

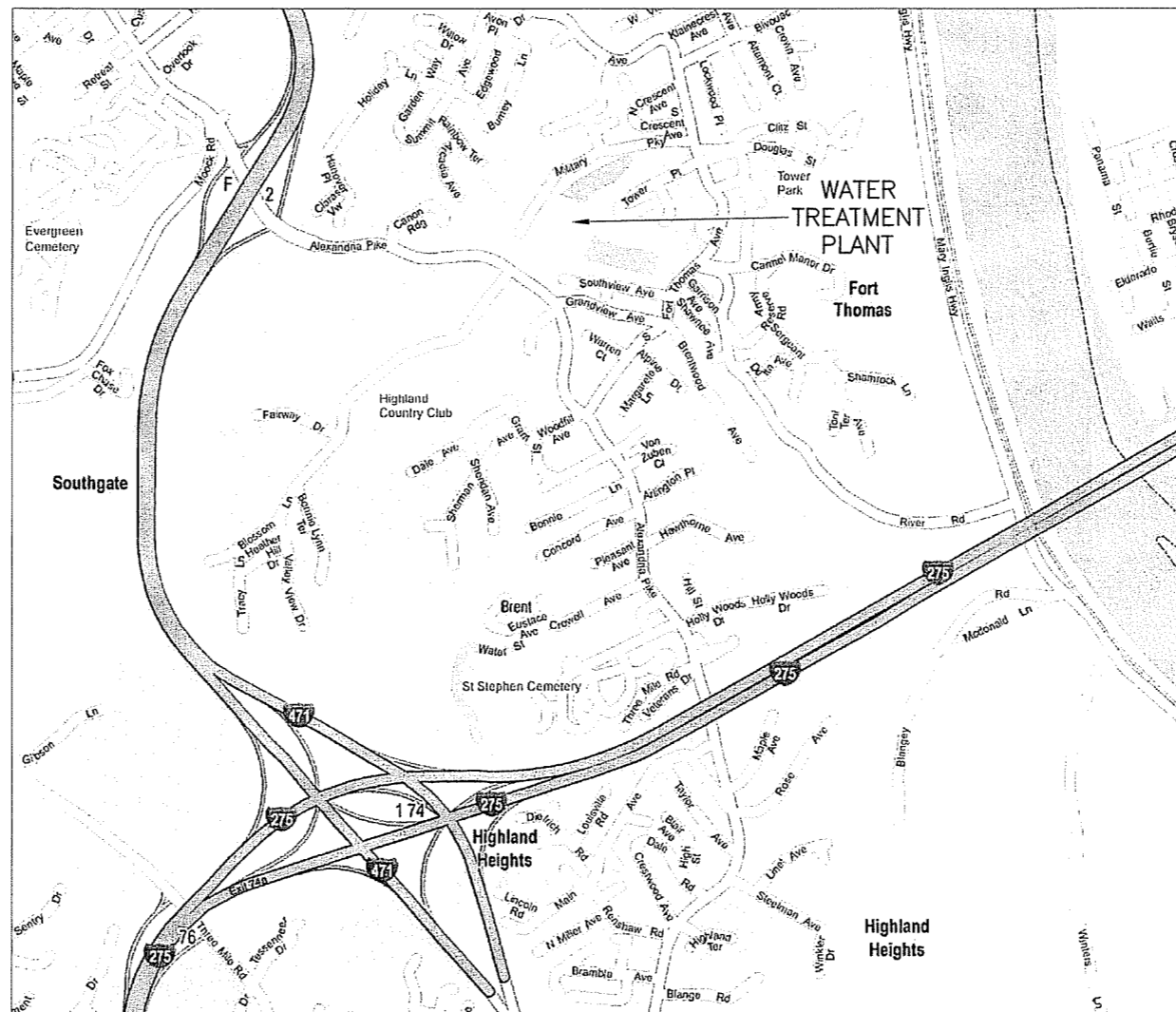
NORTHERN KENTUCKY WATER DISTRICT FORT THOMAS TREATMENT PLANT FILTER RENOVATIONS

COMMISSIONERS

FRED MACKE, JR. - CHAIR
 ANDREW C. COLLINS - VICE-CHAIR
 JOE KOESTER - SECRETARY
 DOUG WAGNER - TREASURER
 PAT SOMERKAMP - COMMISSIONER
 FRANK JACKSON - COMMISSIONER

RON LOVAN - PRESIDENT/CEO

CHARLES PANGBURN - ATTORNEY

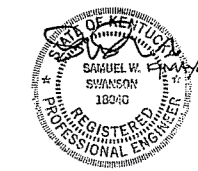


DRAWING INDEX	
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17	FFTP FILTER BUILDING PIPE GALLERY ELECTRICAL DEMOLITION PLAN
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19	ELECTRICAL NOTES, SYMBOLS AND DETAILS
20	ELECTRICAL DIAGRAMS CLARIFIER PLC CP-5

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2009-00255

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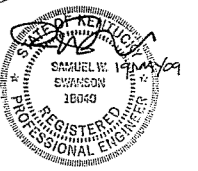
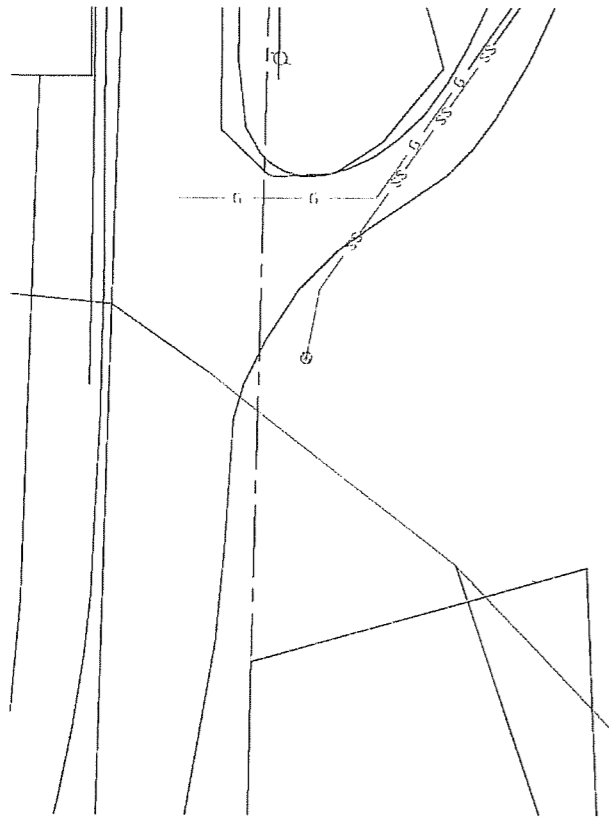
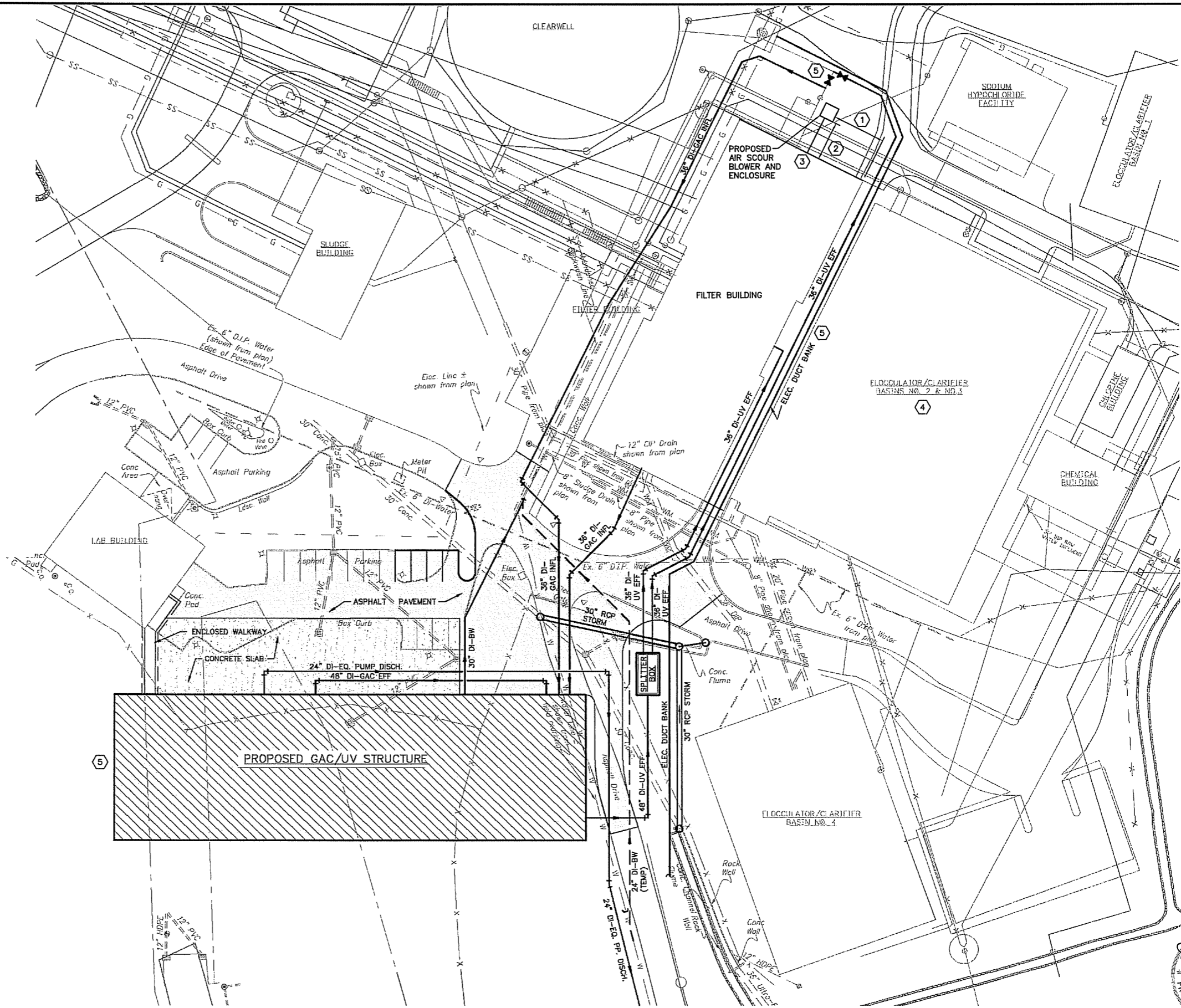
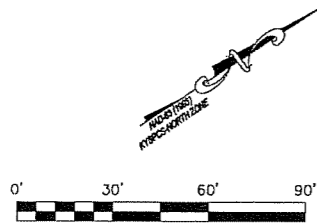


NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS

JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

TITLE		SCALE:
		NONE
SHEET NO.	OF	
1	20	

- CODED NOTES:**
- ① SEE SHEET 10 FOR DIMENSION FROM NORTHEAST CORNER OF EXISTING BUILDING TO CENTERLINE OF NEW AIR SCOUR SUPPLY LINE.
 - ② SEE SHEET 10 FOR DIMENSION FROM FACE OF EXISTING BUILDING TO NEW CONCRETE BLOWER PAD.
 - ③ DURING BLOWER AND AIR PIPING INSTALLATION, TEMPORARILY RELOCATE TWO AIR CONDITIONING UNITS, CONCRETE PAD MOUNTS AND ALL SUPPORT PIPING, INSULATION, CONDUITS, AND CONDUCTORS. UNITS SHALL REMAIN OPERABLE DURING RELOCATION. PLACE ALL COMPONENTS BACK TO ORIGINAL LOCATIONS AND OPERABLE CONDITIONS FOLLOWING BLOWER AND AIR PIPING INSTALLATION.
 - ④ BASIN COVERING PROJECT MAY BE CONDUCTED CONCURRENTLY WITH FILTER RENOVATIONS PROJECT.
 - ⑤ GAC/UV PROJECT CONSTRUCTION, INCLUDING YARD PIPING AND ELECTRICAL DUCT BANKS IN THE VICINITY OF THE FILTER BUILDING, MAY BE CONDUCTED CONCURRENTLY WITH FILTER RENOVATIONS PROJECT.



NO.	REVISIONS	DATE	BY	CHK.



**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

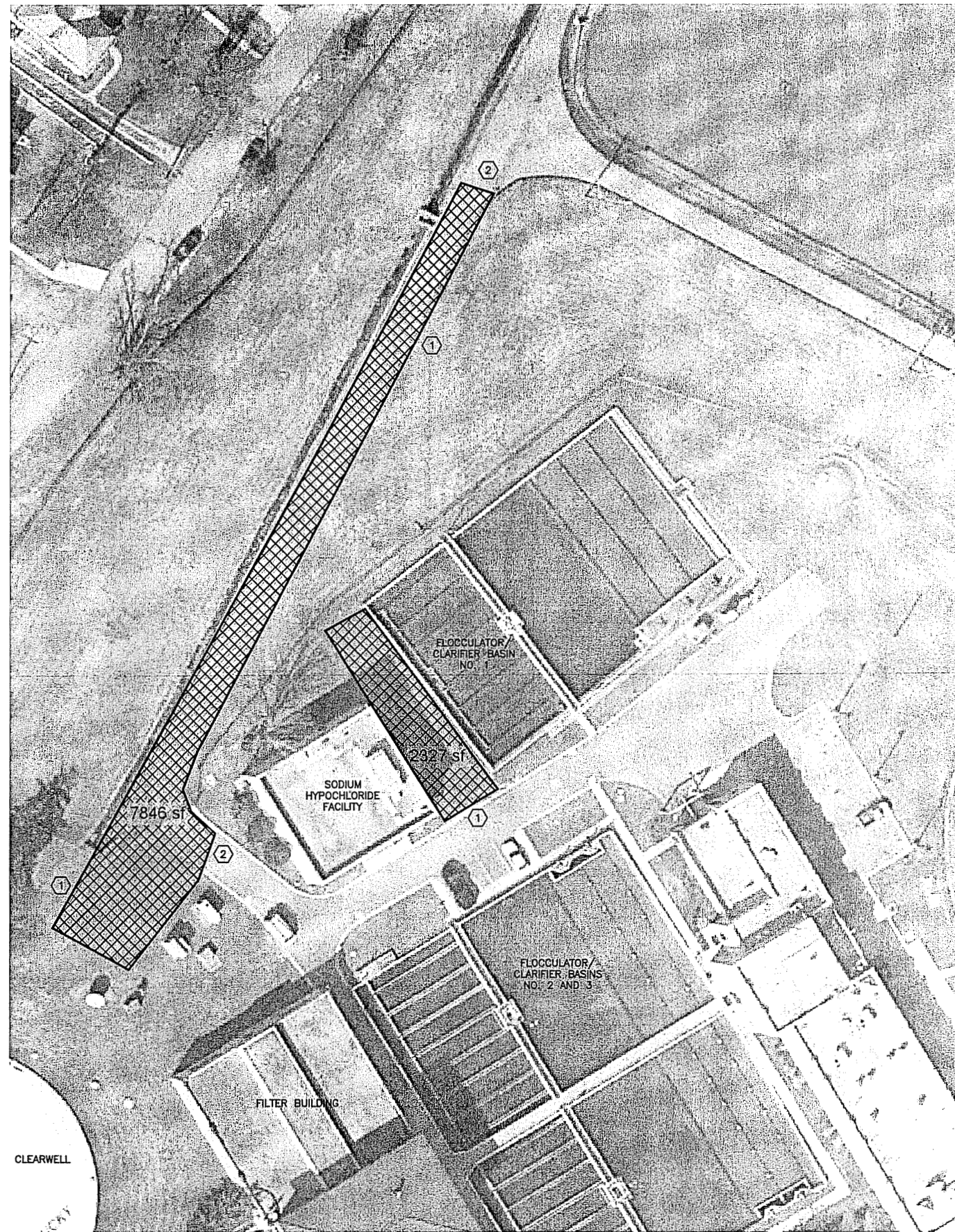
JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

SITE PLAN

SCALE:	1"=30'
SHEET NO.	2
OF	20

CODED NOTES:

- ① PROPOSED CONTRACTOR STAGING AREA. OBTAIN OWNER APPROVAL FOR SPECIFIC USE OF EACH AREA PRIOR TO PLACEMENT OF TRAILERS, PIPING RACKS, UNDERDRAIN PALLETS, AND MEDIA CONTAINERS.
- ② DURING ALL CONSTRUCTION OPERATIONS, INSURE THAT ONE LANE IS PASSABLE (BY DISTRICT PICK-UP TRUCKS) ALONG ENTIRE LENGTH OF RESERVOIR ACCESS ROAD.



NO.	REVISIONS	DATE	BY	CHK.

