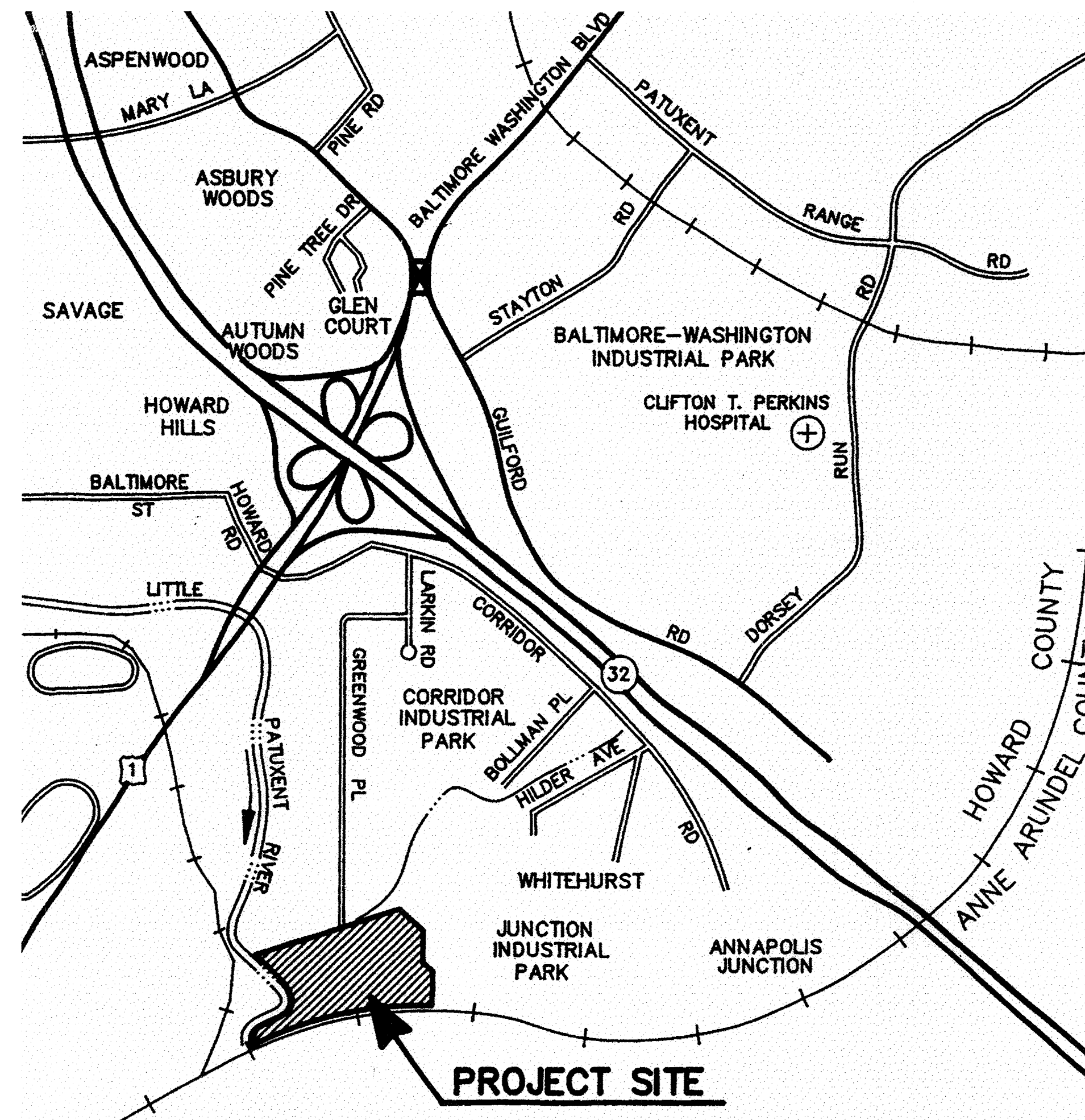


HOWARD COUNTY, MARYLAND

LITTLE PATUXENT WATER RECLAMATION PLANT



MAY 30, 2000

CAPACITY EXPANSION AND BNR IMPROVEMENTS ADDITION NO. 6 SOLIDS PROCESSING FACILITIES

**CAPITAL PROJECT NO. S-6205
CONTRACT NO. 20-3751**

ASSOCIATE DESIGN FIRMS

STANTEC CONSULTING, LTD.
Surrey, British Columbia

BRYANT, BRYANT, & WILLIAMS
Washington, D. C.

A. MORTON THOMAS & ASSO., INC.
Rockville, Maryland

LACH ELECTRIC CORPORATION
Baltimore, Maryland

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

_____ DIRECTOR OF PUBLIC WORKS	_____ DATE	_____ CHIEF, BUREAU OF ENGINEERING	_____ DATE
_____ CHIEF, BUREAU OF UTILITIES	_____ DATE	_____ CHIEF, WATER & SEWER DIVISION	_____ DATE



BLACK & VEATCH_{LLP}
Gaithersburg, Maryland

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
D. MATT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

CONFORMED TO CONSTRUCTION RECORDS 07/26/04

GENERAL LEGEND

Table with 2 columns: Symbol and Description. Includes items like SURFACED STREET, ROAD OR DRIVE; CONCRETE WALK; CATCH BASIN MANHOLE; DRAINAGE COURSE OR FLOW LINE; EXISTING GROUND CONTOUR; FINISH GRADE CONTOUR; BANK OR SLOPE LINES; TEST HOLE AND NUMBER; SURVEY LINE WITH PI, PT, OR POT; CONCRETE ENCASEMENT-PLAN; CONCRETE REACTION BLOCKING AT BEND, PLUG OR TEE; DRAINS OR CULVERTS; TUNNEL CASING - PLAN; EXISTING GENERAL LAYOUT YARD PIPING; NEW GENERAL LAYOUT YARD PIPING; NEW WATER LINE OR SEWER IN PROFILE; NON-CONNECTING PIPING; CONSTRUCTION EASEMENT LINE; EASEMENT LINE; RIGHT-OF-WAY LINE; PROPERTY LINE; PERMANENT EASEMENT LINE; TEMPORARY EASEMENT LINE; UTILITY EASEMENT LINE; SURVEY LINE SECTION LINE; WATER LINE; GAS LINE; TELEPHONE (UNDERGROUND); ELECTRICAL (UNDERGROUND); POWER OR TELEPHONE LINES (OVERHEAD); WATER OR GAS VALVE; WATER OR GAS METER; TELEPHONE OR POWER POLE WITH GUY ANCHOR; FIRE HYDRANT; YARD HYDRANT; STREET LIGHT POLE; TRAFFIC SIGNAL; TRAFFIC SIGN; STOP SIGN; HEDGE, BRUSH, SHRUBS, WOODS; DECIDUOUS TREE AND TRUNK DIAMETER; CONIFEROUS TREE AND TRUNK DIAMETER; SWAMP.

Table with 2 columns: Symbol and Description. Includes items like BUILDINGS, STRUCTURES; STRUCTURES UNDERGROUND; FUTURE BUILDINGS, STRUCTURES; CLOTHES LINE; SWING SET; FENCE; FENCE, WOOD; RAILROAD, EACH TRACK; CENTERLINE; SECTION NUMBER OR DETAIL LETTER; DRAWING NUMBER ON WHICH SECTION OR DETAIL APPEARS; OR WHERE SECTION IS CUT OR DETAIL IS NOTED; WALL ELEVATION; ABBREVIATION, DOOR, WINDOW AND LOUVER SCHEDULE REFERENCE; SCHEDULE NUMBER; ROOM NUMBER; AREA DESIGNATION; EQUIPMENT OR VALVE IDENTIFICATION CODE; EQUIPMENT NUMBER; EQUIPMENT OR VALVE IDENTIFICATION CODE; EQUIPMENT NUMBER; EQUIPMENT REPRESENTATION WITH CALLOUT; EXISTING FACILITY TO BE DEMOLISHED OR REMOVED.

MATERIALS LEGEND

Table with 2 columns: Symbol and Description. Includes items like EARTH OR GRADE; GRANULAR FILL (CRUSHED ROCK OR GRAVEL); ROCK; NEW CONCRETE; EXISTING CONCRETE, PRECAST OR PRESTRESSED CONCRETE; BRICK, FACE; CONCRETE MASONRY UNITS (CMU); CUT STONE OR SAND FILL, GROUT, MORTAR, AND PLASTER; WOOD, SHEATHING, PANELING, DECKING, ETC.; WOOD, STUDS, BEAMS, JOISTS, ETC.; RIPRAP; CHECKERED PLATE; STEEL (FOR 1" SCALE & LARGER); STEEL OR ALUMINUM (FOR 3/4" SCALE & SMALLER); BAR GRATING (LINES IN DIRECTION OF SPAN); ALUMINUM; INSULATION (BATT); INSULATION (RIGID).

Table with 2 columns: Symbol and Description. Includes items like NEW PIPING; UNDERGROUND PIPING; EXISTING PIPING; FUTURE PIPING; AIR (COMPRESSED); ALUMINUM SULFATE - (ALUM); ARGON; CHEMICAL RESISTANT ACID WASTE; CHEMICAL RESISTANT ACID WASTE VENT; TEMPERED OR BLENDED WATER; CARBON SLURRY; ACETYLENE; CHILLED WATER RETURN; CHILLED WATER SUPPLY; CHLORINE GAS; CHLORINE LIQUID; CHLORINE SOLUTION; CDWR; CDWS; Co2(G); Co2(S); CW; DN; FeCl; FeS; F; FL; FOR; FOS; FOV; G; H; HE; HP.

Table with 2 columns: Symbol and Description. Includes items like BLIND FLANGE; CAP OR PLUG; CLEANOUT; CROSS; DIAPHRAGM SEAL; ELBOW; ELBOW DOWN; ELBOW TURNING UP; FLAME ARRESTER OR CHECK; HOSE CONNECTION; QUICK COUPLING; REDUCER; RUPTURE DISK; TEE; CALIBRATING COLUMN; TEE LINE DOWN; TEE LINE UP; TRAP; UNION; WALL SLEEVE; WYE; WYE STRAINER; WYE STRAINER WITH BLOWOFF; AUTOMATIC DRAIN TRAP; DRAIN OR BELL-UP; DRIP TRAP; DUPLEX STRAINER; EXPANSION COMPENSATOR; INLINE FILTER; FLEXIBLE HOSE OR TUBING; FLEXIBLE CONNECTOR; HOSE REEL; INJECTOR, EDUCTOR, BLENDER; ORIFICE PLATE; PIPE DIFFUSER; PIPE GUIDE; SEDIMENT TRAP; STRAINER; SUCTION DIFFUSER; BOOD BALANCE ODOUR CONTROL DAMPER; SURGE CHAMBER; VENT - SCREENED; VENT; PRESSURE GAUGE W/SNUBBER; SIGHT FLOW INDICATOR; TEMPERATURE INDICATOR; THERMOMETER; ELECTROMAGNETIC/ULTRASONIC FLOWMETER; PITOT TUBE; ROTAMETER; TURBINE OR PROPELLOR FLOWMETER; SET STOP METER; VENTURI; STATIC MIXER; VERTICAL MIXER; SIGHT GLASS; CENTRIFUGE; CHANNEL DIFFUSER; COMPRESSOR OR BLOWER; PIPE ANCHOR; PUMP; SLUICE GATE; SLIDE GATE; STOP PLATE; BAR SCREEN; EXPANSION TANK; SCREW (LIFT) PUMP; FLUME; WEIR.

VALVE LEGEND

Table with 2 columns: Symbol and Description. Includes items like PINCH VALVE; PLUG VALVE, ECCENTRIC; PLUG VALVE, NON-ECCENTRIC; BUTTERFLY VALVE; GATE VALVE; BALL VALVE; GLOBE VALVE; CHECK VALVE; 3 WAY VALVE; 4 WAY VALVE; ANGLE VALVE; CHLORINE INSTITUTE VALVE; DIAPHRAGM VALVE; THROTTLING VALVE; BACKWATER VALVE; INLINE PRESSURE RELIEF VALVE; PRESSURE REGULATING VALVE; PRESSURE SUSTAINING OR MAINTAINING VALVE; VACUUM BREAKER; THERMAL SHUTOFF VALVE; EXPLOSION RELIEF VALVE; HOSE FAUCET; HOSE FAUCET W/VACUUM BREAKER; HOSE VALVE W/HOSE NIPPLE; BACKFLOW PREVENTER; SAFETY RELIEF VALVE; VACUUM RELIEF CHECK VALVE.

PIPING SYSTEMS

Table with 2 columns: Symbol and Description. Includes items like CONDENSER WATER RETURN; CONDENSER WATER SUPPLY; CARBON DIOXIDE GAS; CARBON DIOXIDE SOLUTION; WATER, COLD; DISTILLED WATER; FERRIC CHLORIDE; FERRIC SULFATE; FIRE PROTECTION WATER SYSTEM; FLUORIDE; FUEL OIL RETURN; FUEL OIL SUPPLY; FUEL OIL VENT; GAS, NATURAL; HYDROGEN; HELIUM; HYDROGEN PEROXIDE; PA; HWR; HWS; HW; HWC; IA; PERM; LIME; PG; N; SA; NaOH; SP; NaOCL; AMM(G); AMM(S); NO.

Table with 2 columns: Symbol and Description. Includes items like PHOSPHORIC ACID; HEATING SYSTEM WATER RETURN; HEATING SYSTEM WATER SUPPLY; WATER, POTABLE HOT; HOT WATER CIRCULATING; INSTRUMENT AIR; POTASSIUM PERMANGANATE; LIME; LP GAS (PROPANE); NITROGEN; SODA ASH; SODIUM HYDROXIDE; SODIUM HEXAMETAPHOSPHATE (PHOSPHATE); SODIUM HYPOCHLORITE; AMMONIA GAS; AMMONIA SOLUTION; NITROUS OXIDE; NPW; NPHW; OX; OZ; OF; POLY; RF; ST; SG; SI; PD; SAN; V; VAC; W; WATER, NON-POTABLE; WATER, NON-POTABLE HOT; OXYGEN; OZONE; OVERFLOW; POLYMER SOLUTION; REFRIGERANT; STORM DRAIN; SLUDGE GAS; SILICA; SUMP PUMP DISCHARGE; SANITARY SEWER; VENT; VACUUM; WATER.

PIPING ACCESSORIES LEGEND

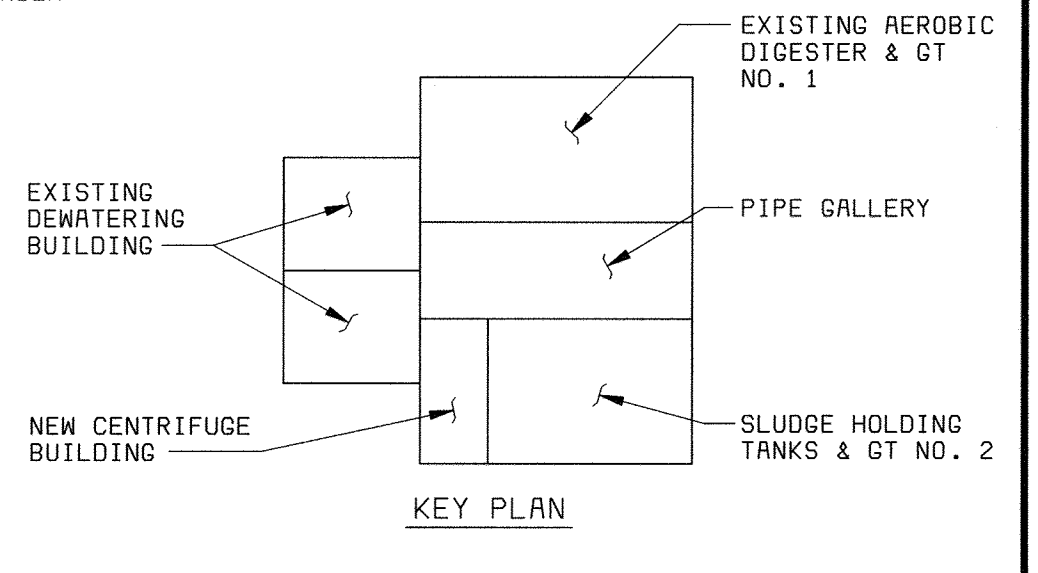
Table with 2 columns: Symbol and Description. Includes items like EXPANSION COMPENSATOR; INLINE FILTER; FLEXIBLE HOSE OR TUBING; FLEXIBLE CONNECTOR; HOSE REEL; INJECTOR, EDUCTOR, BLENDER; ORIFICE PLATE; PIPE DIFFUSER; PIPE GUIDE; SEDIMENT TRAP; STRAINER; SUCTION DIFFUSER; BOOD BALANCE ODOUR CONTROL DAMPER; SURGE CHAMBER; VENT - SCREENED; VENT; PRESSURE GAUGE W/SNUBBER; SIGHT FLOW INDICATOR; TEMPERATURE INDICATOR; THERMOMETER; ELECTROMAGNETIC/ULTRASONIC FLOWMETER; PITOT TUBE; ROTAMETER; TURBINE OR PROPELLOR FLOWMETER; SET STOP METER; VENTURI; STATIC MIXER; VERTICAL MIXER; SIGHT GLASS; CENTRIFUGE; CHANNEL DIFFUSER; COMPRESSOR OR BLOWER; PIPE ANCHOR; PUMP; SLUICE GATE; SLIDE GATE; STOP PLATE; BAR SCREEN; EXPANSION TANK; SCREW (LIFT) PUMP; FLUME; WEIR.

ACTUATOR LEGEND

Table with 2 columns: Symbol and Description. Includes items like ELECTRIC; FLOAT; DIAPHRAGM; AIR/OIL TANDEM; SOLENOID; AIR.

MISCELLANEOUS EQUIPMENT

Table with 2 columns: Symbol and Description. Includes items like STATIC MIXER; VERTICAL MIXER; SIGHT GLASS; CENTRIFUGE; CHANNEL DIFFUSER; COMPRESSOR OR BLOWER; PIPE ANCHOR; PUMP; SLUICE GATE; SLIDE GATE; STOP PLATE; BAR SCREEN; EXPANSION TANK; SCREW (LIFT) PUMP; FLUME; WEIR.



58472-401-323-C013

058472.2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND; CHIEF, BUREAU OF UTILITIES DATE; BLACK & VEATCH LLP Gaithersburg, Maryland; THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676; REG. PROF. ENGR. DATE; DES: TJW; DRN: NAG,RAB; CHK: WLK; DATE: 5-30-00; 07/26/04 CONFORMED TO CONSTRUCTION RECORDS; RHH,RJR,RJR; LAYOUT/OVERVIEW; LEGEND; LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY; CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND; SCALE AS SHOWN; SHEET 2 OF 150; L2.

ABBREVIATIONS

EQUIPMENT DESIGNATION

Table listing abbreviations for various equipment and materials, including ACID, AMBER INDICATING LIGHT, ANCHOR BOLT, AIR CONDITIONER, etc.

Table listing abbreviations for various equipment and materials, including GLOBE VALVE, GAS METER, GALLONS PER MINUTE, GRADE, GRAVITY THICKENER, etc.

Table listing equipment designations, including AERATION BLOWER, ALTERNATE TRANSFORMER, BACKFLOW PREVENTER, CONTROL DAMPER, COMBUSTIBLE GAS DETECTOR, etc.

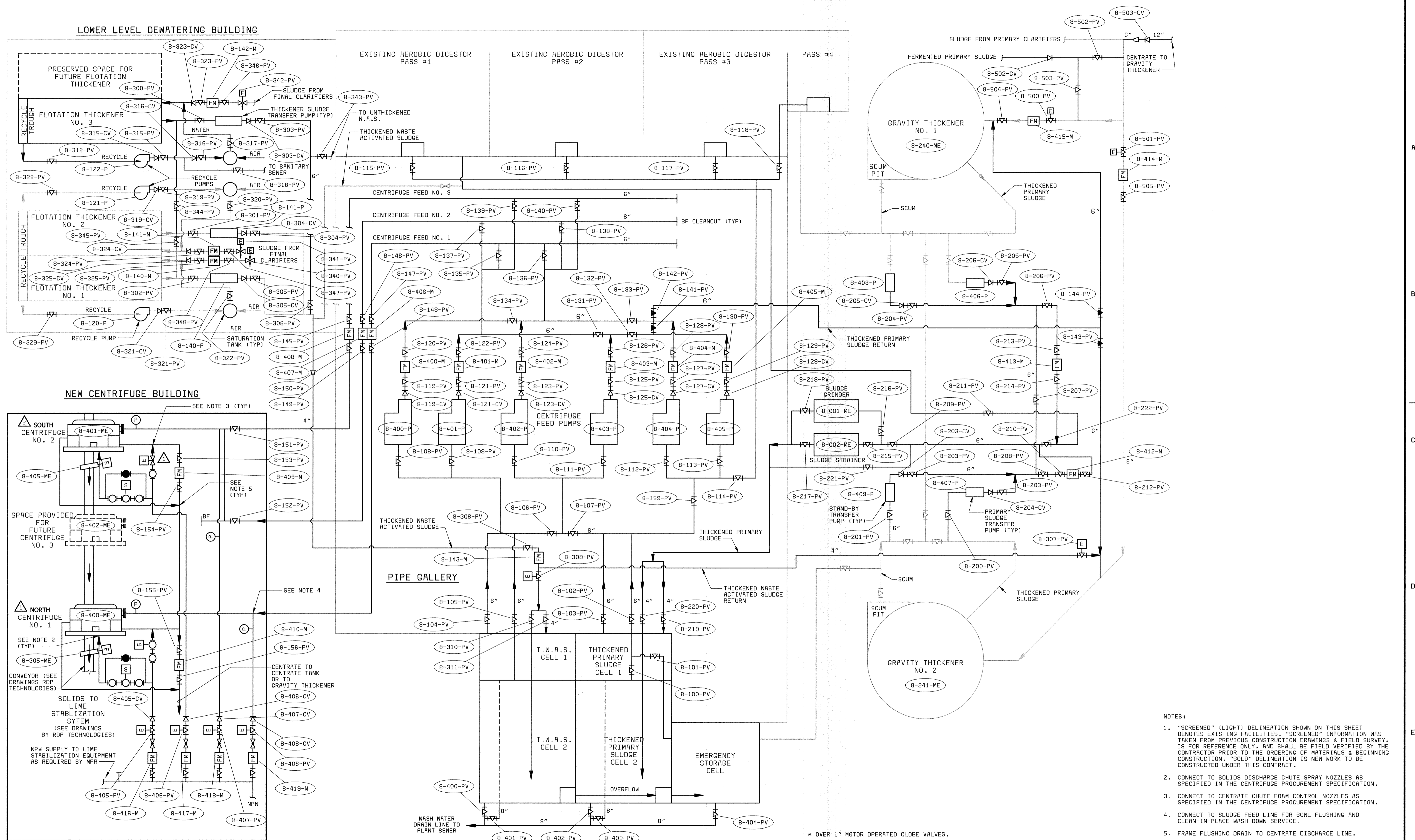
VALVE DESIGNATION

Table listing valve designations, including AIR RELEASE VALVE, BUTTERFLY VALVE, BALL VALVE, CONTROL VALVE, CHECK VALVE, PLUG VALVE, PINCH VALVE, RELIEF VALVE, etc.

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F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. BLACK & VEATCH LLP. Gaithersburg, Maryland. THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676. REG. PROF. ENGR. DATE. DES: TJW, DRN: NAG, CHK: WLK, DATE: 5-30-00. LAYOUT/OVERVIEW. ABBREVIATIONS. LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY. SCALE AS SHOWN. SHEET 3 OF 150. L3. HOWARD COUNTY, MARYLAND.

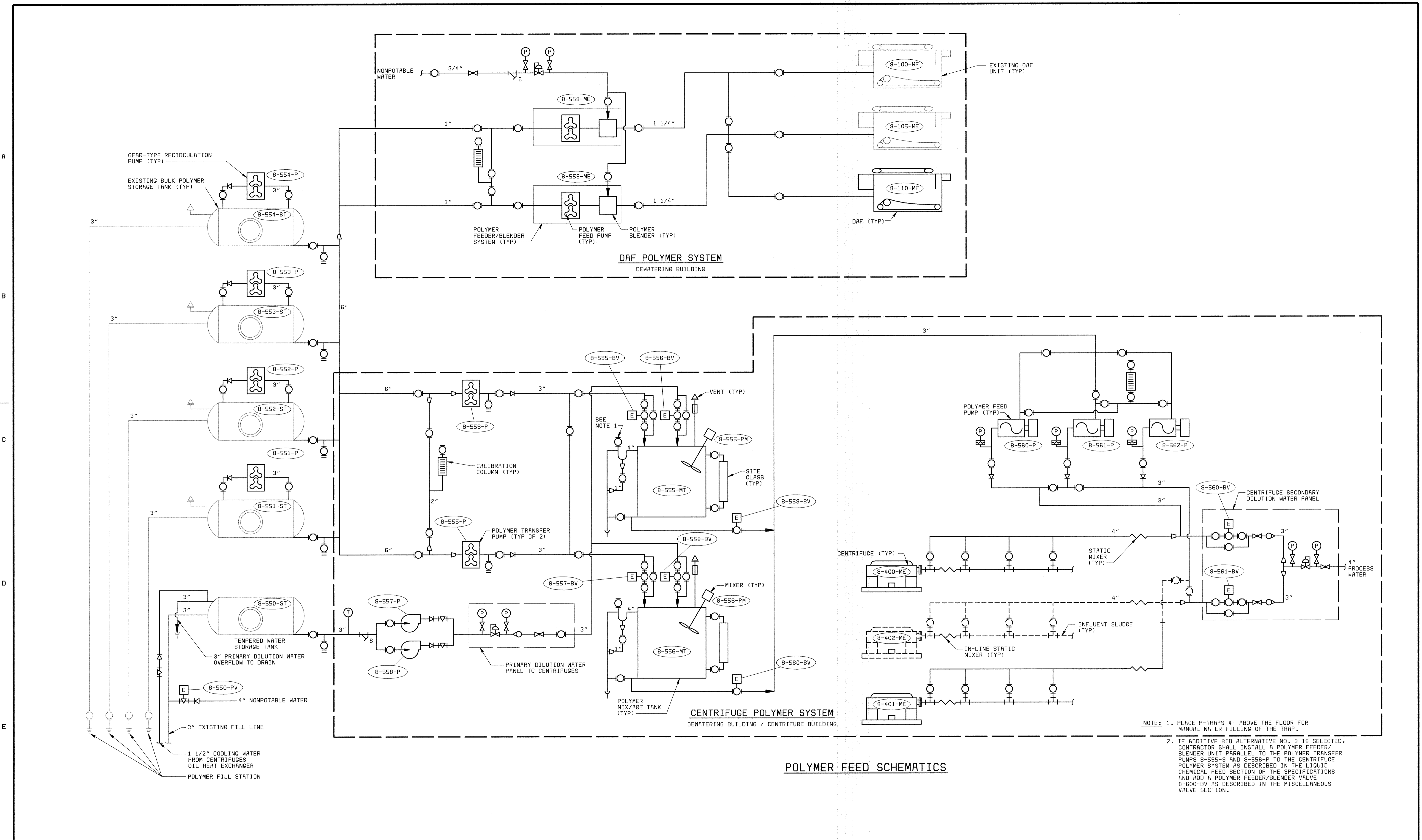


- NOTES:
- "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
 - CONNECT TO SOLIDS DISCHARGE CHUTE SPRAY NOZZLES AS SPECIFIED IN THE CENTRIFUGE PROCUREMENT SPECIFICATION.
 - CONNECT TO CENTRATE CHUTE FORM CONTROL NOZZLES AS SPECIFIED IN THE CENTRIFUGE PROCUREMENT SPECIFICATION.
 - CONNECT TO SLUDGE FEED LINE FOR BOWL FLUSHING AND CLEAN-IN-PLACE WASH DOWN SERVICE.
 - FRAME FLUSHING DRAIN TO CENTRATE DISCHARGE LINE.

* OVER 1" MOTOR OPERATED GLOBE VALVES.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24876 DATE: 5-30-00	DES: TJW DRN: RAB CHK: WLK DATE: 5-30-00 07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	LAYOUT/OVERVIEW MECHANICAL SOLIDS SCHEMATIC	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 4 OF 150 L4
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R00098474.DWG 58472-401-0002
 058472.2
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POLYMER FEED SCHEMATICS

NOTE: 1. PLACE P-TRAPS 4' ABOVE THE FLOOR FOR MANUAL WATER FILLING OF THE TRAP.
 2. IF ADDITIVE BID ALTERNATIVE NO. 3 IS SELECTED, CONTRACTOR SHALL INSTALL A POLYMER FEEDER/BLENDER UNIT PARALLEL TO THE POLYMER TRANSFER PUMPS 8-555-P AND 8-556-P TO THE CENTRIFUGE POLYMER SYSTEM AS DESCRIBED IN THE LIQUID CHEMICAL FEED SECTION OF THE SPECIFICATIONS AND ADD A POLYMER FEEDER/BLENDER VALVE 8-560-BV AS DESCRIBED IN THE MISCELLANEOUS VALVE SECTION.

58472-401-GEN-C-00000187; R0000187

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. DATE

THIS DRAWING WAS
 ORIGINALLY APPROVED
 FOR CONSTRUCTION
 AND SEALED BY
 D MITT BOND
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 24676

DES: ACR,KAL					
DRN: VAP,JRC					
CHK: DCG					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
		REVISIONS AND RECORD OF ISSUE			

LAYOUT/OVERVIEW
 MECHANICAL
 POLYMER FEED SCHEMATICS

LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN
 SHEET
 5 OF 150
 L5

EXISTING LEGEND

- TREE
- TREE LINE
- TRAVERSE MARKER
- DROP INLET
- SIGN
- LIGHT POLE
- SANITARY MANHOLE
- WATER VALVE
- FIRE HYDRANT
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- UTILITY POLE
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- PROPERTY LINE
- FENCE LINE
- UNDERGROUND PIPING 12" AND LARGER
- UNDERGROUND PIPING SMALLER THAN 12"
- RAILROAD TRACK
- TEST BORING

ABBREVIATIONS

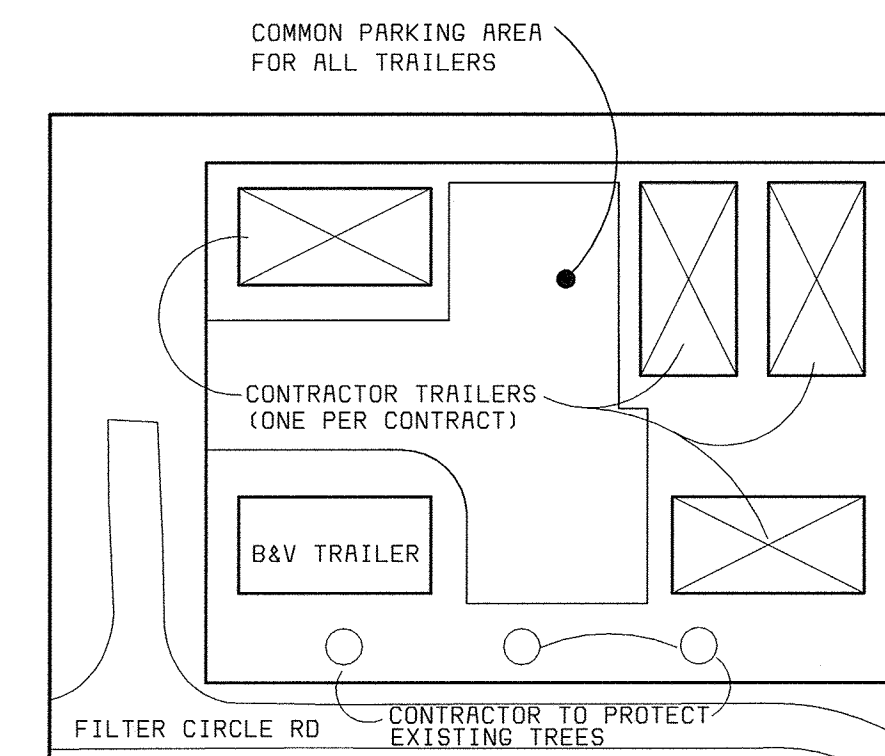
- F FERMENTER
- FC FINAL CLARIFIER
- FEB FLOW EQUALIZATION BASIN
- PC PRIMARY CLARIFIER
- PR PROCESS REACTOR
- PS PRIMARY SUBSTATION

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
5. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH MAXIMUM ONE FOOT CONTOUR INTERVALS PREPARED FOR AMT AND ASSOCIATES BY AIR SURVEY CORP., INC. DATED JUNE 1999.
6. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 47111 AND 4712N WERE USED FOR THIS PROJECT.
7. WATER IS PUBLIC (HO. CO. LITTLE PATUXENT WATER RECLAMATION PLANT).
8. SEWER IS PUBLIC (HO. CO. LITTLE PATUXENT WATER RECLAMATION PLANT).
9. EXISTING UTILITIES ARE BASED ON LITTLE PATUXENT WATER RECLAMATION PLAN AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF ANY DEMOLITION AND CONSTRUCTION.
10. FLOODPLAIN LIMITS FOR THIS PROJECT WERE TAKEN FROM HOWARD COUNTY STUDY DATED 1986.
11. THE ENTIRE LITTLE PATUXENT WASTEWATER TREATMENT PLANT SITE IS LOCATED IN THE 100 YEAR FLOODPLAIN, ELEV. 143.0.
12. OFFSITE DISPOSAL OF EXCESS MATERIAL WILL BE TO AN APPROVED SITE.
13. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE UNLESS OTHERWISE SHOWN.
14. OMISSIONS/ADDITIONS OF UTILITIES FOUND DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF ANY CONTRACTOR ENGAGED IN CONSTRUCTION AT THIS SITE. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY AND ALL UTILITY OMISSIONS/ADDITIONS.
15. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND LEGALLY DISPOSE OF ANY AND ALL DEMOLISHED/DELETERIOUS MATERIALS.
16. EXISTING PAVEMENT SHALL BE SAWCUT PRIOR TO REMOVAL. ALL SAWCUT SHALL BE STRAIGHT, EVEN CUTS. JAGGED EDGES SHALL NOT BE PERMITTED. SAWCUT DEPTH SHALL EXTEND AT LEAST 2/3 TIMES THE THICKNESS OF THE EXISTING PAVEMENT THAT REMAINS IN PLACE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES. PONDING OF WATER SHALL NOT BE PERMITTED. ALL PONDING WATER SHALL BE FILTERED THROUGH A PORTABLE SEDIMENT TANK PRIOR TO DISCHARGE INTO THE PUBLIC STORM/SEWER SYSTEM.
18. SURFACED STREET AND PARKING AREAS SHALL BE MAINTAINED IN A CLEAN CONDITION, MUD AND DUST FREE AT ALL TIMES. ADEQUATE MEANS SHALL BE PROVIDED TO CLEAN TRUCKS AND EQUIPMENT.
19. CONTRACTOR SHALL HAND DIG TEST PITS AT ALL UTILITY CROSSINGS TO DETERMINE THEIR EXACT LOCATION, WELL IN ADVANCE OF ANY DEMOLITION/CONSTRUCTION.
20. ALL TIES TO EXISTING PAVEMENT/STRUCTURES AND CURB SHALL BE SMOOTH TRANSITIONS WITH NO ABRUPT CHANGES.
21. CONTRACTOR SHALL ADJUST ALL UTILITY FRAME AND COVERS TO MATCH NEW FINISHED GRADE.
22. FOR DEMOLITION/RELOCATION OF YARD PIPING SANITARY SEWER, WATER LINE ETC. SEE YARD PIPING DEMOLITION PLANS.
23. THE VERTICAL SURVEY IS BASED ON THE CURRENT HOWARD COUNTY GEODETIC CONTROL (NAVD 88). PREVIOUS CONSTRUCTION PROJECTS AND RECORD DRAWINGS AT THE SITE WERE BASED ON AN EARLIER VERTICAL DATUM. ELEVATIONS OF EXISTING FACILITIES SHOWN ON THESE DRAWINGS HAVE BEEN ADJUSTED TO APPROXIMATE THE ELEVATIONS IN THE CURRENT HOWARD COUNTY GEODETIC CONTROL. THE CONTRACTOR SHALL CONFIRM THE ELEVATION OF ALL EXISTING STRUCTURES WHICH ARE CRITICAL TO THIS CONTRACT.
24. THE SITE PLAN AND EROSION CONTROL PLAN ARE BASED ON THE SITE DEVELOPMENT PLAN (SDP) AMENDMENT DATED APRIL 10, 2000 AND SUBMITTED TO HOWARD COUNTY. THE SDP AMENDMENT IS INCLUDED IN THE CONTRACT BY REFERENCE. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE SDP AMENDMENT.
25. CONTRACTOR OF CONTRACT NO 20-3751 SHALL CONSTRUCT THE CONTRACTOR PARKING AREA AND BE RESPONSIBLE FOR ITS MAINTENANCE THROUGHOUT THE DURATION OF CONTRACT 20-3751.
26. CONTRACTOR OF CONTRACT NO 20-3751 SHALL INSTALL AND MAINTAIN SIGNS AS SHOWN IN THE CONSTRUCTION SIGNAGE TABLE ON THIS DRAWING.
27. CONTRACTOR OF CONTRACT NO 20-3751 SHALL PREPARE CONSTRUCTION TRAILER AREA AS SHOWN, AND MAINTAIN THE SITE THROUGHOUT THE DURATION OF THE CONTRACT.

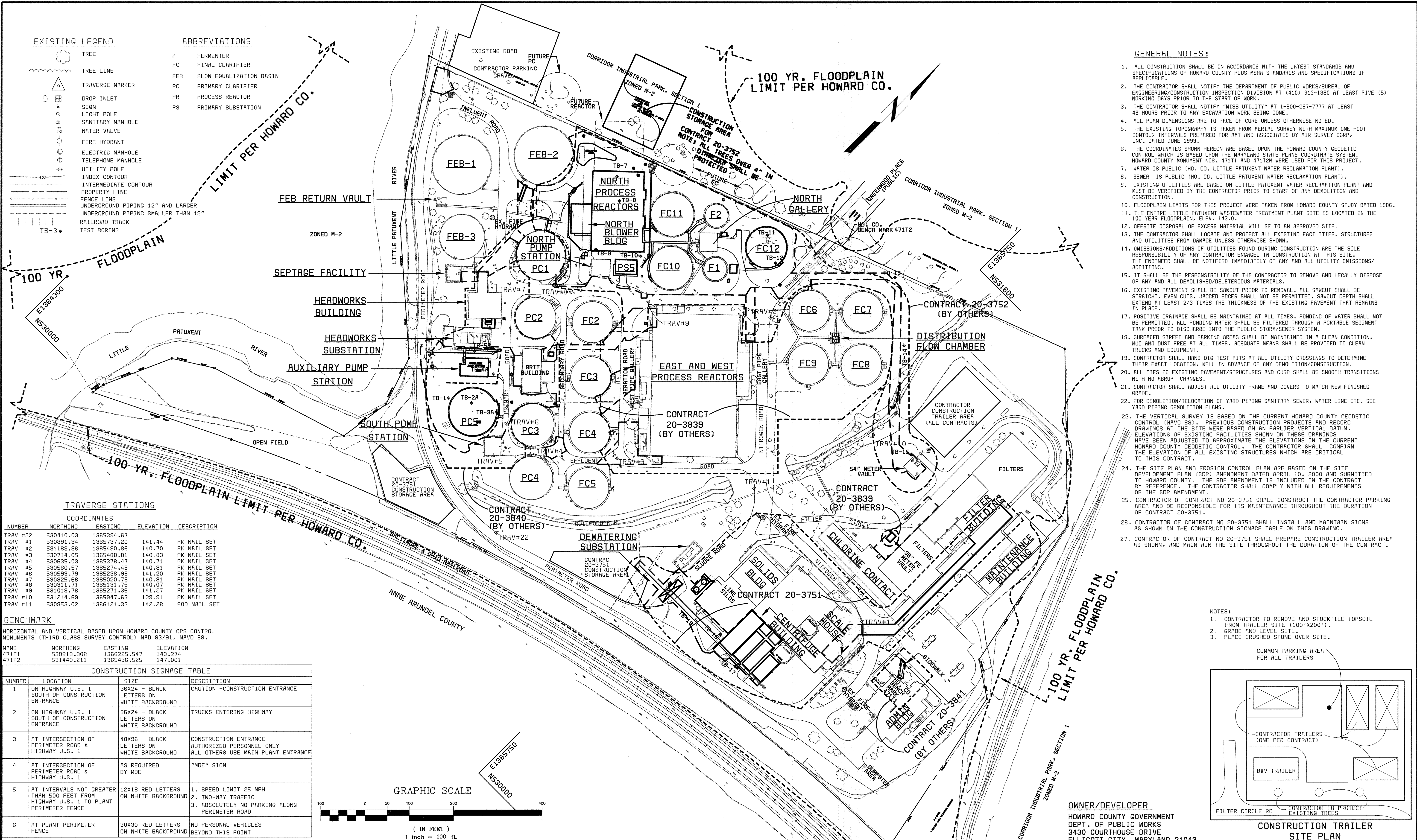
NOTES:

1. CONTRACTOR TO REMOVE AND STOCKPILE TOPSOIL FROM TRAILER SITE (100'X200').
2. GRADE AND LEVEL SITE.
3. PLACE CRUSHED STONE OVER SITE.



CONSTRUCTION TRAILER SITE PLAN

OWNER/DEVELOPER
 HOWARD COUNTY GOVERNMENT
 DEPT. OF PUBLIC WORKS
 3430 COURTHOUSE DRIVE
 ELLICOTT CITY, MARYLAND 21043



TRAVERSE STATIONS

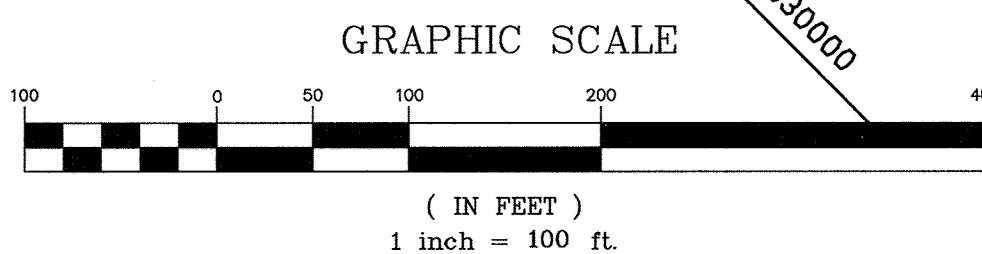
NUMBER	COORDINATES			DESCRIPTION
	NORTHING	EASTING	ELEVATION	
TRAV #22	530410.03	1365394.67	141.44	PK NAIL SET
TRAV #1	530091.94	1365737.20	140.70	PK NAIL SET
TRAV #2	531189.86	1365490.86	140.70	PK NAIL SET
TRAV #3	530714.05	1365488.81	140.83	PK NAIL SET
TRAV #4	530635.03	1365378.47	140.71	PK NAIL SET
TRAV #5	530560.57	1365274.49	140.81	PK NAIL SET
TRAV #6	530539.79	1365236.95	141.20	PK NAIL SET
TRAV #7	530825.96	1365020.78	140.81	PK NAIL SET
TRAV #8	530911.71	1365131.75	140.07	PK NAIL SET
TRAV #9	531019.78	1365271.36	141.27	PK NAIL SET
TRAV #10	531214.69	1365947.63	139.91	PK NAIL SET
TRAV #11	530853.02	1366121.33	142.28	60D NAIL SET

BENCHMARK

HORIZONTAL AND VERTICAL BASED UPON HOWARD COUNTY GPS CONTROL MONUMENTS (THIRD CLASS SURVEY CONTROL) NAD 83/91, NAVD 88.

NAME	NORTHING	EASTING	ELEVATION
47111	530819.308	1366228.547	143.274
47121	531440.211	1365496.525	147.001

NUMBER	LOCATION	SIZE	DESCRIPTION
1	ON HIGHWAY U.S. 1 SOUTH OF CONSTRUCTION ENTRANCE	36X24 - BLACK LETTERS ON WHITE BACKGROUND	CAUTION -CONSTRUCTION ENTRANCE
2	ON HIGHWAY U.S. 1 SOUTH OF CONSTRUCTION ENTRANCE	36X24 - BLACK LETTERS ON WHITE BACKGROUND	TRUCKS ENTERING HIGHWAY
3	AT INTERSECTION OF PERIMETER ROAD & HIGHWAY U.S. 1	48X96 - BLACK LETTERS ON WHITE BACKGROUND	CONSTRUCTION ENTRANCE AUTHORIZED PERSONNEL ONLY ALL OTHERS USE MAIN PLANT ENTRANCE
4	AT INTERSECTION OF PERIMETER ROAD & HIGHWAY U.S. 1	AS REQUIRED BY MDE	"MODE" SIGN
5	AT INTERVALS NOT GREATER THAN 500 FEET FROM HIGHWAY U.S. 1 TO PLANT PERIMETER FENCE	12X18 RED LETTERS ON WHITE BACKGROUND	1. SPEED LIMIT 25 MPH 2. TWO-WAY TRAFFIC 3. ABSOLUTELY NO PARKING ALONG PERIMETER ROAD
6	AT PLANT PERIMETER FENCE	30X30 RED LETTERS ON WHITE BACKGROUND	NO PERSONAL VEHICLES BEYOND THIS POINT



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY JOSEPH H. BYRNE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24174

DES:	AR				
DRN:	REA				
CHK:	JB				
DATE:	05/30/00	DATE		REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

SITWORK
 OVERALL SITE PLAN

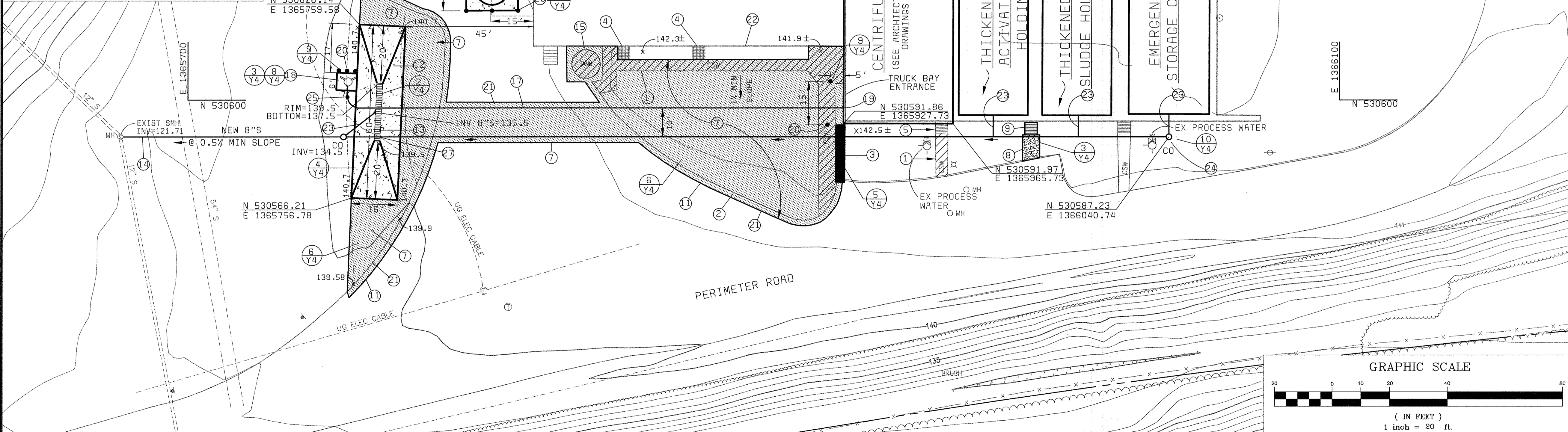
LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 8 OF 150
 Y1

056724
 056724

CONSTRUCTION NOTES:

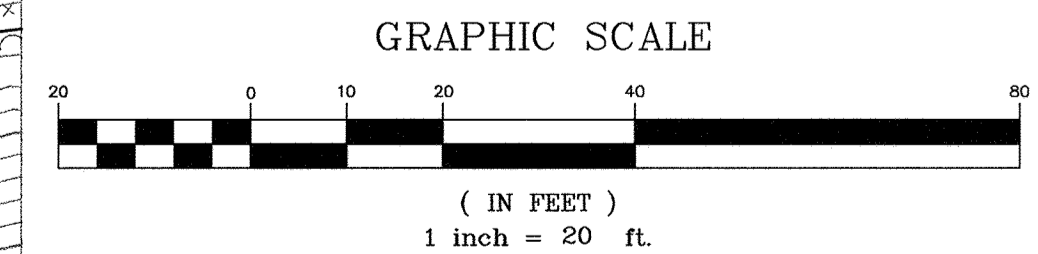
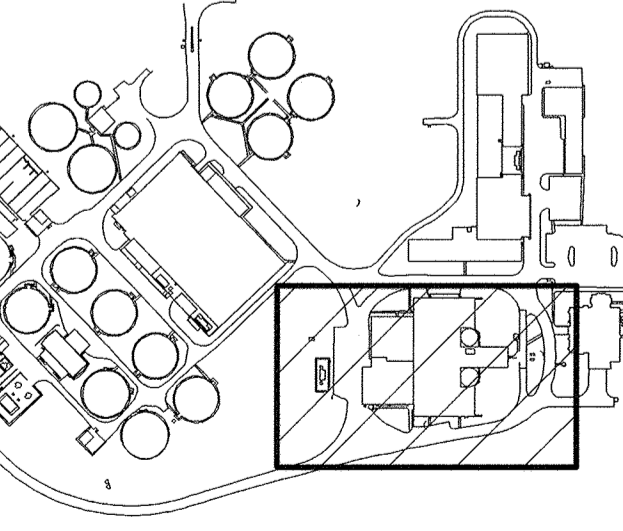
- 1 REMOVE CONCRETE WALK
- 2 REMOVE CONCRETE CURB - SAWCUT 1" OF EXISTING PAVEMENT PRIOR TO REMOVING CURB
- 3 INSTALL CONCRETE CURB
- 4 EXISTING GRATING TO REMAIN
- 5 REMOVE AND REUSE ALUMINUM STAIRS
- 6 REMOVE BITUMINOUS PAVING FOR SILO INSTALLATION
- 7 INSTALL NEW BITUMINOUS PAVING
- 8 INSTALL 6" WIDE CONCRETE PAD, 2" ABOVE EXISTING GRADE
- 9 RE-INSTALL ALUMINUM STAIRCASE (SEE NOTE 5)
- 10 INSTALL NEW CONCRETE PAD AROUND SILOS. SEE STRUCTURAL DRAWINGS
- 11 REMOVE A 2' WIDE STRIP OF BITUMINOUS PAVING - SAWCUT PRIOR TO REMOVAL. MEET EXISTING PAVEMENT IN LINE AND GRADE
- 12 INSTALL CONCRETE TRUCK WASH AREA
- 13 INSTALL TRENCH DRAIN W/SAND TRAP AND 8" SANITARY SEWER
- 14 INSTALL 8" SANITARY SEWER AND CONNECT TO EXISTING SANITARY MANHOLE
- 15 RELOCATE LIME SILO PER DRAWINGS PREPARED BY RDP TECHNOLOGIES INC., AND PATCH AREA FLUSH WITH EX GRADE
- 16 INSTALL LIME SILO
- 17 INSTALL 1 1/2" WATER SUPPLY LINE, MIN 4" COVER
- 18 INSTALL 1 1/2" YARD HYDRANT, POST AND NON-FREEZE TYPE
- 19 SEE MECHANICAL/PLUMBING DRAWINGS FOR CONTINUATION
- 20 INSTALL BOLLARDS
- 21 CONNECT NEW PAVING TO EX. PAVING
- 22 GRASS AREA TO REMAIN
- 23 INSTALL 8" SEWER
- 24 INSTALL NEW CLEANOUT
- 25 INSTALL 1 1/2" CURB STOP AND BOX
- 26 RELOCATED LIME SILO (SEE NOTE 15)
- 27 CONTRACTOR TO TEST PIT PRIOR TO CONSTRUCTION
- 28 CONTRACTOR TO TEST PIT 15" D RELOCATE IF NECESSARY AT NO COST TO OWNER
- 29 REMOVE AND REPAVE AREA UNDERNEATH TRUCK LOADING CANOPY WITH BITUMINOUS PAVING
- 30 CONTRACTOR TO MAKE TEMPORARY PROVISIONS AS REQUIRED TO MAINTAIN TRUCK LOADING OF SLUDGE FROM THIS INDICATED CONVEYOR FOR THE DURATION OF THE WORK.



LEGEND

- SEE DRAWING L2 FOR ADDITIONAL LEGENDS
- F FERMENTER
 - FC FINAL CLARIFIER
 - FEB FLOW EQUALIZATION BASIN
 - PC PRIMARY CLARIFIER
 - PR PROCESS REACTOR
 - PS PRIMARY SUBSTATION
 - TB-3 TEST BORING
 - PROPOSED STRUCTURE
 - PROPOSED BITUMINOUS PAVING
 - CONCRETE PAVING/SIDEWALK OR STRUCTURE
 - PROPOSED CONTOUR
 - LIMIT OF DISTURBANCE
 - EXISTING CONTOUR
 - EXISTING STORM SEWER
 - PROPOSED STORM SEWER
 - EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - N 532000
 - E 1365000
 - STAKEOUT COORDINATES
 - SF SILT FENCE
 - SSF SUPER SILT FENCE
 - AGIP INLET PROTECTION
 - MH 6 NEW STORM MANHOLE AND DESIGNATOR
 - I-1 NEW STORM INLET AND DESIGNATOR
 - SMH 6 NEW SEWER MANHOLE AND DESIGNATOR

KEY LEGEND



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-0814
E-MAIL: JBYRNE@AMTENGINEERING.COM
AMT FILE # 98-154

BLACK & VEATCH
Gathersburg, Maryland
REG. PROF. ENGR.
DATE: 5/30/00

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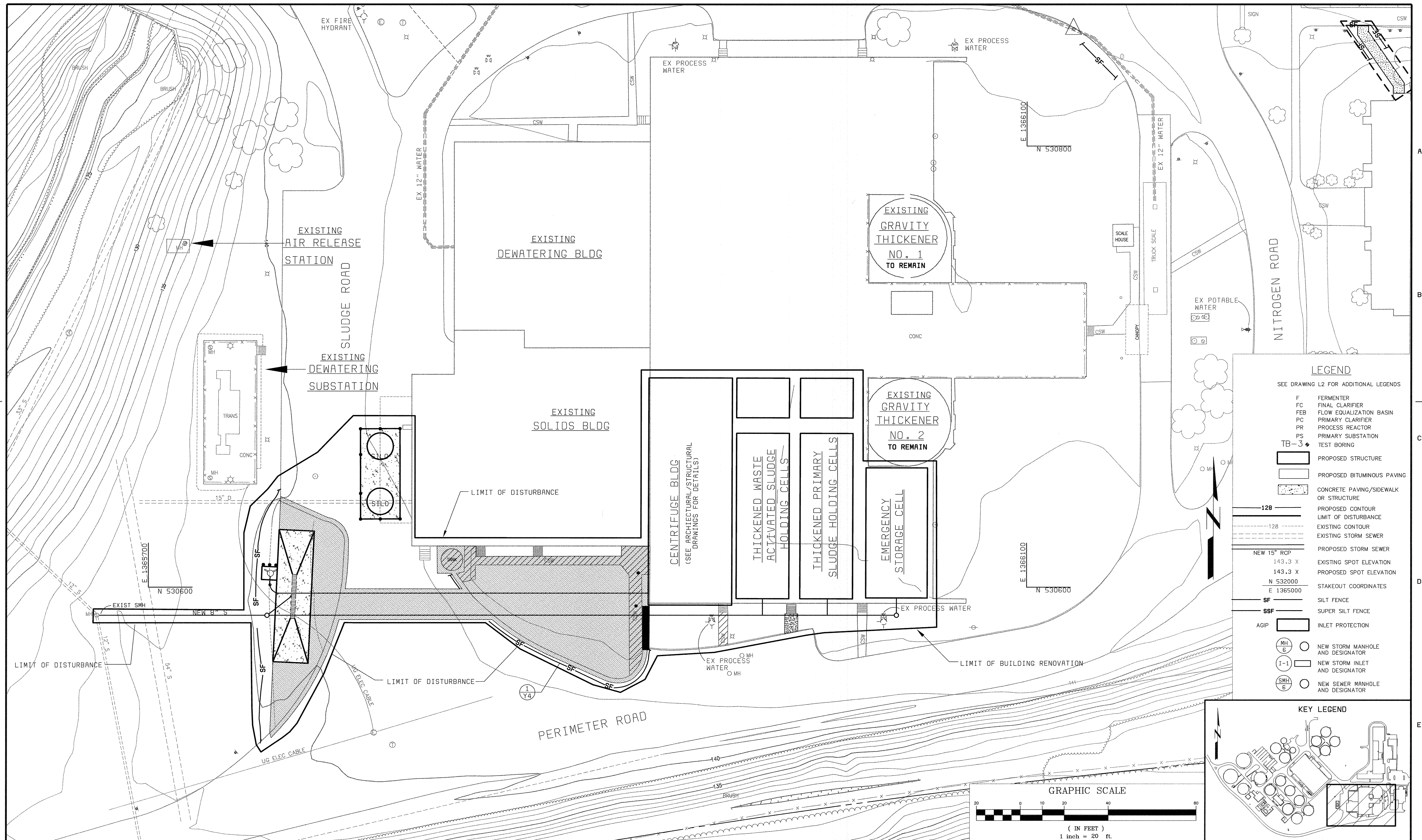
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DRN:	REA								
CHK:	JB								
DATE:	05/30/00	DATE		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	

SITWORK
SITE DEVELOPMENT PLAN

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 9 OF 150
Y2

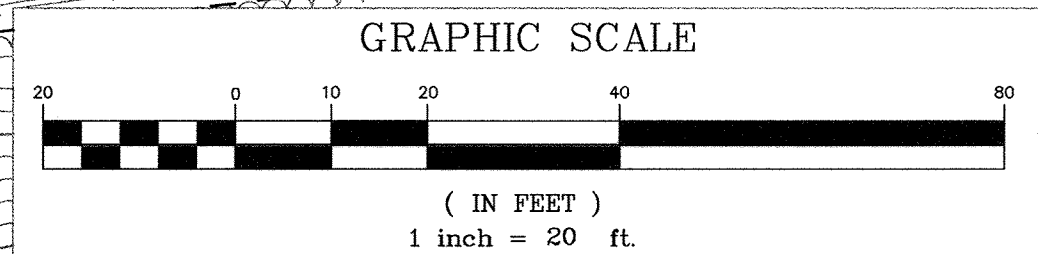
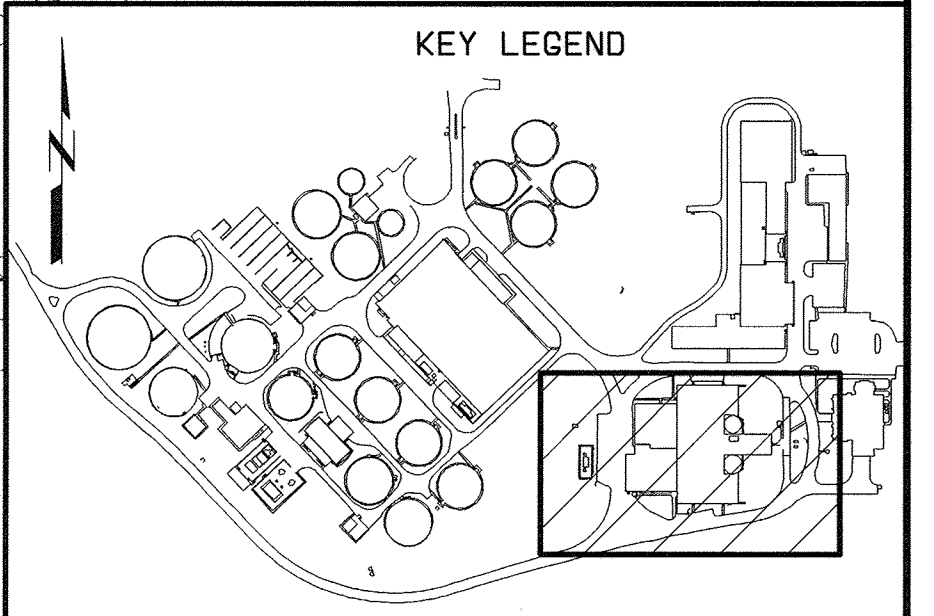
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FD58472A



LEGEND

SEE DRAWING L2 FOR ADDITIONAL LEGENDS

F	FERMENTER
FC	FINAL CLARIFIER
FEB	FLOW EQUALIZATION BASIN
PC	PRIMARY CLARIFIER
PR	PROCESS REACTOR
PS	PRIMARY SUBSTATION
TB-3	TEST BORING
[Symbol]	PROPOSED STRUCTURE
[Symbol]	PROPOSED BITUMINOUS PAVING
[Symbol]	CONCRETE PAVING/SIDEWALK OR STRUCTURE
[Symbol]	PROPOSED CONTOUR
[Symbol]	LIMIT OF DISTURBANCE
[Symbol]	EXISTING CONTOUR
[Symbol]	EXISTING STORM SEWER
[Symbol]	PROPOSED STORM SEWER
[Symbol]	EXISTING SPOT ELEVATION
[Symbol]	PROPOSED SPOT ELEVATION
[Symbol]	STAKEOUT COORDINATES
[Symbol]	SILT FENCE
[Symbol]	SUPER SILT FENCE
[Symbol]	INLET PROTECTION
[Symbol]	NEW STORM MANHOLE AND DESIGNATOR
[Symbol]	NEW STORM INLET AND DESIGNATOR
[Symbol]	NEW SEWER MANHOLE AND DESIGNATOR



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
TEL (301) 881-2545 FAX (301) 881-8814
E-MAIL JBYRNE@AMTENGINEERING.COM
AMT FILE # 96-154

BLACK & VEATCH LP
Gaithersburg, Maryland

REG. PROF. ENGR. DATE 5/30/00

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JOSEPH H. BYRNE
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24174

DES:	AR								
DRN:	REA								
CHK:	JB								
DATE:	05/30/00	DATE		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	

SITWORK

EROSION AND SEDIMENT CONTROL PLAN

**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 10 OF 150

Y3

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HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENEED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1. **PREFERRED** -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).

2. **ACCEPTABLE** -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ. FT.) AND 1000 LBS/ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING -- FOR THE PERIODS MARCH 1 -- APRIL 30, AND AUGUST 1 -- OCTOBER 15, SEED WITH 60 LBS/ACRE (1.4 LBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 -- JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS/ACRE (.05 LBS/1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 -- FEBRUARY 28, PROTECT SITE BY:

OPTION 1 -- TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
OPTION 2 -- USE SOD.
OPTION 3 -- SEED WITH 60 LBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENEED.

SOIL AMENDMENTS: APPLY 600 LBS/ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ. FT.).

SEEDING -- FOR PERIODS MARCH 1 -- APRIL 30 AND FROM AUGUST 15 -- OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 -- AUGUST 14, SEED WITH 3 LBS/ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 -- FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING -- APPLY 1-1/2 TO 2 TONS/ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (5 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

NOTE: FOR PERMANENT SEED MIXTURE, SEE PROJECT SPECIFICATIONS.

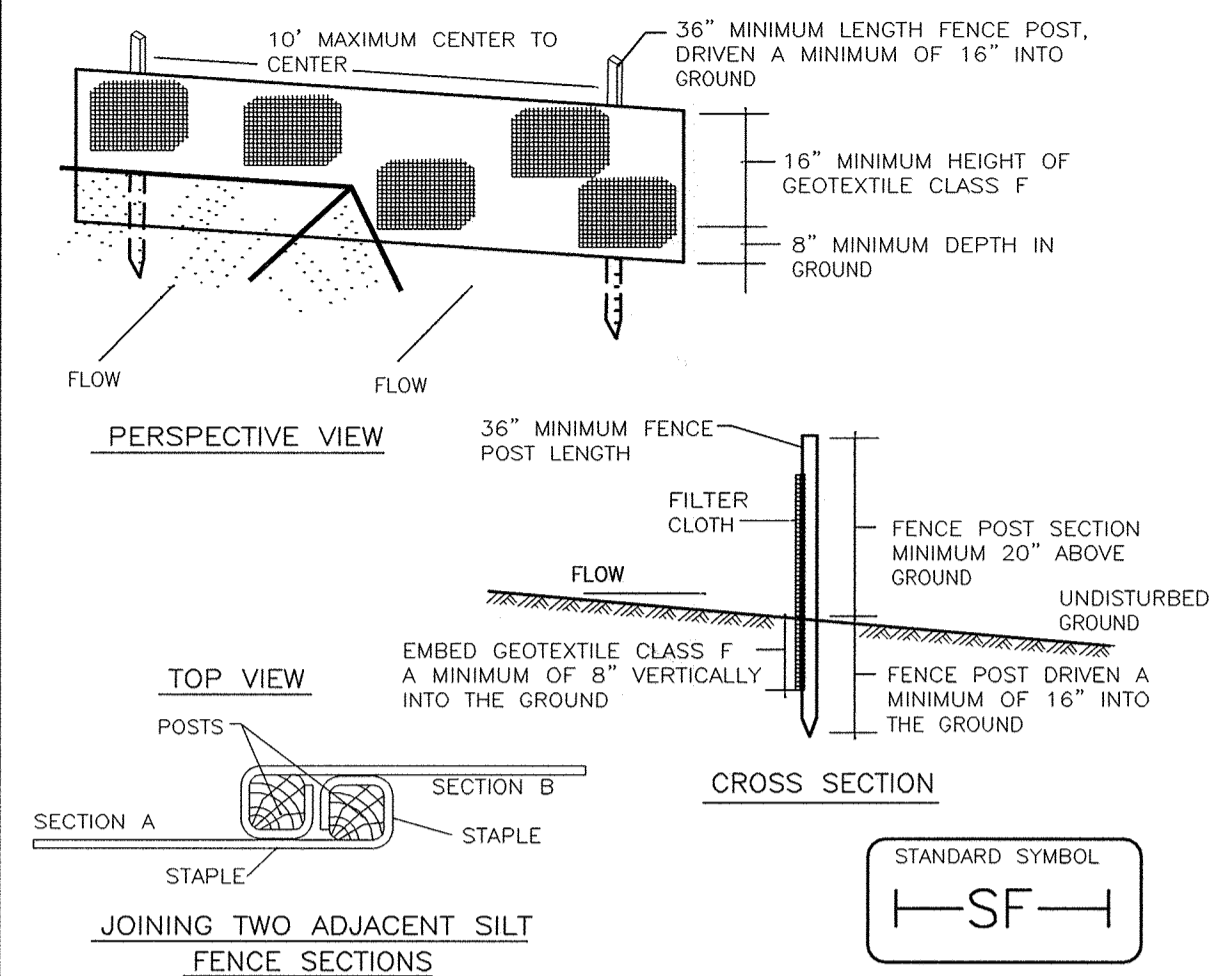
HOWARD SOIL CONSERVATION DISTRICT

STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
 - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:**

TOTAL AREA OF SITE	38.01 ACRES
AREA DISTURBED	0.23 ACRES
AREA TO BE ROOFED OR PAVED	0.23 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0 ACRES
TOTAL CUT	100 CU. YDS.
TOTAL FILL	0 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	100 CU. YDS.
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.

SILT FENCE

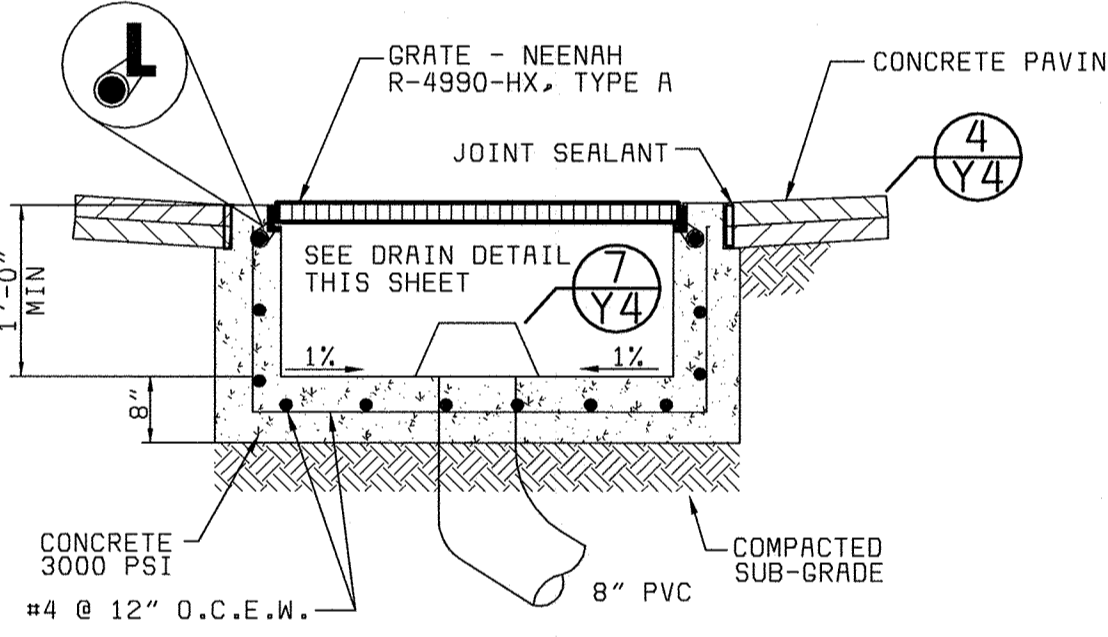


Construction Specifications

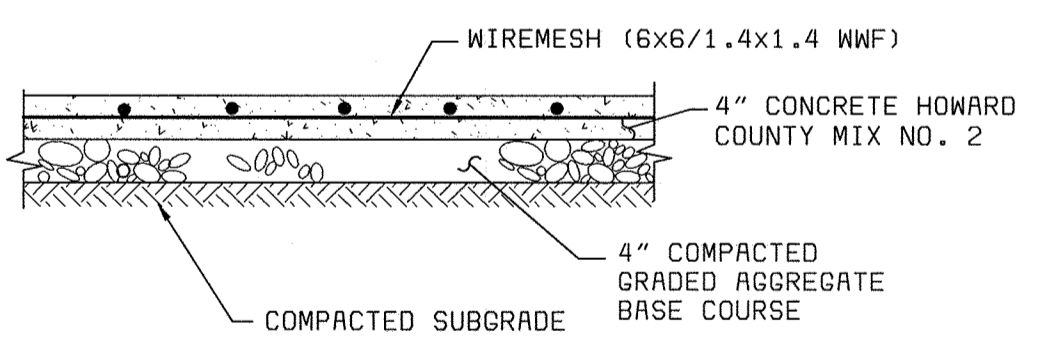
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

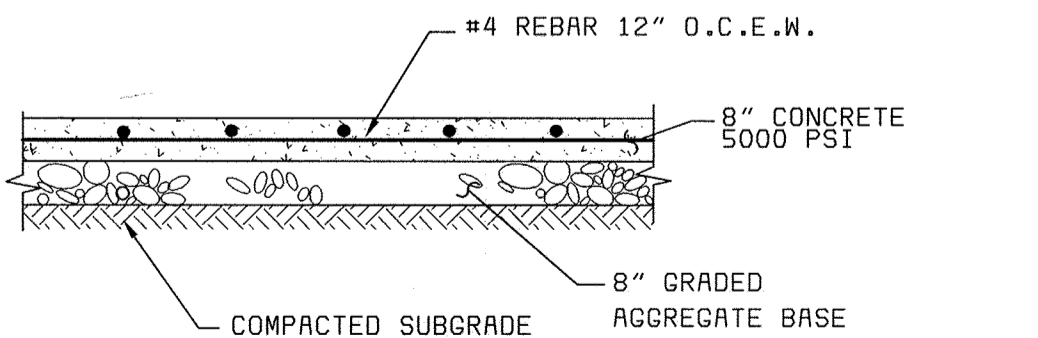
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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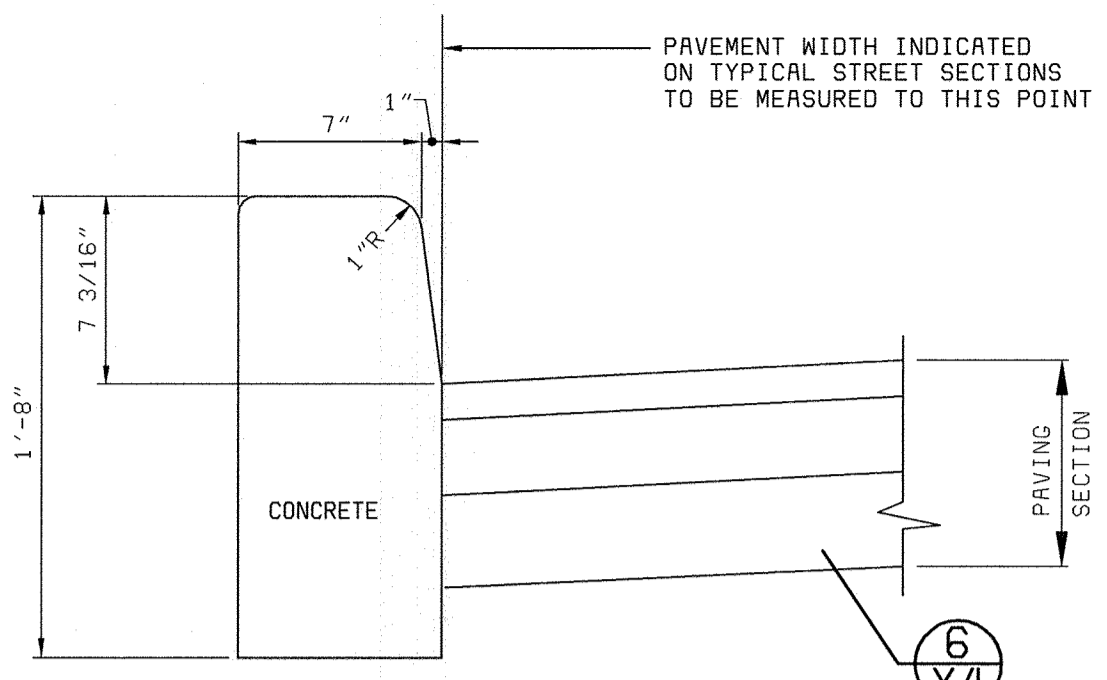
TRENCH DRAIN FOR TRUCK WASH (NOT TO SCALE) Y4



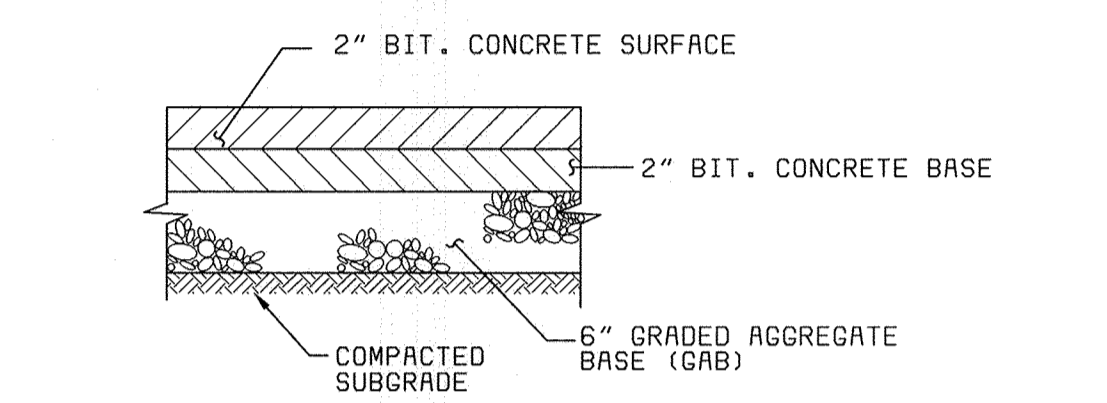
CONCRETE PAD/WALK DETAIL (NOT TO SCALE) Y4



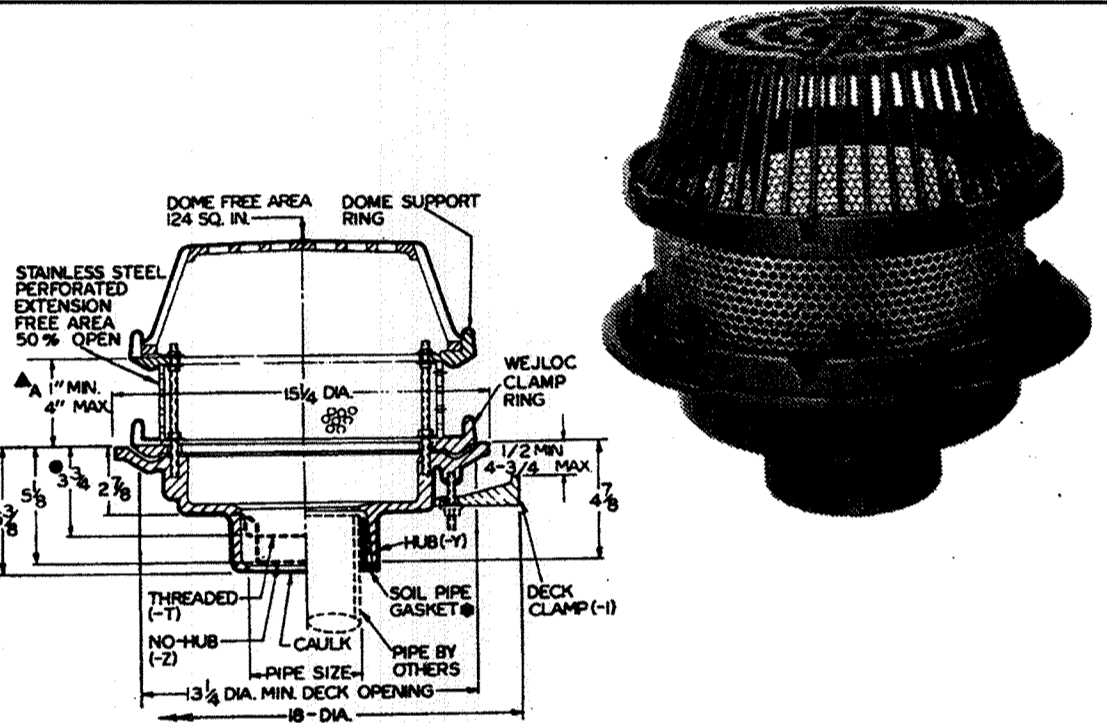
CONCRETE PAVING FOR TRUCK WASH (NOT TO SCALE) Y4



CURB DETAIL (NOT TO SCALE) Y4

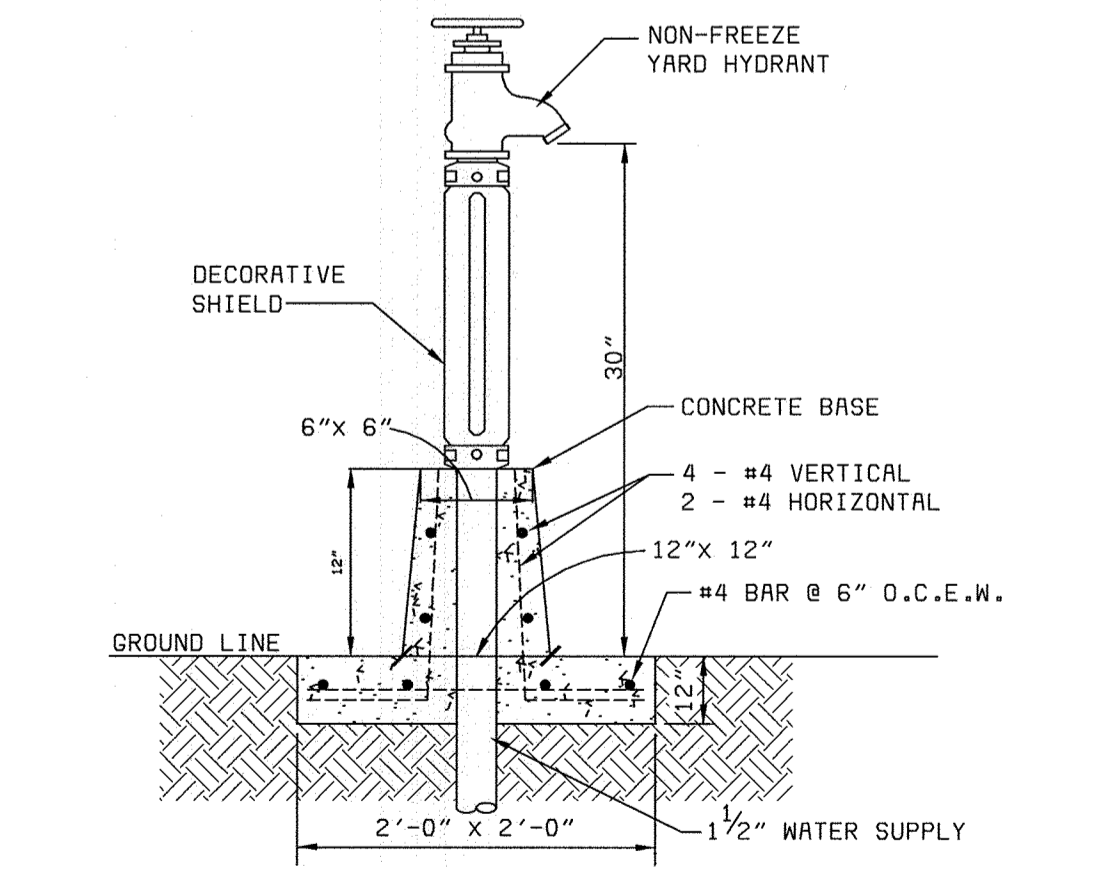


PAVING DETAIL (NOT TO SCALE) Y4

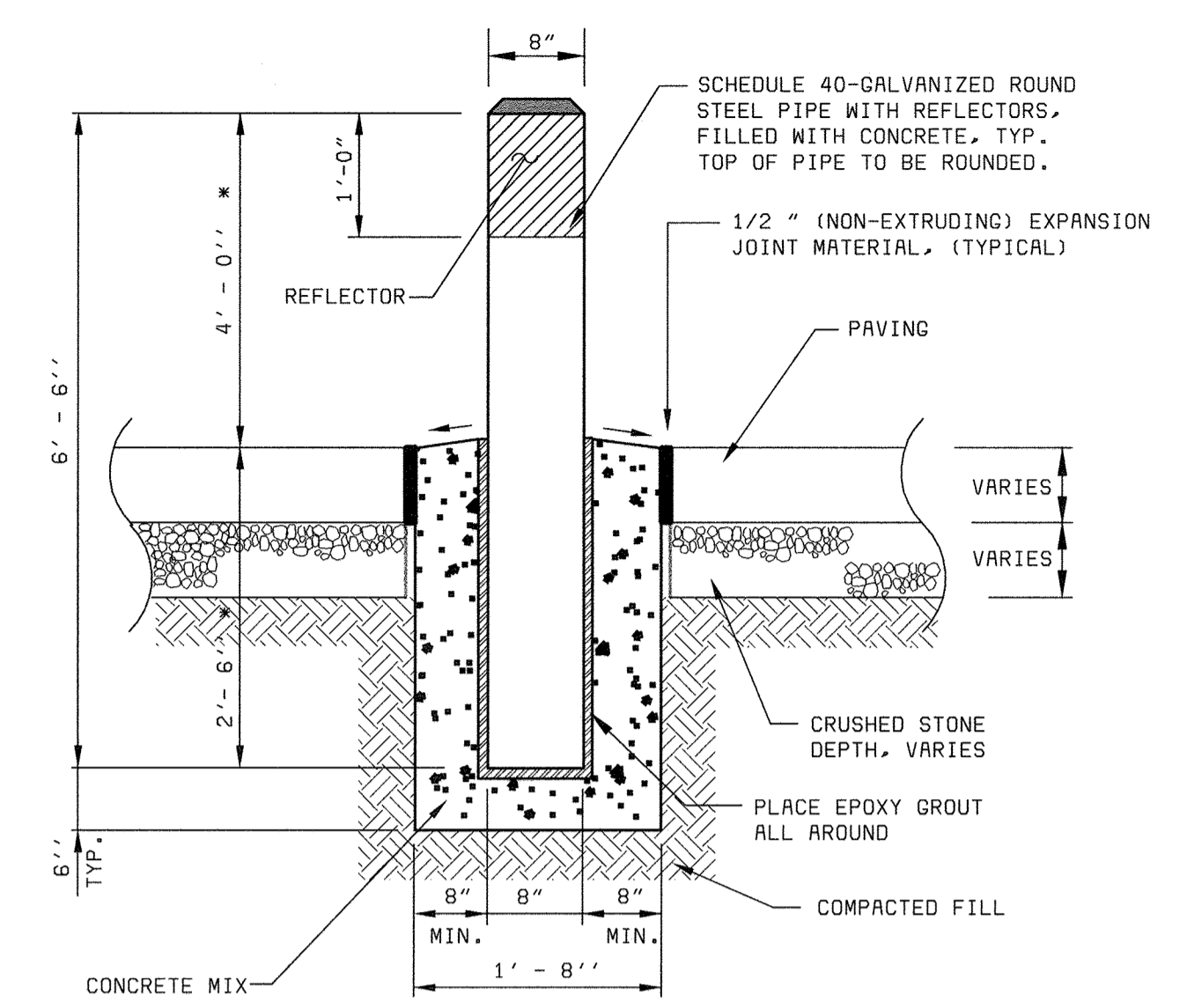


Series 2150-IRMA

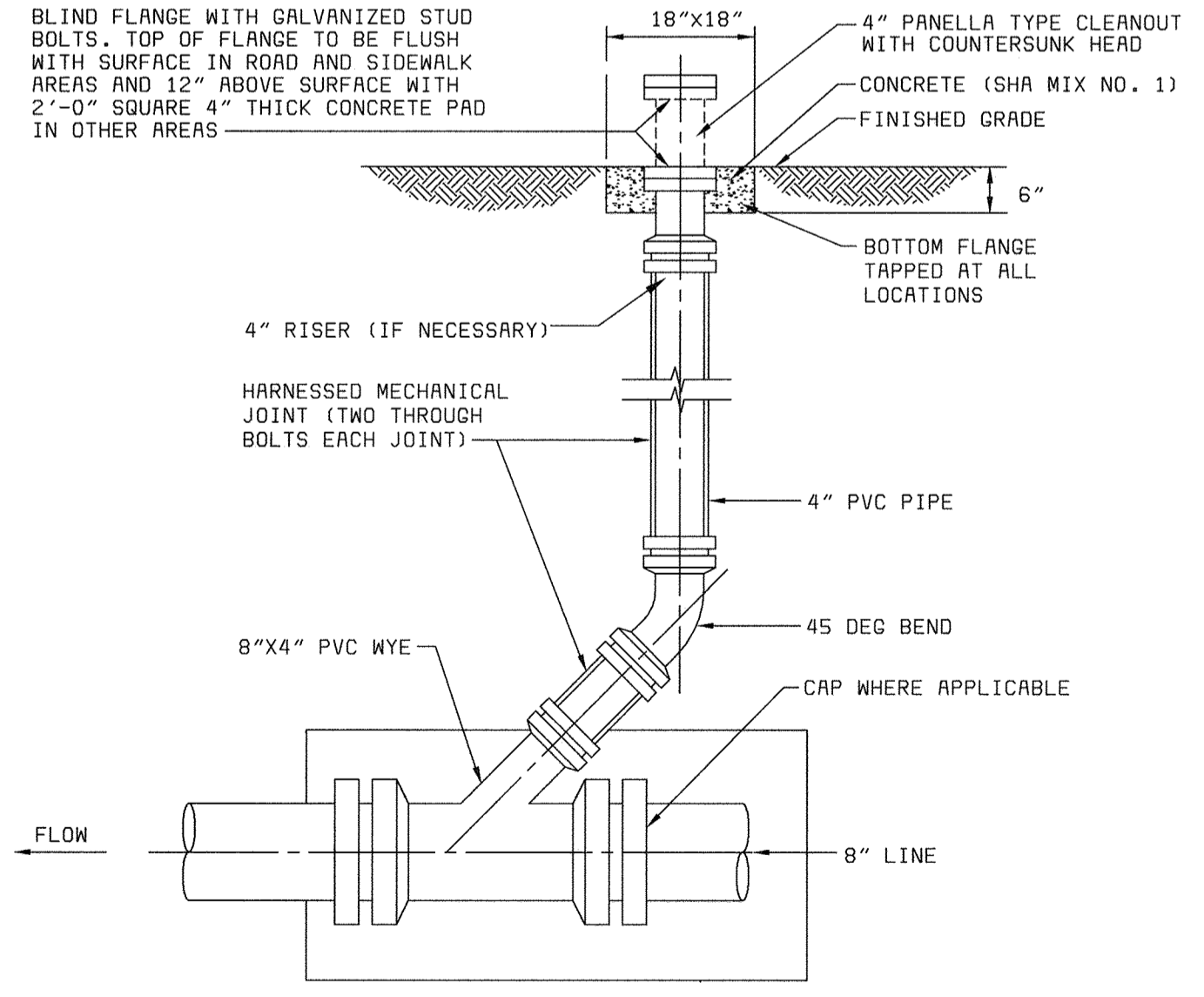
DRAIN DETAIL (NOT TO SCALE) Y4



YARD HYDRANT DETAIL (NOT TO SCALE) Y4

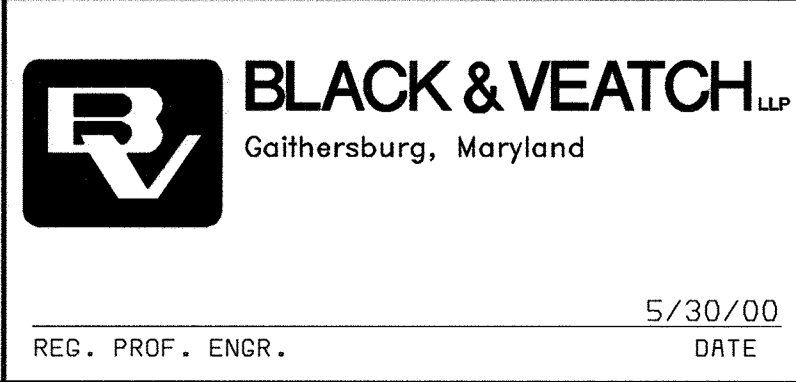
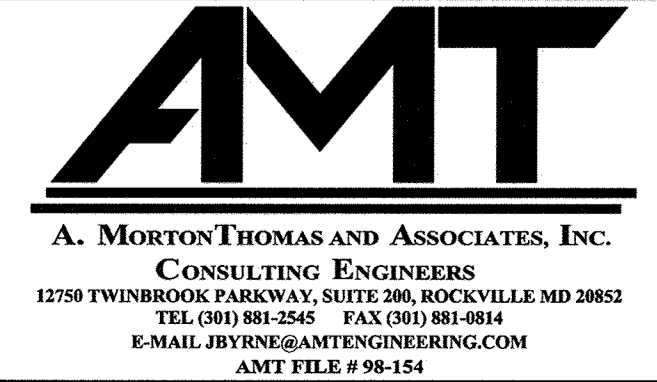


PIPE BOLLARD DETAIL (NOT TO SCALE) Y4



CLEANOUT DETAIL (NOT TO SCALE) Y4

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



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DES: AR									
DRN: REA									
CHK: JB									
DATE: 05/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			

SITWORK

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

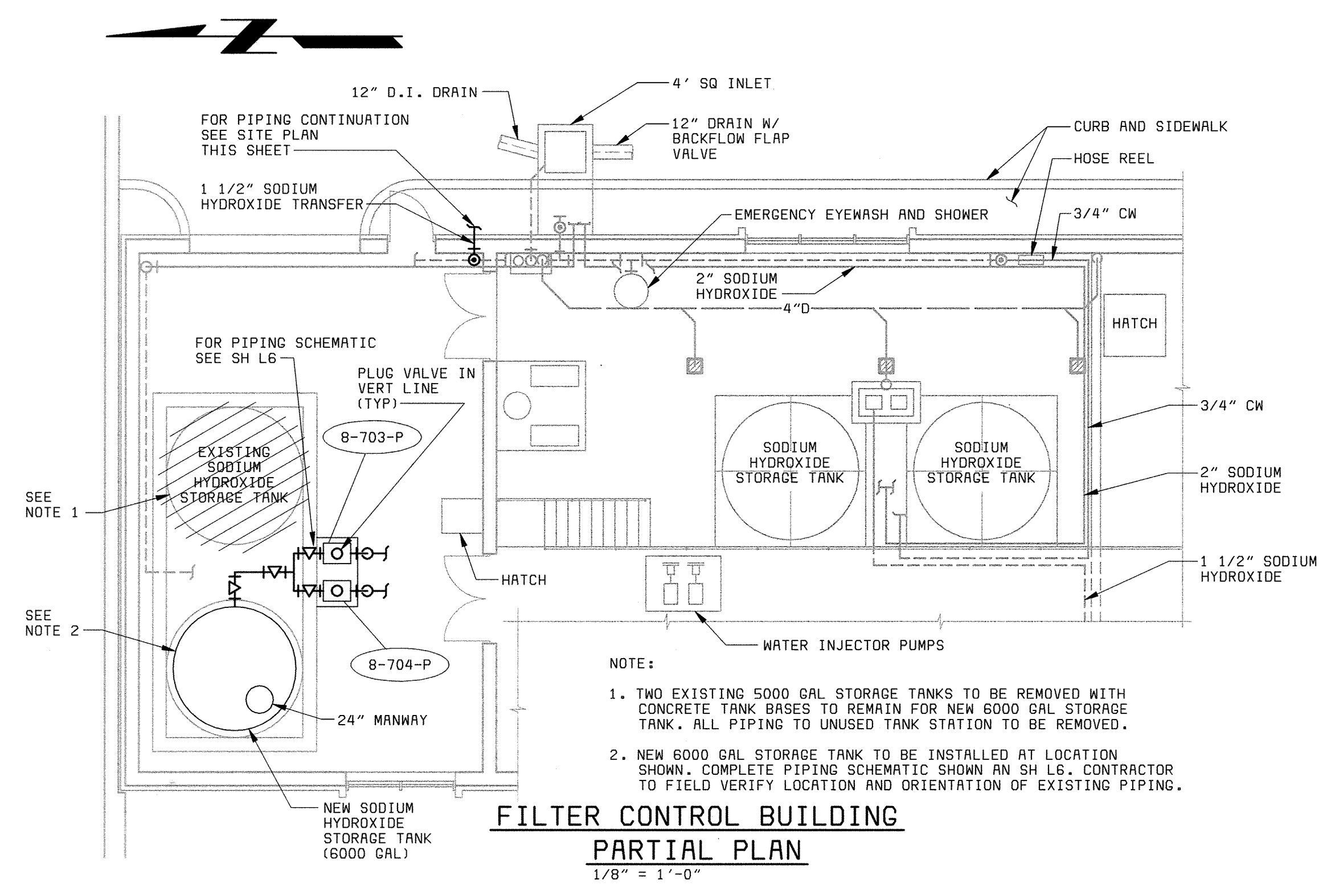
LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

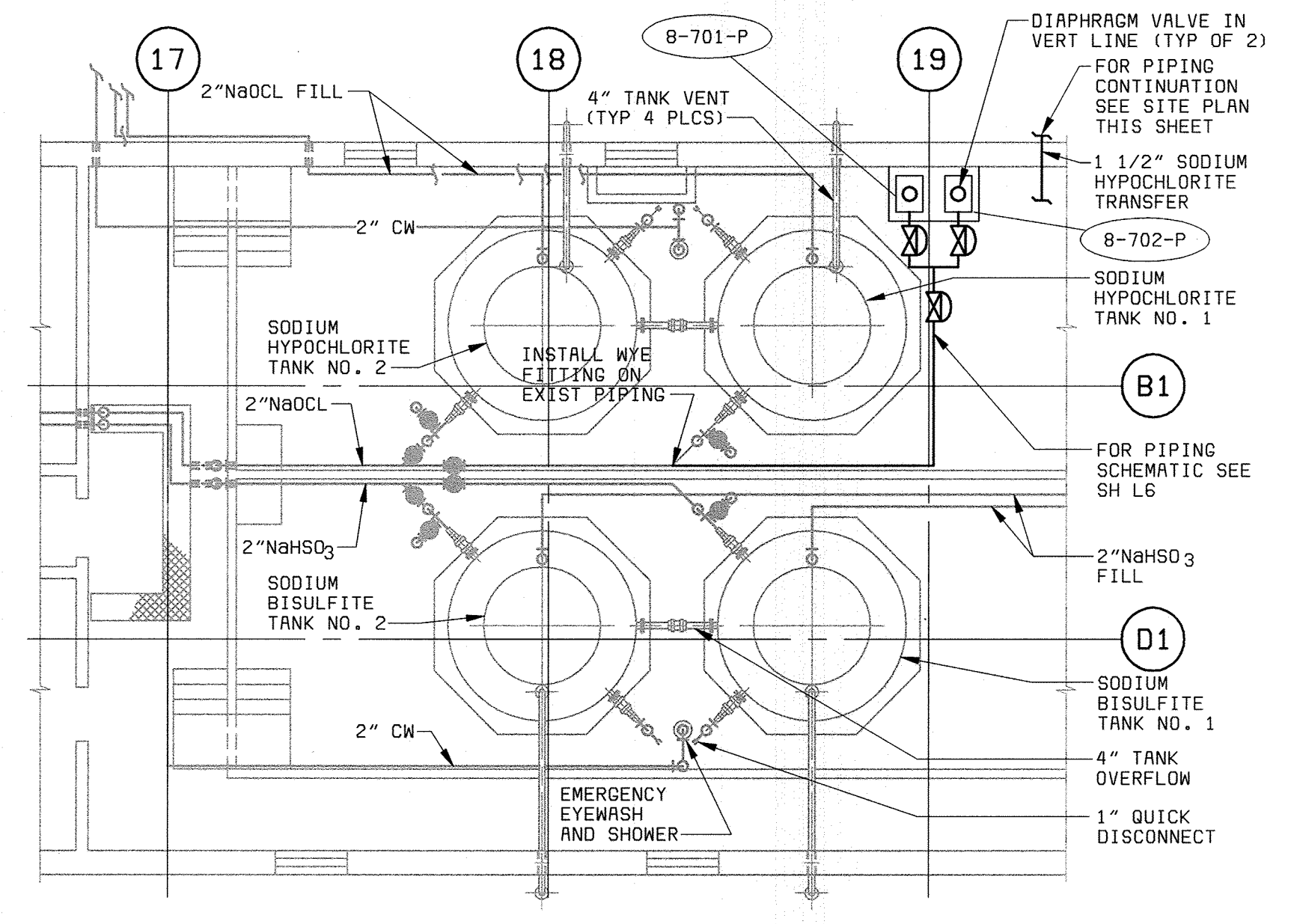
SHEET 11 OF 150

Y4

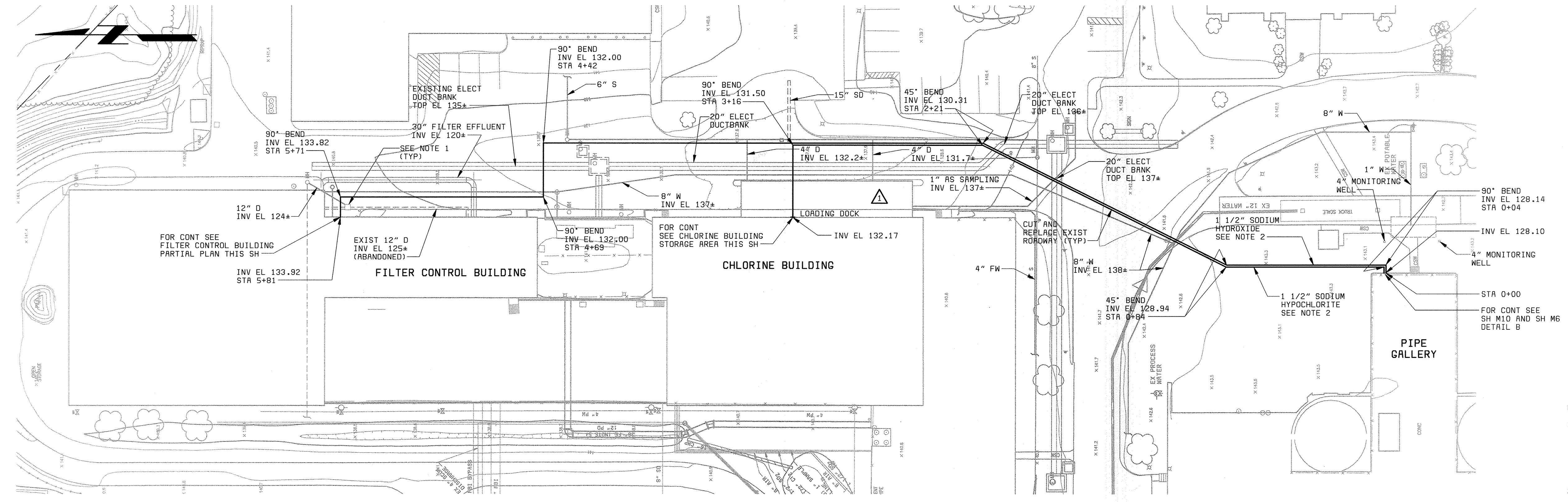


FILTER CONTROL BUILDING
PARTIAL PLAN
1/8" = 1'-0"

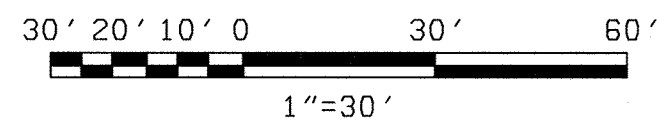
- NOTE:
- TWO EXISTING 5000 GAL STORAGE TANKS TO BE REMOVED WITH CONCRETE TANK BASES TO REMAIN FOR NEW 6000 GAL STORAGE TANK. ALL PIPING TO UNUSED TANK STATION TO BE REMOVED.
 - NEW 6000 GAL STORAGE TANK TO BE INSTALLED AT LOCATION SHOWN. COMPLETE PIPING SCHEMATIC SHOWN ON SH L6. CONTRACTOR TO FIELD VERIFY LOCATION AND ORIENTATION OF EXISTING PIPING.



CHLORINE BUILDING STORAGE AREA
PLAN
1/8" = 1'-0"



SITE PLAN



- NOTE:
- "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
 - SODIUM HYPOCHLORITE AND SODIUM HYDROXIDE YARD PIPING IS DOUBLE-WALL CONTAINMENT PIPE AS SPECIFIED. PIPING SHALL CONTINUOUSLY SLOPE TO PIPE GALLERY IF INVERT ELEVATION ADJUSTMENTS ARE REQUIRED TO MISS OBSTRUCTIONS.
 - ALL EXISTING ELEVATIONS OF YARD STRUCTURES ARE SHOWN * 1'-0". CONTRACTOR SHALL VERIFY ACTUAL LOCATION OF ALL YARD STRUCTURES ALONG PIPE ROUTE PRIOR TO EXCAVATION. EXISTING YARD STRUCTURES SHOWN ARE BASED ON PREVIOUS CONSTRUCTION DOCUMENTS.

58472-204-SDL5-S-R000125
XREF: 58472-101-YARD-C-Z0000007B
XREF: 58472-101-YARD-C-Z0000007A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

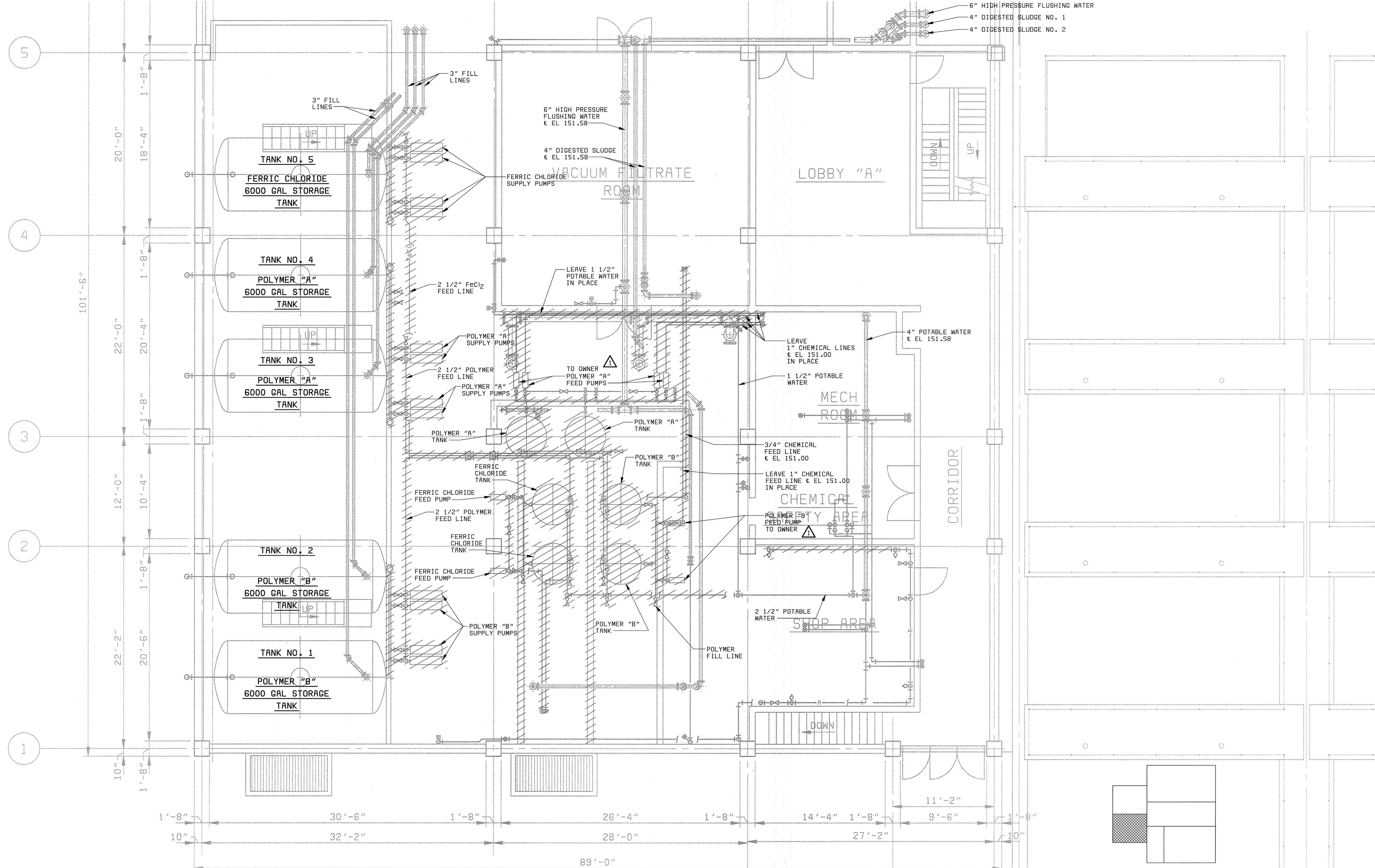
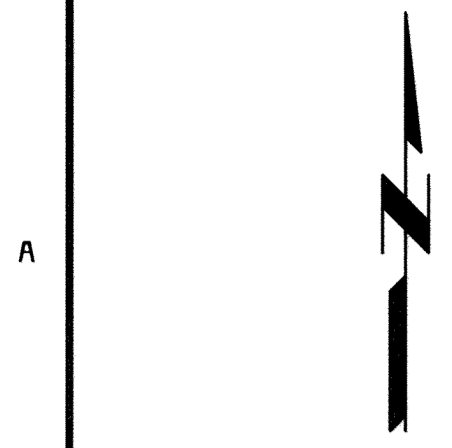
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D MITT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

DES: ACR	DRN: TSH,RAB	CHK: WLK	DATE: 5-30-00
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	
DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP	

SITWORK
**CHEMICAL FEED
PIPING AND YARD PLANS**

**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

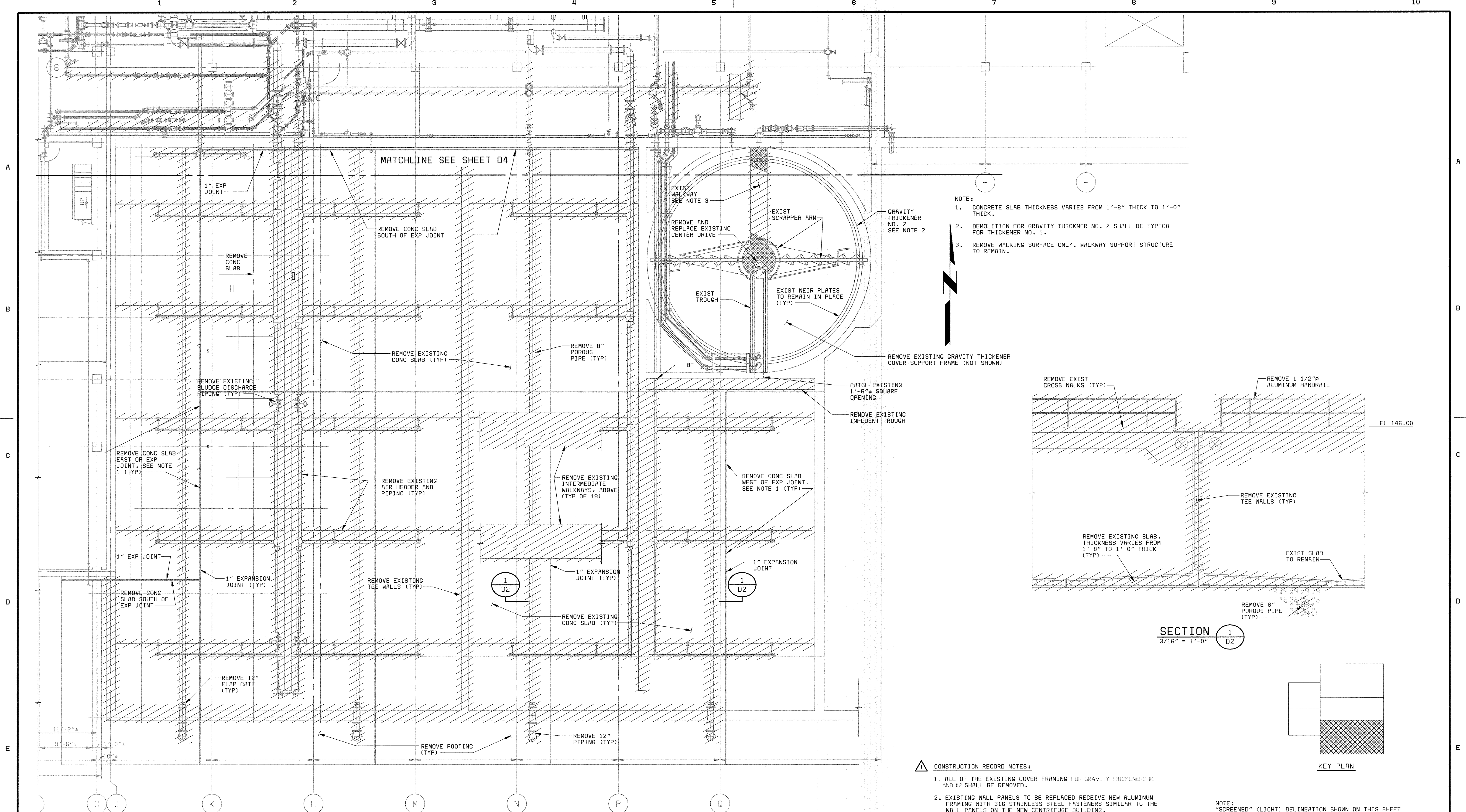
SCALE
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SHEET
12 OF 150
Y5



PLAN EL 142.00
3/16" = 1'-0"

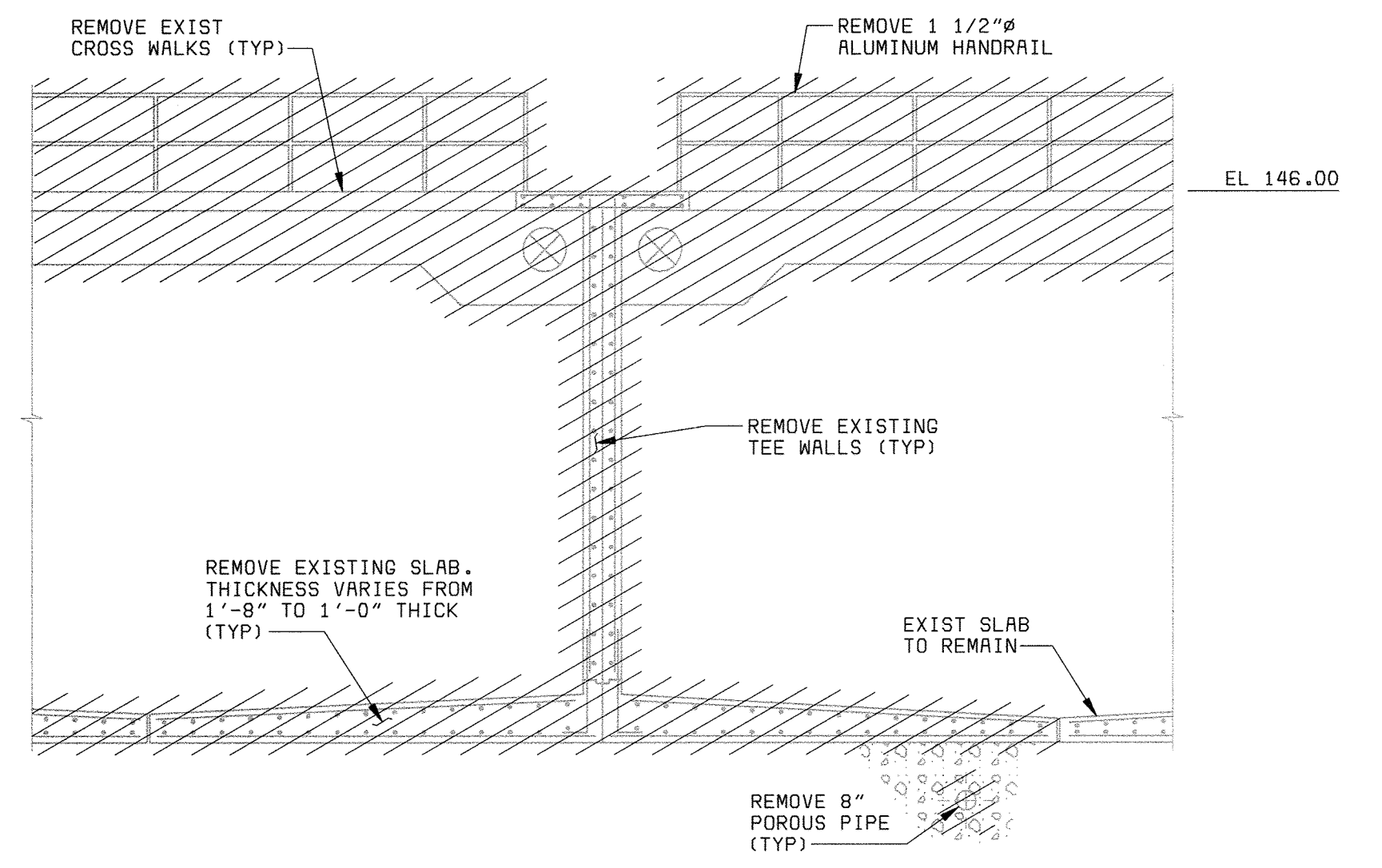
58472-401-329-C001: A00099002
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW.ACR DRN: RAB CHK: WLK DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	DEMOLITION MECHANICAL DEWATERING BUILDING POLYMER/CHEMICAL AREA DEMOLITION PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 13 OF 150 D1
			DATE	NO. BY CK APP	RHH/RJR/RJR	DATE	

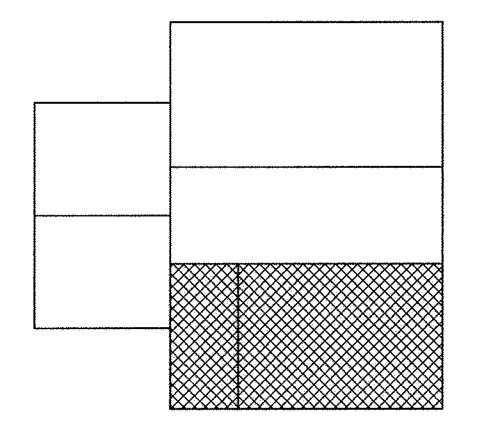


AEROBIC DIGESTER DEMOLITION PLAN
1/8" = 1'-0"

- NOTE:**
1. CONCRETE SLAB THICKNESS VARIES FROM 1'-8" THICK TO 1'-0" THICK.
 2. DEMOLITION FOR GRAVITY THICKENER NO. 2 SHALL BE TYPICAL FOR THICKENER NO. 1.
 3. REMOVE WALKING SURFACE ONLY. WALKWAY SUPPORT STRUCTURE TO REMAIN.



SECTION 1
3/16" = 1'-0"

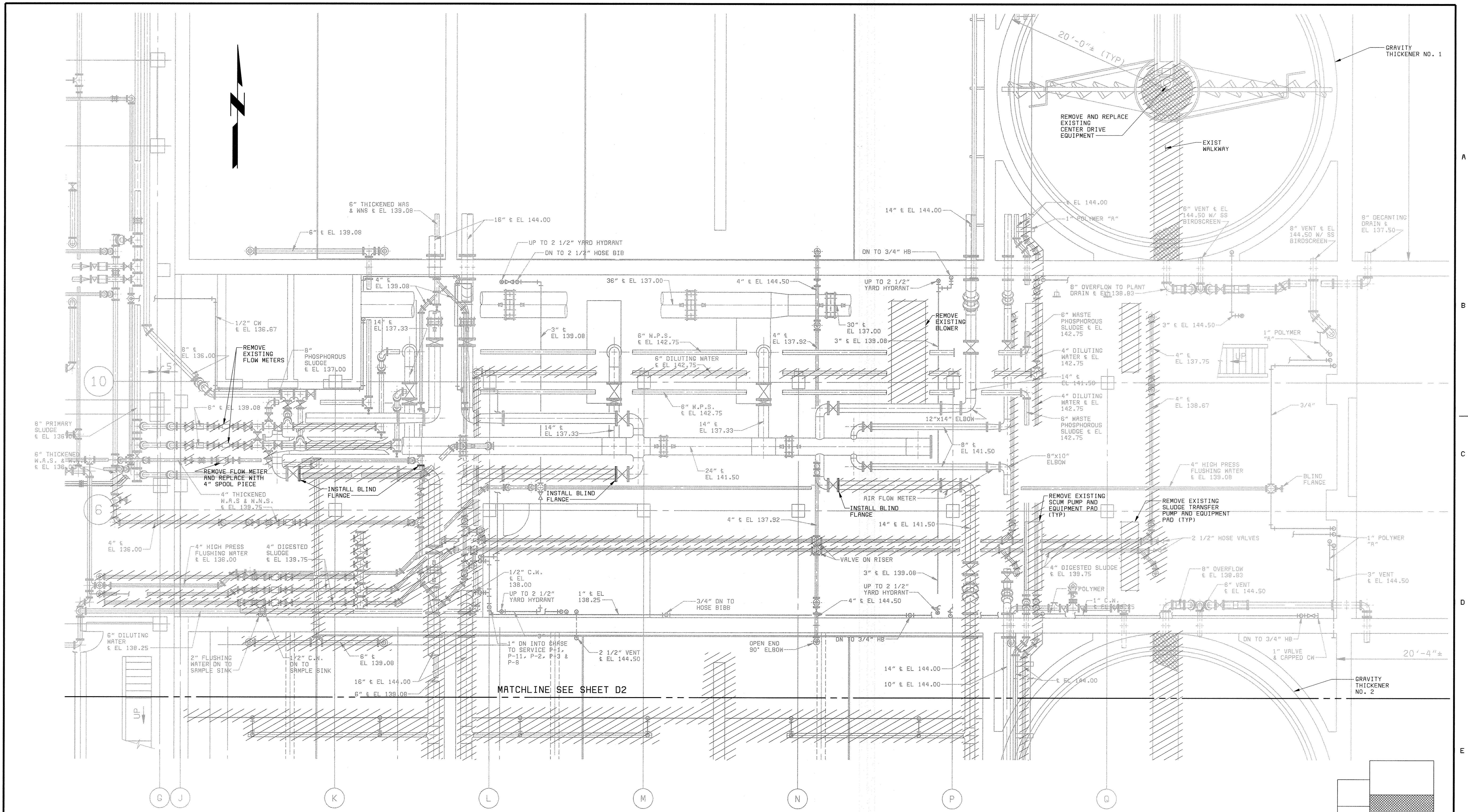


- CONSTRUCTION RECORD NOTES:**
1. ALL OF THE EXISTING COVER FRAMING FOR GRAVITY THICKENERS #1 AND #2 SHALL BE REMOVED.
 2. EXISTING WALL PANELS TO BE REPLACED RECEIVE NEW ALUMINUM FRAMING WITH 316 STAINLESS STEEL FASTENERS SIMILAR TO THE WALL PANELS ON THE NEW CENTRIFUGE BUILDING.
 3. ALL CAUSTIC SODA (SODIUM HYDROXIDE) PIPING SHALL BE SCHEDULE 80 CPVC. DRAINS AND OVERFLOWS SHALL ALSO BE CPVC.

NOTE: "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

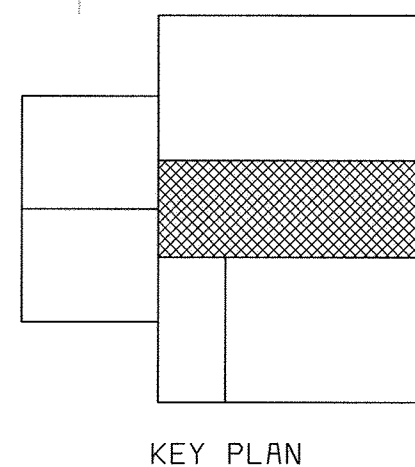
58472-401-323-C005: R0009855.DWG
XREF: 58472-401-323-BAE1
58472-401-323-PIPE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	RH RH RH RH RH RJ RJ RJ RJ RJ CK APP	DEMOLITION MECHANICAL	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY	SCALE AS SHOWN SHEET 14 OF 150 D2
			DRN: RAB					



DEMOLITION PLAN
3/16" = 1'-0"

NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.



KEY PLAN

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D. MATT BOND, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676

DES: TJW					
DRN: RAB					
CHK: WLK					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

DEMOLITION MECHANICAL
EQUIPMENT AND PIPE GALLERY DEMOLITION PLAN

LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 15 OF 150
D3

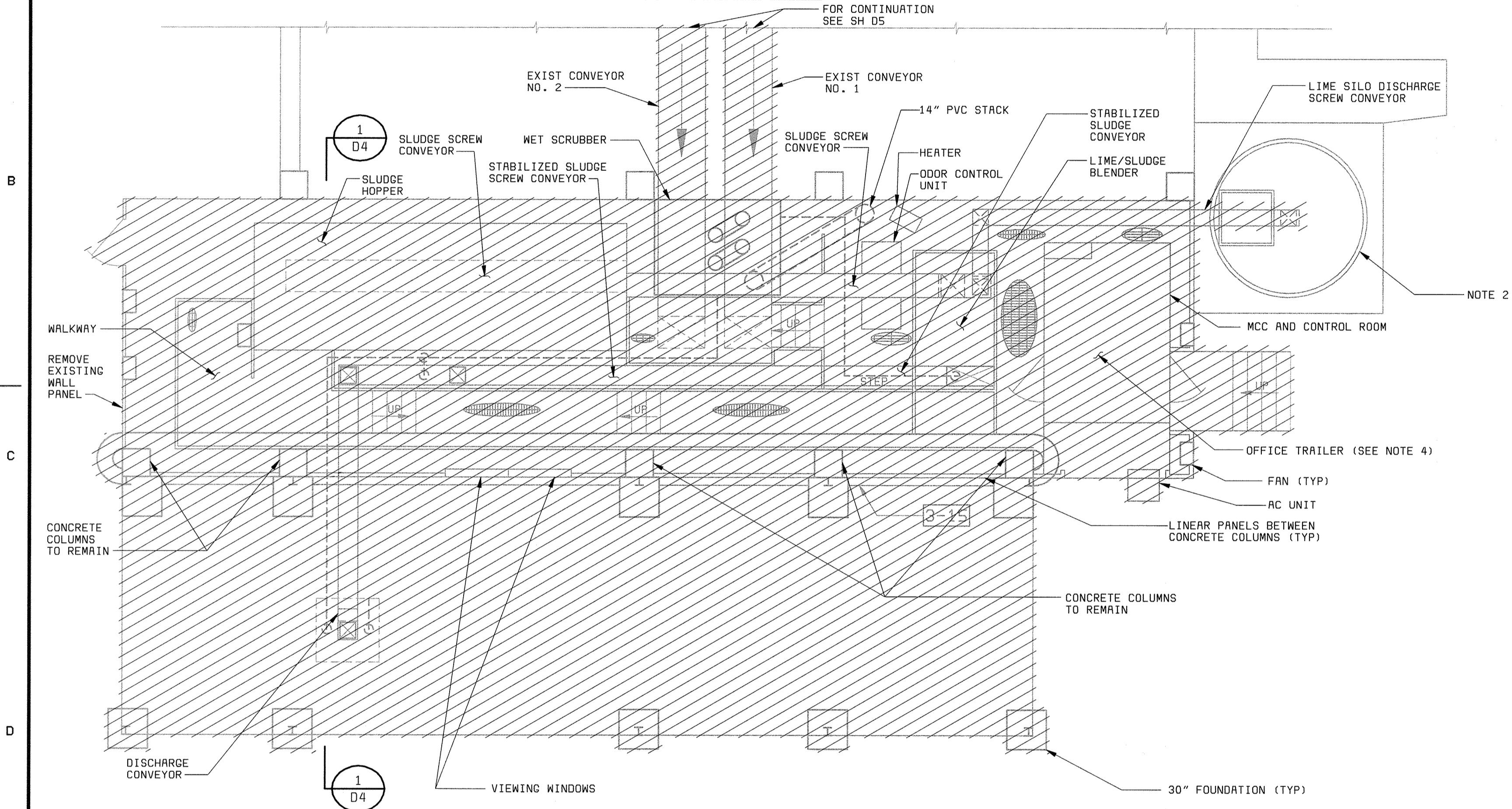
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XREF: 58472-401-323-PTPE
06/24/2004 15:30:40

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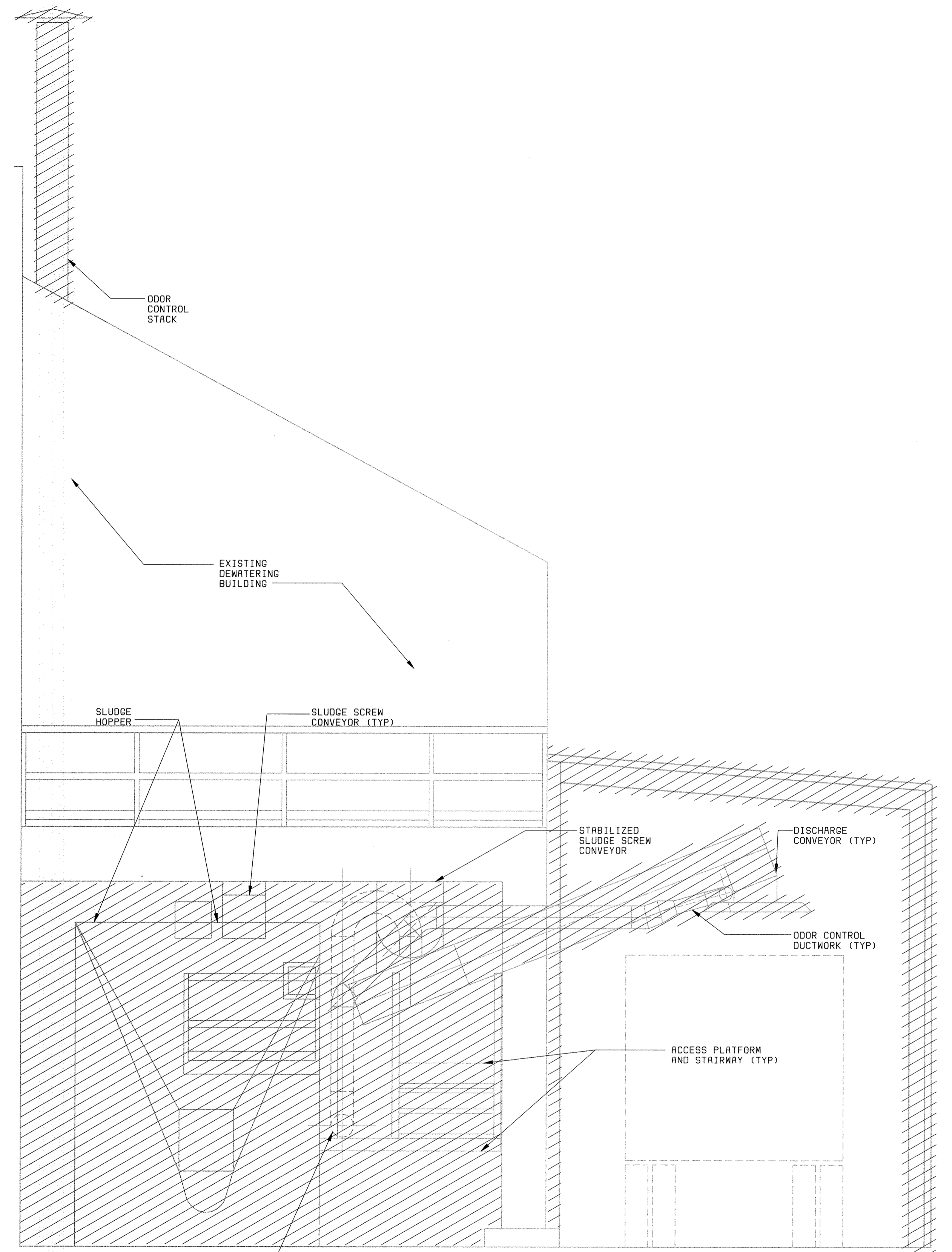
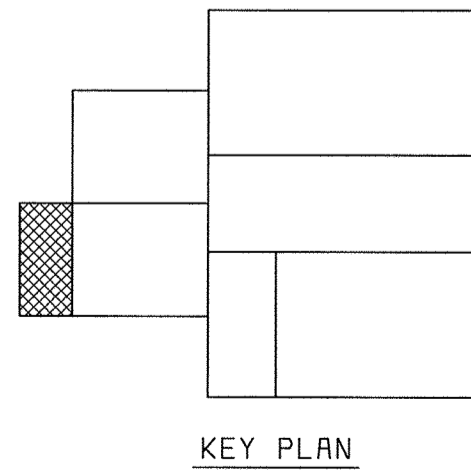
DEWATERING BUILDING



DEMOLITION PARTIAL PLAN EL 152.00
3/16" = 1'-0"

CONSTRUCTION RECORDS NOTE:
ALL CONCRETE SLABS AND COLUMNS SHALL BE DEMOLISHED EXCEPT FOR THE FIVE CONCRETE COLUMNS THAT ARE NOTED ON THE DRAWINGS TO REMAIN.

- DEMOLITION NOTES:**
1. CONTRACTOR IS RESPONSIBLE FOR DISCONNECTION OF ALL ELECTRICAL SERVICE TO THE EXISTING LIME STABILIZATION EQUIPMENT, CONVEYORS, HEATERS, FANS, AND ANY OTHER EQUIPMENT IN THE EXISTING LIME STABILIZATION.
 2. CONTRACTOR SHALL REMOVE THE EXISTING LIME SILO DISCHARGE SCREW CONVEYOR.
 3. CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING LIME STABILIZATION EQUIPMENT WITH THE INSTALLATION OF THE NEW LIME STABILIZATION EQUIPMENT ON THE OPERATING FLOOR OF THE EXISTING DEWATERING BUILDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PHASING ALL WORK ACTIVITIES AND KEEPING THE SLUDGE DEWATERING AND STABILIZATION PROCESSES IN OPERATION AT ALL TIMES. REFER TO THE PROJECT REQUIREMENTS SPECIFICATION SECTION.
 4. CONTRACTOR TO DELIVER SALVAGED TRAILER TO OWNER AT A LOCATION ACCEPTABLE TO PLANT STAFF.



SECTION 1 D4
3/8" = 1'-0"

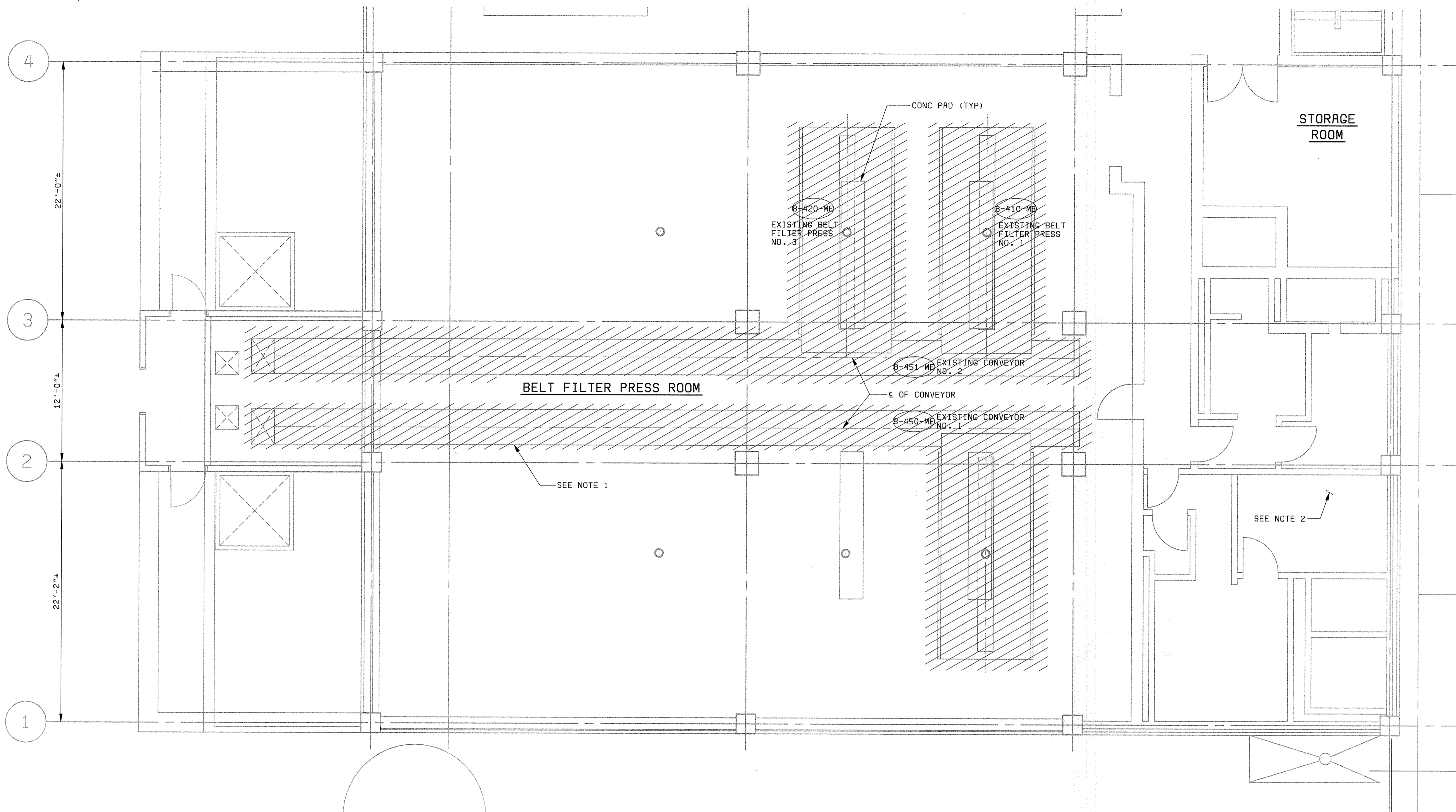
NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO CONSTRUCTED UNDER THIS CONTRACT.

58472-401-LB-C-10000833
058472.2
FD58472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW			DEMOLITION MECHANICAL LIME STABILIZATION AREA DEMOLITION PARTIAL PLAN AND SECTION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN	
			DRN: BDB,RAB	CHK: WLK	DATE: 5-30-00			07/26/04	CONFORMED TO CONSTRUCTION RECORDS
			DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	D4

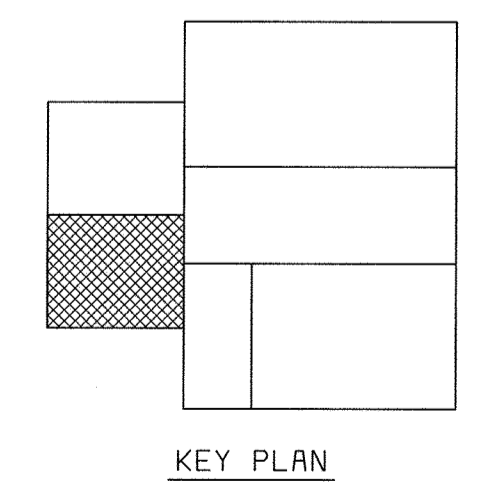
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PLAN AT EL 156.00
3/16" = 1'-0"

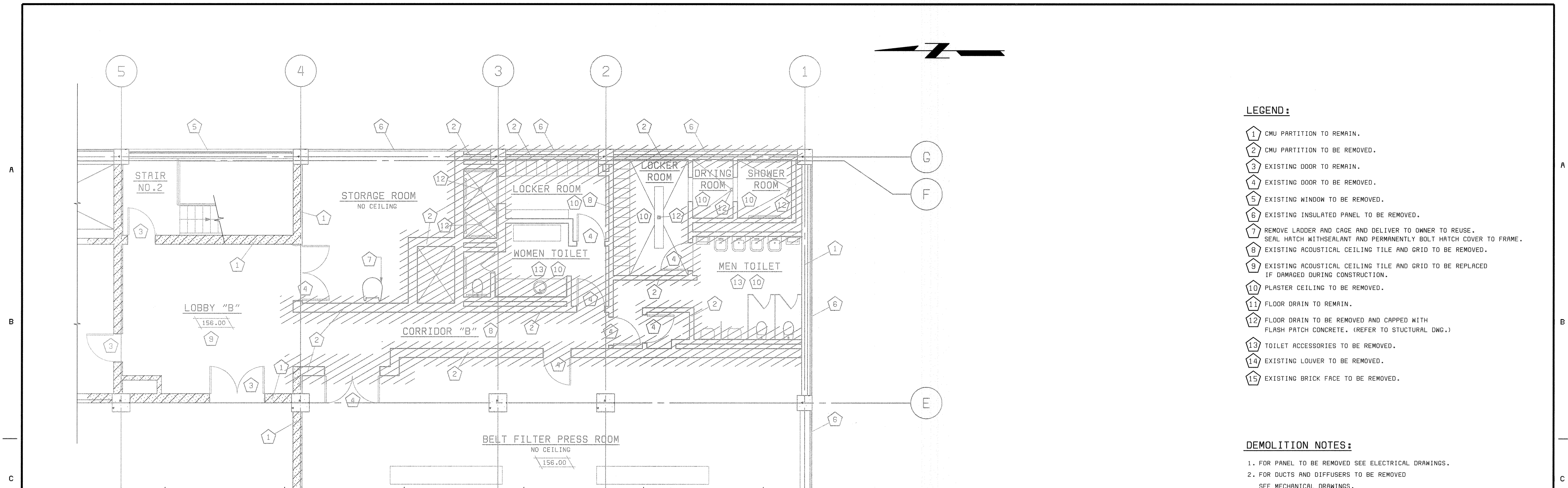
- NOTES:**
- CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND SUPPORTS FLUSH TO EXISTING FLOOR LEVEL.
 - FOR DETAILED DEMOLITION REQUIREMENTS IN THIS LOCATION REFERENCE SHEET DG.
 - "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS AND FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS AND BEGINNING CONSTRUCTION. "SOLID" (DARK) DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
 - CONTRACTOR SHALL COORDINATE REMOVAL OF EXISTING LIME STABILIZATION EQUIPMENT WITH THE INSTALLATION OF THE NEW LIME STABILIZATION EQUIPMENT ON THE OPERATING FLOOR OF THE EXISTING DEWATERING BUILDING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PHASING ALL WORK ACTIVITIES AND KEEPING THE SLUDGE DEWATERING AND STABILIZATION PROCESSES IN OPERATION AT ALL TIMES. REFER TO THE PROJECT REQUIREMENTS SPECIFICATION SECTION.



KEY PLAN

58472-401-SOLS-M-00000952
58472-401-323-PIPE2
58472-203-SOLS-S-00000120
058472.2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW								DEMOLITION MECHANICAL BELT FILTER PRESS AREA AT EL 156.00 DEMOLITION PLAN AND SECTION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR			SHEET 17 OF 150
REVISIONS AND RECORD OF ISSUE NO. BY CK APP											D5		



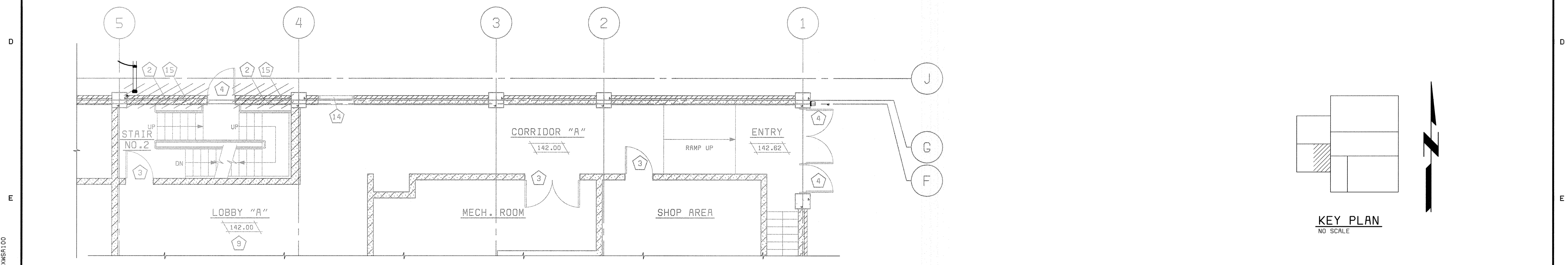
DEMOLITION PLAN ELEVATION 156.00' 1
3/16" = 1'-0" D6

LEGEND:

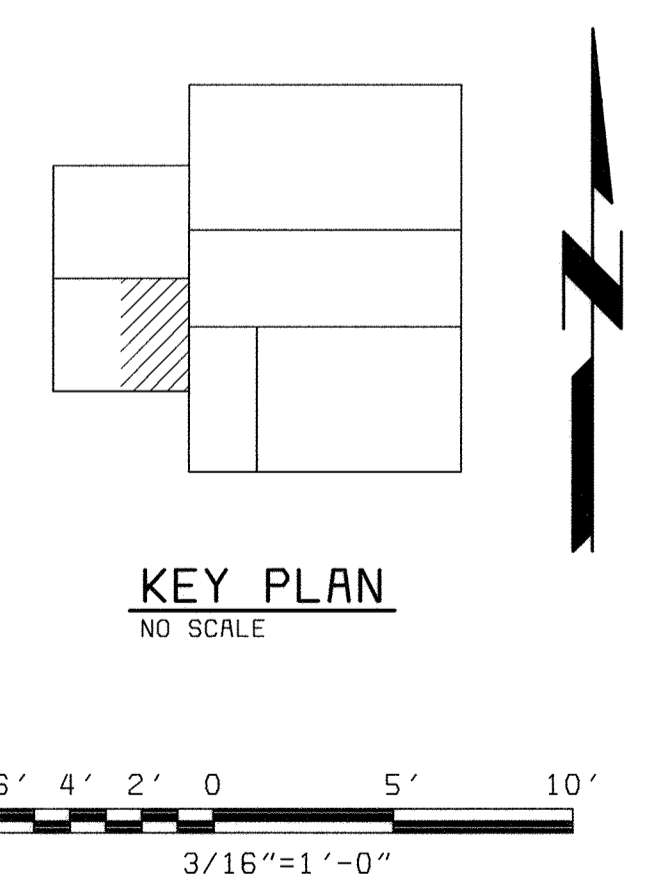
- 1 CMU PARTITION TO REMAIN.
- 2 CMU PARTITION TO BE REMOVED.
- 3 EXISTING DOOR TO REMAIN.
- 4 EXISTING DOOR TO BE REMOVED.
- 5 EXISTING WINDOW TO BE REMOVED.
- 6 EXISTING INSULATED PANEL TO BE REMOVED.
- 7 REMOVE LADDER AND CAGE AND DELIVER TO OWNER TO REUSE. SEAL HATCH WITHSEALANT AND PERMANENTLY BOLT HATCH COVER TO FRAME.
- 8 EXISTING ACOUSTICAL CEILING TILE AND GRID TO BE REMOVED.
- 9 EXISTING ACOUSTICAL CEILING TILE AND GRID TO BE REPLACED IF DAMAGED DURING CONSTRUCTION.
- 10 PLASTER CEILING TO BE REMOVED.
- 11 FLOOR DRAIN TO REMAIN.
- 12 FLOOR DRAIN TO BE REMOVED AND CAPPED WITH FLASH PATCH CONCRETE. (REFER TO STUCTURAL DWG.)
- 13 TOILET ACCESSORIES TO BE REMOVED.
- 14 EXISTING LOUVER TO BE REMOVED.
- 15 EXISTING BRICK FACE TO BE REMOVED.

DEMOLITION NOTES:

- 1. FOR PANEL TO BE REMOVED SEE ELECTRICAL DRAWINGS.
- 2. FOR DUCTS AND DIFFUSERS TO BE REMOVED SEE MECHANICAL DRAWINGS.
- 3. FOR FLOOR DRAIN TO BE REMOVED SEE PLUMBING DRAWINGS.
- 4. FOR EXISTING EMERGENCY LIGHT AND SIGNAL TO BE REMOVED OR REUSED SEE ELECTRICAL DRAWINGS.
- 5. FOR PROPANE GAS PIPE TO BE REMOVED SEE MECHANICAL OR PLUMBING DRAWINGS.
- 6. REMOVE EXISTING FLOOR COATING AT TOILET, SHOER AND LOCKER AREAS.

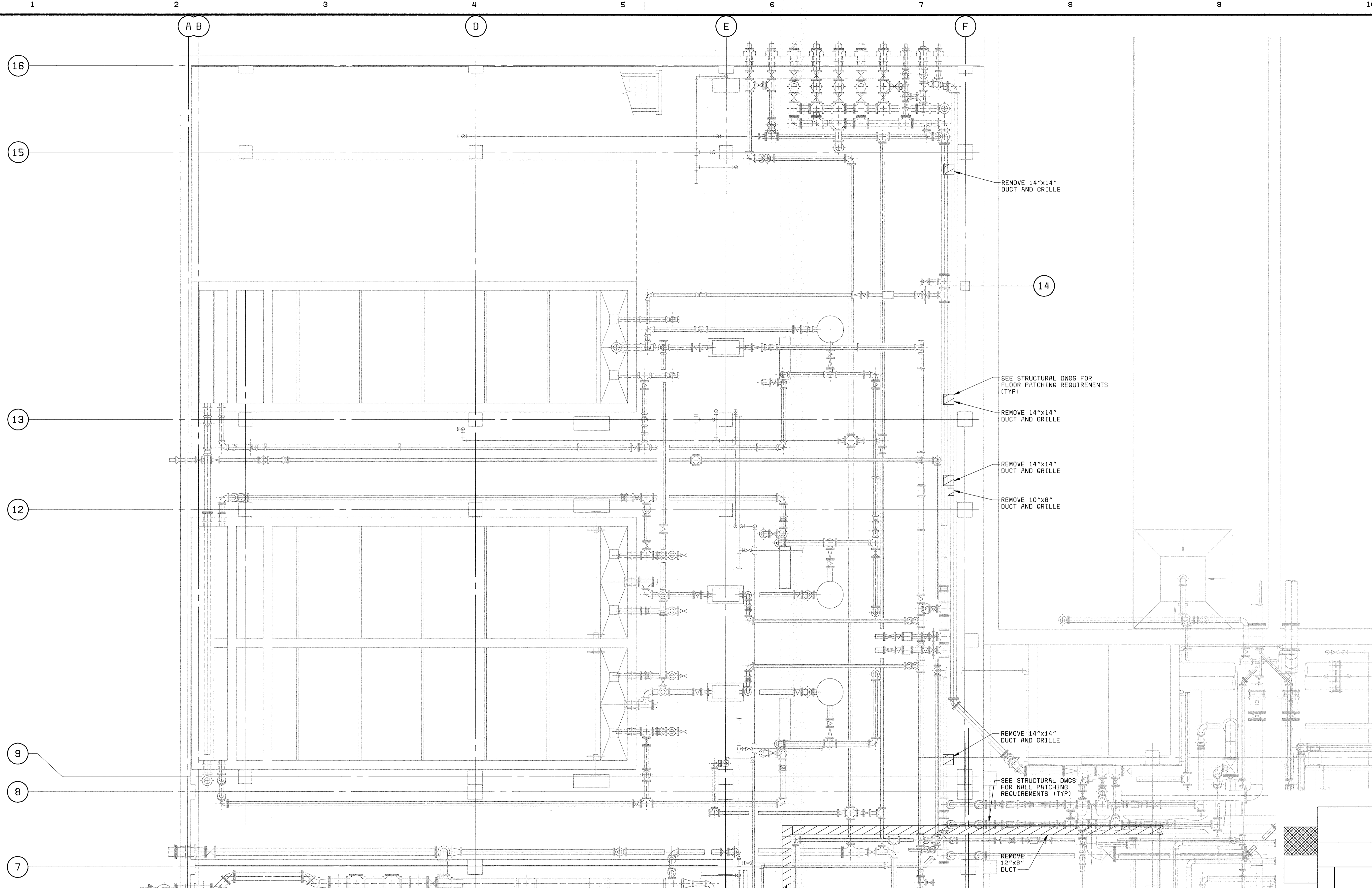


DEMOLITION PLAN ELEVATION 142.00' 2
3/16" = 1'-0" D6



XWLO00
 XMSR1.03
 XMSR1.00
 D58472-2
 F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	Architects • Designers • Planners Bryant Bryant Williams, P.C. <small>4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108</small>	BLACK & VEATCH <small>L.P.</small> Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS DRN: JS CHK: CH DATE: 5/30/00	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DATE</td> <td>REVISIONS AND RECORD OF ISSUE</td> <td>NO.</td> <td>BY</td> <td>CK</td> <td>APP</td> </tr> <tr> <td>07/26/04</td> <td>CONFORMED TO CONSTRUCTION RECORDS</td> <td></td> <td>RHH</td> <td>RJR</td> <td>RJR</td> </tr> </table>	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR	DEMOLITION ARCHITECTURAL DEMOLITION PLAN AT EL. 142.00' AND 156.00'	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 18 OF 150 D6
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP															
07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR															



PLAN EL 128.00
3/16" = 1'-0"

KEY PLAN

XREF: 58472-401-223-BTDE
XREF: 58472-401-223-BASE1

58472-2
058472R

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
MARTIN L. PAPE
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21992

DES: GWP					
DRN: BDL.LDW					
CHK: JEP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR		
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

DEMOLITION
HVAC

FLOTATION THICKENING AREA
PLAN AT EL 128.00

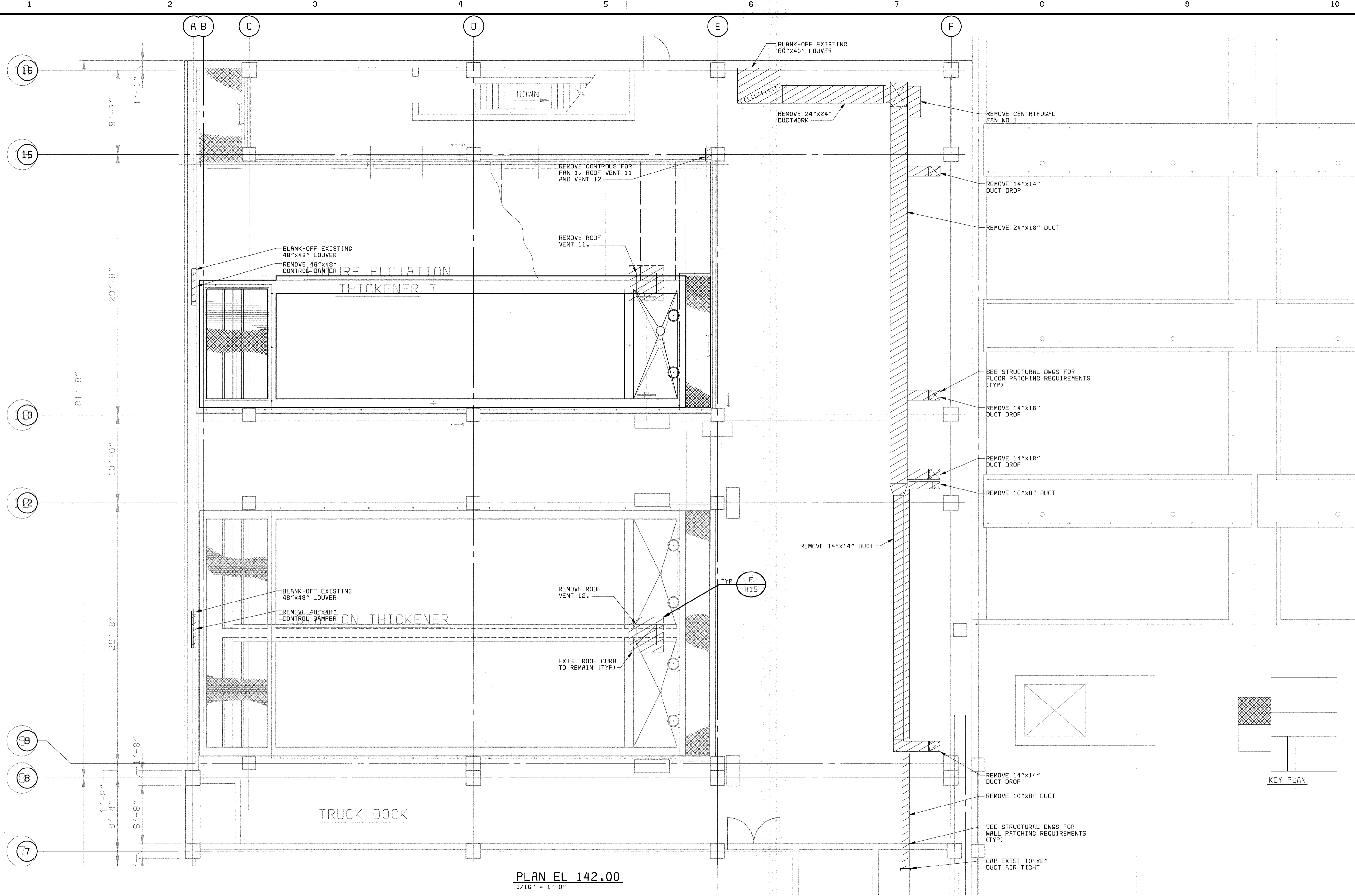
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
19 OF 150

D7



PLAN EL 142.00
3/16" = 1'-0"

XREF: 58472-401-323-C017
 XREF: 58472-401-323-PTPE3
 XREF: 58472-203-SLDS-S-A0000118
 058472-2
 058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP						DEMOLITION HVAC FLOTATION THICKENING AREA PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: BDL,LDW	CHK: JEP	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH			RJR
			DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			D8

XREF: 58472-401-323-PIPE
 XREF: 58472-401-323-BASE1
 XREF: 58472-401-323-C004

058472.2
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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE



BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. DATE

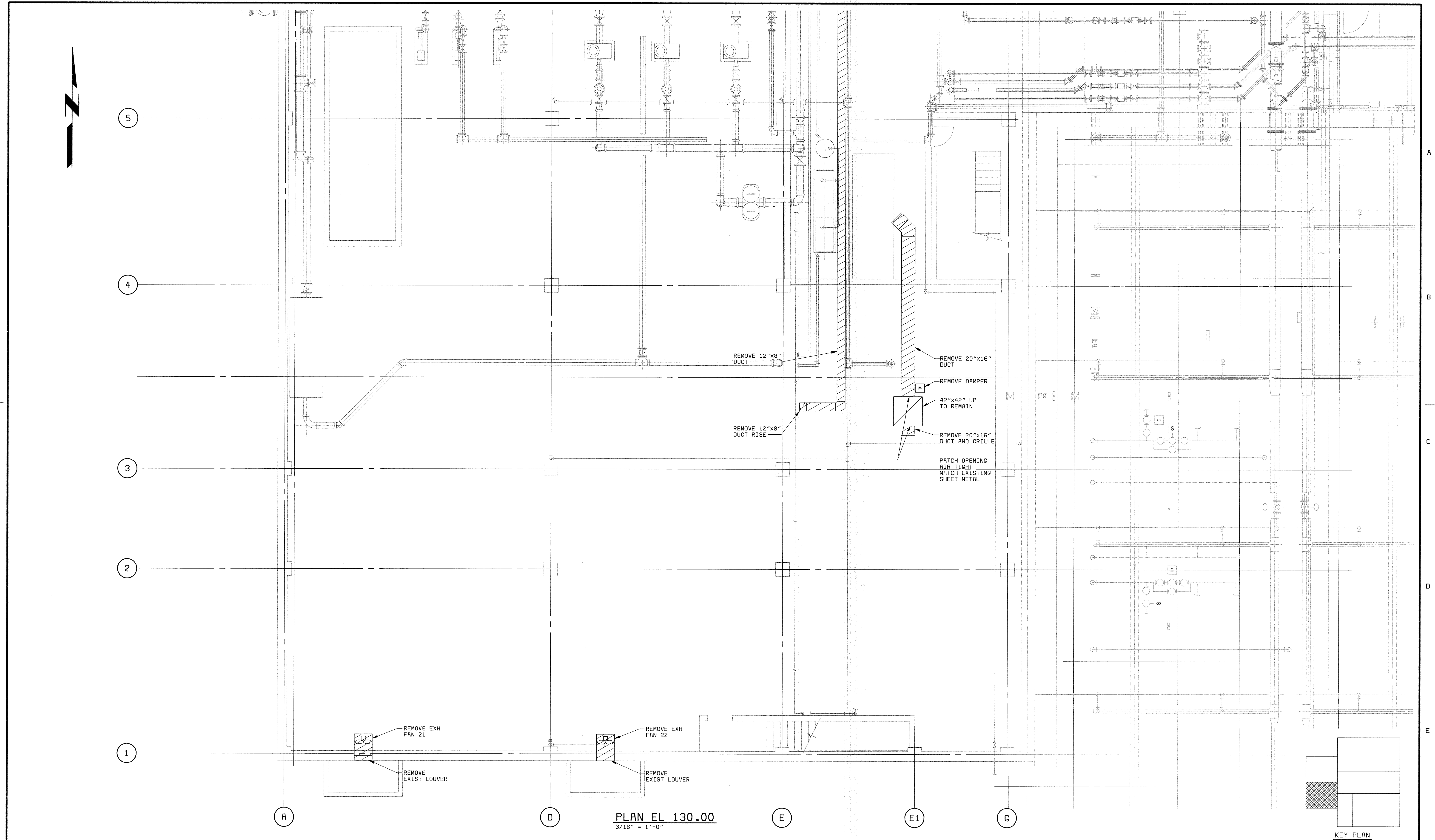
THIS DRAWING WAS
 ORIGINALLY APPROVED
 FOR CONSTRUCTION
 AND SEALED BY
 MARTIN L. PAPE
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 21992

DES: GWP					
DRN: BDL,LDW					
CHK: JEP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

DEMOLITION
 HVAC
 CENTRATE DISPOSAL AREA
 PLAN AT EL 130.00

LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN
 SHEET
 21 OF 150
 D9



PLAN EL 130.00
 3/16" = 1'-0"

KEY PLAN

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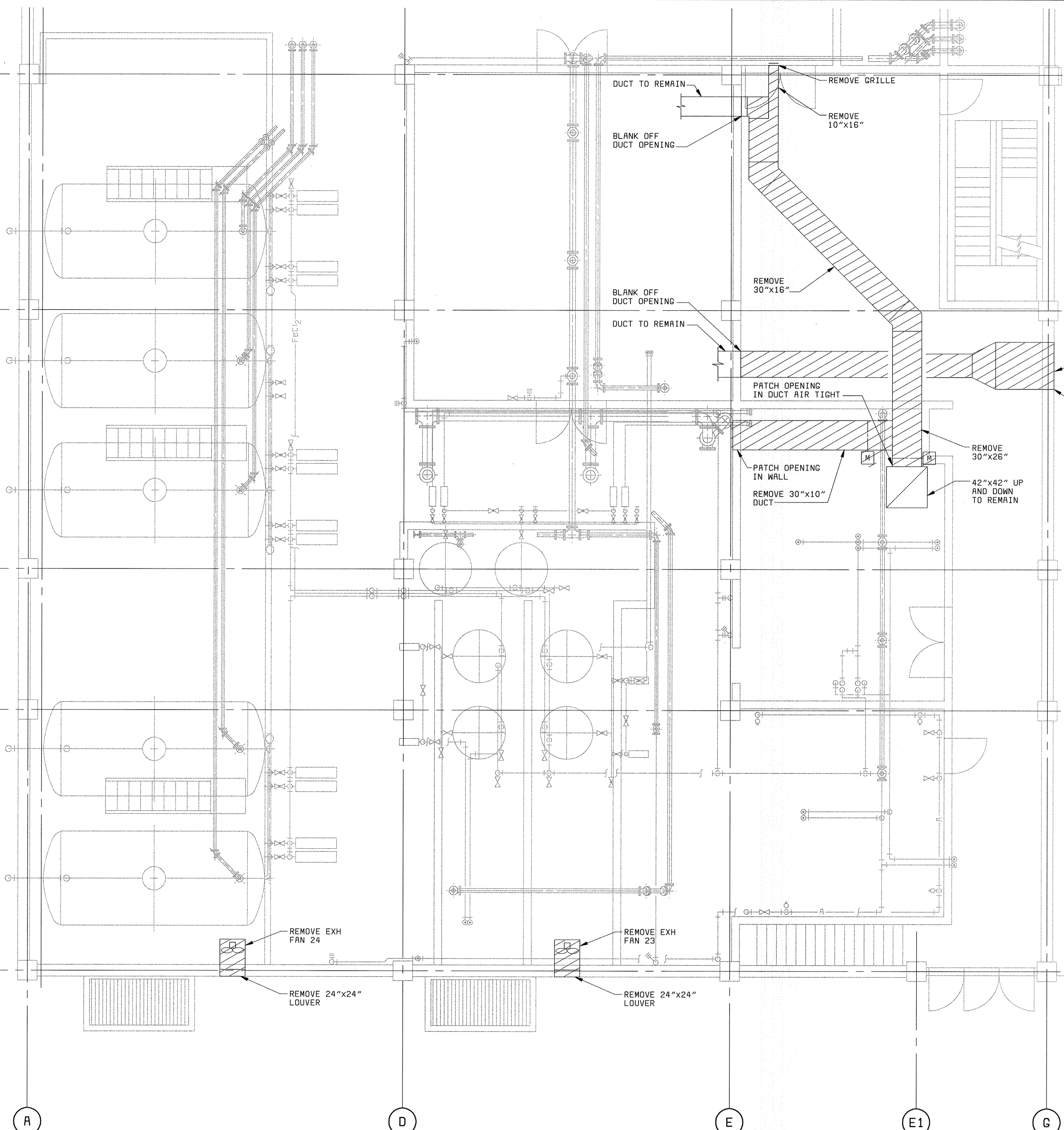
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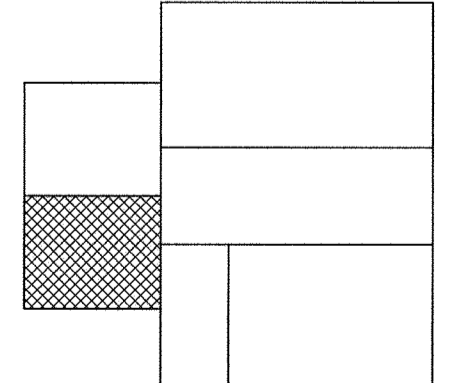
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PLAN EL 142.00
3/16" = 1'-0"



KEY PLAN

XREF: 58472-401-323-BASE
XREF: 58472-401-323-C001

058472
058472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
MARTIN L. PAPE
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21992

DES: GWP					
DRN: BDL,LDW					
CHK: JEP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

**DEMOLITION
HVAC**

**POLYMER FEED AREA
PLAN AT EL 142.00**

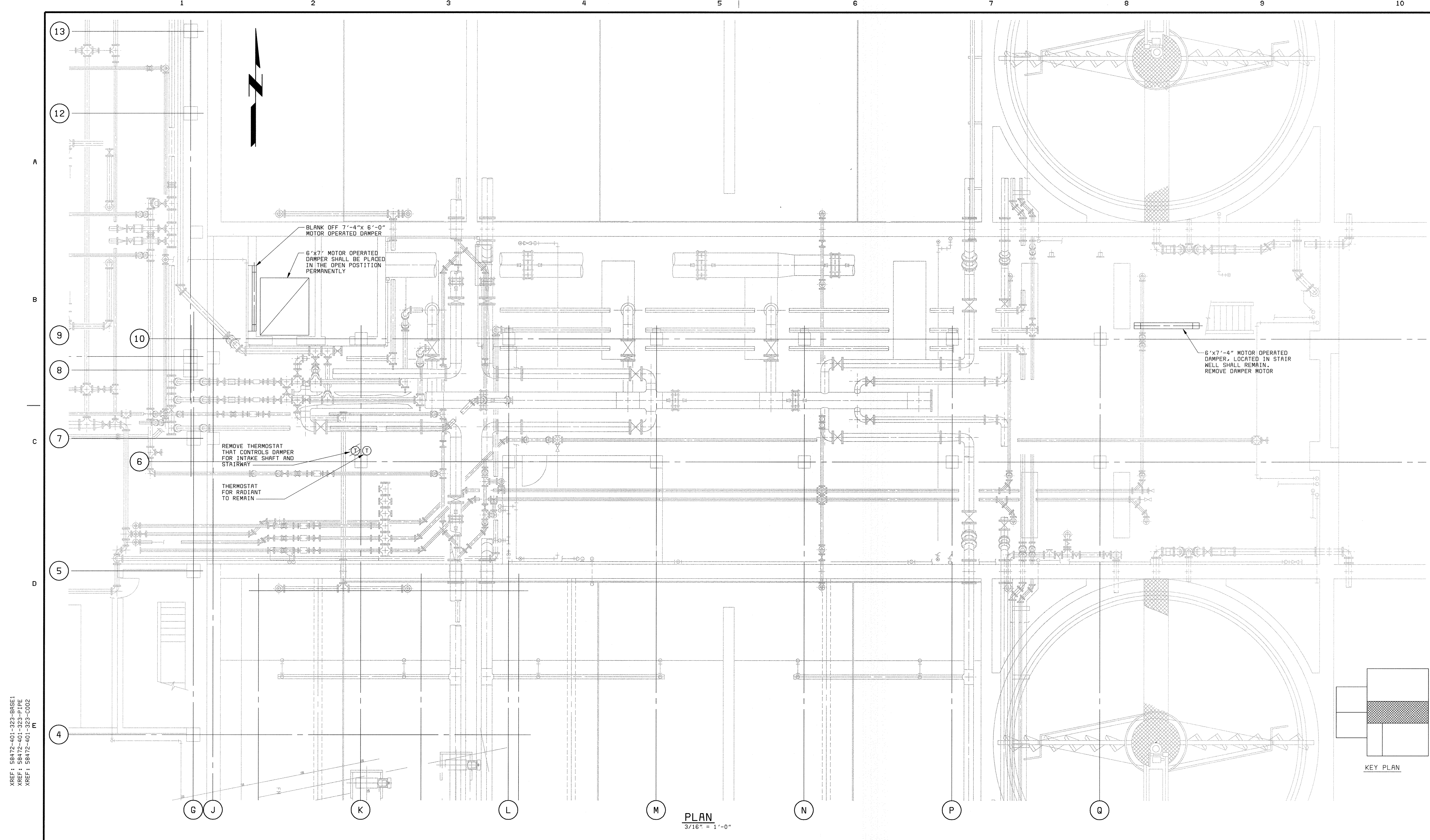
**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
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SHEET
22 OF 150

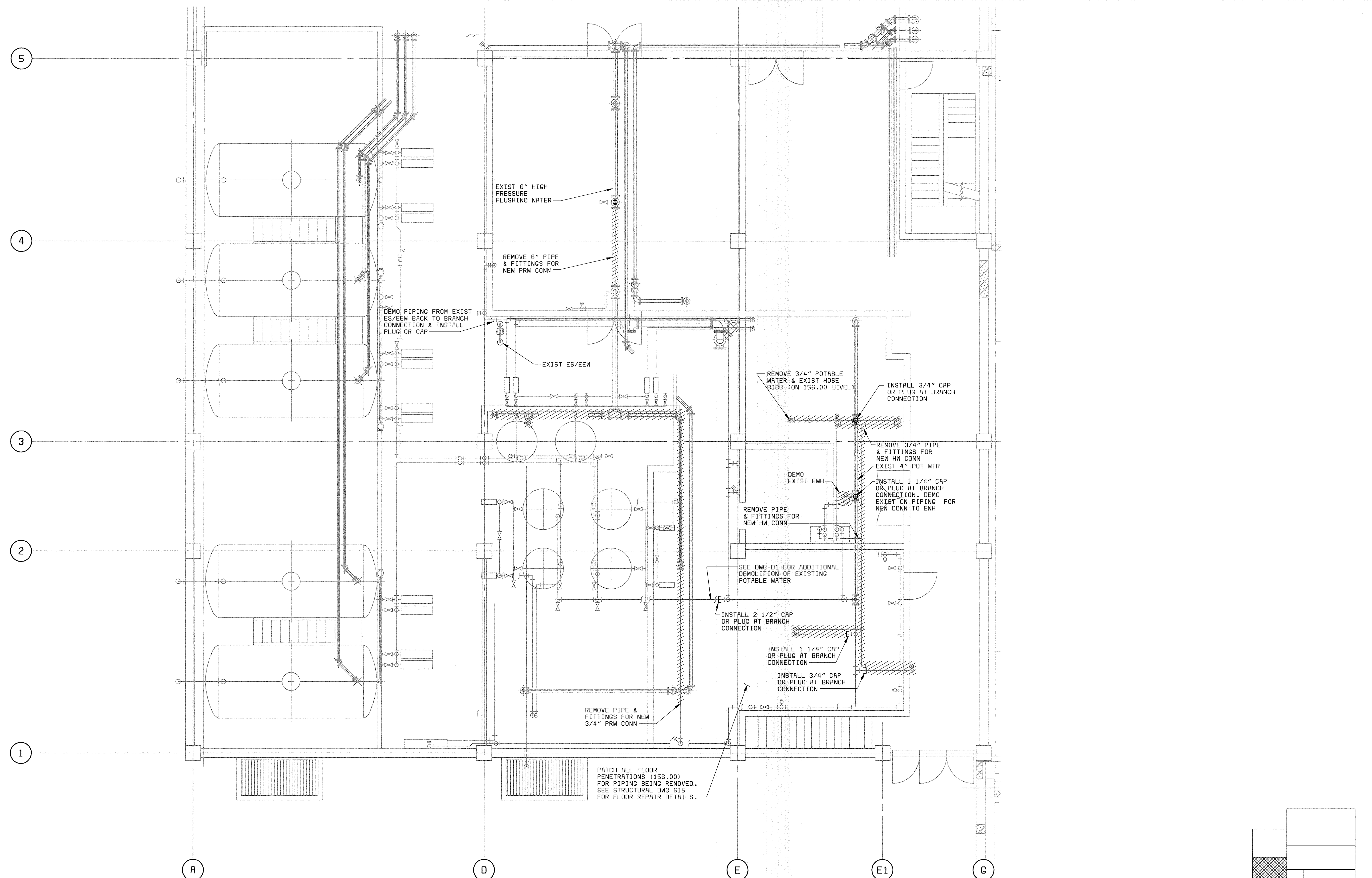
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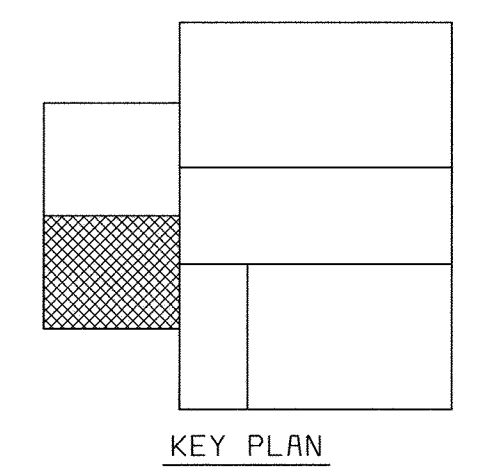
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 XREF: 58472-401-323-PIPE
 XREF: 58472-401-323-COUE

DES: GWP
 DRN: BDL/LDW
 CHK: JEP
 DATE: 5-30-00

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21992	DES: GWP DRN: BDL/LDW CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH/RJR/RJR REVISIONS AND RECORD OF ISSUE NO. BY CK APP	DEMOLITION HVAC EQUIPMENT AND PIPE GALLERY - PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 24 OF 150 D12
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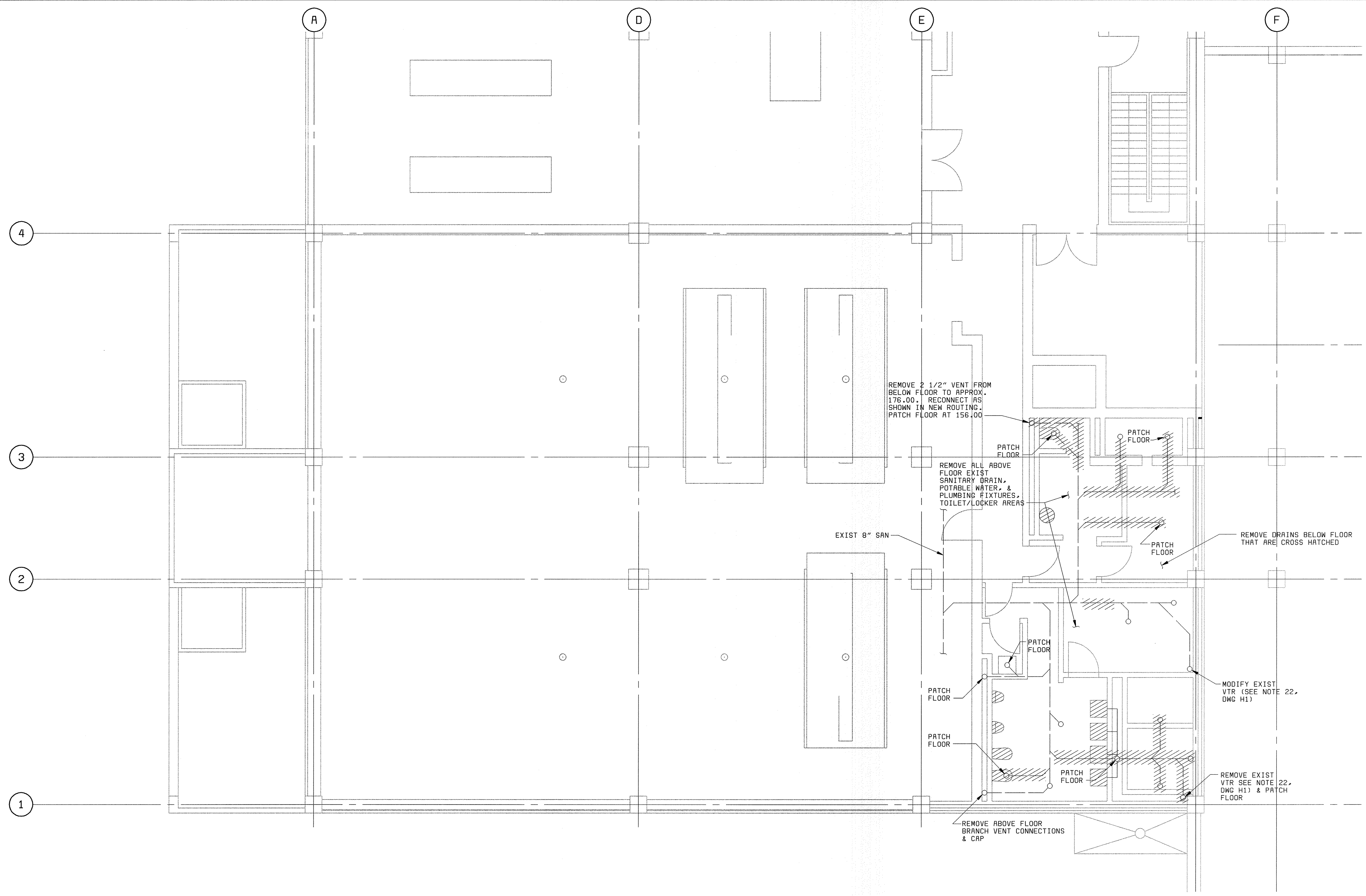
PLAN EL 142.00
3/16" = 1'-0"



KEY PLAN

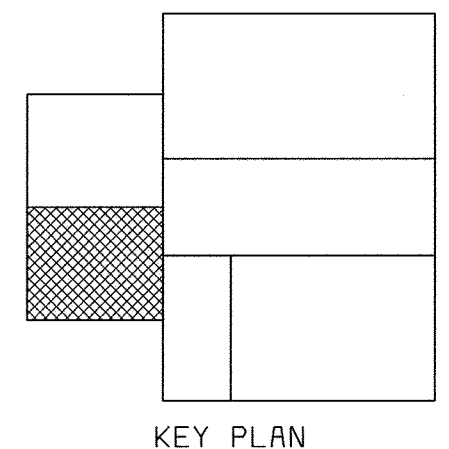
XREF: 58472-203-SDLS-S-R0000118
 XREF: 58472-401-232-C016
 DES: JPC
 DRN: JPC
 CHK: MLP
 DATE: 5-30-00

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC							DEMOLITION PLUMBING POLYMER FEED AREA PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JPC	CHK: MLP	DATE: 5-30-00	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH			RJR



PLAN EL 156.00
3/16" = 1'-0"

NOTES:
1. SEE STRUCTURAL DRAWING S15 FOR FLOOR REPAIR DETAILS.



