

1. ALL CONDUIT, ABOVE EXTERIOR GRADE TO 18" BELOW GRADE SHALL BE RIGID ALUMINUM UNLESS OTHERWISE NOTED.
2. ALL ELECTRICAL EQUIPMENT, WIRE AND CONDUIT REMOVED DURING CONSTRUCTION OF THIS PROJECT SHALL BECOME THE PROPERTY OF THE OWNER AND SHALL BE STORED AS DIRECTED.
3. THE EXISTING CONDITIONS AS SHOWN ON THESE PLANS HAVE BEEN FORMULATED THROUGH REVIEW OF OLD PLANS, DISCUSSIONS WITH CITY PERSONNEL AND DATA GATHERED BY FIELD SURVEYS.
4. THE CONTRACTOR SHALL VERIFY EXISTING AND FINAL CONTOURS AND ELEVATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING LINES, ELECTRICAL CONDUITS AND ANY OTHER ITEMS THAT WILL BE EFFECTED BY THE CONSTRUCTION OF ELECTRICAL SYSTEMS FOR THIS PROJECT.
6. CONTRACTOR SHALL FURNISH AND INSTALL PULL BOXES, BOTH INTERIOR AND EXTERIOR INCLUDING GRADE MOUNT, AS REQUIRED FOR ALL POWER AND CONTROL CIRCUITS.
7. CONTRACTOR SHALL REFER TO OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL ELECTRICAL REQUIREMENTS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR POWER AND CONTROL CIRCUITS AND CONNECTION OF ALL MECHANICAL DAMPERS AT LOUVERS AND EXHAUST FANS AS REQUIRED FOR OPERATION WITH RESPECTIVE EXHAUST FAN.
9. SUBMISSION OF A PRICE FOR BIDDING SHALL BE CONSTRUED AS EVIDENCE THAT THE CONTRACTOR HAS VISITED THE SITE PRIOR TO BIDDING AND FAMILIARIZED HIMSELF WITH THE EXISTING SITE/BUILDING LOCATIONS AND CONDITIONS INVOLVED WITH THE NEW AND/OR EXISTING EQUIPMENT AND CIRCUITING INSTALLATIONS REQUIRED.

SITE PLAN - ELECTRICAL

Scale: 1"=40'

AFA ENGINEERING, LLC
CONSULTING ENGINEERS
HVAC – PLUMBING – ELECTRICAL
706 WESTLAND DRIVE
LEXINGTON, KENTUCKY 40504
PHONE (859) 255-4437

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

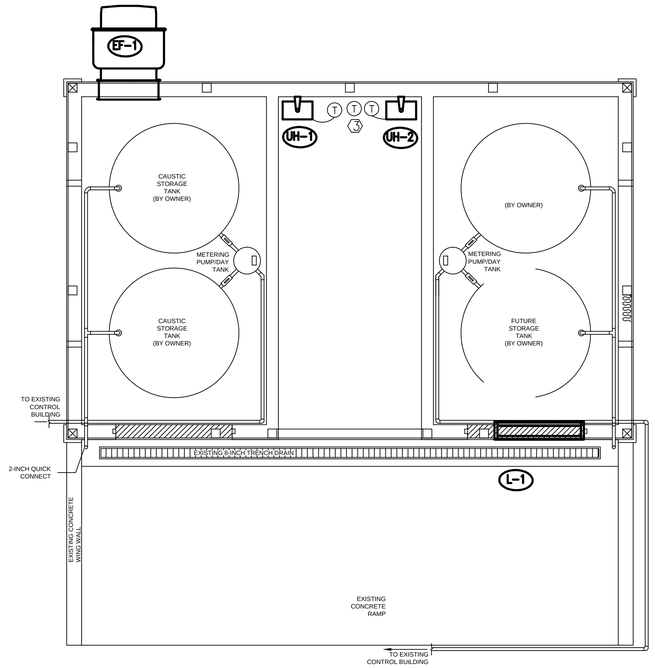
DESCRIPTION: CHEMICAL STORAGE BUILDING SITE PLAN – ELECTRICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO. 1315
DATE: APRIL 2014
DRAWN BY: TN
CHECKED BY:
CHECKED BY: TW
SCALE: AS NOTED