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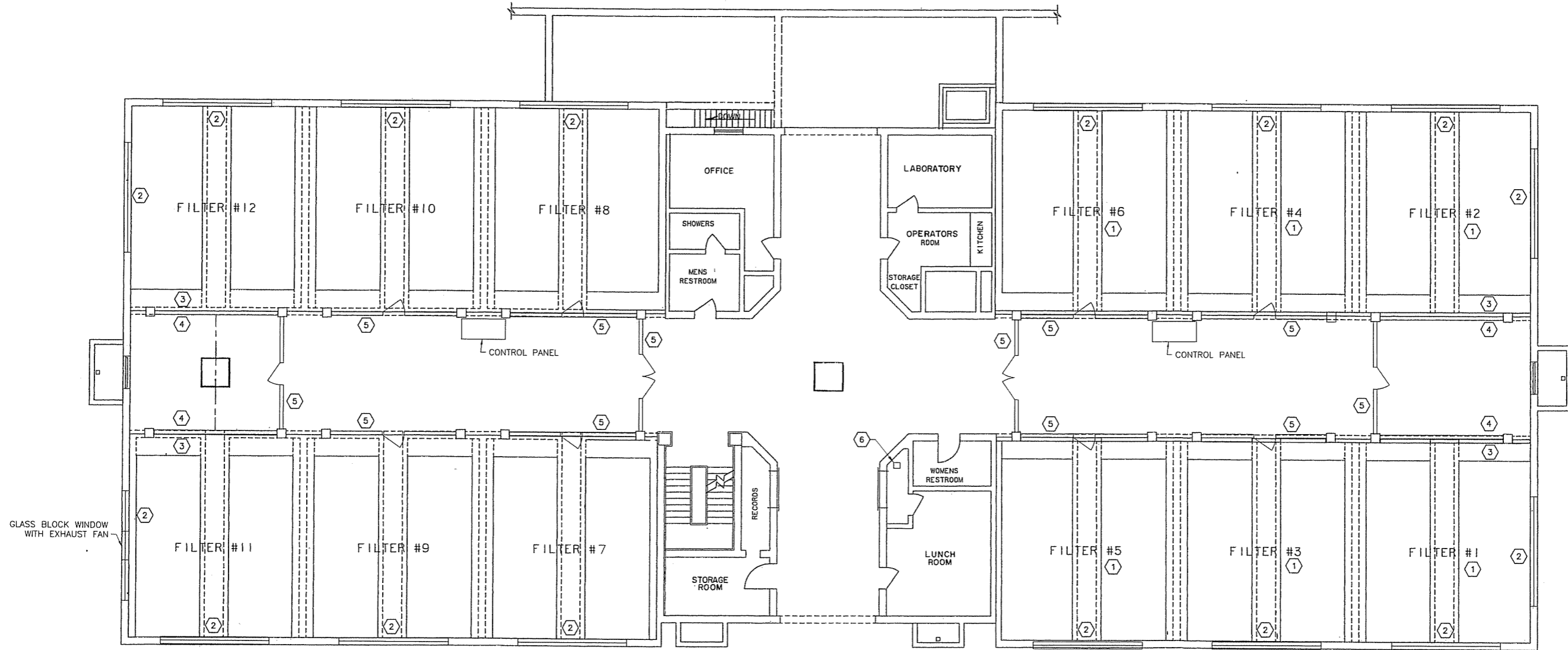


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

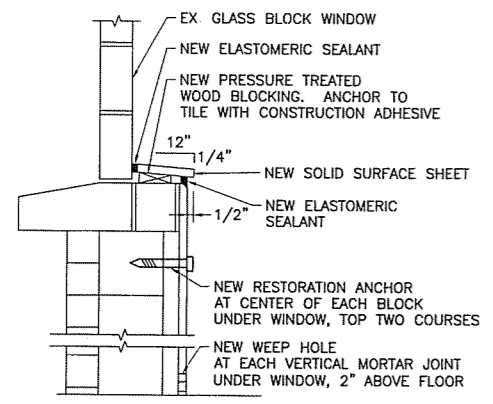
JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

CONTRACTOR STAGING LOCATION PLAN

SCALE:	
1"=30'±	
SHEET NO.	OF
3	20



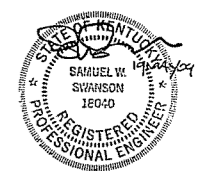
GLASS BLOCK WINDOW WITH EXHAUST FAN



WINDOW SILL DETAIL
SCALE: NONE

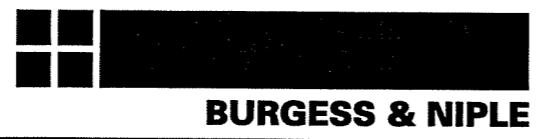
FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

- CODED NOTES:**
- (1) PAINT ABOVE-WATER CONCRETE SURFACES (ELEVATION 775.0 AND ABOVE) WITH SHERWIN-WILLIAMS SW4026 SLATE GRAY (2-PART EPOXY, B672001 AND B67V2002) TO MATCH FILTER BAYS 7-12. PRIOR TO PAINT APPLICATION, PREPARE SURFACES PER SPECIFICATIONS.
 - (2) INSTALL TYPE 316 SST RESTORATION ANCHORS TO STABILIZE LOOSE TILE BELOW EACH WINDOW. REPOINT OR REPAIR MISSING OR CRACKED MORTAR AFTER STABILIZATION. INSTALL SOLID SURFACE SHEET (IMPERVIOUS PLASTIC, ABS OR FRP) OVER EACH WINDOW SILL THAT SLOPES TOWARDS FILTER BAY, PER DETAIL ON THIS SHEET. SEAL SHEET WITH ELASTOMERIC SEALANT WITH BACKER ROD AROUND ALL EDGES, PER SPECIFICATIONS. REPAIR TILES BELOW WINDOW, PER OWNER DIRECTION, UNDER ALLOWANCE ITEM.
 - (3) REMOVE ENTIRE EXISTING GYPSUM INFILL WALL SURFACE IN FILTER ROOM, WHILE MAINTAINING EXISTING METAL STUD SUPPORT SYSTEM (2"x6" STUDS SPACED ON 24" CENTERS) AND FOAM PANEL INSULATION SYSTEM. INSTALL NEW VAPOR RETARDER OVER EXISTING STUDS AND INSTALL NEW COATED 1/2"-THICK GYPSUM PANELS, PER SPECIFICATIONS. SEAL PANELS WITH PAINT SYSTEM SUITABLE FOR WATER SERVICE, PER SPECIFICATIONS, AND MATCHING OWNER-SELECTED OFF-WHITE COLOR. SEAL WALL/FLOOR INTERSECTION WITH ELASTOMERIC SEALANT, PER SPECIFICATIONS.
 - (4) EXISTING STUD WALL WITH GYPSUM WALL BOARD.
 - (5) EXISTING GLASS STORE FRONT WALL.
 - (6) EXISTING CLARIFIER PLC CP-5.



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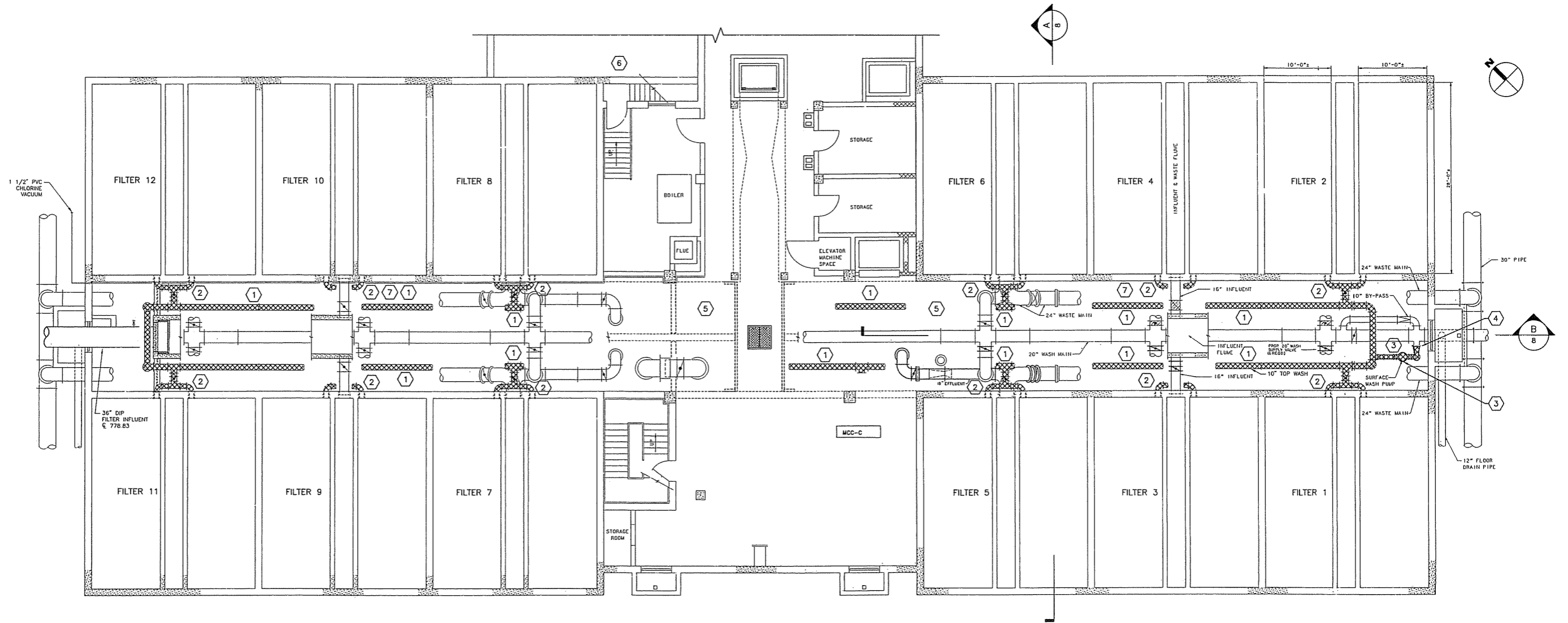


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

**FTTP FILTER BUILDING
FIRST FLOOR RENOVATION PLAN**

SCALE:	NONE
SHEET NO.	4
OF	20



CODED NOTES:

- ① REMOVE 10" TOP WASH DIP SUPPLY PIPE, FITTINGS, SUPPORTS, HANGERS, AND ALL ASSOCIATED APPURTENANCES IN PIPE GALLERY.
- ② REMOVE 8" TOP WASH DIP FITTINGS, SUPPORTS, ISOLATION VALVES AND OPERATORS, AND ALL ASSOCIATED APPURTENANCES. LEAVE ELECTRICAL AND CONTROL CONDUIT AND CONDUCTORS INTACT FOR REUSE. ACCESS PANEL IN FIRST FLOOR CAN BE REMOVED TO FACILITATE WORK, PROVIDED OPENING IS PROPERLY CORDONED AND MARKED.
- ③ REMOVE SURFACE WASH PUMP AND ASSOCIATED DIP PIPING, FITTINGS, VALVES, SUPPORTS, AND CONNECTION HARDWARE. REMOVE ELECTRICAL CONDUIT AND CONDUCTION TO WALL AND PROPERLY TERMINATE IN JUNCTION BOX.
- ④ PROVIDE NEW 10" BUTTERFLY VALVE AND NEW 10" DIP BLIND FLANGE TO CAP EXISTING 20" WASH MAIN CROSS.
- ⑤ DISPOSE OF ALL REMOVED ITEMS THAT OWNER DOES NOT WANT OFF WTP SITE AT A PROPER DISPOSAL FACILITY. STOW OWNER-RETAINED ITEMS AT WTP SITE LOCATION AS INDICATED BY OWNER.
- ⑥ EQUIPMENT AND MATERIALS ACCESS TO PIPE GALLERY LIMITED TO 42"x49" ROADWAY HATCH AND 38.5" WIDE PERSON DOOR LEADING FROM STORAGE ROOM.
- ⑦ PROTECT EXISTING CONTROL AND POWER CONDUITS DURING DEMOLITION OF EXISTING PIPING AND INSTALLATION OF NEW PIPING. CONDUIT POSITION ON EXISTING SUPPORTS CAN BE ADJUSTED WITH OWNER'S ASSISTANCE AND DIRECTION. EXISTING SMALL-DIAMETER GREEN-PAINTED WATER LINES MAY ALSO BE REROUTED IF NECESSARY PENDING OWNER'S DIRECTION AND APPROVAL. USE SCHEDULE 80 PVC FOR NEW WATER LINES.



NO.	REVISIONS	DATE	BY	CHK.

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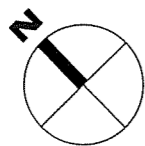


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

**FTTP FILTER BUILDING
PIPE GALLERY DEMOLITION PLAN**

SCALE:	1/8"=1'-0"
SHEET NO.	5
OF	20



2 3 4 5
FILTER 12

2 3 4 5
FILTER 10

2 3 4 5
FILTER 8

BOILER

FLUE

36" DIP FILTER
INFLUENT
@ EL. 778.83

1 4
10" TOP WASH

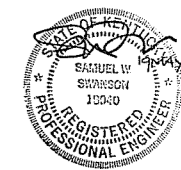
30" DIP

2 3 4 5
FILTER 11

2 3 4 5
FILTER 9

2 3 4 5
FILTER 7

STORAGE
ROOM



CODED NOTES:

- 1 REMOVE GALLERY PIPING AND COMPONENTS AS PER SHEET 5 DETAILS.
- 2 REMOVE FILTER BLOCK UNDERDRAIN, FILTER MEDIA (SAND, GARNET, ANTHRACITE) AND GRAVEL.
- 3 REMOVE SURFACE WASH ARM, AND SURFACE WASH HEADERS, INCLUDING WALL BRACKETS AND FASTENERS.
- 4 DISPOSE OF ALL REMOVED ITEMS THAT OWNER DOES NOT WANT OFF WTP SITE AT A PROPER DISPOSAL FACILITY. STOW OWNER-RETAINED ITEMS AT WTP SITE LOCATION AS INDICATED BY OWNER.
- 5 WORK MUST BE UNDERTAKEN SUCH THAT FIVE FILTERS IN THIS BANK OF 6 (FILTERS 7-12) ARE ALWAYS PROVIDING FILTERED WATER.

FILTER BLOCK UNDERDRAIN

SURFACE WASH HEADER (ONE PER BAY)

18" FIBERGLASS TROUGHS (TYP OF 4 PER BAY)

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**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

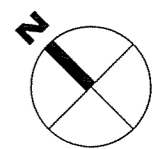
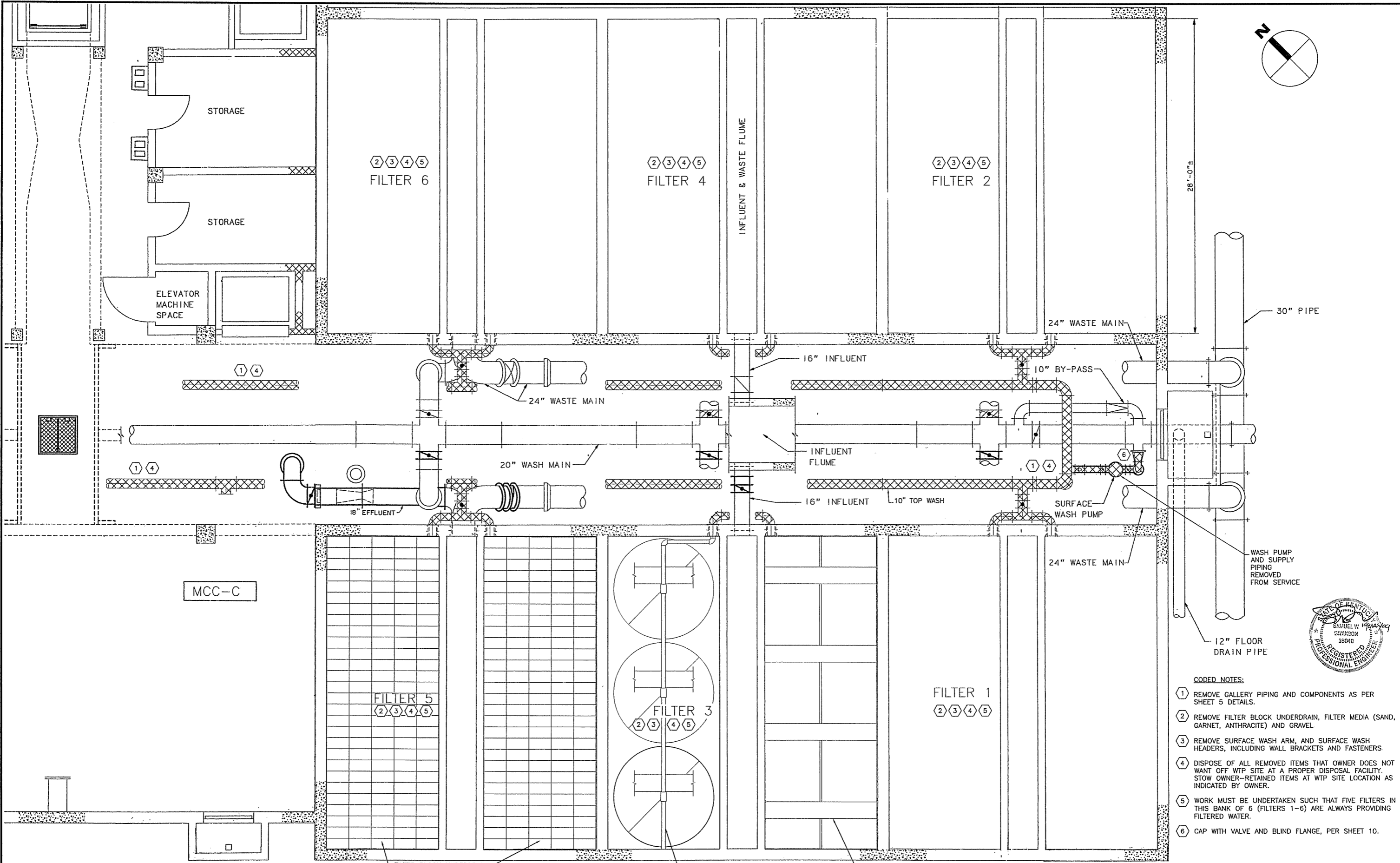
JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

**FTTP FILTER BUILDING
NORTH BASEMENT DEMOLITION PLAN**

SCALE:	1/4"=1'-0"
SHEET NO.	6
OF	20

PLOTTED: 5/19/2009 11:03:57 AM

P:\PR46779\cadd\7 FB SOUTH BSMT DEMO PLAN.dwg 5/14/2009 12:58:01 PM Doss, Colleen



28'-0"±

30" PIPE

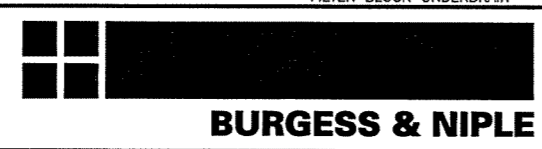
WASH PUMP AND SUPPLY PIPING REMOVED FROM SERVICE

12" FLOOR DRAIN PIPE



- CODED NOTES:**
- ① REMOVE GALLERY PIPING AND COMPONENTS AS PER SHEET 5 DETAILS.
 - ② REMOVE FILTER BLOCK UNDERDRAIN, FILTER MEDIA (SAND, GARNET, ANTHRACITE) AND GRAVEL.
 - ③ REMOVE SURFACE WASH ARM, AND SURFACE WASH HEADERS, INCLUDING WALL BRACKETS AND FASTENERS.
 - ④ DISPOSE OF ALL REMOVED ITEMS THAT OWNER DOES NOT WANT OFF WTP SITE AT A PROPER DISPOSAL FACILITY. STOW OWNER-RETAINED ITEMS AT WTP SITE LOCATION AS INDICATED BY OWNER.
 - ⑤ WORK MUST BE UNDERTAKEN SUCH THAT FIVE FILTERS IN THIS BANK OF 6 (FILTERS 1-6) ARE ALWAYS PROVIDING FILTERED WATER.
 - ⑥ CAP WITH VALVE AND BLIND FLANGE, PER SHEET 10.