KEY PLAN

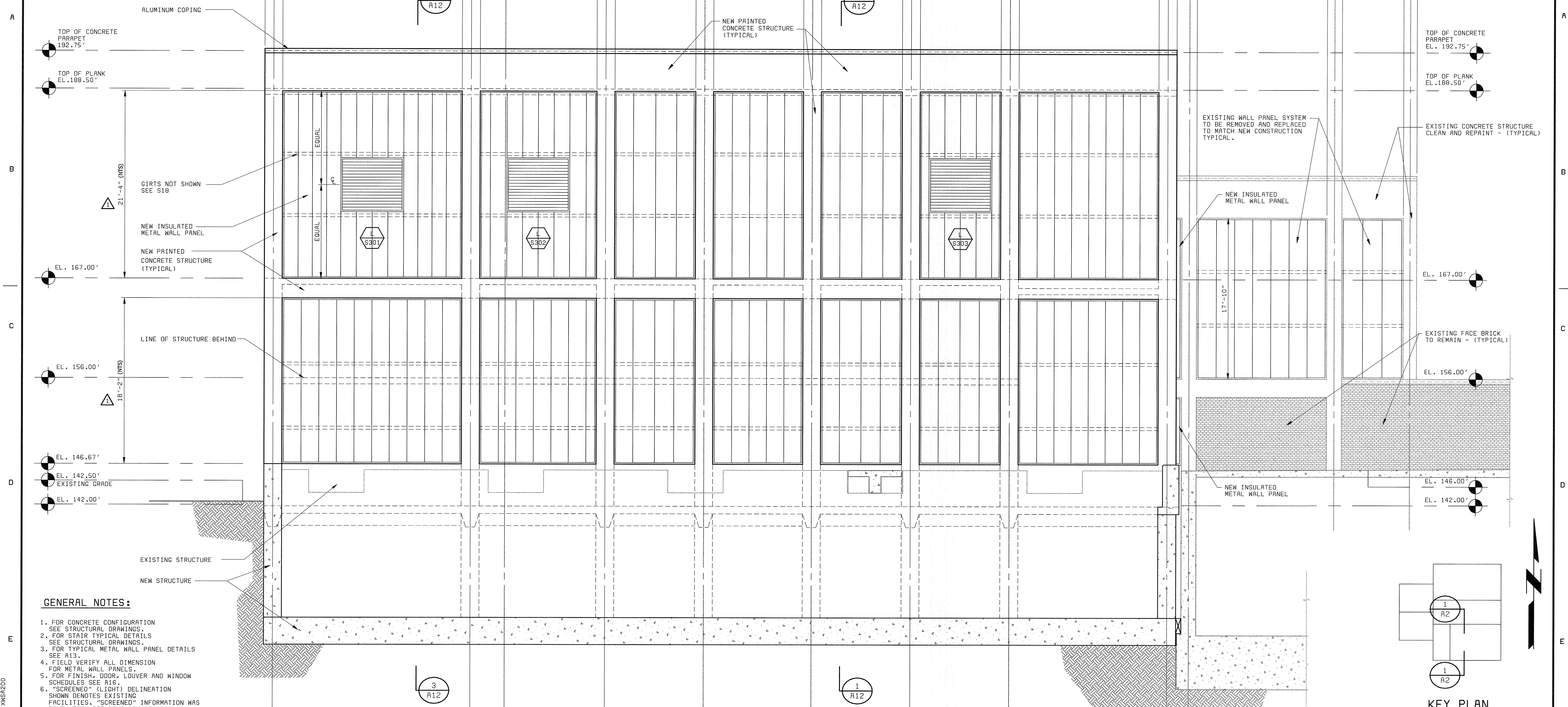
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 XREF: 58472-401-323-PLP2
 XREF: 58472-401-323-B1B2Z
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058472.2
 P058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH, L.P. Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC									DEMOLITION PLUMBING LIME STABILIZATION AREA PLAN AT EL 156.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JPC											
			CHK: MLP	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR					D14	
			DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP					

NEW CONSTRUCTION

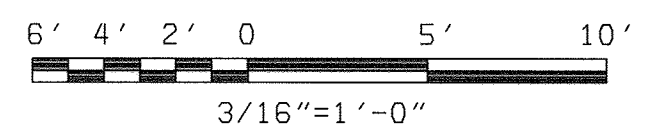
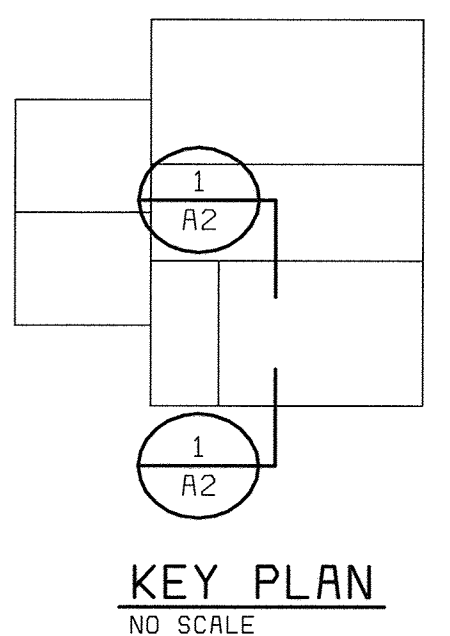
EXISTING CONSTRUCTION



GENERAL NOTES:

1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL METAL WALL PANEL DETAILS SEE A13.
4. FIELD VERIFY ALL DIMENSION FOR METAL WALL PANELS.
5. FOR FINISH, DOOR, LOUVER AND WINDOW SCHEDULES SEE A16.
6. "SCREENED" (LIGHT) DELINEATION SHOWN DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS AND FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING OF MATERIALS AND BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

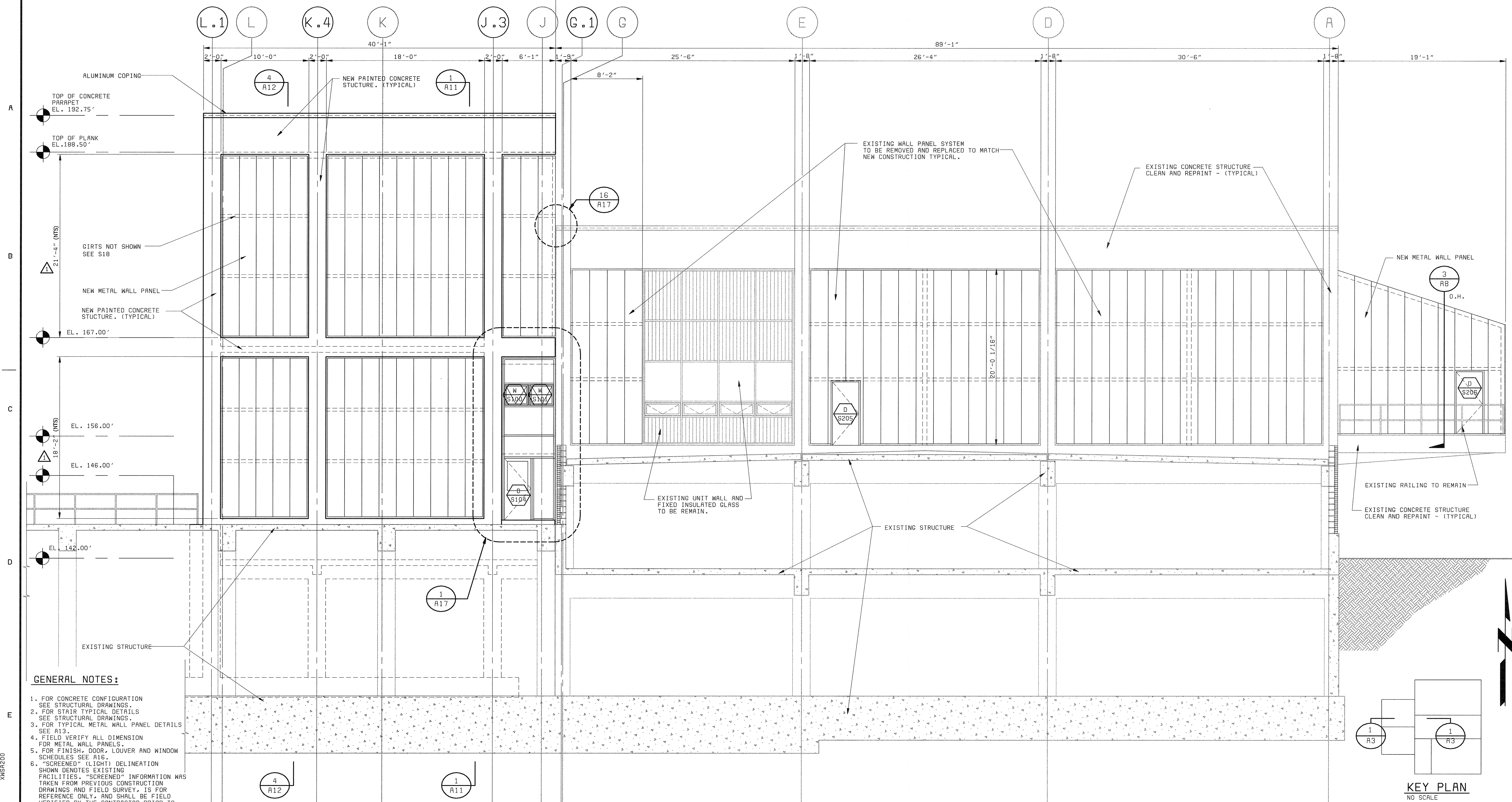
EAST ELEVATION
3/16" = 1'-0"



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108	BLACK & VEATCH Gaithersburg, Maryland	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS		ARCHITECTURAL	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JS				ARCHITECTURAL
CHIEF, BUREAU OF UTILITIES DATE	REC. PROF. ENGR. DATE	DATE	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		A2
					REVISIONS AND RECORD OF ISSUE		

NEW CONSTRUCTION

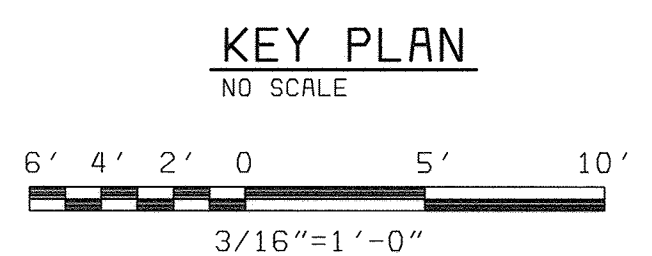
EXISTING CONSTRUCTION



GENERAL NOTES:

1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL METAL WALL PANEL DETAILS SEE A13.
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NORTH ELEVATION
3/16" = 1'-0"



XWLOGO XMSR200 D5E472.2 PDS6472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
bbw Architects • Designers • Planners
Bryant Bryant Williams, P.C.
401 Connecticut Avenue NW, Suite 500
Washington, D.C. 20008 (202) 244-2100
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH LLP
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
CHARLES I. BRYANT
A REGISTERED
ARCHITECT
IN THE
STATE OF MARYLAND,
NO. 1377-R

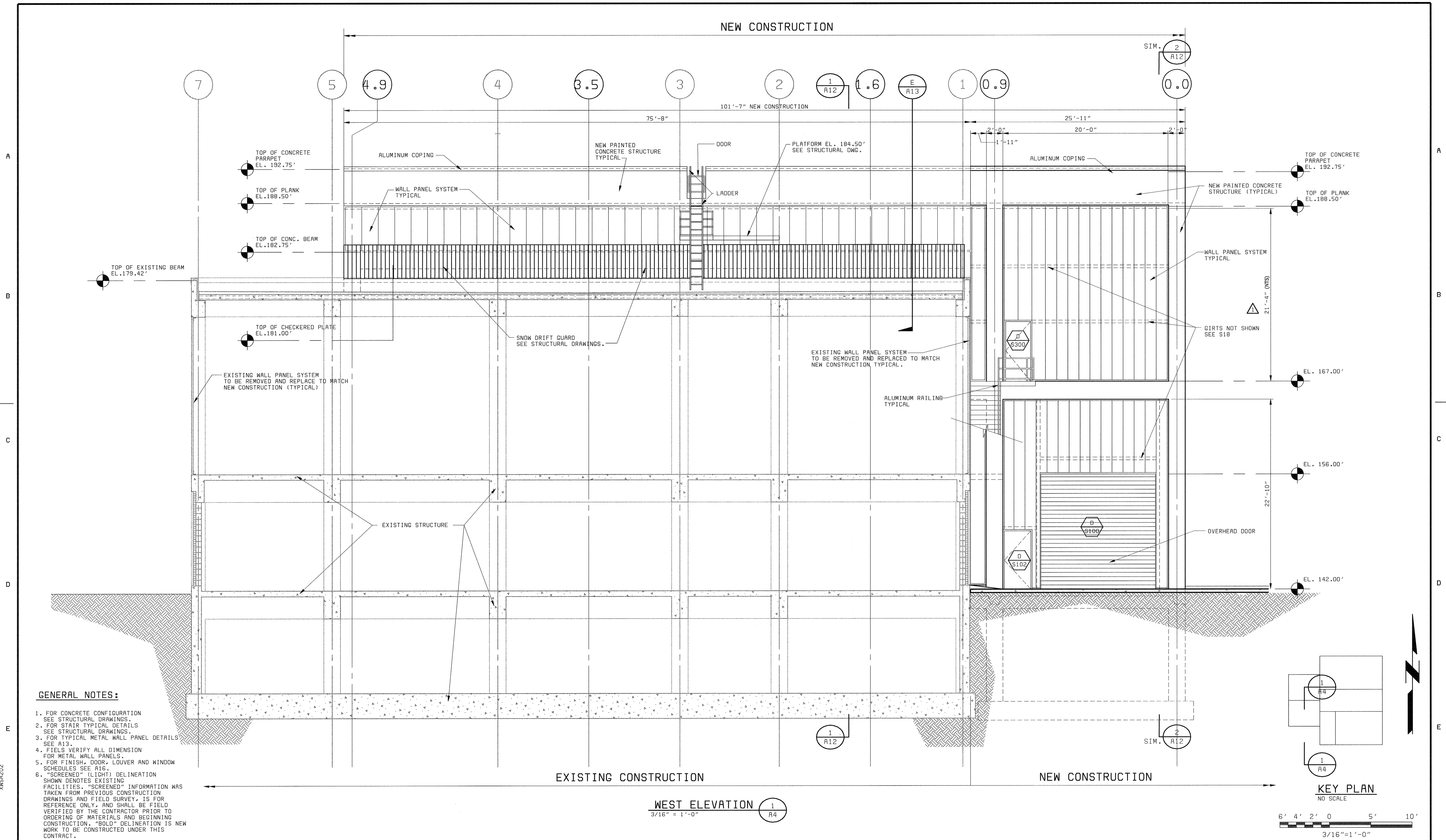
DES: CH/JS					
DRN: JS					
CHK: CH					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
		REVISIONS AND RECORD OF ISSUE			

ARCHITECTURAL
**CENTRIFUGE BUILDING EXPANSION
NORTH ELEVATION**

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
30 OF 150
A3

NEW CONSTRUCTION



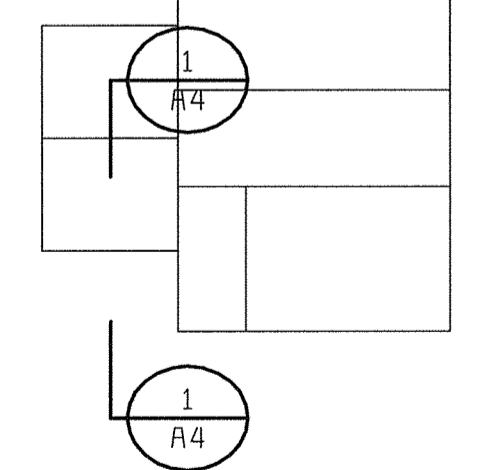
GENERAL NOTES:

1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL METAL WALL PANEL DETAILS SEE A13.
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EXISTING CONSTRUCTION

WEST ELEVATION 1
3/16" = 1'-0"

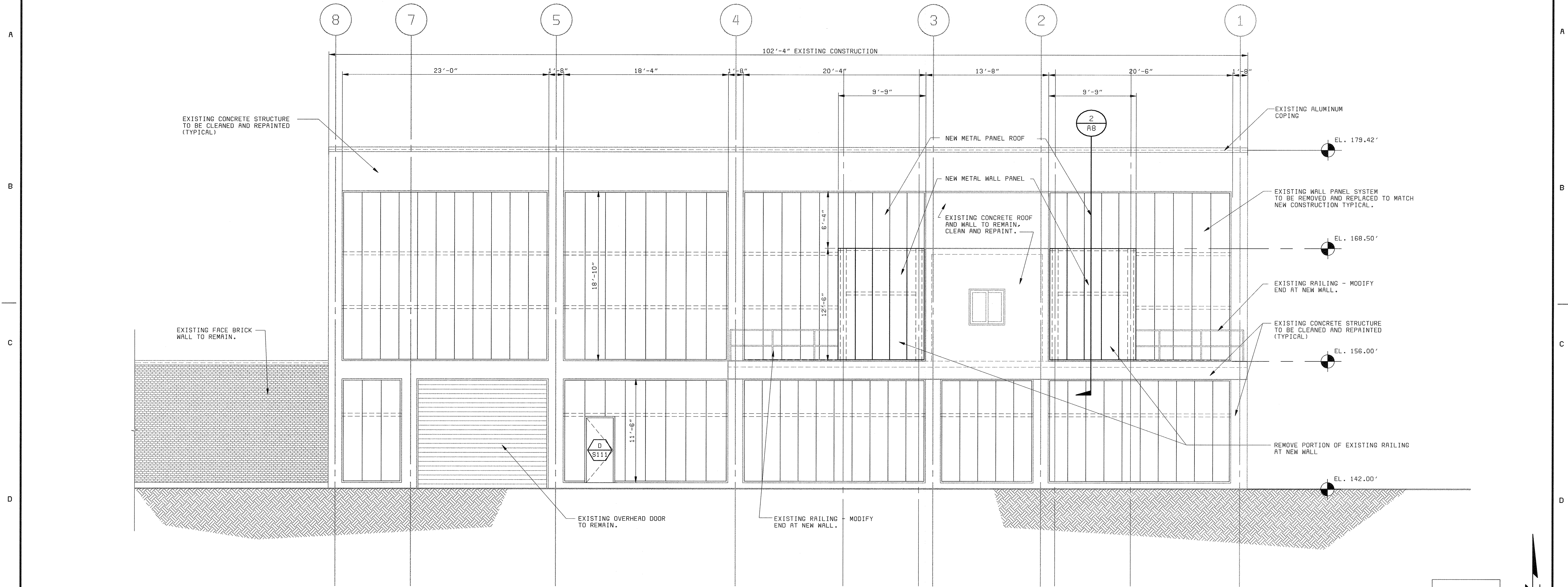
NEW CONSTRUCTION



KEY PLAN
NO SCALE
6' 4' 2' 0 5' 10'
3/16"=1'-0"

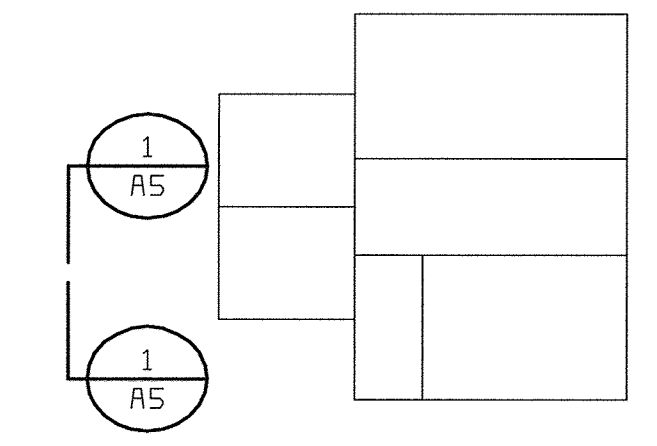
XWLOD XMSR20Z
D58472.2 P058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 200 Washington, D.C. 20008 (202) 244-2108	BLACK & VEATCH Gaithersburg, Maryland THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES J. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS			ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION WEST ELEVATION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN	
		DRN: JS	CHK: CH	DATE: 5/30/00			DATE: 07/26/04	CONFORMED TO CONSTRUCTION RECORDS
CHIEF, BUREAU OF UTILITIES	DATE	REG. PROF. ENGR.	DATE	NO.	BY	CK	APP	

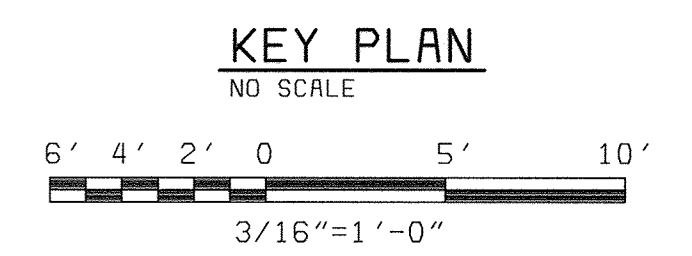


GENERAL NOTES:

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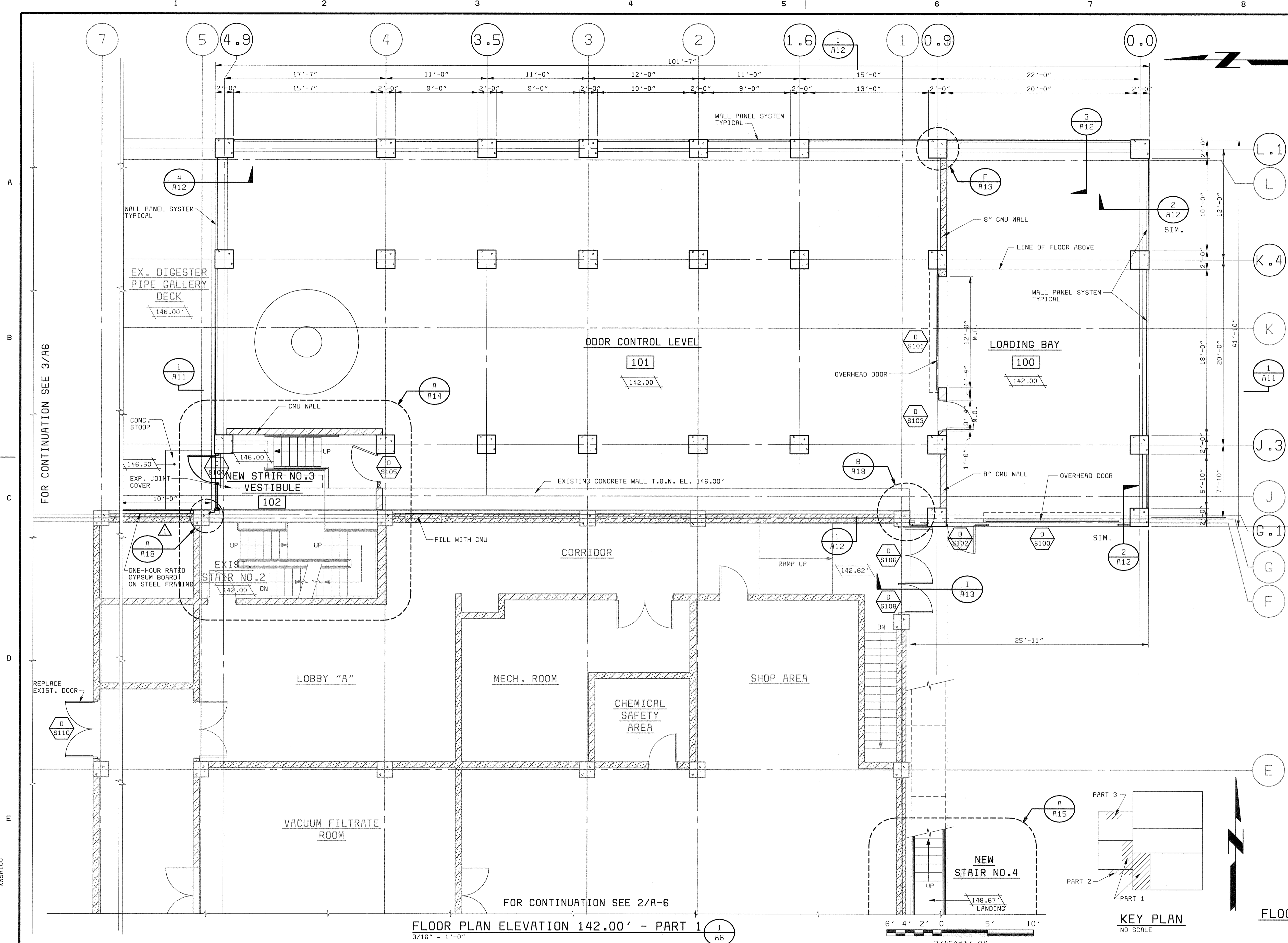


WEST ELEVATION EXISTING BUILDING
 3/16" = 1'-0" 1
A5

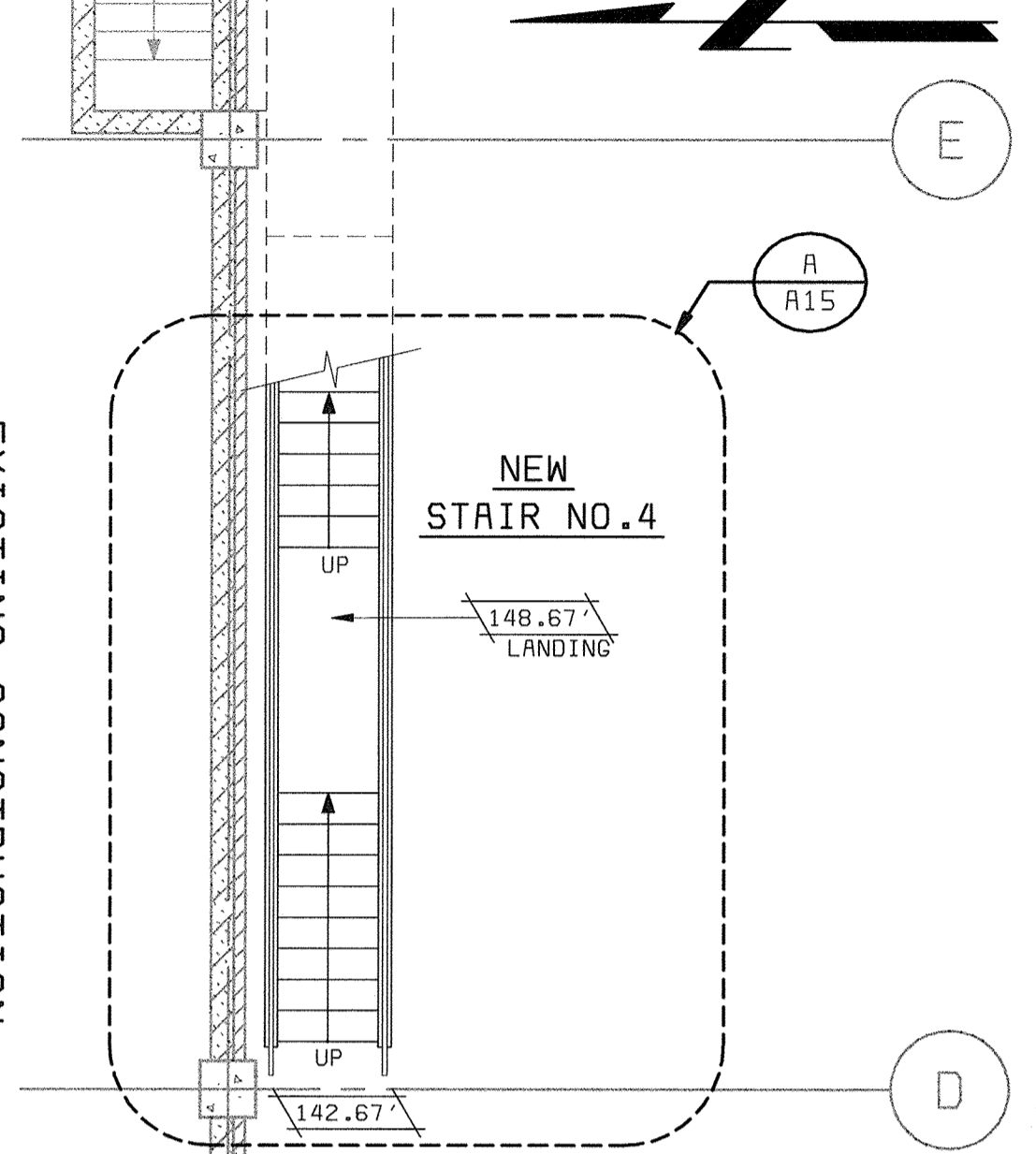


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D58472-2 P058472R

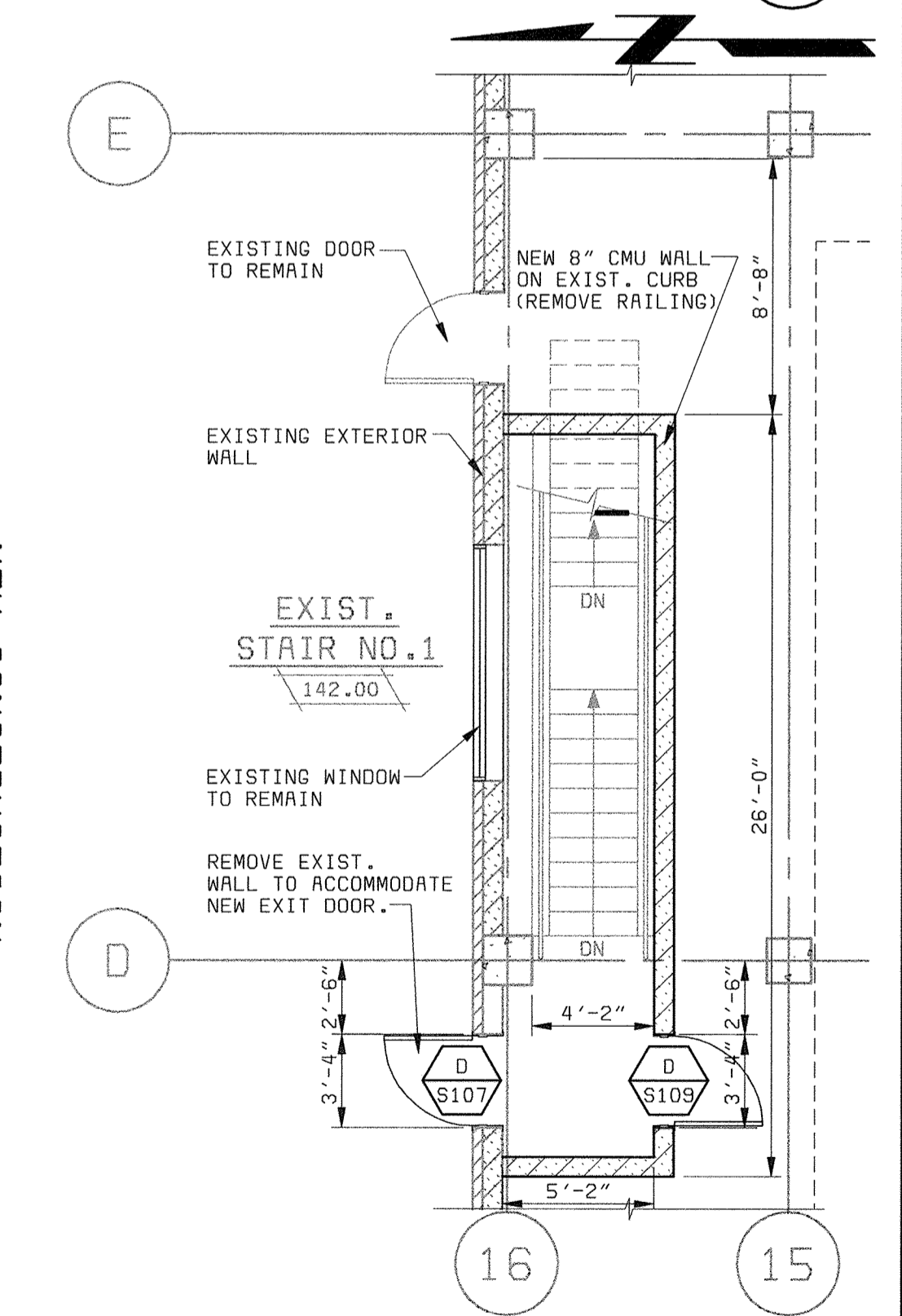
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. <small>4201 Connecticut Avenue N.W., Suite 300 Washington, D.C. 20008 (202) 244-0108</small>	BLACK & VEATCH Gaithersburg, Maryland THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS DRN: JS CHK: CH DATE: 5/30/00	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">07/26/04</td> <td style="width: 50%;">CONFORMED TO CONSTRUCTION RECORDS</td> <td style="width: 50%;">RHH</td> <td style="width: 50%;">RJR</td> <td style="width: 50%;">RJR</td> </tr> <tr> <td>DATE</td> <td>REVISIONS AND RECORD OF ISSUE</td> <td>NO.</td> <td>BY</td> <td>CK APP</td> </tr> </table>	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP	ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION WEST ELEVATION EXISTING BUILDING	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 32 OF 150 A5
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR												
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP												
CHIEF, BUREAU OF UTILITIES DATE _____		REG. PROF. ENGR. _____ DATE _____														



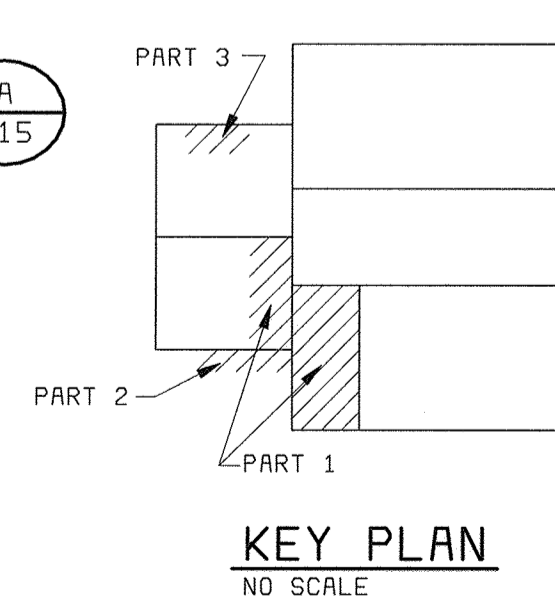
- GENERAL NOTES:**
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 7. FOR MASONRY REINFORCING AND ANCHOR DETAILS SEE S20.



FLOOR PLAN ELEVATION 142.00' PART 2
3/16" = 1'-0"



FLOOR PLAN ELEVATION 142.00' - PART 3
AT EXISTING STAIR N#1
3/16" = 1'-0"



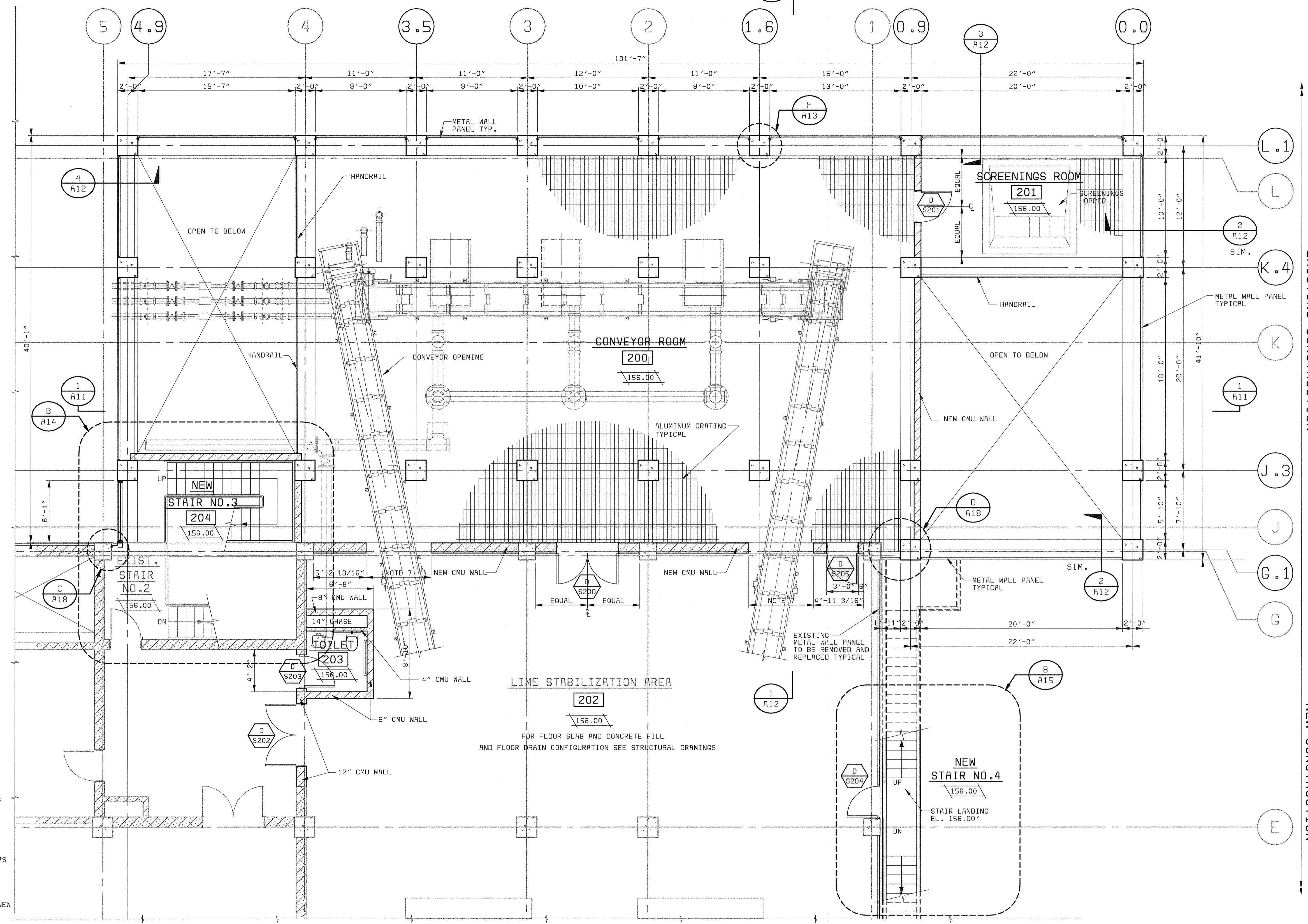
KEY PLAN
NO SCALE

FLOOR PLAN ELEVATION 142.00' - PART 1
3/16" = 1'-0"

FLOOR PLAN ELEVATION 142.00' - PART 2
3/16" = 1'-0"

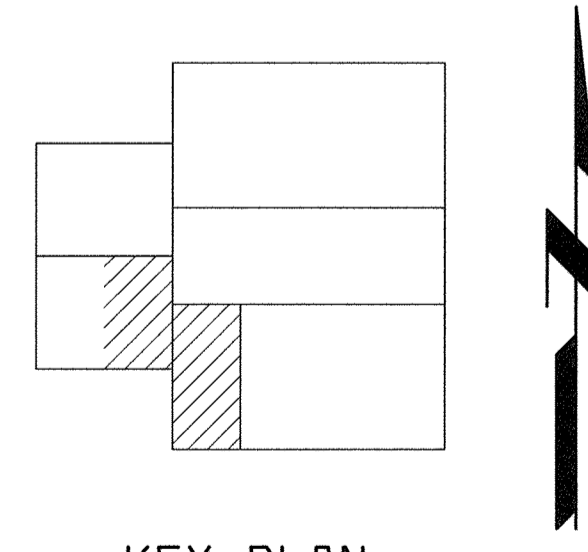
FLOOR PLAN ELEVATION 142.00' - PART 3
AT EXISTING STAIR N#1
3/16" = 1'-0"

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 344-2108	BLACK & VEATCH Gaithersburg, Maryland THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES J. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS DRN: JS CHK: CH DATE: 5/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION FLOOR PLAN AT ELEVATION 142.00'	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 33 OF 150 A6
		CHIEF, BUREAU OF UTILITIES DATE	REG. PROF. ENGR. DATE	NO. BY CK APP	DATE	HOWARD COUNTY, MARYLAND

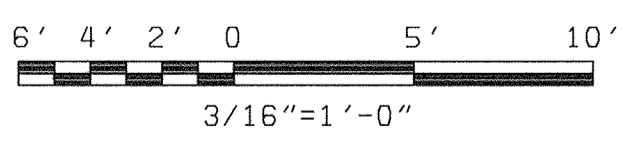


EXISTING CONSTRUCTION

NEW CONSTRUCTION



KEY PLAN
NO SCALE



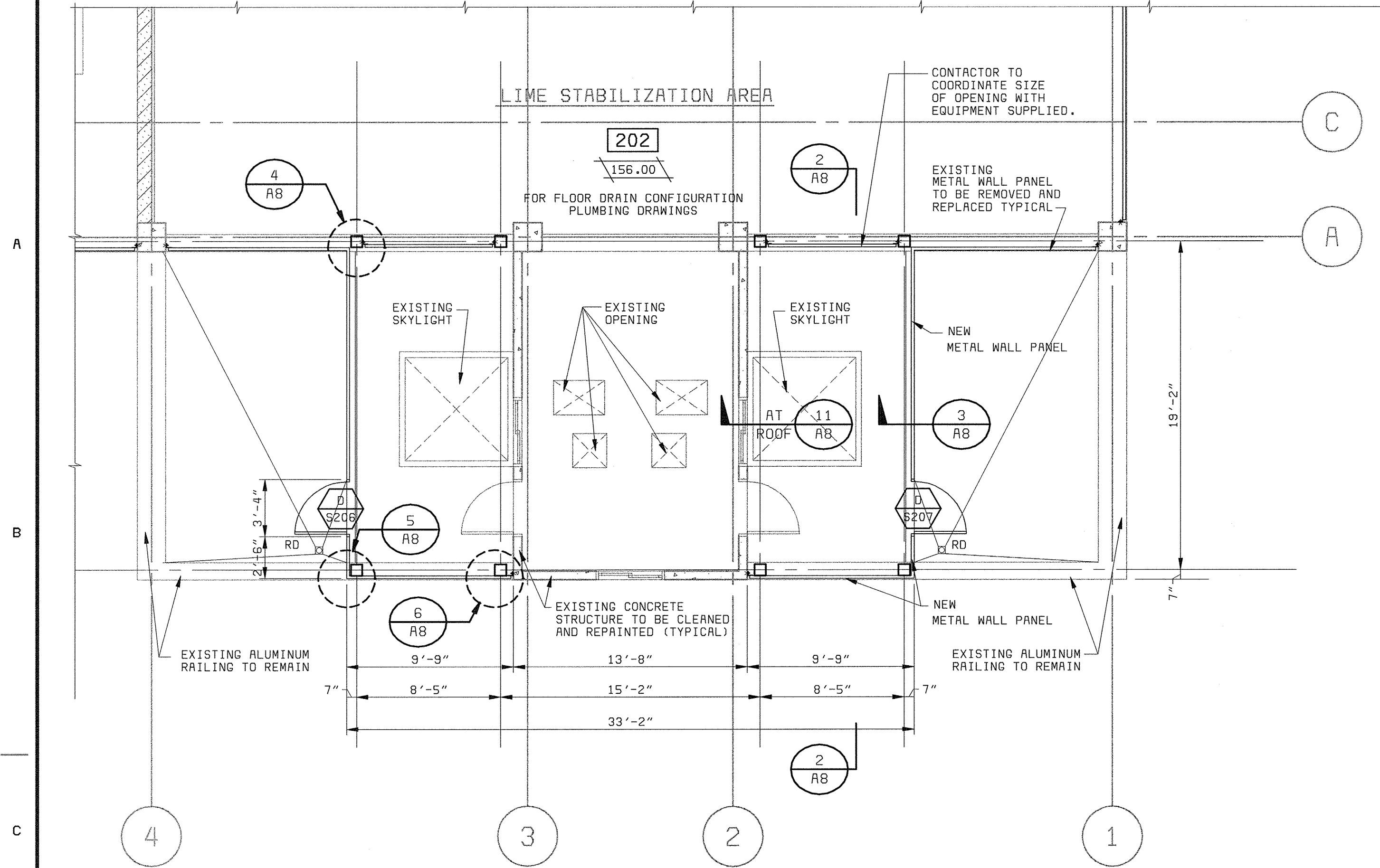
- GENERAL NOTES:**
1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
 2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
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 7. OPENING SIZE AS INDICATED ON DRAWINGS BY RDP TECHNOLOGIES, INC.
 8. EQUIPMENT SHOWN ON ARCHITECTURE DRAWINGS IS ONLY FOR GENERAL ILLUSTRATION. SEE MECHANICAL DRAWINGS FOR EQUIPMENT CONFIGURATION AND LOCATION.
 9. FOR MASONRY REINFORCING AND ANCHOR DETAILS SEE S20.
 10. IF ADDITIVE ALTERNATIVE NO. 2 IS NOT ACCEPTED, DOOR-S201 WILL NOT BE REQUIRED, AND THE OPENING SHALL BE ENCLOSED WITH BLOCK.

FOR CONTINUATION SEE 1/A8
FLOOR PLAN ELEVATION 156.00'
PART 1
3/16" = 1'-0"

XKLO00 XNSR001
056472.2 PDSB472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2168	BLACK & VEATCH Gaithersburg, Maryland	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES J. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS							LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-G205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JS								
CHIEF, BUREAU OF UTILITIES DATE	REG. PROF. ENGR. DATE		CHK: CH	07/26/04	CONFORMED TO CONSTRUCTION RECORDS						A7
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE						

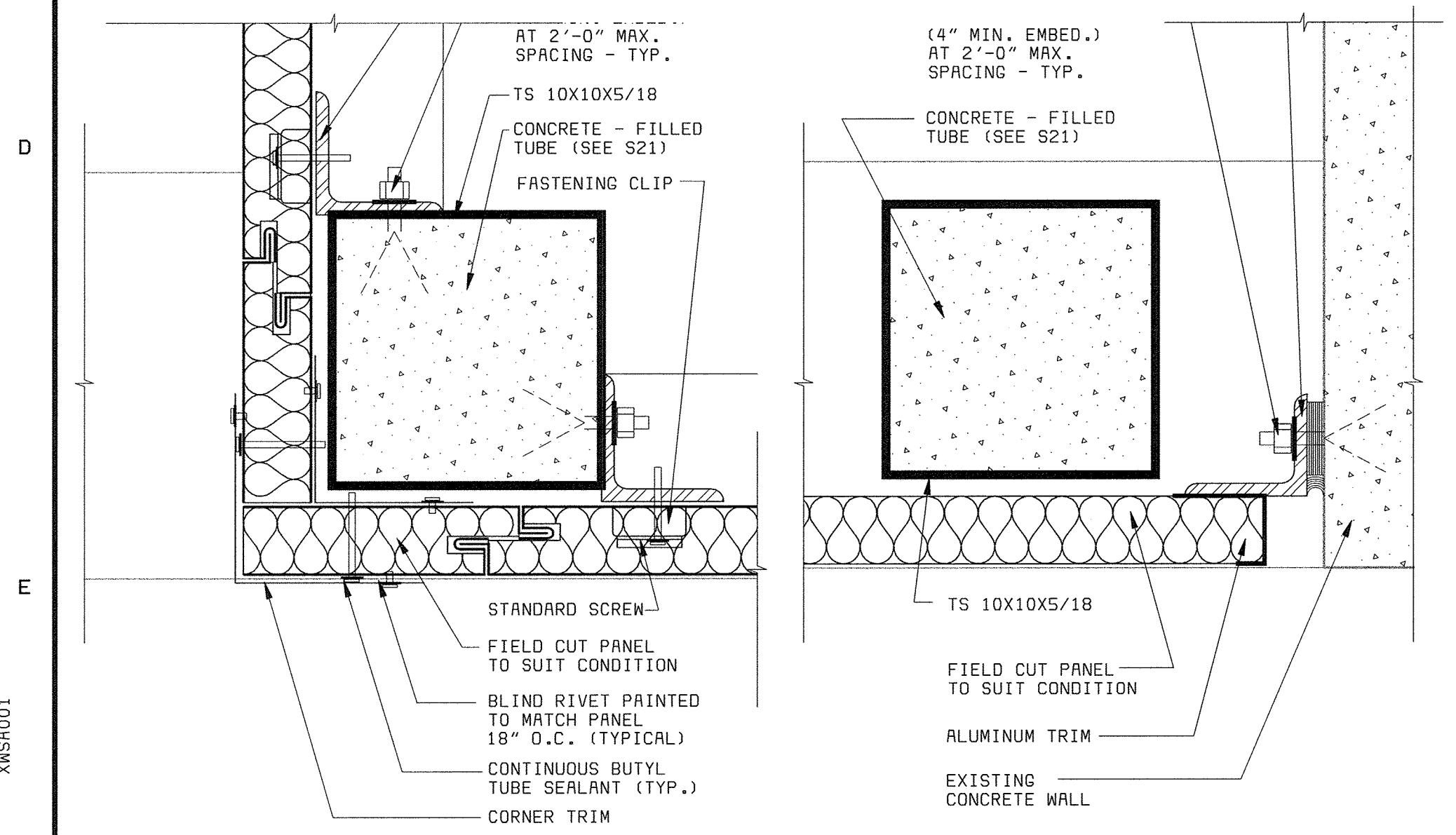
FOR CONTINUATION SEE 1/A7



FLOOR PLAN ELEVATION 156.00'

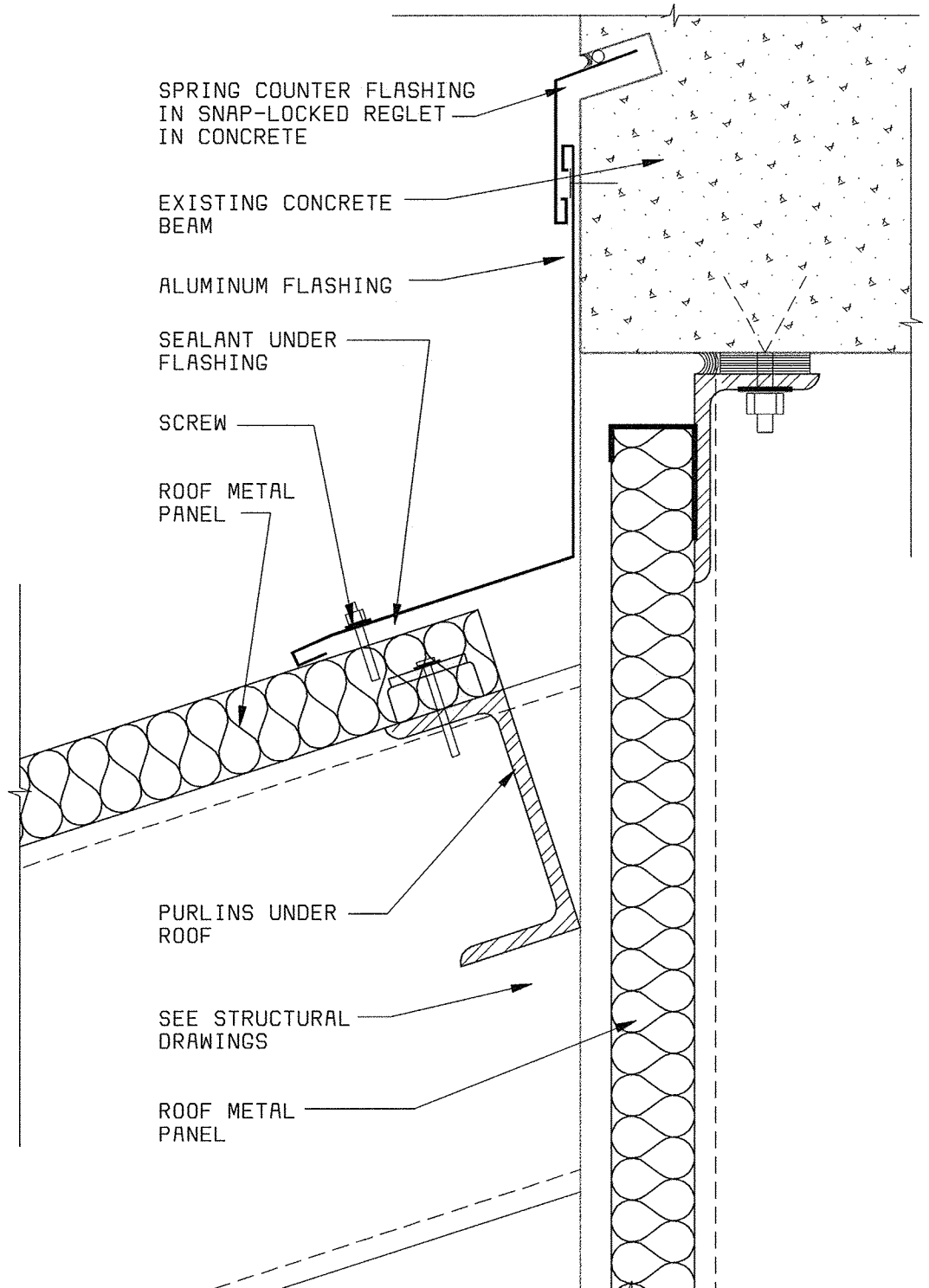
PART 2

3/16" = 1'-0"

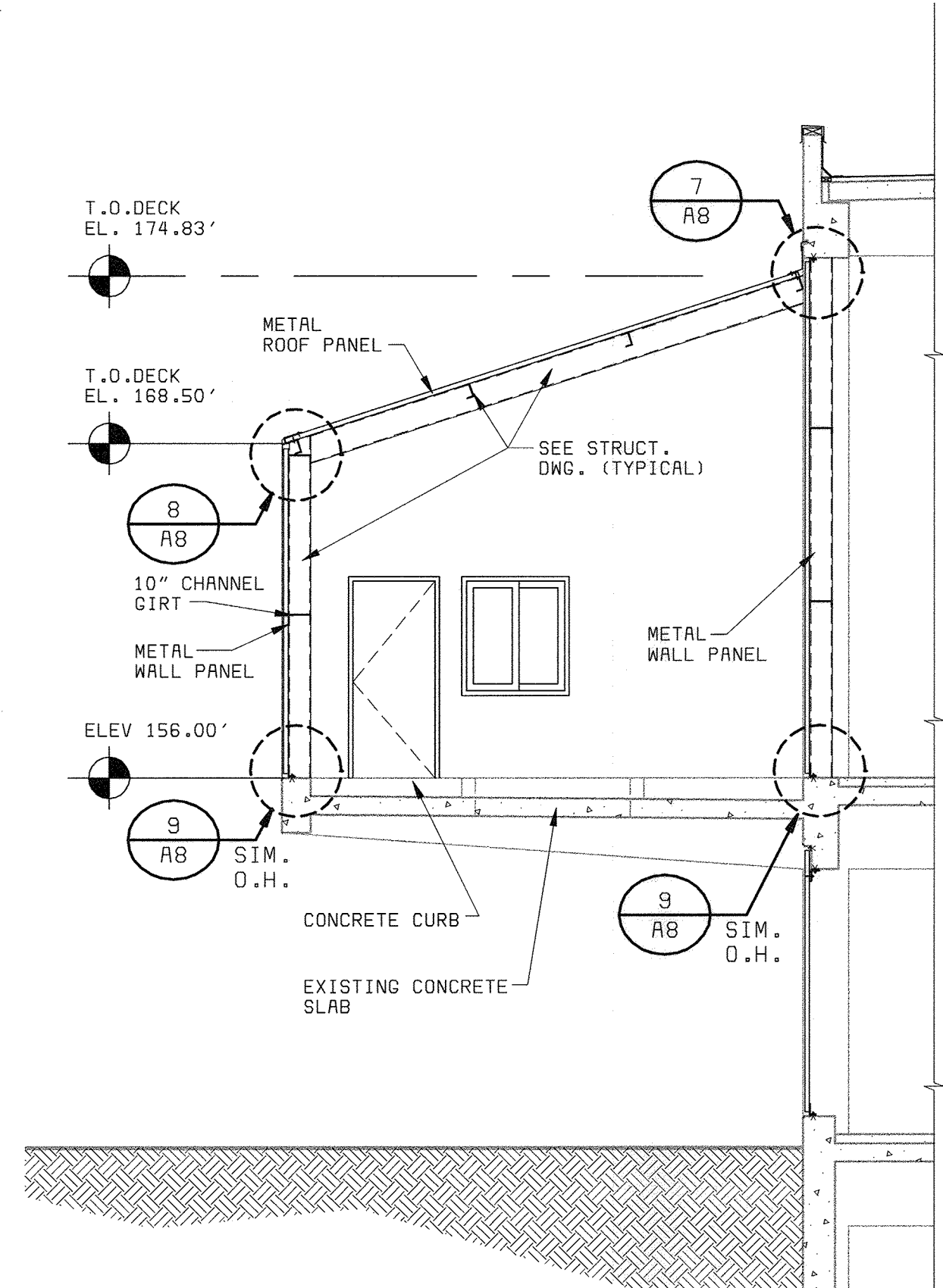


DETAIL 5
3" = 1'-0"

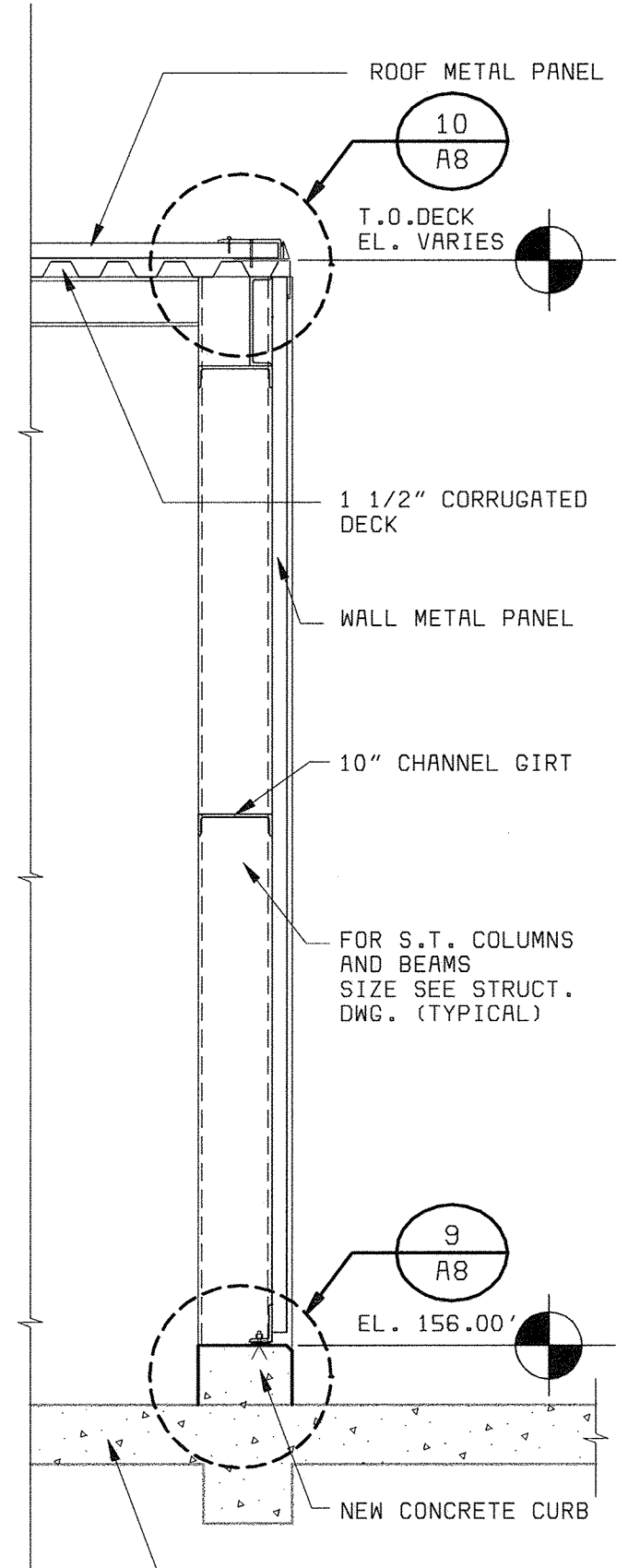
DETAIL 6
3" = 1'-0"



DETAIL 7
3" = 1'-0"

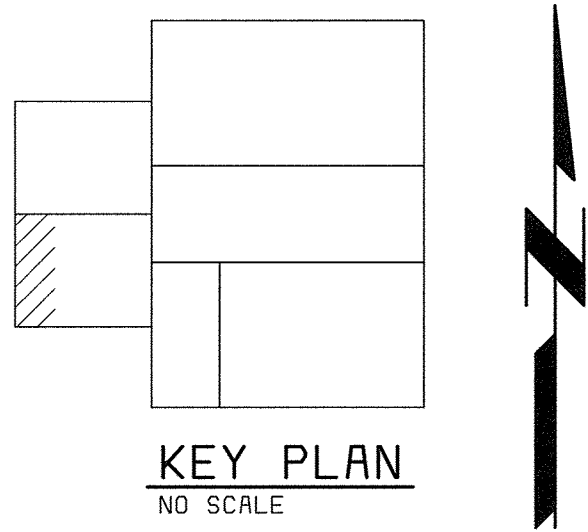


SECTION 2
3/16" = 1'-0"

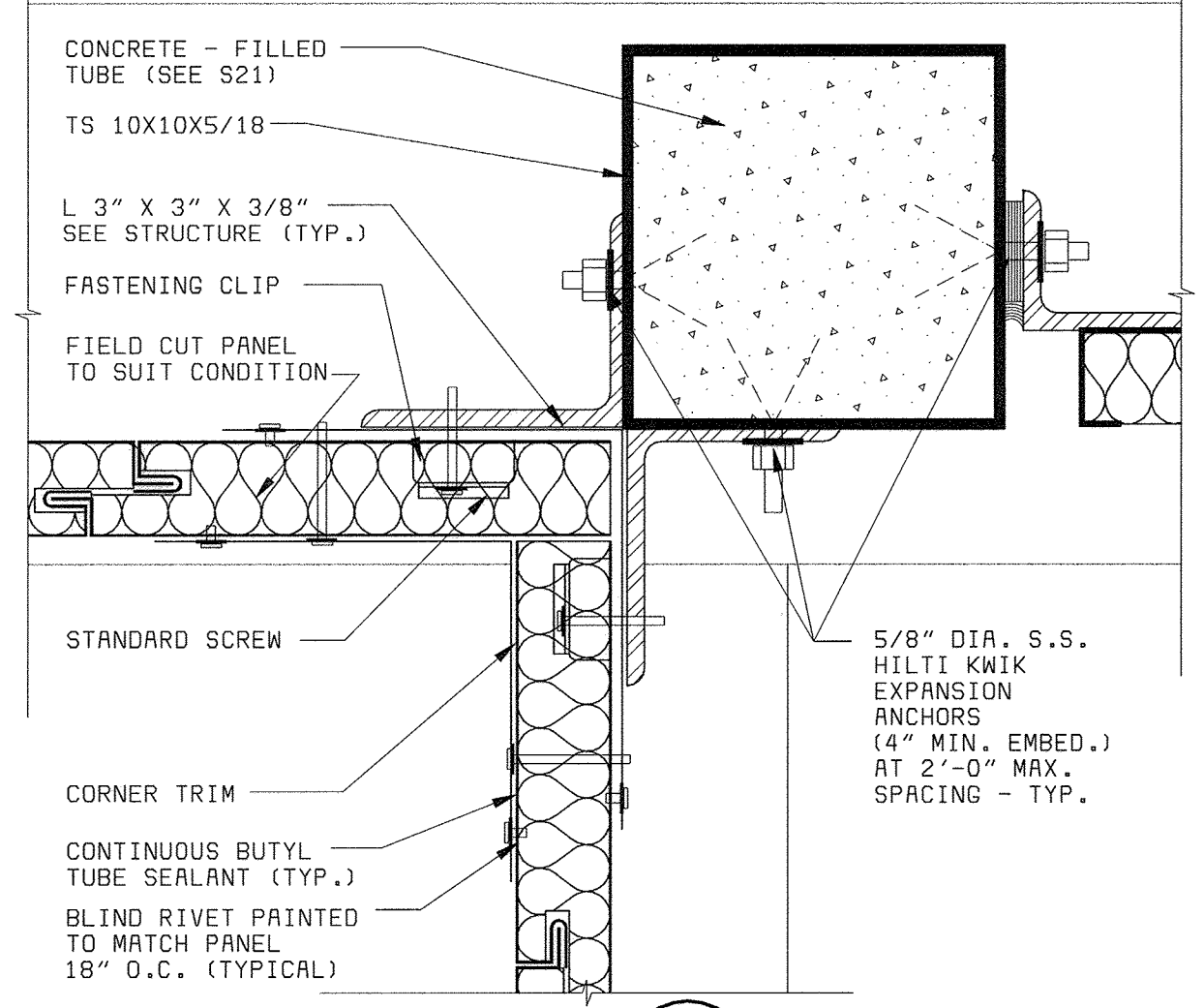
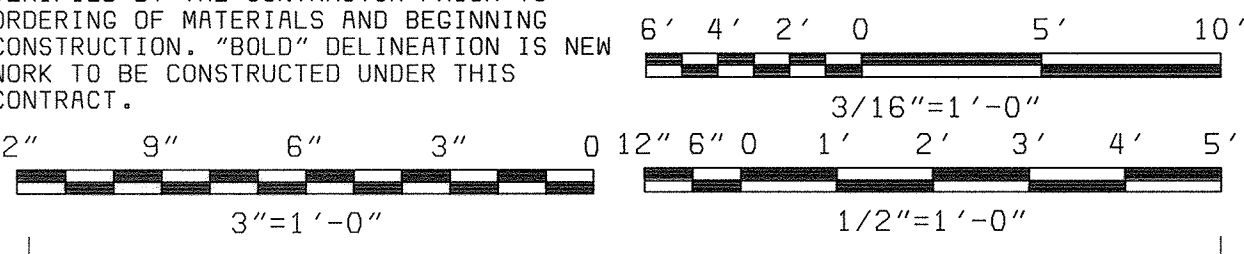


SECTION 3
3/16" = 1'-0"

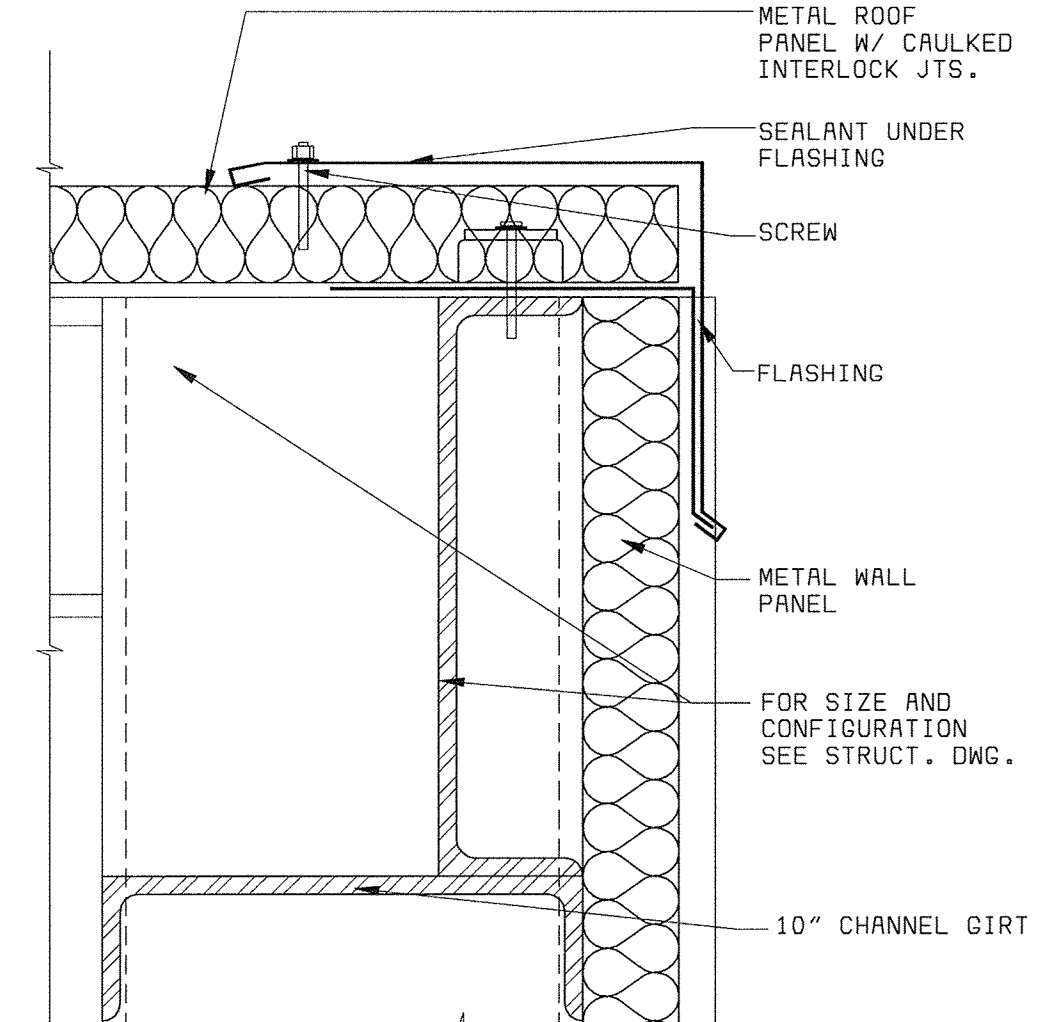
- GENERAL NOTES:**
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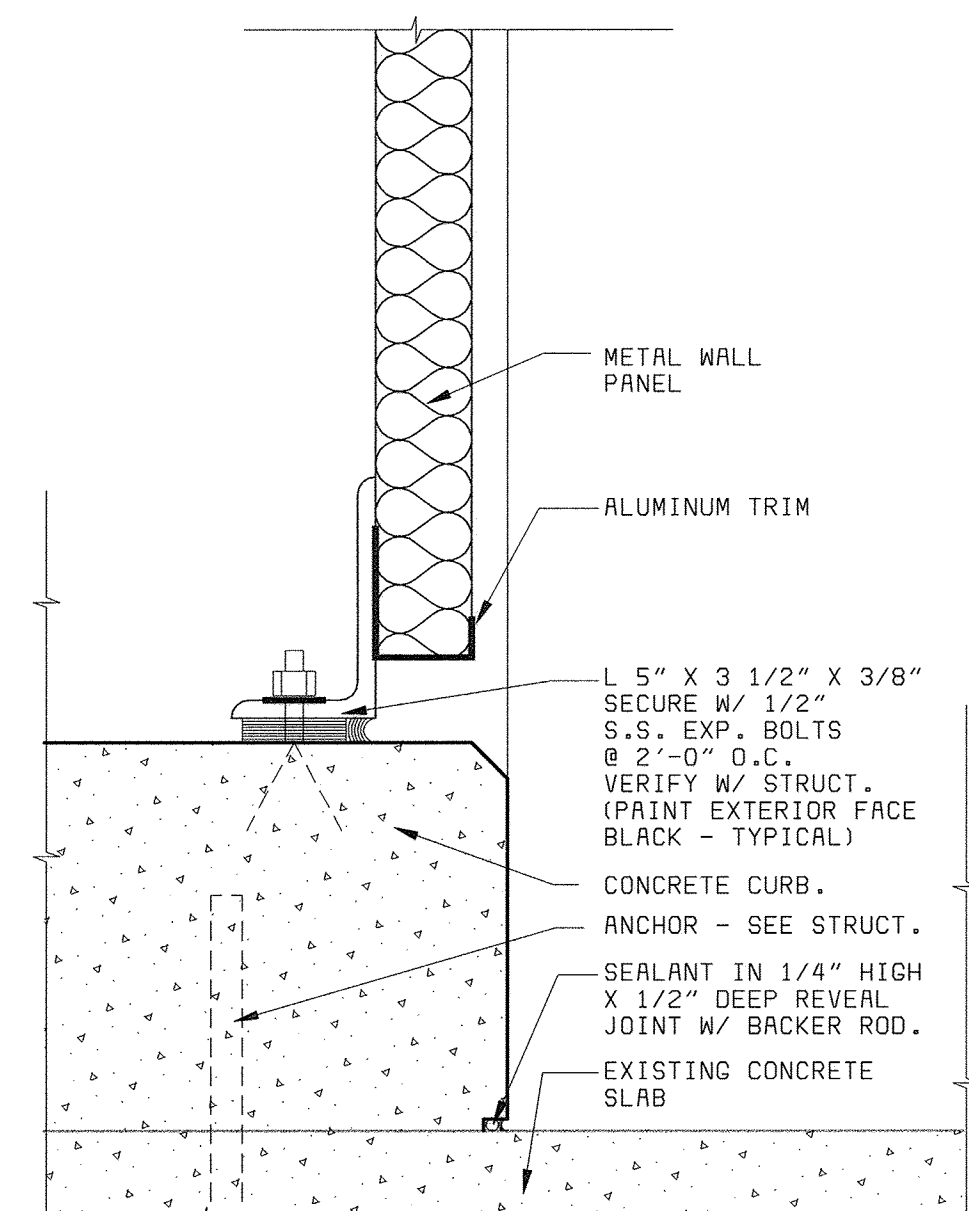
KEY PLAN
NO SCALE



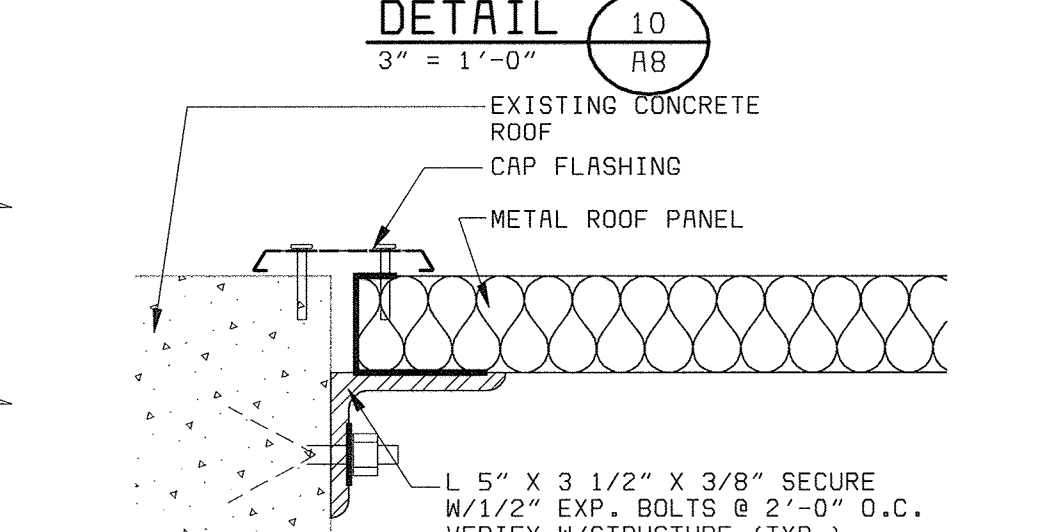
DETAIL 4
3" = 1'-0"



DETAIL 10
3" = 1'-0"



DETAIL 9
3" = 1'-0"



DETAIL 11
3" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
CHARLES I. BRYANT
A REGISTERED
ARCHITECT
IN THE
STATE OF MARYLAND,
NO. 1377-R

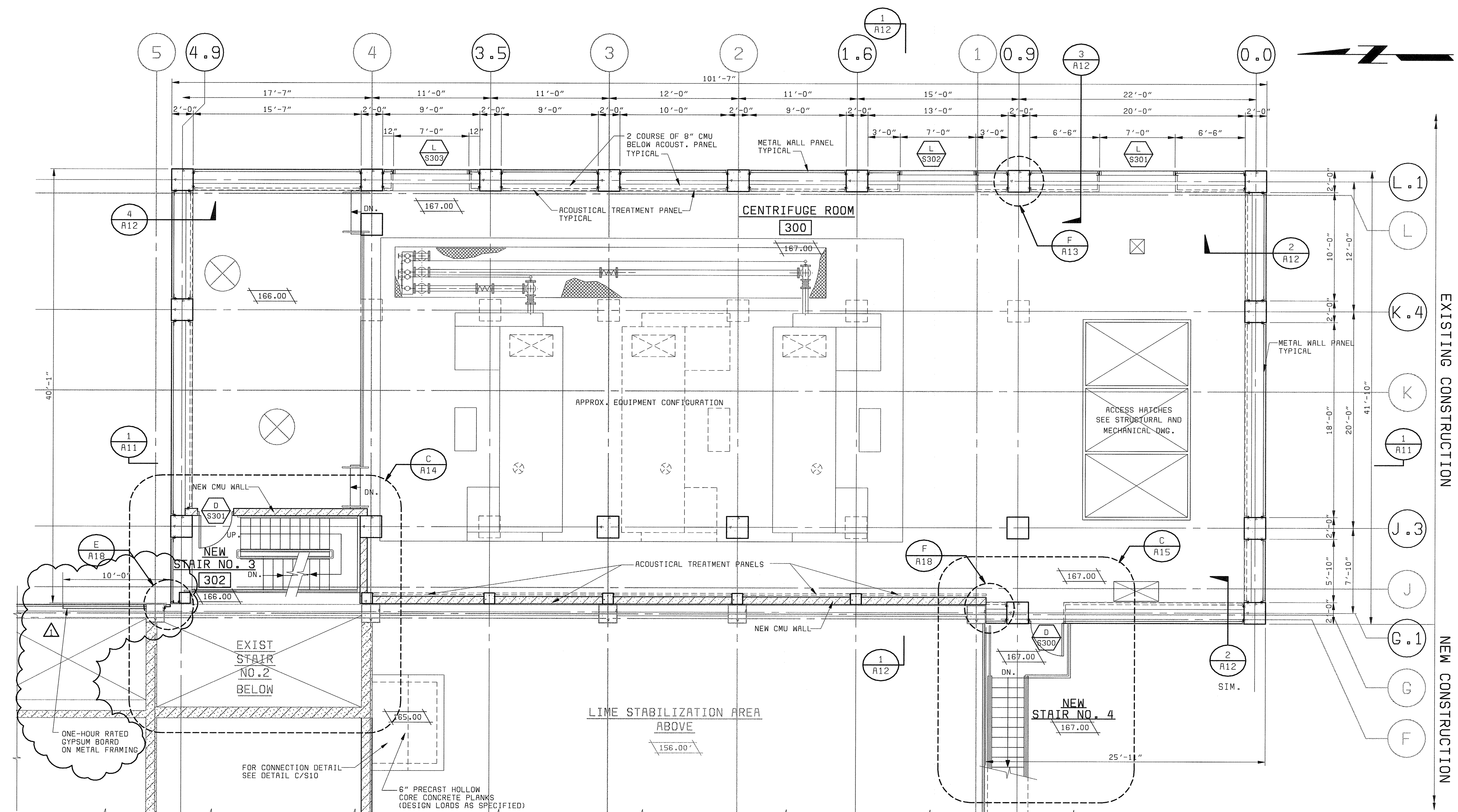
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07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	
REVISIONS AND RECORD OF ISSUE		NO.	BY CK APP

ARCHITECTURAL
CENTRIFUGE BUILDING EXPANSION
FLOOR PLAN AT ELEVATION 156.00'
PART 2 - SECTIONS AND DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-G205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
35 OF 150
A8

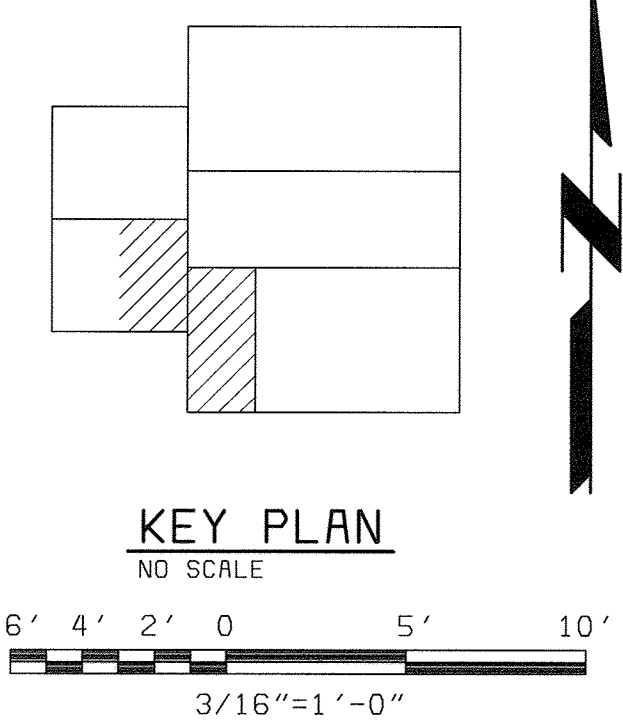
XWLO00 XWBR001 XWBR001 058472-2 058472A



GENERAL NOTES:

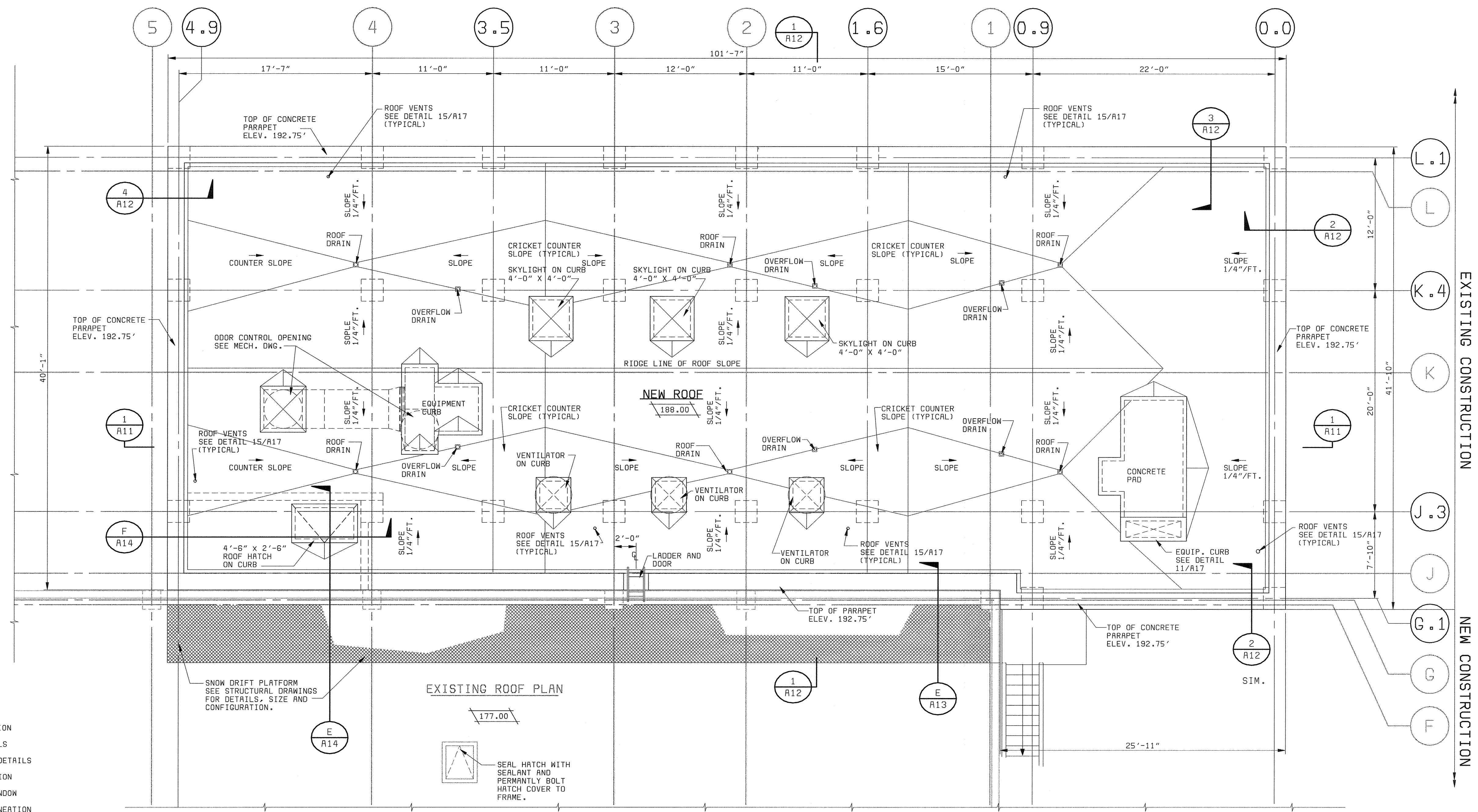
1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL WALL PANEL DETAILS SEE A13.
4. FIELD VERIFY ALL DIMENSION FOR WALL PANELS.
5. FOR FINISH, DOOR AND WINDOW SCHEDULES SEE A16.
6. "SCREENED" (LIGHT) DELINEATION SHOWN DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS AND FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING OF MATERIALS AND BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
7. OPENING SIZE AS INDICATED ON DRAWINGS BY RDP TECHNOLOGIES, INC.
8. EQUIPMENT SHOWN ON ARCHITECTURE DRAWINGS IS ONLY FOR GENERAL ILLUSTRATION ONLY. SEE MECHANICAL DRAWINGS FOR EQUIPMENT CONFIGURATION AND LOCATION.
9. FOR MASONRY REINFORCING AND ANCHOR DETAILS SEE S20.

FLOOR PLAN ELEVATION 167.00' 1
A9
3/16" = 1'-0"



XWLOD0 XWSR002

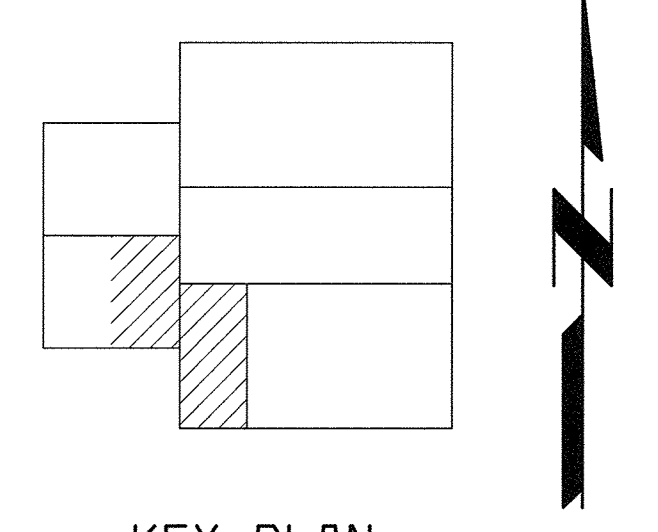
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Bryant Bryant Williams, P.C. 4201 Connecticut Avenue NW, Suite 500 Washington, D.C. 20008 (202) 244-2108 CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES T. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS DRN: JS CHK: CH DATE: 5/30/00	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>07/26/04</td> <td>CONFORMED TO CONSTRUCTION RECORDS</td> <td>RHM</td> <td>RJR</td> <td>RJR</td> </tr> <tr> <td>3/12/01</td> <td>ADD FIRE-RATED PARTITION</td> <td>CB</td> <td>CH</td> <td>CH</td> </tr> <tr> <td>DATE</td> <td>REVISIONS AND RECORD OF ISSUE</td> <td>NO.</td> <td>BY</td> <td>CK APP</td> </tr> </table>	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHM	RJR	RJR	3/12/01	ADD FIRE-RATED PARTITION	CB	CH	CH	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP	ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION FLOOR PLAN AT ELEVATION 167.00'	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 36 OF 150 A9
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHM	RJR	RJR																		
3/12/01	ADD FIRE-RATED PARTITION	CB	CH	CH																		
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP																		



GENERAL NOTES:

1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL WALL PANEL DETAILS SEE A13.
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9. FOR ROOF VENTILATOR AND DRAIN LOCATIONS SEE PLUMBING DRAWINGS. FOR DETAILS SEE A17.
10. ROOF CURBS FOR HVAC EQUIPMENT SEE HVAC DRAWINGS AND COORDINATE WITH MANUFACTURE. FOR DETAILS SEE A17.
11. FOR ROOF TYPICAL DETAILS SEE A17.

ROOF PLAN
3/16" = 1'-0"



KEY PLAN
NO SCALE
3/16" = 1'-0"

XWLO03 XMSR003

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

bbw Architects • Designers • Planners
Bryant Bryant Williams, P.C.
4201 Connecticut Avenue N.W., Suite 300
Washington, D.C. 20008 (202) 244-2108

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R

DES: CH/JS					
DRN: JS					
CHK: CH					
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP
		07/26/04 CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	

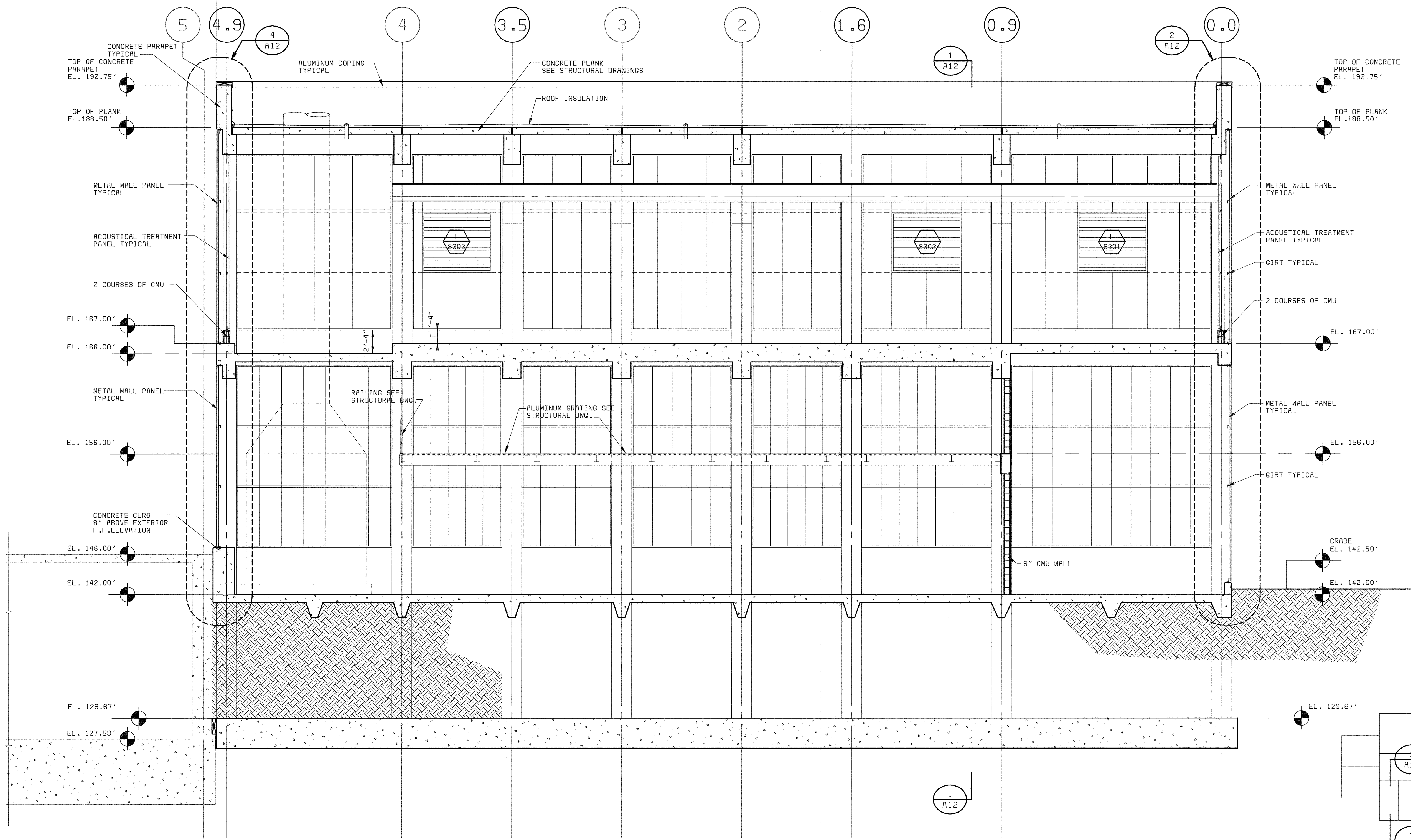
ARCHITECTURAL
**CENTRIFUGE BUILDING EXPANSION
ROOF PLAN**

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 37 OF 150
A10

EXISTING CONSTRUCTION

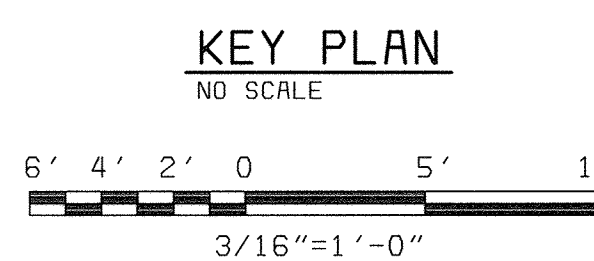
NEW CONSTRUCTION



GENERAL NOTES:

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2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
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SECTION "A"
3/16" = 1'-0"



XKLOGO
XKSR204
068472.2
F058472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
bbw Architects & Planners
Bryant Bryant Williams, P.C.
4201 Connecticut Avenue N.W., Suite 500
Washington, D.C. 20008 (202) 244-2108
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

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FOR CONSTRUCTION
AND SEALED BY
CHARLES L. BRYANT
A REGISTERED
ARCHITECT
IN THE
STATE OF MARYLAND,
NO. 1377-R

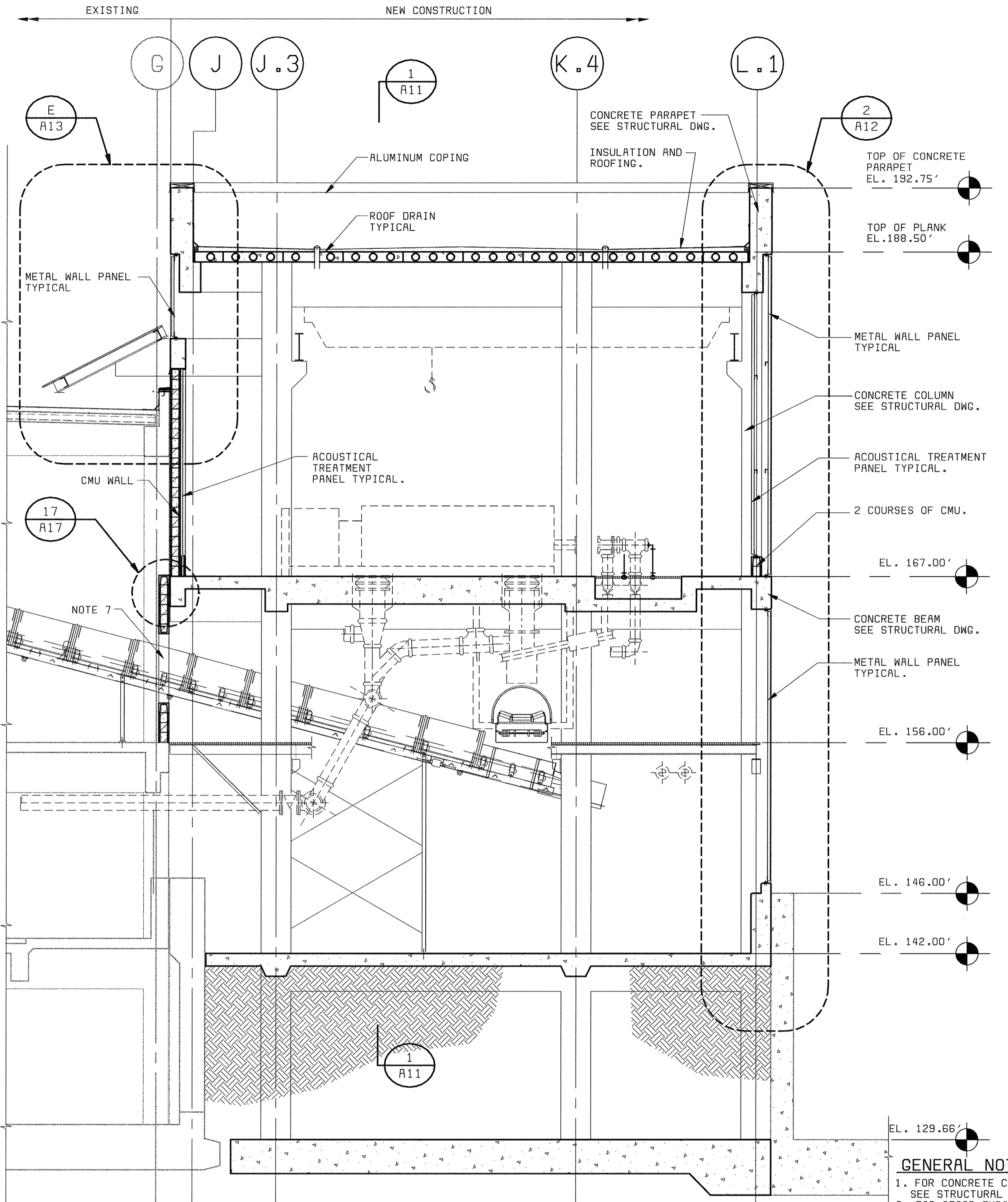
DES: CH/JS
DRN: JS
CHK: CH
DATE: 5/30/00

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR

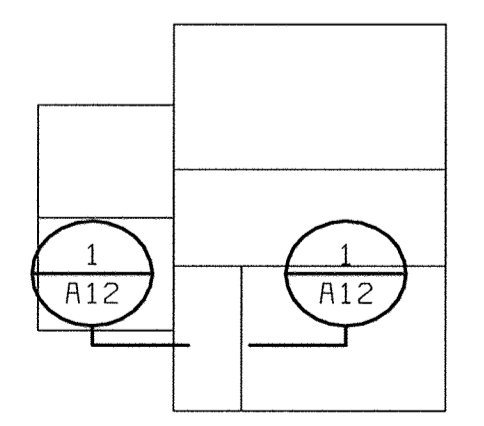
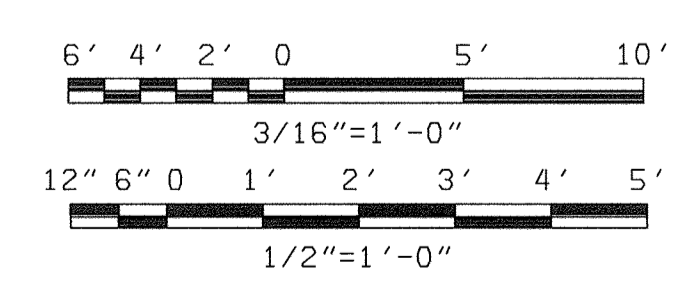
ARCHITECTURAL
**CENTRIFUGE BUILDING EXPANSION
BUILDING SECTION "A"**

**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 38 OF 150
A11

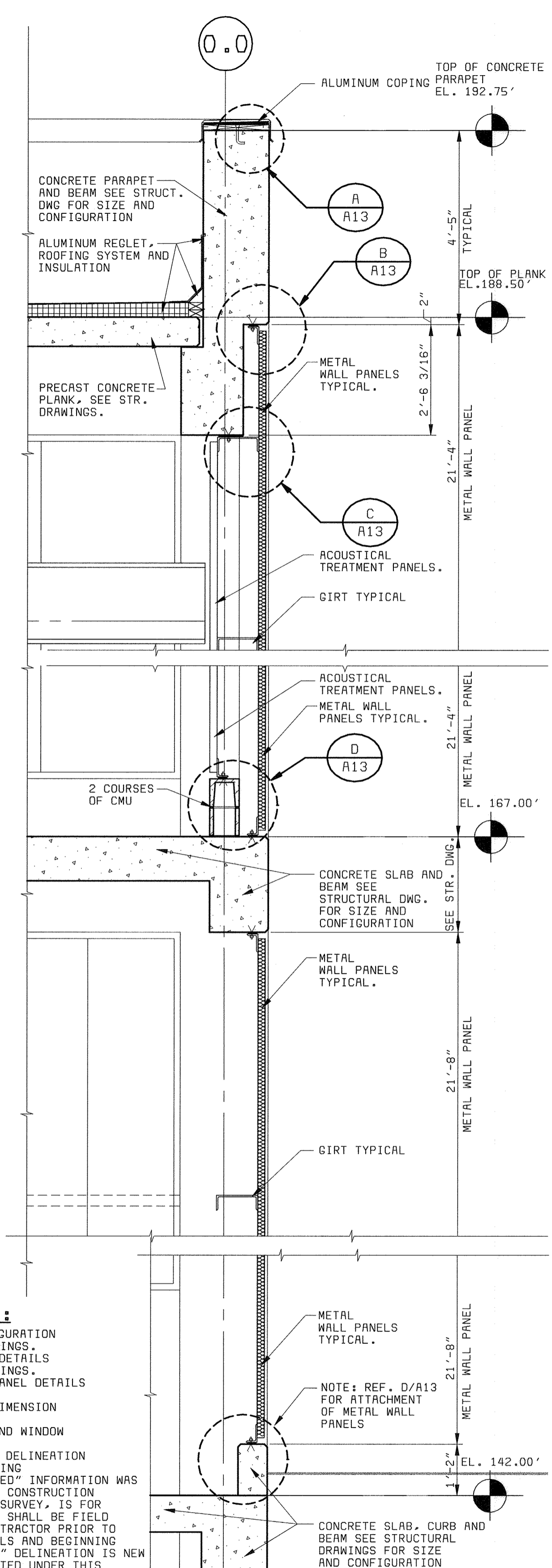


SECTION "B"
 3/16" = 1'-0"
 A2, A4, A6, A7, A9 AND A10

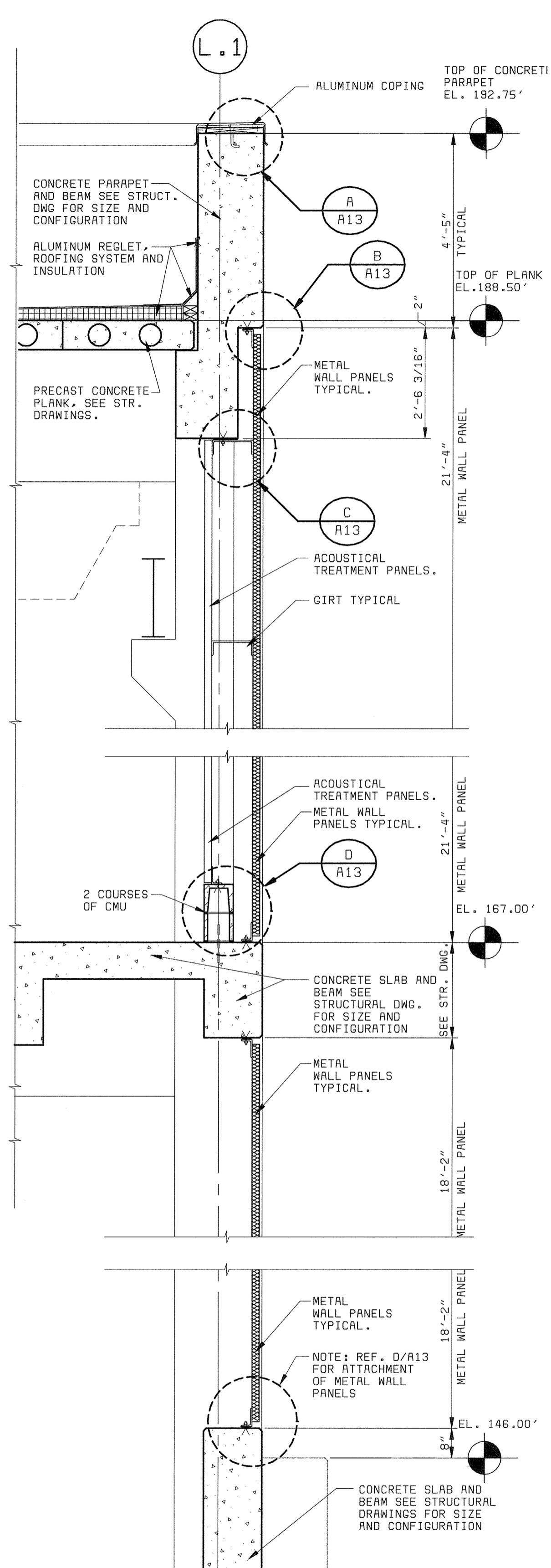


KEY PLAN
 NO SCALE

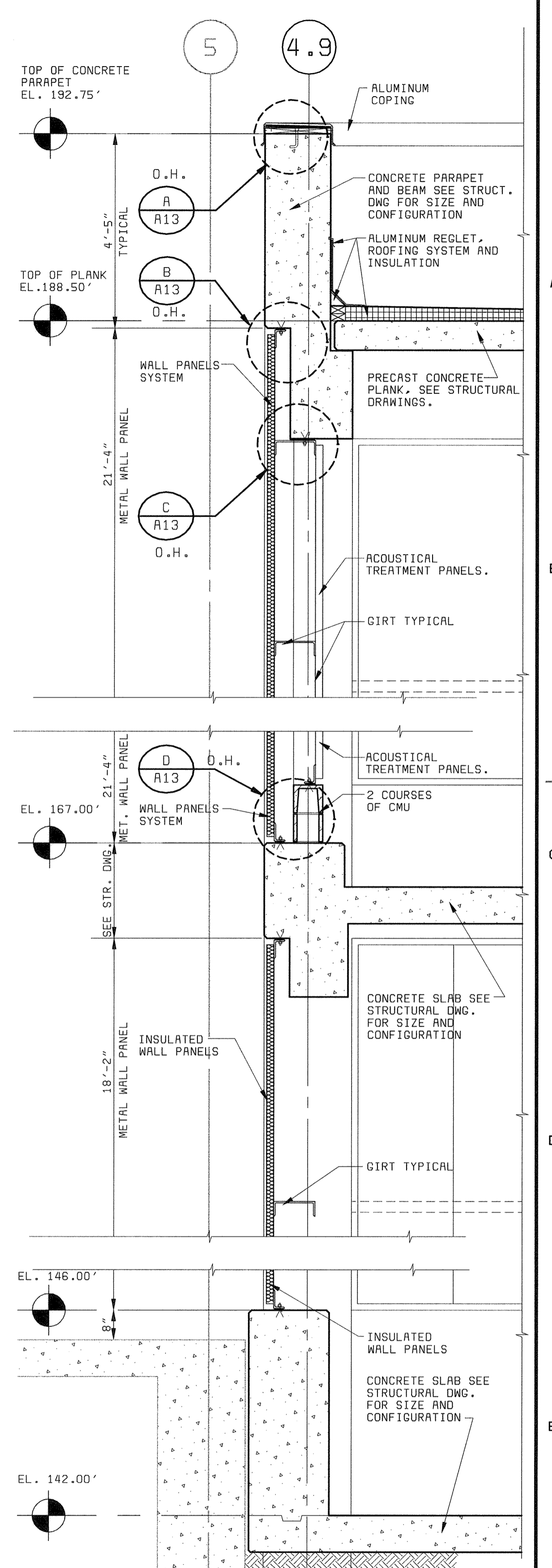
- GENERAL NOTES:**
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 7. OPENING SIZE AS REQUIRED BY RDP TECHNOLOGIES, INC.
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WALL SECTION 2
 1/2" = 1'-0"
 A1, A6, A7, A9, A10 AND A11



WALL SECTION 3
 1/2" = 1'-0"
 A2, A6, A7, A9 AND A10



WALL SECTION 4
 1/2" = 1'-0"
 A3, A6, A7, A9, A10 AND A11

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

bbw Architects • Designers • Planners
 Bryant Bryant Williams, P.C.
 4201 Connecticut Avenue N.W., Suite 500
 Washington, D.C. 20008 (202) 214-2108

BLACK & VEATCH LLP
 Gaithersburg, Maryland

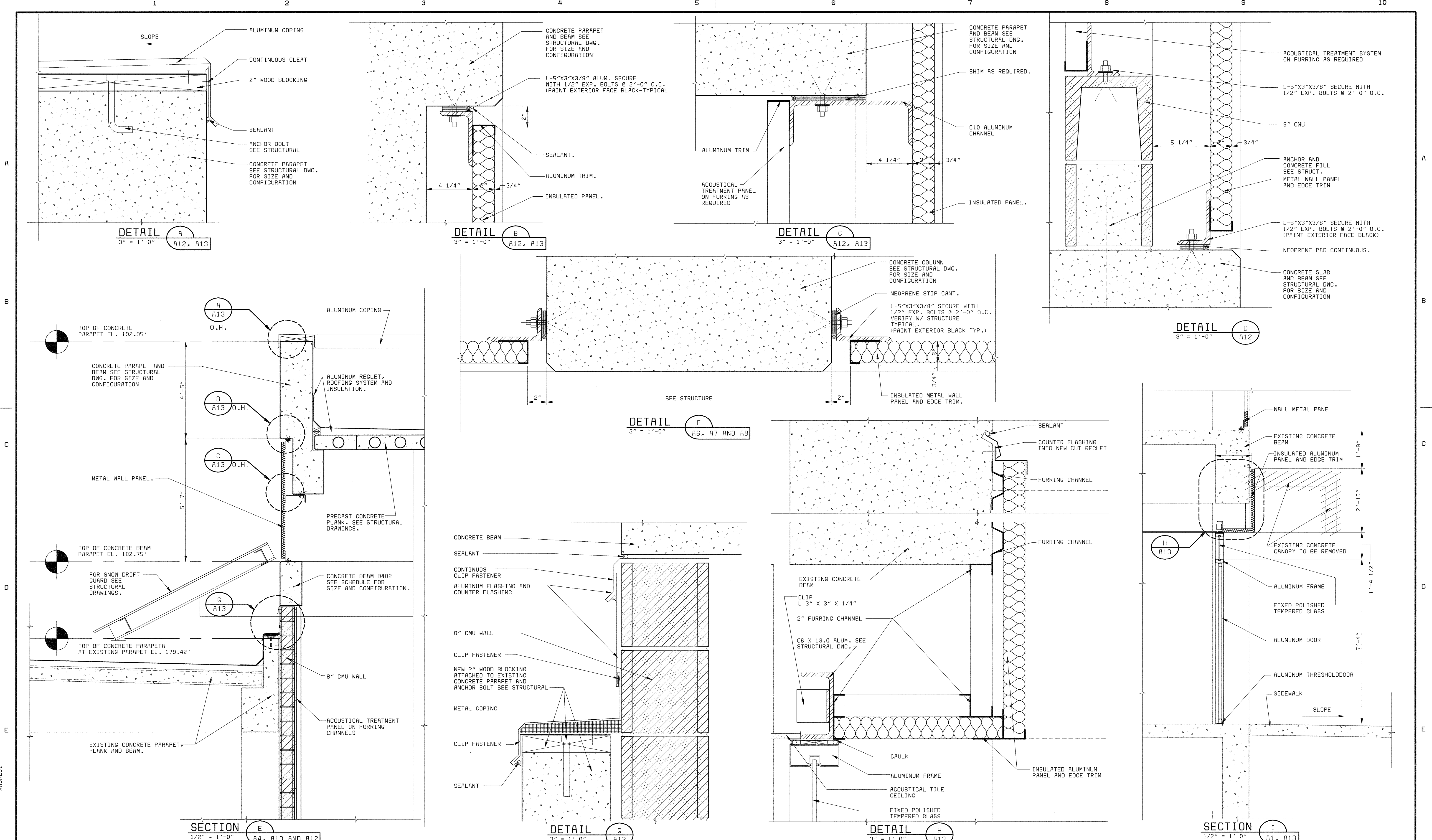
THIS DRAWING WAS
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 FOR CONSTRUCTION
 AND SEALED BY
 CHARLES I. BRYANT
 A REGISTERED
 ARCHITECT
 IN THE
 STATE OF MARYLAND,
 NO. 1377-R

DES: CH/JS	DRN: JS	CHK: CJ	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
					REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

ARCHITECTURAL
**CENTRIFUGE BUILDING EXPANSION
 BUILDING SECTION "B" AND
 WALL SECTIONS**

LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 39 OF 150
A12



X:\1000
 X:\SR203
 X:\SR201
 06/17/2
 PDS6472A

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

bbw Architects • Designers • Planners
 Bryant Bryant Williams, P.C.
 4201 Connecticut Avenue N.W., Suite 500
 Washington, D.C. 20008 (202) 244-2100

BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. DATE

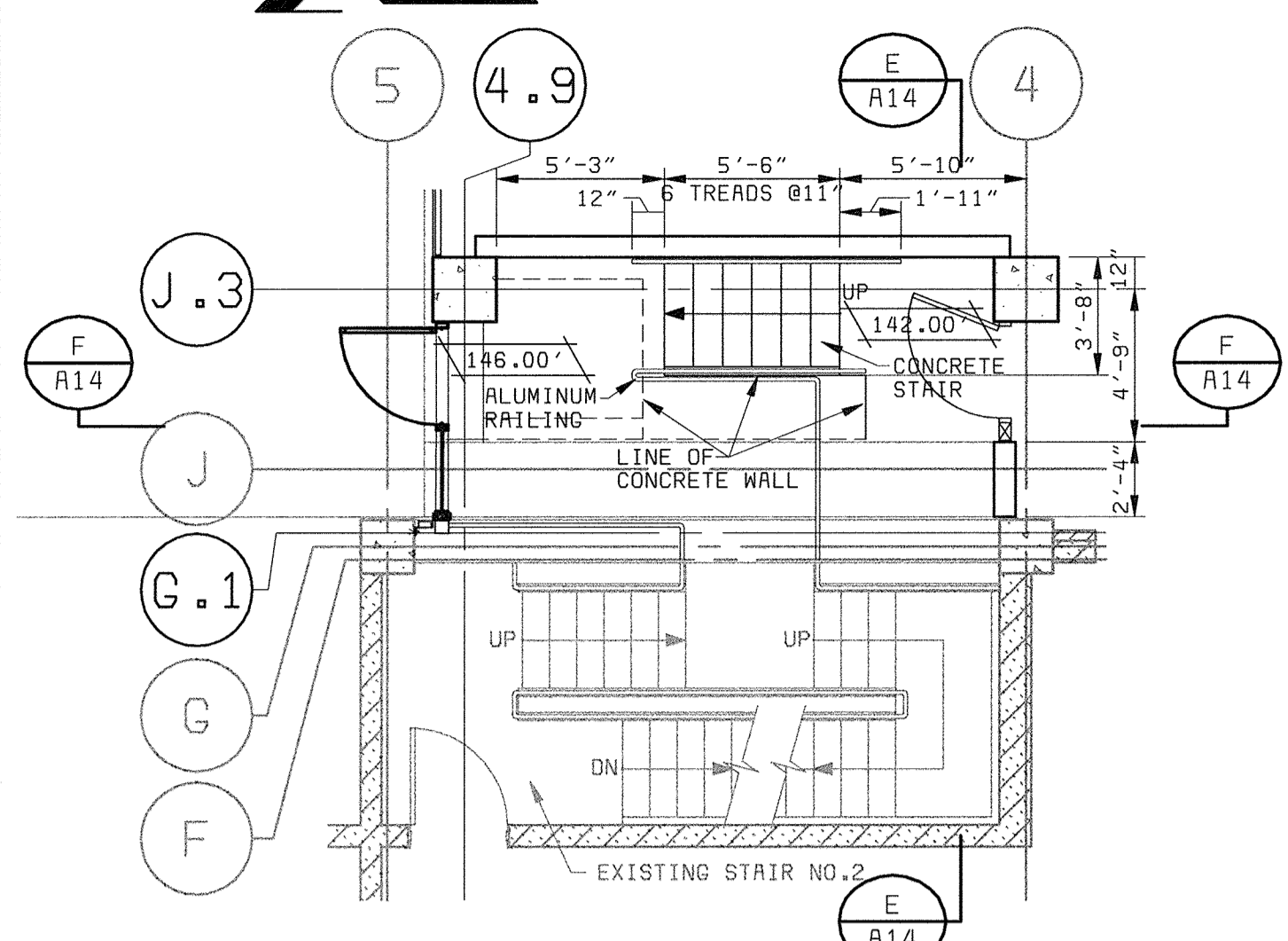
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 STATE OF MARYLAND,
 NO. 1377-R

DES: CH/JS					
DRN: JS					
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DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

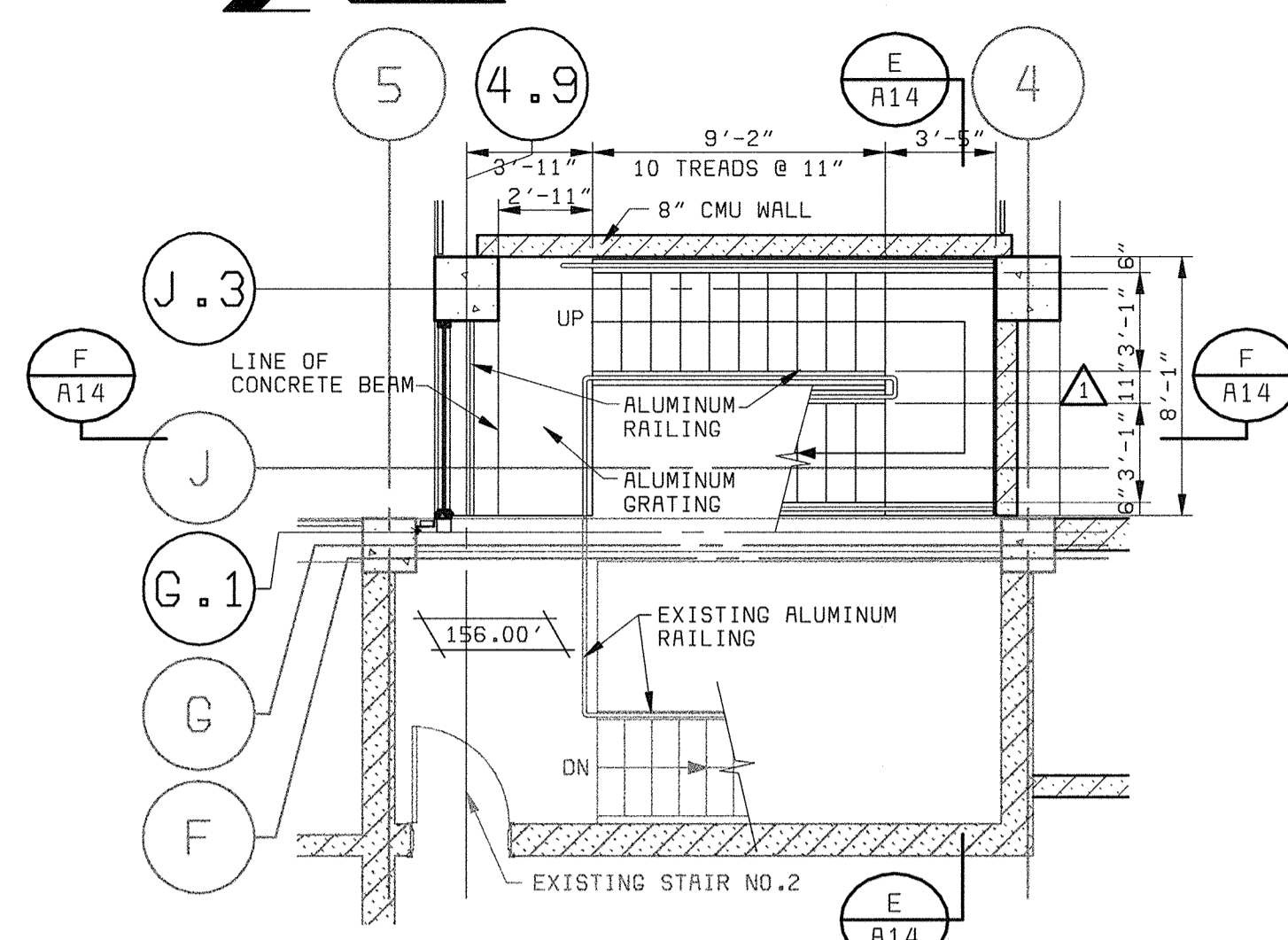
ARCHITECTURAL
**CENTRIFUGE BUILDING EXPANSION
 MISCELLANEOUS DETAILS**

LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

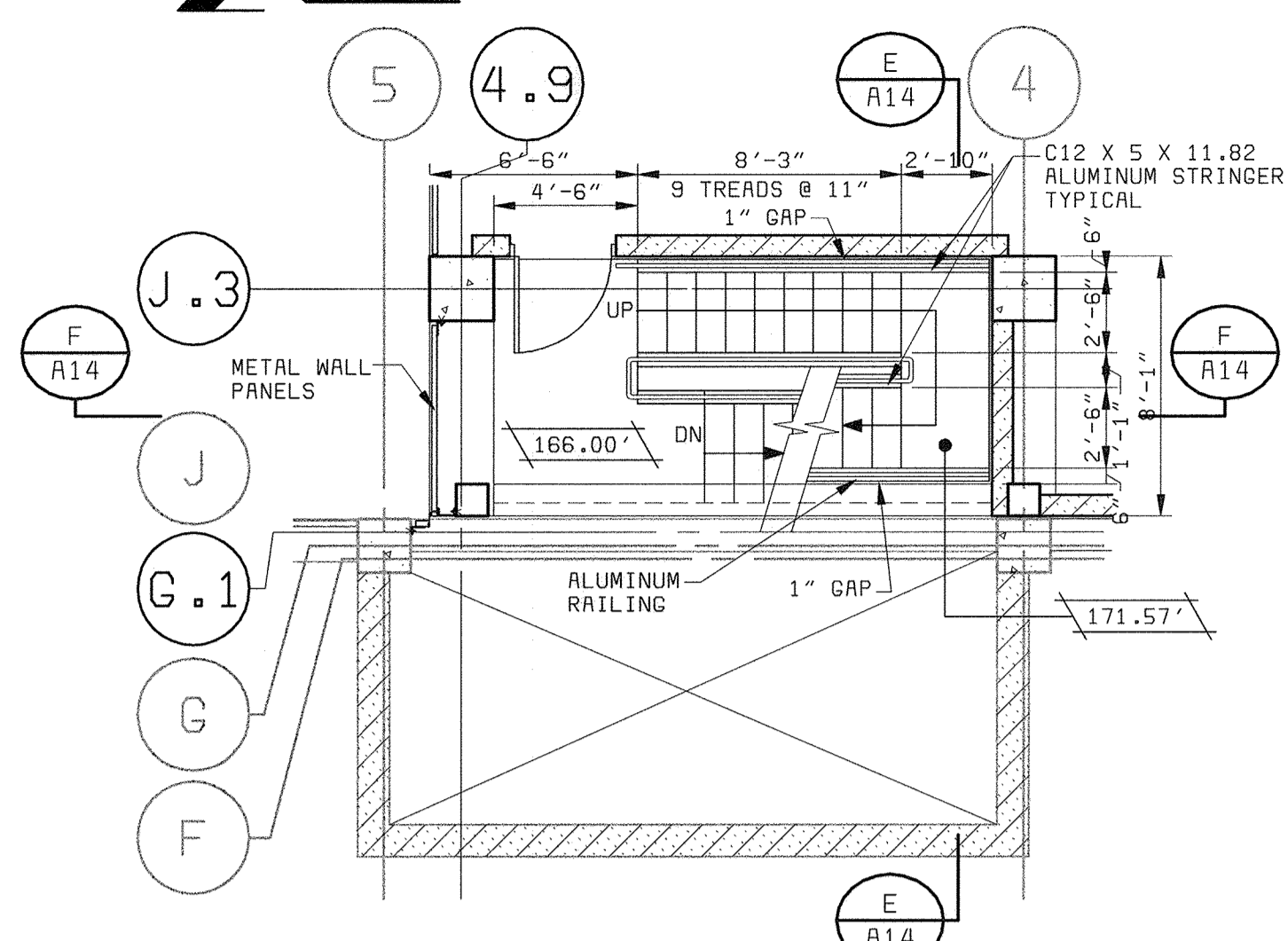
SCALE
 AS
 SHOWN
 SHEET
 40 OF 150
A13



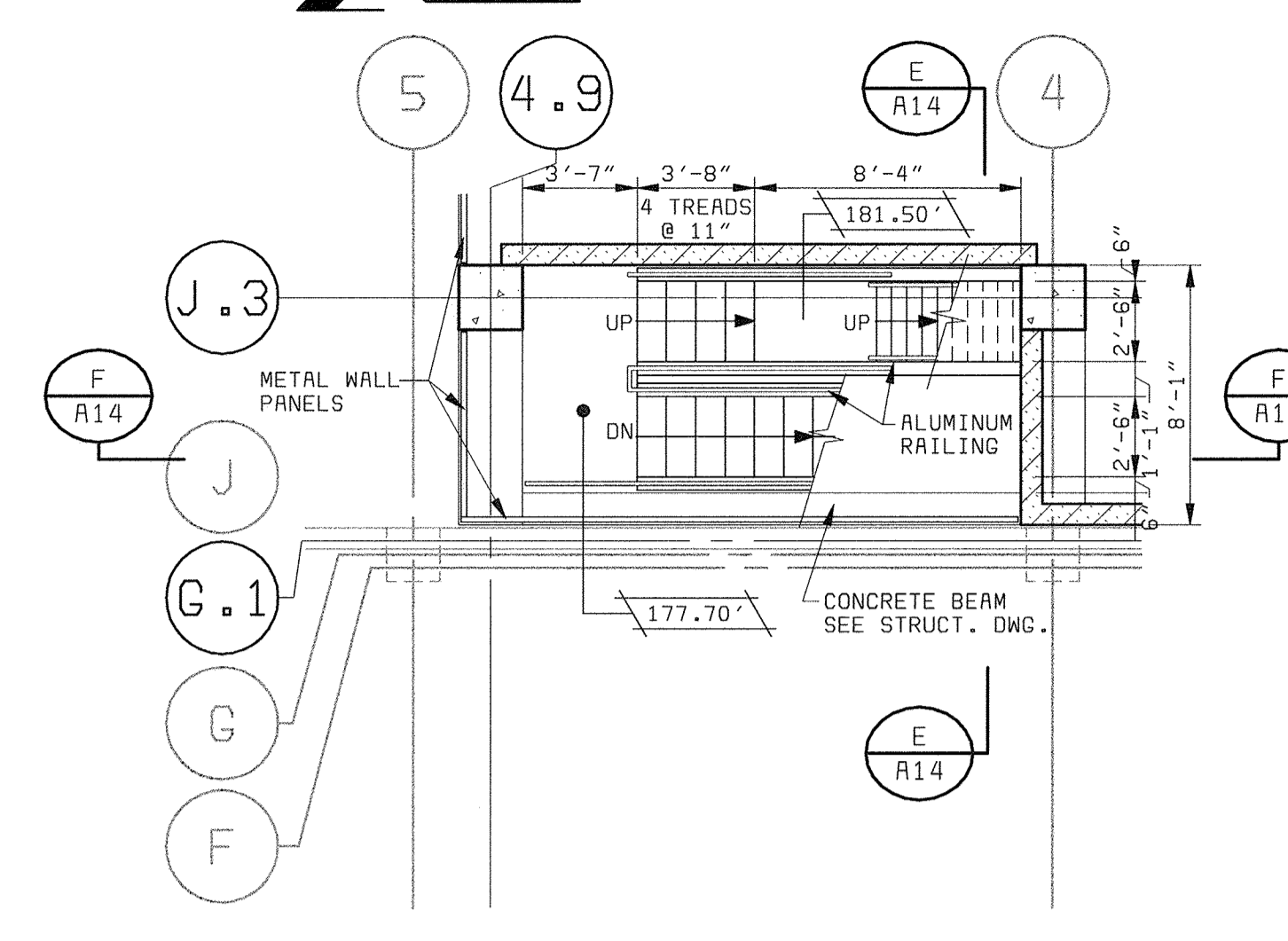
FLOOR PLAN STAIR NO. 3
@ ELEVATION 142.00'
3/16" = 1'-0"



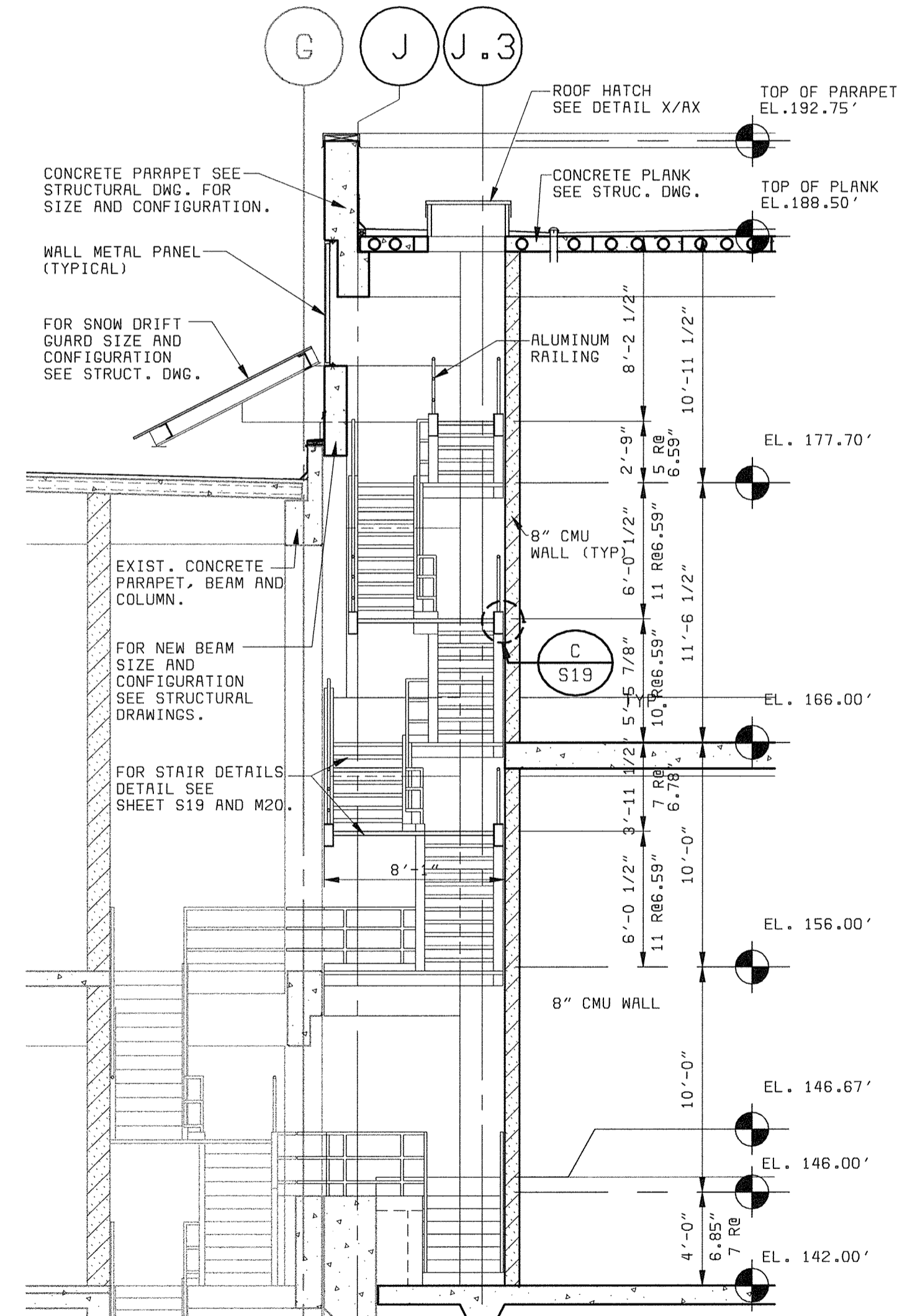
FLOOR PLAN STAIR NO. 3
@ ELEVATION 156.00'
3/16" = 1'-0"



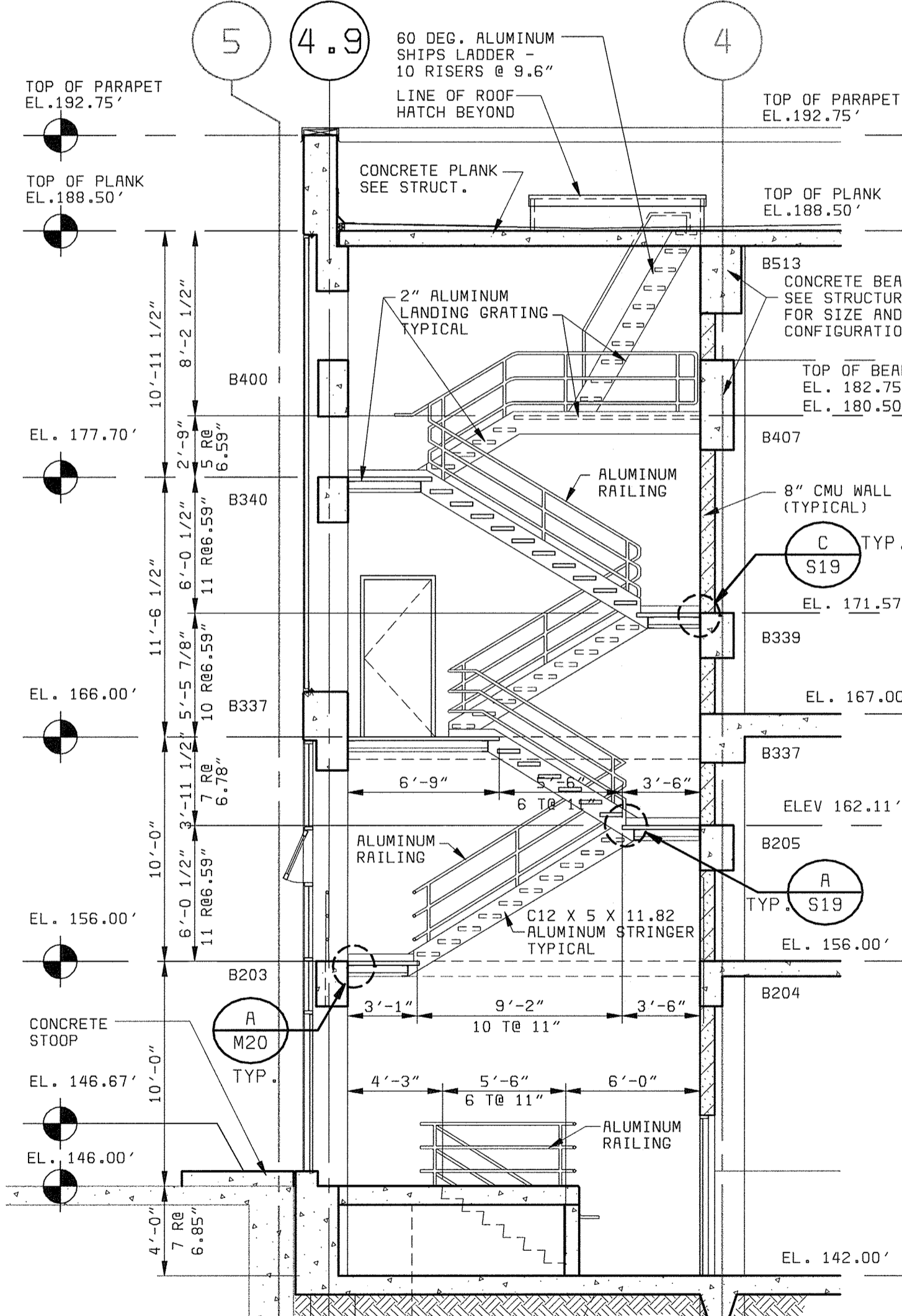
FLOOR PLAN STAIR NO. 3
@ ELEVATION 166.00'
3/16" = 1'-0"



FLOOR PLAN STAIR NO. 3
@ ELEVATION 177.70'
3/16" = 1'-0"

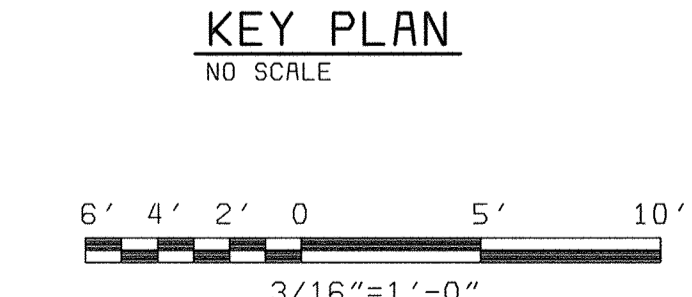
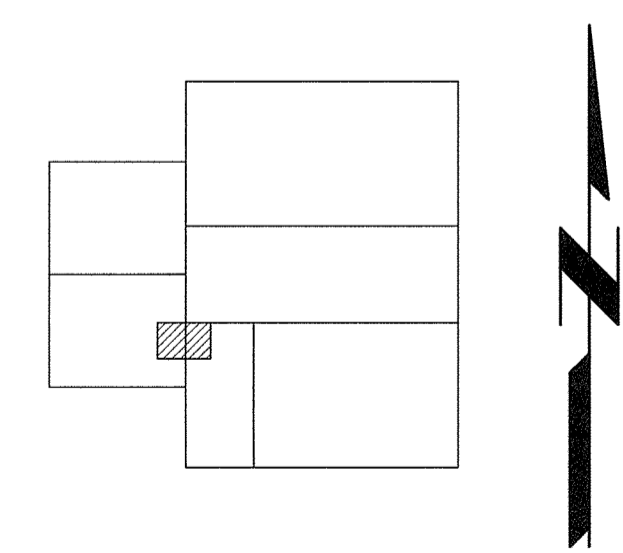


STAIR NO.3 SECTION 1
3/16" = 1'-0"



STAIR NO.3 SECTION 2
3/16" = 1'-0"

- GENERAL NOTES:**
- FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
 - FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
 - FOR TYPICAL WALL PANEL DETAILS SEE A13.
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 - FOR MASONRY REINFORCING AND ANCHOR DETAILS SEE S20.



XKL060 XWSR104

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

bbw Architects • Designers • Planners
Bryant Bryant Williams, P.C.
4301 Connecticut Avenue N.W., Suite 300
Washington, D.C. 20008 (202) 244-2108

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

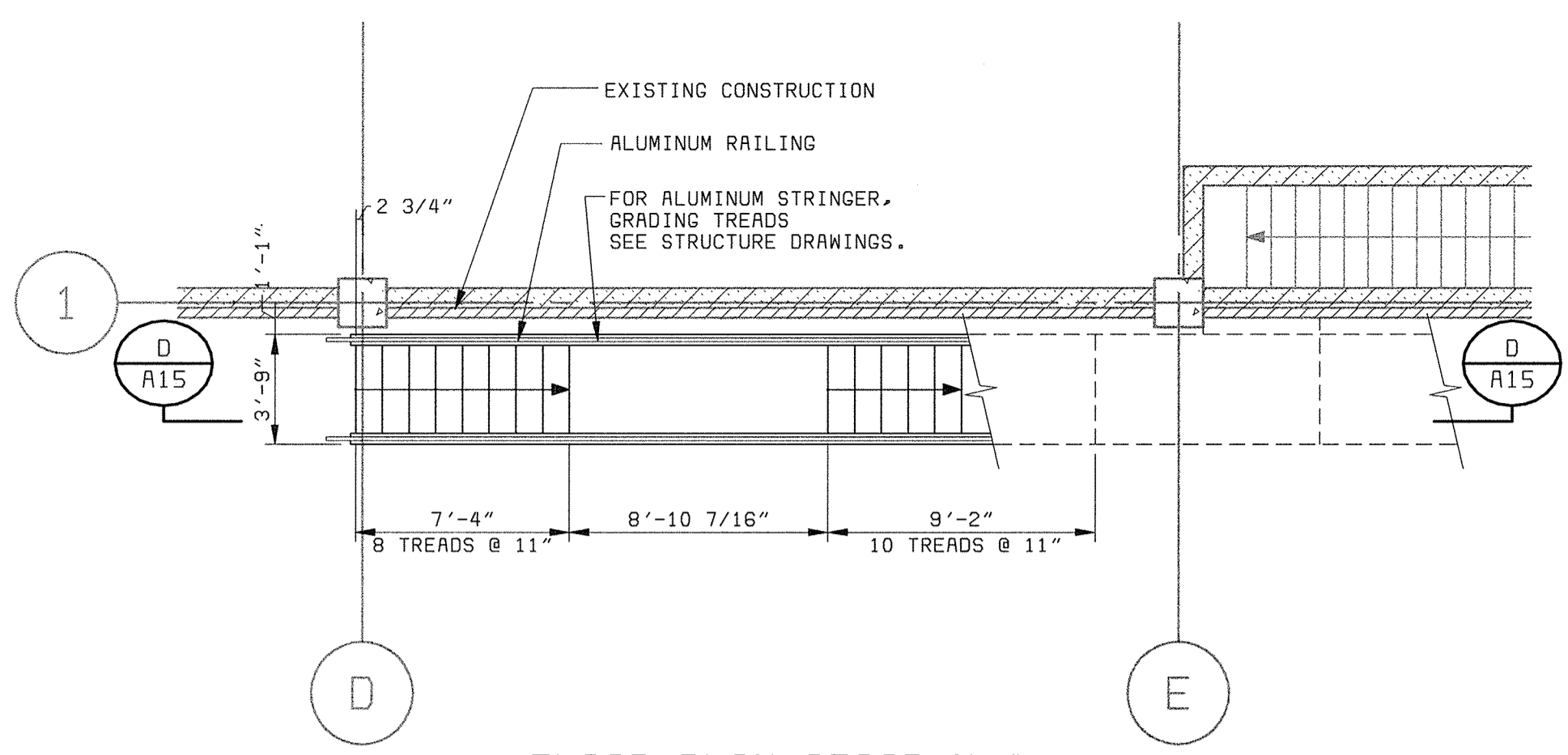
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R

DES: CH/JS	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
DRN: JS					
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DATE: 5/30/00					
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

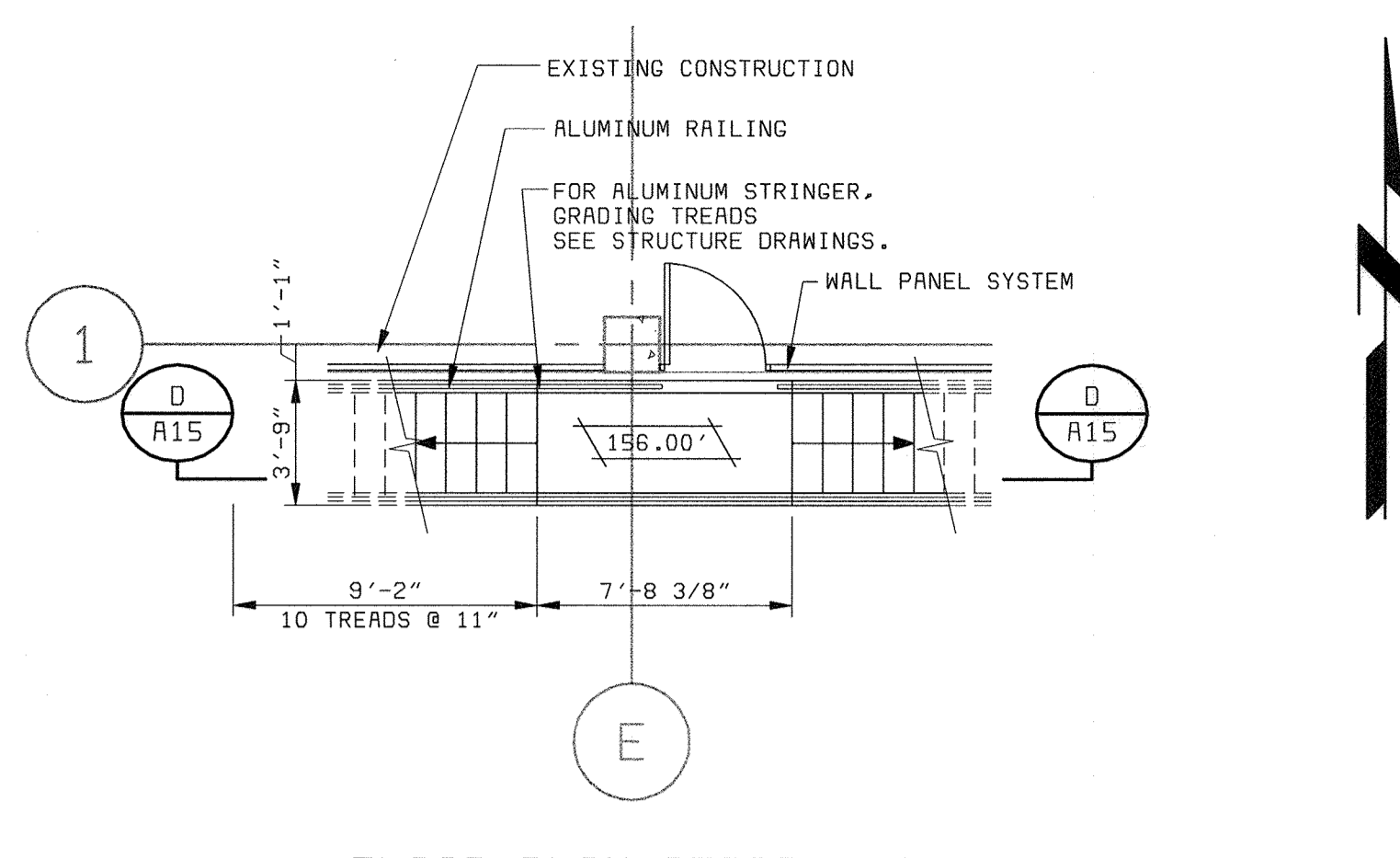
ARCHITECTURAL
CENTRIFUGE BUILDING EXPANSION STAIR NO.3, RAILING DETAILS AND PLAN DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

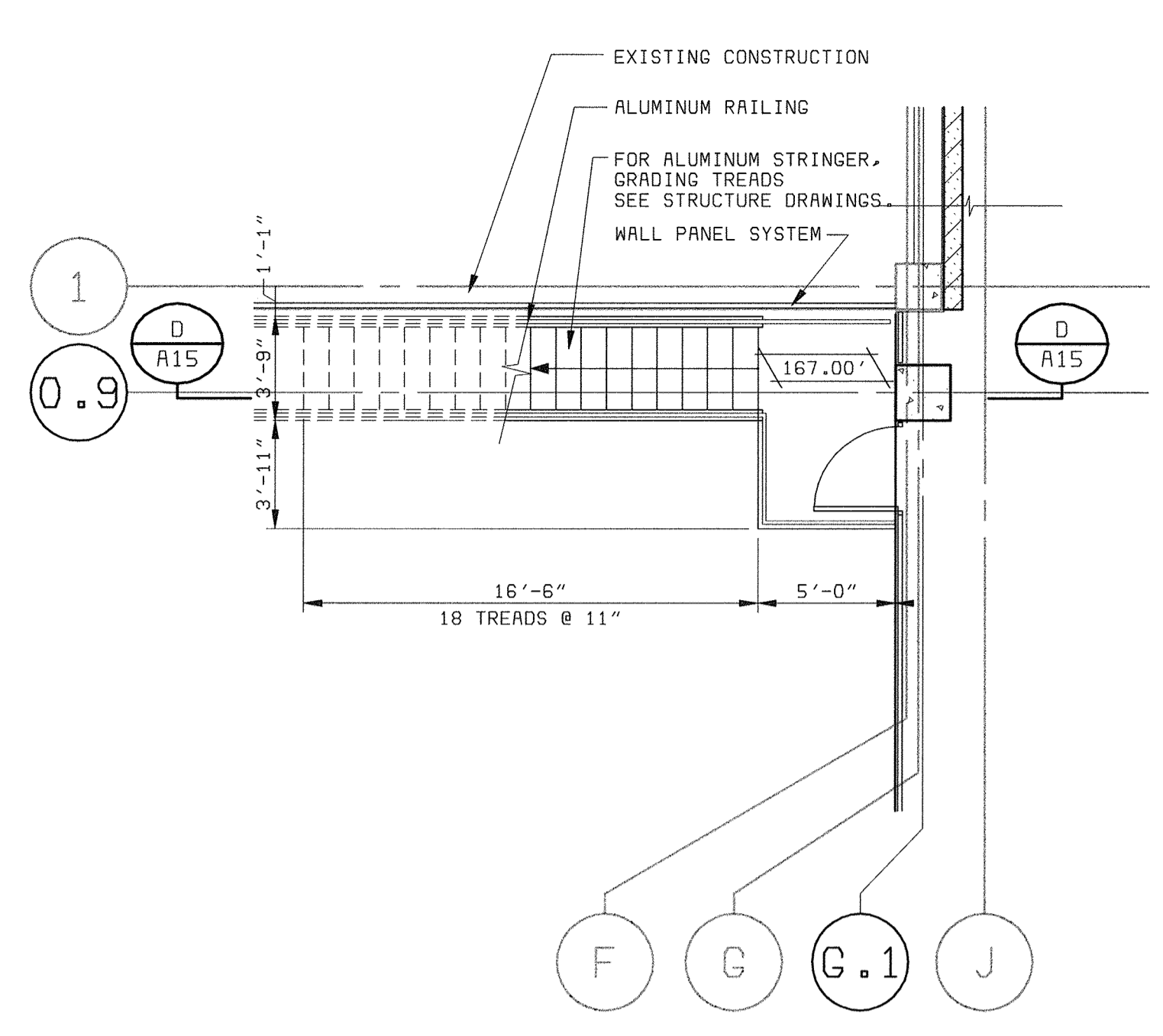
SCALE AS SHOWN
SHEET 41 OF 150
A14



FLOOR PLAN STAIR N#4
@ ELEVATION 148.67'
 3/16" = 1'-0"

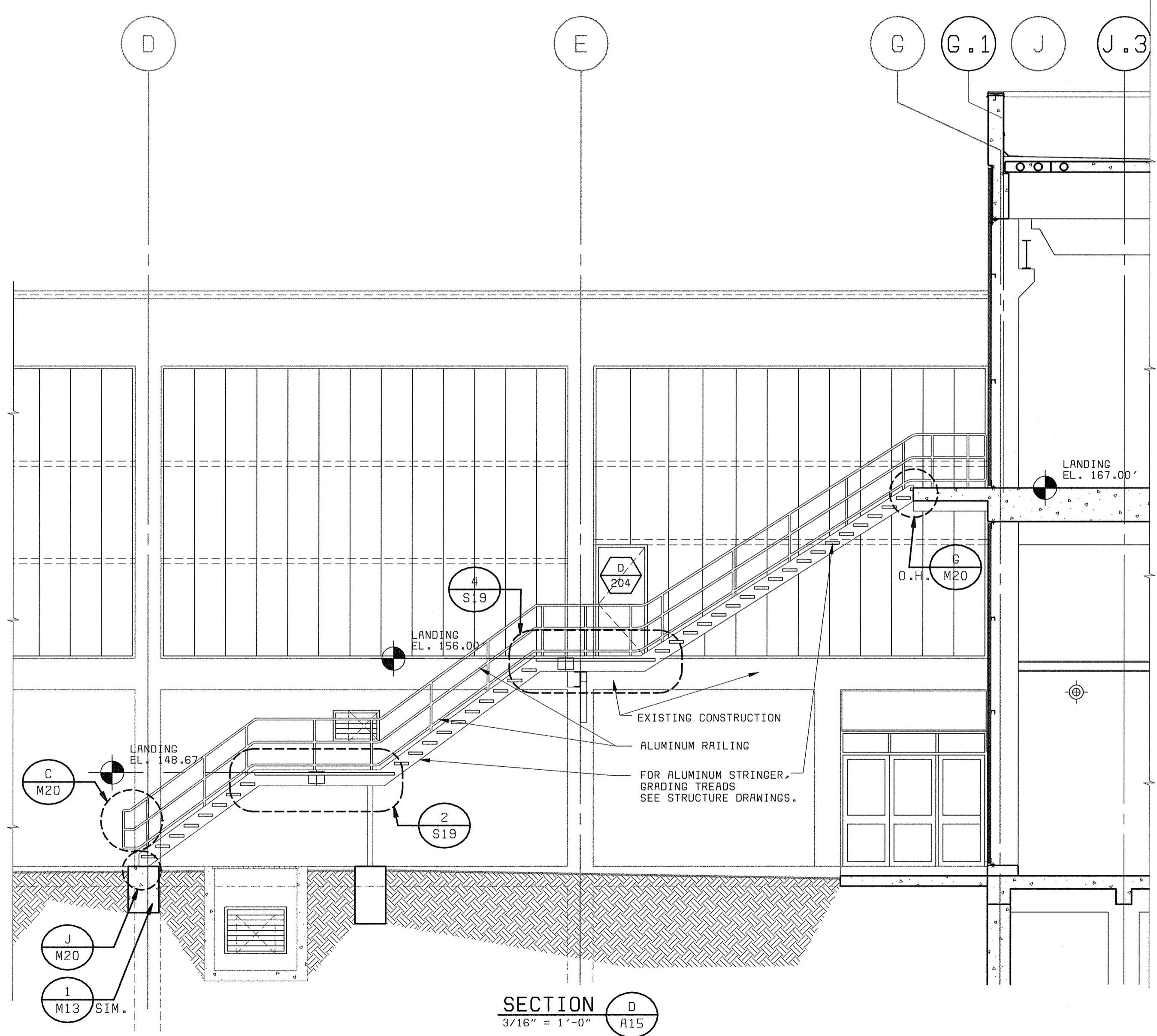


FLOOR PLAN STAIR N#4
@ ELEVATION 156.00'
 3/16" = 1'-0"

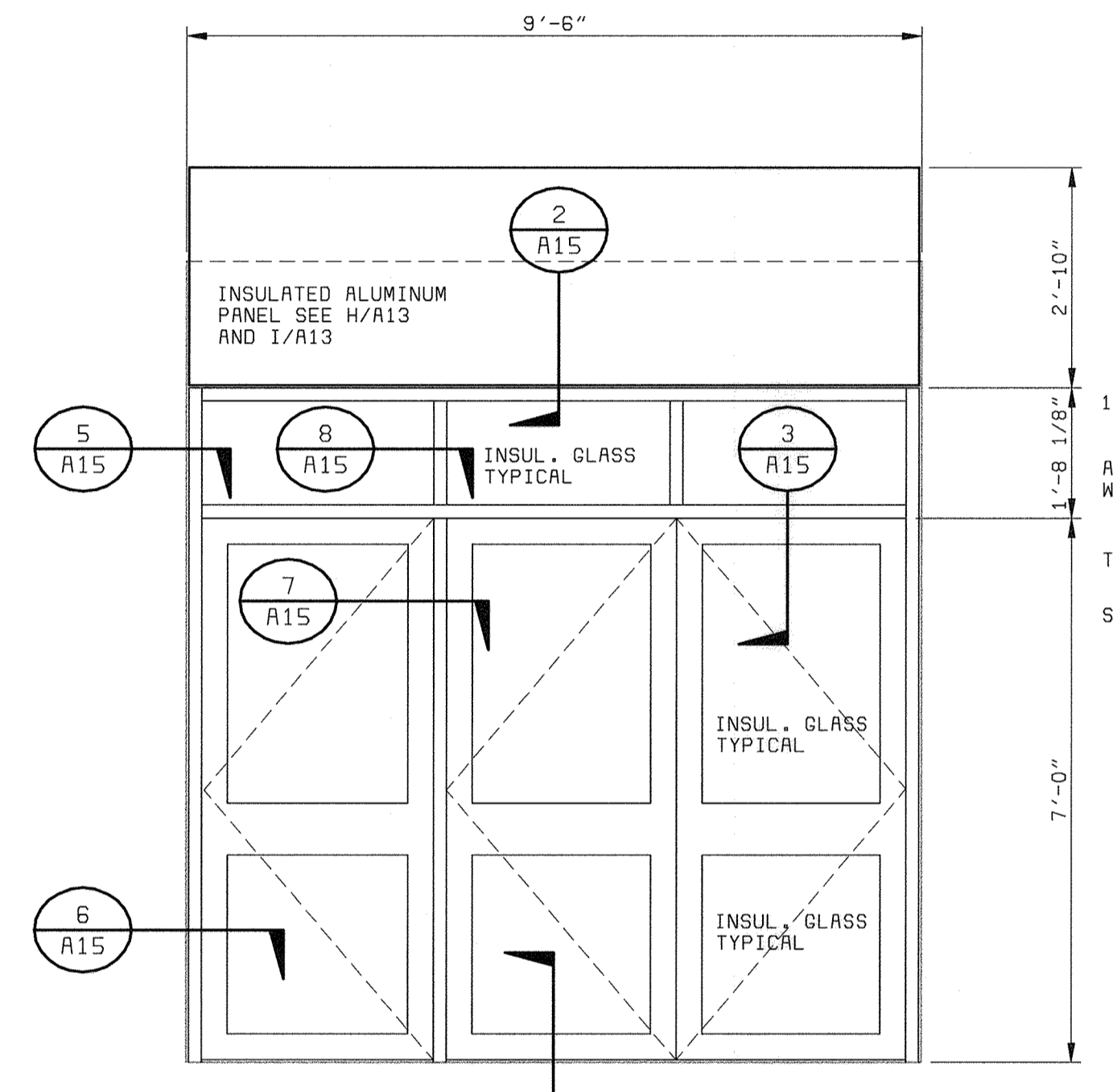


FLOOR PLAN STAIR N#4
@ ELEVATION 167.00'
 3/16" = 1'-0"

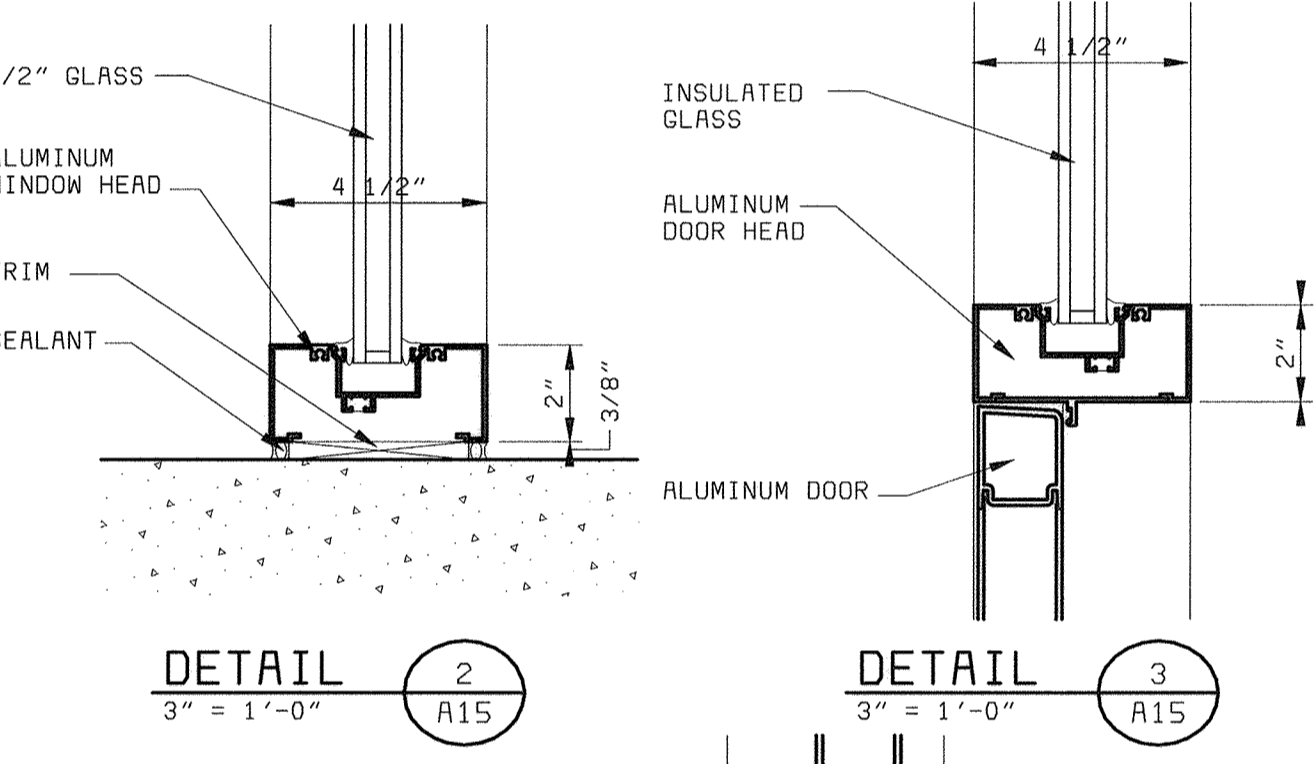
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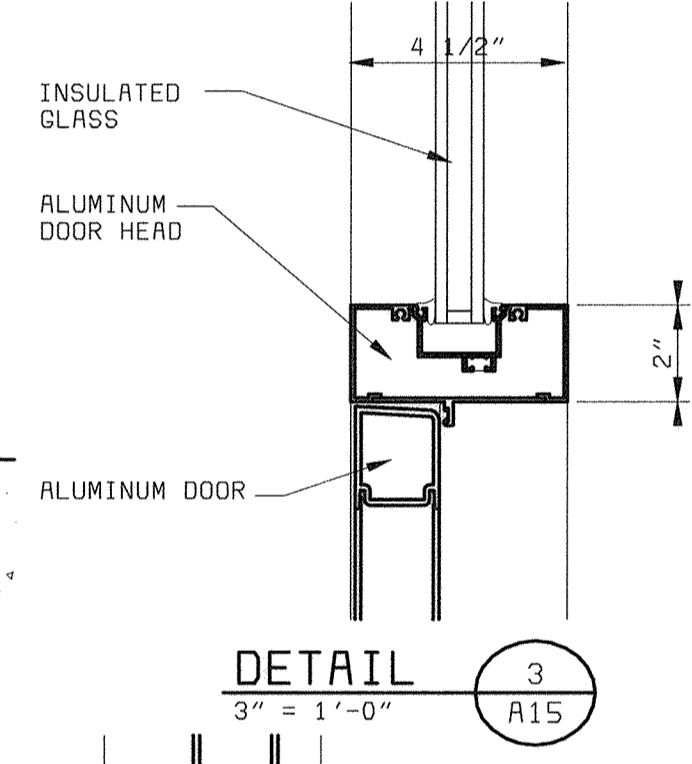
SECTION D
 3/16" = 1'-0"



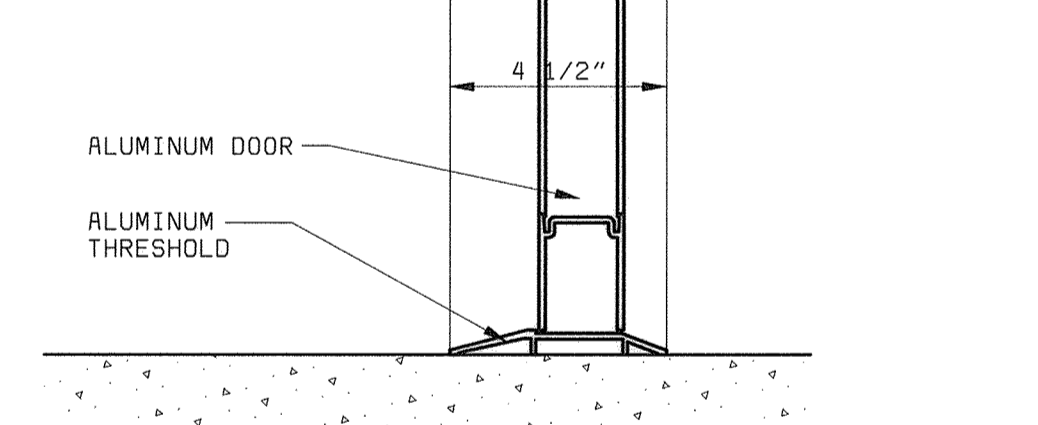
STOREFRONT ELEVATION 1
 1/2" = 1'-0"



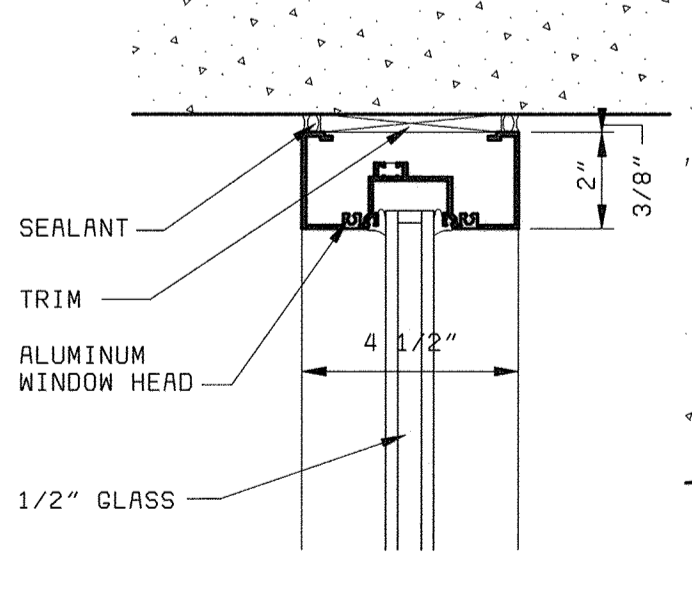
DETAIL 2
 3" = 1'-0"



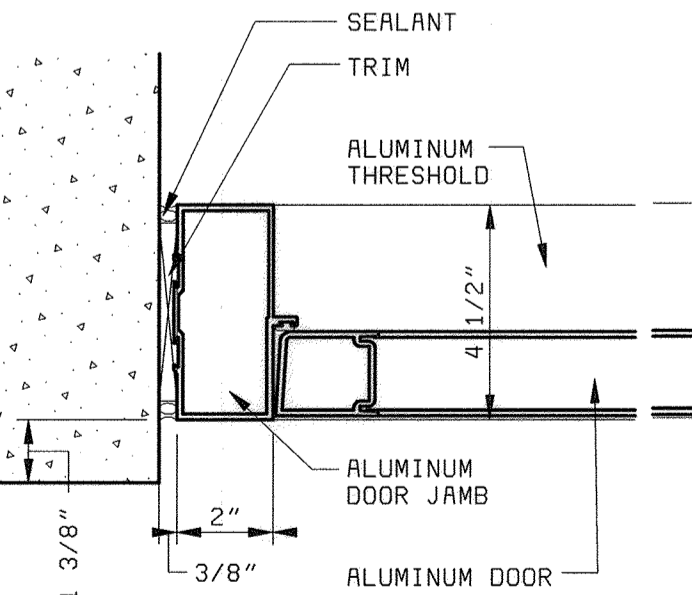
DETAIL 3
 3" = 1'-0"



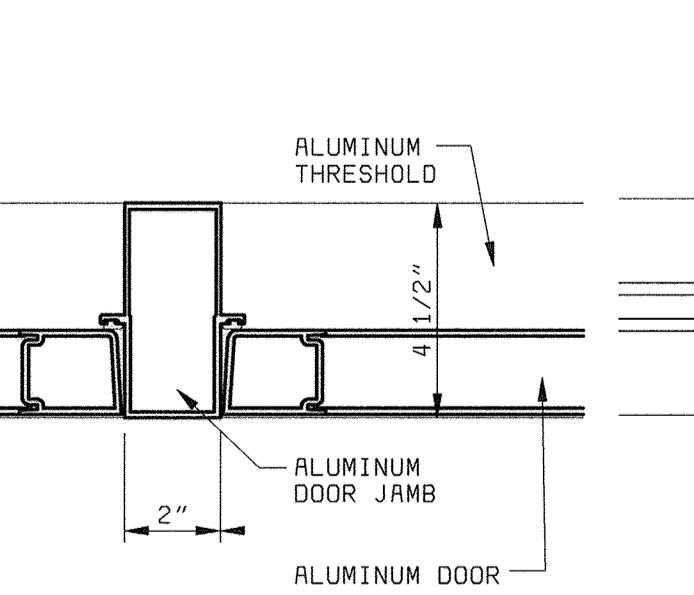
DETAIL 4
 3" = 1'-0"



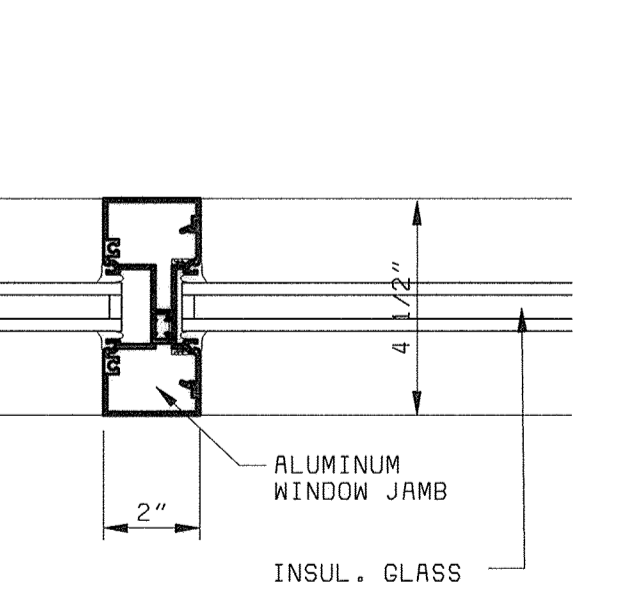
DETAIL 5
 3" = 1'-0"



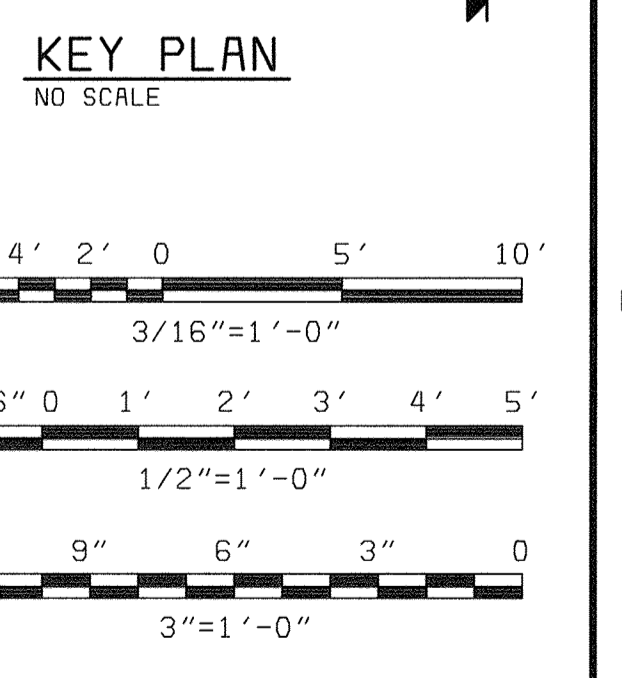
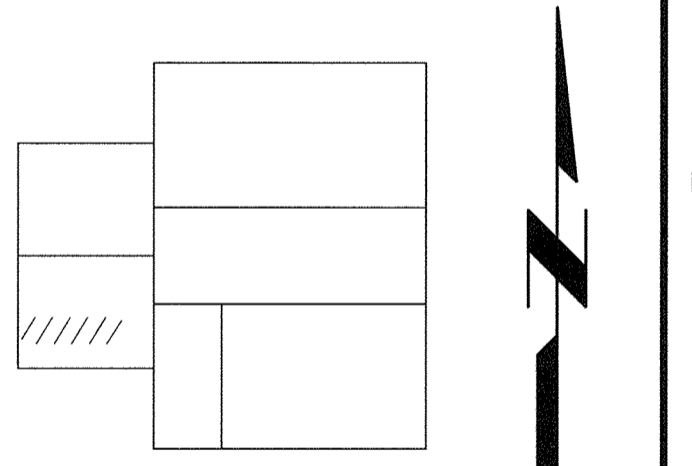
DETAIL 6
 3" = 1'-0"



DETAIL 7
 3" = 1'-0"



DETAIL 8
 3" = 1'-0"



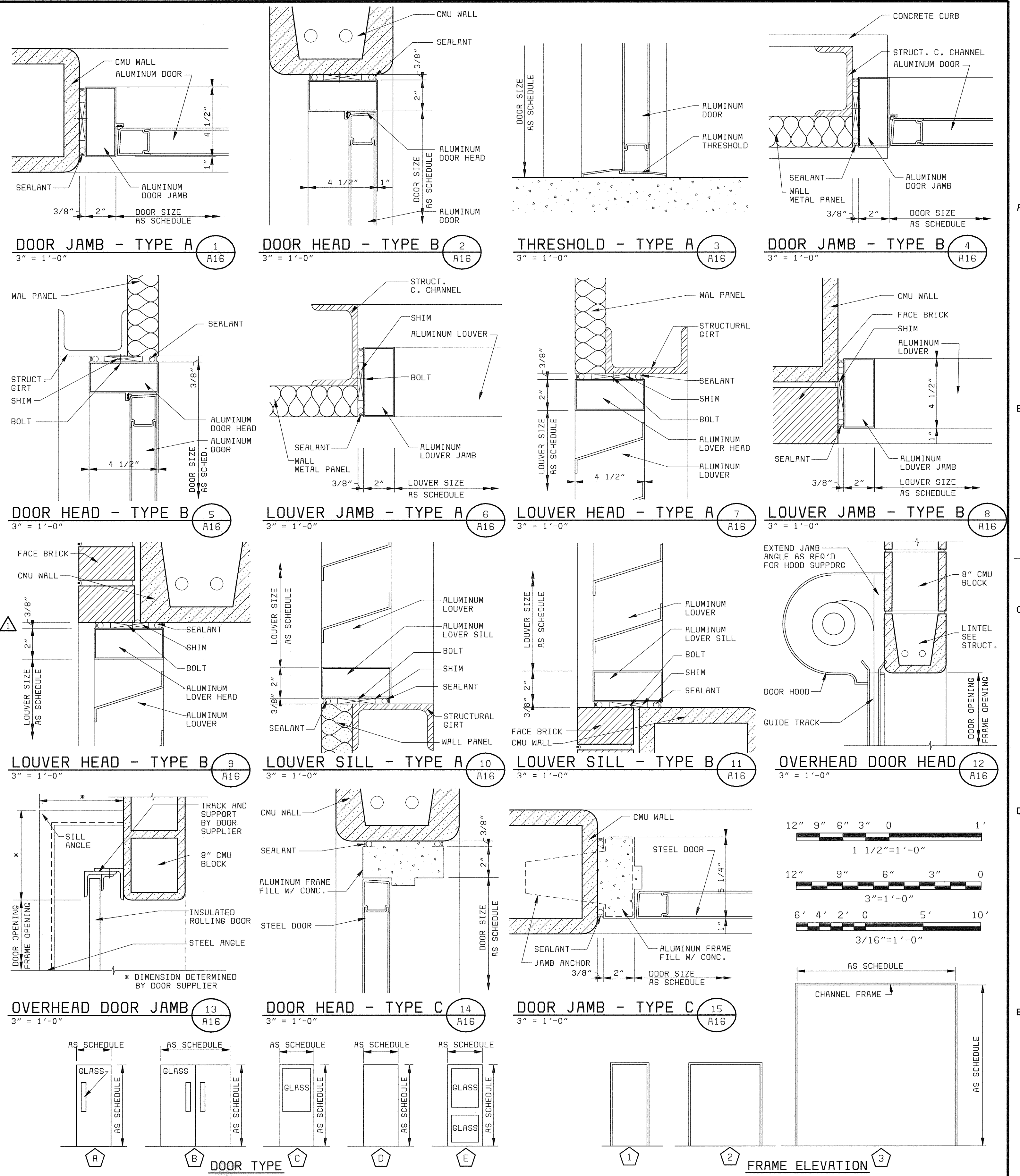
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108 CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH LP Gaithersburg, Maryland THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R REG. PROF. ENGR. DATE	DES: CH/JS DRN: JS CHK: CH DATE: 5/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	RHH/RJR/RJR NO. BY CK APP	ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION STAIR NO. 4, DETAILS AND STOREFRONT DETAILS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 42 OF 150 A15
		DATE	DATE	DATE	DATE	DATE	DATE

FINISH SCHEDULE							
BUILDING	SPACE NUMBER	SPACE NAME	FLOOR	BASE	WALL	CEILING	REMARKS
SOLIDS PROCESSING IMPROVEMENT	100	LOADING BAY	CONCRETE	-	MTL WALL PNLS	EXP. STRU.	-
	101	ODOR CONTROL LEVEL	CONCRETE	-	CMU PTD/ MTL WALL PNLS	EXP. STRU.	-
	102	STAIR NO.3	CONCRETE	-	CMU PTD	EXP. STRU.	-
	200	CONVEYOR ROOM	ALUMINUM GRATING	-	CMU PTD/ MTL WALL PNLS	EXP. STRU.	-
	201	SCREENING HOPPER ROOM	ALUMINUM GRATING	-	CMU PTD/ MTL WALL PNLS	EXP. STRU.	-
	202	LIME STABILIZATION AREA	CONCRETE	-	MTL WALL PNLS	EXP. STRU.	-
	203	TOILET	CER.T	C.T	C.T	PTD. STRU.	-
300	CENTRIFUGE ROOM	CONCRETE	-	CMU PTD/ AC TRMT PNL	EXP. STRU.	-	

DOOR SCHEDULE													
BUILDING	DOOR NUMBER	DOOR SIZE			DOOR TYPE	MATERIAL	FRAME DETAILS			FRAME ELEV.	REMARKS		
		W	H	T			HEAD	JAMB	THRESH			FRAME MATERIAL	
SOLIDS PROCESSING IMPROVEMENT	S100	14'-0"	14'-0"	-	OVERHEAD	ALUMINUM	1/A18	2/A18	3/A18	ALUMINUM CH.	3	-	INSULATED OVERHEAD ROLLING DOOR
	S101	12'-0"	12'-0"	-	OVERHEAD	ALUMINUM	12/A16	13/A16	-	ALUMINUM CH.	3	-	NON - INSULATED OVERHEAD ROLLING DOOR
	S102	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	5/A16	4/A16	3/A16	ALUMINUM	1	-	-
	S103	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	2/A16	1/A16	-	ALUMINUM	1	-	-
	S104	3'-0"	7'-2"	4 1/2"	C	ALUMINUM	-	-	-	ALUMINUM	1/A17	-	SEE STOREFRONT ELEV. 1/A17
	S105	3'-0"	7'-2"	4 1/2"	A	STEEL	14/A16	15/A16	-	STEEL	1	B	-
	S106	6'-0"	7'-2"	4 1/2"	E	ALUMINUM	-	-	-	ALUMINUM	1/A15	-	SEE STOREFRONT ELEV. 1/A15
	S107	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	2/A16	1/A16	3/A16	ALUMINUM	1	-	-
	S108	3'-0"	7'-2"	4 1/2"	E	ALUMINUM	-	-	-	ALUMINUM	1/A15	-	SEE STOREFRONT ELEV. 1/A15
	S109	3'-0"	7'-2"	4 1/2"	A	STEEL	14/A16	15/A16	-	STEEL	1	B	-
	S110	6'-0"	7'-2"	4 1/2"	B	STEEL	14/A16	15/A16	-	STEEL	2	B	-
SOLIDS PROCESSING IMPROVEMENT	S111	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	5/A16	4/A16	3/A16	ALUMINUM	1	-	-
	S200	6'-0"	7'-2"	4 1/2"	B	ALUMINUM	2/A16	1/A16	-	ALUMINUM	2	-	-
	S201	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	2/A16	1/A16	-	ALUMINUM	1	-	NOT REQ'D IF ADDITIVE BID ALT. NO. 2 IS NOT ACCEPTED
	S202	6'-0"	7'-2"	4 1/2"	B	ALUMINUM	2/A16	1/A16	-	ALUMINUM	2	-	-
	S203	3'-0"	7'-2"	4 1/2"	D	ALUMINUM	2/A16	1/A16	-	ALUMINUM	1	-	-
	S204	3'-0"	7'-2"	4 1/2"	D	ALUMINUM	5/A16	4/A16	3/A16	ALUMINUM	1	-	-
	S205	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	2/A16	1/A16	-	ALUMINUM	1	-	-
	S206	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	5/A16	4/A16	3/A16	ALUMINUM	1	-	-
	S207	3'-0"	7'-2"	4 1/2"	A	ALUMINUM	5/A16	4/A16	3/A16	ALUMINUM	1	-	-
	S300	3'-0"	7'-2"	4 1/2"	D	ALUMINUM	5/A16	4/A16	3/A16	ALUMINUM	1	-	-
	S301	3'-0"	7'-2"	4 1/2"	A	STEEL	14/A16	15/A16	-	STEEL	1	B	-

WINDOW SCHEDULE							WINDOW TYPE			
BUILDING	WINDOW NUMBER	WINDOW SIZE			TYPE	FRAME DETAILS		REMARKS	A	B
		W	H	T		HEAD	JAMB			
SOLIDS PROCESSING IMPROVEMENT	S100	2'-6"	2'-4"	4 1/2"	A	-	-	SEE STOREFRONT ELEV. 1/A17		
	S101	2'-6"	2'-4"	4 1/2"	A	-	-	SEE STOREFRONT ELEV. 1/A17		

LOUVER SCHEDULE								LOUVER TYPE			
BUILDING	LOUVER NUMBER	LOUVER SIZE			TYPE	FRAME DETAILS			REMARKS	A	B
		W	H	T		HEAD	JAMB	SILL			
SOLIDS PROCESSING IMPROVEMENT	S001	4'-0"	3'-0"	4 1/2"	A	17/A17	18/A17	18/A17	-		
	S002	4'-0"	3'-0"	4 1/2"	A	17/A17	18/A17	18/A17	-		
	S101	4'-0"	2'-0"	4 1/2"	A	9/A16	8/A16	11/A16	-		
	S102	4'-0"	2'-0"	4 1/2"	A	9/A16	8/A16	11/A16	-		
	S301	7'-0"	6'-0"	4 1/2"	A	7/A16	6/A16	10/A16	INSTALLED IN METAL WALL PANEL		
	S302	7'-0"	6'-0"	4 1/2"	A	7/A16	6/A16	10/A16	INSTALLED IN METAL WALL PANEL		
	S303	7'-0"	6'-0"	4 1/2"	A	7/A16	6/A16	10/A16	INSTALLED IN METAL WALL PANEL		



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

bbw Architects • Designers • Planners
Bryant Bryant Williams, P.C.
4201 Connecticut Avenue N.W., Suite 500
Washington, D.C. 20008 (202) 244-1100

BLACK & VEATCH
Gaithersburg, Maryland

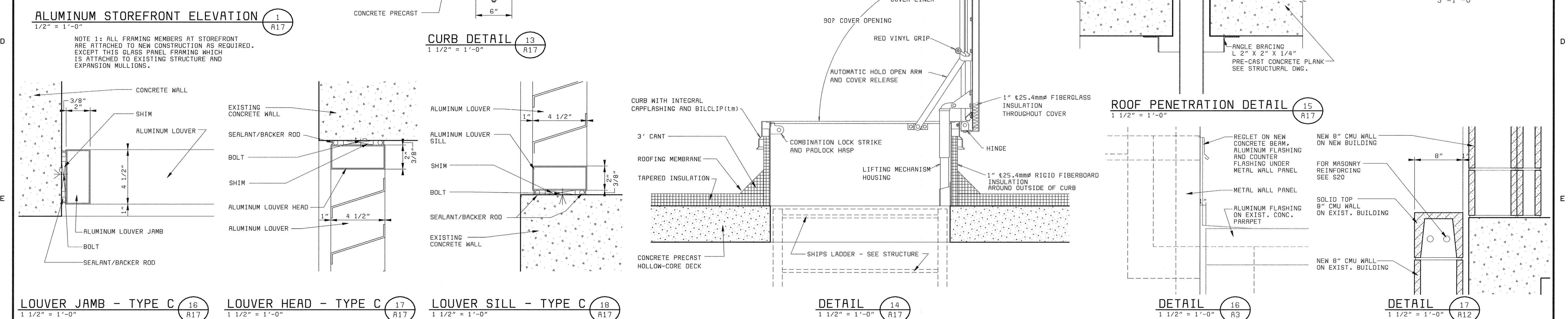
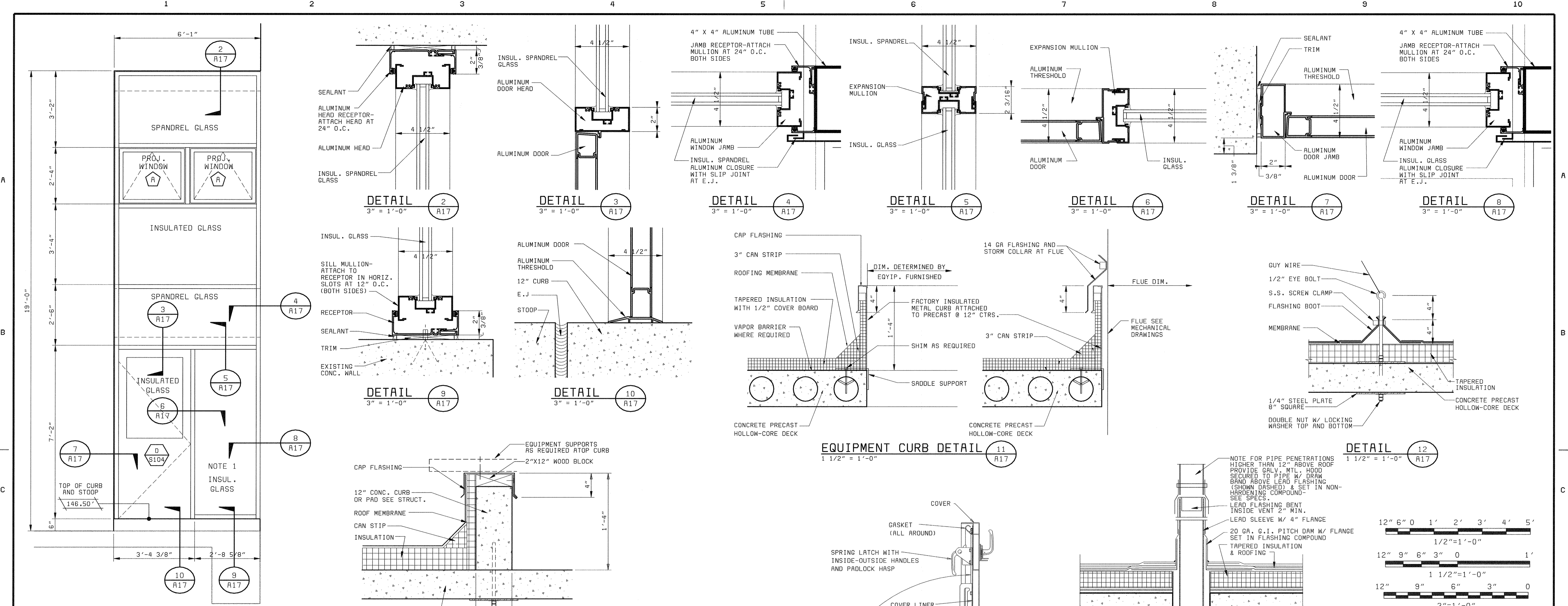
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R

DES: CH/JS	DATE: 5/30/00
DRN: JS	
CHK: CH	
DATE: 07/26/04	CONFORMED TO CONSTRUCTION RECORDS
	REVISIONS AND RECORD OF ISSUE

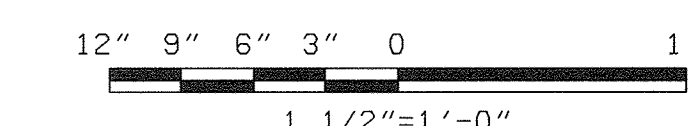
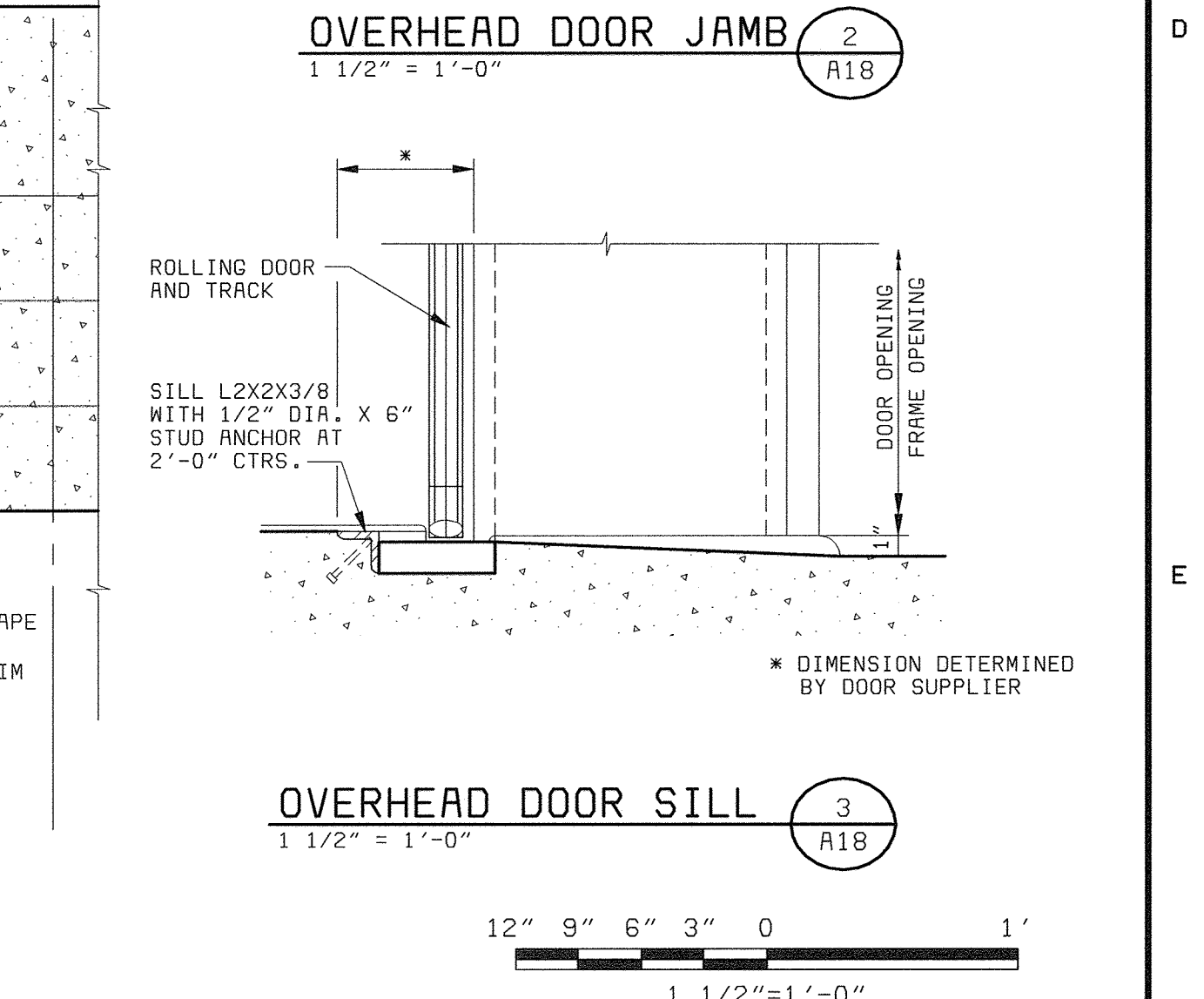
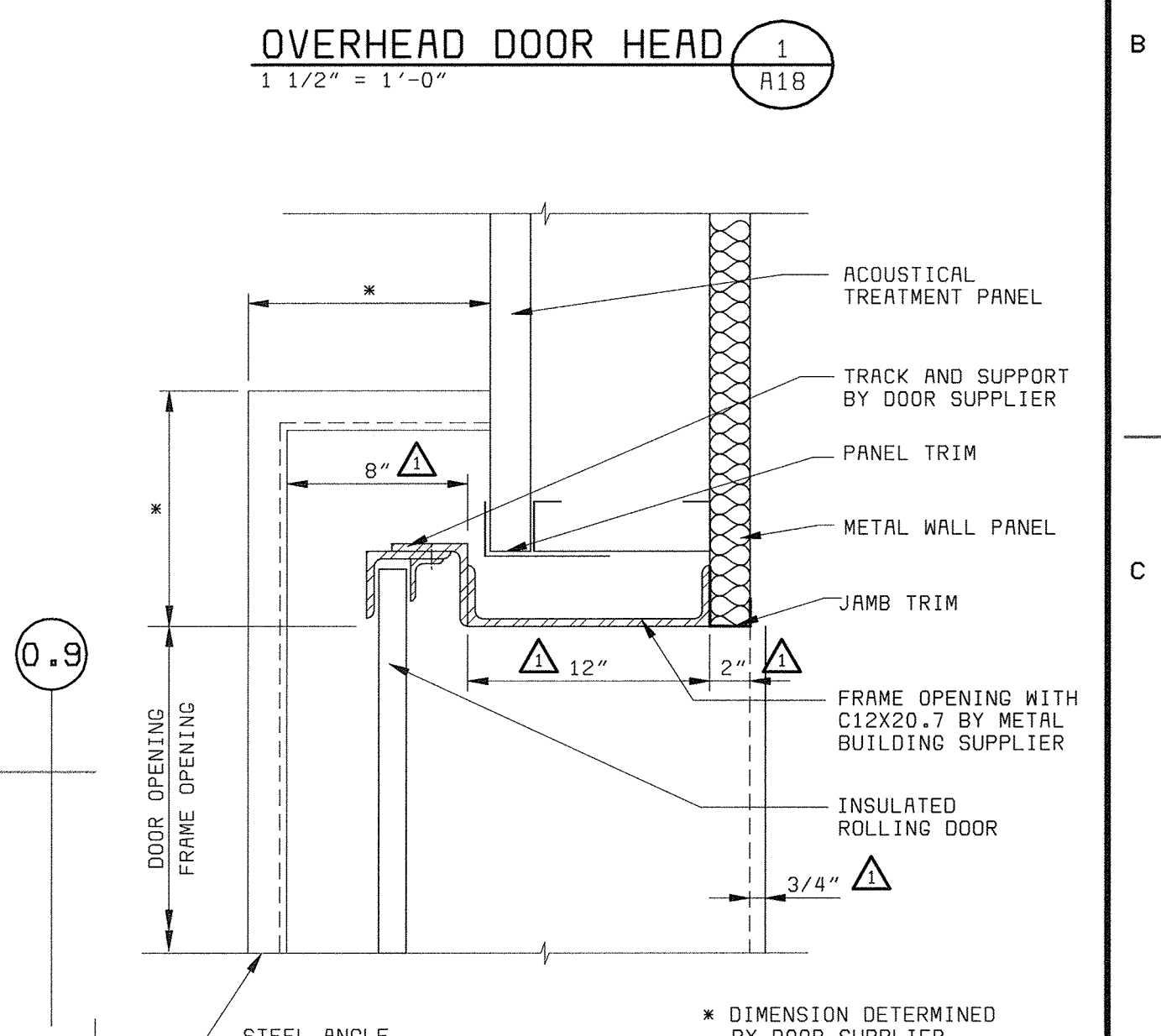
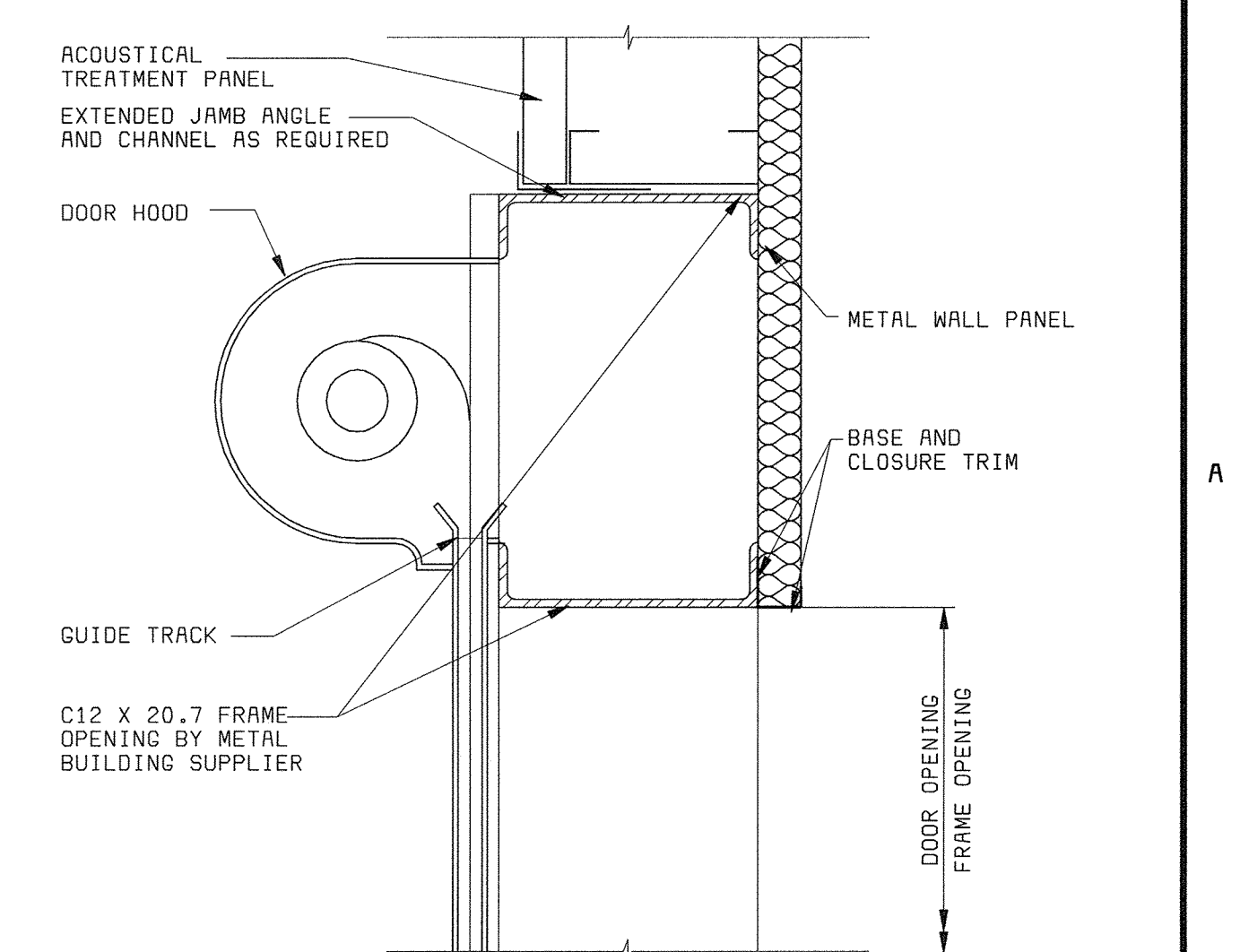
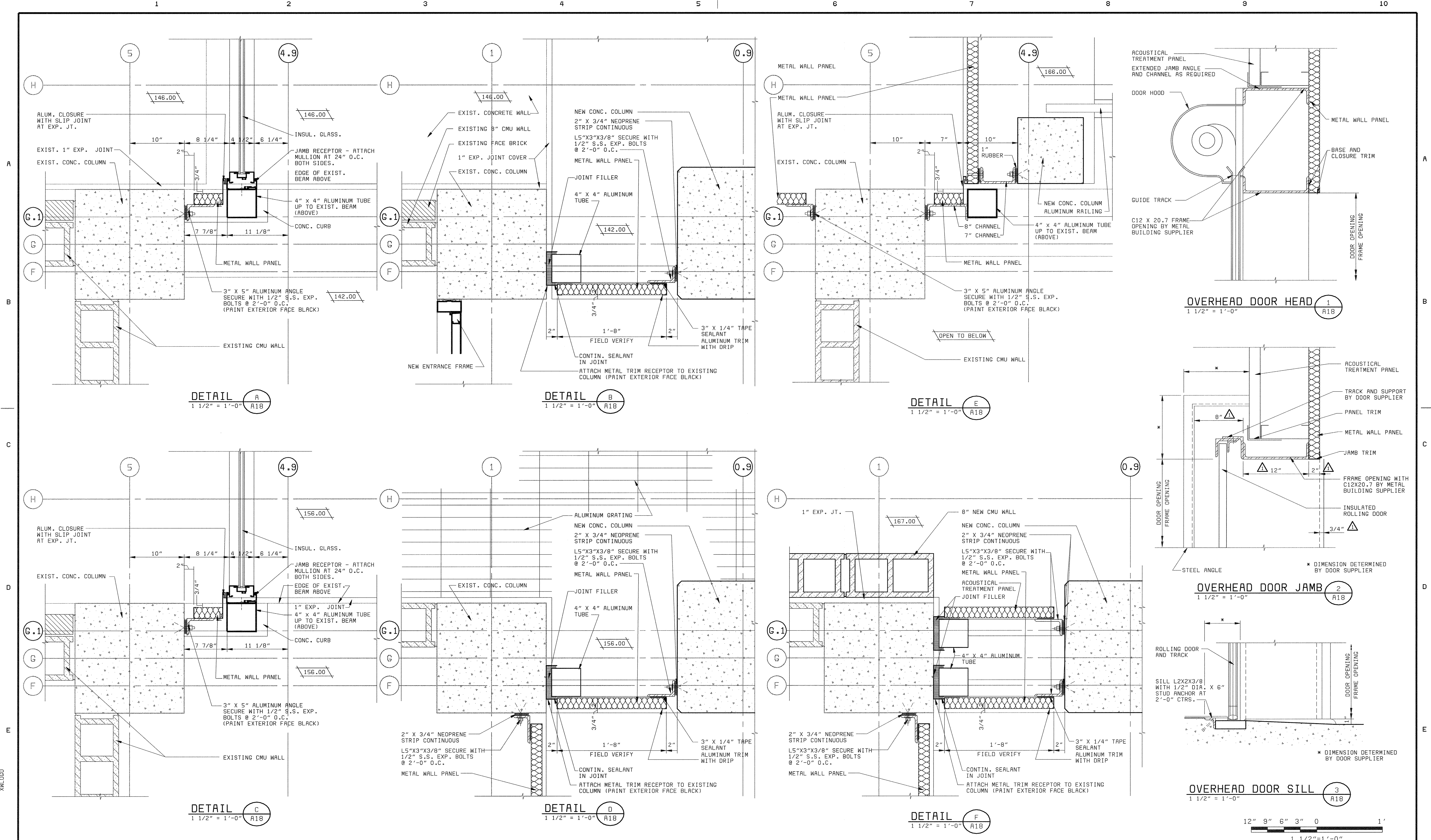
ARCHITECTURAL
CENTRIFUGE BUILDING EXPANSION
SCHEDULES AND DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

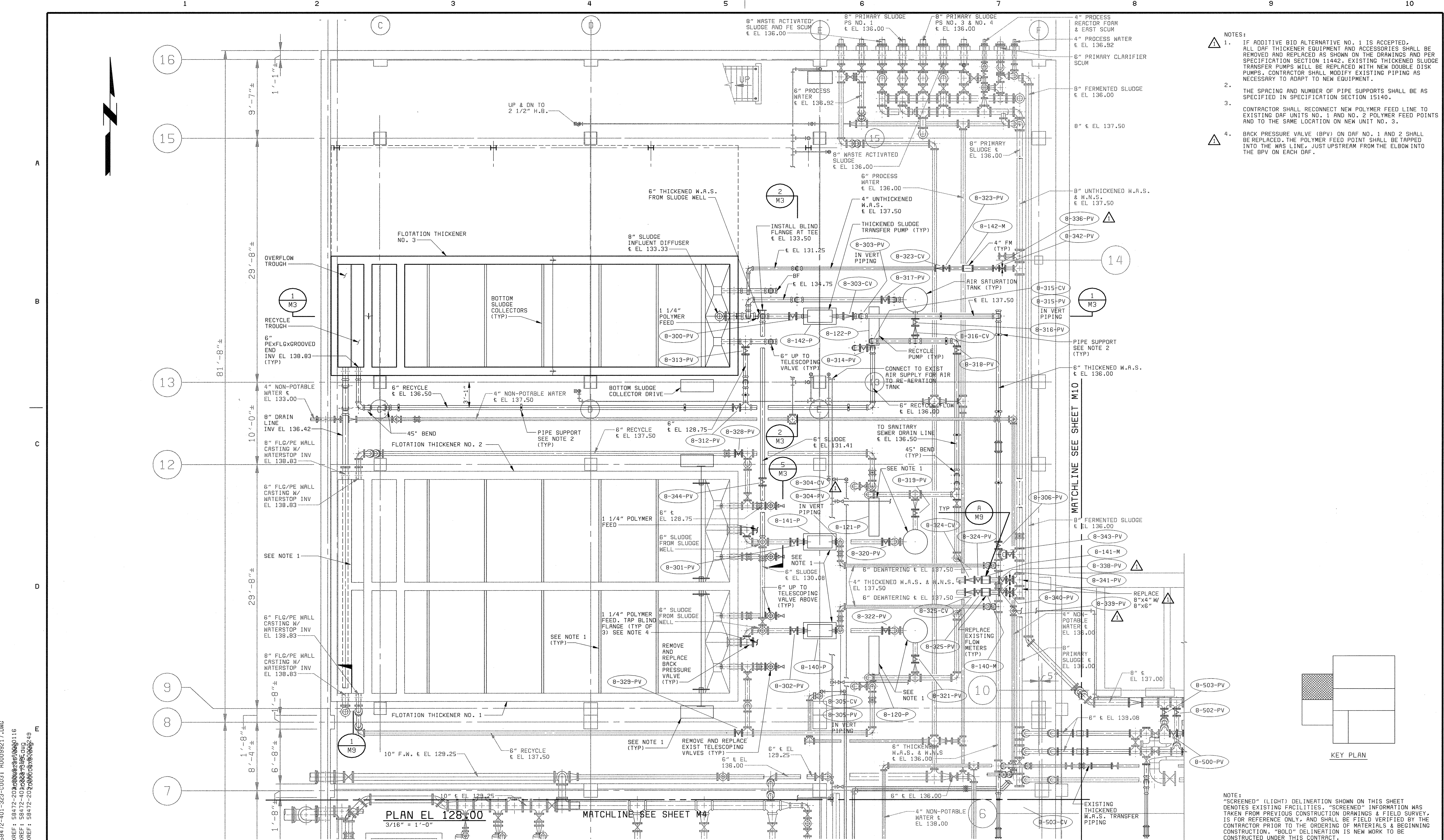
SCALE AS SHOWN
SHEET 43 OF 150
A16



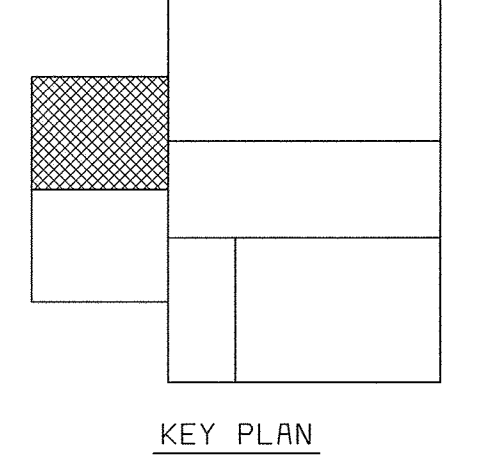
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108	BLACK & VEATCH L.P. Gaithersburg, Maryland THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS						LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 44 OF 150 A17
			DRN: JS	CHK: CH	DATE: 5/30/00	DATE	CONFORMED TO CONSTRUCTION RECORDS	NO.		



