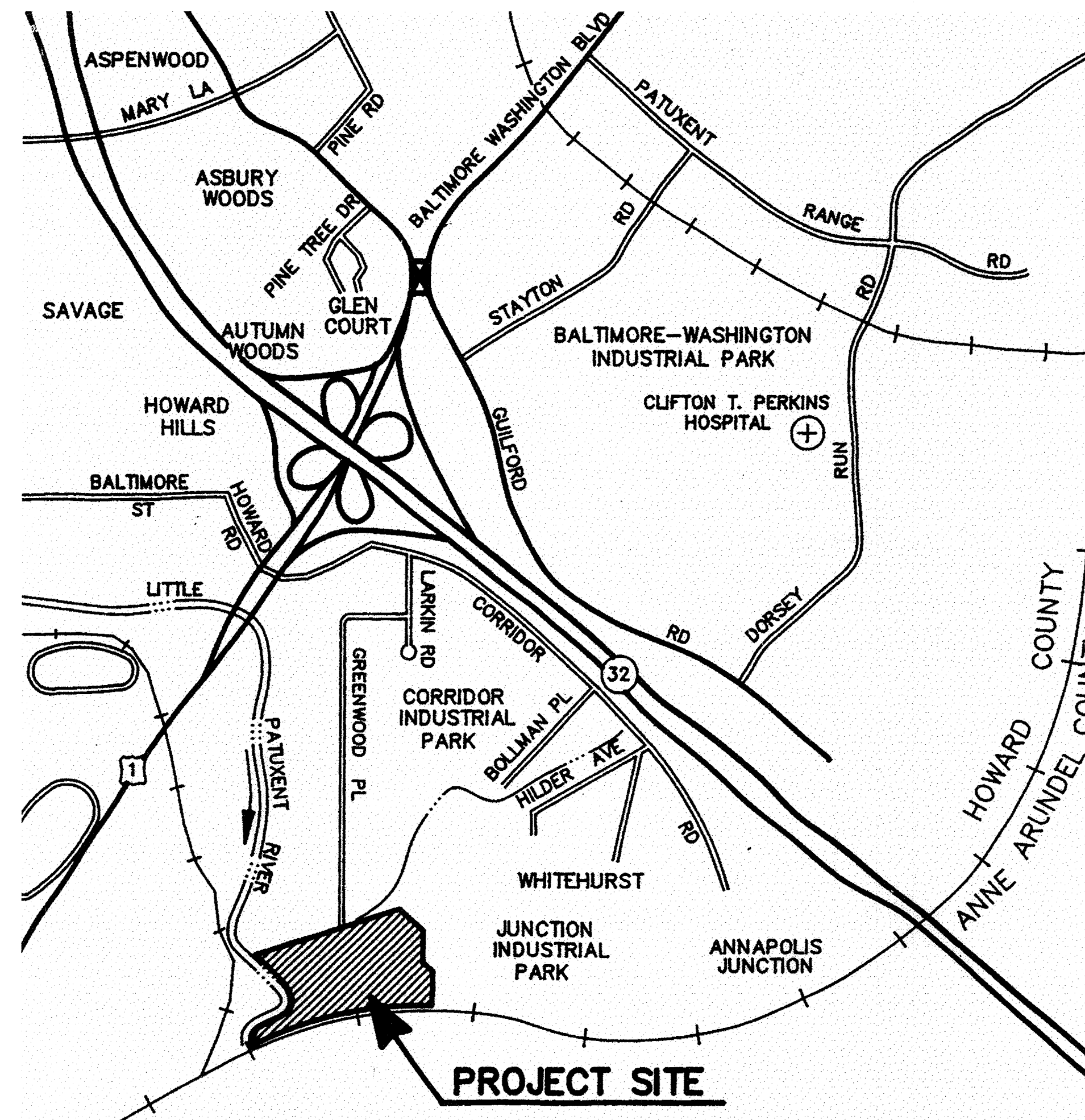


HOWARD COUNTY, MARYLAND

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



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

<p>A</p> <p>B</p> <p>C</p> <p>D</p> <p>E</p>	<p>BUILDINGS, STRUCTURES</p> <p>STRUCTURES UNDERGROUND</p> <p>FUTURE BUILDINGS, STRUCTURES</p> <p>CLOTHES LINE</p> <p>SWING SET</p> <p>FENCE</p> <p>FENCE, WOOD</p> <p>RAILROAD, EACH TRACK</p> <p>CENTERLINE</p> <p>SECTION NUMBER OR DETAIL LETTER</p> <p>DRAWING NUMBER ON WHICH SECTION OR DETAIL APPEARS, OR WHERE SECTION IS CUT OR DETAIL IS NOTED</p> <p>WALL ELEVATION</p> <p>ABBREVIATION</p> <p>DOOR, WINDOW AND LOUVER SCHEDULE REFERENCE</p> <p>SCHEDULE NUMBER</p> <p>ROOM NUMBER</p> <p>AREA DESIGNATION</p> <p>EQUIPMENT OR VALVE IDENTIFICATION CODE</p> <p>EQUIPMENT NUMBER</p> <p>EQUIPMENT OR VALVE IDENTIFICATION CODE</p> <p>EQUIPMENT NUMBER</p> <p>EQUIPMENT REPRESENTATION WITH CALLOUT</p> <p>EXISTING FACILITY TO BE DEMOLISHED OR REMOVED</p>
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MATERIALS LEGEND

<p>EARTH OR GRADE</p> <p>GRANULAR FILL (CRUSHED ROCK OR GRAVEL)</p> <p>ROCK</p> <p>NEW CONCRETE</p> <p>EXISTING CONCRETE, PRECAST OR PRESTRESSED CONCRETE</p> <p>BRICK, FACE</p> <p>CONCRETE MASONRY UNITS (CMU)</p> <p>CUT STONE OR SAND FILL, GROUT, MORTAR, AND PLASTER</p> <p>WOOD, SHEATHING, PANELING, DECKING, ETC.</p> <p>WOOD, STUDS, BEAMS, JOISTS, ETC.</p> <p>CHECKERED PLATE</p> <p>STEEL (FOR 1" SCALE & LARGER)</p> <p>STEEL OR ALUMINUM (FOR 3/4" SCALE & SMALLER)</p> <p>BAR GRATING (LINES IN DIRECTION OF SPAN)</p> <p>ALUMINUM</p> <p>INSULATION (BATT)</p> <p>INSULATION (RIGID)</p>