NO.	REVISIONS	DATE	BY	CHK.

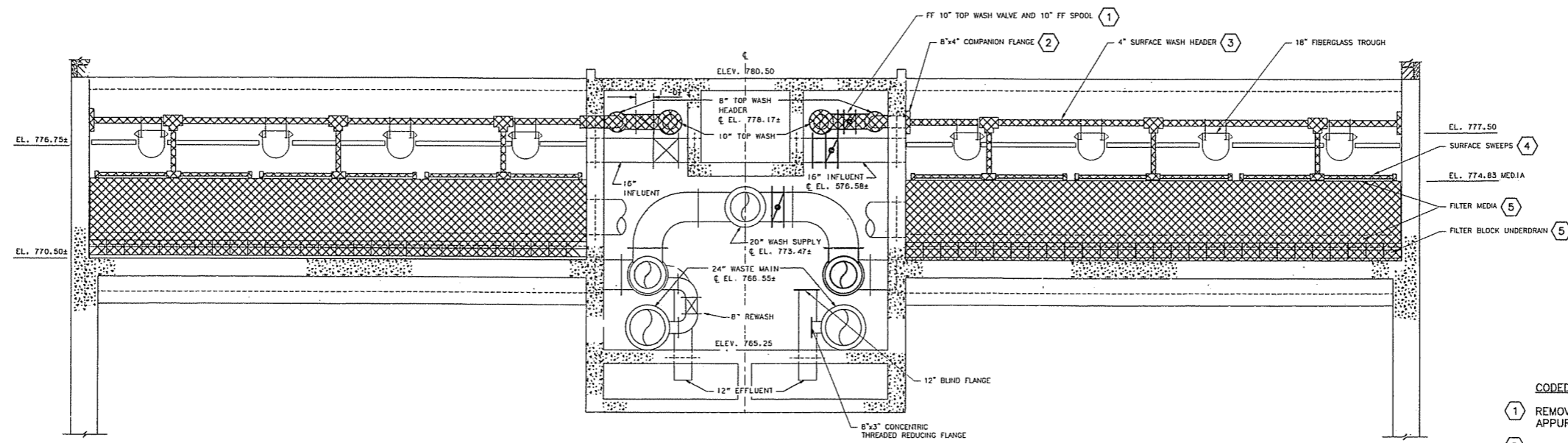


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

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DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

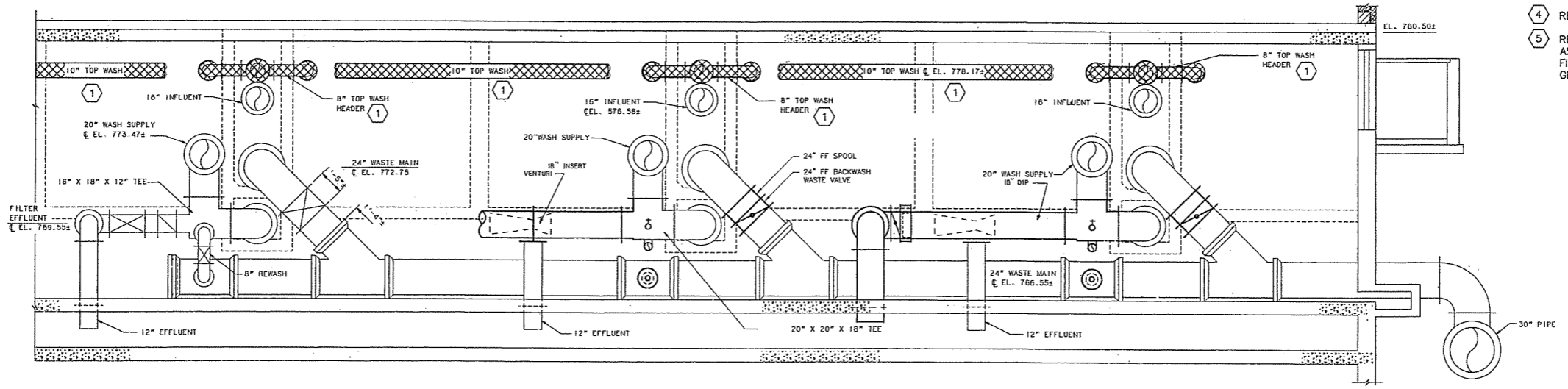
**FTTP FILTER BUILDING
SOUTH BASEMENT DEMOLITION PLAN**

SCALE:	1/4"=1'-0"
SHEET NO.	7
OF	20



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

- CODED NOTES:**
- 1 REMOVE GALLERY PIPING, EQUIPMENT, AND APPURTENANCES PER DETAILS ON SHEETS 5, 6 AND 7.
 - 2 REMOVE WALL PIPE COMPANION FLANGE, AND 4" SURFACE WASH HEADER CONNECTION.
 - 3 REMOVE 4" SURFACE WASH HEADER, FASTENERS, AND WALL PIPE SUPPORT PLATE, PER DETAIL ON SHEET 9. SEAL MOUNTING HOLES IN FILTER BAY WALL FROM SUPPORT PLATE FASTENER REMOVAL.
 - 4 REMOVE SURFACE SWEEP PIPING.
 - 5 REMOVE FILTER MEDIA AND FILTER BLOCK UNDERDRAIN AS PER DETAILS ON SHEETS 6 AND 7. REPAIR EACH FILTER BAY BASE SLAB AND WALLS WITH NON-SHRINK GROUT, PER SPECIFICATIONS.



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

NO.	REVISIONS	DATE	BY	CHK.

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**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

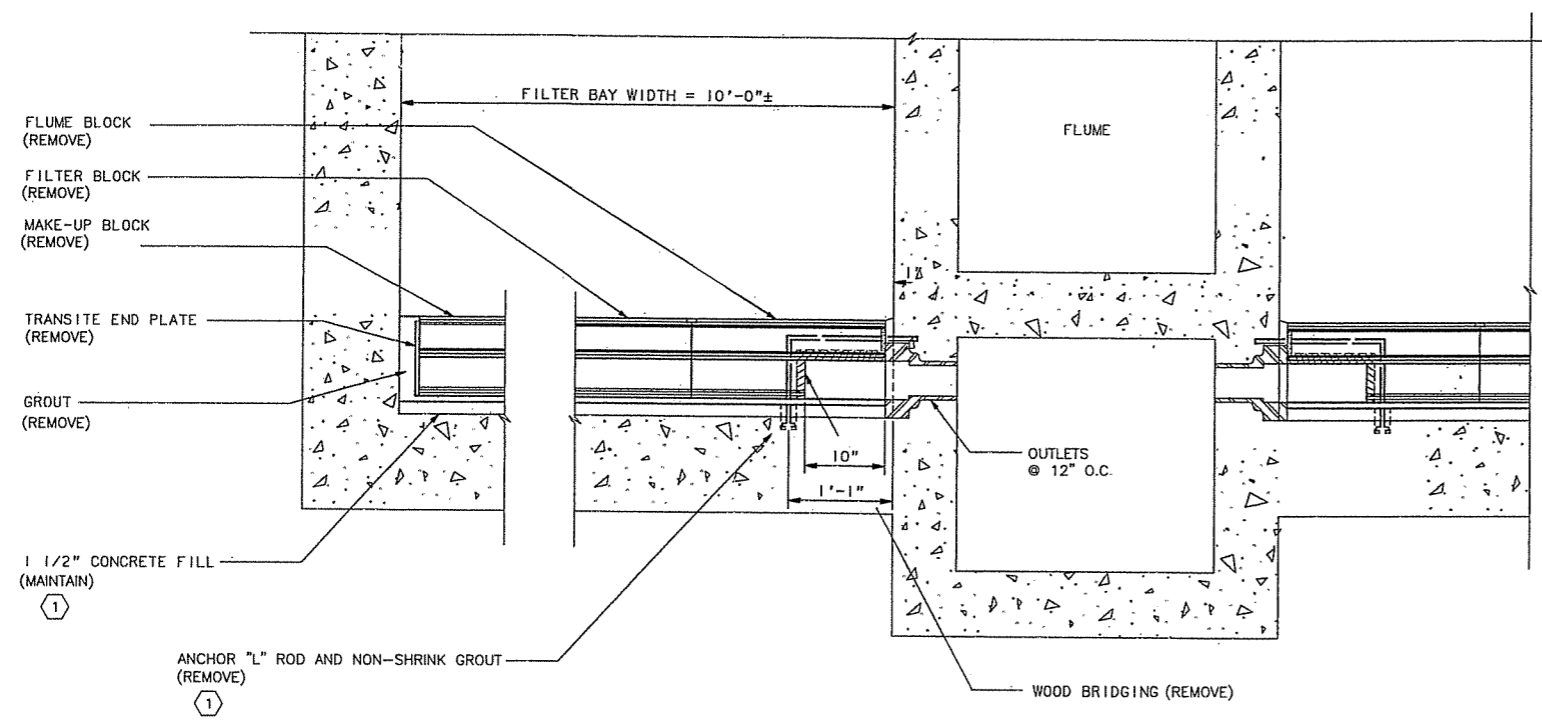
JOB NO.	PR46779
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DATE:	MAY 2009

**FFTP FILTER BUILDING
DEMOLITION SECTIONS**



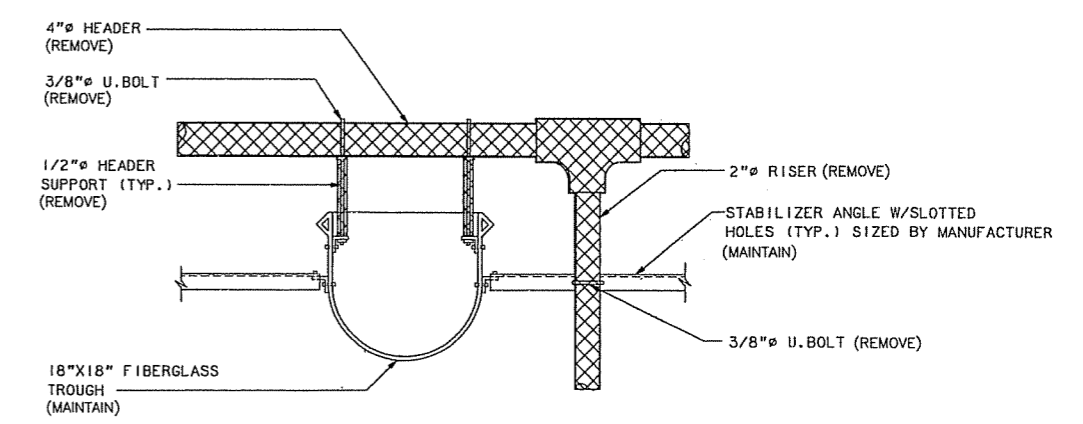
SCALE: 1/4"=1'-0"	
SHEET NO. 8	OF 20

PLOTTED: 5/19/2009 11:03:25 AM



EXISTING FILTER UNDERDRAIN
SCALE: 1" = 1'-0"

CODED NOTES:
① REPAIR VOIDS, CRACKS, AND OTHER DAMAGE TO CONCRETE SURFACE CAPPING FLOOR WITH NON-SHRINK GROUT, PER SPECIFICATIONS. TYPICAL OF 24 FILTER BAYS.



EXISTING BRACING FOR WASH TROUGH AND SURFACE WASH PIPE
SCALE: 1" = 1'-0"

P:\PR46779\cadd\9 FB RECONV DETAILS.dwg 5/14/2009 12:57:51 PM Doss, Colleen



NO.	REVISIONS	DATE	BY	CHK.

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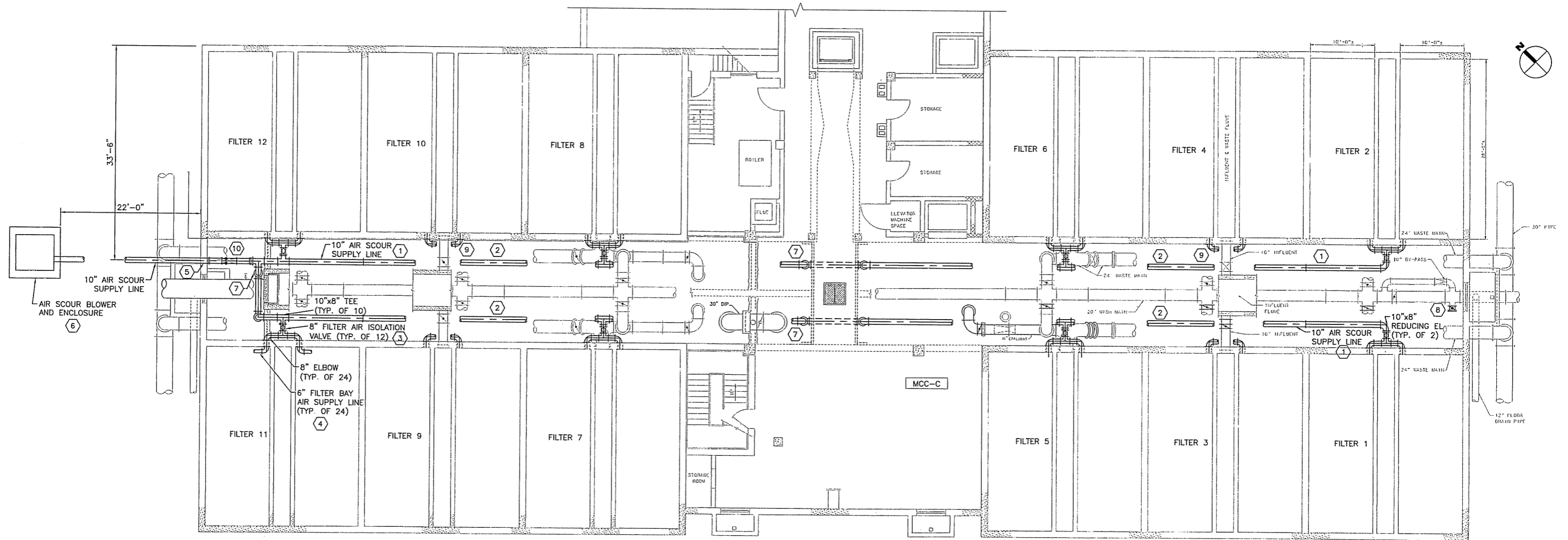


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

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CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

**FFTP FILTER BUILDING
FILTER RENOVATION DETAILS**

SCALE: 1" = 1'-0"	
SHEET NO. 9	OF 20



CODED NOTES:

- ① ROUTE 10" TYPE 304L SCHEDULE 10 SST AIR SUPPLY LINE IN VICINITY OF SPACE PREVIOUSLY OCCUPIED BY 10" SURFACE WASH (TOP WASH) HEADER. PROVIDE NEW PIPE HANGERS, PER ROD AND CLEVIS DETAIL ON SHEET 16, AND INSTALL PER SPECIFICATIONS.
- ② INSULATE ALL EXPOSED 10" AIR PIPING, AND SMALLER DIAMETER PIPING, SUCH AS CONDENSATE DRAINS, THAT ARE INSTALLED AT OR BELOW ELEVATION 776.25. INSULATE PIPE PER SPECIFICATIONS.
- ③ PROVIDE FLANGED 8" PLUG VALVE, PER SPECIFICATIONS, COMPLETE WITH ELECTRIC ACTUATOR. POWER AND CONTROL ACTUATOR WITH EXISTING CONDUCTORS AND CABLES HOUSED IN EXISTING CONDUITS.
- ④ PROVIDE FILTER BAY WALL PENETRATION PER DETAIL ON SHEET 14. PROVIDE FILTER BAY PIPING PER SHEETS 11, 12, AND 14.
- ⑤ PROVIDE FILTER BUILDING WALL PENETRATION PER DETAIL ON SHEET 15.
- ⑥ PROVIDE BLOWER PER DETAIL ON SHEET 15.
- ⑦ PROVIDE CONDENSATE DRAIN PER DETAIL ON SHEET 15.
- ⑧ PROVIDE 10" BUTTERFLY VALVE WITH MANUAL OPERATOR AND 10" BLIND FLANGE.
- ⑨ INSULATE EXPOSED AIR PIPING, FITTINGS, AND VALVES IN VICINITY OF EXISTING CONTROL AND ELECTRICAL PVC CONDUITS SERVING CONTROL PANELS. INSULATE AIR PIPING COMPONENTS FROM WALL PENETRATION TO 2' BELOW OR BEYOND NEAREST VERTICAL OR HORIZONTAL EXISTING PVC CONDUIT SEGMENT.
- ⑩ PROVIDE FLOW METER PER DETAILS ON SHEETS 11 AND 18.

NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc. CINCINNATI, OHIO



**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

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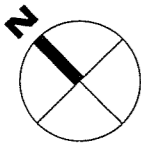
**FFTP FILTER BUILDING
PIPE GALLERY AIR PIPING PLAN**

SCALE:	
1/8"=1'-0"	
SHEET NO.	OF
10	20



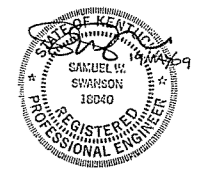
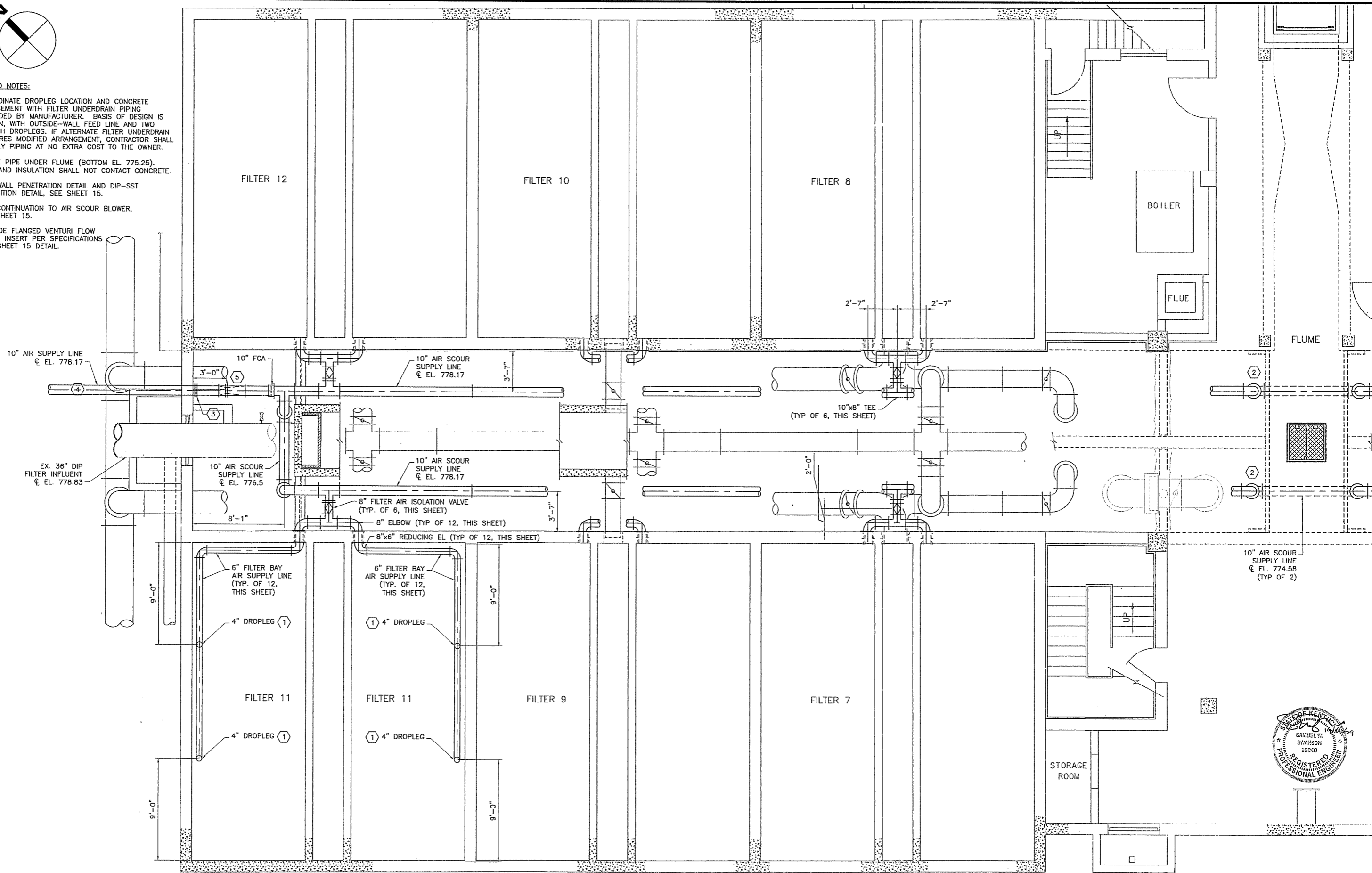
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P:\PR46779\cadd\11 FB NORTH BSMT RENOVATION PLAN.dwg 5/19/2009 9:29:44 AM Dess, Colleen



CODED NOTES:

- ① COORDINATE DROPLEG LOCATION AND CONCRETE ENCASEMENT WITH FILTER UNDERDRAIN PIPING PROVIDED BY MANUFACTURER. BASIS OF DESIGN IS SHOWN, WITH OUTSIDE-WALL FEED LINE AND TWO 4-INCH DROPLEGS. IF ALTERNATE FILTER UNDERDRAIN REQUIRES MODIFIED ARRANGEMENT, CONTRACTOR SHALL SUPPLY PIPING AT NO EXTRA COST TO THE OWNER.
- ② ROUTE PIPE UNDER FLUME (BOTTOM EL. 775.25). PIPE AND INSULATION SHALL NOT CONTACT CONCRETE.
- ③ FOR WALL PENETRATION DETAIL AND DIP-SST TRANSITION DETAIL, SEE SHEET 15.
- ④ FOR CONTINUATION TO AIR SCOUR BLOWER, SEE SHEET 15.
- ⑤ PROVIDE FLANGED VENTURI FLOW METER INSERT PER SPECIFICATIONS AND SHEET 15 DETAIL.



NO.	REVISIONS	DATE	BY	CHK.



BURGESS & NIPL

**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

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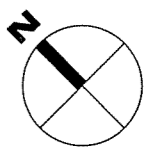
**FTFB FILTER BUILDING
NORTH BASEMENT FILTER RENOVATION PLAN**

SCALE:	1/4"=1'-0"
SHEET NO.	11
OF	20

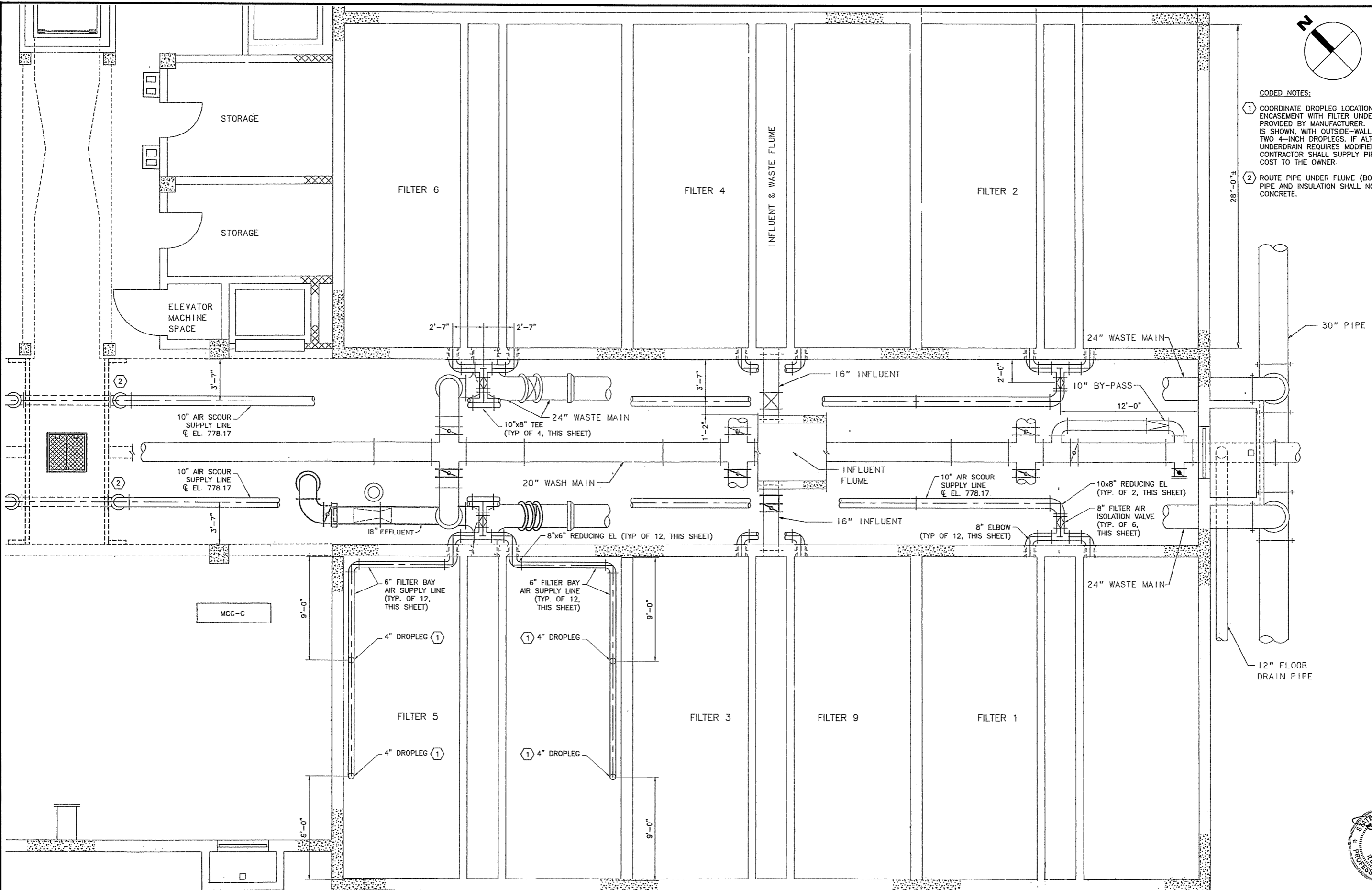
Burgess & Niple, Inc. CINCINNATI, OHIO

PLOTTED: 5/19/2009 11:02:33 AM

P:\PR46779\cadd\12_FB_SOUTH_BSMT_RENOV_PLN.dwg 5/14/2009 12:57:34 PM Doss, Colleen



- CODED NOTES:**
- ① COORDINATE DROPLEG LOCATION AND CONCRETE ENGAGEMENT WITH FILTER UNDERDRAIN PIPING PROVIDED BY MANUFACTURER. BASIS OF DESIGN IS SHOWN, WITH OUTSIDE-WALL FEED LINE AND TWO 4-INCH DROPLEGS. IF ALTERNATE FILTER UNDERDRAIN REQUIRES MODIFIED ARRANGEMENT, CONTRACTOR SHALL SUPPLY PIPING AT NO EXTRA COST TO THE OWNER.
 - ② ROUTE PIPE UNDER FLUME (BOTTOM EL. 775.25). PIPE AND INSULATION SHALL NOT CONTACT CONCRETE.



NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc. CINCINNATI, OHIO

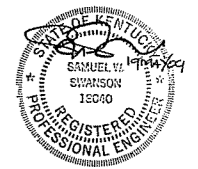


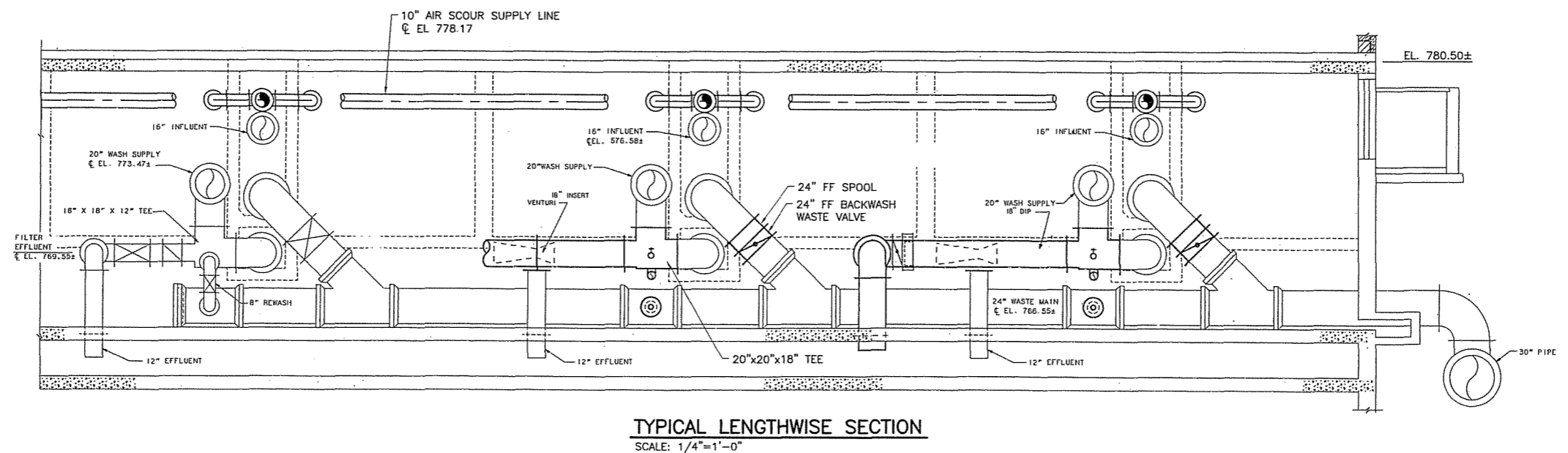
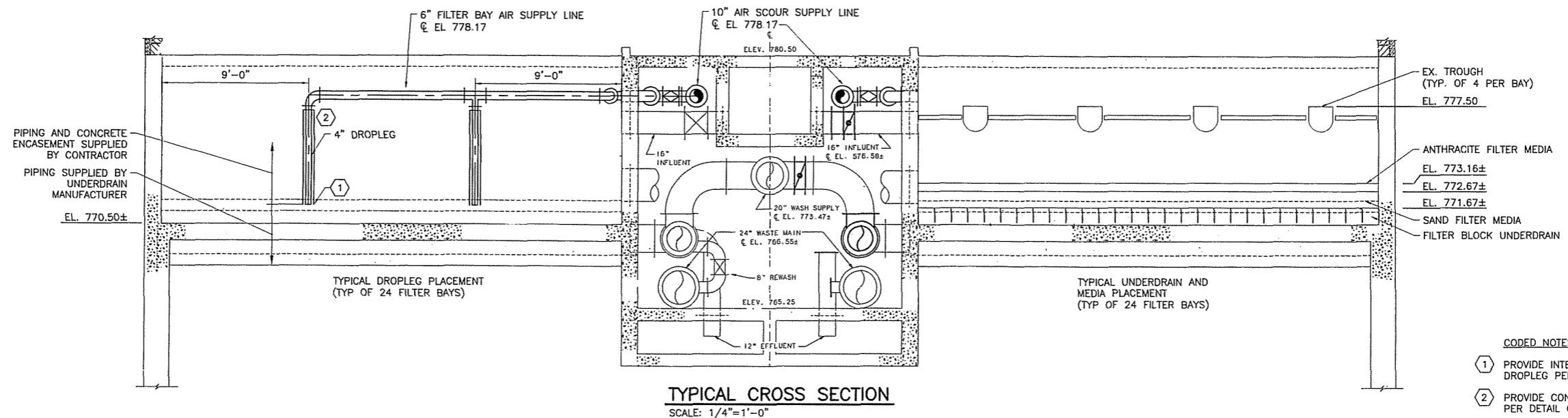
**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

**FFTP FILTER BUILDING
SOUTH BASEMENT RENOVATION PLAN**

SCALE:	
1/4"=1'-0"	
SHEET NO.	OF
12	20





NO.	REVISIONS	DATE	BY	CHK.