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108 CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH LLP Gaithersburg, Maryland THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R	DES: CH/JS DRN: JS CHK: CH DATE: 5/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	NO. BY CK APP RH/RJR/RJR	ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION MISCELLANEOUS DETAILS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 45 OF 150 A18
		REG. PROF. ENGR. DATE	DATE	DATE	DATE	DATE	DATE




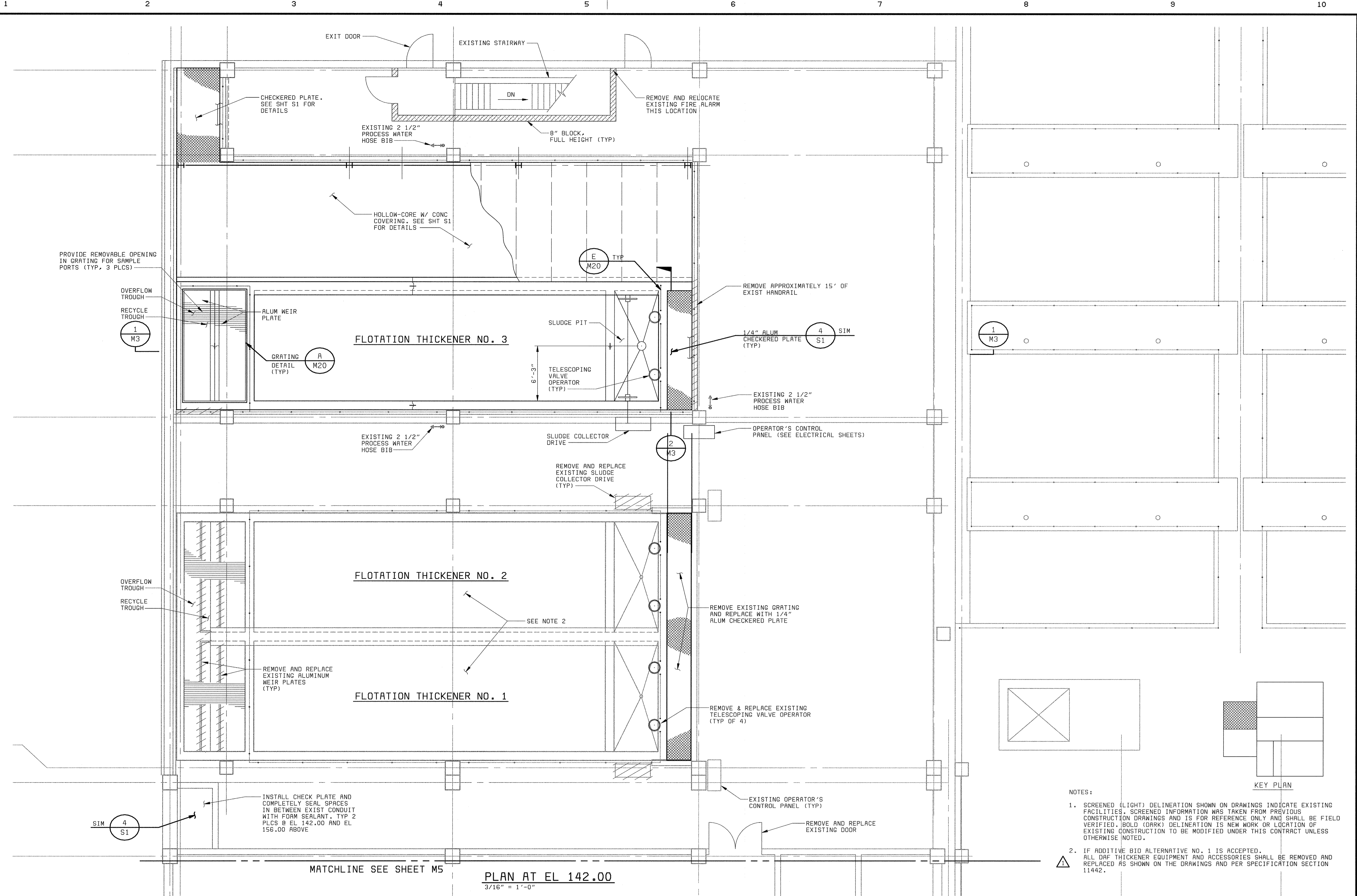
- NOTES:**
- IF ADDITIVE BID ALTERNATIVE NO. 1 IS ACCEPTED, ALL DAF THICKENER EQUIPMENT AND ACCESSORIES SHALL BE REMOVED AND REPLACED AS SHOWN ON THE DRAWINGS AND PER SPECIFICATION SECTION 11442. EXISTING THICKENED SLUDGE TRANSFER PUMPS WILL BE REPLACED WITH NEW DOUBLE DISK PUMPS. CONTRACTOR SHALL MODIFY EXISTING PIPING AS NECESSARY TO ADAPT TO NEW EQUIPMENT.
 - THE SPACING AND NUMBER OF PIPE SUPPORTS SHALL BE AS SPECIFIED IN SPECIFICATION SECTION 15140.
 - CONTRACTOR SHALL RECONNECT NEW POLYMER FEED LINE TO EXISTING DAF UNITS NO. 1 AND NO. 2 POLYMER FEED POINTS AND TO THE SAME LOCATION ON NEW UNIT NO. 3.
 - BACK PRESSURE VALVE (BPV) ON DAF NO. 1 AND 2 SHALL BE REPLACED. THE POLYMER FEED POINT SHALL BE TAPPED INTO THE WAS LINE, JUST UPSTREAM FROM THE ELBOW INTO THE BPV ON EACH DAF.



NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "UNSCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

58472-401-323-C003 : P00098217.DWG
 XREF : 58472-204-300-300-00000116
 XREF : 58472-401-323-300-00000049
 XREF : 58472-203-300-000-00000249
 058472_2
 PDS8472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 24676	DES: TLW	DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH RJR RJR	MECHANICAL DAF THICKENING AND STABILIZATION AREA FLOTATION THICKENING AREA PLAN AT EL 128.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
		CHIEF, BUREAU OF UTILITIES DATE	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP	SHEET 46 OF 150	M1				



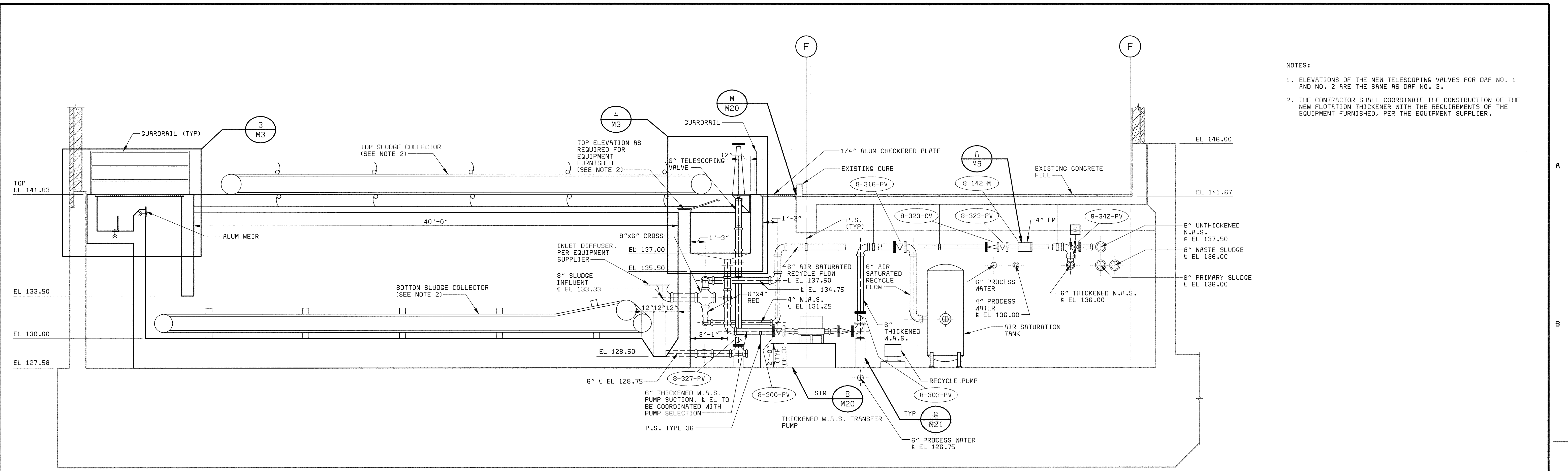
XREF : 58472-203-SOLLS-S-40000118
 XREF : 58472-401-323-PIPE3
 DES: 2
 PDS: 472A

- NOTES:
1. SCREENED (LIGHT) DELINEATION SHOWN ON DRAWINGS INDICATE EXISTING FACILITIES. SCREENED INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS AND IS FOR REFERENCE ONLY AND SHALL BE FIELD VERIFIED. BOLD (DARK) DELINEATION IS NEW WORK OR LOCATION OF EXISTING CONSTRUCTION TO BE MODIFIED UNDER THIS CONTRACT UNLESS OTHERWISE NOTED.
 2. IF ADDITIVE BID ALTERNATIVE NO. 1 IS ACCEPTED, ALL DAF THICKENER EQUIPMENT AND ACCESSORIES SHALL BE REMOVED AND REPLACED AS SHOWN ON THE DRAWINGS AND PER SPECIFICATION SECTION 11442.

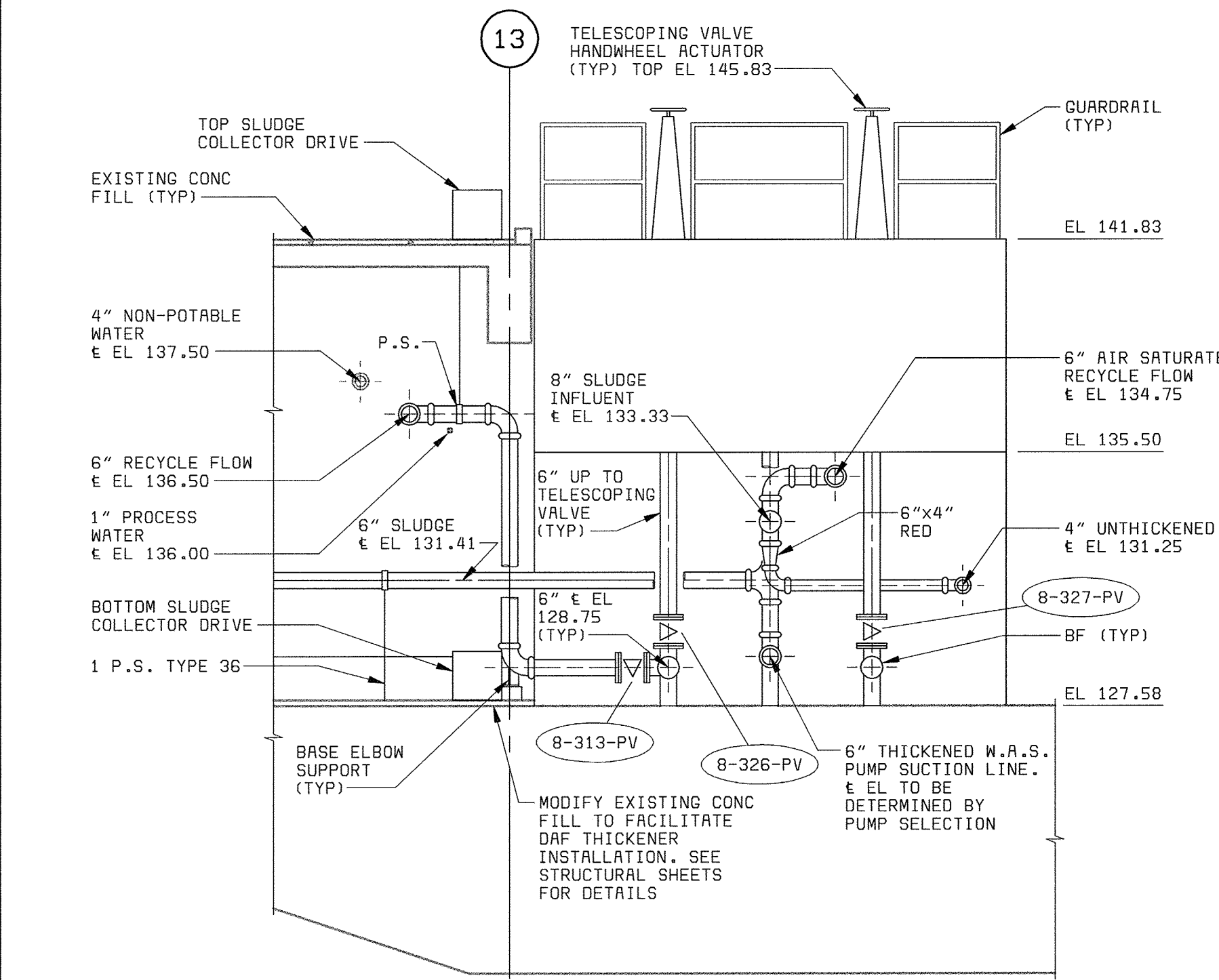
MATCHLINE SEE SHEET M5
PLAN AT EL 142.00
 3/16" = 1'-0"

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Galthersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW					MECHANICAL DAF THICKENING AND STABILIZATION AREA FLOTATION THICKENING AREA PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH/RJR/RJR

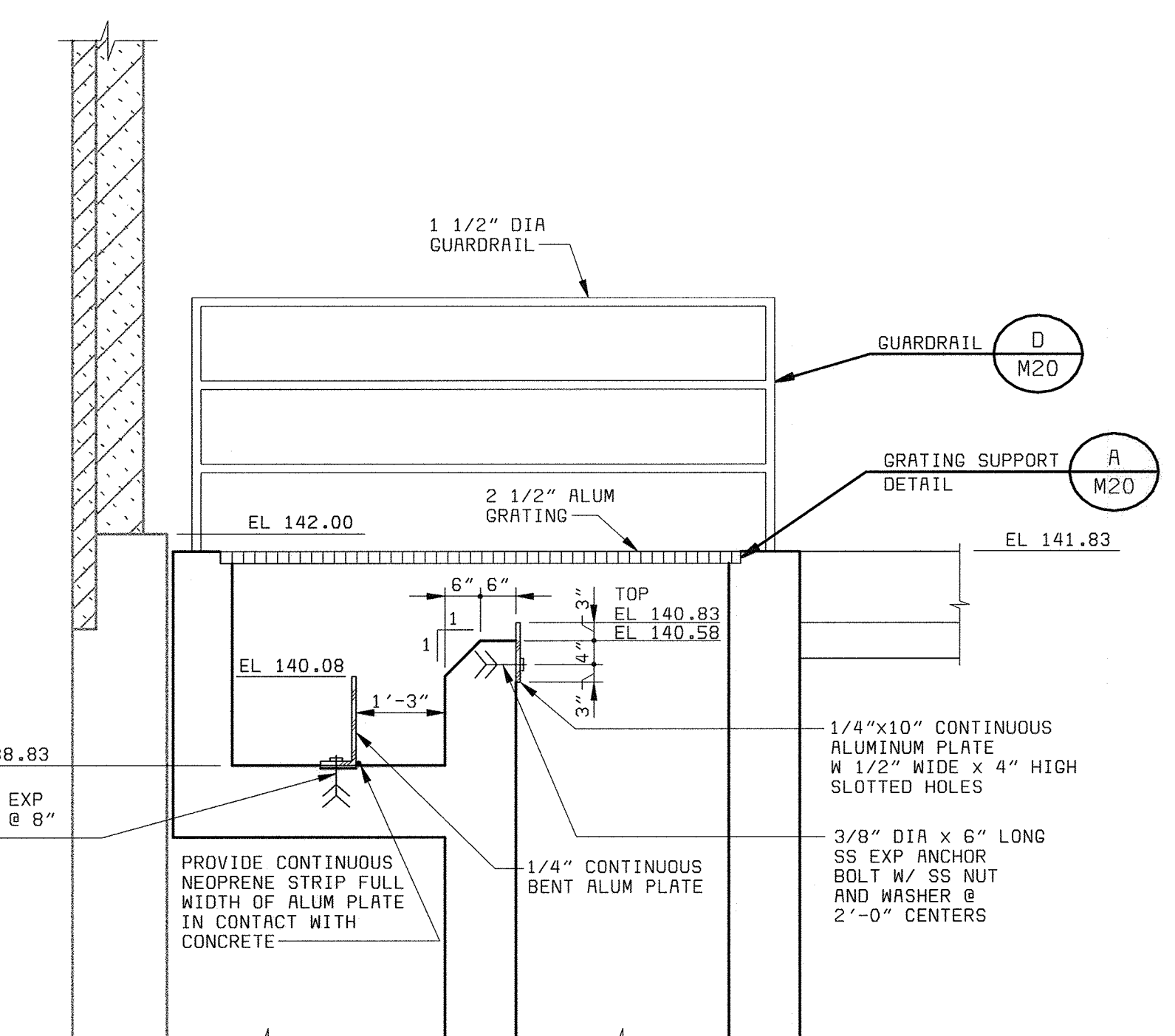
- NOTES:
- ELEVATIONS OF THE NEW TELESCOPING VALVES FOR DAF NO. 1 AND NO. 2 ARE THE SAME AS DAF NO. 3.
 - THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE NEW FLOTATION THICKENER WITH THE REQUIREMENTS OF THE EQUIPMENT FURNISHED, PER THE EQUIPMENT SUPPLIER.



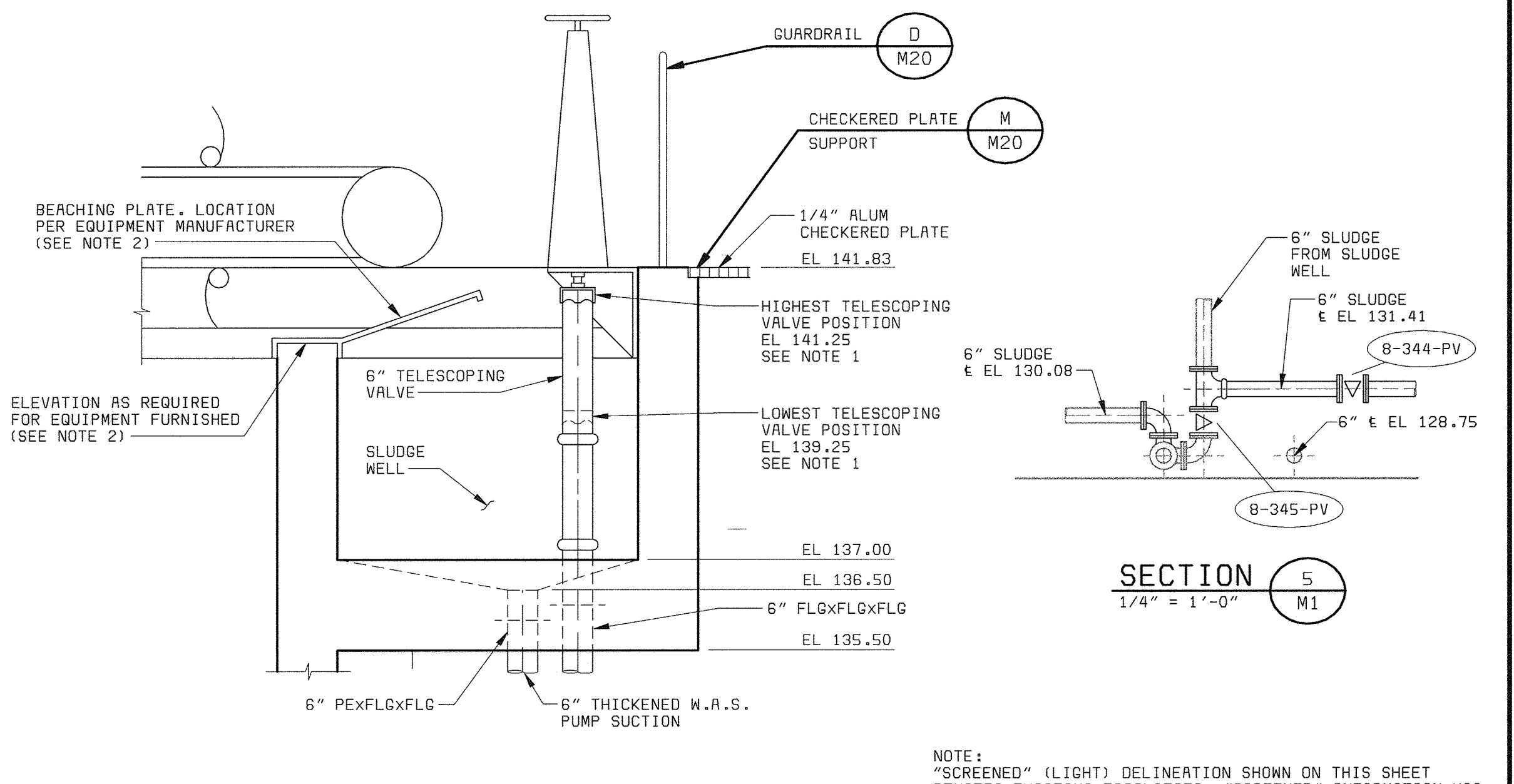
SECTION 1
1/4" = 1'-0"



SECTION 2
1/4" = 1'-0"



ENLARGED SECTION 3
1/2" = 1'-0"



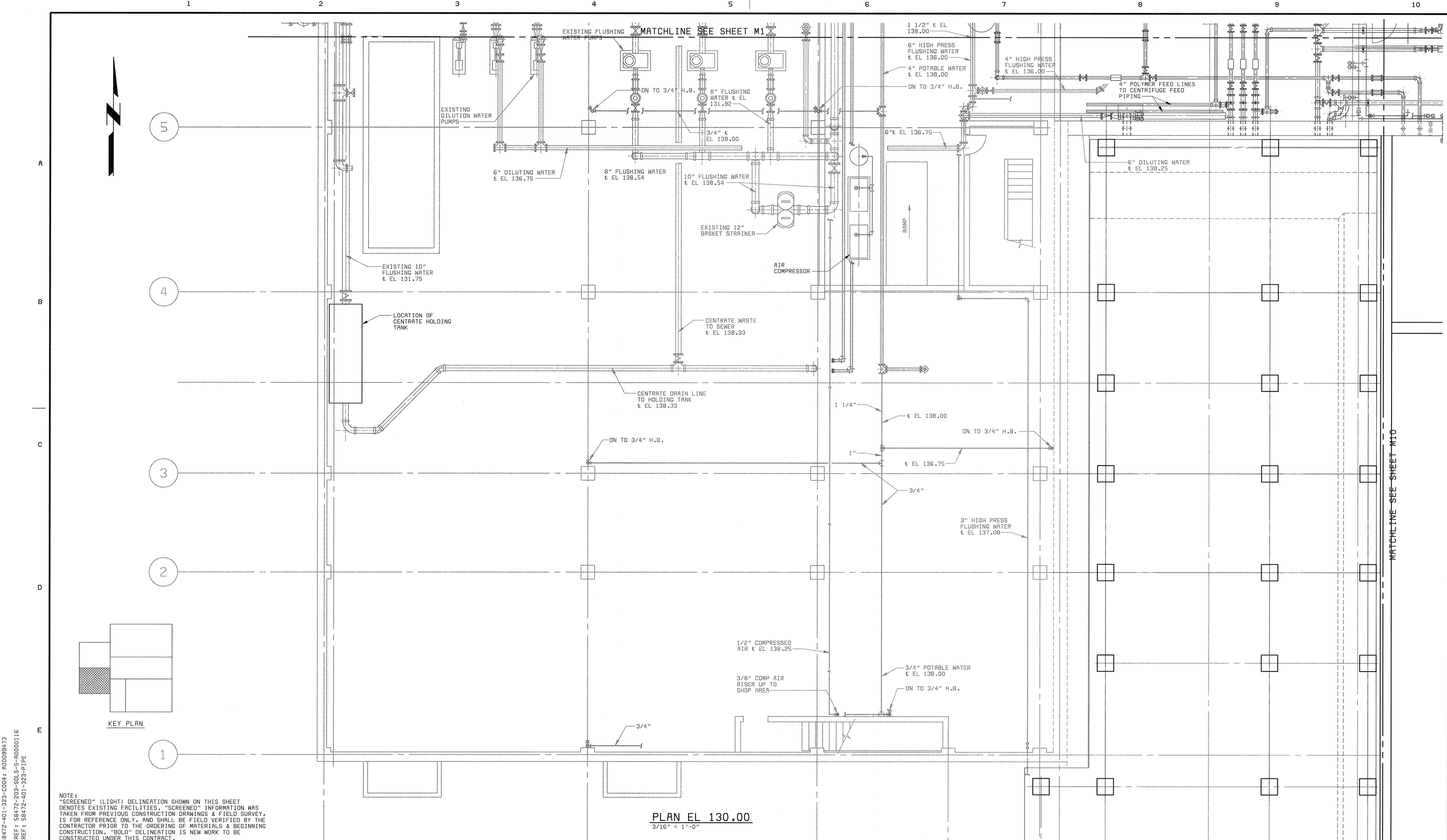
ENLARGED SECTION 4
1/2" = 1'-0"

SECTION 5
1/4" = 1'-0"

NOTE: "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE _____	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW						MECHANICAL DAF THICKENING AND STABILIZATION AREA FLOTATION THICKENING AREA SECTIONS AND DETAILS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH			RJR
58472-401-DAF-C-Z00000R0V 07/29/2004 15:30:12, Plotted : 5/20/2005 12:02:47 PM											

58472-401-DAF-C-R0000104



PLAN EL 130.00
3/16" = 1'-0"

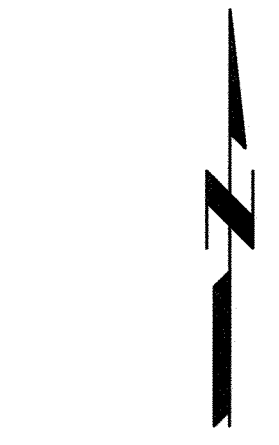
NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

58472-401-323-C004: R00099473
XREF: 58472-303-SOL-S-R0000116
XREF: 58472-401-323-PIPE

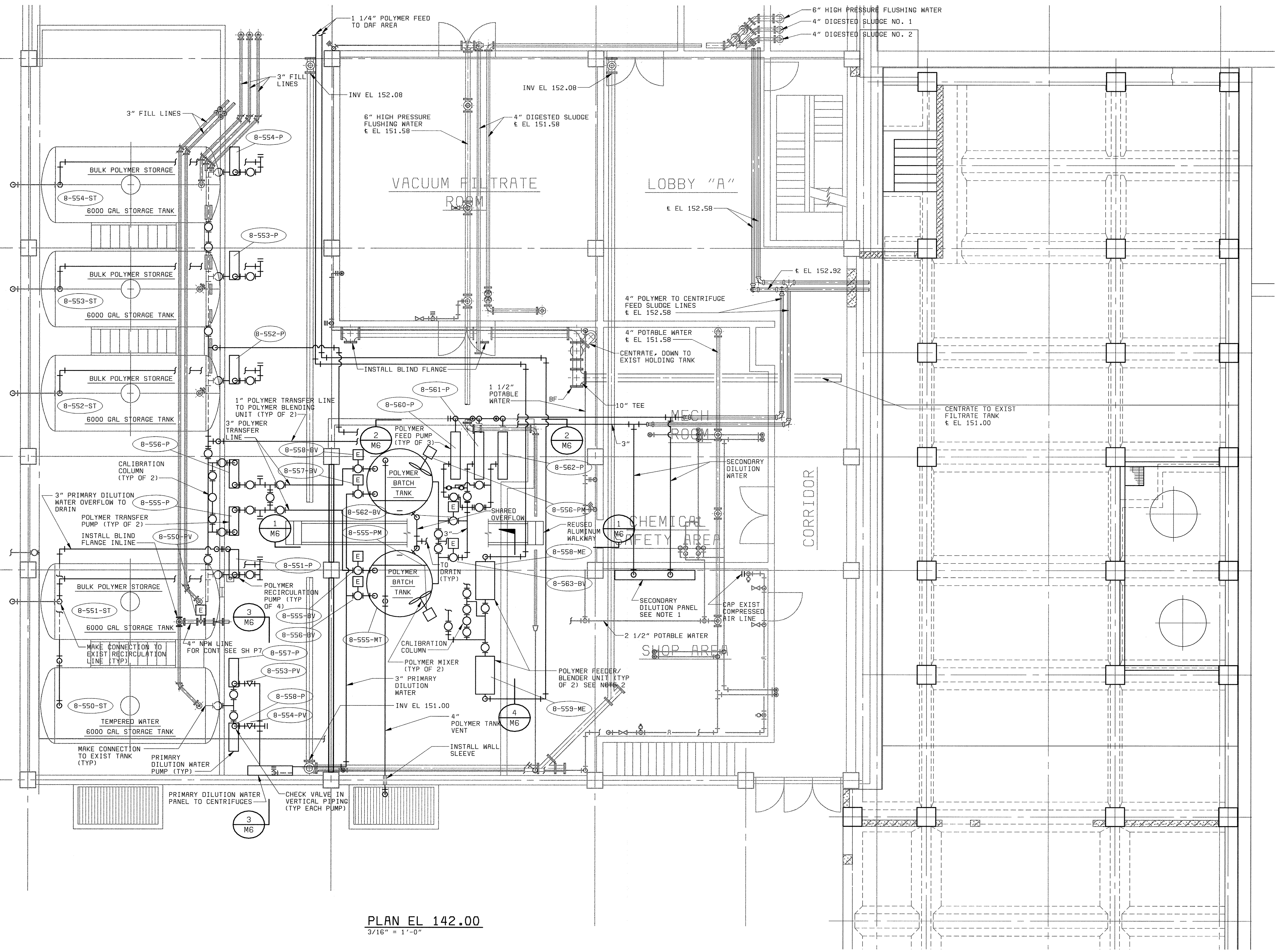
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D. MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW/ACR					MECHANICAL DAF THICKENING AND STABILIZING AREA CENTRATE DISPOSAL AREA PLAN AT EL 130.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH/RJR/RJR
			DATE			REVISIONS AND RECORD OF ISSUE			NO. BY CK APP	

A
B
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E

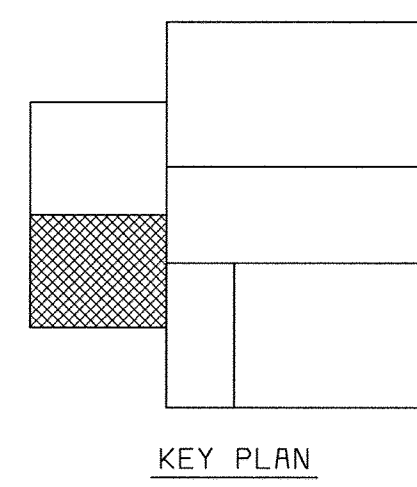
A
B
C
D
E



5
4
3
2
1



NOTE:
NOT ALL PIPING AND VALVES SHOWN.
SEE SCHEMATIC SHEET L5.
1. PROCESS WATER CONNECTION FOR SECONDARY
DILUTION PANEL SHOWN ON SH P7.
2. NONPOTABLE WATER CONNECTION FOR POLYMER
FEEDER/BLENDER UNITS SHOWN ON SH P7.



PLAN EL 142.00
3/16" = 1'-0"

58472-401-323-C016: R00098934
XREF: 58472-203-SLS-5-R0000118
58472_2
FD58472R

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gathersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
D MITT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

DES: TJW.ACR	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
DRN: RAB.NAG			
CHK: WLK			
DATE: 5-30-00			
	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

MECHANICAL
DAF THICKENING AND
STABILIZATION AREA

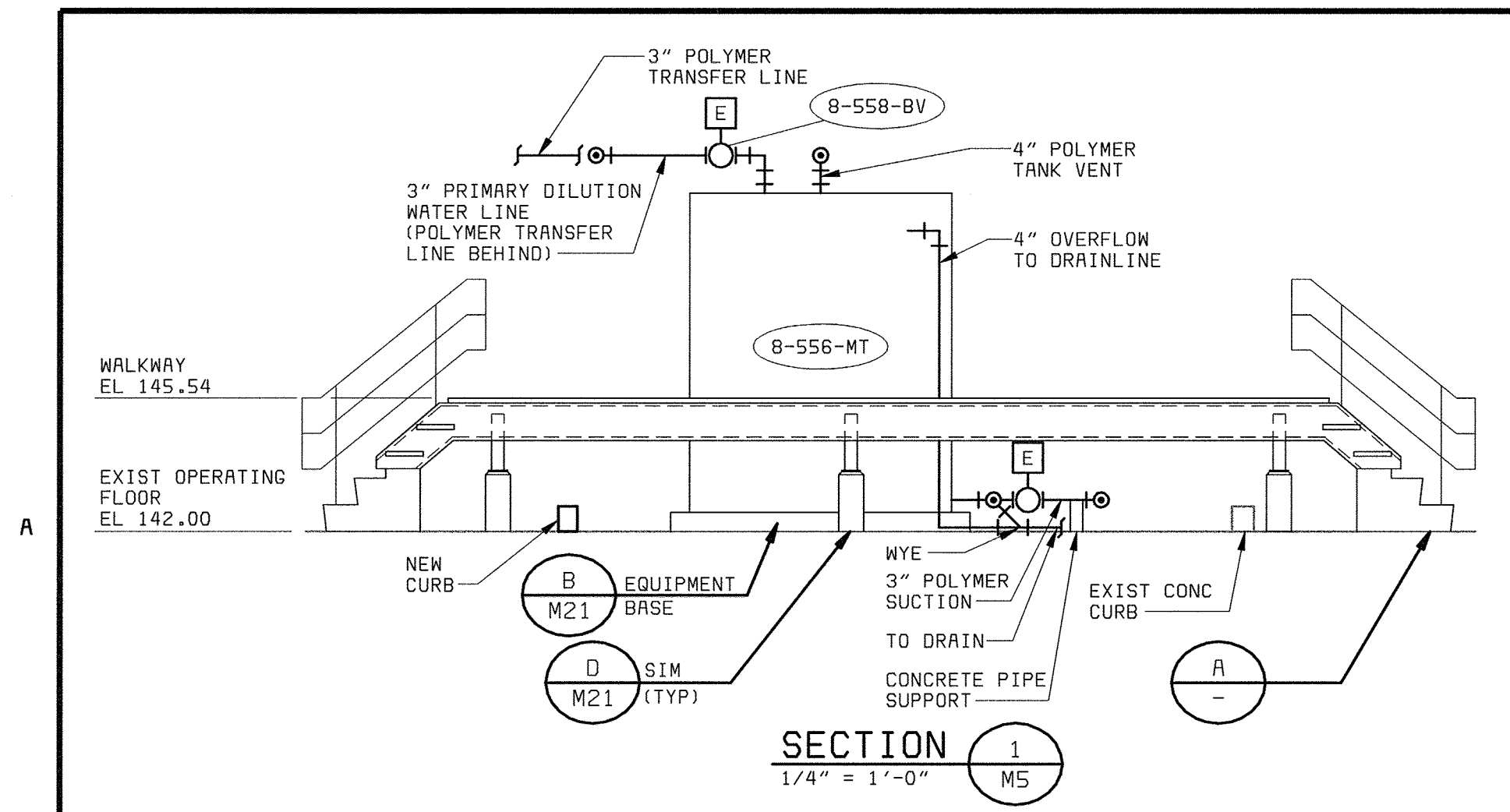
POLYMER FEED AREA
PLAN AT EL 142.00

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

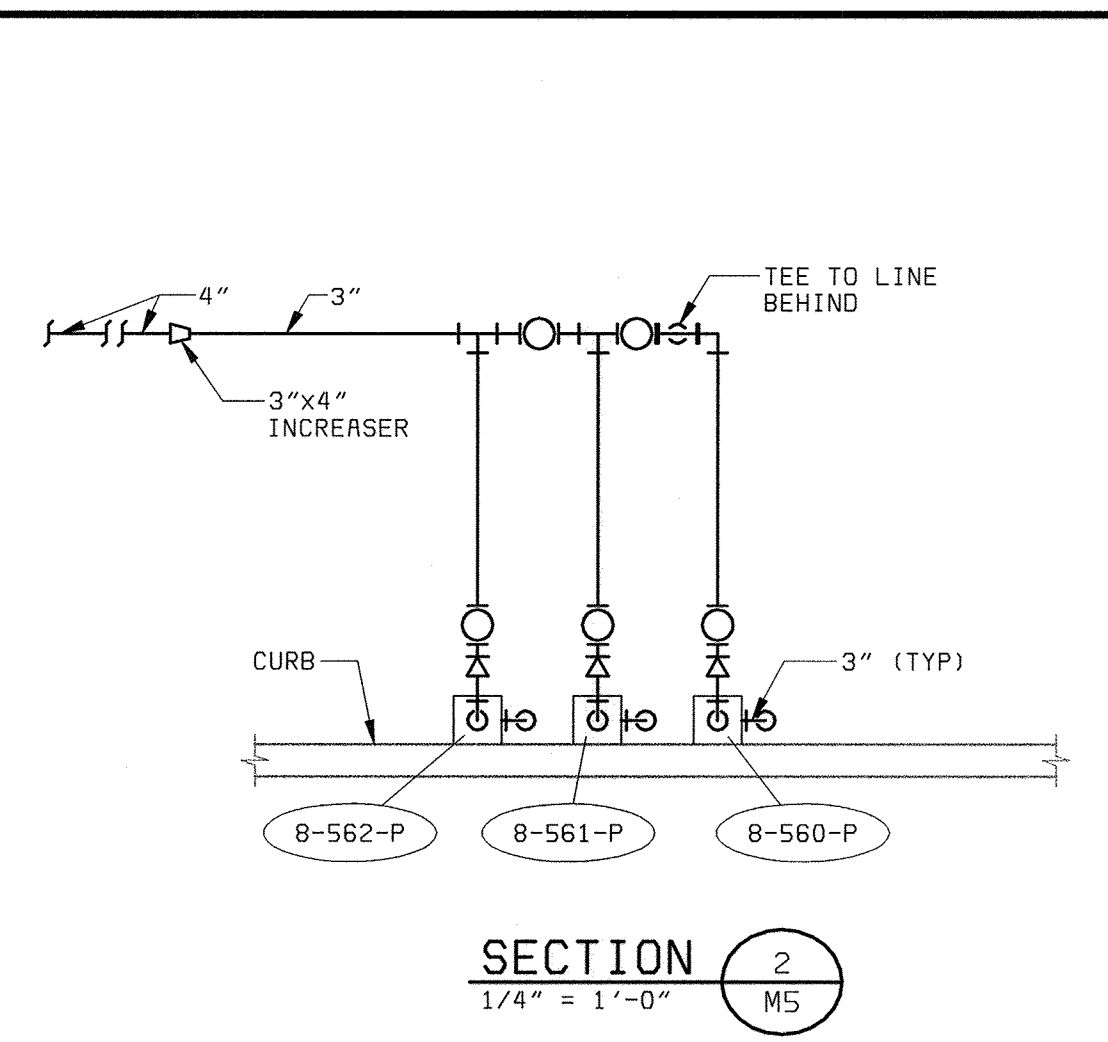
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SHOWN

SHEET
50 OF 150

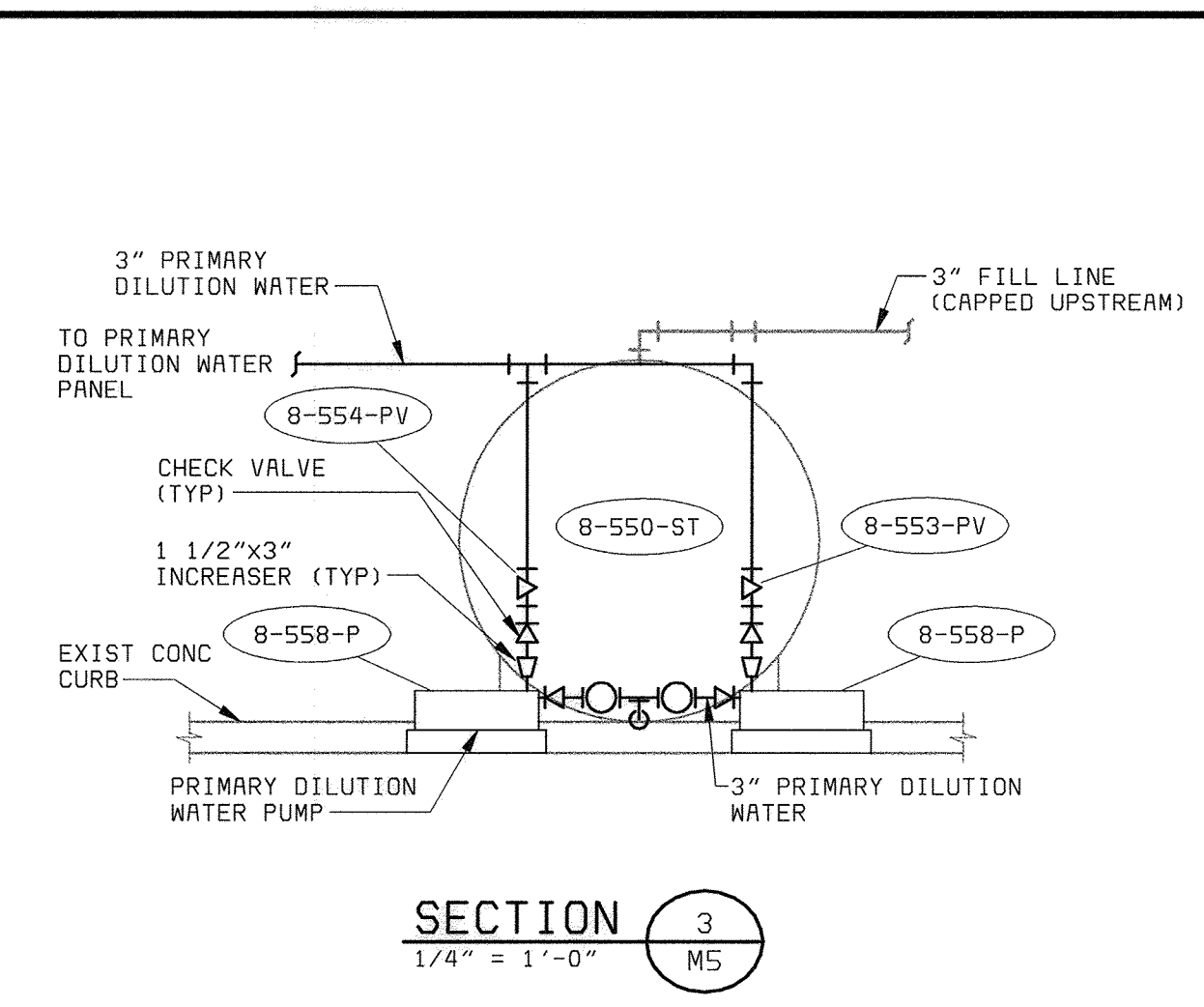
M5



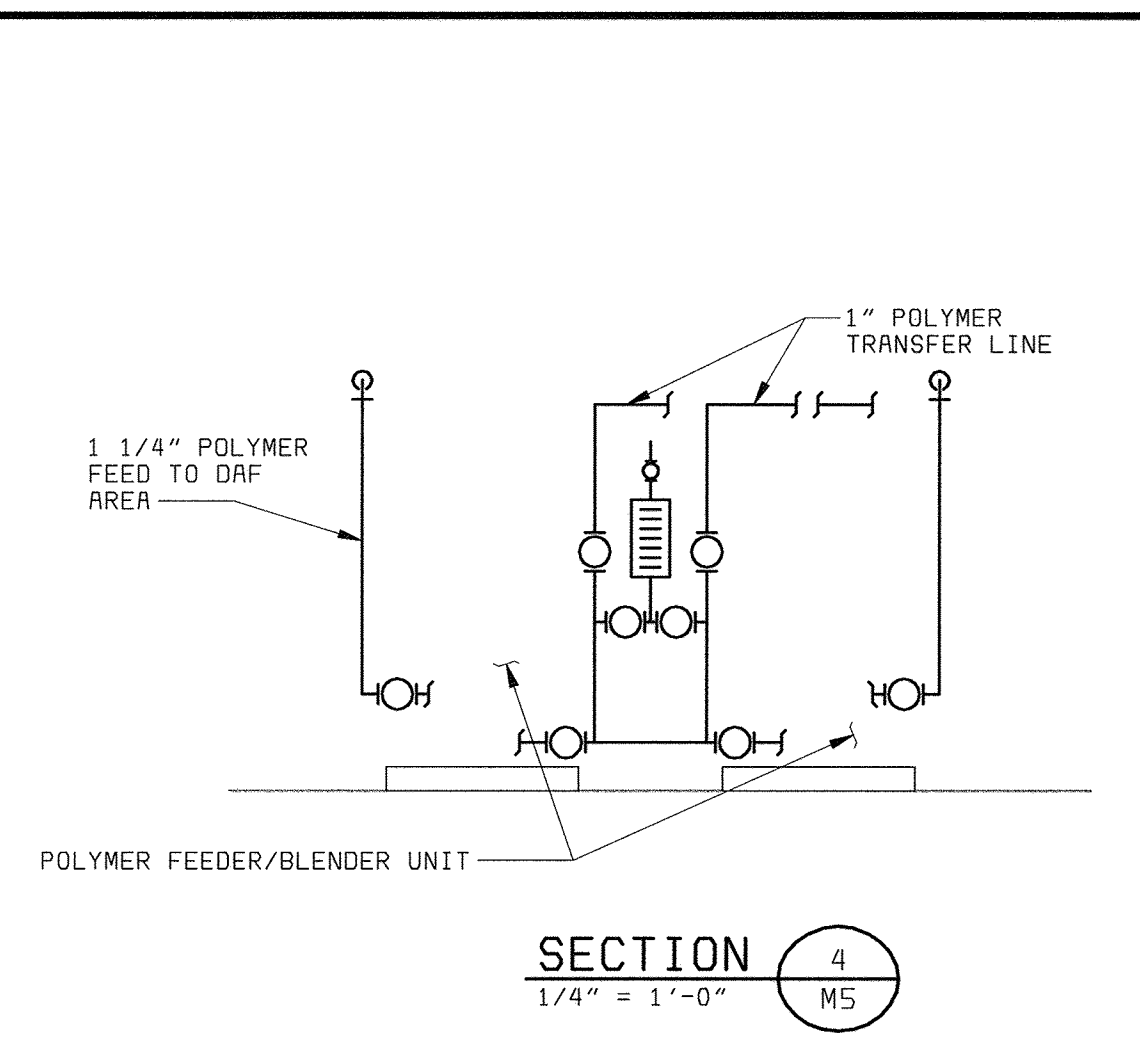
SECTION 1
1/4" = 1'-0"



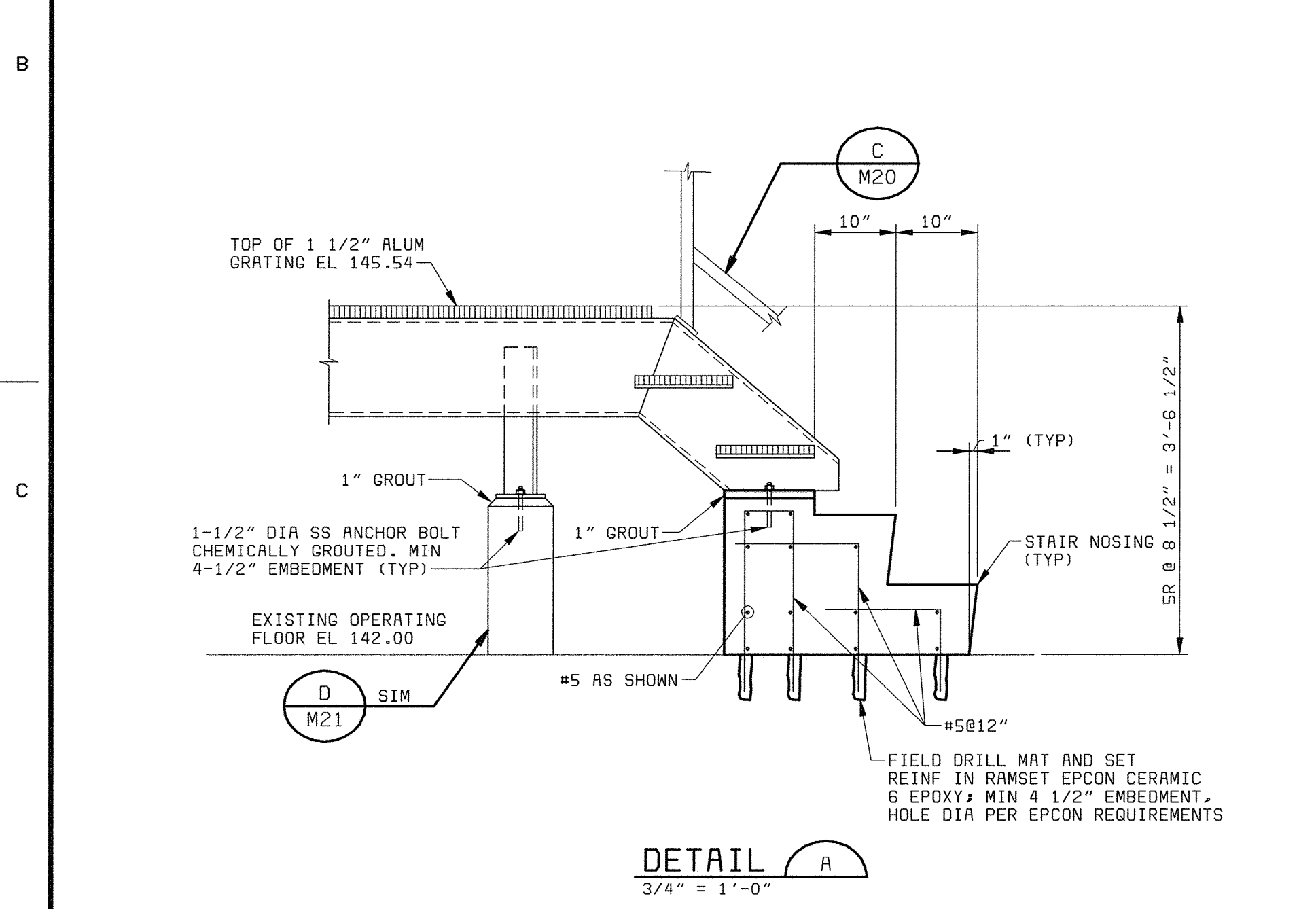
SECTION 2
1/4" = 1'-0"



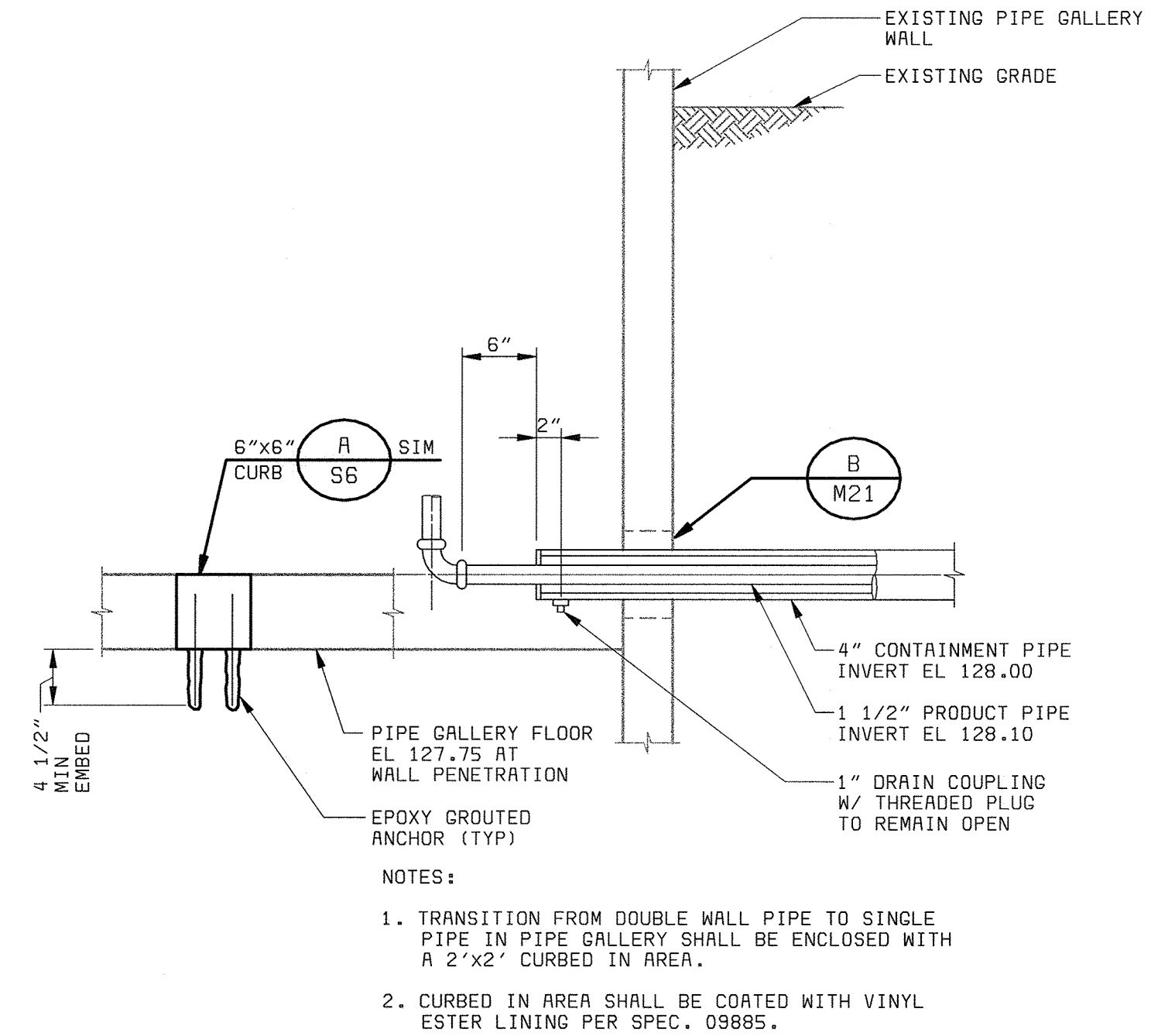
SECTION 3
1/4" = 1'-0"



SECTION 4
1/4" = 1'-0"



DETAIL A
3/4" = 1'-0"



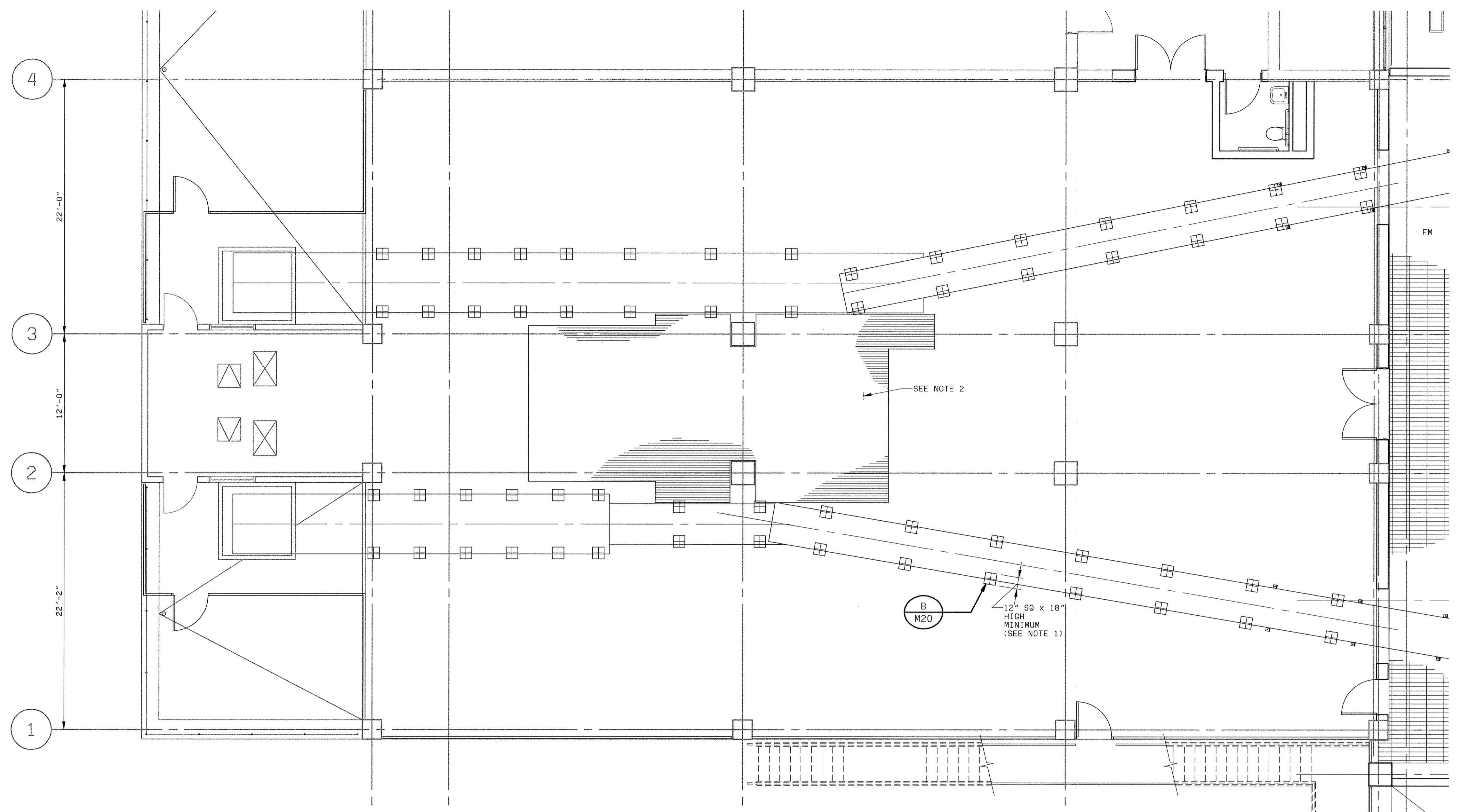
CONTAINMENT PIPE TRANSITION B
NO SCALE

- NOTES:
1. TRANSITION FROM DOUBLE WALL PIPE TO SINGLE PIPE IN PIPE GALLERY SHALL BE ENCLOSED WITH A 2'x2' CURBED IN AREA.
 2. CURBED IN AREA SHALL BE COATED WITH VINYL ESTER LINING PER SPEC. 09885.
 3. LOCATION AND PLACEMENT OF LEVEL SENSOR IN CURBED AREA SHOWN ON SH 16.

58472-401-DAF-C-0001256

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH, L.P. Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 24676	DES: ACR					MECHANICAL DAF THICKENING AND STABILIZATION AREA POLYMER FEED AREA SECTIONS AND DETAILS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH
			DATE			REVISIONS AND RECORD OF ISSUE			M6	

A
B
C
D
E
F




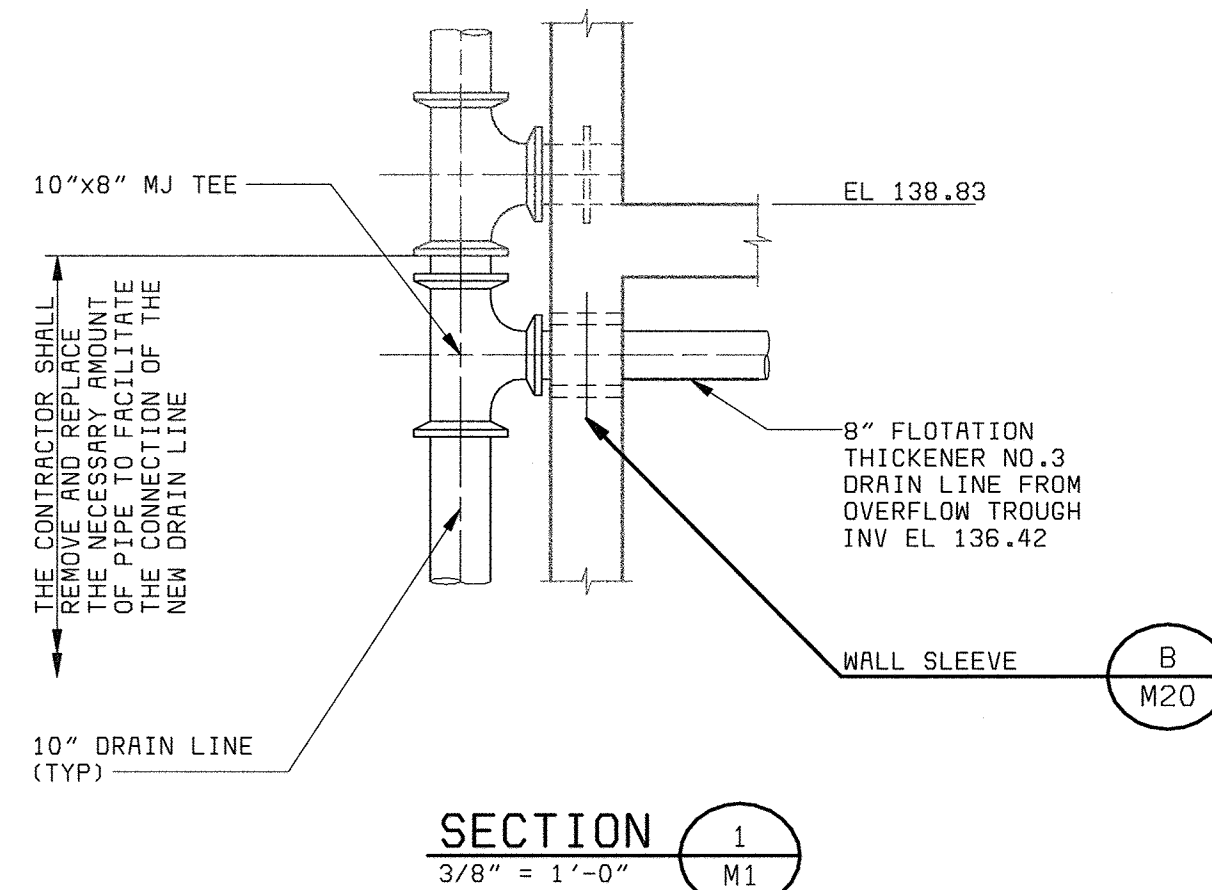
PLAN AT EL 156.00
3/16" = 1'-0"

- NOTES:
1. CONTRACTOR SHALL COORDINATE LOCATION AND NUMBER OF EQUIPMENT SUPPORT BASES WITH THE EQUIPMENT SUPPLIED AND SHOWN IN THE SEPARATELY BOUND LIME STABILIZATION SYSTEM DRAWINGS (BY RDP TECHNOLOGIES INC). LOAD SHALL NOT EXCEED 5800lbs POINT LOAD DISTRIBUTED OVER A 1.0 SQ FT AREA WITHOUT REVIEW BY ENGINEER.
 2. FOR EQUIPMENT LOCATIONS, REFERENCE DRAWINGS SUPPLIED BY RDP TECHNOLOGIES, INC.

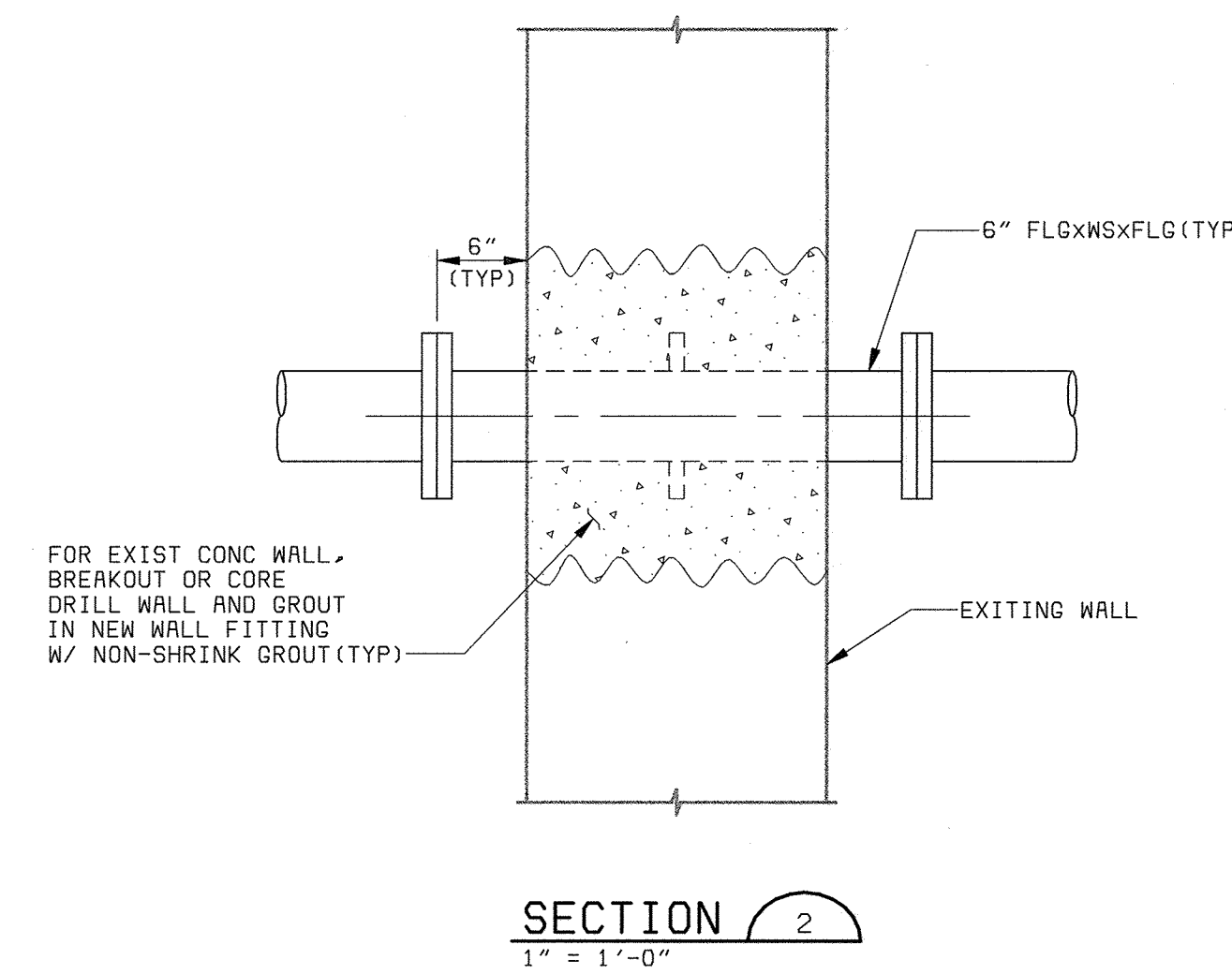
58472-401-323-C007: R00098688.DWG
XREF: 58472-203-SOLS-A-A0000420
XREF: 58472-401-323-PIPE

DS6472_2
FD584726

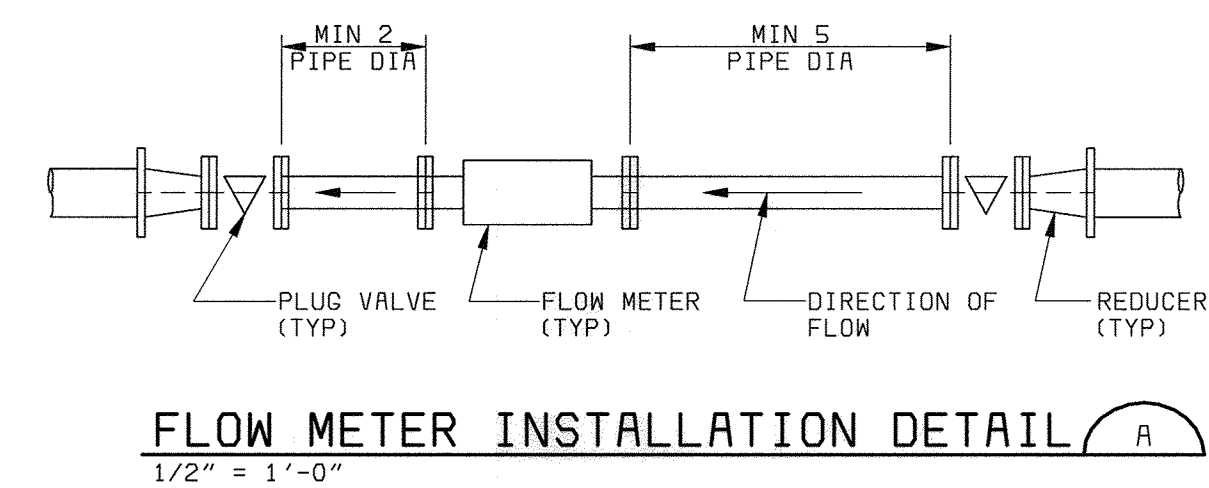
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW								MECHANICAL DAF THICKENING AND STABILIZATION AREA LIME STABILIZATION AREA PLAN AT EL 156.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR					



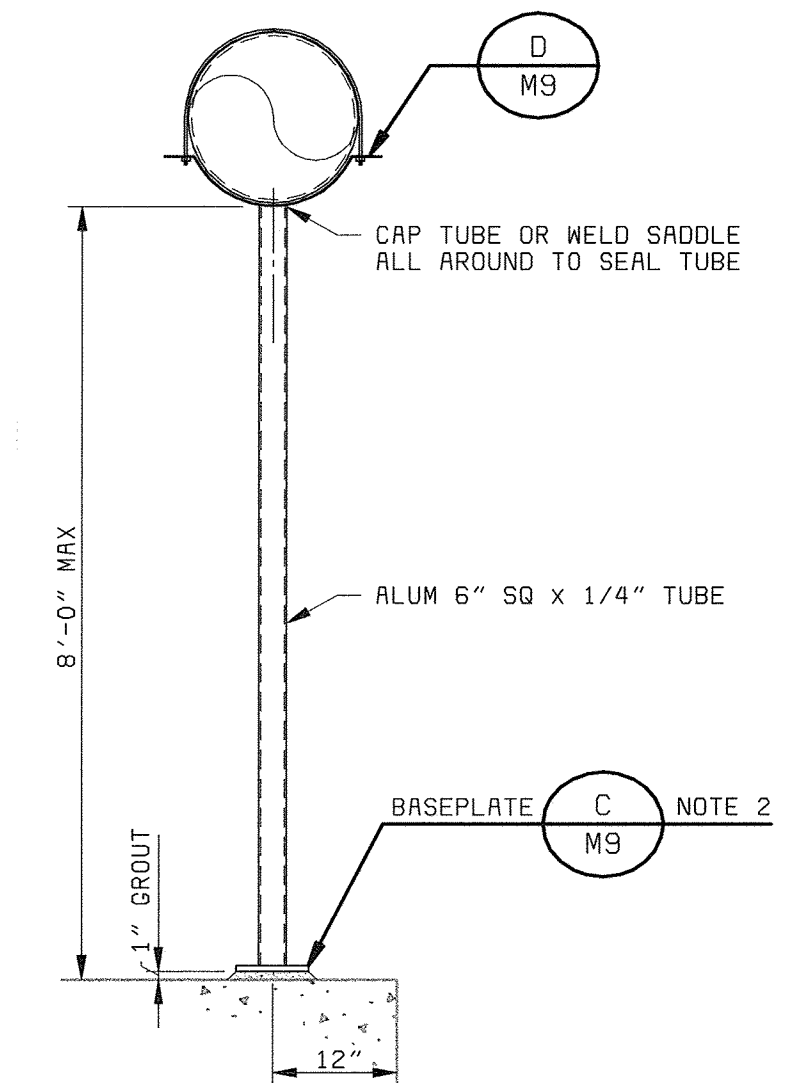
SECTION 1
3/8" = 1'-0" M1



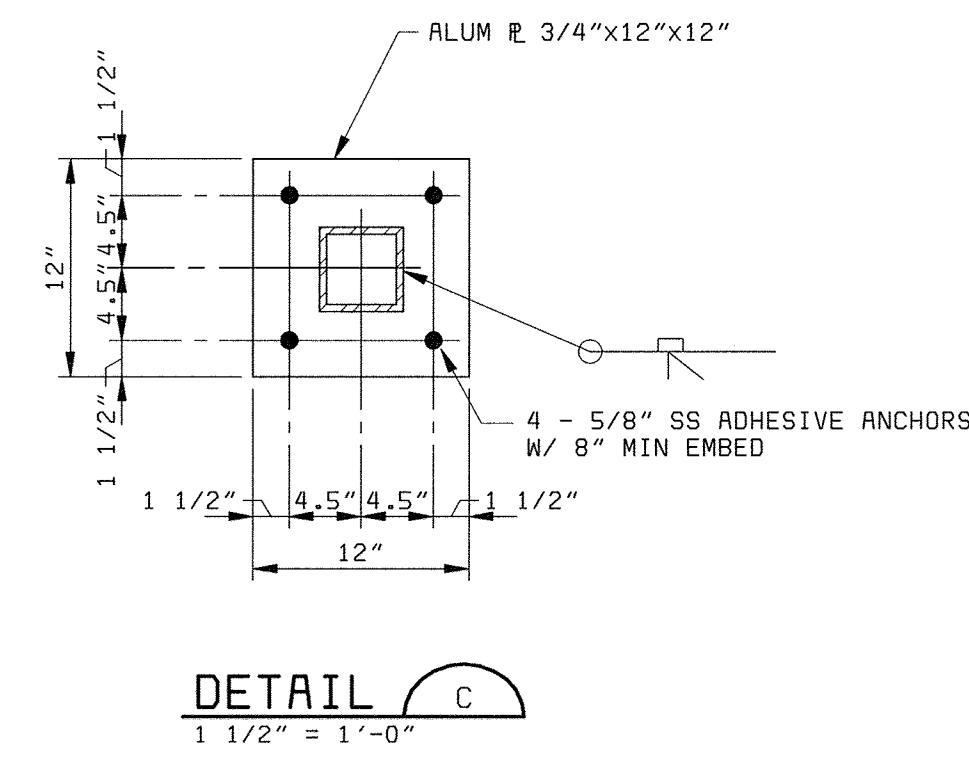
SECTION 2
1" = 1'-0"



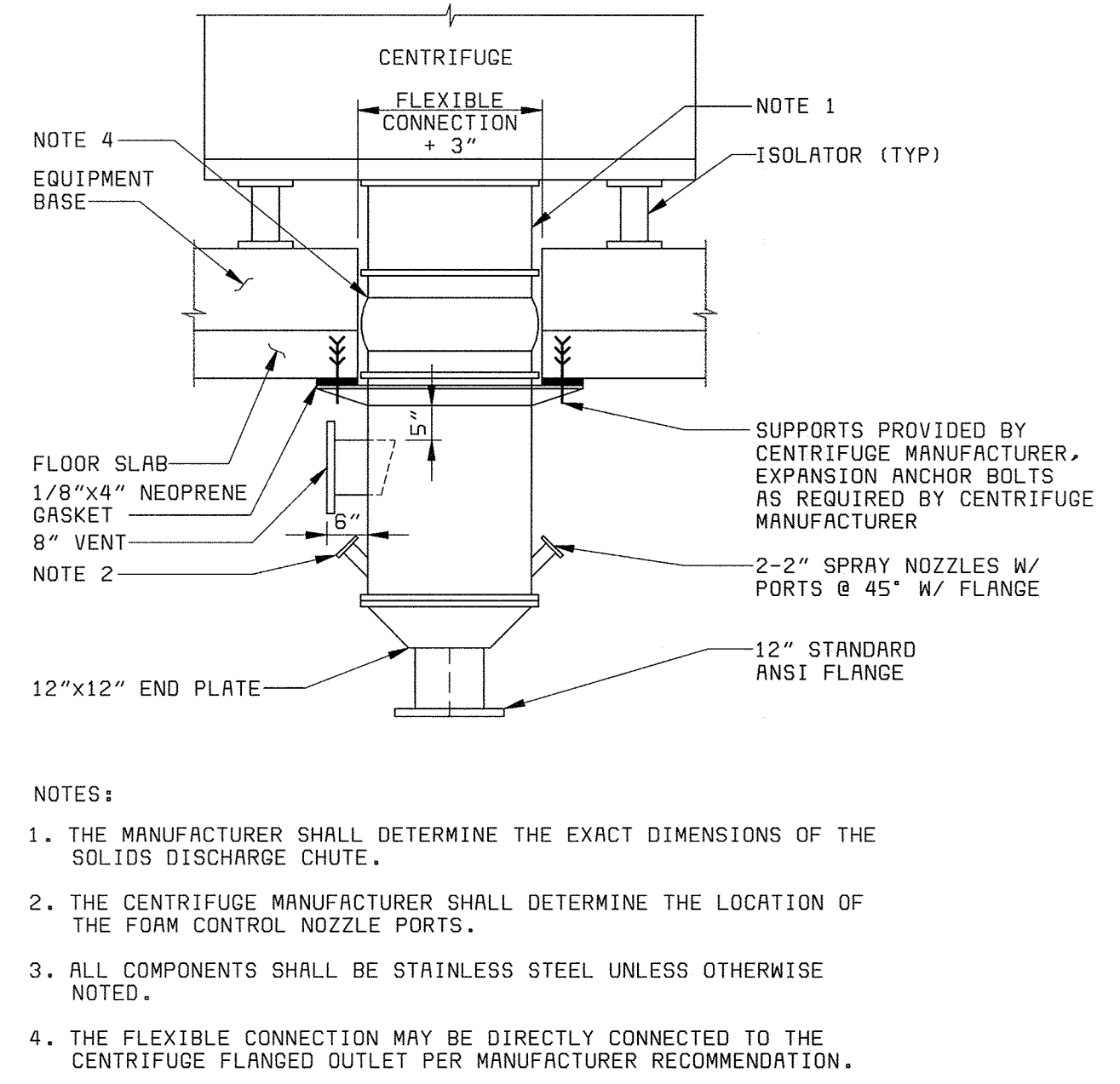
FLOW METER INSTALLATION DETAIL A
1/2" = 1'-0"



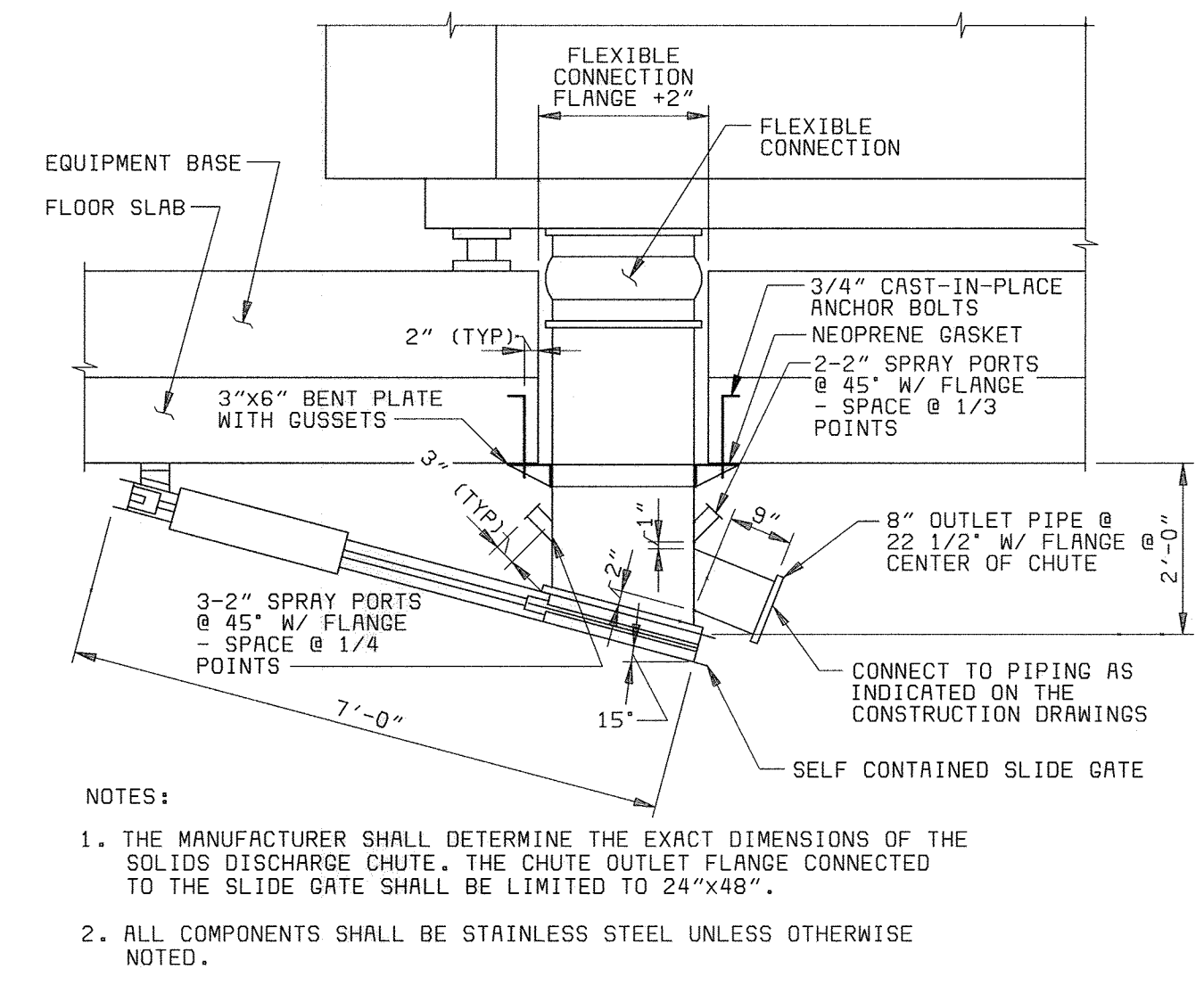
TOP MOUNTED DUCT SUPPORT B
1/2" = 1'-0"



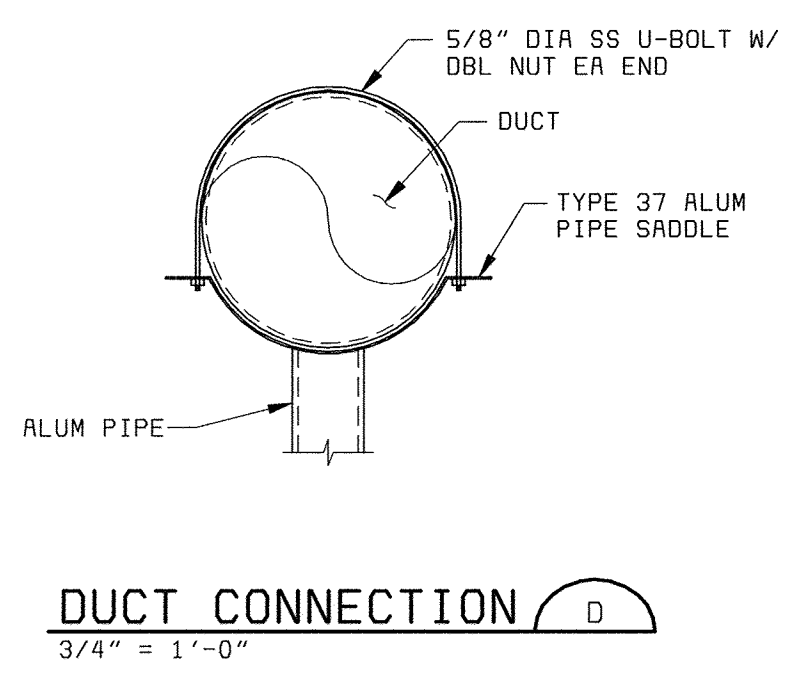
DETAIL C
1 1/2" = 1'-0"



SIDE ELEVATION CENTRATE DISCHARGE CHUTE E
NO SCALE M15, M17



SIDE ELEVATION SOLIDS DISCHARGE CHUTE F
NO SCALE M15, M17



DUCT CONNECTION D
3/4" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

BLACK & VEATCH
Gaithersburg, Maryland

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
D MITT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

DES: TJW					
DRN: BOB					
CHK: WLK					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

MECHANICAL
DAF THICKENING AND
STABILIZATION AREA

MISCELLANEOUS
SECTIONS & DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

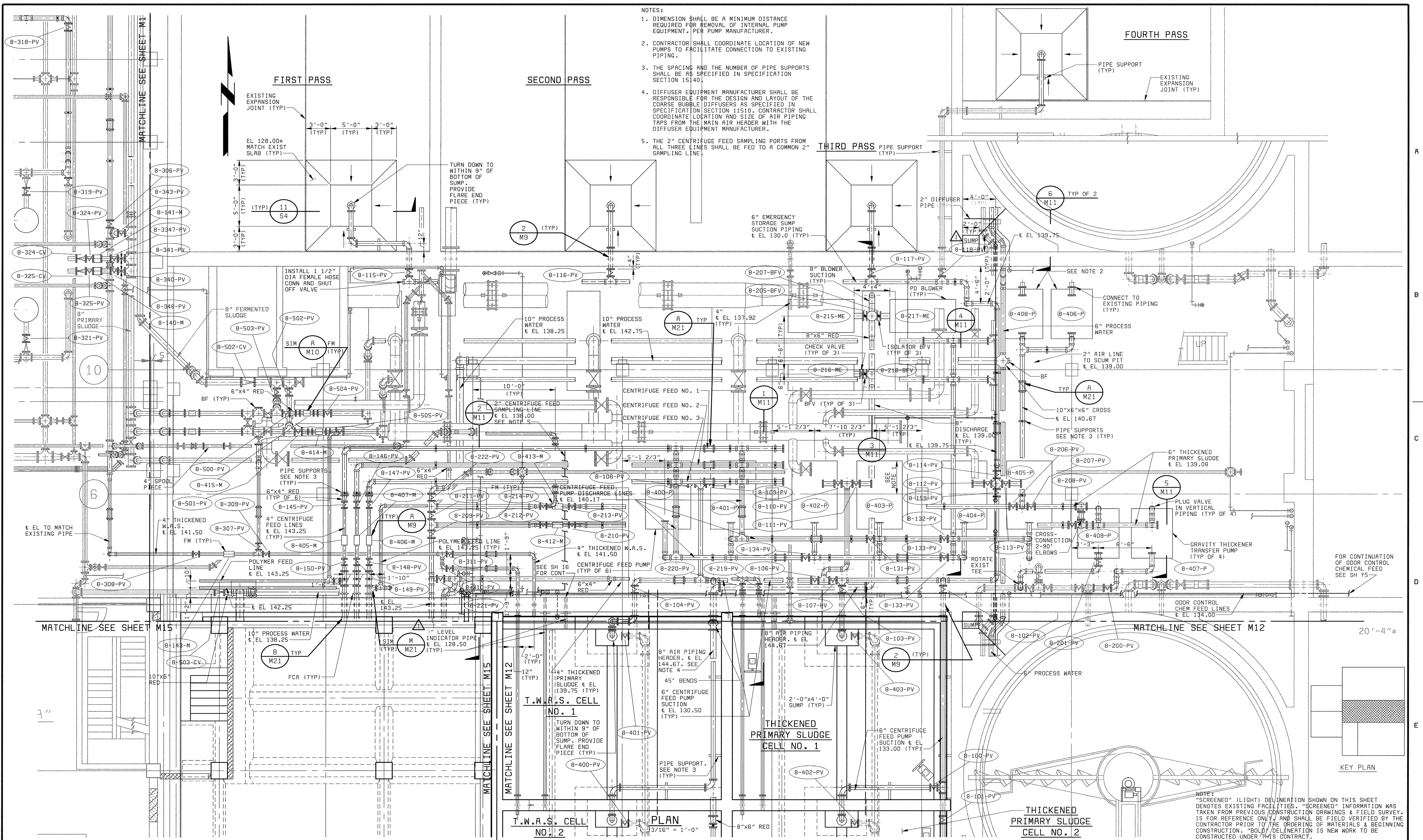
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
53 OF 150

M9

58472-401-DAF-C-00000378

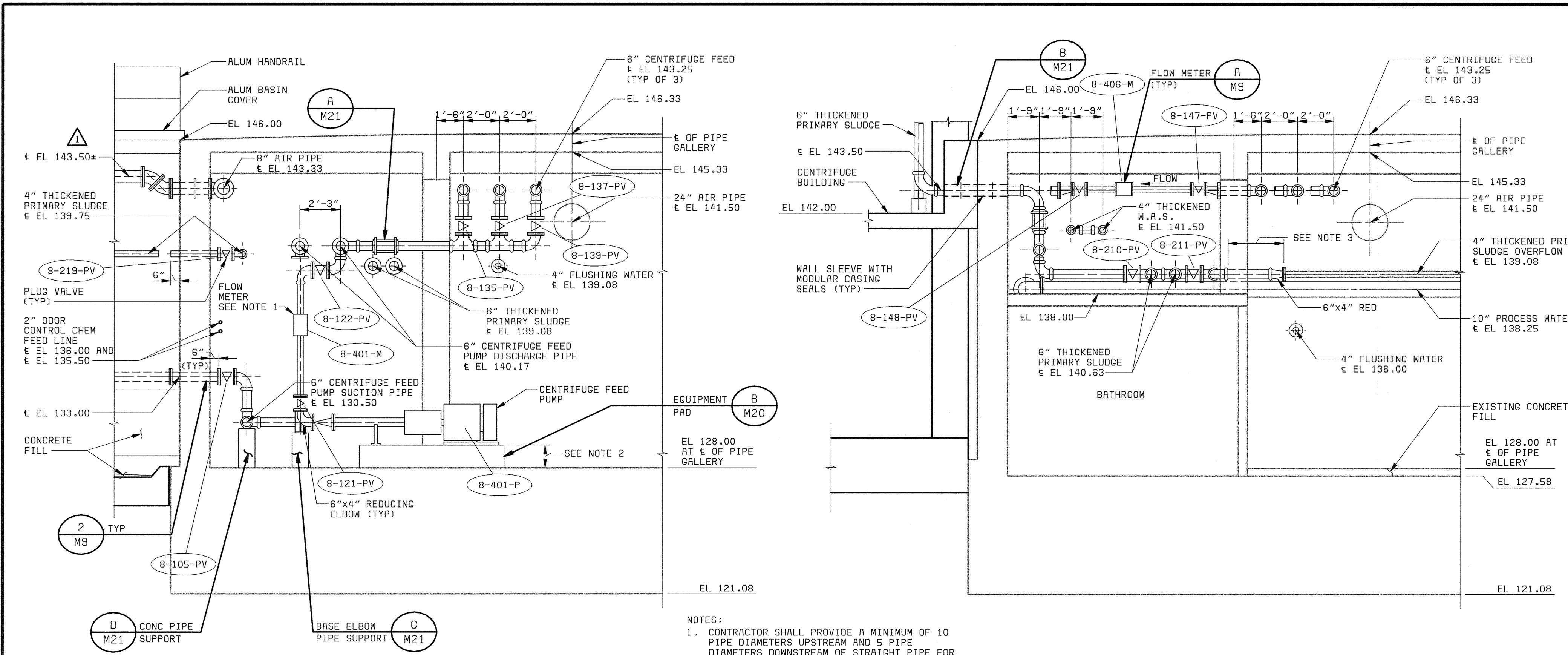


- NOTES:
1. DIMENSION SHALL BE A MINIMUM DISTANCE REQUIRED FOR REMOVAL OF INTERNAL PUMP EQUIPMENT, PER PUMP MANUFACTURER.
 2. CONTRACTOR SHALL COORDINATE LOCATION OF NEW PUMPS TO FACILITATE CONNECTION TO EXISTING PIPING.
 3. THE SPACING AND THE NUMBER OF PIPE SUPPORTS SHALL BE AS SPECIFIED IN SPECIFICATION SECTION 15140.
 4. DIFFUSER EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE COARSE BUBBLE DIFFUSERS AS SPECIFIED IN SPECIFICATION SECTION 11510. CONTRACTOR SHALL COORDINATE LOCATION AND SIZE OF AIR PIPING TAPS FROM THE MAIN AIR HEADER WITH THE DIFFUSER EQUIPMENT MANUFACTURER.
 5. THE 2" CENTRIFUGE FEED SAMPLING PORTS FROM ALL THREE LINES SHALL BE FED TO A COMMON 2" SAMPLING LINE.

NOTE: "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "GREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

58472-401-323-C006: R0009670
 XREF: 58472-203-SOLS-S-R0000116
 XREF: 58472-203-SOLS-S-R0000118
 XREF: 58472-401-323-P1PE

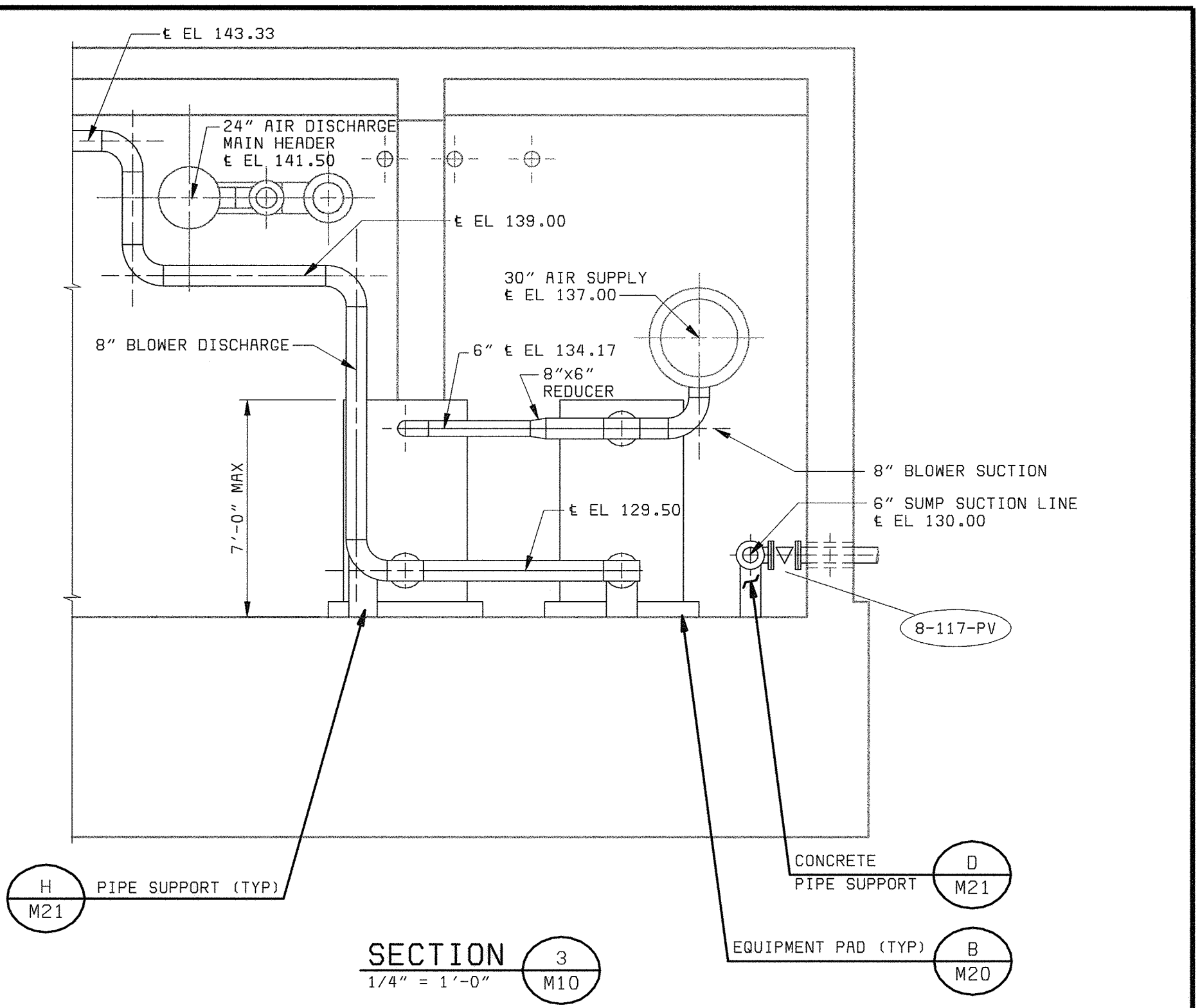
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____ CHIEF, BUREAU OF UTILITIES DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW				MECHANICAL SLUDGE STORAGE AND PRIMARY SLUDGE THICKENER AREA EQUIPMENT AND PIPE GALLERY-PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
		DRN: RAB	CHK: WLK	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH/RJR/RJR
		DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP			M10



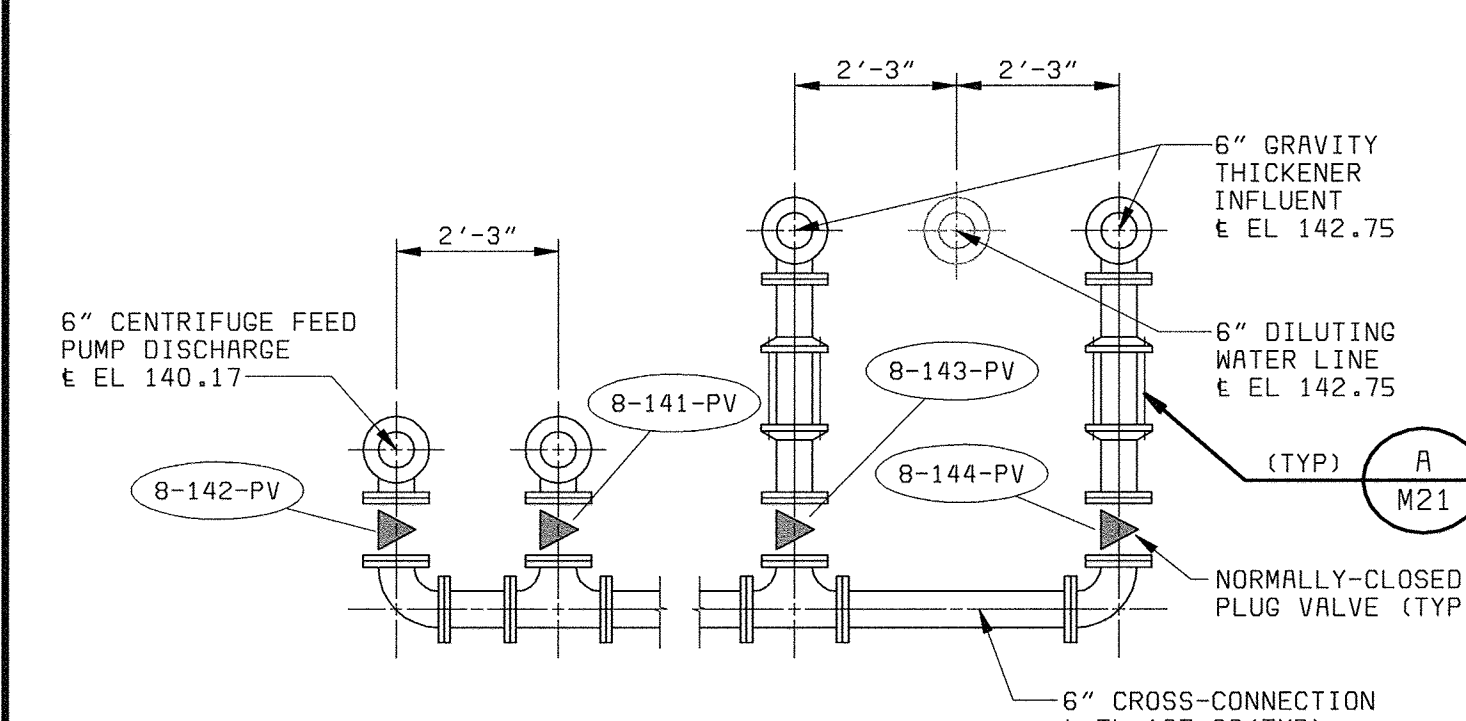
- NOTES:
- CONTRACTOR SHALL PROVIDE A MINIMUM OF 10 PIPE DIAMETERS UPSTREAM AND 5 PIPE DIAMETERS DOWNSTREAM OF STRAIGHT PIPE FOR EACH FLOW METER.
 - CONTRACTOR SHALL ADJUST THE HEIGHT OF THE CENTRIFUGE FEED PUMP EQUIPMENT PAD AS NECESSARY TO FACILITATE PUMP INSTALLATION, MIN 6".
 - CONTRACTOR SHALL INSTALL REQUIRED LENGTH OF NEW PIPE TO CONNECT TO THE NEXT EXISTING FLANGE.

SECTION 1
1/4" = 1'-0" M10

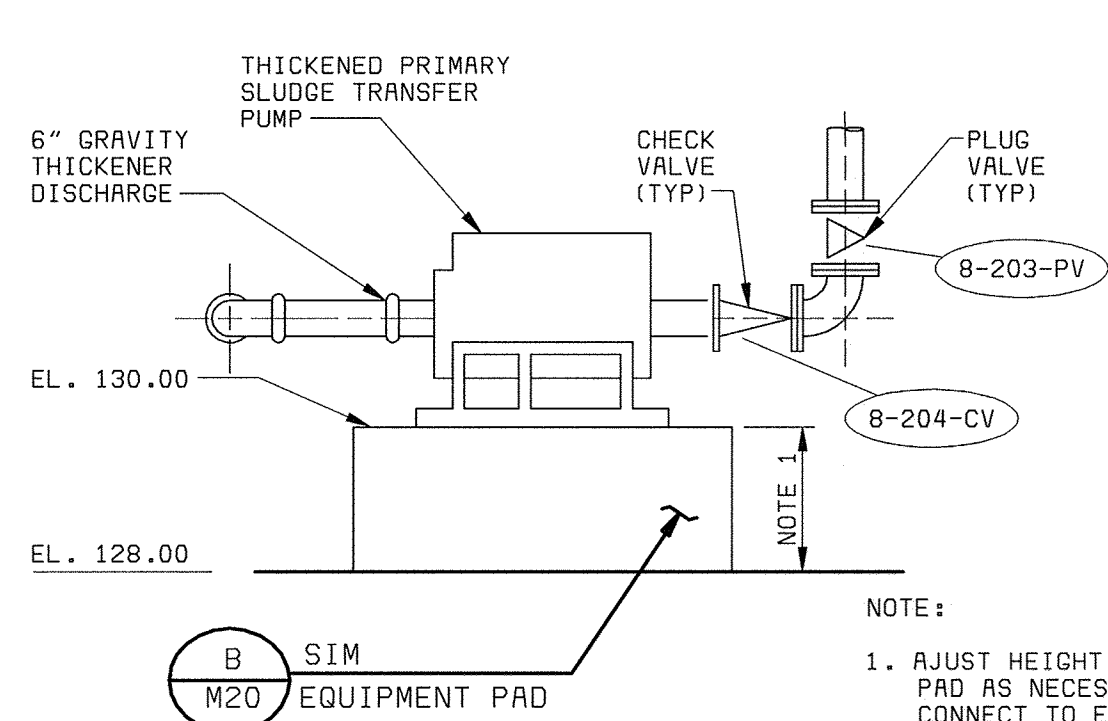
SECTION 2
1/4" = 1'-0" M10



SECTION 3
1/4" = 1'-0" M10

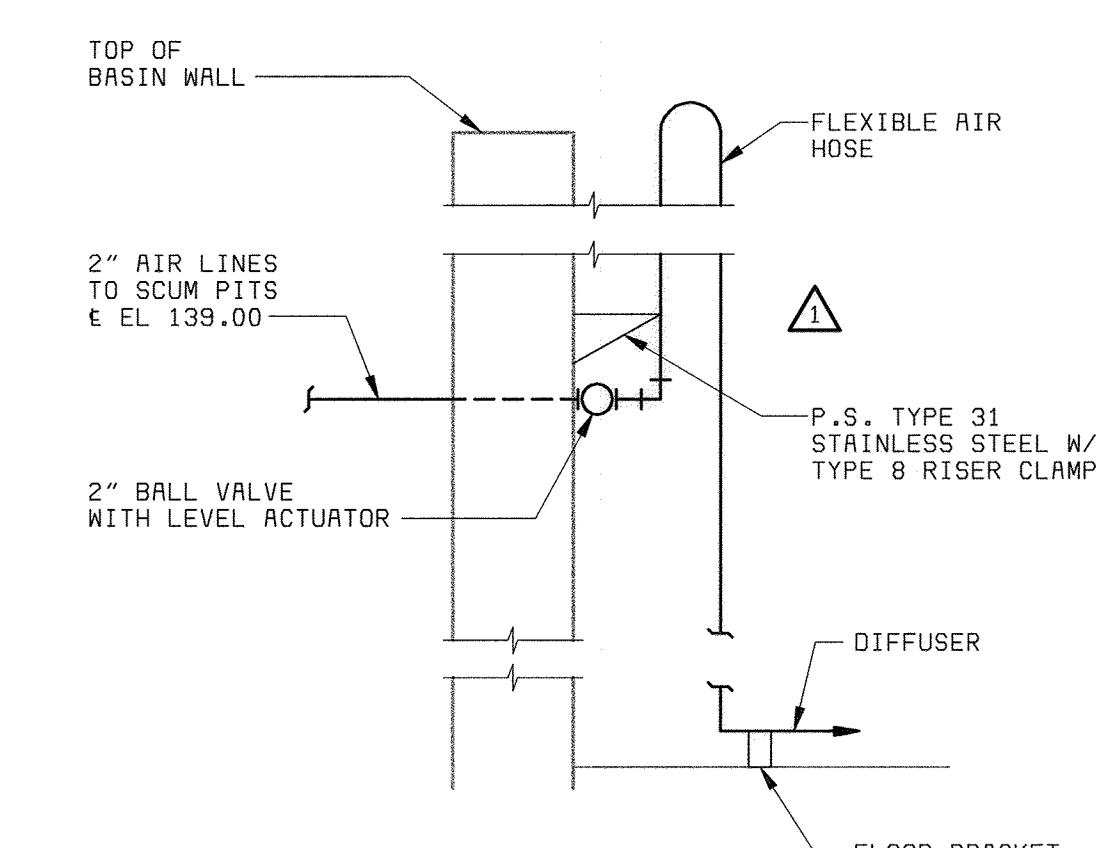


SECTION 4
3/8" = 1'-0" M10

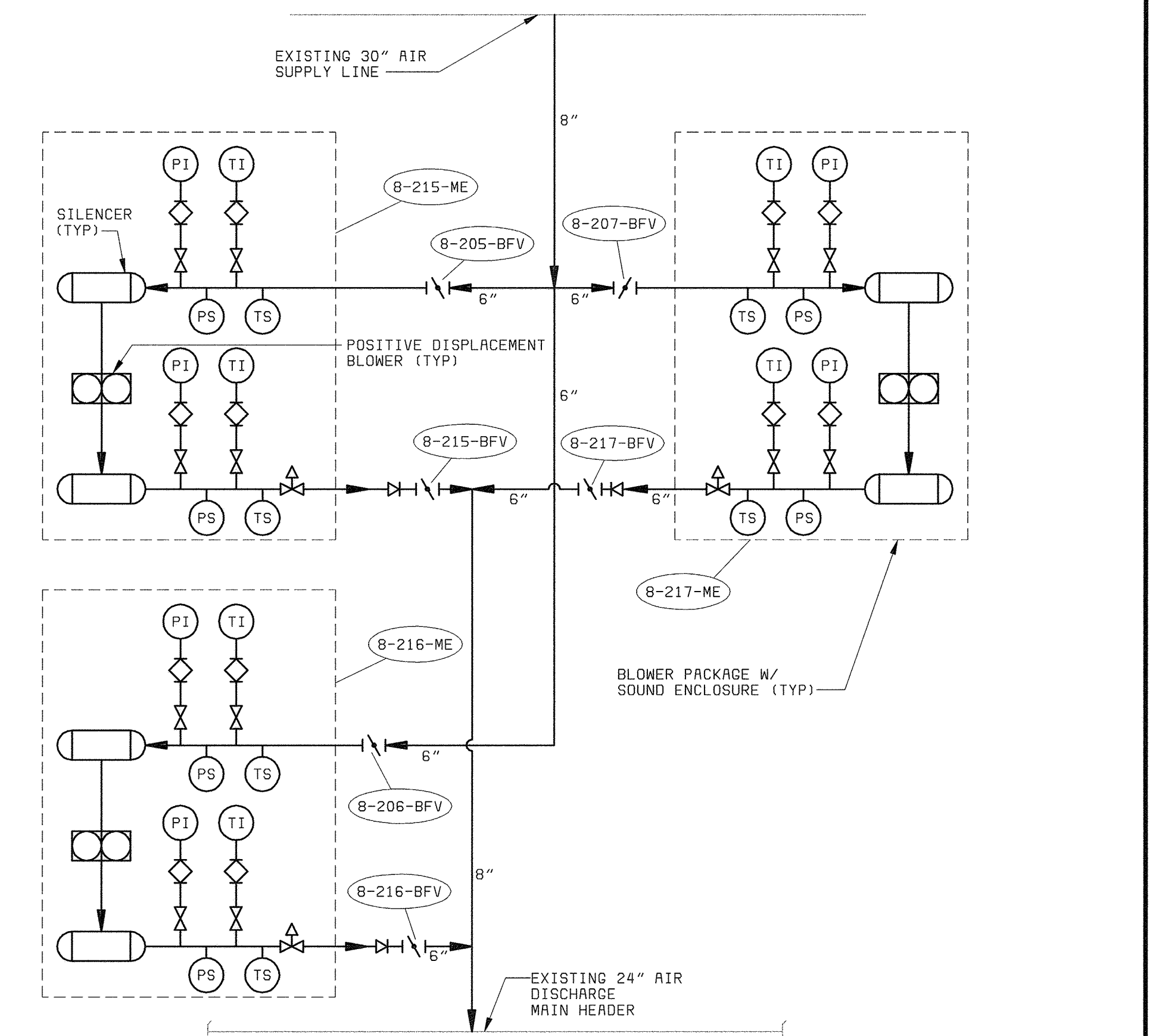


SECTION 5
3/8" = 1'-0" M10

- NOTE:
- ADJUST HEIGHT OF EQUIPMENT PAD AS NECESSARY TO CONNECT TO EXISTING PIPING, MIN 2'-0".



SECTION 6
3/8" = 1'-0" M10



POSITIVE DISPLACEMENT BLOWER SCHEMATIC
NO SCALE

NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
D MITT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

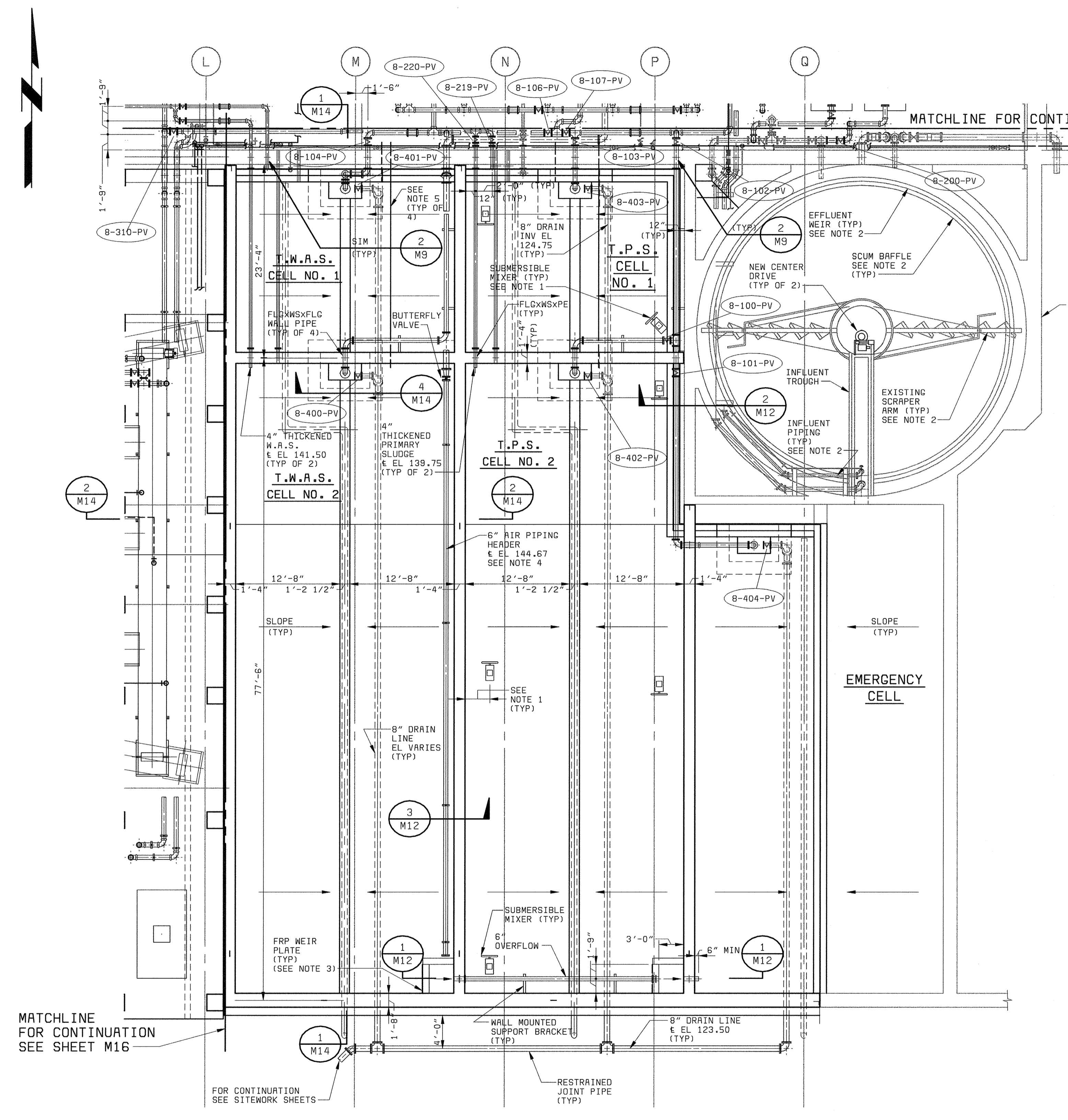
DES: TJW					
DRN: RAB, RB					
CHK: WLK					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

MECHANICAL
SLUDGE STORAGE AND
PRIMARY SLUDGE THICKENER AREA
EQUIPMENT AND PIPE GALLERY
SECTIONS, DETAILS AND SCHEMATIC

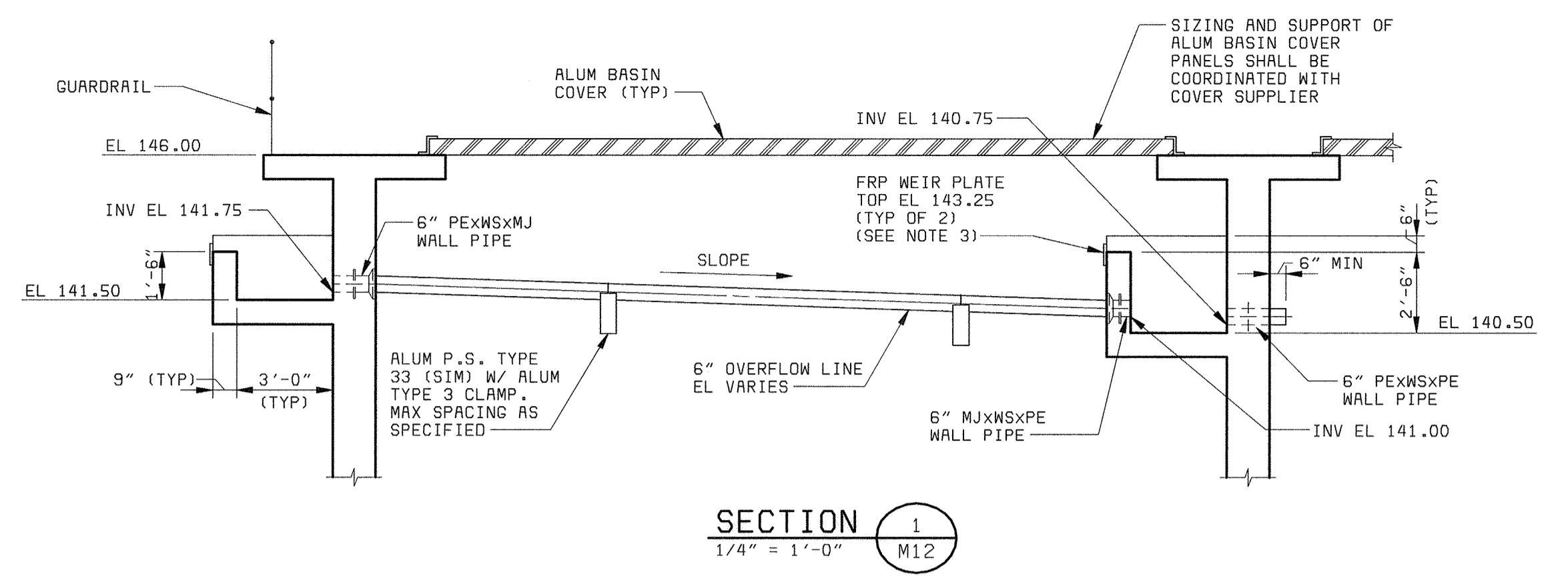
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
55 OF 150
M11

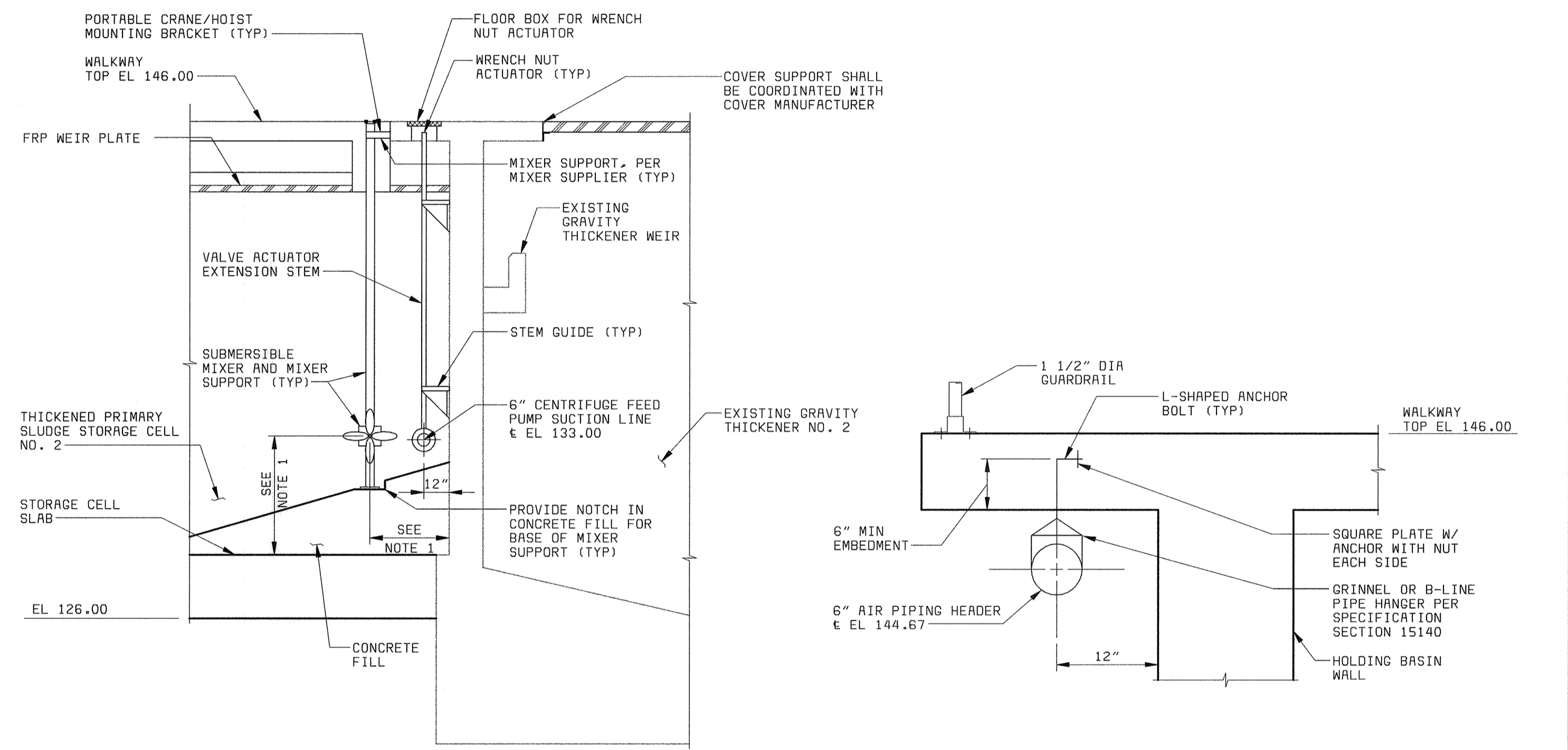
59472-401-SHT-C-0000045



SECTIONAL PLAN
1/8" = 1'-0"



SECTION 1
1/4" = 1'-0" M12

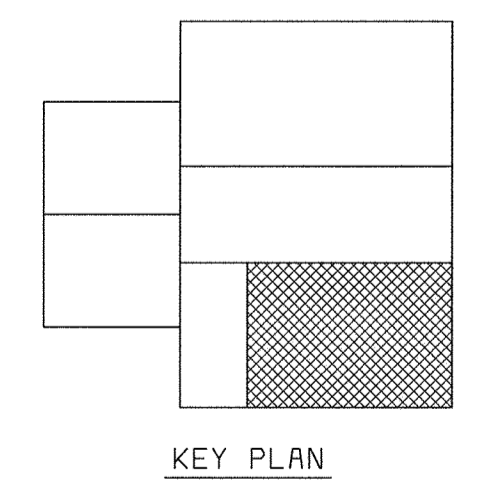


SECTION 2
1/4" = 1'-0" M12

SECTION 3
1" = 1'-0" M12

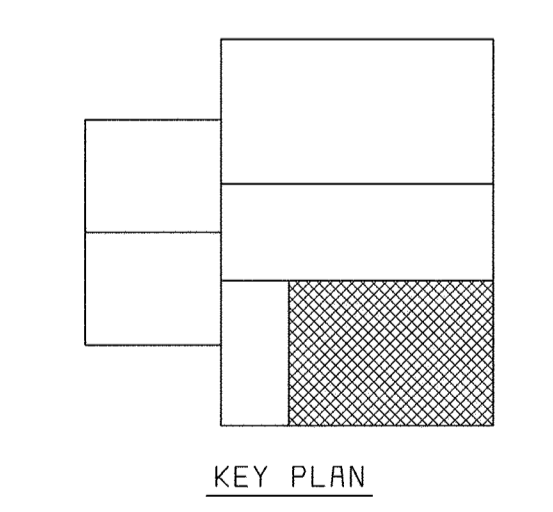
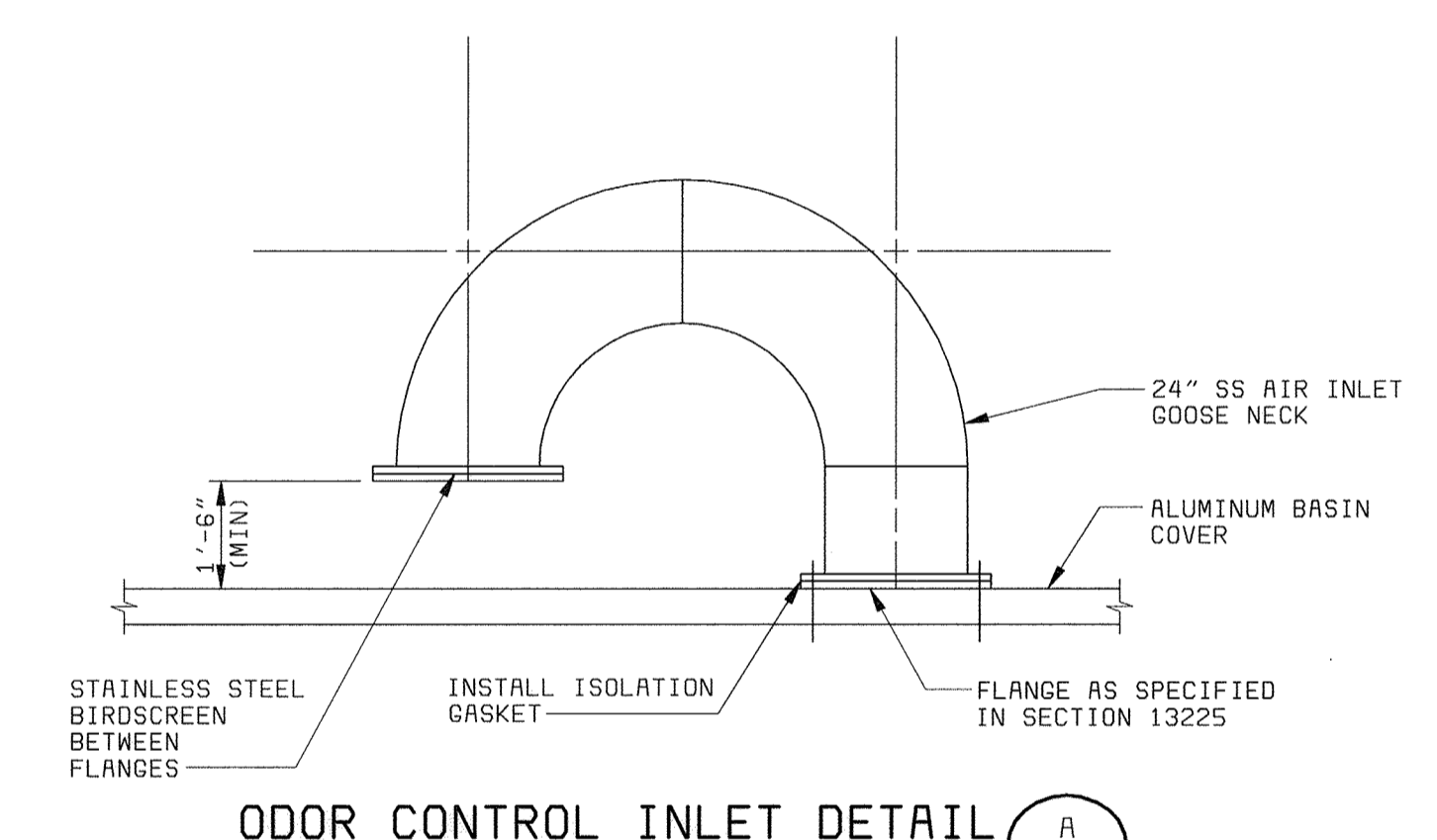
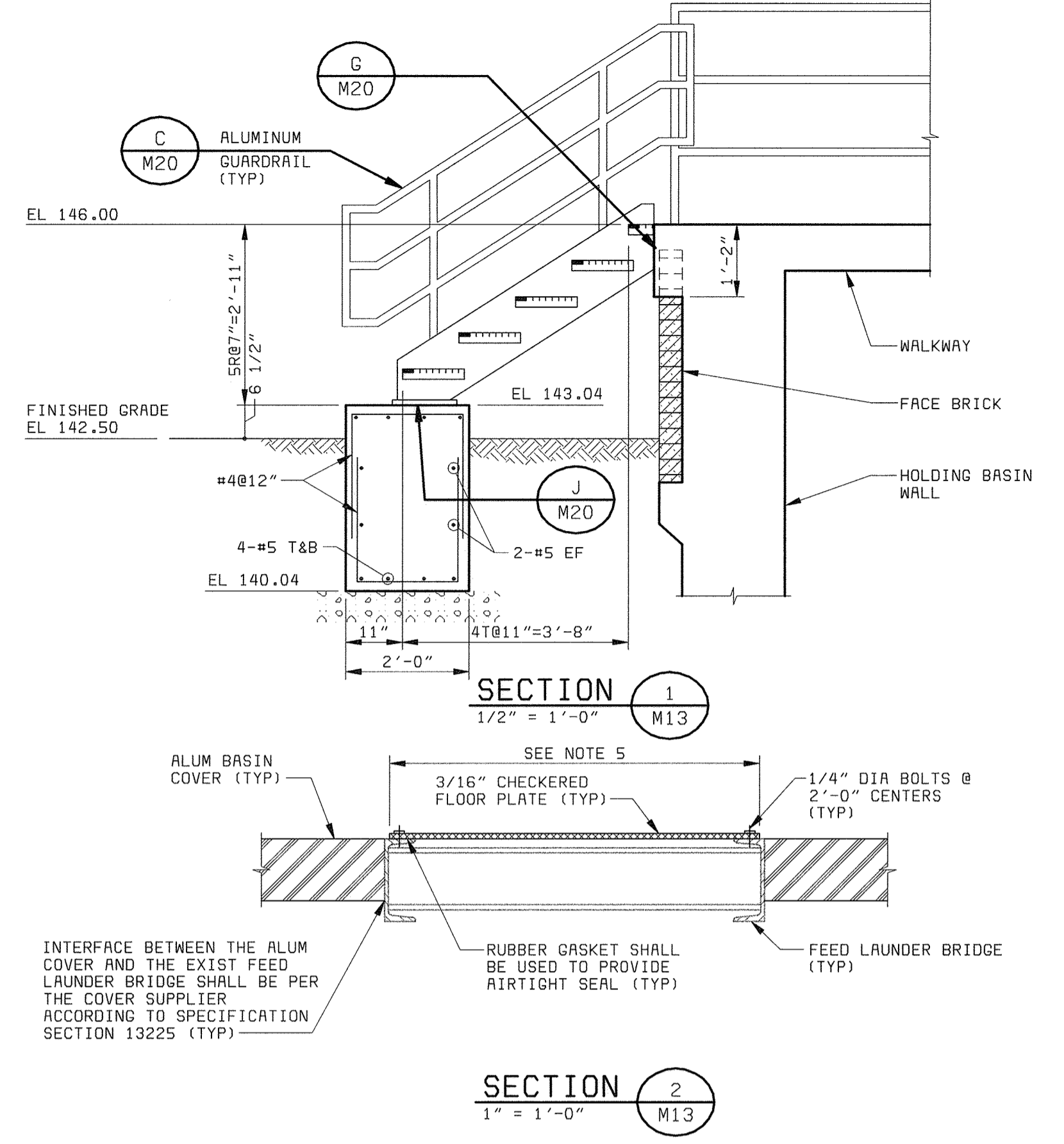
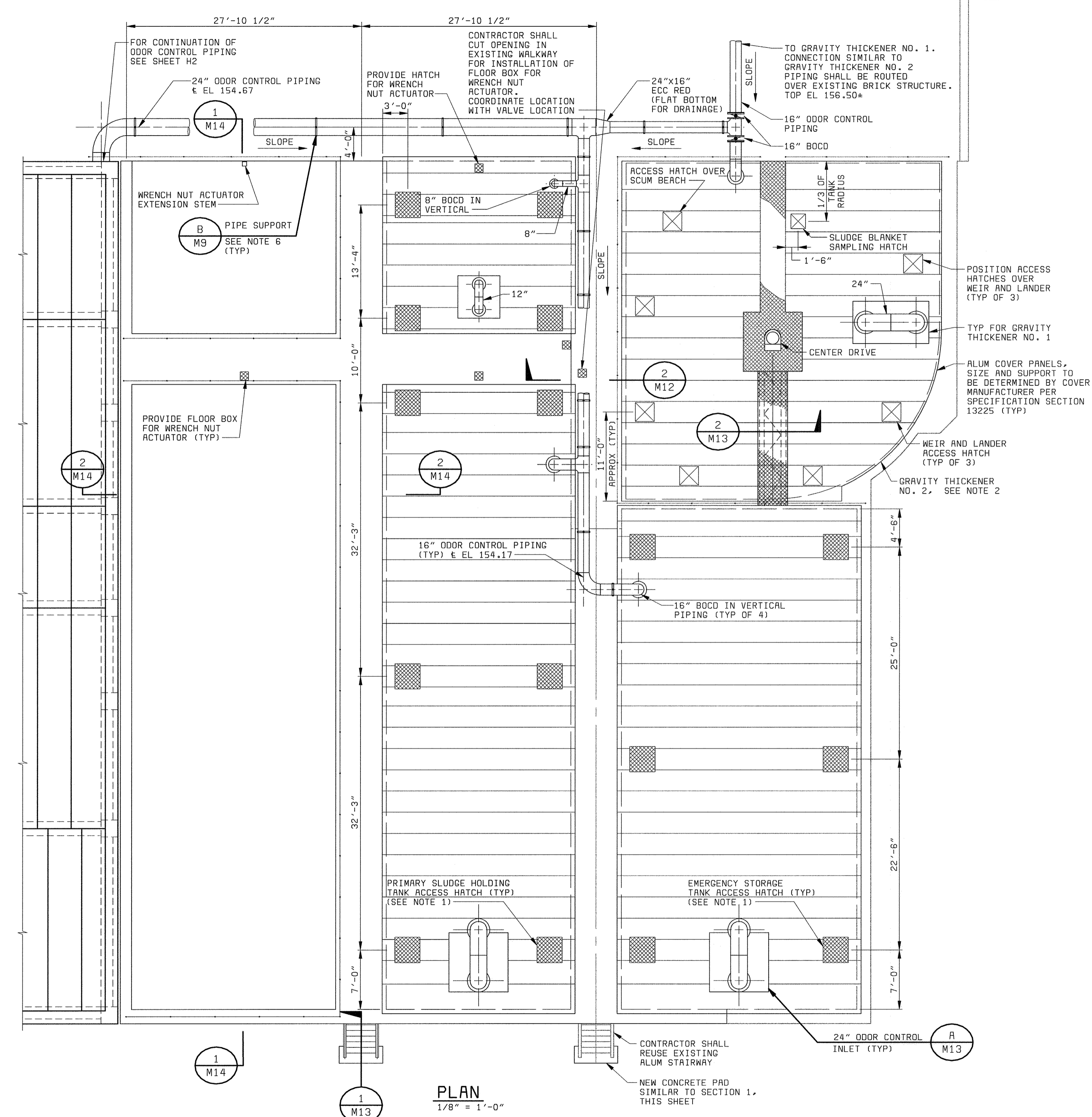
- NOTES:
1. THE LOCATION, ANGLE, AND SUPPORT OF THE SUBMERSIBLE MIXERS SHALL BE PER THE MIXER MANUFACTURER.
 2. THE CONTRACTOR SHALL CLEAN AND PAINT ALL OF THE GRAVITY THICKENER EXISTING EQUIPMENT, INCLUDING, BUT NOT LIMITED TO, THE SCRAPER ARMS, SCUM SKIMMER BLADES, CENTER CRAB, ROTARY CENTER INFLUENT WELL, CENTER COLUMN, SCUM BAFFLE, EFFLUENT WEIR, SCUM TROUGH, INFLUENT PIPING, GRAVITY THICKENER WALLS, AND ALL EQUIPMENT AND PIPE SUPPORTS PER SPEC SECTION 09900. TYPICAL FOR BOTH EXISTING GRAVITY THICKENERS.
 3. FOR CONNECTION OF WEIR PLATE, SEE SIMILAR ENLARGED SECTION 3, SHEET M14.
 4. DIFFUSER EQUIPMENT MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THE COARSE BUBBLE DIFFUSERS AS SPECIFIED IN SPECIFICATION SECTION 11510. CONTRACTOR SHALL COORDINATE LOCATION AND SIZE OF AIR PIPING TAPS FROM THE MAIN AIR HEADER WITH THE DIFFUSER EQUIPMENT MANUFACTURER.
 5. PROVIDE 3" LEVEL SENSOR PIPING FOR EACH STORAGE CELL. SEE SHEET 16 FOR DETAIL OF PRESSURE SENSING LEVEL TRANSMITTER INSTALLATION.

NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "UNSCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.



58472-401-323-C008; R00089703.DWG
XREF: 58472-203-S01-S-R0000116
58472-401-323-PIPE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW							MECHANICAL SLUDGE STORAGE AND PRIMARY SLUDGE THICKENER AREA SOUTH SLUDGE HOLDING TANK AND GRAVITY THICKENER NO. 2 SECTIONAL PLAN AND SECTIONS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RH/RJR/RJR	NO.			BY



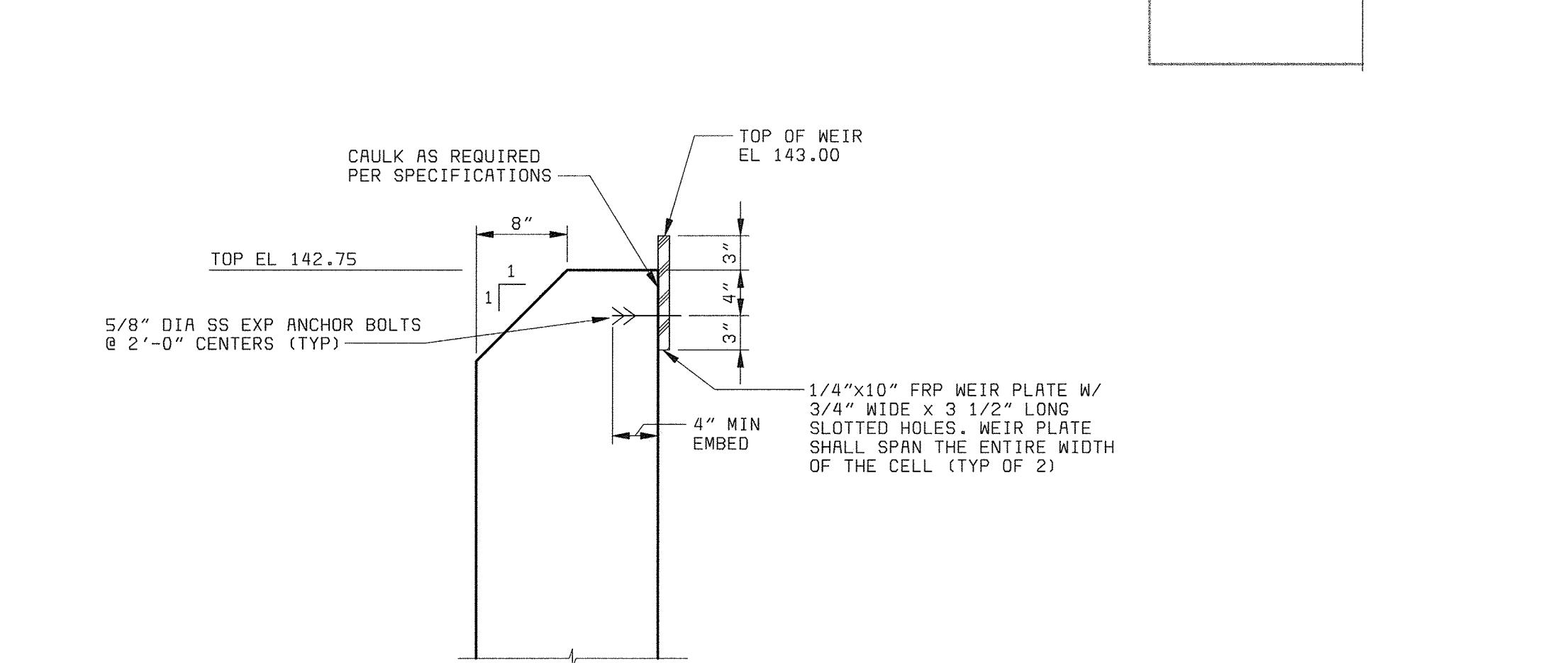
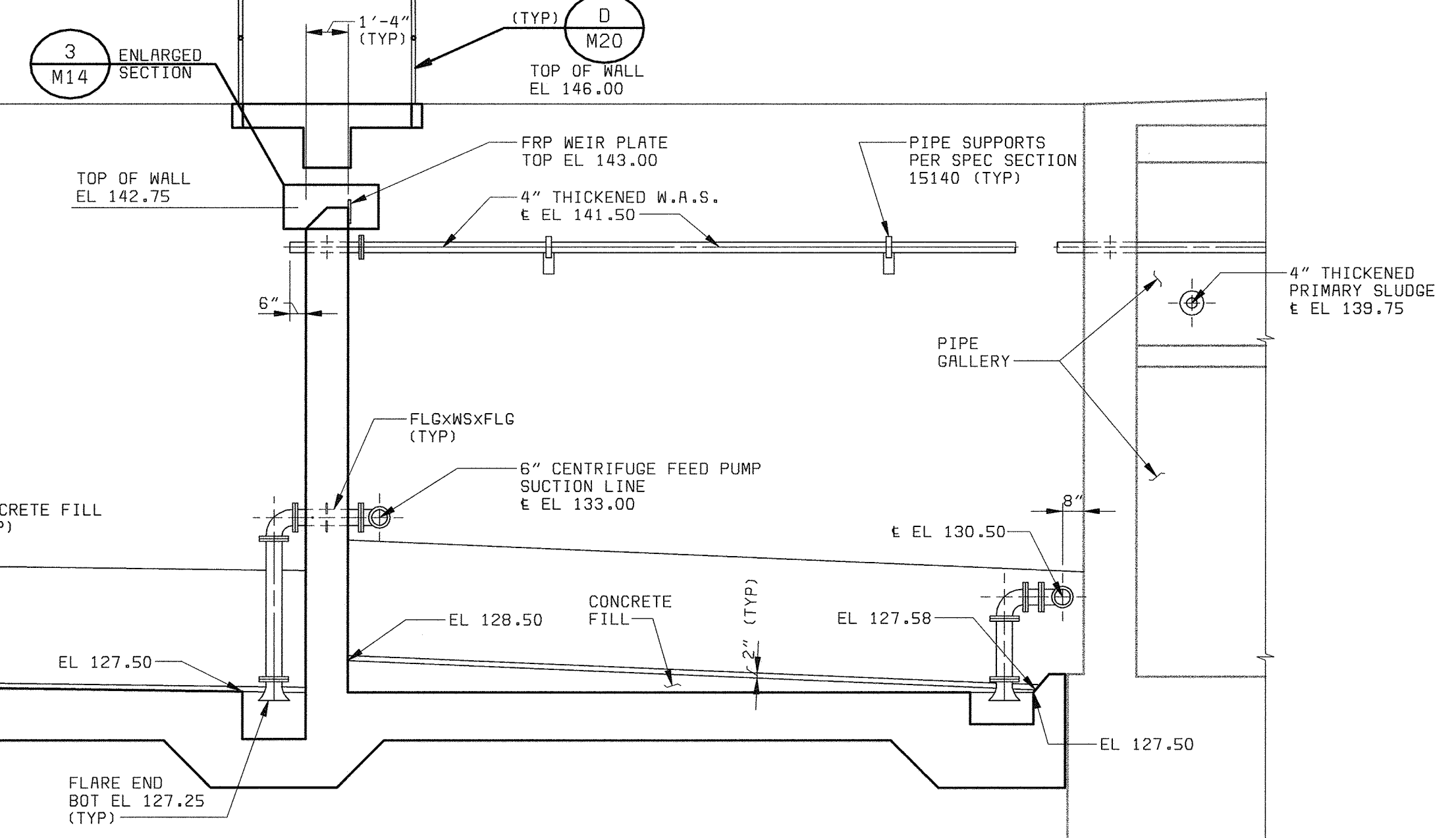
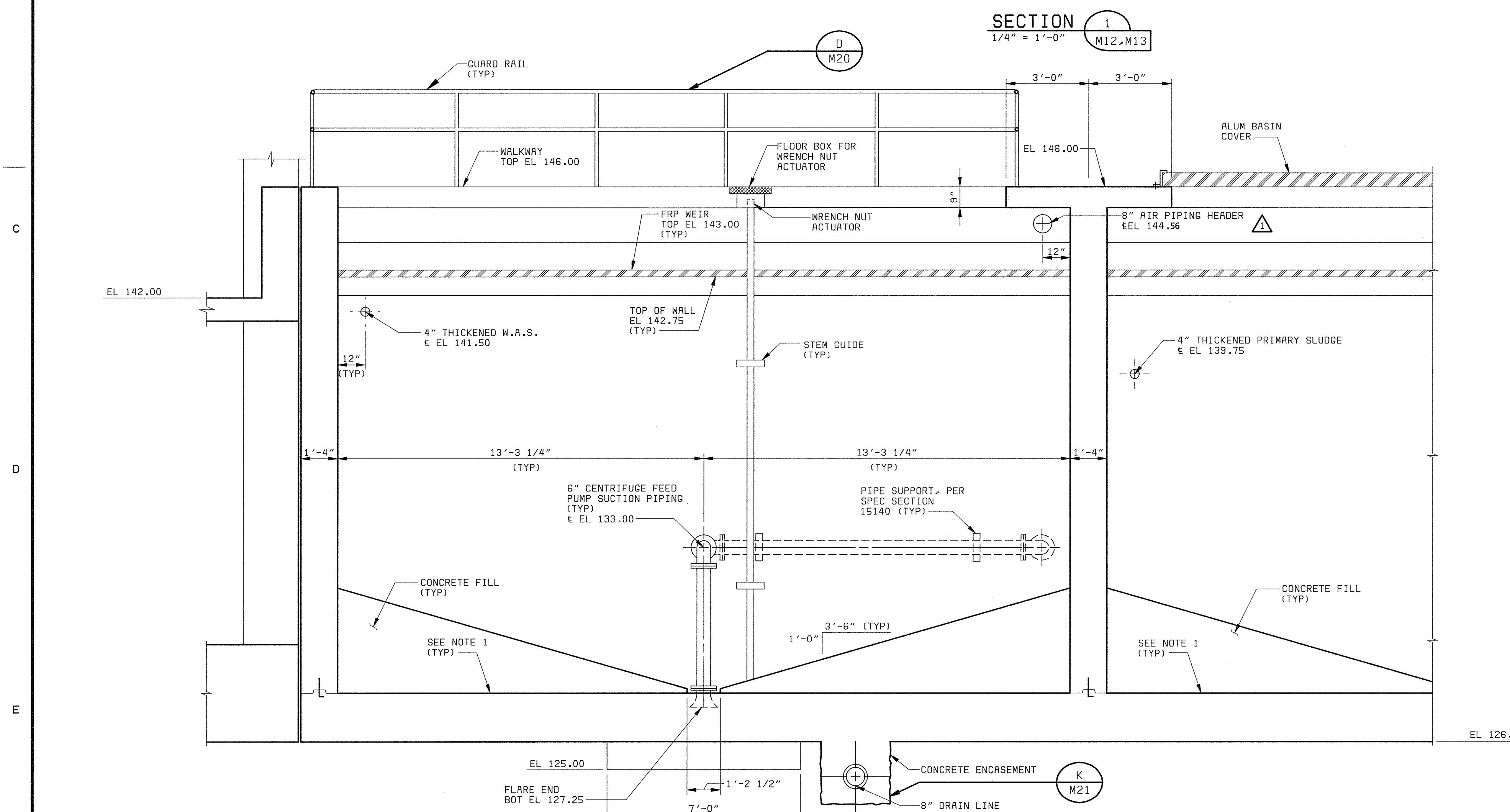
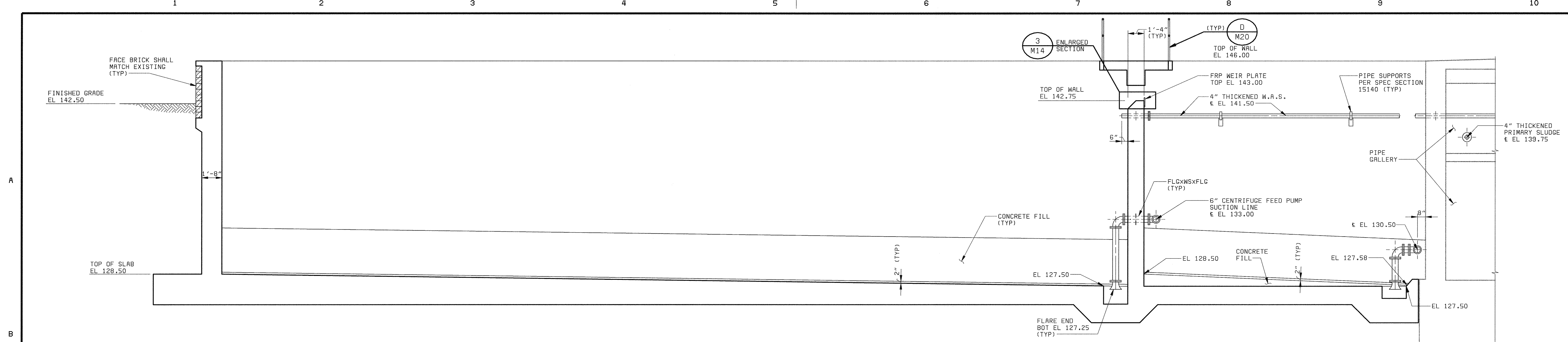
- NOTES:**
- LOCATIONS OF ACCESS HATCHES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE LOCATION OF ACCESS HATCHES WITH COVER MANUFACTURER.
 - COVER FOR GRAVITY THICKENER NO.1 SHALL BE SIMILAR TO COVER FOR GRAVITY THICKENER NO. 2.
 - INTERFACE OF THE GRAVITY THICKENER COVER TO THE WALKWAY SHALL BE COORDINATED WITH THE COVER SUPPLIER PER SPECIFICATION SECTION 13225.
 - GRAVITY THICKENER EQUIPMENT SUPPLIER SHALL FIELD VERIFY ALL DIMENSIONS REQUIRED FOR PROPER INSTALLATION OF THE DRIVE EQUIPMENT.
 - CONTRACTOR SHALL FIELD VERIFY WIDTH OF THE EXISTING FEED LAUNDER BRIDGE BEFORE CHECKERED PLATE COVERING IS FABRICATED.
 - MAXIMUM DUCT SUPPORT SPACING SHALL BE 8'-0". ALL TEES, BENDS, AND VALVES SHALL BE SUPPORTED ON ALL ENDS.
 - ODOR CONTROL PIPING SHALL SLOPE A MINIMUM OF 0.5% IN DIRECTION INDICATED ON DRAWINGS.

PLAN
1/8" = 1'-0"

NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D. WATTS BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW			MECHANICAL SLUDGE STORAGE AND PRIMARY SLUDGE THICKENER AREA SOUTH SLUDGE HOLDING TANK AND GRAVITY THICKENER NO. 2 - PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00			07/26/04
			DATE		REVISIONS AND RECORD OF ISSUE	NO. BY CK APP		M13

58472-401-PPSPS-C-R0000019 - R0000019.DWG
 XREF: 58472-203-SOLS-S-R0000202
 058472_2
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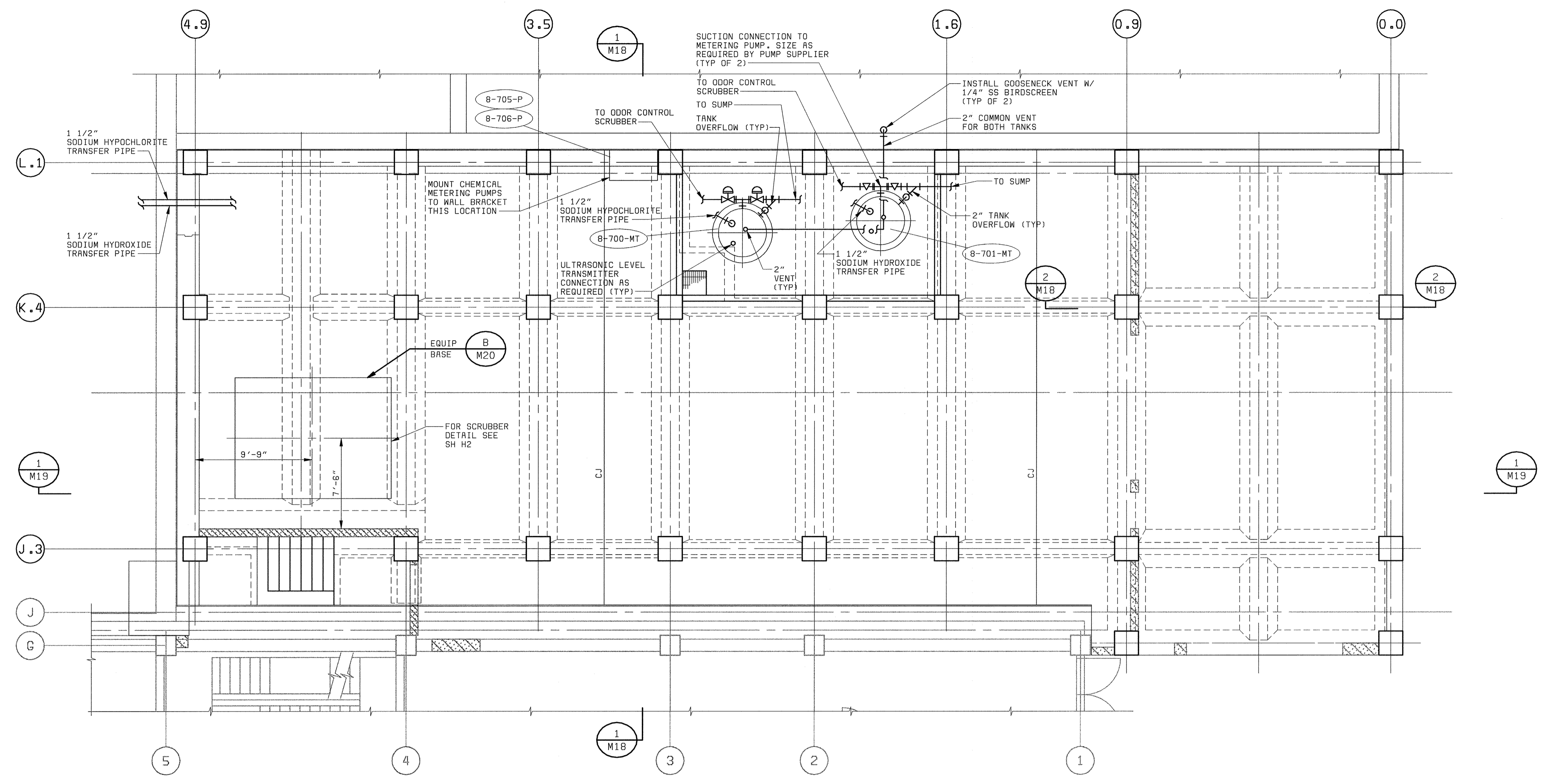


NOTE:
 1. TOP OF SLAB ELEVATION VARIES FROM EL 128.50 AT SOUTH END OF THE STORAGE CELL TO EL 127.50 AT NORTH END OF THE STORAGE CELL (TYP OF 4 CELLS).

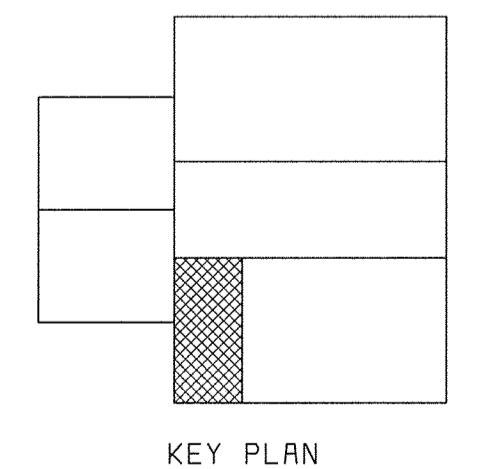
NOTE:
 "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

59472-401-SHT-C-0000042

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D. MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW							MECHANICAL SLUDGE STORAGE AND PRIMARY SLUDGE THICKENER AREA	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY	SCALE AS SHOWN
			DRN: RAB, RB									
			CHK: WLK							SLUDGE HOLDING TANK SECTIONS AND DETAILS	CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	M14
			DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			




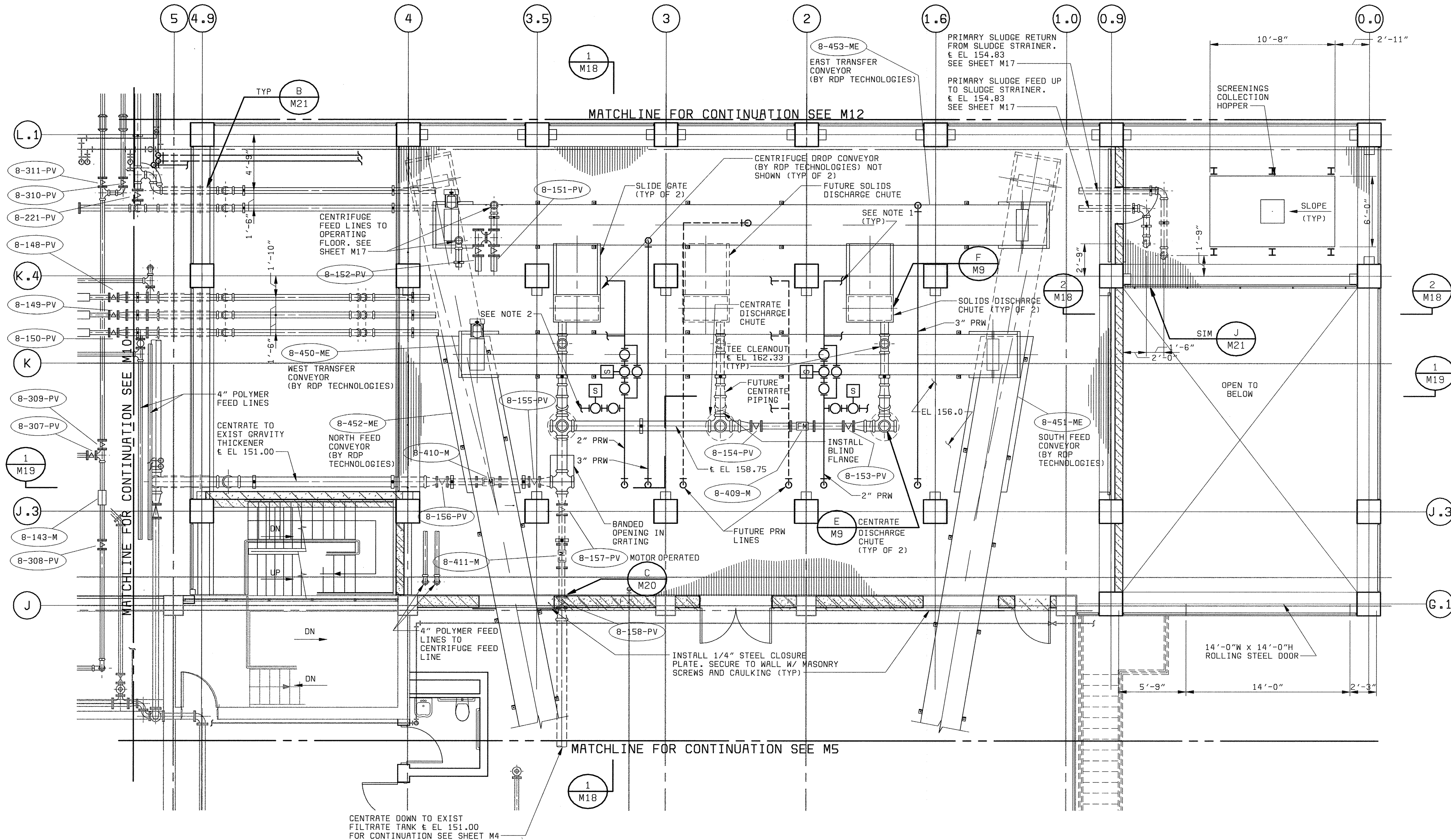
PLAN AT EL 142.00
3/16" = 1'-0"



KEY PLAN

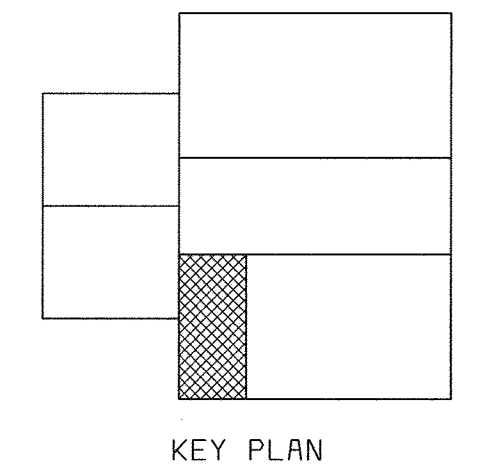
58472-203-SDLS-S-00000118
DS8472.2
PDS8472R

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Galthersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: ACR				MECHANICAL CENTRIFUGE BUILDING EXPANSION CENTRIFUGE BUILDING EXPANSION PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB						SHEET 59 OF 150 M15
			CHK: WLK	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR			
			DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP			



PLAN EL 156.00
3/16" = 1'-0"

- NOTES:
- CONTRACTOR TO CONNECT TO FOAM CONTROL SPRAY NOZZLES ON SOLIDS AND CENTRATE DISCHARGE CHUTE. LOCATION OF SPRAY NOZZLES SHALL BE VERIFIED WITH CENTRIFUGE SUPPLIER.
 - ROUTE PRW PIPE AROUND ODOR CONTROL DUCT AS NECESSARY.



NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

58472-401-323-C003: R00099112.DWG
 58472-212-SOLS-A-R000841
 58472-401-323-PIPE
 58472-203-SOLS-S-R0000120
 058472.2
 FD58472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
D MITT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

DES: TJW.ACR					
DRN: RAB					
CHK: WLK					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

MECHANICAL
CENTRIFUGE BUILDING EXPANSION

CENTRIFUGE BUILDING EXPANSION
PLAN AT EL 156.00

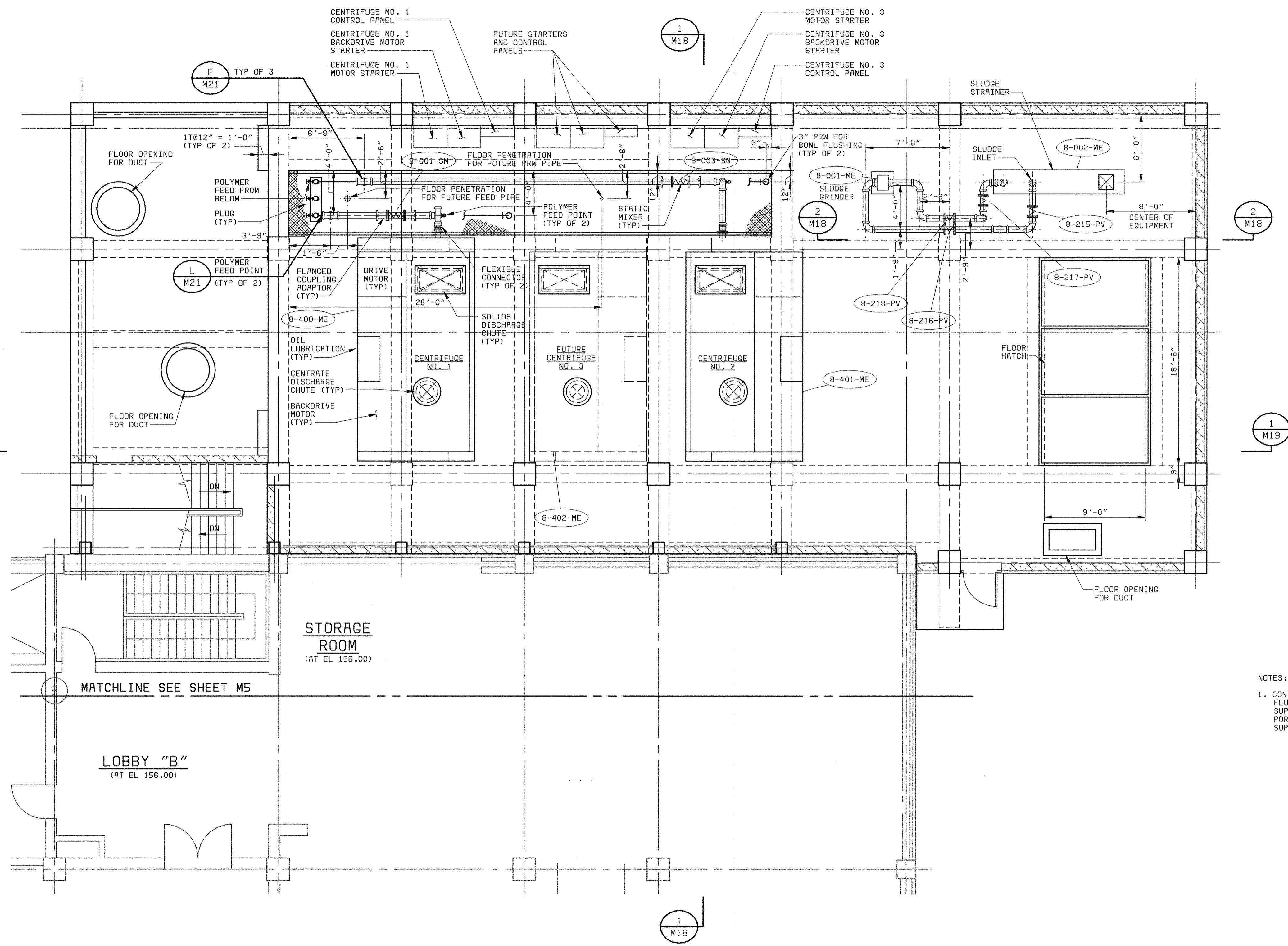
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

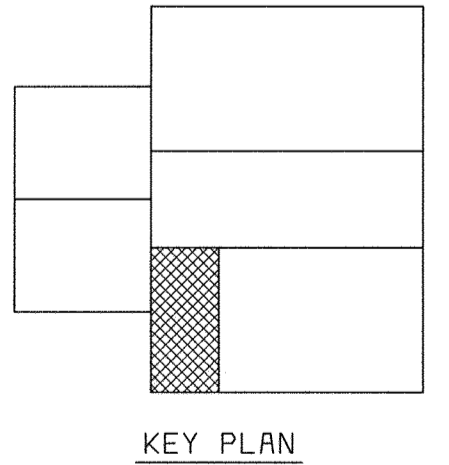
SHEET
60 OF 150

M16



PLAN - EL 167.00
3/16" = 1'-0"

- NOTES:
- CONTRACTOR TO CONNECT 3" PRW PIPE TO BOWL FLUSHING WATER PORT SUPPLIED BY CENTRIFUGE SUPPLIER. LOCATION OF BOWL FLUSHING WATER PORT TO BE COORDINATED WITH THE CENTRIFUGE SUPPLIER.

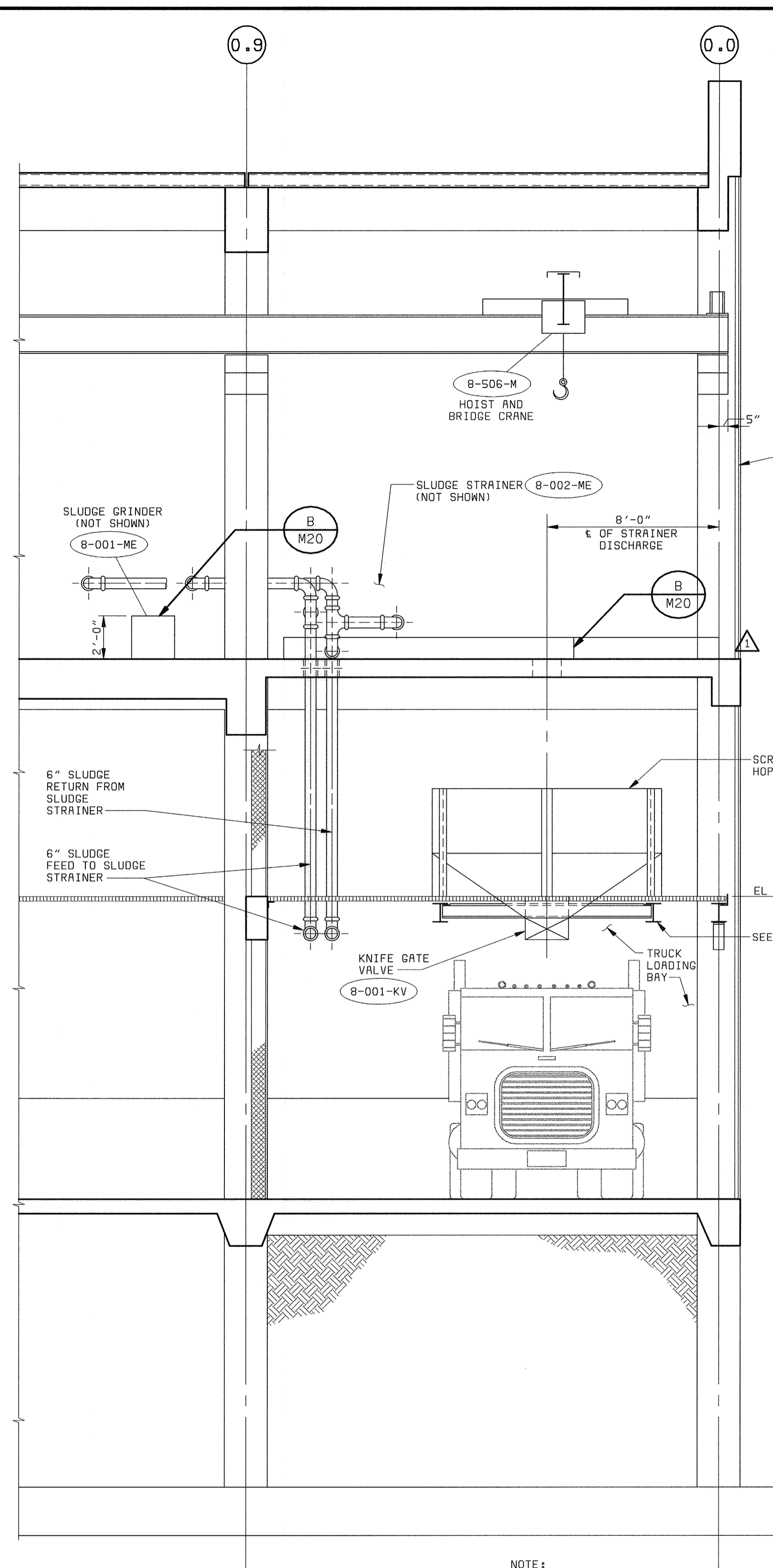
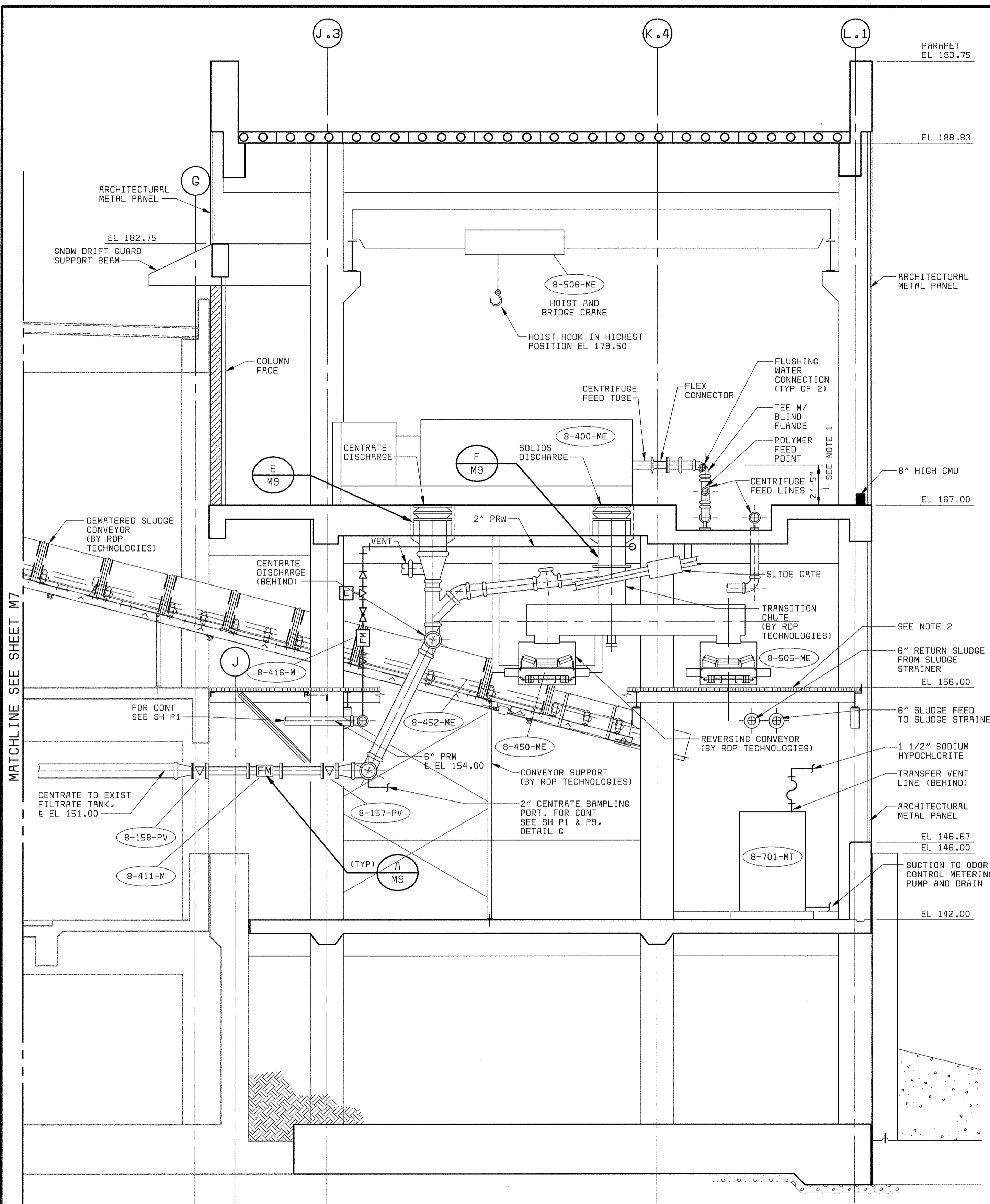


NOTE:
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58472-401-323-C010: R00098729
58472-203-S01S-S-R0000147
58472-203-S01S-S-R0000052
58472-204-S01S-H-R0000396

XREF:
058472 2
FD58472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: GEC/BCV							MECHANICAL CENTRIFUGE BUILDING EXPANSION CENTRIFUGE BUILDING EXPANSION PLAN AT EL 167.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	NO. BY CK APP			SHEET 61 OF 150



SECTION 1
1/4" = 1'-0" M16, M17, M18

SECTION 2
1/4" = 1'-0" M16, M17, M18

NOTES:
 1. VERTICAL INSTALLATION TOLERANCE OF CENTRIFUGE IS ± 0.25 INCH INSTALLED CENTRIFUGE FEED PIPING SHOULD ADJUST ACCORDINGLY.
 2. FOR STRUCTURAL MEMBERS FOR EQUIPMENT ACCESS WALKWAY REFERENCE SHEET S5.

NOTE:
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NOTE:
 EXTEND THE END OF THE EQUIPMENT BASE FOR THE SLUDGE STRAINER AT ELEVATION 167.00 OF COLUMN ROW 0.0.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. DATE

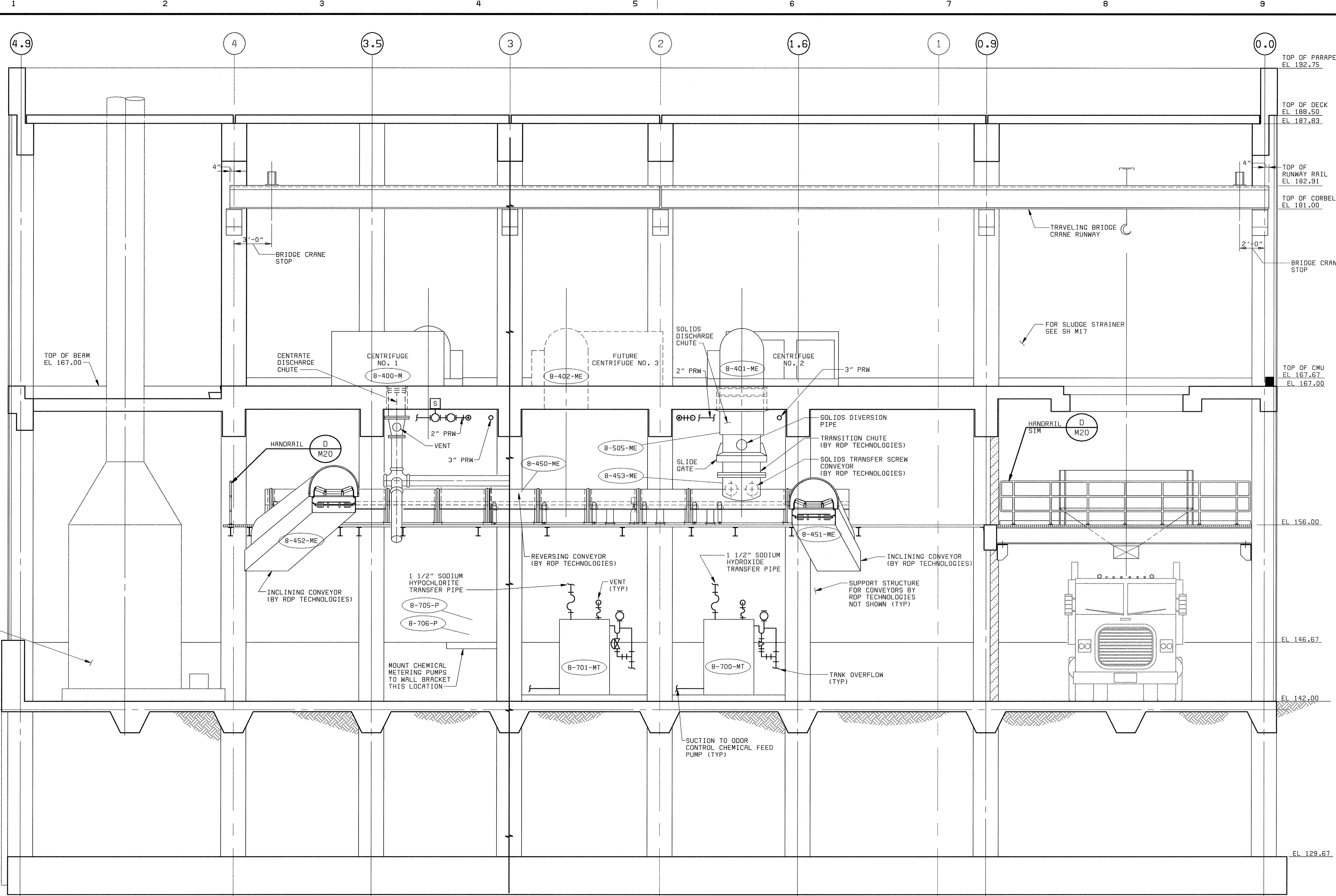
THIS DRAWING WAS
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 FOR CONSTRUCTION
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 D MITT BOND
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 24676

DES:	ACR				
DRN:	RAB				
CHK:	WLK				
DATE:	5-30-04	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
		REVISIONS AND RECORD OF ISSUE			NO. BY CK APP

MECHANICAL
 CENTRIFUGE BUILDING EXPANSION
 CENTRIFUGE BUILDING EXPANSION
 SECTIONS AND DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN
 SHEET
 62 OF 150
M18

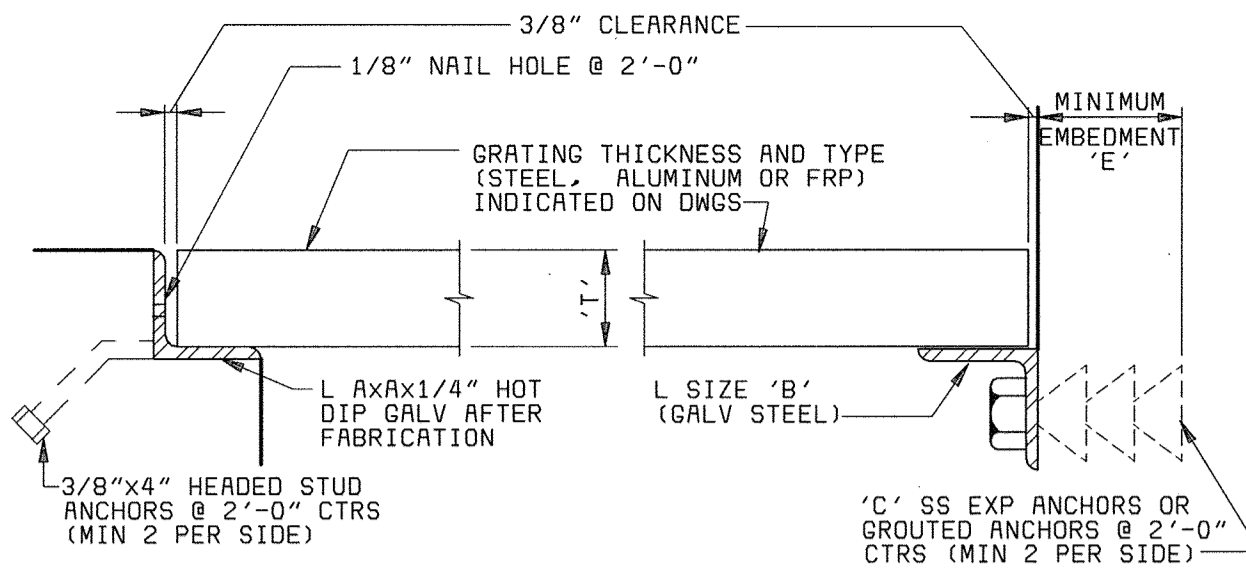


SECTION 1
 1/4" = 1'-0" M15, M16, M17, M18

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 "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.