PIPING SYSTEMS

<p>NEW PIPING</p> <p>UNDERGROUND PIPING</p> <p>EXISTING PIPING</p> <p>FUTURE PIPING</p> <p>AIR (COMPRESSED)</p> <p>ALUMINUM SULFATE - (ALUM)</p> <p>ARGON</p> <p>CHEMICAL RESISTANT ACID WASTE</p> <p>CHEMICAL RESISTANT ACID WASTE VENT</p> <p>TEMPERED OR BLENDED WATER</p> <p>CARBON SLURRY</p> <p>ACETYLENE</p> <p>CHILLED WATER RETURN</p> <p>CHILLED WATER SUPPLY</p> <p>CHLORINE GAS</p> <p>CHLORINE LIQUID</p> <p>CHLORINE SOLUTION</p>	<p>CONDENSER WATER RETURN</p> <p>CONDENSER WATER SUPPLY</p> <p>CARBON DIOXIDE GAS</p> <p>CARBON DIOXIDE SOLUTION</p> <p>WATER, COLD</p> <p>DISTILLED WATER</p> <p>FERRIC CHLORIDE</p> <p>FERRIC SULFATE</p> <p>FIRE PROTECTION WATER SYSTEM</p> <p>FLUORIDE</p> <p>FUEL OIL RETURN</p> <p>FUEL OIL SUPPLY</p> <p>FUEL OIL VENT</p> <p>GAS, NATURAL</p> <p>HYDROGEN</p> <p>HELIUM</p> <p>HYDROGEN PEROXIDE</p>
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<p>PHOSPHORIC ACID</p> <p>HEATING SYSTEM WATER RETURN</p> <p>HEATING SYSTEM WATER SUPPLY</p> <p>WATER, POTABLE HOT</p> <p>HOT WATER CIRCULATING</p> <p>INSTRUMENT AIR</p> <p>POTASSIUM PERMANGANATE</p> <p>LIME</p> <p>LP GAS (PROPANE)</p> <p>NITROGEN</p> <p>SODA ASH</p> <p>SODIUM HYDROXIDE</p> <p>SODIUM HEXAMETAPHOSPHATE (PHOSPHATE)</p> <p>SODIUM HYPOCHLORITE</p> <p>AMMONIA GAS</p> <p>AMMONIA SOLUTION</p> <p>NITROUS OXIDE</p>	<p>WATER, NON-POTABLE</p> <p>WATER, NON-POTABLE HOT</p> <p>OXYGEN</p> <p>OZONE</p> <p>OVERFLOW</p> <p>POLYMER SOLUTION</p> <p>REFRIGERANT</p> <p>STORM DRAIN</p> <p>SLUDGE GAS</p> <p>SILICA</p> <p>SUMP PUMP DISCHARGE</p> <p>SANITARY SEWER</p> <p>VENT</p> <p>VACUUM</p> <p>WATER</p>
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PIPING ACCESSORIES LEGEND

<p>BLIND FLANGE</p> <p>CAP OR PLUG</p> <p>CLEANOUT</p> <p>CROSS</p> <p>DIAPHRAGM SEAL</p> <p>ELBOW</p> <p>ELBOW DOWN</p> <p>ELBOW TURNING UP</p> <p>FLAME ARRESTER OR CHECK</p> <p>HOSE CONNECTION</p> <p>QUICK COUPLING</p> <p>REDUCER</p> <p>RUPTURE DISK</p> <p>TEE</p>	<p>CALIBRATING COLUMN</p> <p>TEE LINE DOWN</p> <p>TEE LINE UP</p> <p>TRAP</p> <p>UNION</p> <p>WALL SLEEVE</p> <p>WYE</p> <p>WYE STRAINER</p> <p>WYE STRAINER WITH BLOWOFF</p> <p>AUTOMATIC DRAIN TRAP</p> <p>DRAIN OR BELL-UP</p> <p>DRIP TRAP</p> <p>DUPLEX STRAINER</p>
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VALVE LEGEND

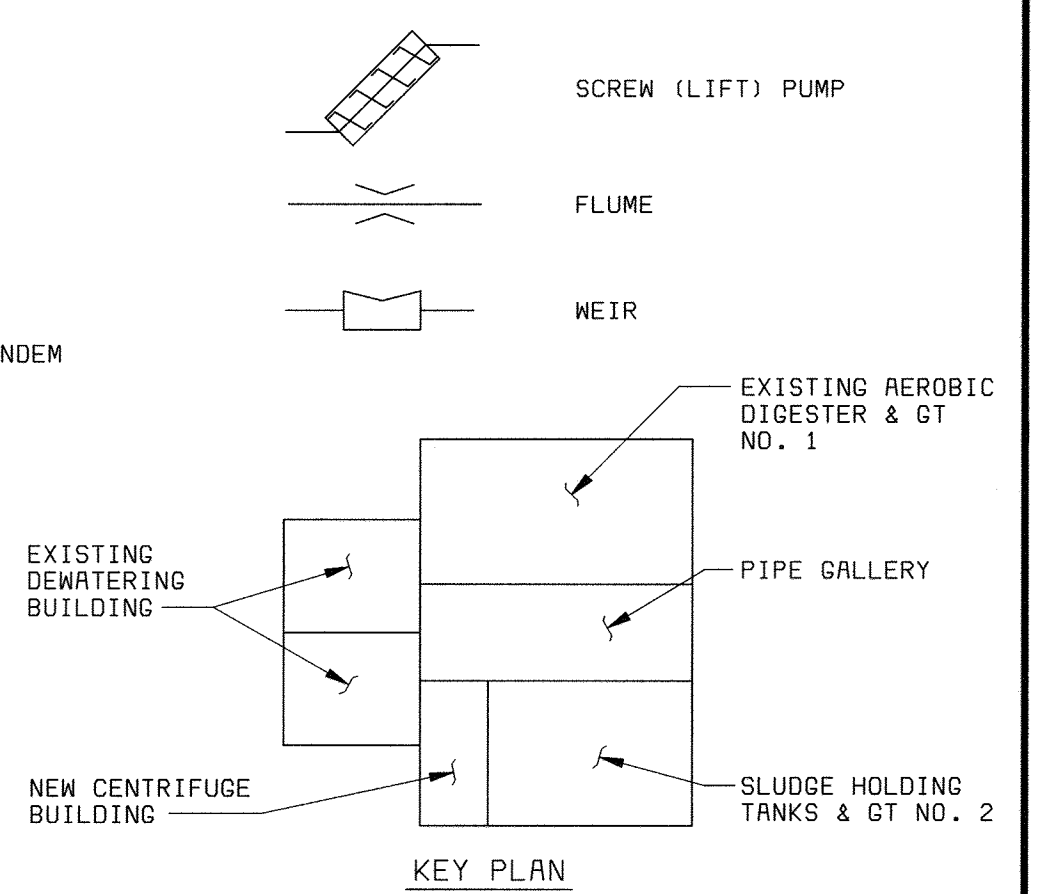
<p>PINCH VALVE</p> <p>PLUG VALVE, ECCENTRIC</p> <p>PLUG VALVE, NON-ECCENTRIC</p> <p>BUTTERFLY VALVE</p> <p>GATE VALVE</p> <p>BALL VALVE</p> <p>GLOBE VALVE</p> <p>CHECK VALVE</p> <p>3 WAY VALVE</p>	<p>4 WAY VALVE</p> <p>ANGLE VALVE</p> <p>CHLORINE INSTITUTE VALVE</p> <p>DIAPHRAGM VALVE</p> <p>THROTTLING VALVE</p> <p>BACKWATER VALVE</p> <p>INLINE PRESSURE RELIEF VALVE</p> <p>PRESSURE REGULATING VALVE</p> <p>PRESSURE SUSTAINING OR MAINTAINING VALVE</p> <p>VACUUM BREAKER</p>
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ACTUATOR LEGEND

<p>THERMAL SHUTOFF VALVE</p> <p>EXPLOSION RELIEF VALVE</p> <p>HOSE FAUCET</p> <p>HOSE FAUCET W/VACUUM BREAKER</p> <p>HOSE VALVE W/HOSE NIPPLE</p> <p>BACKFLOW PREVENTER</p> <p>SAFETY RELIEF VALVE</p> <p>VACUUM RELIEF CHECK VALVE</p>