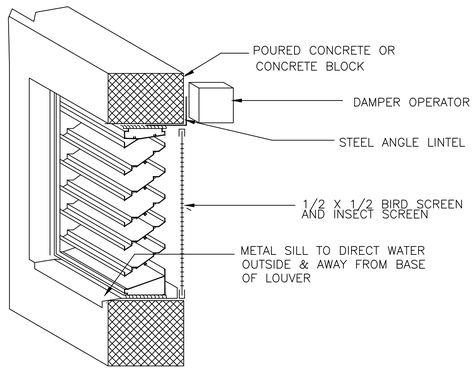
SHEET: ES-1

STATE OF KENTUCKY THOMAS B. WILSON, JR. 9017 LICENSED PROFESSIONAL ENGINEER



FLOOR PLAN – MECHANICAL

1/4"=1'-0"



NOTES:

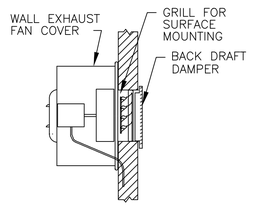
1 CAULK AND SEAL AROUND PERIMETER OF LOUVER SECTION AT WALL

2 PROVIDE ALUMINUM OR GALV EXPANDED BIRD EXCLUSION SCREEN.

3 CONSTRUCT EXTRUDED LOUVER OF NON–FERROUS CORROSION RESISTANT MATERIAL AND SECURE WITH SS OR ALUMINUM FASTENERS

OPPERABLE LOUVER, OUTSIDE AIR INLET.

NTS 15943–A3



NOTES:

1 WHERE BACK DRAFT DAMPER IS FURNISHED AS PART OF FAN ARRANGEMENT, VERIFY INSTALLATION IN WALL CAN PROPERLY ACCOMMODATE BACK DRAFT OPERATION WITH SURFACE MOUNTED GRILL AS SHOWN

2 MOUNT BOTTOM OF FAN AT 7'–6" ABOVE FINISHED FLOOR.

WALL MOUNTED CENTRIFUGAL EXHAUST FAN

NTS 15870–B1

LOUVER SCHEDULE

MARK	WIDTH (IN)	HEIGHT (IN)	MATERIAL	SERVICE	MFGR & MODEL	REMARKS
L–1	36	48	ALUMINUM	INTAKE	GREENHECK 401	1–3

REMARKS:

1. ANODIZED ALUMINUM, COLOR SELECTED BY ARCHITECT
2. FIXED DRAINABLE BLADES, LOW WATER INDUCTION, SLOPED SILL, ALUMINUM BIRD SCREEN.
3. HYPRO Z FINISH.
4. 120 VOLT, INTERLOCK WITH EF–1.

EXHAUST FAN SCHEDULE

MARK	CFM	S.P. IN H2O	SONES	H.P.	ELEC	TYPE	DRIVE		MODEL	REMARKS
EF–1	3000	.25	14.8	3/4	115/60/1	SIDEWALL	DIRECT		CW–161	1–6

REMARKS:

1. FURNISH DIRECT DRIVE CENTRIFUGAL UP BLAST ROOF WALL FAN.
2. FURNISH WITH BIRD SCREEN.
3. FURNISH WITH DISCONNECT SWITCH AND INTERNAL SPEED CONTROL.
4. FURNISH WITH GRAVITY BACKDRAFT DAMPER.
5. MODEL BASED ON GREENHECK.
6. FURNISH WITH HYPROZ FINISH.