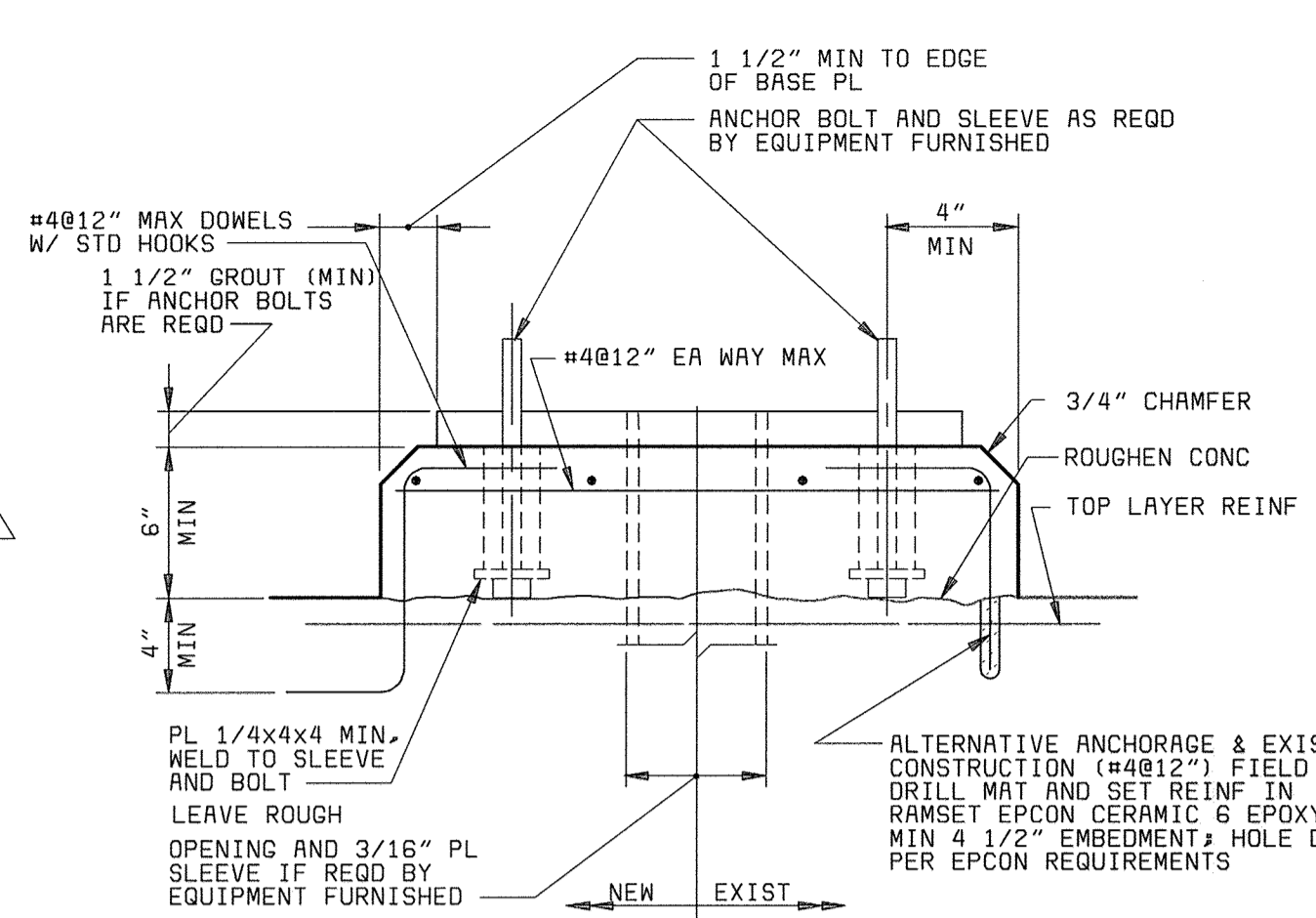
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: ACR							MECHANICAL CENTRIFUGE BUILDING EXPANSION CENTRIFUGE BUILDING EXPANSION SECTION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: TSH,RAB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	NO.			BY

58472-204-SOLS-S-R0000861

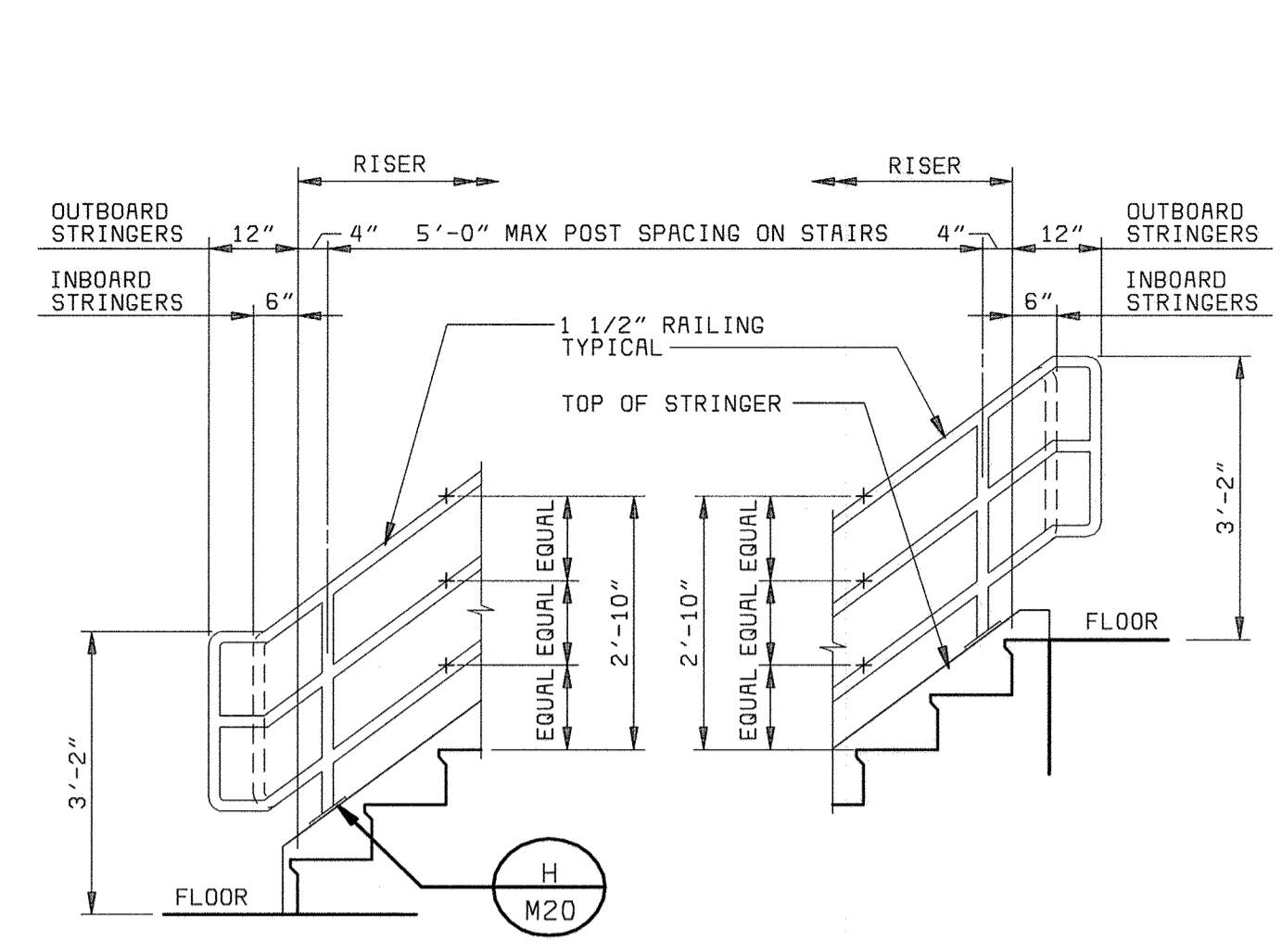


GRATING THICKNESS ('T')	L SIZE AxAx1/4		L SIZE 'B'		'C' EXP ANCHOR	
	DIA	MIN 'E'	DIA	MIN 'E'	DIA	MIN 'E'
1	1 1/4x1 1/4	2 1/2x2 1/2x1/4	1/2"	4 1/8"		
1 1/4	1 1/2x1 1/2	2 1/2x2 1/2x1/4	1/2"	4 1/8"		
1 1/2	1 3/4x1 3/4	2 1/2x2 1/2x1/4	1/2"	4 1/8"		
1 3/4	2x2	3x3x3/8	3/4"	6 3/8"		
2	2 1/2x2 1/2*	3x3x3/8	3/4"	6 3/8"		
2 1/4	2 1/2x2 1/2	3x3x3/8	3/4"	6 3/8"		
2 1/2	3x3*	3x3x3/8	3/4"	6 3/8"		

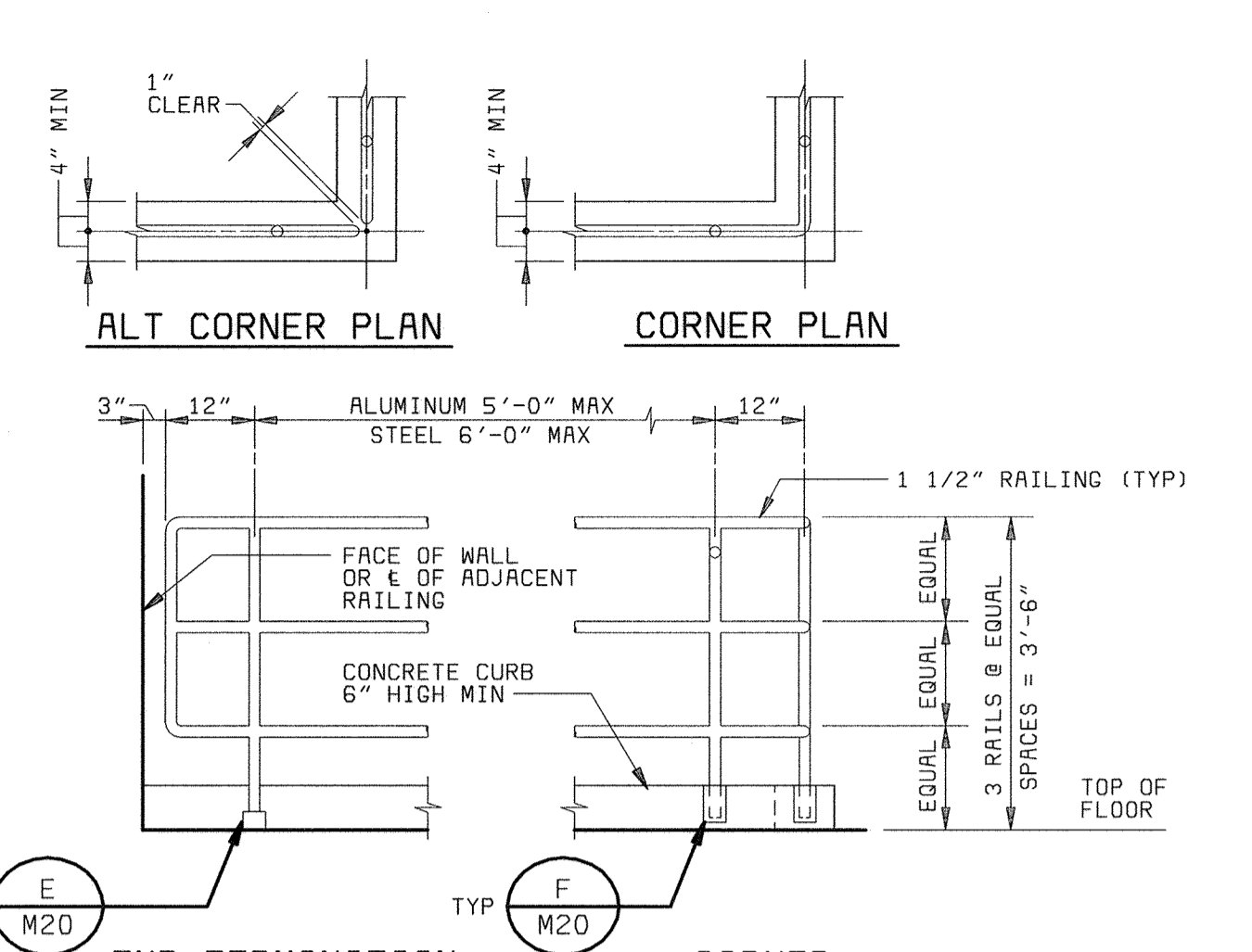
GRATING SUPPORT (A)
3" = 1'-0"



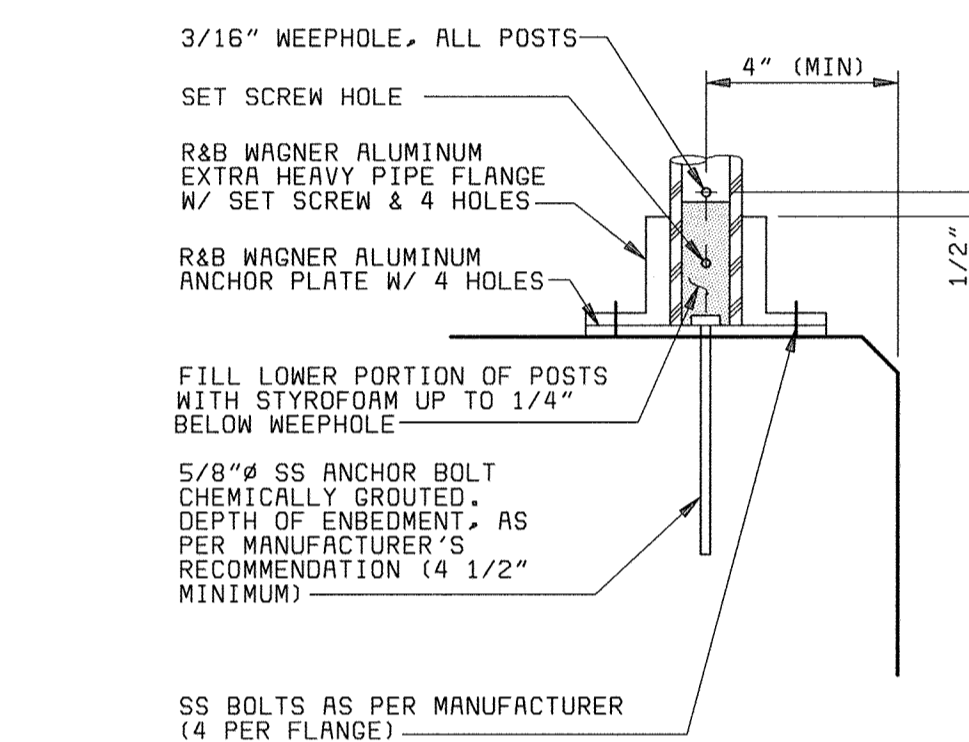
EQUIPMENT BASE (B)
NO SCALE



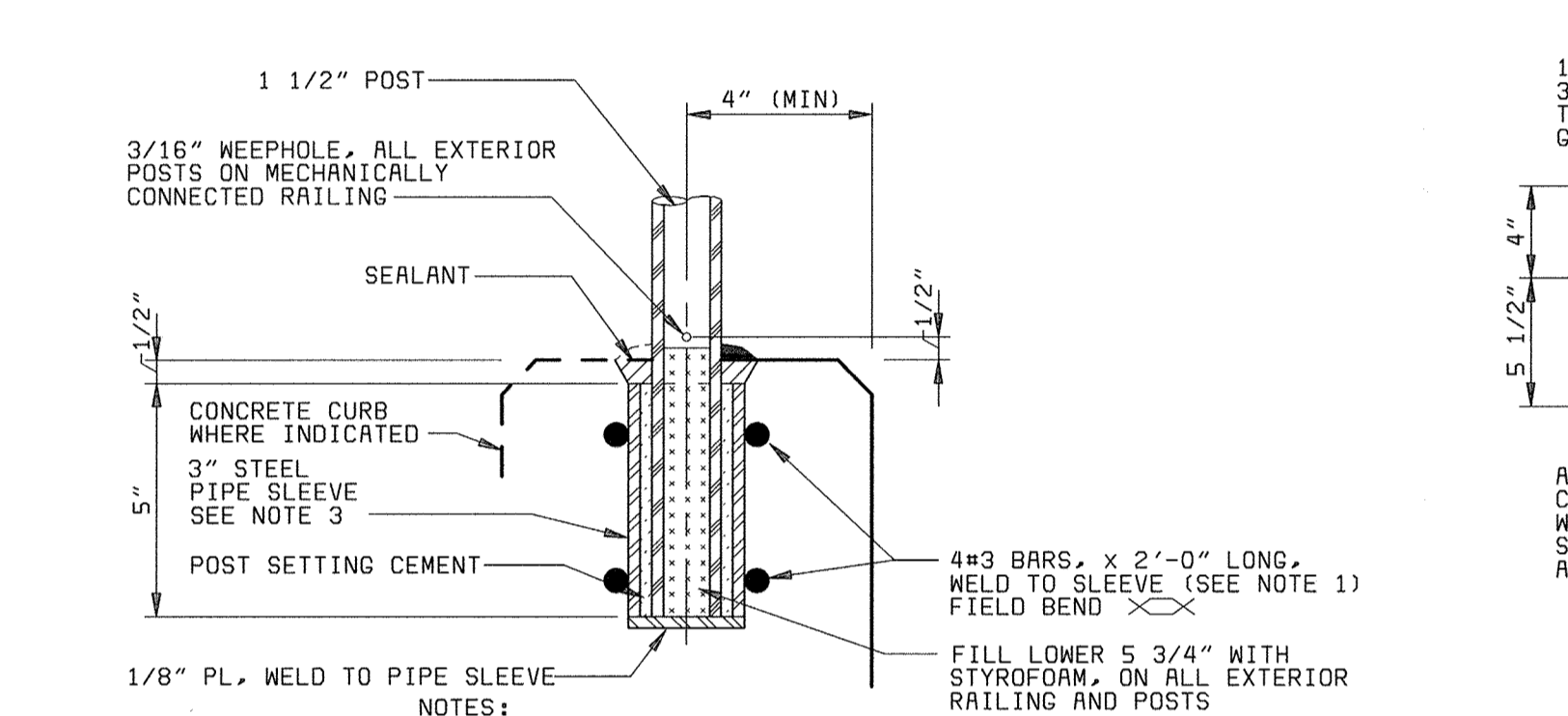
TYPICAL STAIR GUARDRAIL ELEVATION (C)
1/2" = 1'-0"



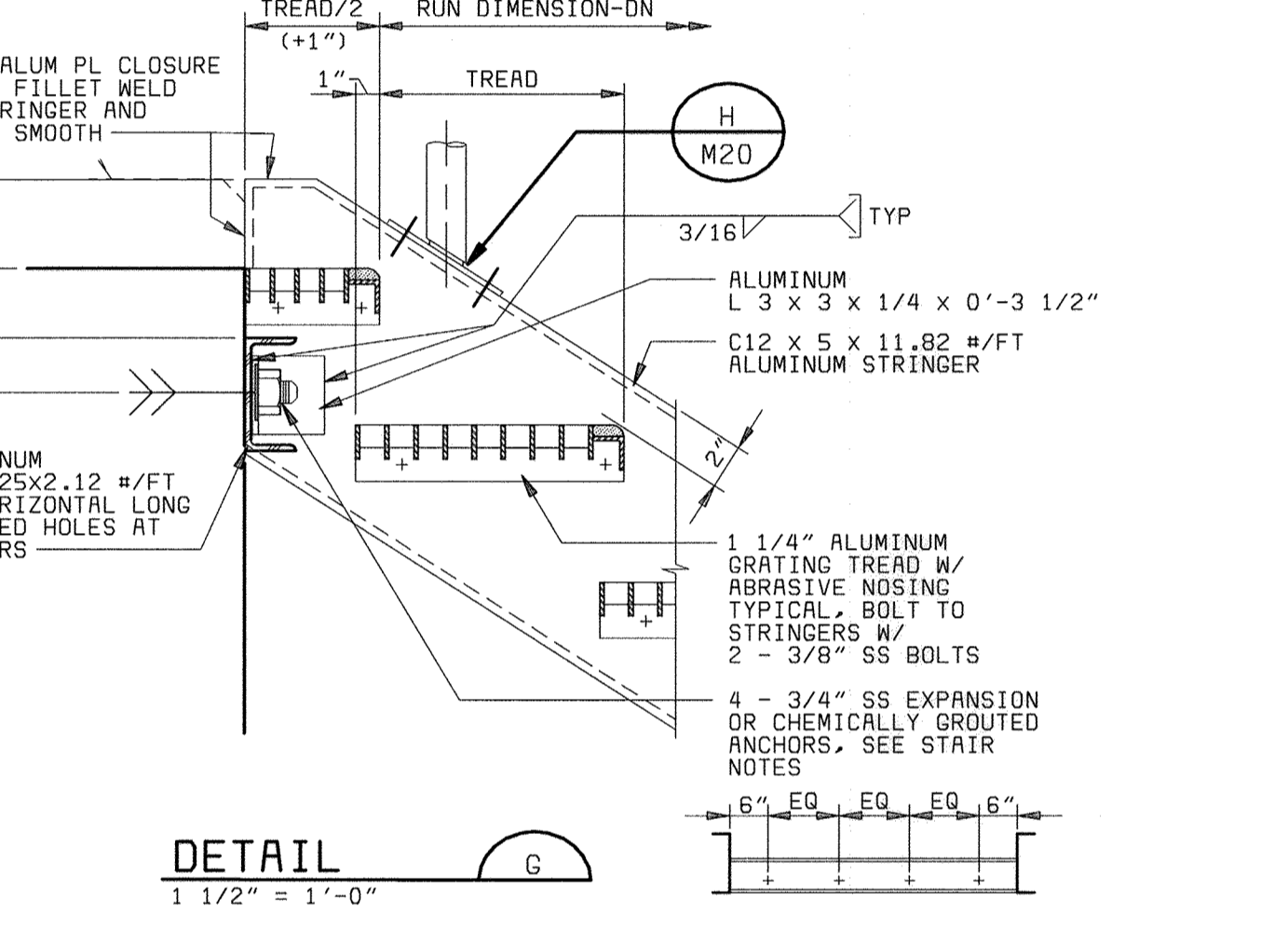
TYPICAL FIXED GUARDRAIL ELEVATION (D)
1/2" = 1'-0"



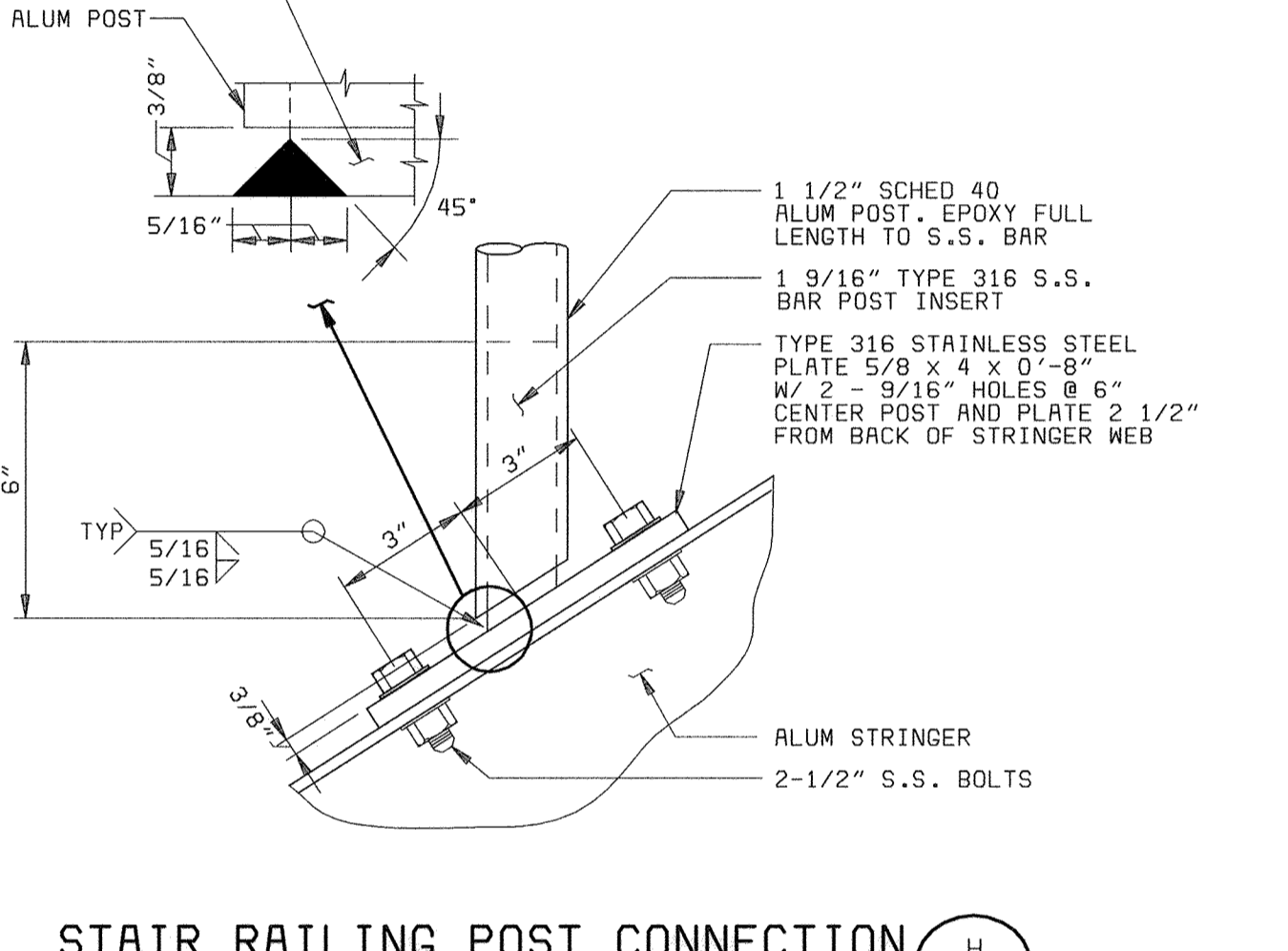
RAILING POST SETTING (E)
3" = 1'-0"



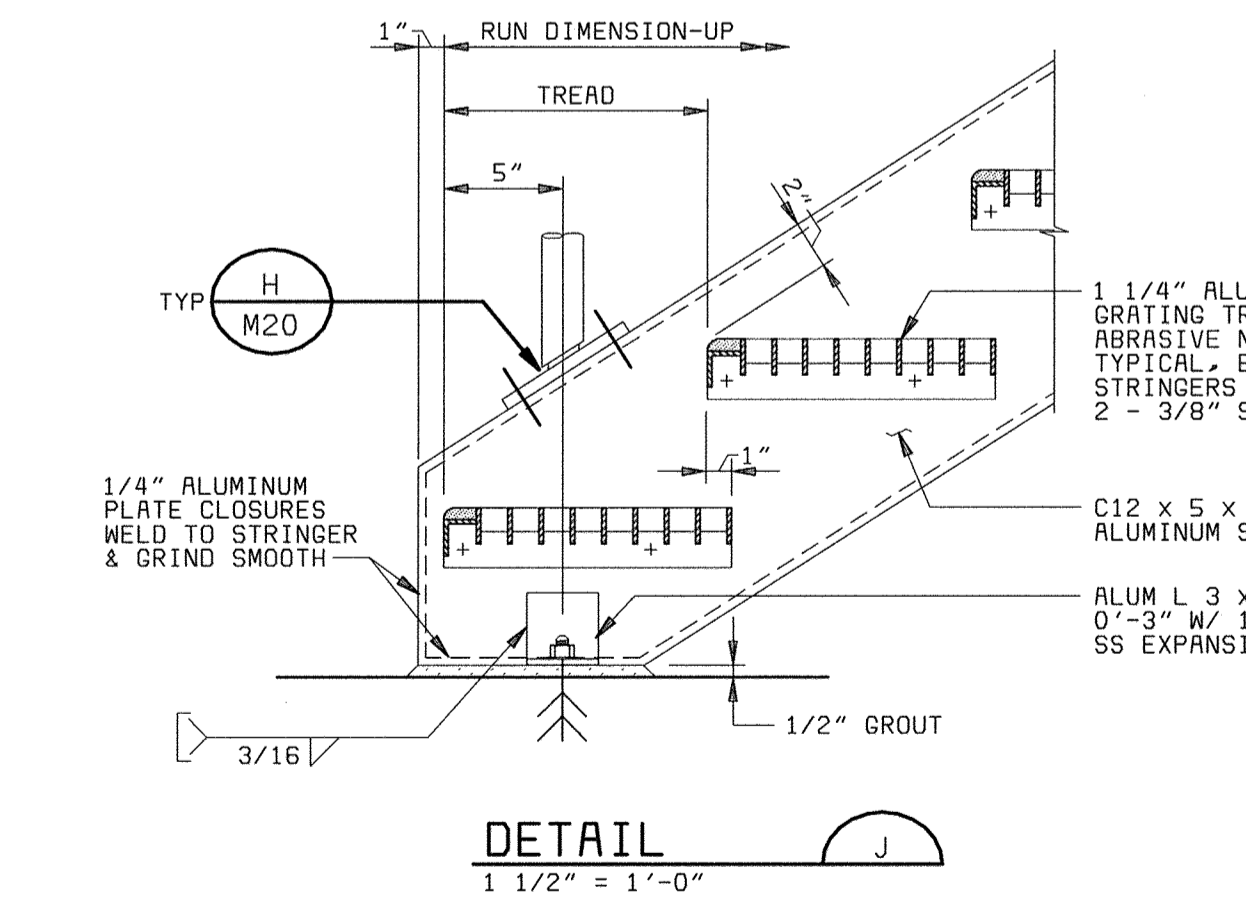
RAILING AND POST SETTING (F)
3" = 1'-0"



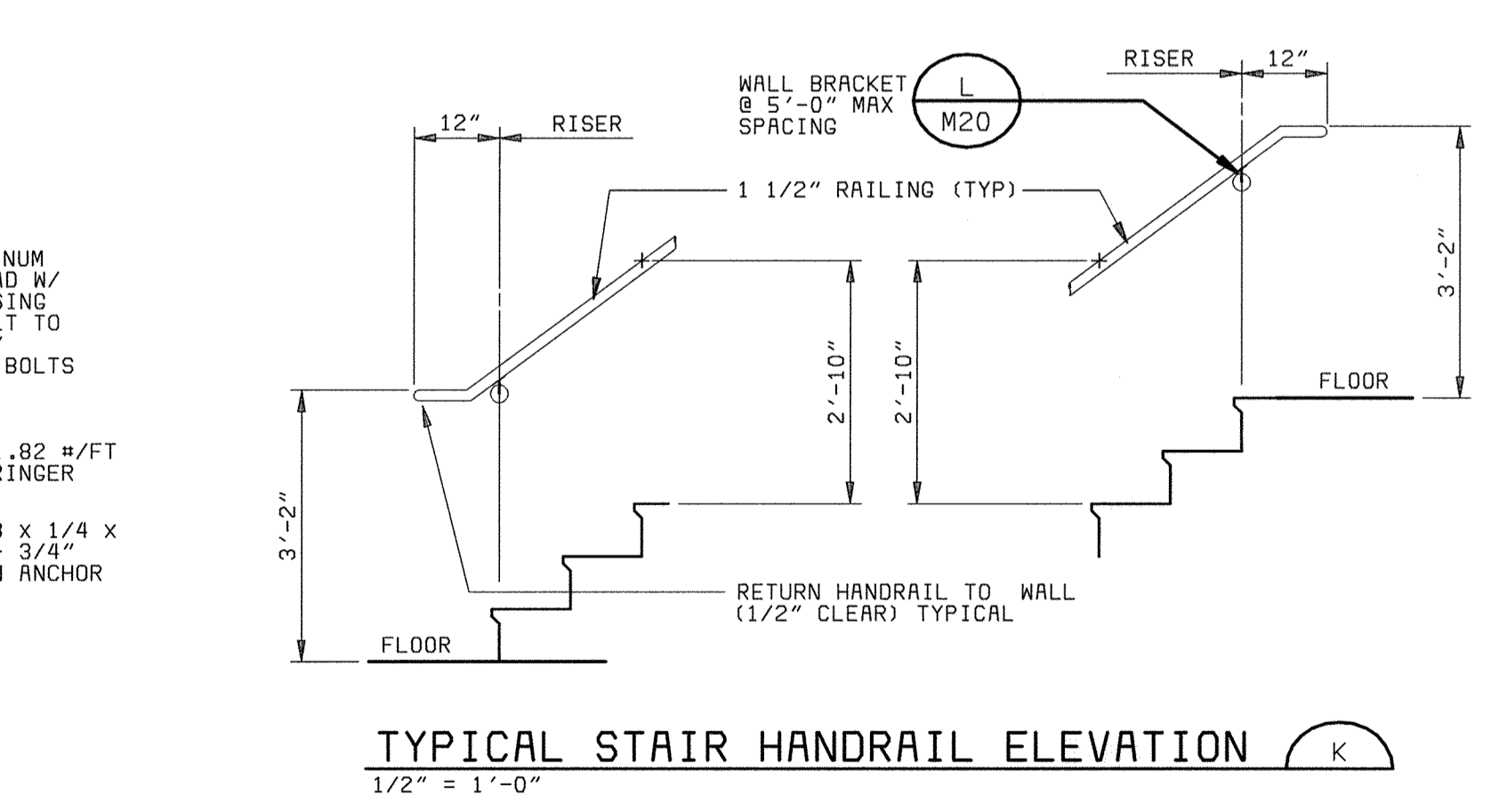
DETAIL (G)
1/2" = 1'-0"



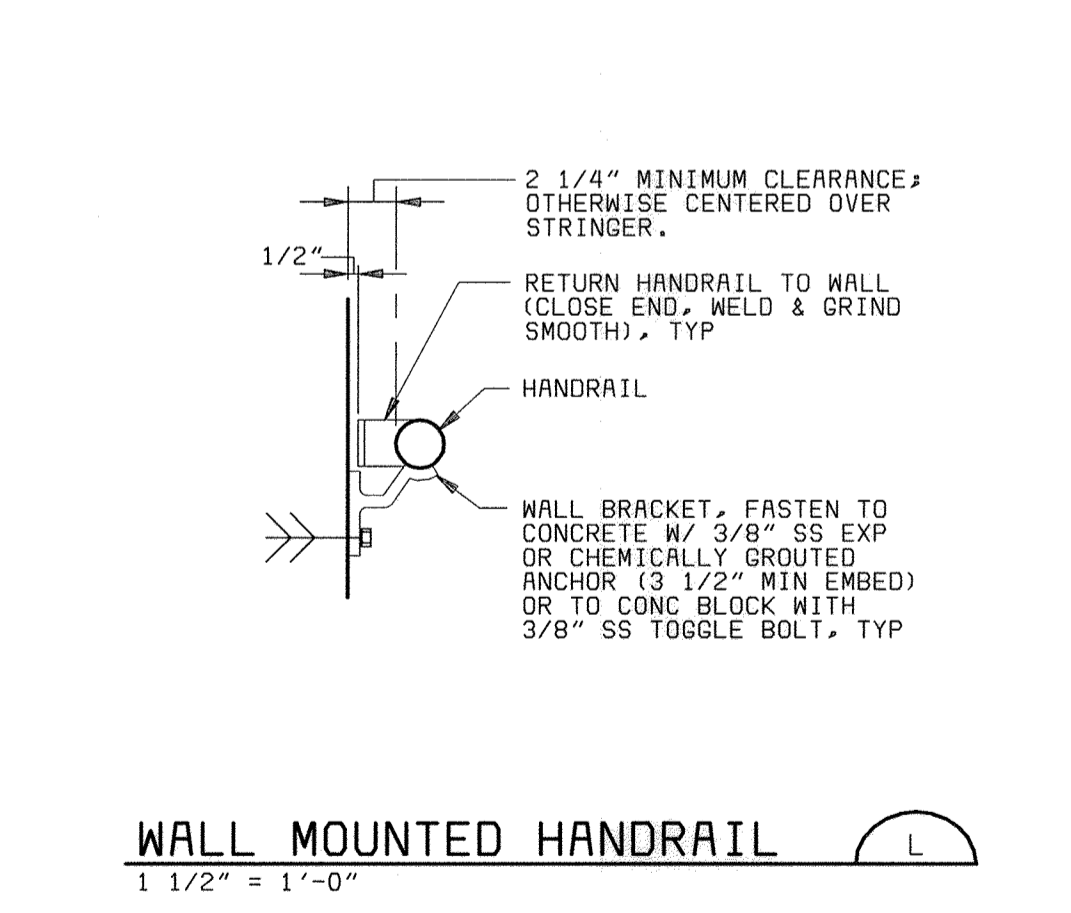
STAIR RAILING POST CONNECTION (H)
3" = 1'-0"



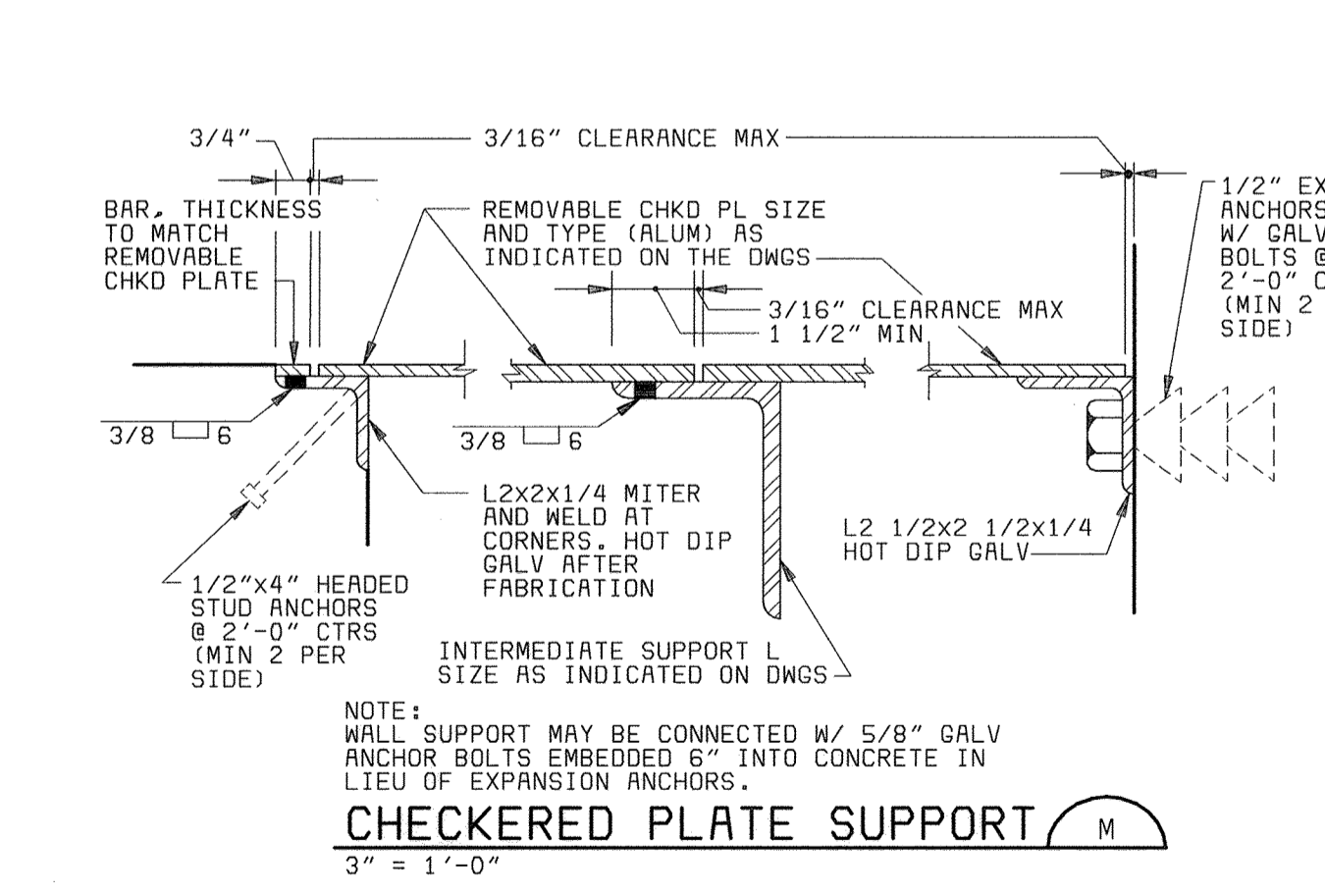
DETAIL (J)
1 1/2" = 1'-0"



TYPICAL STAIR HANDRAIL ELEVATION (K)
1/2" = 1'-0"



WALL MOUNTED HANDRAIL (L)
1 1/2" = 1'-0"



CHECKED PLATE SUPPORT (M)
3" = 1'-0"

58472-401-SHT-C-00000050
058472-2
FD58472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

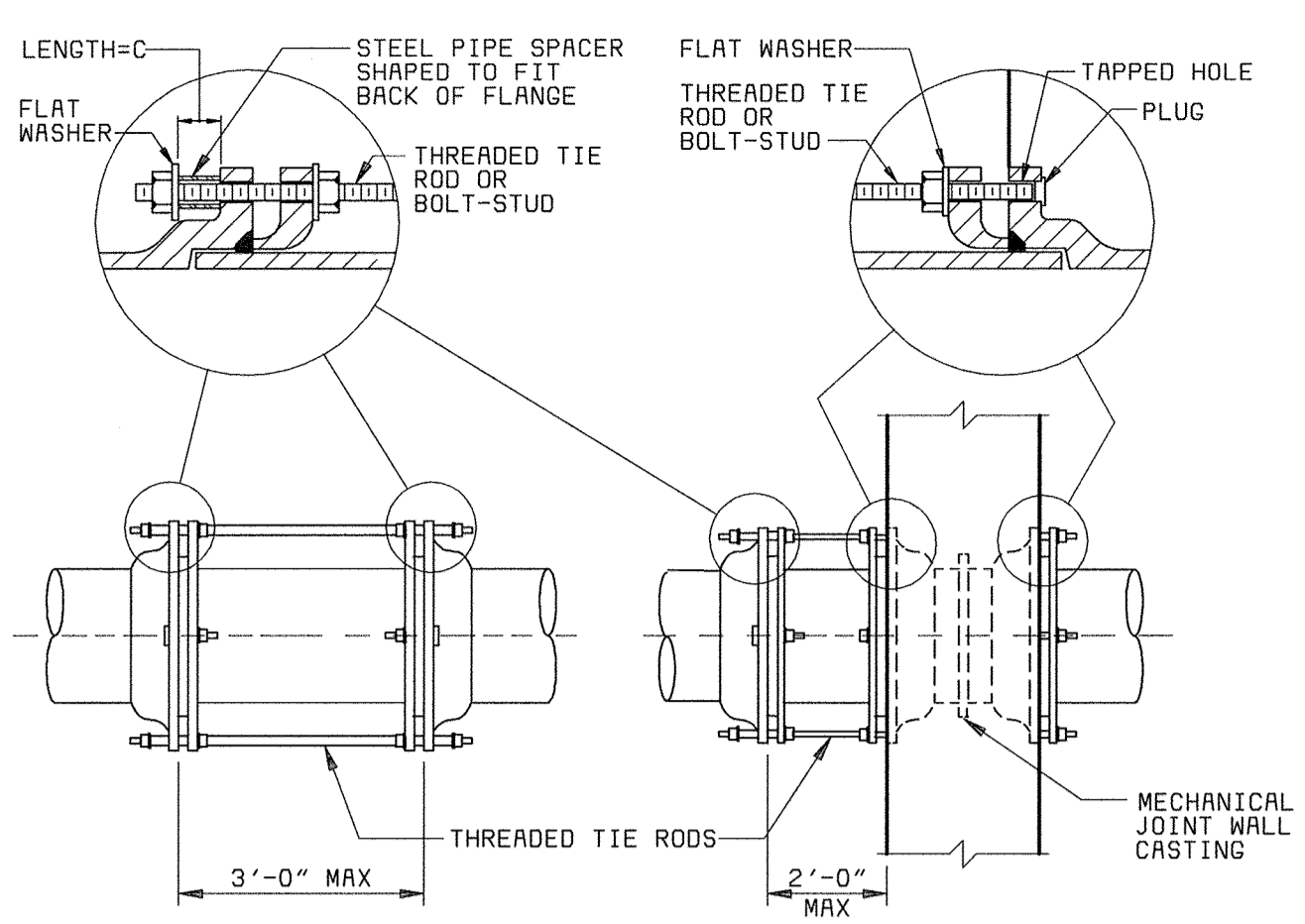
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D MITT BOND
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 24676

DES: TJW					
DRN: RAB					
CHK: WLK					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY CK APP

MECHANICAL
GENERAL
CIVIL - MISCELLANEOUS DETAILS

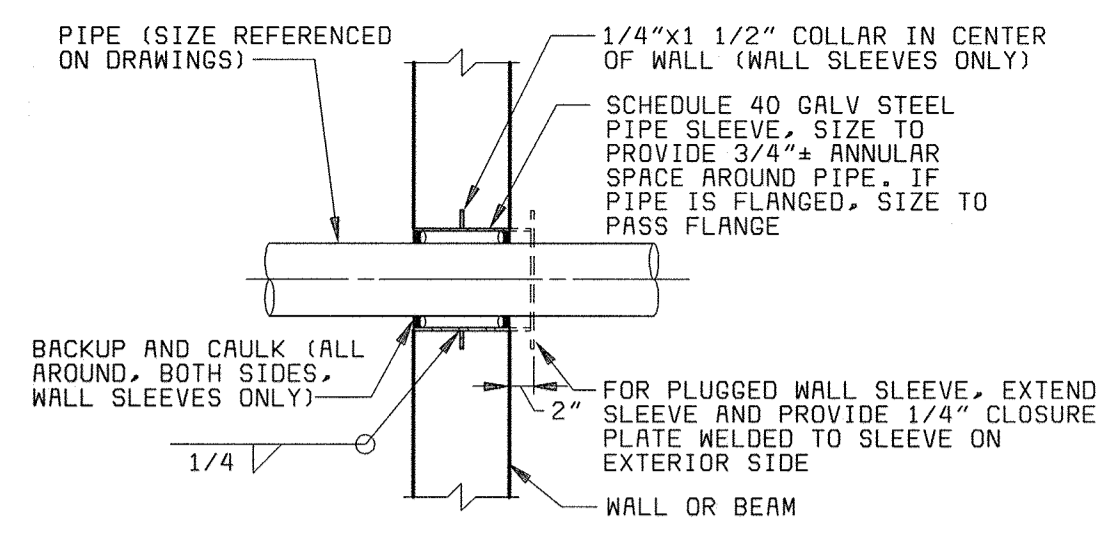
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
64 OF 150
M20

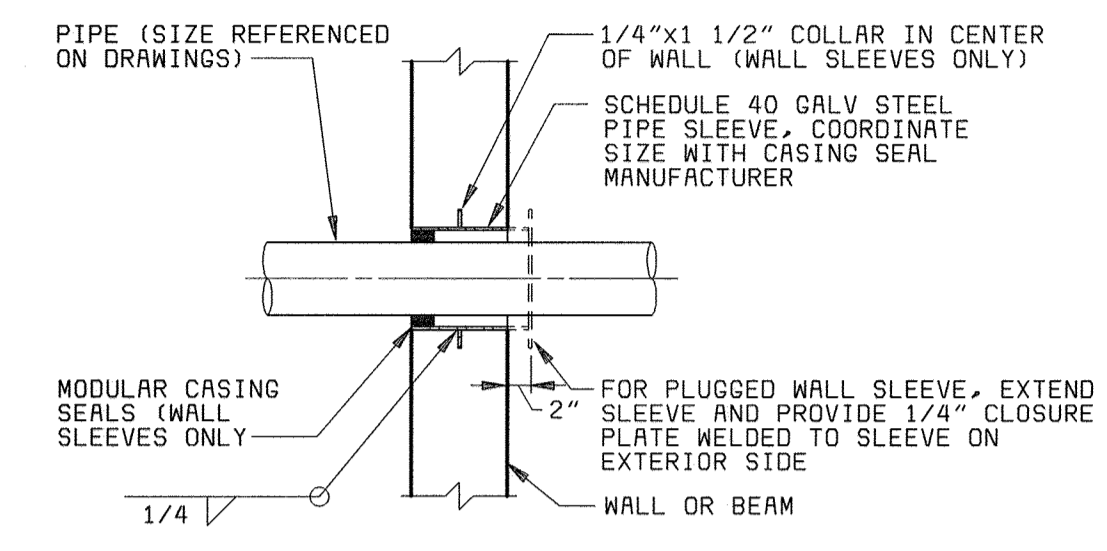


PIPE SIZE (IN)	MAXIMUM PRESSURE (PSI) (NOTE 1)	TIE RODS		PIPE SPACERS	
		NO. OF RODS (NOTE 2)	DIA (IN)	DIA (IN)	LENGTH (IN)
4	350 OR LESS	2	3/4	3/4	2 1/2
6	250 OR LESS	2	3/4	3/4	2 1/2
8	150 OR LESS	2	3/4	3/4	2 1/2
10	200 OR LESS	2	3/4	3/4	2 1/2
12	150 OR LESS	2	3/4	3/4	2 1/2
14	100 OR LESS	2	3/4	3/4	2 1/2
16	150 OR LESS	4	3/4	3/4	1 1/2
18	150 OR LESS	4	3/4	3/4	1 1/2
20	100 OR LESS	4	3/4	3/4	1 1/2
24	100 OR LESS	6	3/4	3/4	1 1/2
30	100 OR LESS	8	1/4	1/4	4
36	100 OR LESS	8	1/4	1/4	4
42	100 OR LESS	8	1/4	1/4	4
48	100 OR LESS	12	1/4	1/4	4

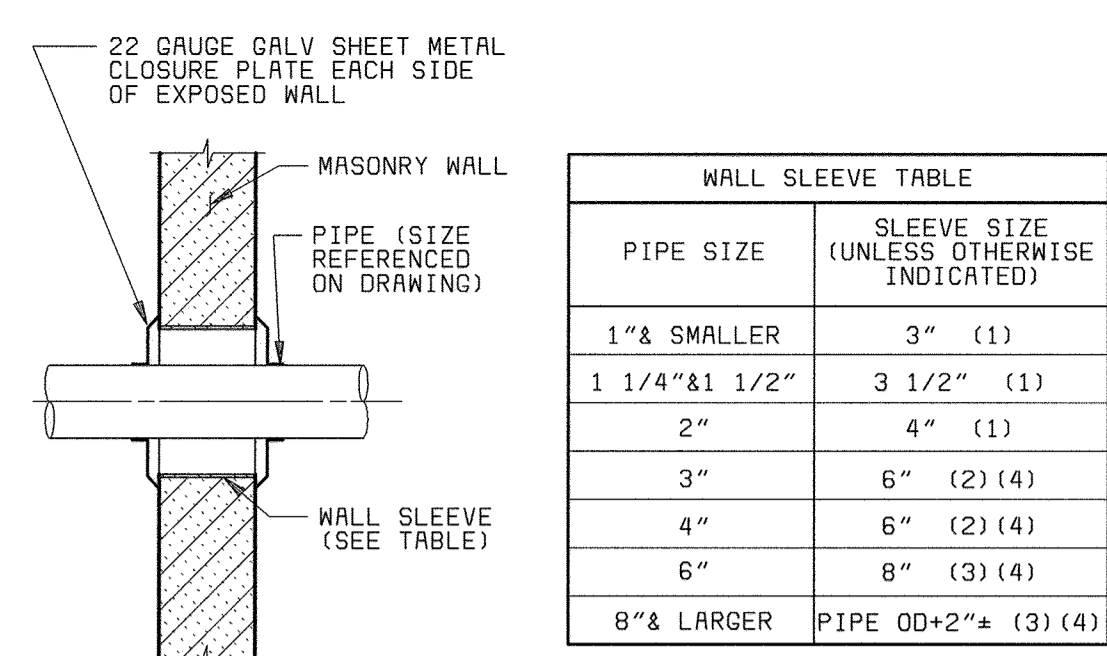
NOTES:
 1. PRESSURE SHALL BE THE PRESSURE AT WHICH THE PIPE IS HYDROSTATICALLY TESTED, OR IF THERE IS NO HYDROSTATIC FIELD TEST, IT SHALL BE THE SPECIFIED SHOP TEST PRESSURE.
 2. UNLESS OTHERWISE INDICATED, TIE RODS SHALL BE SPACED UNIFORMLY AROUND THE PIPE, BEGINNING WITH THE FIRST TWO AT THE HORIZONTAL CENTERLINE OF THE PIPE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
 3. EXCEPT WHERE TIE RODS ARE REQUIRED, BOLTS FOR FOLLOWER RINGS SHALL BE BOLT-STUDS ON WALL CASTING AND TEE HEAD BOLTS IN OTHER LOCATIONS. ALL BOLT HOLES IN WALL CASTING SHALL BE TAPPED. WALL PIPES SHALL BE ORIENTED SO THAT THE BOLT HOLES STRADDLE THE TOP (SIDE IN VERTICAL PIPING) CENTERLINE.



FOR PIPE SMALLER THAN 2 1/2 INCH DIAMETER



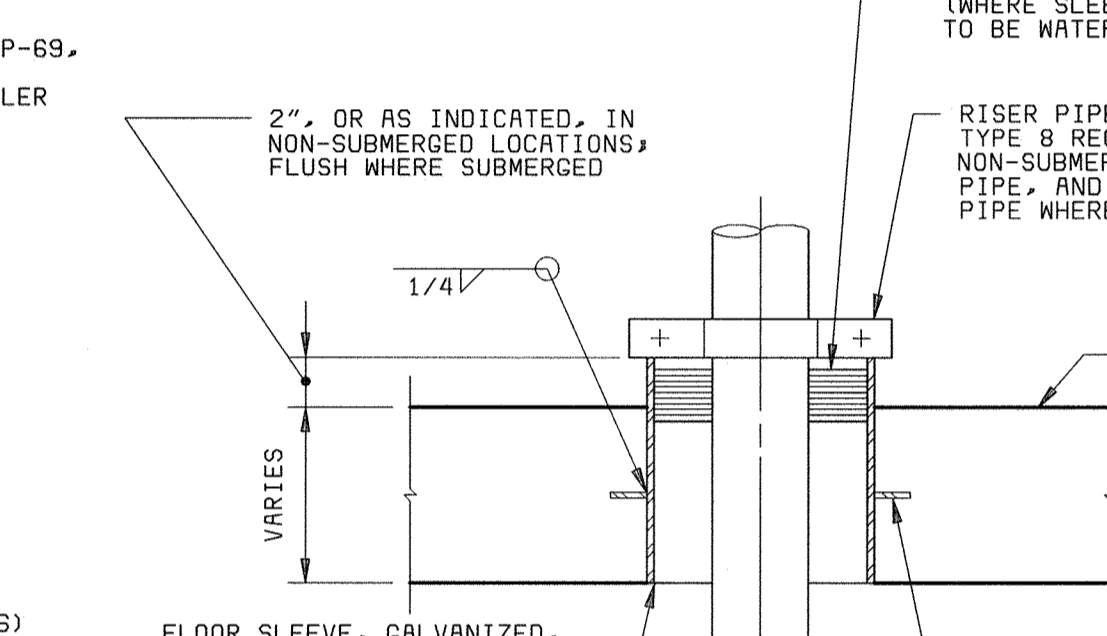
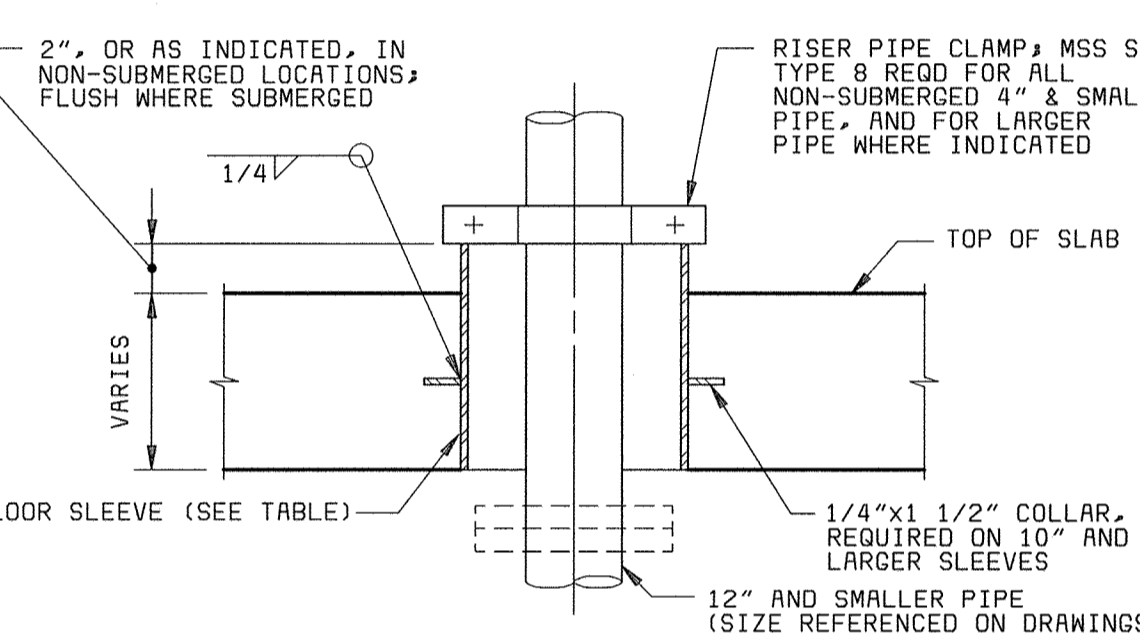
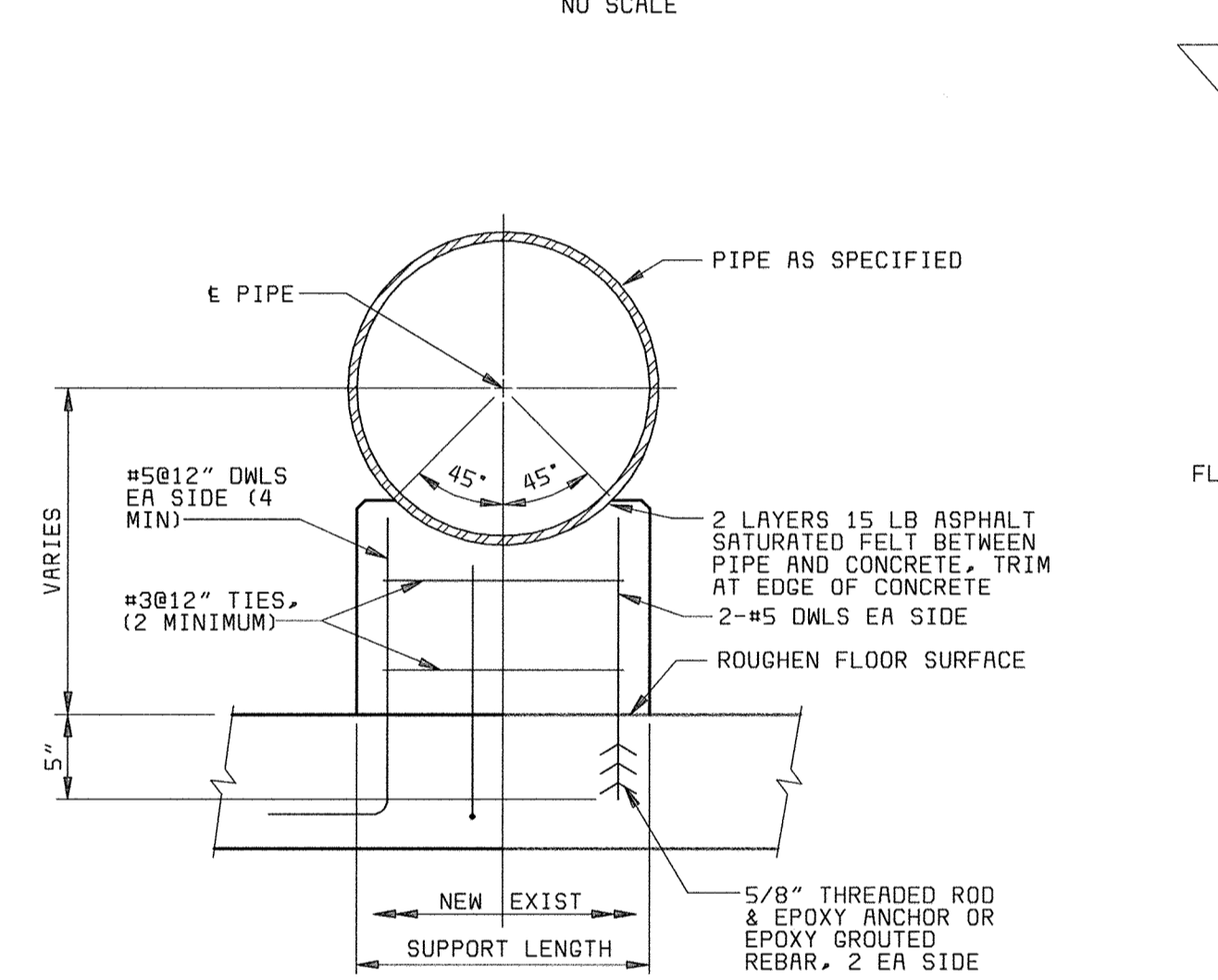
FOR PIPE 3 INCH TO 6 INCH DIAMETER



PIPE SIZE	SLEEVE SIZE (UNLESS OTHERWISE INDICATED)
1" & SMALLER	3" (1)
1 1/4" & 1 1/2"	3 1/2" (1)
2"	4" (1)
3"	6" (2) (4)
4"	6" (2) (4)
6"	8" (3) (4)
8" & LARGER	PIPE OD+2" (3) (4)

(1) SCHEDULE 40 GALV STEEL PIPE
 (2) SCHEDULE 20 GALV STEEL PIPE, MINIMUM
 (3) 1/4" MINIMUM WALL THICKNESS
 (4) IF PIPE IS FLANGED, USE SLEEVE LARGE ENOUGH FOR FLANGE TO PASS THROUGH

CIP MECHANICAL JOINTS WITH TIE RODS



NOTES:
 1. SUPPORT WIDTH, 8" FOR 12" & SMALLER PIPE, 12" FOR 14" & LARGER PIPE.
 2. SUPPORT LENGTH, PIPE OD + 4" FOR 12" & SMALLER PIPE, PIPE OD FOR 14" & LARGER PIPE.

CONCRETE PIPE SUPPORT

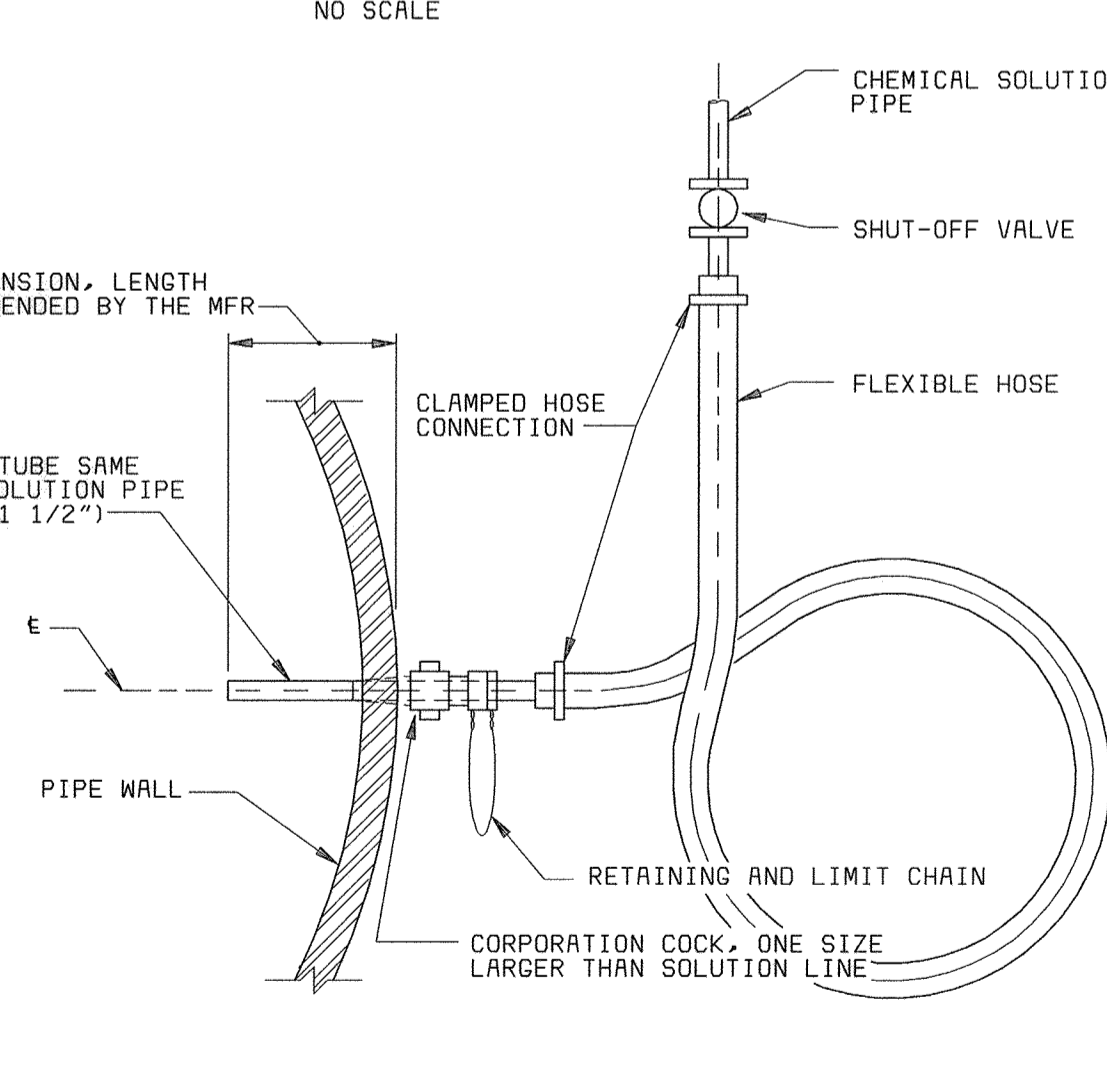
PIPE SIZE	SLEEVE SIZE (UNLESS INDICATED OTHERWISE)
1" & SMALLER	3"
1 1/4" & 1 1/2"	3 1/2"
2"	4"
3"	8"
4"	10"
6"	12"
8" TO 12"	FLANGE OD+2"

FLOOR SLEEVE

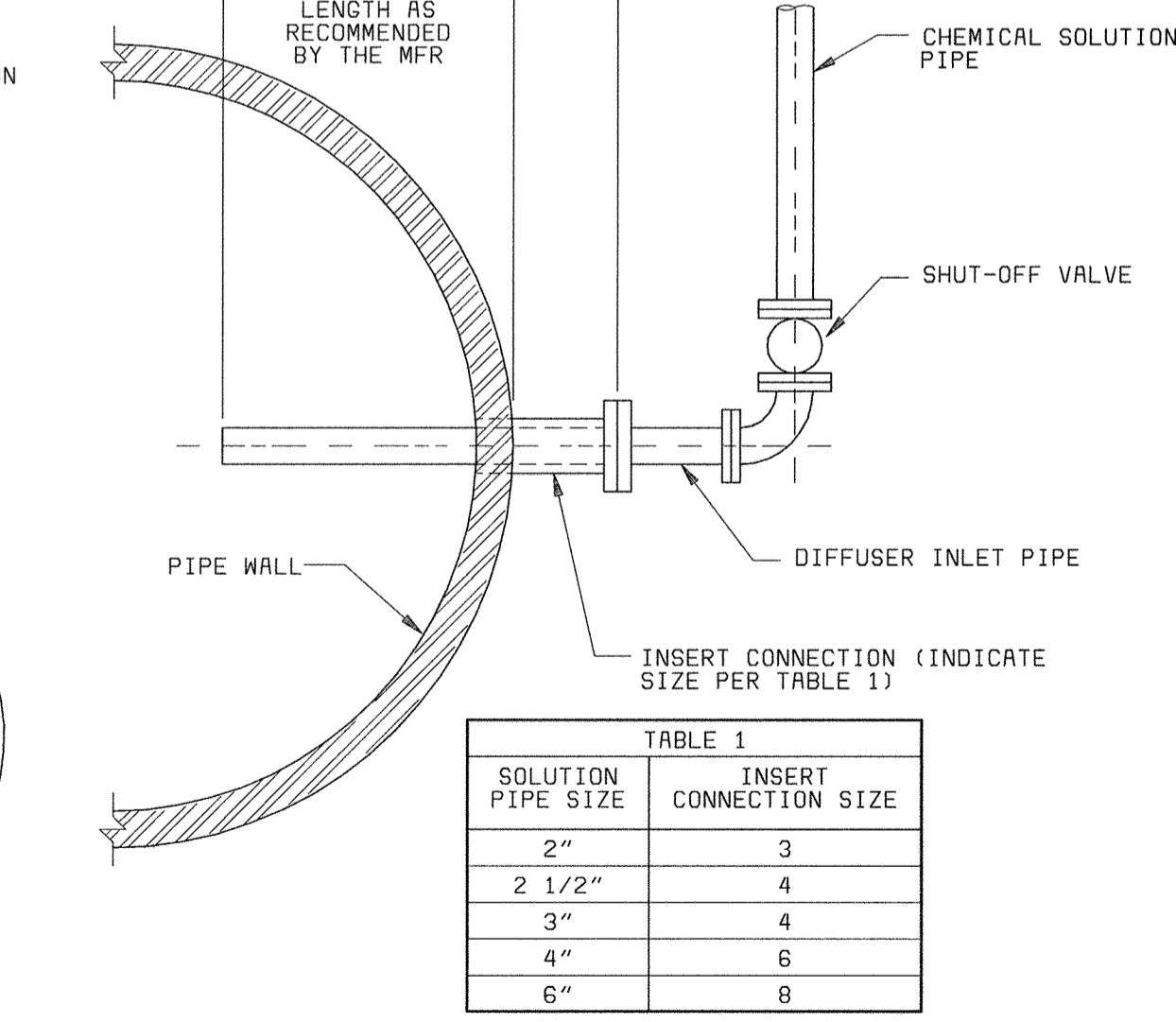


CONCRETE ENCASEMENT FOR PIPE UNDER SLABS

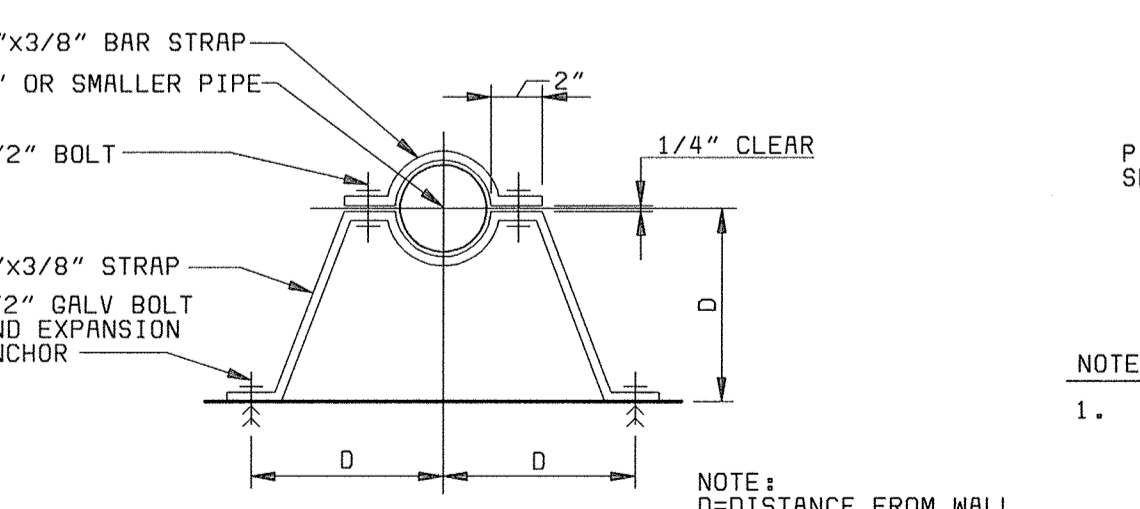
CONCRETE SUPPORT FOR CAST IRON BASE ELBOW



CONCRETE SUPPORT FOR PIPE ELBOW



VERTICAL PIPE SUPPORT



FLOOR SLEEVE WITH SEAL

CONCRETE ENCASEMENT FOR PIPE UNDER SLABS

PIPE DIFFUSER FOR SOLUTION PIPES 1 1/2 INCH AND SMALLER

PIPE DIFFUSER FOR SOLUTION PIPES 2 INCH AND LARGER

SOLUTION PIPE SIZE	INSERT CONNECTION SIZE
2"	3
2 1/2"	4
3"	4
4"	6
6"	8

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
 Gathersburg, Maryland
 REG. PROF. ENGR. DATE

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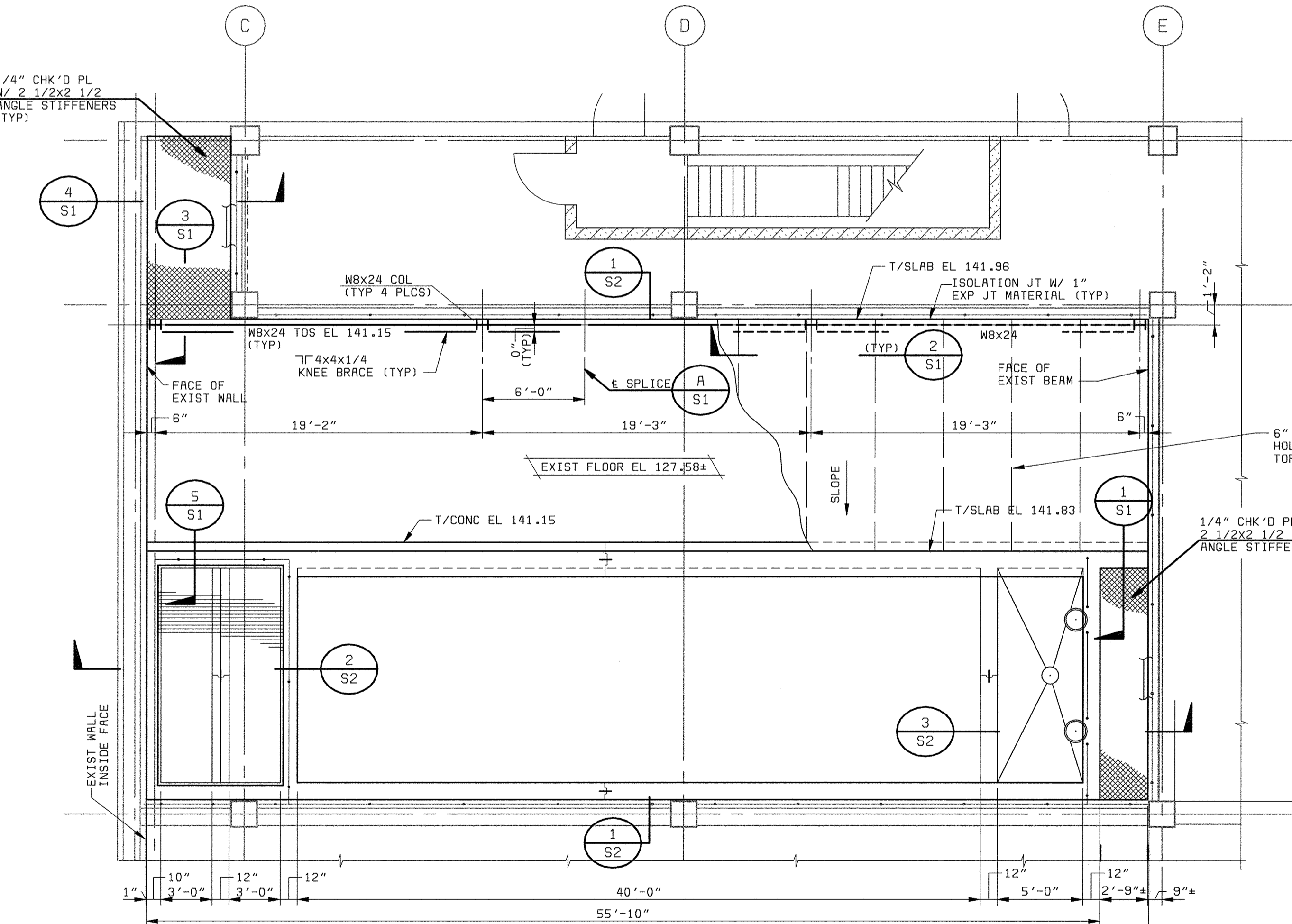
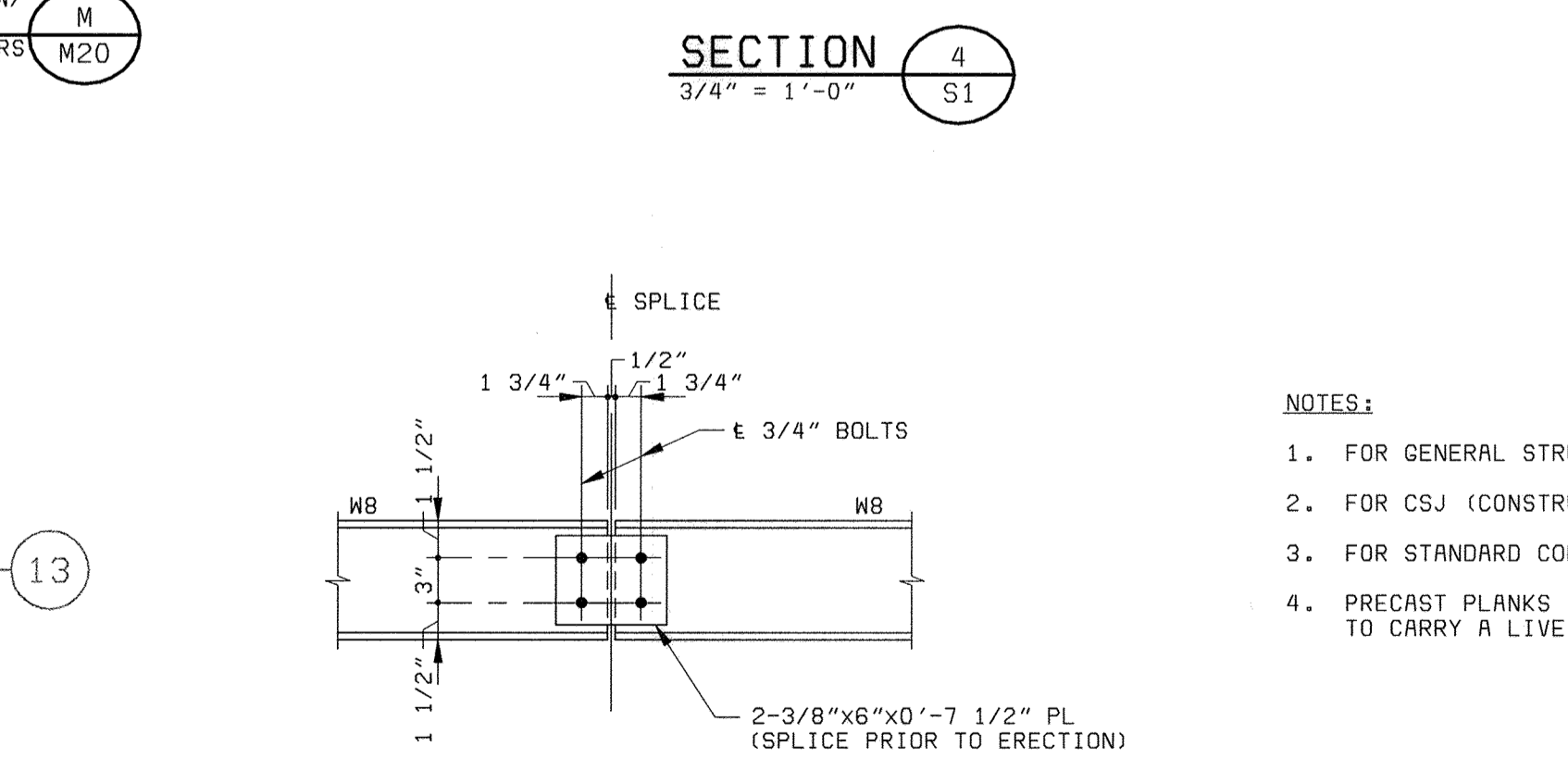
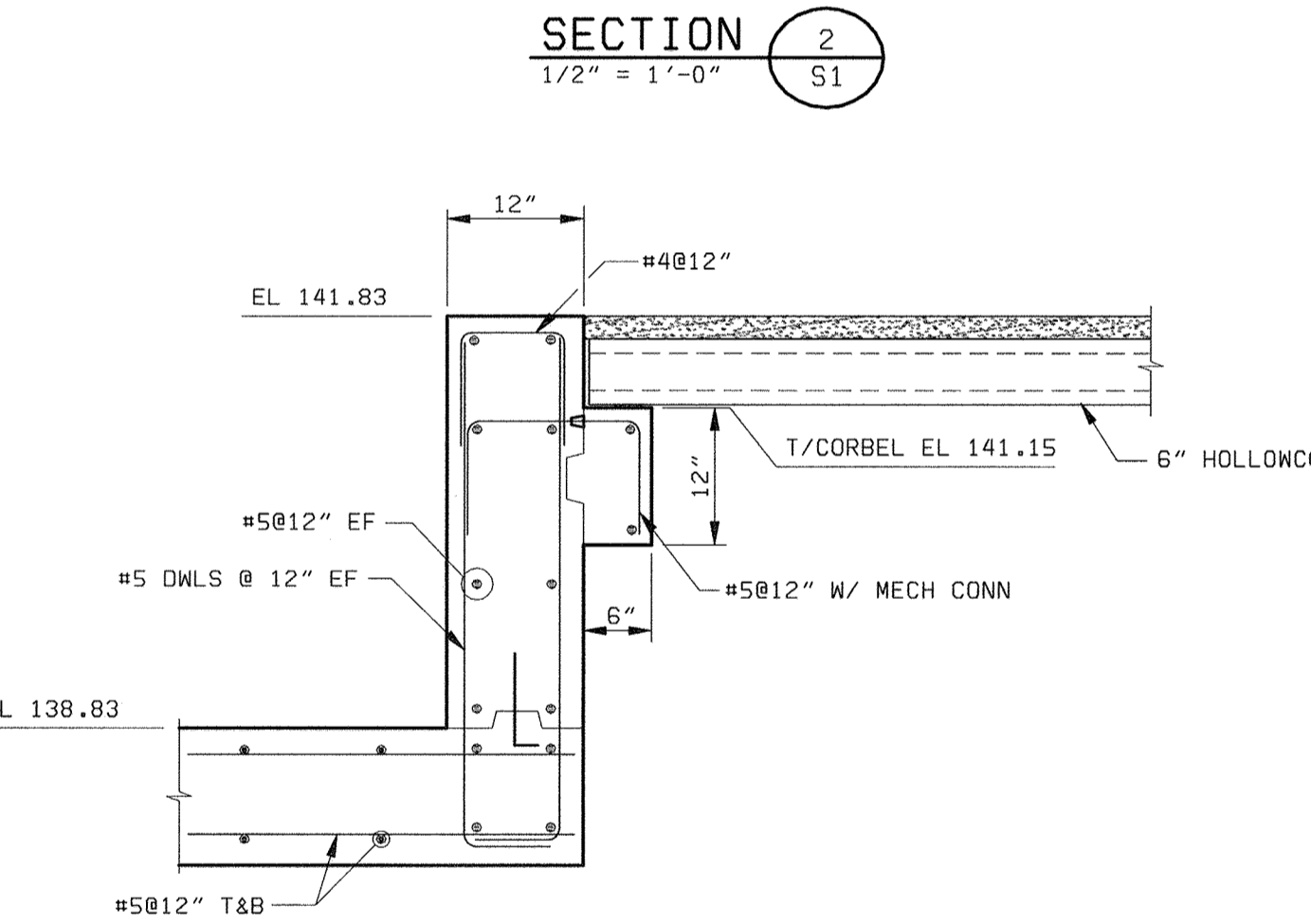
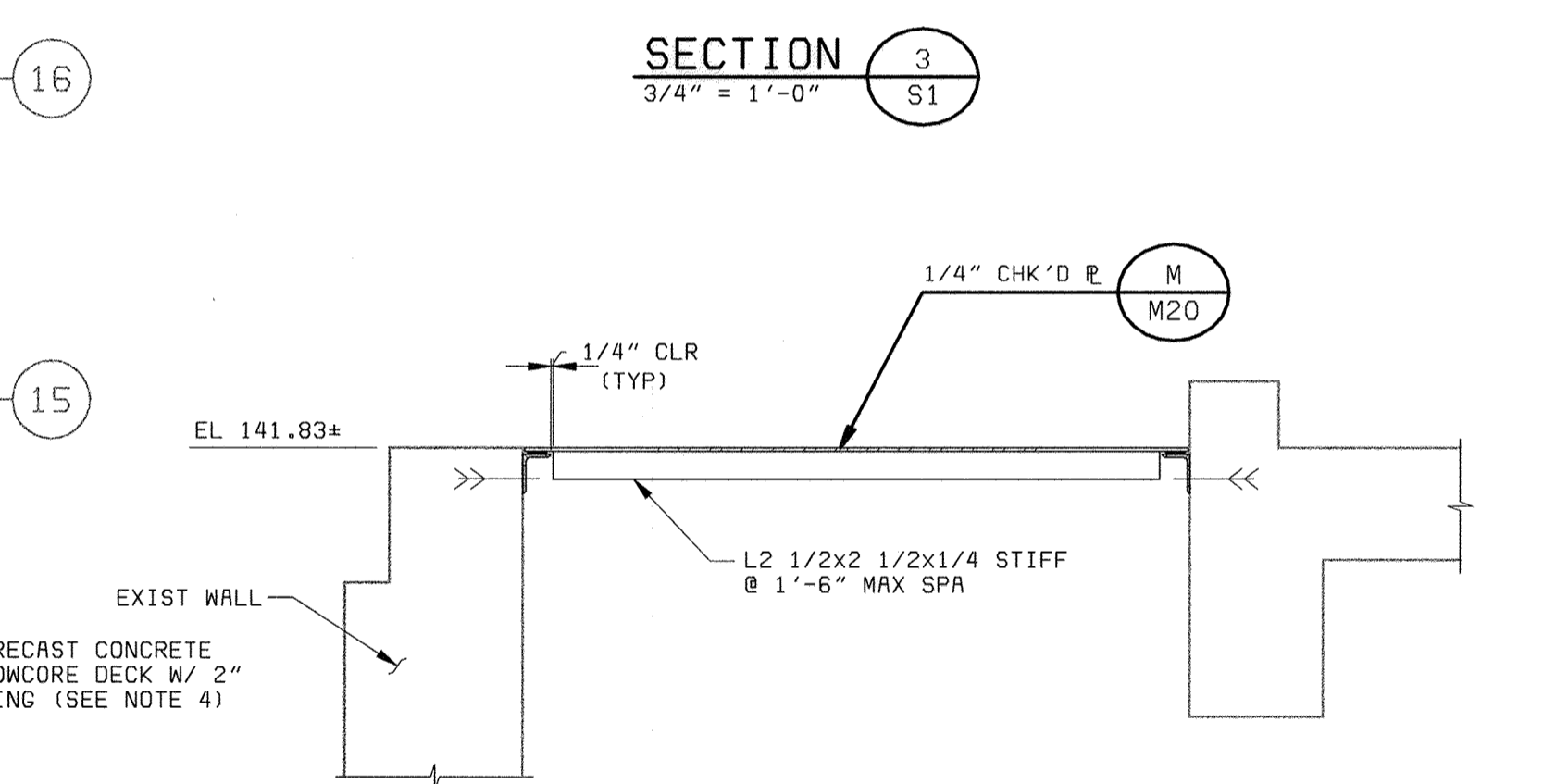
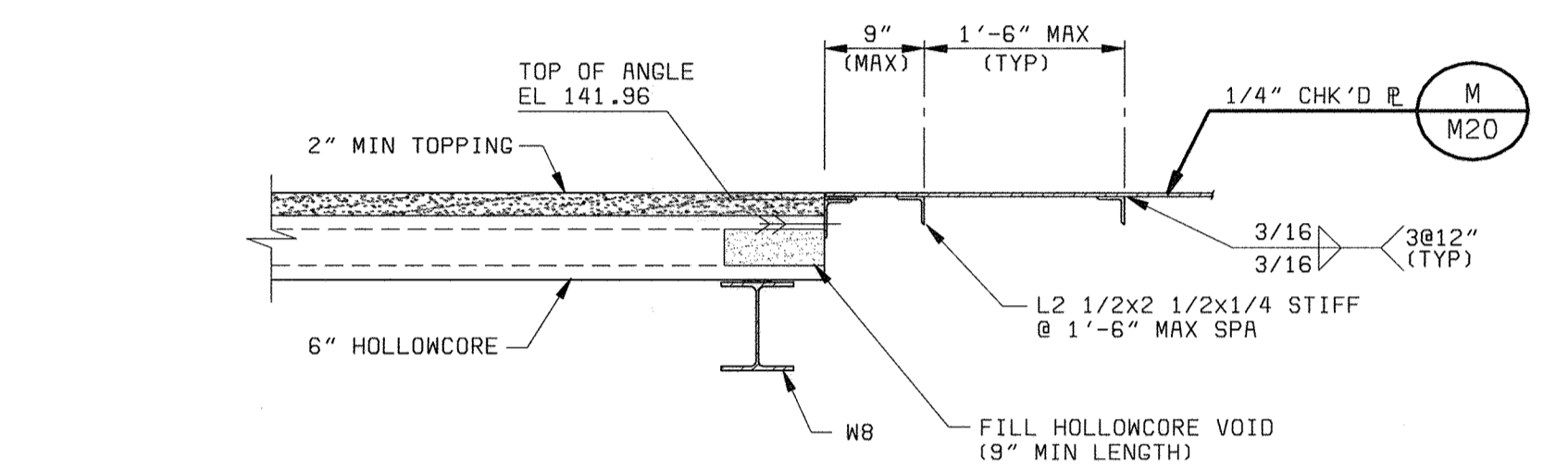
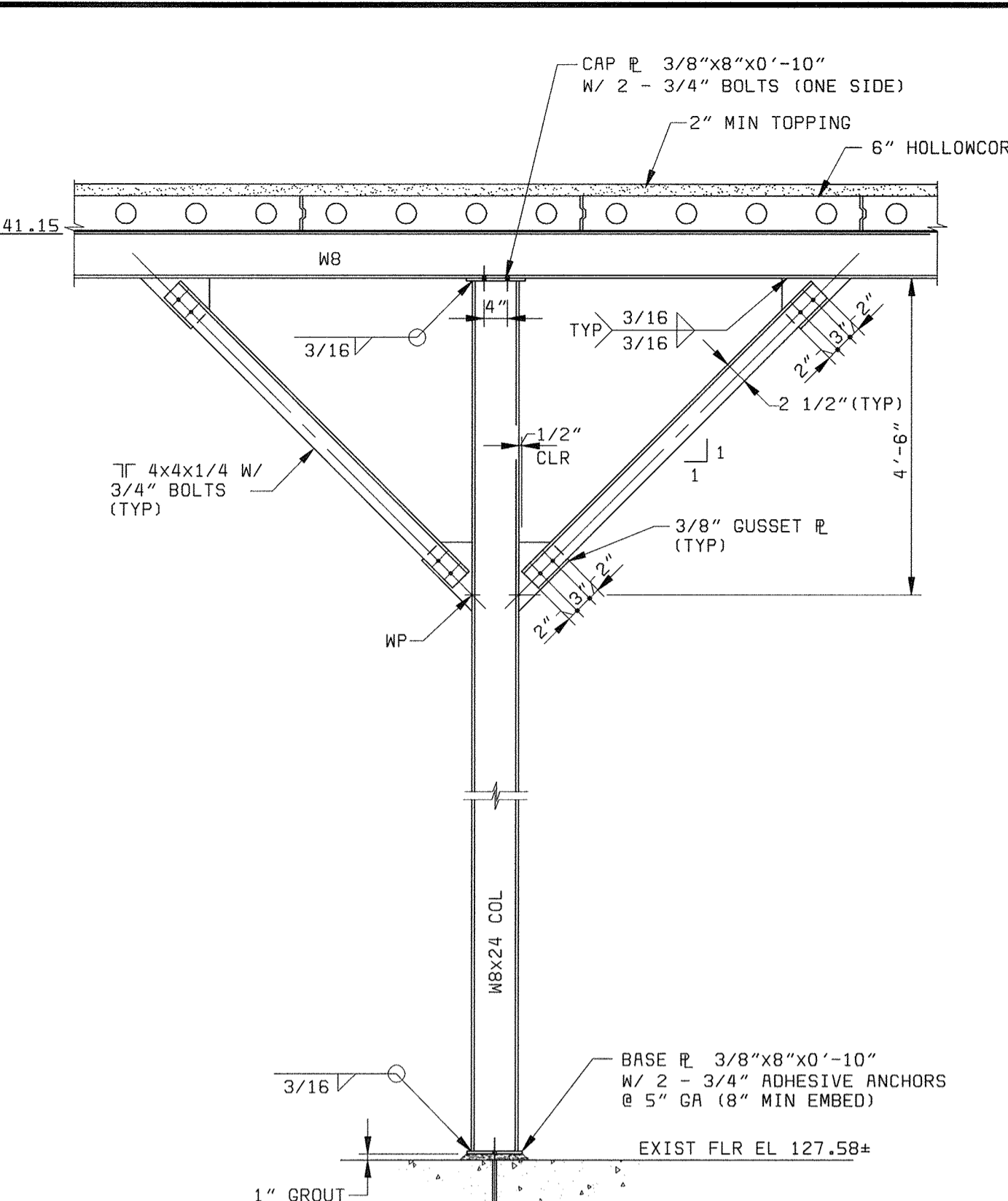
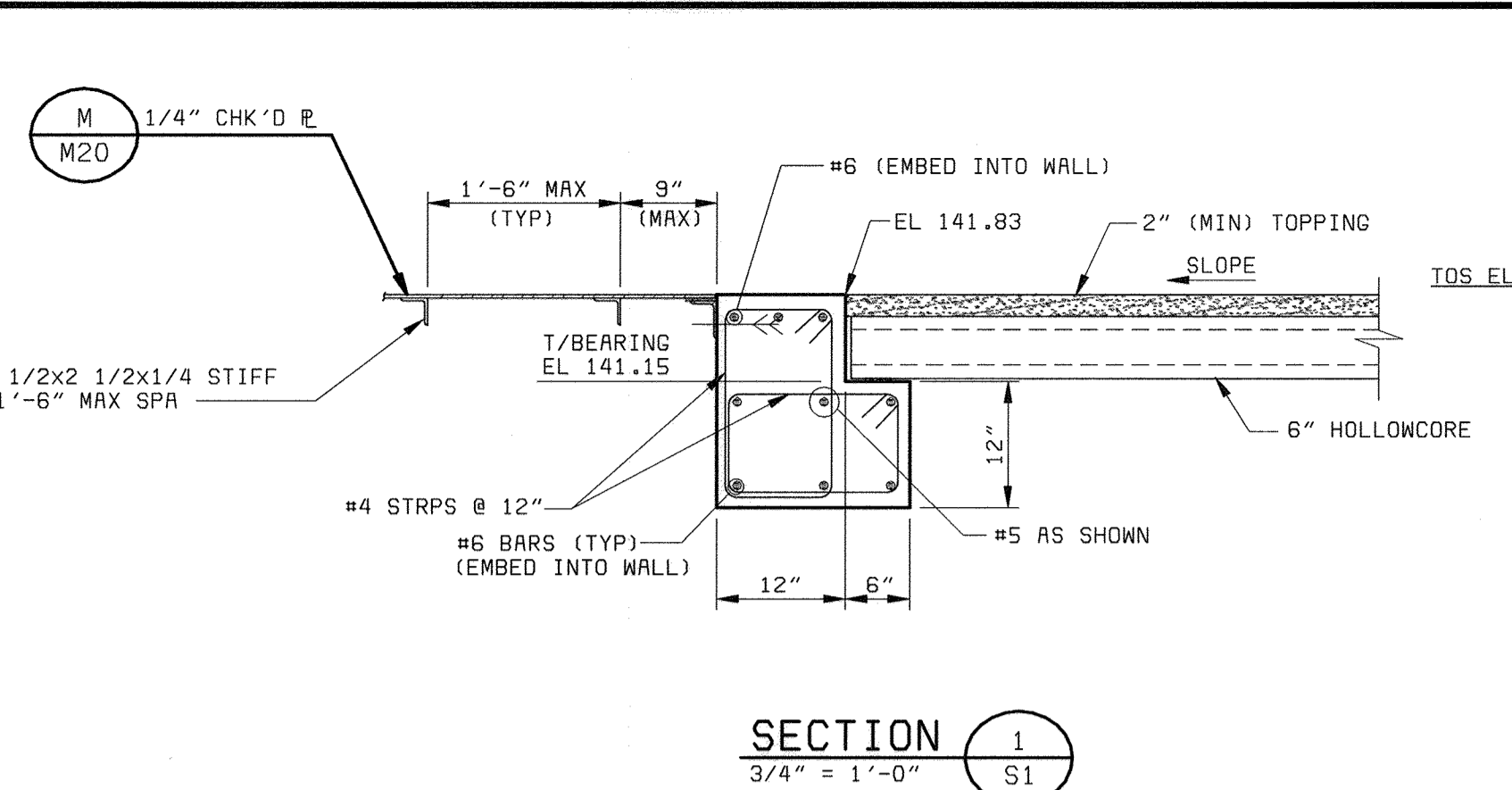
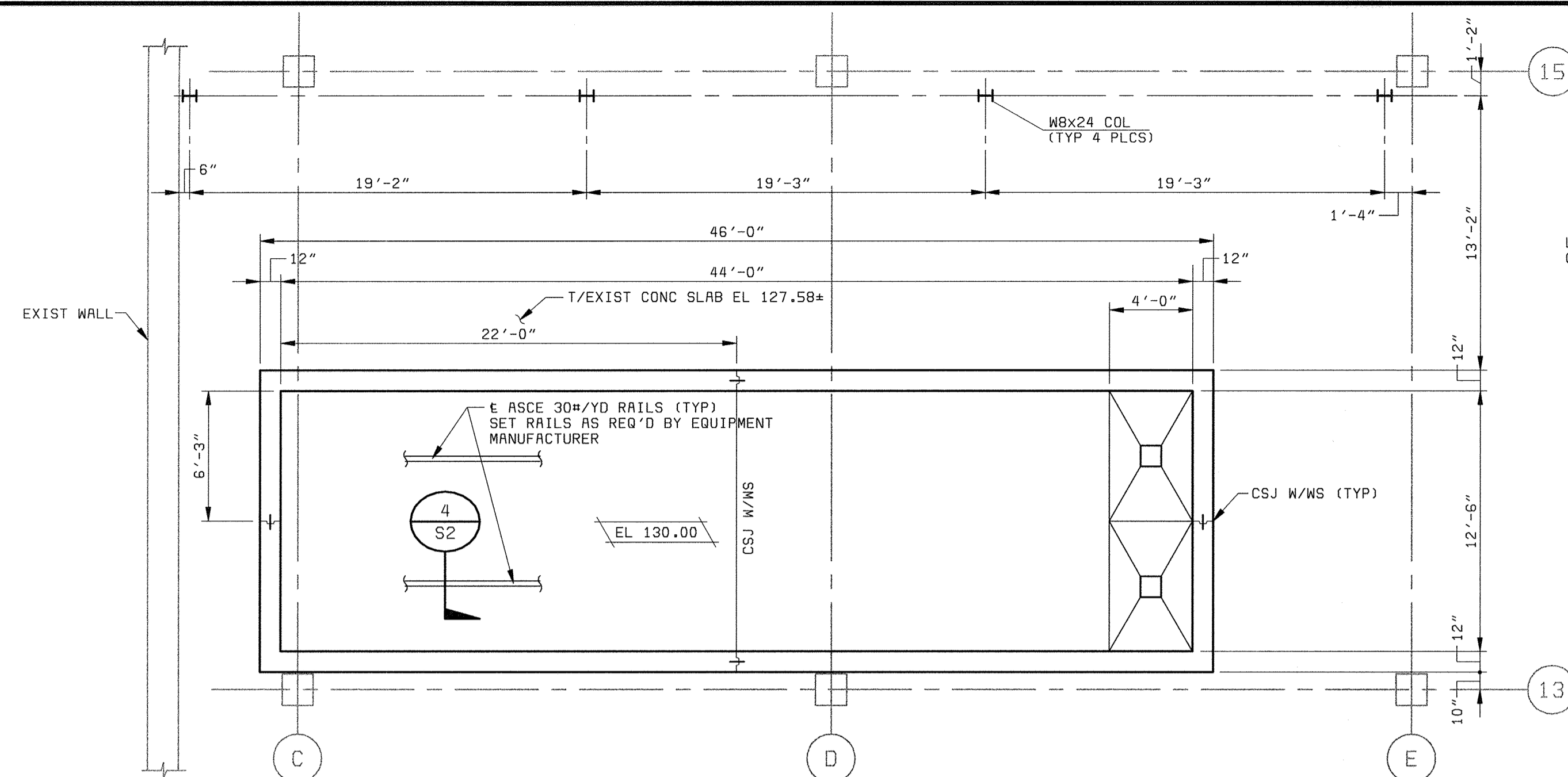
DES:	DRN:	CHK:	DATE:	DATE:	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	NO.	BY	CK	APP
TJW	NAG	WLK	5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR				

MECHANICAL GENERAL
 CIVIL - MISCELLANEOUS DETAILS

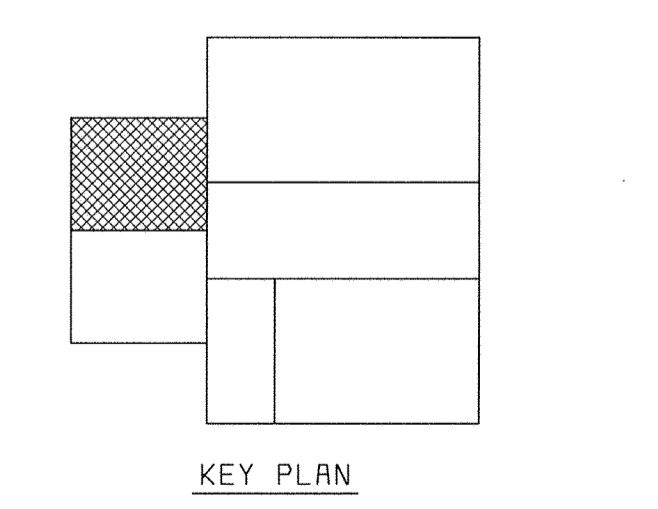
LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 65 OF 150
 M21

058472 2
 F058472R



- NOTES:
- FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 - FOR CSJ (CONSTRUCTION JOINT) DETAILS SEE SHEET S15.
 - FOR STANDARD CONCRETE DETAILS SEE SHEET S15.
 - PRECAST PLANKS (WITH 2" MIN TOPPING) SHALL BE DESIGNED TO CARRY A LIVE LOAD OF 125 PSF.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
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FOR CONSTRUCTION
AND SEALED BY
THAY N. GOPALAKRISHNAN
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 19809

DES: TNG					
DRN: MAS					
CHK: JME					
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR		
		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

STRUCTURAL
FLOTATION THICKENING TANK

PLANS, SECTIONS AND
DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

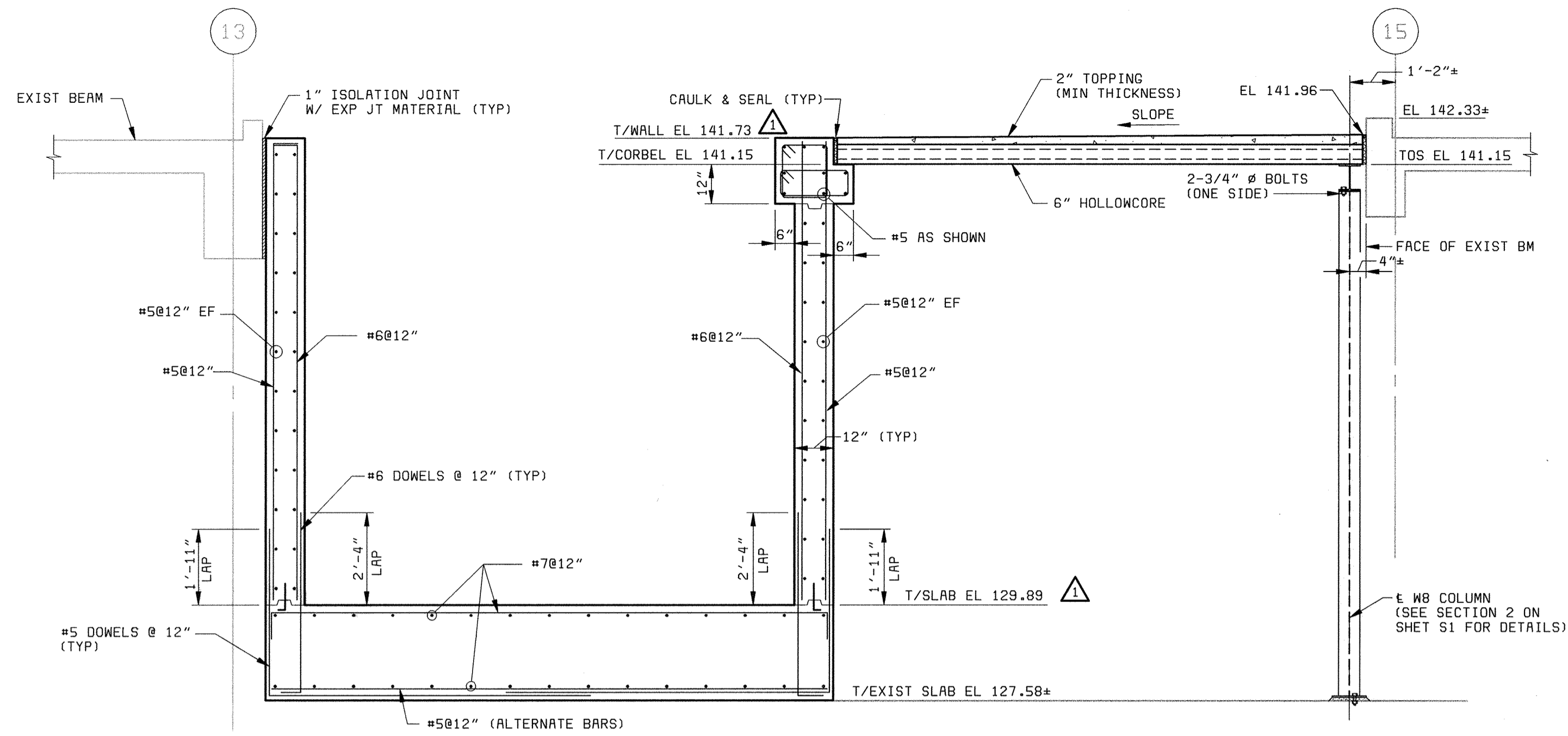
SHEET
66 OF 150

S1

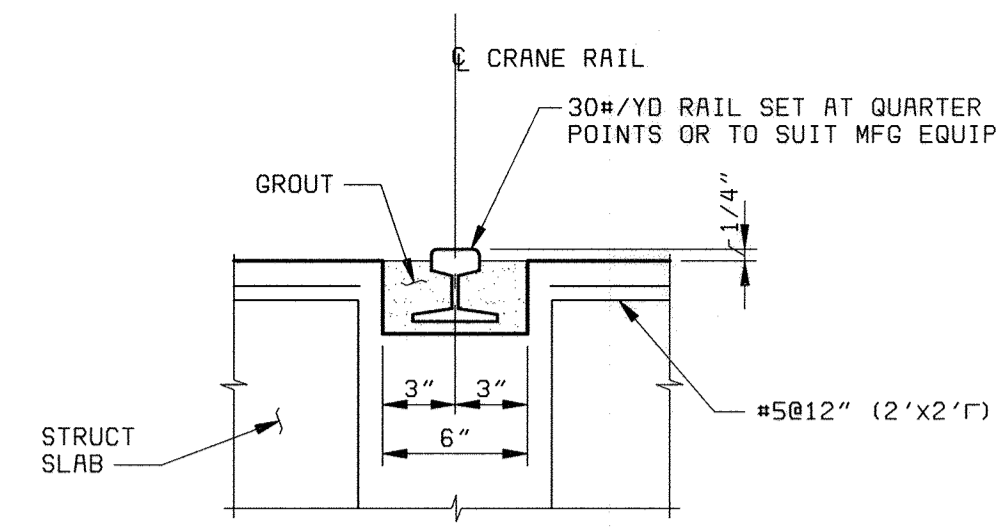
58472-203-SOLS-S-A0000118

058472 2
FD58472A

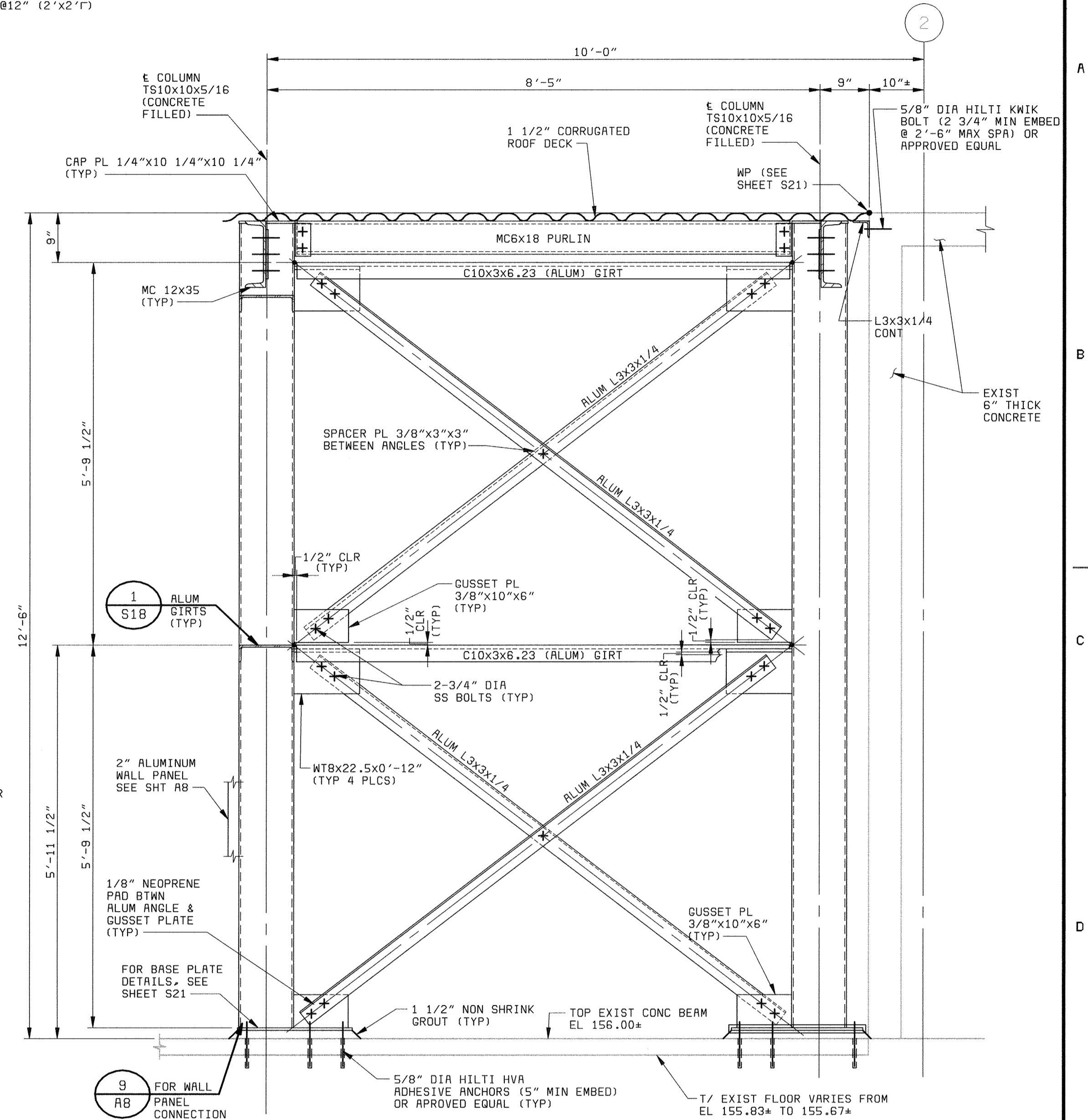
58472-203-DAF-S-Z00000XB



SECTION 1
3/8" = 1'-0" S2



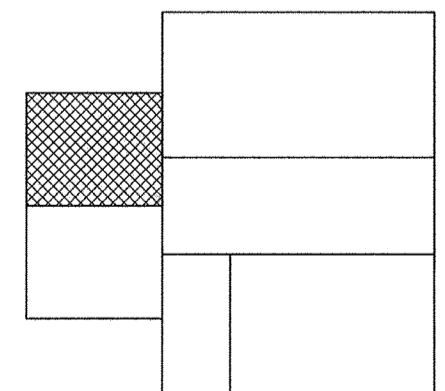
SECTION 4
1 1/2" = 1'-0" S2



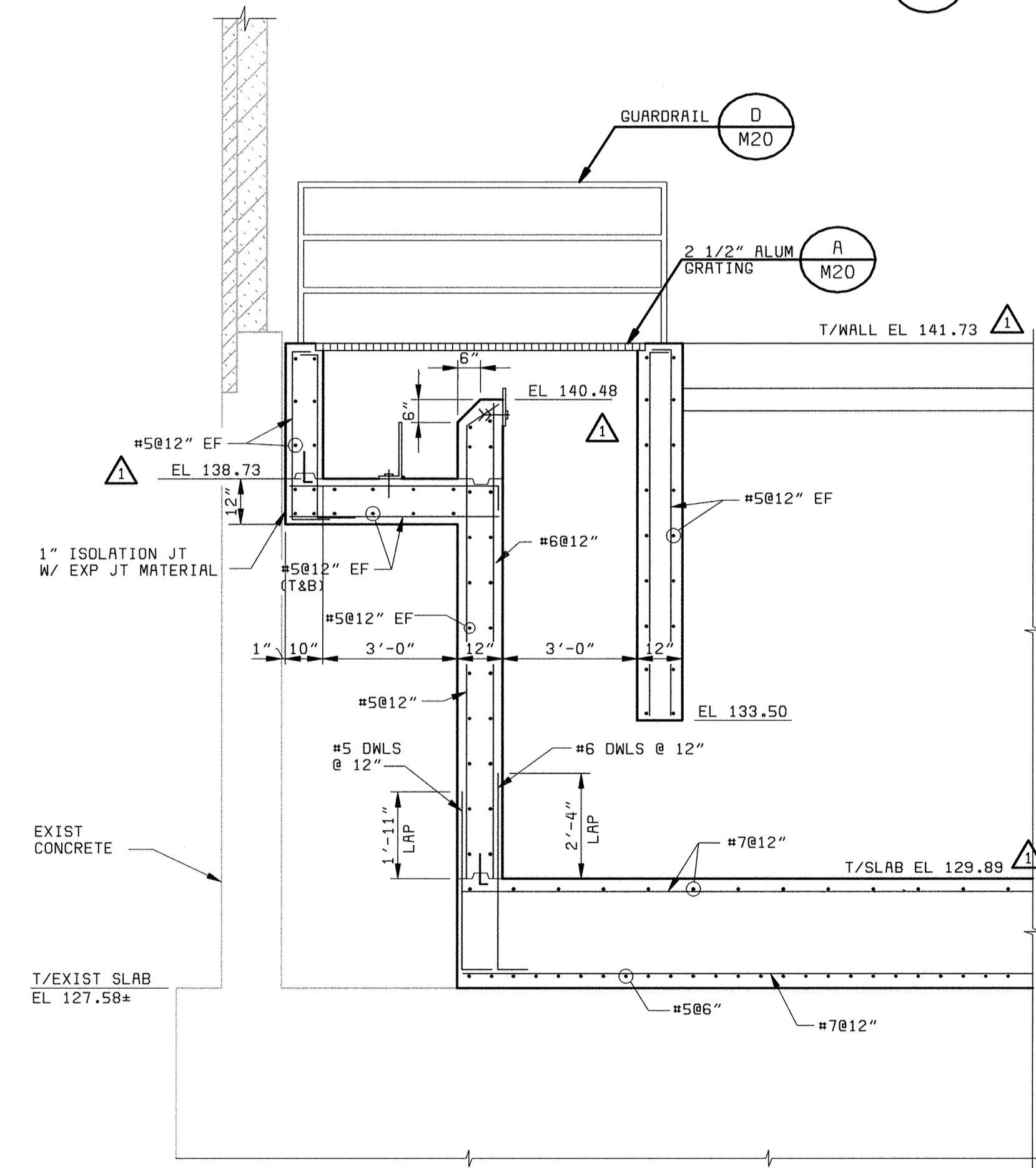
SECTION 4
3/4" = 1'-0" S21

NOTE: ALL STRUCTURAL MEMBERS NOT SHOWN AS ALUMINUM SHALL BE STEEL

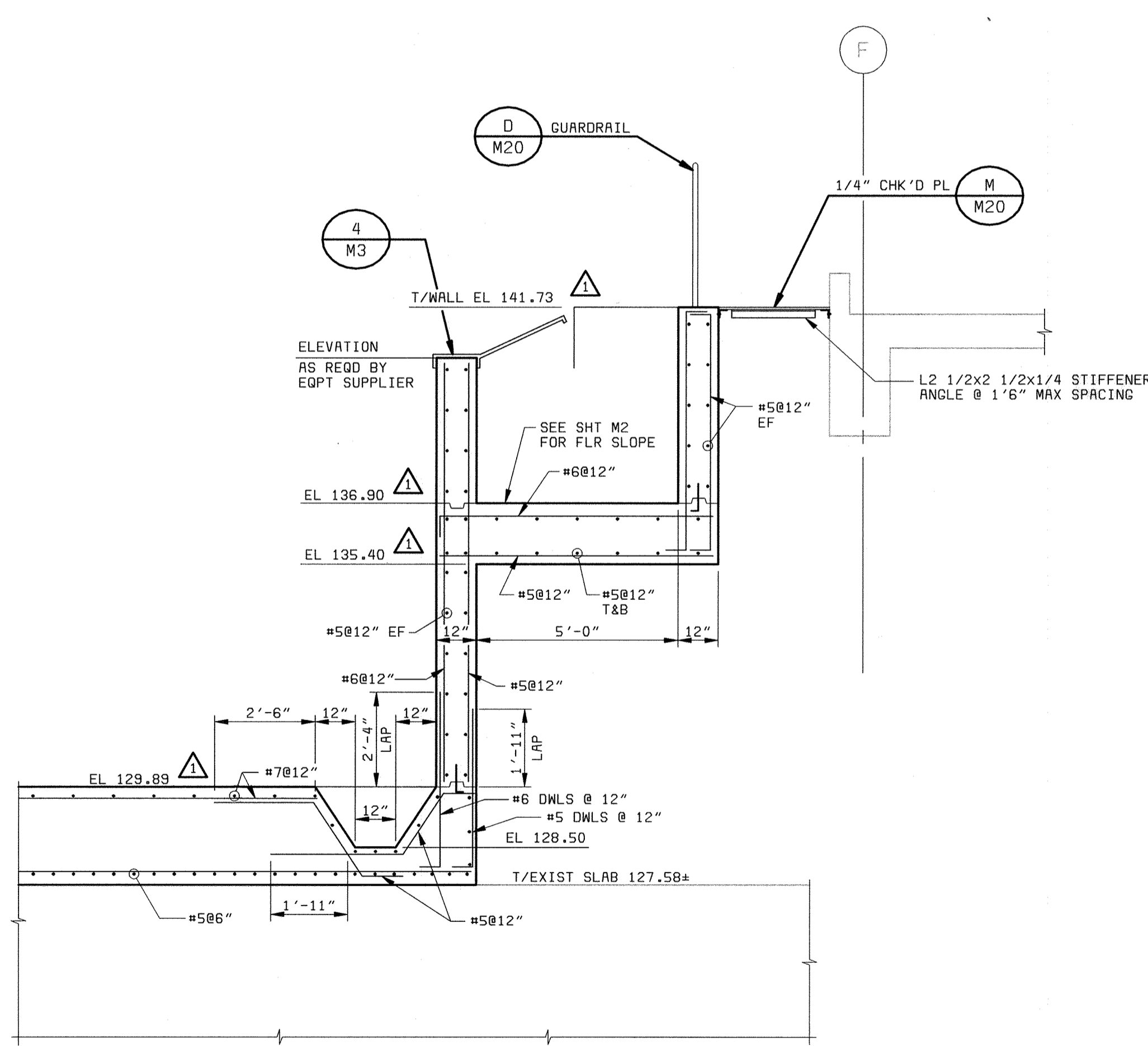
- NOTES:
- FOR GENERAL STRUCTURAL NOTES SEE SHT S14.
 - FOR CSJ (CONSTRUCTION JOINT) DETAILS SEE SHT S15.
 - FOR STD CONCRETE DETAILS SEE SHT S15.
 - FOR PROCESS EQUIPMENT LAYOUTS SEE SHTS MI THRU M3.



KEY PLAN



SECTION 2
3/8" = 1'-0" S2



SECTION 3
3/8" = 1'-0" S2

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

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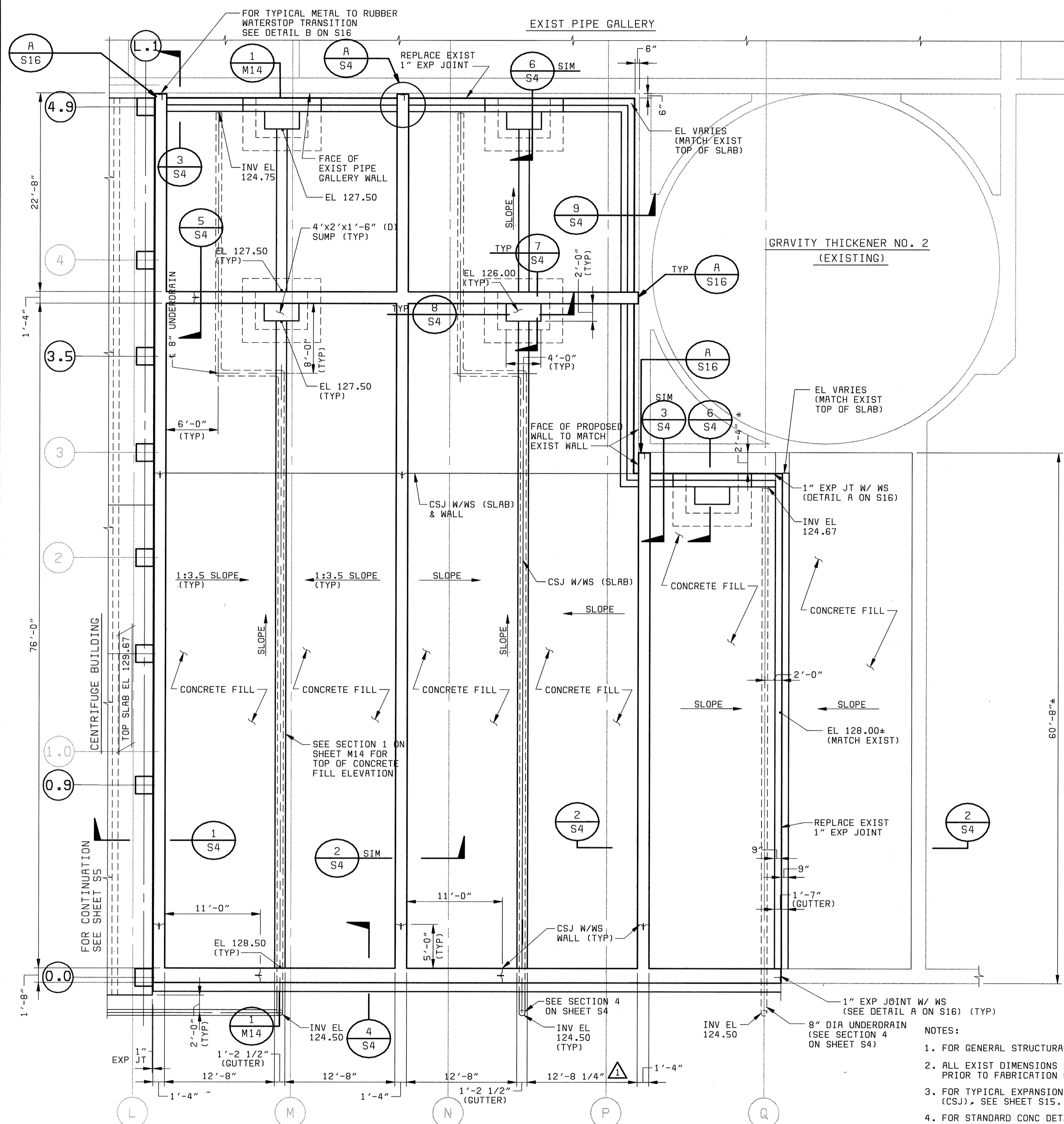
DES: TNG					
DRN: MAS,ALB					
CHK: JME					
DATE: 05/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP
07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH/RJR/RJR	

STRUCTURAL
FLOTATION THICKENING TANK
SECTIONS AND DETAILS

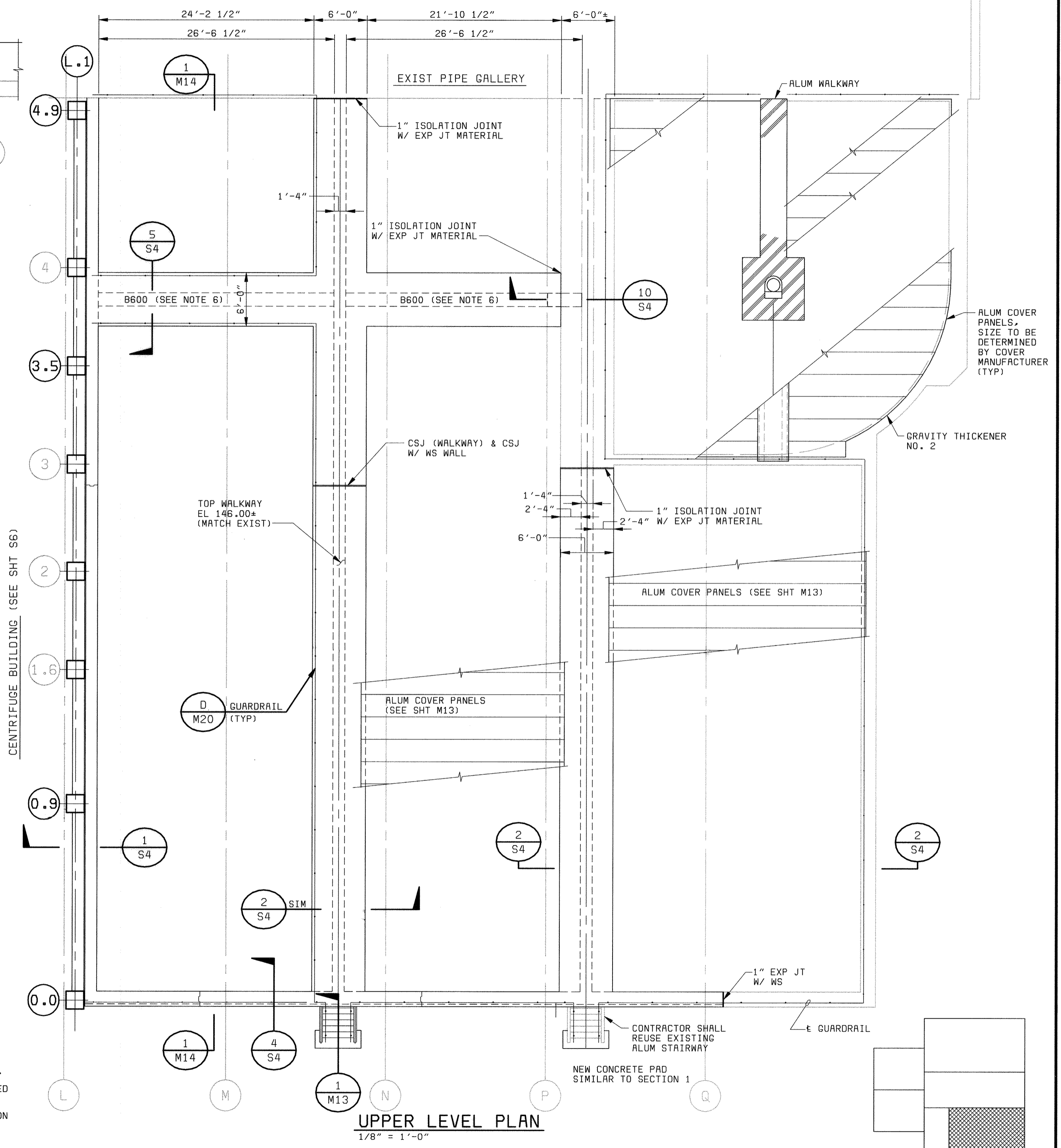
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
67 OF 150
S2

069475.2
P058472A

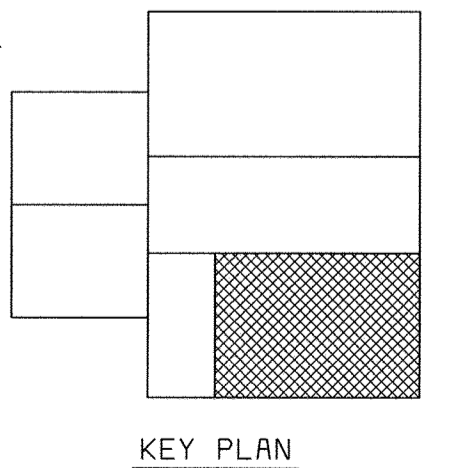


LOWER LEVEL PLAN
1/8" = 1'-0"



UPPER LEVEL PLAN
1/8" = 1'-0"

- NOTES:**
1. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 2. ALL EXIST DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF REINF STEEL.
 3. FOR TYPICAL EXPANSION (EXP) AND CONSTRUCTION (CSJ), SEE SHEET S15.
 4. FOR STANDARD CONC DETAILS SEE SHEET S15.
 5. FOR WATERSTOP DETAILS BETWEEN EXISTING AND NEW CONCRETE, SEE DETAILS A AND B ON SHEET S16.
 6. FOR BEAM SCHEDULE, SEE SHEET S18.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES' DATE

BLACK & VEATCH
Galliersburg, Maryland

REG. PROF. ENGR. DATE

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DES: TNG	DATE: 05/30/00
DRN: EAJ	DATE: 07/26/04
CHK: JME	CONFORMED TO CONSTRUCTION RECORDS
	REVISIONS AND RECORD OF ISSUE
	NO. BY CK APP

STRUCTURAL
SOUTH SLUDGE HOLDING TANK AND
GRAVITY THICKENER NO. 2

PLANS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

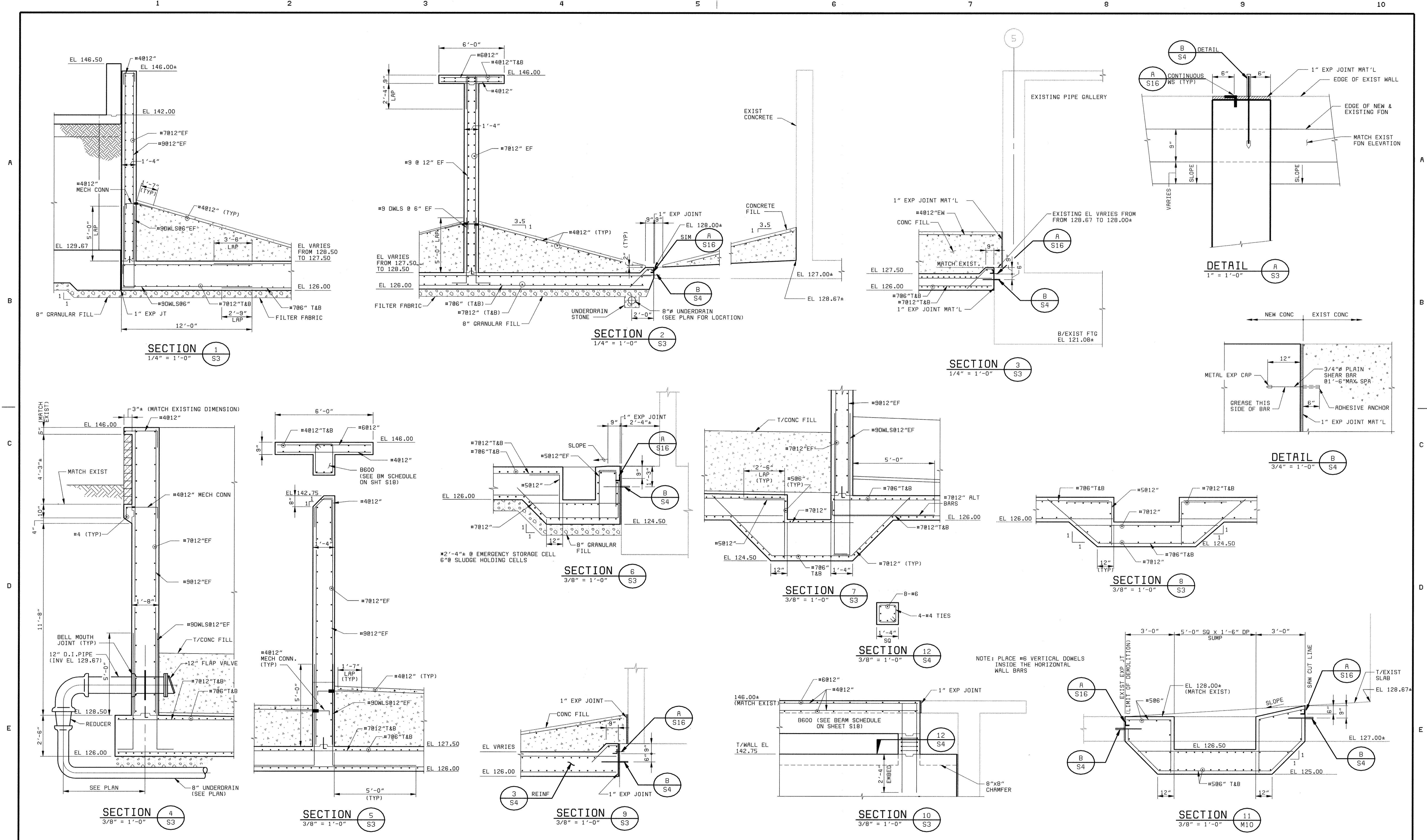
SHEET
68 OF 150

S3

58472-203-SHT-S-40000116

058472-2
FD58472A

58472-203-SHT-S-Z00000QY9



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

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Gaithersburg, Maryland

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DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
DATE		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

STRUCTURAL
SOUTH SLUDGE HOLDING TANK

SECTIONS AND DETAILS

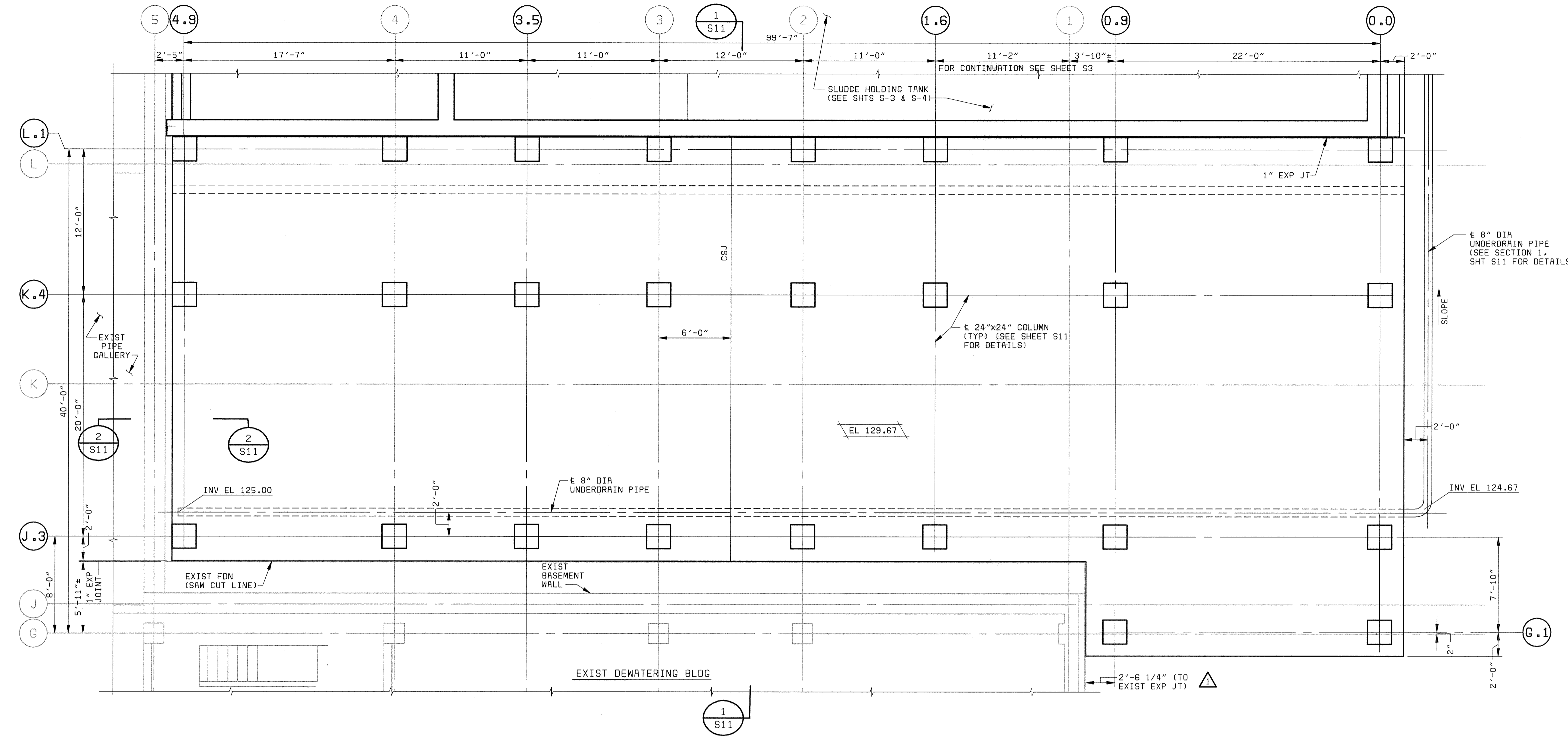
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

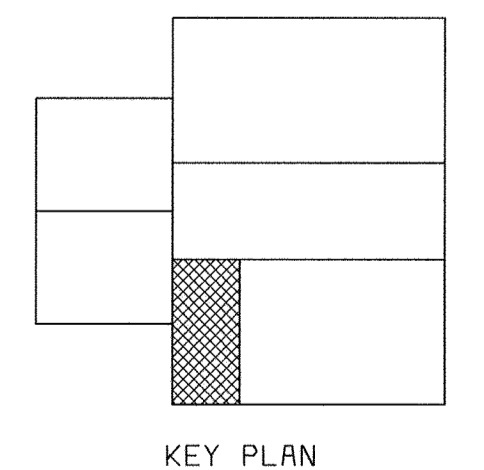
SHEET
69 OF 150

S4



PLAN AT EL 129.67
3/16" = 1'-0"

- NOTES:**
1. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 2. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF REINFORCING STEEL.
 3. EL SHOWN ∇ REPRESENT EL AT TOP OF SLAB.
 4. FOR TYPICAL CONSTRUCTION JOINT DETAILS, SEE SHEET S15.
 5. FOR STANDARD CONCRETE DETAILS, SEE SHEET S15.



584720203-SCLS-S-00000116
P
05/04/22
PDS/STZ

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

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Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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DES: TNG							
DRN: JRC							
CHK: JME							
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS					
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	

STRUCTURAL
CENTRIFUGE BUILDING EXPANSION

FOUNDATION PLAN AT EL. 129.67

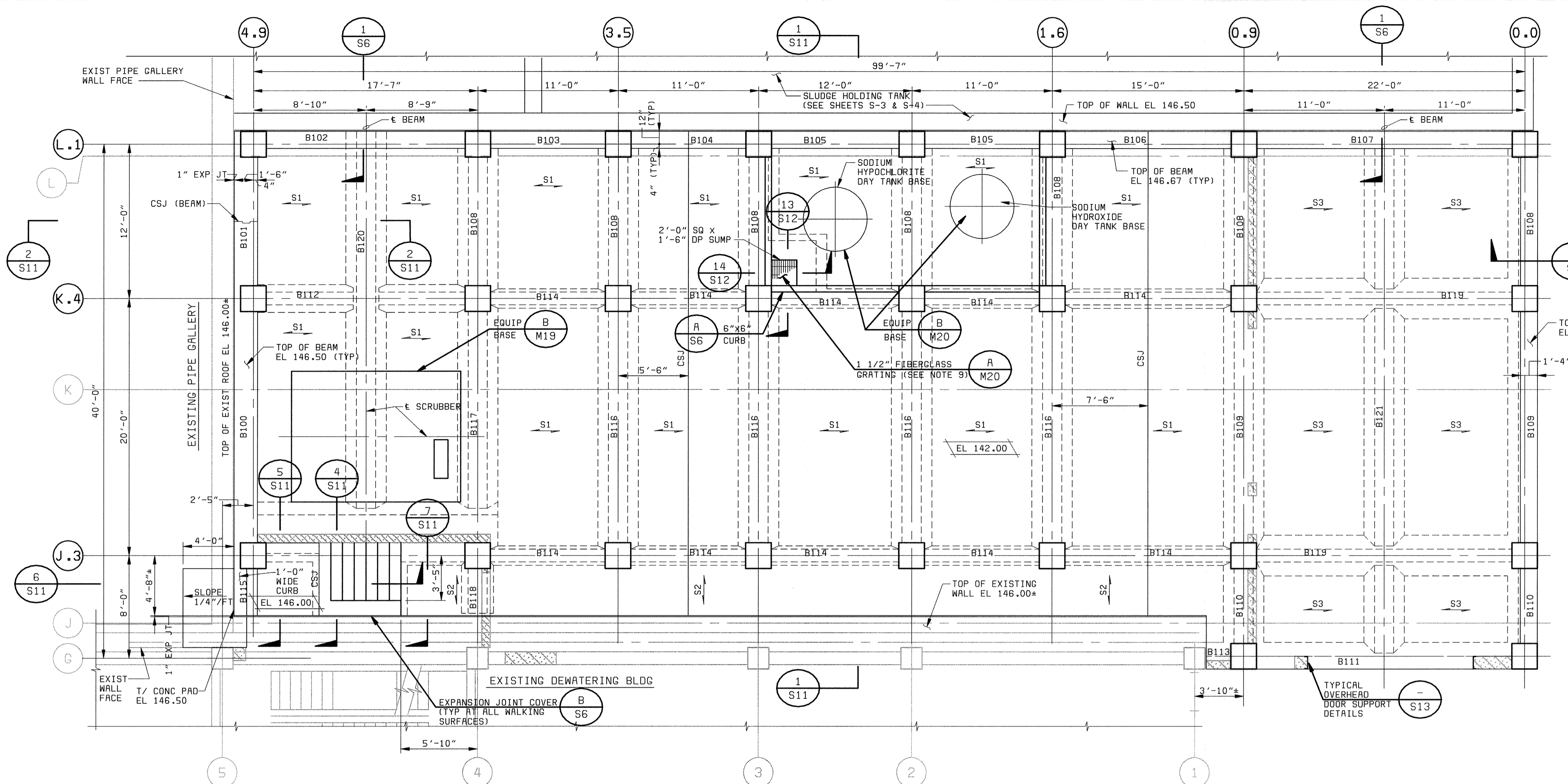
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

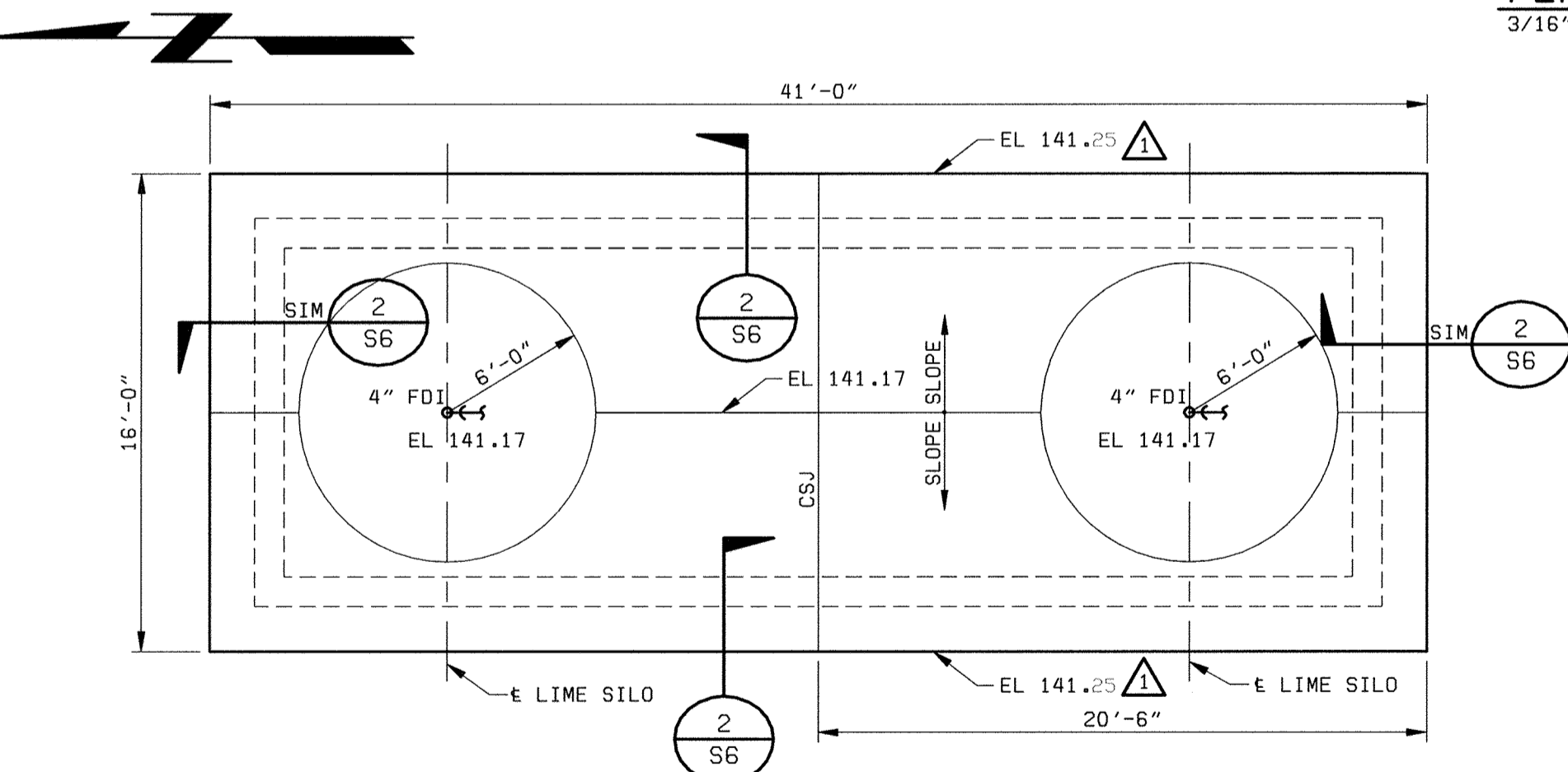
SCALE
AS
SHOWN

SHEET
70 OF 150

S5

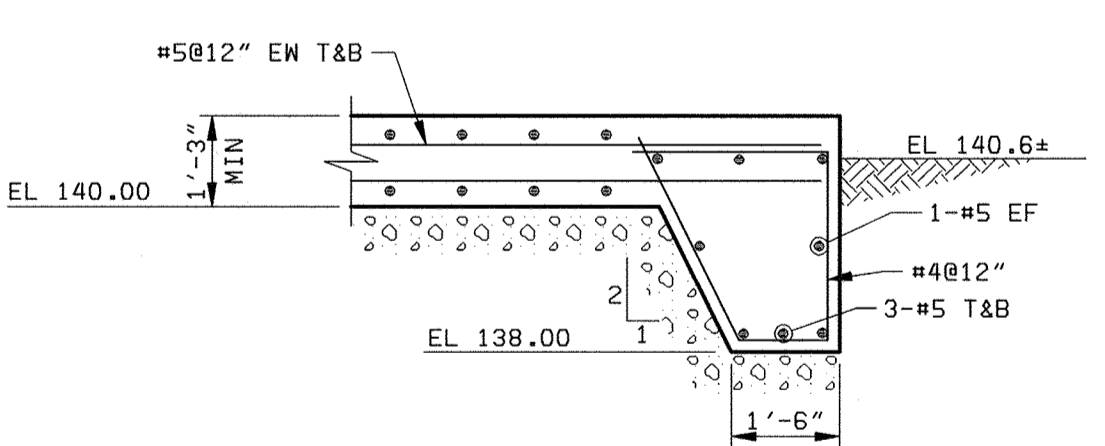


PLAN AT EL 142.00
3/16" = 1'-0"

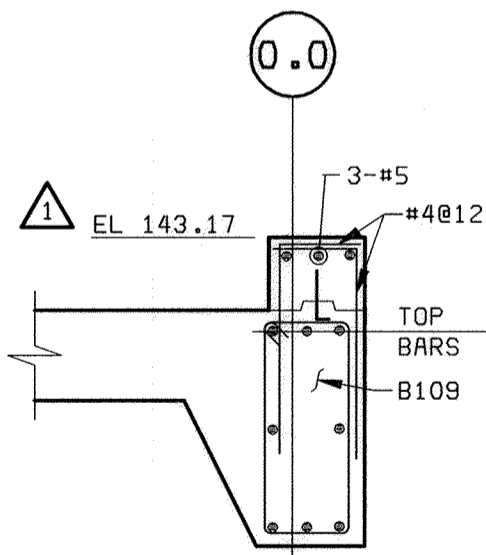


- NOTES:**
1. THE PAD DIMENSIONS AND LOCATION SHALL BE VERIFIED WITH THE LIME SILO MANUFACTURER PRIOR TO FABRICATION OF REINFORCING STEEL.
 2. THE SLAB THICKNESS SHOWN IS MINIMUM THICKNESS. THE SLAB THICKNESS SHALL NOT BE LESS THAN THE SILO ANCHOR BOLTS +3\".
 3. SEE RDP DRAWING NO. PE99004-700 FOR LIME SILO LOCATION.

LIME SILO PADS
3/16" = 1'-0"

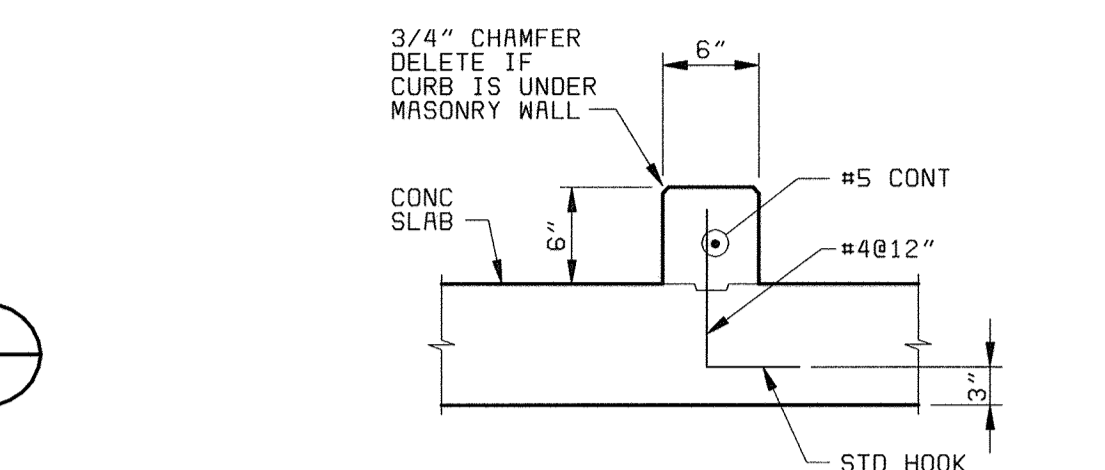


SECTION 2
3/8" = 1'-0"

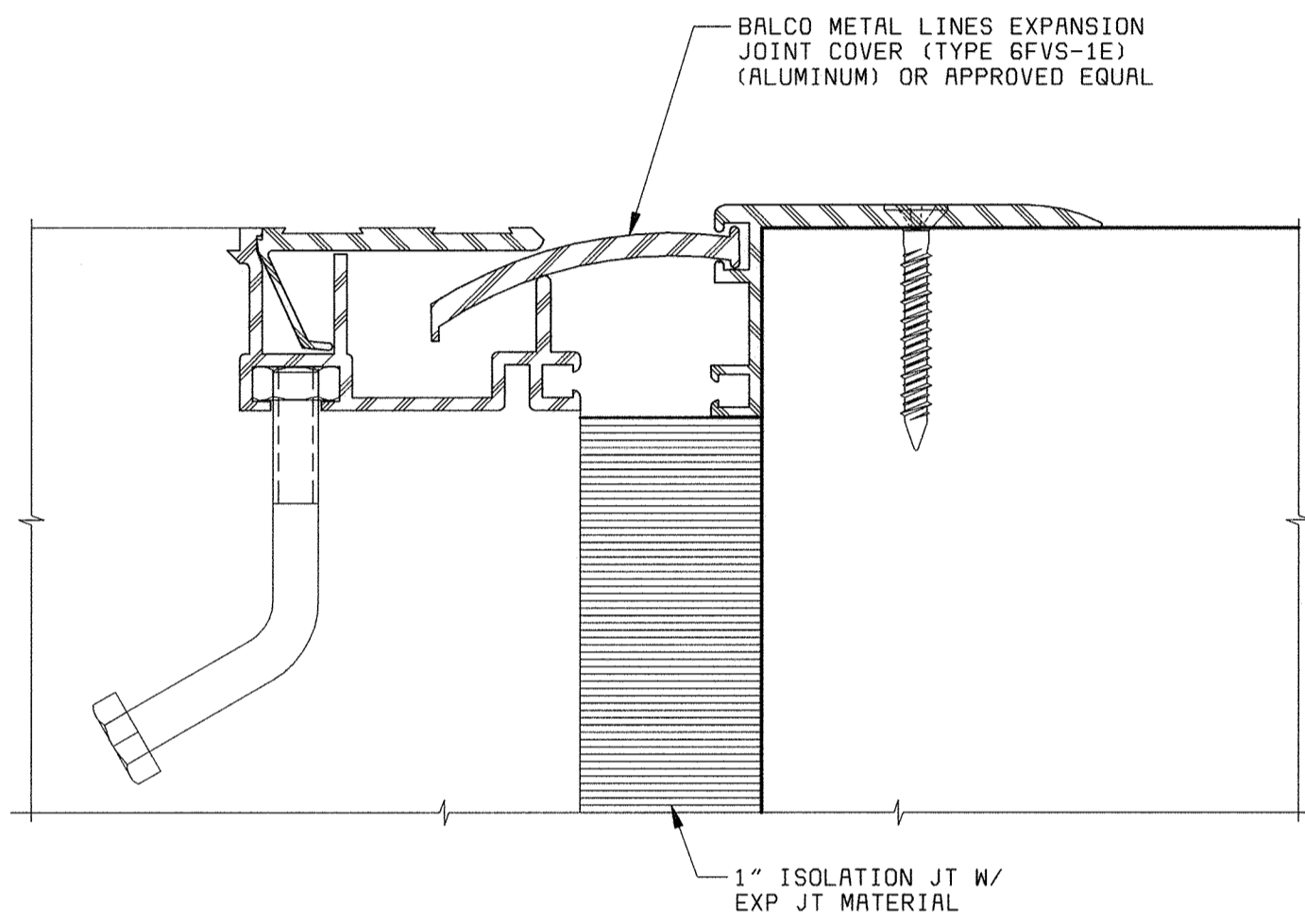


SECTION 3
3/8" = 1'-0"

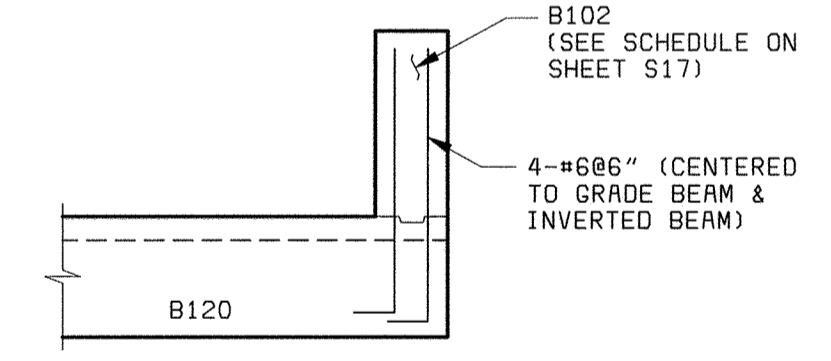
- NOTES:**
1. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 2. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF REINFORCING STEEL.
 3. ELEVATION SHOWN REPRESENT ELEVATION AT TOP OF SLAB, AT HIGH POINT. SEE SHEET P1 FOR FLOOR DRAIN LOCATIONS AND SLOPE TO DRAIN.
 4. FOR TYPICAL CONSTRUCTION JOINT DETAILS, SEE SHEET S15.
 5. FOR STANDARD CONCRETE DETAILS, SEE SHEET S15.
 6. FOR SCRUBBER AND CHEMICAL TANK LOCATIONS SEE SHEET H2.
 7. FOR CONCRETE BEAM SCHEDULE SEE SHEET S17.
 8. FOR CONCRETE SLAB SCHEDULE SEE SHEET S18.
 9. FIBERGLASS GRATING SHALL BEAR ON FIBERGLASS TRIM ANGLE AS MANUFACTURED BY FIBERGLASS PRODUCTS AND SYSTEMS.
 10. FOR WALL PANEL GIRT ELEVATION SEE SHEET S18.
 11. FOR PIPE HANGER DETAILS UNDER EL 142.00 SLAB, SEE SHEET P1.



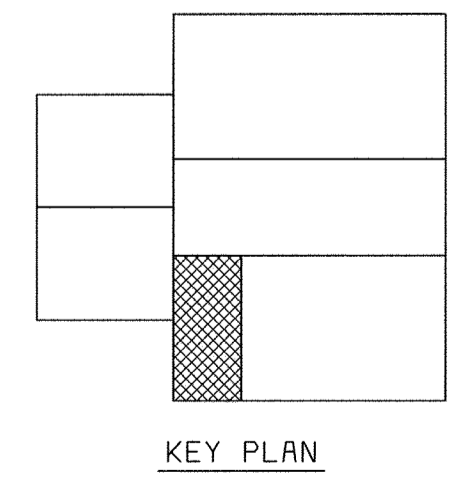
TYPICAL CONCRETE CURB
NO SCALE



TYPICAL AT ALL WALKWAY SURFACES EXPANSION JOINT COVER
NO SCALE



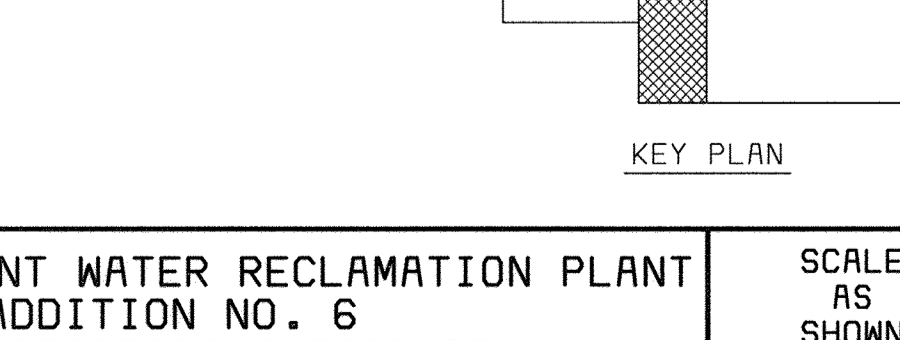
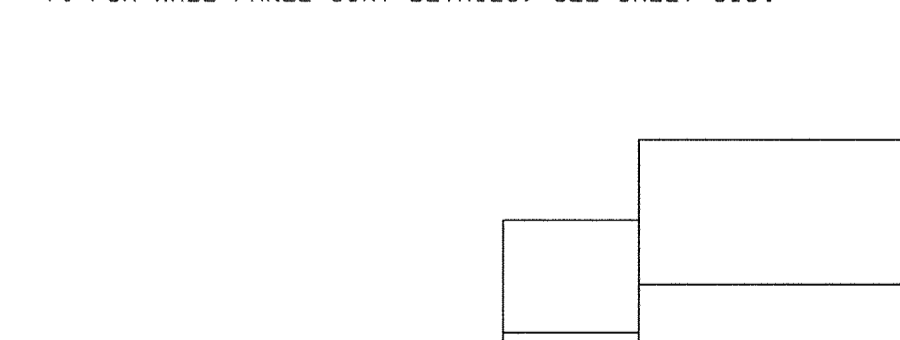
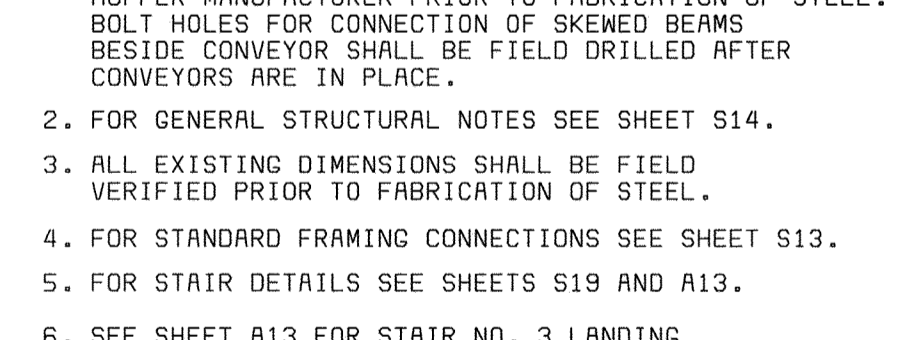
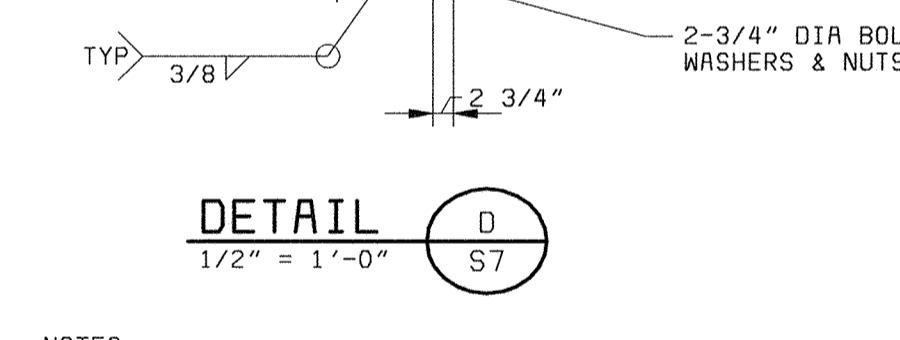
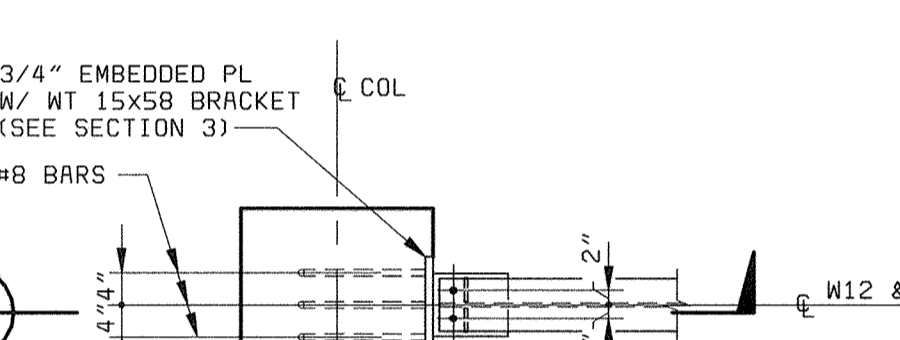
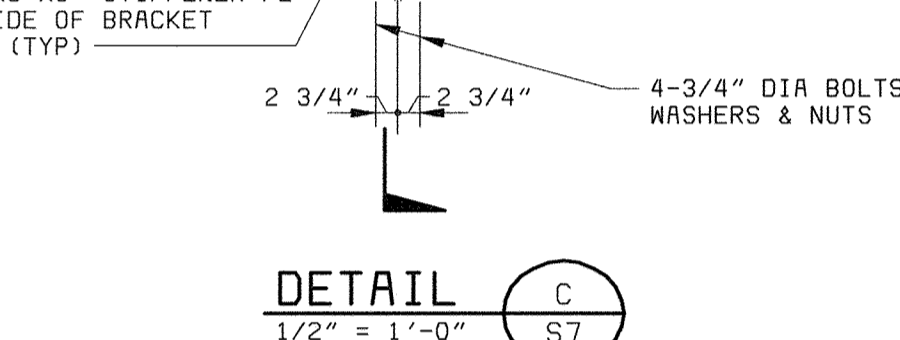
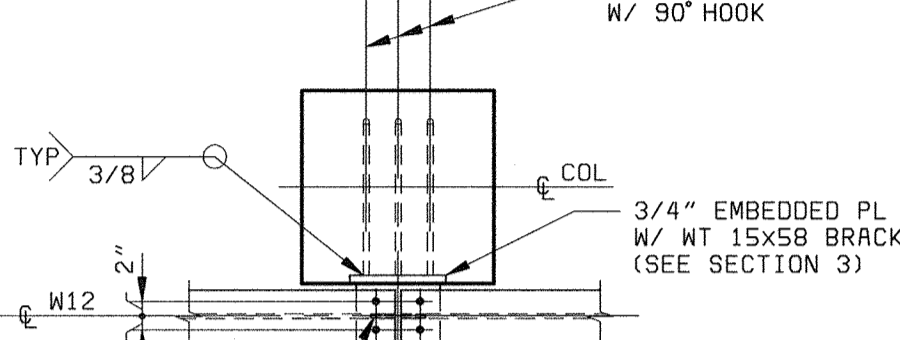
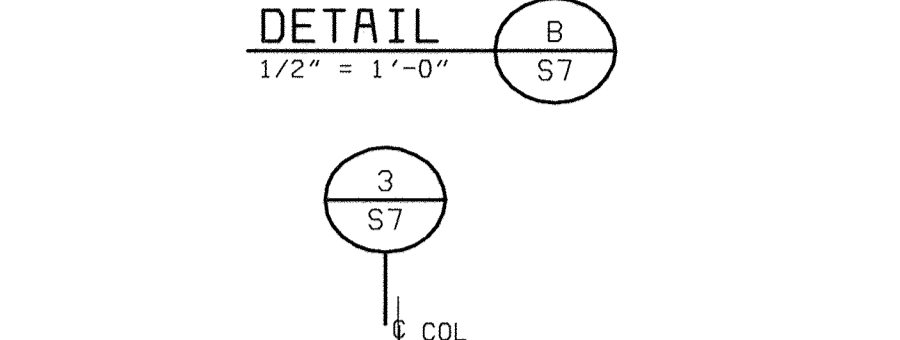
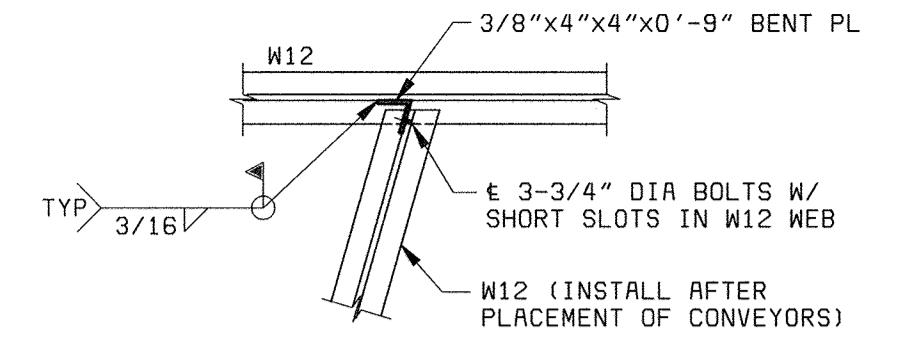
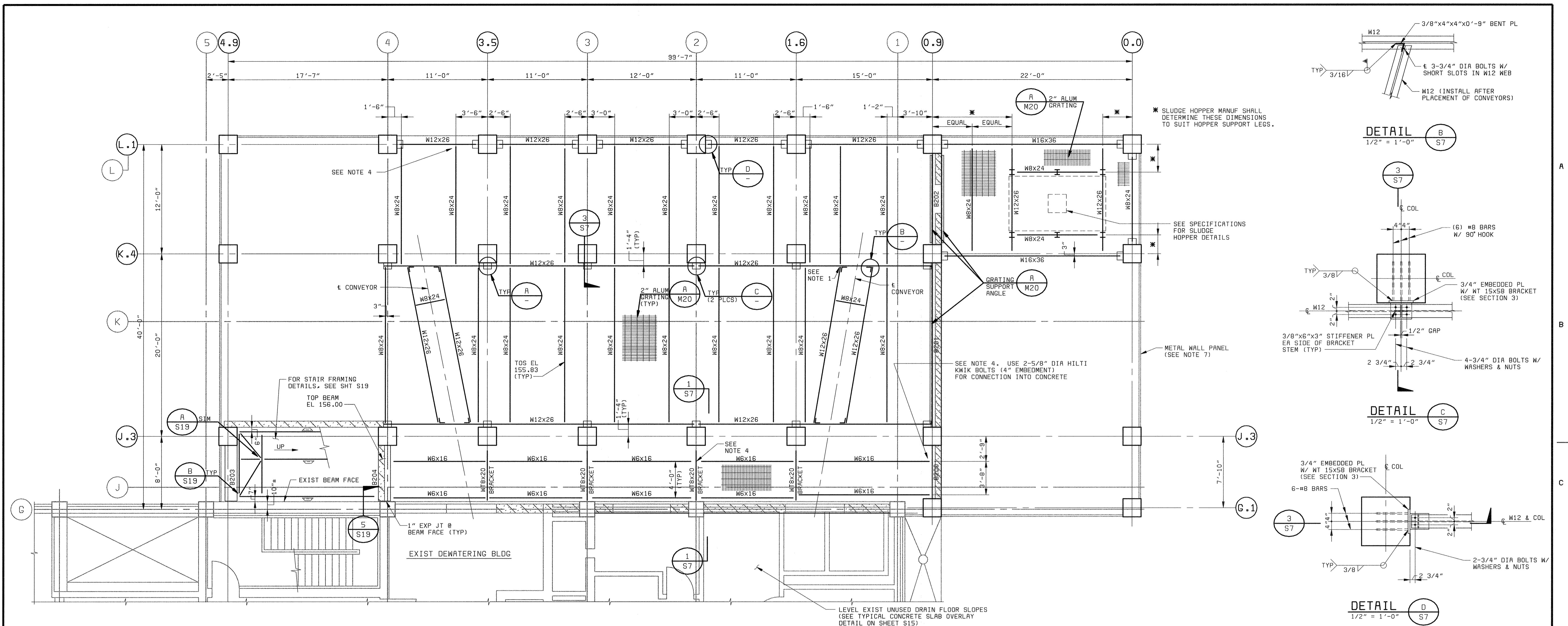
SECTION 1
1/4" = 1'-0"



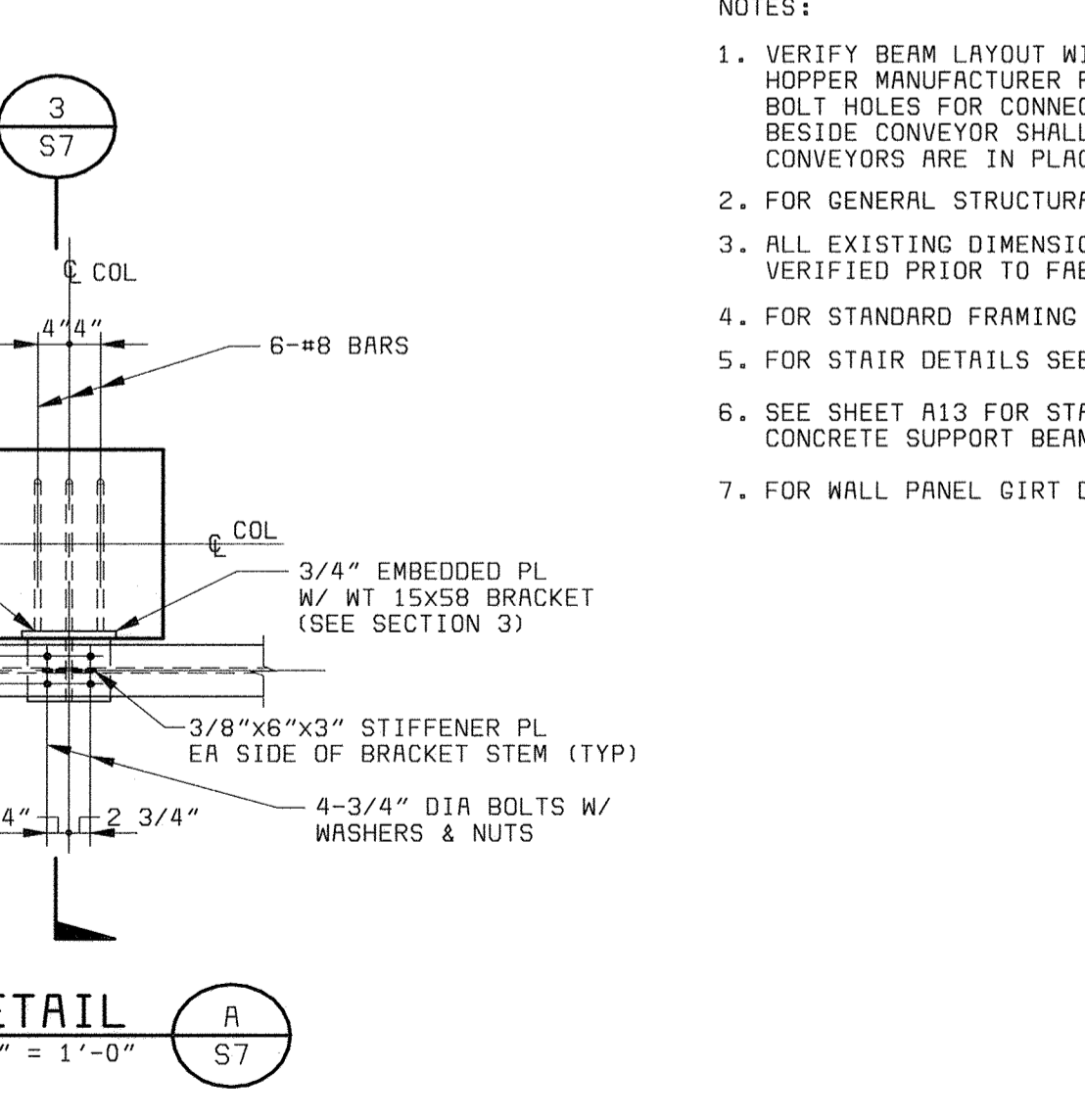
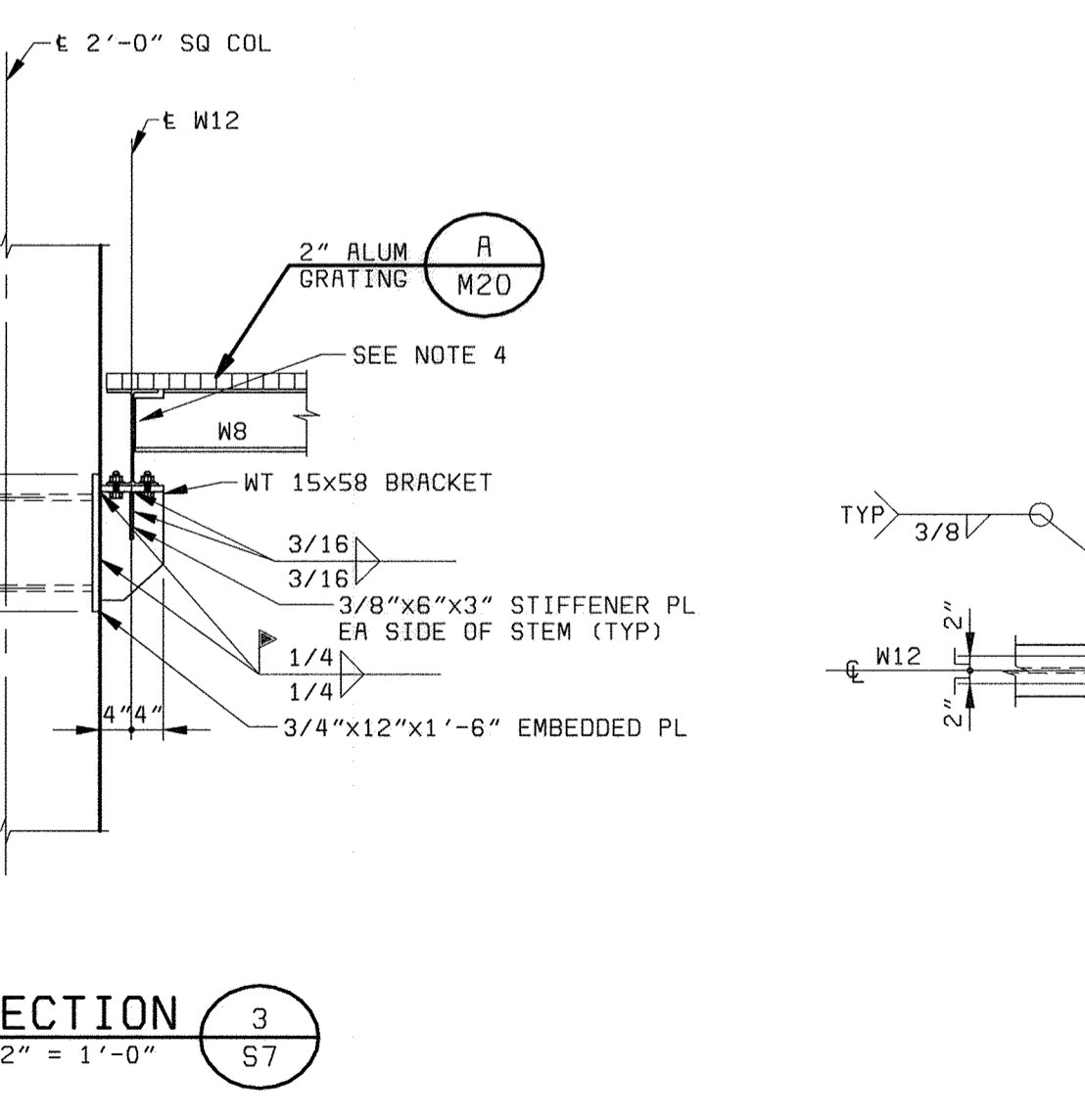
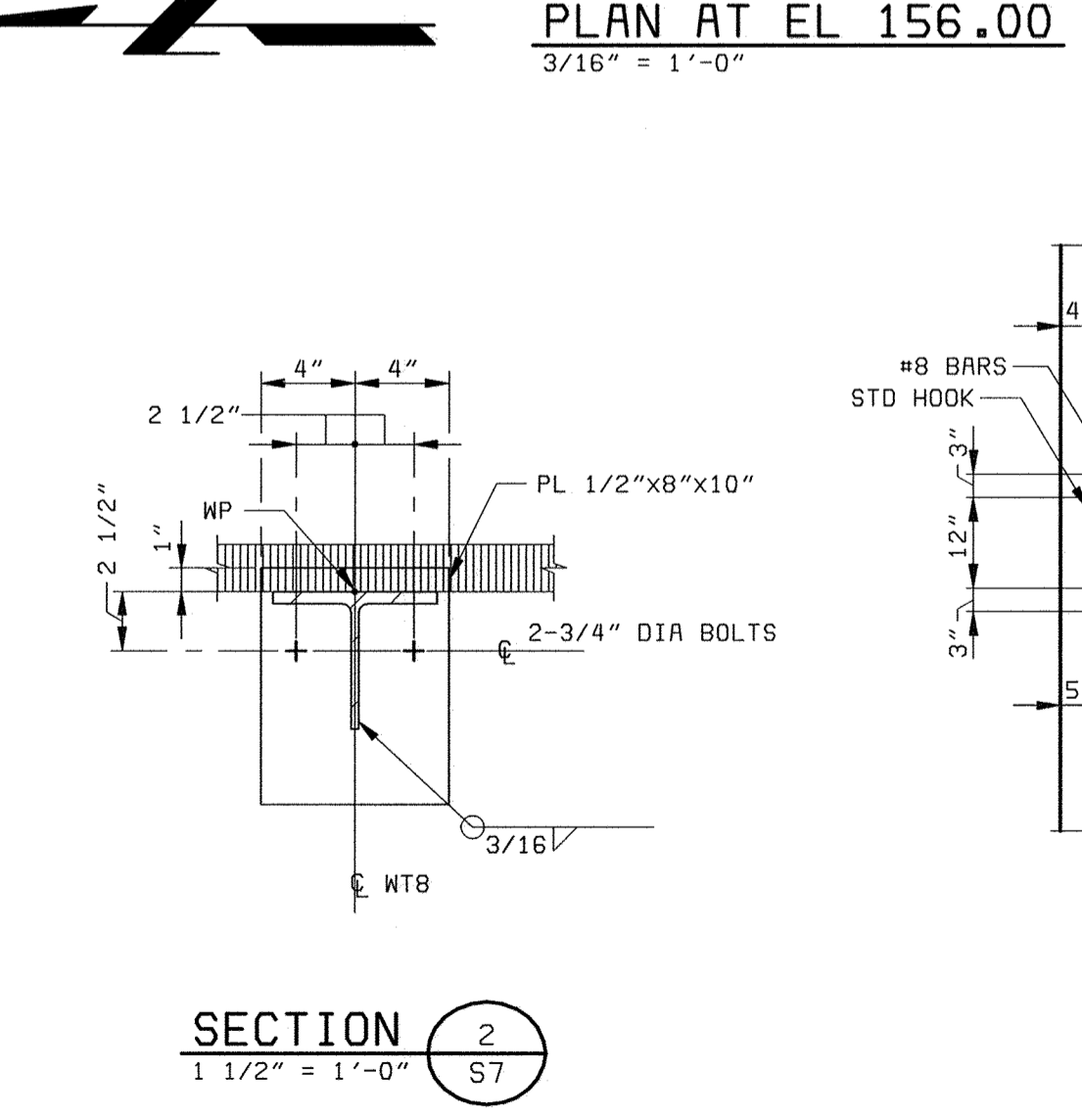
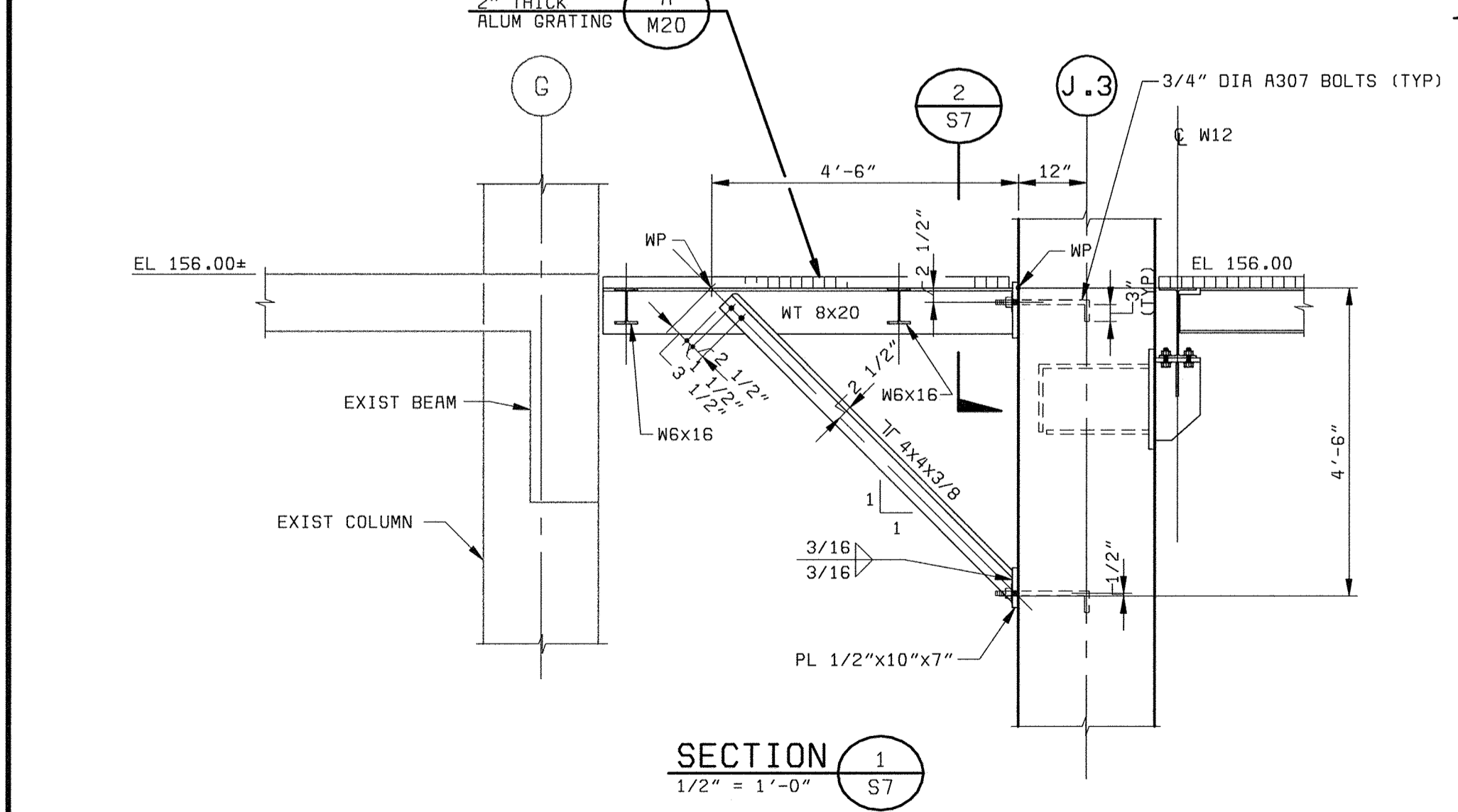
KEY PLAN

58472-203-SDL-S-R0000118
05/31/05
PDS58472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		STRUCTURAL CENTRIFUGE BUILDING EXPANSION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 71 OF 150 S6
			DRN: JRC						



- NOTES:**
1. VERIFY BEAM LAYOUT WITH CONVEYOR AND SLUDGE HOPPER MANUFACTURER PRIOR TO FABRICATION OF STEEL. BOLT HOLES FOR CONNECTION OF SKEWED BEAMS BESIDE CONVEYOR SHALL BE FIELD DRILLED AFTER CONVEYORS ARE IN PLACE.
 2. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 3. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF STEEL.
 4. FOR STANDARD FRAMING CONNECTIONS SEE SHEET S13.
 5. FOR STAIR DETAILS SEE SHEETS S19 AND A13.
 6. SEE SHEET A13 FOR STAIR NO. 3 LANDING CONCRETE SUPPORT BEAMS.
 7. FOR WALL PANEL GIRT DETAILS, SEE SHEET S18.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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DES: TNG
DRN: EAJ
CHK: JME
DATE: 05/30/00

07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH/RJR/RJR

REVISIONS AND RECORD OF ISSUE NO. BY CK APP

STRUCTURAL CENTRIFUGE BUILDING EXPANSION

PLAN AT EL. 156.00 AND DETAILS

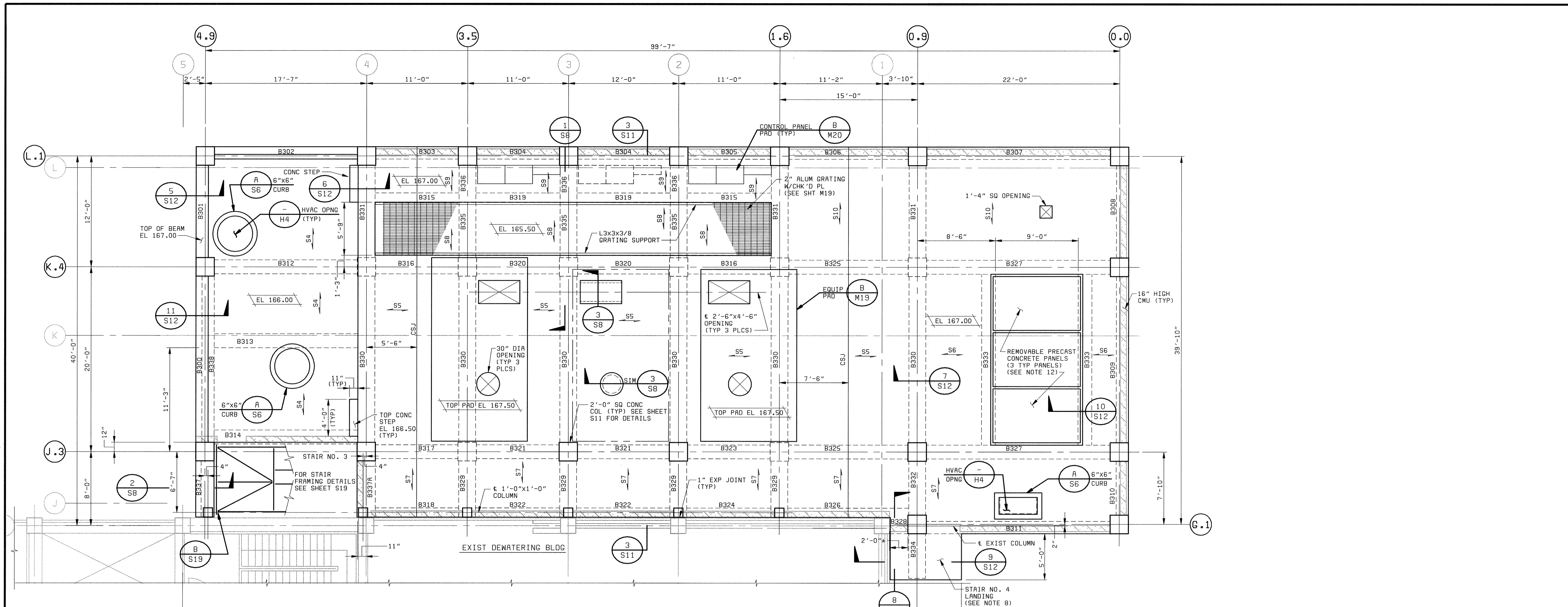
LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

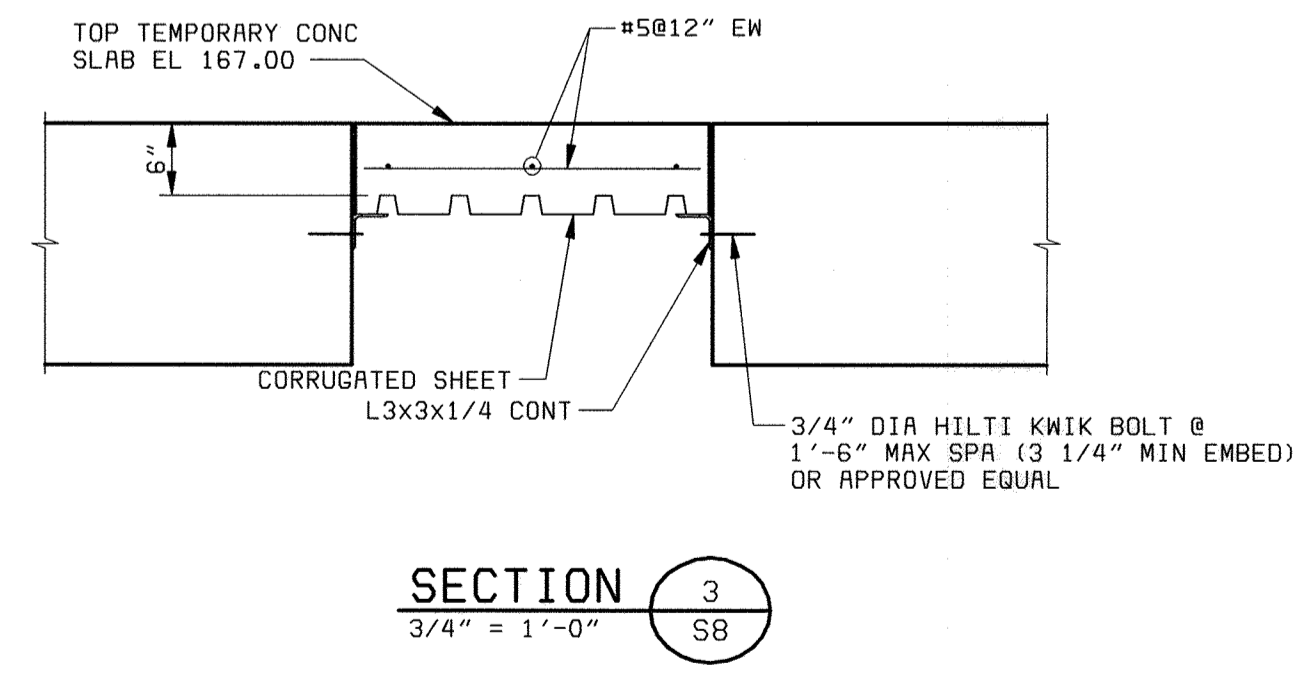
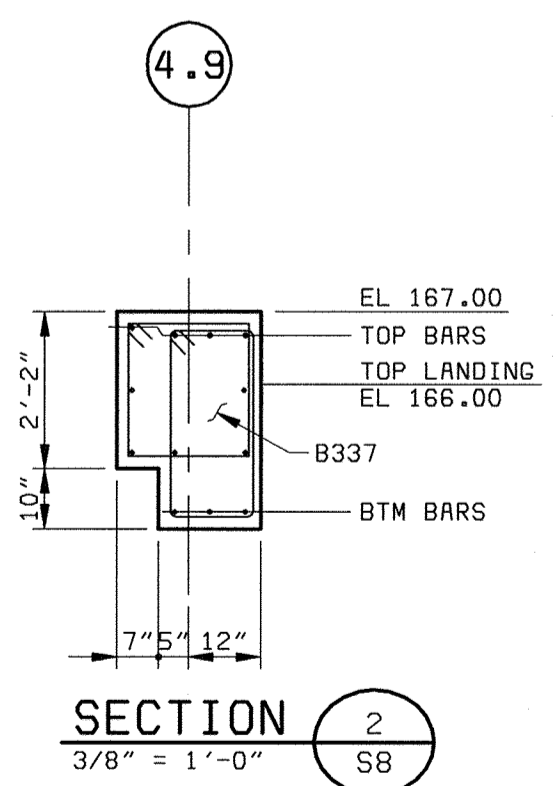
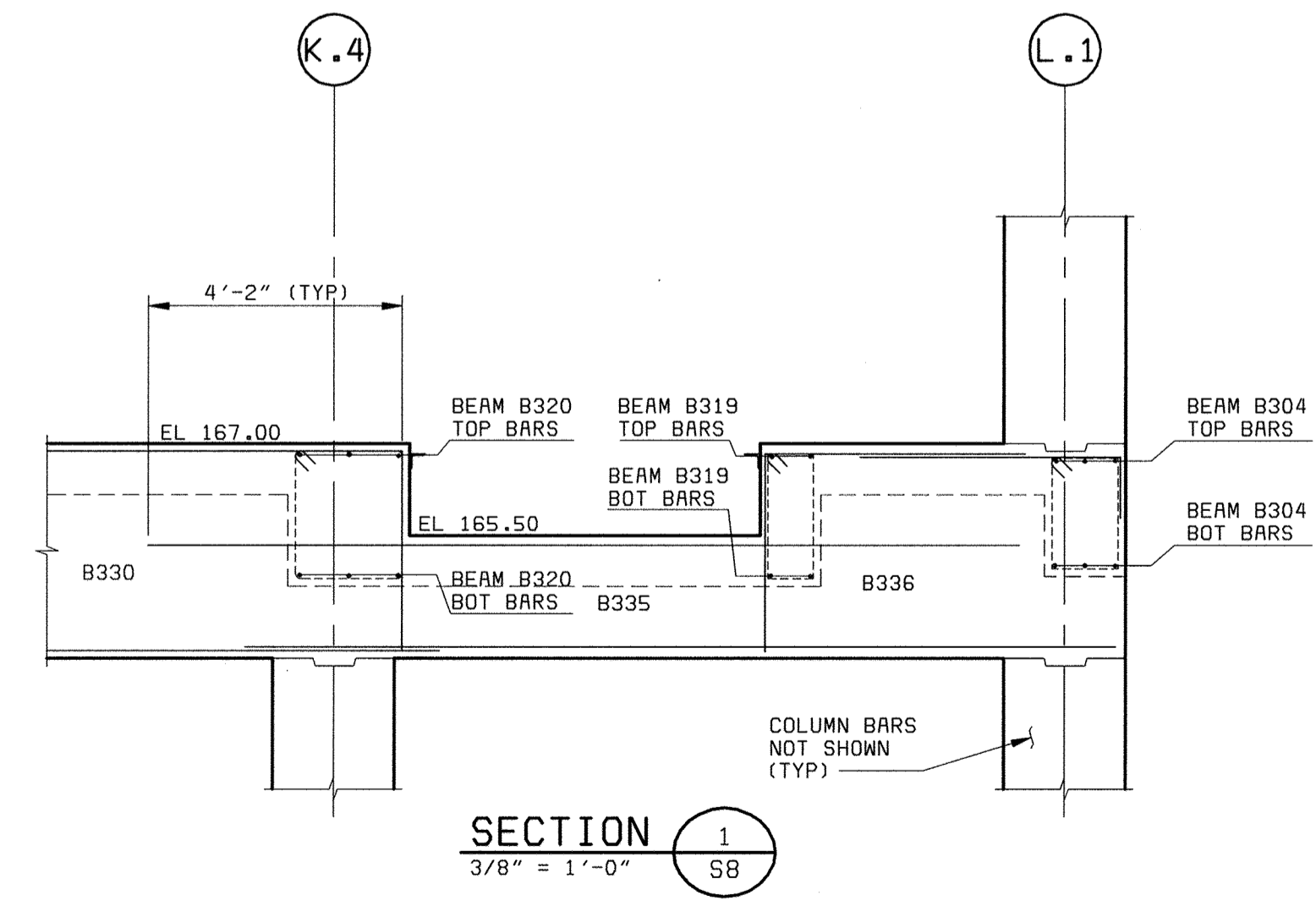
SCALE AS SHOWN

SHEET 72 OF 150

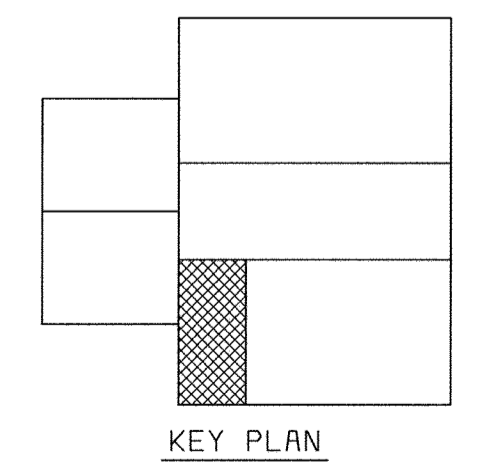
S7



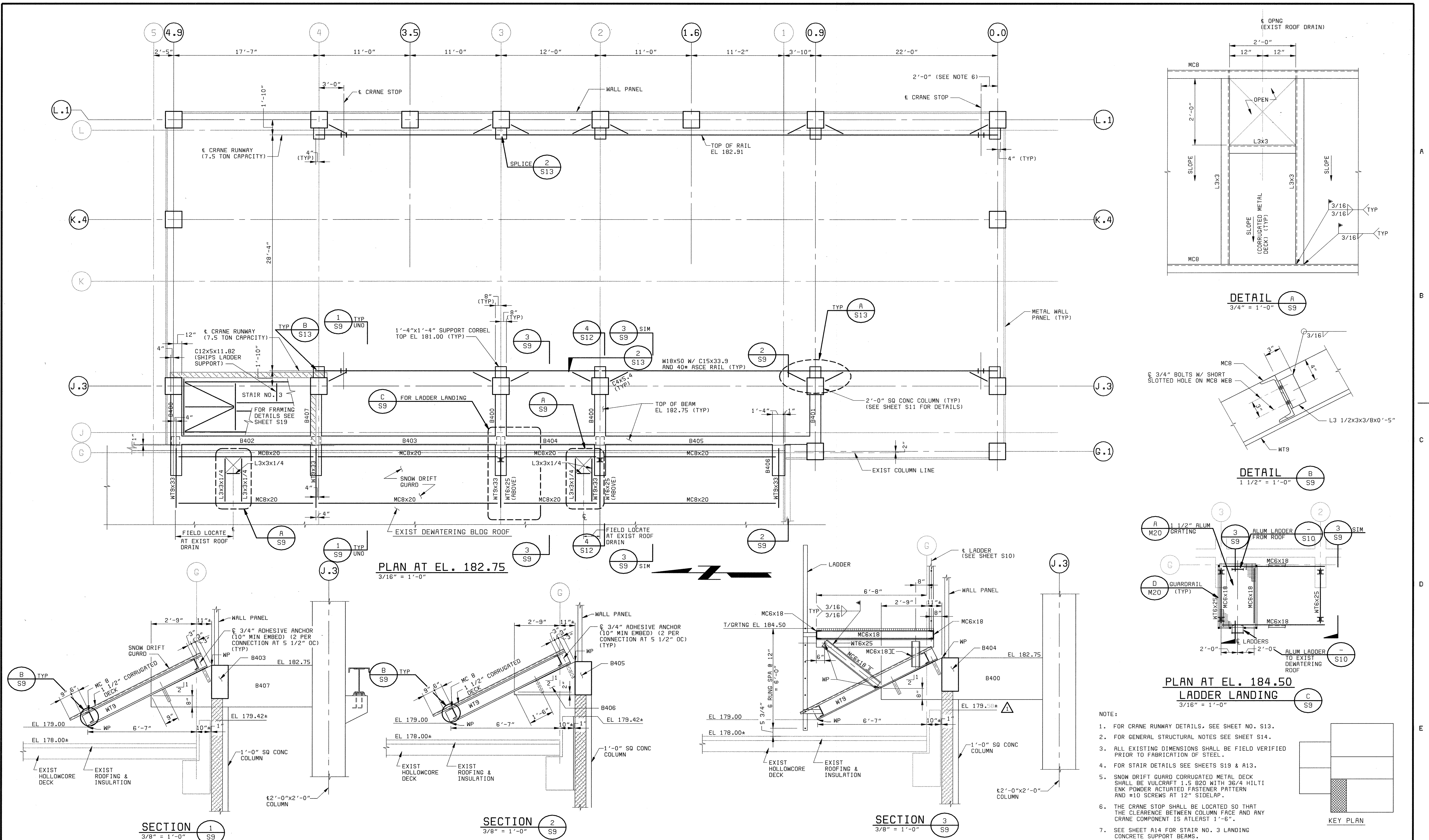
PLAN AT EL. 167.00
3/16" = 1'-0"



- NOTES:**
1. VERIFY ALL FLOOR PENETRATION SIZE AND LOCATION WITH EQUIPMENT MANUFACTURER.
 2. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 3. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF REINFORCING STEEL.
 4. ELEVATION SHOWN ∇ REPRESENT ELEVATION AT TOP OF SLAB, AT HIGH POINT. SEE SHEET P3 FOR FLOOR DRAIN LOCATIONS AND SLOPES TO DRAIN.
 5. FOR TYPICAL CONSTRUCTION JOINT DETAILS, SEE SHEET S15.
 6. FOR TYPICAL REINFORCING AROUND OPENING SEE SHEET S15.
 7. FOR STANDARD CONCRETE DETAILS SEE SHEET S15.
 8. FOR STAIR DETAILS SEE SHEETS S19 AND A13.
 9. FOR CONCRETE BEAM SCHEDULE SEE SHEETS S17.
 10. FOR CONCRETE SLAB SCHEDULE SEE SHEETS S18.
 11. SEE SHEET A14 FOR STAIR NO. 3 LANDING BEAMS.
 12. REMOVABLE PRECAST CONCRETE PANEL SHALL BE DESIGNED TO CARRY 150#/SQ FT LIVE LOAD. 4-RETRACTABLE LIFTING HOOKS SHALL BE PROVIDED PER PANEL. ALL PANELS SHALL HAVE EDGE ANGLES OR CHANNELS ALL AROUND AS SHOWN IN SECTION 10 ON SHEET S12.
 13. FOR WALL PANEL GIRT DETAILS, SEE SHEET S18.