MISCELLANEOUS EQUIPMENT

<p>EXPANSION COMPENSATOR</p> <p>INLINE FILTER</p> <p>FLEXIBLE HOSE OR TUBING</p> <p>FLEXIBLE CONNECTOR</p> <p>HOSE REEL</p> <p>INJECTOR, EDUCTOR, BLENDER</p> <p>ORIFICE PLATE</p> <p>PIPE DIFFUSER</p> <p>PIPE GUIDE</p> <p>SEDIMENT TRAP</p> <p>STRAINER</p> <p>SUCTION DIFFUSER</p> <p>BOOD BALANCE ODOOR CONTROL DAMPER</p>	<p>VENT - SCREENED</p> <p>VENT</p> <p>PRESSURE GAUGE W/SNUBBER</p> <p>SIGHT FLOW INDICATOR</p> <p>TEMPERATURE INDICATOR</p> <p>THERMOMETER</p> <p>ELECTROMAGNETIC/ULTRASONIC FLOWMETER</p> <p>PITOT TUBE</p> <p>ROTAMETER</p> <p>TURBINE OR PROPELLOR FLOWMETER</p> <p>SET STOP METER</p> <p>VENTURI</p>
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<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p>	<p>BLACK & VEATCH Gaithersburg, Maryland</p>	<p>THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676</p>	<p>DES: TJW DRN: NAG,RAB CHK: WLK DATE: 5-30-00</p>	<p>LAYOUT/OVERVIEW</p> <p>LEGEND</p>	<p>LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY</p> <p>CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 2 OF 150</p> <p>L2</p>
<p>REG. PROF. ENGR. _____ DATE _____</p>			<p>DATE 07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH RJR RJR</p> <p>DATE _____ REVISIONS AND RECORD OF ISSUE NO. BY CK APP</p>			

ABBREVIATIONS

EQUIPMENT DESIGNATION

Table of abbreviations and their meanings, including terms like ACID, ALTERNATING CURRENT, AIR CONDITIONER, etc.

Table of abbreviations and their meanings, including terms like ANCHOR BOLT, AREA DRAIN, AIR DAMPER, etc.

Table of abbreviations and their meanings, including terms like AIR RELEASE VALVE, AMMETER SWITCH, etc.

Table of equipment designations and their meanings, including terms like AERATION BLOWER, ALTERNATE TRANSFORMER, etc.

VALVE DESIGNATION

Table of valve designations and their meanings, including terms like AIR RELEASE VALVE, BUTTERFLY VALVE, etc.

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE



REG. PROF. ENGR. DATE

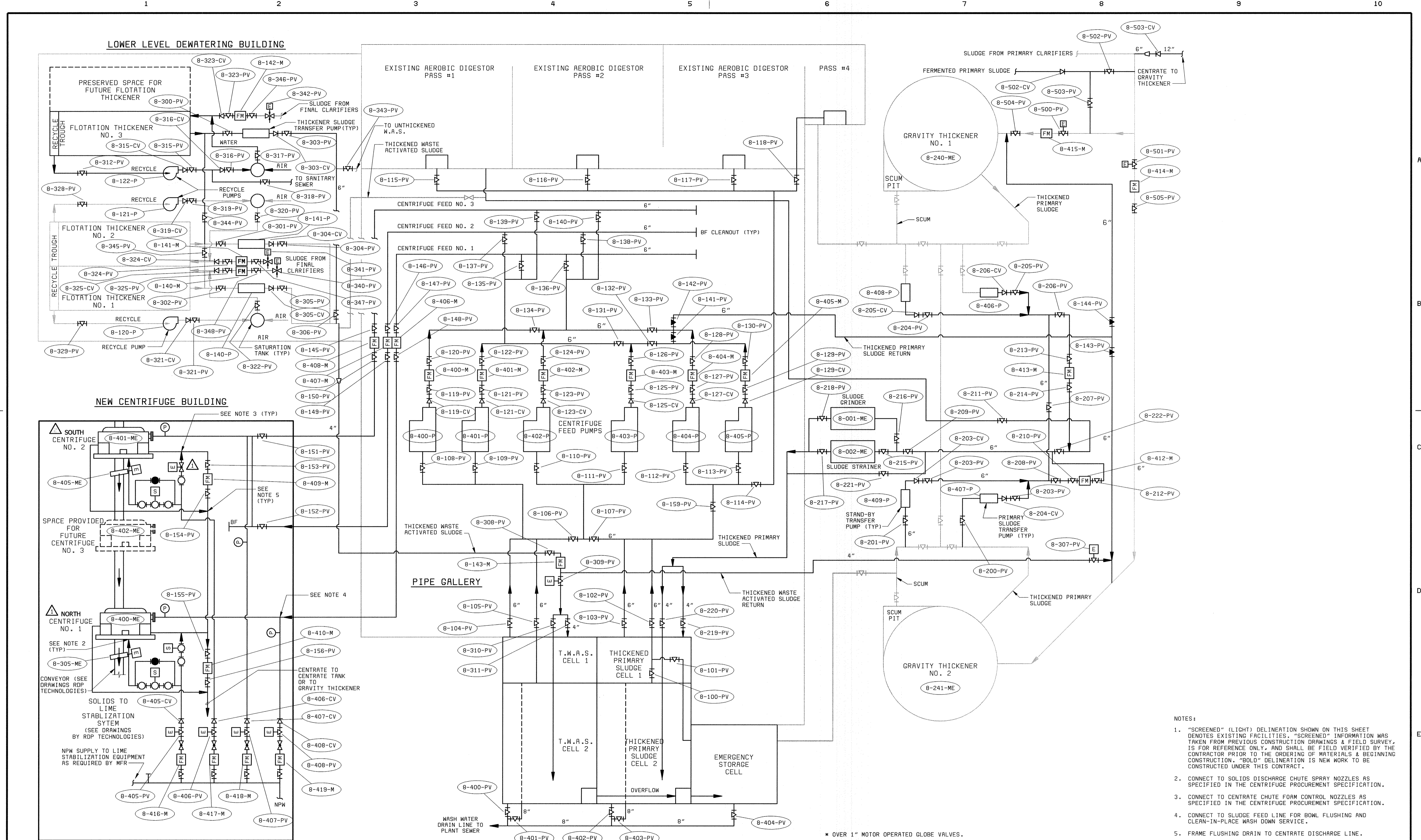
DES: TJW DRN: NAG CHK: WLK DATE: 5-30-00

Table with columns for DATE, REVISIONS AND RECORD OF ISSUE, NO., BY, CK, APP.