ELECTRIC UNIT HEATERS

MARK	DAYTON MODEL	ELECTRICAL			REMARKS
		KW	VOLT/PH	AMPS	
UH–1	27U66	7.5	480/3	9.2	1
UH–2	27U66	7.5	480/3	9.2	1

REMARKS:

1. SEE SPECIFICATION, THIS SHEET.

DIVISION 15 SPEC

EXHAUST FAN (EF-1)
Furnish and install wall mounted direct drive centrifugal type exhaust fan and gravity damper. Greenheck Model Number CW-161.

PERFORMANCE
3/4 horsepower 3,000 cfm at .25" static pressure.

CONTROLS
Wall Mounted line voltage cooling only thermostat.

LOUVER (L-1)
Greenheck 401, combination louver/damper, 36" by 48" by 6" deep. 120 volt damper operator. Damper shall open 30 seconds before exhaust fan starts and close when exhaust fan is off. Use vinyl blade seals.

ELECTRIC UNIT HEATER (EUH-1)
Fan forced Dayton 2YU66, 7 1/2 kw 480 volt 3 phase, 2YV16 wall mounting bracket, Wall mount thermostat with 24 volt relay 2YU90.

KEYNOTES:

1. MOUNT WALL THERMOSTAT 48" A.F.F. WHERE INDICATED. CONFIRM PROPER EQUIPMENT CONTROL.
2. PROVIDE THERMOSTAT AS NOTED IN SPECIFCATIONS, THIS SHEET. ROUTE WIRING BACK TO UNIT AND CONFIRM PROPER UNIT CONTROL.
3. WALL MOUNT LINE VOLTAGE THERMOSTAT COUPLED WITH END SWITCH MOUNTED ON ONE OF THE LOUVER BLADES. MOUNT SWITCH TO COMPLETE CIRCUIT WHEN DAMPER IS 50% OPEN. FAN, WIRED IN SERIES WITH END SWITCH, WILL OPERATE. WHEN THERMOSTAT IS SATISIFIED DAMPER IS TO CLOSE AND FAN STOP.
4. MOUNT BOTTOM OF HEATER AT 7'-6" AFF.
5. MOUNT BOTTOM OF FAN AT 7'-6" AFF.
6. MOUNT BOTTOM OF LOUVER AT 16" AFF.

CHEMICAL STORAGE BUILDING - MECHANICAL

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

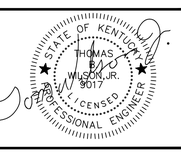
Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: CHEMICAL STORAGE BUILDING MECHANICAL