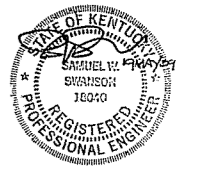
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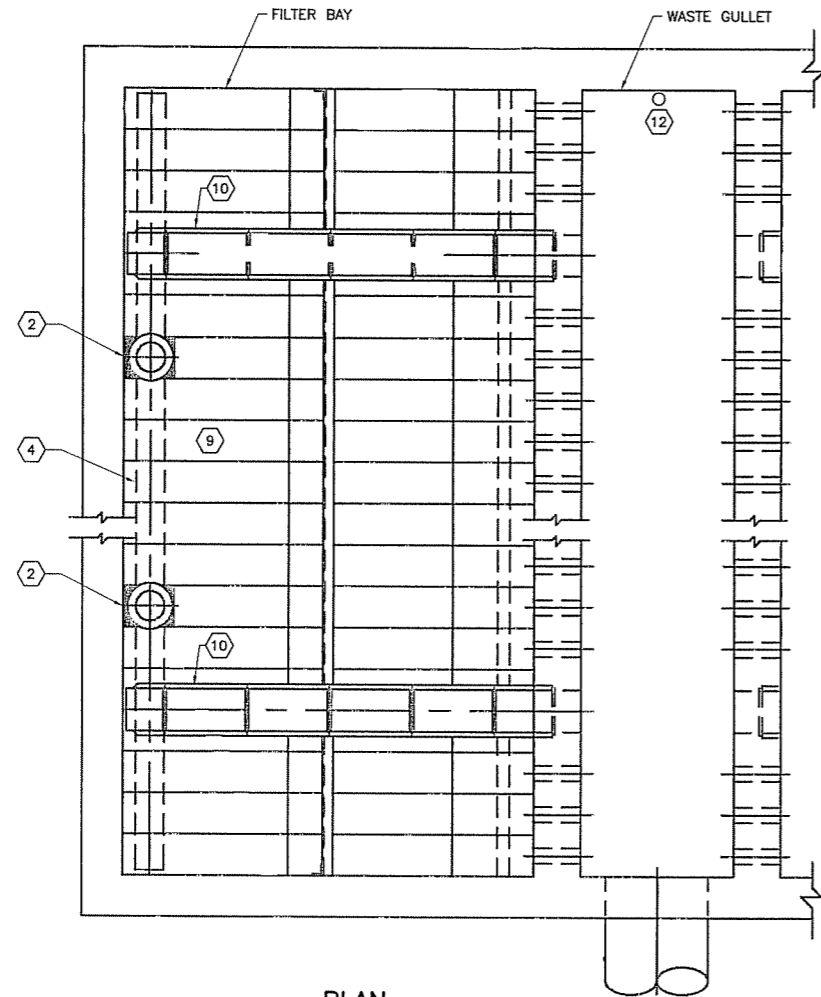
**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

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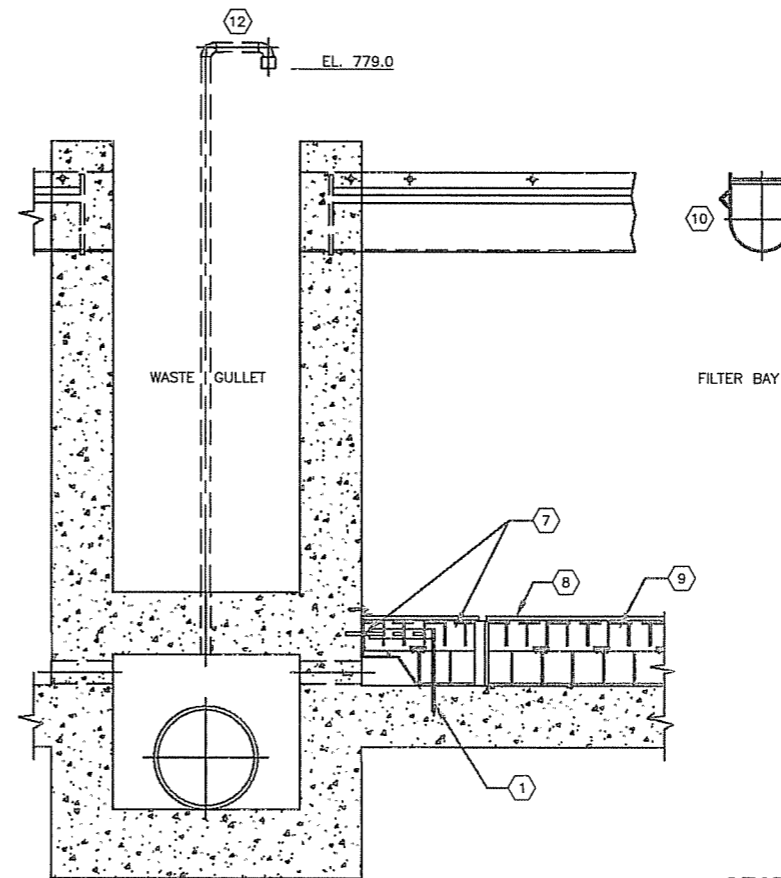
**FFTP FILTER BUILDING
FILTER RENOVATION SECTIONS**



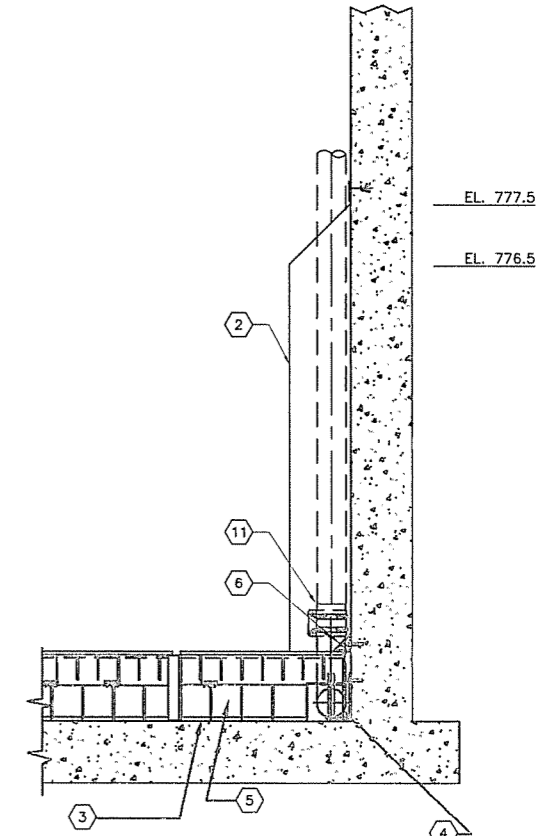
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SHEET NO.	13
OF	20



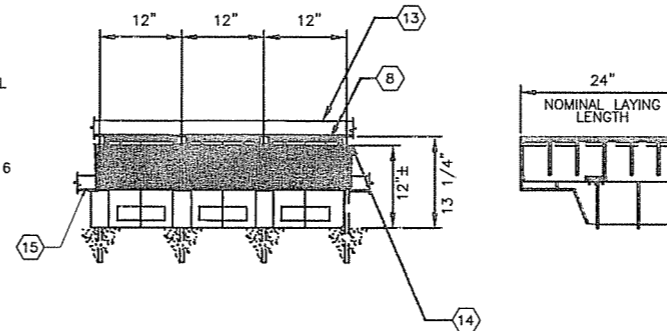
PLAN
SCALE: NONE



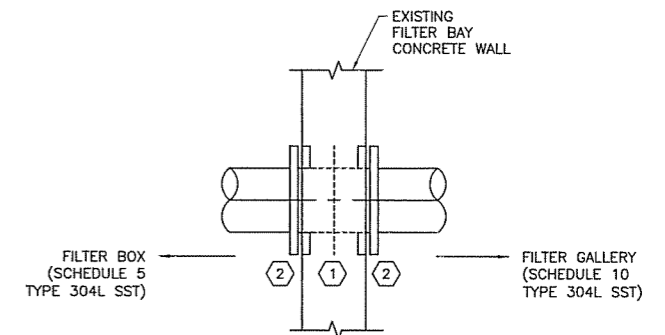
SECTION
SCALE: NONE



- CODED NOTES:**
- 1 PROVIDE ANCHOR RODS, AS REQUIRED BY UNDERDRAIN MANUFACTURER.
 - 2 INSTALL CONCRETE 12"x12" COLUMN ENCASEMENT AFTER UNDERDRAIN AND AIR HEADER ARE INSTALLED. CONCRETE COLUMN BASE SHALL BE FLUSH WITH TOP OF UNDERDRAINS. DOWEL ENCASEMENT WITH #5 ON 12" CENTERS, WITH 3" OF DOWEL IN NEW CONCRETE AND 3" OF DOWEL IN EXISTING CONCRETE.
 - 3 SET UNDERDRAIN BLOCK ON 3/4" OF NEW NON-SHRINK GROUT, PLACED PER SPECIFICATIONS AND UNDERDRAIN MANUFACTURER'S REQUIREMENTS. USE HIGHEST FLOOR ELEVATION AS REFERENCE BASE.
 - 4 PROVIDE 4" AIR HEADER (SCHEDULE 5 WITH AIR RISER PIPES ON 12" CENTERS, TYPE 304 SST). PROVIDE WITH TYPE 316 SST CLIP ANGLES ANCHORED TO TANK WALL.
 - 5 PROVIDE MAKE-UP BLOCK, PER FILTER UNDERDRAIN MANUFACTURER'S REQUIREMENTS.
 - 6 PROVIDE 45° GROUT FILLET EXTENDING 1-2 INCHES INTO BLOCK (TYPICAL).
 - 7 PROVIDE FLUME BLOCK WITH WELDED END PLATE. CAULK BETWEEN WALL AND END PLATE.
 - 8 PROVIDE FILTER BLOCK CAP, PER SPECIFICATIONS AND FILTER UNDERDRAIN MANUFACTURER'S REQUIREMENTS.
 - 9 PROVIDE FILTER BLOCK, 27 EQUAL SPACES ON 12" CENTERS. PER FILTER UNDERDRAIN MANUFACTURER'S REQUIREMENTS.
 - 10 MAINTAIN FOUR EXISTING WASH WATER TROUGHS AND STABILIZER BARS.
 - 11 INTERCONNECT PIPING AT FLANGED CONNECTION. FILTER UNDERDRAIN MANUFACTURER SHALL SUPPLY FULL NEOPRENE GASKET AND MINLON SLEEVES. INSTALLING CONTRACTOR SHALL PROVIDE MATING FLANGE AND TYPE 304 SST CONNECTION HARDWARE FOR 4" DROPLEGS.
 - 12 PROVIDE 1" SCHEDULE 80 PVC FLUME AIR VENT PIPE WITH ORIFICED END CAP (TYPICAL OF 12). SUPPORT WITH TYPE 316 SST WALL-BRACKET HARDWARE.
 - 13 SECURE ANGLE WITH 3/8" WEDGE TYPE ANCHORS. CAULK BETWEEN ANGLE, WALL AND UNDERDRAIN, PER FILTER UNDERDRAIN MANUFACTURER'S REQUIREMENTS.
 - 14 SEAL BETWEEN ANGLE AND GROUT JOINT WITH CAULK, PER FILTER UNDERDRAIN MANUFACTURER'S REQUIREMENTS.
 - 15 PROVIDE SHELF ANCHOR WITH 3/8" WEDGE TYPE ANCHORS, PER FILTER UNDERDRAIN MANUFACTURER'S REQUIREMENTS.



FILTER BLOCK DETAIL
SCALE: NONE



FILTER WALL PENETRATION DETAIL
SCALE: NONE

- DETAIL CODED NOTES:**
- 1 CLEAN EXISTING WALL PIPE OF ALL ACCUMULATED SCALE AND REMOVE LINING (PAINT AND CEMENT GROUT) TO BASE METAL.
 - 2 ISOLATE NEW SST AIR PIPE WITH INSULATING FLANGES SUITABLE FOR HIGH-TEMPERATURE AIR SERVICE AND SST CONNECTION HARDWARE WITH SLEEVES TO AVOID CONTACT OF DISSIMILAR METALS.



NO.	REVISIONS	DATE	BY	CHK.

Burgess & Niple, Inc. CINCINNATI, OHIO

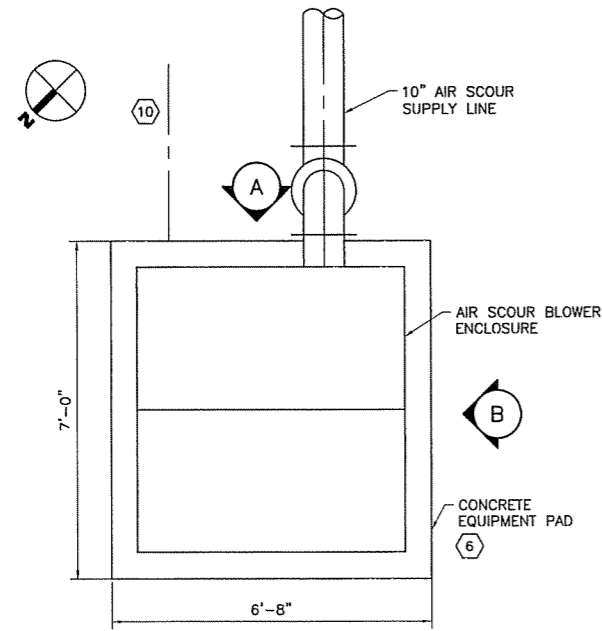


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

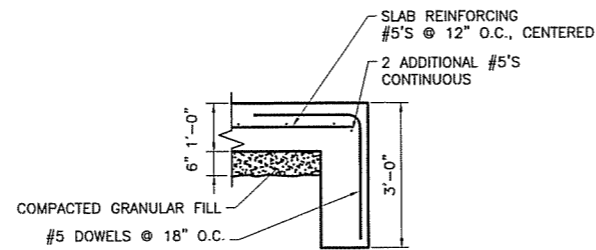
JOB NO.	PR46779
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APPROVED BY:	SWS
DATE:	MAY 2009

**FFTP FILTER BUILDING
FILTER BOX RENOVATION DETAILS**

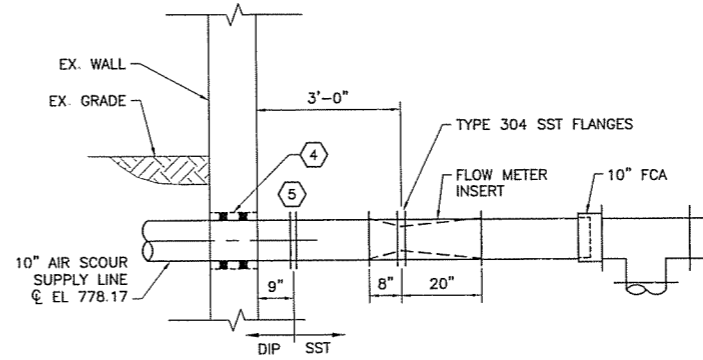
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SHEET NO.	OF
14	20



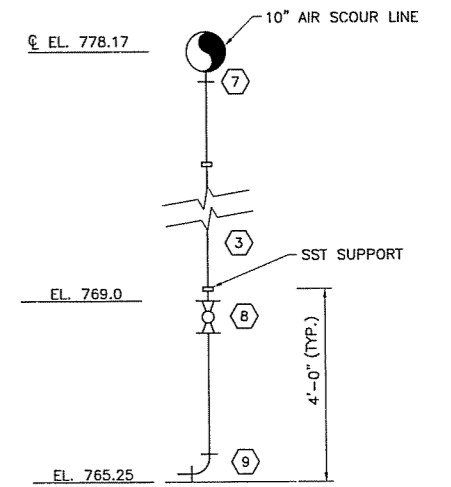
BLOWER PLAN
SCALE: 1/2" = 1'-0"



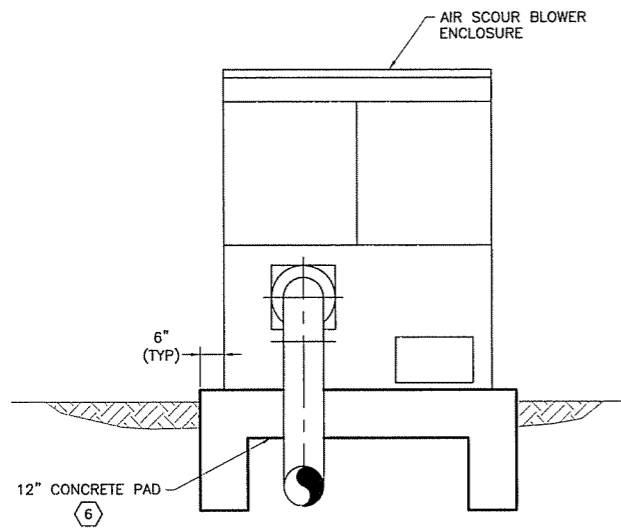
SLAB EDGE DETAIL
SCALE: 1/2" = 1'-0"



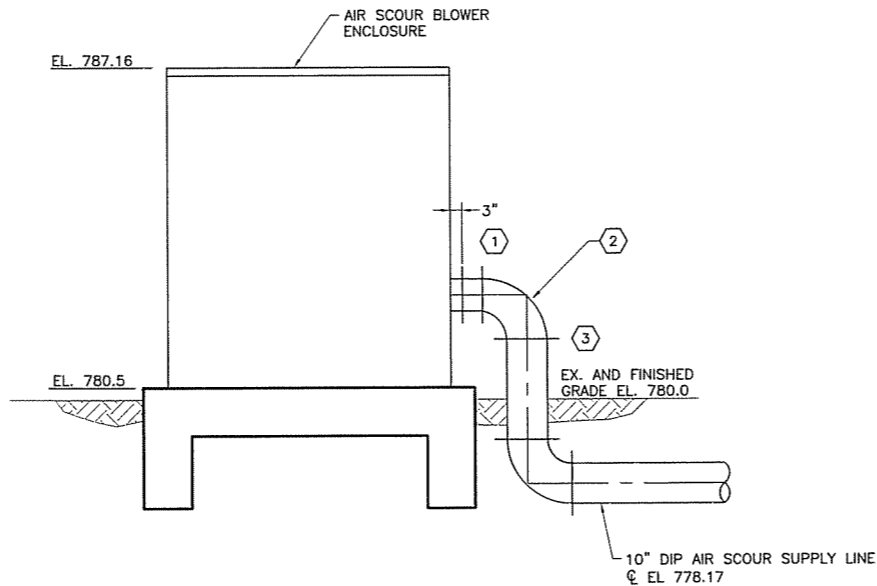
FILTER BUILDING WALL PENETRATION DETAIL
SCALE: 1/2" = 1'-0"



CONDENSATE BLOWOFF DETAIL
SCALE: NONE



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



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

CODED NOTES:

- 1 INTERCONNECT BLOWER DISCHARGE PLAIN END (3" FROM BLOWER ENCLOSURE) WITH PIPING PLAIN END USING RUBBER BOOT AND CLAMPS PROVIDED BY BLOWER MANUFACTURER.
- 2 PROVIDE FLANGED 10"x8" REDUCING ELBOW.
- 3 INSULATE EXPOSED AIR PIPING.
- 4 CORE DRILL WALL TO CLEAR PIPE AND LINK SEAL. PROVIDE DOUBLE LINK SEAL INSET 2" FROM WALL FACE AND COMPATIBLE WITH HIGH-TEMPERATURE SERVICE. SEAL ANNULAR SPACE ON EACH SIDE OF PIPE PENETRATION WITH NON-SHRINK GROUT, PER SPECIFICATIONS.
- 5 PROVIDE ISOLATING GASKET AND FASTENER COMPONENTS TO PREVENT CONTACT OF DISSIMILAR METALS FOR BOTH PIPE MATERIALS AND CONNECTION HARDWARE MATERIALS.
- 6 PROVIDE PAD WITH THICKENED EDGE PER DETAIL THIS SHEET.
- 7 PROVIDE 1/2" TYPE 304 SST CORPORATION STOP, 1/2" PIPING AND WALL-MOUNTING CONNECTION HARDWARE.
- 8 PROVIDE TYPE 304 SST BALL VALVE SUITABLE FOR AIR SERVICE.
- 9 ROUTE PIPE TO FLOOR/WALL INTERSECTION AND DIRECT PIPE DISCHARGE ALONG WALL.
- 10 INTERCONNECT BLOWER AND POWER AND CONTROL CABLES PER BLOWER MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION REQUIREMENTS.