LAYOUT/OVERVIEW ABBREVIATIONS


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

SCALE AS SHOWN SHEET 3 OF 150 L3

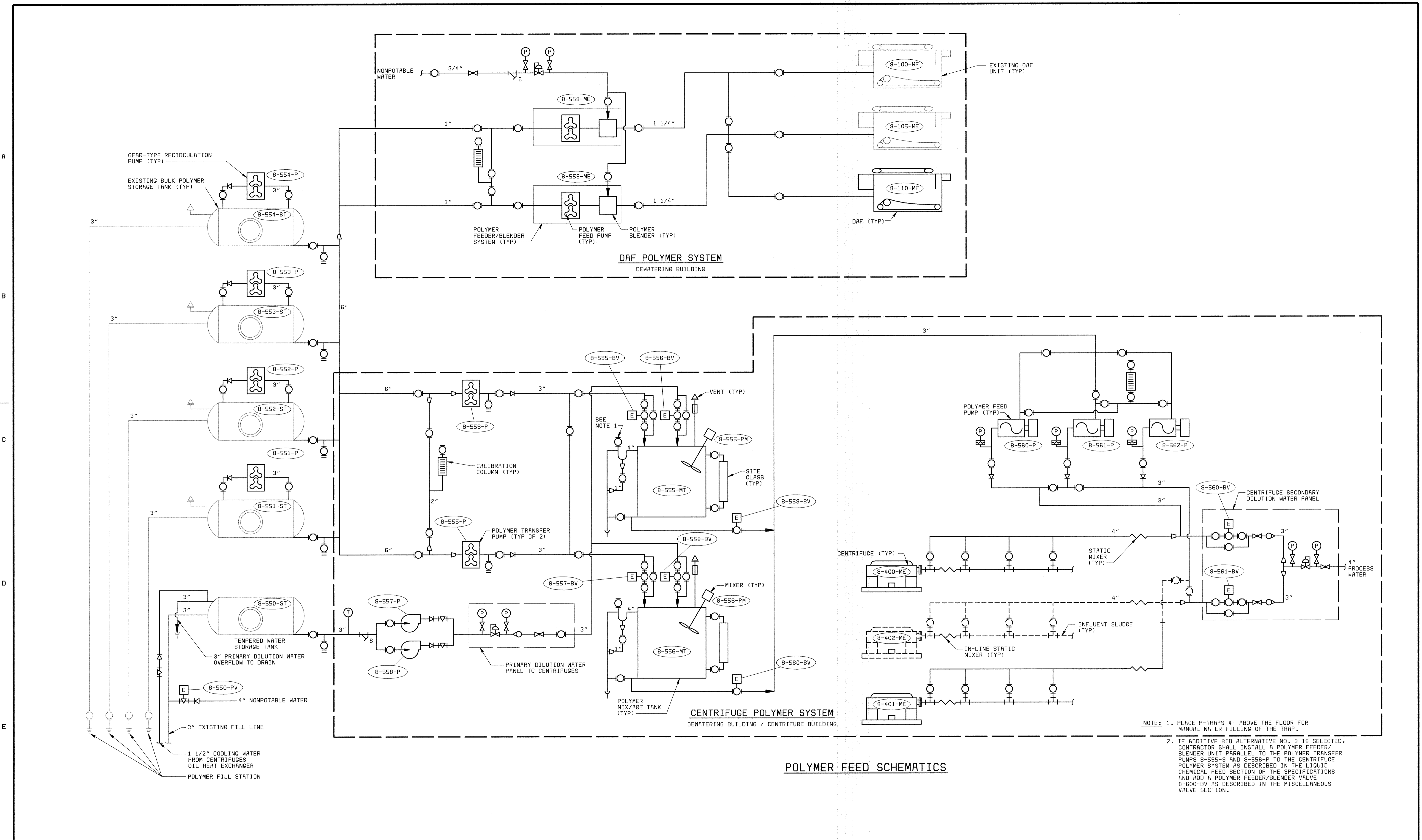


- NOTES:
- 1. "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
 - 2. CONNECT TO SOLIDS DISCHARGE CHUTE SPRAY NOZZLES AS SPECIFIED IN THE CENTRIFUGE PROCUREMENT SPECIFICATION.
 - 3. CONNECT TO CENTRATE CHUTE FORM CONTROL NOZZLES AS SPECIFIED IN THE CENTRIFUGE PROCUREMENT SPECIFICATION.
 - 4. CONNECT TO SLUDGE FEED LINE FOR BOWL FLUSHING AND CLEAN-IN-PLACE WASH DOWN SERVICE.
 - 5. 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 DES: TJW DRN: RAB CHK: WLK DATE: 5-30-00	LAYOUT/OVERVIEW MECHANICAL SOLIDS SCHEMATIC 07/26/04 CONFORMED TO CONSTRUCTION RECORDS RHH/RJR/RJR NO. BY CK APP	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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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.

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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 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			

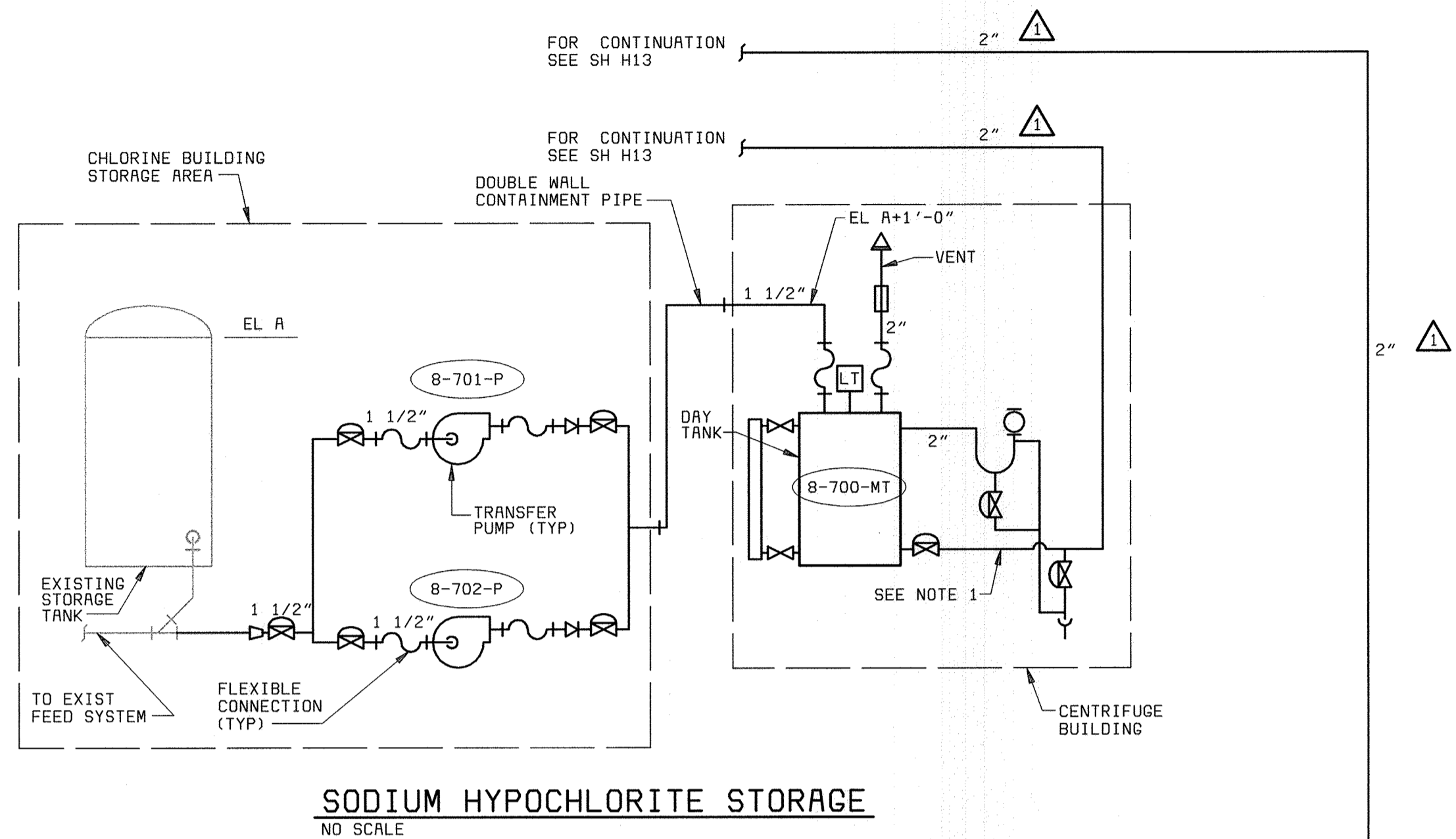
LAYOUT/OVERVIEW
 MECHANICAL
 POLYMER FEED SCHEMATICS