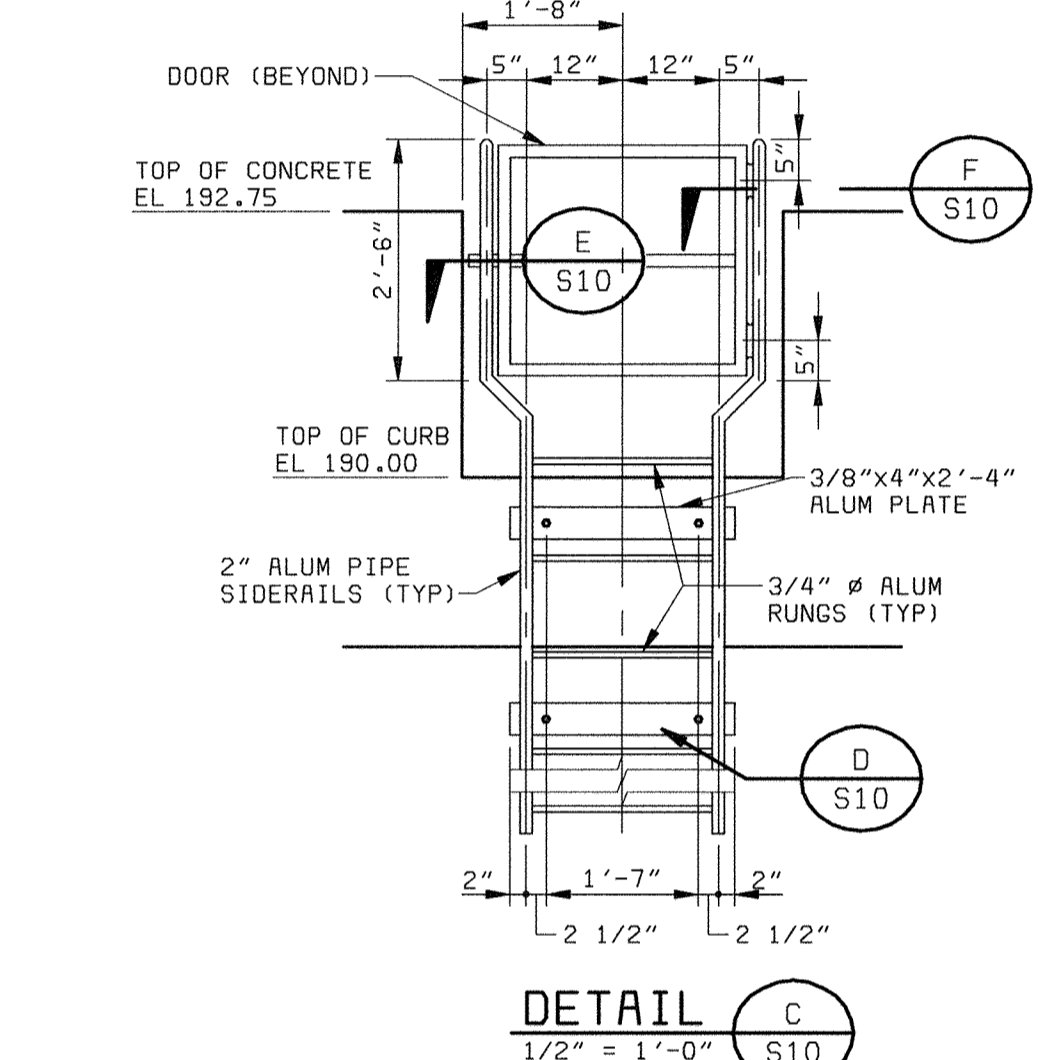
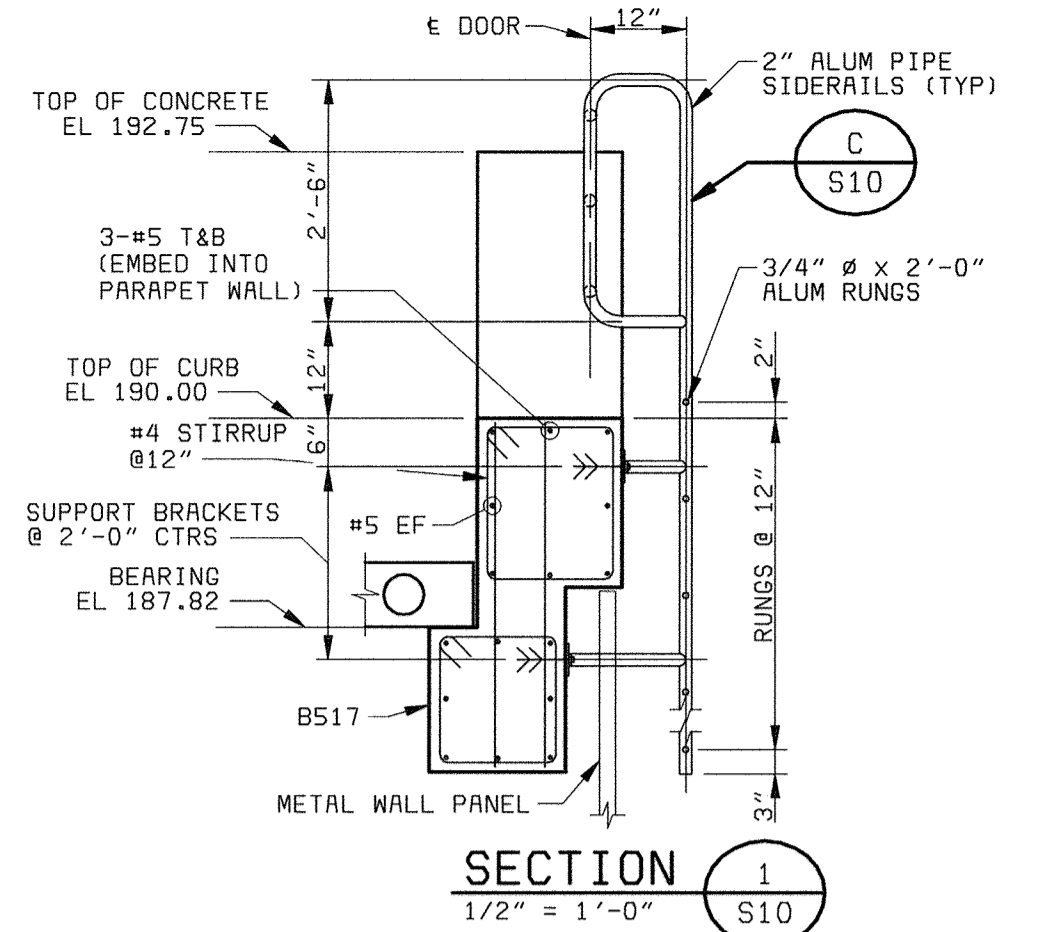
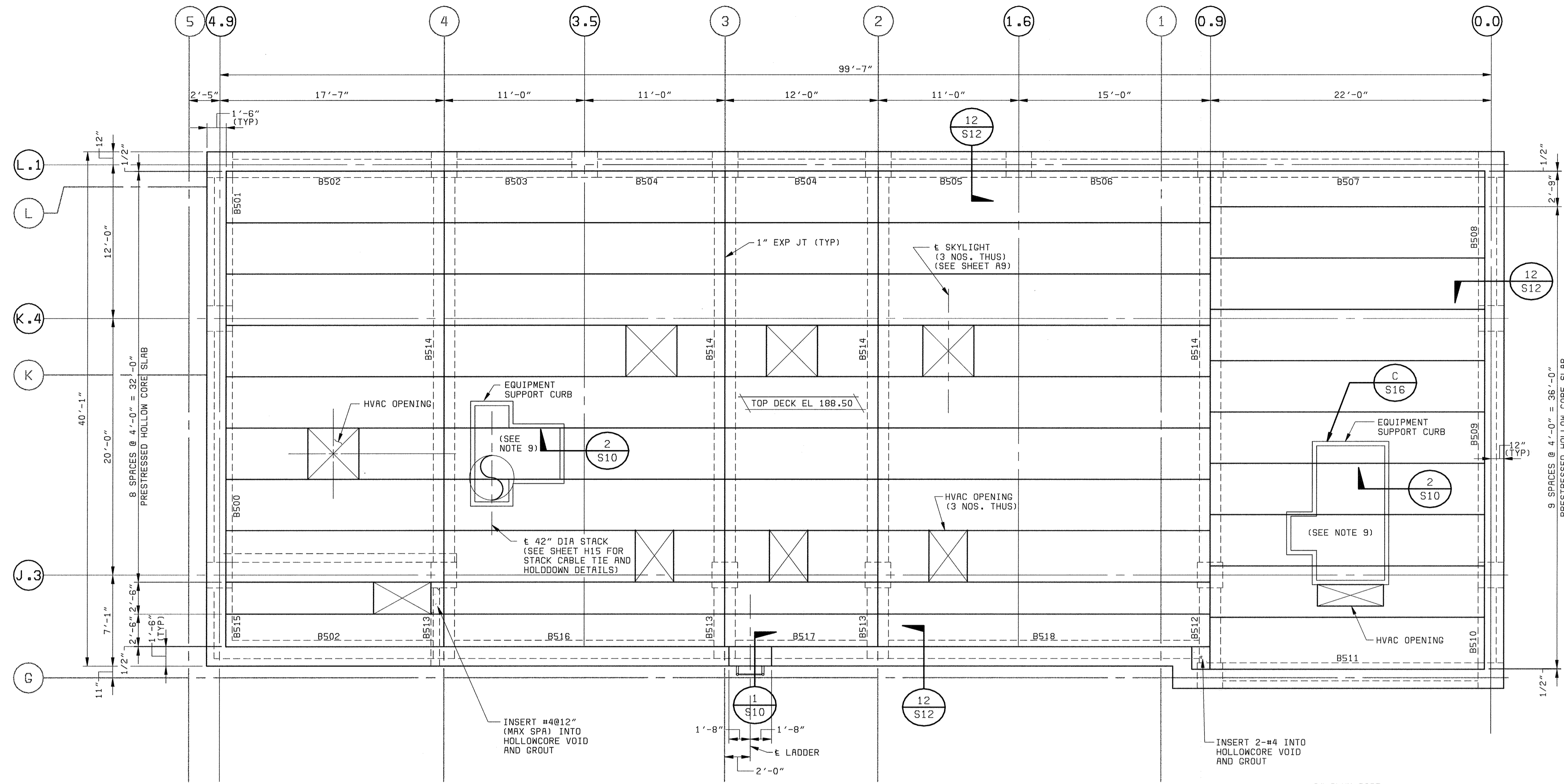
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG	07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH/RJR/RJR	STRUCTURAL CENTRIFUGE BUILDING EXPANSION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: EAJ				PLAN AT EL. 167.00 AND DETAILS
			CHK: JME				S8
			DATE: 05/30/00				



- NOTE:
1. FOR CRANE RUNWAY DETAILS, SEE SHEET NO. S13.
 2. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 3. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF STEEL.
 4. FOR STAIR DETAILS SEE SHEETS S19 & A13.
 5. SNOW DRIFT GUARD CORRUGATED METAL DECK SHALL BE VULCRAFT 1.5 B20 WITH 36/4 HILTI ENK POWDER ACTUATED FASTENER PATTERN AND #10 SCREWS AT 12" SIDELAP.
 6. THE CRANE STOP SHALL BE LOCATED SO THAT THE CLEARANCE BETWEEN COLUMN FACE AND ANY CRANE COMPONENT IS AT LEAST 1'-6".
 7. SEE SHEET A14 FOR STAIR NO. 3 LANDING CONCRETE SUPPORT BEAMS.

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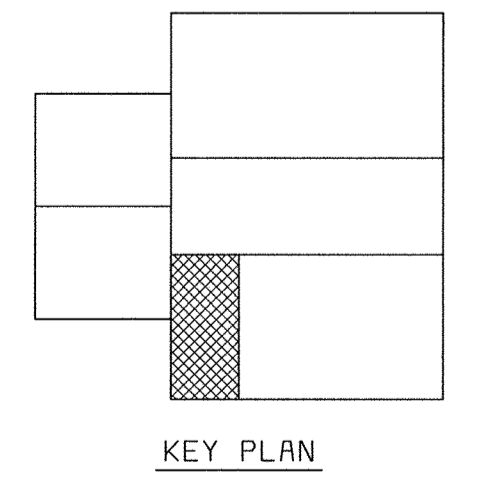
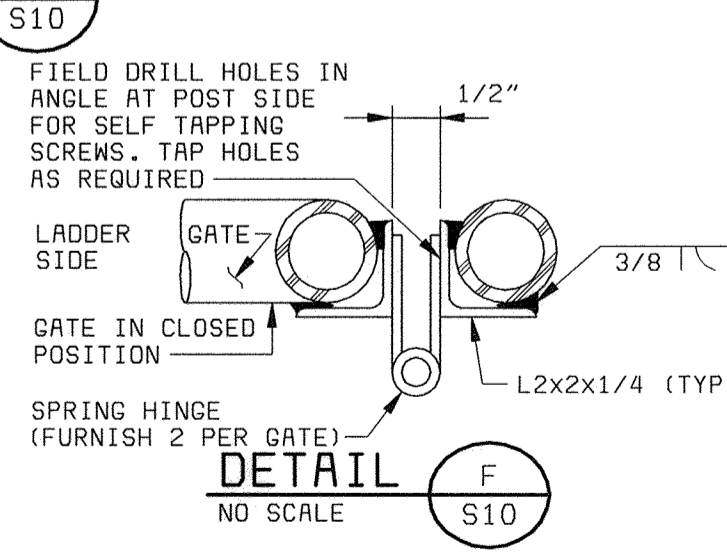
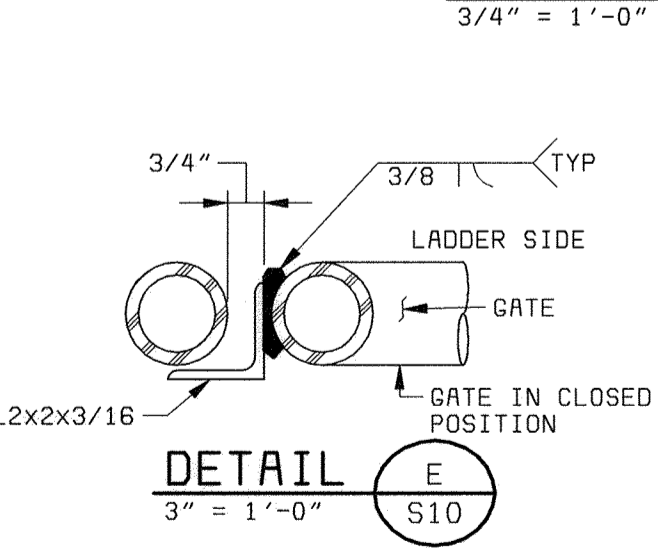
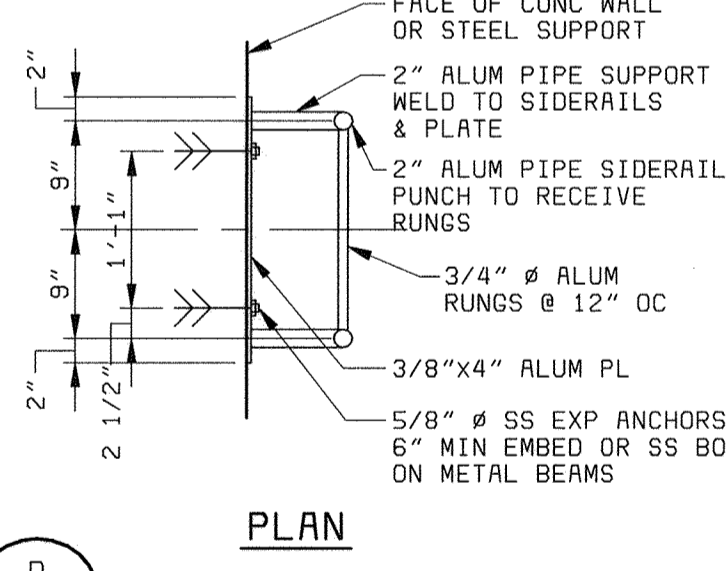
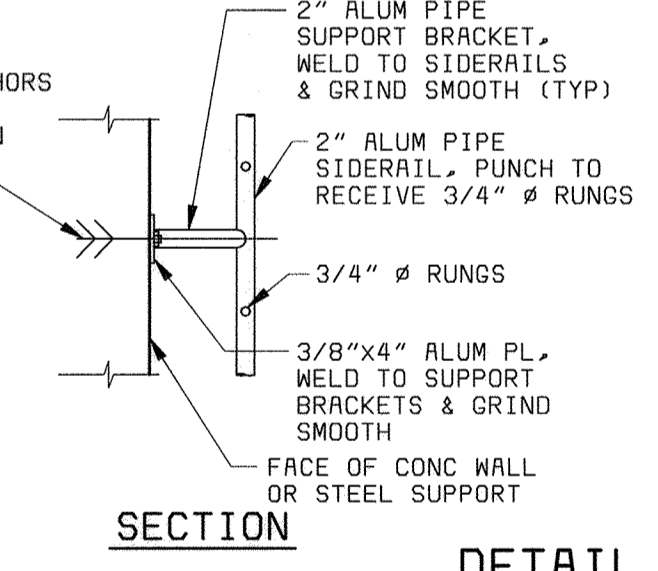
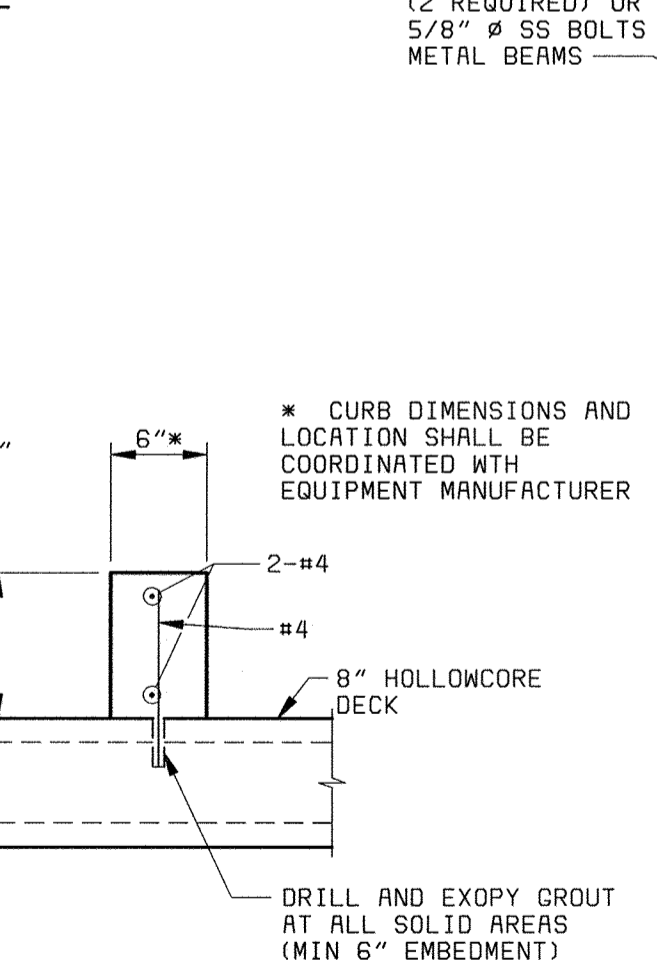
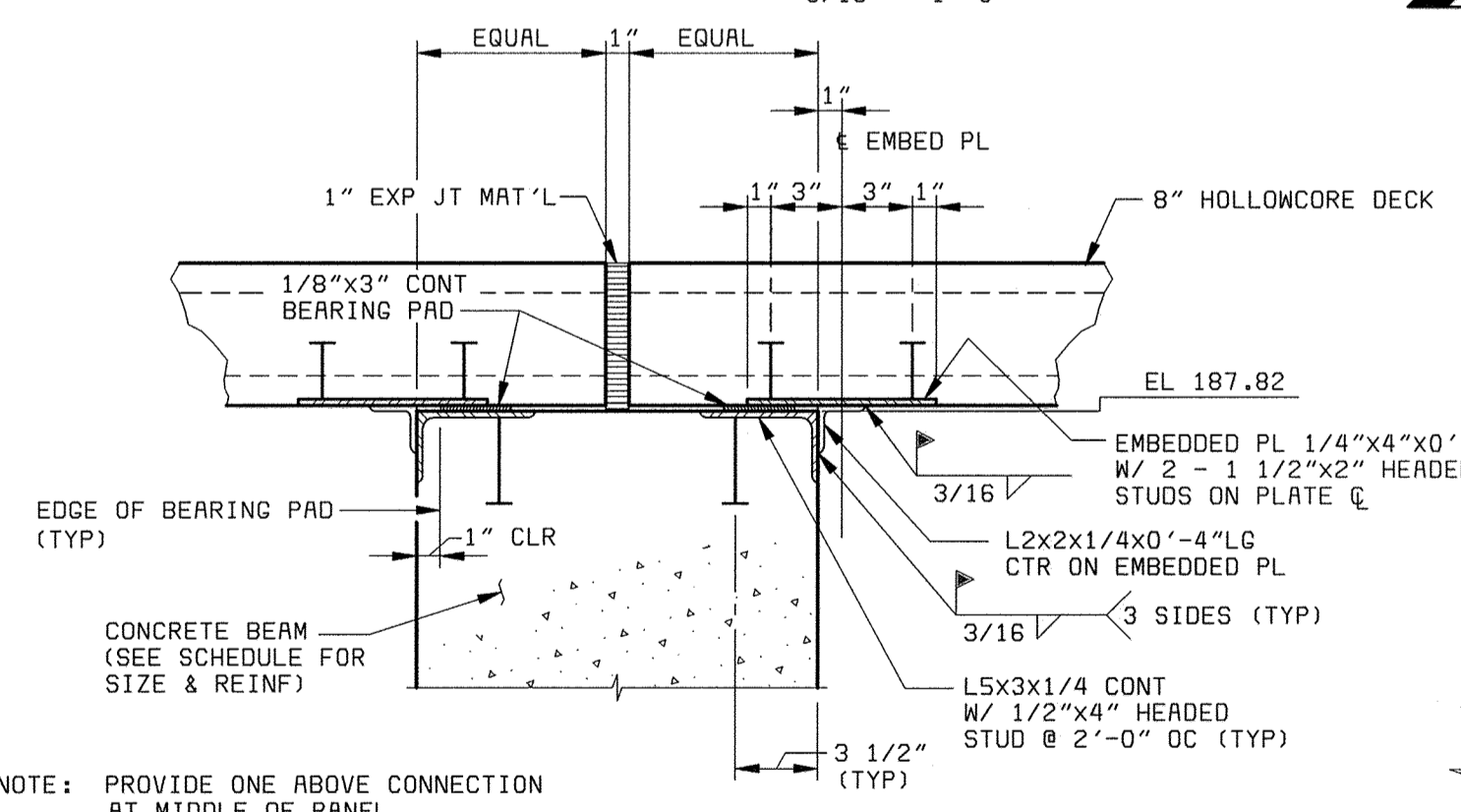
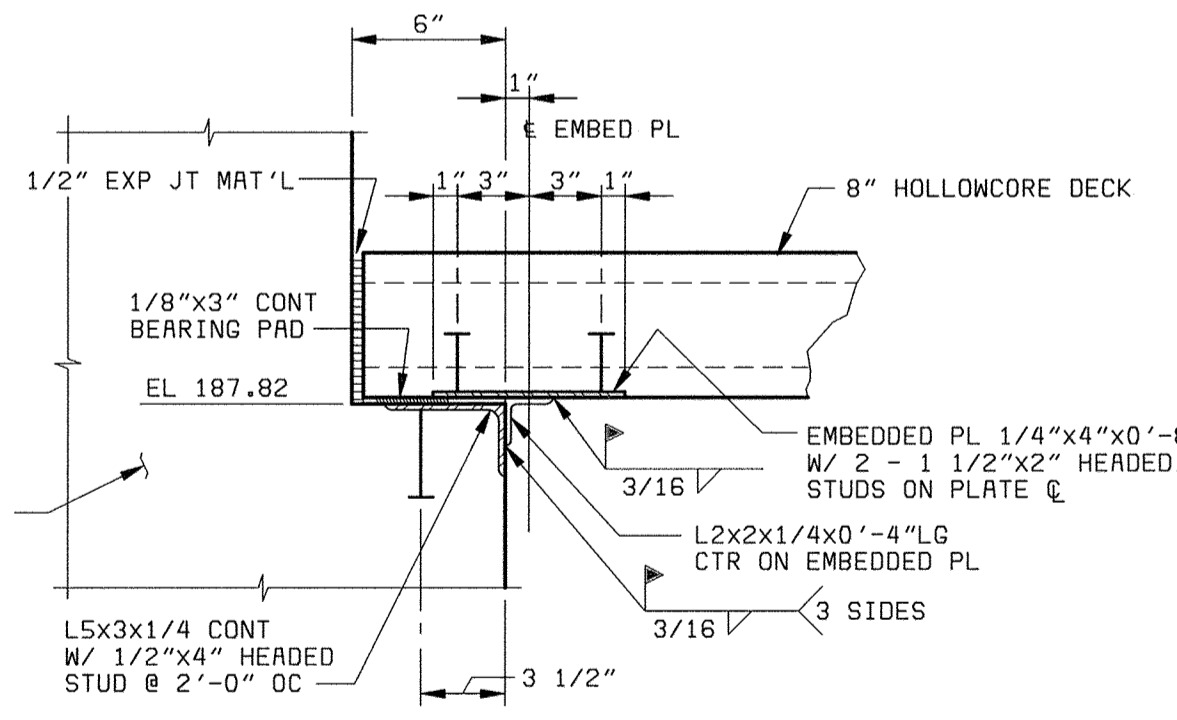
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609 DATE: 05/30/00	DES: TNG DRN: EAJ CHK: JME DATE: 07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE NO. BY CK APP	STRUCTURAL CENTRIFUGE BUILDING EXPANSION PLAN AT EL. 182.75 AND DETAILS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 BNR TREATMENT CAPACITY EXPANSION CAPITAL PROJECT S-6205 CONTRACT NO. 20-3752 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 74 OF 150 S9
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ROOF PLAN
3/16" = 1'-0"



- NOTES:
- FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 - ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF HOLLOWCORE DECK.
 - FOR HOLLOWCORE PANEL DESIGN UNIFORM LOADS AND TRIANGULAR SNOW DRIFT LOADS, SEE SPECIFICATION 03410-2-1.01. FOR HVAC ROOF EQUIPMENT LOADS, SEE SHEETS H12 AND H17 (ALL EQUIPMENT LOADS SHALL BE VERIFIED WITH EQUIPMENT SUPPLIER). SKYLIGHT AND ROOF HATCH WEIGHTS SHALL BE OBTAINED FROM SUPPLIERS.
 - SEE SHEETS A11 FOR ROOFING DETAILS.
 - SEE SHEET A9 FOR ROOF DRAIN LOCATION.
 - PLATE IN HOLLOWCORE MAY BE CAST IN DURING MANUFACTURE, OR GROUTED IN A HOLLOWCORE VOID AFTER CASTING. GROUTING IN VOID SHALL EXTEND MIN 6" BEYOND HEADED STUD CENTERLINE EACH WAY.
 - ALL HOLLOWCORE DECK SHALL BE ANCHORED ONLY AT ONE END USING EITHER DETAIL 1 OR DETAIL 2.
 - FOR CONCRETE BEAM SIZES AND REINFORCING SEE BEAM SCHEDULE ON SHEET S18.
 - THE INSIDE OF CURB UNDER THE EQUIPMENT SHALL BE FILLED WITH INSULATION AND WATERPROOFED. SLOPE TOP SURFACE TOWARDS CURB.



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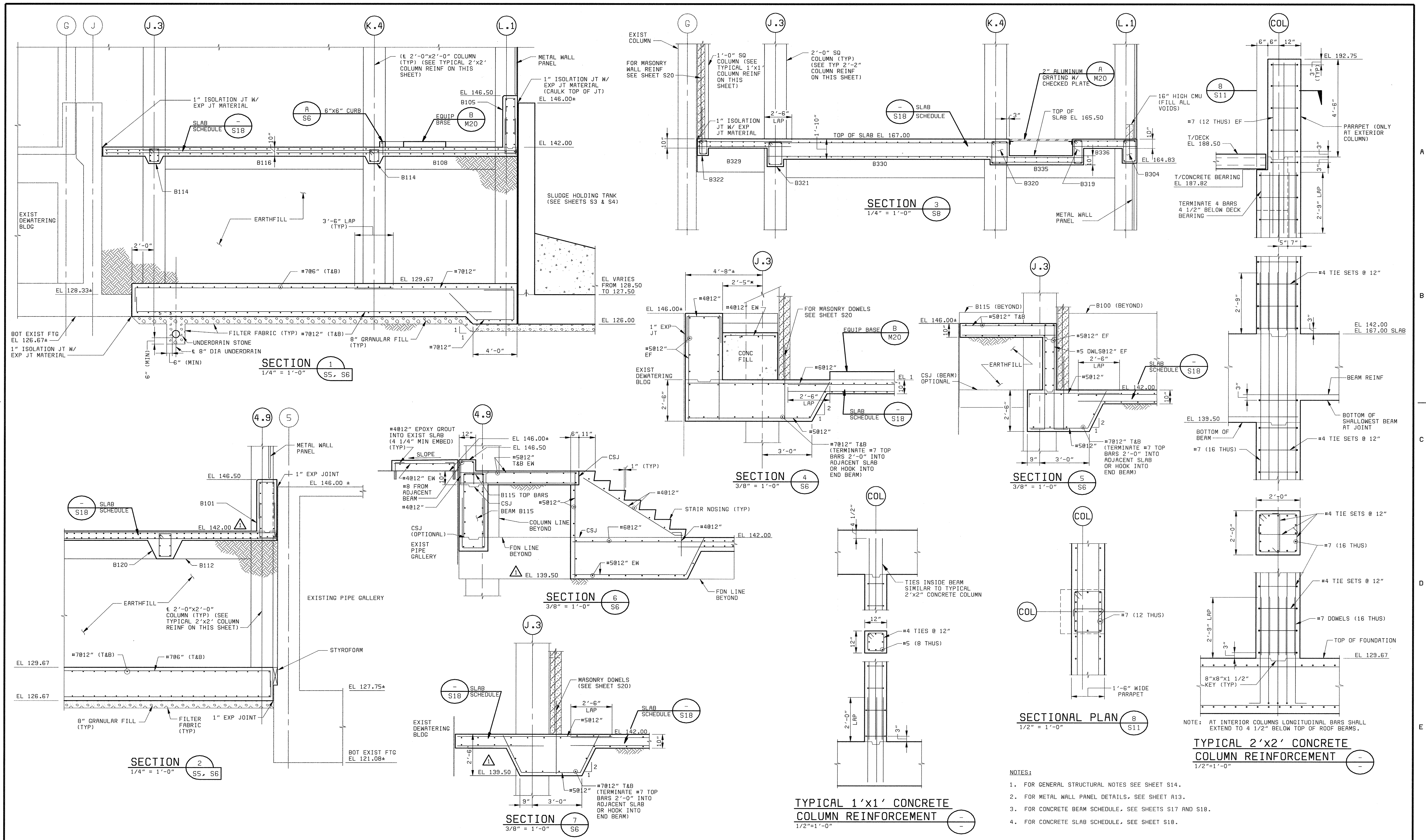
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STRUCTURAL
CENTRIFUGE BUILDING EXPANSION
ROOF PLAN AND DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 75 OF 150
S10



- NOTES:
1. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 2. FOR METAL WALL PANEL DETAILS, SEE SHEET A13.
 3. FOR CONCRETE BEAM SCHEDULE, SEE SHEETS S17 AND S18.
 4. FOR CONCRETE SLAB SCHEDULE, SEE SHEET S18.

NOTE: AT INTERIOR COLUMNS LONGITUDINAL BARS SHALL EXTEND TO 4 1/2" BELOW TOP OF ROOF BEAMS.

TYPICAL 2'x2' CONCRETE COLUMN REINFORCEMENT
1/2"=1'-0"

TYPICAL 1'x1' CONCRETE COLUMN REINFORCEMENT
1/2"=1'-0"

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CHK: JME					
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DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
REVISIONS AND RECORD OF ISSUE					

STRUCTURAL
CENTRIFUGE BUILDING EXPANSION

SECTIONS AND DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

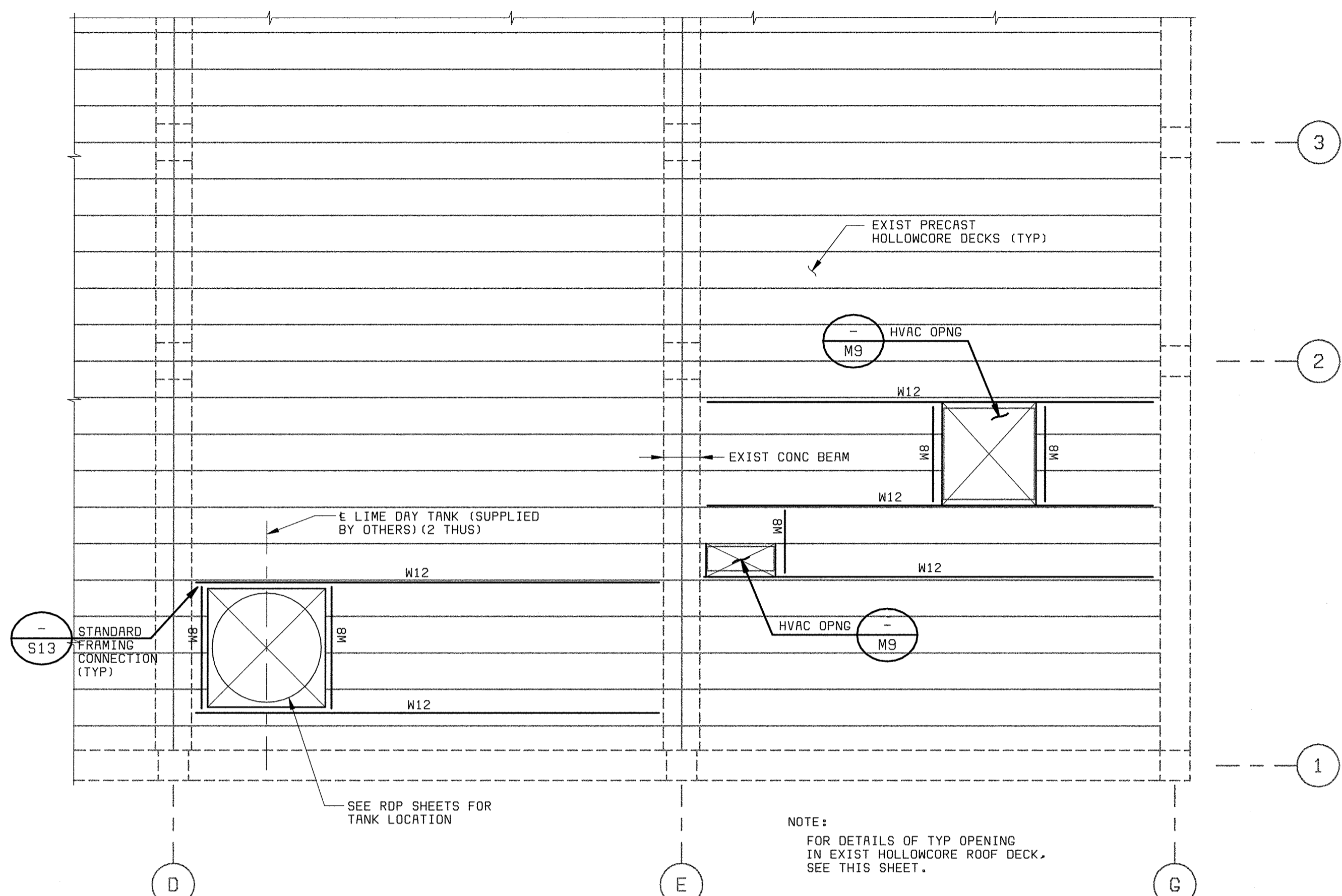
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

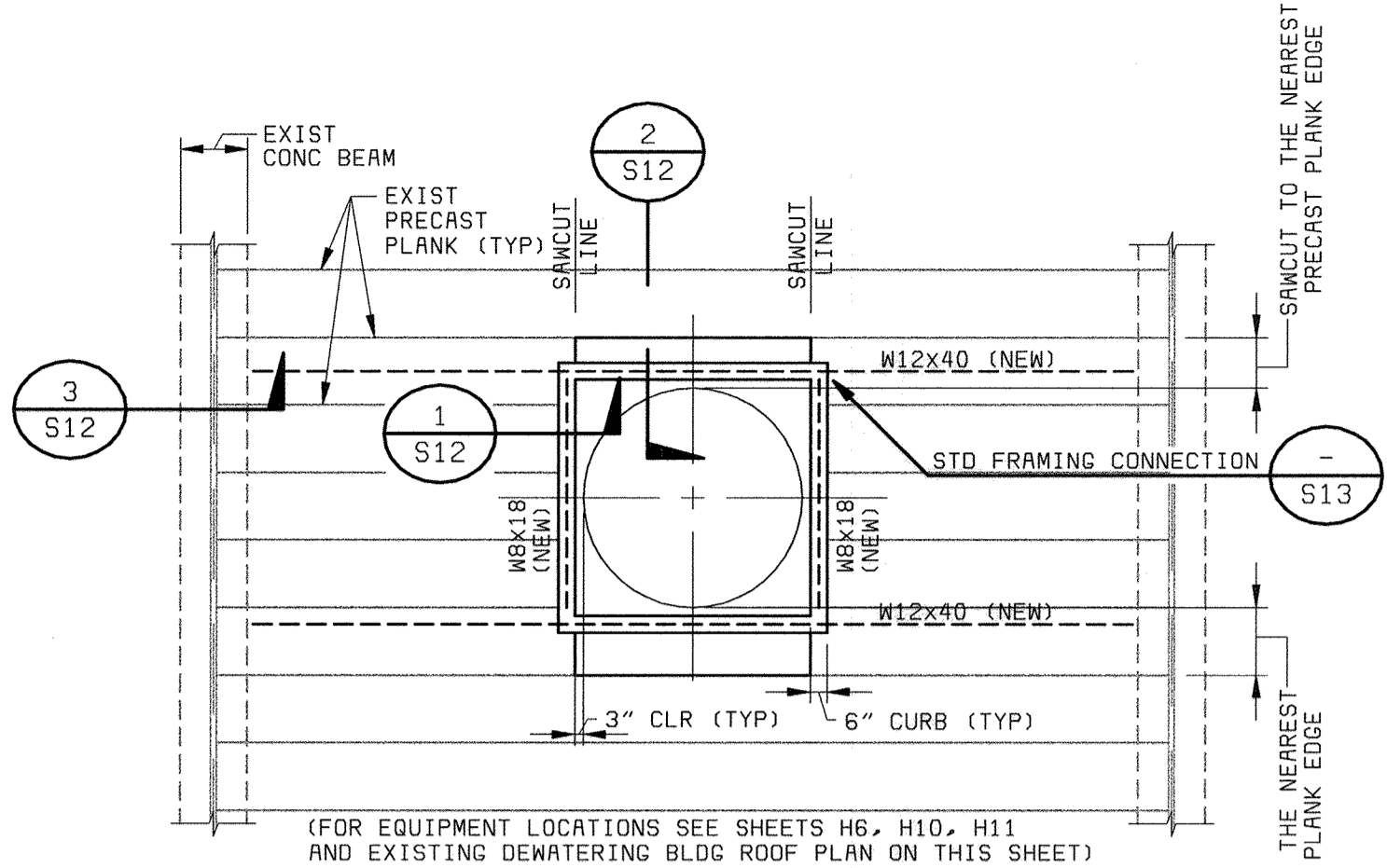
SCALE AS SHOWN

SHEET 76 OF 150

S11



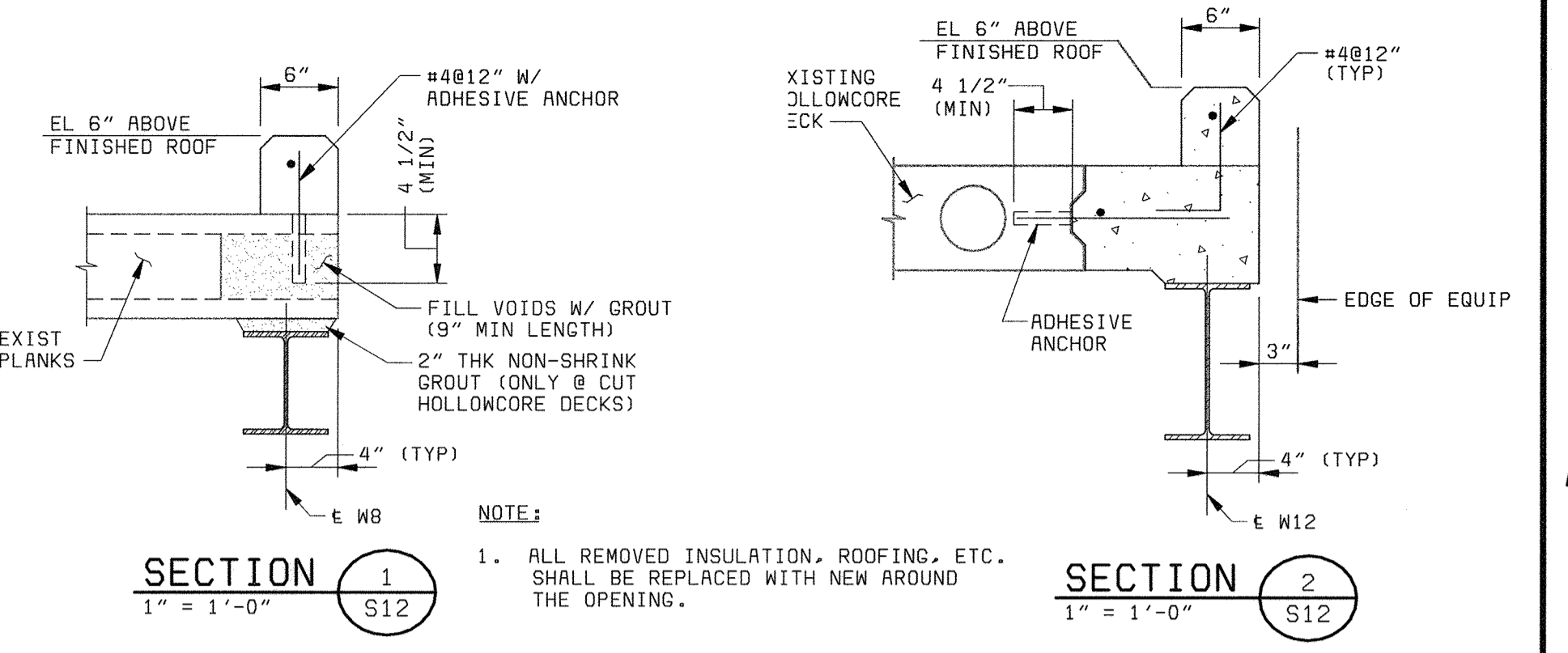
EXISTING DEWATERING BUILDING ROOF PLAN
3/16" = 1'-0"



TYPICAL OPENING IN EXIST HOLLOWCORE ROOF DECK
3/16" = 1'-0"

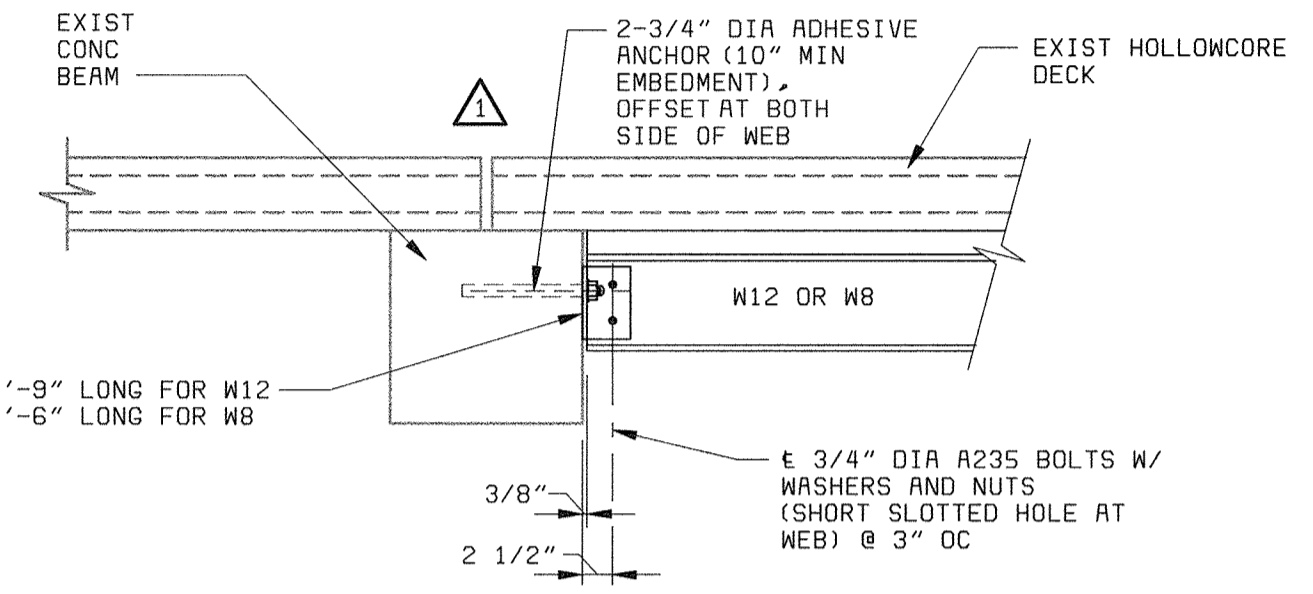
SEQUENCE OF CONSTRUCTION FOR CUTTING EXISTING ROOF

1. INSTALL STEEL BEAMS AND GROUT ONLY UNDER DECK PANELS THAT ARE TO BE CUT.
2. AFTER THE GROUT HAS ATTAINED FULL STRENGTH, REMOVE EXISTING INSULATION AND ROOFING AT THE DEMOLITION AREA.
3. SAW CUT TO THE NEAREST PLANK AS SHOWN ON PLAN.
4. INSTALL EQUIPMENT, CURB (IF REQUIRED), INSULATION, FLASHING, AND ROOFING, AROUND CUT OPENING.

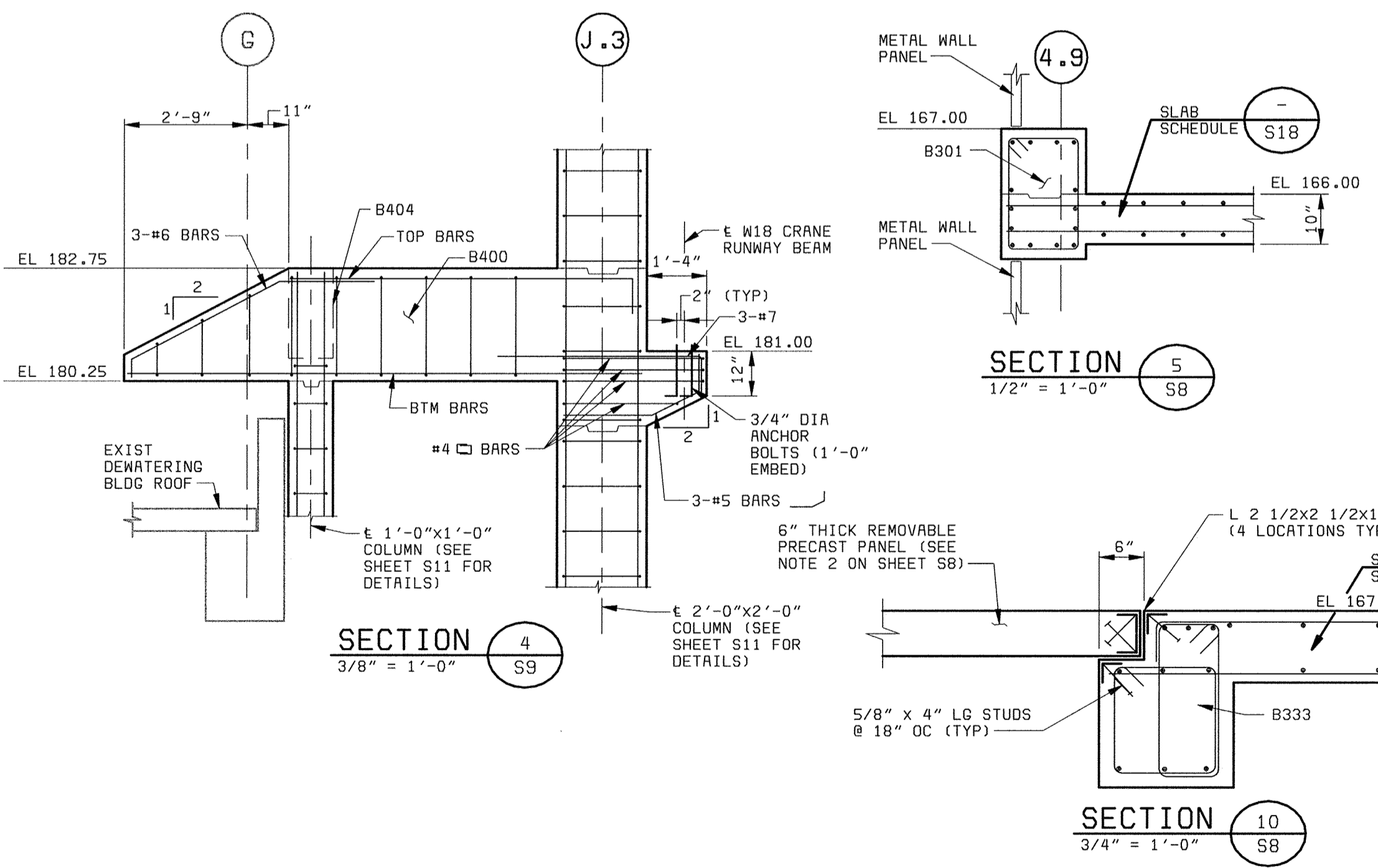


SECTION 1
1" = 1'-0"

SECTION 2
1" = 1'-0"



SECTION 3
3/4" = 1'-0"

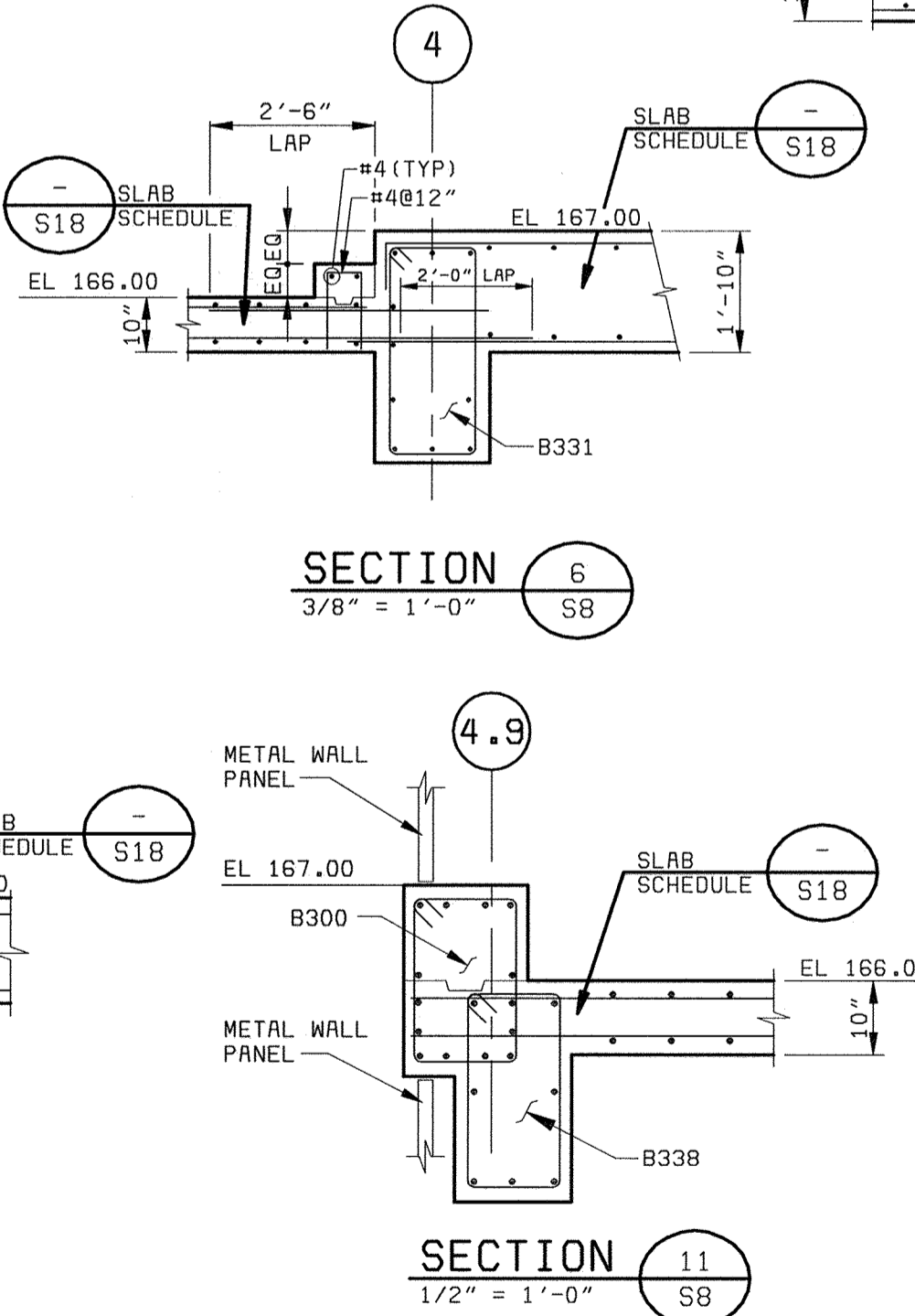


SECTION 4
3/8" = 1'-0"

SECTION 5
1/2" = 1'-0"

SECTION 10
3/4" = 1'-0"

SECTION 11
1/2" = 1'-0"



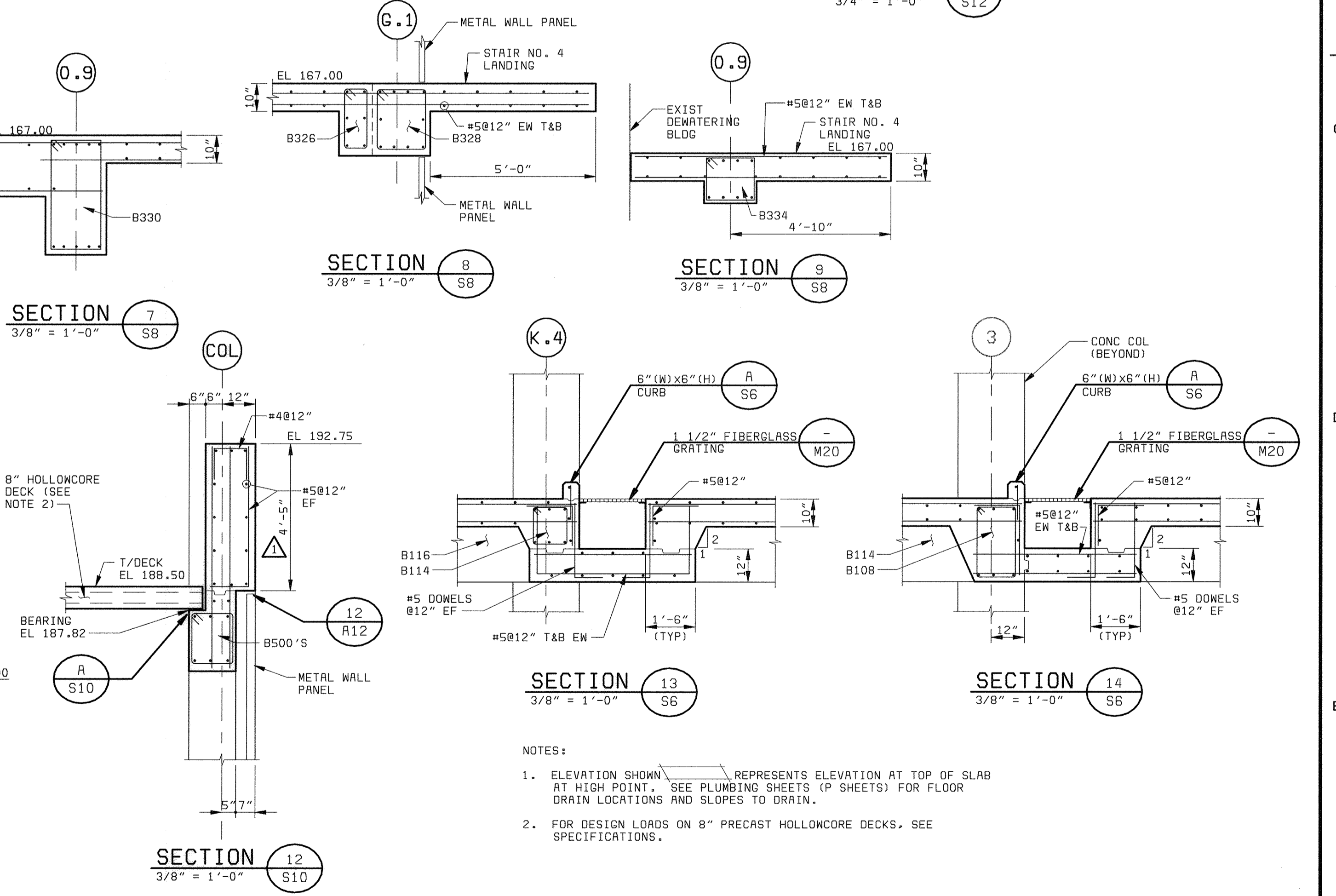
SECTION 6
3/8" = 1'-0"

SECTION 7
3/8" = 1'-0"

SECTION 8
3/8" = 1'-0"

SECTION 9
3/8" = 1'-0"

SECTION 12
3/8" = 1'-0"



SECTION 13
3/8" = 1'-0"

SECTION 14
3/8" = 1'-0"

- NOTES:**
1. ELEVATION SHOWN REPRESENTS ELEVATION AT TOP OF SLAB AT HIGH POINT. SEE PLUMBING SHEETS (P SHEETS) FOR FLOOR DRAIN LOCATIONS AND SLOPES TO DRAIN.
 2. FOR DESIGN LOADS ON 8" PRECAST HOLLOWCORE DECKS, SEE SPECIFICATIONS.

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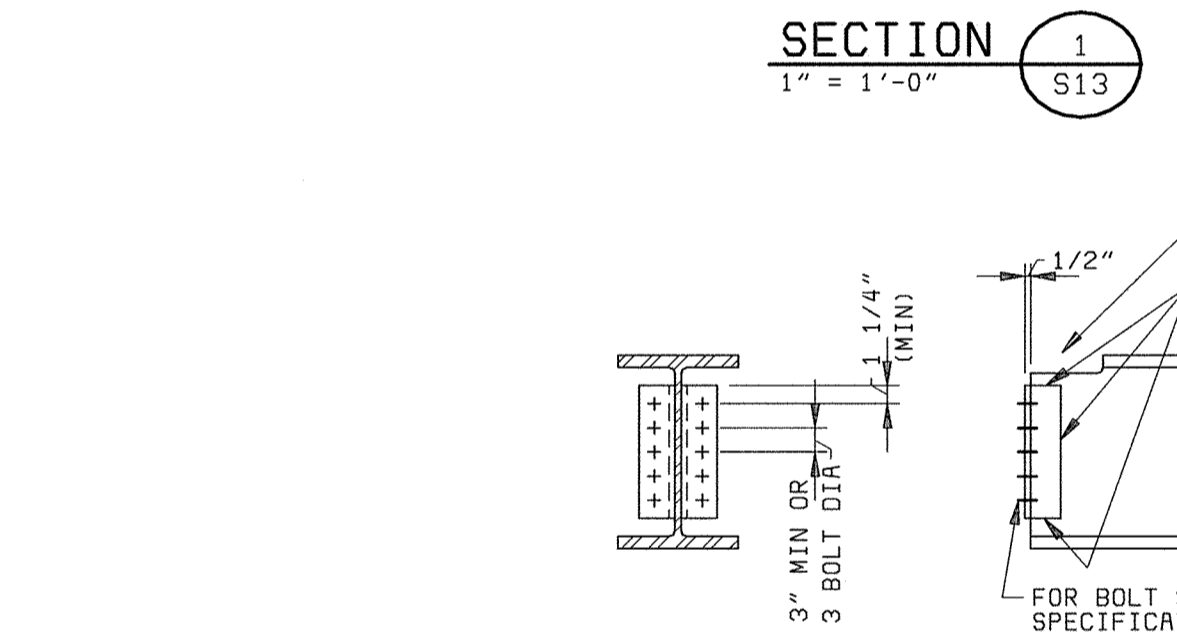
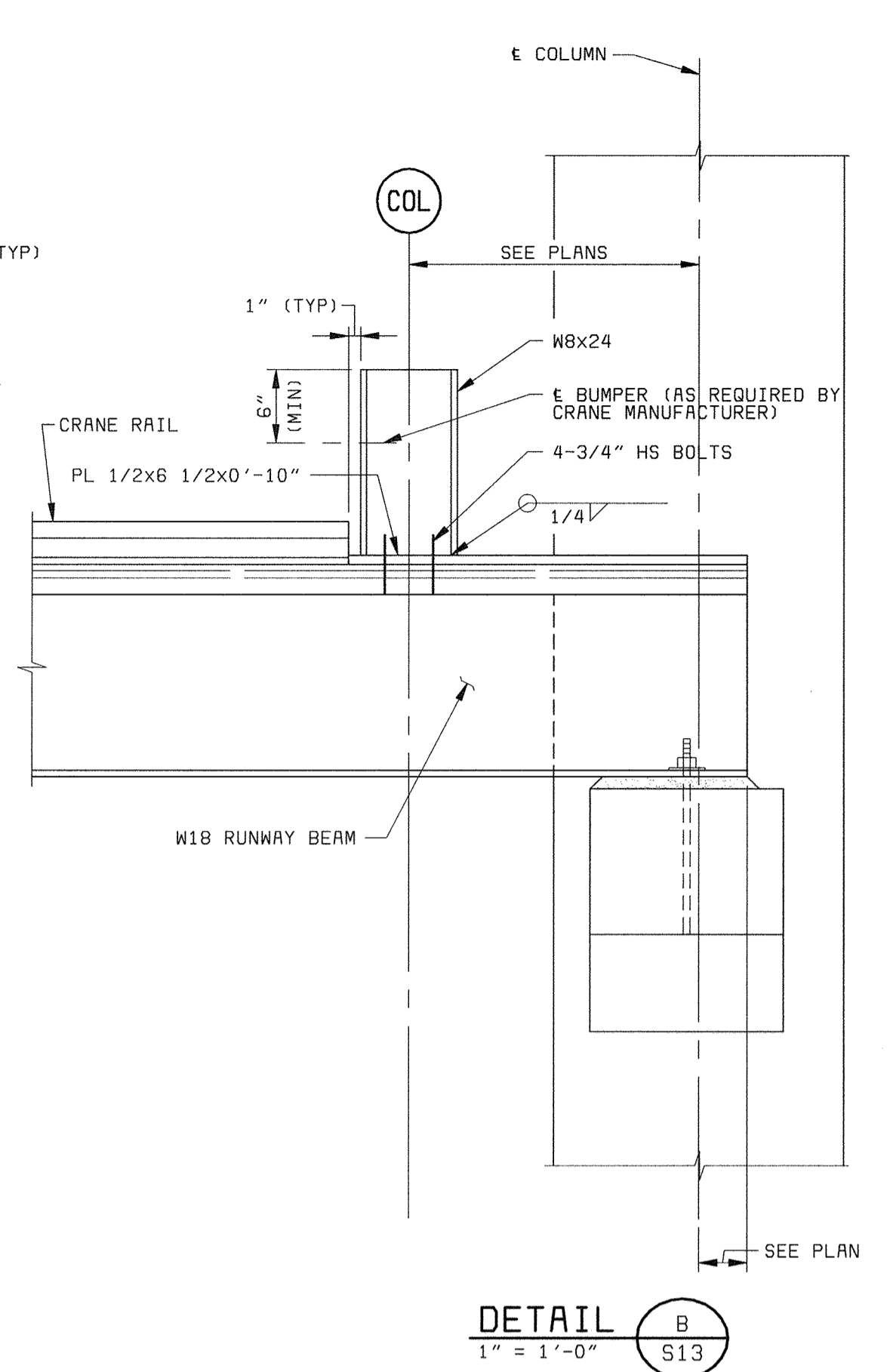
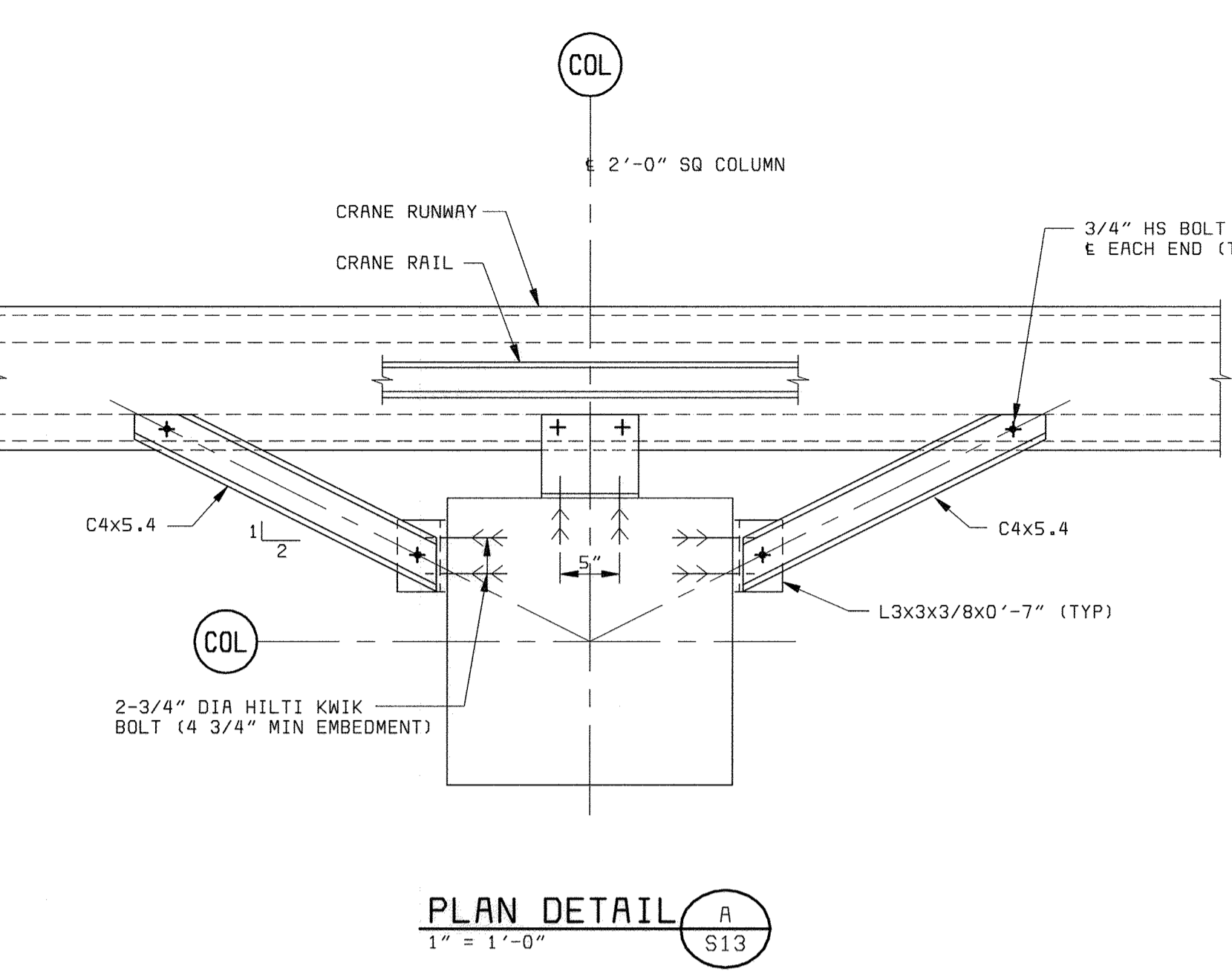
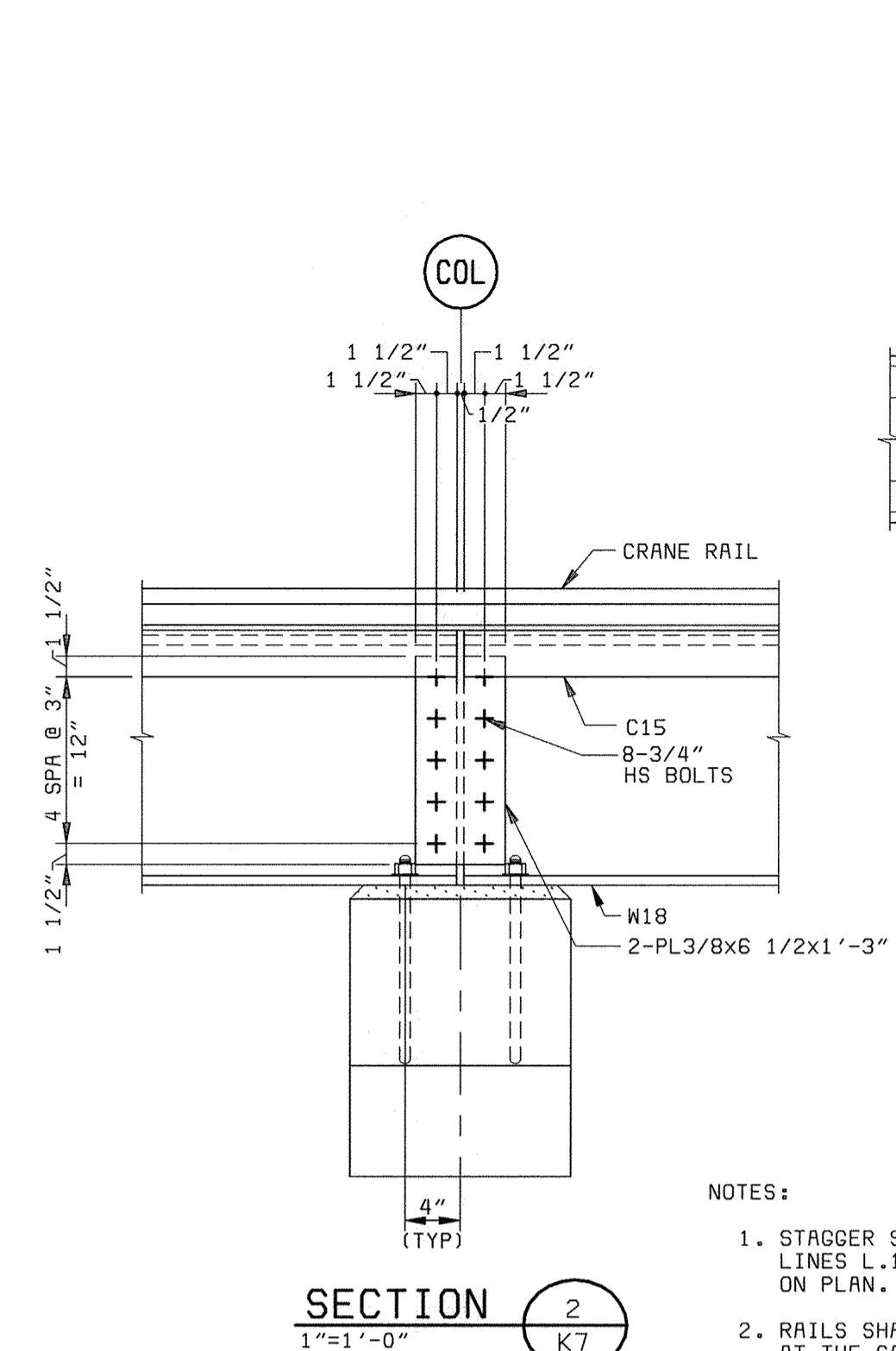
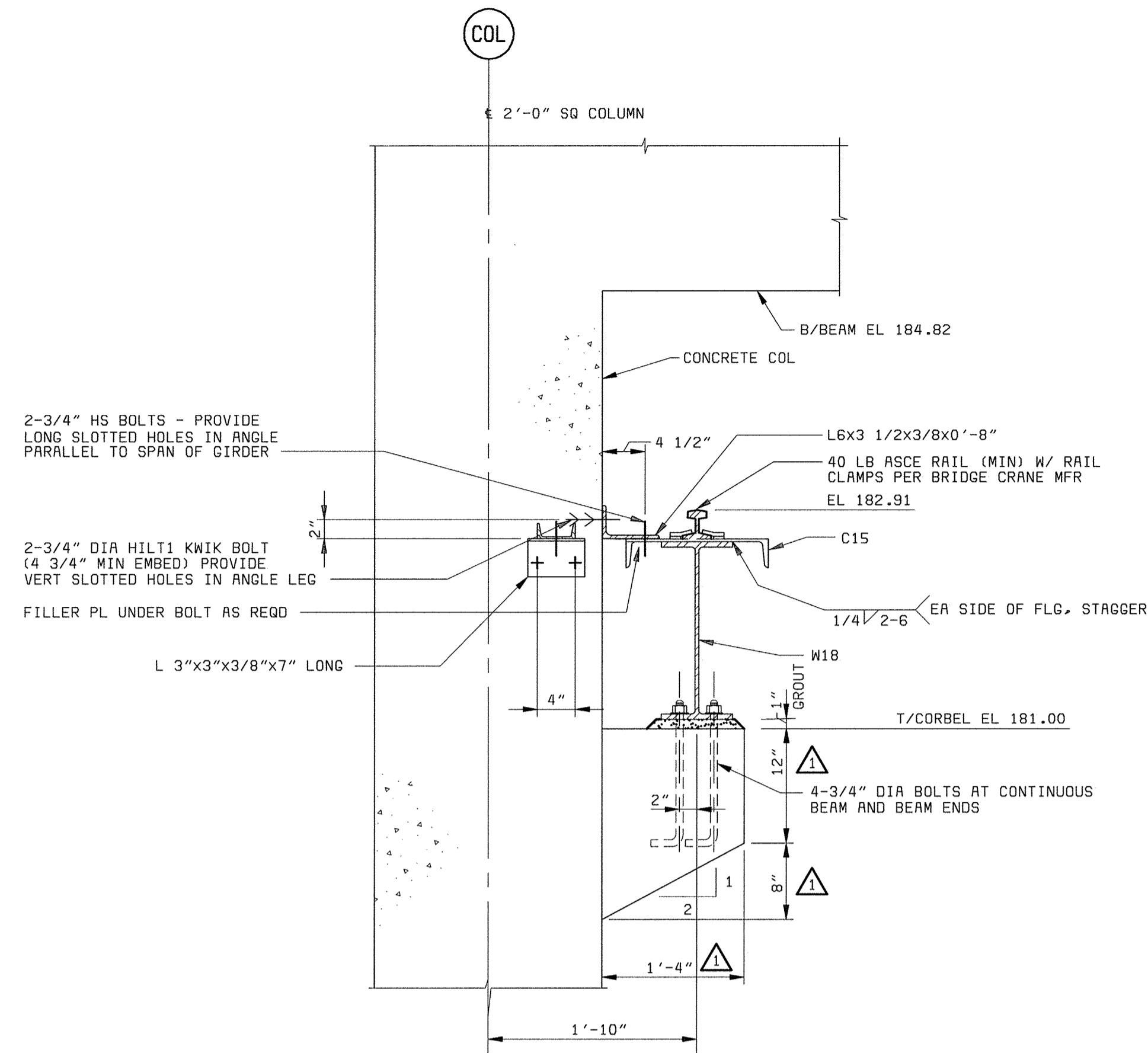
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CHK: JME			
DATE: 05/30/00			
	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

CENTRIFUGE BUILDING EXPANSION
STRUCTURAL
SECTIONS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 77 OF 150
S12

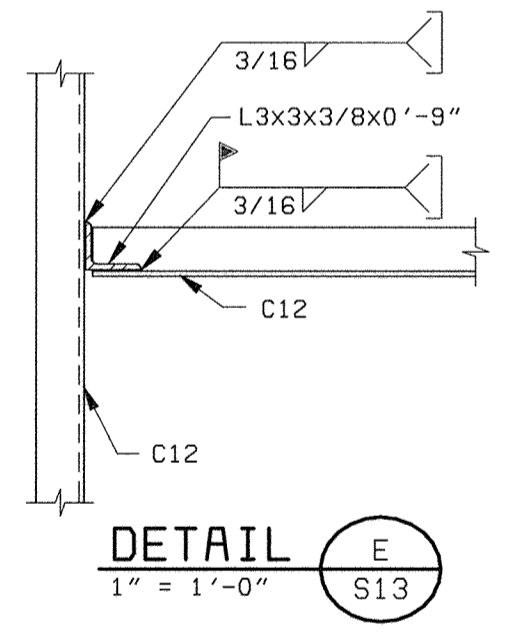
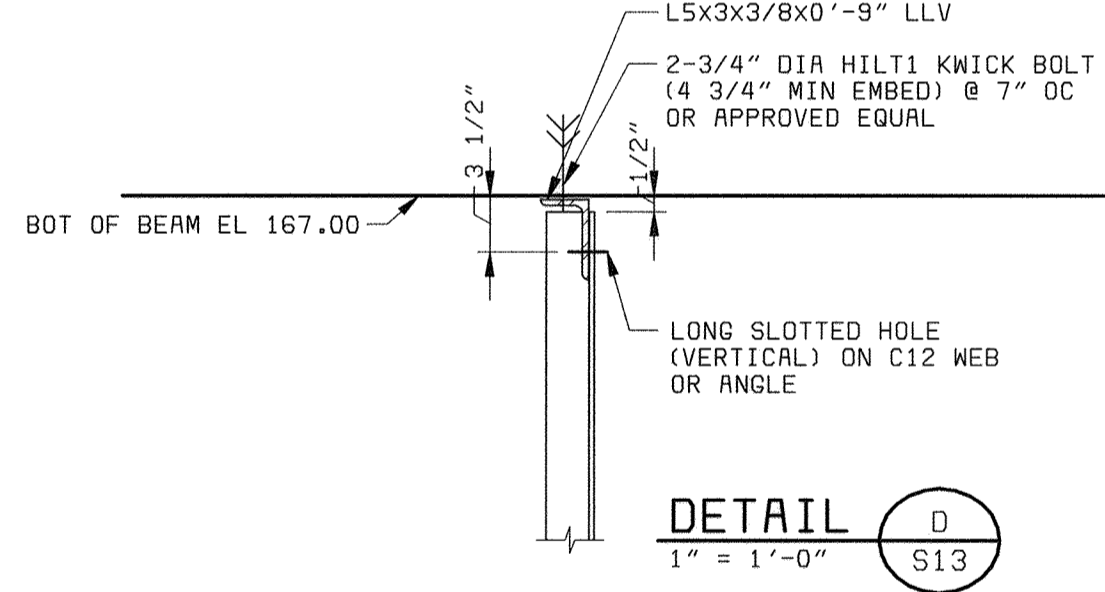
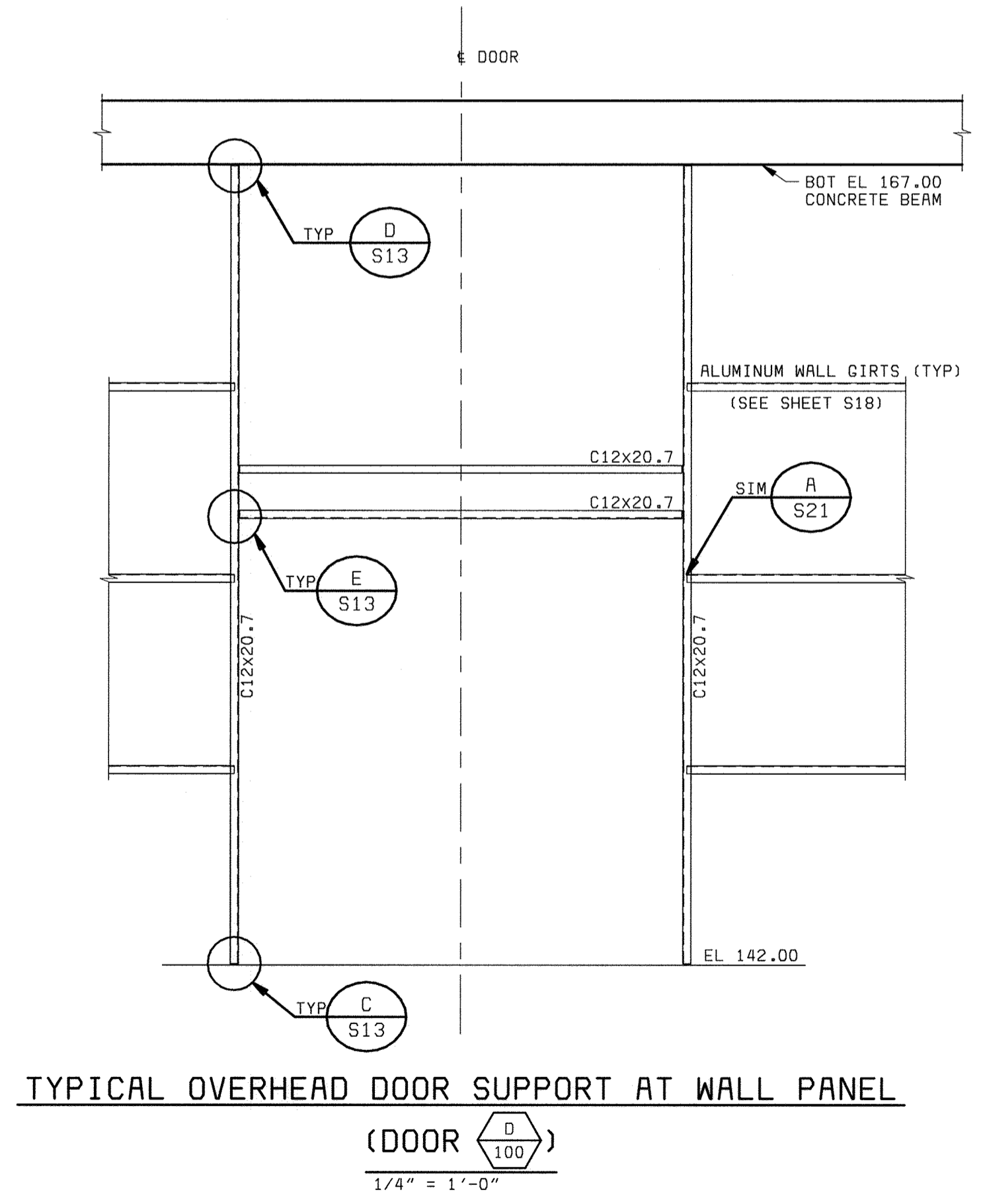


SHOP WELDED - FIELD BOLTED		
BEAM SIZE (ALL WEIGHTS)	NO OF BOLTS IN OSL	ANGLE SIZE
W36	20	2L'S 3 1/2x3x3/8
W33	18	2L'S 3 1/2x3x3/8
W30	16	2L'S 3 1/2x3x3/8
W27	14	2L'S 3 1/2x3x3/8
W24 & S24	12	2L'S 3 1/2x3x3/8
W21 & S20	10	2L'S 3 1/2x3x3/8
W18 & W18, S15 & S18, C15, MC18	8	2L'S 3 1/2x3x3/8
W12 & W14, M12 & M14, S12, C12, MC12 & MC13	6	2L'S 3 1/2x3x3/8
W8 & W10, W8 & M10, S8 & S10, C8, C9 & C10, MC8, MC9 & MC10	4	2L'S 3 1/2x3x3/8
W6, W6, S6 & S7, C6 & C7, MC6 & MC7	2	2L'S 3 1/2x3x3/8

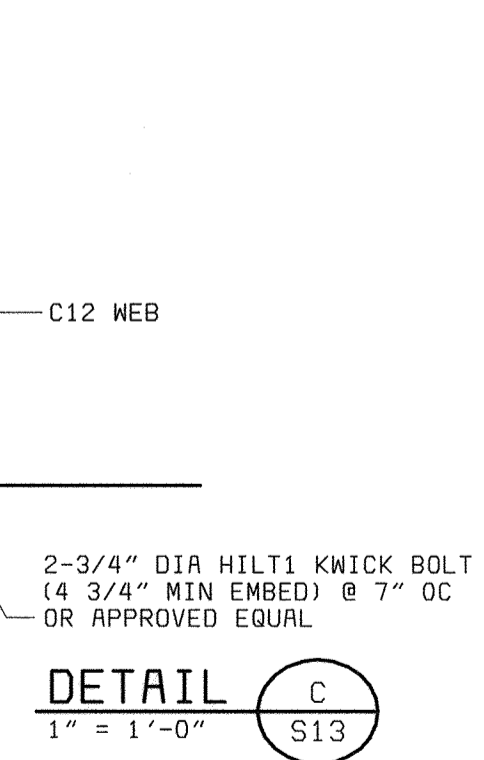
NOTES:
 1. 3 1/2" LEGS OUTSTANDING. 2L3x3x3/8 SHALL BE SUBSTITUTED WHERE ADEQUATE CLEARANCE DOES NOT EXIST FOR 3 1/2" LEGS
 2. AT CONTRACTOR OPTION, ANGLES MAY BE BOLTED TO BEAM WEB IN PLACE OF WELDING AS SHOWN. USING 1/2 THE NUMBER OF BOLTS LISTED IN THE TABLE. ANGLE SIZE TO BE 3 1/2x3 1/2x3/8.

STANDARD FRAMING CONNECTION

NOTES:
 1. STAGGER SPLICE AT COLUMN LINES L.1 AND J.3 AS SHOWN ON PLAN.
 2. RAILS SHALL NOT BE SPLICED AT THE SAME LOCATION AS GIRDERS-RAIL SPLICE SHALL BE SPLICED USING BOLTED SPLICE BARS.



NOTES:
 1. ALL DIMENSIONS AND CLEARANCES, RELATED TO CRANE SHALL BE VERIFIED WITH CRANE MANUFACTURER.
 2. FOR CRANE RUNWAY PLAN SEE SHEET S9.



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STRUCTURAL
 CENTRIFUGE BUILDING EXPANSION
 CRANE RUNWAY SECTIONS AND MISCELLANEOUS DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 78 OF 150
S13

STRUCTURAL NOTES

GENERAL

1. THE APPLICABLE BUILDING CODE SHALL BE THE 1996 BOCA NATIONAL BUILDING CODE.
2. FOR LOCATIONS AND DIMENSIONS OF SLEEVES, CURB, OPENINGS AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, CIVIL/MECHANICAL, YARDWORK, PLUMBING, HVAC AND ELECTRICAL DRAWINGS. CONTRACTOR SHALL VERIFY AND COORDINATE REQUIREMENT FOR AND LOCATION OF ABOVE ITEMS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
3. EMBEDDED ITEMS, SUCH AS PIPE SLEEVES, CONDUITS AND INSERTS SHALL BE IN PLACE BEFORE CONCRETE IS POURED. SEE ARCHITECTURAL, CIVIL/MECHANICAL, YARDWORK, PLUMBING, HVAC AND ELECTRICAL DRAWINGS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE WHICH ARE NOT SHOWN IN THE STRUCTURAL DRAWINGS.

GENERAL LEGEND

INDICATES ANGLE OR PLATE TO BE WELDED ON THREE SIDES

CONCRETE (CAST IN PLACE)

1. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c) OF 4000 PSI, UNLESS OTHERWISE SPECIFIED. CEMENT SHALL BE ASTM C150, TYPE II, LOW ALKALI FOR ALL STRUCTURES.
2. ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE STANDARD BUILDING CODE AND THE ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" INCLUDING BAR BENDS AND HOOKS, UNLESS DETAILED OTHERWISE.
3. THE LOCATION OF ALL CONSTRUCTION JOINTS AND OTHER TYPES OF JOINTS, OTHER THAN SPECIFIED OR SHOWN ON THE PLANS, SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
4. ALL OPENINGS, PIPE SLEEVES, CONDUITS, INSERTS AND OTHER EMBEDDED ITEMS SHALL BE IN PLACE BEFORE CONCRETE IS PLACED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ARCHITECTURAL, CIVIL/MECHANICAL, PLUMBING, HVAC, ELECTRICAL PLANS FOR ITEMS REQUIRING SLEEVES AND EMBEDMENTS IN CONCRETE WHICH ARE NOT INDICATED IN SECTIONS OR FLOOR PLANS. NO PIPES OR SLEEVES SHALL PASS THROUGH STRUCTURAL MEMBERS, UNLESS SHOWN ON STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
5. ALL EXPOSED EDGES AND CORNERS SHALL BE CHAMFERED 3/4" EXCEPT THE TOP EDGES OF WALLS AND SLABS WHICH ARE TO BE TOOLED.
6. ALL CONSTRUCTION JOINTS SHALL BE ROUGHENED TO 1/4" AMPLITUDE MINIMUM.

REINFORCING STEEL

1. ALL REINFORCING BAR SHALL BE GRADE 60, ASTM A615.
2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 OR A497.
3. DIMENSIONS TO REINFORCING BARS ARE TO BAR CENTERLINES, UNLESS NOTED OTHERWISE. BAR COVER IS CLEAR DISTANCE BETWEEN BAR AND THE CONCRETE SURFACE. BAR COVERS AS SHOWN ON THE "STANDARD CONCRETE DETAILS" SHEET SHALL BE PROVIDED UNLESS NOTED OTHERWISE.
4. SPLICING OF REINFORCEMENT FOR WALLS, FOOTINGS AND SLABS SHALL BE AS SHOWN ON THE "STANDARD CONCRETE DETAILS" SHEET, UNLESS NOTED OTHERWISE. WHEN BARS OF DIFFERENT SIZE LAP TO EACH OTHER, SPLICE LENGTH FOR THE SMALLER BAR CAN BE USED.
5. ALL DOWELS SHALL HAVE THE SAME SIZE AND SPACING AS THAT OF THE REINFORCING STEEL TO WHICH THEY ARE SPLICED AND SHALL HAVE A MINIMUM LAP PER NOTE NO. 4 ABOVE, UNLESS NOTED OTHERWISE.
6. NO WELDING OF REINFORCING BARS SHALL BE PERMITTED, UNLESS NOTED ON THE DRAWINGS OR APPROVAL IS OBTAINED FROM THE ENGINEER PRIOR TO CONSTRUCTION.

STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, STRUCTURAL STEEL SHALL CONFORM TO ASTM A36; STRUCTURAL PIPES TO ASTM A53, TYPE E OR S, GRADE B OR ASTM A500, GRADES B OR C; STRUCTURAL TUBING TO ASTM A500, GRADE B OR C. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED BY AN AISC CERTIFIED FABRICATOR IN CONFORMANCE WITH THE LATEST AISC SPECIFICATIONS PARTS 1 THRU 4 AND THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."
2. UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL COMPONENTS AND CONNECTIONS SHALL BE PAINTED OR PROTECTIVE COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. ALL BRACING, HANGER, AND POST CONNECTIONS SHALL BE DETAILED AND FABRICATED FOR THE FOLLOWING MINIMUM NUMBER OF BOLTS UNLESS INDICATED OTHERWISE ON THE DRAWINGS.

SINGLE ANGLE MEMBER	2 BOLTS
DOUBLE ANGLES	4 BOLTS IN SINGLE SHEAR OR 2 BOLTS IN DOUBLE SHEAR
STRUCTURAL TEE	2 BOLTS
WIDE FLANGE SHAPES USED AS BRACING	4 BOLTS

STAINLESS STEEL

1. STAINLESS STEEL BOLTS SHALL CONFORM TO ASTM F593, ALLOY GROUP 1, UNLESS NOTED OTHERWISE.
2. STAINLESS STEEL PLATES, BARS AND RODS SHALL CONFORM TO ASTM A167, TYPES 304 OR 316.
3. STAINLESS STEEL STRUCTURAL SHAPES AND STUDS SHALL CONFORM TO ASTM A276, TYPES 304 OR 316.

ALUMINUM

1. UNLESS NOTED OTHERWISE, ALUMINUM ALLOY IN ALL ALUMINUM STRUCTURAL MATERIALS SHALL BE 6061-T6.
2. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE COATED OR COVERED WITH A HEAVY COAT OF EPOXY ENAMEL TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION.
3. ALL ALUMINUM WELDING SHALL CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE. (AWS D1.2)
4. A CERTIFIED FABRICATOR IS REQUIRED FOR ALL ALUMINUM PANELS AND FRAMES.
5. ALUMINUM GRATING SHALL BE 6063-T6 ALLOY.

MASONRY

1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, TYPE I MOISTURE CONTROLLED UNITS. THE TOTAL MASONRY ASSEMBLAGE SHALL HAVE A COMPRESSIVE STRENGTH EQUAL TO 1500 PSI AT 28 DAYS.
2. MASONRY MORTAR SHALL CONFORM TO ASTM C270, TYPE S.
3. ANY MASONRY IN CONTACT WITH EARTH SHALL BE GROUTED FULL AND BACK PARGED AS REQUIRED.
4. ALL BOND BEAMS AND ANY BLOCK CELLS CONTAINING EMBEDMENTS, REINFORCING STEEL, ANCHORS, ETC., SHALL BE FILLED WITH MINIMUM 2,000 PSI CONCRETE FILL. PROVIDE BOND BEAMS W/ MIN 2-#5 HORIZONTAL AT OPENING SILL (EXTEND 2'-0" BEYOND OPENING AT EACH END), WHERE INDICATED ON ARCH DRAWINGS AND TOP OF WALL UNLESS DETAILED OTHERWISE. BOND BEAM REINF TO BE CONTINUOUS AT CORNERS AND INTERSECTIONS.
5. ALL CONCRETE MASONRY OPERATIONS SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE 1994 STANDARD BUILDING CODE.
6. SEE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR EMBEDDED ITEMS NOT SHOWN HEREIN AND TO VERIFY SIZE AND LOCATION OF ALL OPENINGS. BEFORE EXECUTING ANYTHING HEREIN SHOWN, THE CONTRACTOR SHALL EXAMINE ACTUAL JOB CONDITIONS AND REPORT TO THE ENGINEER ANY ERROR OMISSION OR DISCREPANCY AFFECTING THE WORK.
7. ALL REINFORCING TO BE CONTINUOUS WITH LAP SPLICES EQUAL TO 48 BAR DIAMETERS MINIMUM.

SOIL AND FOUNDATIONS

1. ALL EARTHWORK AND FOUNDATION CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND THE RECOMMENDATIONS OF THE PROJECT GEOTECHNICAL REPORT. IN CASE OF A CONFLICT THE REQUIREMENTS OF THE SPECIFICATIONS SHALL GOVERN.
2. TO FACILITATE SCHEDULING, AT LEAST 48 HOURS ADVANCE NOTICE SHOULD BE GIVEN TO THE ENGINEER PRIOR TO THE REQUIRED INSPECTIONS.
3. FOUNDATION CONSTRUCTION SHALL NOT BEGIN UNTIL THE INSPECTION HAS BEEN COMPLETED AND THE CONTRACTOR NOTIFIED TO PROCEED.
4. UNLESS NOTED OTHERWISE, BACKFILL SHALL NOT BE PLACED AGAINST THE WALLS UNTIL THE TOP SLAB HAS BEEN PLACED IN ITS ENTIRETY AND ALL CONCRETE HAS REACHED ITS DESIGN STRENGTH.
5. THE FOLLOWING NET ALLOWABLE BEARING PRESSURES WERE UTILIZED IN THE DESIGN OF FOUNDATIONS:

SPREAD FOOTINGS	4,000 PSF
MAT FOUNDATION @ CENTRIFUGE BUILDING, SLUDGE HOLDING TANK AND LIME SILO PAD	4,000 PSF

LOADING CRITERIA

1. DEAD LOAD CALCULATED.
2. LIVE LOADS:

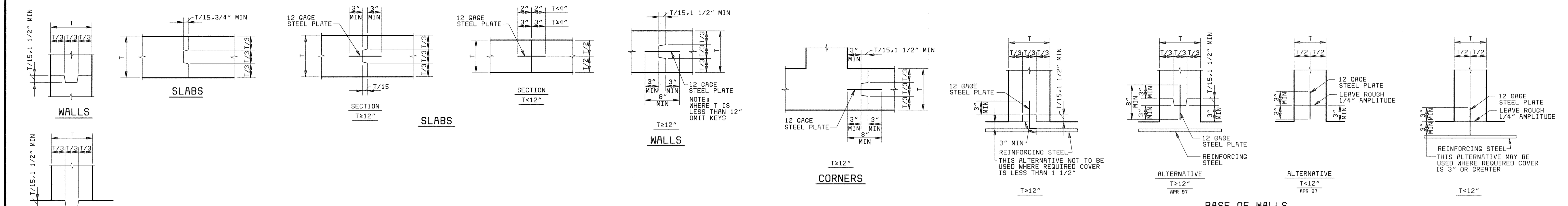
ELECTRICAL & CONTROL ROOMS	250 PSF
OPERATION AND PROCESS FLOORS	150 PSF
EQUIPMENT	ACTUAL
STAIRS/SERVICE PLATFORMS	100 PSF
GRATING AREAS	100 PSF
ALL FLOORS NOT INDICATED	100 PSF
ROOF	25 PSF
3. LATERAL EARTH PRESSURE AS PER SOILS REPORT.
4. LATERAL SURCHARGE EQUIVALENT OF 2 FT OF SOIL WHERE ADJACENT TO ROADWAY.
5. COMPACTIVE SURCHARGE LOAD 400 PSF AT FINISH GRADE ELEVATION DECREASES LINEARLY BY SAME RATE OF BACKFILL LOAD.
6. HYDROSTATIC FLUID PRESSURE 63 PSF/FT
7. WIND LOAD:

BASIC WIND SPEED	80 MPH
IMPORTANCE FACTOR	1.00
8. SEISMIC LOAD:

PEAK VELOCITY RELATED ACCELERATION(AV)	0.05
PEAK ACCELERATION(A _g)	0.05
SEISMIC HAZARD EXPOSURE GROUP	I
SEISMIC PERFORMANCE CATERGORY	C

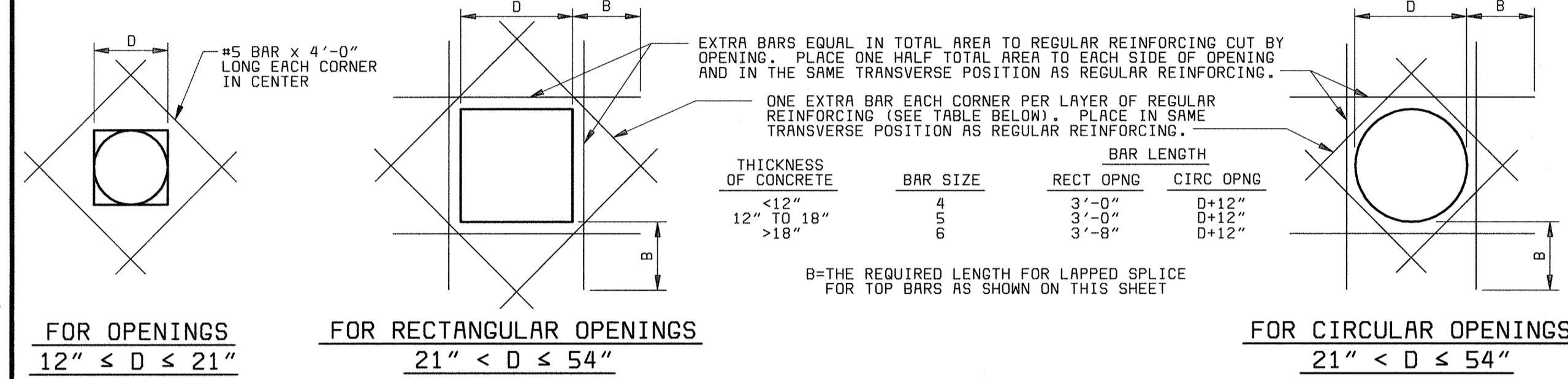
 ANALYSIS PROCEDURE.....EQUIVALENT LATERAL FORCE

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH ^{LLP} Gaithersburg, Maryland	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG DRN: MAS CHK: JME DATE: 05/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS DATE	STRUCTURAL STRUCTURAL NOTES	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 79 OF 150 S14
REG. PROF. ENGR. _____ DATE _____				NO. BY CK APP		REVISIONS AND RECORD OF ISSUE	



TYPICAL CONSTRUCTION JOINTS

NOTE:
 1. REINFORCING STEEL IS CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS
 2. "CSJ W/MS" - WITH WATERSTOP
 3. "CSJ" - WITHOUT WATERSTOP



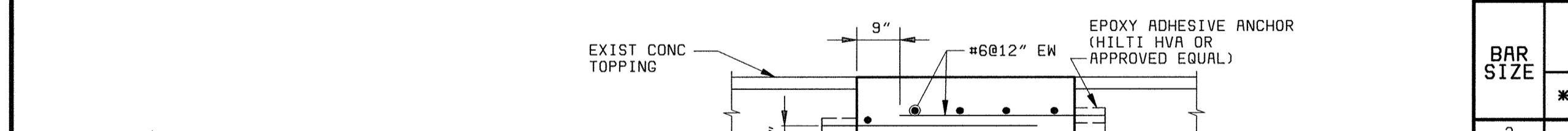
TYPICAL EXTRA REINFORCING AT OPENINGS 12" TO ≤ 54"



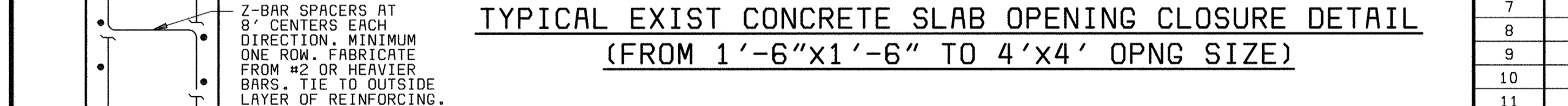
TYPICAL HORIZONTAL CORNER REINFORCING DETAILS

NOTE:
 1. VERTICAL REINFORCING NOT SHOWN
 2. THESE DETAILS SHALL BE APPLICABLE TO ALL WALL CORNERS UNLESS NOTED OTHERWISE ON THE DRAWINGS.

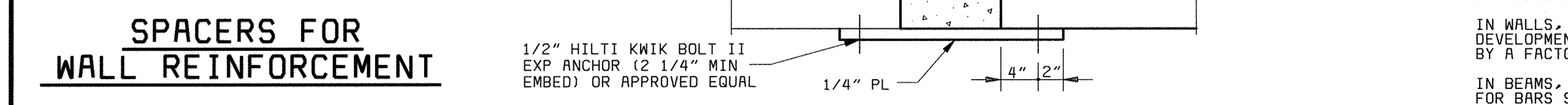
TYPICAL EXTRA REINFORCING AT ISOLATED RE-ENTRANT CORNERS



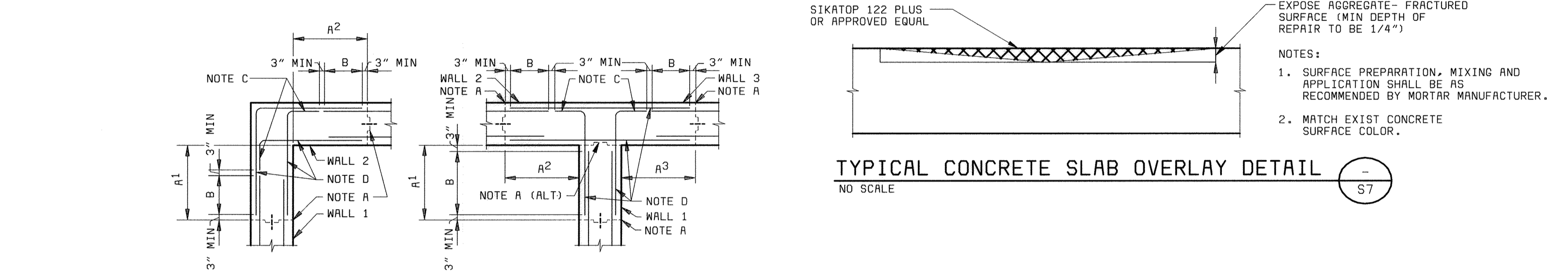
CONDUIT PLACING DETAIL



TYPICAL EXIST CONCRETE SLAB OPENING CLOSURE DETAIL (FROM 1'-6" X 1'-6" TO 4' X 4' OPNG SIZE)



TYPICAL EXIST CONCRETE SLAB OPENING CLOSURE DETAIL (UP TO 1'-6" X 1'-6" OPNG SIZE)



TYPICAL CONCRETE SLAB OVERLAY DETAIL

NOTE:
 1. SURFACE PREPARATION, MIXING AND APPLICATION SHALL BE AS RECOMMENDED BY MORTAR MANUFACTURER.
 2. MATCH EXIST CONCRETE SURFACE COLOR.

SPLICE & DEVELOPMENT LENGTHS
(UNLESS NOTED OTHERWISE ON THE DRAWINGS)

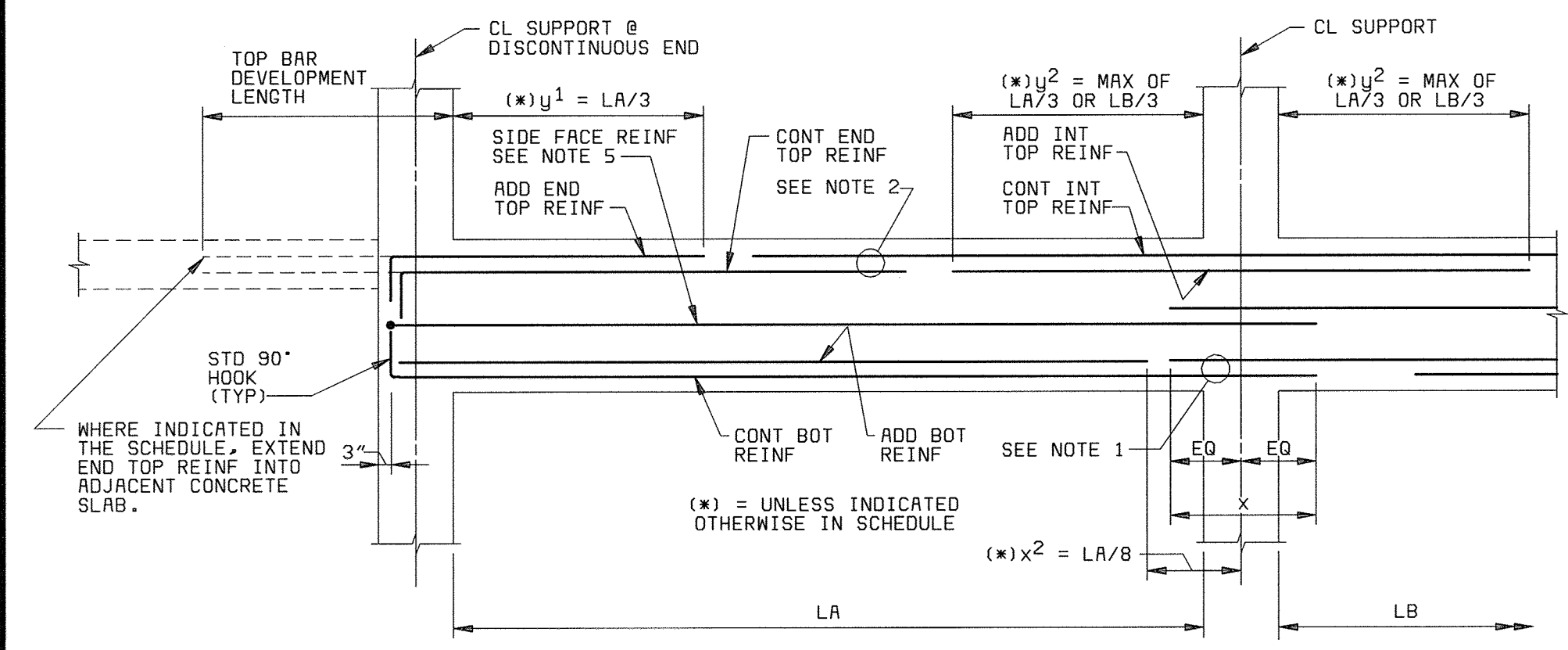
BAR SIZE	BEAMS AND COLUMNS			WALLS, SLABS AND FOOTINGS			BAR SIZE				
	LENGTH OF LAPPED SPLICES FOR REIN (INCHES)		LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)	LENGTH OF LAPPED SPLICES FOR REIN (INCHES)		LENGTH OF END ANCHORAGE FOR DEVELOPMENT OF REINFORCEMENT (INCHES)					
	*TOP BARS	OTHERS		*TOP BARS	OTHERS			HOOKED BARS			
3	19	16	14	12	6	19	16	14	12	6	3
4	24	19	19	15	7	24	19	19	15	7	4
5	31	24	24	18	9	31	24	24	18	9	5
6	40	31	28	22	10	36	28	28	22	10	6
7	54	42	33	25	12	54	42	42	32	12	7
8	71	55	39	30	14	102	78	55	42	14	8
9	90	70	50	38	15	129	99	69	53	15	9
10	115	88	63	49	17	163	126	88	68	17	10
11	141	108	77	60	19	201	154	154	119	19	11
14	---	---	105	81	33	---	---	210	162	33	14
18	---	---	155	119	43	---	---	309	238	43	18

CONCRETE COVER FOR REINFORCEMENT

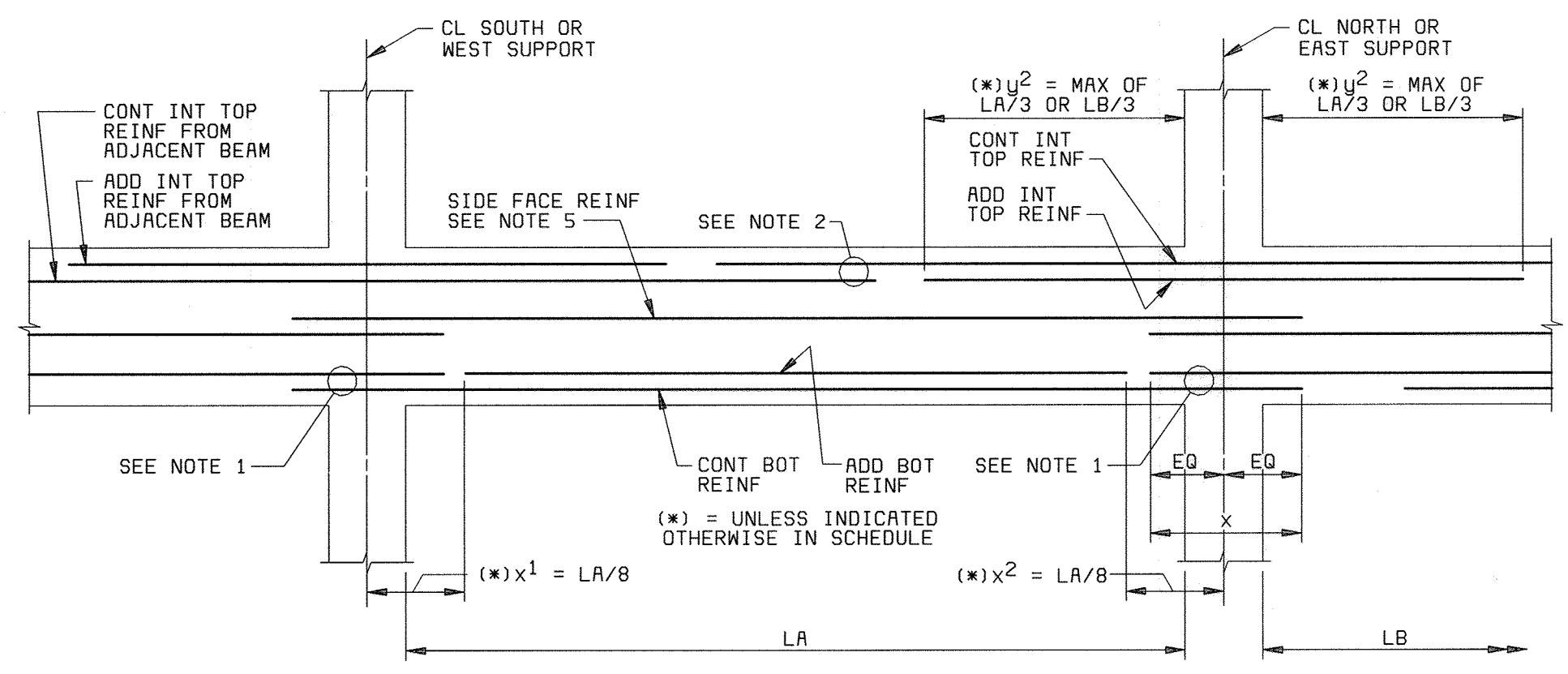
LOCATION	MINIMUM COVER
UNFORMED SURFACES ADJACENT TO EXCAVATION	3"
FORMED OR TOP SURFACES EXPOSED TO WEATHER OR SATURATED AIR, SUBMERGED OR IN CONTACT WITH EARTH, INCLUDING STIRRUPS, TIES OR SPIRALS	2"
OTHER LOCATIONS	
BARS IN BEAMS OR GIRDERS, INCLUDING STIRRUPS AND COLUMN SPIRALS OR TIES	1 1/2"
SLABS, WALLS AND JOISTS #6 AND LARGER	1 1/2"
#5 AND SMALLER	1"

NOTE: TOLERANCES FOR CONCRETE COVER AND THE FABRICATION AND PLACING OF REINFORCEMENT SHALL CONFORM TO ACI 117.

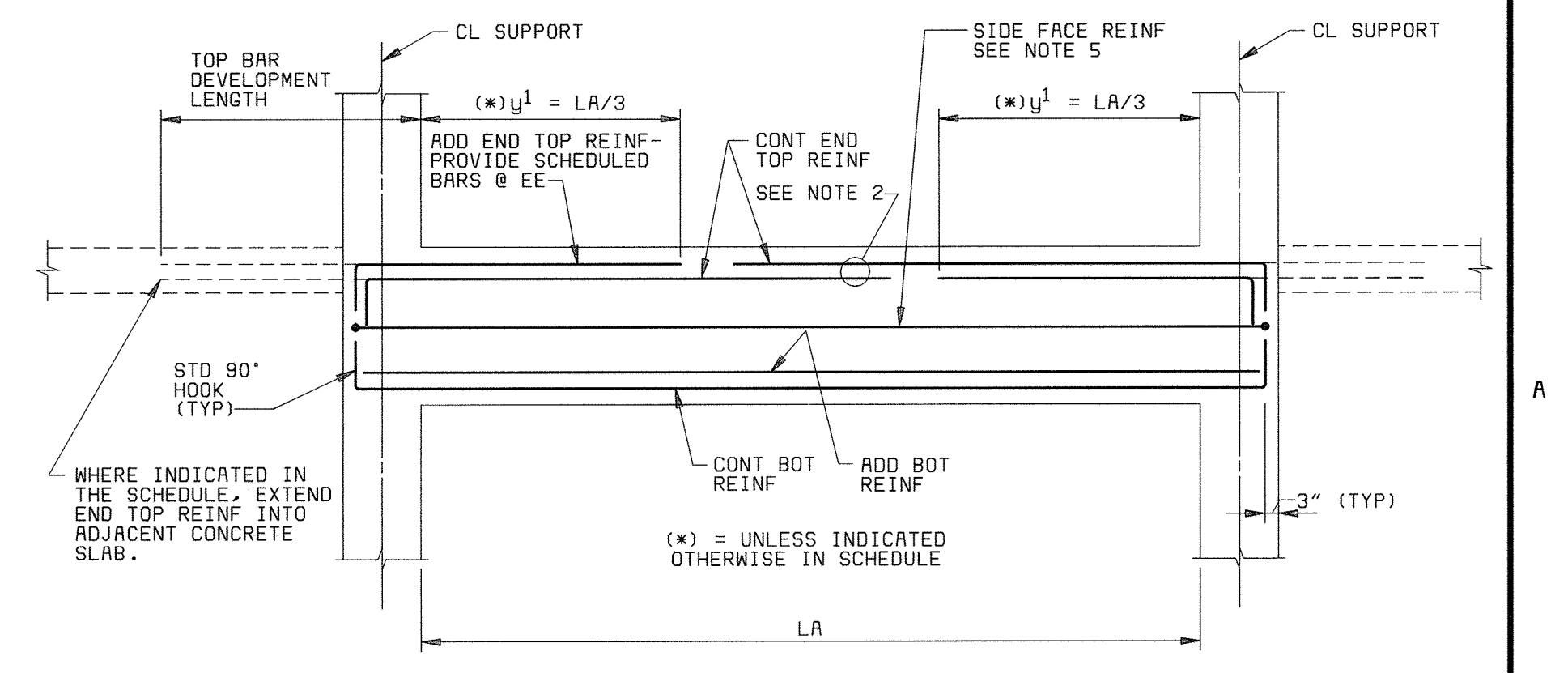
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG	07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHR/RJR/RJR	STRUCTURAL	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: MAS				REVISIONS AND RECORD OF ISSUE NO. BY CK APP



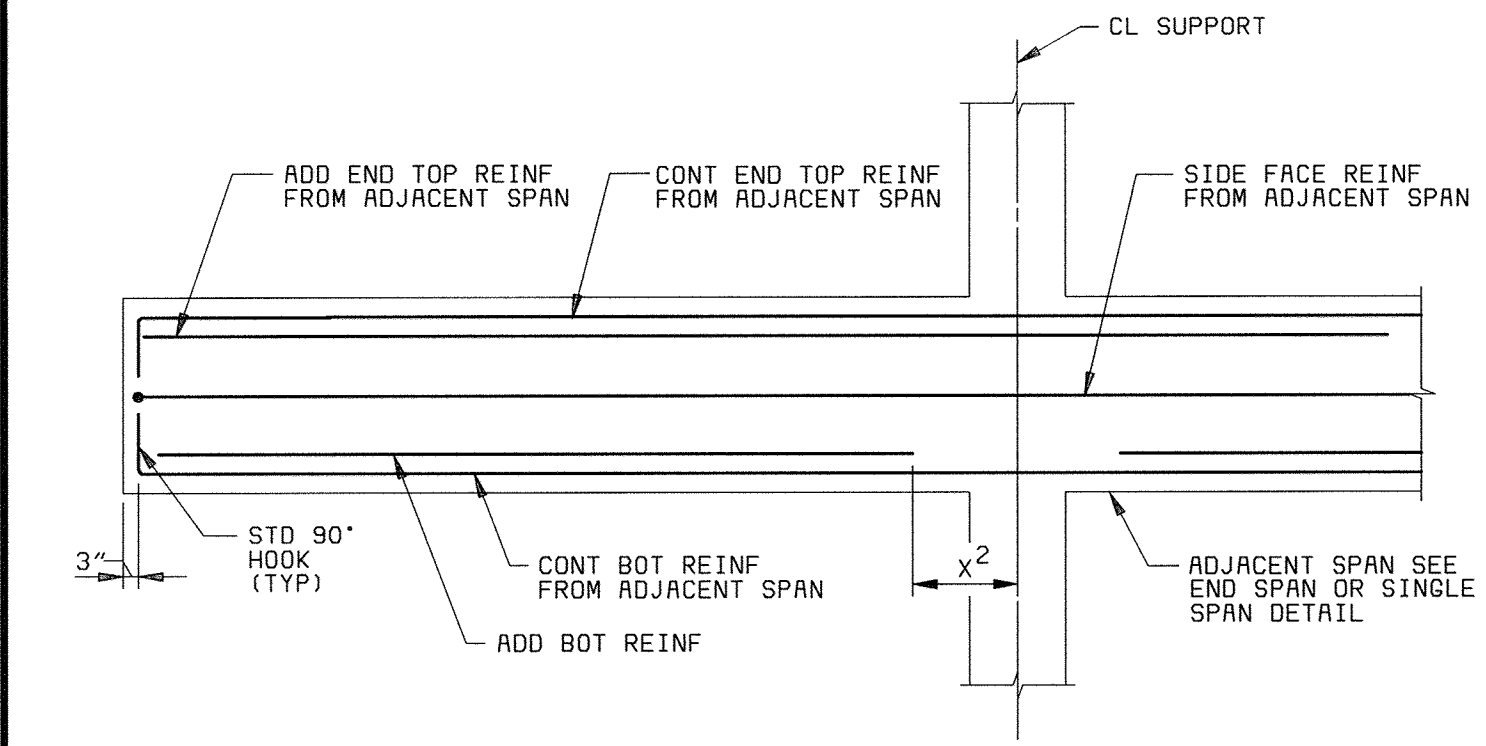
TYPE E-END SPAN



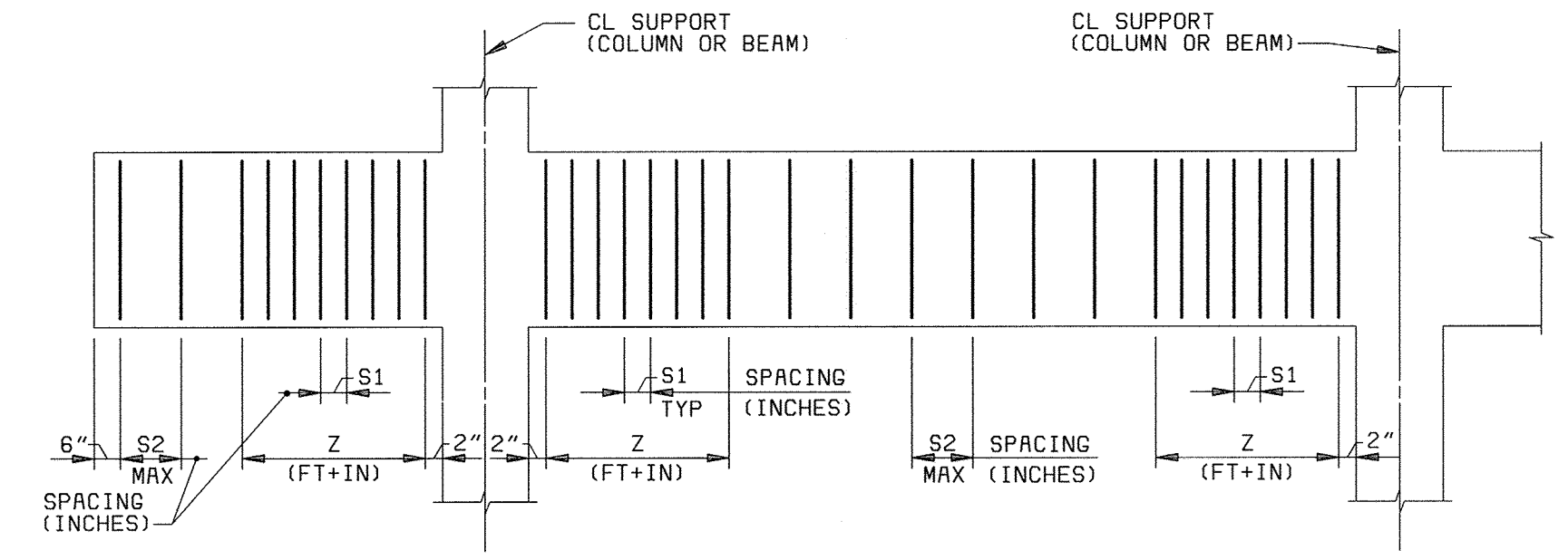
TYPE I-INTERIOR SPAN



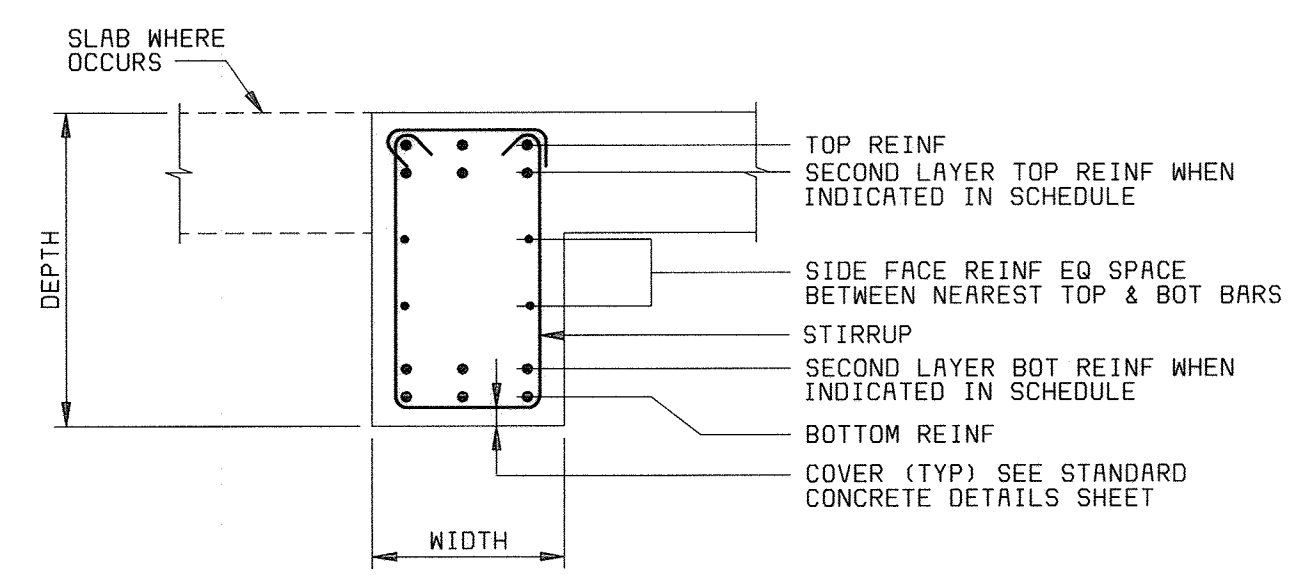
TYPE S-SINGLE SPAN



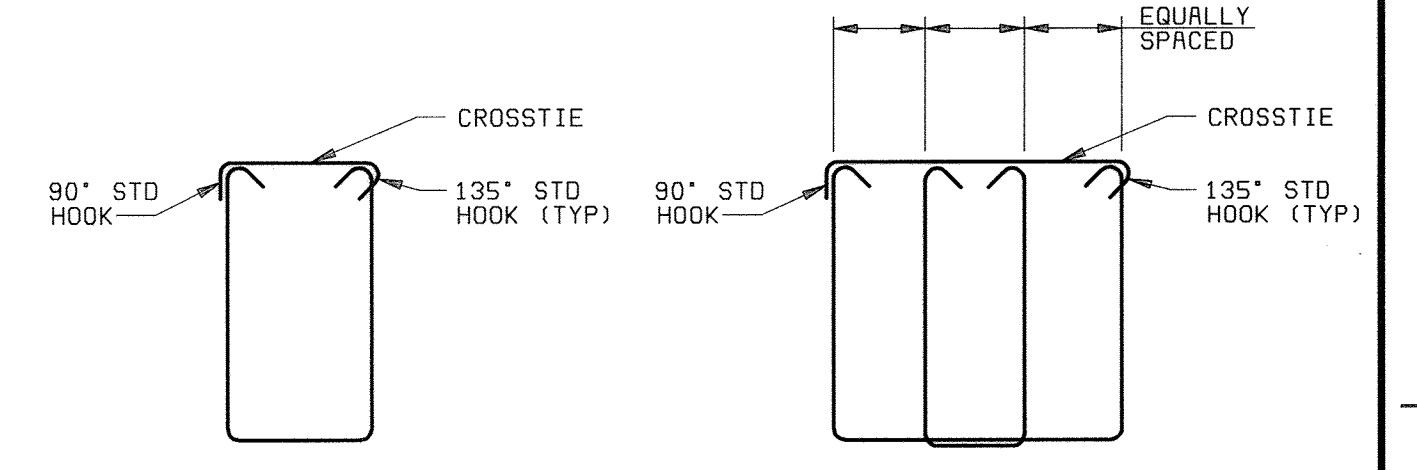
TYPE C-CANTILEVER SPAN



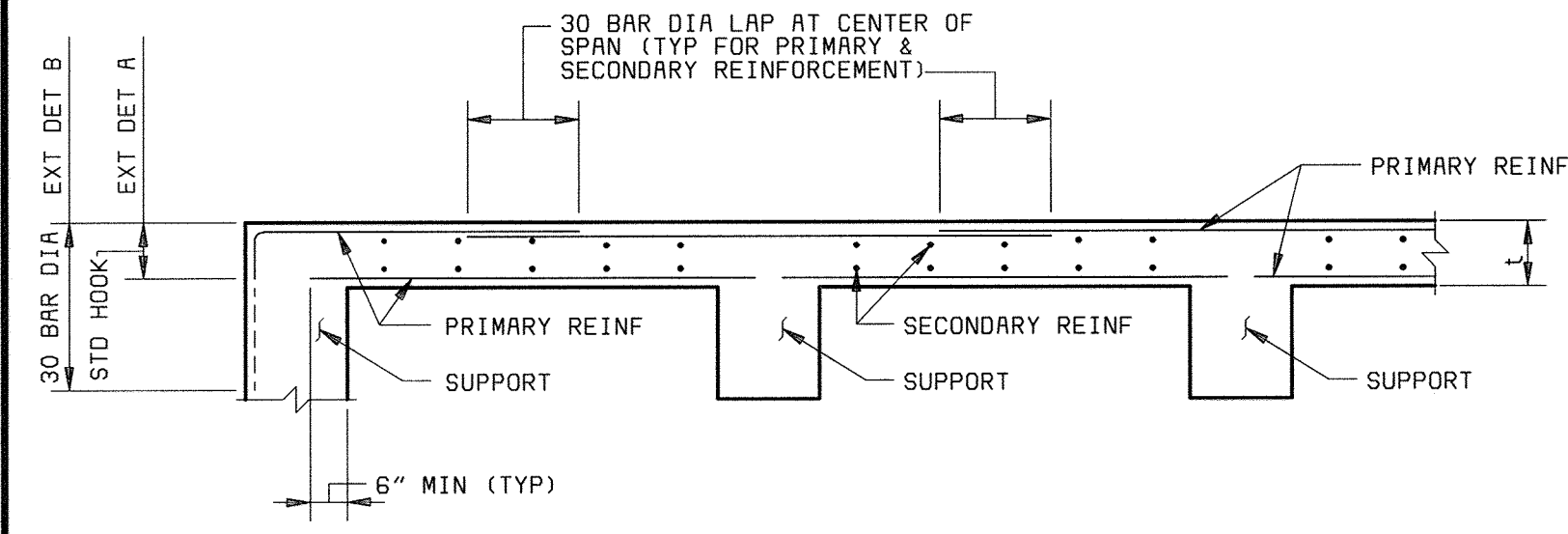
CANTILEVER SPAN
END, INTERIOR OR SINGLE SPAN
STIRRUP SPACING LAYOUT



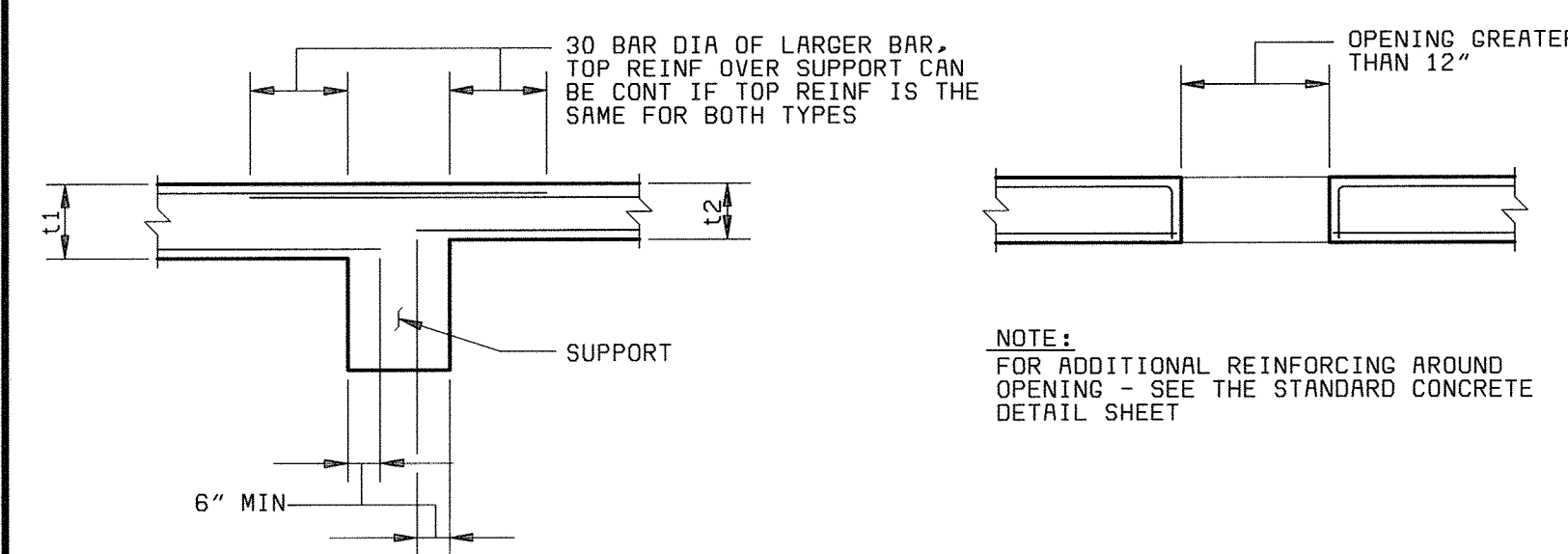
TYPICAL BEAM SECTION



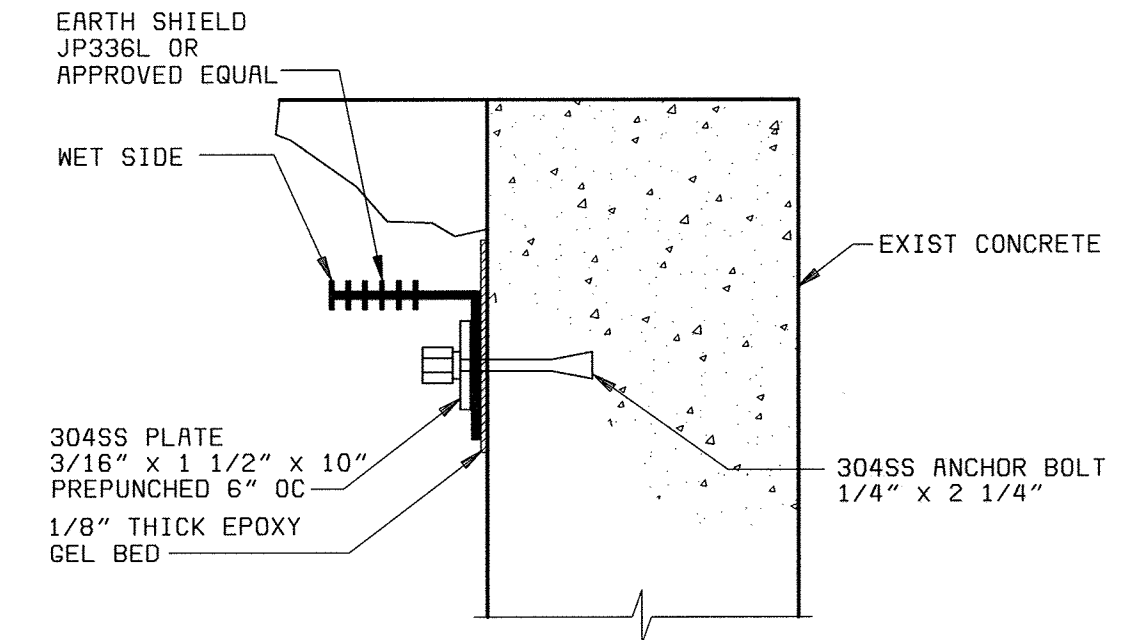
TYPE SA
TYPE SB
STIRRUP DETAILS



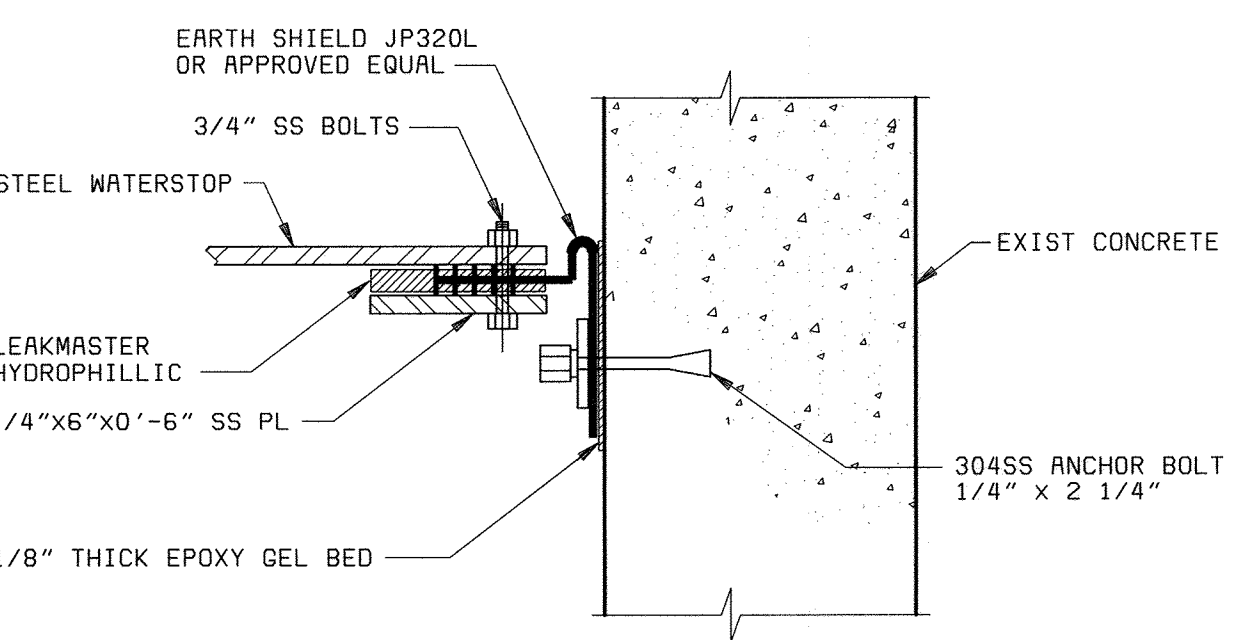
TYPICAL SUSPENDED SLAB DETAIL



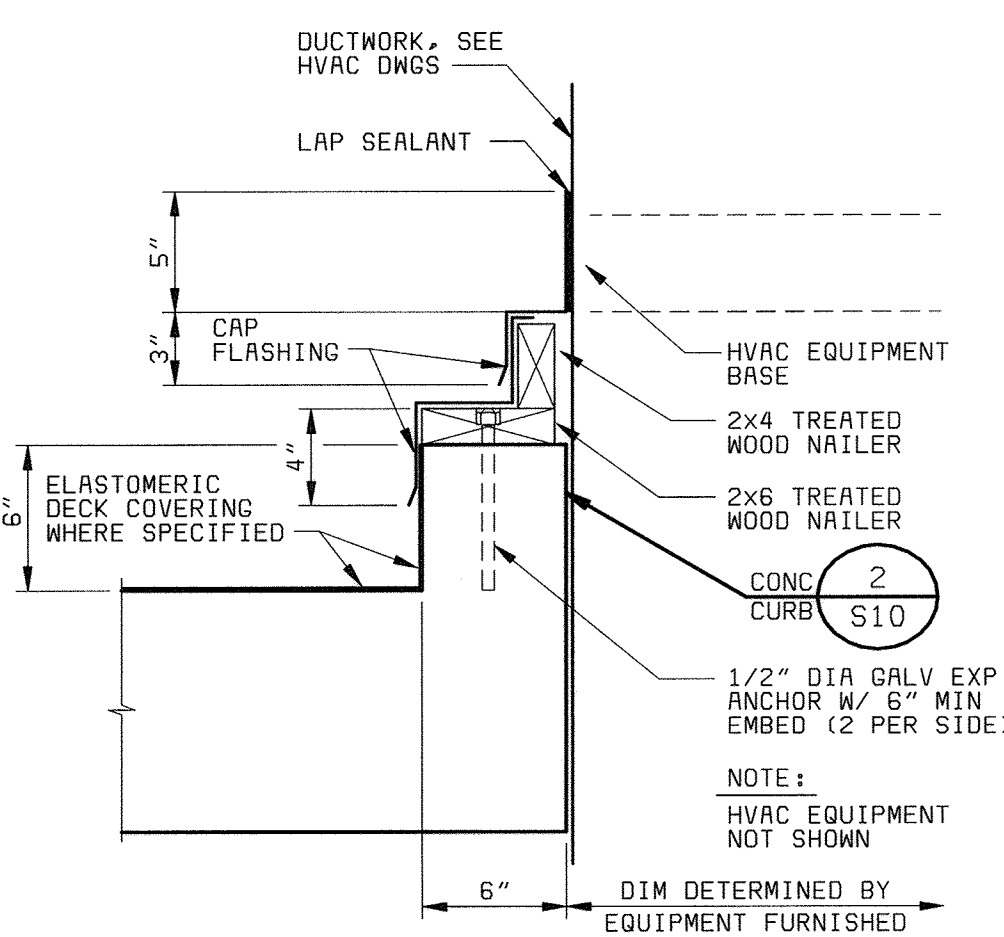
SLAB INTERACTION DETAIL
DETAIL AT OPENINGS



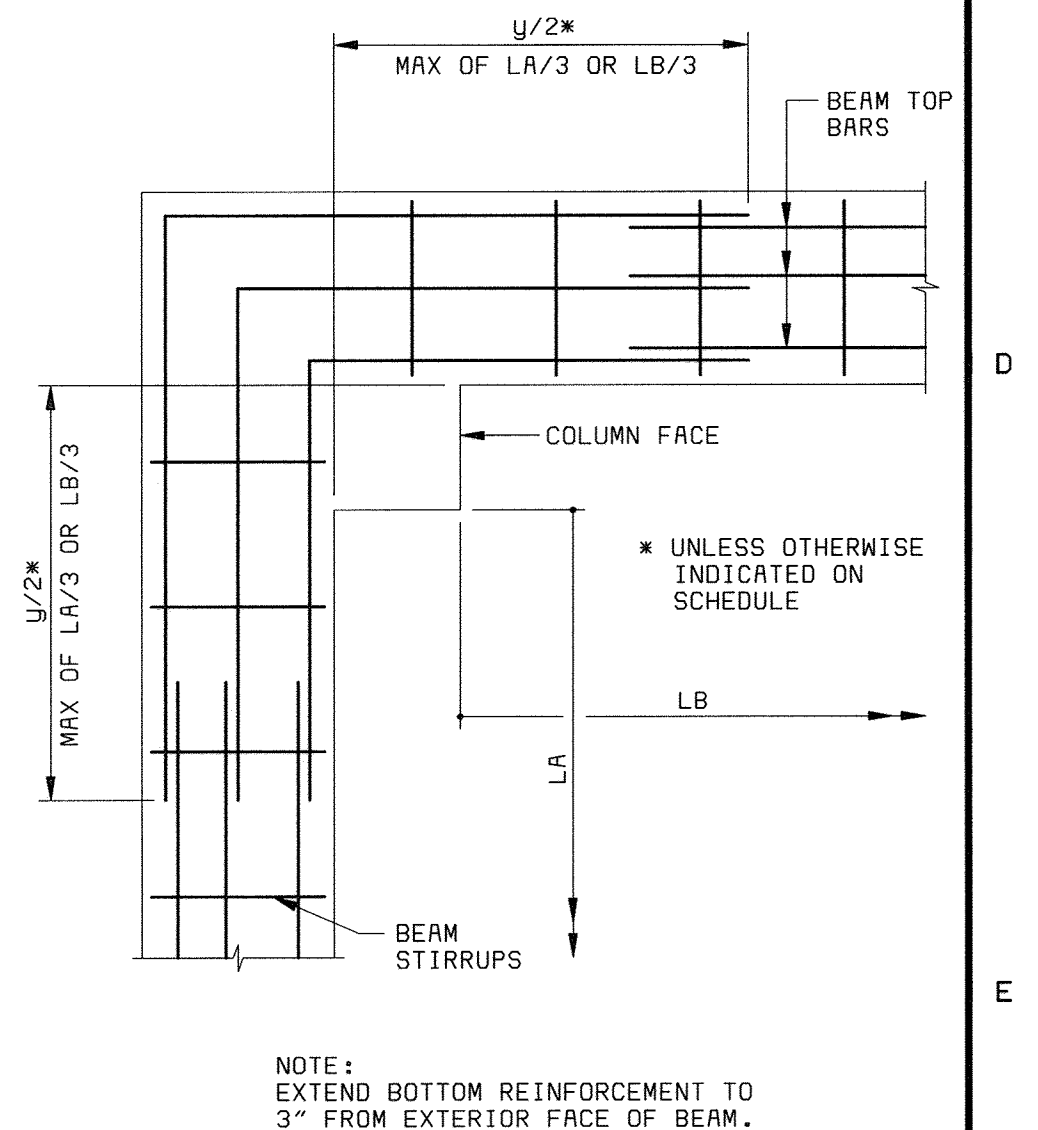
DETAIL A
NO SCALE
S16



DETAIL B
NO SCALE
S16



HVAC EQUIPMENT SUPPORT
1 1/2" = 1'-0"
S10



TYPICAL BEAM TOP END
REINFORCEMENT AT CORNERS (PLAN)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
THAY N. GOPALAKRISHNAN
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 19609

DES: TNG					
DRN: ALB					
CHK: JME					
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

STRUCTURAL
CONCRETE BEAMS
AND SLAB DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
81 OF 150
S16

BEAM SCHEDULE

Table with columns: MARK, TYPE, BEAM SIZE (WIDTH, DEPTH), BOTTOM REINF (CONT, ADD, x, x1, x2), END TOP REINF (CONT, ADD, y1), INT TOP REINF (CONT, ADD, y2), SIDE FACE REINF (EF), STIRRUPS (TYPE, SIZE, S1, Z, S2), REMARKS. Rows include beams B100 through B340, categorized by building level (e.g., EL 142.00, EL 156.00, EL 167.00).

BEAM NOTES:

- 1. UNLESS INDICATED OTHERWISE IN BEAM SCHEDULE, CONTINUOUS BOTTOM REINF SHALL HAVE LAP SPLICES CENTERED ON THE CENTERLINE OF THE SUPPORT USING 75% OF THE LAP SPlice LENGTH INDICATED ON THE STANDARD CONCRETE DETAILS SHEET...
2. CONTINUOUS END AND INTERIOR TOP REINF SHALL BE LAPPED AT MIDSPAN BETWEEN SUPPORTS USING 75% OF THE LAP SPlice LENGTH INDICATED ON THE STANDARD CONCRETE DETAILS SHEET...
3. CONTINUOUS TOP AND BOTTOM BARS SHALL BE PLACED IN THE BEAM SECTION SUCH THAT ONE OF THE CONTINUOUS BARS IS LOCATED IN EACH CORNER OF THE BEAM STIRRUPS...
4. ALL TOP AND BOTTOM BARS SHALL BE PLACED IN ONE LAYER UNLESS INDICATED OTHERWISE...
5. SIDE FACE REINF SHALL BE CONTINUOUS WITH LAP SPLICES CENTERED AT THE CENTERLINE OF THE SUPPORT...
6. PROVIDE MINIMUM #5 STIRRUP SUPPORT BARS IN ALL CORNERS OF STIRRUPS WHEN TOP OR BOTTOM BARS ARE NOT PRESENT...
7. UNLESS INDICATED OTHERWISE, CONSECUTIVE STIRRUP CROSSTIES SHALL HAVE THEIR 90 DEGREE HOOK PLACED ON OPPOSITE SIDES...
8. ABBREVIATIONS USED:

ADD = ADDITIONAL LE = LEFT END
BOT = BOTTOM RE = RIGHT END
CONT = CONTINUOUS REINF = REINFORCEMENT
EE = EACH END STD = STANDARD (PER ACI 318)
EF = EACH FACE T = TOP
EQ = EQUAL TYP = TYPICAL
INT = INTERIOR

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE



REG. PROF. ENGR. DATE

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DES: TNG
DRN: MAS
CHK: JME
DATE: 05/30/00

Table with columns: DATE, REVISIONS AND RECORD OF ISSUE, NO., BY, CK, APP. Includes revision 07/26/04 CONFORMED TO CONSTRUCTION RECORDS.

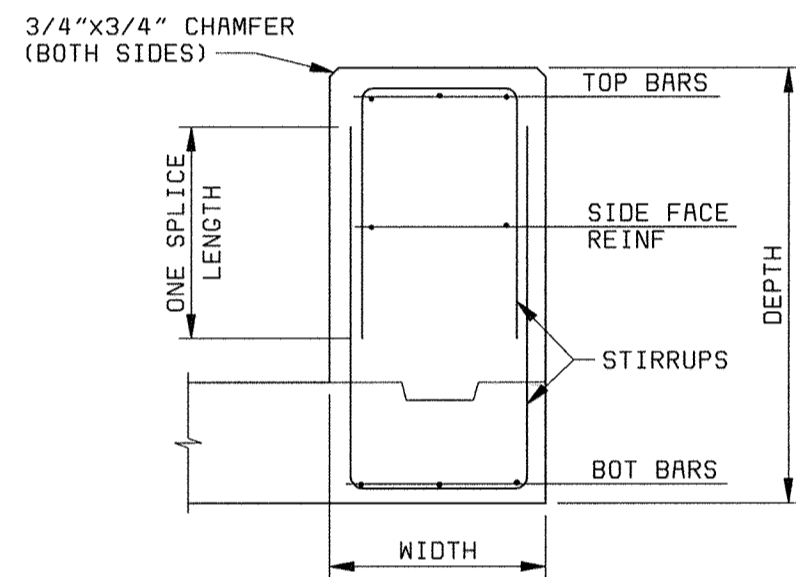
STRUCTURAL
CONCRETE BEAM SCHEDULE

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

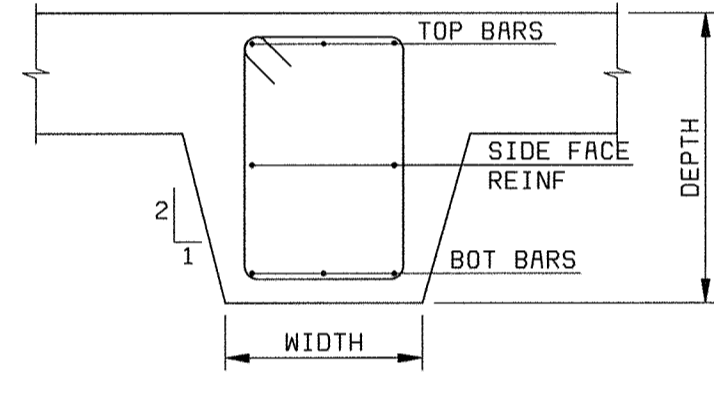
SCALE AS SHOWN
SHEET 82 OF 150
S17

BEAM SCHEDULE

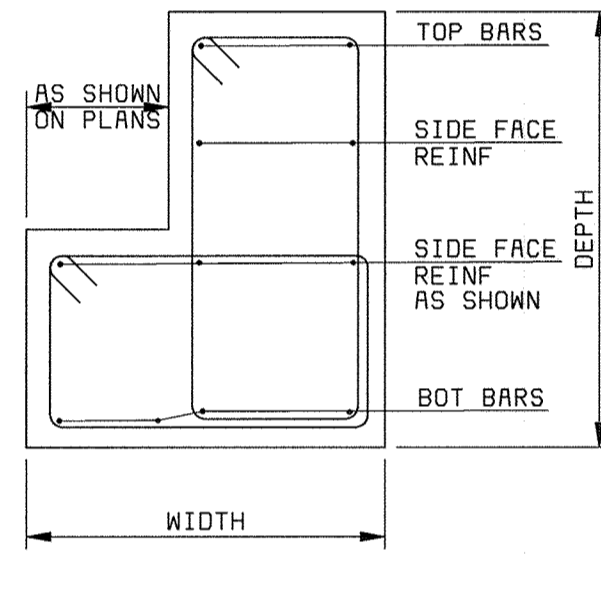
MARK	TYPE	BEAM SIZE		BOTTOM REINF			END TOP REINF		INT TOP REINF		SIDE FACE REINF (EF)	STIRRUPS			REMARKS		
		WIDTH	DEPTH	CONT	ADD	x ¹	x ²	CONT	ADD	y ¹		CONT	ADD	y ²		TYPE	SIZE
CENTRIFUGE BUILDING (EL 182.75 LEVEL)																	
B400	C	16"	30"		3-#6			3-#8			#6@12"	SA	#4	12"		12"	SEE SECTION 4 ON SHEET S12
B401	S	16"	30"	3-#7				3-#7			#6@12"	SA	#4	12"		12"	
B402	E	12"	24"		2-#7						#6@12"	SA	#4	12"		12"	
B403	I	12"	24"								#6@12"	SA	#4	12"		12"	
B404	I	12"	24"								#6@12"	SA	#4	12"		12"	
B405	E	12"	30"		2-#7						#6@12"	SA	#4	12"		12"	
B406	C	16"	30"		3-#6			3-#6			#6@12"	SA	#4	12"		12"	SEE SECTION 2 ON SHEET S9 - HOOK TOP BAR INTO B405
B407	C	16"	48"		3-#7			3-#7			#6@12"	SA	#4	12"		12"	
CENTRIFUGE BUILDING (ROOF LEVEL)																	
B500	I	17"	24"	3-#8				3-#9			#6@12"	SA	#4	10"		10"	SECTION 12 ON S12 (TYPICAL EXTERIOR BEAM)
B501	E	17"	24"		3-#8			3-#9			#6@12"	SA	#4	10"		10"	BEND () END TOP REINF TO B502
B502	E	17"	24"		3-#8			3-#9			#6@12"	SA	#4	10"		10"	
B503	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B504	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B505	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B506	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B507	E	17"	24"		3-#8			3-#9			#6@12"	SA	#4	10"		10"	BEND () END TOP REINF TO B508
B508	E	17"	24"		3-#8			3-#9			#6@12"	SA	#4	10"		10"	
B509	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B510	E	17"	24"		3-#8			3-#9			#6@12"	SA	#4	10"		10"	BEND () END TOP REINF TO B511
B511	E	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B512	E	20"	36"		3-#10			3-#11			#6@12"	SA	#4	12"		12"	
B513	C	20"	36"		3-#10			3-#11			#6@12"	SA	#4	12"		12"	
B514	E	20"	36"		3-#10			3-#11			#6@12"	SA	#4	12"		12"	
B515	C	17"	24"		3-#8			3-#9	2-#9		#6@12"	SA	#4	10"		10"	BEND () TOP LAYER TOP REINF TO ADJ BEAM TWO ADDITIONAL TOP BAR TO ANCHOR INTO ADJACENT BEAM
B516	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B517	I	17"	24"					3-#9			#6@12"	SA	#4	10"		10"	
B518	E	17"	24"		3-#8			3-#9			#6@12"	SA	#4	10"		10"	
B600	E	16"	24"		3-#9			5-#9			#6@12"	SA	#4	10"		10"	RFI-#28 03/05/2001



TYPICAL INVERTED BEAM



TYPICAL GRADE BEAM

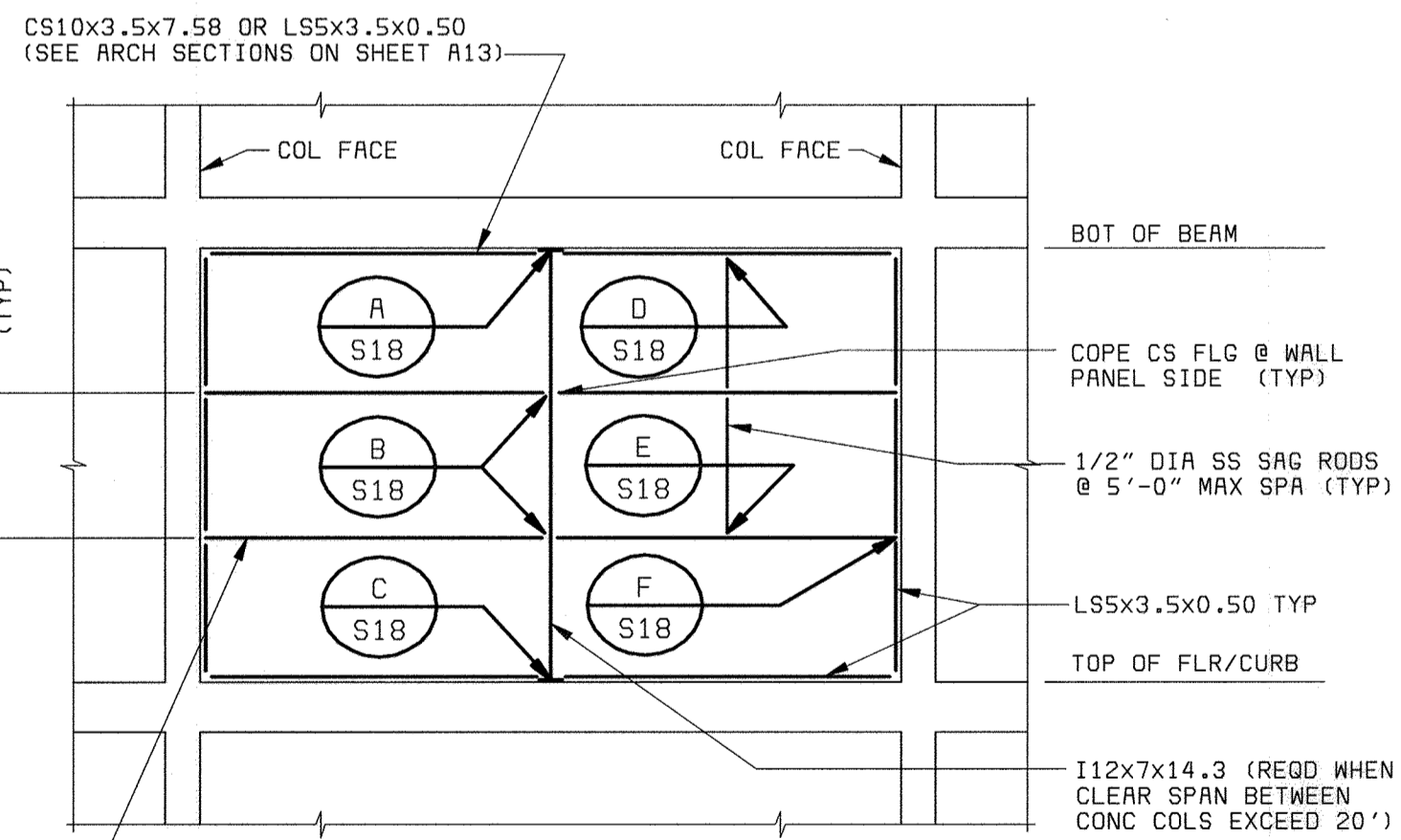


TYPICAL LEDGE

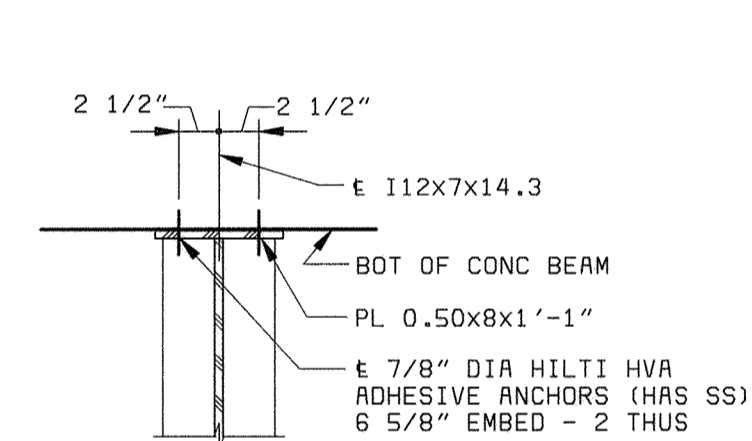
SLAB SCHEDULE

SLAB TYPE	t	PRIMARY REINF		SECONDARY REINF		EXT DET	COMMENTS
		TOP	BOTTOM	TOP	BOTTOM		
CENTRIFUGE BUILDING EL 142.00 SLAB							
S1	10"	#5@6"	#5@6"	#4@12"	#4@12"	A	
S2	10"	#5@12"	#4@12"	#4@12"	#4@12"	A	
S3	14"	#5@6"	#5@6"	#4@12"	#4@12"	A	
CENTRIFUGE BUILDING EL 167.00 SLAB							
S4	10"	#5@6"	#5@6"	#4@12"	#4@12"	A	
S5	22"	#7@12"	#7@12"	#7@12"	#7@12"		
S6	10"	#5@12"	#5@12"	#4@12"	#4@12"	A	
S7	10"	#5@12"	#5@12"	#4@12"	#4@12"		SEE SECTION 3 ON SHEET S11
S8	10"	#5@8"	#5@8"	#4@12"	#4@12"		SEE SECTION 3 ON SHEET S11
S9	10"	#5@12"	#5@12"	#4@12"	#4@12"		SEE SECTION 3 ON SHEET S11
S10	10"	#5@6"	#5@6"	#4@12"	#4@12"	A	

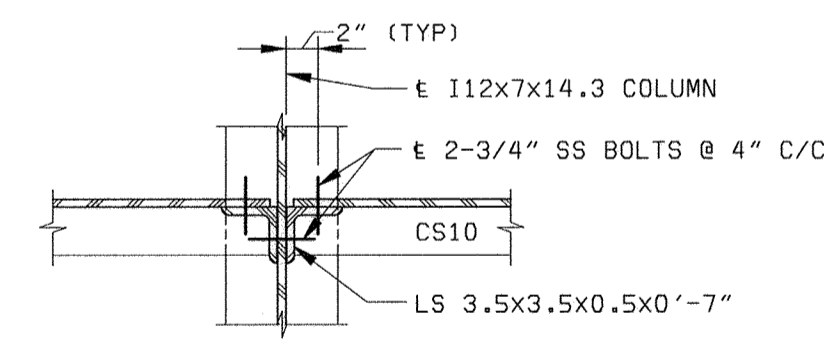
- NOTES:
 1. THE SLAB CALL-OUTS S-1 SHOWN ON THE PLANS INDICATE THE DIRECTION OF PLACEMENT OF THE PRIMARY REINFORCEMENT.
 2. FOR TAPERED SLABS AT FLOOR DRAINS - SEE THE FLOOR DRAIN PIPING SHEETS.
 3. ALL SLAB DETAILS TYPICAL FOR BOTH PRIMARY AND SECONDARY REINFORCEMENT.
 4. REINFORCING IN SLABS MAY BE CONTINUOUS.



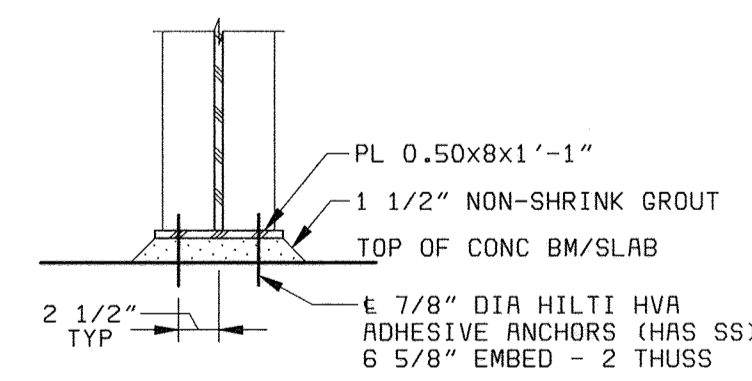
WALL PANEL GIRTS ELEVATION
1/8" = 1'-0" (TYPICAL)



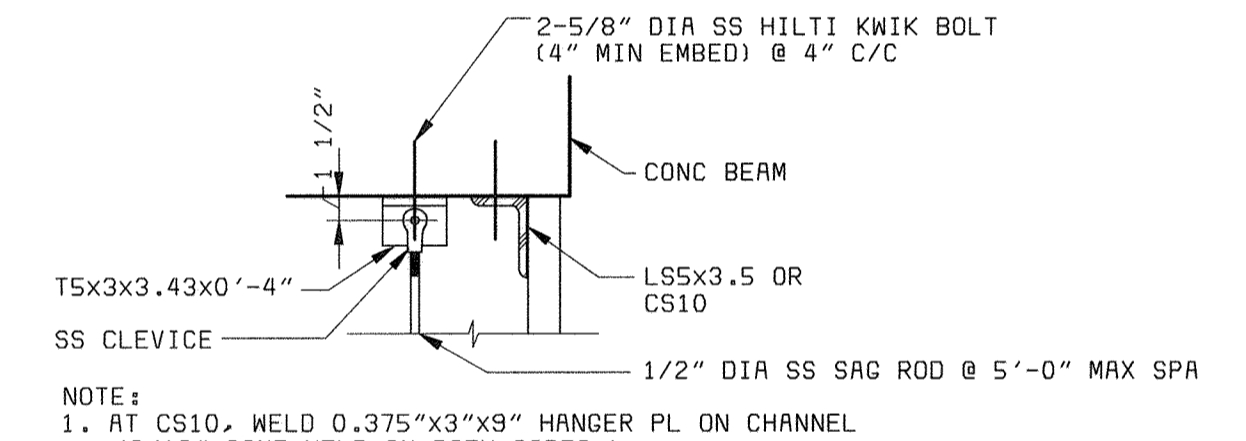
DETAIL A
1" = 1'-0" S18



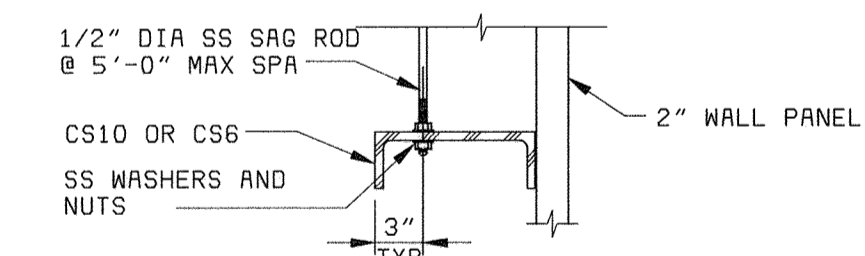
DETAIL B
1" = 1'-0" S18



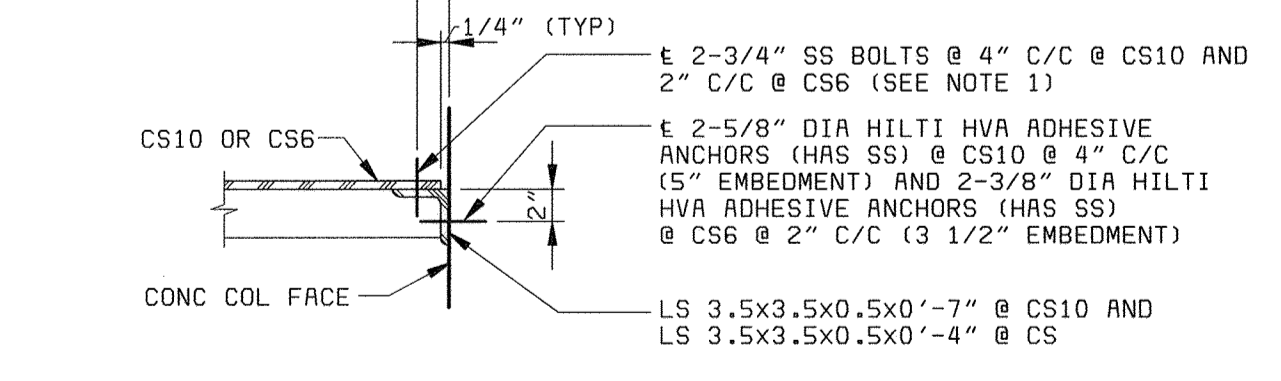
DETAIL C
1" = 1'-0" S18



DETAIL D
1" = 1'-0" S18



DETAIL E
1" = 1'-0" S18



DETAIL F
1" = 1'-0" S18

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609

DES: TNG
DRN: MAS
CHK: JME
DATE: 05/30/00

07/26/04 CONFORMED TO CONSTRUCTION RECORDS
REVISIONS AND RECORD OF ISSUE
NO. BY CK APP

STRUCTURAL

CONCRETE BEAM AND SLAB SCHEDULES AND DETAILS

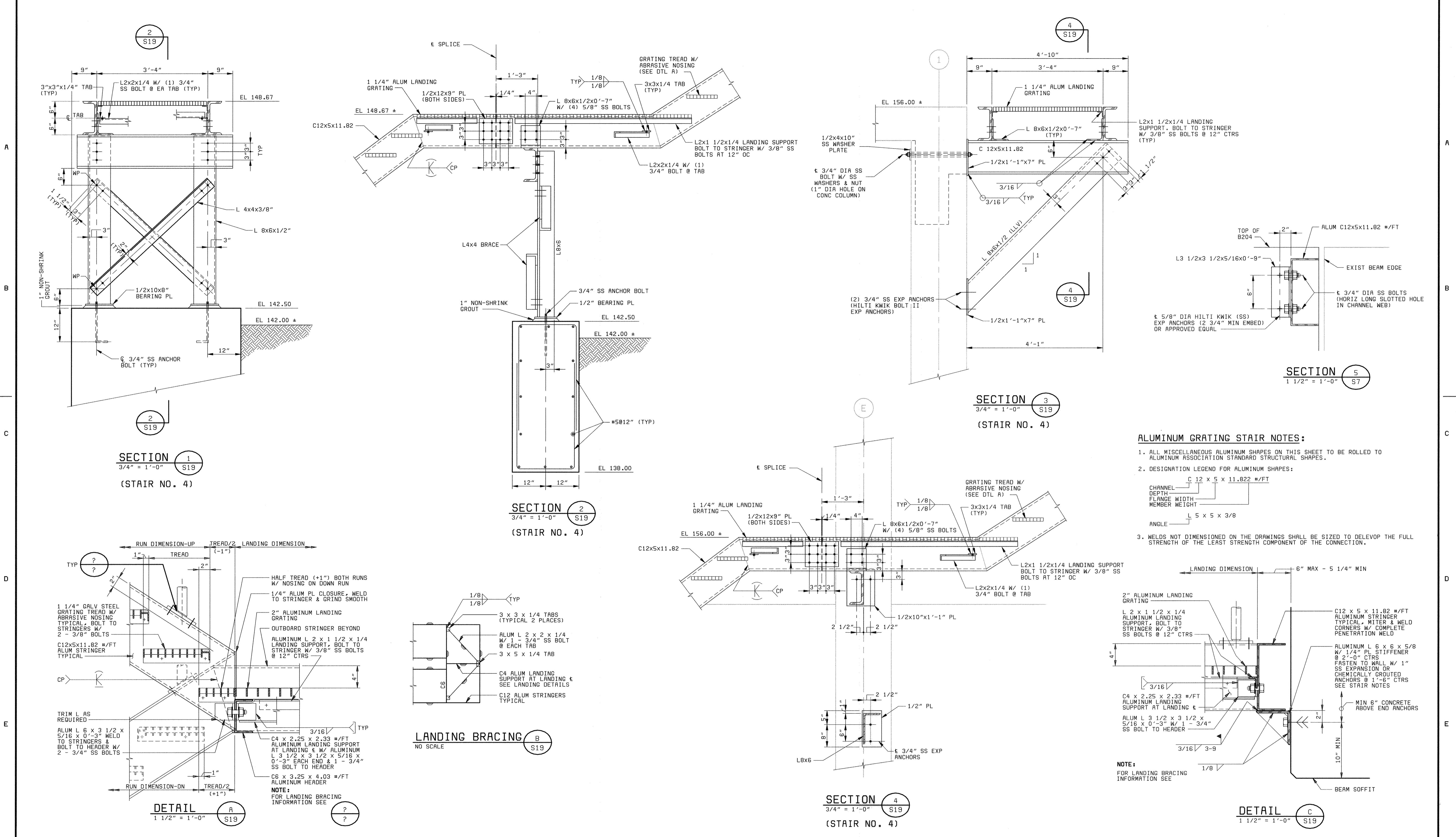
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

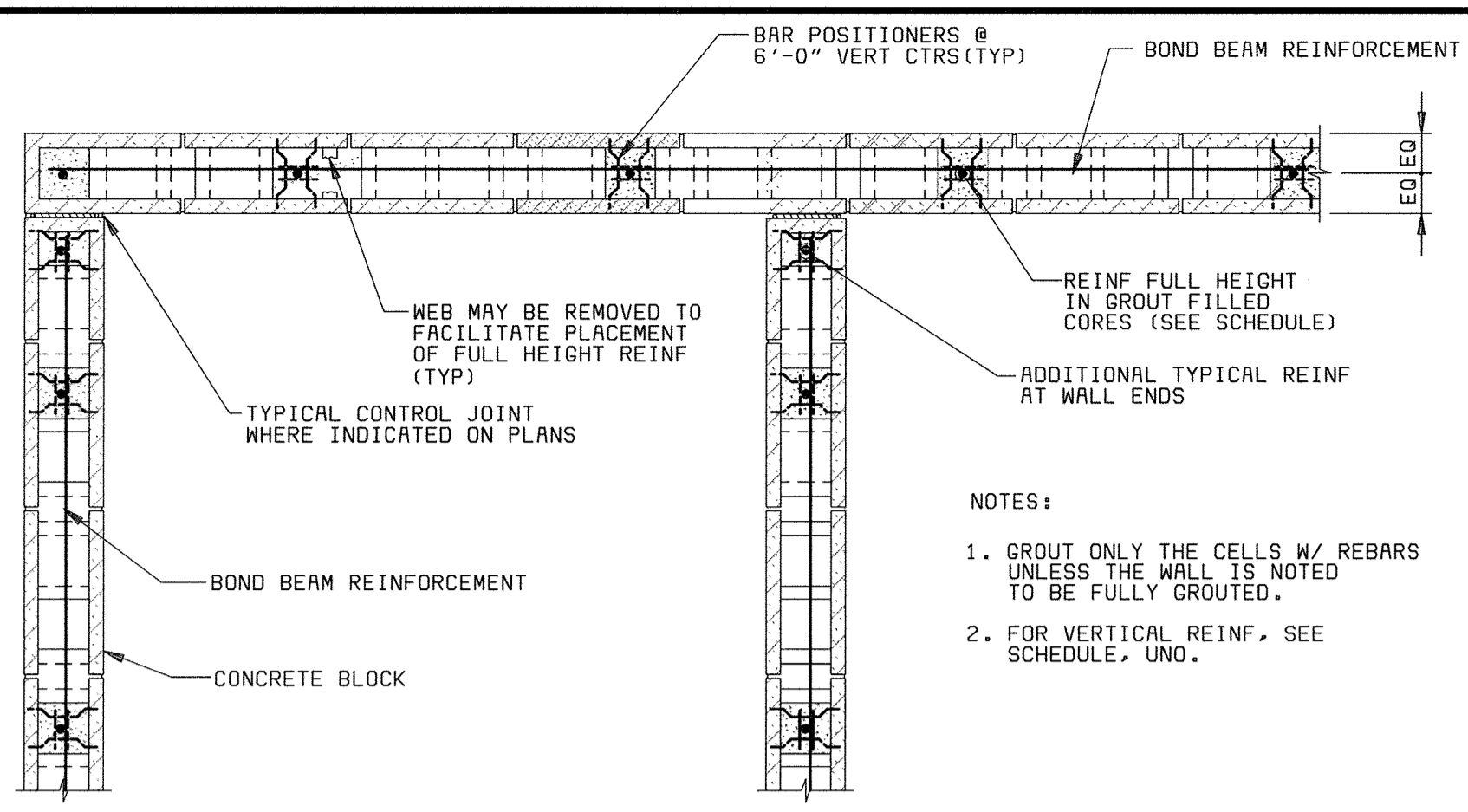
SCALE AS SHOWN

SHEET 83 OF 150

S18

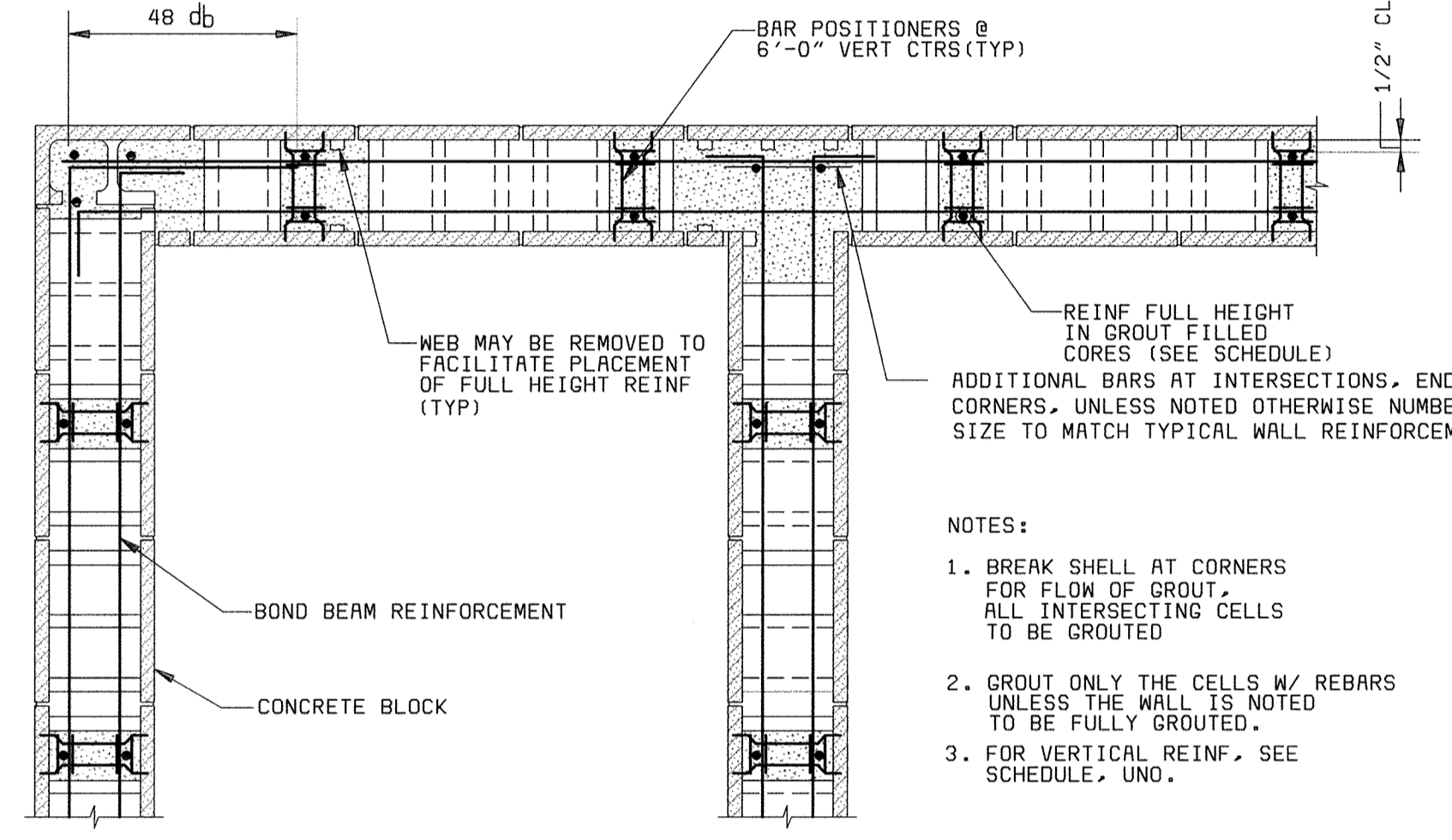


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG								LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: MAS	CHK: JME	DATE: 07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR			
			DATE: 05/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			S19



TYPICAL REINFORCING WITH CORNER CONTROL JOINTS

SINGLE CURTAIN REINFORCEMENT SHOWN. DOUBLE CURTAIN SIMILAR WITH 1/2" CLEAR



TYPICAL REINFORCING WITHOUT CORNER CONTROL JOINTS

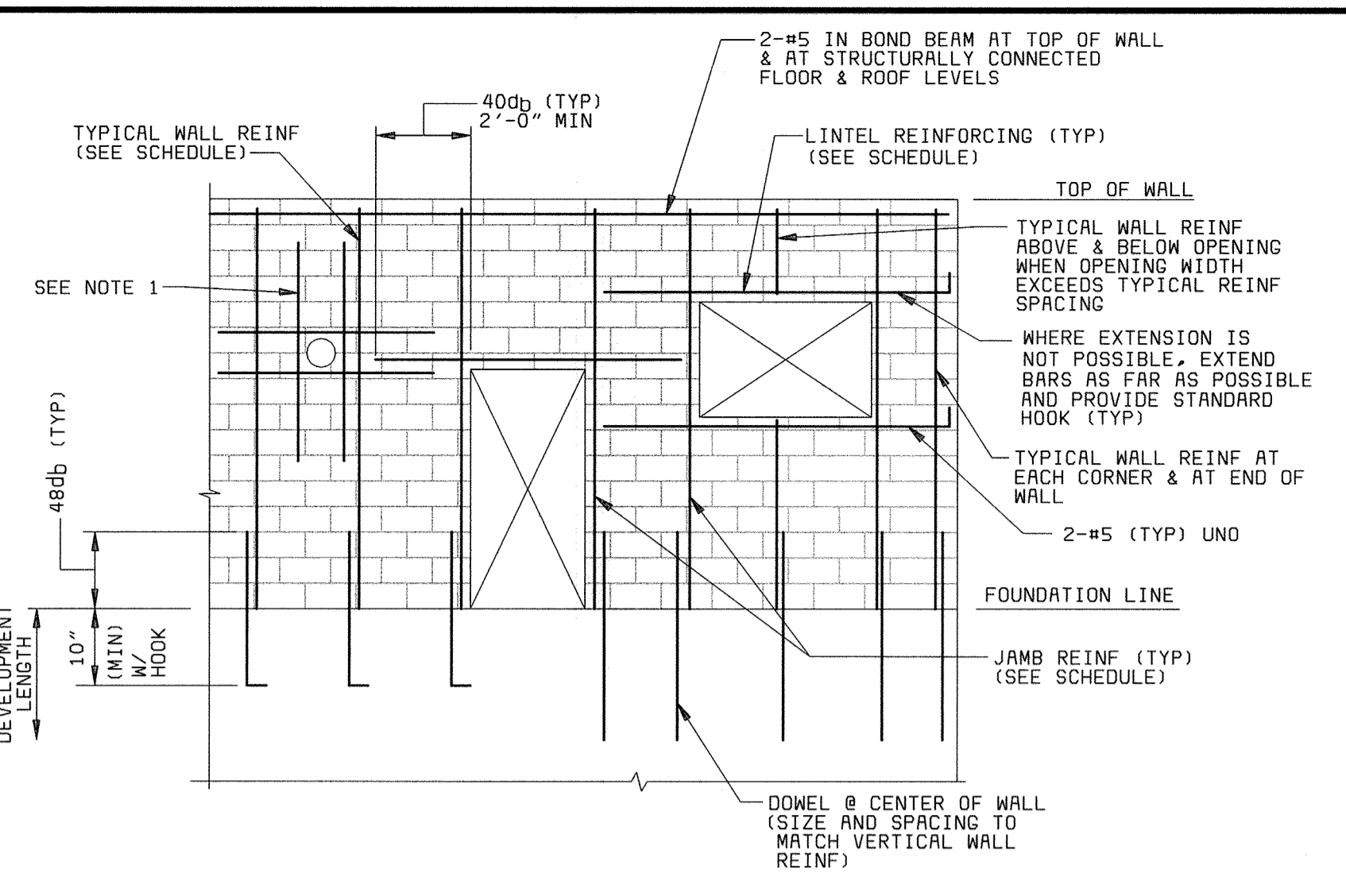
DOUBLE CURTAIN REINFORCEMENT SHOWN. SINGLE CURTAIN SIMILAR EXCEPT CENTERED IN WALL.