CUSTOMER: McCREARY COUNTY WATER DISTRICT McCREARY COUNTY, KENTUCKY

PROJECT NO. 1315
DATE: APRIL 2014
DRAWN BY: --
CHECKED BY:
CHECKED BY: TW
SCALE: AS NOTED

SHEET: M–1



RAW WATER BOOSTER PUMP STATION
ROOF HATCH INSTALLATION
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

ALTERNATE NO. 3

TABLE OF CONTENTS

COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
DOUG SEXTON, SECRETARY
MAYNARD NEW
COY TAYLOR
TONY JONES

MANAGER/SUPERINTENDENT

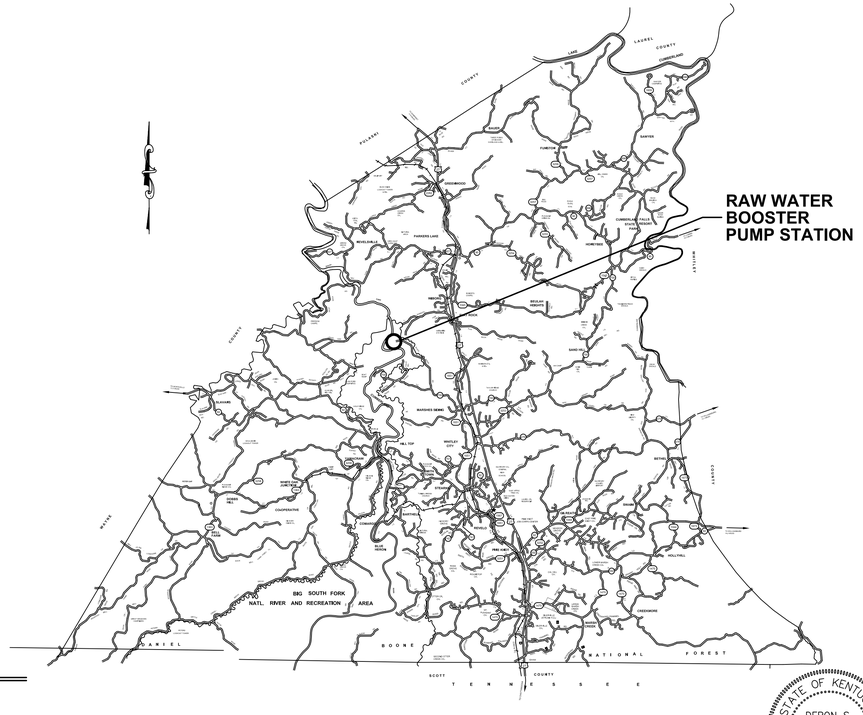
STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER

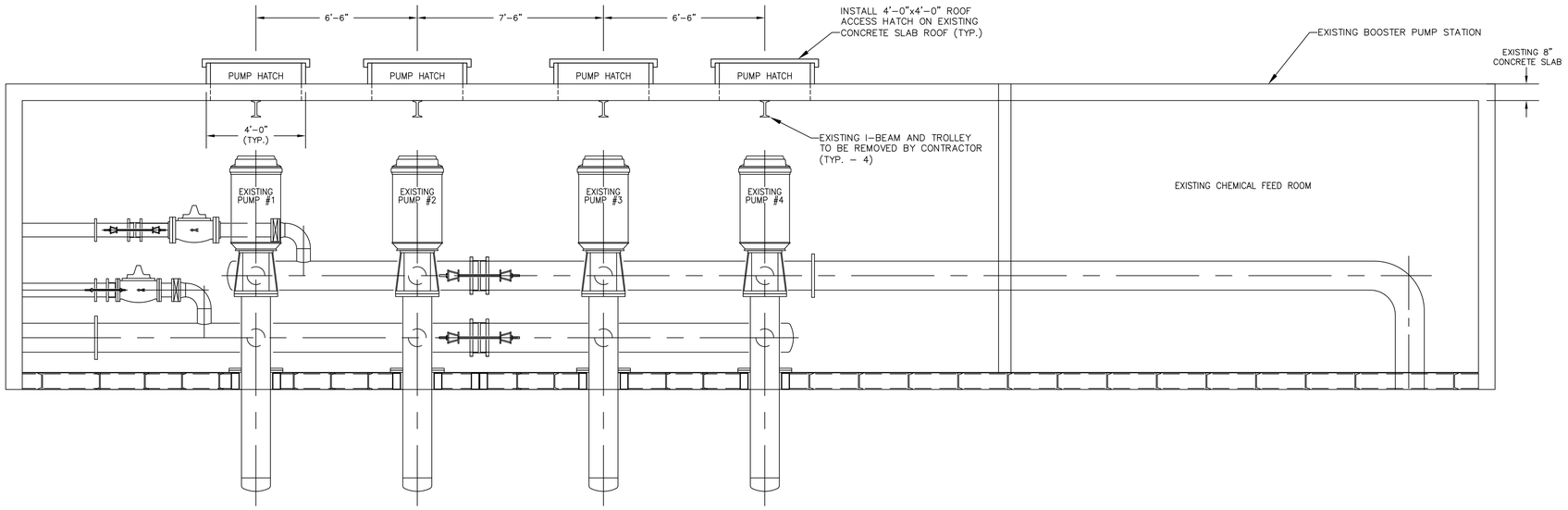
APRIL 2014

LOCATION MAP



Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



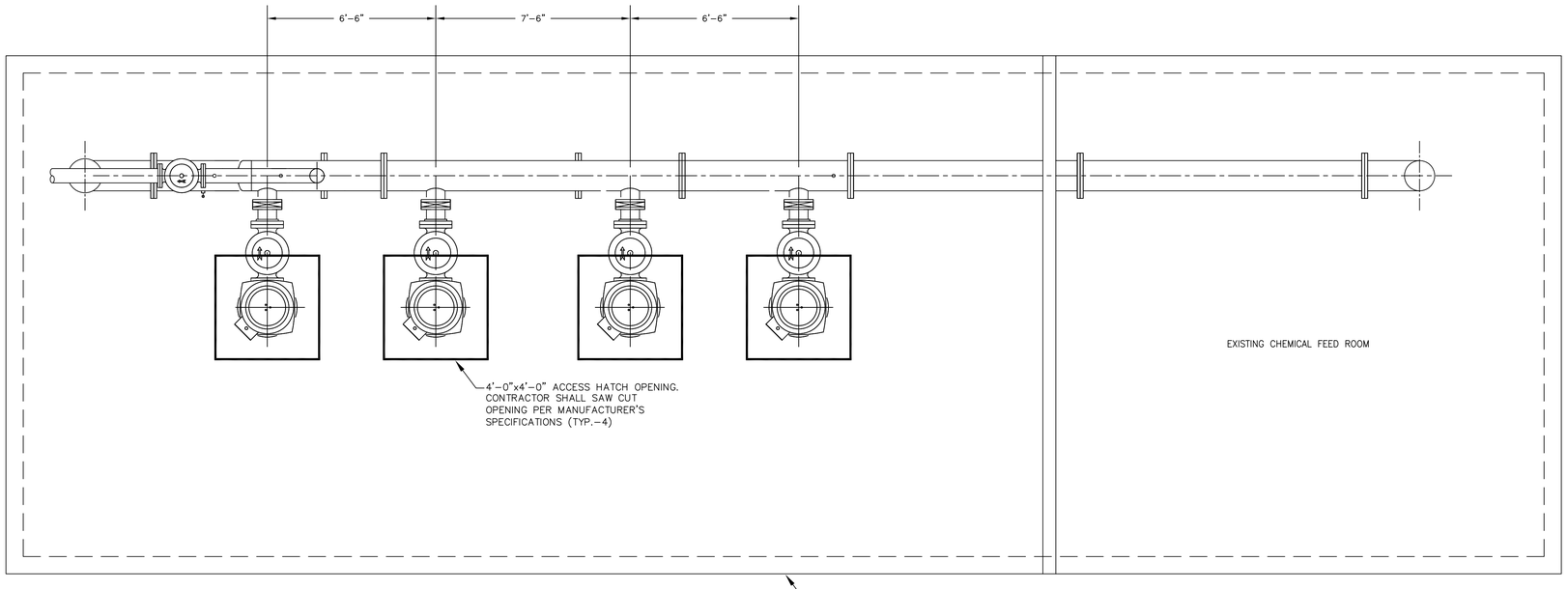
ELEVATION VIEW – ROOF HATCH LAYOUT

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

NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING INTERIOR ELECTRICAL CONDUIT AND LIGHTING, AS REQUIRED.
2. CONTRACTOR SHALL REMOVE EXISTING I-BEAM AND TROLLEY ABOVE EACH EXISTING PUMP MOTOR.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING LOCATION OF ROOF HATCHES CENTERED ABOVE EACH EXISTING PUMP MOTOR.