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

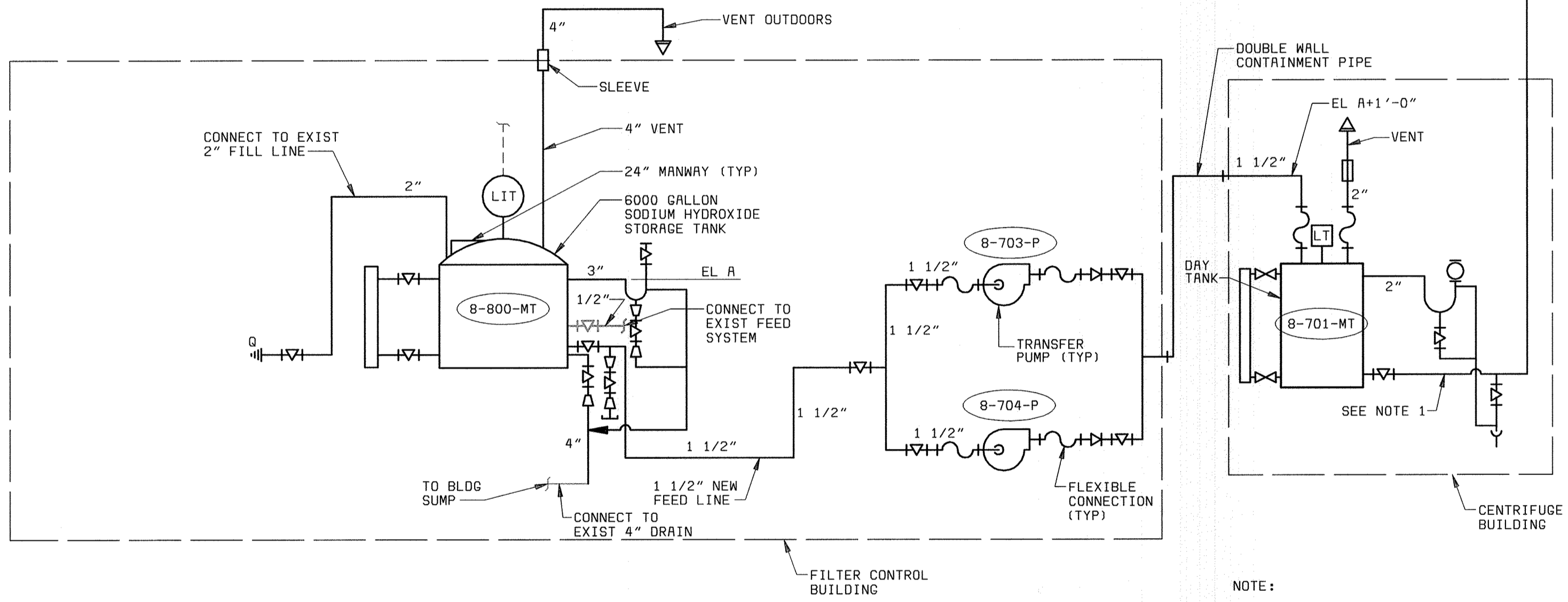
SCALE
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SODIUM HYPOCHLORITE STORAGE
NO SCALE

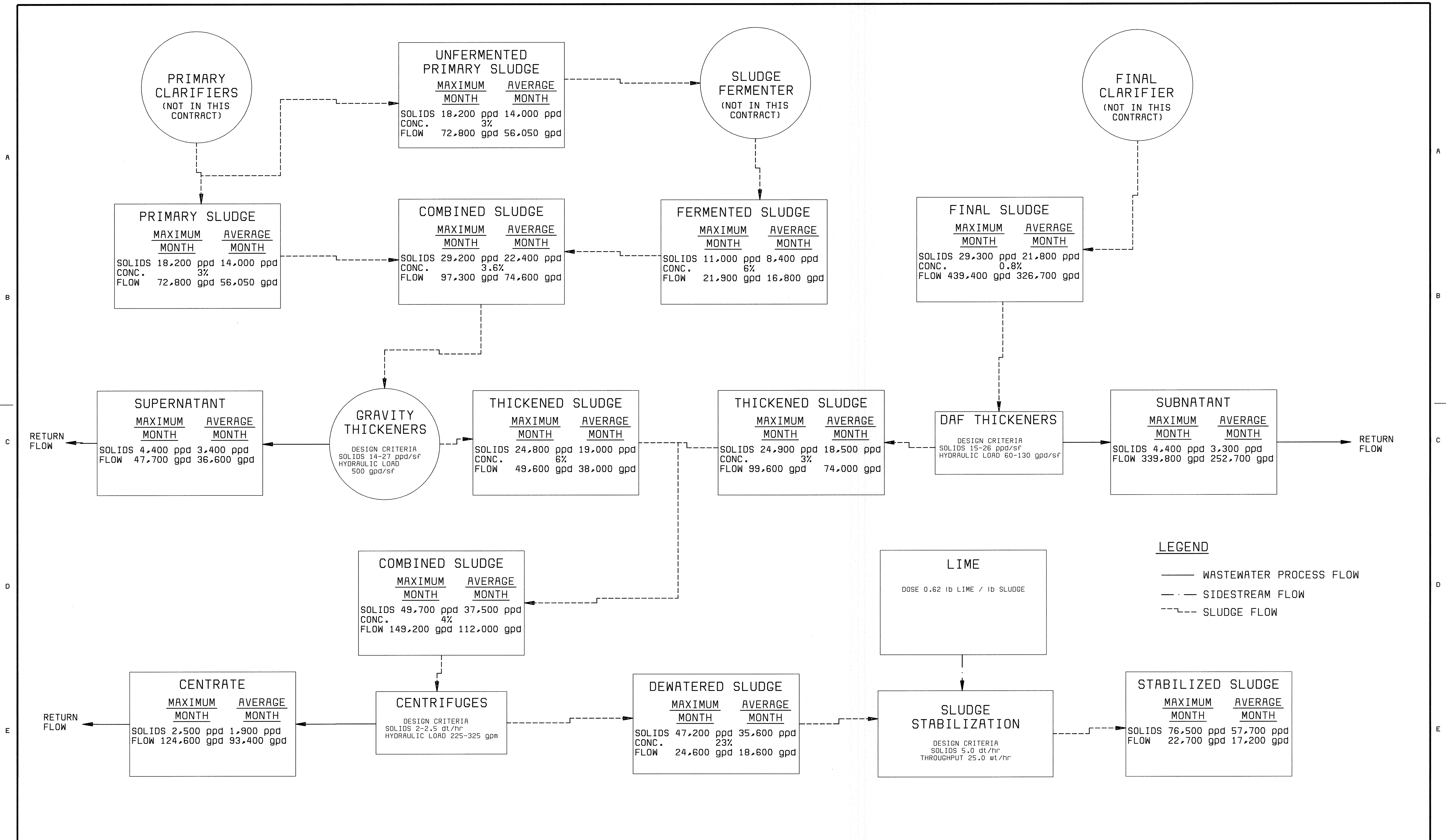


SODIUM HYDROXIDE STORAGE
NO SCALE

NOTE:
1. TANK SUCTION CONNECTION AS REQUIRED BY ODOR CONTROL METERING PUMP SUPPLIER.