TYPICAL MASONRY REINFORCING PLANS
3/4" = 1'-0"

MINIMUM CMU WALL REINFORCING SCHEDULE (NOTE 5) (SPECIAL INSPECTION REQUIRED)					
WALL SIZE	WALL HEIGHT	VERTICAL REINFORCEMENT		HORIZONTAL REINFORCEMENT	
		EXTERIOR WALL	INTERIOR WALL	EXTERIOR WALL	INTERIOR WALL
12"	≤16'-0"	#5@48	#5@48	LADDER TYPE JOINT REINFORCEMENT @ 16" CTRS	LADDER TYPE JOINT REINFORCEMENT @ 16" CTRS
	≤20'-0"	#6@48	#5@48		
	≤22'-0"	#5@48 EF	#5@48		
	≤24'-0"	#5@32 EF	#5@48		
8"	≤13'-0"	#5@48	#5@48	LADDER TYPE JOINT REINFORCEMENT @ 16" CTRS	LADDER TYPE JOINT REINFORCEMENT @ 16" CTRS
	≤16'-0"	#5@32	#5@48		
	≤18'-0"	#5@32 EF	#5@48		
	≤22'-0"	#6@32 EF	#5@48		

- NOTES:
- WALL HEIGHT IS DISTANCE FROM BOTTOM OF MASONRY WALL TO THE LOCATION OF TOP LATERAL SUPPORT.
 - WHERE BARS ARE CALLED OUT EACH FACE (EF), BARS SHALL BE PLACED, IN A DOUBLE CURTAIN WITH ONE BAR TOWARD EACH FACE OF THE WALL. OTHERWISE BARS SHALL BE CENTERED IN THE WALL.
 - AN INTERIOR WALL IS A WALL IN WHICH NO PORTION OF THE WALL IS EXPOSED TO THE EXTERIOR.
 - AT LOCATIONS WHERE WALLS CANTILEVER ABOVE THE TOP LATERAL SUPPORT, THE WALL HEIGHT FOR THE ABOVE SCHEDULE SHALL BE THE GREATER OF THE HEIGHT IN NOTE 1 OR DOUBLE THE DISTANCE FROM LATERAL SUPPORT TO THE TOP OF THE WALL.
 - IN ADDITION TO THE SCHEDULED REINFORCEMENT, WALLS SHALL HAVE A CONTINUOUS BOND BEAM WITH AT LEAST 2-#5 BARS AT OR NEAR THE TOP COURSE, SCHEDULED REINFORCEMENT AT OPENINGS, AND ALL OTHER HORIZONTAL AND VERTICAL REINFORCEMENT AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL DRAWINGS.
 - SEE THE STRUCTURAL DRAWINGS FOR SPECIAL REINFORCEMENT AND BOUNDARY ELEMENTS IN HIGH STRESS SHEAR WALLS. ALL WALLS SHALL BE REINFORCED WITH THE MINIMUMS ABOVE.

MINIMUM CMU WALL REINFORCING SCHEDULE
NO SCALE

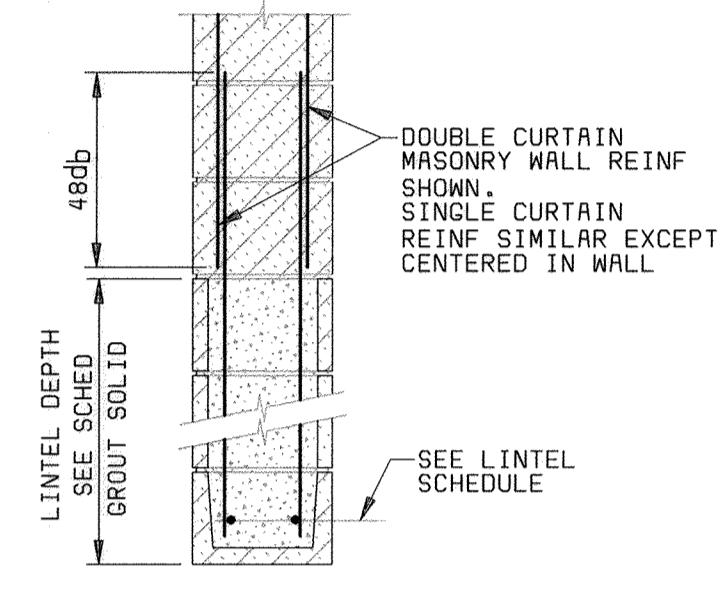


TYPICAL MASONRY REINFORCING ELEVATION
NO SCALE

- NOTE:
- EXTEND JAMB BARS FLOOR TO ROOF WHERE OPENING WIDTH EXCEEDS 1'-4", OTHERWISE, EXTEND 40 BAR DIAMETERS OR 2'-0" MIN PAST OPENINGS.

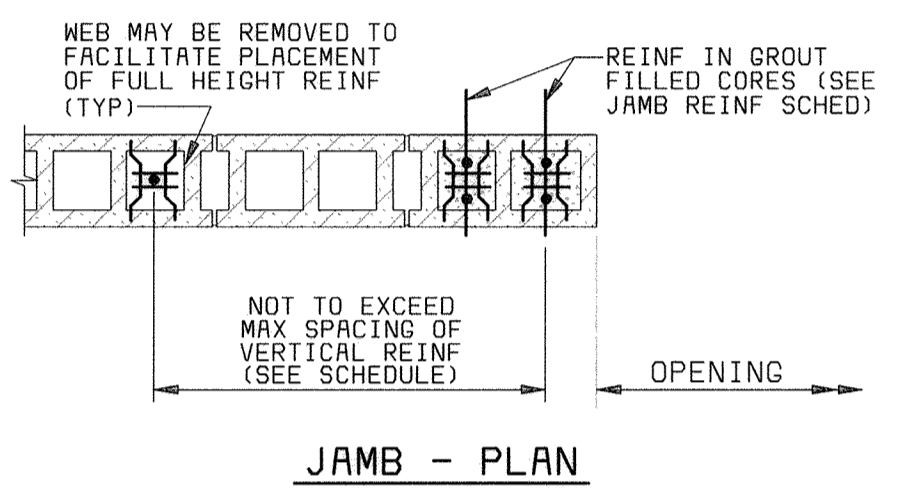
LINTEL SCHEDULE			
WALL SIZE	OPENING WIDTH	LINTEL DEPTH	LONGITUDINAL REINFORCEMENT
12"	≤4'-0"	0'-8"	2-#5
	≤8'-0"	1'-4"	2-#5
	≤12'-0"	2'-0"	2-#5
	≤16'-0"	2'-0"	2-#6
8"	≤20'-0"	2'-8"	2-#7
	≤4'-0"	0'-8"	2-#5
	≤8'-0"	1'-4"	2-#5
	≤15'-0"	2'-0"	2-#5

- NOTES:
- BEAR ALL LINTELS A MINIMUM 2'-0" AT EACH END.
 - REINFORCE LINTELS AS INDICATED ABOVE UNLESS NOTED OTHERWISE ON THE DRAWINGS.



TYPICAL MASONRY LINTEL SECTION AND SCHEDULE
NO SCALE

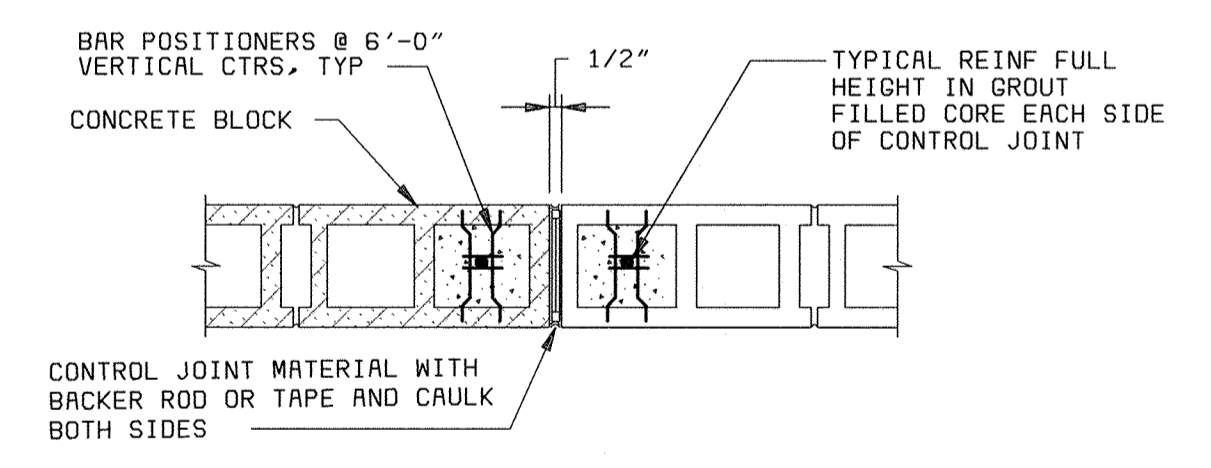
JAMB REINFORCING SCHEDULE				
WALL SIZE	WALL HEIGHT	OPENING WIDTH	EXTERIOR WALL REINFORCEMENT	INTERIOR WALL REINFORCEMENT
12"	≤16'-0"	≤7'-0"	1-#5 EF	1-#5 EF
		≤12'-0"	2-#5 EF	1-#5 EF
		≤4'-0"	1-#6 EF	1-#5 EF
	≤20'-0"	≤7'-0"	1-#6 EF	1-#5 EF
		≤12'-0"	3-#6 EF	1-#5 EF
		≤4'-0"	1-#6 EF	1-#5 EF
≤22'-0"	≤7'-0"	2-#6 EF	1-#5 EF	
	≤12'-0"	3-#6 EF	2-#5 EF	
	≤4'-0"	2-#6 EF	1-#5 EF	
8"	≤13'-0"	≤4'-0"	1-#5 EF	1-#5 EF
		≤7'-0"	1-#6 EF	1-#5 EF
		≤12'-0"	3-#6 EF	1-#5 EF
	≤16'-0"	≤4'-0"	1-#6 EF	1-#5 EF
		≤7'-0"	2-#7 EF	1-#5 EF
		≤18'-0"	≤4'-0"	2-#5 EF



JAMB - PLAN

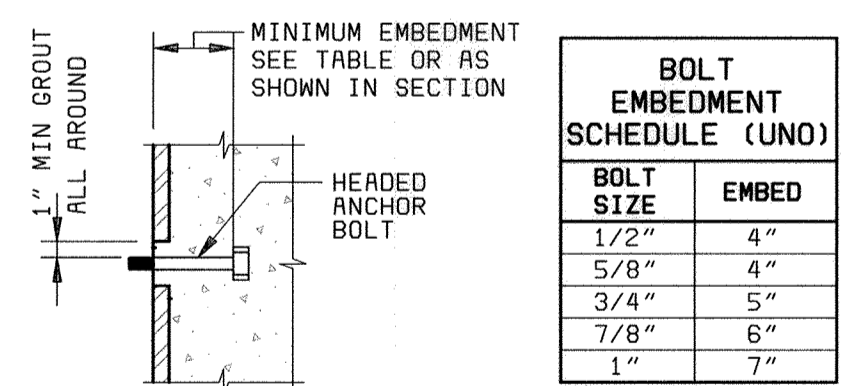
- NOTES:
- WALL HEIGHT IS DISTANCE FROM BOTTOM OF MASONRY WALL TO THE LOCATION OF TOP LATERAL SUPPORT.
 - THE SCHEDULED REINFORCING SHALL BE PLACED WITH ONE BAR AT EACH FACE OF THE WALL. ONLY ONE PAIR OF BARS SHALL BE PLACED IN EACH CELL.
 - AN INTERIOR WALL IS A WALL IN WHICH NO PORTION OF THE WALL IS EXPOSED TO THE EXTERIOR.
 - AT LOCATIONS WHERE WALLS CANTILEVER ABOVE THE TOP LATERAL SUPPORT, THE WALL HEIGHT FOR ABOVE SCHEDULE SHALL BE THE GREATER OF THE HEIGHT IN NOTE 1 OR DOUBLE THE DISTANCE FROM LATERAL SUPPORT TO THE TOP OF THE WALL.
 - REINFORCE JAMBS AS INDICATED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

TYPICAL MASONRY JAMB PLAN AND SCHEDULE
NO SCALE



- NOTES:
- LADDER TYPE REINFORCEMENT IS DISCONTINUOUS AT JOINT. 50% OF BOND BEAM REINFORCEMENT IS DISCONTINUOUS AT JOINT.
 - CONTROL JOINT IS CONTINUOUS FULL WALL HEIGHT.
 - PLACE CONCRETE MASONRY CONTROL JOINTS AT ABOUT 35'-0" CENTERS AND WITHIN 16'-0" OF CORNERS UNLESS OTHERWISE NOTED. PLACE CONTROL JOINTS AT LEAST ONE HALF THE OPENING WIDTH AWAY FROM OPENINGS.
 - SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF VENEER CONTROL JOINTS.

TYPICAL CONCRETE MASONRY CONTROL JOINT
NO SCALE



NOTE:

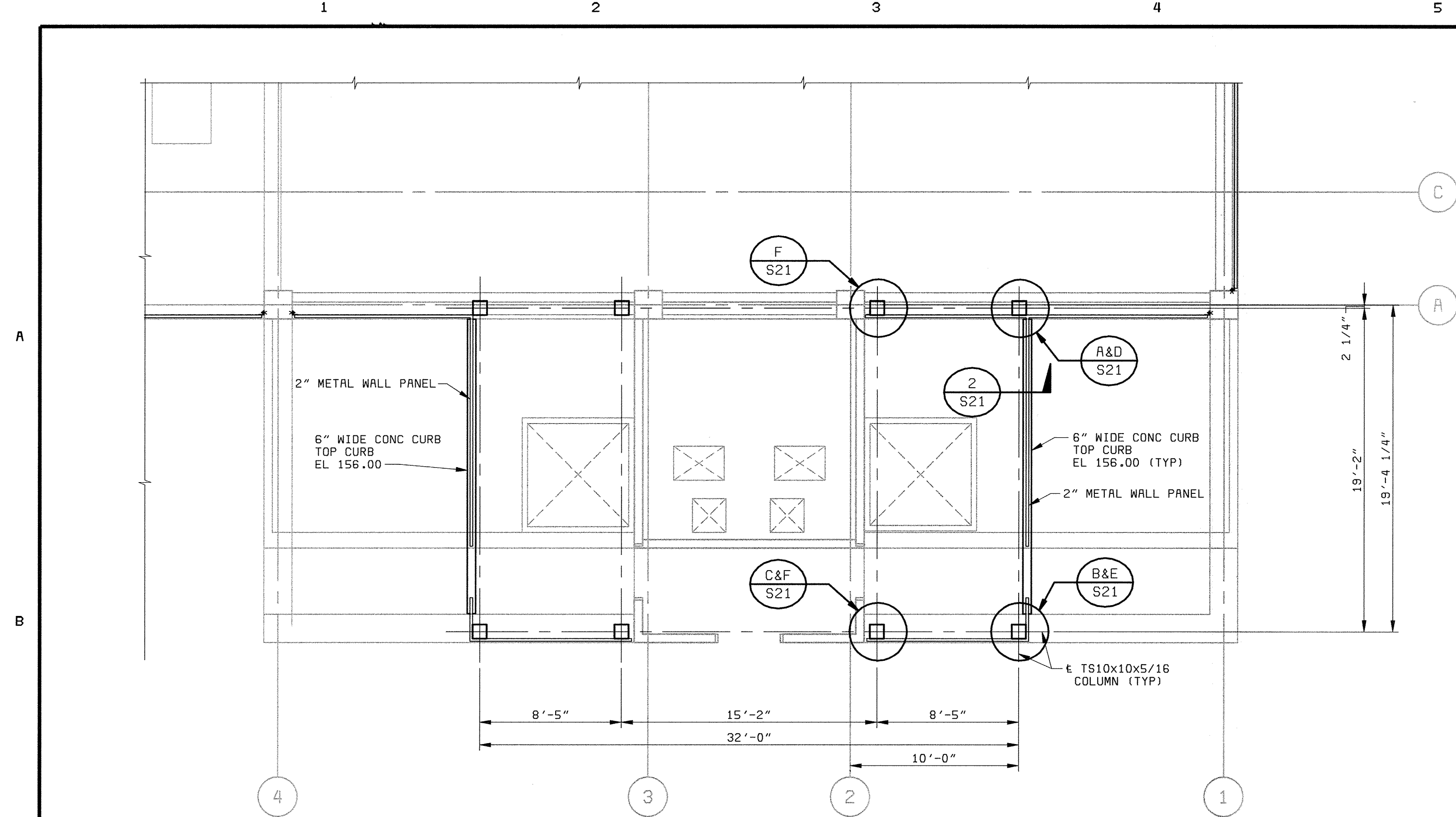
MINIMUM BOLT SPACING SHALL BE 12 BOLT DIAMETERS WITH A MINIMUM EDGE DISTANCE OF 6 BOLT DIAMETERS AND WITH A MINIMUM OF 6" TO END OF WALL.

BOLT SIZE	EMBED
1/2"	4"
5/8"	4"
3/4"	5"
7/8"	6"
1"	7"

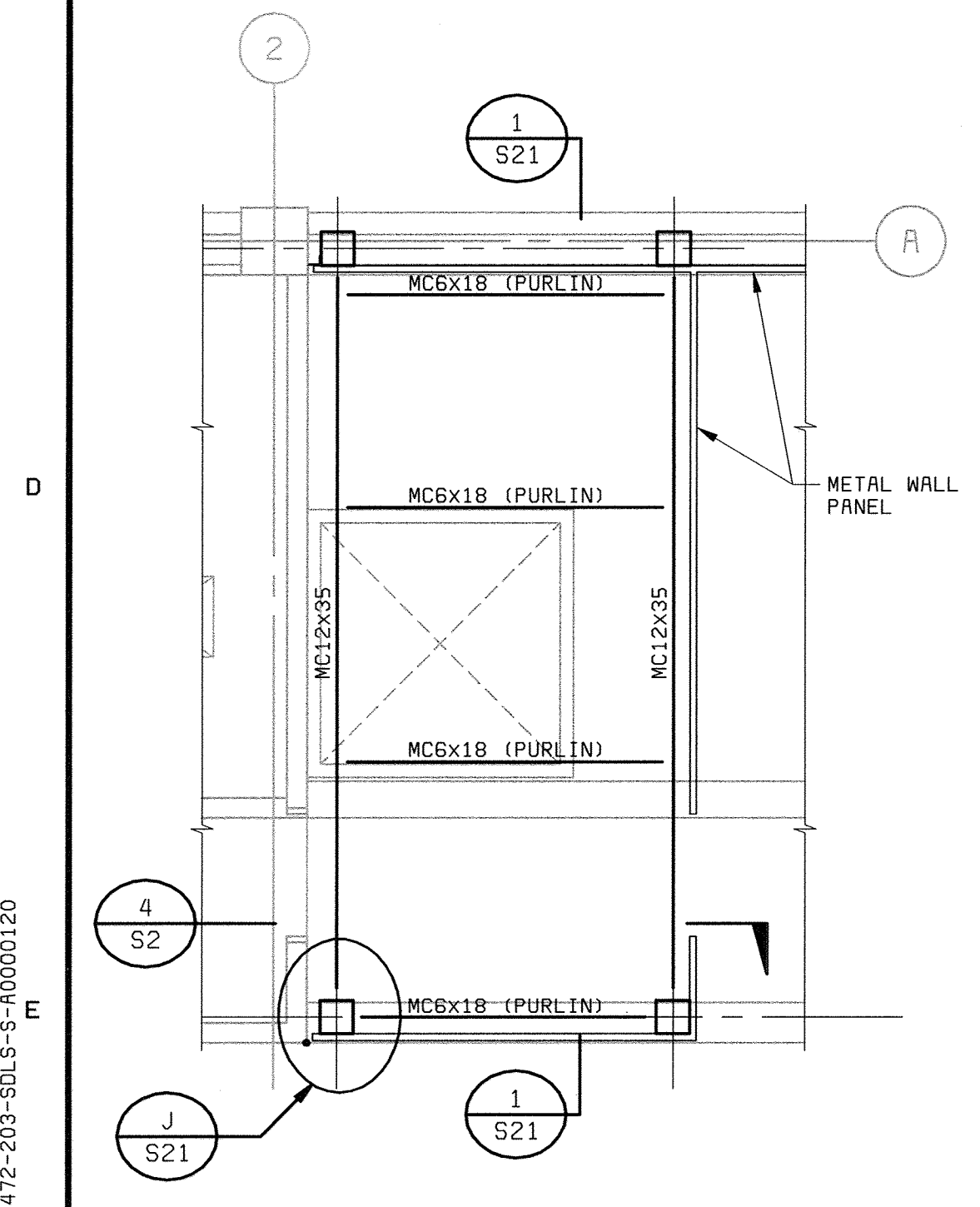
TYPICAL MASONRY ANCHOR BOLT DETAIL
NO SCALE

- GENERAL NOTES:
- THE DETAILS ON THIS SHEET ARE APPLICABLE TO ALL CONCRETE MASONRY CONSTRUCTION. SPECIAL NOTES, SECTIONS AND DETAILS SPECIFICALLY NOTED ON THE DESIGN DRAWINGS SHALL BE APPLICABLE IN LIEU OF THESE TYPICAL DETAILS, EXCEPT THAT REINFORCEMENT SHALL NOT BE LESS THAN THE TYPICAL REINFORCEMENT REQUIRED.
 - FOR MISCELLANEOUS APPURTENANCES INCLUDING EMBEDMENTS, BRACING, STEEL OR PRECAST LINTELS, VENEER, FLASHING, WEEPS, INSULATION, SEALING, CAULKING AND EMBEDDED PIPE AND ELECTRICAL CONDUIT, SEE THE DESIGN DRAWINGS.
 - MASONRY SHALL BE CONSTRUCTED WITH SLEEVES AS REQUIRED TO ACCOMMODATE PASSAGE OF PENETRATING PIPING, CONDUIT AND DUCT BANKS INDICATED ON THE CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.
 - db DENOTES REINFORCING BAR DIAMETER. UNO DENOTES "UNLESS NOTED OTHERWISE".

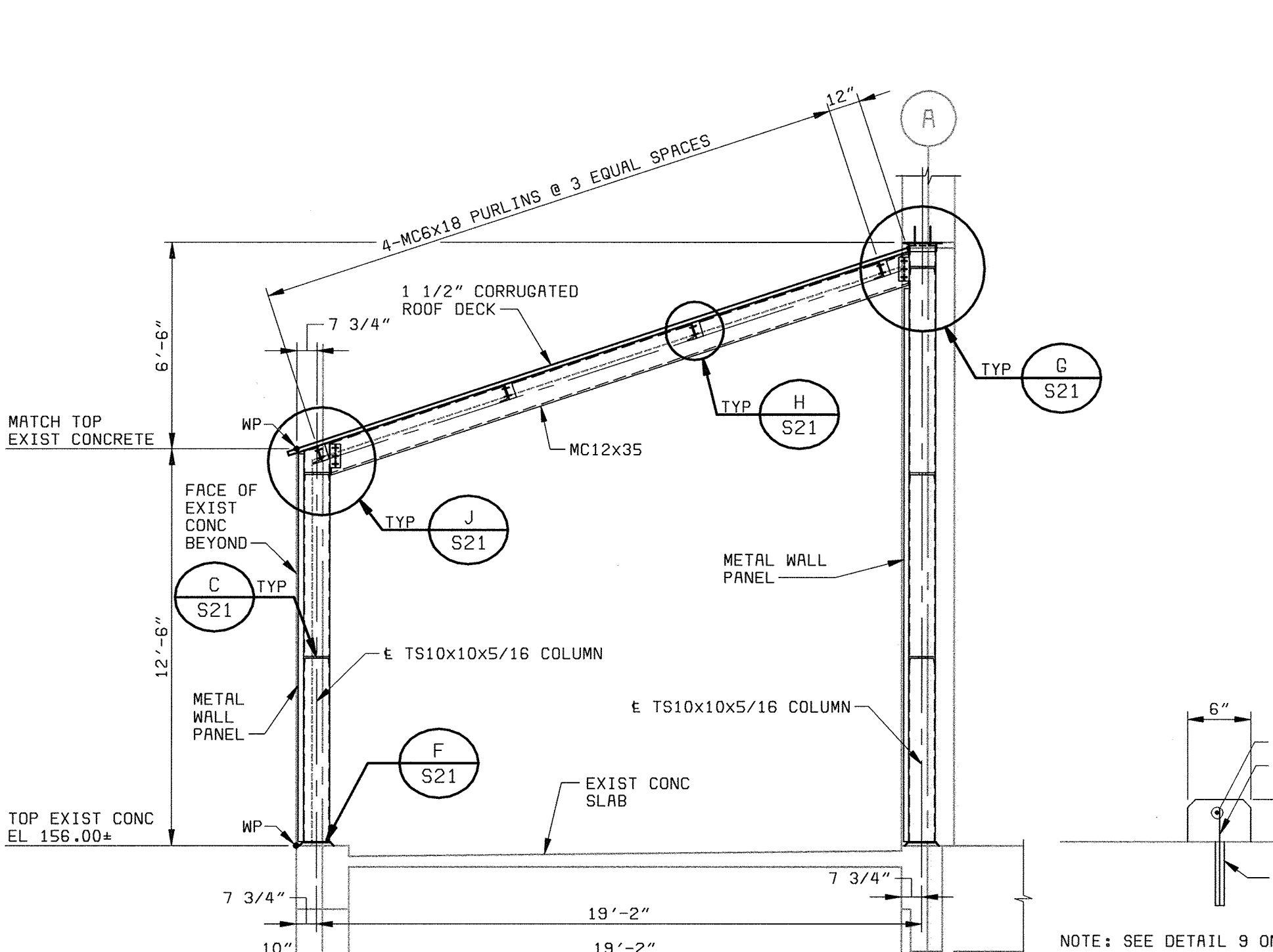
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: B&V							LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 85 OF 150 S20
			DRN: B&V	CHK: JME	DATE: 05/30/00	DATE	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR		



FLOOR PLAN AT EL. 156.00
PART 2
 3/16" = 1'-0"



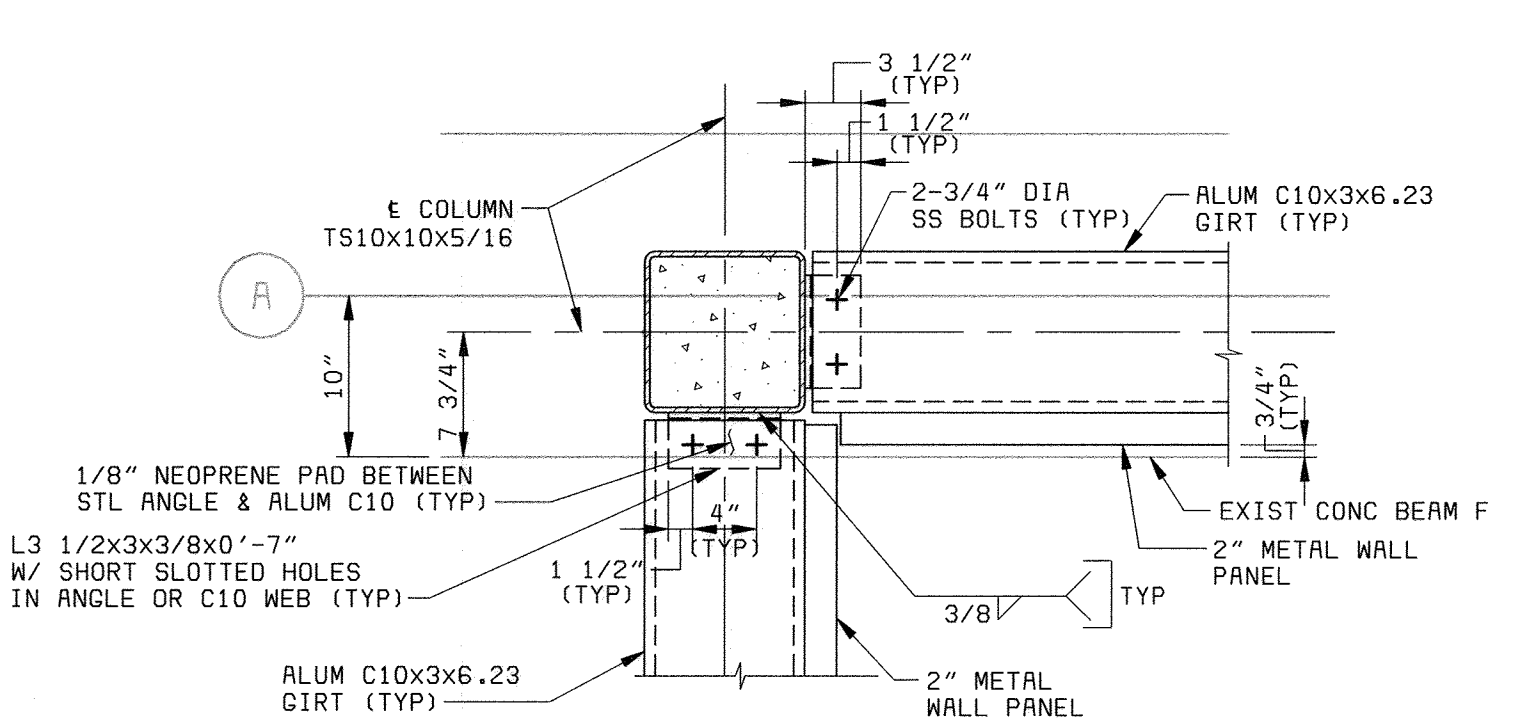
ROOF FRAMING PLAN
 (SOUTH SIDE, NORTH SIDE SIMILAR)
 1/4" = 1'-0"



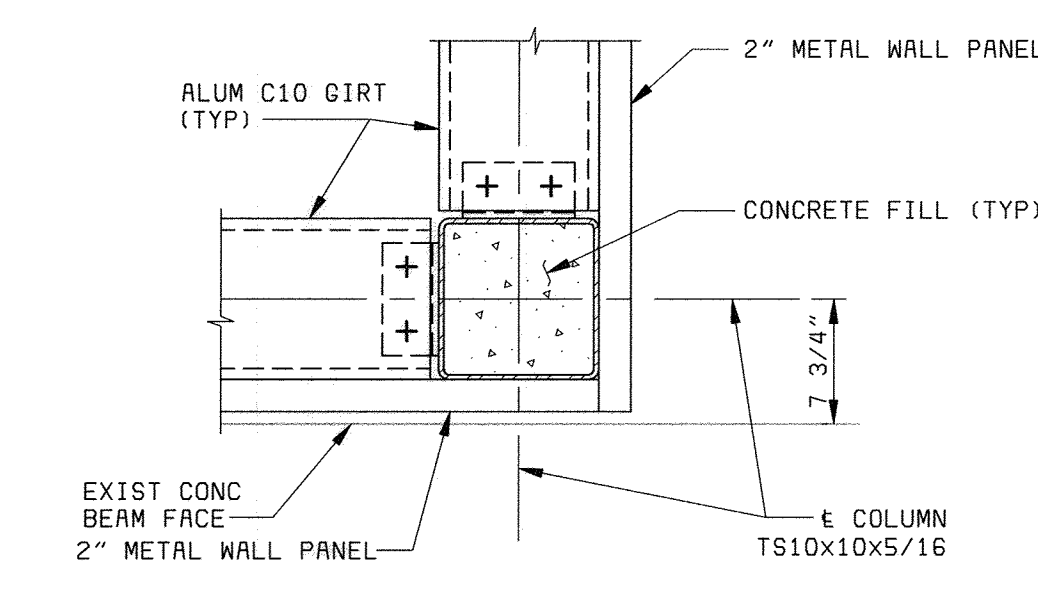
SECTION 1
 1/4" = 1'-0" S21

SECTION 2
 1" = 1'-0" S21

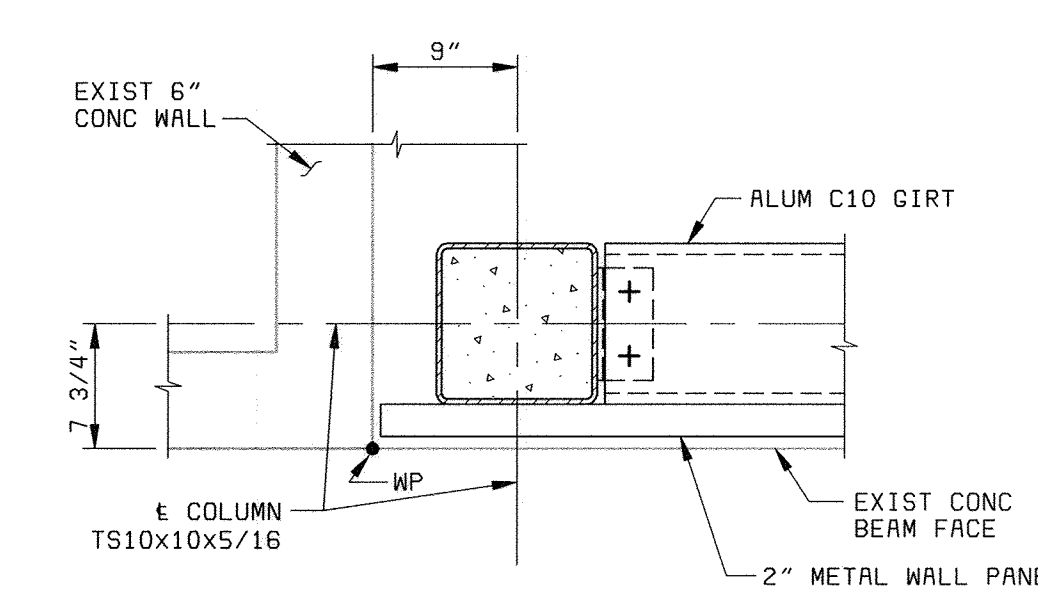
NOTE: SEE DETAIL 9 ON SHEET A8 FOR WALL PANEL ATTACHMENT DETAILS.



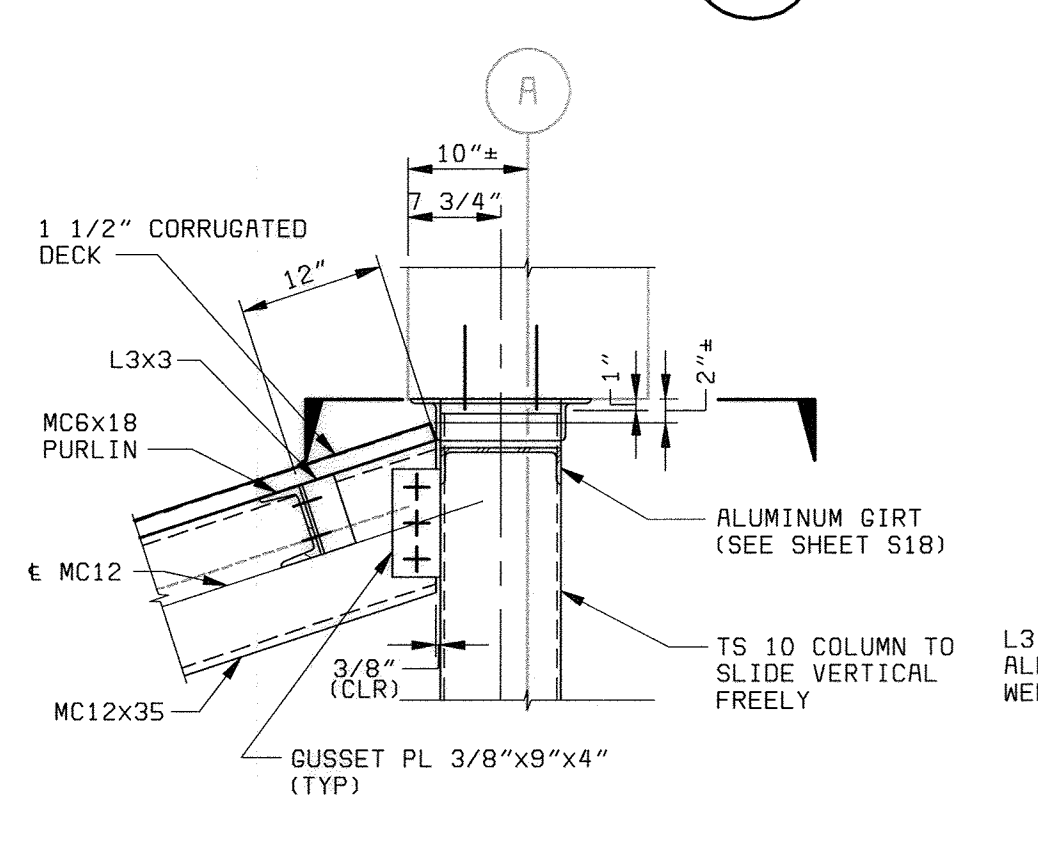
DETAIL A
 1" = 1'-0" S10



DETAIL B
 1" = 1'-0" S10

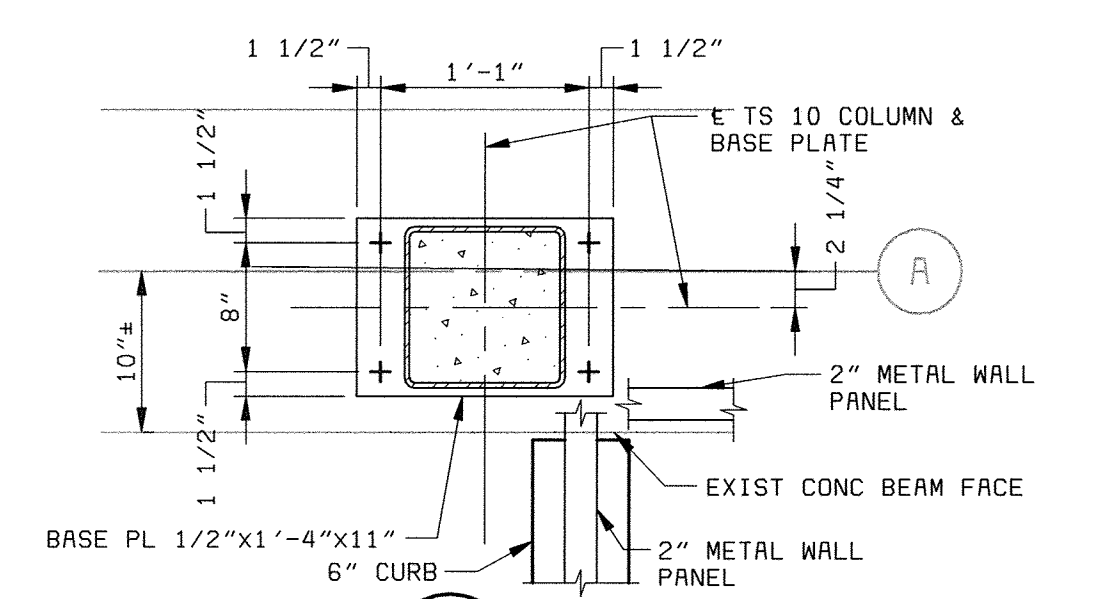


DETAIL C
 1" = 1'-0" S10

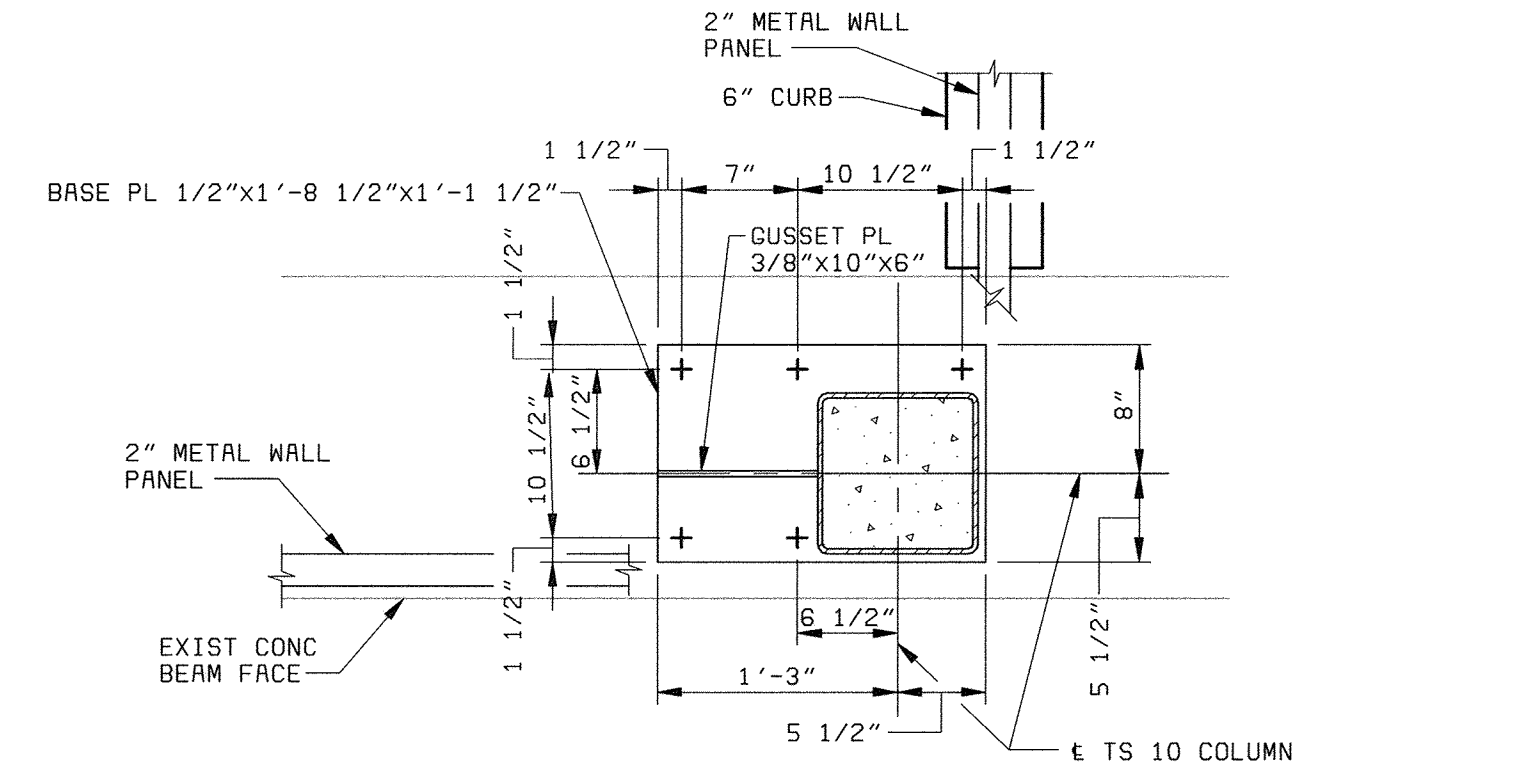


TYPICAL DETAIL G
 3/4" = 1'-0" S21

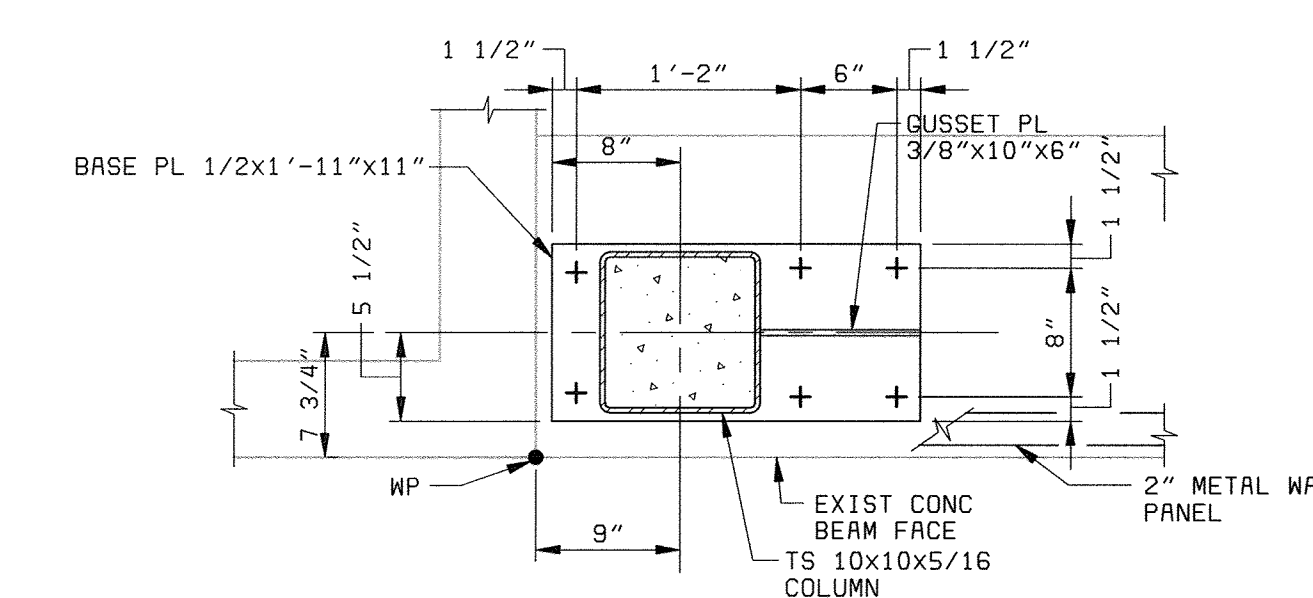
- NOTES:
1. VERIFY ALL EXISTING DIMENSIONS PRIOR TO FABRICATION OF STEEL.
 2. CORRUGATED METAL DECK SHALL BE VULCRAFT 1.5 B20 WITH 36/4 HILTI ENK POWDER ACTUATED FASTENER PATTERN AND #10 SCREWS AT 12" SIDELAP.
 3. FOR ARCHITECTURAL DETAILS, SEE SHEET A8.



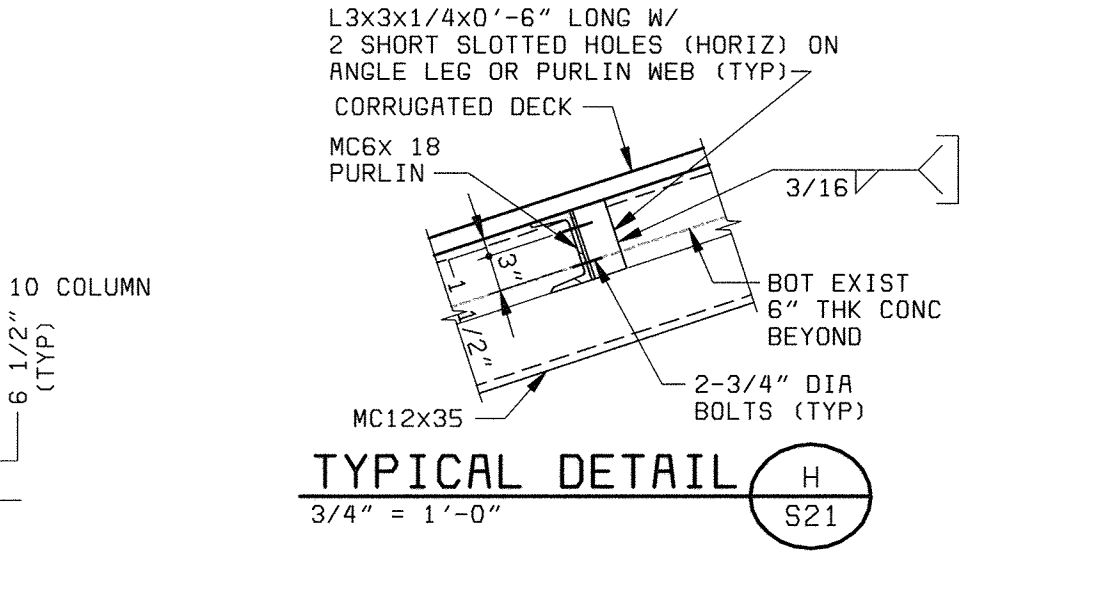
DETAIL D
 1" = 1'-0" S10



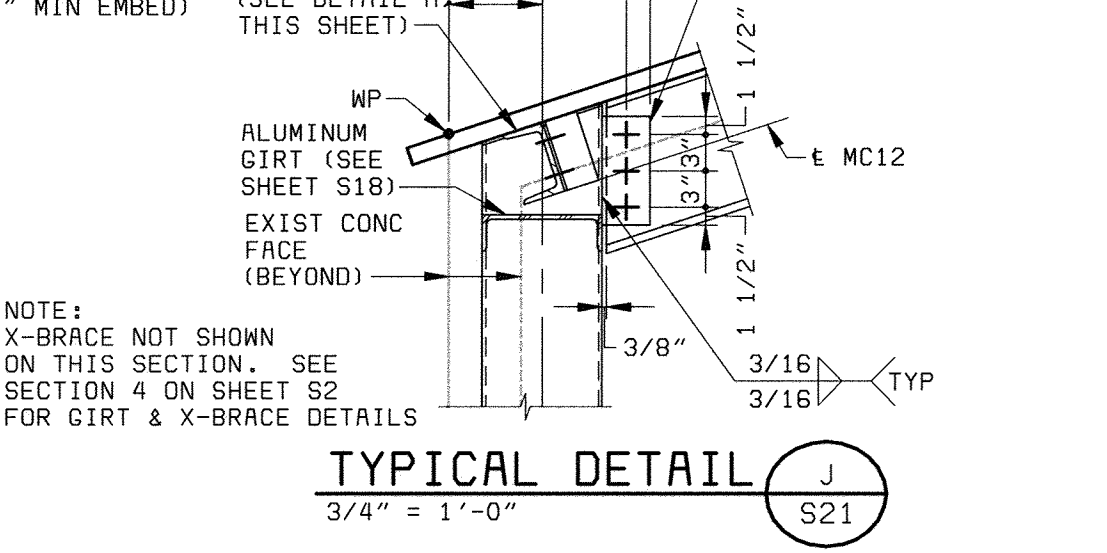
DETAIL E
 1" = 1'-0" S10



DETAIL F
 1" = 1'-0" S10



TYPICAL DETAIL H
 3/4" = 1'-0" S21



TYPICAL DETAIL J
 3/4" = 1'-0" S21

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. DATE

THIS DRAWING WAS
 ORIGINALLY APPROVED
 FOR CONSTRUCTION
 AND SEALED BY
 THAY N. GOPALAKRISHNAN
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 19609

DES: TNG					
DRN: EAJ					
CHK: JME					
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

**SOLIDS PROCESSING IMPROVEMENTS
 CENTRIFUGE BUILDING ADDITION
 STRUCTURAL**
 PLAN AND DETAILS OF
 ENCLOSURE AT EL. 156.00

**LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY**
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN
 SHEET
 86 OF 150
S21

ABBREVIATIONS

Table of abbreviations for various plumbing and HVAC components, including Alarm, Air Compressor, Backdraft Damper, etc.

GENERAL MECHANICAL NOTES

- 1. THIS IS A GENERAL LEGEND AND ABBREVIATION SHEET FOR PLUMBING AND HVAC DRAWINGS. SOME ITEMS CONTAINED ON THIS SHEET MAY NOT BE USED ON THIS SPECIFIC PROJECT.
2. FOR ROOFTOP EQUIPMENT CURBS, FLUES, AND FLASHING DETAILS, SEE ARCHITECTURAL DRAWINGS.
3. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL EQUIPMENT BASE DETAILS.
4. "SCREENED" DELINEATION DENOTES EXISTING AND NEW FACILITIES IN RETURN AIR SYSTEMS...

LEGEND

Legend section containing symbols and descriptions for General, Pipe Fittings, Valves, HVAC, Plumbing, and Fire Protection. Includes symbols for piping, valves, dampers, and various equipment.

GENERAL NOTE: ALL FRP PIPE DUCT AND DAMPERS FOR ODOOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS. AIR INLET AND OUTLET IDENTIFICATION section with diagrams and labels for air flow and equipment identification.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH logo and contact information: Gaithersburg, Maryland

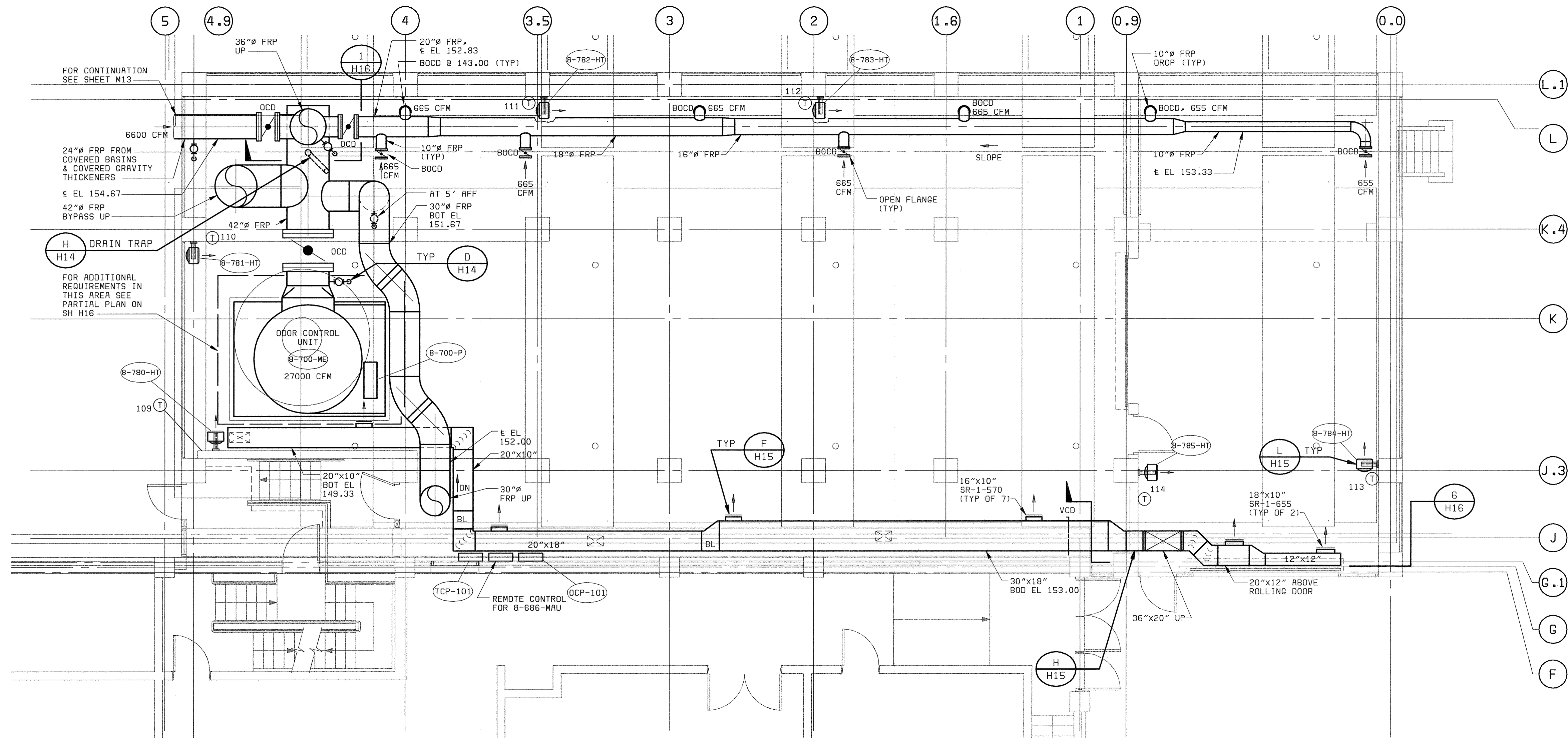
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21982

Table with project details: DES: GWP,JPC; DRN: BDL,LDW; CHK: JEP; DATE: 5-30-00; DATE: 07/26/04; CONFORMED TO CONSTRUCTION RECORDS; REVISIONS AND RECORD OF ISSUE.

HVAC/PLUMBING HVAC/ODOOR CONTROL LEGEND, ABBREVIATIONS AND GENERAL NOTES

LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN SHEET 87 OF 150 H1

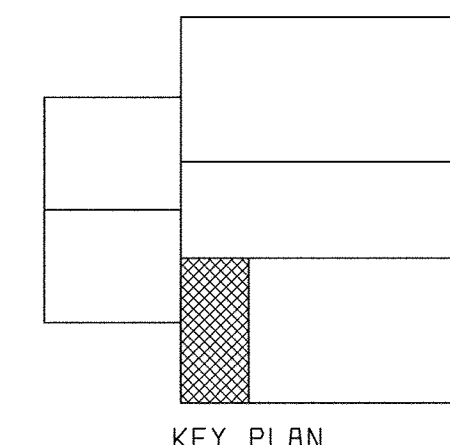


PLAN EL 142.00
3/16" = 1'-0"

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

PLAN NOTES:


- 1 SEE SH H13 FOR ODOR CONTROL PROCESS SCHEMATIC AND ODOR CONTROL AIR FLOW SCHEMATIC.
- 2 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL EXCEPT WHERE NOTED FRP.
- 3 FOR LOCATIONS OF CHEMICAL FEED PUMPS 8-705-P AND 8-706-P SEE SH M15.

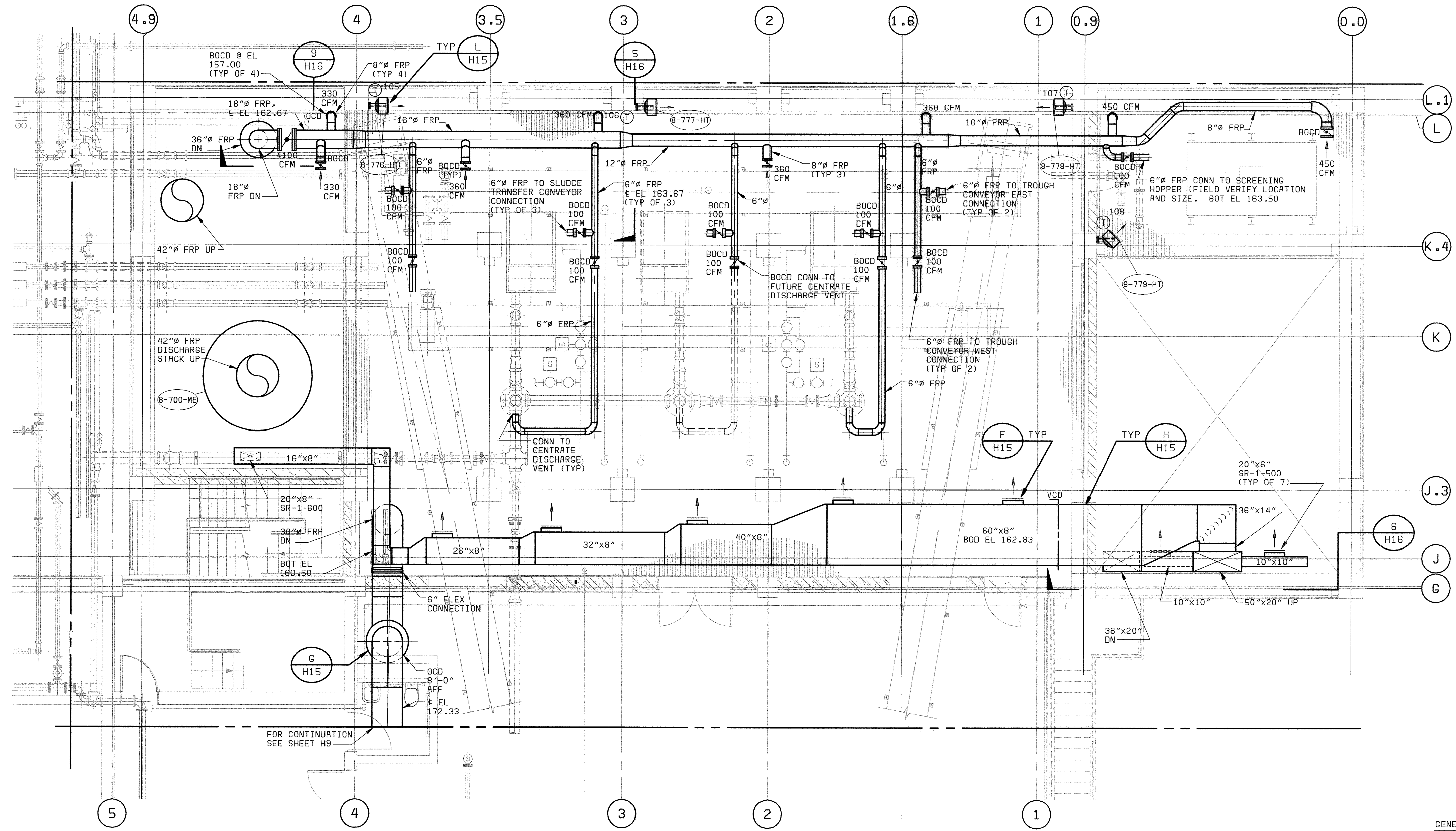


KEY PLAN

XREF: 58472-212-SOLS-A-R0000837
XREF: 58472-203-SOLS-S-R0000118

D58472-2
F058472R

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Galliersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP, HX DRN: BDL, LOW CHK: JEP DATE: 5-30-00 07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	HVAC/PLUMBING HVAC/ODOR CONTROL CENTRIFUGE BUILDING EXPANSION PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 88 OF 150 H2
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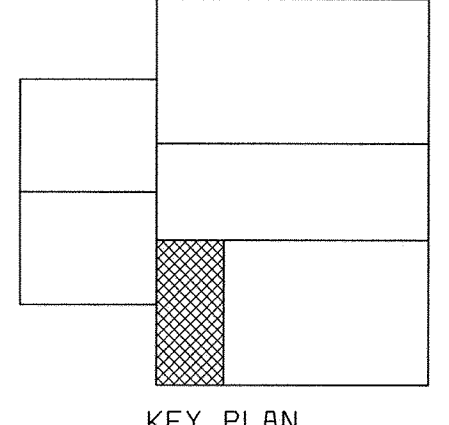
PLAN EL 156.00
3/16" = 1'-0"

PLAN NOTES:

- 1 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL EXCEPT WHERE NOTED FRP.
- 2 ALL THE CONNECTIONS AND LOCATIONS TO CONVEYORS SHALL BE FIELD VERIFIED.

GENERAL NOTE:

ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPER.

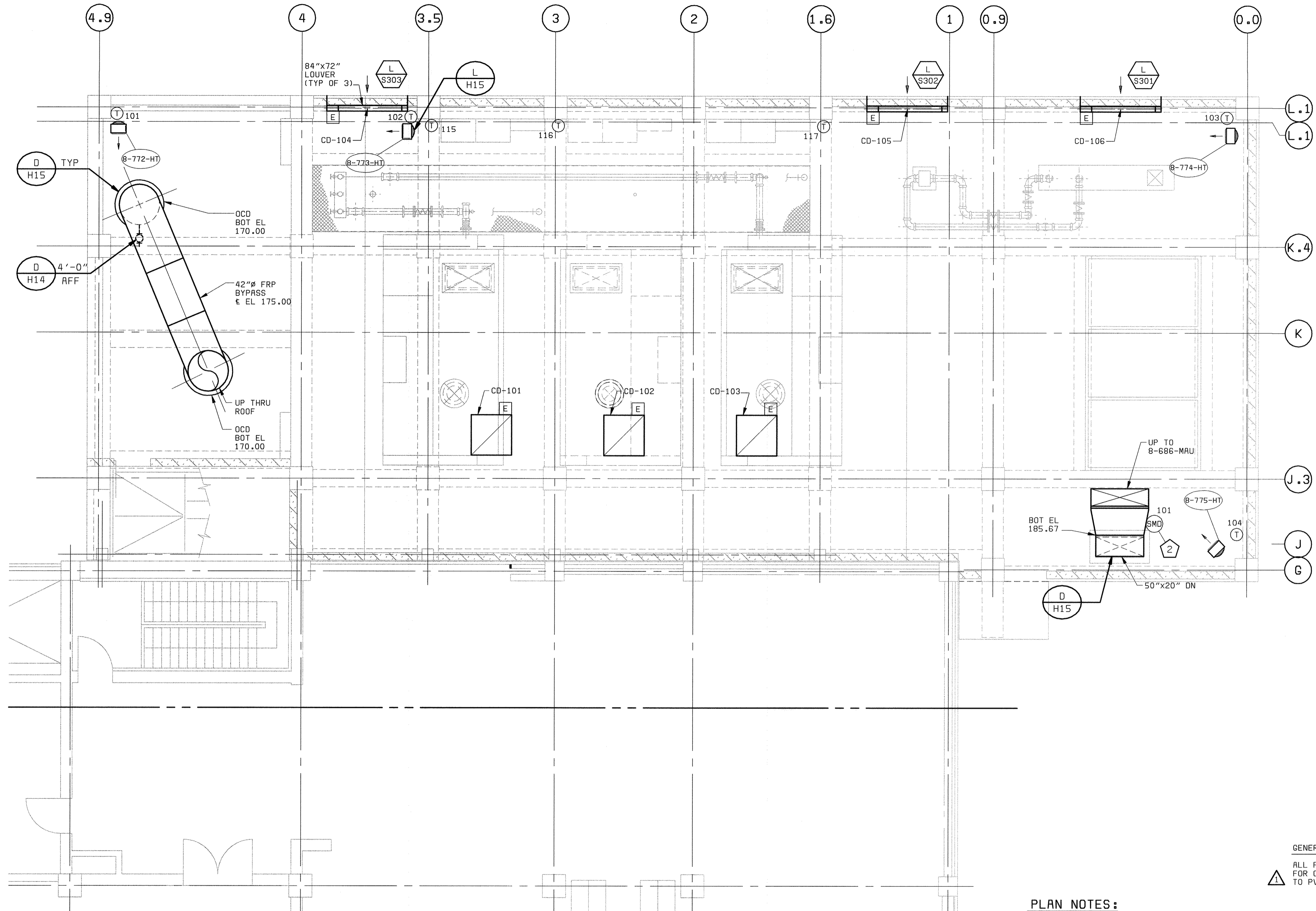


KEY PLAN

58472-212-SDLS-A-R0000841
58472-203-SDLS-S-R0000120
58472-401-323-PIPE

05/11/2005
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP, HX			HVAC/PLUMBING HVAC/ODOR CONTROL	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: BDL, LDW	CHK: JEP	DATE: 5-30-00			07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE

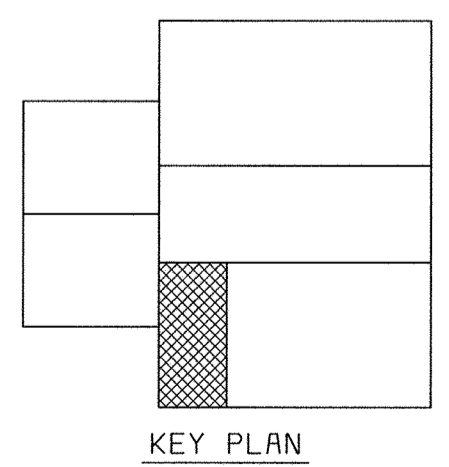


PLAN EL 166.00
3/16" = 1'-0"


PLAN NOTES:

- ① DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL EXCEPT WHERE NOTED FRP.
- ② SMD-101 FURNISHED AND INSTALLED UNDER SPEC 16721.

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.



XREF: 58472-01-323-C010
 XREF: 58472-203-S0LS-S-R0000147
 XREF: 58472-01-323-PTPEZ

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP,HX DRN: BDL,LDW CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	HVAC/PLUMBING HVAC/ODOR CONTROL CENTRIFUGE BUILDING EXPANSION PLAN AT EL 166.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 90 OF 150 H4
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1 2 3 4 5 6 7 8 9 10

A B

D

E

F

16

15

13

12

9

8

7

14



20"x20" OPENING W/
1/2" BIRDSCREEN MESH,
12" AFF, 1700 CFM W/
VCD @ 5'-0" AFF
(TYP OF 3)

18"x28"
ER-1-1700
BOT EL 138.50
(TYP OF 3)

20"x20" UP

30"x24"
SR-1-2675
BOT EL 138.75
(TYP OF 4)

32"x12" UP
(TYP OF 4)

20"x20" UP

202

203

TYP F H15

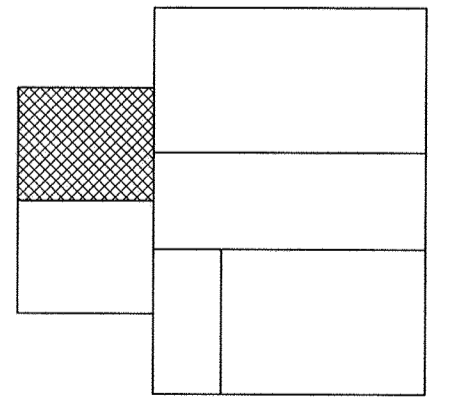
F H15 TYP

PLAN EL 128.00
3/16" = 1'-0"

PLAN NOTES:

1 DUCTWORK INDICATED ON THIS SHEET SHALL BE ALUMINUM.

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.



KEY PLAN

XREF: 58472-001-323-C003
XREF: 58472-001-323-P1PE
XREF: 58472-001-323-BASE1

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
MARTIN L. PAPE
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21992

DES: GWP,HX
DRN: BDL,LDW
CHK: JEP
DATE: 5-30-00

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR

HVAC/PLUMBING
HVAC/ODOR CONTROL

FLOTATION THICKENING AREA
PLAN AT EL 128.00

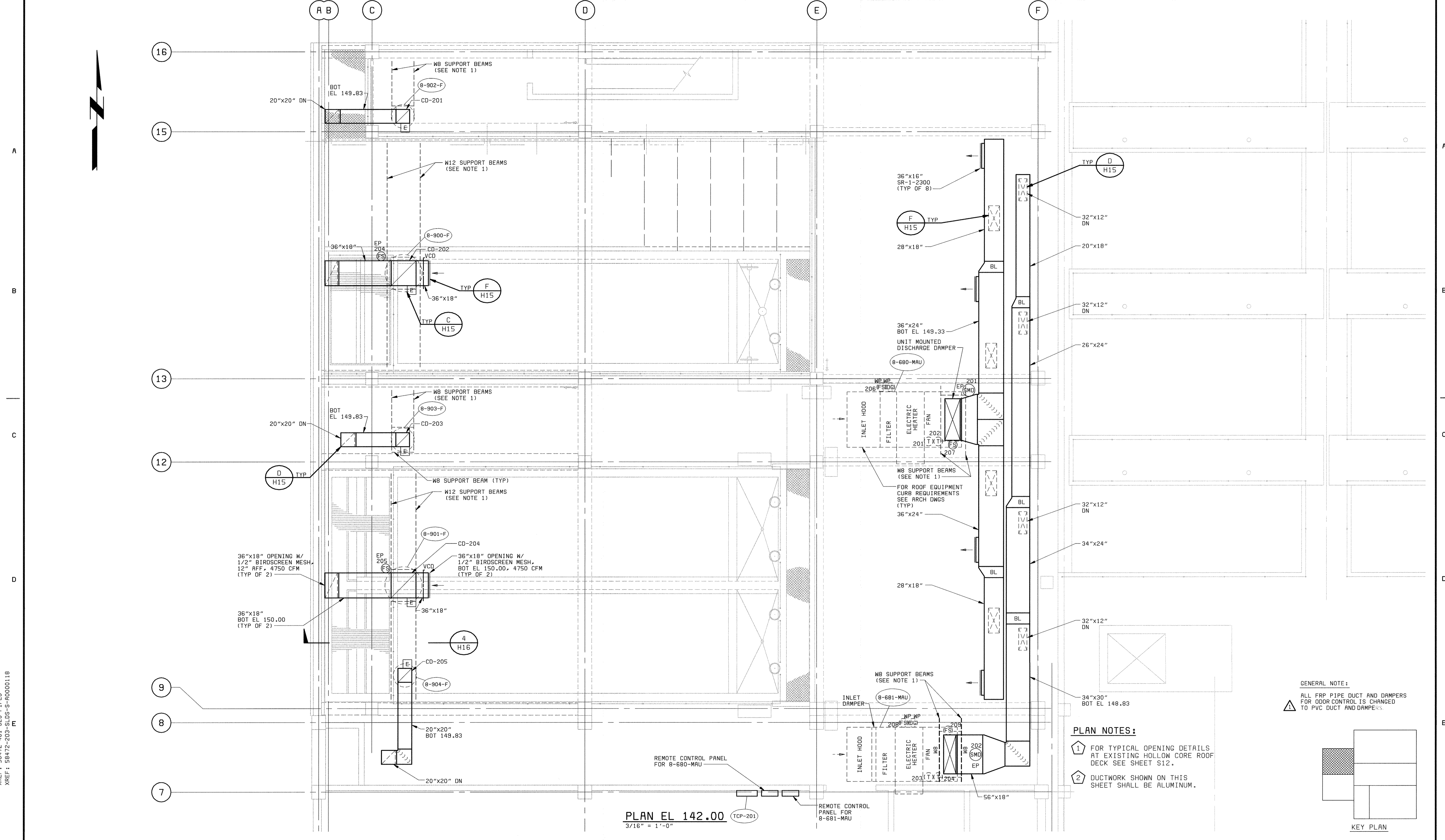
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
91 OF 150

H5

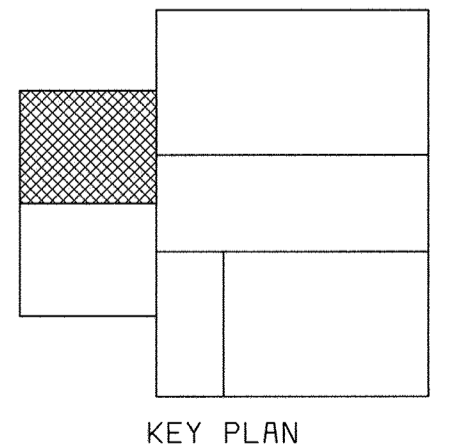


PLAN EL 142.00
3/16" = 1'-0"

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

PLAN NOTES:

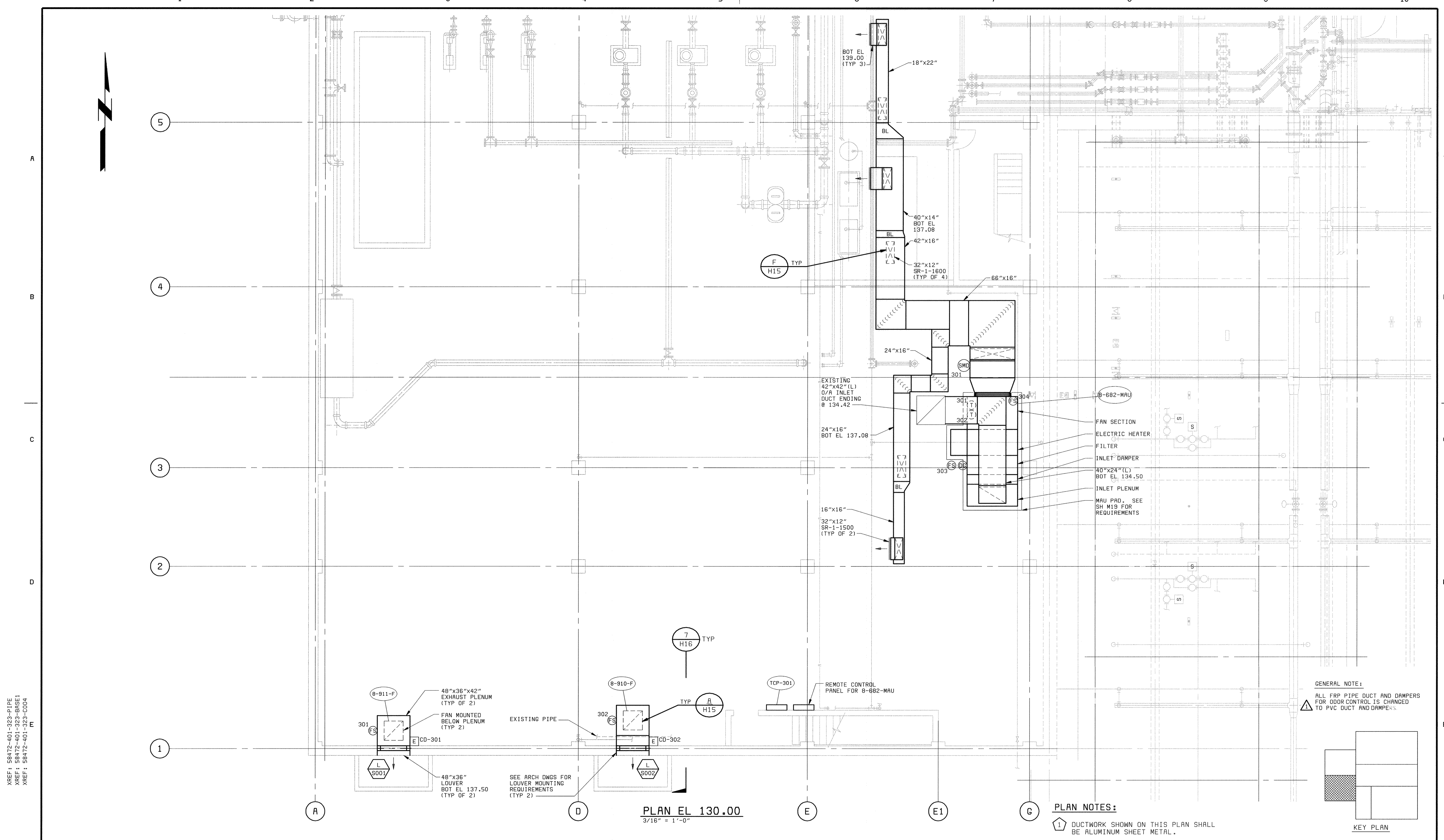
- 1 FOR TYPICAL OPENING DETAILS AT EXISTING HOLLOW CORE ROOF DECK SEE SHEET S12.
- 2 DUCTWORK SHOWN ON THIS SHEET SHALL BE ALUMINUM.



XREF: 58472-401-323-C017
 XREF: 58472-401-323-PTRE3
 XREF: 58472-203-SLDS-S-R0000118

DES: GWP
 DRN: BDL
 CHK: JEP
 DATE: 5-30-00

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21992	DES: GWP, HX DRN: BDL, LDW CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH, RJR, RJR	HVAC/PLUMBING HVAC/ODOR CONTROL FLOTATION THICKENING AREA PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 92 OF 150 H6
		CHIEF, BUREAU OF UTILITIES DATE _____	REVISIONS AND RECORD OF ISSUE NO. BY CK APP	DATE: 5-30-00	DATE: 5-30-00	HOWARD COUNTY, MARYLAND



XREF: 58472-401-323-PIPE
XREF: 58472-401-323-DRSE1
XREF: 58472-401-323-C004

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992

DES: GWP, HX					
DRN: BDL, LDW					
CHK: JEP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
		REVISIONS AND RECORD OF ISSUE			

HVAC/PLUMBING
HVAC/ODOR CONTROL

CENTRATE DISPOSAL AREA
PLAN AT EL 130.00

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6

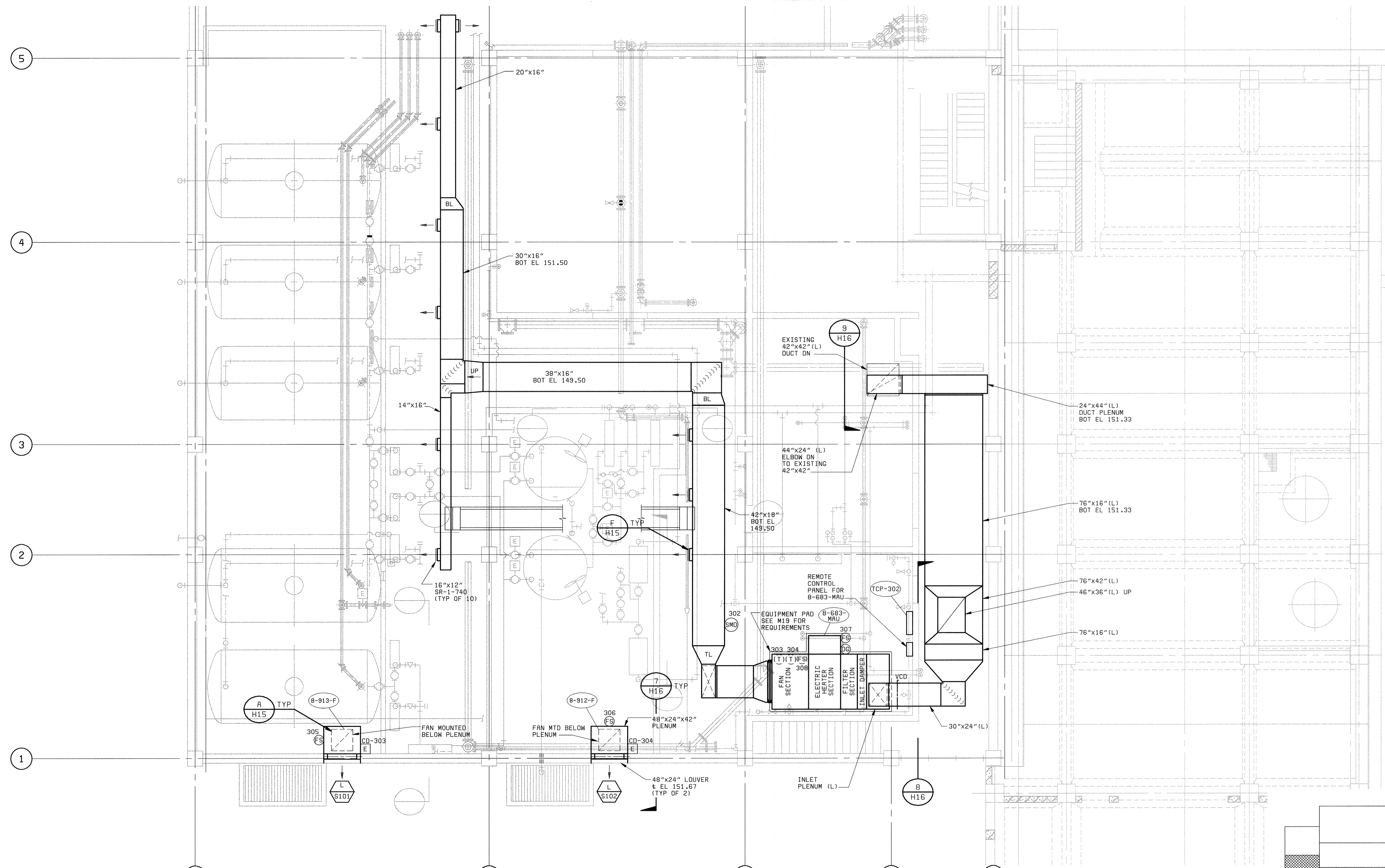
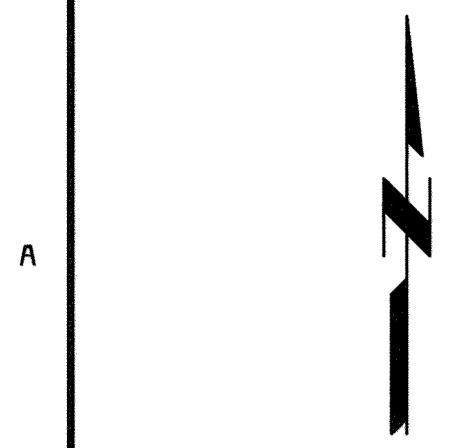
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 93 OF 150

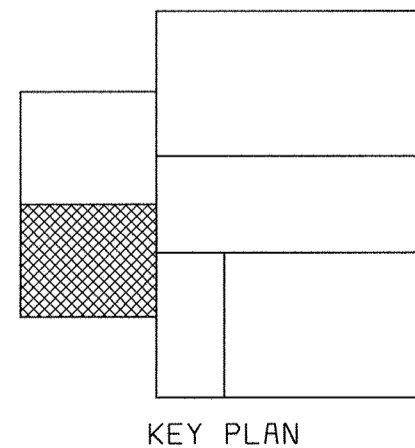
H7

1 2 3 4 5 6 7 8 9 10



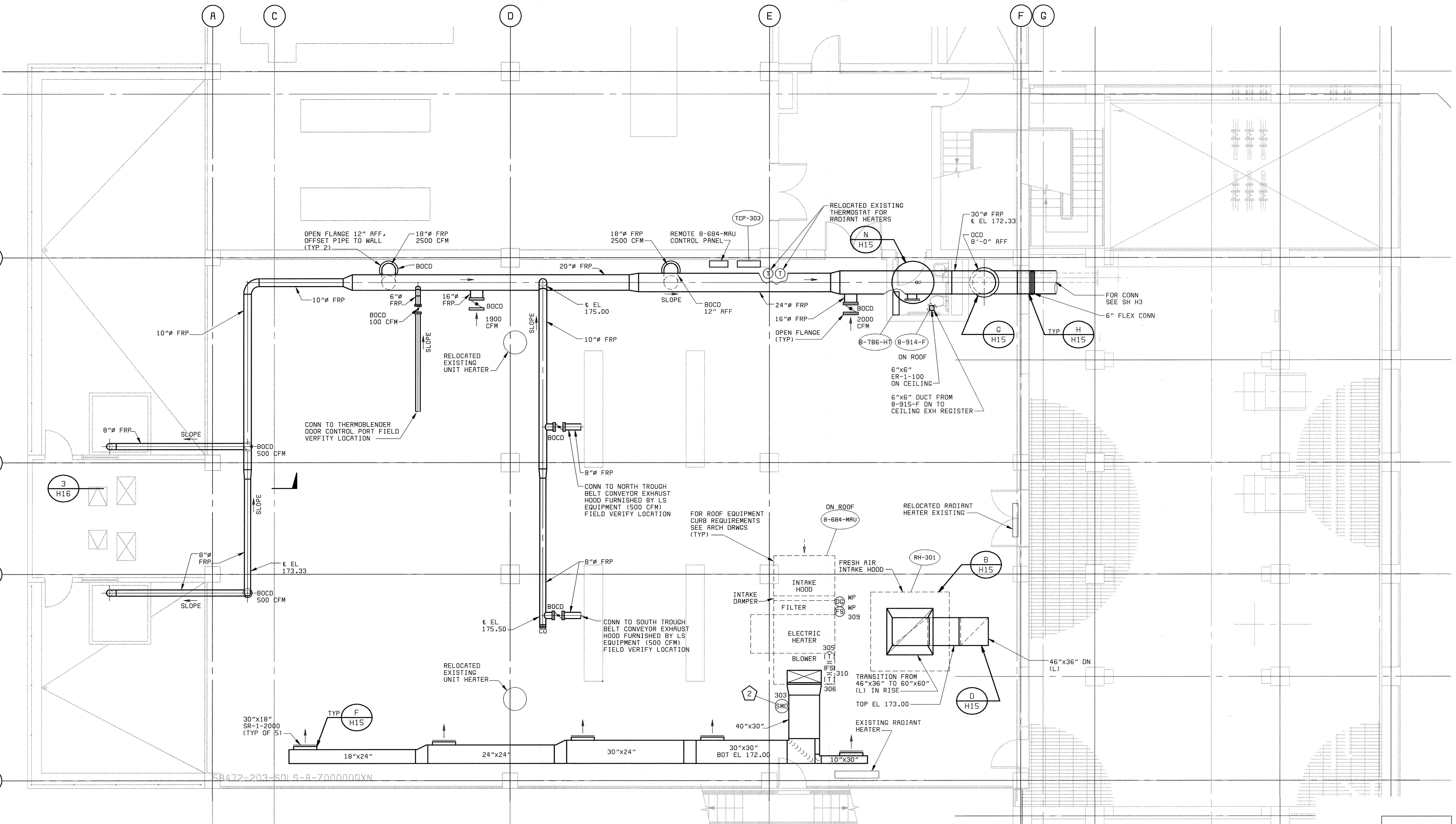
GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

PLAN NOTES:
1 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL.



XREF: 58472-203-SOLS-S-R0000118
XREF: 58472-401-232-0016

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21992	DES: GWP, HX																		
			DRN: BDL, LDW	CHK: JEP	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR													
HVAC/PLUMBING HVAC/ODOR CONTROL POLYMER FEED AREA PLAN AT EL 142.00										LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND										SCALE AS SHOWN SHEET 94 OF 150 H8	

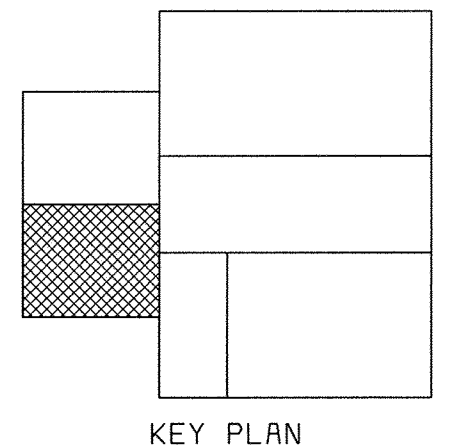


PLAN EL 156.00
3/16" = 1'-0"

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

PLAN NOTES:

- 1 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM METAL EXCEPT WHERE NOTED FRP.
- 2 SMD-303 FURNISHED AND INSTALLED UNDER SPEC 16721.



XREF: 58472-401-08F-H-00000614
06/27/24
P584724

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

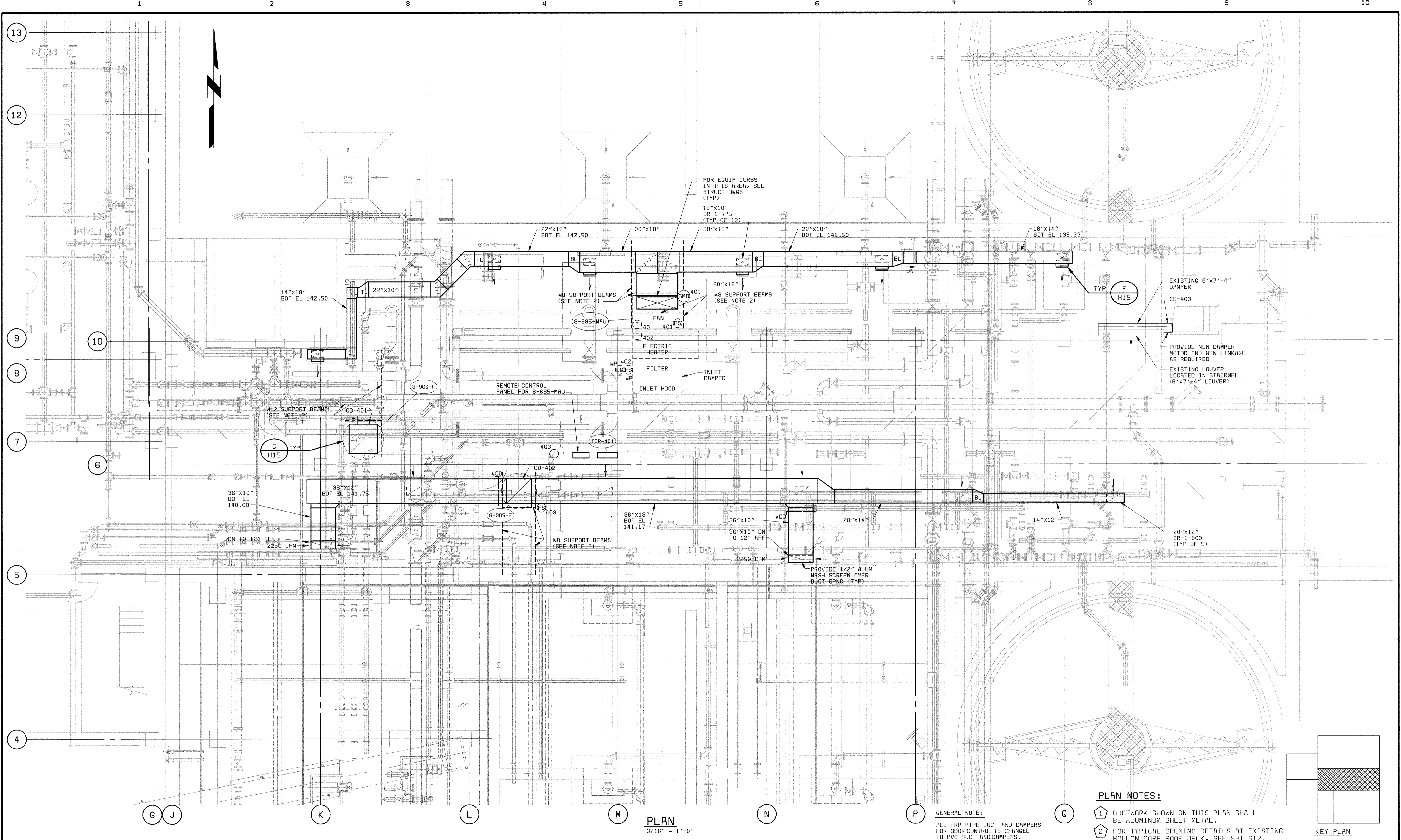
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992

DES: GWP, HX	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
DRN: BDL, LDW			
CHK: JEP			
DATE: 5-30-00			
	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

HVAC/PLUMBING
HVAC/ODOR CONTROL
LIME STABILIZATION AREA
PLAN AT EL 156.00

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 95 OF 150
H9

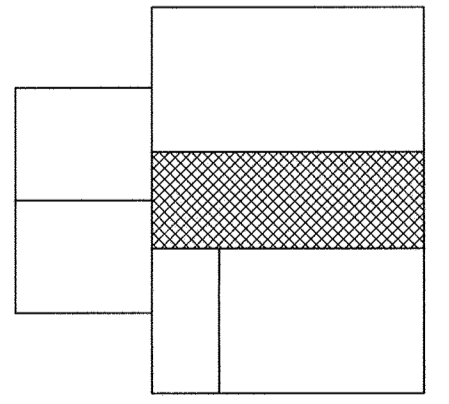


PLAN
3/16" = 1'-0"


PLAN NOTES:

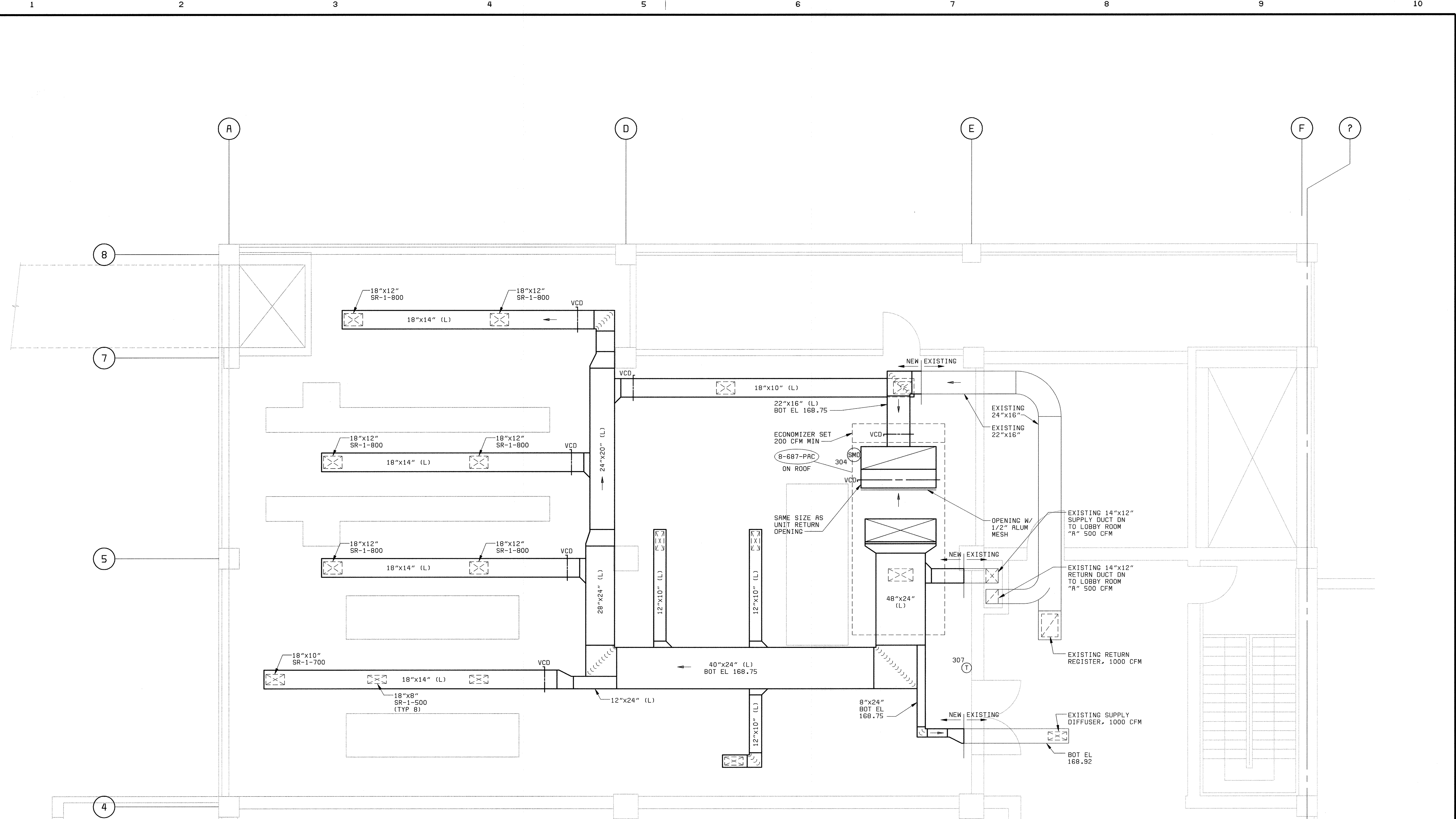
- 1 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL.
- 2 FOR TYPICAL OPENING DETAILS AT EXISTING HOLLOW CORE ROOF DECK, SEE SHT S12.

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.



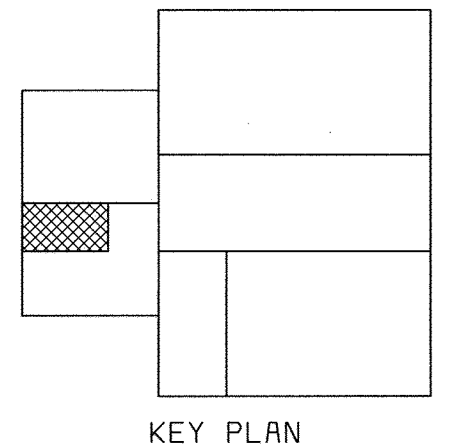
XREF: 58472-401-323-C005
 XREF: 58472-401-323-P1PE
 XREF: 58472-203-SDLS-S-A0000116

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP.HX DRN: BDL.LOW CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH/RJR/RJR REVISIONS AND RECORD OF ISSUE NO. BY CK APP	HVAC/PLUMBING HVAC/ODOR CONTROL EQUIPMENT AND PIPE GALLERY - PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 96 OF 150 H10
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FLOOR PLAN ELEVATION 156.00
 1/4" = 1'-0"

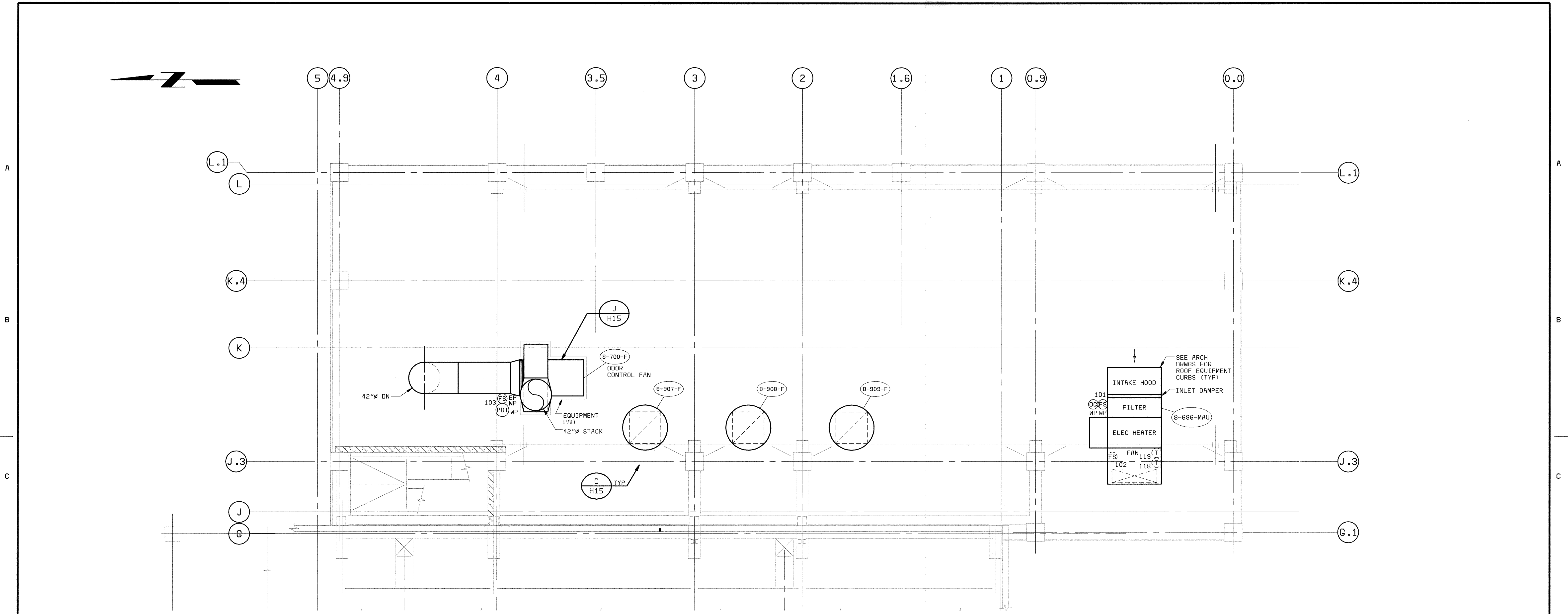
- PLAN NOTES:**
- ① ALL DUCT SHOWN IN THIS DRAWING SHALL BE GALVANIZED.
- GENERAL NOTE:**
- △ ALL FRP PIPE DUCT AND DAMPERS FOR ODDR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.



KEY PLAN

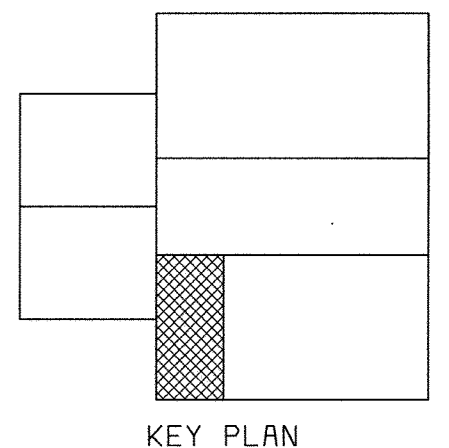
58472-401-323-BASE2 (R00097415)
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP,HX DRN: BDL,LDN CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	NO. BY CK APP △ RHH RJR RJR	HVAC/PLUMBING HVAC/ODOR CONTROL ELECTRICAL ROOM PLAN - EL 156.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 97 OF 150 H11
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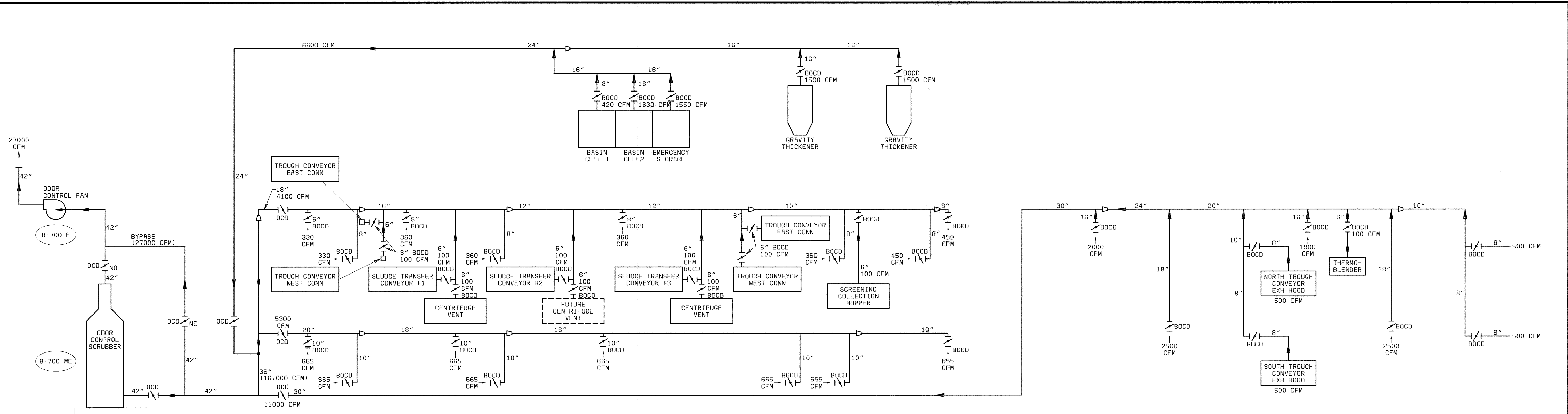
ROOF PLAN EL 181.00
3/16" = 1'-0"

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

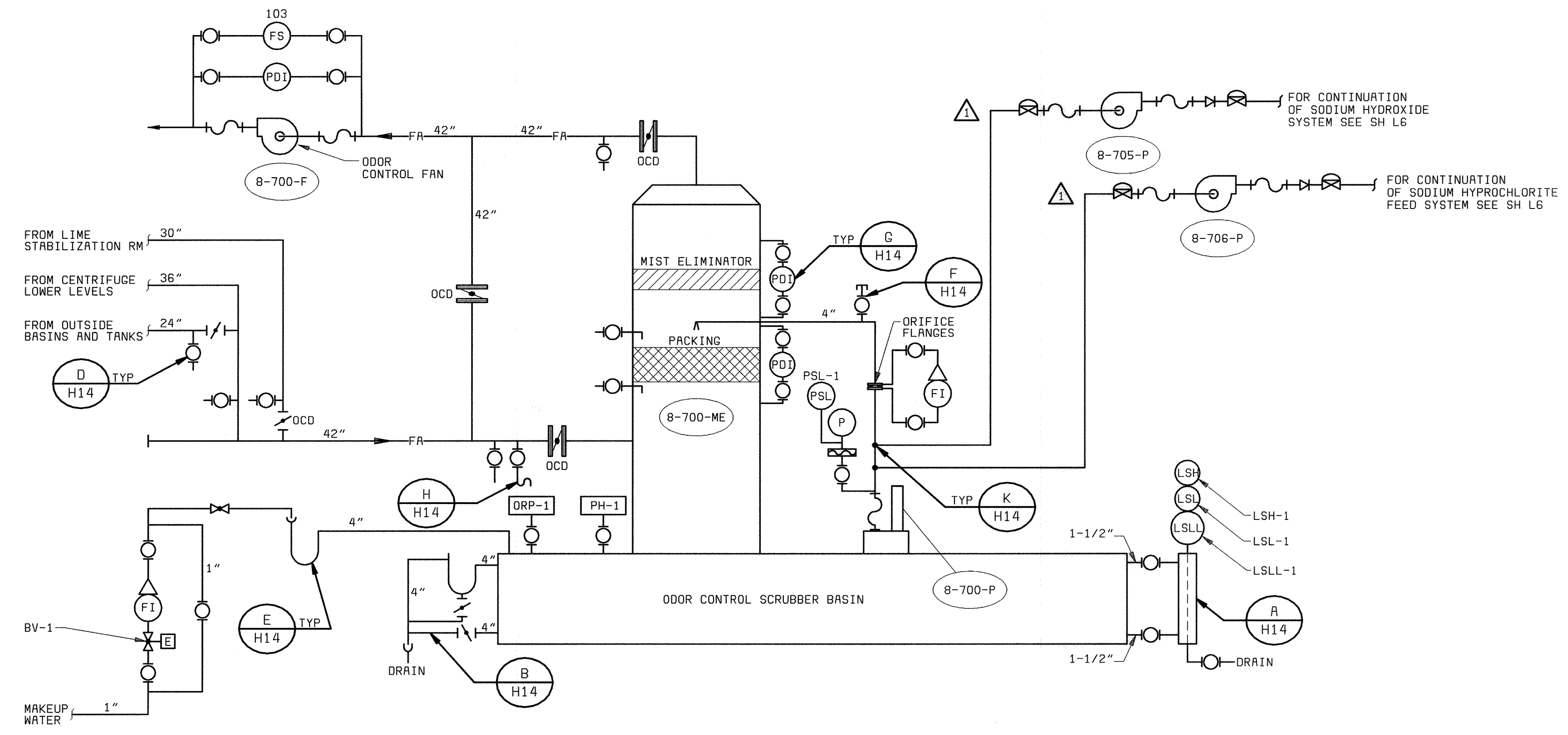


XREF: 58472-203-SDLS-S-R0000193
 XREF: 58472-203-SDLS-S-R000099
 DES: GWP.HX
 DRN: BDL.LDW
 CHK: JEP
 DATE: 5-30-00
 DATE: 07/26/04
 DATE: 05/04/2005

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21992	DES: GWP.HX DRN: BDL.LDW CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE NO. BY CK APP	HVAC/PLUMBING HVAC/ODOR CONTROL CENTRIFUGE BUILDING EXPANSION PLAN AT ROOF	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 98 OF 150 H12
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ODOR CONTROL AIRFLOW SCHEMATIC
NO SCALE



ODOR CONTROL PROCESS SCHEMATIC
NO SCALE

GENERAL NOTE:
ALL FRP PIPE, DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH LP
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992

DES: GWP
DRN: BDL,LDW
CHK: JEP
DATE: 5-30-00

07/26/04	CONFORMED TO CONSTRUCTION RECORDS	△ RHH	RJR	RJR
REVISIONS AND RECORD OF ISSUE		NO.	BY	CK APP

HVAC/PLUMBING
HVAC/ODOR CONTROL
ODOR CONTROL SCHEMATICS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 99 OF 150
H13

SEQUENCE OF OPERATION

THE SEQUENCE OF OPERATION FOR THE ODOR CONTROL SYSTEM SHALL BE AS FOLLOWS:

1. MAKEUP WATER SHUTOFF VALVE:

THE MAKEUP WATER SHUTOFF VALVE BV-1 SHALL BE CONTROLLED BY AN "OPEN-CLOSED" SELECTOR SWITCH ON THE FACE OF THE ODOR CONTROL PANEL. (OCP-101)

2. RECIRCULATION PUMPS:

RECIRCULATION PUMP 8-700-P SHALL BE CONTROLLED BY AN "ON-OFF" SELECTOR SWITCH ON THE FACE OF ODOR CONTROL PANEL (OCP-101).

RECIRCULATION PUMP FAILURE: IN THE EVENT THAT A RECIRCULATION FLOW PRESSURE SWITCH SENSES LOW RECIRCULATION FLOW PRESSURE, AN AUDIBLE ALARM SHALL SOUND ON THE ODOR CONTROL PANEL, AN INDICATING LIGHT SHALL BE ENERGIZED ON THE ODOR CONTROL PANEL, AND A COMMON ALARM SIGNAL SHALL BE SENT TO THE PLANT CONTROL SYSTEM. THE RECIRCULATION FLOW PRESSURE SWITCH SHALL BE BYPASSED UPON PUMP STARTUP.

RECIRCULATION PUMP	PRESSURE SWITCH
8-700-P	PSL-1

3. ODOR CONTROL FAN:

SEE SHEET H10 HVAC SEQUENCE OF OPERATIONS

4. CHEMICAL METERING PUMPS:

CHEMICAL METERING PUMPS 8-705-P AND 8-706-P SHALL EACH BE CONTROLLED BY AN "ON-OFF" SELECTOR SWITCH ON THE FACE OF ODOR CONTROL PANEL. WHEN THE SYSTEM SWITCH IS PLACED IN THE "ON" POSITION, THE METERING PUMP AND RESPECTIVE CONTROLLER SHALL BE ENERGIZED.

CHEMICAL METERING PUMP 8-705-P CHEMICAL DELIVERY RATE SHALL BE CONTROLLED BY A SIGNAL FROM SENSOR AND ANALYZER PH-1. CHEMICAL METERING PUMP 8-706-P CHEMICAL DELIVERY RATE SHALL BE CONTROLLED BY A SIGNAL FROM SENSOR AND ANALYZER ORP-1. WHEN THE ORP LEVEL FALLS BELOW THE SETPOINT THE SODIUM HYPOCHLORITE DELIVERY RATE SHALL BE INCREASED TO RETURN THE "ORP" LEVEL TO NORMAL. WHEN THE PH LEVEL FALLS BELOW THE SETPOINT THE SODIUM HYDROXIDE DELIVERY RATE SHALL BE INCREASED TO RETURN THE PH LEVEL TO NORMAL.

5. NOT USED.

6. PACKED TOWER SUMP LEVEL SWITCHES:

IN THE EVENT LEVEL SWITCHES LOCATED TO INDICATE THE PACKED TOWER SUMP LEVEL SENSE HIGH, LOW, OR LOW-LOW LEVEL. THE FOLLOWING EVENTS SHALL OCCUR:

HIGH LEVEL: AN AUDIBLE ALARM SHALL SOUND ON THE ODOR CONTROL PANEL, AN INDICATING LIGHT SHALL BE ENERGIZED ON THE ODOR CONTROL PANEL, A COMMON SIGNAL SHALL BE SENT TO THE PLANT CONTROL SYSTEM, CHEMICAL METERING PUMPS ASSOCIATED WITH THE PACKED TOWER SCRUBBER SHALL BE DE-ENERGIZED, AND THE MAKE-UP WATER SHUTOFF VALVE ASSOCIATED WITH THE PACKED TOWER SCRUBBER SHALL CLOSE. THE RELATIONSHIPS OF THE EQUIPMENT CONTROLLED ARE AS FOLLOWS:

PACKED TOWER SCRUBBER	MAKEUP WATER SHUTOFF VALVE
8-700-ME	BV-1

LOW LEVEL: AN AUDIBLE ALARM SHALL SOUND ON THE ODOR CONTROL PANEL, AN INDICATING LIGHT SHALL BE ENERGIZED ON THE ODOR CONTROL PANEL AND A COMMON SIGNAL SHALL BE SENT TO THE PLANT CONTROL SYSTEM.

LOW LOW LEVEL: AN AUDIBLE ALARM SHALL SOUND ON THE ODOR CONTROL PANEL, AN INDICATING LIGHT SHALL BE ENERGIZED ON THE ODOR CONTROL PANEL, AND A COMMON SIGNAL SHALL BE SENT TO THE PLANT CONTROL SYSTEM. THE CHEMICAL METERING PUMPS ASSOCIATED WITH THE PACKED TOWER SCRUBBER AND THE RECIRCULATION PUMPS SHALL BE DE-ENERGIZED. THE MAKEUP WATER SHUTOFF VALVE ASSOCIATED WITH THE PACKED TOWER SCRUBBER SHALL CLOSE.

7. ODOR CONTROL PANEL OCP-101:

INDICATING LIGHTS, RUNNING LIGHTS, TIMERS, AND SELECTOR SWITCHES SHALL BE PROVIDED ON THE FACE OF THE ODOR CONTROL PANEL. RUNNING LIGHTS SHALL BE PROVIDED AT EACH SELECTOR SWITCH TO INDICATE BOTH ENERGIZED AND DE-ENERGIZED STATUS. INDICATING AND RUNNING LIGHT COLOR SHALL BE AS FOLLOWS:

- RED - ENERGIZED
- GREEN - DE-ENERGIZED
- WHITE - STATUS
- AMBER - ALARM

AS A MINIMUM, THE FOLLOWING INDICATING LIGHTS, RUNNING LIGHTS AND SELECTOR SWITCHES, AND ALARM LIGHTS SHALL BE PROVIDED FOR THE FOLLOWING:

A. INDICATING LIGHTS:

CONTROL POWER ON

B. RUNNING LIGHTS AND SELECTOR SWITCHES

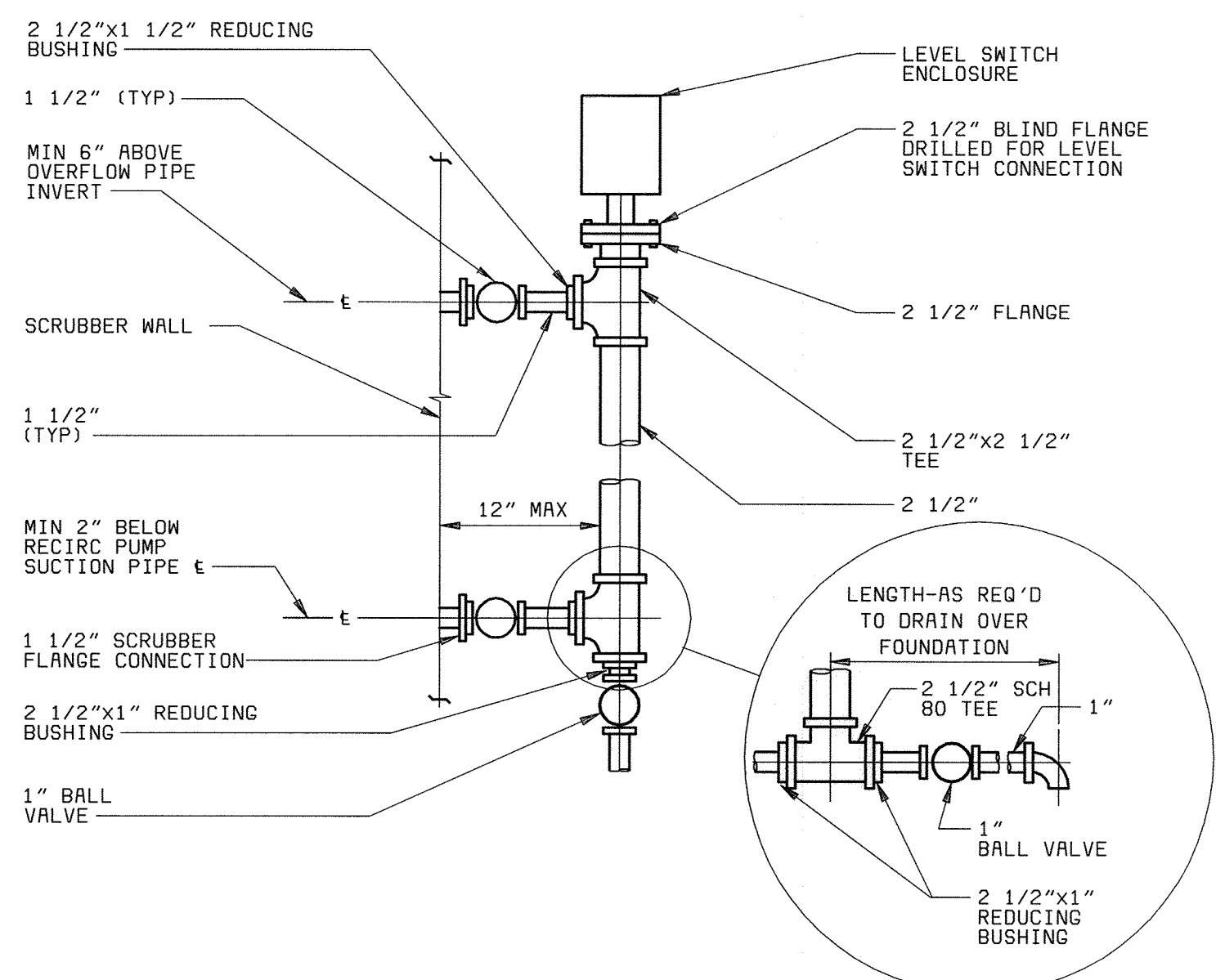
- MAKEUP WATER SHUTOFF VALVE BV-1 OPEN
- RECIRCULATION PUMP 8-700-P
- CHEMICAL METERING PUMP 8-705-P
- CHEMICAL METERING PUMP 8-706-P

C. ALARM LIGHTS AND AUDIBLE ALARM CONTROL SYSTEM

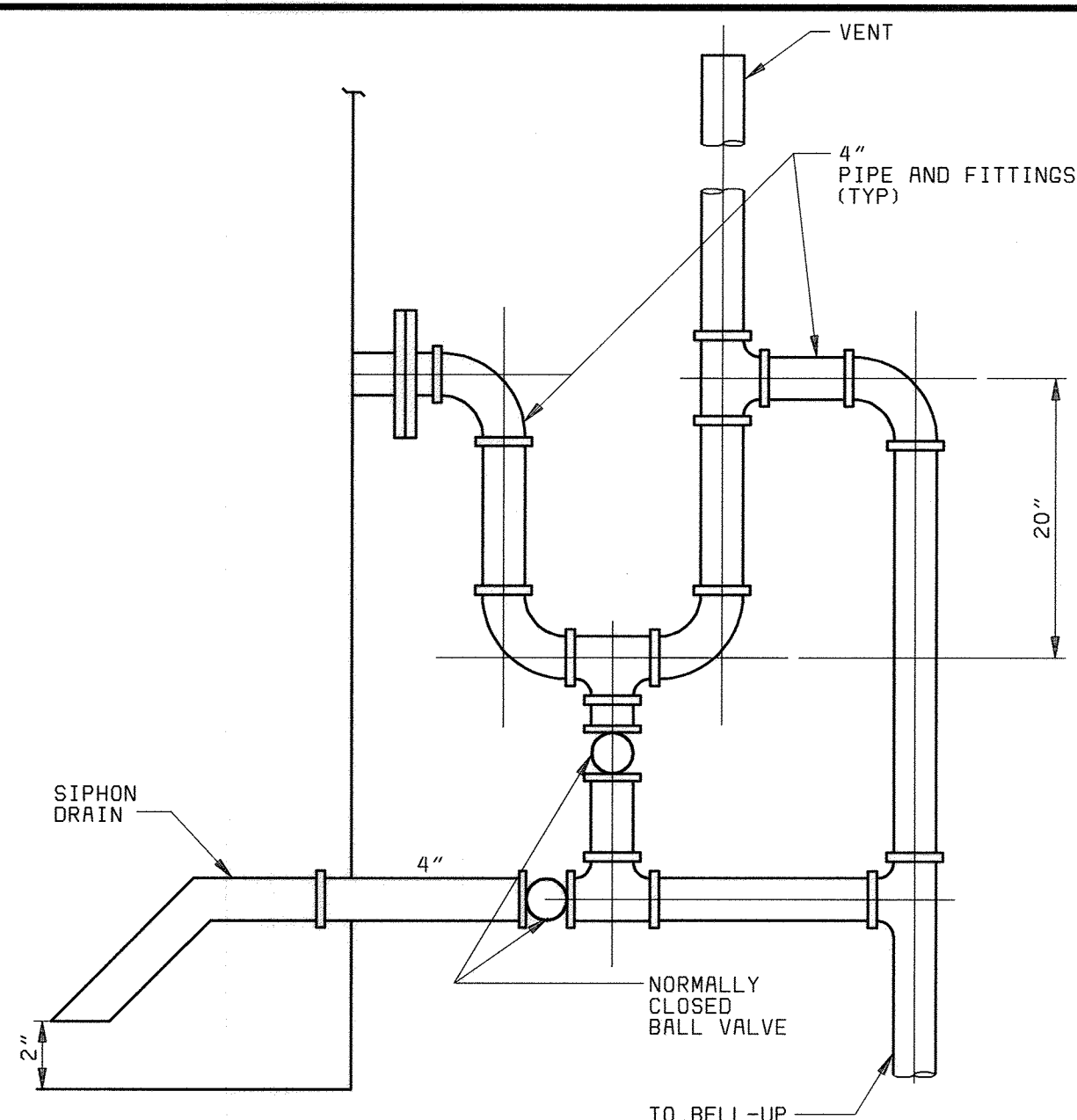
- LOW RECIRCULATION PRESSURE 8-700-P
- PACKED TOWER SUMP HIGH LEVEL LSH-1
- PACKED TOWER SUMP LOW LEVEL LSL-1
- PACKED TOWER SUMP LOW-LOW LEVEL LSL-1
- CHEMICAL METERING PUMP FAILURE 8-705-P
- CHEMICAL METERING PUMP FAILURE 8-706-P
- HIGH/LOW PH LEVEL PH-1
- HIGH/LOW ORP LEVEL ORP-1

D. ALARM SIGNAL TO PLANT CONTROL SYSTEM

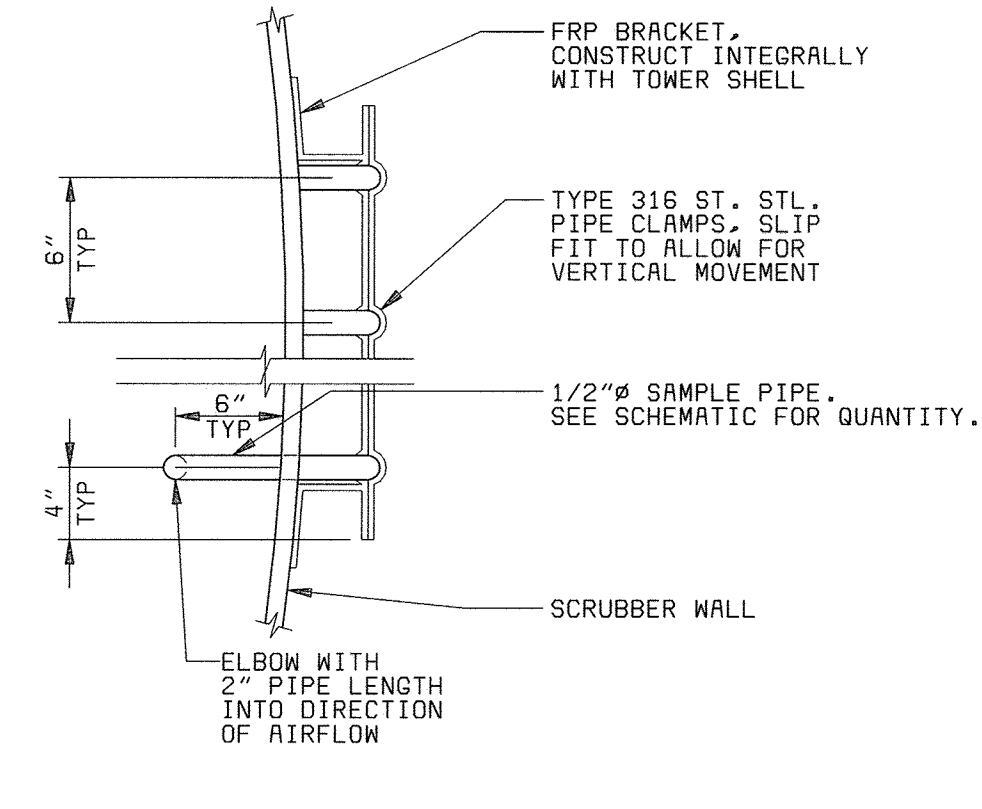
ONE COMMON ALARM CONDITION FOR ANY ALARM STATED UNDER "C"



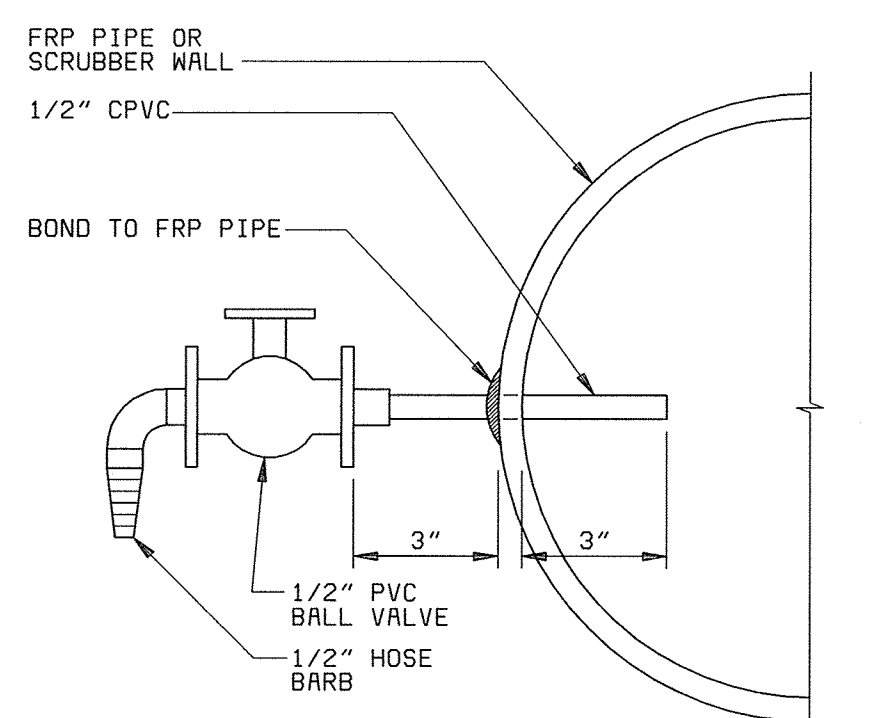
LEVEL GAUGE/SWITCH A
NO SCALE
H13, H16



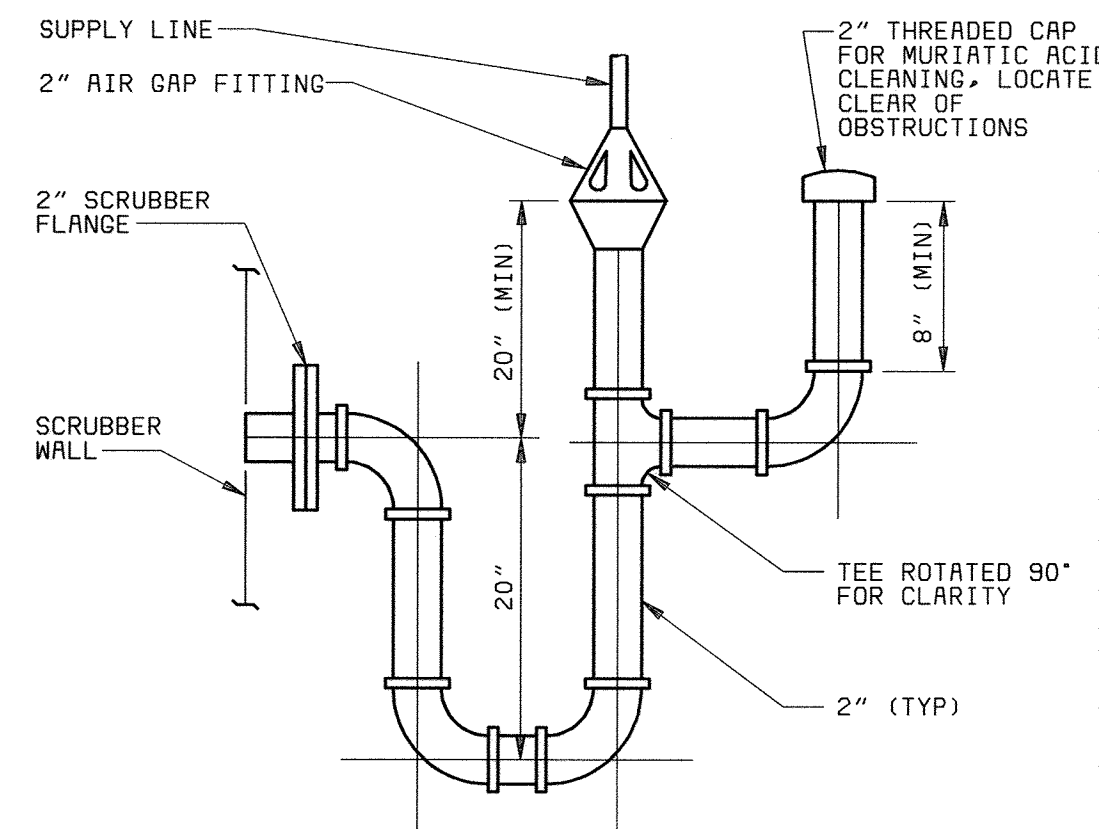
TANK OVERFLOW AND DRAIN B
NO SCALE
H13, H16



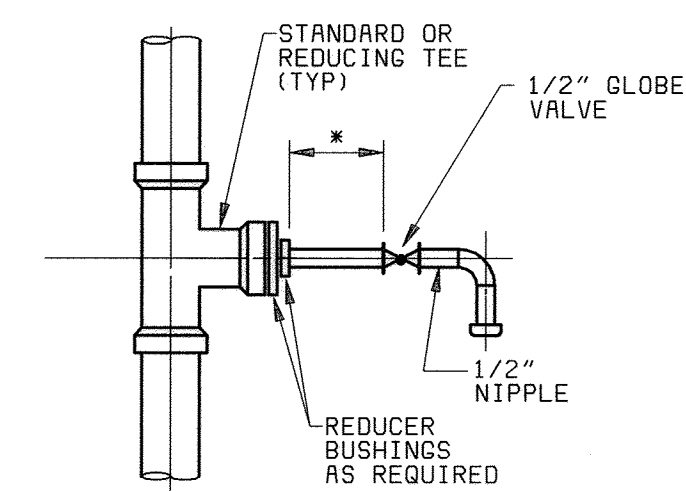
SAMPLE PIPE SUPPORT DETAIL C
NO SCALE



SAMPLE PORT DETAIL D
NO SCALE
H2, H4, H13, H16

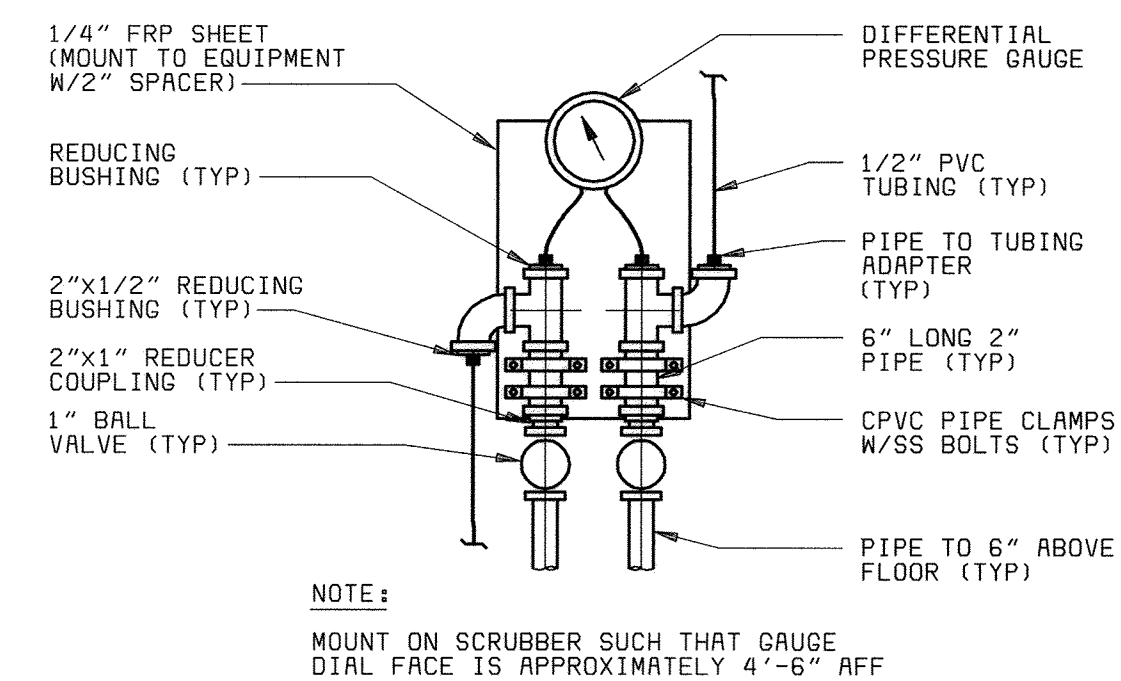


SCRUBBER MAKE-UP WATER AND ACID CLEANING CONNECTION E
NO SCALE
H13, H16

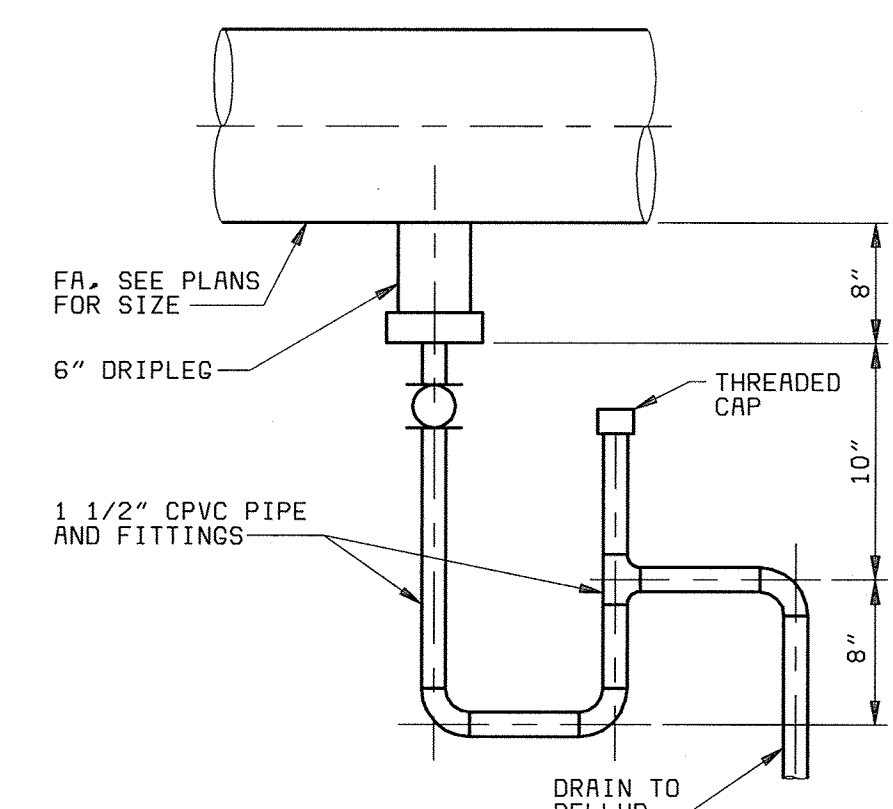


- NOTES:
- CPVC NIPPLES SHALL BE FACTORY FABRICATED AND SHALL NOT BE THREADED IN THE FIELD.
 - DIMENSION "X" SHALL BE SUFFICIENT TO PREVENT CONTACT BETWEEN THE VALVE OPERATING LEVER AND ADJACENT PIPING BUT SHALL NOT EXCEED FOUR INCHES UNLESS OTHERWISE PERMITTED BY THE ENGINEER.
 - LOCATE APPROXIMATELY 4'-6" AFF.

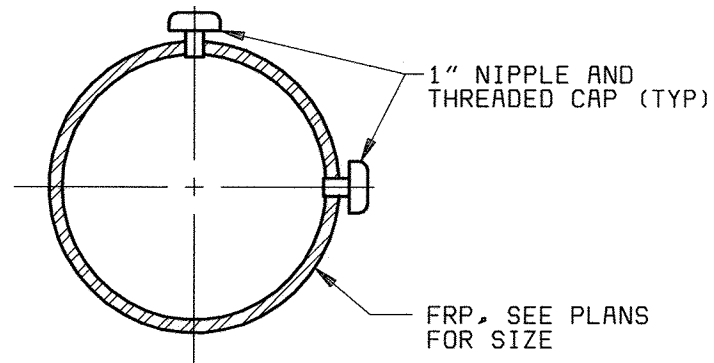
LIQUID SAMPLE TAP F
NO SCALE
H13



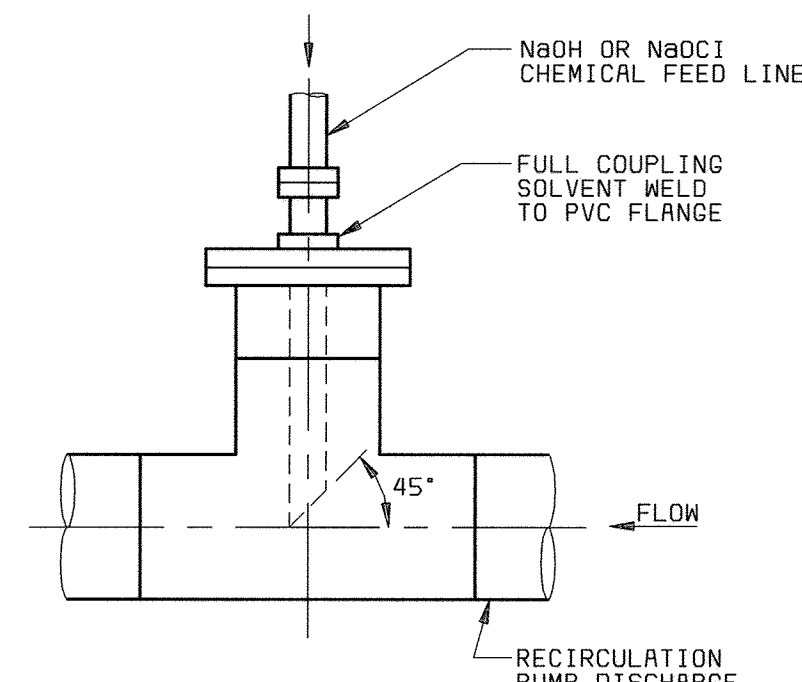
PRESSURE DIFFERENTIAL INDICATOR G
NO SCALE
H13, H16



DRAIN TRAP H
NO SCALE
H2, H13



INSTRUMENT TEST OPENING J
NO SCALE



CHEMICAL DIFFUSER K
NO SCALE
H13

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

BLACK & VEATCH
Gaithersburg, Maryland

THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992

DES: GWP					
DRN: BDL, LDW					
CHK: JEP					
DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP
				RHH/RJR/RJR	

HVAC/PLUMBING
HVAC/ODOR CONTROL

ODOR CONTROL
DETAILS AND
SEQUENCE OF OPERATIONS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

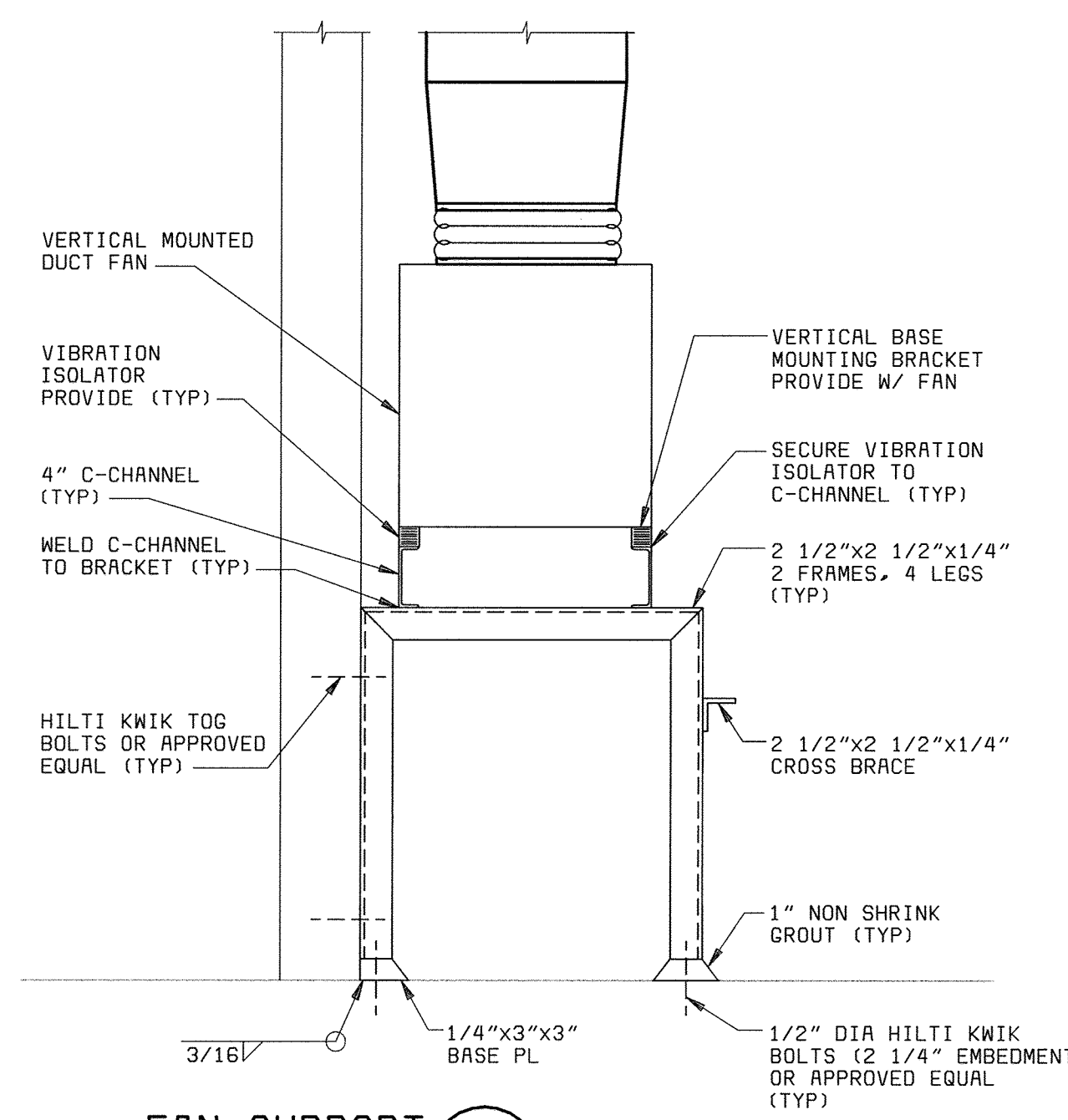
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

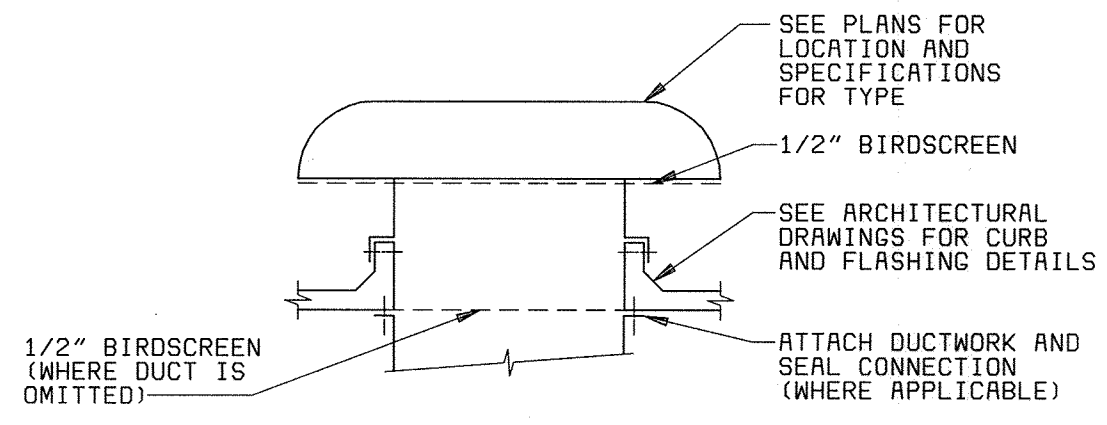
SHEET 100 OF 150

H14

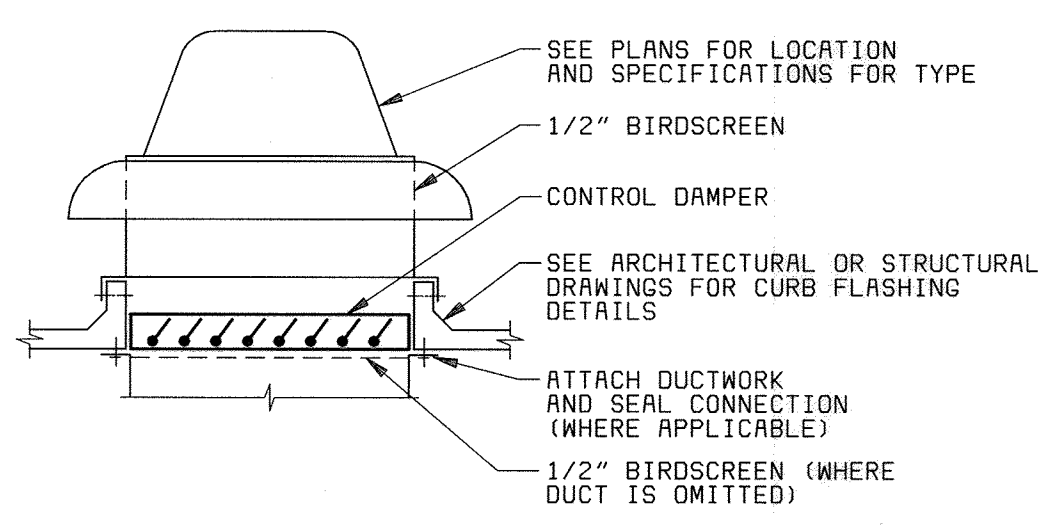
DS6472.2
F058472R



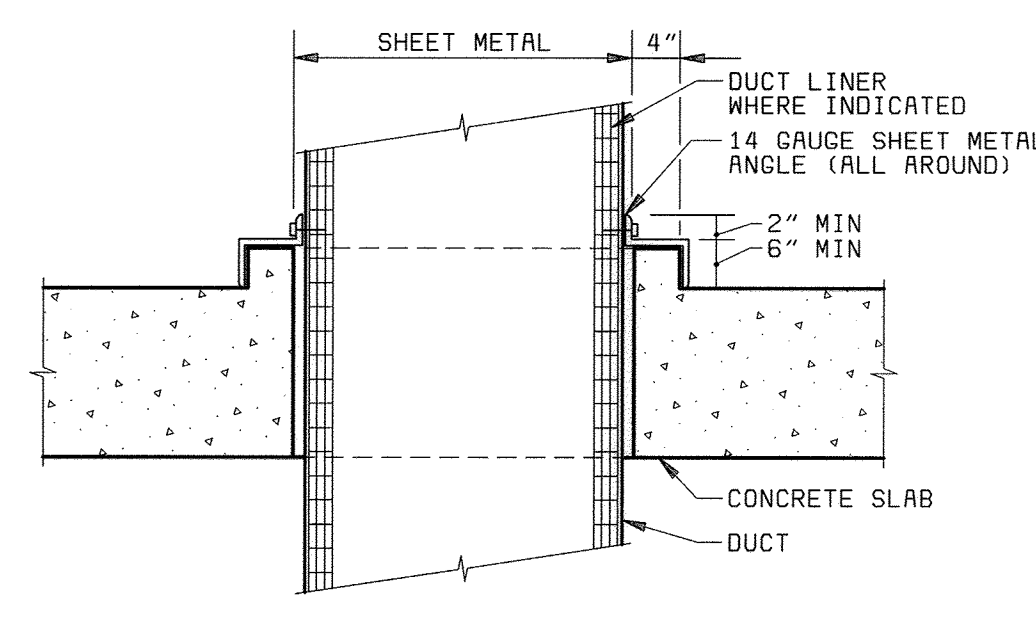
FAN SUPPORT (A)
NO SCALE
H7, H8, H16



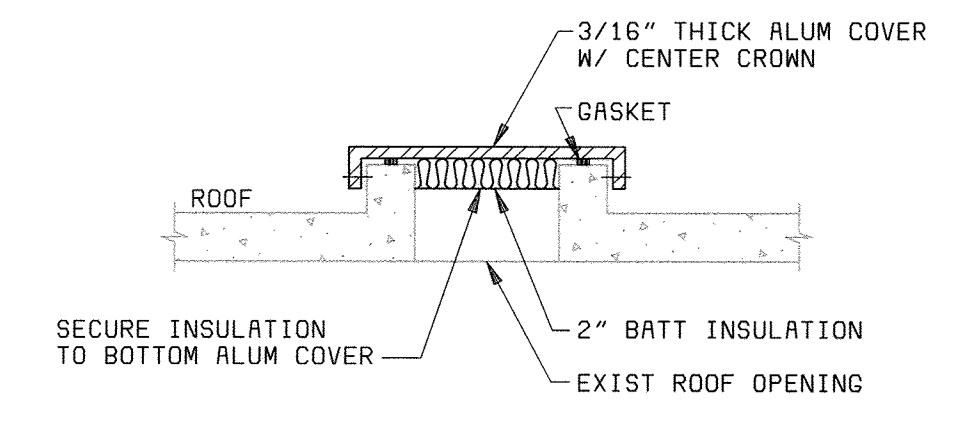
ROOF HOOD (B)
NO SCALE
H9



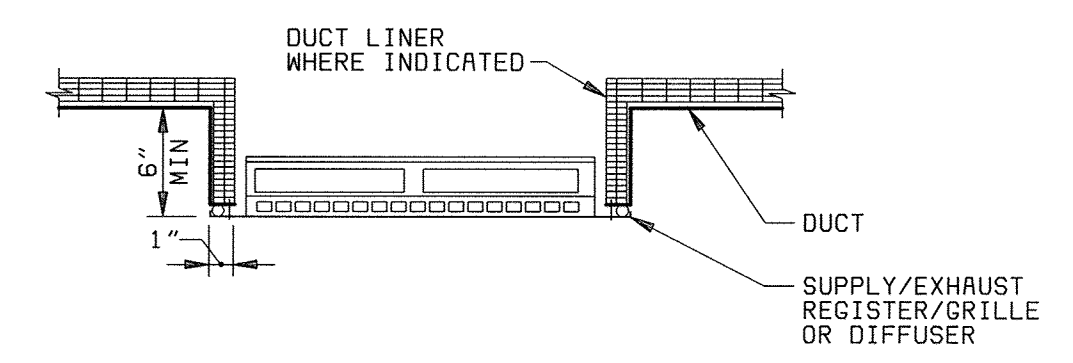
POWER ROOF VENTILATOR (C)
NO SCALE
H6, H10, H12



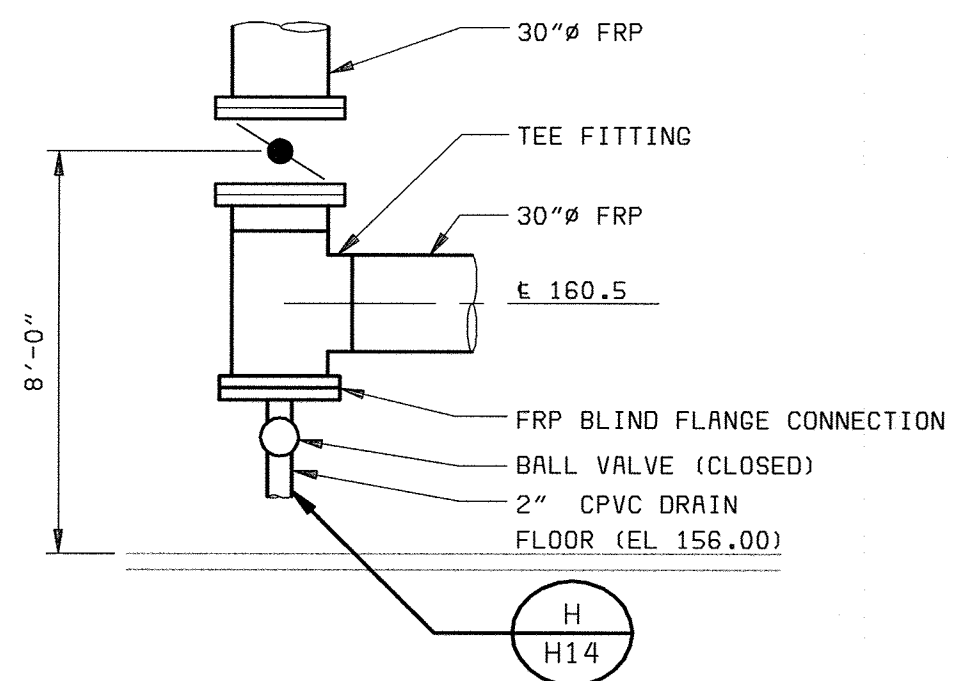
DUCT FLOOR SLEEVE (D)
NO SCALE
H4, H6, H9



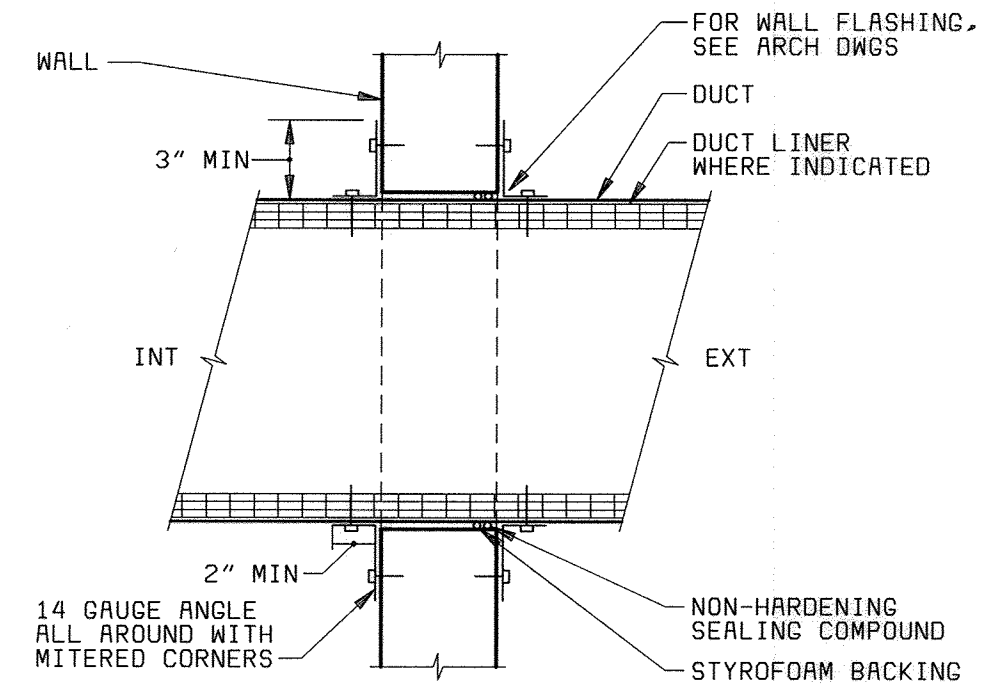
ROOF OPENING PATCH (E)
NO SCALE
D6, D9



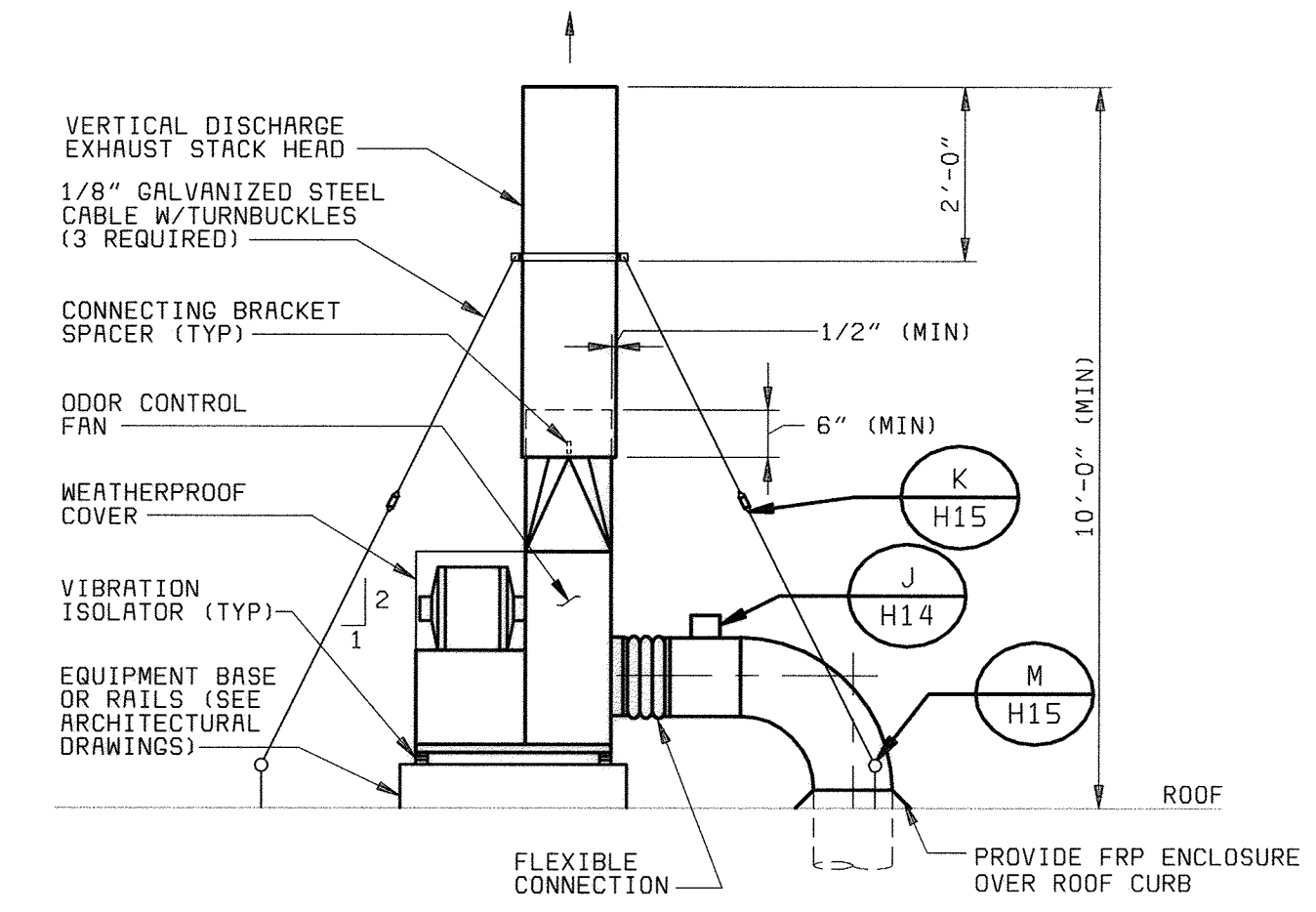
REGISTER/GRILLE (F)
NO SCALE
H2, H3, H5, H6, H7, H8, H9, H10



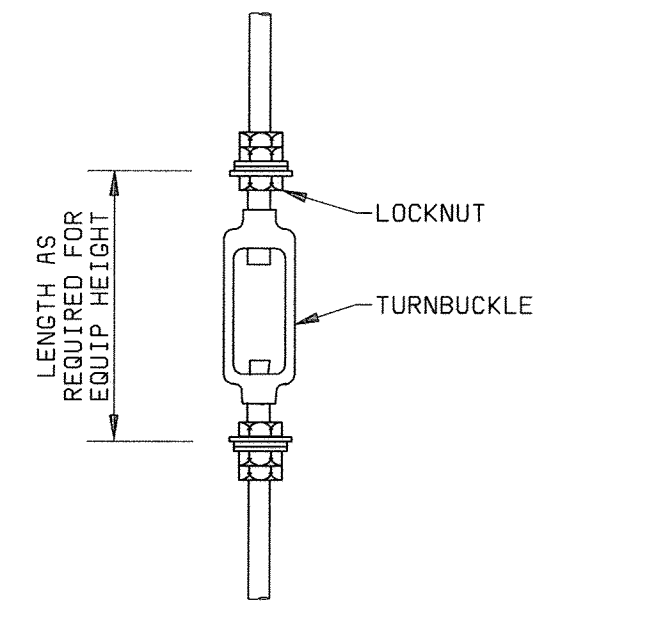
DRAIN CONNECTION (G)
NO SCALE
H9



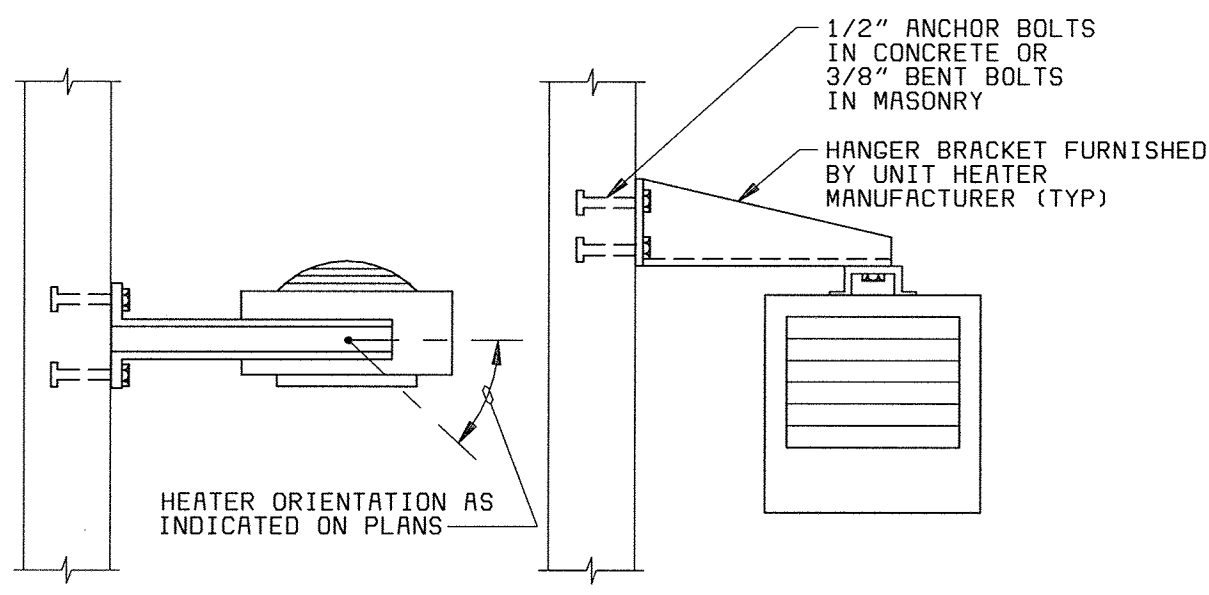
WALL PENETRATION (H)
NO SCALE
H2, H3, H9



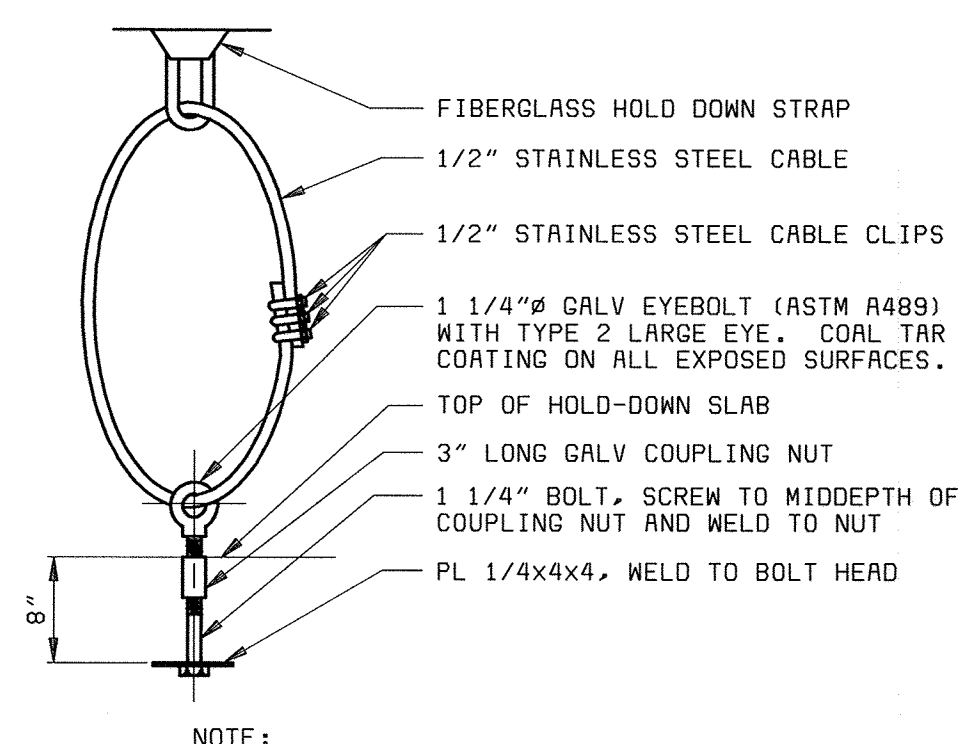
ROOF EXHAUST FAN (J)
NO SCALE
H12



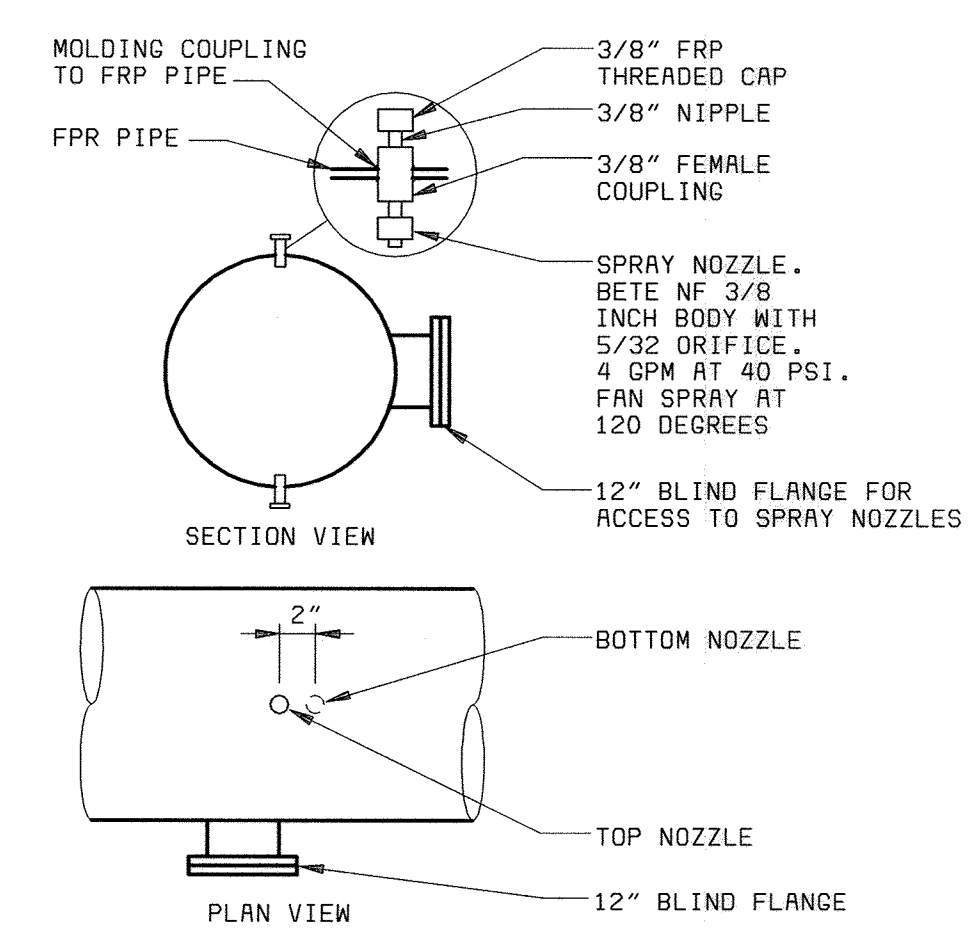
EQUIPMENT SUPPORT (K)
NO SCALE
H15



ELECTRIC UNIT HEATER SUPPORT (L)
NO SCALE
H2, H3, H4



HOLD-DOWN DETAIL (M)
NO SCALE
H15



SPRAY NOZZLE DETAIL (N)
NO SCALE
H9

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

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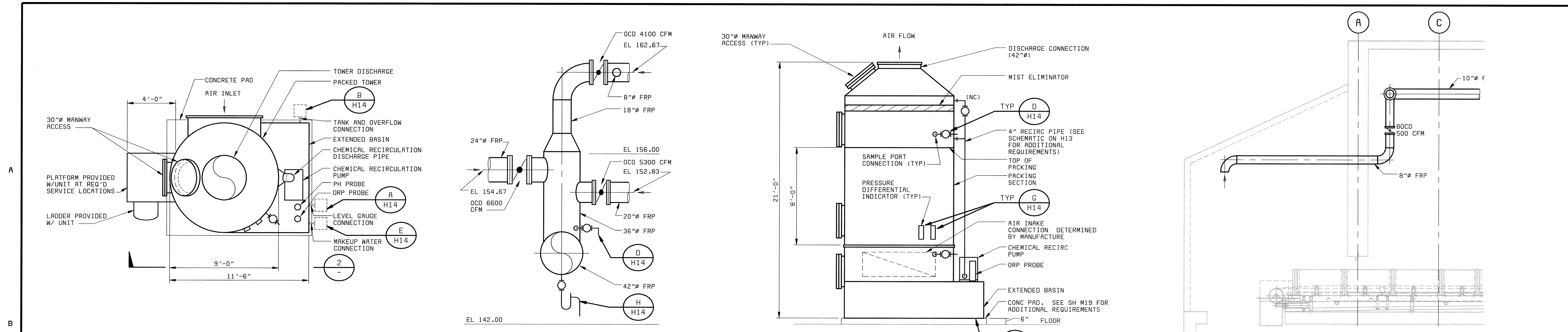
DES: GWP, HX					
DRN: BOL, LDW					
CHK: JEP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
		REVISIONS AND RECORD OF ISSUE			

HVAC/PLUMBING
HVAC/ODOR CONTROL
DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 101 OF 150
H15

05/04/2005 10:11:14

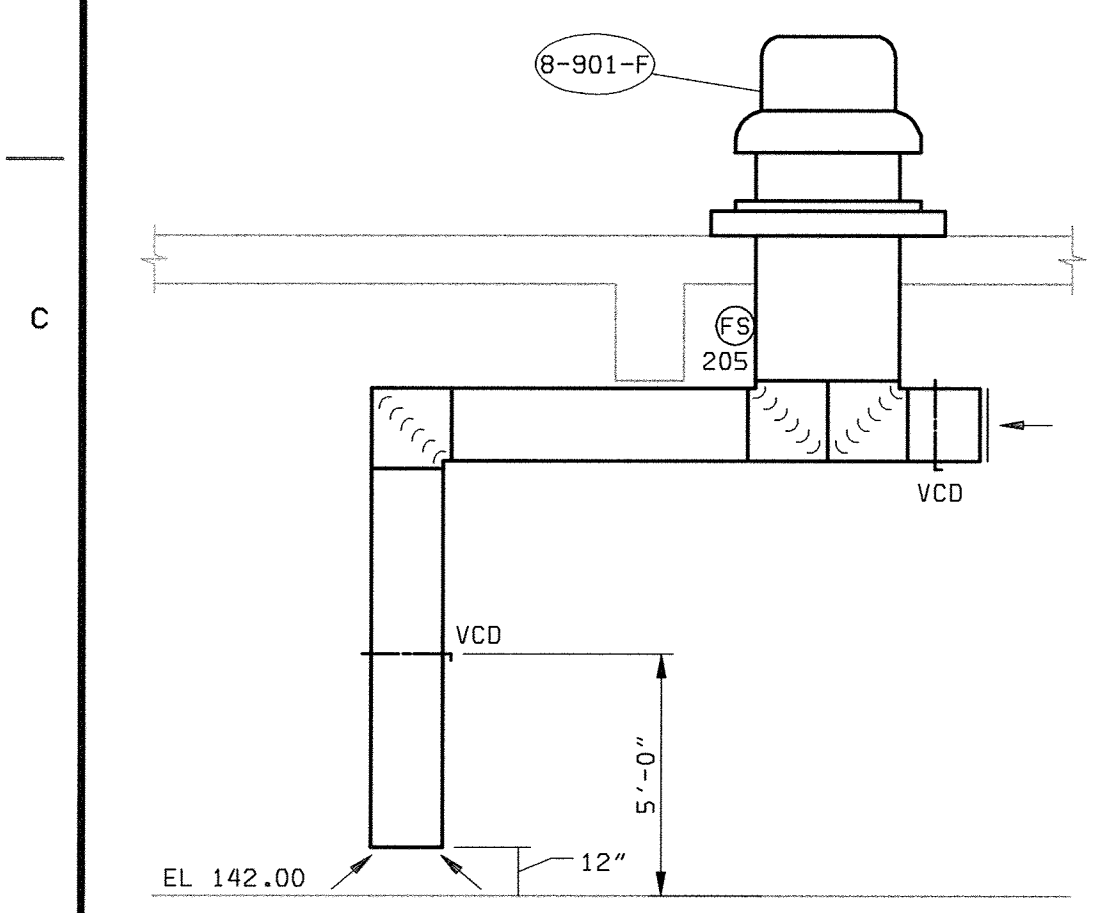


PARTIAL PLAN
1/4" = 1'-0"

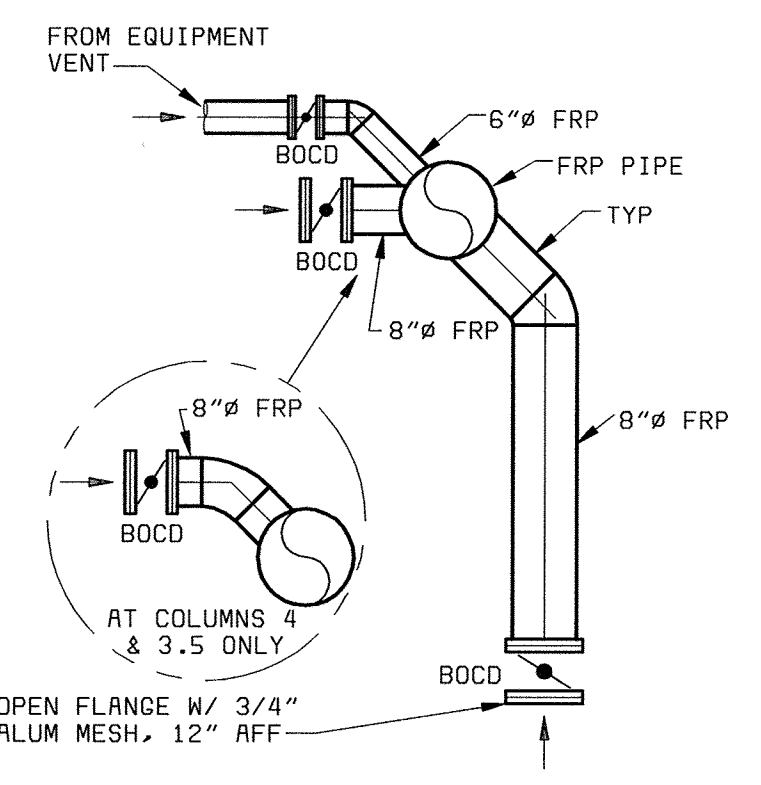
SECTION 1
1/4" = 1'-0" (H2, H3)

SECTION 2
1/4" = 1'-0" (H14)

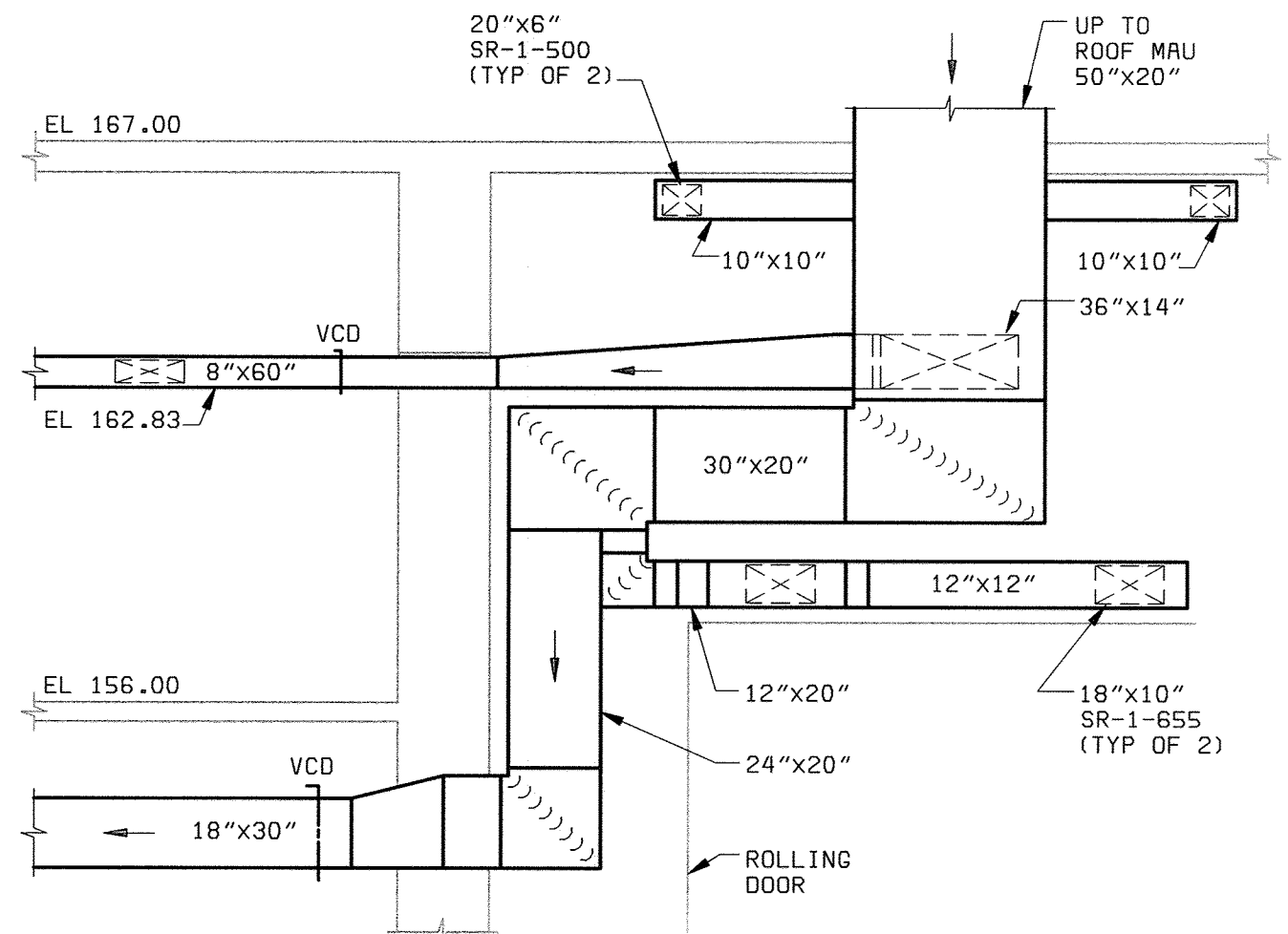
SECTION 3
1/4" = 1'-0" (H6)



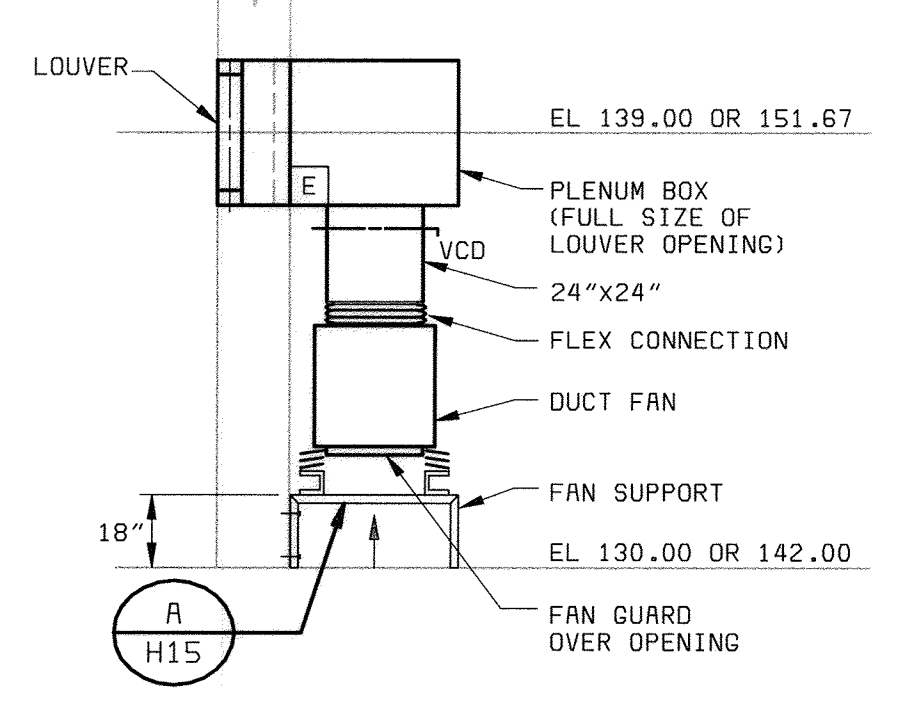
SECTION 4
1/4" = 1'-0" (H6)



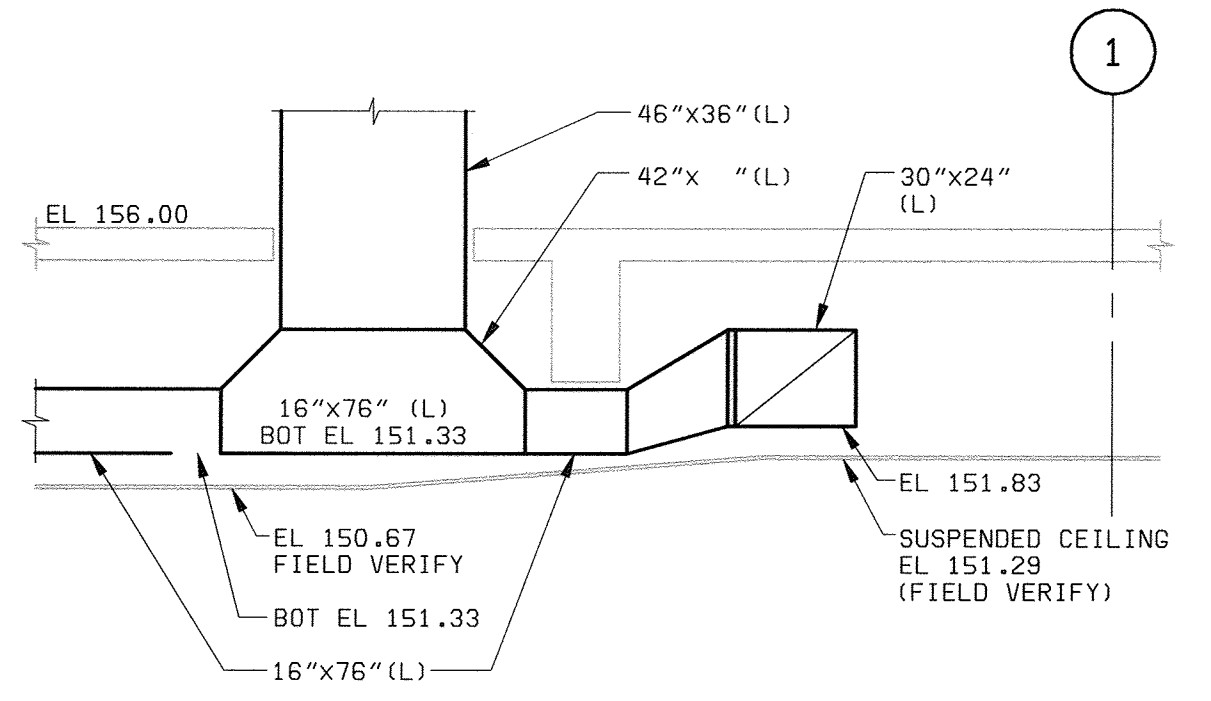
SECTION 5
NO SCALE (H3)



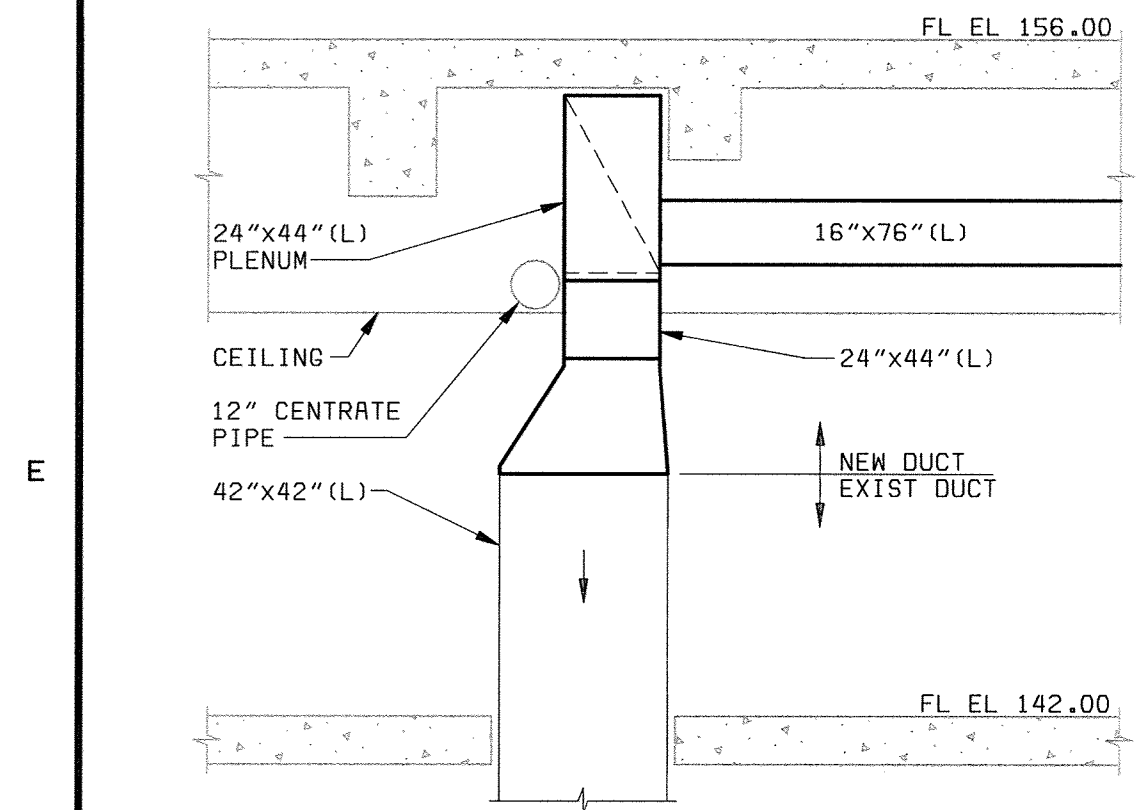
SECTION 6
1/4" = 1'-0" (H2, H3)



SECTION 7
1/4" = 1'-0" (H7, H8)



SECTION 8
1/4" = 1'-0" (H8)



SECTION 9
1/4" = 1'-0" (H8)

GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP, HX							HVAC/PLUMBING HVAC/ODOR CONTROL	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: BDL, LDW	CHK: JEP	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR				
PARTIAL PLAN AND SECTIONS											H16	

PACKAGED AIR CONDITIONING UNIT SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), ESP (IN WG), INDOOR FAN MOTOR HP, POWER SUPPLY VOLTS/PHASE, MINIMUM CIRCUIT AMPACITY, COOLING (EAT, CAPACITY (MBTUH)), HEATING (EAT, CAPACITY (BTUH), AUX CAPACITY (KW)), OA (CFM), APPROX WEIGHT (LBS), REMARKS. Includes notes and remarks for unit 8-687-PAC.

AIR OUTLET & INLET DEVICE SCHEDULE

Table with columns: SYMBOL, MODEL, FRAME/BORDER, MATERIAL, FINISH, DAMPER TYPE, ACCESSORIES, REMARKS. Includes notes for equipment schedule model numbers based on Titus Company.