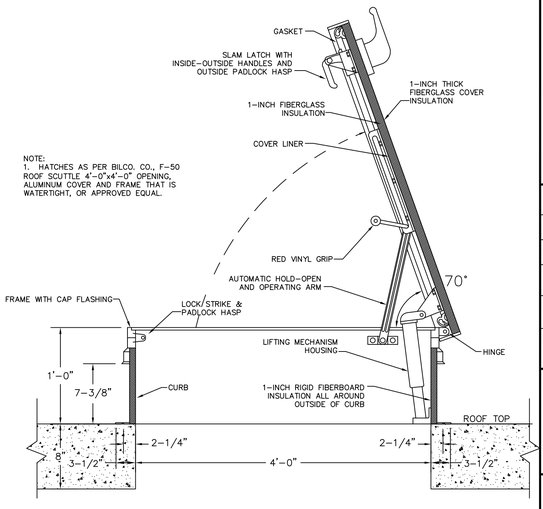
EXISTING RAW WATER BOOSTER PUMP STATION

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



ROOF HATCH LAYOUT

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



NOTE:
1. HATCHES AS PER BILCO. CO., F-50 ROOF SCUTTLE 4'-0"x4'-0" OPENING, ALUMINUM COVER AND FRAME THAT IS WATERTIGHT, OR APPROVED EQUAL.

RAW WATER BOOSTER PUMP STATION ROOF HATCH DETAIL

N. T. S.

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION:
RAW WATER BOOSTER PUMP STATION
ROOF HATCH INSTALLATION

CUSTOMER:
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO. 1314
DATE: APRIL 2014
DRAWN BY: JRC
CHECKED BY: DSB
CHECKED BY: DMB
SCALE: AS NOTED

SHEET:
RH-1

FEDERAL PRISON MASTER METER
McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