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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 MRY BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676 DATE: 5-30-00	DES: ACR,KAL								LAYOUT/OVERVIEW ODOR CONTROL CHEMICAL 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
			DRN: RAB	CHK: WLK	DATE: 07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR				

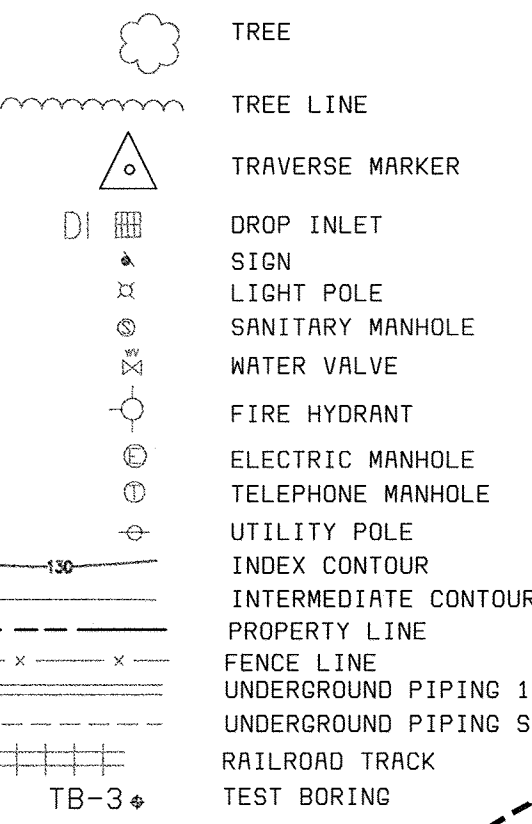


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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D. MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: ACR							LAYOUT/OVERVIEW CIVIL PROCESS LOADING AND MASS BALANCE	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	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			L7

EXISTING LEGEND



ABBREVIATIONS

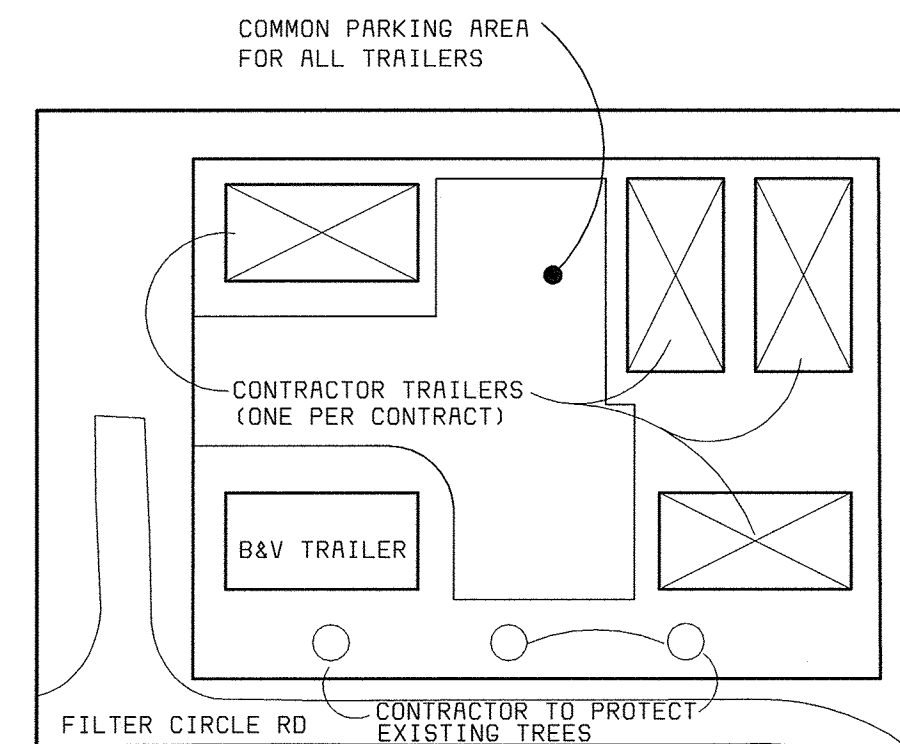
- F FERMENTER
- FC FINAL CLARIFIER
- FEB FLOW EQUALIZATION BASIN
- PC PRIMARY CLARIFIER
- PR PROCESS REACTOR
- PS PRIMARY SUBSTATION

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 PLANT 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.

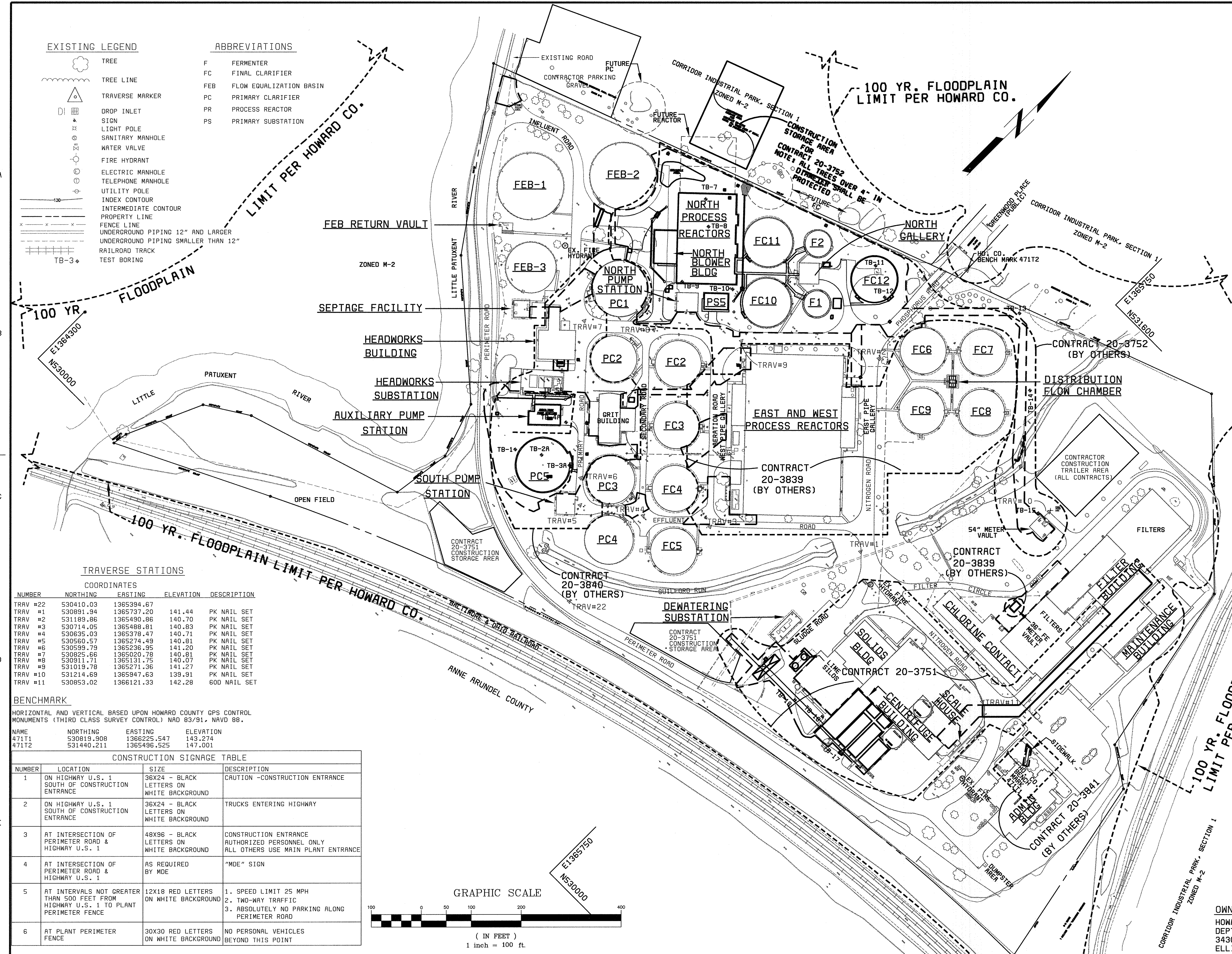
NOTES:

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

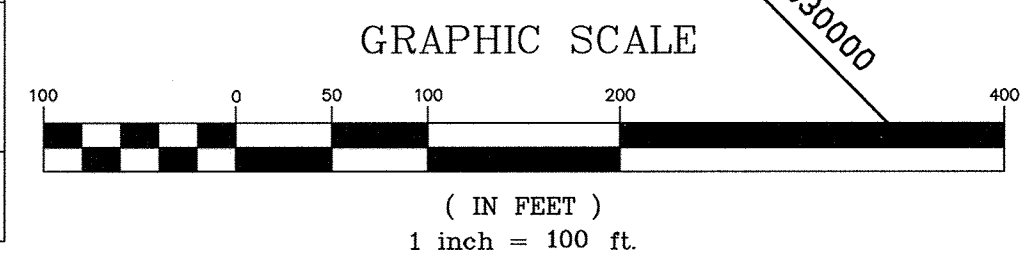
NUMBER	COORDINATES		ELEVATION	DESCRIPTION
	NORTHING	EASTING		
TRAV #22	530410.03	1365394.67	141.44	PK NAIL SET
TRAV #1	530091.94	1365737.20	140.70	PK NAIL SET
TRAV #2	531189.86	1365490.86	140.70	PK NAIL SET
TRAV #3	530714.05	1365488.81	140.83	PK NAIL SET
TRAV #4	530635.03	1365378.47	140.71	PK NAIL SET
TRAV #5	530560.57	1365274.49	140.81	PK NAIL SET
TRAV #6	530599.79	1365236.95	141.20	PK NAIL SET
TRAV #7	530825.86	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	1366225.547	143.274
4712	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	"MDE" 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

AMT
 A. MORTON THOMAS AND ASSOCIATES, INC.
 CONSULTING ENGINEERS
 12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
 TEL (301) 881-2545 FAX (301) 881-6814
 E-MAIL: AJBYRNE@AMTENGINEERING.COM
 AMT FILE # 99-154

BLACK & VEATCH
 Gaithersburg, Maryland
 REG. PROF. ENGR. 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	DATE:	05/30/00
DRN:	REA	DATE:	
CHK:	JB	DATE:	
DATE:	05/30/00	DATE:	
		REVISIONS AND RECORD OF ISSUE	
		NO.	BY
		CK	APP

SITWORK
 OVERALL SITE PLAN

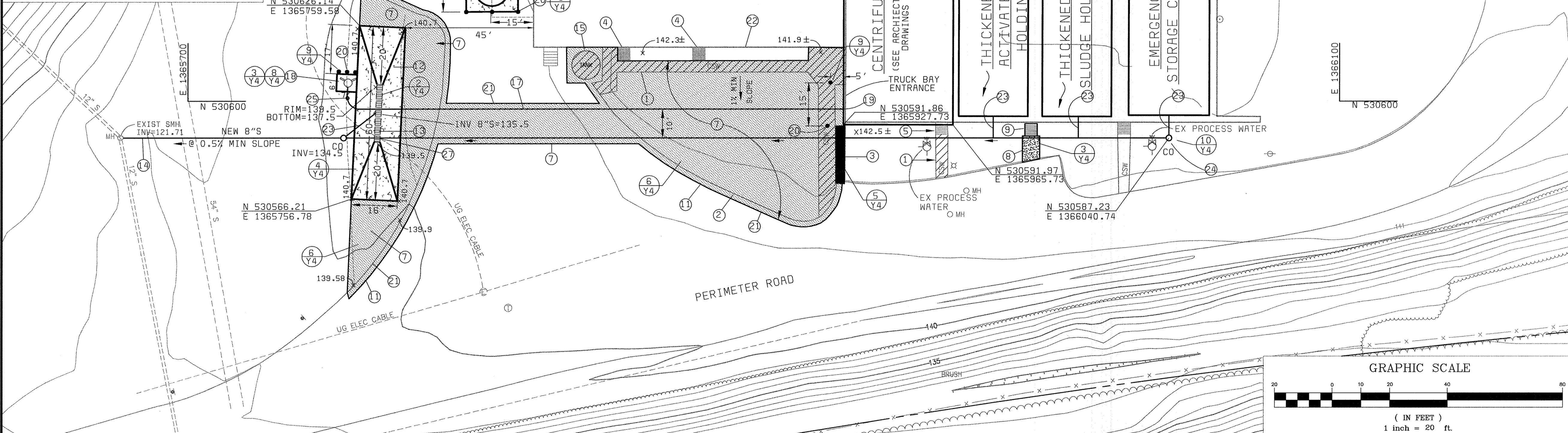
LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 8 OF 150
 Y1

056724
 056724

CONSTRUCTION NOTES:

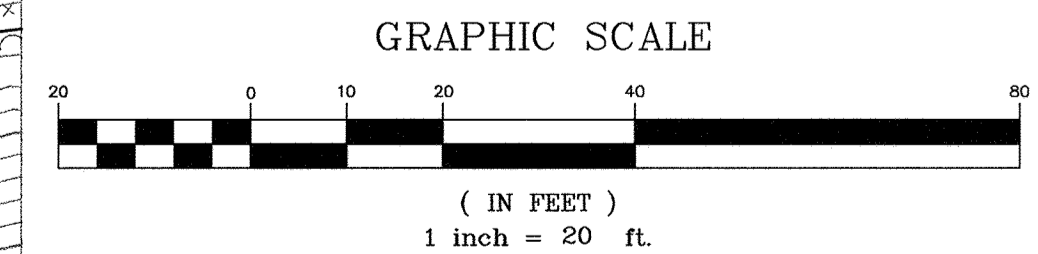
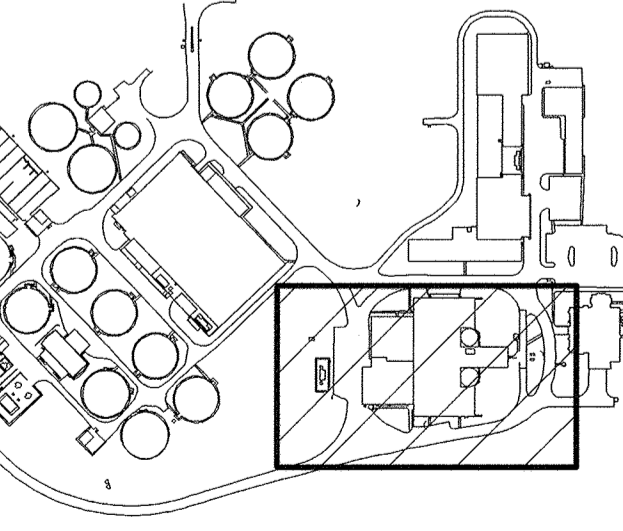
- 1 REMOVE CONCRETE WALK
- 2 REMOVE CONCRETE CURB - SAWCUT 1' OF EXISTING PAVEMENT PRIOR TO REMOVING CURB
- 3 INSTALL CONCRETE CURB
- 4 EXISTING GRATING TO REMAIN
- 5 REMOVE AND REUSE ALUMINUM STAIRS
- 6 REMOVE BITUMINOUS PAVING FOR SILO INSTALLATION
- 7 INSTALL NEW BITUMINOUS PAVING
- 8 INSTALL 6' WIDE 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 TEST BORING
 - TB-3
 - 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
 - STAKEOUT COORDINATES
 - SILT FENCE
 - SUPER SILT FENCE
 - INLET PROTECTION
 - NEW STORM MANHOLE AND DESIGNATOR
 - NEW STORM INLET AND DESIGNATOR
 - NEW SEWER MANHOLE AND DESIGNATOR