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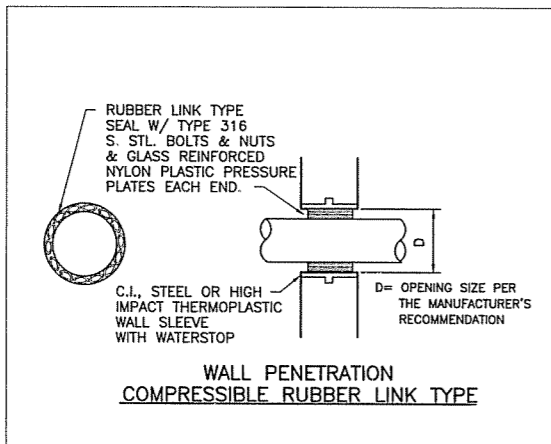


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

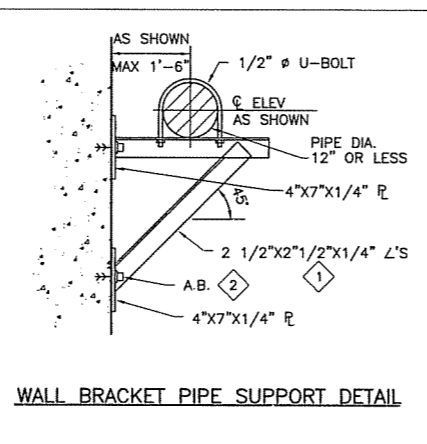
JOB NO.	PR46779
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**FFTP FILTER BUILDING
AIR SCOUR BLOWER DETAILS**

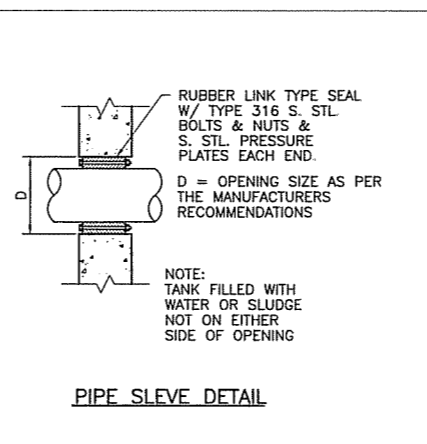
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SHEET NO.	15
OF	20



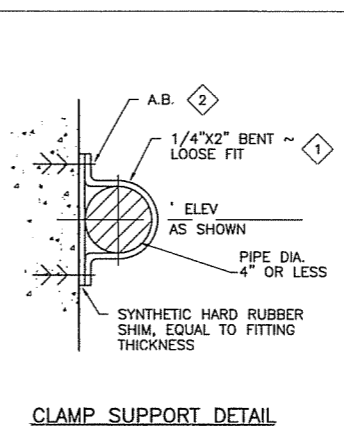
WALL PENETRATION
COMPRESSIBLE RUBBER LINK TYPE



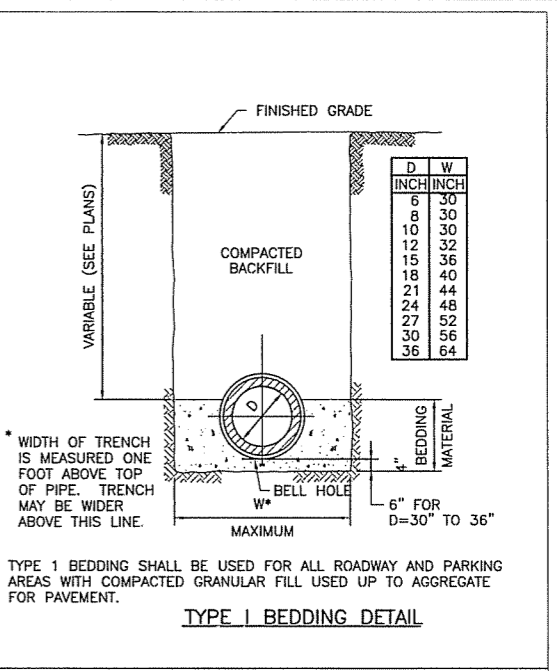
WALL BRACKET PIPE SUPPORT DETAIL



PIPE SLEEVE DETAIL

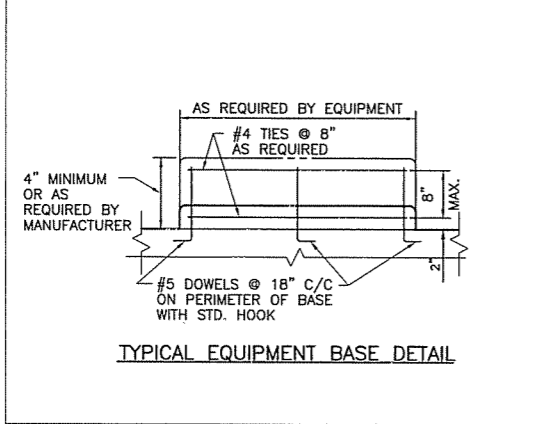


CLAMP SUPPORT DETAIL

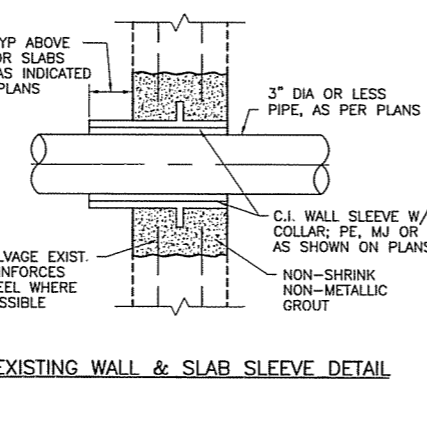


* WIDTH OF TRENCH IS MEASURED ONE FOOT ABOVE TOP OF PIPE. TRENCH MAY BE WIDER ABOVE THIS LINE.

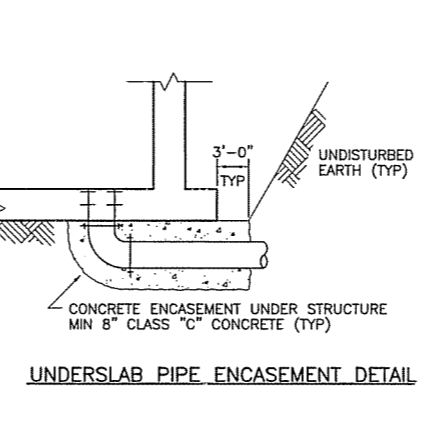
TYPE 1 BEDDING SHALL BE USED FOR ALL ROADWAY AND PARKING AREAS WITH COMPACTED GRANULAR FILL USED UP TO AGGREGATE FOR PAVEMENT.



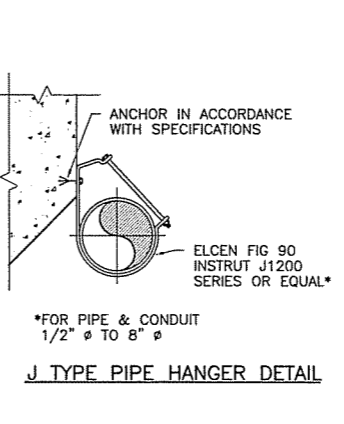
TYPICAL EQUIPMENT BASE DETAIL



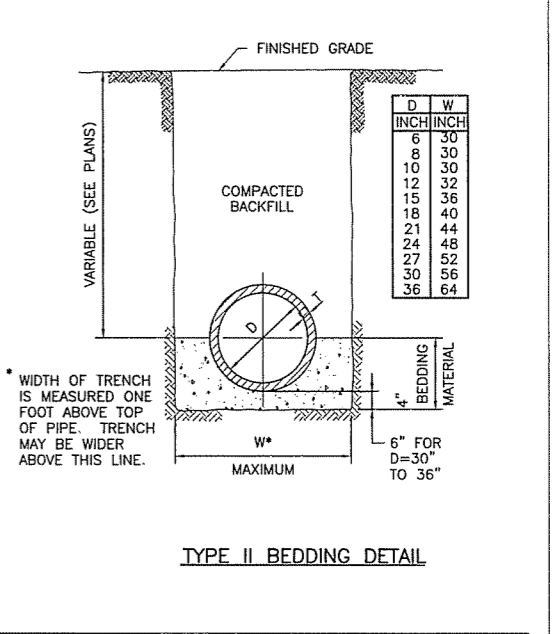
EXISTING WALL & SLAB SLEEVE DETAIL



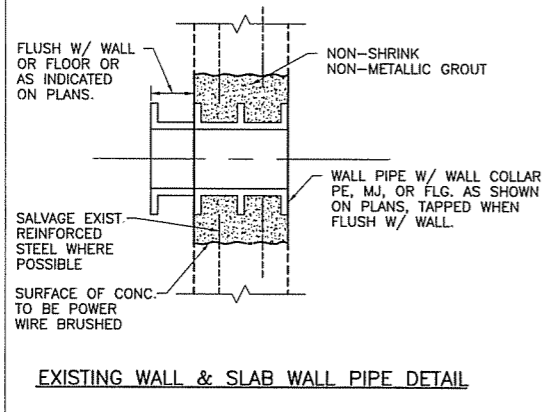
UNDERSLAB PIPE ENCASEMENT DETAIL



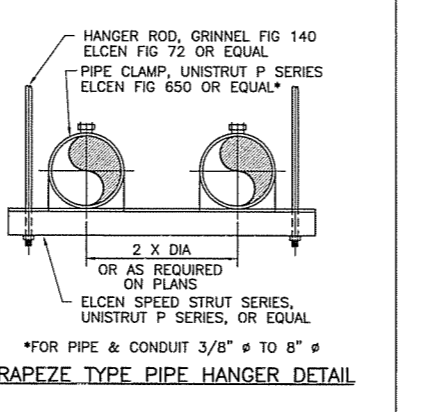
J TYPE PIPE HANGER DETAIL



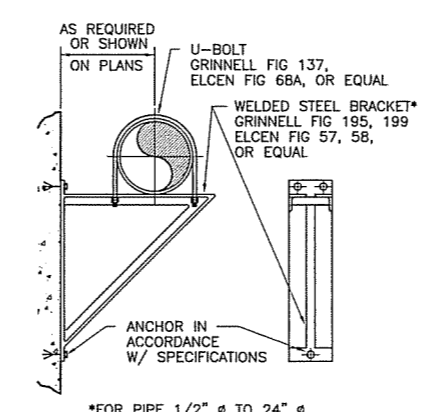
* WIDTH OF TRENCH IS MEASURED ONE FOOT ABOVE TOP OF PIPE. TRENCH MAY BE WIDER ABOVE THIS LINE.



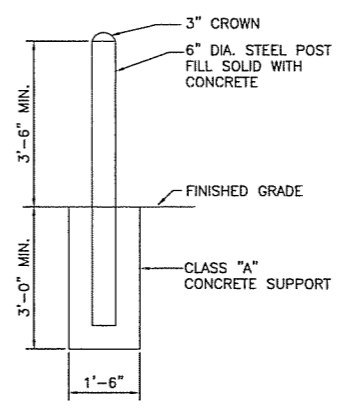
EXISTING WALL & SLAB WALL PIPE DETAIL



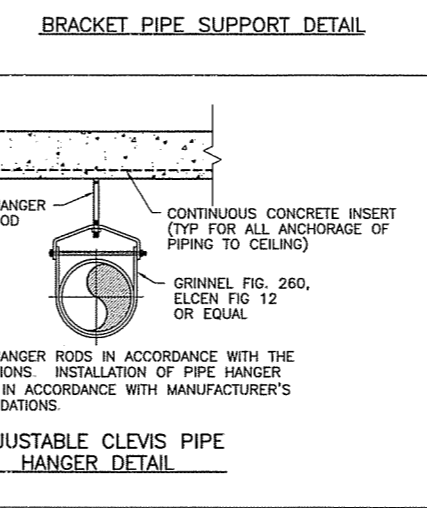
TRAPEZE TYPE PIPE HANGER DETAIL



BRACKET PIPE SUPPORT DETAIL

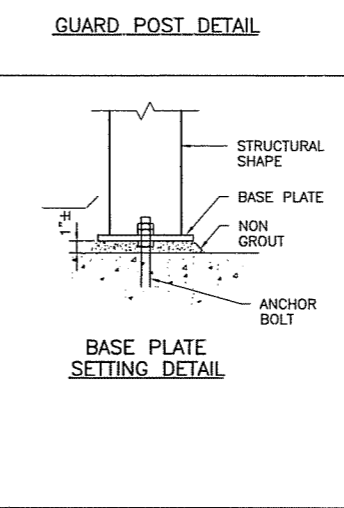


GUARD POST DETAIL



NOTE: PROVIDE HANGER RODS IN ACCORDANCE WITH THE SPECIFICATIONS. INSTALLATION OF PIPE HANGER SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

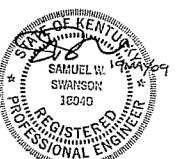
ADJUSTABLE CLEVIS PIPE HANGER DETAIL



BASE PLATE SETTING DETAIL

GENERAL NOTES FOR PIPING INSIDE STRUCTURES

- ALL FLANGED PIPING UNLESS NOTED OTHERWISE SHALL BE DUCTILE IRON (DIP).
- PIPING WITH COUPLINGS OR MECHANICAL JOINTS SHALL BE ADEQUATELY RESTRAINED, TIED OR BLOCKED, TO PREVENT MOVEMENT UNDER TEST AND OPERATING PRESSURES. THE REQUIRED TIES AND BLOCKING ARE NOT SHOWN.
- SLEEVE COUPLINGS AND COUPLING ADAPTERS FOR DUCTILE IRON PIPING SHALL BE CAST IRON AS MANUFACTURED BY DRESSER, SMITH BLAIR OR EQUAL.
- PIPING SHALL BE ADEQUATELY SUPPORTED. THE REQUIRED PIPE HANGERS AND SUPPORTS ARE NOT ALL SHOWN. PIPE HANGERS AND PIPE SUPPORTS SHALL BE AS SHOWN ON THIS SHEET AND AS SPECIFIED.
- IF CONCRETE SUPPORTS ARE SHOWN, SEE MISCELLANEOUS CONCRETE DETAILS SHEET FOR TYPICAL CONCRETE PIPE SUPPORTS. PROVIDE HANGER OR SUPPORT AT ALL FITTINGS AND AT A MAXIMUM SPACING OF 8'-0" ON STRAIGHT PIPE.
- DIELECTRIC FITTINGS SHALL BE PROVIDED WHERE PIPES OF DISSIMILAR METALS MEET.



NO.	REVISIONS	DATE	BY	CHK.