ALTERNATE NO. 4

TABLE OF CONTENTS

COMMISSIONERS

RAYMOND TAYLOR, CHAIRMAN
DOUG SEXTON, SECRETARY
MAYNARD NEW
COY TAYLOR
TONY JONES

MANAGER/SUPERINTENDENT

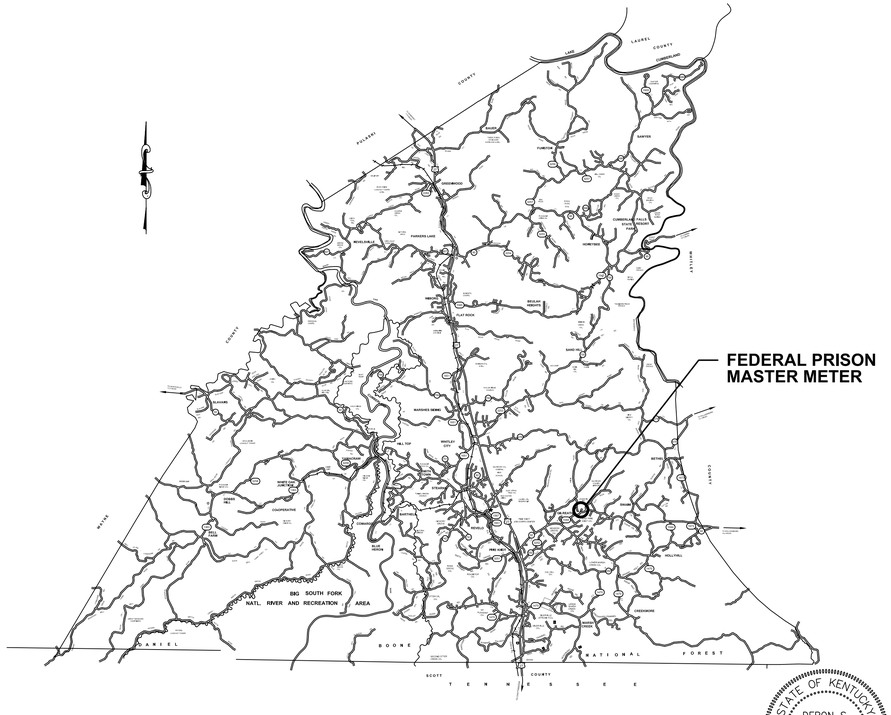
STEPHEN T. OWENS

LOCAL COUNSEL

TIM LAVENDER

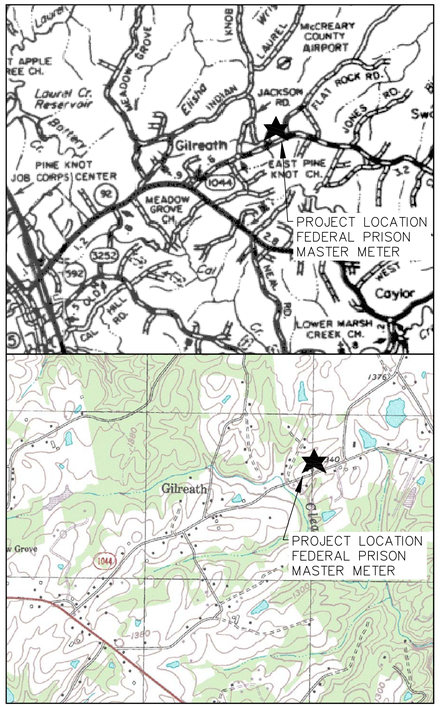
APRIL 2014

LOCATION MAP

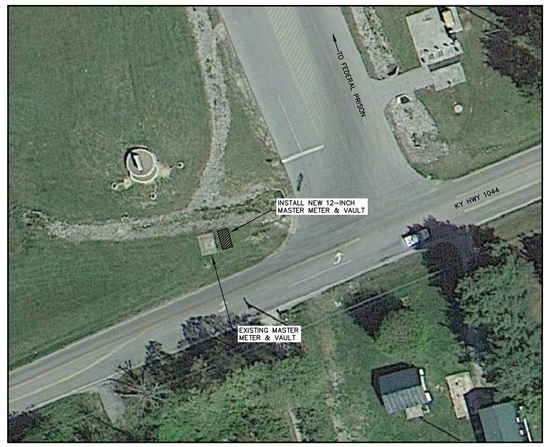


Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER



VICINITY MAPS

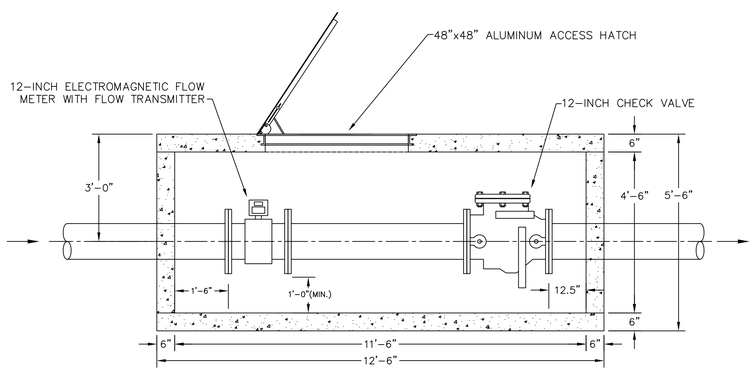


AERIAL PLAN VIEW

N.T.S.