FAN SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), ESP (IN WG), MOTOR HP, POWER SUPPLY VOLTS/PHASE, MIN WHEEL DIA (IN), DRIVE, APPROX WT (LBS), REMARKS. Lists various fan units like 8-900-F, 8-901-F, etc.

ODOR CONTROL FAN SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), ESP (IN WG), MIN WHEEL DIA (IN), POWER SUPPLY VOLTS/PHASE, MOTOR HP, DRIVE, RPM (MAX), SOUND POWER (dBA), REMARKS. Includes note about shipping and crating.

ODOR CONTROL SCRUBBER RECIRCULATION PUMP SCHEDULE

Table with columns: UNIT NO, LOCATION, FLOW (GPM), TOTAL HEAD (FT), MAX SPEED (RPM), MOTOR HP, POWER SUPPLY VOLTS/PHASE, MIN PUMP NOZZLE (IN) (SUCTION, DISCHARGE), REMARKS. Includes note about pump type.

PACKED TOWER SCRUBBER SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), MAX PRESSURE DROP (IN W G), MAX INLET H2S (PPM), AVG INLET H2S (PPM), MIN REMOVAL EFF (%), MIN DIA (FT), MIN PACKING DEPTH (FT), MAX SCRUBBER HEIGHT (FT), WIND LOAD (MPH), EFFECTIVE ACCELERATION COEFFICIENT Aa, DESIGN PRESSURE (IN WG), DESIGN VACUUM (IN WG), REMARKS.

ROOF HOOD SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), AIR PD (IN WC), TYPE, THROAT SIZE (INXIN), REMARKS. Includes type notes and remarks for aluminum hood construction.

GENERAL NOTE: ALL FRP PIPE DUCT AND DAMPERS FOR CONSTRUCTION AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.

HEATER SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), AIR PD (IN WC), OUTPUT CAPACITY (BTUH, KW), WATER FLOW (GPM), WATER PD (FT), MOTOR HP, POWER SUPPLY VOLTS/PHASE, APPROX WT (LBS), REMARKS. Lists various heater units.

MAKEUP AIR UNIT SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), ESP (IN WG), MOTOR HP, POWER SUPPLY VOLTS/PHASE, HEATER CAPACITY (BTUH), MIN WHEEL DIA (IN), APPROX WT (LBS), REMARKS. Includes remarks about filter velocity and vibration isolators.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND



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DES: GWP

DRN: BDL,LDW

CHK: JEP

DATE: 5-30-00

Table with columns: DATE, CONFORMED TO CONSTRUCTION RECORDS, REVISIONS AND RECORD OF ISSUE, NO., BY, CK, APP.

HVAC/PLUMBING HVAC/ODOR CONTROL

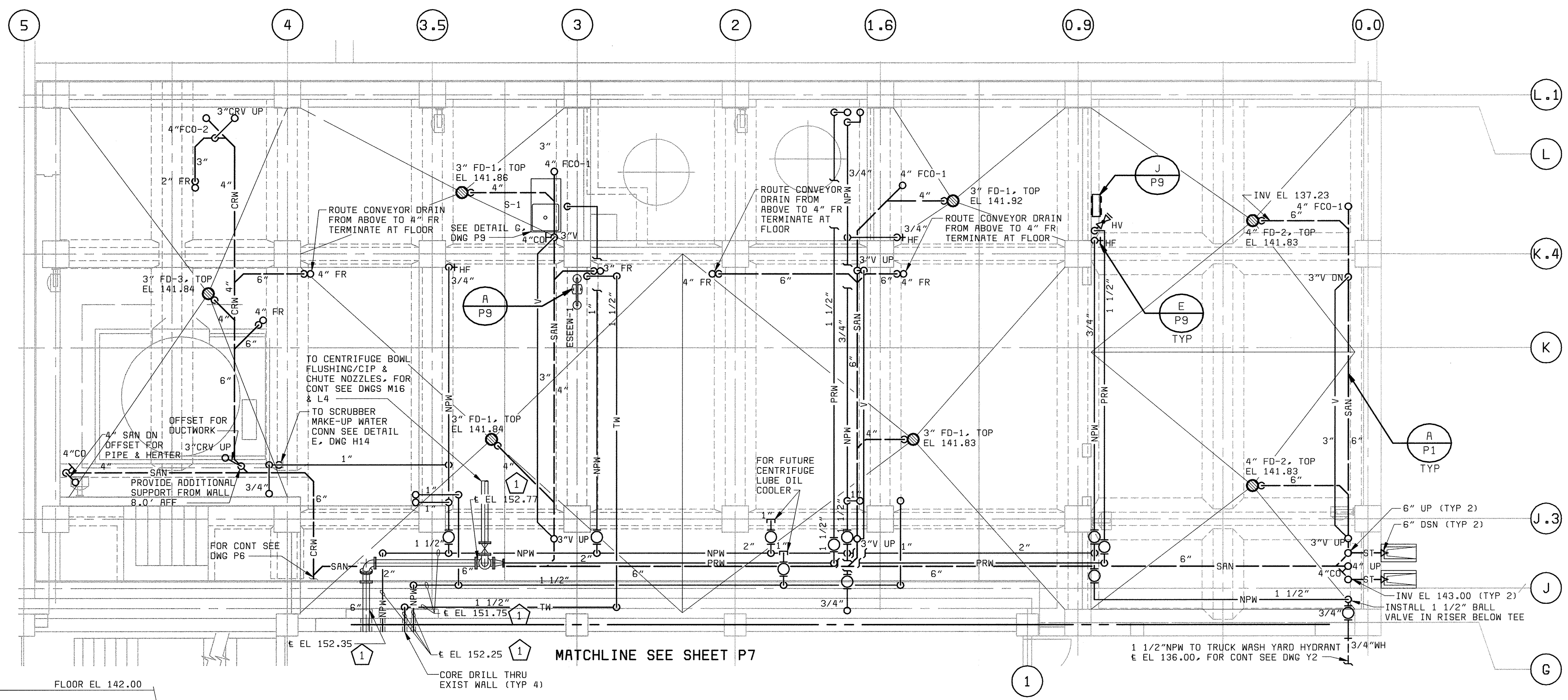
EQUIPMENT SCHEDULES

LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-G205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND

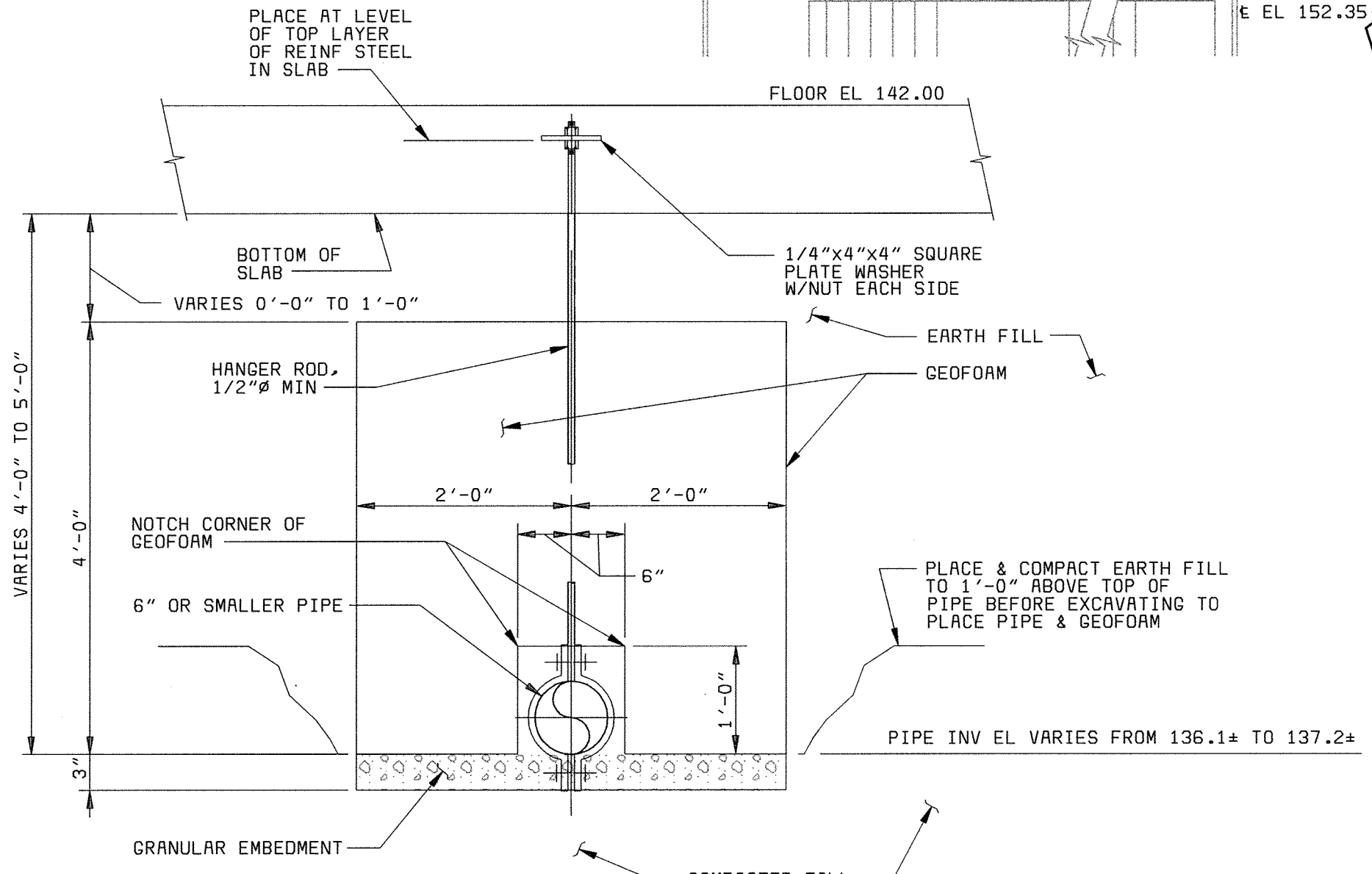
SCALE AS SHOWN

SHEET 103 OF 150

H17



PLAN EL 142.00
3/16" = 1'-0"

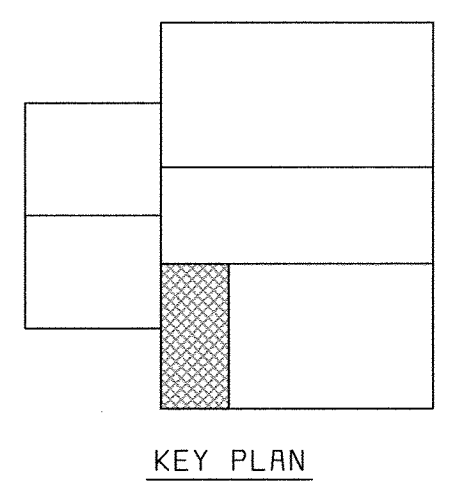


BELOW SLAB DRAINAGE SUPPORT DETAIL (A)
NO SCALE

- NOTES:**
1. THIS DETAIL APPLIES TO ALL DRAIN LINES BELOW ELEVATION 142.00 ON THIS DRAWING.
 2. SEE PIPE SUPPORT SPECIFICATION SECTION FOR SUPPORTING PIPE SMALLER THAN 12" SIZE.
 3. ALL HANGER COMPONENTS SHALL BE HOT DIPPED GALVANIZED.
 4. FOR ADDITIONAL REQUIREMENTS SEE SPECIFICATION 10300.

PLAN NOTES:

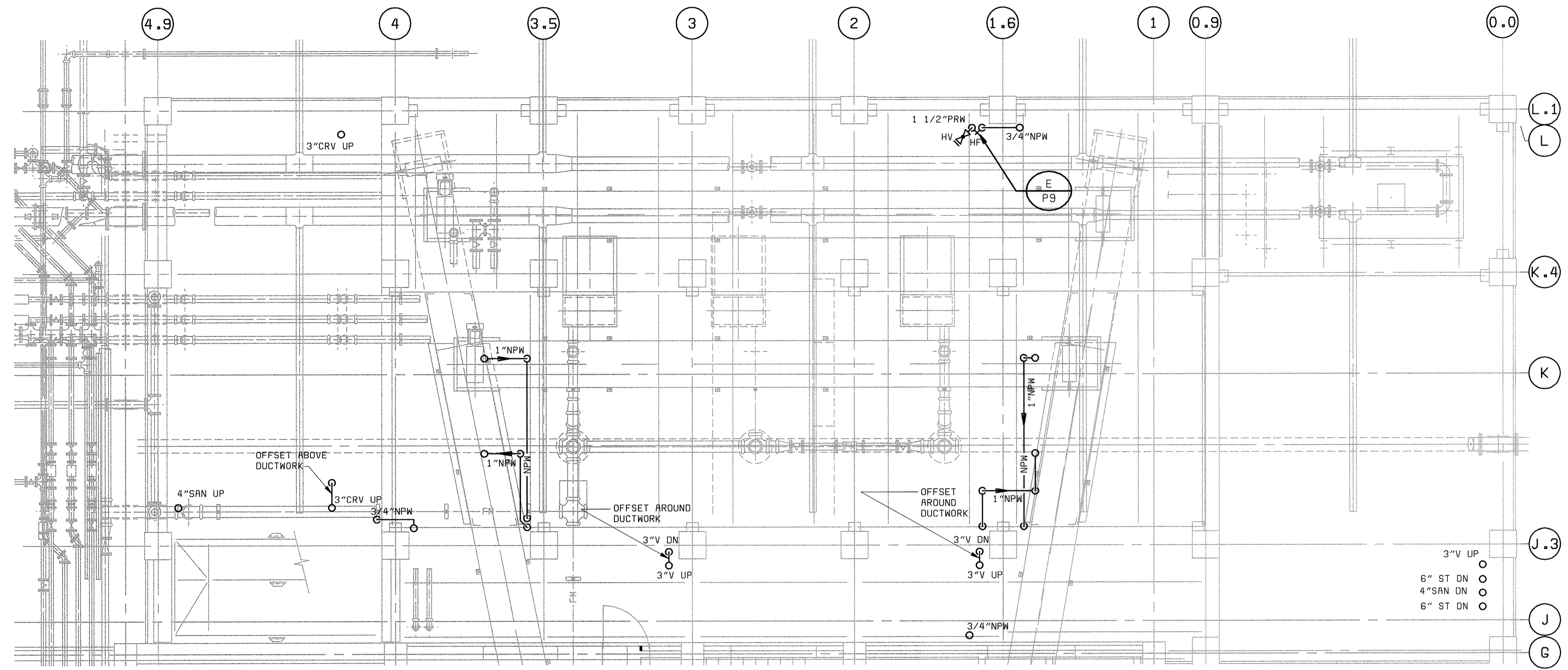
1 ELEVATIONS SHOWN ARE FOR REFERENCE ONLY. FIELD VERIFY BEFORE PIPE FABRICATION.



XREF: 58472-01-323-PIPE
XREF: 58472-203-SOLS-S-R0000018

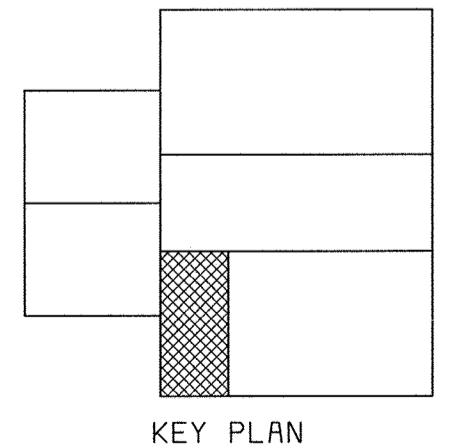
08/05/2004
09:52:57

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC						HVAC/PLUMBING PLUMBING	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JPC	CHK: MLP	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR			



PLAN EL 156.00
3/16" = 1'-0"

PLAN NOTES:
1. CONTRACTOR SHALL PROVIDE AND INSTALL DRAIN PIPING FROM CONVEYOR DRIP PANS TO 4" FUNNEL RECEPTORS LOCATED ON 142.00 LEVEL.



KEY PLAN

58472-401-223-C009
58472-203-501-S-5-A-00000120
58472-401-323-P1PE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH LP
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

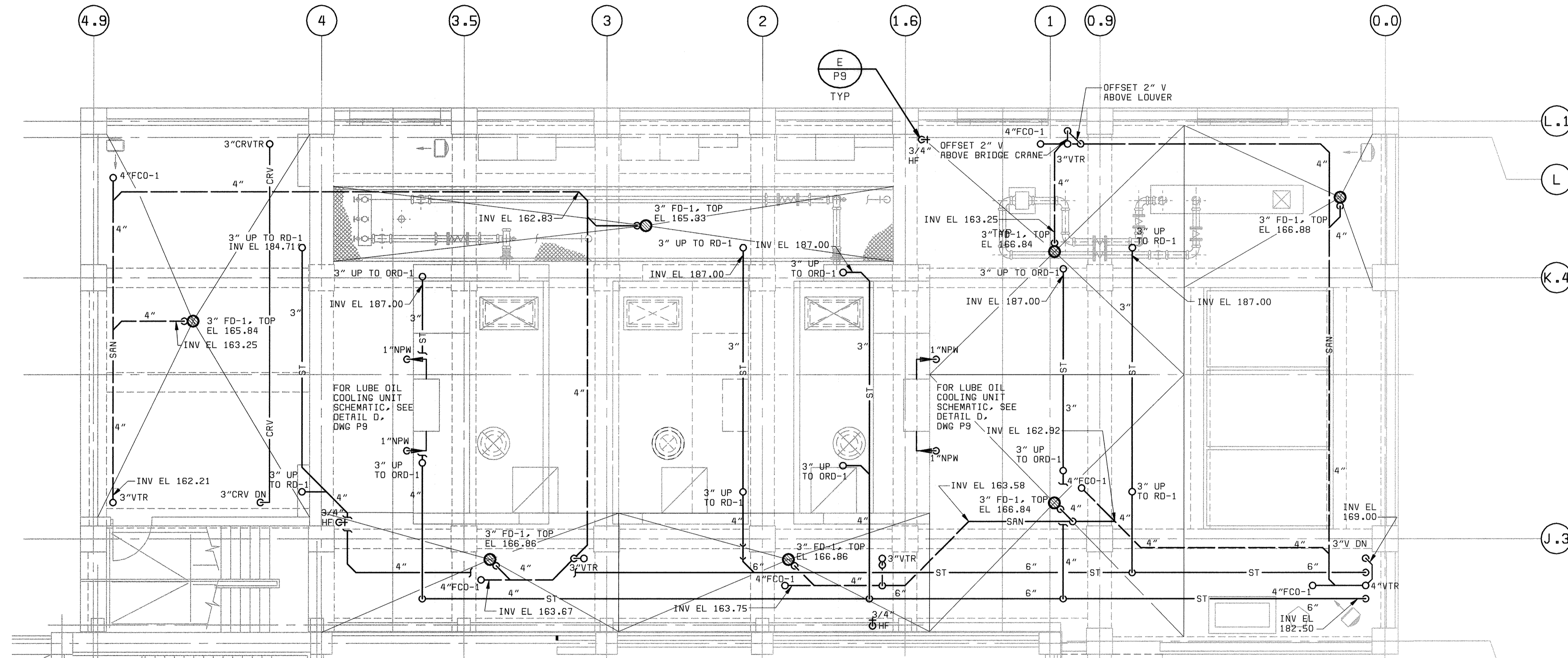
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IN THE
STATE OF MARYLAND,
NO. 21992

DES: JPC					
DRN: JPC					
CHK: MLP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

HVAC/PLUMBING
PLUMBING
CENTRIFUGE BUILDING EXPANSION
PLAN AT EL 156.00

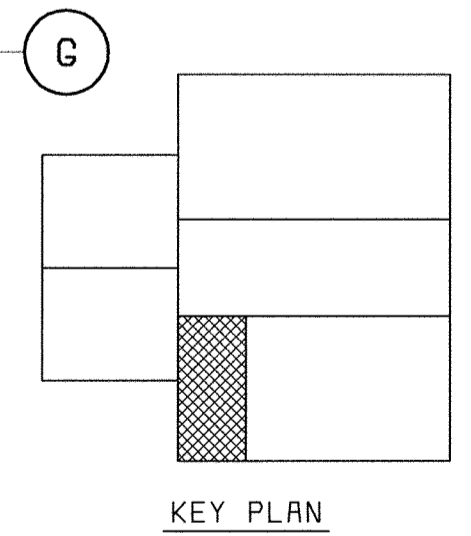
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-G205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
106 OF 150
P2



PLAN - EL 167.00

3/16" = 1'-0"



KEY PLAN

58472-401-323-C010
58472-203-SOLS-S-R0000147
58472-401-323-PIPE2

058472.2
FD58472R

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE



BLACK & VEATCH
Gathersburg, Maryland

REG. PROF. ENGR.

DATE

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IN THE
STATE OF MARYLAND,
NO. 21992

DES: JPC

DRN: JPC

CHK: MLP

DATE: 5-30-00

07/26/04

CONFORMED TO CONSTRUCTION RECORDS

RHH/RJR/RJR

DATE REVISIONS AND RECORD OF ISSUE

NO. BY CK APP

HVAC/PLUMBING
PLUMBING

CENTRIFUGE BUILDING EXPANSION
PLAN AT EL 167.00

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
107 OF 150

P3

A B D E F

16
15
13
12
9
8
7

C
P9
W-201
F
P9

BFP-201 REMOVE EXIST WATER SUPPLY PIPING FROM HERE TO FLANGE AT WALL
BFP-202
4" CW NPK
2" CW NPK
EL 137.08

1
EL 136.00

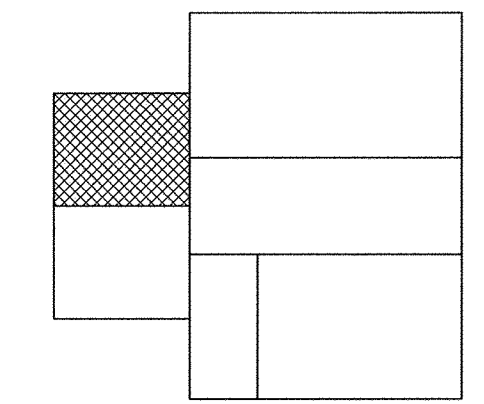
1
EL 137.08

MATCHLINE SEE SHEET P6

MATCHLINE SEE SHEET P5

PLAN EL 128.00
3/16" = 1'-0"

PLAN NOTES:
1 ELEVATIONS SHOWN ARE FOR REFERENCE ONLY. FIELD VERIFY BEFORE PIPE FABRICATION.



KEY PLAN

XREF: 58472-401-323-C003
XREF: 58472-401-323-PTPE
XREF: 58472-401-323-BASE1

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21992	DES: JPC	07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH/RJR/RJR	HVAC/PLUMBING PLUMBING	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JPC				FLOTATION THICKENING AREA PLAN AT EL 128.00
			CHK: MLP				P4
			DATE: 5-30-00	REVISIONS AND RECORD OF ISSUE			

1 2 3 4 5 6 7 8 9 10

A

B

C

D

E

A

B

C

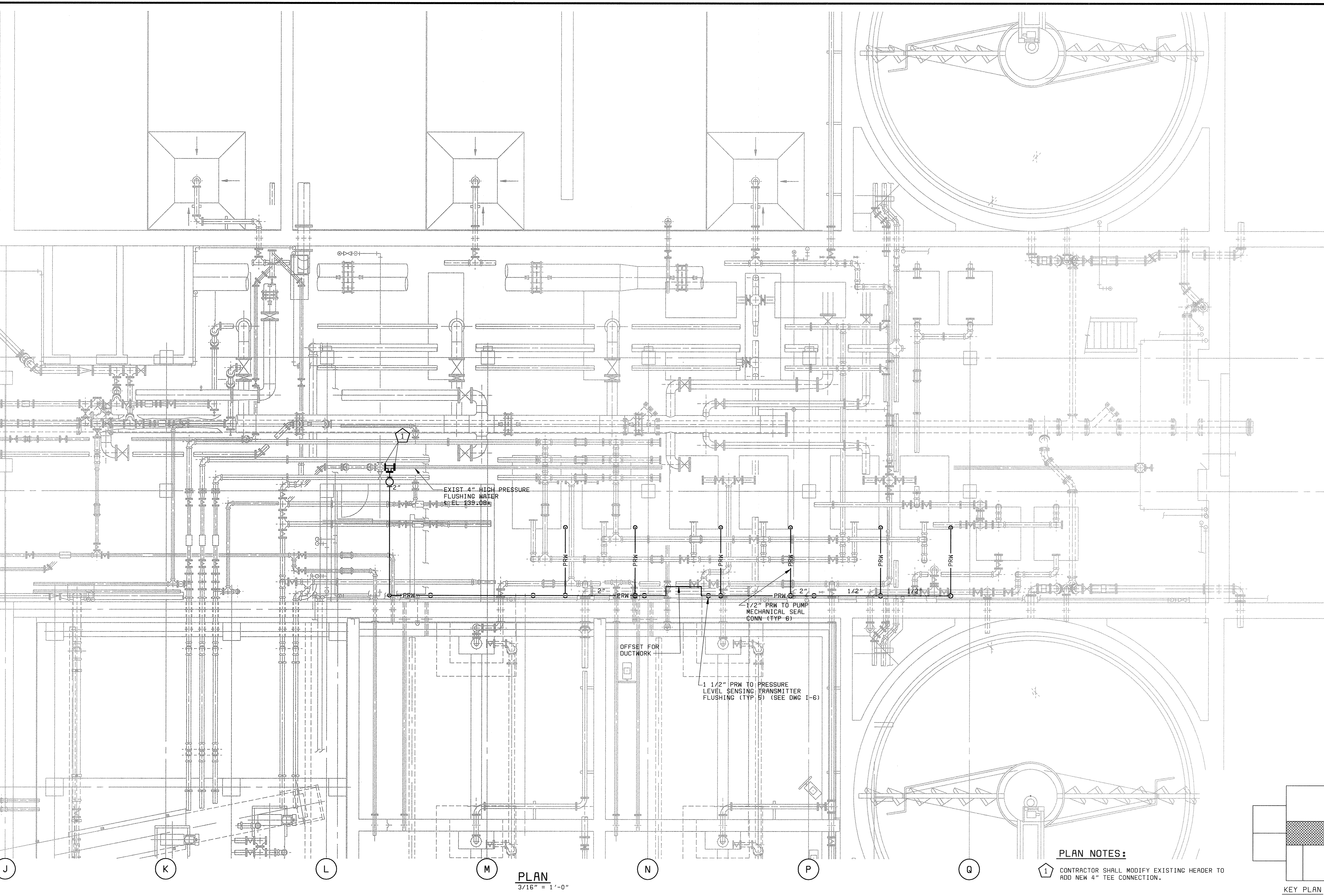
D

E

13
12
9
8
7
6
5
4
F
J
K
L
M
N
P
Q

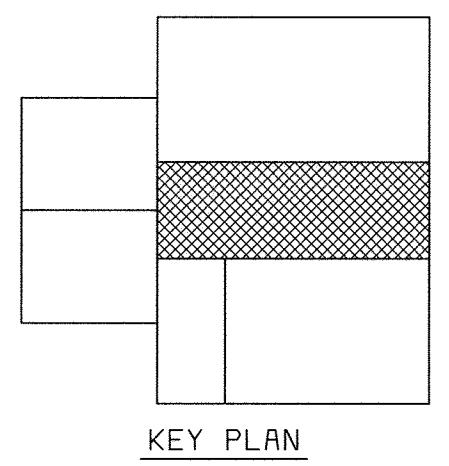
MATCHLINE SEE SHEET P4

MATCHLINE SEE SHEET P6



PLAN
3/16" = 1'-0"

PLAN NOTES:
1 CONTRACTOR SHALL MODIFY EXISTING HEADER TO ADD NEW 4" TEE CONNECTION.



XREF: 58472-401-323-C006
 XREF: 58472-401-323-P1PE
 XREF: 58472-203-SOLS-S-R0000116

DES: JPC
 DRN: JPC
 CHK: MLP
 DATE: 5-30-00

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REC. PROF. ENGR. DATE

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PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21992

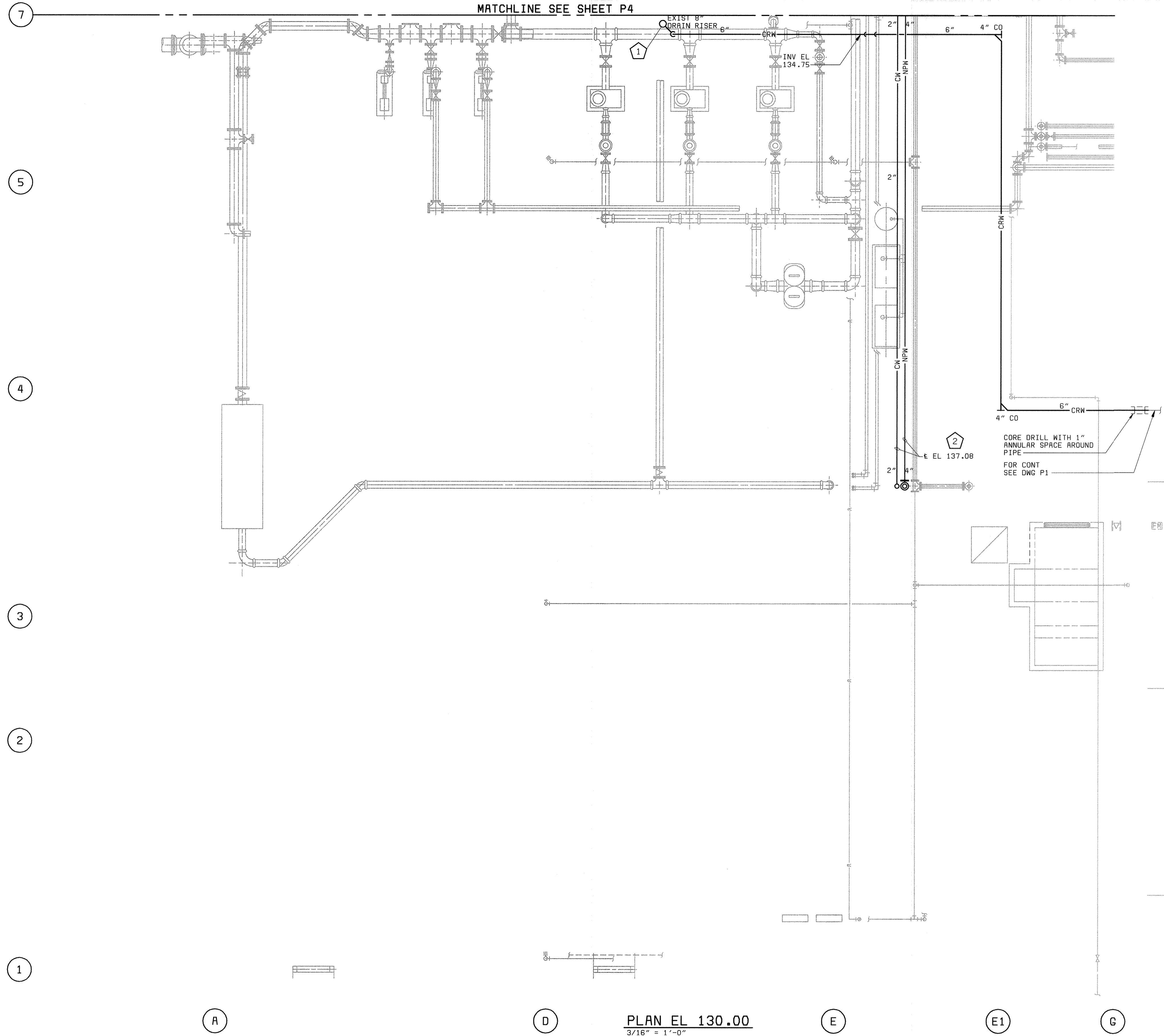
DES: JPC					
DRN: JPC					
CHK: MLP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
		REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

HVAC/PLUMBING
PLUMBING
EQUIPMENT AND PIPE
GALLERY - PLAN

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

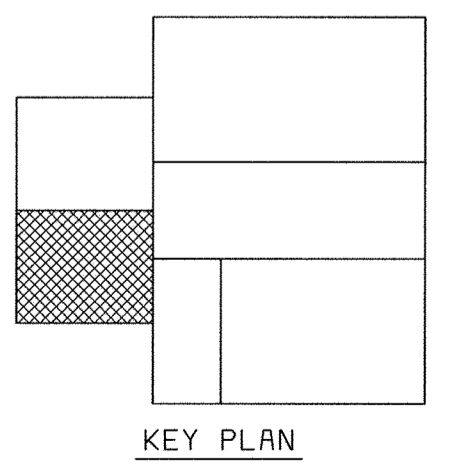
SCALE
AS
SHOWN
SHEET
109 OF 150
P5

MATCHLINE SEE SHEET P4



2
CORE DRILL WITH 1" ANNUULAR SPACE AROUND PIPE FOR CONT SEE DWG P1

- PLAN NOTES:**
- 1 CONTRACTOR SHALL MODIFY EXISTING RISER ADD NEW 8"x6" WYE CONNECTION.
 - 2 ELEVATION SHOWN IS FOR REFERENCE ONLY. FIELD VERIFY BEFORE PIPE FABRICATION.



PLAN EL 130.00
3/16" = 1'-0"

XREF: 58472-401-323-PTPE
 XREF: 58472-401-323-BASE1
 XREF: 58472-401-323-C004

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC					HVAC/PLUMBING PLUMBING CENTRATE DISPOSAL AREA PLAN AT EL 130.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JPC							
			CHK: MLP	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR				
			DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	

A

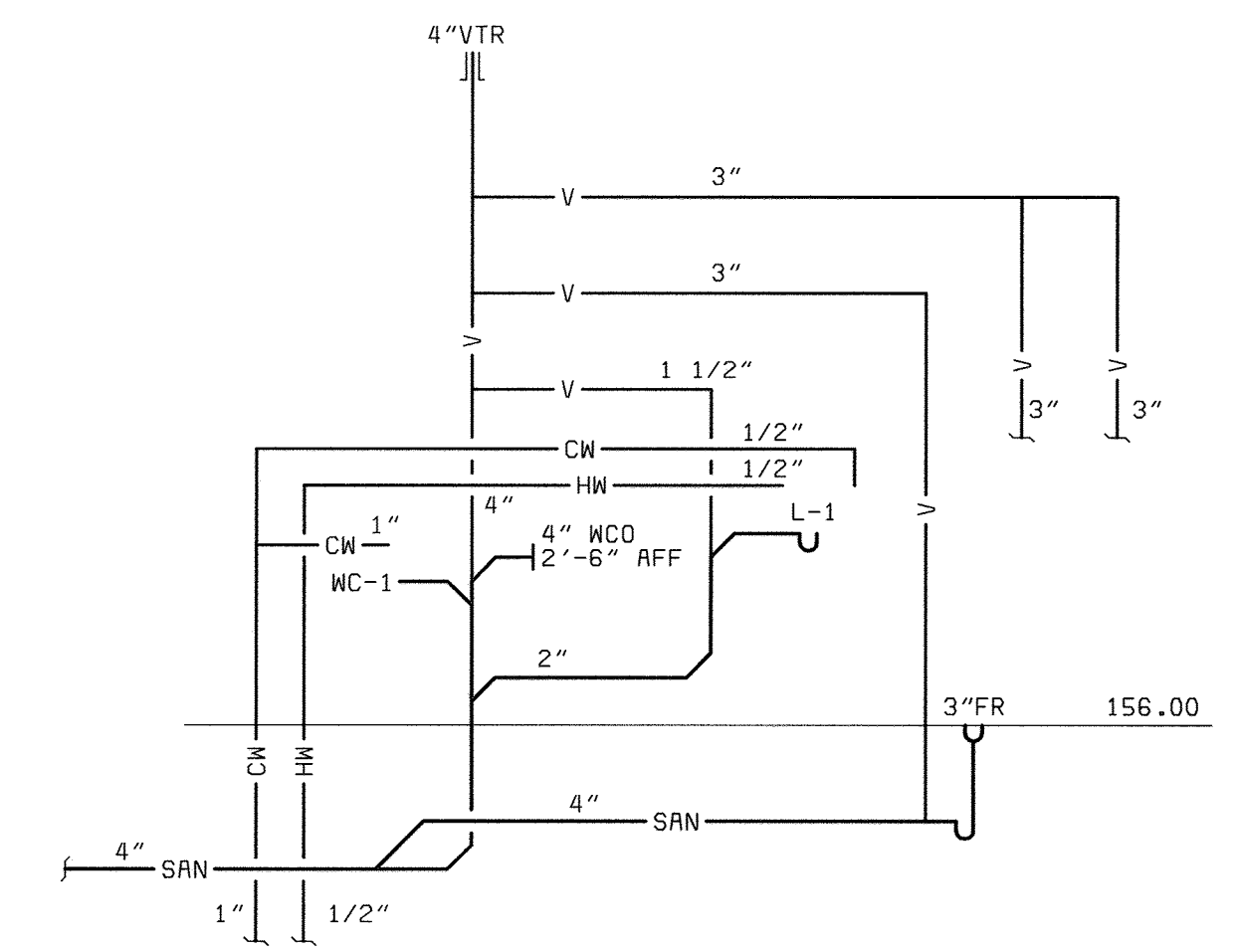
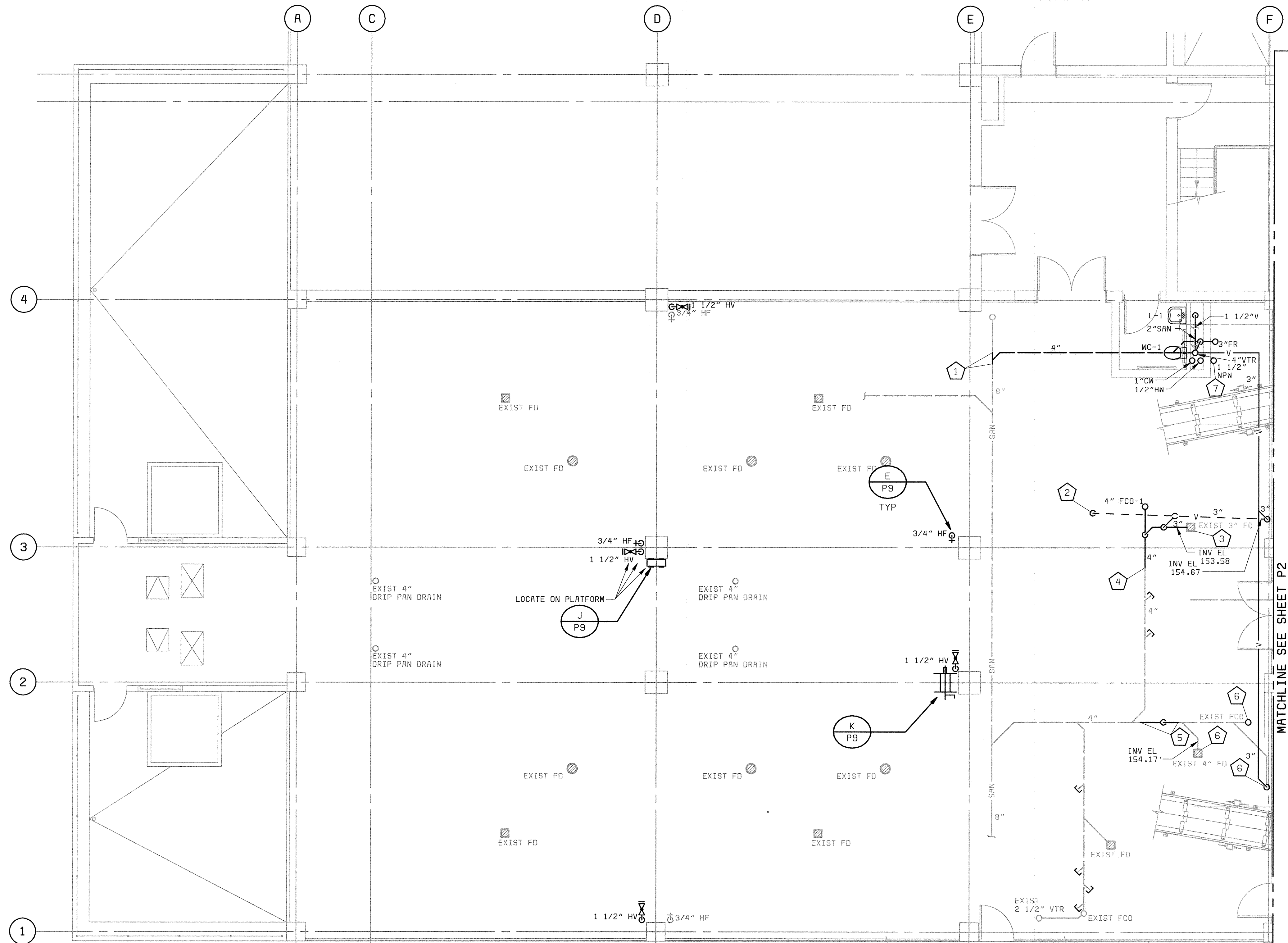
B

C

D

E

F



RESTROOM RISER DIAGRAM
NO SCALE

PLAN NOTES:

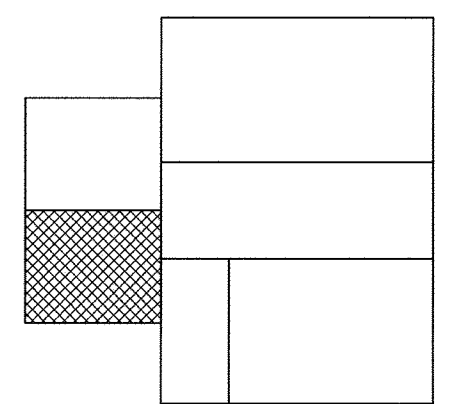
- 1 CONTRACTOR SHALL CUT IN NEW BRANCH CONNECTION AS NECESSARY TO ACCOMMODATE NEW CONNECTION.
- 2 CONNECT TO EXIST 2 1/2" VENT. CONTRACTOR SHALL MODIFY EXISTING VENT PIPING AS NECESSARY TO ACCOMMODATE NEW ROUTING.
- 3 CONTRACTOR SHALL MODIFY DRAIN TO RAISE EXIST TRAP ABOVE NEW DUCTWORK.
- 4 CONNECT NEW 4" DRAIN TO EXIST 4" DRAIN LINE.

KEYNOTES:

- 5 CONTRACTOR SHALL CUT IN NEW OFFSET IN HEADER TO ACCOMMODATE NEW ELEVATIONS OF DRAIN AND VENT PIPING.
- 6 CONTRACTOR SHALL RAISE EXISTING DRAIN AND VENT PIPING AS NECESSARY TO RUN ABOVE NEW DUCTWORK.
- 7 CONTRACTOR SHALL INSTALL 1 1/2" SHUT-OFF VALVE AND CAP NPW PIPE 1'-0" AFF FOR FUTURE CONNECTION TO ODOR CONTROL SPRAY SYSTEM.

PLAN EL 156.00
3/16" = 1'-0"

MATCHLINE SEE SHEET P2



KEY PLAN

XREF: 58472-401-DRF-M-R0000614

P584722
P584722A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
GaitHERSburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
MARTIN L. PAPE
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21992

DES: JPC					
DRN: JPC					
CHK: MLP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

HVAC/PLUMBING
PLUMBING

LIME STABILIZATION AREA
PLAN AT EL 156.00

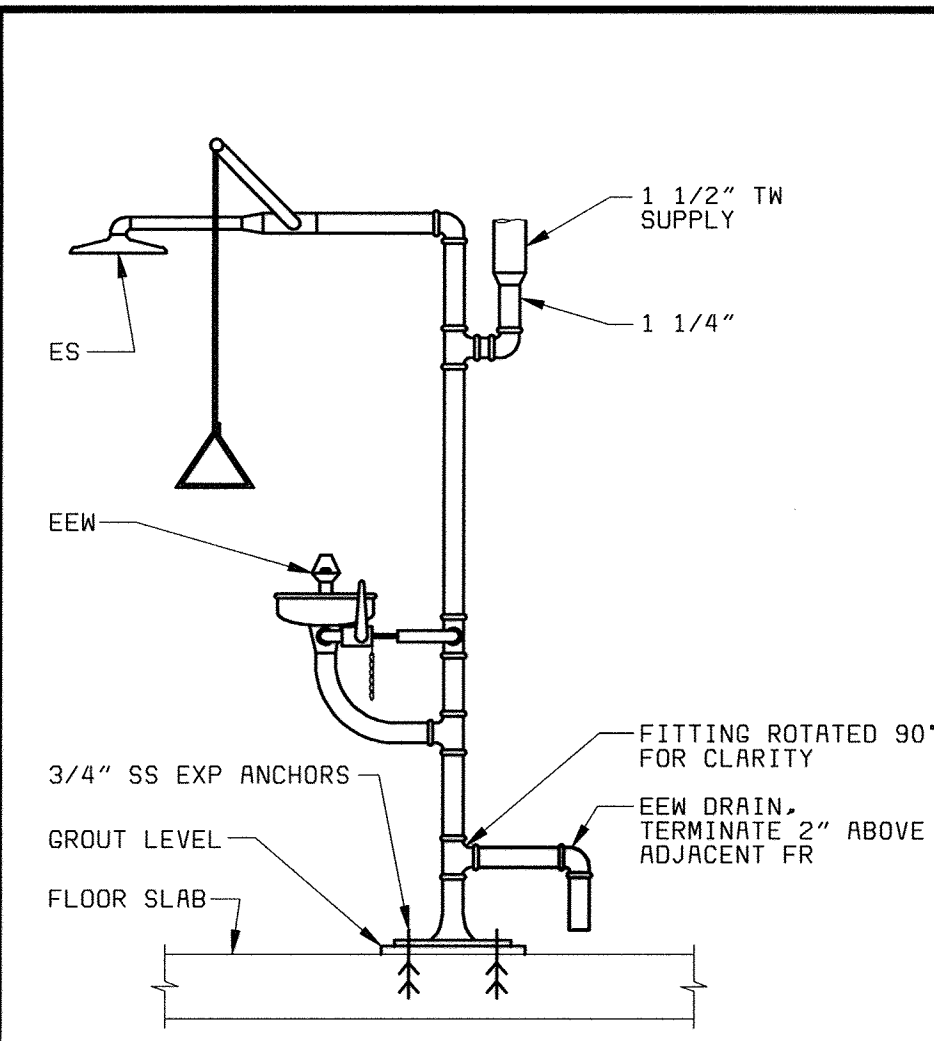
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

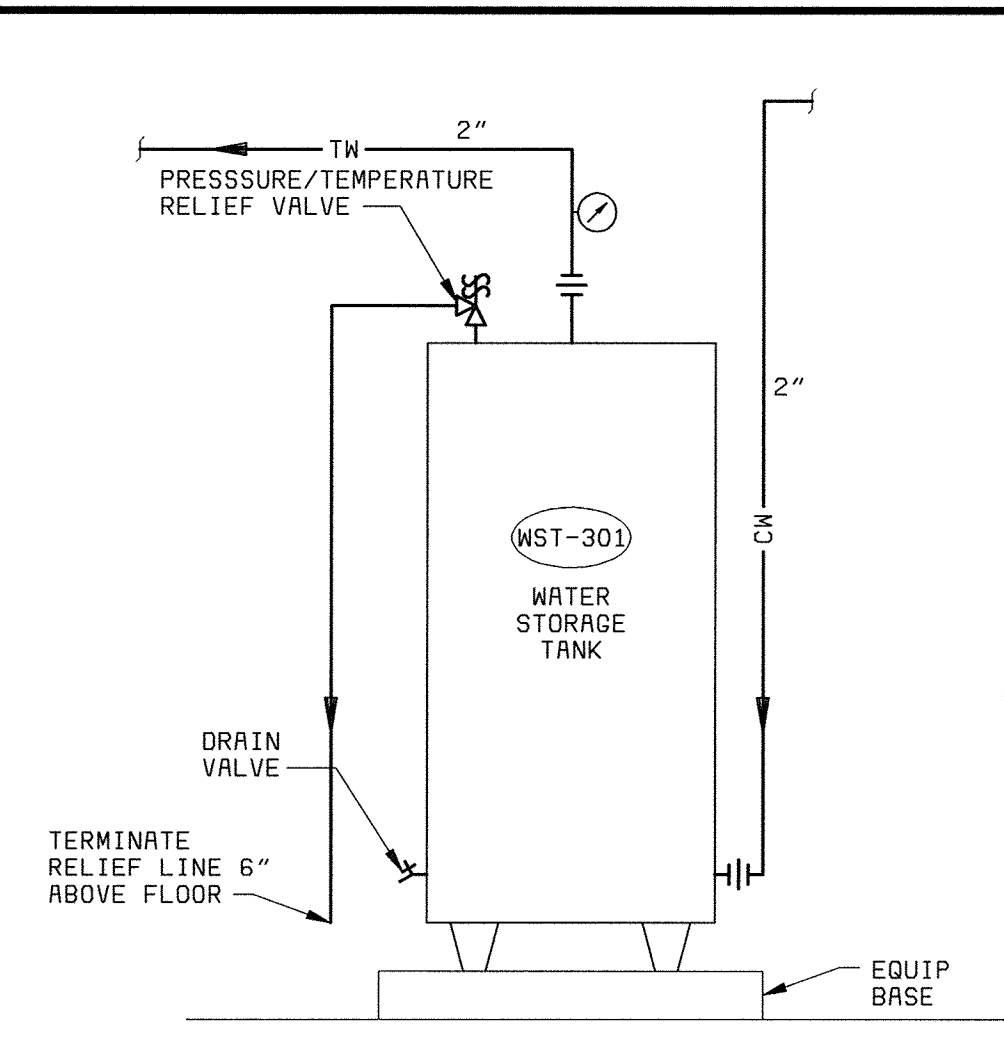
SCALE
AS
SHOWN

SHEET
112 OF 150

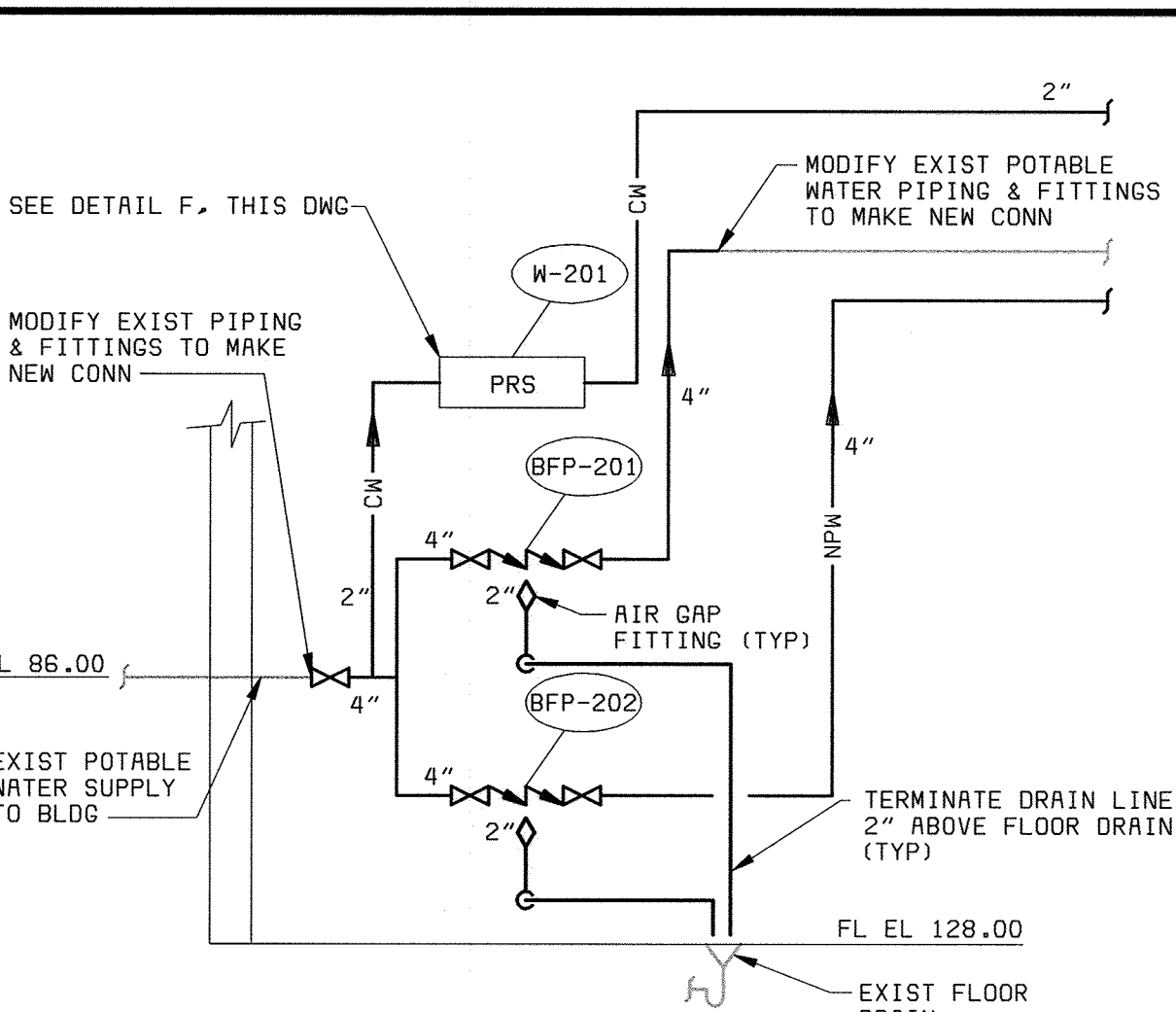
P8



EMERGENCY SHOWER AND EYEWASH PIPING DETAIL (A)
NO SCALE



WST-301 PIPING DETAIL (B)
NO SCALE

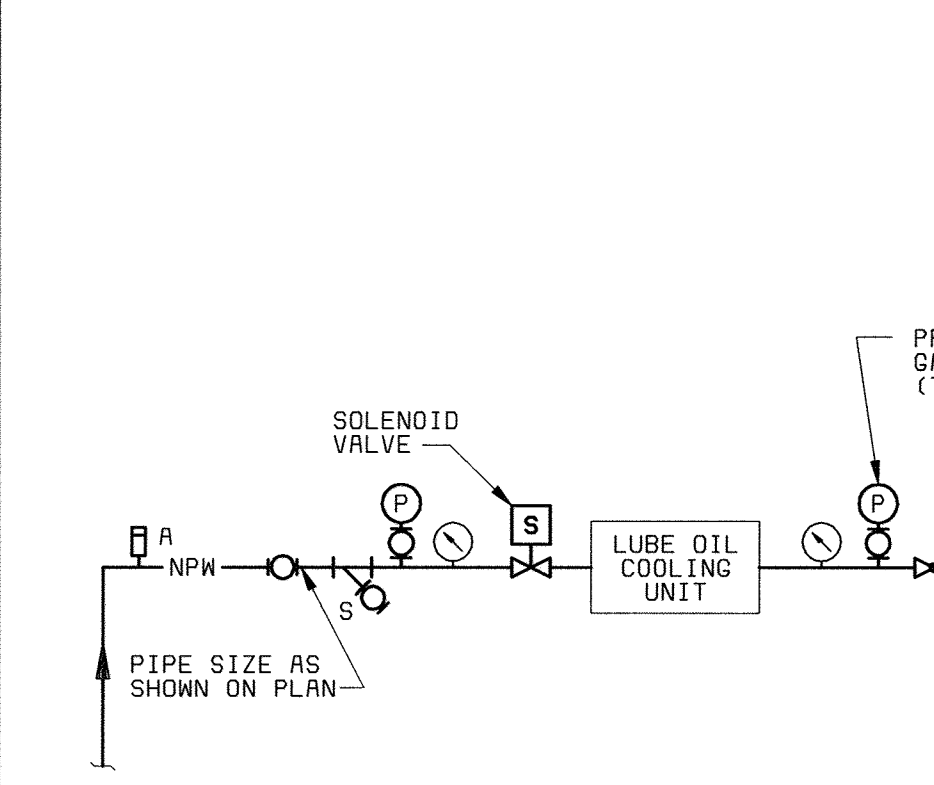


BUILDING WATER SUPPLY SCHEMATIC (C)
NO SCALE

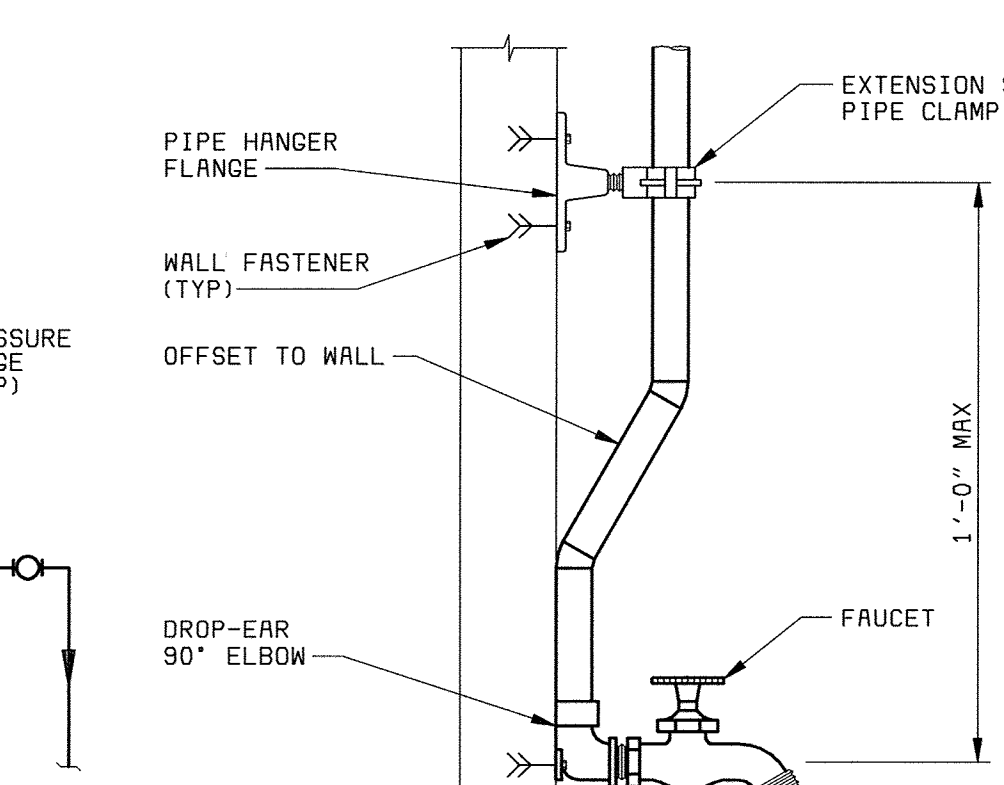
BACKFLOW PREVENTER SCHEDULE						
UNIT NO	SERVICE	BODY SIZE (IN)	MAXIMUM FLOW (GPM)	MAXIMUM PD (PSI)	MANUFACTURER MODEL	REMARKS
BFP-201	POTABLE WATER SERVICE	4	190	13	FEBCO 860	
BFP-202	NONPOTABLE WATER SERVICE	4	219	13	FEBCO 860	

NOTES:

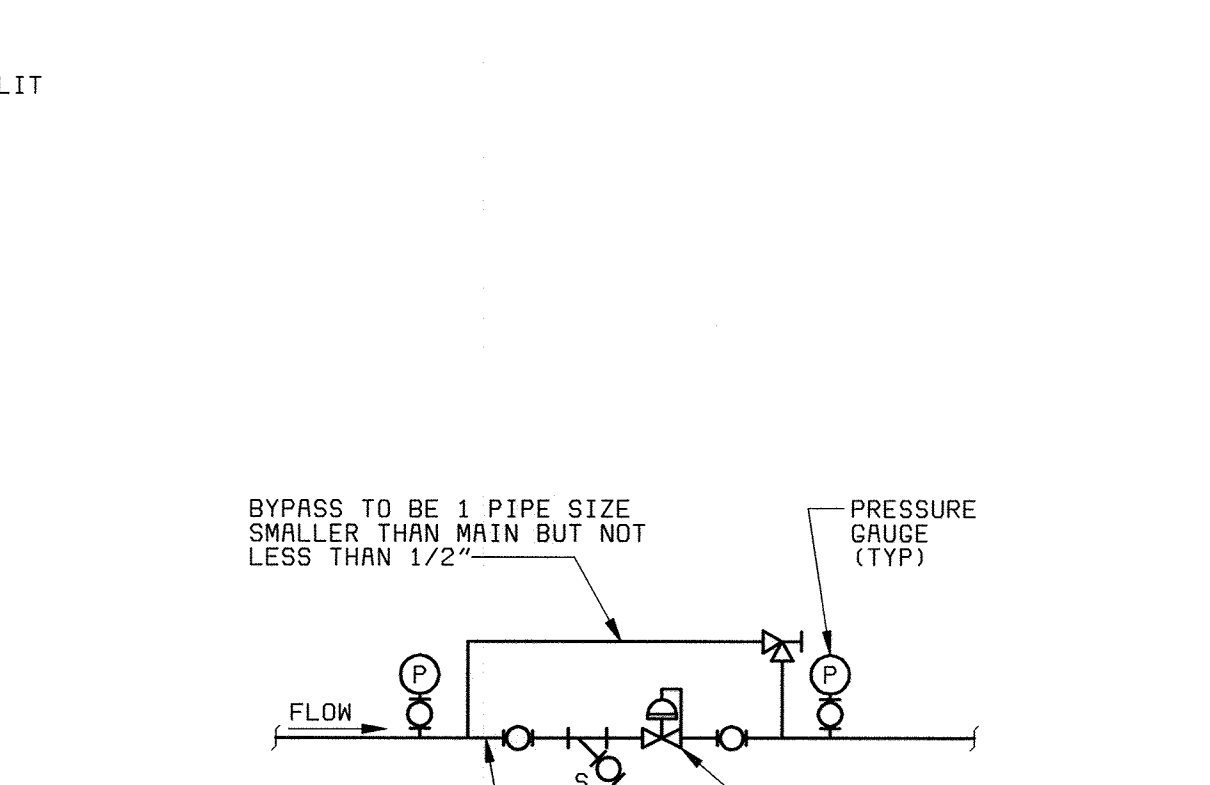
PLUMBING FIXTURE AND EQUIPMENT SCHEDULE			
LABEL	DESCRIPTION	MANUFACTURER MODEL	REMARKS
ES/EEW-1	EMERGENCY SHOWER/EYE/FACEWASH COMBINATION, PEDESTAL MOUNTED, 1-1/4 INCH IPS SUPPLY.	HAWS-8346	
L-1	LAVATORY, WALL HUNG, 21 X 18 INCHES, WITH 2.0 GPM AERATED FAUCET AND POP-UP DRAIN.	LAVATORY-KOHLER K-2005 KINGSTON FAUCET-KOHLER K-15583 CORALAIS	
WC-1	WATER CLOSET, WALL MOUNT, FLUSH VALVE, 1.6 GAL/FLUSH MAX.	KOHLER K-4330 KINGSTON	
S-1	SAMPLE SINK, 24 X 36 INCHES, FREE STANDING SINGLE BOWL 14 INCH DEEP, 14 GAUGE STAINLESS STEEL, 2 INCH DRAIN, 24 INCH LEFT DRAINBOARD, STAINLESS STEEL LEGS.	SINK-ELKAY WNSF-8136-L	
FD-1	MEDIUM DUTY CAST IRON FLOOR DRAIN, ADJUSTABLE TOP, LOOSE SET CAST IRON GRATE.	SMITH 2310 SERIES	
FD-2	HEAVY DUTY CAST IRON FLOOR DRAIN, 12 INCH DIAMETER TRACTOR GRATE.	SMITH 2141 SERIES	
FD-3	CORROSION RESISTANT FLOOR DRAIN, PVC BODY, ADJUSTABLE TOP, SECURED NICKEL BRONZE ROUND GRATE.	SIOUX CHIEF 863 SERIES	
FCO-1	HEAVY DUTY FLOOR CLEANOUT, SECURED ROUND ADJUSTABLE NICKEL BRONZE TOP.	SMITH 4100 SERIES	
FCO-2	CORROSION RESISTANT FLOOR CLEANOUT, PVC BODY, POLYPROPYLENE PLUG, NICKEL BRONZE COVER.	SIOUX CHIEF 852 SERIES	
RD-1	CAST IRON PRIMARY ROOF DRAIN	SMITH 1010-E SERIES	
ORD-1	CAST IRON OVERFLOW ROOF DRAIN	SMITH 1010-E SERIES	PROVIDE OVERFLOW STANDPIPE W/TOP OF STANDPIPE SET @ 2" ABOVE PRIMARY ROOF DRAIN.
HR-1	HOSE REEL WITH 1 1/2" SWIVEL WATER SUPPLY AND 100 FT TYPE 1 HOSE.	HANNAY 3528-24-26	
EWH-301	ELECTRIC WATER HEATER, 20 GALLON STORAGE, 37 GPH RECOVERY AT 100 F RISE, 9 KW, 480V, 3 PHASE, 60 HZ.	STATE SB6-20-9-IFE-ASME-NSF	
ET-301	EXPANSION TANK, PIPELINE MOUNTED, 2.0 GALLON, PRECHARGE TO 80 PSIG.	AMTROL, ST-5	



LUBE OIL COOLING DETAIL (D)
NO SCALE



HOSE FAUCET PIPE MOUNTING DETAIL (E)
NO SCALE

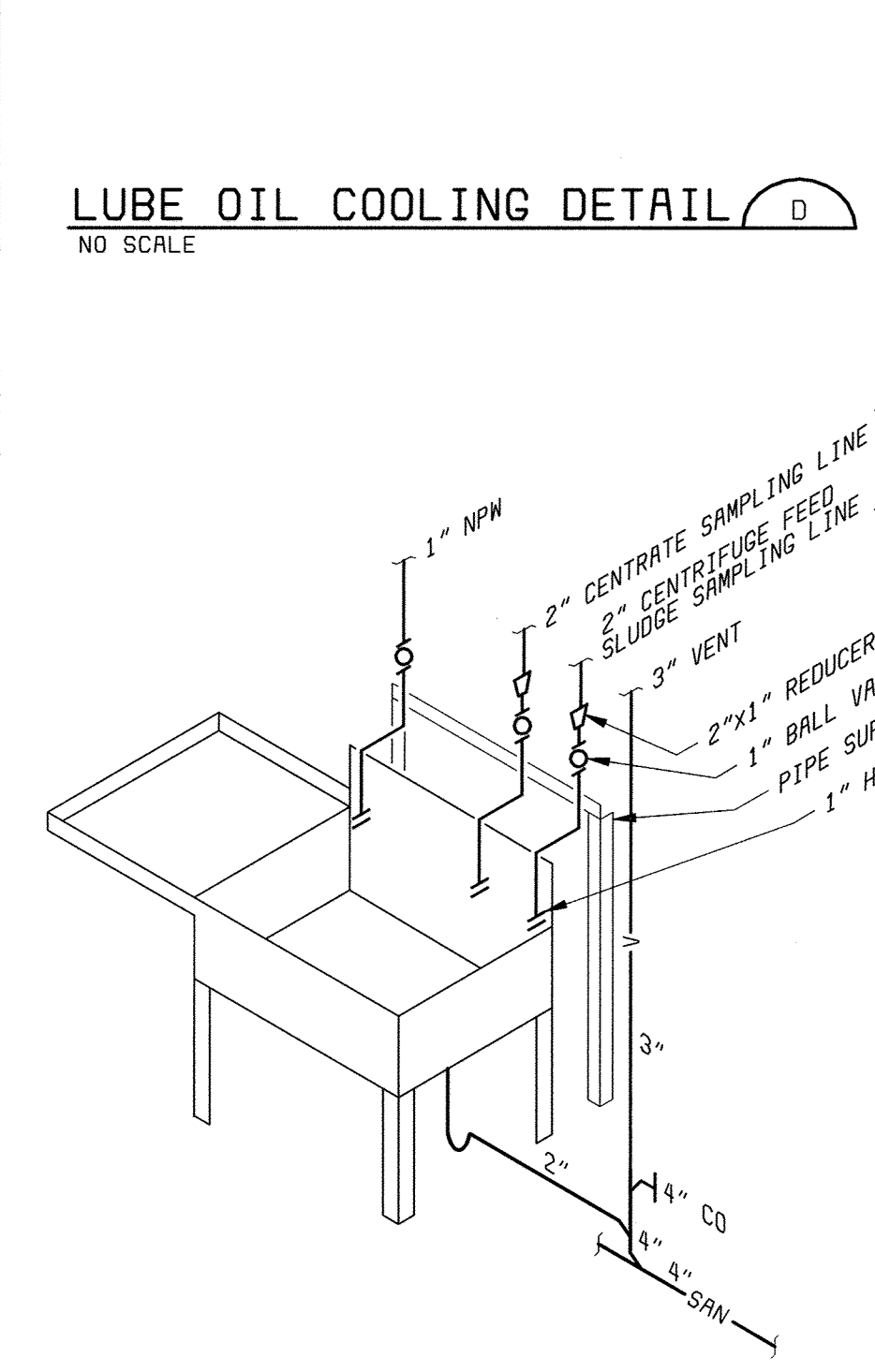


PRESSURE REDUCING STATION (PRS) DETAIL (F)
NO SCALE

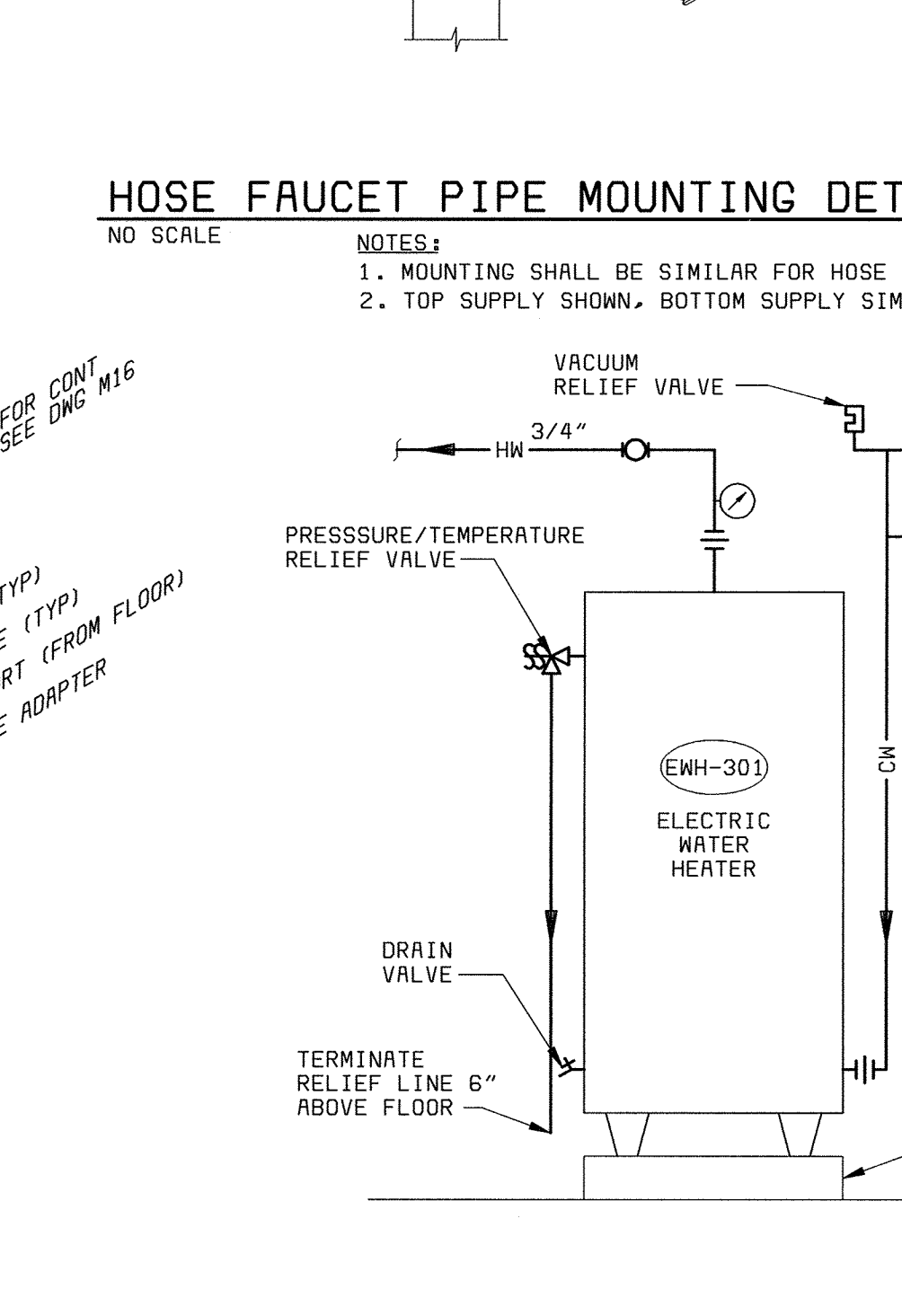
PRESSURE REDUCING VALVE SCHEDULE										
UNIT NO	SERVICE	TYPE*	FLOW RATE**			REDUCED PRESSURE SETPOINT PSIG	INLET PRESSURE PSIG		MINIMUM PRESSURE AT MAX FLOW PSIG	REMARKS
			MAX	ORD	MIN		MAX	MIN		
W-201	CW TO POTABLE WATER SYSTEM	DA	50	5	0	70	90	80	65	

*DA - DIRECT ACTING PO - PILOT OPERATED
**UNITS ARE SCFH FOR GAS, SCFM FOR AIR, AND GPM FOR WATER. "ORD" INDICATES ORDINARY FLOW RATE.

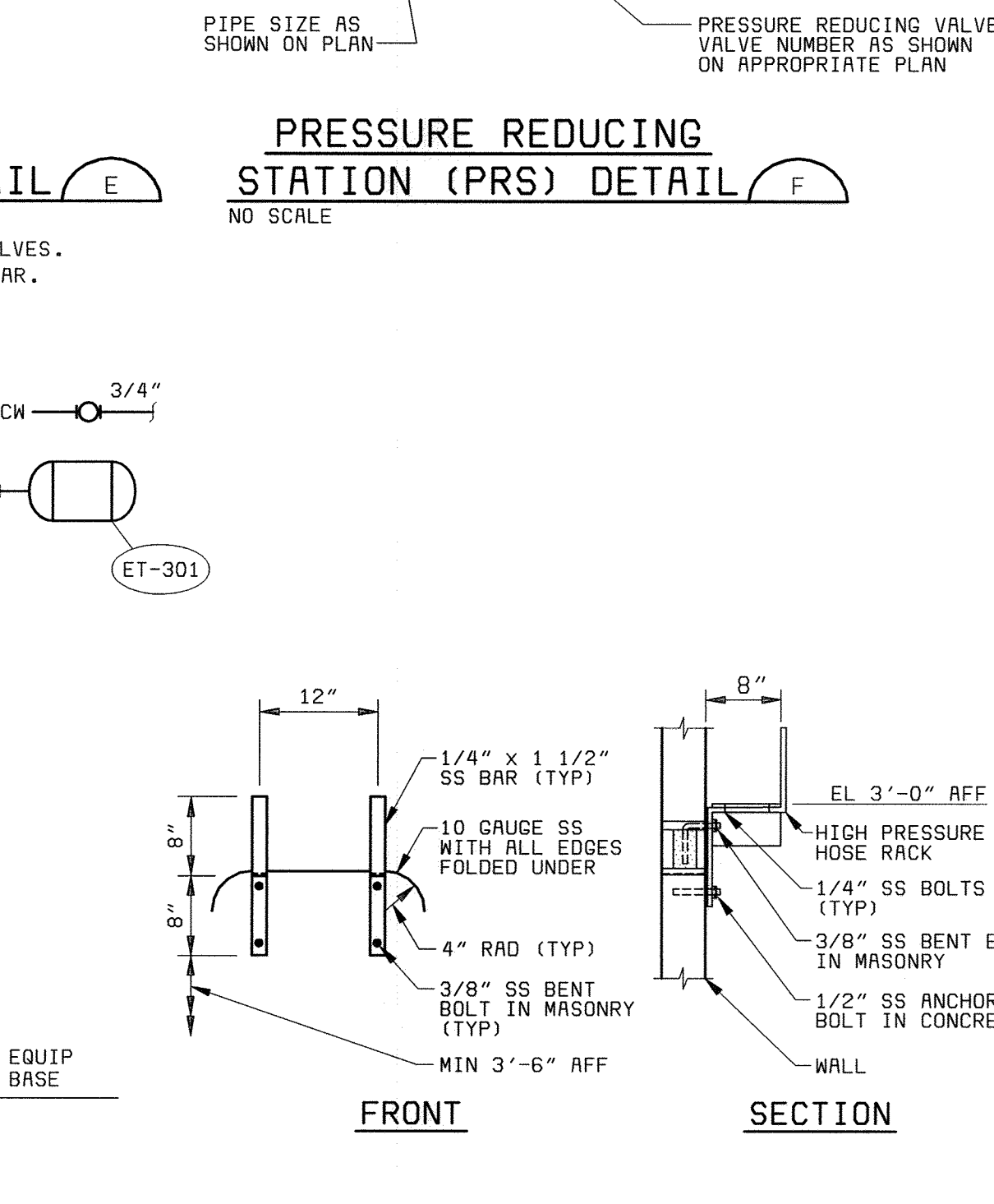
REMARKS:



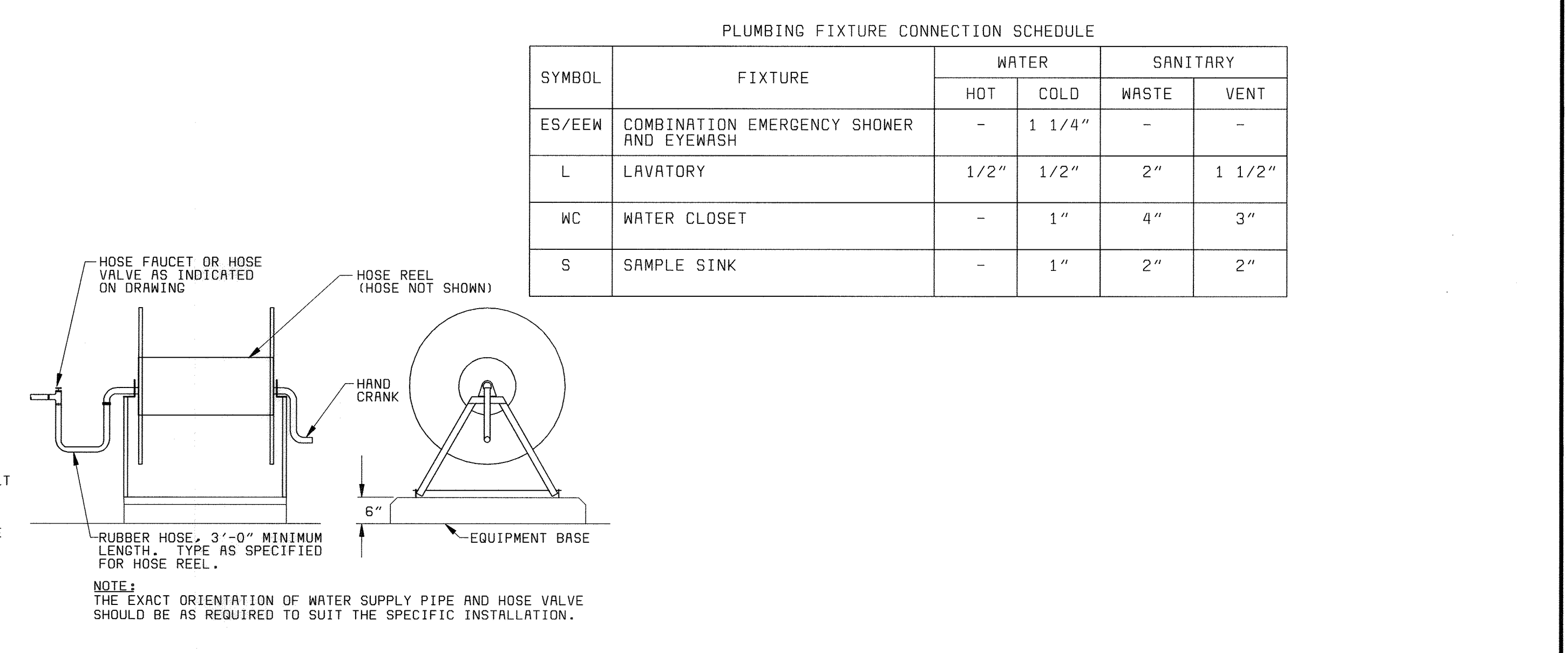
SAMPLE SINK PIPING DETAIL (G)
NO SCALE



EWH-301 PIPING DETAIL (H)
NO SCALE



HOSE RACK (WALL MOUNTED) DETAIL (J)
NO SCALE



HOSE REEL DETAIL (K)
NO SCALE

PLUMBING FIXTURE CONNECTION SCHEDULE					
SYMBOL	FIXTURE	WATER		SANITARY	
		HOT	COLD	WASTE	VENT
ES/EEW	COMBINATION EMERGENCY SHOWER AND EYEWASH	-	1 1/4"	-	-
L	LAVATORY	1/2"	1/2"	2"	1 1/2"
WC	WATER CLOSET	-	1"	4"	3"
S	SAMPLE SINK	-	1"	2"	2"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

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DES: JPC					
DRN: JPC					
CHK: MLP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR		
	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP		

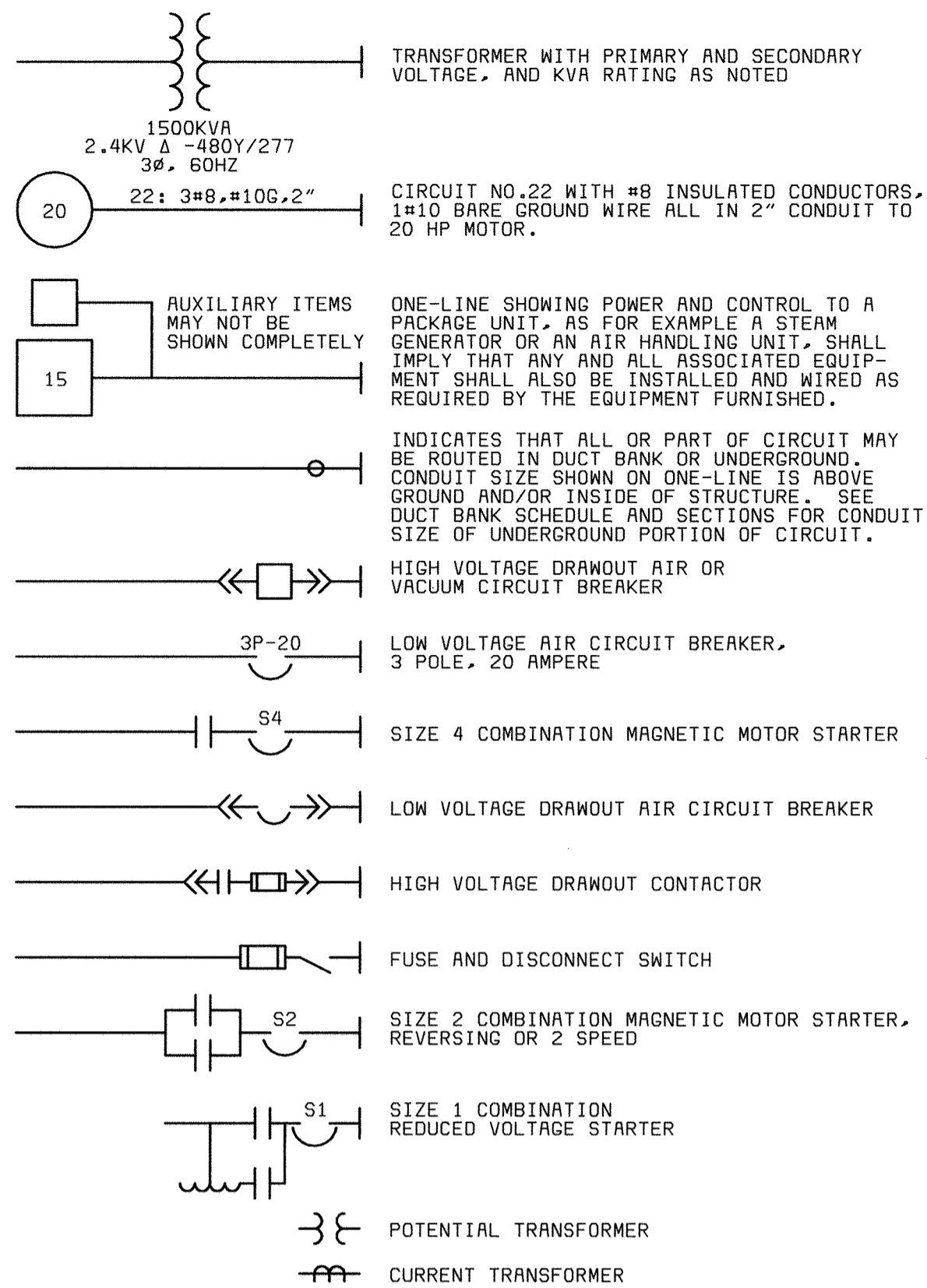
HVAC/PLUMBING
PLUMBING
SCHEMATICS, DETAILS,
AND SCHEDULES

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

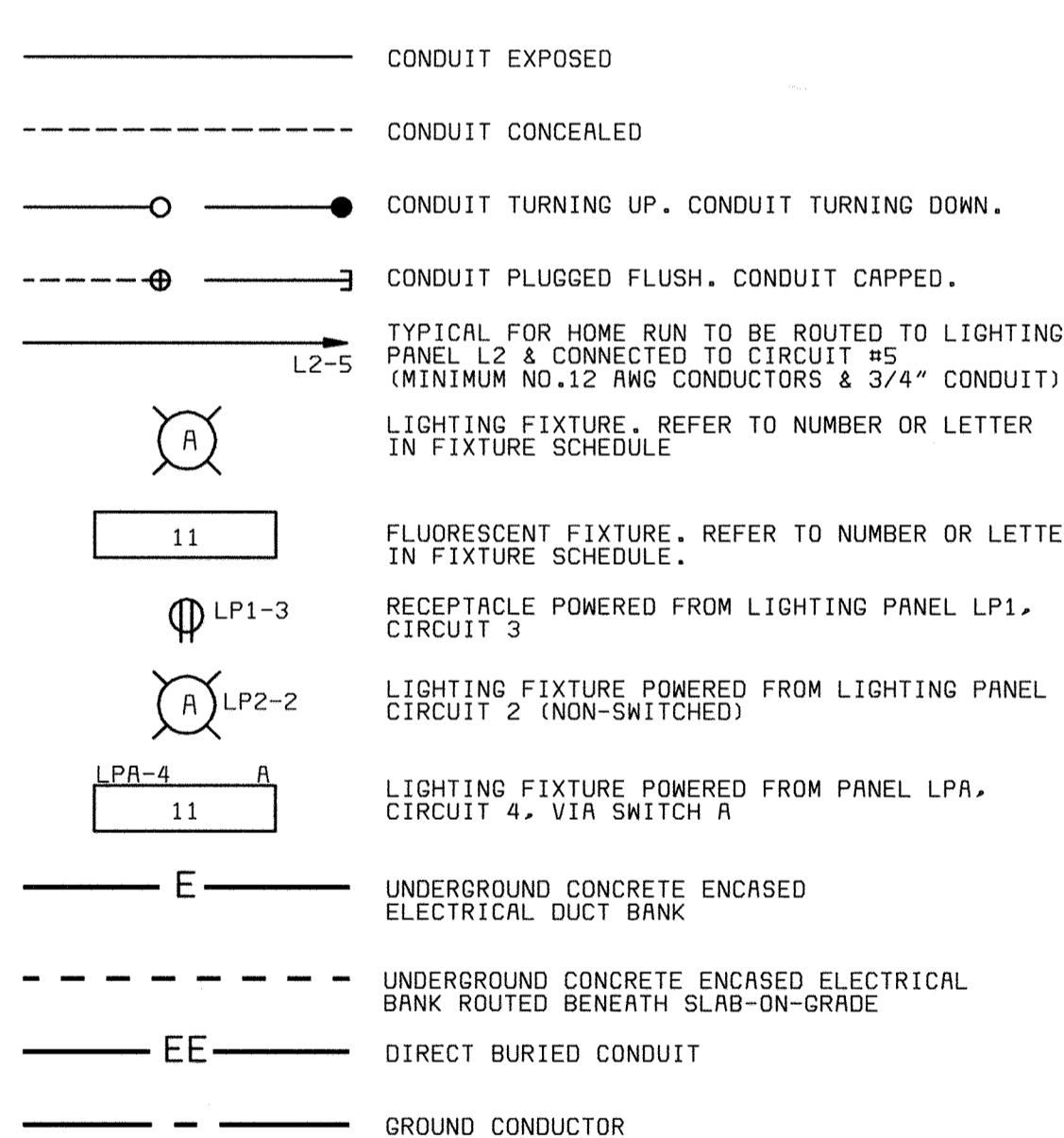
SCALE AS SHOWN
SHEET 113 OF 150
P9

058472.2
F058472A

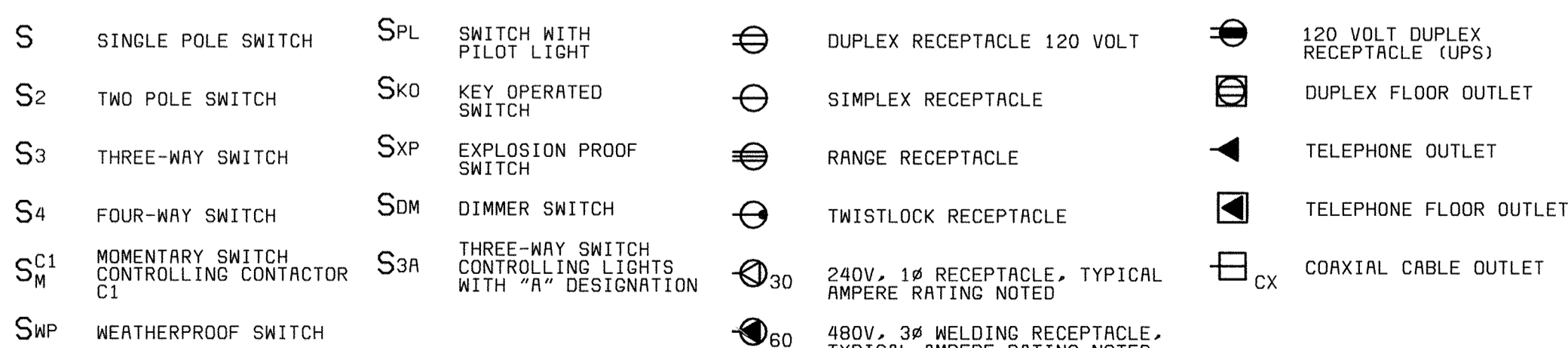
ONE-LINE DIAGRAM LEGEND



CONDUIT & WIRING INSTALLATION LEGEND



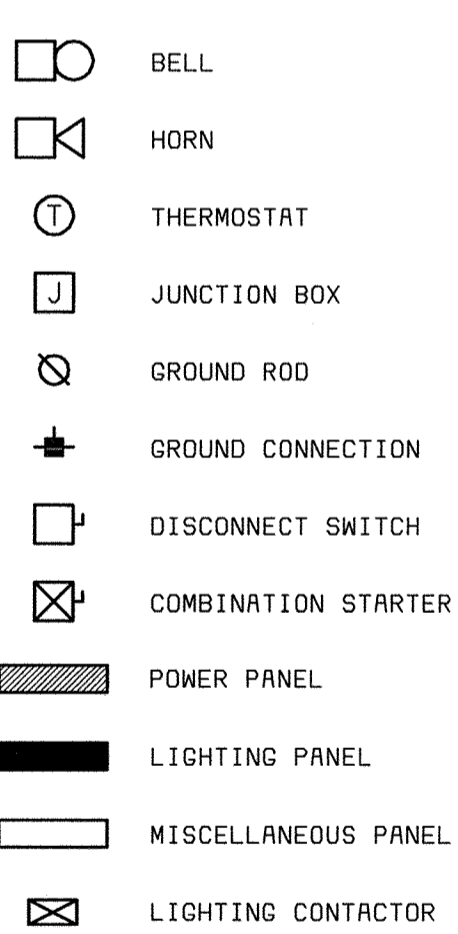
SWITCH & OUTLET SYMBOLS



SCHEMATIC SYMBOLS



MISCELLANEOUS SYMBOLS



ABBREVIATIONS

Table of abbreviations including AMBER, AMPERE, ALARM, ALTERNATING CURRENT, AIR CIRCUIT BREAKER, etc.

AREA DESIGNATIONS

Area designations table including AREA TYPE 1A, AREA TYPE 4, AREA TYPE 7A, AREA TYPE 7B, AREA TYPE 12.

GENERAL REQUIREMENTS

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING ALL CONDUITS NOT SHOWN ON THE PLANS...

GENERAL NOTES

- 1. SOLID LINES (——) INDICATE NEW WORK OR EQUIPMENT.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND



THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876

Table with project details: DES: GNS, DRN: JGT, DAH, CHK: JTF, DATE: 5/30/00

Table with revision history: 07/26/04 CONFORMED TO CONSTRUCTION RECORDS

LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY

SCALE AS SHOWN SHEET 114 OF 150 E1

A

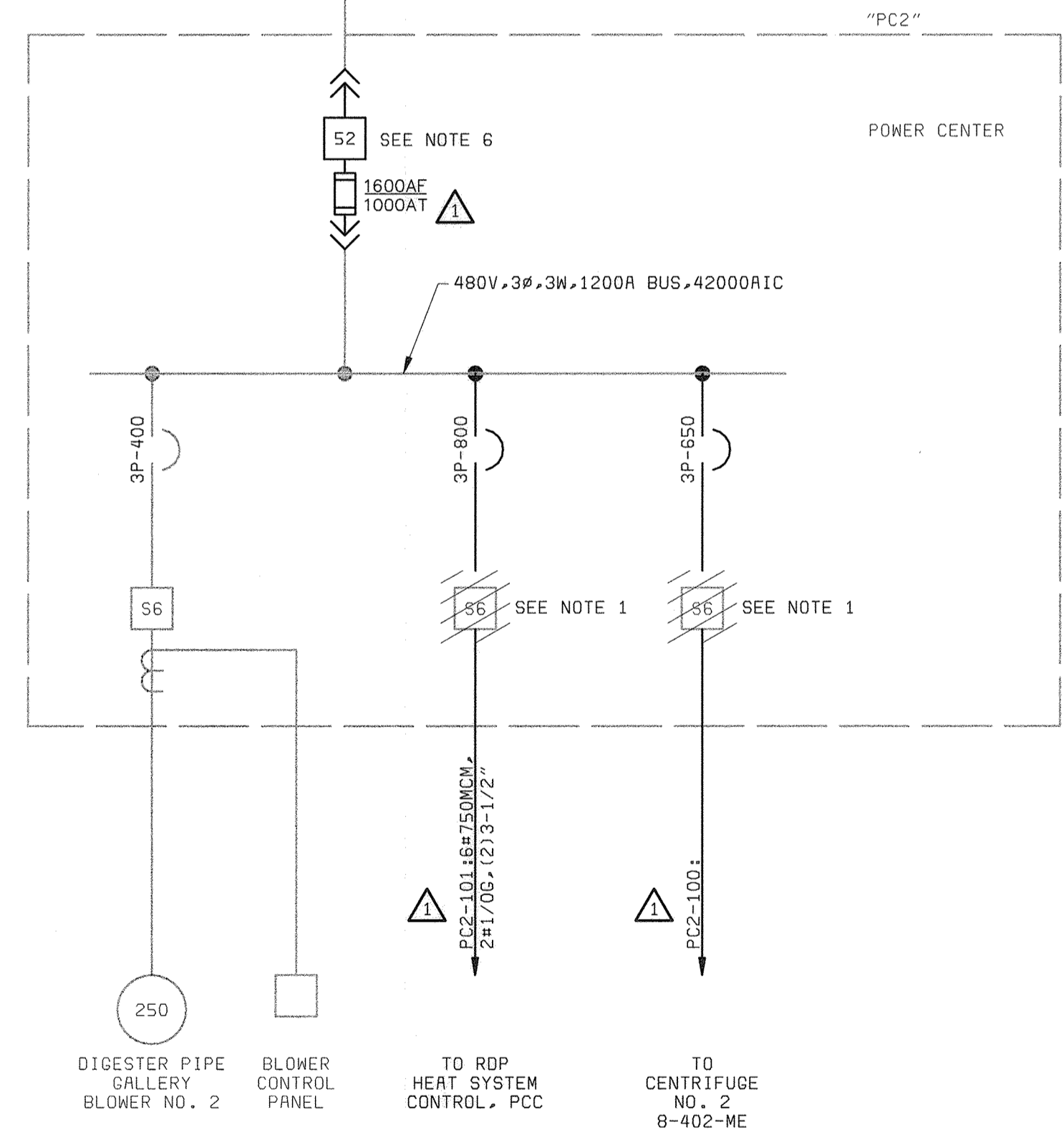
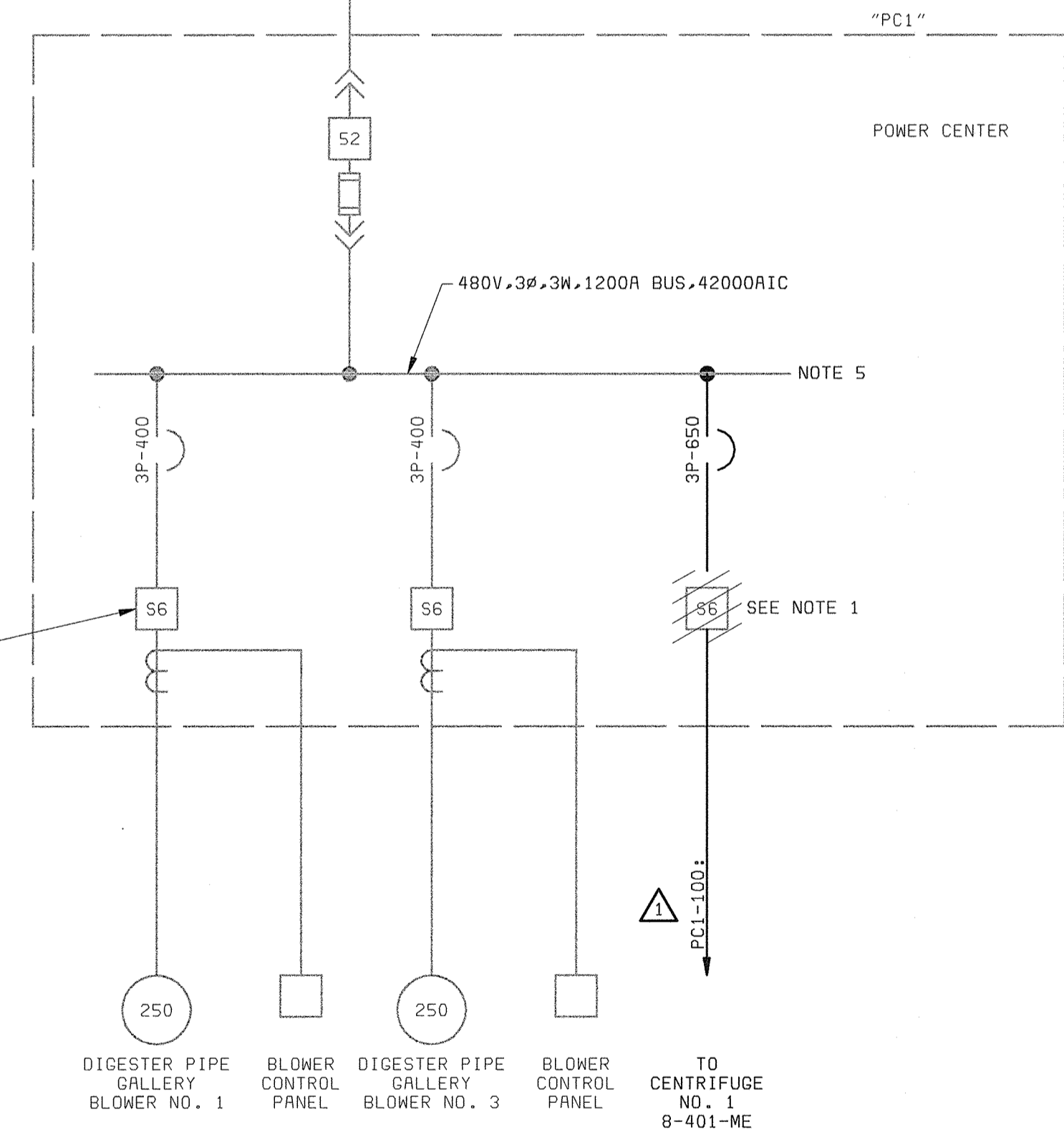
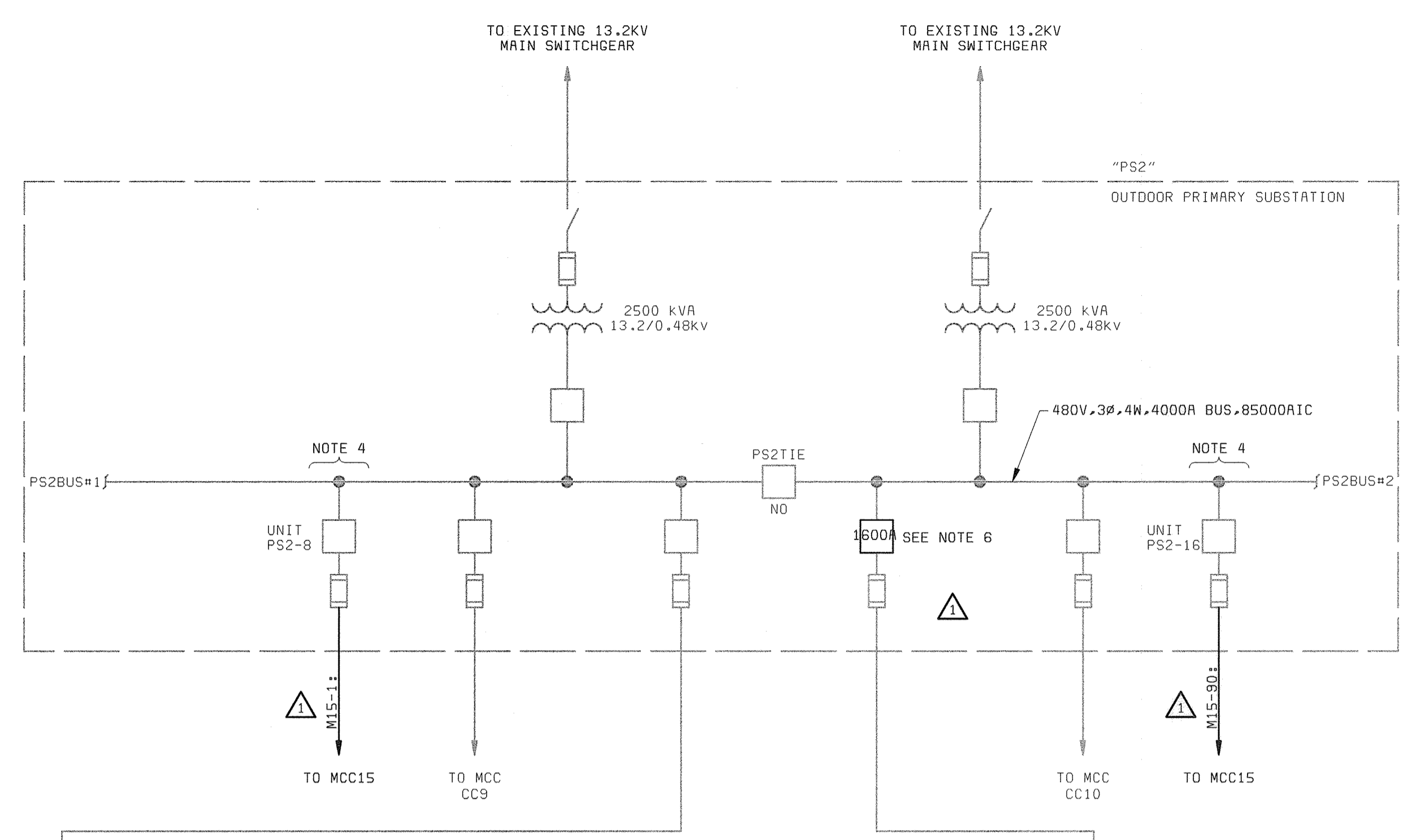
B

C

D

E

F



- NOTES:**
1. REMOVE EXISTING SIZE 6 FVNR STARTERS. REPLACE WITH CIRCUIT BREAKERS IN EXISTING GENERAL ELECTRIC MODEL SST EQUIPMENT AS SHOWN.
 2. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 3. FUTURE CENTRIFUGE NO.3 WILL REQUIRE A NEW ADDITIONAL PC FEEDER SECTION OR THE REMOVAL OF ONE OF THE DIGESTER BLOWERS (NOT IN SCOPE OF THIS PROJECT).
 4. POWER CABLE FOR MCC15 SHALL BE ROUTED FROM SUBSTATION PS2 USING EXISTING SPARE 4" DUCTS IN UNDERGROUND DUCTBANK TO THE DEWATERING BUILDING.
 5. POWER CENTER PC1 WILL REQUIRE A NEW ADDITIONAL FEEDER SECTION WHEN FUTURE CENTRIFUGE NO.1 IS PROVIDED (NOT IN SCOPE OF THIS PROJECT).
 6. CONTRACTOR SHALL REPLACE EXISTING BREAKERS WITH NEW BREAKERS SIZED TO MATCH EXISTING. EXISTING BREAKERS SHALL BE RETAINED AS SPARES.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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A REGISTERED
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IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS									
DRN: JCT,DAH									
CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR			
DATE: 5/30/00	2/27/01	ADD CIRCUIT NO.'S & O.C. RATINGS		GNS					
	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY	CK	APP		

ELECTRICAL

**SOLIDS HANDLING
POWER DISTRIBUTION
ONE-LINE DIAGRAM**

**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

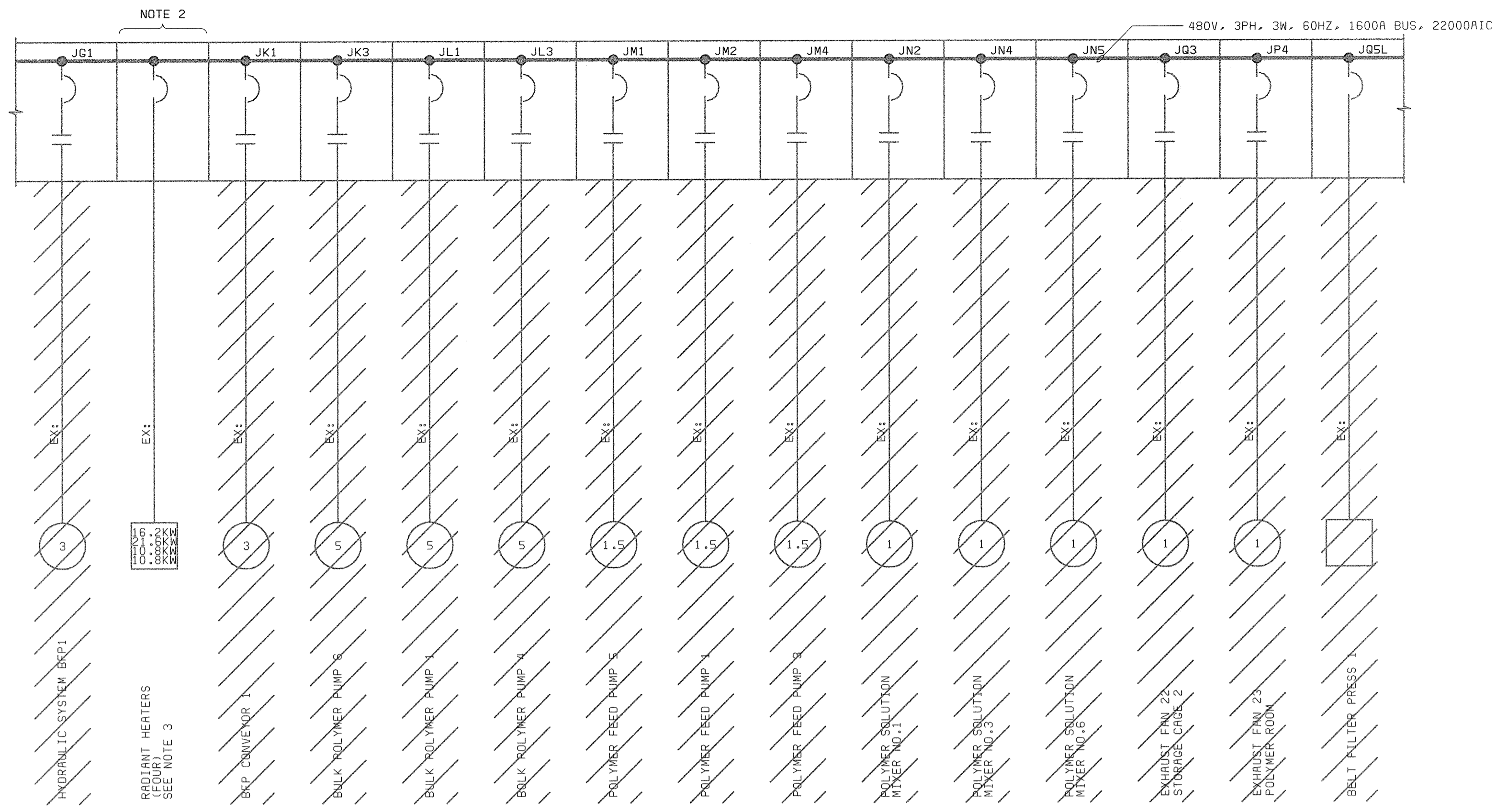
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

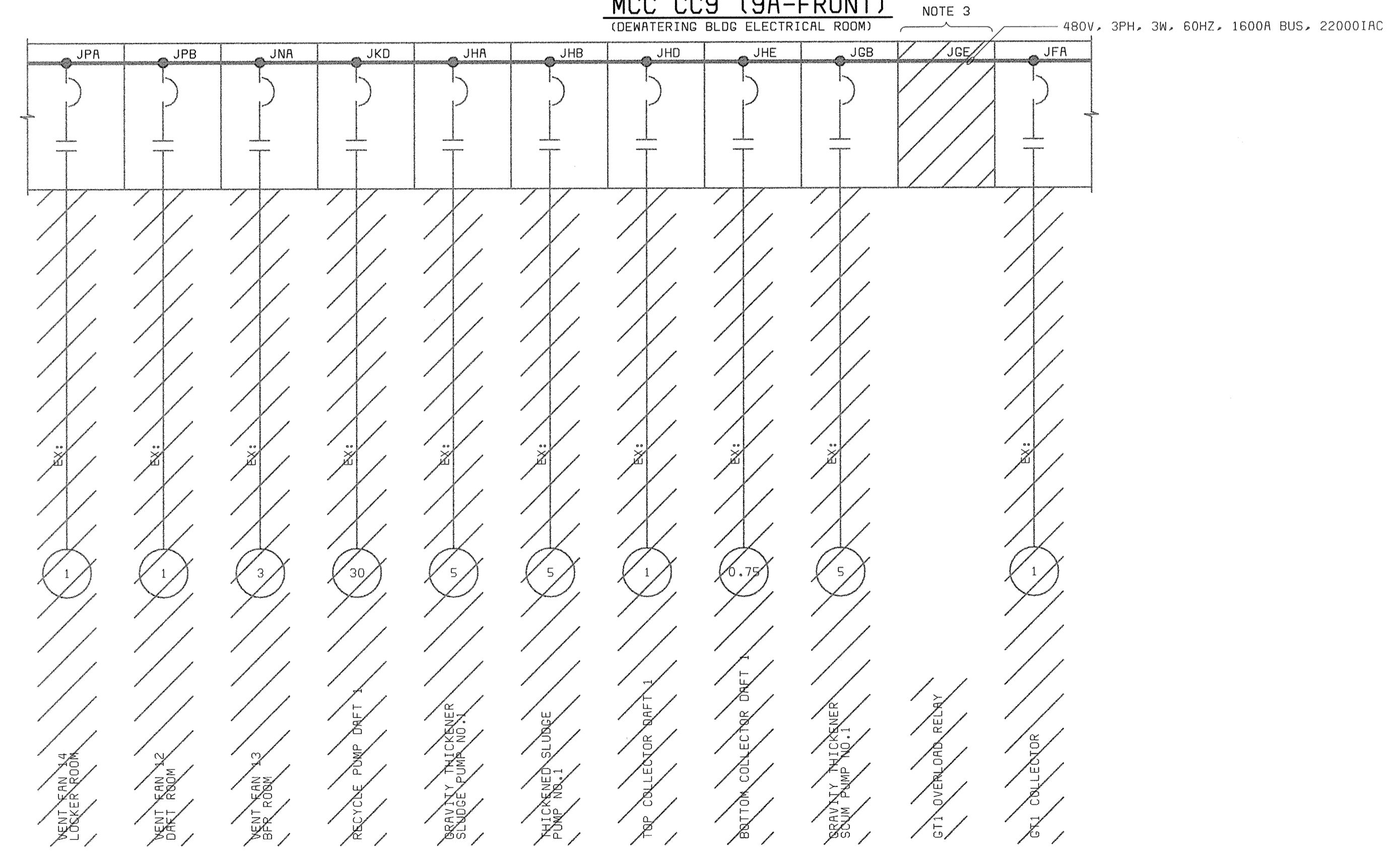
SHEET
115 OF 150

E2

058472.2
F058472A



MCC CC9 (9A-FRONT)
(DEWATERING BLDG ELECTRICAL ROOM)

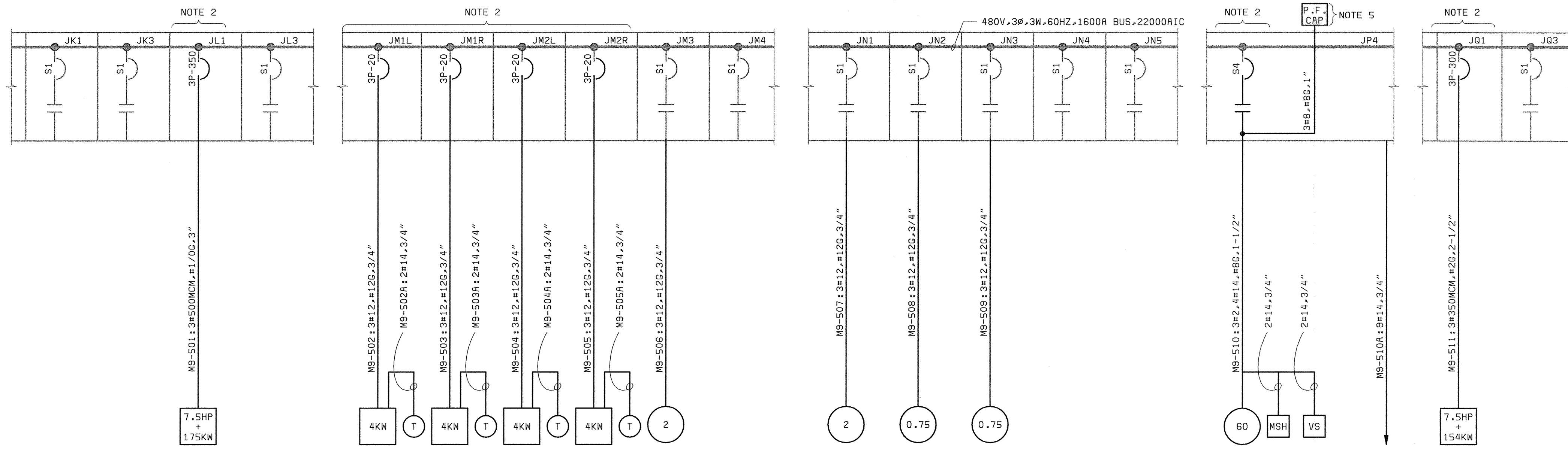


MCC CC9 (9B-REAR)
(DEWATERING BLDG ELECTRICAL ROOM)

- NOTES:**
- ACTUAL EXISTING EQUIPMENT TAGS MAY VARY SOMEWHAT FROM THOSE SHOWN ON THIS DRAWING. CONTRACTOR TO VERIFY.
 - EXISTING UNIT AND RADIANT HEATERS SHALL REMAIN OR SHALL BE REMOVED AND/OR RELOCATED AS INDICATED ON HVAC DRAWINGS.
 - DRIVE CONTROL RELAYING SHALL BE REMOVED FROM MCC BUCKET.

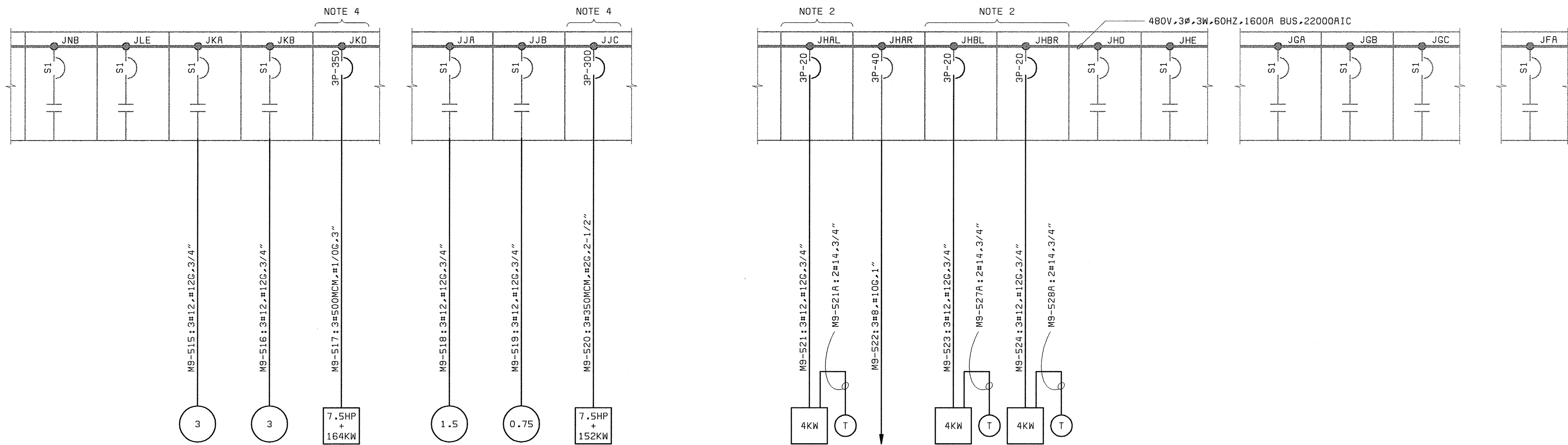
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS					ELECTRICAL MOTOR CONTROL CENTER C9 ONE-LINE DIAGRAMS DEMOLITION	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT,DAH	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH RJR RJR

058472 2
FD58472A



SPARE	MAKE-UP AIR UNIT 8-681-MAU	EUH 8-772B-774-HT	EUH 8-776B-778-HT	DAF FAN 8-900-F	SPARE	MAKE-UP AIR UNIT 8-686-MAU
RADIANT HEATERS		EUH 8-776B-778-HT	EUH 8-902-F	DAF FAN 8-902-F	SPARE	
SPARE	SPARE	PIPE GALL FAN 8-906-F	DAF FAN 8-904-F	AC UNIT	SUMP PUMP NO.1	SPARE
SPARE	PANEL "PB"	SPARE	SPARE	ODOR CONTROL FAN 8-700-F	SPARE	DUCT HTR NO.1
CONTROLS	CONTROLS	CONTROLS	SPARE	SPARE	SPARE	SPARE
SPARE				SPARE		SPARE

MCC CC9 (9A-FRONT)
ELEVATION MODIFICATIONS
NO SCALE



SPARE	MECH ROOM FAN	AIR COMPRESSOR NO.1	CENTRIFUGE FAN 8-907-F	CENTRATE DISP. FAN 8-911-F	EUH 8-780-HT	OCF	SPARE	SPARE
SPARE	SPARE	MONO-LP-RAIL DBA	CENTRIFUGE FAN 8-909-F	POLYMER FEED FAN 8-913-F	EUH 8-782B-784-HT	EUH 8-784-HT	SPARE	SPARE
SPARE	SPARE	SPARE	SPARE	PIPE GALLERY MAKE-UP AIR UNIT 8-685-MAU	SPARE	SPARE	SPARE	CY BAL WTR SUPP. PUMP 1
FLUSHING WATER POWER & TRANSFER SWITCH	BFP FILTRATE PUMP SOFT START	SPARE	LIME STABILIZATION MAKE-UP AIR UNIT 8-684-MAU	ALTERNATOR FOR AIR COMPRESSOR	SPARE	RETURN PUMP NO.1	CONTROLS	WATER PUMP NO.3 RETURN PUMP NO.3
SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE

MCC CC9 (9B-REAR)
ELEVATION MODIFICATIONS
NO SCALE

NOTES:

- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
- REPLACE SIZE 1 OR SIZE 2 STARTER(S) WITH NEW FEEDER BREAKER.
- REPLACE SIZE 1 STARTERS WITH SIZE 4 STARTER AS INDICATED.
- REPLACE EXISTING SIZE 3 STARTER WITH BREAKERS AS INDICATED.
- TUNED POWER FACTOR CORRECTION CAPACITOR WILL BE FURNISHED BY AFD SUPPLIER FOR INSTALLATION BY CONTRACTOR.

MCC CC9 (9A-FRONT) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)

MCC CC9 (9B-REAR) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENCR. DATE

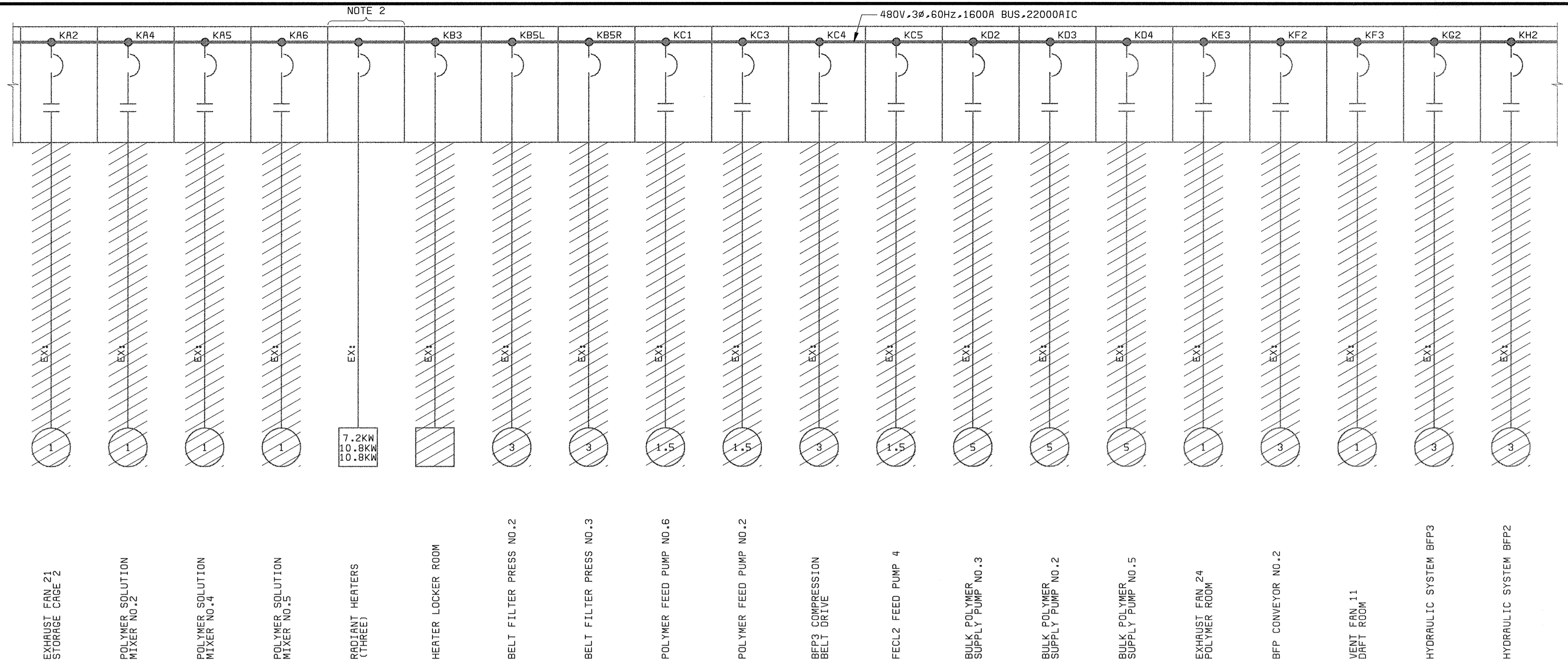
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DES: GNS								
DRN: MDR,DAH								
CHK: JTF								
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP		
	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR		

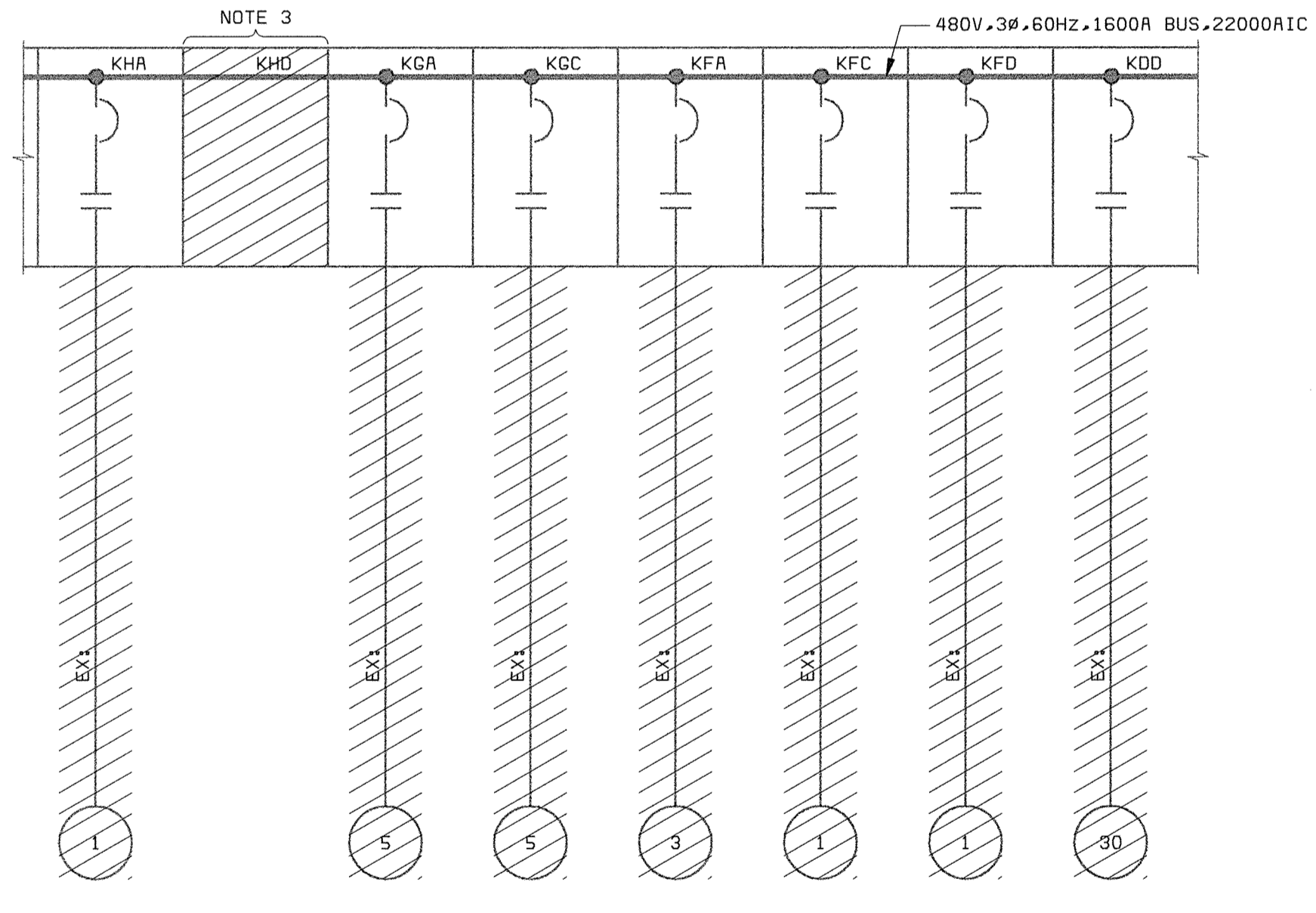
ELECTRICAL
MOTOR CONTROL CENTER CC9
ONE-LINE DIAGRAMS
MODIFIED

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 117 OF 150
E4



MCC CC10 (10A-FRONT) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)

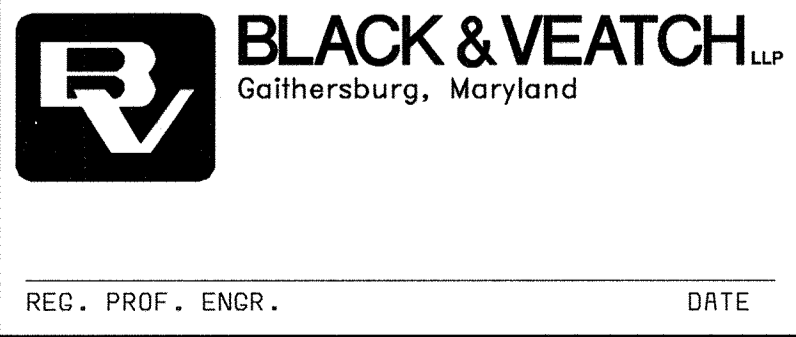


MCC CC10 (10B-REAR)
(DEWATERING BLDG ELECTRICAL ROOM)

- NOTES:**
1. ACTUAL EXISTING EQUIPMENT TAGS MAY VARY SOMEWHAT FROM THOSE SHOWN ON THIS DRAWING. CONTRACTOR TO VERIFY.
 2. EXISTING UNIT AND RADIANT HEATERS SHALL REMAIN OR SHALL BE REMOVED AND/OR RELOCATED AS INDICATED ON HVAC DRAWINGS.
 3. DRIVE CONTROL RELAYING SHALL BE REMOVED FROM INSIDE MCC BUCKET.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE



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IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS					
DRN: DAH					
CHK: JTF					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR/RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

ELECTRICAL

**MOTOR CONTROL CENTER CC10
ONE-LINE DIAGRAMS
DEMOLITION**

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

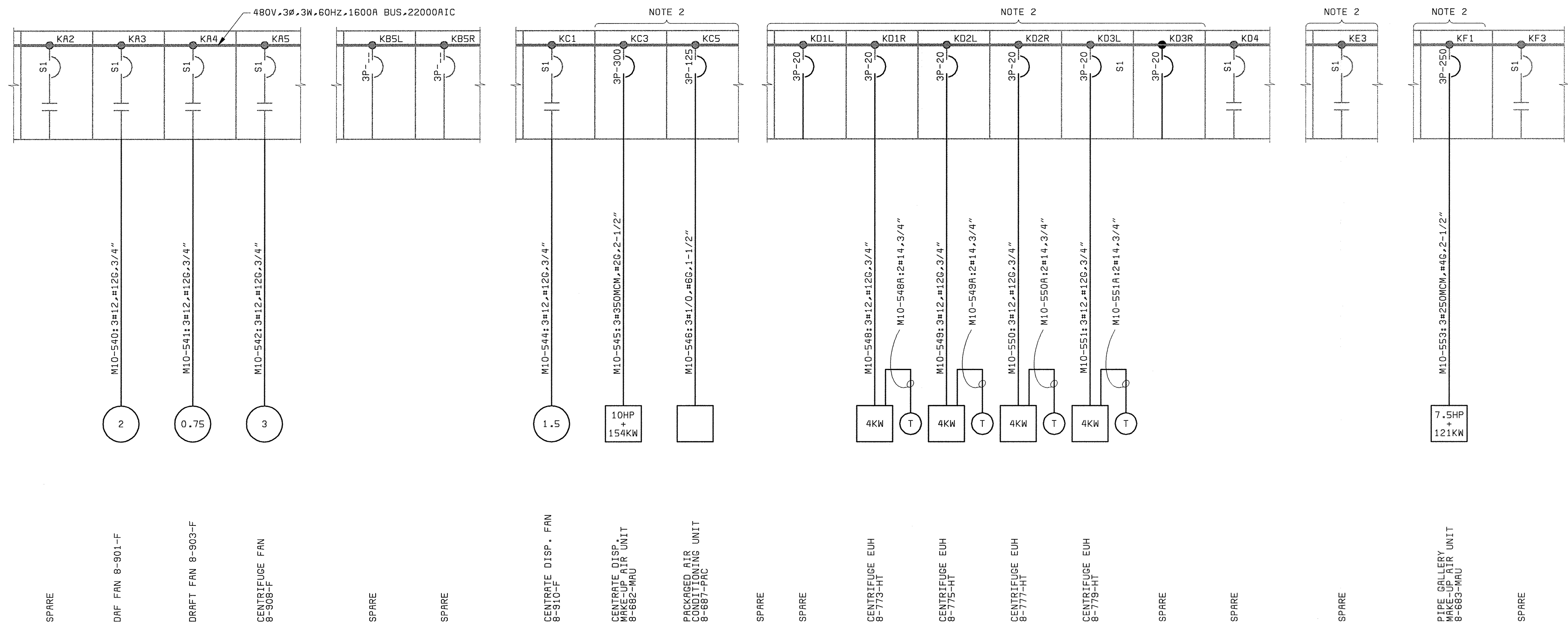
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
118 OF 150

E5

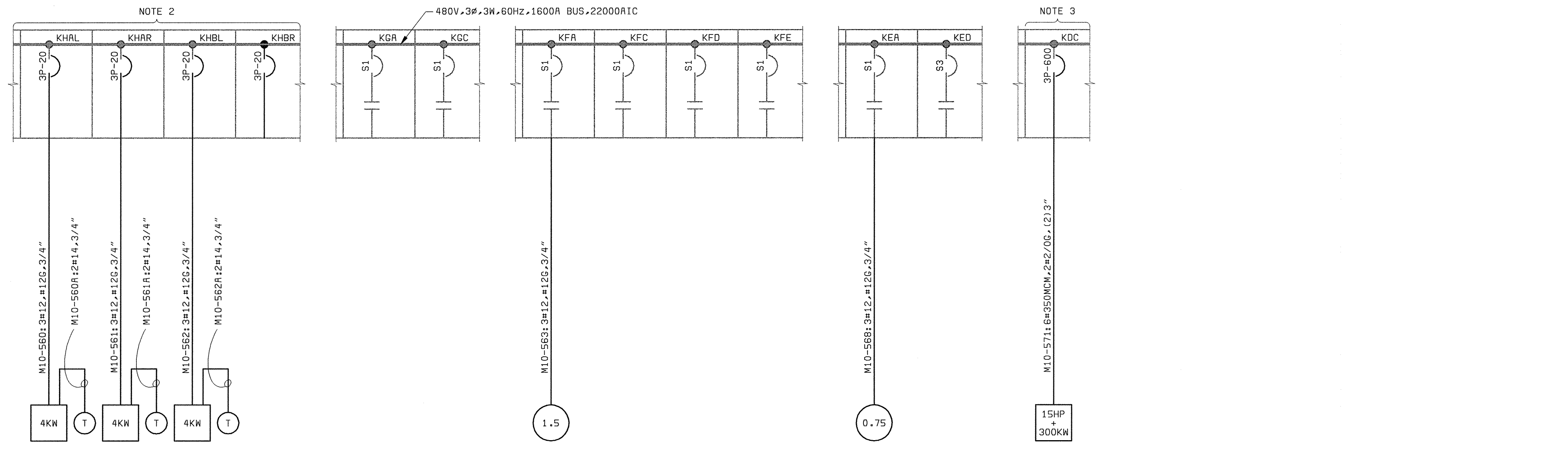
058472-2
FD58472R



SPARE	RADIANT HEATER	CENTRATE DISP FAN 8-910-F	SPARE	EUH 8-773 -HT	UNIT HEATER NO.1A	POLYMER FEED MAKE-UP AIR UNIT 8-683-MAU
SPARE	RADIANT HEATER	BLANK	EUH 8-775-777 -HT	EUH 8-778 -HT	SUMP PUMP NO.2	
DAF FAN 8-901-F	RADIANT HEATER	CENTRATE DISP MAKE-UP AIR UNIT 8-682-MAU	EUH 8-778 -HT	SPARE	SPARE	SPARE
DAF FAN 8-903-F	AD NO.4 PASS 4 RECIRC PMP		SPARE	TRANS. D	FAN NO.3	
CENTRIFUGE FAN 8-908-F	SPARE	P. AIR COND. 8-687-PAC	SPARE	TRANS. B1	TRANS. C	

MCC CC10 (10A-FRONT)
ELEVATION MODIFICATIONS
NO SCALE

MCC CC10 (10A-FRONT) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)



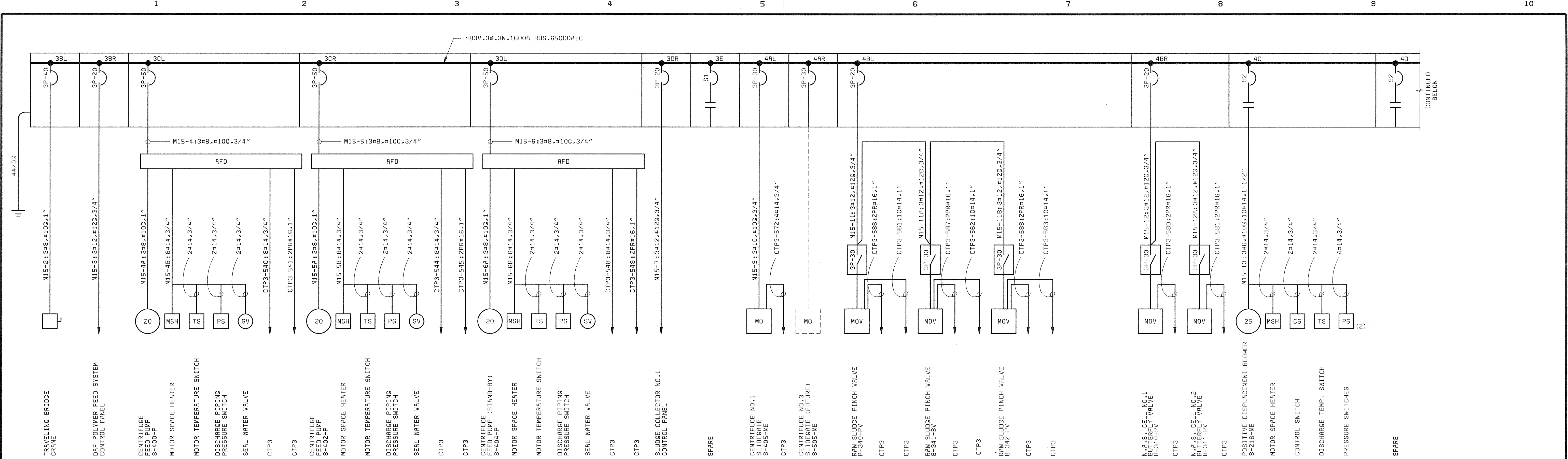
EUH 8-781-783 -HT	EUH 8-785 -HT	SPARE	PIPE GALL FAN 8-905-F	POLYMER FEED FAN 8-912-F	SPACE
EUH 8-785 -HT	SPARE	SPARE	SPARE	SPARE	SPACE
SPARE	SPARE	SPARE	SPARE	AIR COMPRESSOR NO.2	DAF MAKE-UP AIR UNIT 8-680-MAU
SPACE	HEATER LEFT	SPARE			SPACE

MCC CC10 (10B-REAR)
ELEVATION MODIFICATIONS
NO SCALE

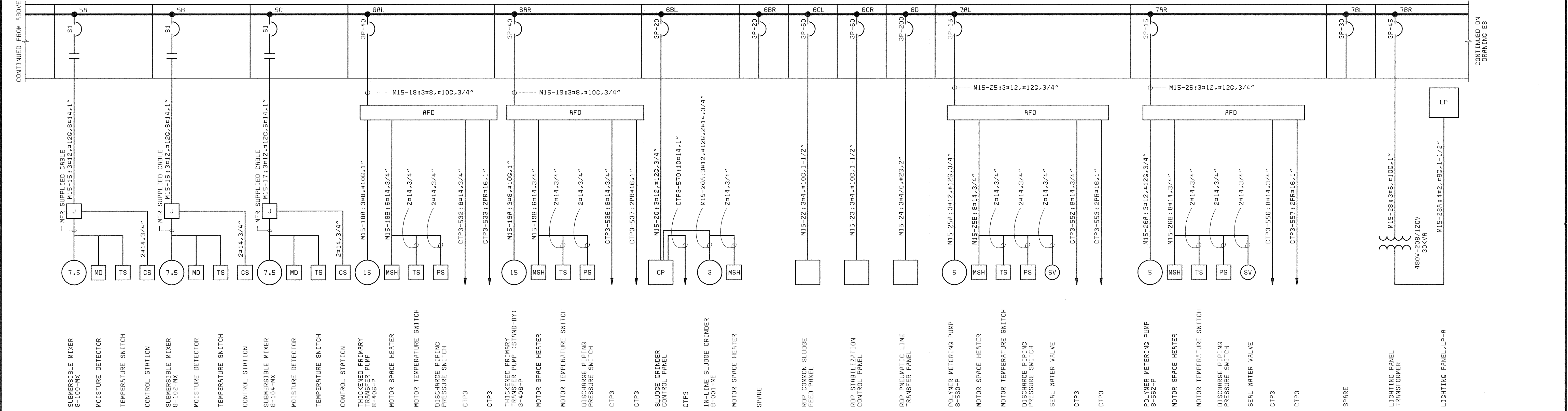
MCC CC10 (10B-REAR) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)

- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - REPLACE SIZE 1 FVNR STARTER(S) WITH NEW FEEDER BREAKER AS INDICATED.
 - REPLACE EXISTING SIZE 3 STARTER WITH BREAKER AS INDICATED.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS							ELECTRICAL MOTOR CONTROL CENTER CC10 ONE-LINE DIAGRAMS MODIFIED	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: MDR,DAH	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR			RJR



MCC15 (FRONT) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)



MCC15 (FRONT) ONE-LINE (CONTINUED)
(DEWATERING BLDG ELECTRICAL ROOM)

NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

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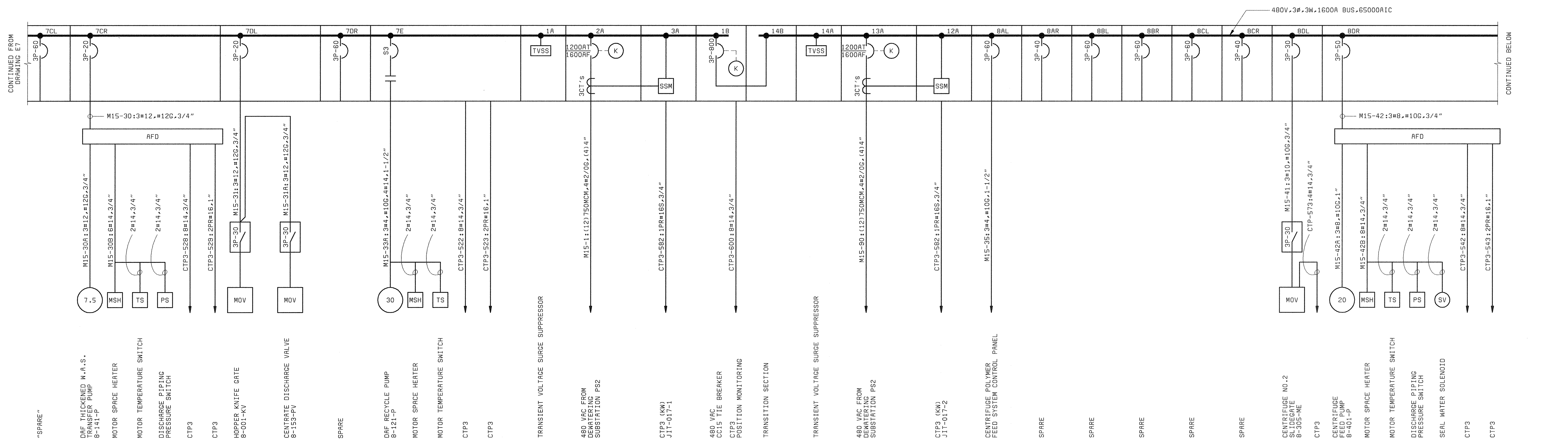
DES: GNS					
DRN: DAH					
CHK: JTF					
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP
				RHH	RJR/RJR

ELECTRICAL
MOTOR CONTROL CENTER MCC15
ONE-LINE DIAGRAMS

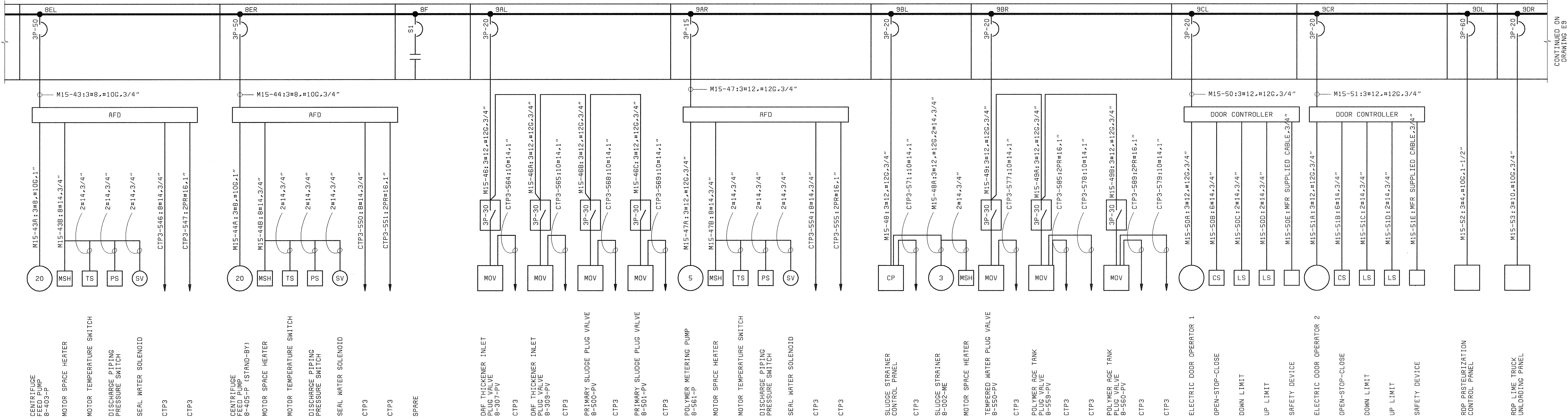
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 120 OF 150
E7

058472.2
F058472A



MCC15 (REAR) ONE-LINE
(DEWATERING BLDG ELECTRICAL ROOM)



MCC15 (REAR) ONE-LINE (CONTINUED)
(DEWATERING BLDG ELECTRICAL ROOM)

NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

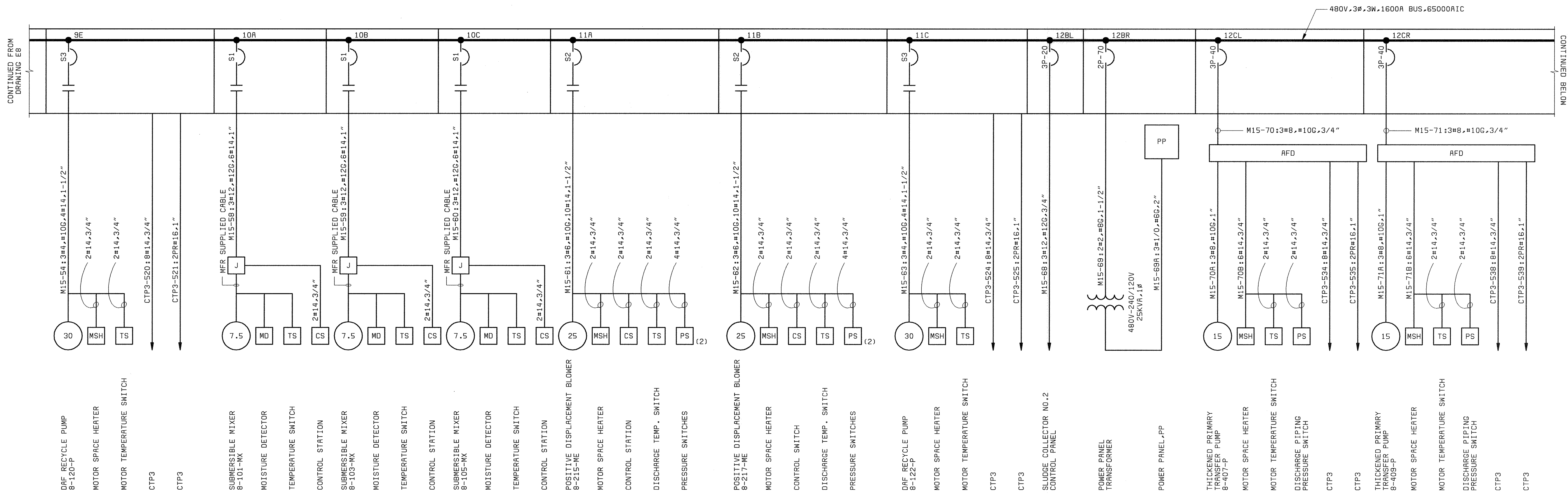
THIS DRAWING WAS
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AND SEALED BY
DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS					
DRN: MDR,DAH					
CHK: JTF					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

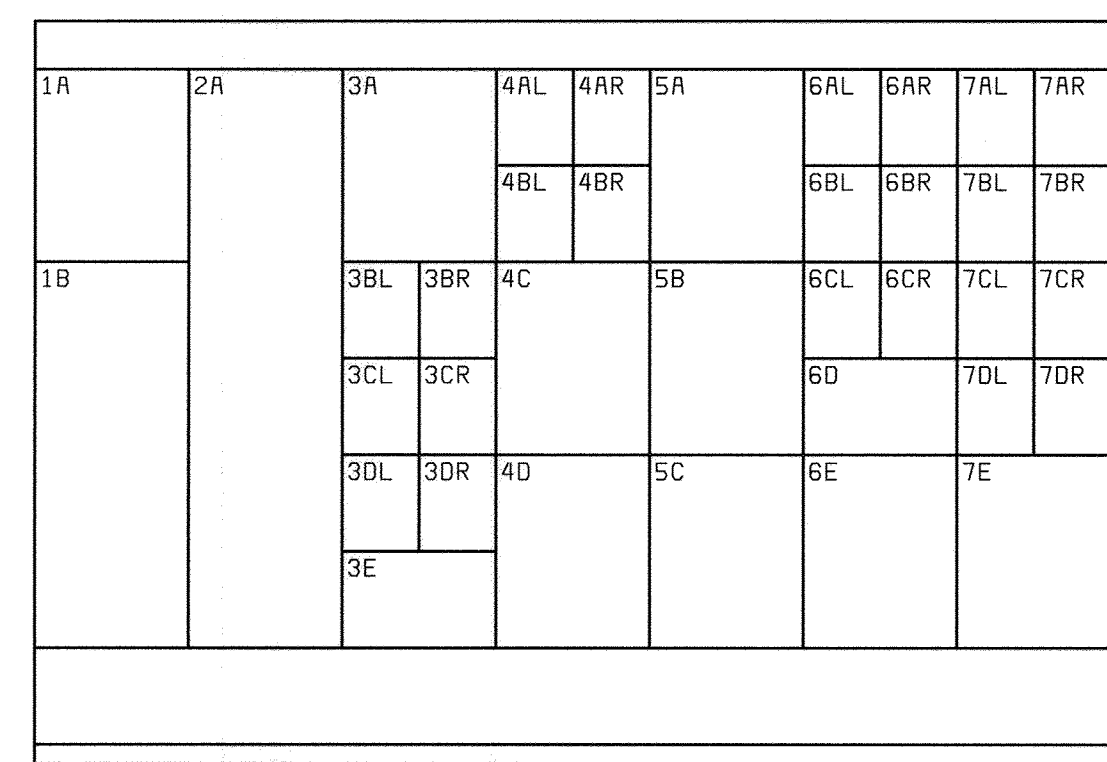
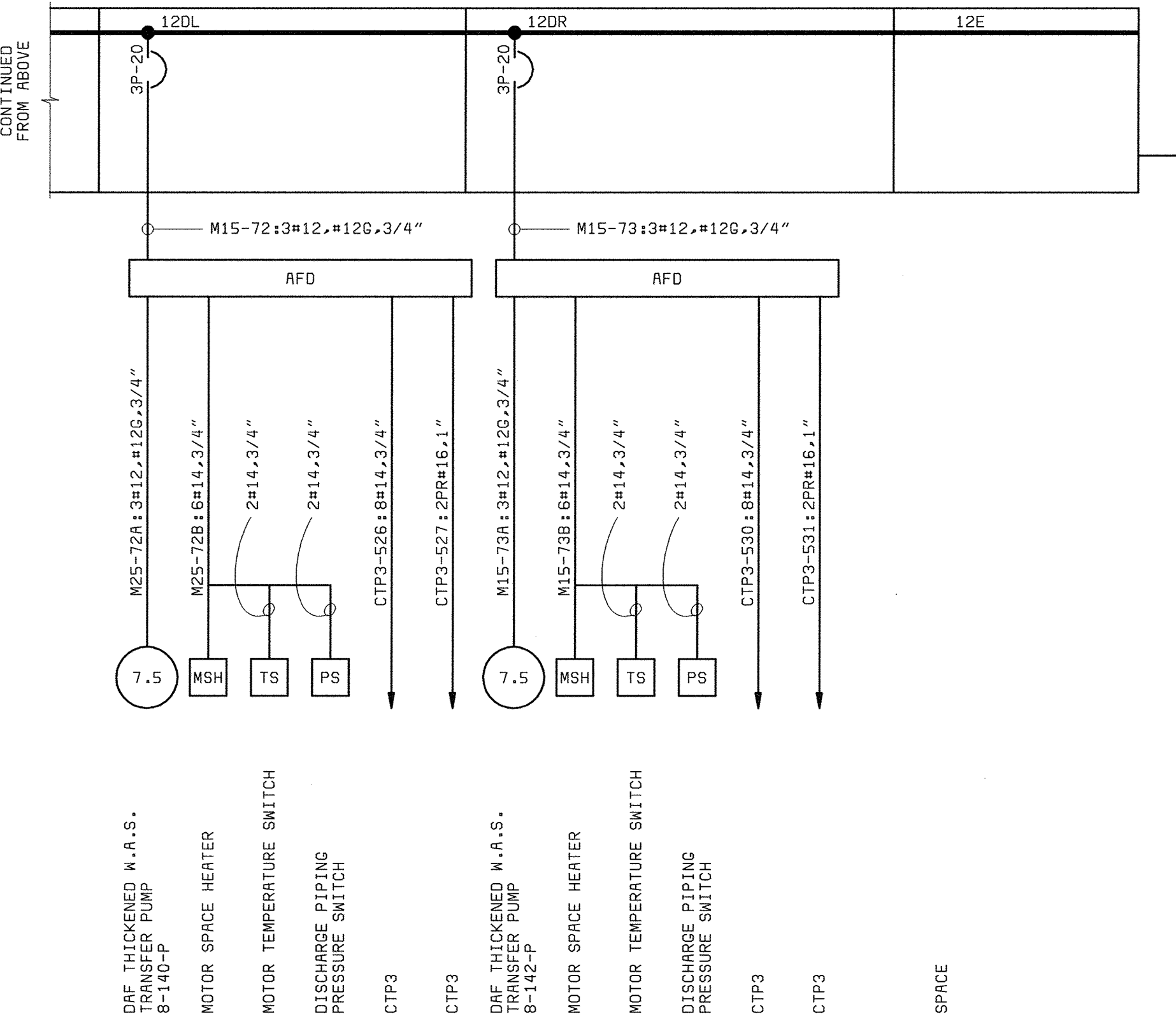
ELECTRICAL
MOTOR CONTROL CENTER MCC15
ONE-LINE DIAGRAM CONTINUED

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

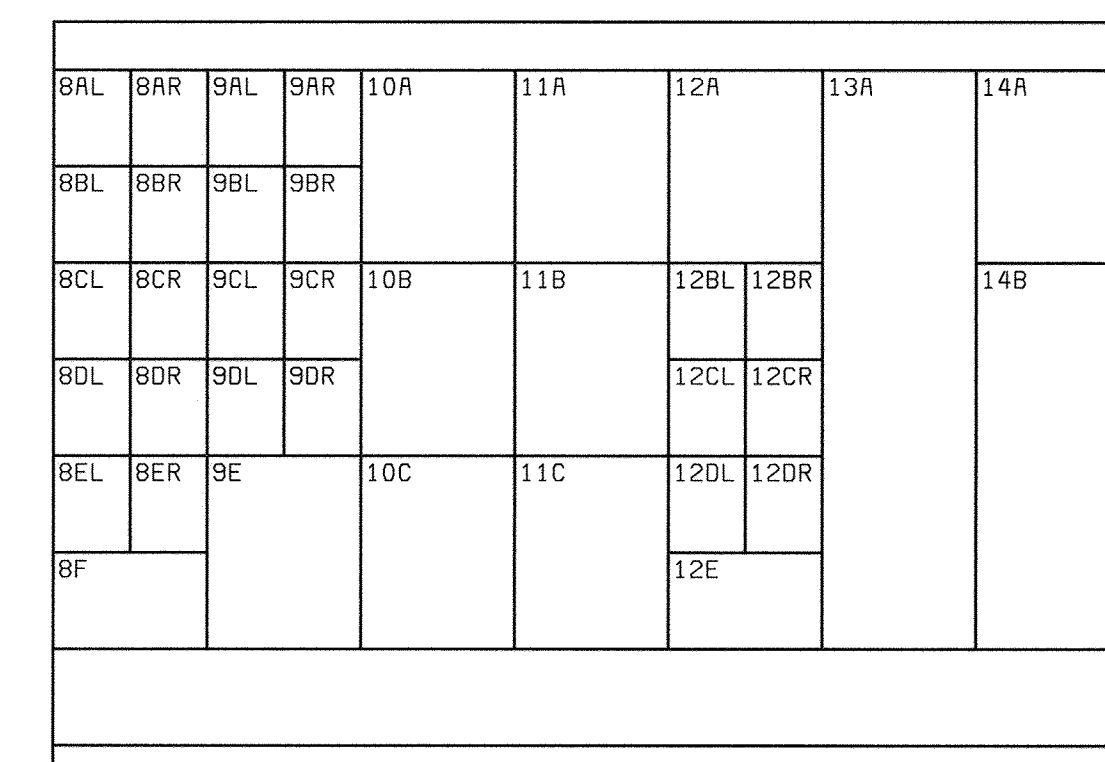
SCALE
AS
SHOWN
SHEET
121 OF 150
E8



MCC15 (REAR) ONE-LINE (CONTINUED)
(DEWATERING BLDG ELECTRICAL ROOM)



MCC15 FRONT ELEVATION
NO SCALE



MCC15 REAR ELEVATION
NO SCALE

NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

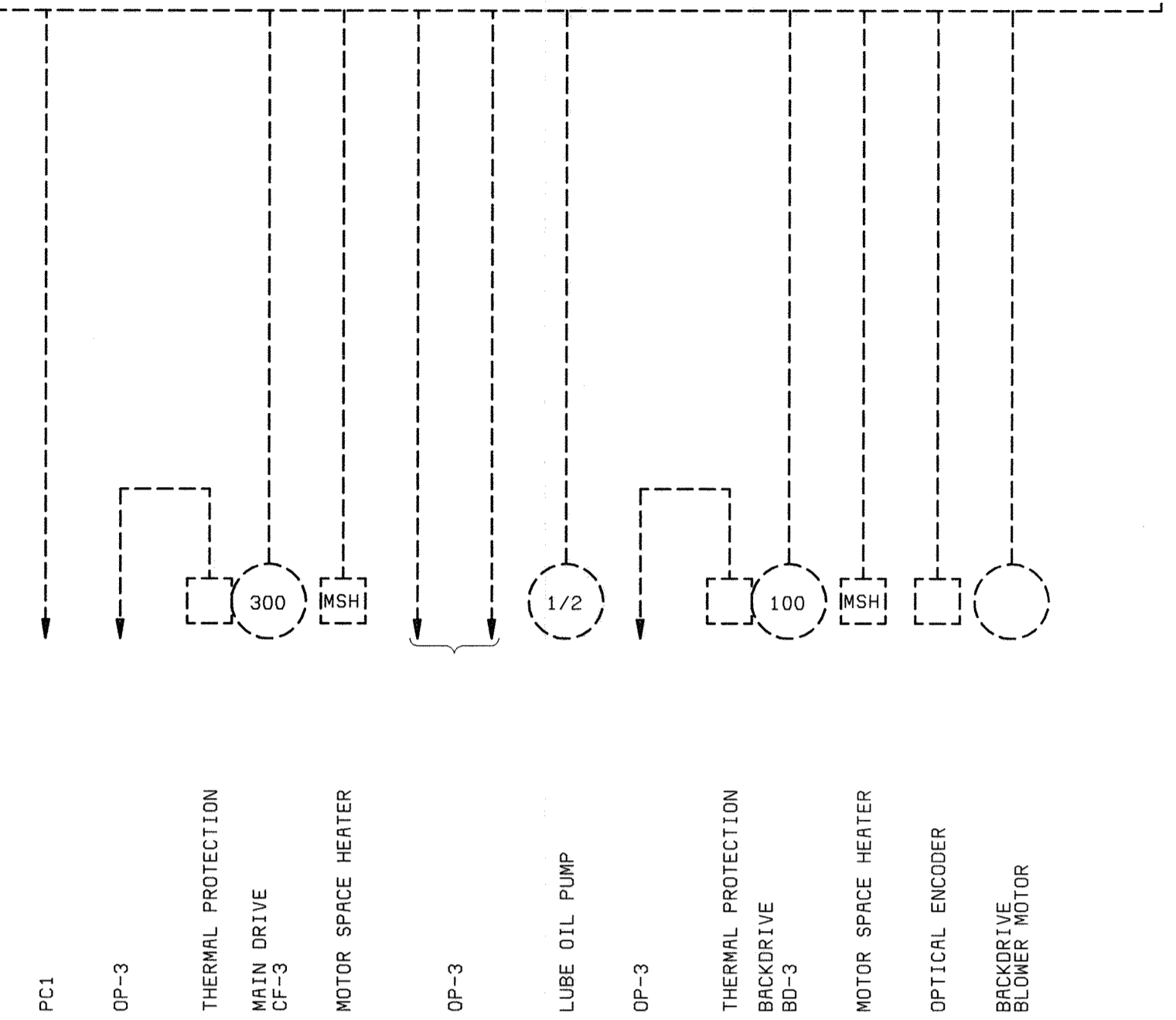
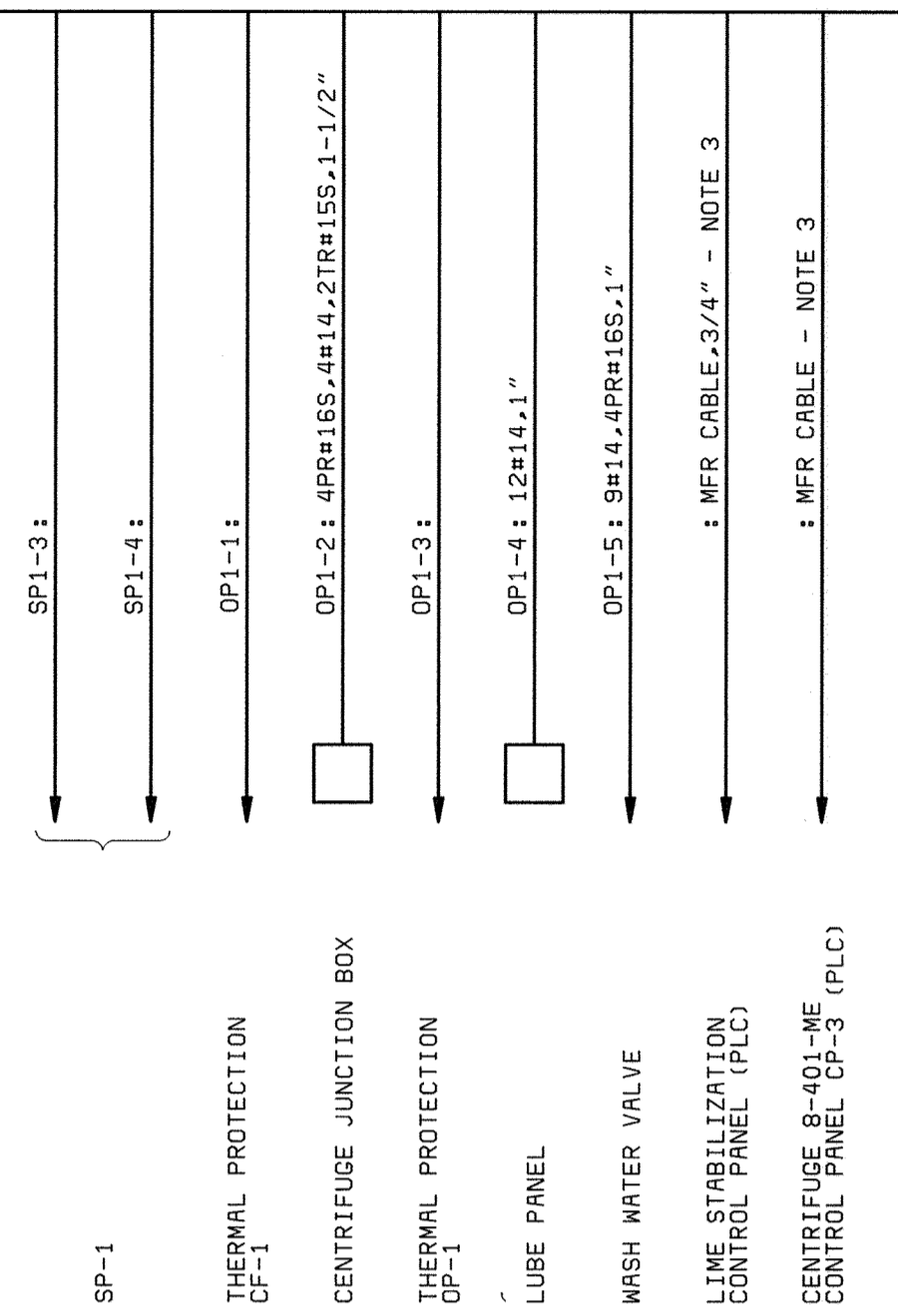
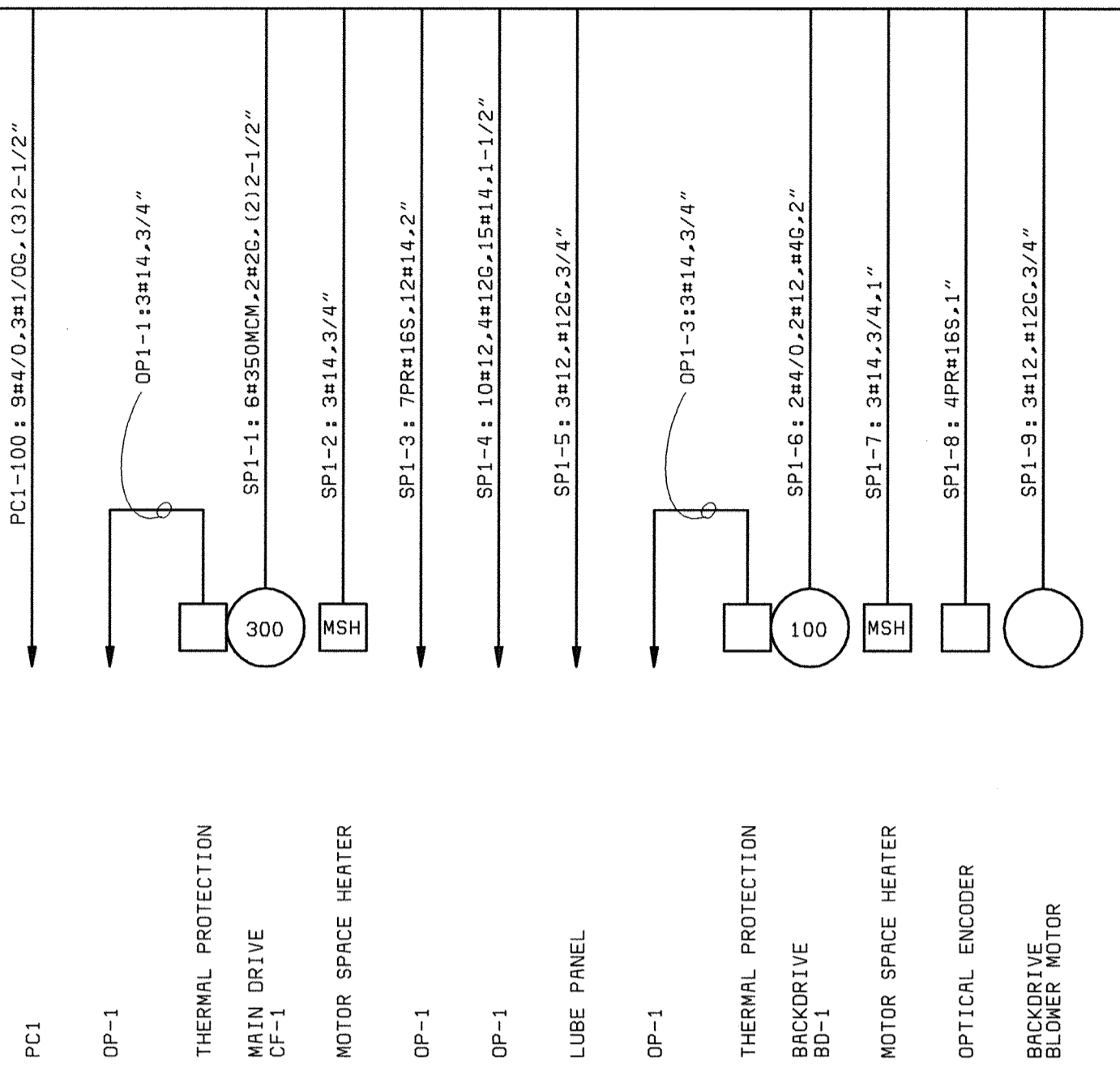
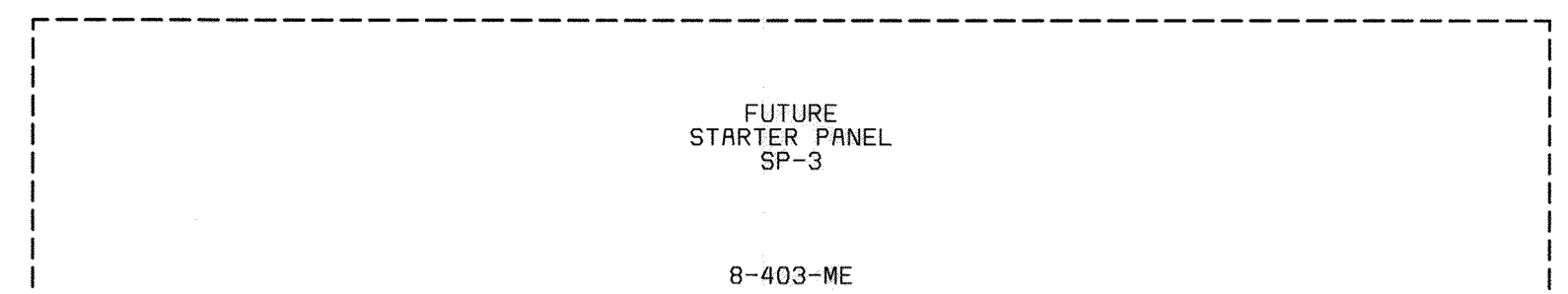
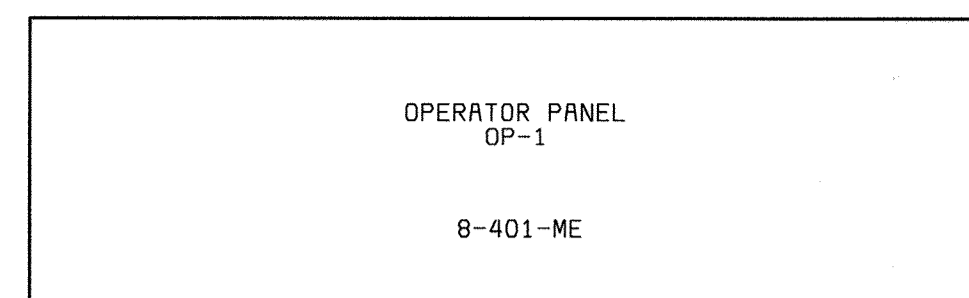
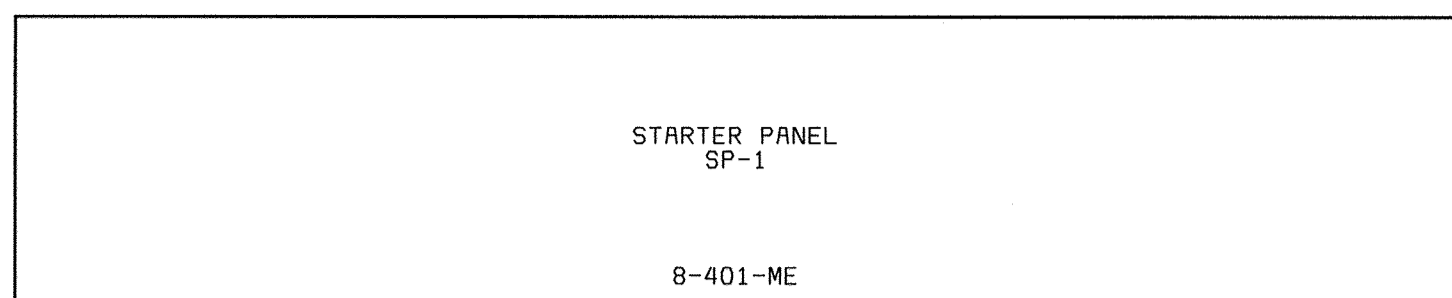
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STATE OF MARYLAND,
NO. 21876

DES: GNS					
DRN: MDR,DAH					
CHK: JTF					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

ELECTRICAL
MOTOR CONTROL CENTER MCC15
ONE-LINE DIAGRAM CONTINUED

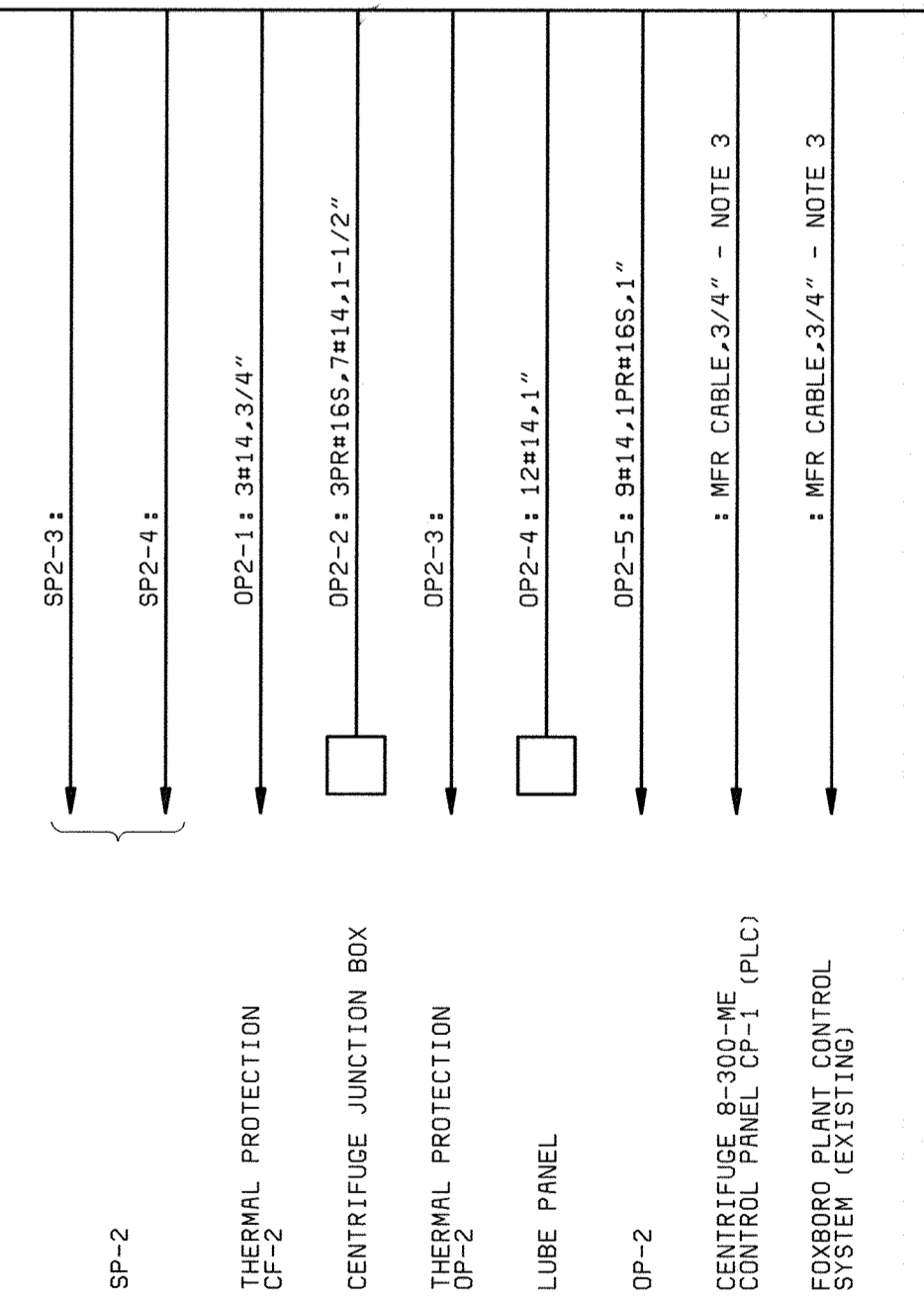
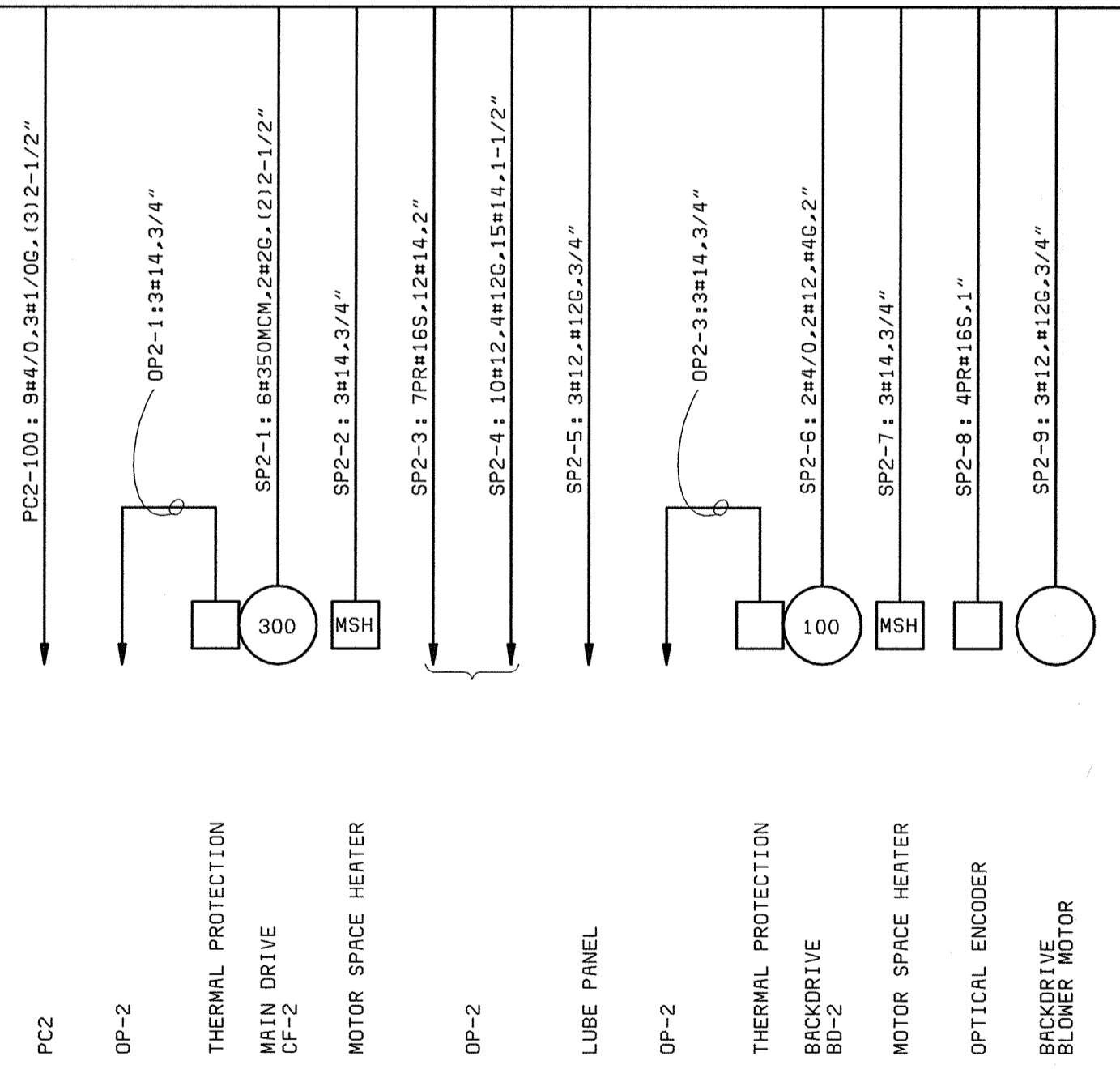
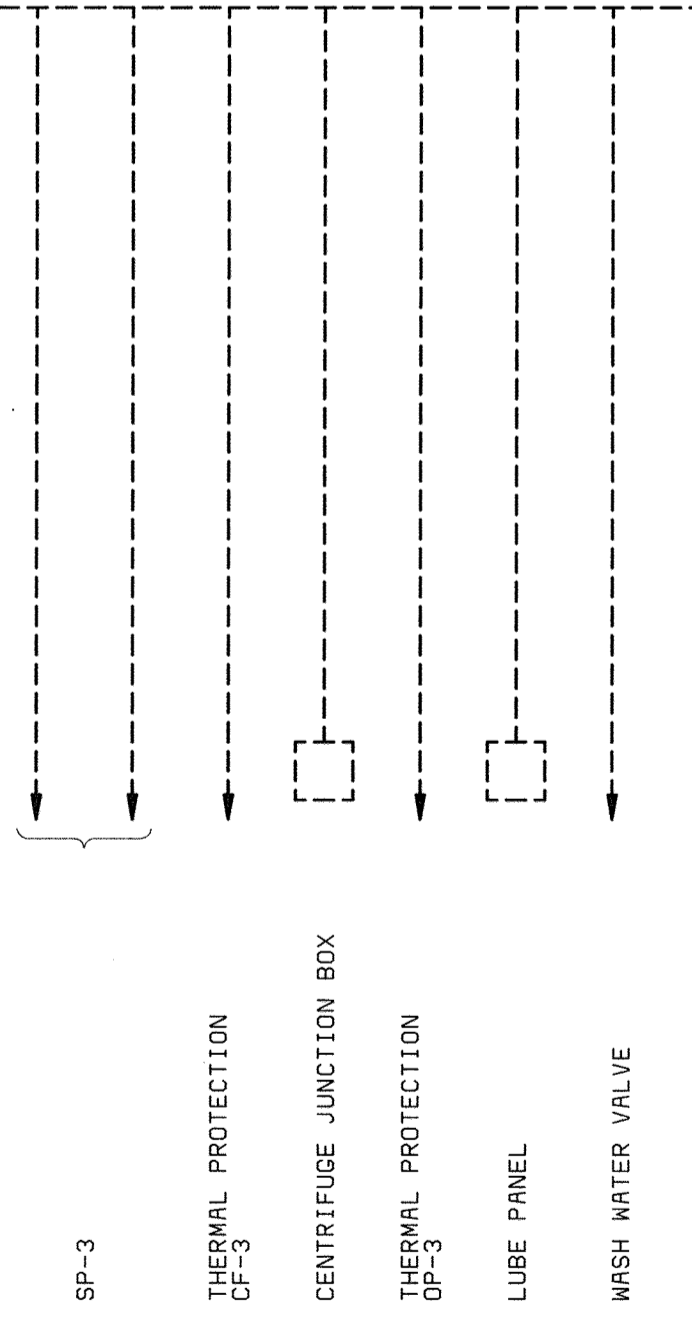
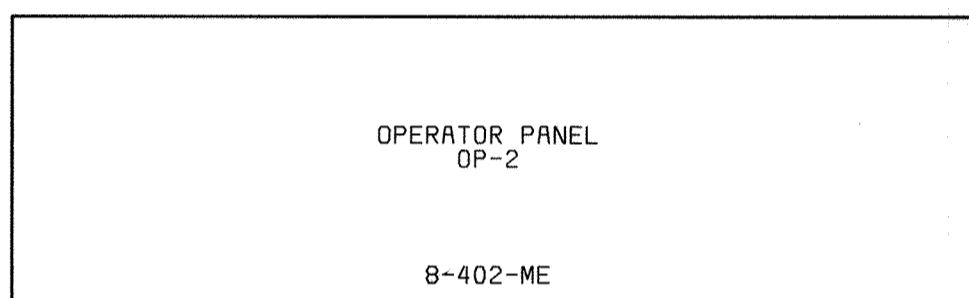
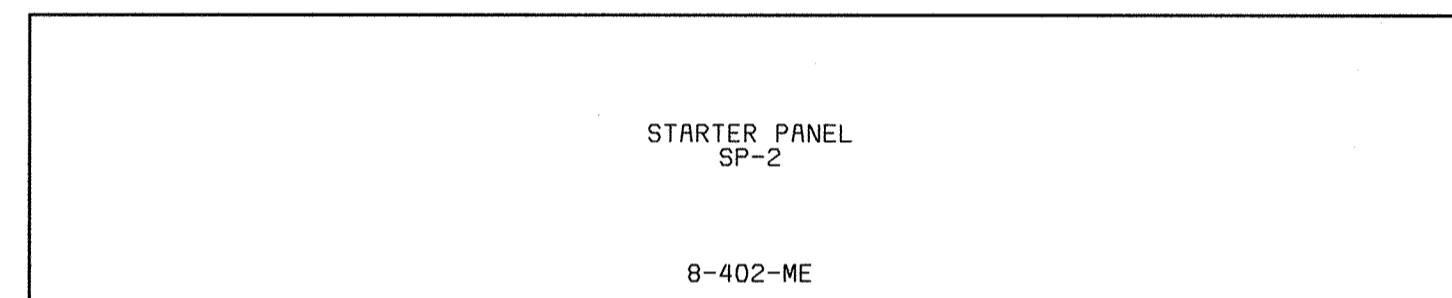
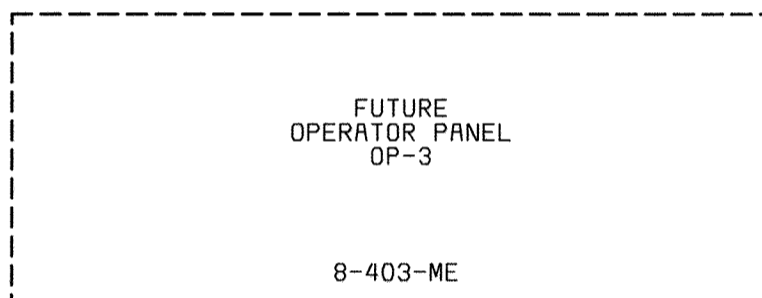
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
122 OF 150
E9



CENTRIFUGE 8-401-ME ONE-LINES

FUTURE CENTRIFUGE 8-403-ME ONE-LINES

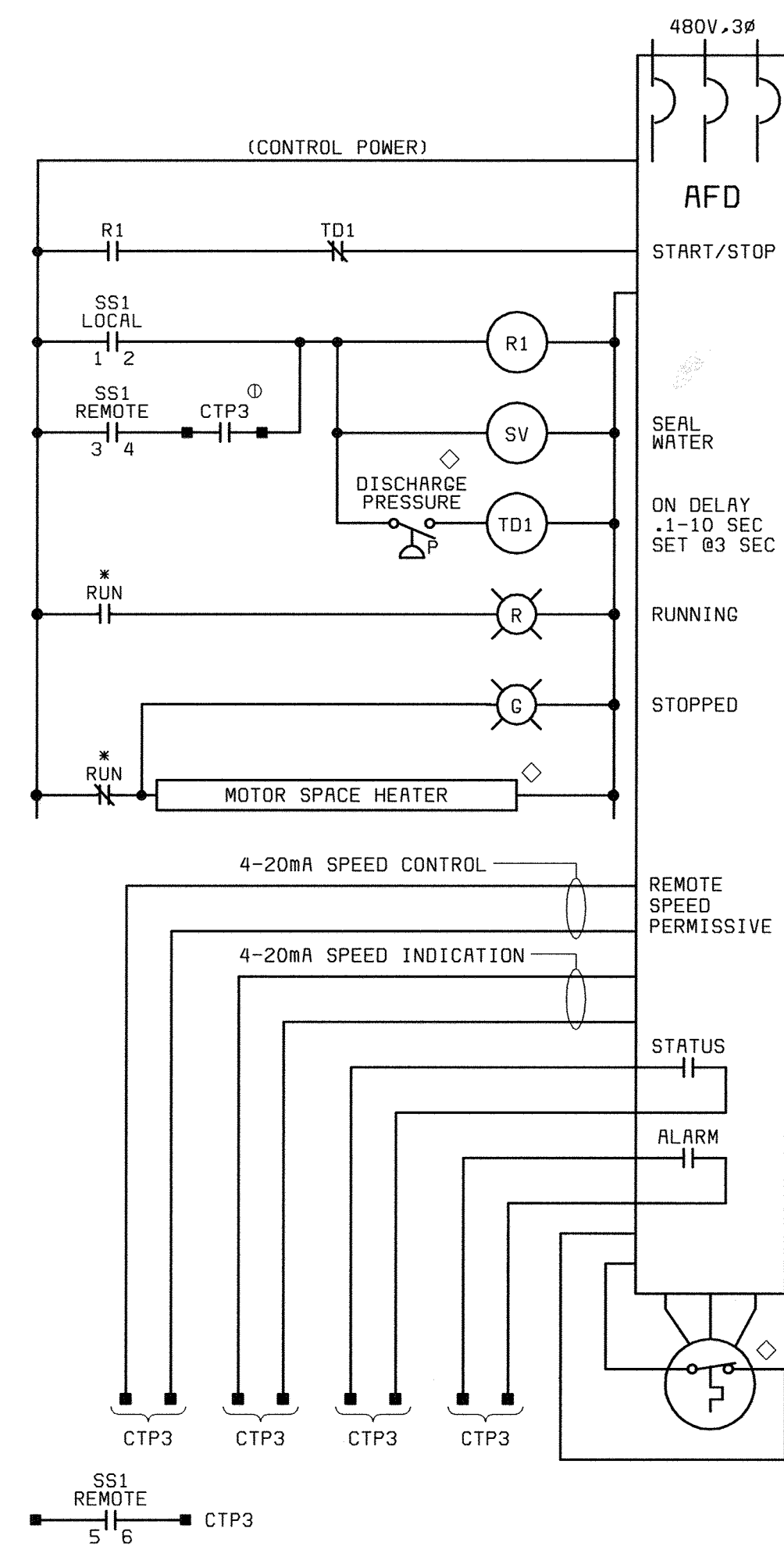


FUTURE CENTRIFUGE 8-403-ME ONE-LINES (CONTINUED)

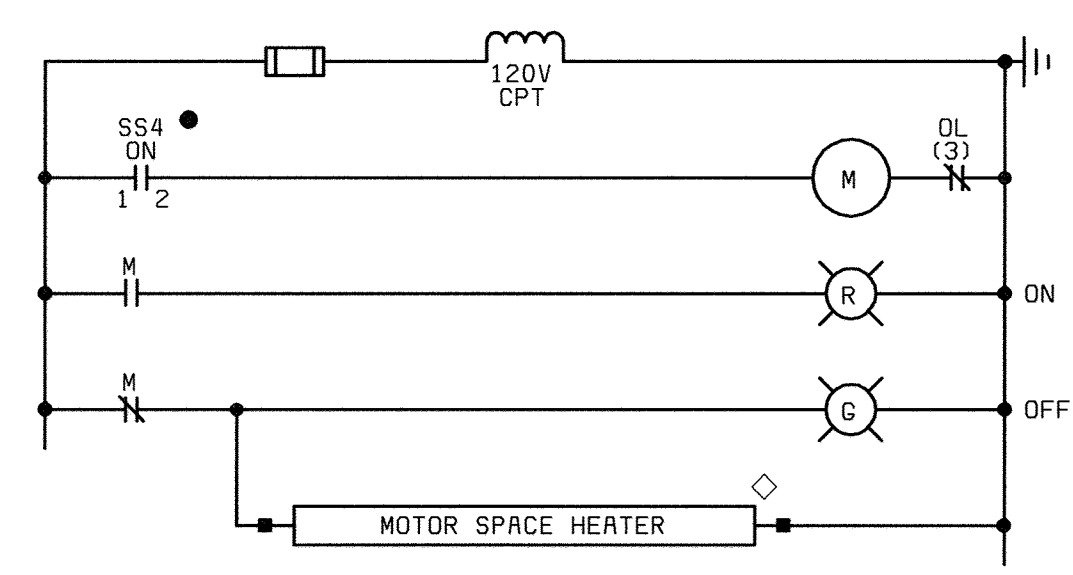
CENTRIFUGE 8-402-ME ONE-LINES

- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - FINAL ELECTRICAL REQUIREMENTS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH VENDOR DRAWINGS PROVIDED UNDER CONTRACT NO.20-3751A.
 - NETWORK CABLE AND CONDUIT SHALL BE PROVIDED AND INSTALLED UNDER THE LIQUIDS PHASE CONTRACT 20-3842.