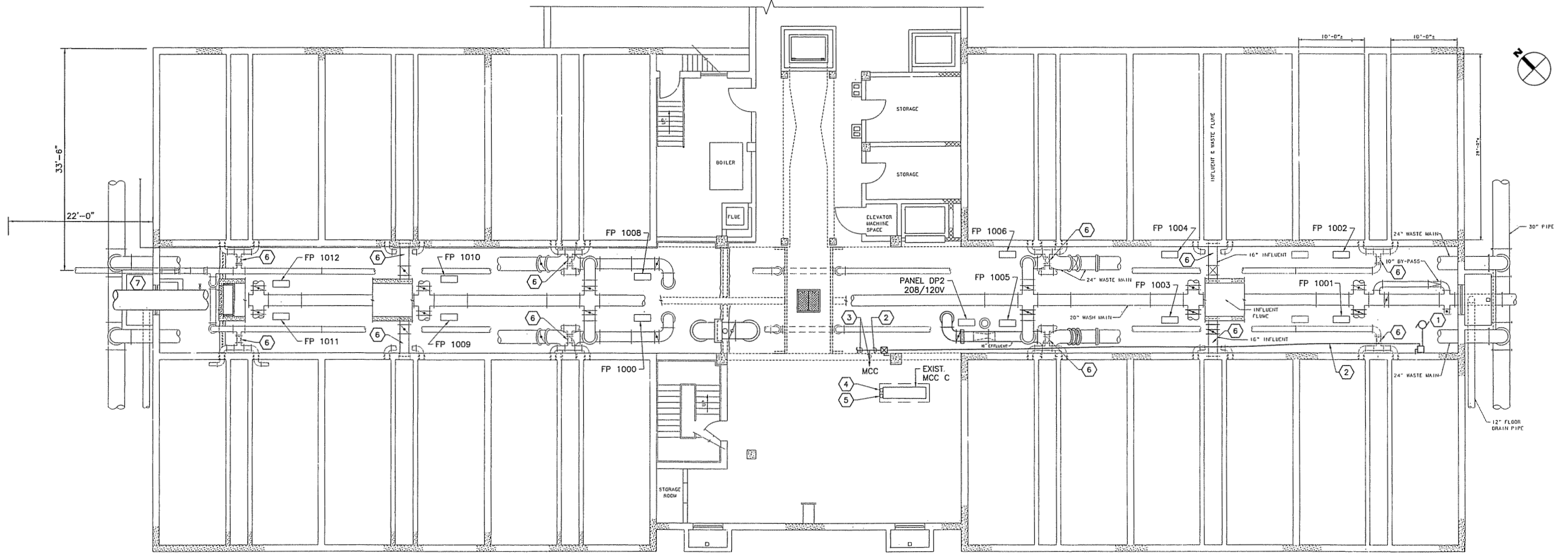


NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS

JOB NO.	PR46779
DESIGNED BY:	SWS
DRAWN BY:	CKD
CHECKED BY:	DES
APPROVED BY:	SWS
DATE:	MAY 2009

PROCESS MECHANICAL DETAILS

SCALE:	NONE
SHEET NO.	OF
16	20



**ELECTRICAL DEMOLITION
PLAN AT EL. 765.25**
SCALE: 1/8" = 1'-0"

CODED NOTES:

- ① DISCONNECT SURFACE WASH PUMP. DISCONNECT AND REMOVE DISCONNECT SWITCH AND COMBINATION MOTOR STARTER.
- ② DISCONNECT AND REMOVE EXISTING PVC POWER CONDUIT AND WIRING FROM PANEL TO MOTOR CONTROL CENTER. REPAIR HOLE IN DRY WALL (BOTH SIDES). DISCONNECT AND REMOVE EXISTING METAL CONDUIT AND CONDUCTORS BETWEEN PANEL AND PUMP. REMOVE PANEL AND CONNECTION HARDWARE. REPAIR WALL WITH NON-SHRINK GROUT, PER SPECIFICATIONS.
- ③ DISCONNECT AND REMOVE CONDUIT AND SCADA WIRING FROM COMBINATION STARTER AND TERMINATE IN NEW JUNCTION BOX 3 FEET ABOVE THE STARTER BOX LOCATION.
- ④ RELOCATE EXISTING TVSS ONTO BACK SIDE OF MCC. SEE SHEET 18.
- ⑤ RELOCATE EXISTING PANEL ONTO BACK SIDE OF MCC. SEE SHEET 18.
- ⑥ DISCONNECT EXISTING ISOLATION VALVE. PRESERVE AND PROTECT CONDUIT AND CONDUCTORS FOR REUSE.
- ⑦ RELOCATE TEMPORARILY EXISTING TWO AIR CONDITIONING UNITS, AS DIRECTED BY THE OWNER.



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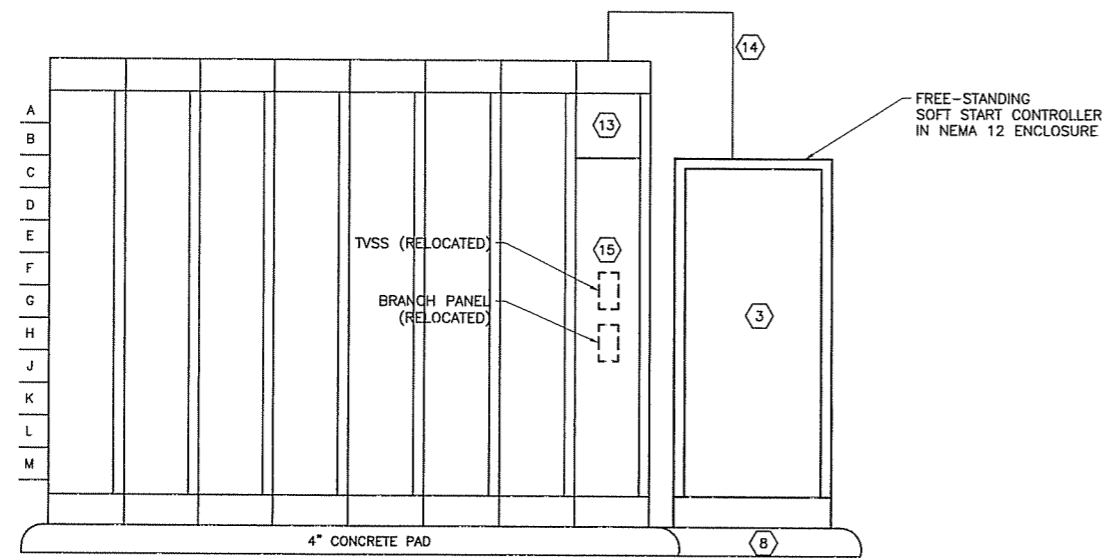
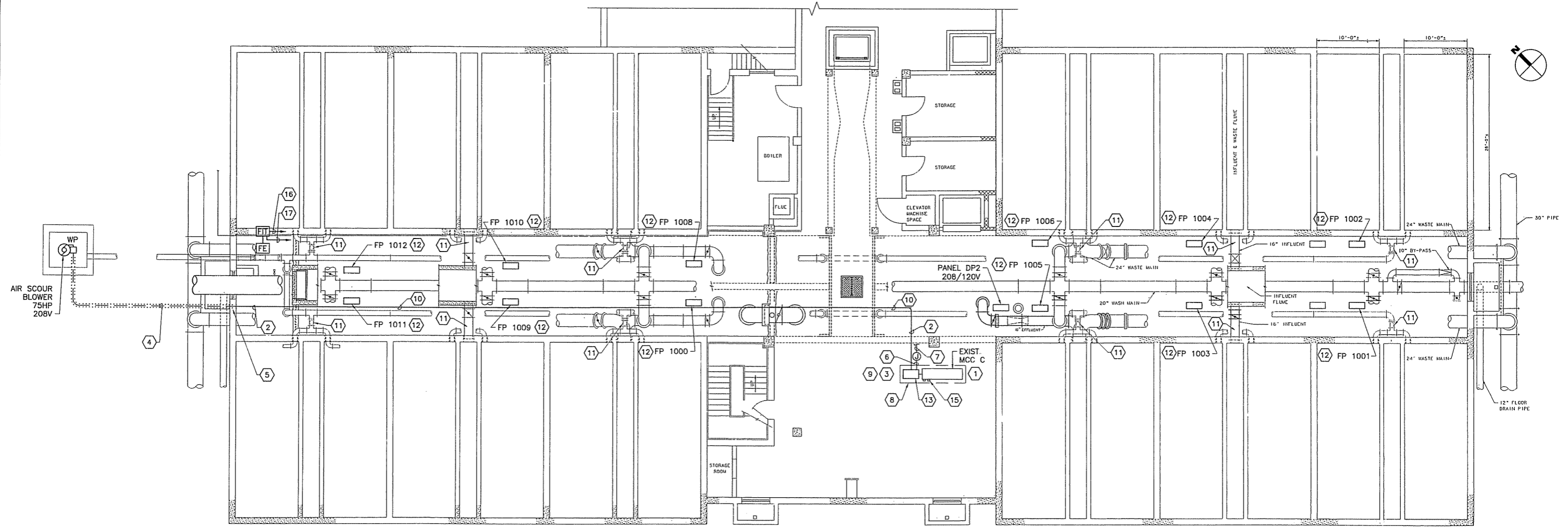


**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

JOB NO.	PR46779
DESIGNED BY:	JBK
DRAWN BY:	CKD
CHECKED BY:	CR
APPROVED BY:	SWS
DATE:	MAY 2009

**FTTP FILTER BUILDING
PIPE GALLERY ELECTRICAL DEMOLITION PLAN**

SCALE:	AS NOTED
SHEET NO.	OF
17	20



MCC C ELEVATION
NOT TO SCALE

ELECTRICAL PLAN AT EL. 765.25
SCALE: 1/8" = 1'-0"

CODED NOTES:

- ① USE EXISTING 400 AMP SPARE CIRCUIT BREAKER TO SERVE NEW SOFT STARTER. REPLACE TRIP ELEMENT TO 300 AMP. FIELD VERIFY EXISTING TRIP ELEMENT VIABILITY.
- ② PROVIDE 3 #350 KCMIL, 2 #12, 4 #14, 1 #3 GND IN 3" CONDUIT. PROVIDE SCHEDULE 80 PVC CONDUIT.
- ③ PROVIDE SOFT START CONTROLLER.
- ④ PROVIDE 3" CONDUIT (ENCASED IN CONCRETE) WITH BRANCH CIRCUIT CABLES. SEE DETAIL, SHEET 19. PROVIDE SCHEDULE 40 PVC CONDUIT.
- ⑤ CORE DRILL EXISTING FILTER BUILDING CONCRETE WALL AND SEAL 3" CONDUIT PENETRATING WALL WITH NON-SHRINK GROUT, PER SPECIFICATIONS.
- ⑥ PROVIDE 8 #14, 1 #14 GND IN 3/4" CONDUIT TO EXISTING PLC LOCATED ON FIRST FLOOR. FIELD VERIFY LOCATION OF PLC. PROVIDE SCHEDULE 80 PVC CONDUIT. PROVIDE 3/4" CONDUIT FROM SOFT STARTER TO JUNCTION BOX, SEE NOTE #7.
- ⑦ PROVIDE 8 #14, 1 #14 GND IN 2" CONDUIT FROM JUNCTION BOX TO PLC LOCATED ON FIRST FLOOR. JUNCTION BOX SHALL BE 12"x12"x6". FIELD VERIFY LOCATION OF CLARIFIER PLC. PROVIDE SCHEDULE 80 PVC CONDUIT.
- ⑧ EXTEND EXISTING CONCRETE PAD TO INCLUDE NEW MCC SECTION. SEE DETAIL ON SHEET 19.
- ⑨ PROVIDE WATER SHIELD ABOVE NEW MCC SECTION TO PROTECT FROM WATER PIPES LOCATED ABOVE. WATER SHIELD SHALL BE MCC-SUPPLIER'S STANDARD DESIGN AND MOUNTED TO ROOF WITH TYPE 316 SST ANCHOR BOLTS AND CONNECTION HARDWARE.
- ⑩ USE EXISTING SUPPORT SYSTEM FOR NEW CONDUIT THROUGHOUT PIPE GALLERY. ADD NEW CONDUIT SUPPORTS WHERE NECESSARY, USING FRP TRAPEZE AND TYPE 304 SST RODS AND SST HARDWARE.
- ⑪ RECONNECT ISOLATION VALVE BY REROUTING CONDUIT AND WIRING. DO NOT SPLICE WIRING OR INSTALL NEW JUNCTION BOX. REPLACE CONDUCTORS AND EXTEND CONDUIT IF EXISTING WIRES ARE FOUND TO BE TOO SHORT.
- ⑫ REPLACE EXISTING FACE-OF-PANEL TAGS WITH NEW TAGS. OWNER TO SUPPLY TAG NUMBERS AND VALVE TITLES. MATCH STYLE AND SIZE OF EXISTING TAGS.
- ⑬ EXISTING DISCONNECT SWITCH TO BE USED TO SERVE NEW SOFT START CONTROLLER.
- ⑭ PROVIDE 3 #350 KCMIL, 1 #3 GND IN 3" CONDUIT FROM SPARE BREAKER TO SOFT STARTER.
- ⑮ RELOCATE EXISTING TVSS AND EXISTING BRANCH PANEL FROM SIDE OF EXISTING MCC SECTION. REROUTE AND EXTEND CONDUIT AND WIRING TO RELOCATED ITEMS.
- ⑯ PROVIDE 2 #12, 1 #12 GND IN 3/4" CONDUIT TO PANEL DP2. USE SPARE CIRCUIT BREAKER.
- ⑰ PROVIDE 1 #16 TWISTED SHIELDED PAIR IN 3/4" CONDUIT TO PLC MODULE CHASSIS 1, CHASSIS SLOT 8, I/O RACK 1, I/O SLOT 0, INPUT MODULE (16, 15).



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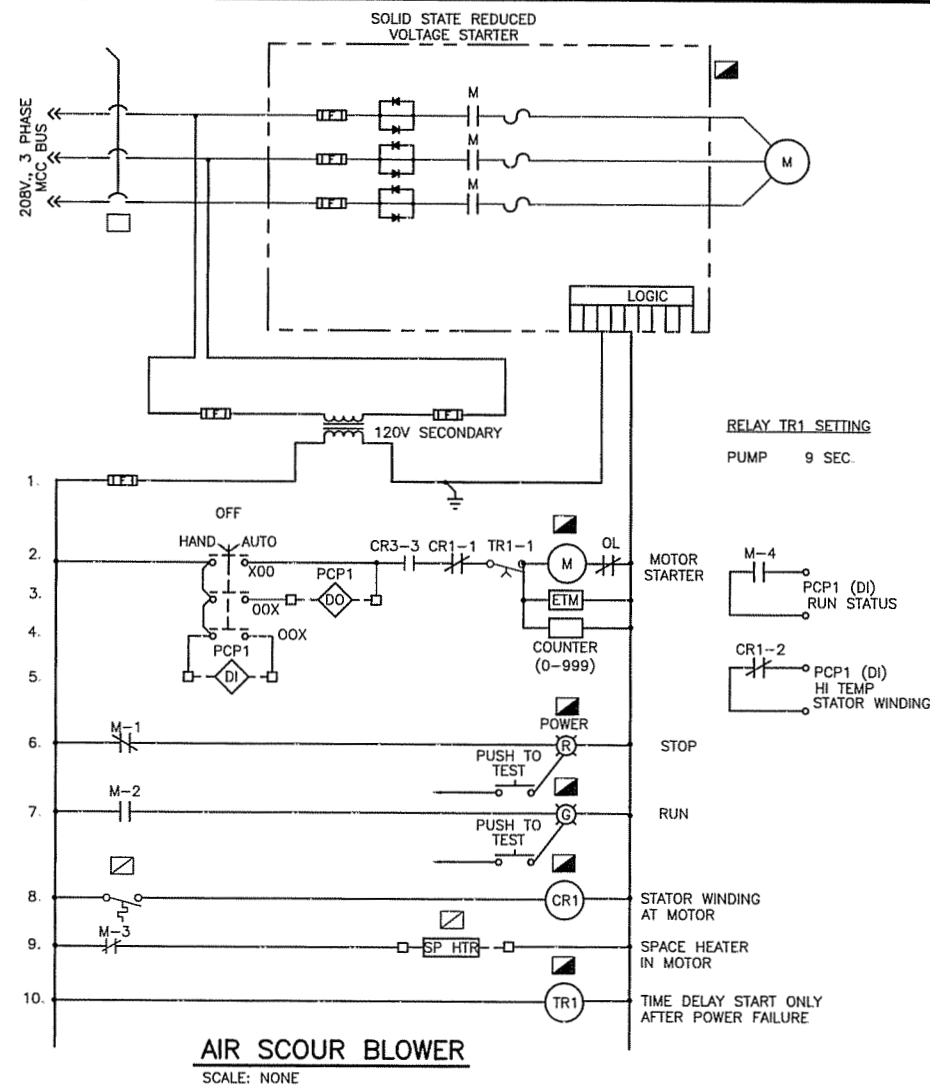


NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS

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FTTP FILTER BUILDING
PIPE GALLERY ELECTRICAL PLAN

SCALE:	
AS NOTED	
SHEET NO.	OF
18	20



CONDUIT/WIRING	
---	EXPOSED CONDUIT
---	UNDERGROUND CONDUIT ENCASED IN CONCRETE
---	CONDUIT IN SLAB
---	CONCEALED CONDUIT
---	LPLS-1 HOMERUN - TO PANEL LPLS, CIRCUIT NO. 1
A-1,3	TWO SINGLE POLE CIRCUITS
A(1,3)	ONE TWO POLE CIRCUIT
A(1,3,5)	ONE THREE POLE CIRCUIT
---	UNDERGROUND DUCT BANK ENCASED IN CONCRETE

NOTE: THIS IS A STANDARD LEGEND. SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.