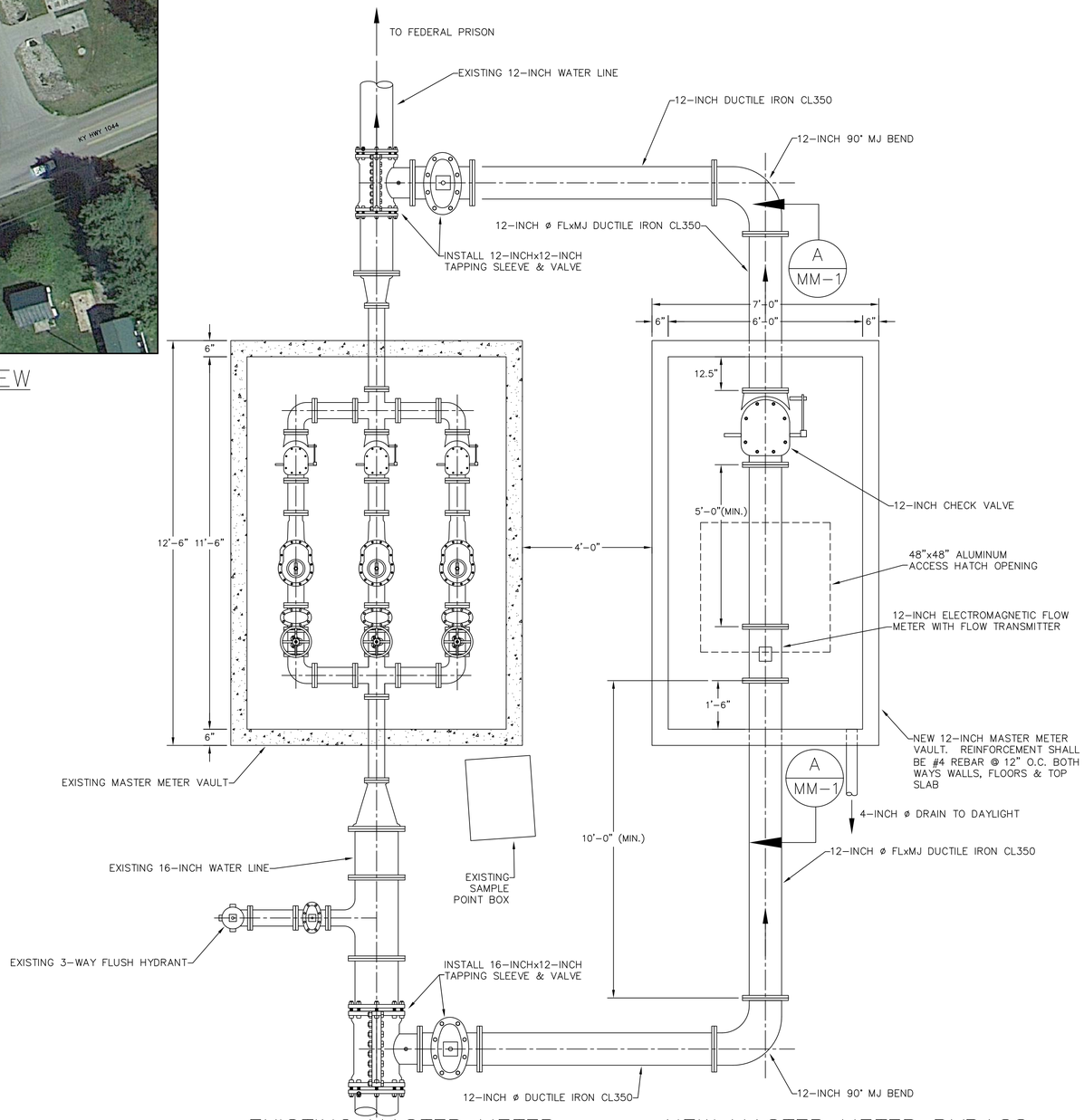
NOTES:

1. ALL INSIDE PIPING & FITTINGS SHALL BE 12-INCH DUCTILE IRON.
2. VAULT SHALL BE 6-INCH THICK CLASS A CONCRETE WITH #4 BARS 12-INCH O.C. BOTH WALLS, ALL WALLS, FLOORS AND SLABS.



SECTION A / MM-1

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



EXISTING MASTER METER

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

NEW MASTER METER BYPASS

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

Monarch Engineering, Inc.
556 CARLTON DRIVE
LAWRENCEBURG, KY 40342

DESCRIPTION: PRISON MASTER METER VAULT

CUSTOMER: McCREARY COUNTY WATER DISTRICT
McCREARY COUNTY, KENTUCKY

PROJECT NO.	1314
DATE:	APRIL 2014
DRAWN BY:	JRC
CHECKED BY:	DSB
CHECKED BY:	DMB
SCALE:	AS NOTED

SHEET: MM-1

STATE OF KENTUCKY
DERON S. BYRNE
23127
LICENSED PROFESSIONAL ENGINEER