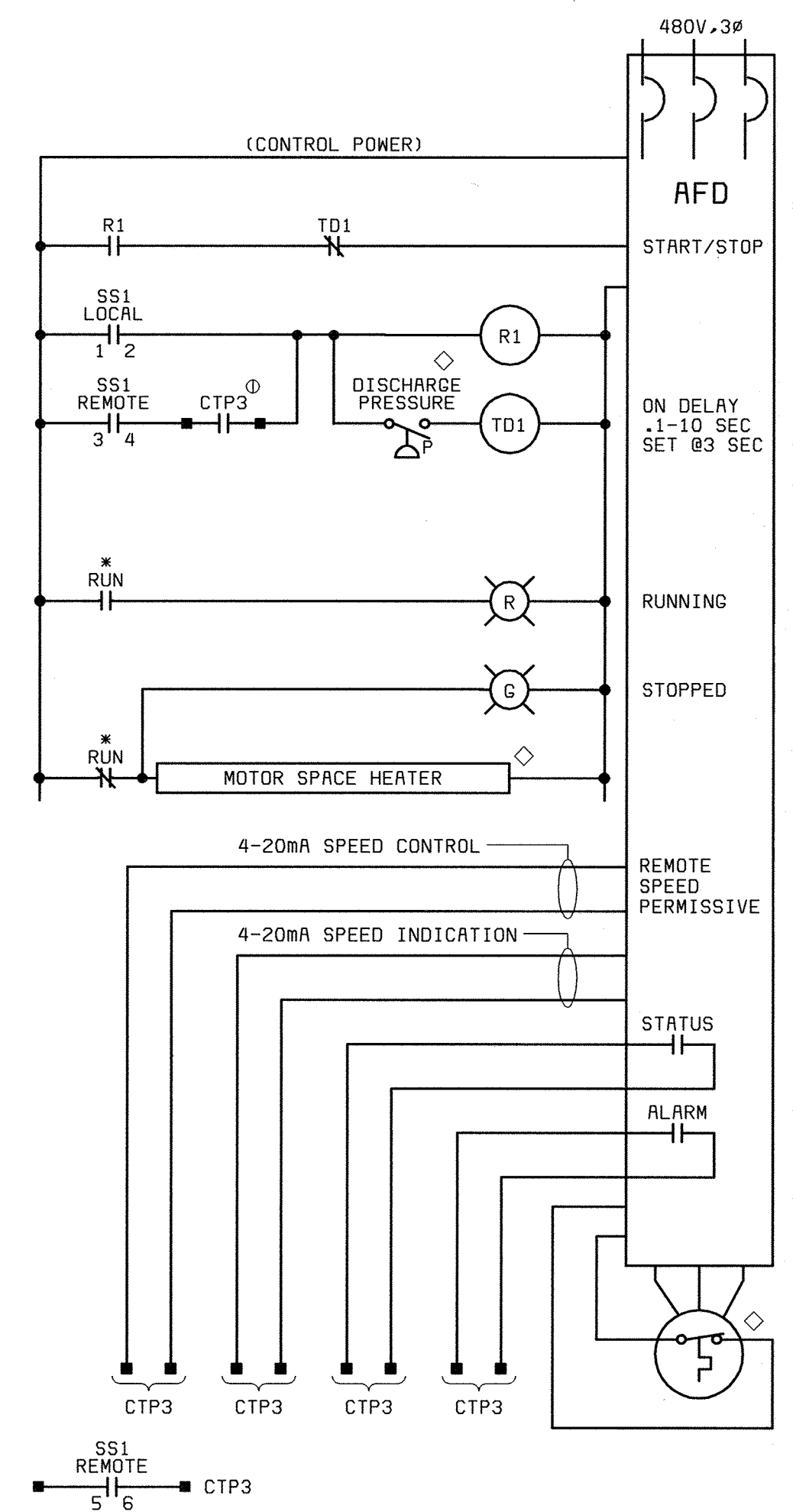
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES : GNS					ELECTRICAL CENTRIFUGE ONE-LINE DIAGRAMS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN : JCT,DAH	CHK : JTF	DATE : 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH
			DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP		E10



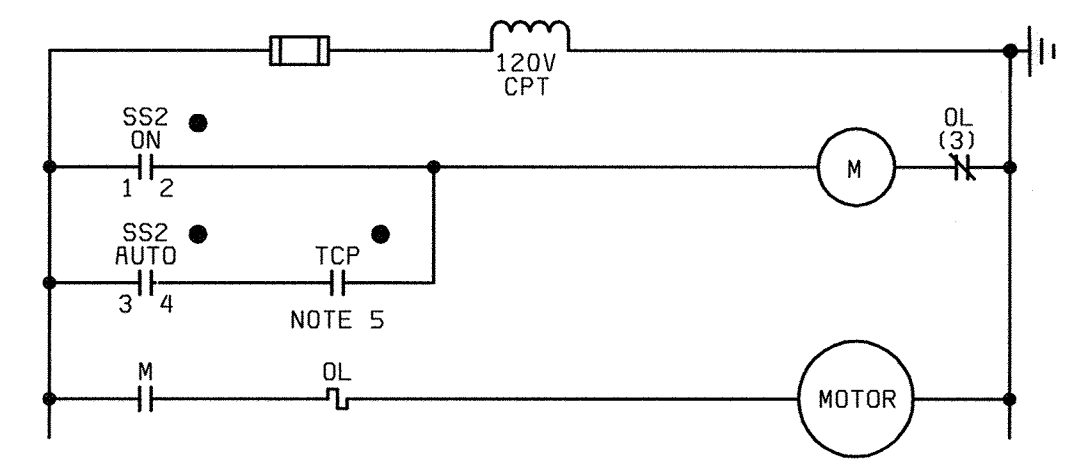
CENTRIFUGE FEED PUMPS
 8-400-P THRU 8-405-P
 * DENOTES INTERLOCKS PROVIDED BY AFD



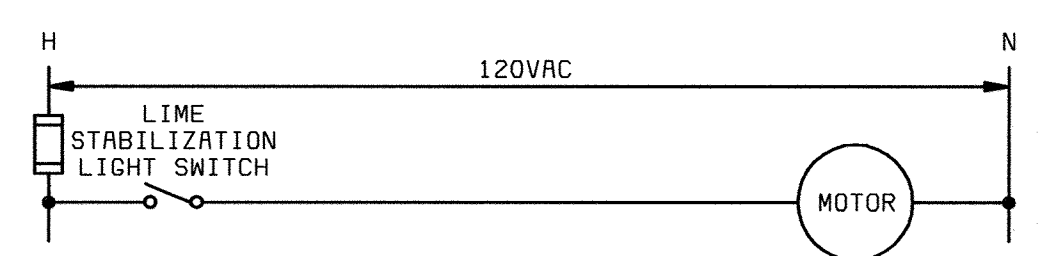
ODOR CONTROL FAN
 8-700-F



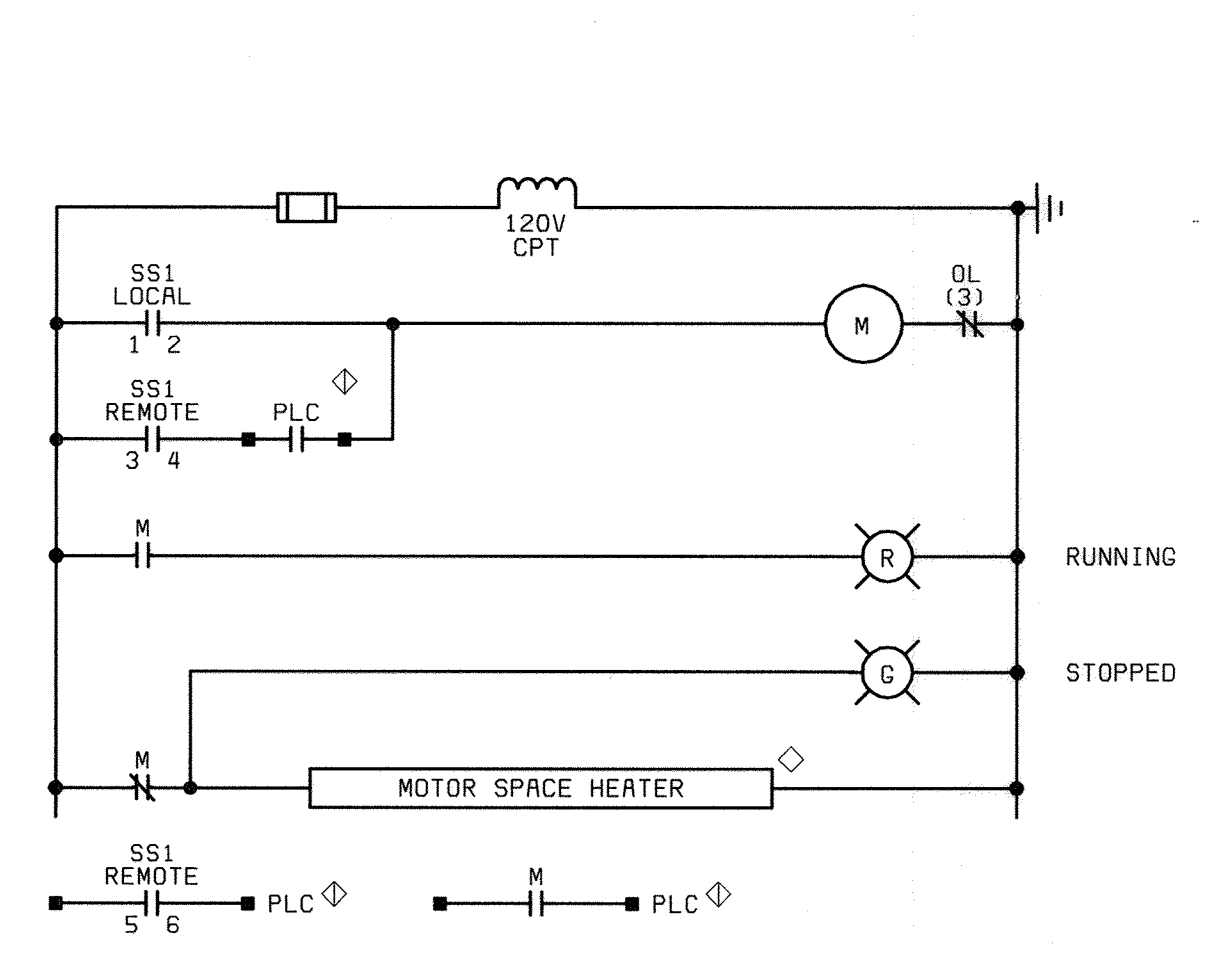
THICKENED PRIMARY TRANSFER PUMPS
 8-406-P THRU 8-409-P,
DAF THICKENED W.A.S. TRANSFER PUMPS
 8-140-P THRU 8-142-P



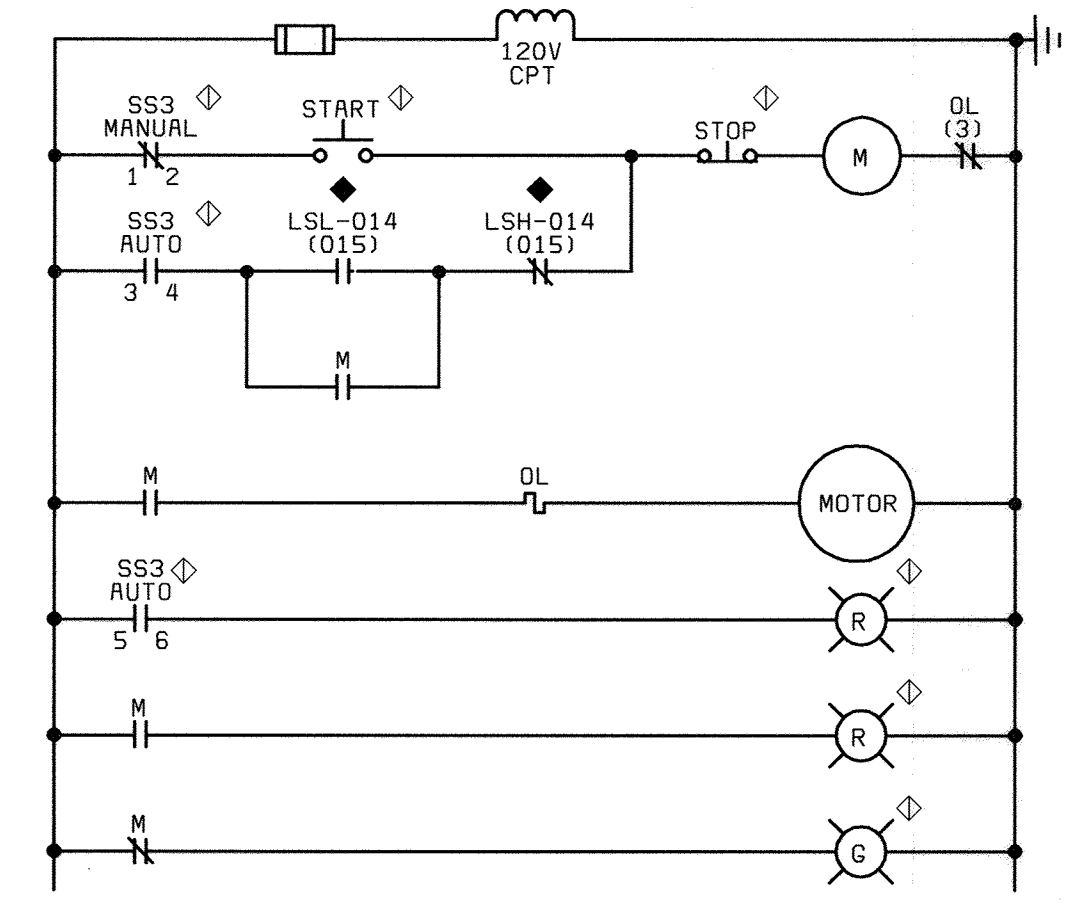
TYPICAL PRV AND DUCT FANS



LIME STABILIZATION FAN
 8-915-F



DAF RECYCLE PUMPS
 8-120-P THRU 8-122-P
 * DENOTES INTERLOCKS PROVIDED BY AFD



SODIUM HYDROXIDE TRANSFER PUMPS,
SODIUM HYPOCHLORITE TRANSFER PUMPS
 (NOTE 6)

SWITCH DEVELOPMENTS:

CONTACTS	POSITION		
	LOCAL	OFF	REMOTE
1-2	X		
3-4			X
5-6			X

CONTACTS	POSITION		
	MANUAL	AUTO	
1-2	X		
3-4		X	
5-6		X	

CONTACTS	POSITION		
	ON	OFF	AUTO
1-2	X		
3-4			X
5-6			X

CONTACTS	POSITION	
	ON	OFF
1-2	X	

DEVICE LEGEND:

- ◆ REMOTE FROM DRIVEN EQUIPMENT AND STARTER
- ◇ AT DRIVEN EQUIPMENT
- ◇ AT LOCAL CONTROL PANEL OR STATION
- ⊙ CONTROL TERMINATION PANEL, CTP3 (PIU-3)
- TEMPERATURE CONTROL PANEL (REFER TO HVAC DRAWINGS)

NOTES:

1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
2. SPARE CONTACTS SHALL BE PROVIDED FOR EACH STARTER AS DESCRIBED IN THE SPECIFICATIONS.
3. UNLESS OTHERWISE NOTED, DEVICES SHOWN ON THE DRAWING SHALL BE SUPPLIED AS AN INTEGRAL PART OF THE STARTER. DEVICES LOCATED OUTSIDE OR REMOTE FROM THE STARTER ARE IDENTIFIED BY A LOCATION SYMBOL AS DEFINED IN THE DEVICE LOCATION LEGEND.
4. RELAY AND TIMER DESIGNATIONS APPLY TO INDIVIDUAL SCHEMATIC ONLY.
5. SEE HVAC FOR CONTROL DETAILS.
6. FOR PUMP LOCATIONS SEE DRAWING Y5.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. DATE

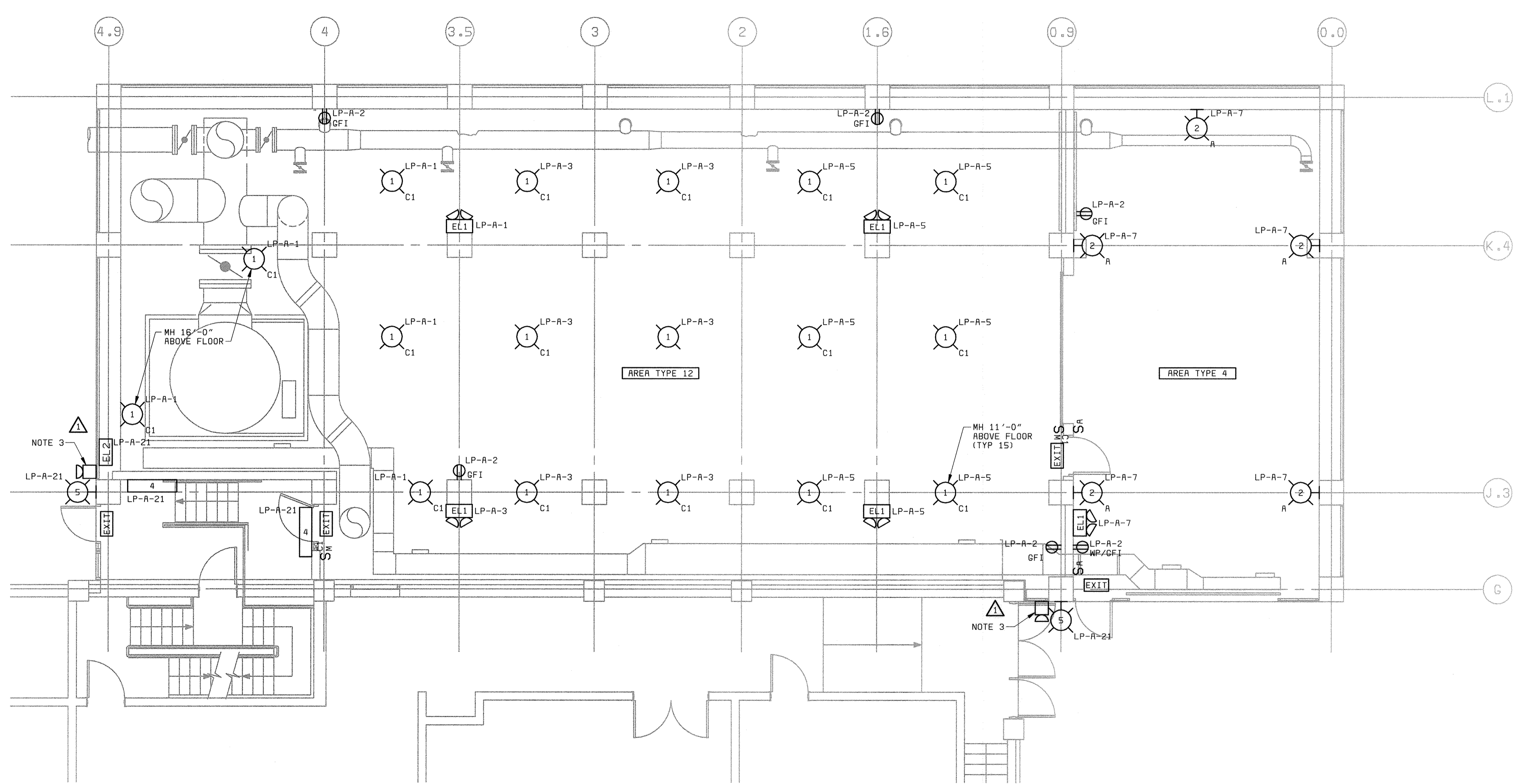
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 IN THE
 STATE OF MARYLAND,
 NO. 21876

DES: GNS					
DRN: DAH					
CHK: JTF					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

ELECTRICAL
SCHEMATIC DIAGRAMS

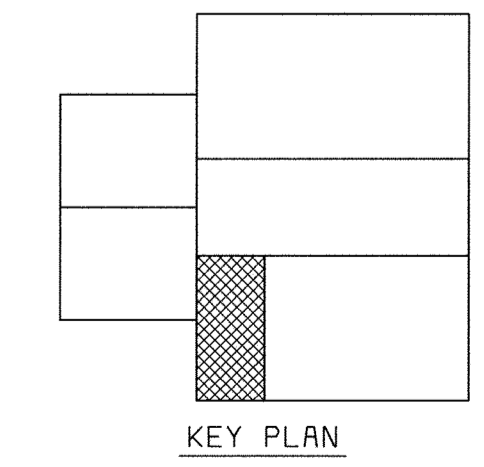
LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 125 OF 150
E12



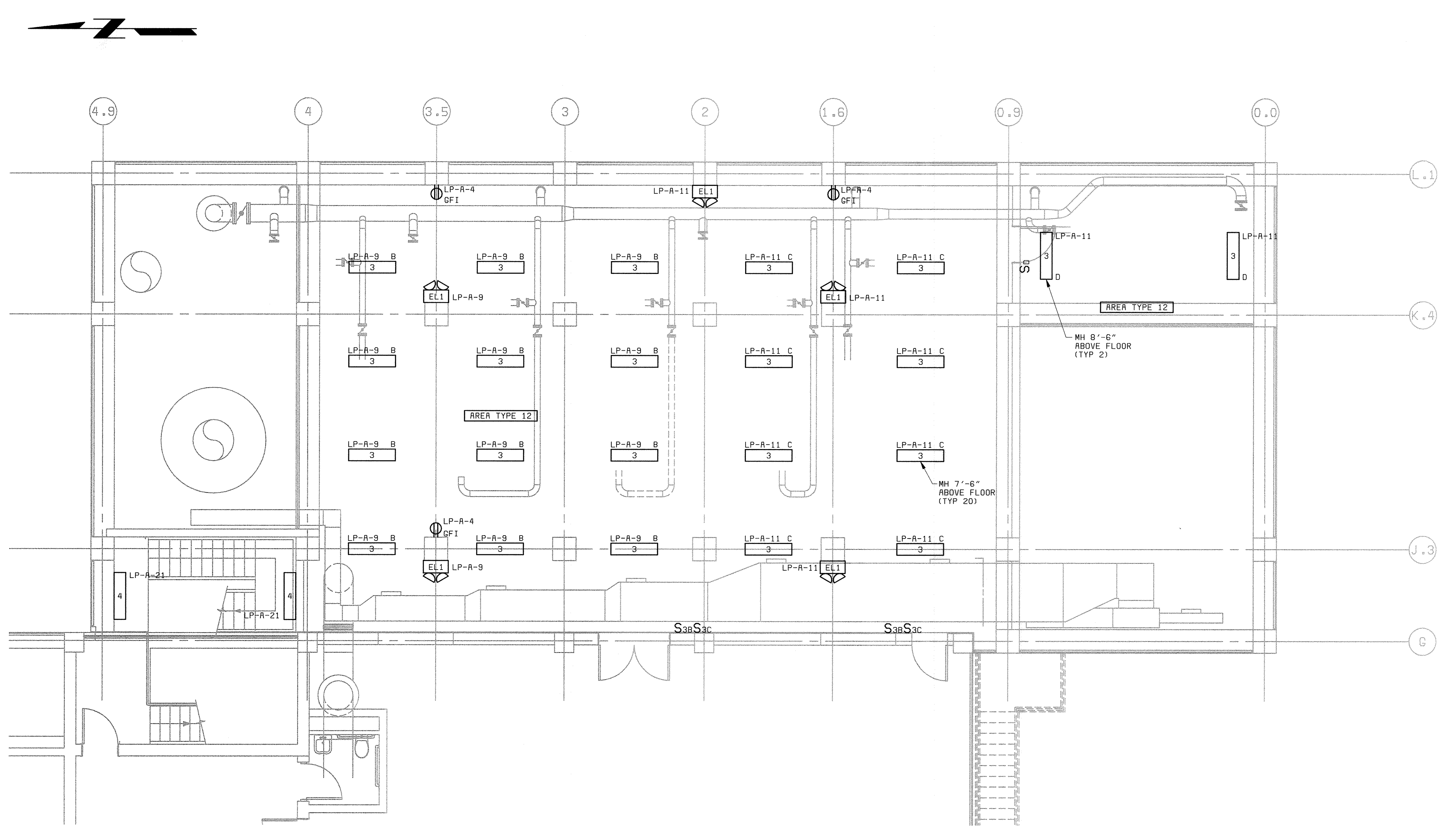
FLOOR PLAN ELEVATION 142.00
3/16"=1'-0"

- NOTES:**
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 2. SEE FIXTURE SCHEDULE ON DRAWING E28.
 3. EMERGENCY LIGHTING UNIT (EL2) REMOTE HEAD MOUNTED NEXT TO FIXTURE OR 8'-8" ABOVE FLOOR.



58472-206-SDLS-E-Z00000ROE
58472-212-SDLS-E-40000687
05/04/2005 13:36:53

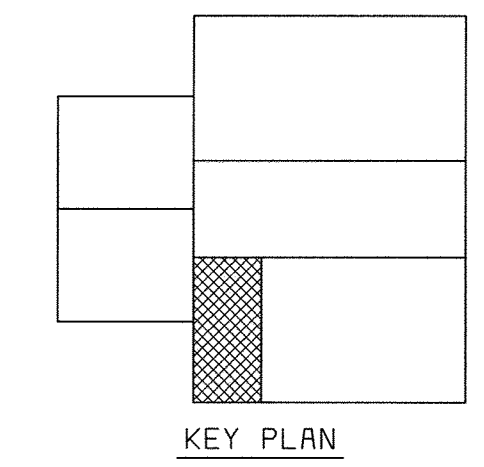
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS,JCB						ELECTRICAL CENTRIFUGE BUILDING EXPANSION LIGHTING PLAN AT EL. 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT,JCB								
			CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH RJR RJR				
			DATE: 5/30/00	07/27/01	EMERG. EGRESS LIGHTING AT EXTERIOR DOORS		MEP GNS				
					REVISIONS AND RECORD OF ISSUE		NO. BY CK APP				



FLOOR PLAN ELEVATION 156.00
3/16"=1'-0"

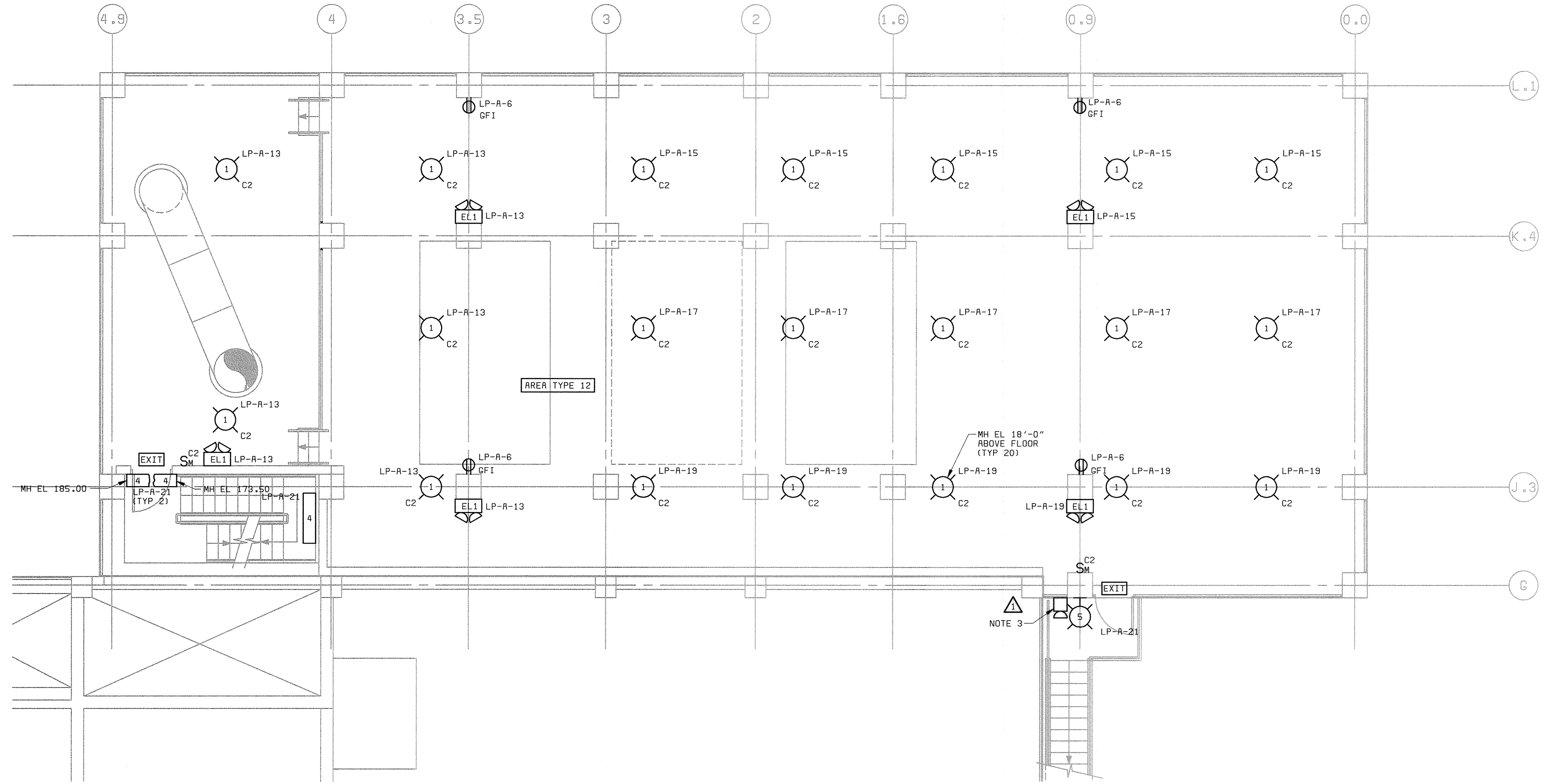
NOTES:

1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
2. SEE FIXTURE SCHEDULE ON DRAWING E2B.



58472-401-323-PIPE (600098236)
 58472-206-SDLS-H-R0000284
 58472-212-SDLS-R-R0000841

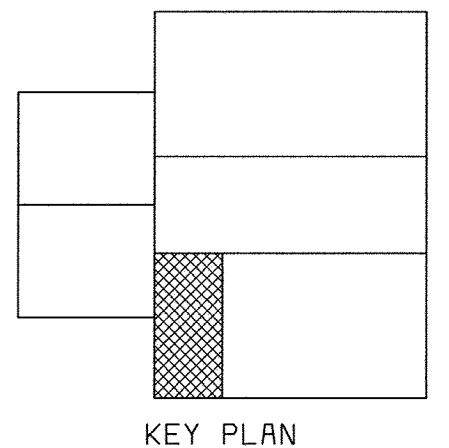
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Galithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21876	DES: GNS,JCB							ELECTRICAL CENTRIFUGE BUILDING EXPANSION LIGHTING PLAN AT EL. 156.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT,JCB	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR			RJR



FLOOR PLAN ELEVATION 167.00
3/16"=1'-0"

NOTES:

- 1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
- 2. SEE FIXTURE SCHEDULE ON DRAWING E28.
- 3. EMERGENCY LIGHTING UNIT (EL2) REMOTE HEAD MOUNTED NEXT TO FIXTURE OR 8'-8" ABOVE FLOOR. SEE DRAWING E13 FOR LOCATION OF EL2.



KEY PLAN

58472-212-SDLS-A-R0000843
05/04/2005 13:41:16

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS,JCB									
DRN: JGT,JCB									
CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR			
DATE: 5/30/00	07/27/01	EMERG. EGRESS LIGHTING AT EXTERIOR DOORS		MEP	GNS				
	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY	CK	APP		

ELECTRICAL

**CENTRIFUGE BUILDING EXPANSION
LIGHTING PLAN AT EL. 167.00**

**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

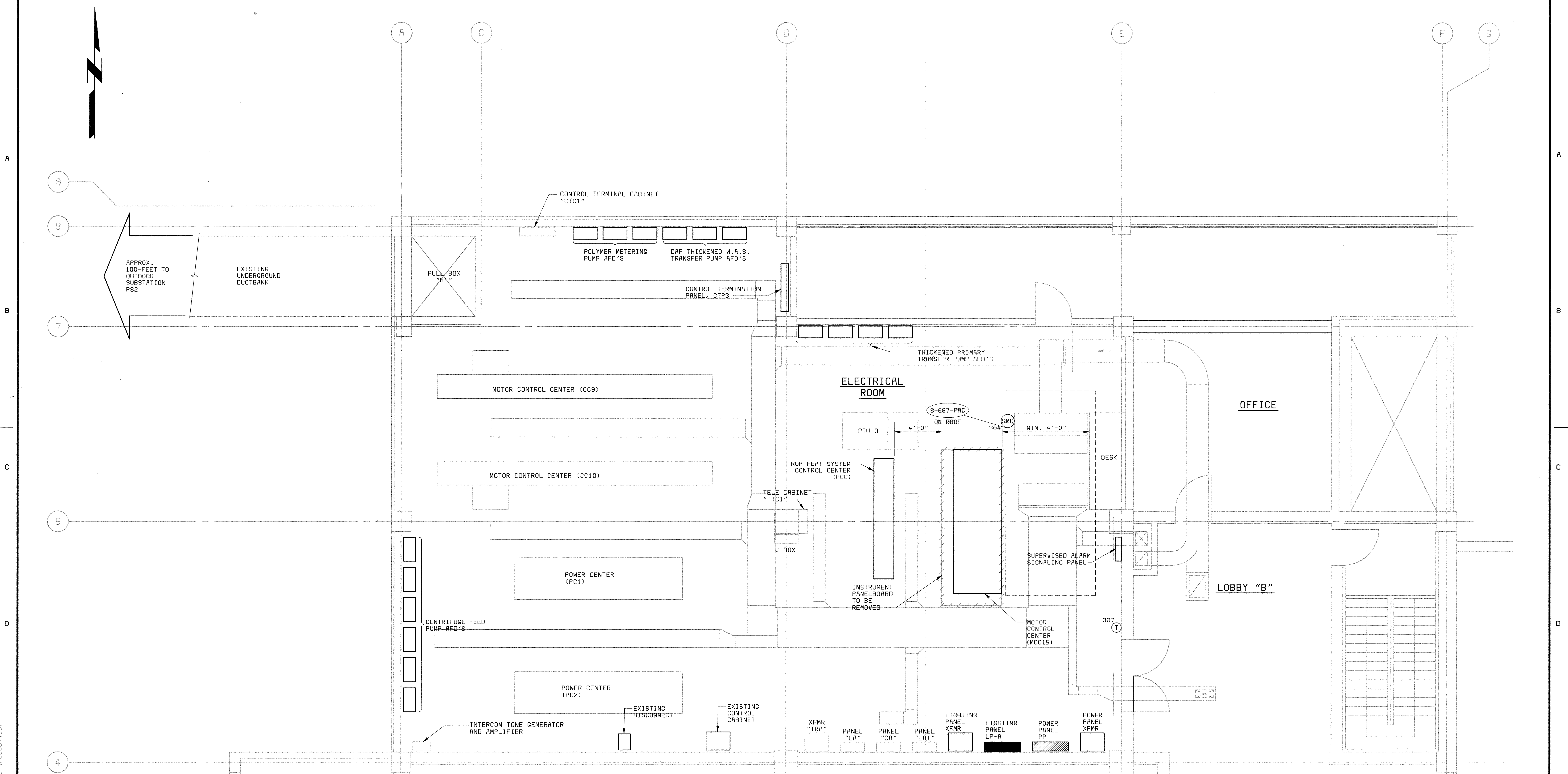
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
128 OF 150

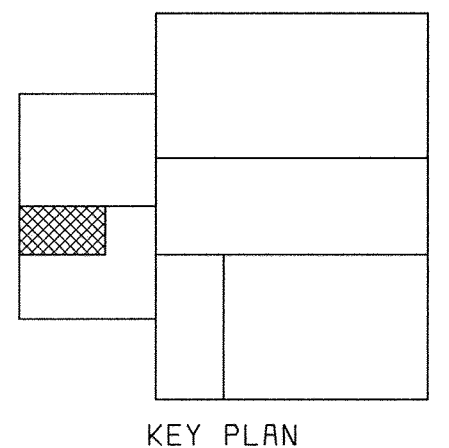
E15



FLOOR PLAN ELEVATION 156.00
1/4" = 1'-0"

NOTES:

- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
- NEW MCC15 SHALL BE CONNECTED TO GROUND AT NEAREST GROUND SYSTEM BUS USING ONE #4/0 AWG CONDUCTOR AT EACH END OF MCC.



58472-204-DAF-H-0001248
58472-401-323-BASE2 (R00097415)

06/07/2004
P058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21876	DES: GNS							ELECTRICAL ELECTRICAL ROOM POWER PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT.MAS2	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR			RJR

A

B

C

D

E

A

B

C

D

E

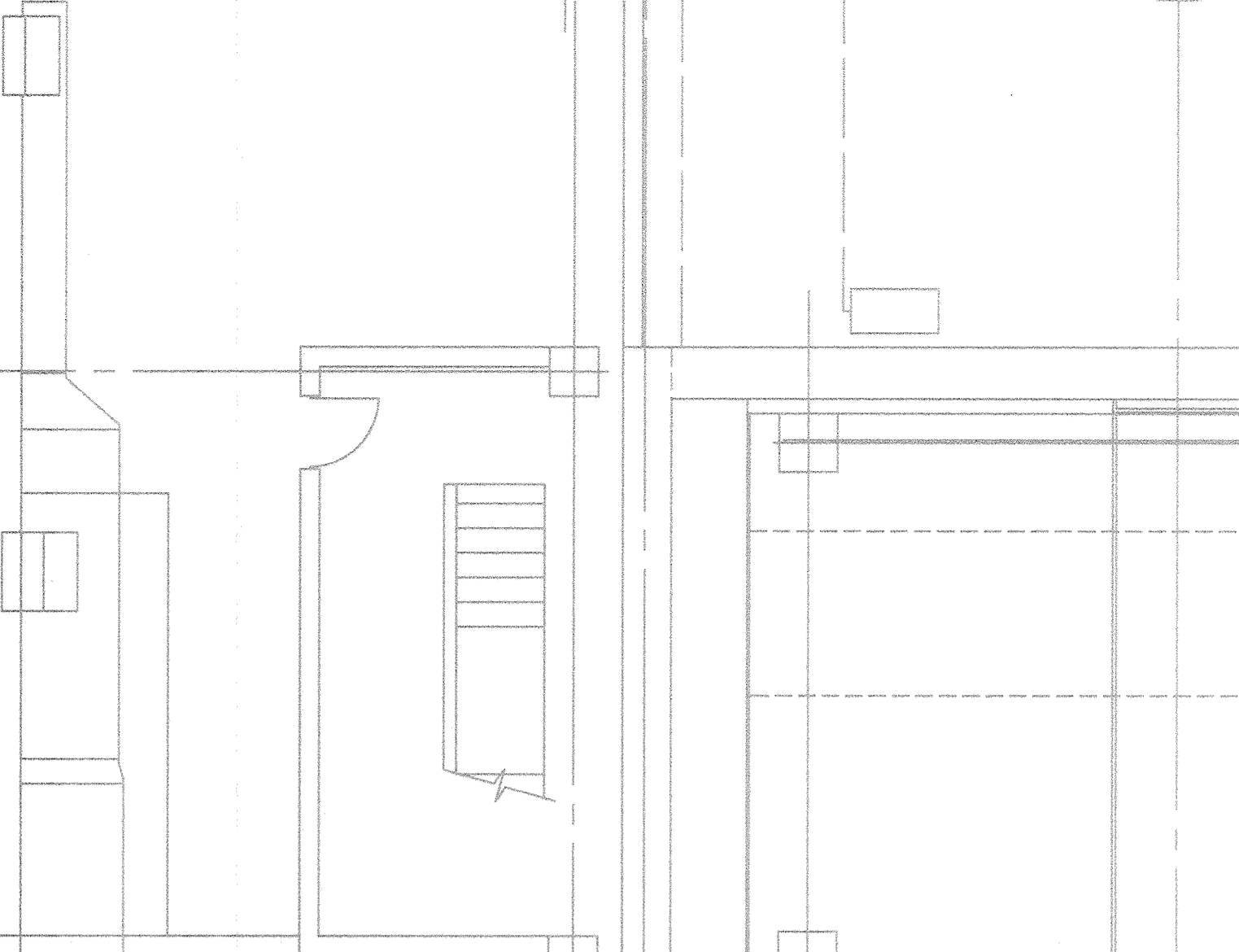
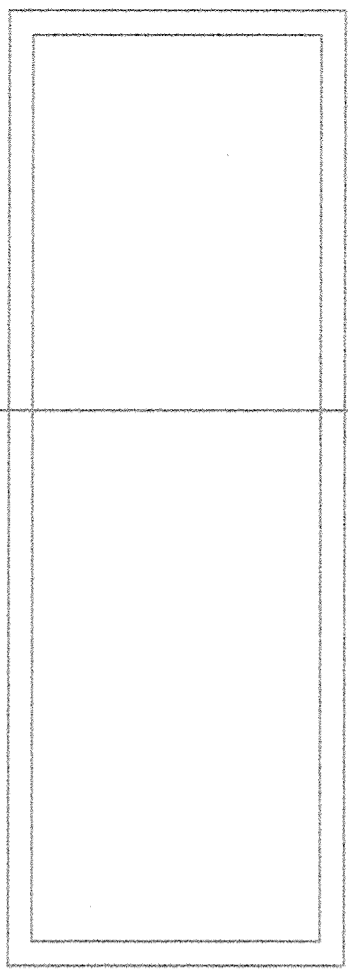
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4

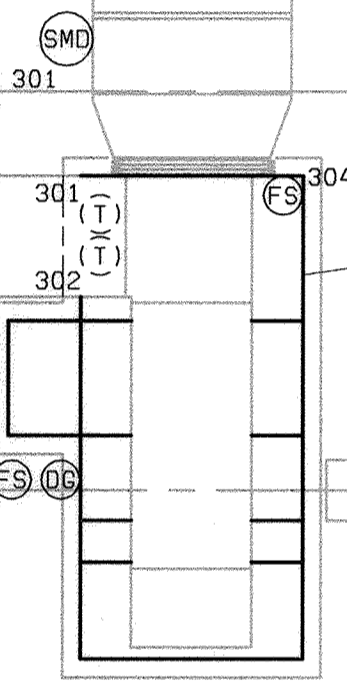
3

2

1



AREA TYPE 12



8-682-MRU

8-910-F

8-911-F

TCP-301

301

302

PP-10

A

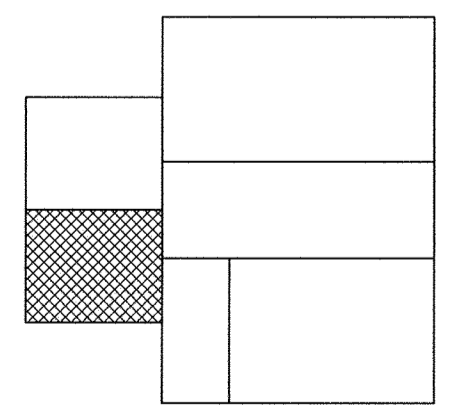
D

E

E1

G

PLAN EL 130.00
3/16" = 1'-0"



KEY PLAN

58472-206-SDLS-H-00000540
58472-401-323-818E1 (A00097348)

08/03/2004
12:29:15

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE



BLACK & VEATCH LLP
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS
DRN: JCB
CHK: JTF
DATE: 5/30/00

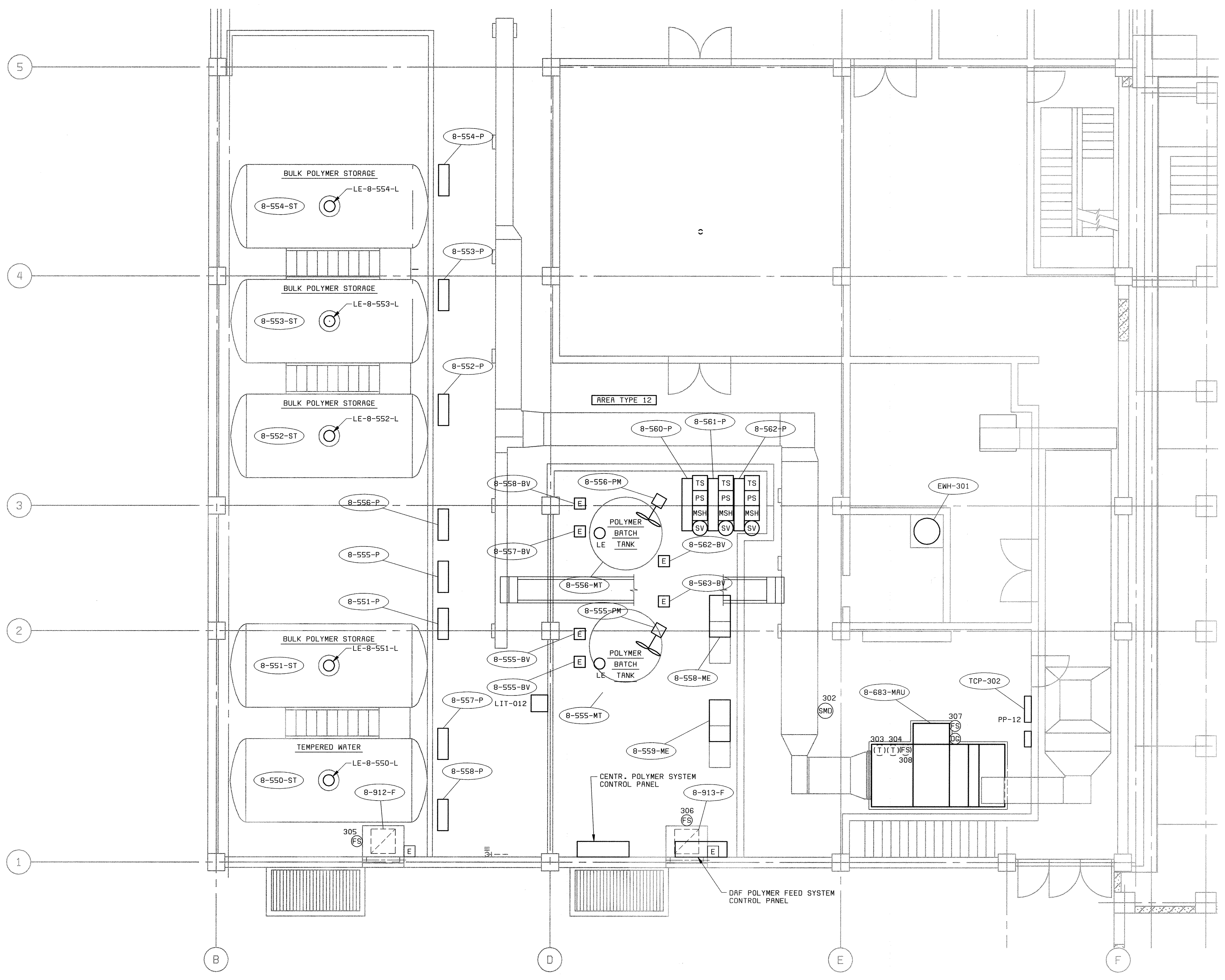
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

ELECTRICAL
CENTRATE DISPOSAL AREA
PLAN AT EL 130.00

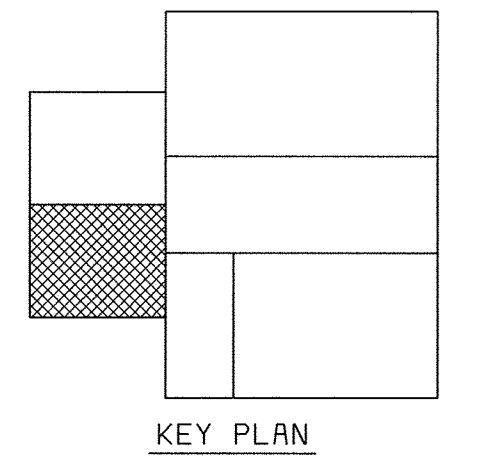
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
130 of 150
E17

A
B
C
D
E
F



- NOTES:**
- SEE DRAWING E-1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - THE POLYMER MIX/STORAGE TANKS 8-555-MT AND 8-556-MT SHALL HAVE THEIR TANK GROUND ELECTRODES CONNECTED TO NEAREST GROUND SYSTEM CONNECTION POINT USING A #2/0 AWG CONDUCTOR.



58472-401-232-C016 (R0009834)
58472-204-SDLS-H-R0000542
58472-203-SDLS-S-R0000118

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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NO. 21876

DES: BRG					
DRN: JGT					
CHK: JTF					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
DATE		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

ELECTRICAL

**POLYMER FEED AREA
POWER PLAN AT EL 142.00**

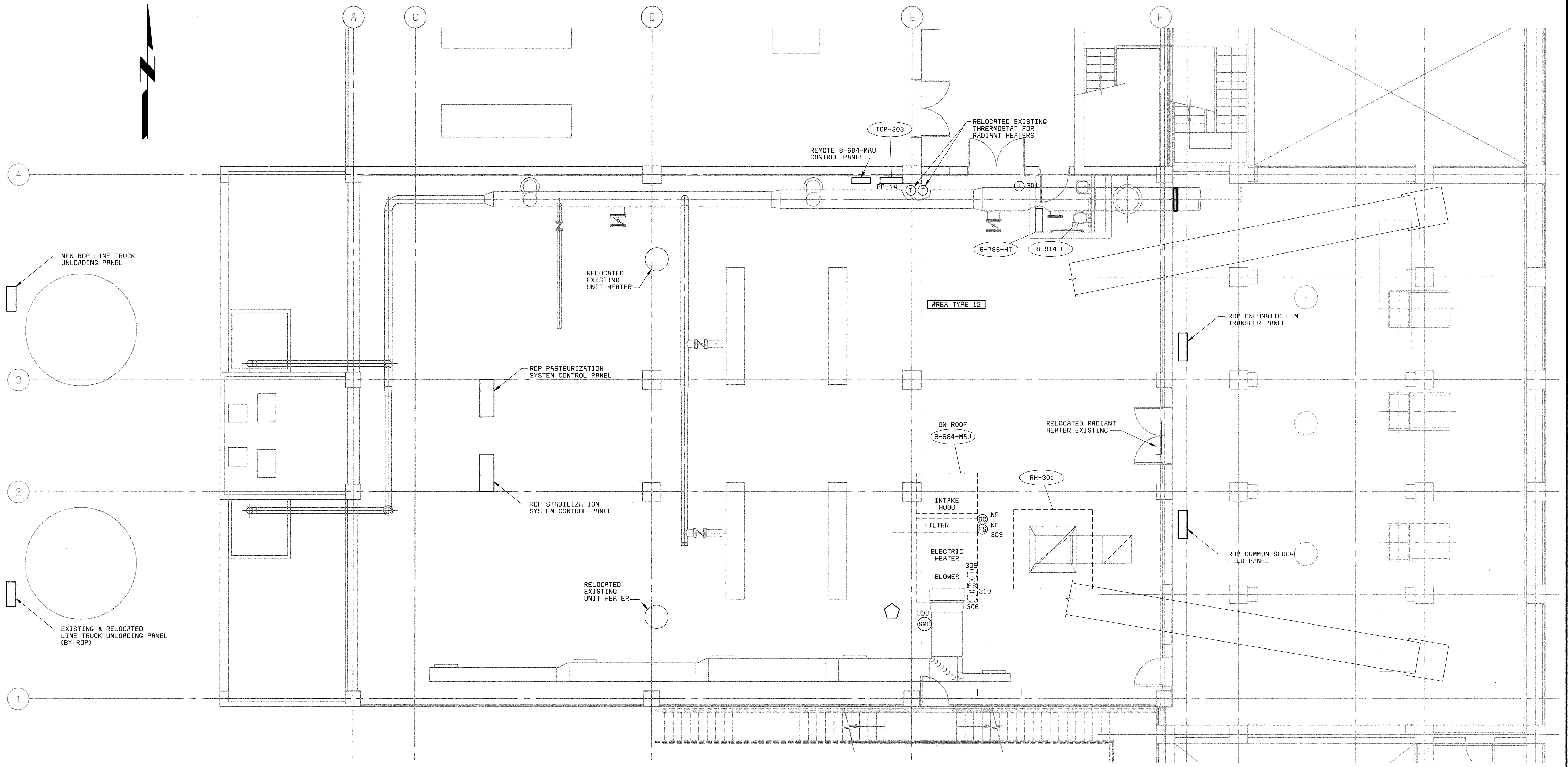
**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

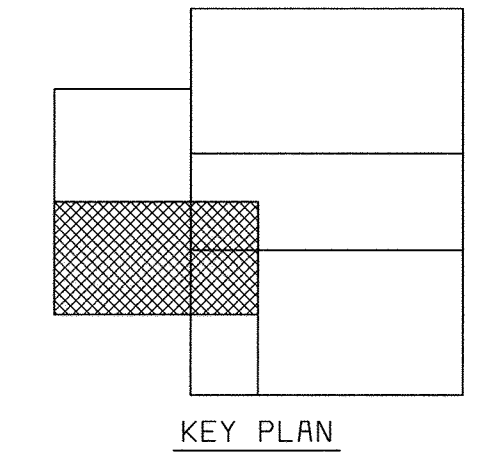
SHEET
131 OF 150

E18



PLAN EL 156.00
3/16" = 1'-0"

- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - EXISTING UNIT AND RADIANT HEATERS TO BE REMOVED AND/OR RELOCATED AS INDICATED ON HVAC DRAWINGS.



58472-212-SOLS-A-R00000841
58472-204-SOLS-H-R00000617
58472-2
FDS8472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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DONALD R. STEVENS
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IN THE
STATE OF MARYLAND,
NO. 21876

DES: BRG					
DRN: JGT					
CHK: JTF					
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP
	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR/RJR

ELECTRICAL

**LIME STABILIZATION AREA
POWER PLAN AT EL 156.00**

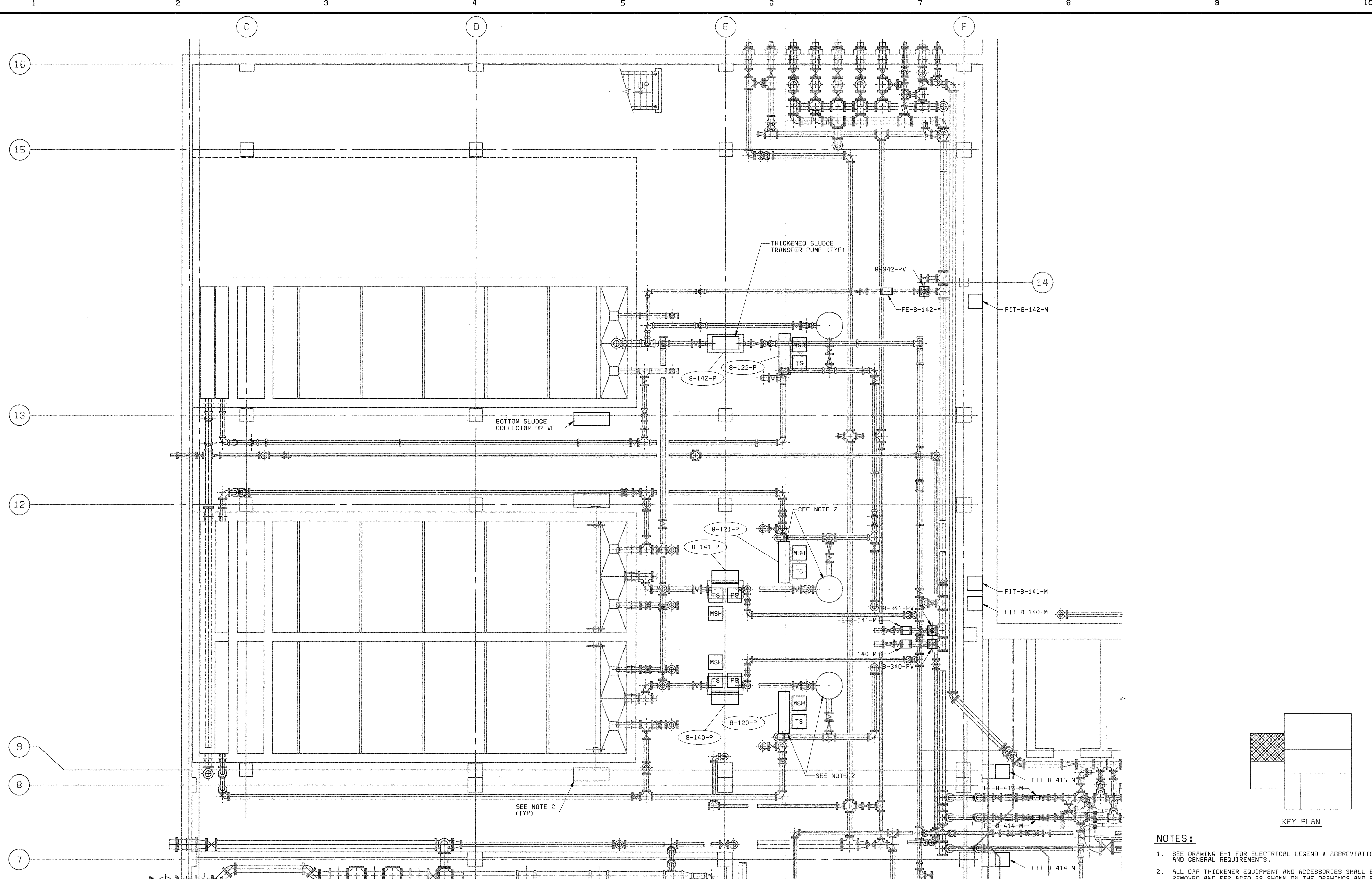
**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

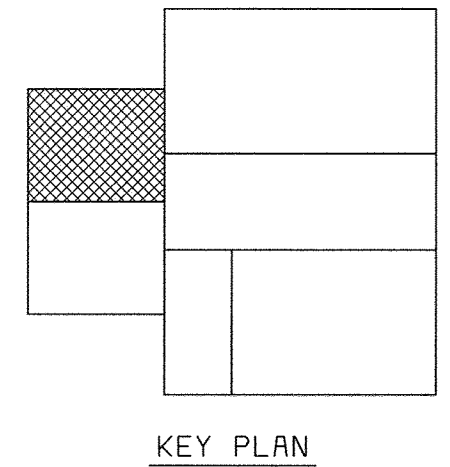
SCALE
AS
SHOWN

SHEET
132 OF 150

E19



PLAN EL 128.00
3/16" = 1'-0"



- NOTES:**
1. SEE DRAWING E-1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 2. ALL DAF THICKENER EQUIPMENT AND ACCESSORIES SHALL BE REMOVED AND REPLACED AS SHOWN ON THE DRAWINGS AND PER SPECIFICATION SECTION 11442. EXISTING THICKENED SLUDGE TRANSFER PUMPS WILL BE REPLACED WITH NEW DOUBLE DISK PUMPS. CONTRACTOR SHALL MODIFY EXISTING PIPING AS NECESSARY TO ADAPT TO NEW EQUIPMENT.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS					
DRN: JCB					
CHK: JTF					
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK APP
	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	

ELECTRICAL

FLOTATION THICKENING AREA
PLAN AT EL 128.00

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

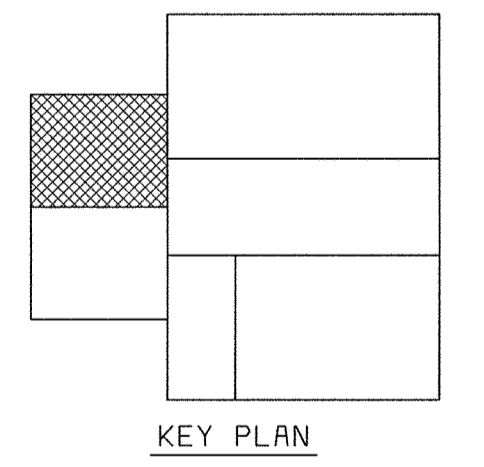
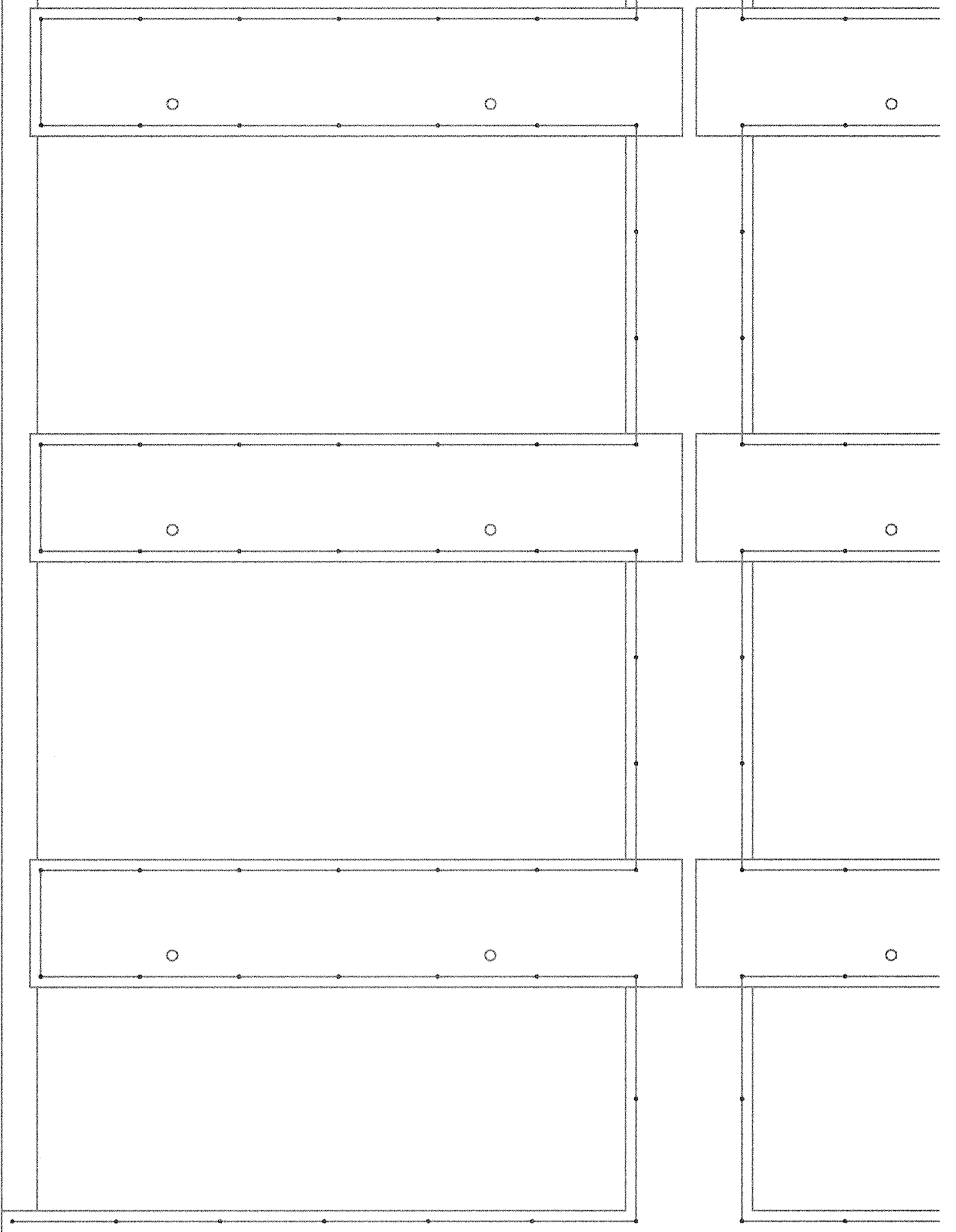
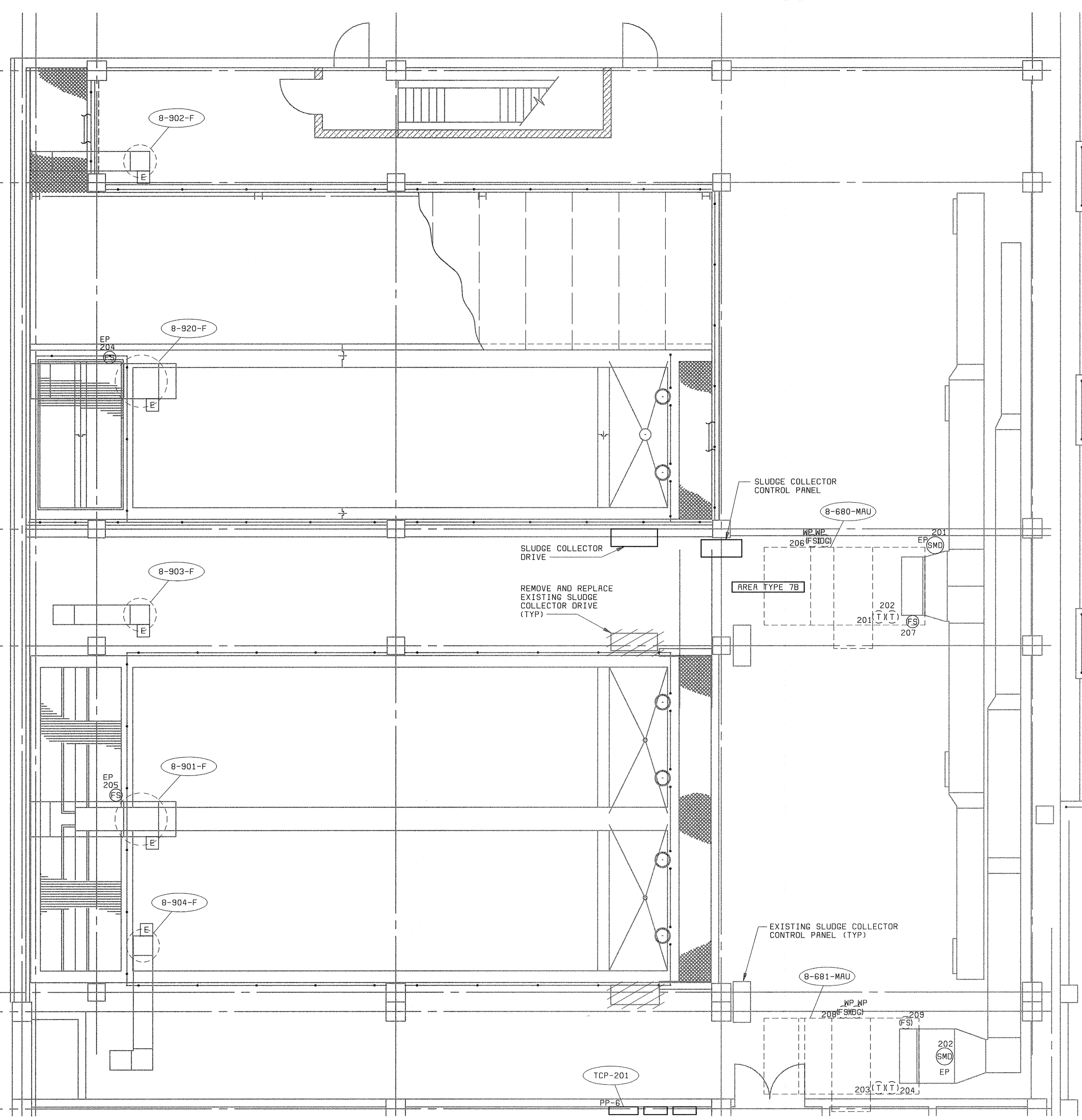
SHEET
133 OF 150

E20

1 2 3 4 5 6 7 8 9 10

A B C D E

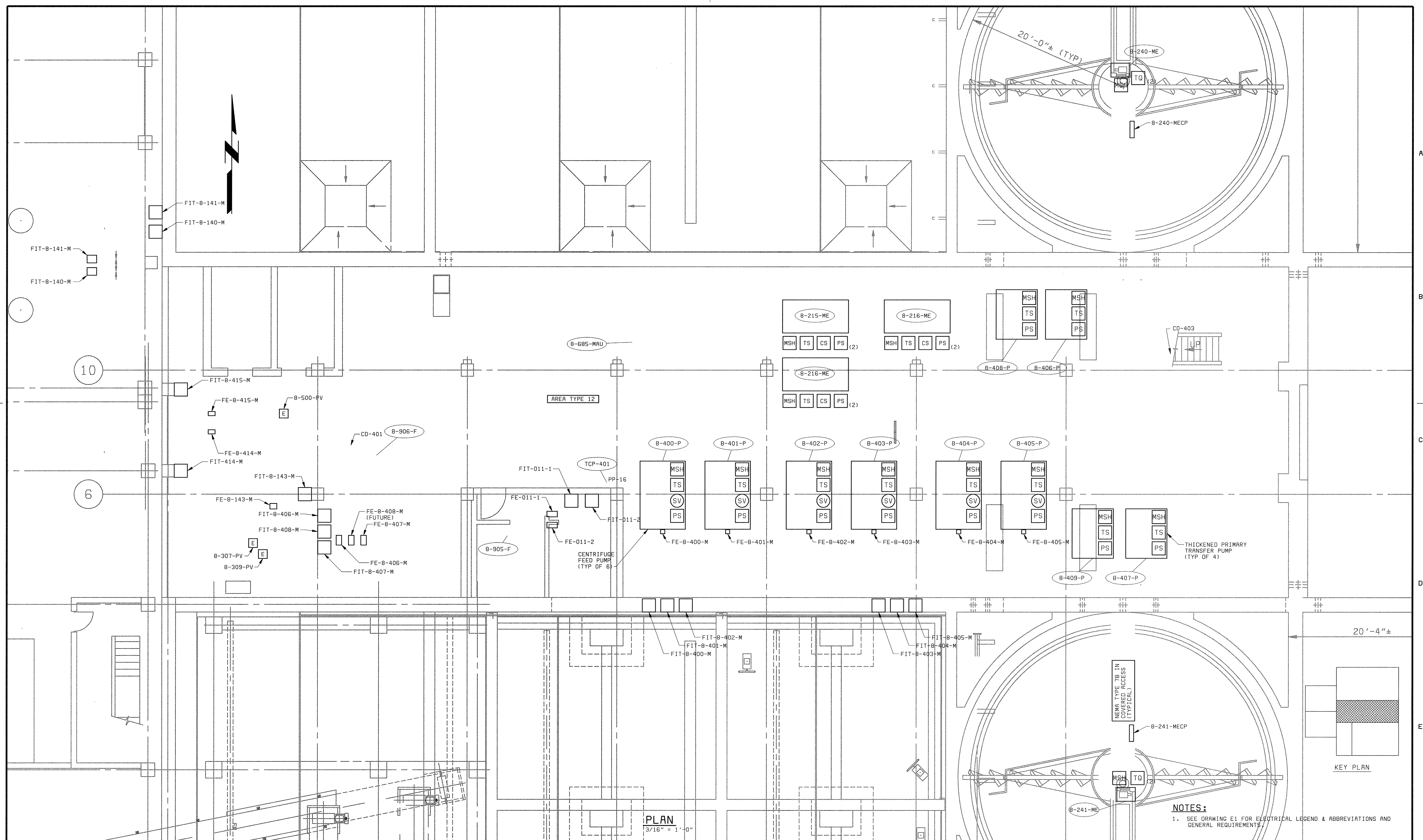
16
15
13
12
9
8
7



NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

PLAN AT EL 142.00
3/16" = 1'-0"

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS							ELECTRICAL FLOTATION THICKENING AREA PLAN AT EL 142.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JCB	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	NO.			BY



PLAN
3/16" = 1'-0"

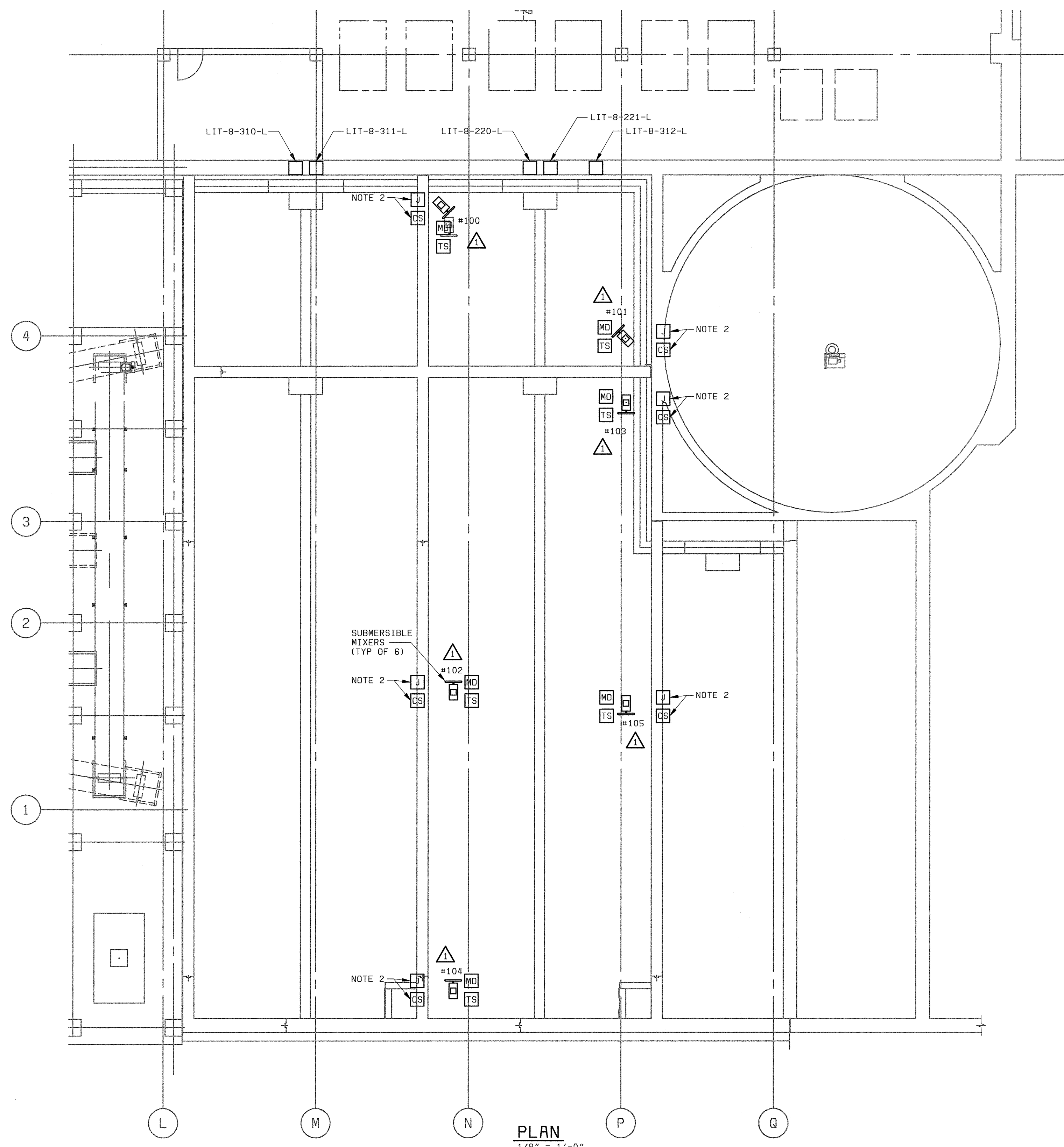
NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: BRC								ELECTRICAL SLUDGE STORAGE AND PRIMARY SLUDGE THICKENER AREA POWER PLAN	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT										
			CHK: JTF										E22
			DATE: 5/30/00		07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR					
						REVISIONS AND RECORD OF ISSUE							

058472_2
FD58472R

A
B
C
D
E

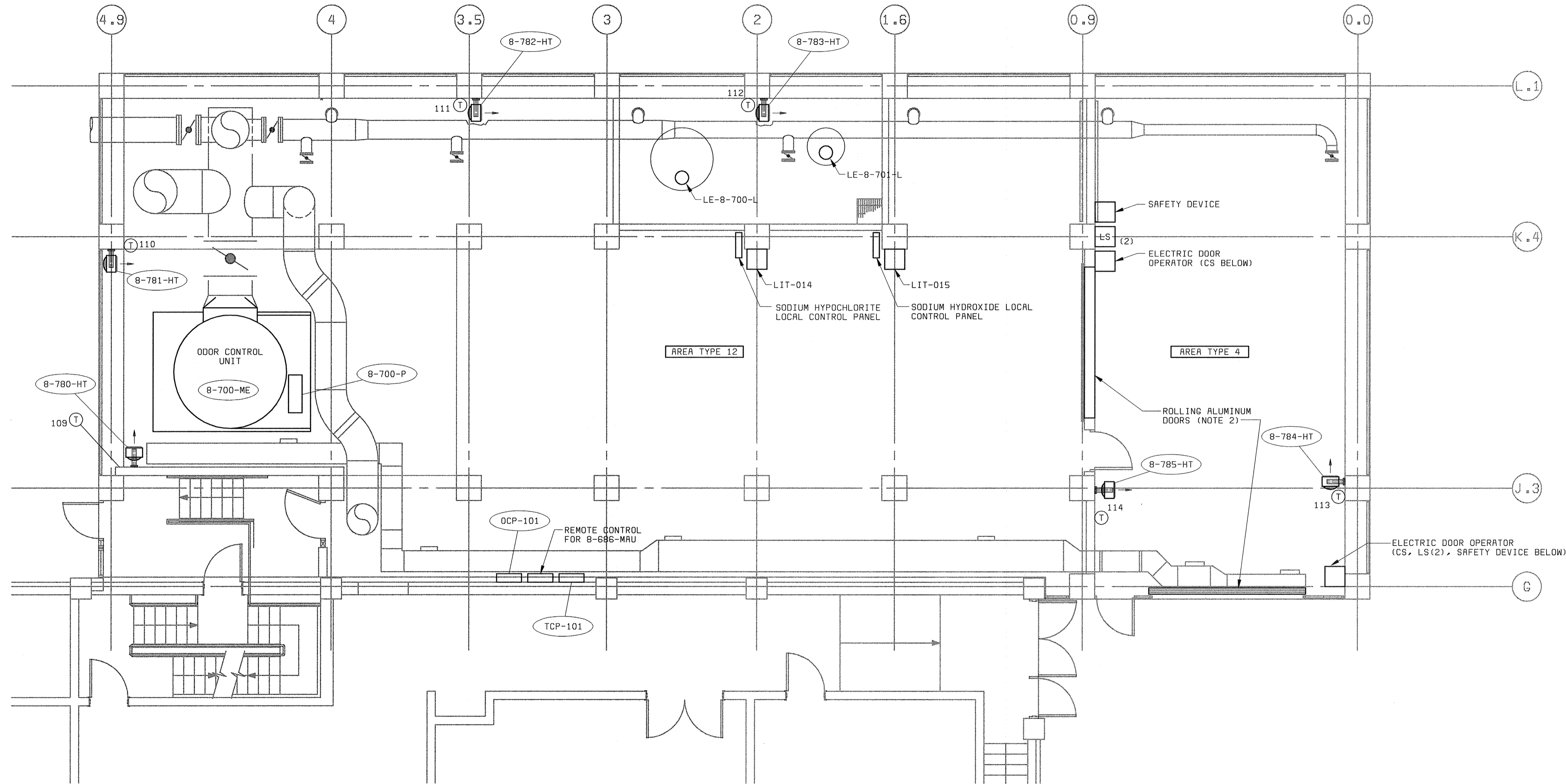
A
B
C
D
E



PLAN
1/8" = 1'-0"

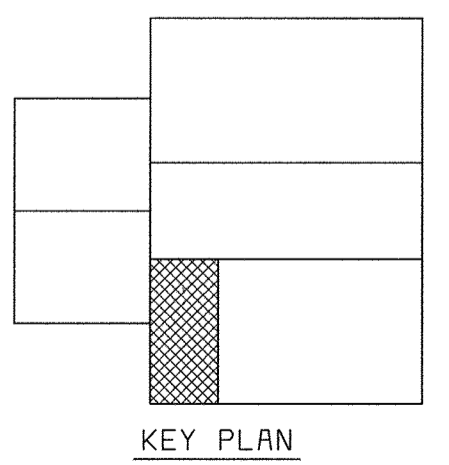
- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - MIXER JUNCTION BOXES AND CONTROL STATIONS SHALL BE INSTALLED ON THE WALKWAYS LOCATED ABOVE ON THE NEXT LEVEL.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gathersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: BRG					ELECTRICAL	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT							
			CHK: JTF							E23
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE					



FLOOR PLAN ELEVATION 142.00
3/16"=1'-0"

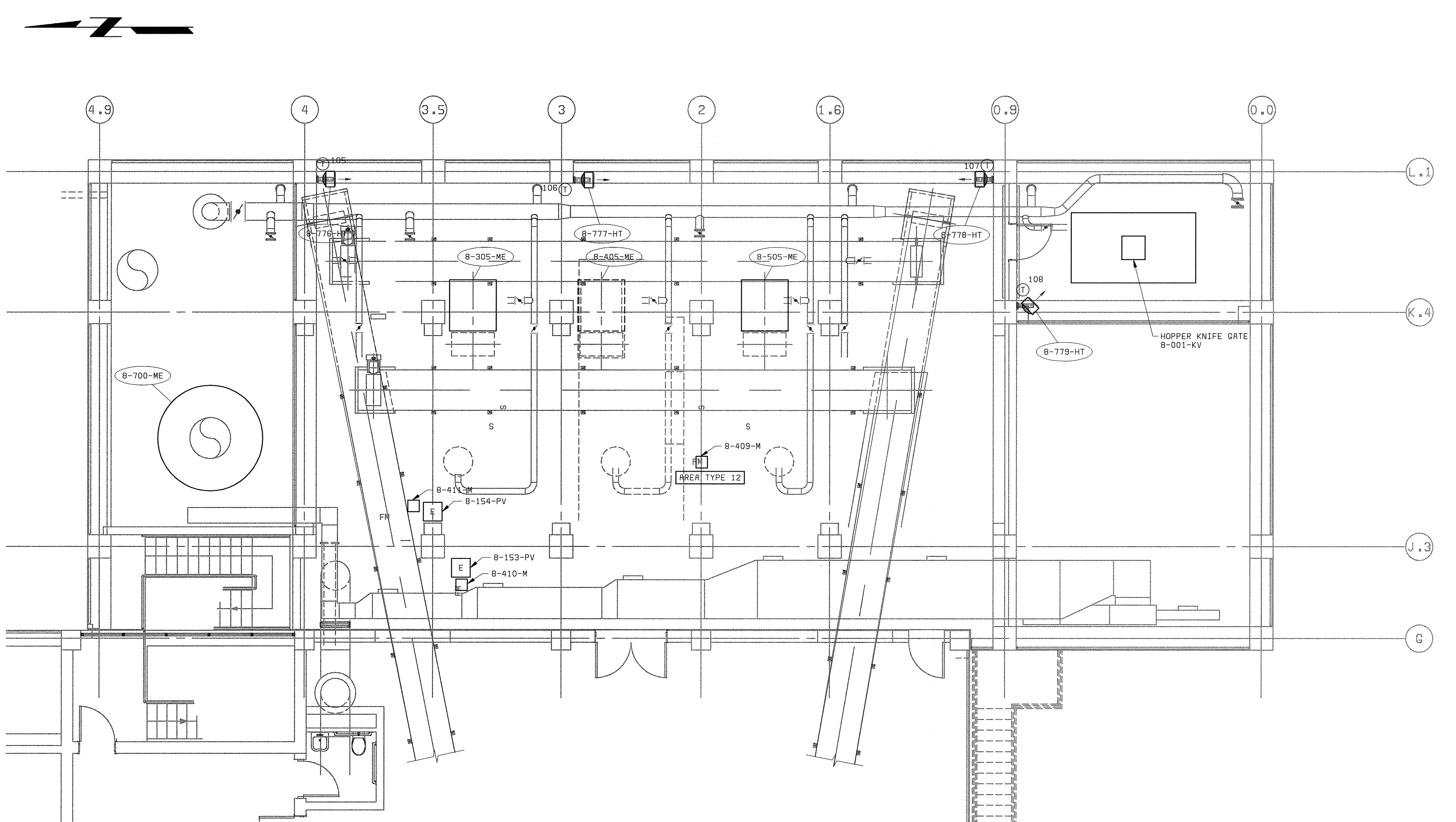
- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - REFER TO ARCHITECTURAL DRAWINGS FOR ROLLING DOOR DETAILS.



58472-212-SOLS-H-0000837
58472-204-SOLS-H-0000426

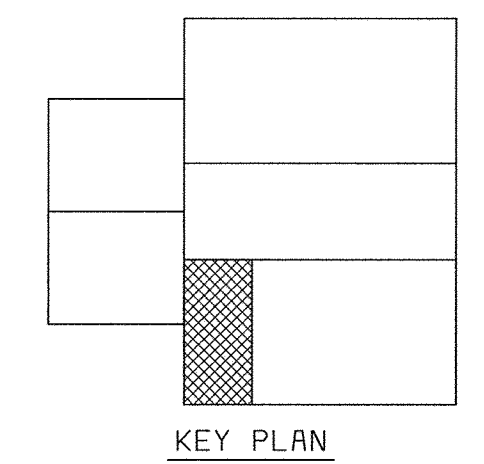
058472.2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876 DATE: 5/30/00	DES: BRG							LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JGT								
			CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR				
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY	CK	APP	




FLOOR PLAN ELEVATION 156.00
3/16"=1'-0"

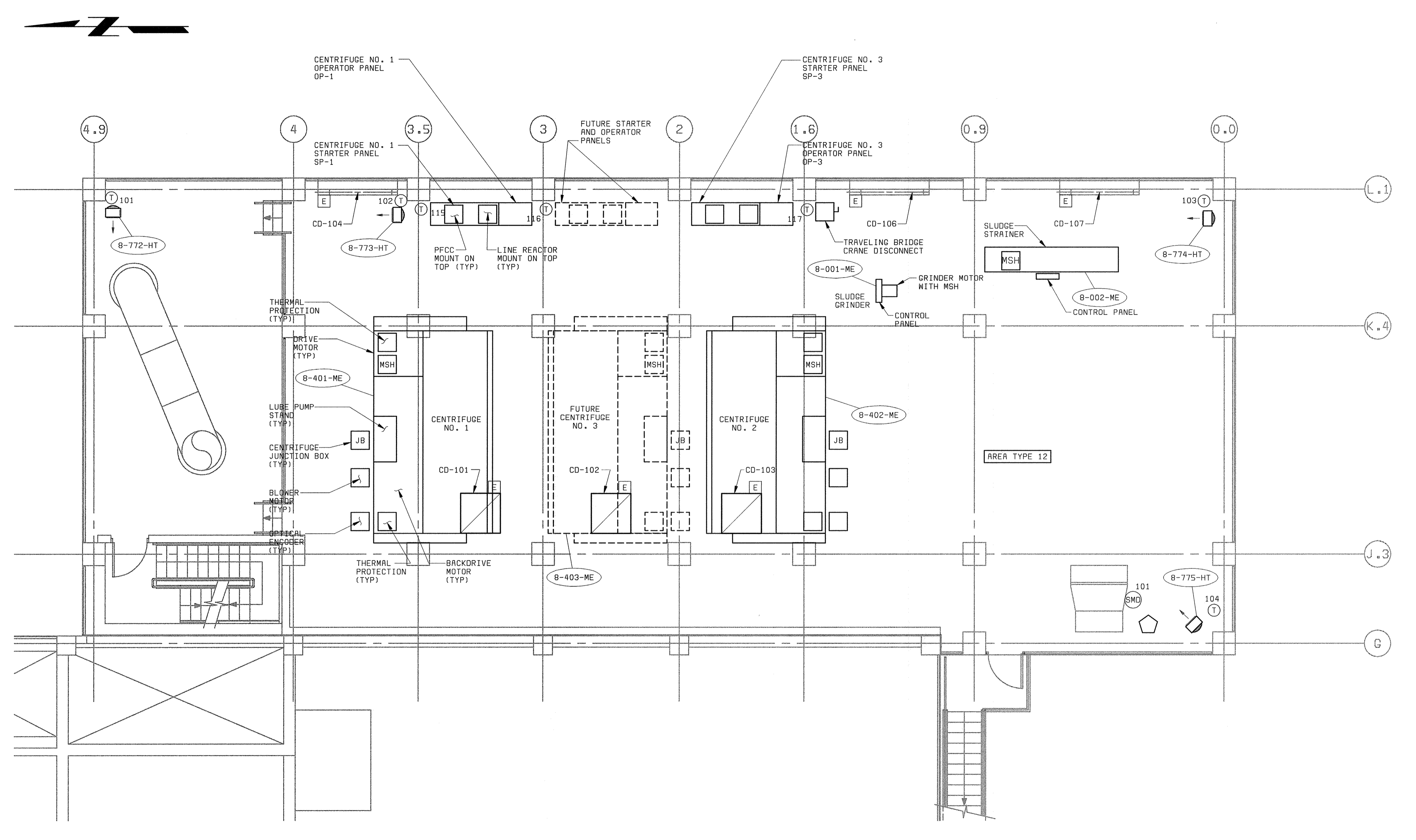
NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.



58472-401-323-PIPE (A00099236)
58472-204-SOLS-H-A0000384
58472-212-SOLS-A-A0000841

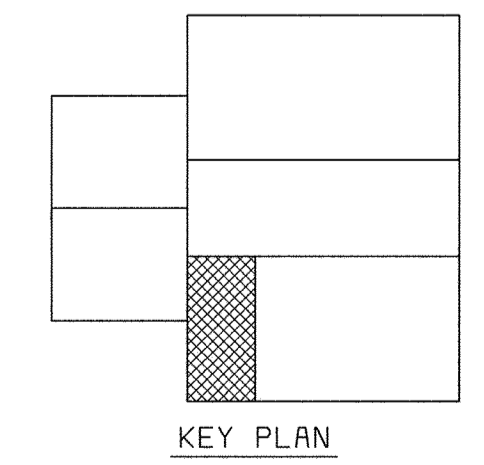
058472_2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: MAS2							ELECTRICAL CENTRIFUGE BUILDING EXPANSION POWER PLAN AT EL 156.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: MAS2									
			CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR					E25
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY	CK	APP		



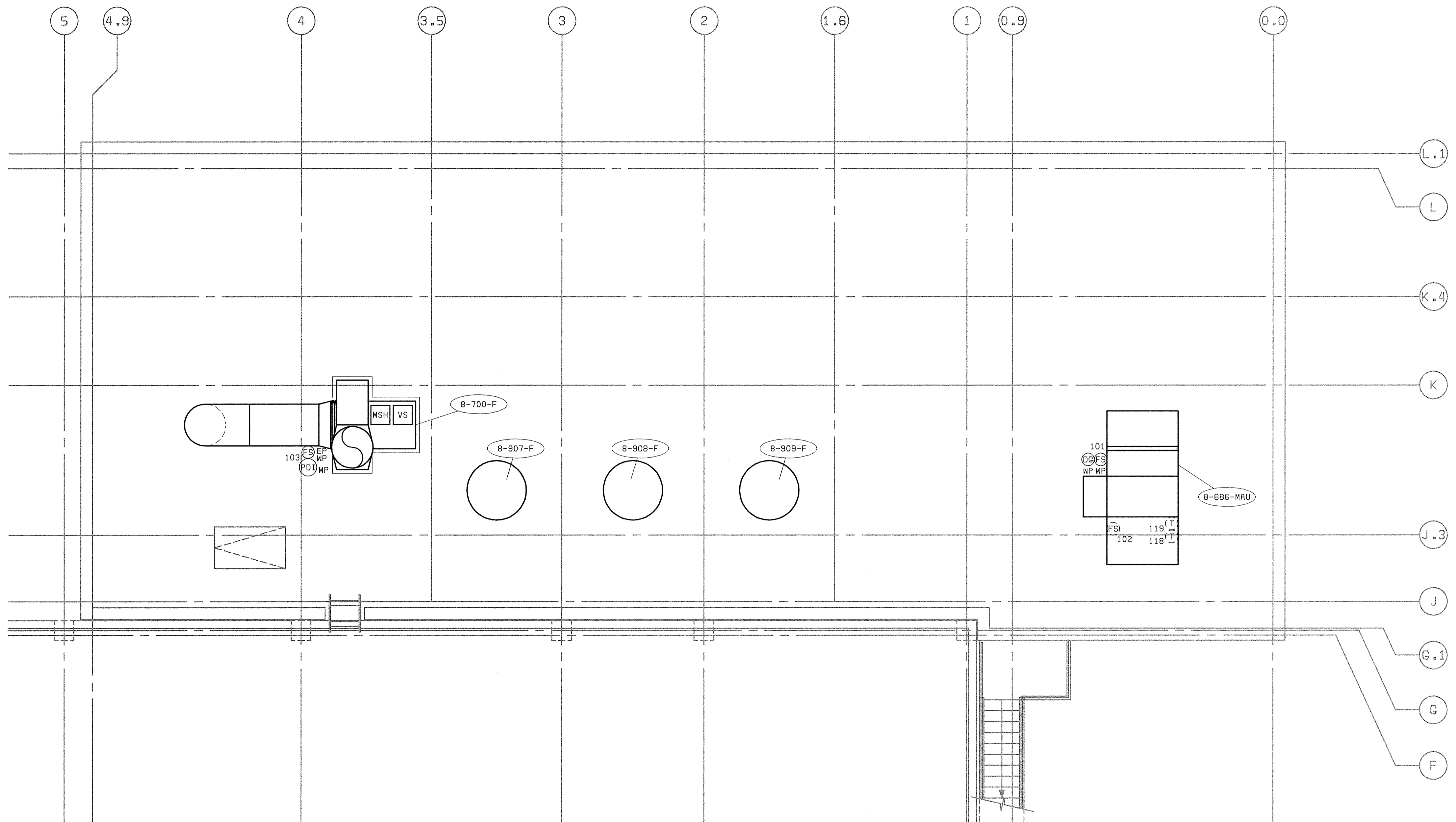
FLOOR PLAN ELEVATION 167.00
3/16"=1'-0"

NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

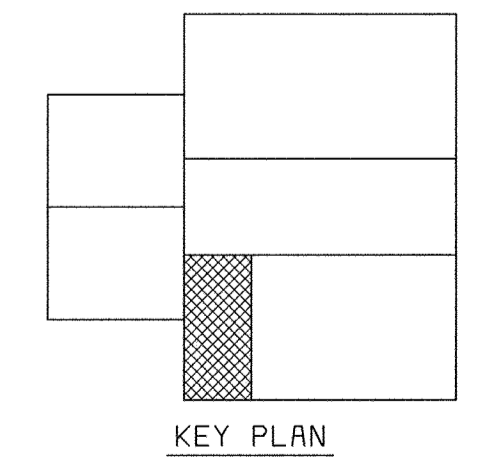


58472-204-SOLS-H-A0000386
58472-212-SOLS-H-A0000843
058472 2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: BRG					ELECTRICAL CENTRIFUGE BUILDING EXPANSION POWER PLAN AT EL 167.00	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: JCT							
			CHK: JTF							E26
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	



ROOF PLAN EL 181.00
3/16" = 1'-0"



58472-206-SOLS-H-A0000592
58472-212-SOLS-H-A0000847

058472.2
F058472A


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH <small>LLP</small> Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS								ELECTRICAL CENTRIFUGE BUILDING EXPANSION PLAN AT ROOF	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN				
			DRN: JCB	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR			SHEET 140 OF 150				
											DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	E27

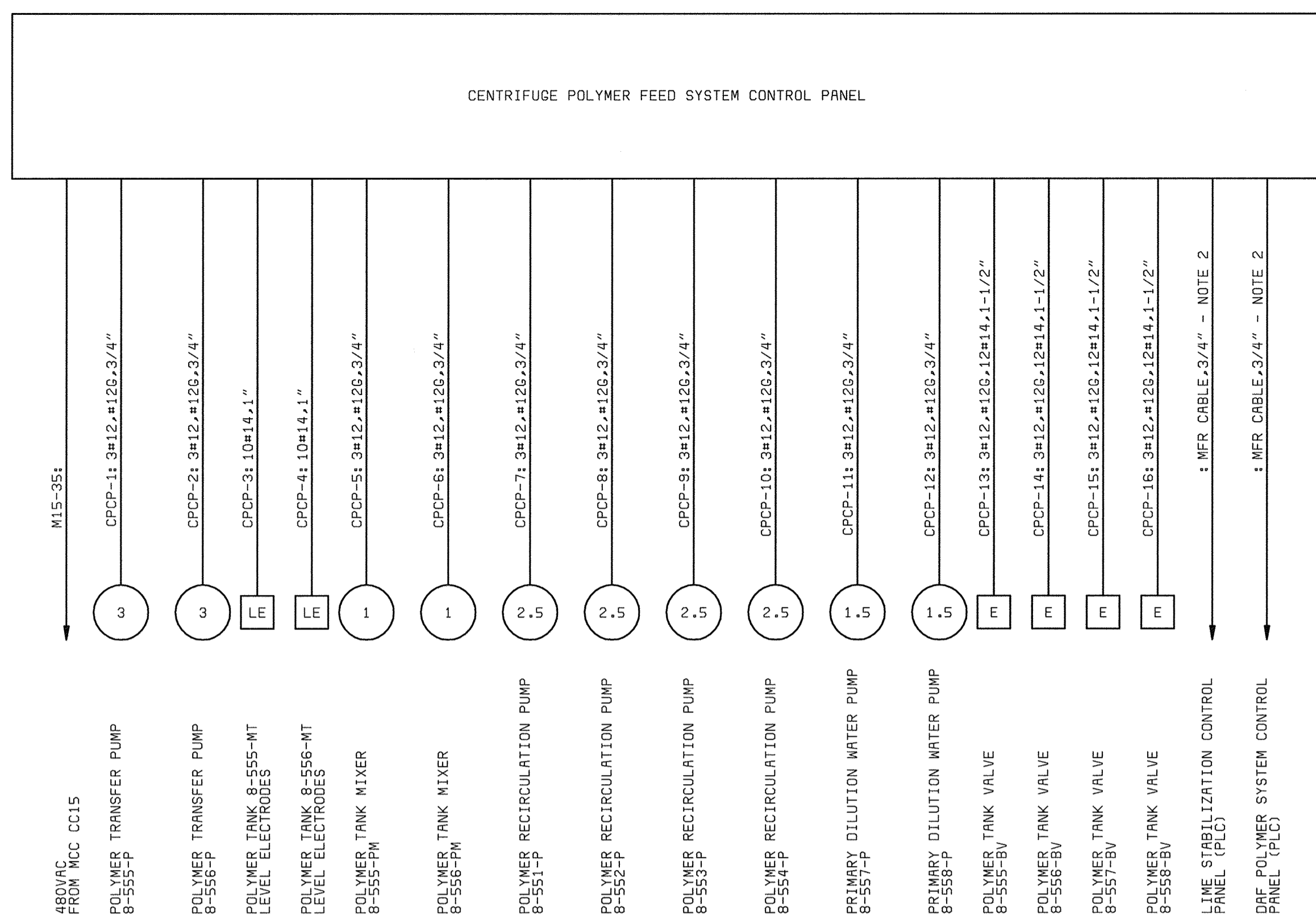
LIGHTING FIXTURE SCHEDULE				
SYMBOL	LAMP	MTG HGT	DESCRIPTION	MANUFACTURER
1	175MH 14,000 LUMENS	AS NOTED	175W METAL HALIDE LOW BAY FIXTURE, DIE-CAST ALUMINUM HOUSING, HIGH POWER FACTOR CONSTANT-WATTAGE AUTO-TRANSFORMER BALLAST & ACRYLIC LENS. 120V.	LITHONIA TXL175MA20120
2	175MH 14,000 LUMENS	11'-0" ABOVE FLOOR	175W METAL HALIDE WALL MOUNTED FIXTURE, DIE-CAST DARK BRONZE ALUMINUM HOUSING, POLYCARBONATE REFRACTOR. 120V.	LITHONIA TWP175M120
3	F32T8/SP35 2,850 LUMENS	AS NOTED	2-TUBE ENCLOSED & GASKETED INDUSTRIAL FLUORESCENT, POLYESTER FIBERGLASS HOUSING, ACRYLIC DIFFUSER, ELECTRONIC BALLAST, SUITABLE FOR DAMP LOCATION. 120V.	LITHONIA DM232AR120GEB
4	F32T8/SP35 2,850 LUMENS	7'-6" ABOVE FLOOR OR AS NOTED	2-TUBE ALL-PURPOSE WALL BRACKET FLUORESCENT, MATTE WHITE OPAL ACRYLIC DIFFUSER, ELECTRONIC BALLAST & EMERGENCY BATTERY PACK. 120V.	LITHONIA WC232A12120GEBEL
5	LU70 6,300 LUMENS	10'-0" ABOVE FLOOR	70W HIGH PRESSURE SODIUM WALL MOUNTED FIXTURE, DIE-CAST DARK BRONZE ALUMINUM HOUSING, POLYCARBONATE REFRACTOR & PE CONTROL. 120V.	LITHONIA TWP70S120PE
EL1	2 HEADS FURNISHED W/UNIT	7'-6" ABOVE FLOOR	2-LAMP, NEMA 4X, EMERGENCY LIGHTING FIXTURE, WALL-MOUNTED, SEALED AND GASKETED, TIME DELAY OPTION, 120V	DUAL-LITE #N4X2TDR
EXIT	N/A	1'-6" ABOVE DOOR	SELF-LUMINOUS, 20 YEAR, SEALED HOUSING, SUITABLE FOR WET LOCATIONS, UNIVERSAL DIRECTIONAL INDICATORS AND MOUNTING	LITHONIA #DSW1R20AA
EL2 REMOTE	3 REMOTE HEADS FURNISHED W/ UNIT	8'-8" ABOVE FLOOR OR AS NOTED	EMERGENCY LIGHTING UNIT, WALL MOUNTED, SEALED & GASKETED, SUITABLE FOR CLASS I DIV I AREAS, TIME DELAY, TWO 12W TUNGSTEN-HALOGEN LAMPS, 120V	LITHONIA #ELU4XN-TD-R0 WITH (3) #ELANX-H1212 REMOTE HEAD

PHASE		PANELBOARD: LIGHTING PANEL LP-A		BUS: COPPER		MAINS: 3P-100A MAIN BREAKER		PHASE							
"A"	"B"	"C"	SERVICE: 120/208V, 3Ø, 4W, S/N		RATING: 100A		LOCATION: DEWATERING BUILDING ELECTRICAL ROOM		"A"	"B"	"C"				
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT#	BKR	P	LOAD	V.A.	V.A.	V.A.			
1050	1260	1260	LIGHTS - EL 142.00	1	20	1	2	20	1	RECP - EL 142.00	1080	720	720		
780	610	1050	LIGHTS - EL 142.00	1	20	3	4	20	1	RECP - EL 156.00	0	0	0		
1050	1050	1050	LIGHTS - EL 142.00	1	20	5	6	20	1	RECP - EL 167.00	0	0	0		
1050	1050	1050	LIGHTS - EL 156.00	1	20	7	8	20	1	SPARE	0	0	0		
1050	1050	1050	LIGHTS - EL 167.00	1	20	9	10	20	1	SPARE	0	0	0		
1050	1050	1050	LIGHTS - EL 167.00	1	20	11	12	20	1	SPARE	0	0	0		
1050	1050	1050	LIGHTS - EL 167.00	1	20	13	14	20	1	SPARE	0	0	0		
1050	1050	1050	LIGHTS - EL 167.00	1	20	15	16	20	1	SPARE	0	0	0		
1050	1050	1050	LIGHTS - EL 167.00	1	20	17	18	20	1	SPARE	0	0	0		
1050	1050	1050	LIGHTS - EL 167.00	1	30	19	20	30	1	SPARE	0	0	0		
586	0	0	LIGHTS - STAIRS & OUTSIDE	1	20	21	22	30	1	SPARE	0	0	0		
0	0	0	SPARE	1	30	23	24	30	1	SPARE	0	0	0		
3930	3470	3360	TOTAL "A"				5,010			TOTAL "A"			1080	720	720
			TOTAL "B"				4,226			TOTAL "B"			720	720	720
			TOTAL "C"				4,080			TOTAL "C"			720	720	720
			TOTAL LOAD =			13,316									

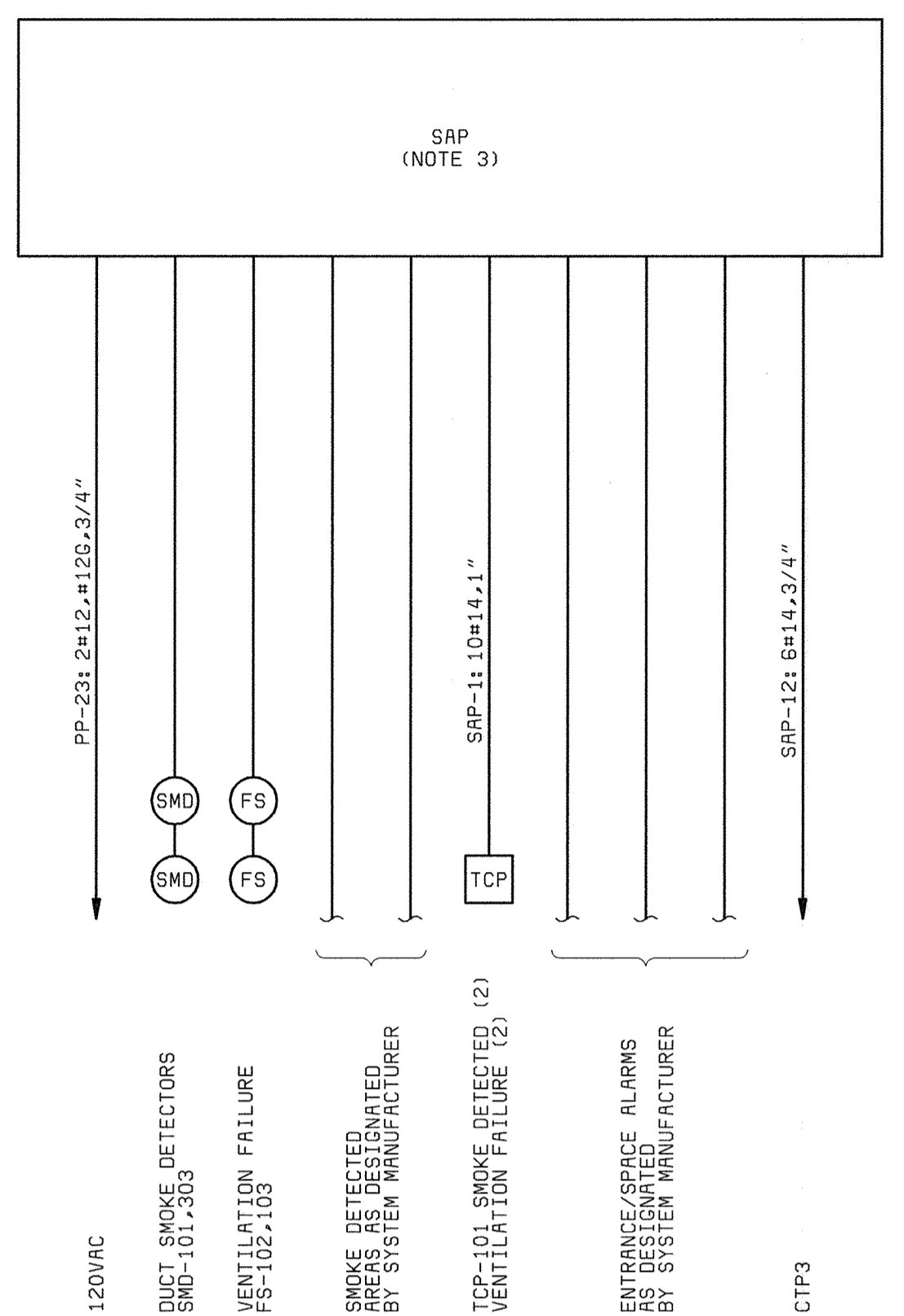
PHASE		PANELBOARD: POWER PANEL PP		BUS: COPPER		MAINS: 2P-125A MAIN BREAKER		PHASE							
"A"	"B"	"C"	SERVICE: 120/240V, 1Ø, 4W, S/N		RATING: 125A (MIN)		LOCATION: DEWATERING BUILDING ELECTRICAL ROOM		"A"	"B"	"C"				
V.A.	V.A.	V.A.	LOAD	P	BKR	CKT#	BKR	P	LOAD	V.A.	V.A.	V.A.			
3600	1270	104	ELECTRIC WATER HEATER EWH-302	1	40	1	2	20	1	TEMPERATURE CONTROL PANEL TCP-101	225	250	200		
720	500	500	LIME STABILIZATION WALL HEATER 8-786-HT	1	20	3	4	20	1	TEMPERATURE CONTROL PANEL TCP-201	200	200	200		
720	500	720	POLYMER FEED FAN 8-914-F	1	20	5	6	20	1	TEMPERATURE CONTROL PANEL TCP-301	200	200	200		
500	500	500	SODIUM HYDROXIDE TRANSFER PUMPS	1	20	7	8	20	1	TEMPERATURE CONTROL PANEL TCP-302	200	200	200		
500	500	500	POLYMER FEED PUMP CONTROLLER, 8-558-P	1	20	9	10	20	1	TEMPERATURE CONTROL PANEL TCP-303	150	200	200		
500	500	500	POLYMER FEED PUMP CONTROLLER, 8-559-P	1	20	11	12	20	1	TEMPERATURE CONTROL PANEL TCP-401	200	175	1000		
720	200	1000	SODIUM HYPOCHLORITE TRANSFER PUMPS	1	20	13	14	20	1	TEMPERATURE CONTROL PANEL TCP-402	1000	1000	1000		
200	1000	200	CENTRIFUGE BUILDING SOLENOID VALVES	1	20	15	16	20	1	BLOWER ENCLOSURE FAN/HEATER	1000	1000	1000		
1000	200	200	BLOWER ENCLOSURE FAN/HEATER	1	20	17	18	20	1	BLOWER ENCLOSURE FAN/HEATER	1000	1000	1000		
200	200	300	INSTRUMENTATION	1	30	19	20	40	1	AIR COMPRESSOR CONTROL VALVES	100	300	300		
200	300	300	INSTRUMENTATION	1	20	21	22	40	1	INSTRUMENTATION	300	300	300		
300	0	0	SUPERVISED ALARM PANEL	1	20	23	24	20	1	INSTRUMENTATION	300	300	300		
0	0	0	SPARE	-	20	25	26	20	1	INSTRUMENTATION	300	300	300		
0	0	0	SPARE	-	20	27	28	20	1	INSTRUMENTATION	300	300	300		
0	0	0	SPARE	-	20	29	30	20	1	SPARE	0	0	0		
9,314			TOTAL				14,014			TOTAL			4,700		

NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

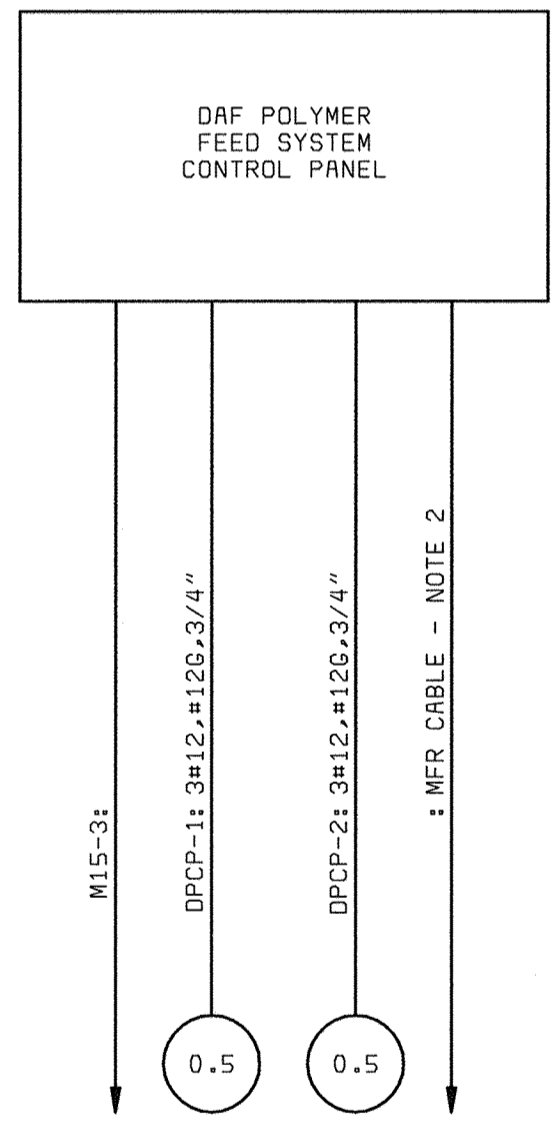
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS						ELECTRICAL MISCELLANEOUS DETAILS AND SCHEDULES	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: MDR,DAH	CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR			RJR
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP		E28



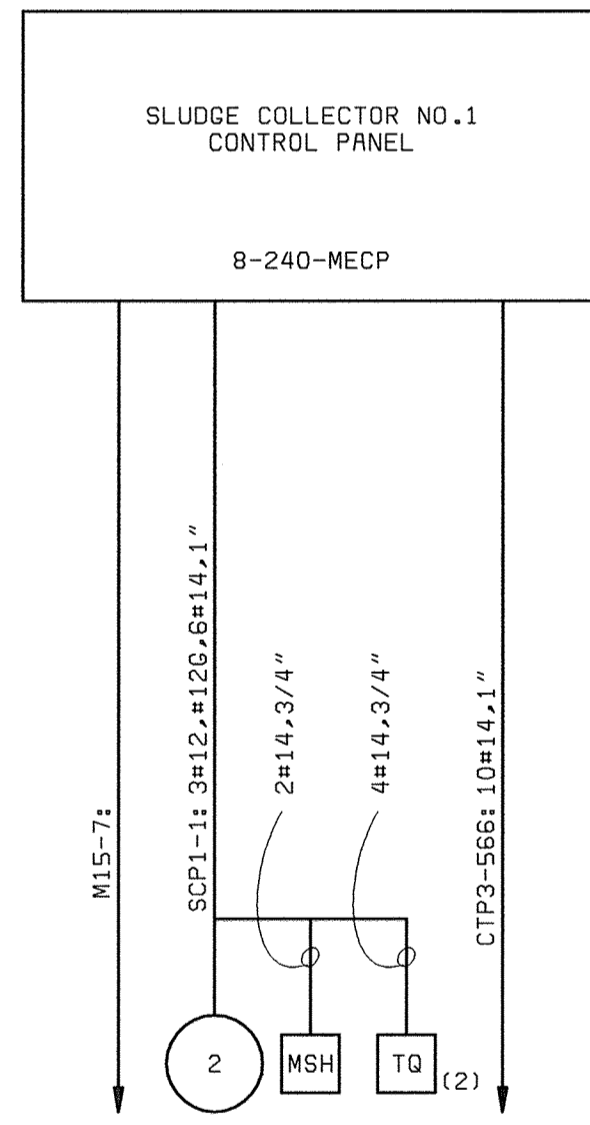
CENTRIFUGE POLYMER FEED SYSTEM ONE-LINE
(DEWATERING BUILDING POLYMER FEED AREA)



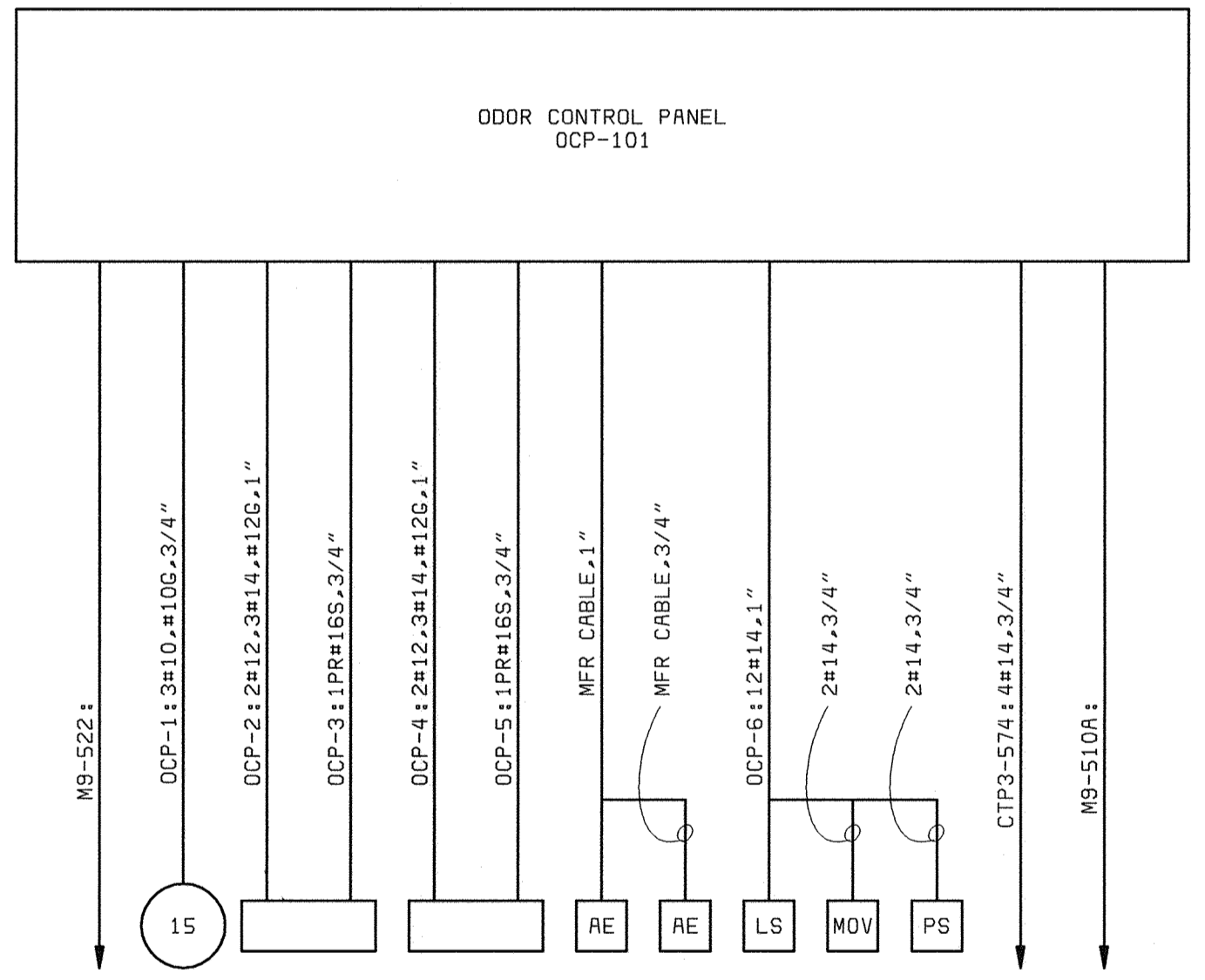
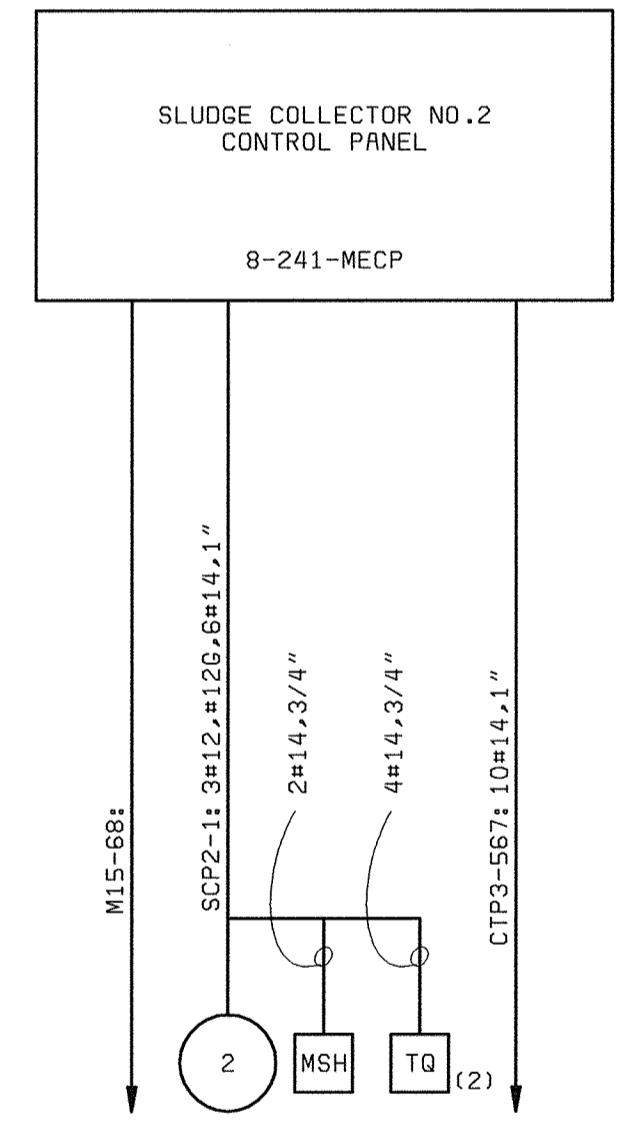
SUPERVISED ALARM PANEL (SAP) ONE-LINE
(DEWATERING BUILDING ELECTRICAL ROOM)



DAF POLYMER FEED SYSTEM ONE-LINE
(DEWATERING BUILDING POLYMER FEED AREA)



SLUDGE COLLECTOR CONTROL ONE-LINES
(DEWATERING BUILDING FLOTATION THICKENING AREA)

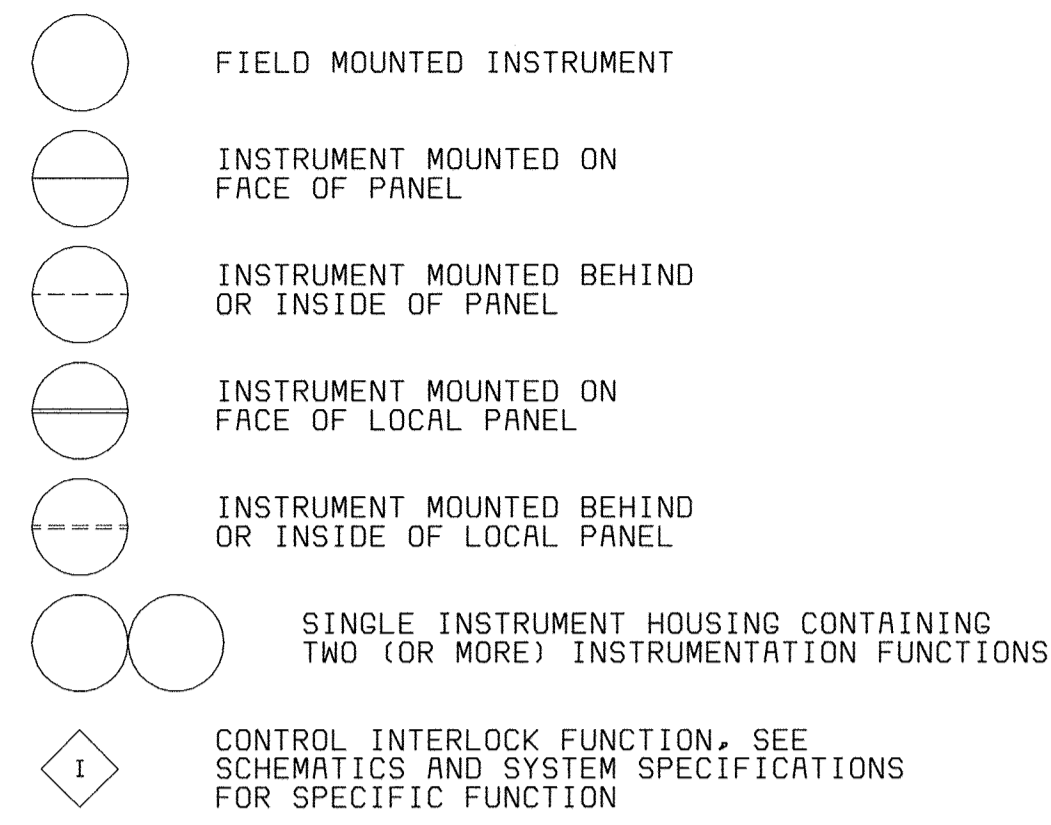


OCP-101 ONE-LINE
(CENTRIFUGE BUILDING)

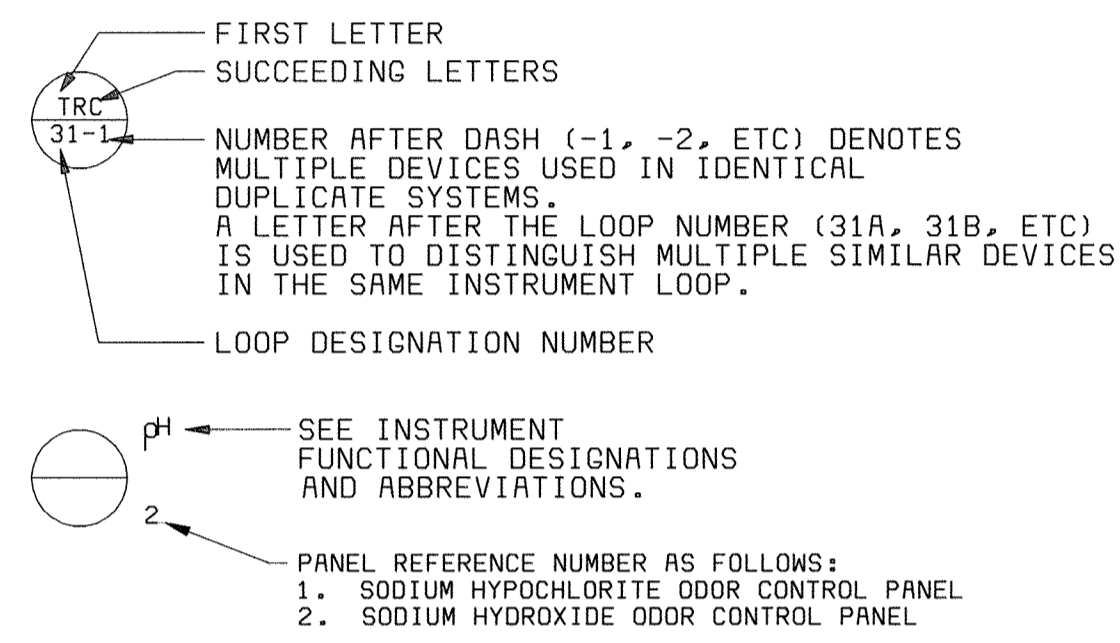
- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - NETWORK CABLE AND CONDUIT SHALL BE PROVIDED AND INSTALLED UNDER THE LIQUIDS PHASE CONTRACT.
 - THE SUPERVISED ALARM SIGNALING SYSTEM SHALL BE DESIGNED AND PROVIDED BY THE SYSTEM MANUFACTURER, INCLUDING CABLE AND CONDUIT THAT ARE NOT SPECIFICALLY IDENTIFIED IN THE ONE-LINE.
 - IF ADDITIVE ALTERNATIVE NO. 3 IS SELECTED, CONTRACTOR SHALL WIRE A 3 HP MOTOR FOR THE POLYMER FEEDER/BLENDER PUMP UNIT AND WIRE 3#12, #12C, 3/4" CONDUIT TO THE CENTRIFUGE POLYMER FEED SYSTEM CONTROL PANEL. CONTRACTOR SHALL ALSO INSTALL AND WIRE POLYMER FEEDER/BLENDER VALVE 8-600-BV AND WIRE 3#12, #12C, 12#4, 1-1/2 WIRE AND CONDUIT TO THE CENTRIFUGE POLYMER FEED CONTROL SYSTEM PANEL.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS						LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 142 OF 150 E29
			DRN: DAH CHK: JTF DATE: 5/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS	RHH RJR RJR	NO. BY CK APP	ELECTRICAL MISCELLANEOUS SYSTEM ONE-LINE DIAGRAMS			

GENERAL INSTRUMENT SYMBOLS



TAG NUMBERS AND ADDITIONAL DESIGNATIONS

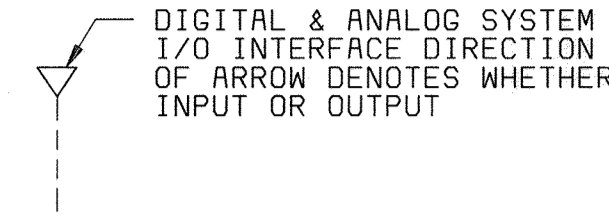


TAG NUMBERS MEANINGS OF IDENTIFICATION LETTERS

LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	
D	DENSITY (MASS) OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE OR HUMIDITY	MOMENTARY			MIDDLE OR INTER-MEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE	INTEGRATE OR TOTALIZE		
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, OR PRESENCE			RELAY OR COMPUTE	
Z	POSITION, DIMENSION			DRIVE, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

DIGITAL SYSTEMS INTERFACE SYMBOLS

NOTE: REFER TO DETAILED SYSTEM SPECIFICATIONS FOR FUNCTIONAL DESCRIPTION. ALSO SEE I/O SCHEDULES FOR COMPLETE INPUT AND OUTPUT LISTINGS.



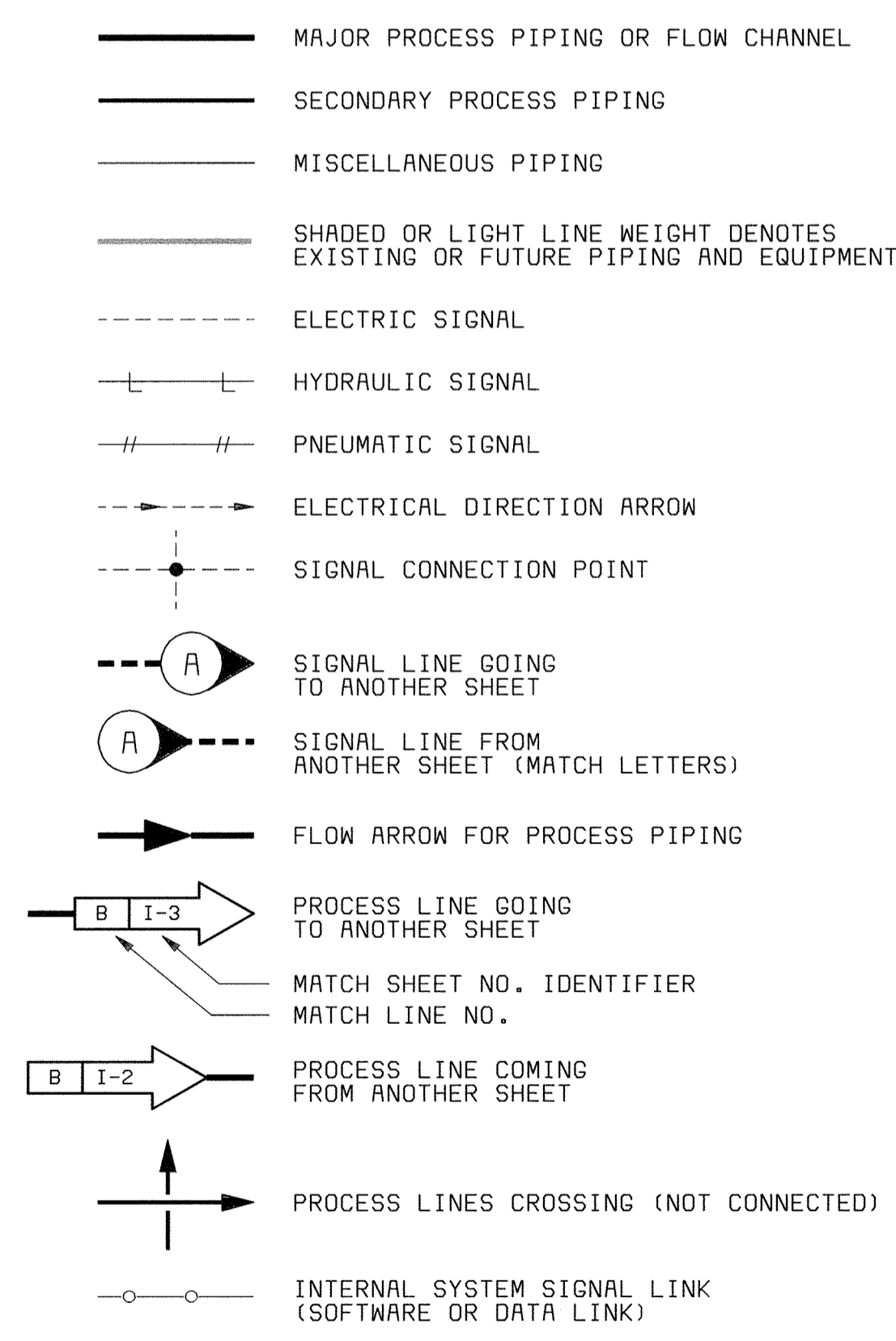
FUNCTION DESIGNATIONS AND ABBREVIATIONS

INSTRUMENT DESIGNATIONS		HAND SWITCH DESIGNATIONS	
K	GAIN OR ATTENUATE (INPUT:OUTPUT)	HOR	HAND-OFF-AUTO
-K	GAIN AND REVERSE	LR	LOCAL REMOTE
Σ	ADD OR SUM (ADD AND SUBTRACT)	OC	OPEN-CLOSE
Δ	SUBTRACT (DIFFERENCE)	OO	ON-OFF
√	EXTRACT SQUARE ROOT	LOR	LOCAL-OFF-REMOTE
÷	DIVIDE	OOA	ON-OFF-AUTO
F(X)	CHARACTERIZE SIGNAL	OCR	OPEN-CLOSE-REMOTE
>	HIGH-SELECT	OOD	ON-OFF-REMOTE
<	LOW-SELECT		
X	MULTIPLY	POWER SUPPLY ABBREVIATIONS	
∫	INTEGRATE (TIME INTEGRAL)	AS	AIR SUPPLY
CH ₄	METHANE	ES	ELECTRIC SUPPLY
CL ₂	CHLORINE RESIDUAL	GS	GAS SUPPLY
CO ₂	CARBON DIOXIDE	HS	HYDRAULIC SUPPLY
DO	DISSOLVED OXYGEN	NS	NITROGEN SUPPLY
LEL	LOWER EXPLOSIVE LIMIT	SS	STEAM SUPPLY
MCC	MOTOR CONTROL CENTER	WS	WATER SUPPLY
MLSS	MIXED LIQUOR SUSPENDED SOLIDS		
O ₂	OXYGEN (PURITY)	AS	POWER SUPPLY SOURCE LABEL, USED ONLY WHERE NECESSARY TO HELP CLARIFY AN INSTRUMENT OR SYSTEM FUNCTION.
pH	pH CELL		
TURB	TURBIDITY		

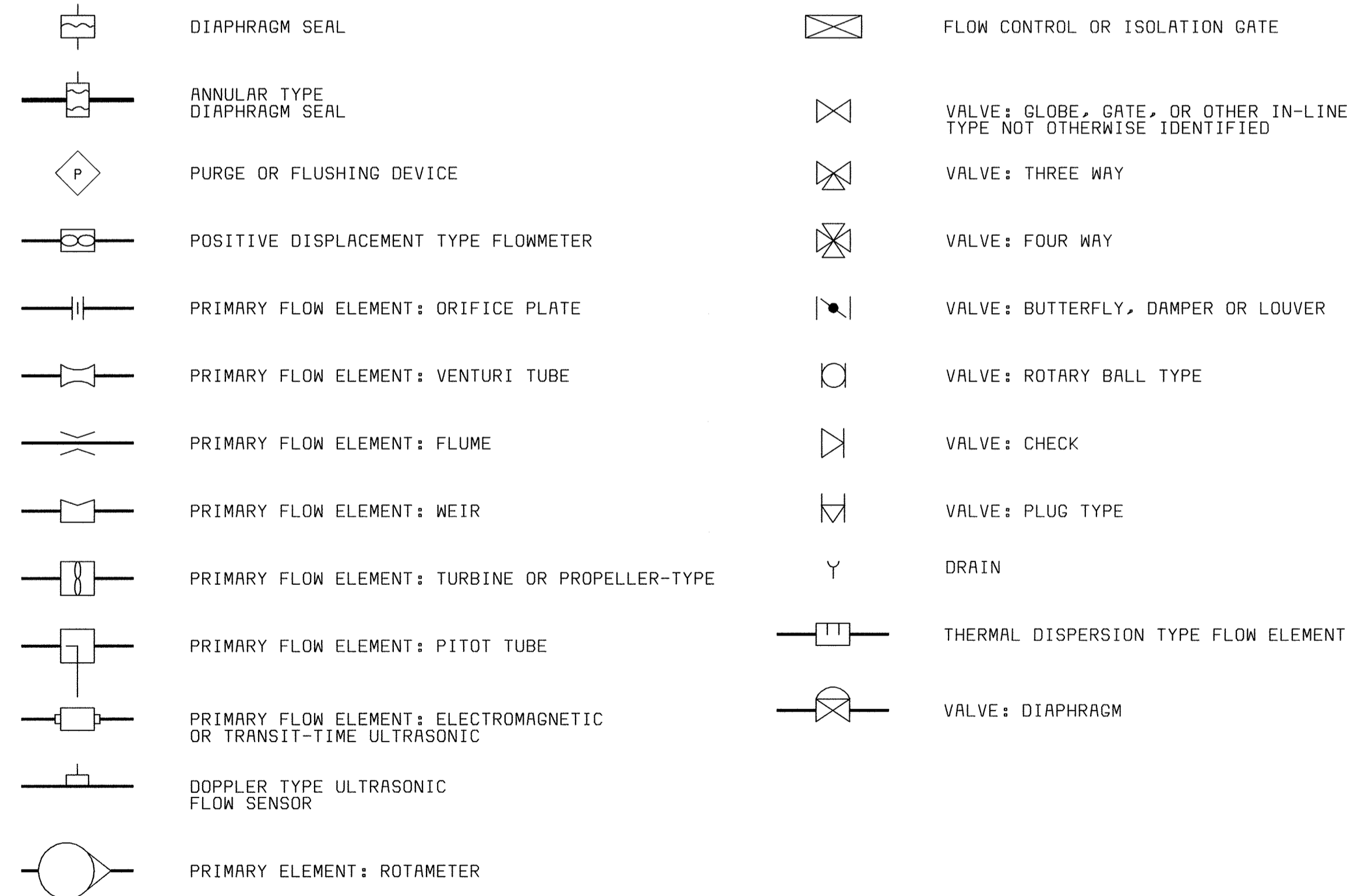
GENERAL NOTES

- IN GENERAL, THE P & ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INSTRUMENT SOCIETY OF AMERICA, STANDARD PRACTICE (ISA-SS-1) (1988). SOME MODIFICATIONS, ADDITIONS, AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT REQUIREMENTS.
- ADDITIONAL CONTROL AND INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON SCHEMATIC DRAWINGS HAVE BEEN OMITTED FROM THE P & ID DRAWINGS. SOME PROCESS ITEMS, SUCH AS EQUIPMENT ISOLATION VALVES, BYPASS LINES, ETC., WHICH ARE NOT CRITICAL FOR AN UNDERSTANDING OF THE INSTRUMENTATION FUNCTIONS HAVE ALSO BEEN OMITTED.
- THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
- PIPING AND EQUIPMENT LEGEND APPLIES TO P & ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.

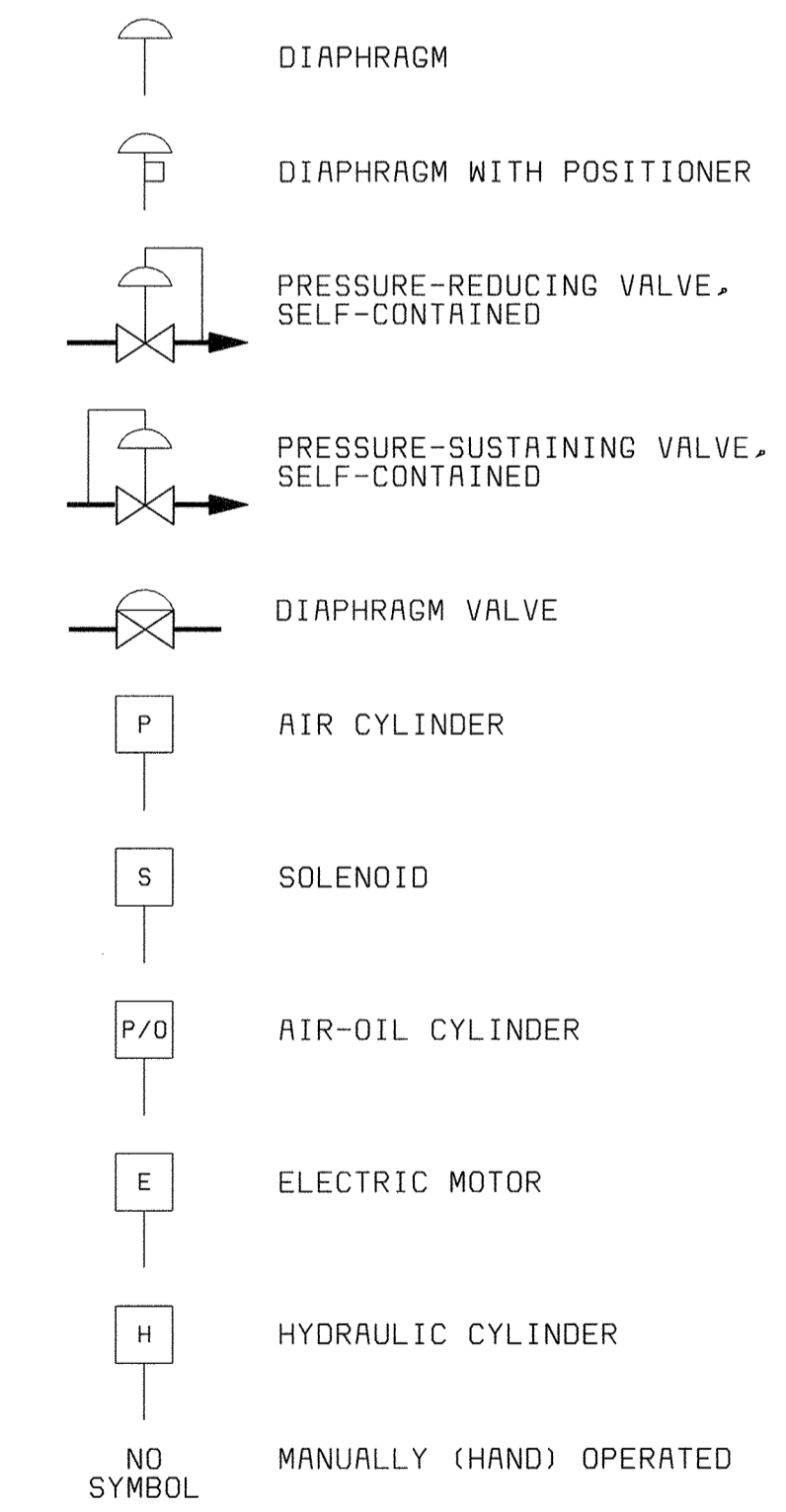
LINE SYMBOLS



PROCESS DEVICE SYMBOLS



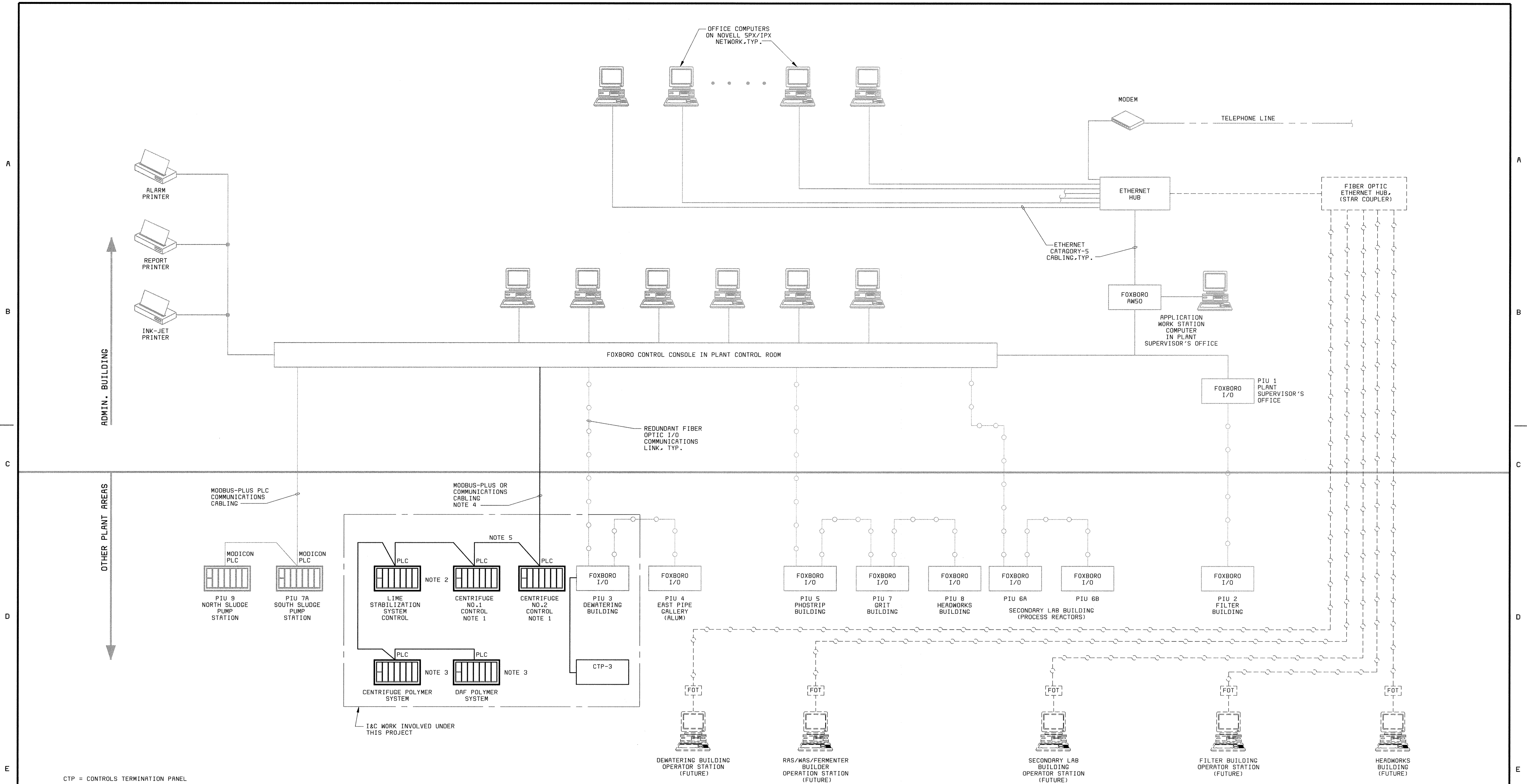
VALVE AND GATE ACTUATOR SYMBOLS



THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILIZED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

NC NORMALLY CLOSED
 FC FAILS CLOSED
 FO FAILS OPEN
 FIP FAILS IN LAST POSITION

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH, L.P. Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21876	DES: RLS					INSTRUMENTATION P & ID LEGEND & ABBREVIATIONS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: TDR							
			CHK: PWM							I 1
			DATE: 5/30/00	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH RJR RJR			

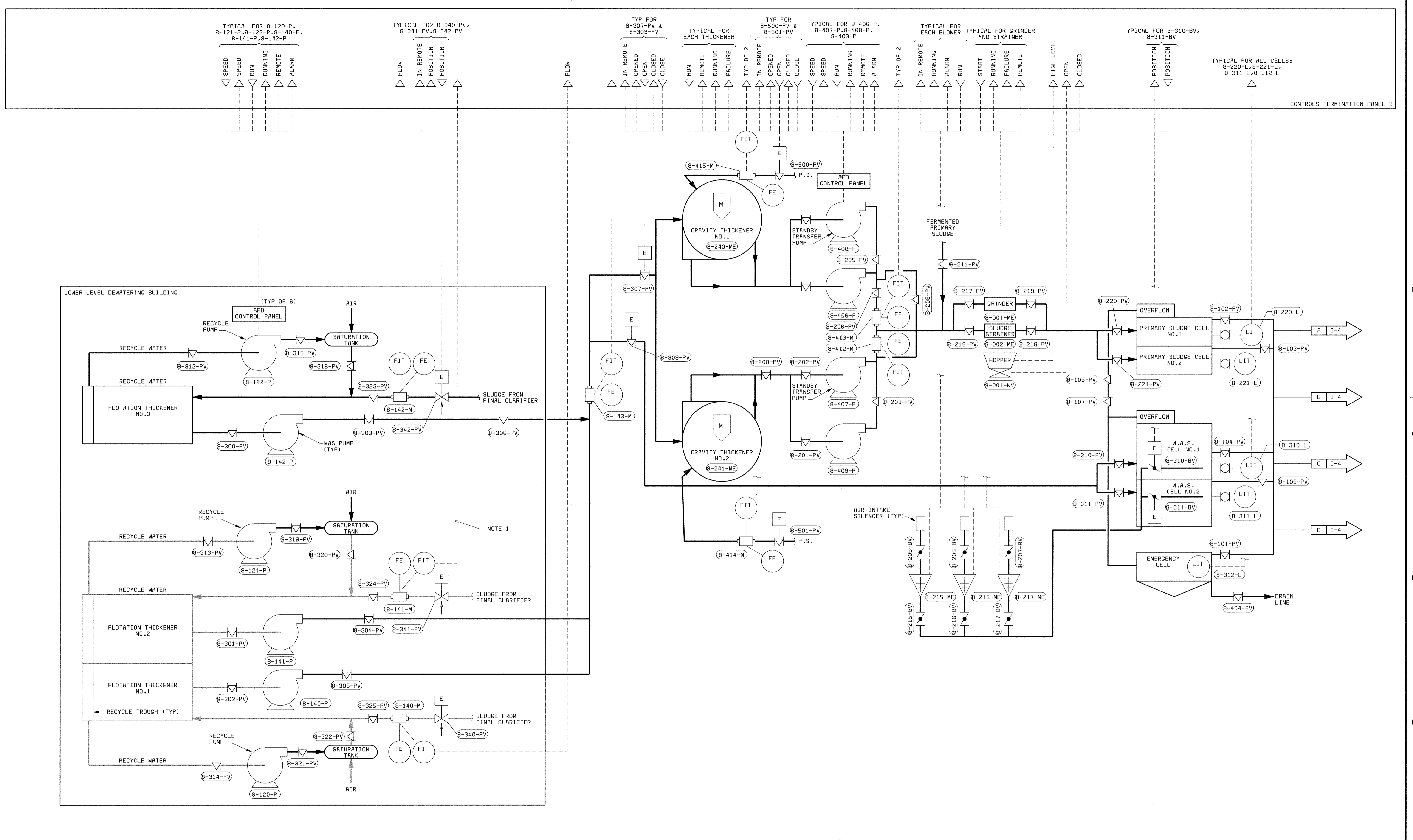


CTP = CONTROLS TERMINATION PANEL

I&C WORK INVOLVED UNDER THIS PROJECT

- NOTES:**
1. PROVIDES UNDER A SEPARATE EQUIPMENT PROCUREMENT CONTRACT.
 2. PROVIDED BY CHEMICAL FEED SECTION 11727.
 3. ALL NETWORK CABLE SHALL BE PROVIDED AND CONNECTED UNDER CONTRACT #20-3842.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: PWM							INSTRUMENTATION PLANT CONTROL SYSTEM BLOCK DIAGRAM PROPOSED ADDITIONS	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: DAH									
			CHK: PWM									12
			DATE: 5/30/00	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR		
						REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP		



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

BLACK & VEATCH LLP
Gaithersburg, Maryland

REG. PROF. ENGR. _____ DATE _____

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DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

DES: RLS					
DRN: DAH					
CHK: PWM					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHR	RJR/RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

INSTRUMENTATION

SOLIDS PROCESSING P&ID

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

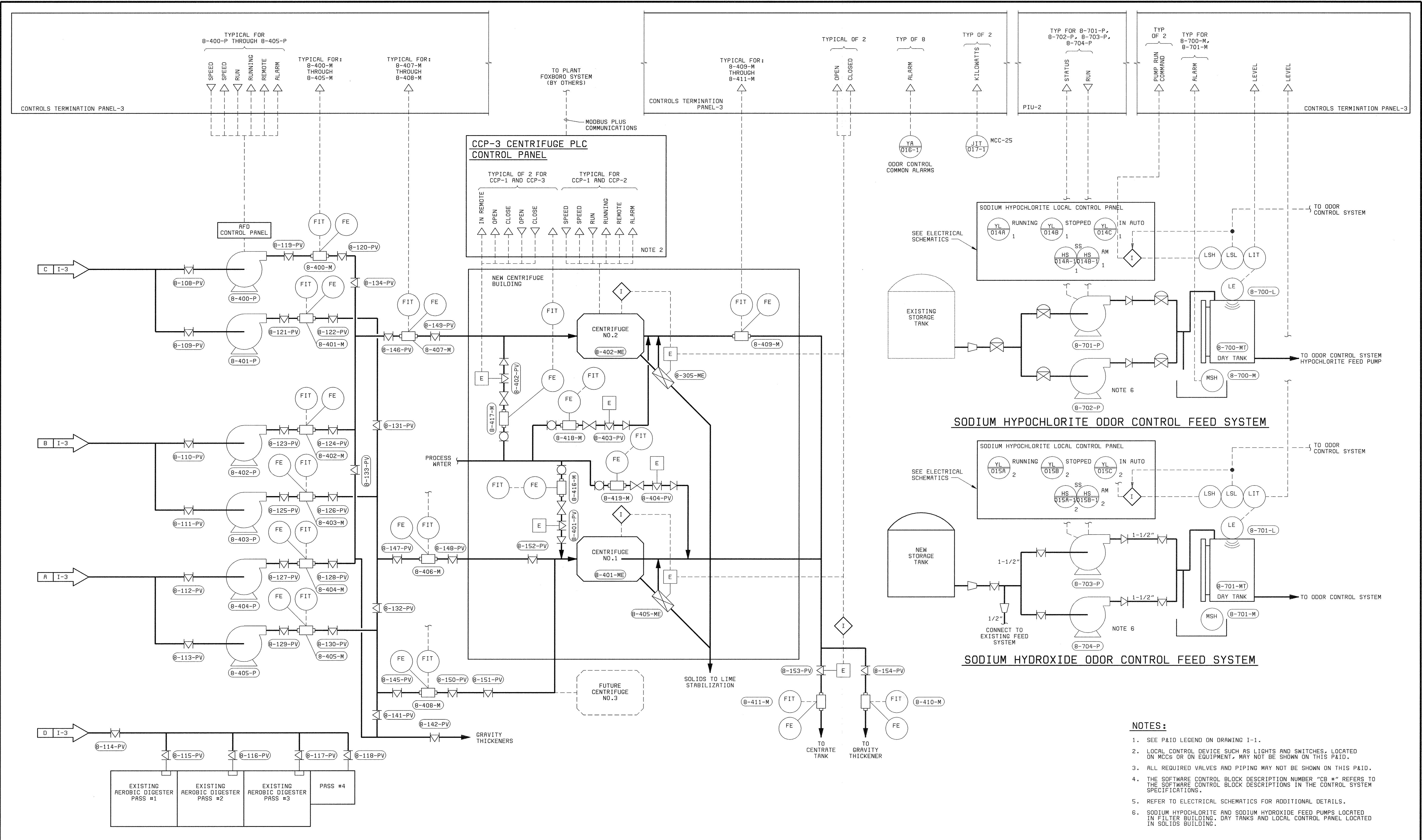
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
145 OF 150

13

DS6472-2
P056472A



- NOTES:**
1. SEE P&ID LEGEND ON DRAWING I-1.
 2. LOCAL CONTROL DEVICE SUCH AS LIGHTS AND SWITCHES, LOCATED ON MCCS OR ON EQUIPMENT, MAY NOT BE SHOWN ON THIS P&ID.
 3. ALL REQUIRED VALVES AND PIPING MAY NOT BE SHOWN ON THIS P&ID.
 4. THE SOFTWARE CONTROL BLOCK DESCRIPTION NUMBER "CB #" REFERS TO THE SOFTWARE CONTROL BLOCK DESCRIPTIONS IN THE CONTROL SYSTEM SPECIFICATIONS.
 5. REFER TO ELECTRICAL SCHEMATICS FOR ADDITIONAL DETAILS.
 6. SODIUM HYPOCHLORITE AND SODIUM HYDROXIDE FEED PUMPS LOCATED IN FILTER BUILDING, DRY TANKS AND LOCAL CONTROL PANEL LOCATED IN SOLIDS BUILDING.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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NO. 21876

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DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR	
	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY	CHK	APP

INSTRUMENTATION

SOLIDS PROCESSING P&ID

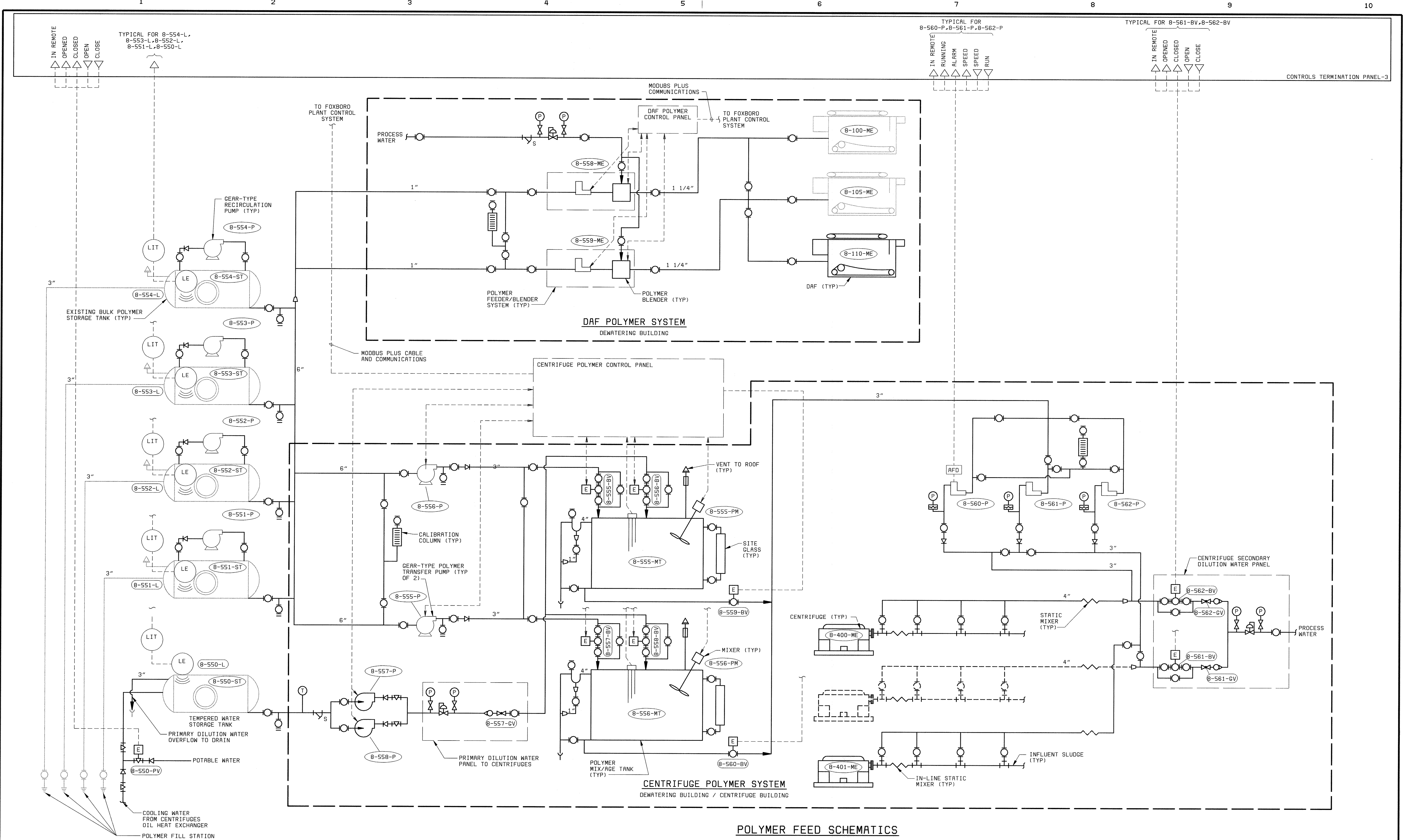
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 146 OF 150

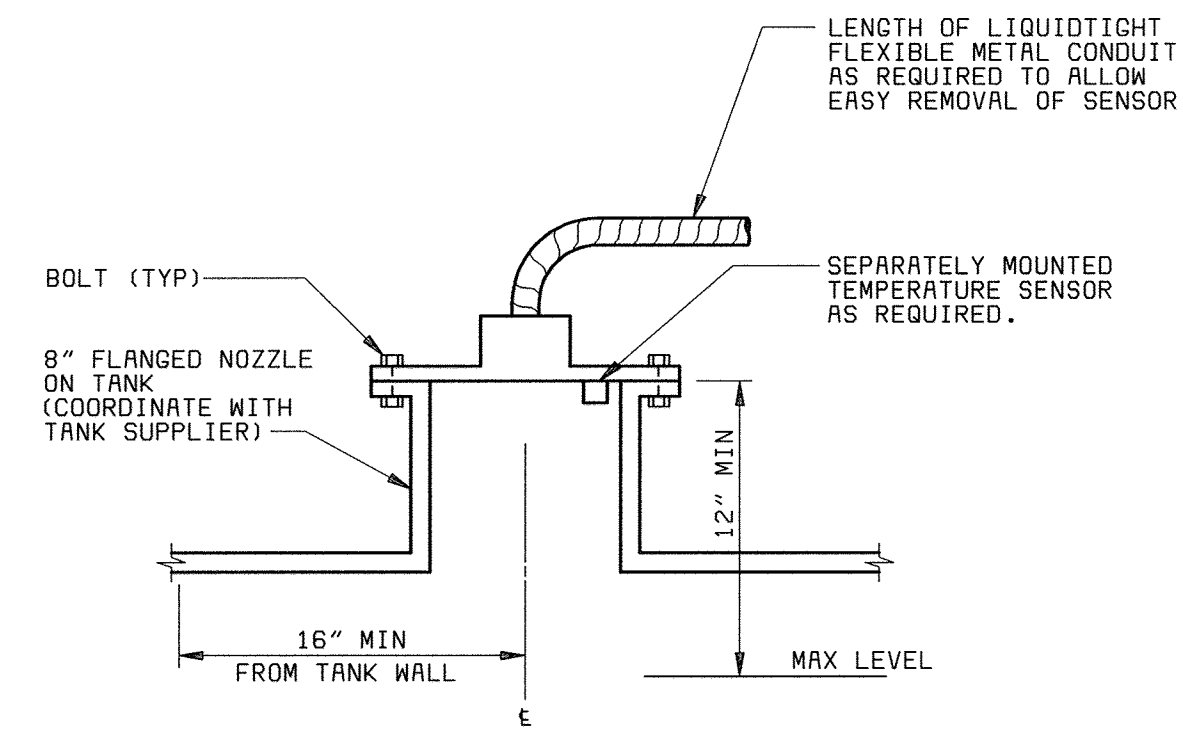
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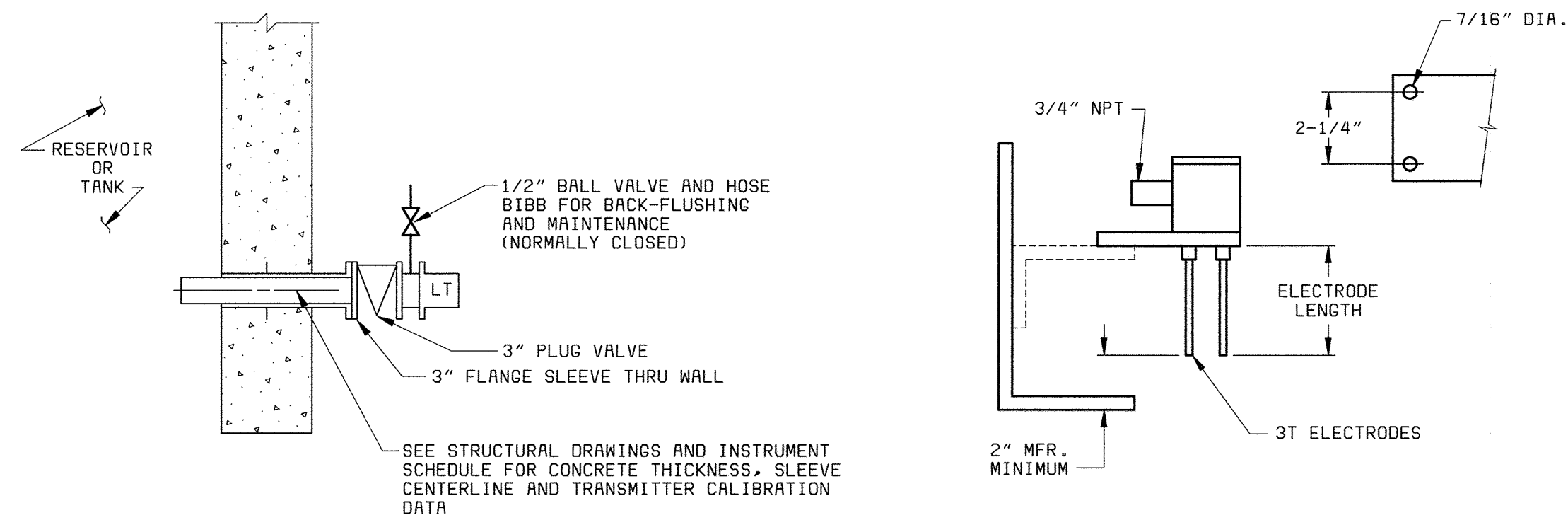
POLYMER FEED SCHEMATICS

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: RLS					INSTRUMENTATION POLYMER FEED SCHEMATIC	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
			DRN: DAH	CHK: PWM	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHR/RJR/RJR
			DATE REVISIONS AND RECORD OF ISSUE						I5	

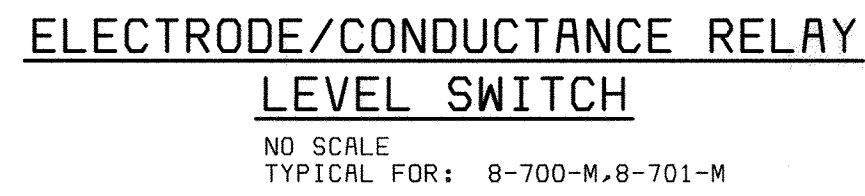
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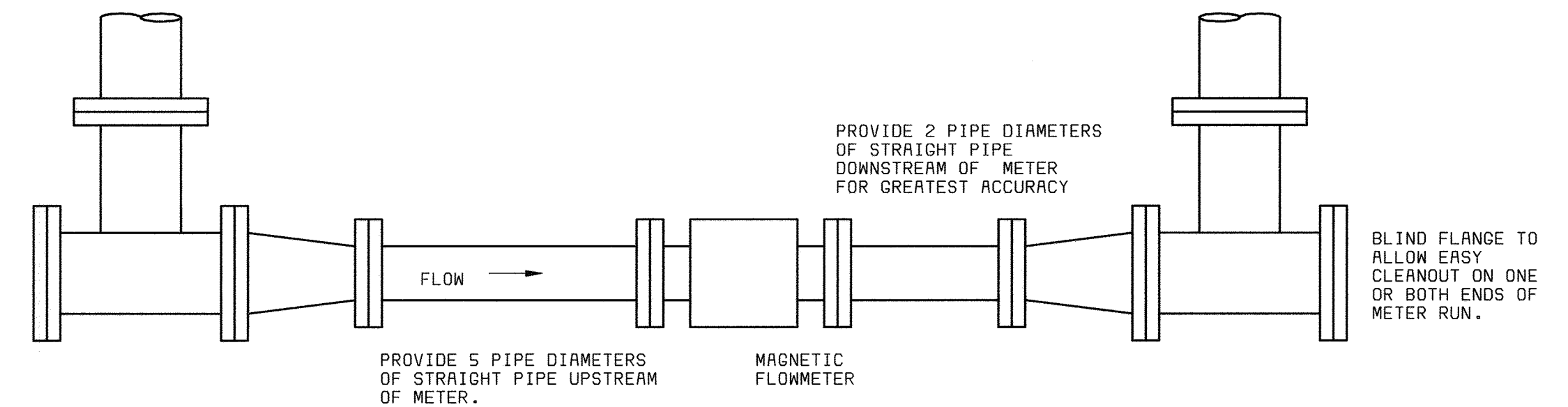
**ULTRASONIC LEVEL SENSOR
INSTALLATION DETAIL**
NO SCALE
TYPICAL FOR: 8-700-L, 8-701-L, 8-550-L



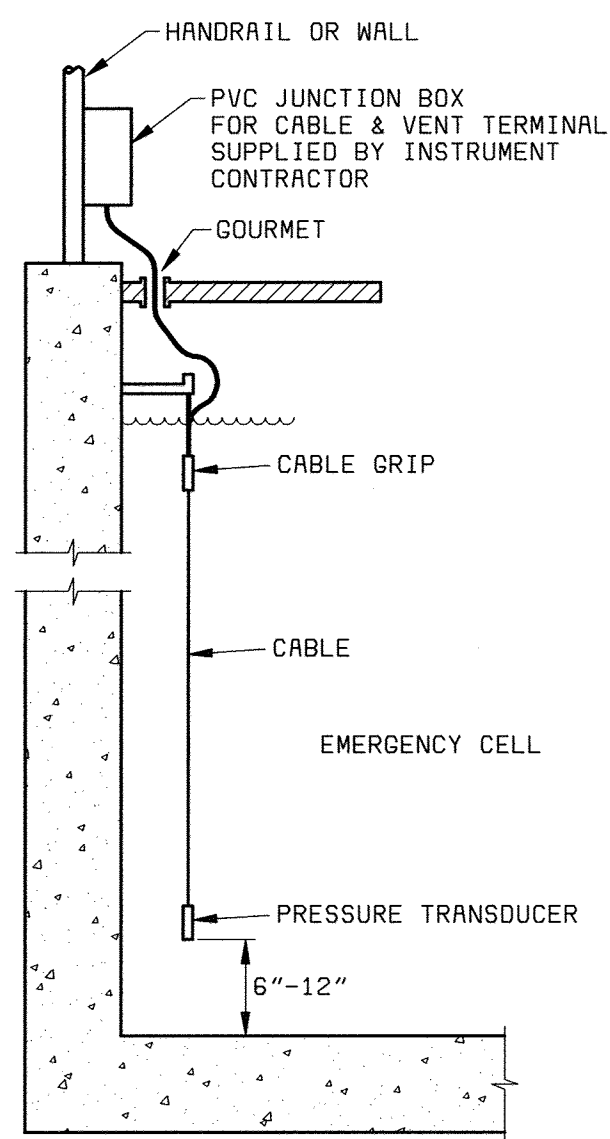
**FLANGE MOUNTED PRESSURE SENSING
LEVEL TRANSMITTER INSTALLATION DETAIL**
NO SCALE
TYPICAL FOR: 8-220-L, 8-221-L, 8-310-L, 8-311-L



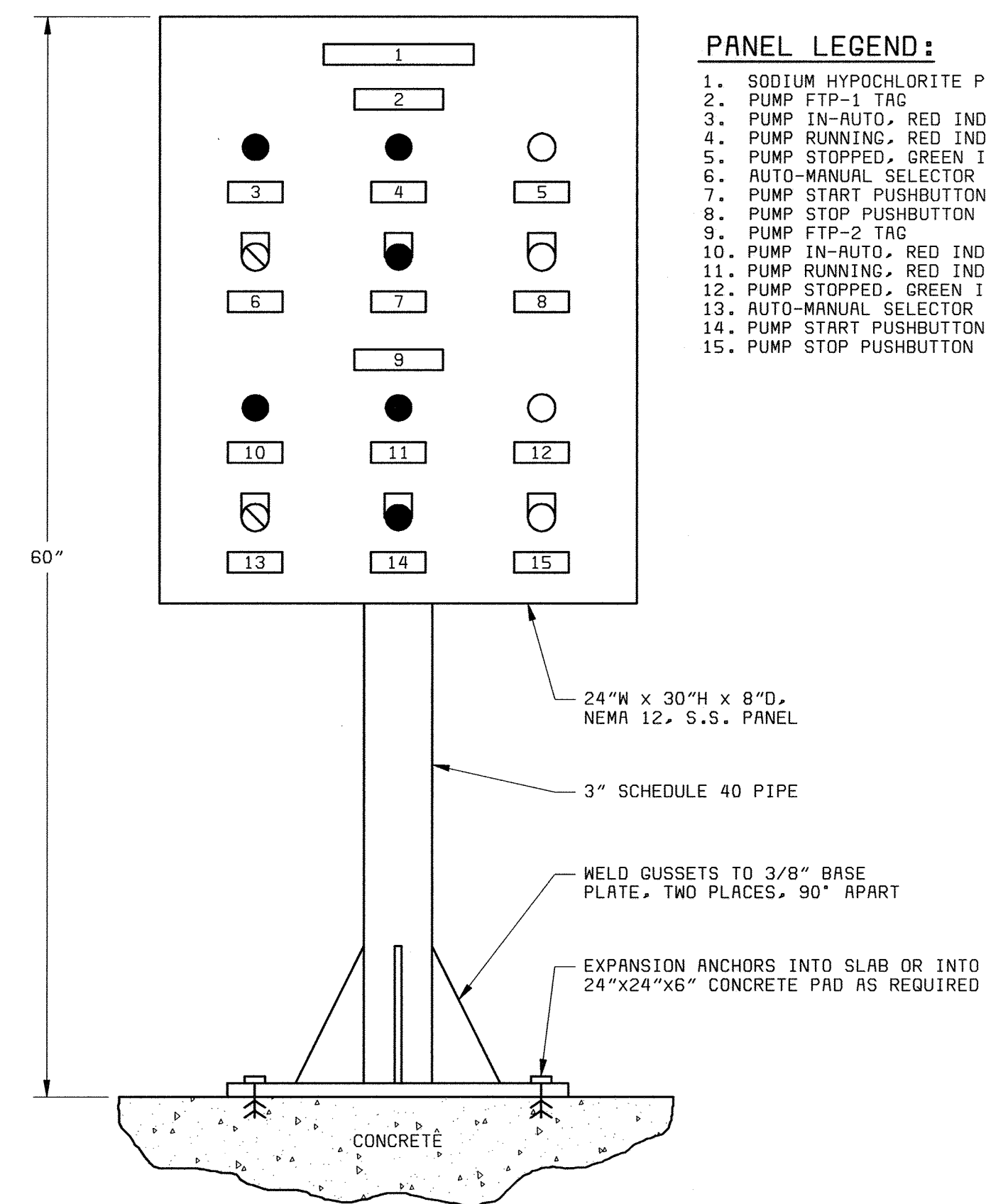
**ELECTRODE/CONDUCTANCE RELAY
LEVEL SWITCH**
NO SCALE
TYPICAL FOR: 8-700-M, 8-701-M



**TYPICAL MAGNETIC FLOWMETER INSTALLATION
WITH CLEAN-OUTS**
NO SCALE

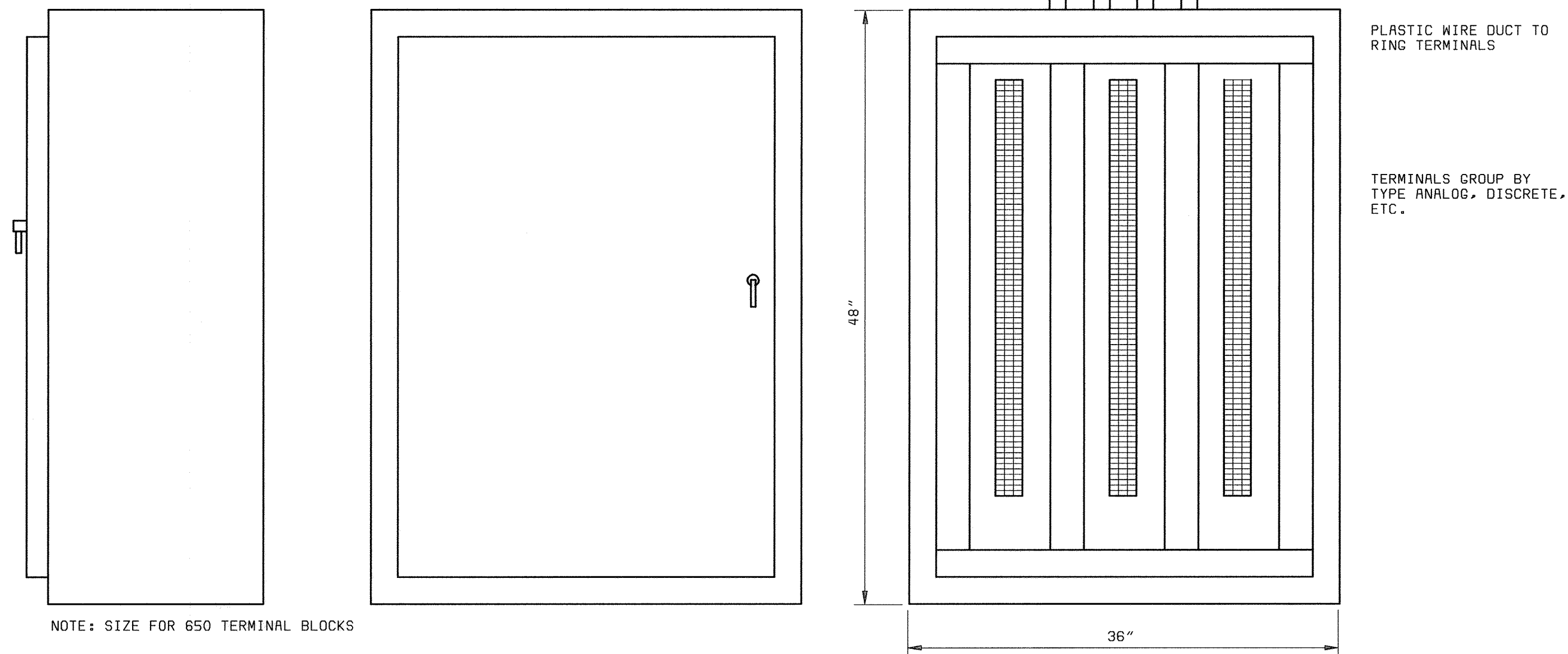


SUBMERSIBLE PRESSURE SENSOR DETAIL
NO SCALE
TYPICAL FOR: 8-312-L



SODIUM HYPOCHLORITE LOCAL CONTROL PANEL
NO SCALE
(TYPICAL FOR SODIUM HYPOCHLORITE AND SODIUM HYDROXIDE CONTROL PANELS)

- PANEL LEGEND:**
1. SODIUM HYPOCHLORITE PUMP CONTROL PANEL
 2. PUMP FTP-1 TAG
 3. PUMP IN-AUTO, RED INDICATOR
 4. PUMP RUNNING, RED INDICATOR
 5. PUMP STOPPED, GREEN INDICATOR
 6. AUTO-MANUAL SELECTOR SWITCH
 7. PUMP START PUSHBUTTON
 8. PUMP STOP PUSHBUTTON
 9. PUMP FTP-2 TAG
 10. PUMP IN-AUTO, RED INDICATOR
 11. PUMP RUNNING, RED INDICATOR
 12. PUMP STOPPED, GREEN INDICATOR
 13. AUTO-MANUAL SELECTOR SWITCH
 14. PUMP START PUSHBUTTON
 15. PUMP STOP PUSHBUTTON



**DEWATERING BUILDING
WALL MOUNT CONTROLS TERMINATION PANEL**
NO SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Galtersburg, Maryland
REG. PROF. ENGR. DATE

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NO. 21876

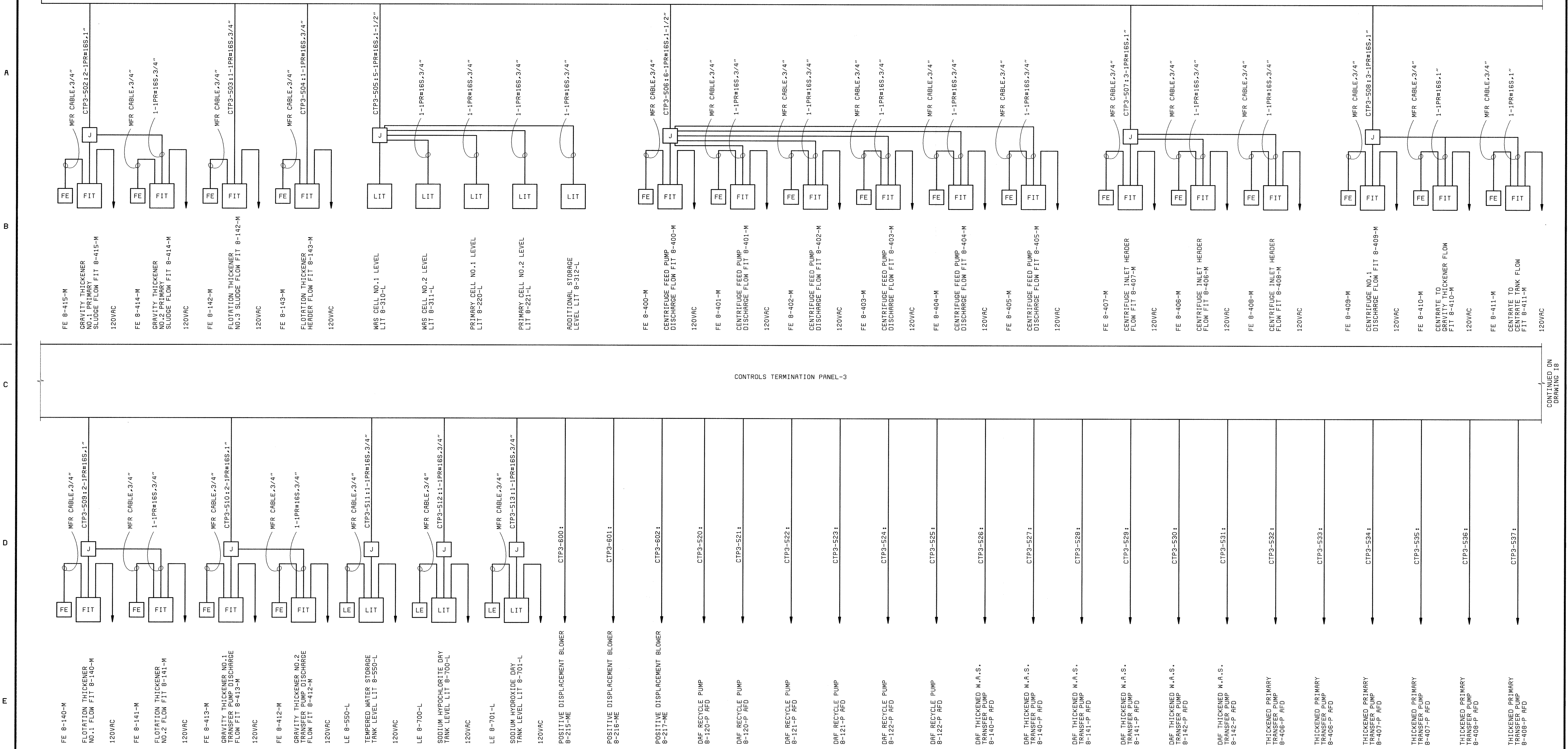
DES: RLS					
DRN: DAH					
CHK: PWM					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

INSTRUMENTATION
MISCELLANEOUS DETAILS

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
148 OF 150
I6

CONTROLS TERMINATION PANEL-3



- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - INSTRUMENTATION POWER SHALL BE FROM 120V POWER PANEL PP- AND SHALL BE DAISY-CHAINED AS REQUIRED. NO MORE THAN 6 INSTRUMENTS SHALL BE DAISY-CHAINED FROM ONE CIRCUIT BREAKER.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE



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DES: GNS					
DRN: MDR,DAH					
CHK: PWM					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK

INSTRUMENTATION
ONE-LINE DIAGRAM

LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

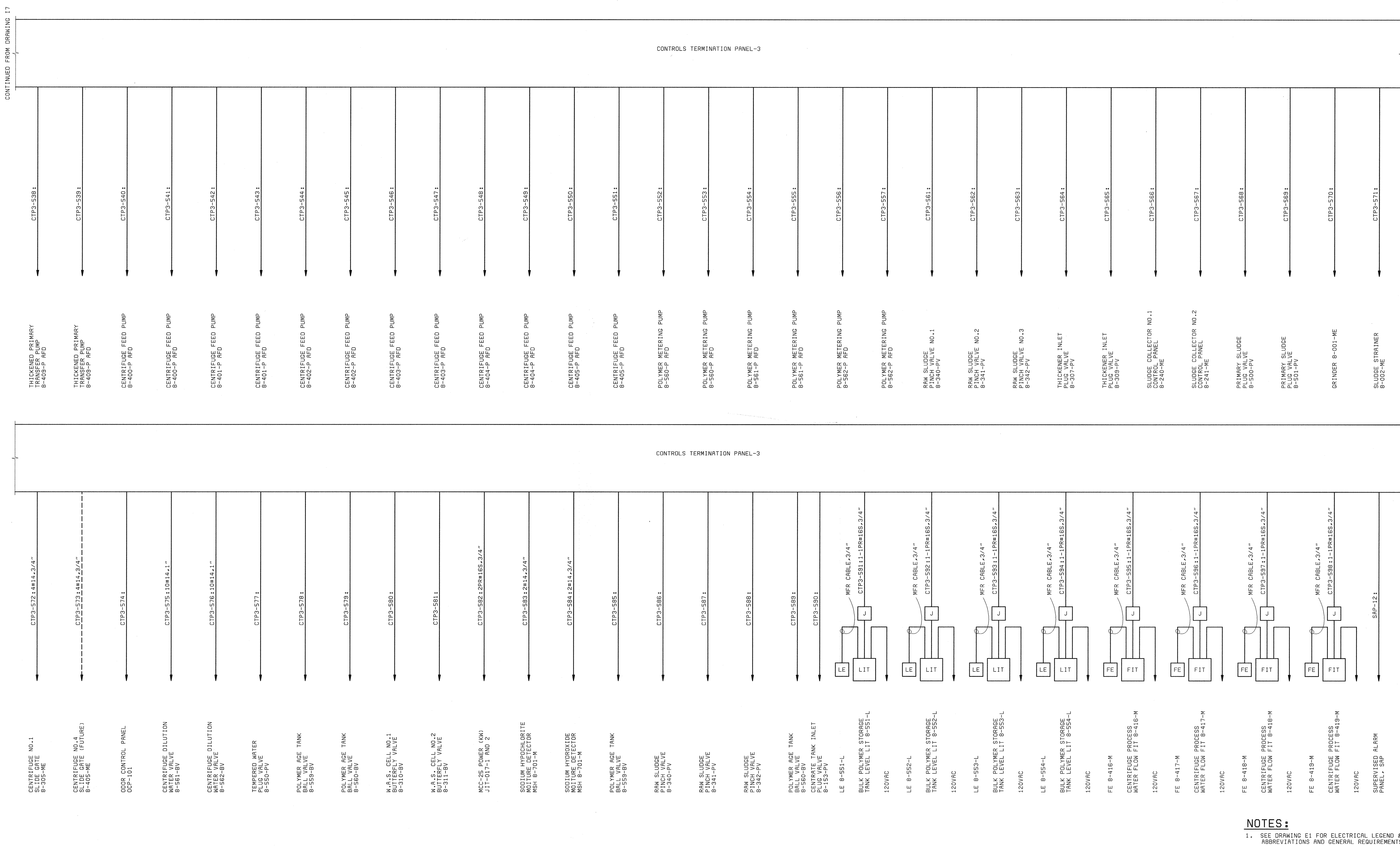
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 149 OF 150

17

058472.2
F058472A



NOTES:
 1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE _____	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21876	DES: GNS DRN: MOR,DAH CHK: PWM DATE: 5/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE NO. BY CK APP	INSTRUMENTATION ONE-LINE DIAGRAM	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 150 OF 150 18
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