CONTROL DIAGRAM LEGEND	
□	DEVICE LOCATED IN MCC
▣	DEVICE LOCATED IN FIELD
▤	DEVICE LOCATED IN MOTOR CONTROLLER
◇	PROGRAMMABLE CONTROL PANEL DI - DISCRETE INPUT DO - DISCRETE OUTPUT

MISCELLANEOUS POWER	
---	PLYWOOD BACKBOARD FIRE TREATED REFER TO PLANS FOR SIZE
---	FLUSH MOUNTED PANELBOARD
---	SURFACE MOUNTED PANELBOARD
---	FLUSH MOUNTED EQUIPMENT
---	SURFACE MOUNTED EQUIPMENT
□	NON-FUSIBLE DISCONNECT SWITCH
⊠	FUSIBLE DISCONNECT SWITCH
⊙	THREE PHASE MOTOR
⊘	SINGLE PHASE MOTOR
⊠	COMBINATION TYPE STARTER WITH FUSIBLE DISC. SWITCH
⊠	PUSHBUTTON
⊙	JUNCTION BOX
FE	FLOW METER ELEMENT
FI	FLOW TRANSMITTER AND INDICATOR

DIAGRAM SYMBOLS	
⊠	FUSED DISCONNECT SWITCH SIZE AS INDICATED ON PLANS
⊠	NON-FUSED DISCONNECT SWITCH SIZE AS INDICATED ON PLANS
⊠	CIRCUIT BREAKER SIZE AS INDICATED ON PLAN
⊠	TRANSFER SWITCH SIZE AS INDICATED ON PLANS
PT	POTENTIAL TRANSFORMER
⊠	CURRENT TRANSFORMER
⊗	METER: X INDICATES TYPE V = VOLTMETER A = AMMETER
XX	CONTROLLER: X INDICATES TYPE AF = ADJUSTABLE FREQ. DRIVE 2 = TWO SPEED ONE WINDING NR = FULL VOLT. NON REVERS. R = FULL VOLTAGE REVERS.
⊠	TRANSFORMER
⊠	EARTH GROUND
⊙	MOTOR LOAD 'X' INDICATES HP, AMPS., OR KW
⊠	GENERAL LOAD 'X' INDICATES HP, AMPS., OR KW
⊠	LOCAL COMBINATION STARTER X = SIZE Y = DESCRIPTION
⊠	LOCAL MANUAL STARTER X = SIZE Y = DESCRIPTION
⊠	LOCAL FUSED DISCONNECT SWITCH X = SIZE Y = DESCRIPTION
⊠	NON-FUSED DISCONNECT SWITCH X = SIZE Y = DESCRIPTION
⊠	REMOTE PUSHBUTTON STATION X = NUMBER OF DEVICES

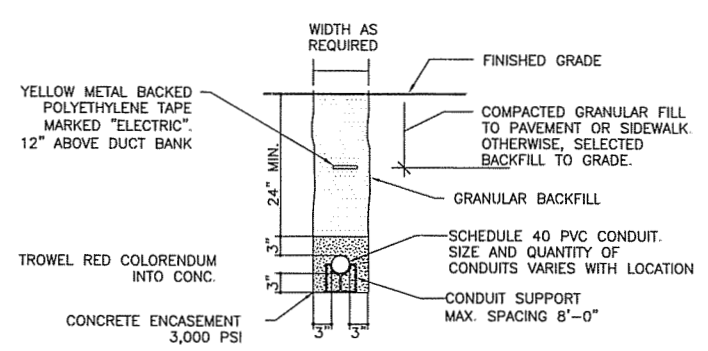
CONTROL DIAGRAM SYMBOLS	
⊠	OPEN ON INCREASE
⊠	CLOSE ON INCREASE
⊠	PRESSURE SWITCH
⊠	LEVEL SWITCH
⊠	FLOW SWITCH
⊠	TEMPERATURE SWITCH
⊠	NORMALLY CLOSED
⊠	NORMALLY OPEN
⊠	PUSH BUTTON
⊠	NORMALLY CLOSED
⊠	NORMALLY OPEN
⊠	INSTANTANEOUS CONTACT
⊠	TIMED CLOSE CONTACT
⊠	TIMED OPEN CONTACT
⊠	LIMIT SWITCH
⊠	SELECTOR SWITCH: QUANTITY OF ARROWS INDICATES NUMBER OF POSITIONS. XO INDICATES UPPER CONTACT CLOSED IN LEFT POSITION AND OPEN IN RIGHT POSITION
⊠	STARTER COIL AND OVERLOAD
⊠	RELAY COIL
⊠	PILOT LIGHT 'X' INDICATES COLOR: R=RED, G=GREEN, A=AMBER, B=BLUE, W=WHITE, Y=YELLOW
⊠	HORN
⊠	BELL
⊠	SOLENOID
+	NO JUNCTION
+	JUNCTION
□	TERMINAL

DEMOLITION NOTES:

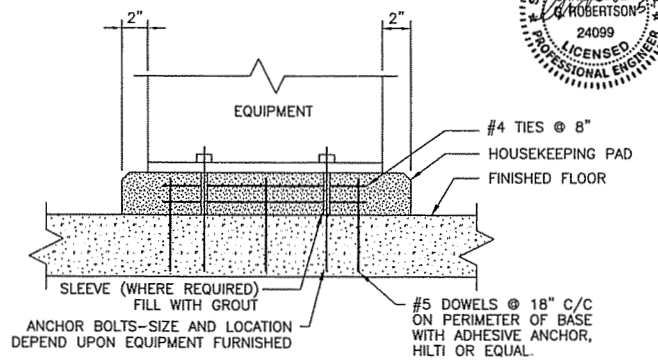
- EXISTING DEVICES THAT ARE RECONNECTED TO NEW PANELS SHALL BE TESTED FOR PROPER OPERATION. ANY DEVICES NOT IN WORKING CONDITION SHALL BE REPORTED TO OWNER'S PROJECT REPRESENTATIVE IMMEDIATELY.
- ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW THE EXTENT OF DEMOLITION WORK AND COUNTING THE DEVICES BEFORE SUBMITTING THE BIDS. NO EXTRA ALLOWANCE SHALL BE PERMITTED DURING CONSTRUCTION.
- THIS CONTRACTOR SHALL REFER TO ALL PROCESS DRAWINGS FOR LOCATIONS OF EQUIPMENT TO BE REMOVED BY THE PROCESS CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT WIRING FROM ABANDONED EQUIPMENT AND PULL WIRING BACK TO SOURCE. REMOVED ALL EXPOSED CONDUITS, AND IF CONDUIT IS UNDER SLAB, CUT CONDUIT OFF AT FLOOR AND PATCH FLOOR.
- ELECTRICAL CONTRACTOR SHALL REFER TO PROCES DRAWINGS FOR DEMOLITION WORK AND SHALL DISCONNECT, RELOCATE ELECTRICAL EQUIPMENT AND CONDUIT AND WIRING AS REQUIRED.
- CONTRACTOR SHALL REROUTE AND RECONNECT ANY CIRCUITS THAT WILL REMAIN IN USE BUT INTERFERE WITH NEW CONSTRUCTION.
- ALL EXISTING CONDUITS THAT WILL NOT BE REUSED SHALL BE REMOVED WHERE THEY WILL BE EXPOSED AFTER COMPLETION OF CONSTRUCTION. ALL OTHERS MAY BE ABANDONED IN CEILING OR BELOW FLOOR. CONTRACTOR SHALL REMOVE ALL WIRING FROM ABANDONED CONDUITS, DISCONNECT FROM ALL POWER SOURCES.
- PROTECT EXISTING WORK, WHICH IS TO REMAIN IN PLACE, BE REUSED, OR REMAIN THE PROPERTY OF THE OWNER. REPAIR ITEMS THAT ARE TO REMAIN AND WHICH ARE DAMAGED DURING PERFORMANCES OF THE WORK TO THEIR ORIGINAL CONDITION, OR REPLACE WITH NEW.

GENERAL NOTES: (APPLIES TO ALL DRAWINGS)

- UNLESS INDICATED ALL WIRING SHALL BE CONSIDERED #12, 1#12 GND IN 3/4" CONDUIT.
- UNLESS INDICATED, ALL MOUNTING ELEVATIONS ARE BOTTOM ELEVATIONS OF DEVICE.
- CONSOLIDATION OF INDIVIDUAL CONDUIT HOME RUNS SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL BY THE ENGINEER.
- UNLESS INDICATED ON DRAWINGS, PROVIDE SEPARATE NEUTRAL FOR ALL CIRCUITS.
- WHERE NEW FEEDERS ARE INDICATED TO BE RUN FROM NEW PANEL BOARDS OR CONTROL CENTERS TO HVAC EQUIPMENT, THIS CONTRACTOR SHALL FIELD VERIFY THE EXACT CONTROL WIRING REQUIRED FOR EACH MOTOR AND PROVIDE WIRING AS REQUIRED.
- THE LIST OF EQUIPMENT, TABULATIONS OF DATA, AND SCHEDULES APPEARING ON THE DRAWINGS ARE INCLUDED ONLY FOR THE ASSISTANCE AND GUIDANCE OF THE CONTRACTOR IN ARRIVING AT A MORE COMPLETE UNDERSTANDING OF THE INTENDED INSTALLATION. THEY ARE NOT INTENDED, NOR TO BE CONSTRUED, AS RELIEVING THE RESPONSIBILITY OF THE CONTRACTOR IN MAKING HIS OWN TAKEOFF AND PROVIDING ALL REQUIRED WORK.
- THIS CONTRACTOR SHALL PROVIDE GROUNDING BUSHINGS FOR ALL CONDUITS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ALL CONDUIT AND SUPPORTS ABOVE GROUND SHALL BE PVC SCHEDULE 80.
- SCREEN LINES INDICATE EXISTING WORK TO REMAIN. HEAVY LINES INDICATE NEW WORK.



UNDERGROUND DUCT BANK DETAIL
NOT TO SCALE



ELECTRICAL EQUIPMENT PAD
NOT TO SCALE



NO.	REVISIONS	DATE	BY	CHK.



BURGESS & NIPLE

**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

JOB NO.	PR46779
DESIGNED BY:	BJJ
DRAWN BY:	CKD
CHECKED BY:	CR
APPROVED BY:	SWS
DATE:	MAY 2009

**ELECTRICAL NOTES, SYMBOLS
AND DETAILS**

SCALE:	NONE
SHEET NO.	19
OF	20

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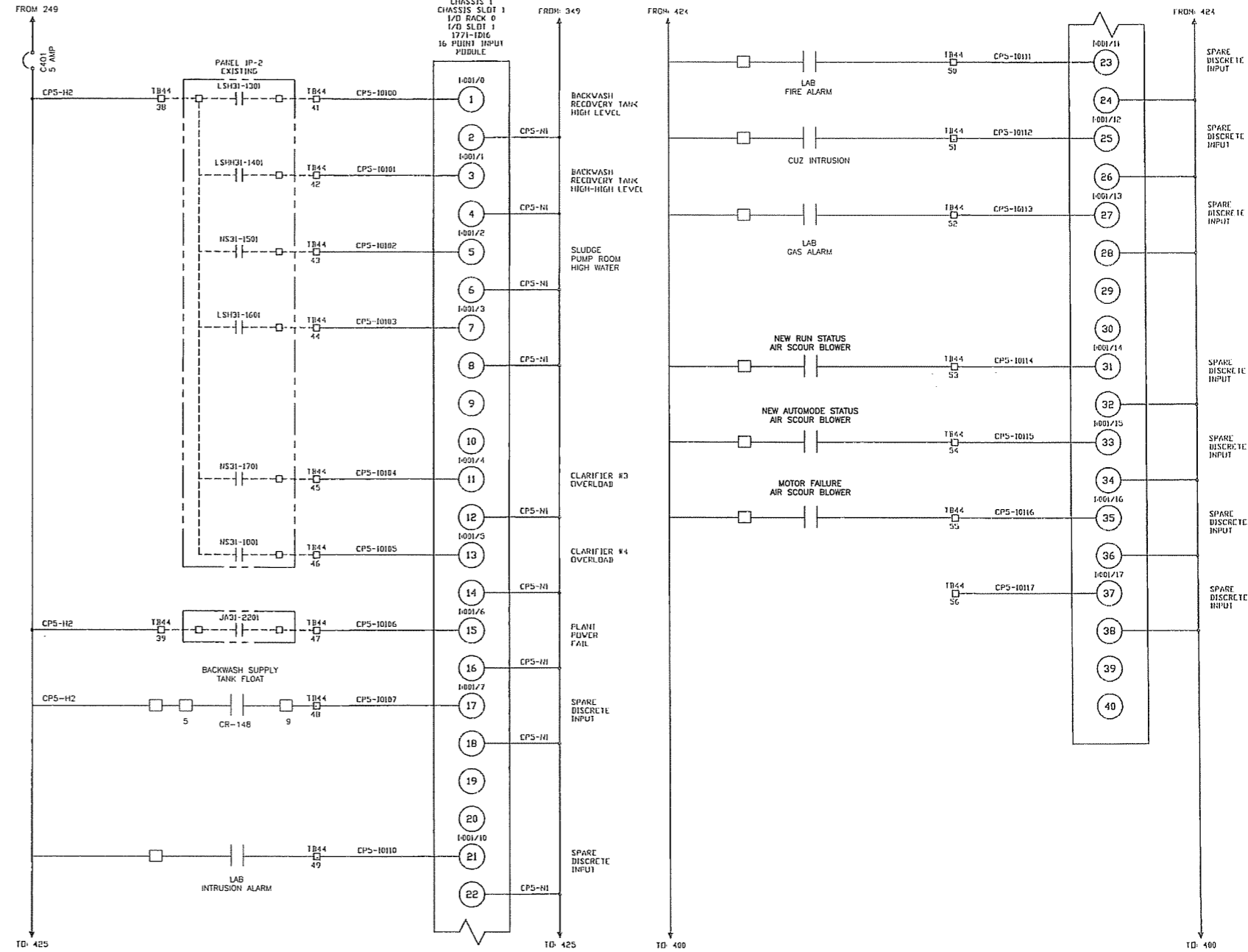
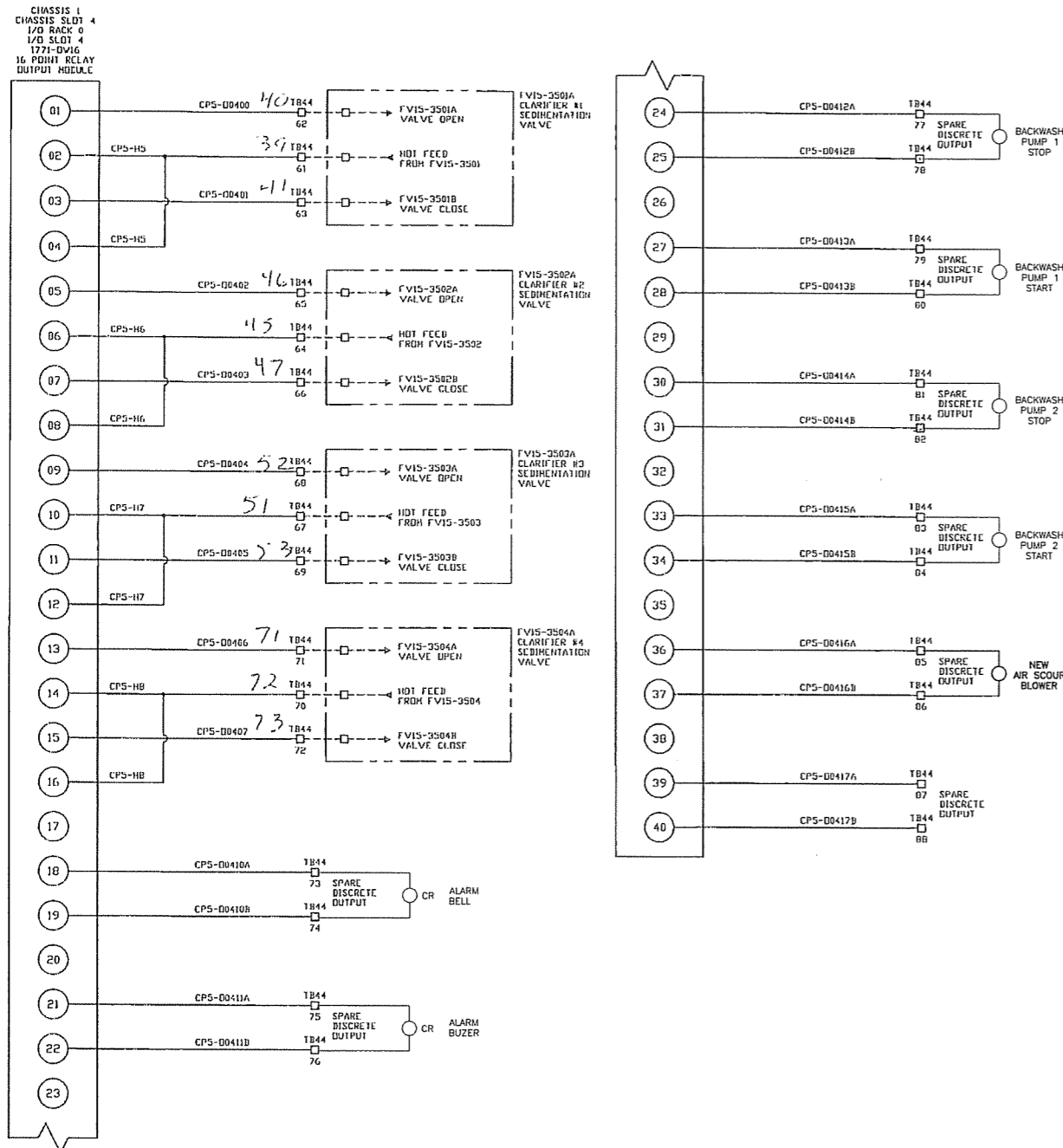
P:\PR46779\cadd\20 ELECTRICAL DIAGRAMS.dwg 5/14/2009 2:32:57 PM Dass, Colleen

NOTES:

- ALL WIRE TAGS TO BE SNAP OR SLIP ON PVC
 - UNLESS NOTED ON THE SCHEMATICS, USE THE FOLLOWING TYPE NTW FOR WIRING:
- | | |
|---------------------|------------------|
| PLC DISCRETE I/O | #18 AWG |
| AC CONTROL | RED #18 AWG |
| DC CONTROL | BLUE #16 AWG |
| NEUTRAL | WHITE #16 AWG |
| GROUND | GREEN #16 AWG |
| REMOTE POWER SOURCE | YELLOW #16 AWG |
| ANALOG | #18 AWG SHIELDED |

LEGEND

- TERMINAL BLOCK
- FIELD WIRING



NO.	REVISIONS	DATE	BY	CHK.



**NORTHERN KENTUCKY WATER DISTRICT
FORT THOMAS TREATMENT PLANT
FILTER RENOVATIONS**

JOB NO.	PR46779
DESIGNED BY:	JBK
DRAWN BY:	CKD
CHECKED BY:	CR
APPROVED BY:	SWS
DATE:	MAY 2009

**ELECTRICAL DIAGRAMS
CLARIFIER PLC CP-5**



SCALE:	NONE
SHEET NO.	20
OF	20