KEY LEGEND



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
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12750 TWINBROOK PARKWAY, SUITE 200, ROCKVILLE MD 20852
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AMT FILE # 98-154

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

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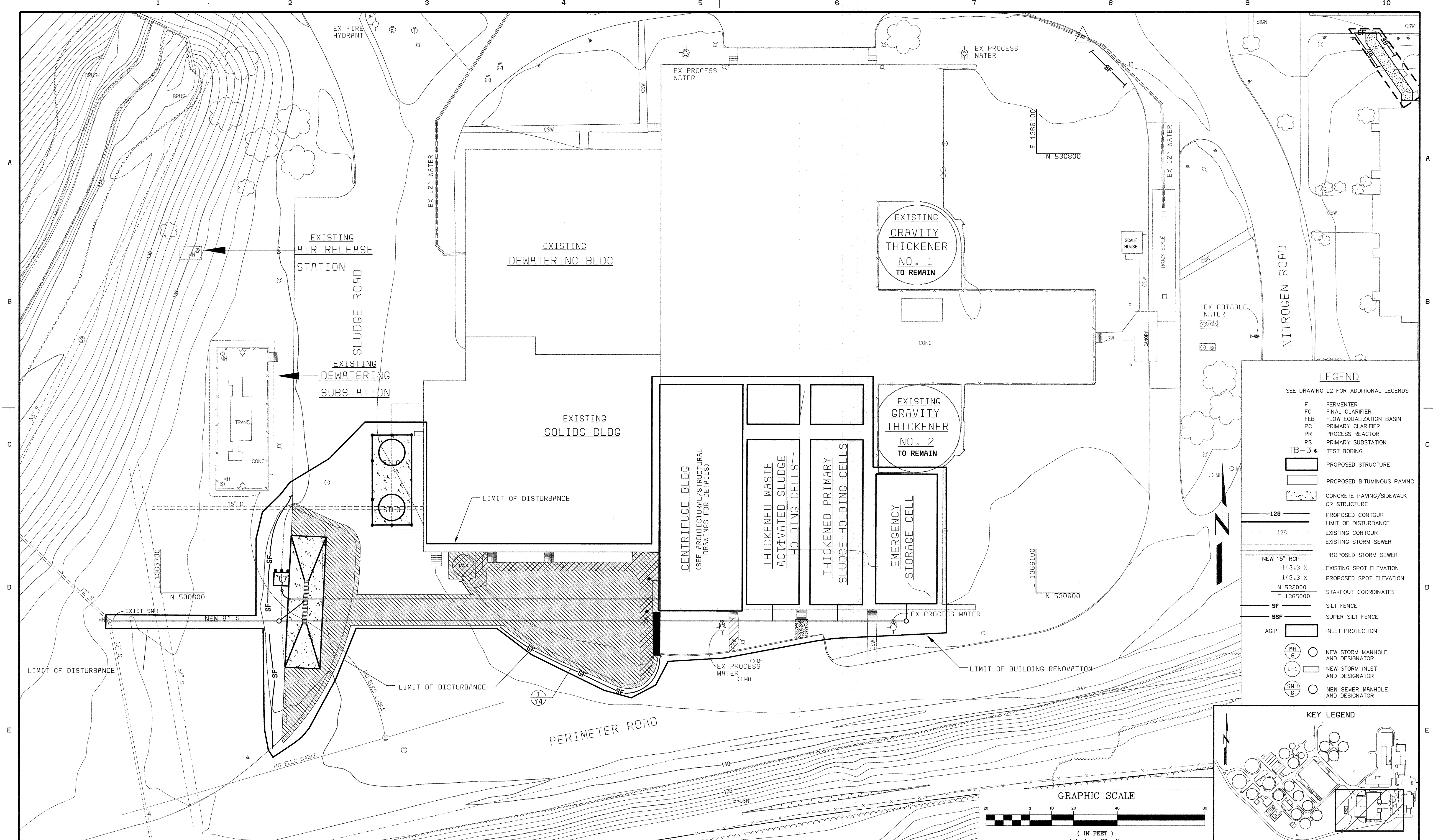
DES:	AR								
DRN:	REA								
CHK:	JB								
DATE:	05/30/00	DATE		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	

SITWORK
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

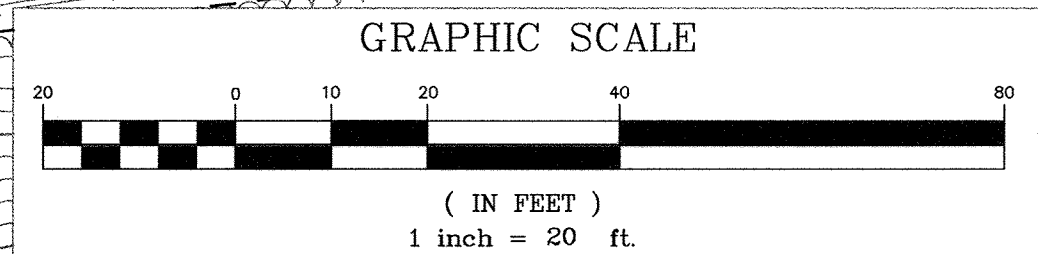
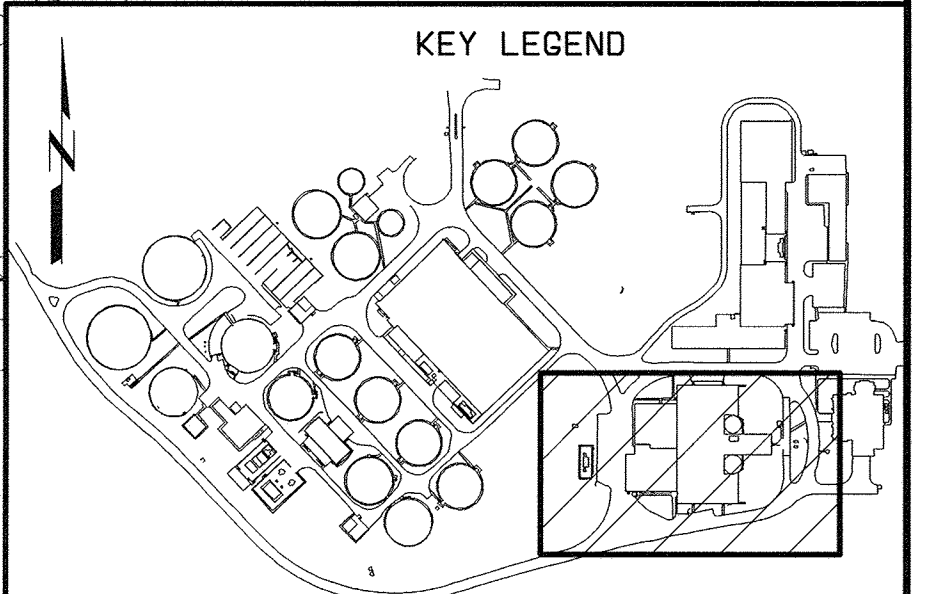
DS6472
FD58472R



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
SF	SILT FENCE
SSF	SUPER SILT FENCE
AGIP	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.
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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
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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

058472
F058472A

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

1. 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).

2. 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.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1,
 B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. 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.

5. 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.

6. 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.

7. **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.

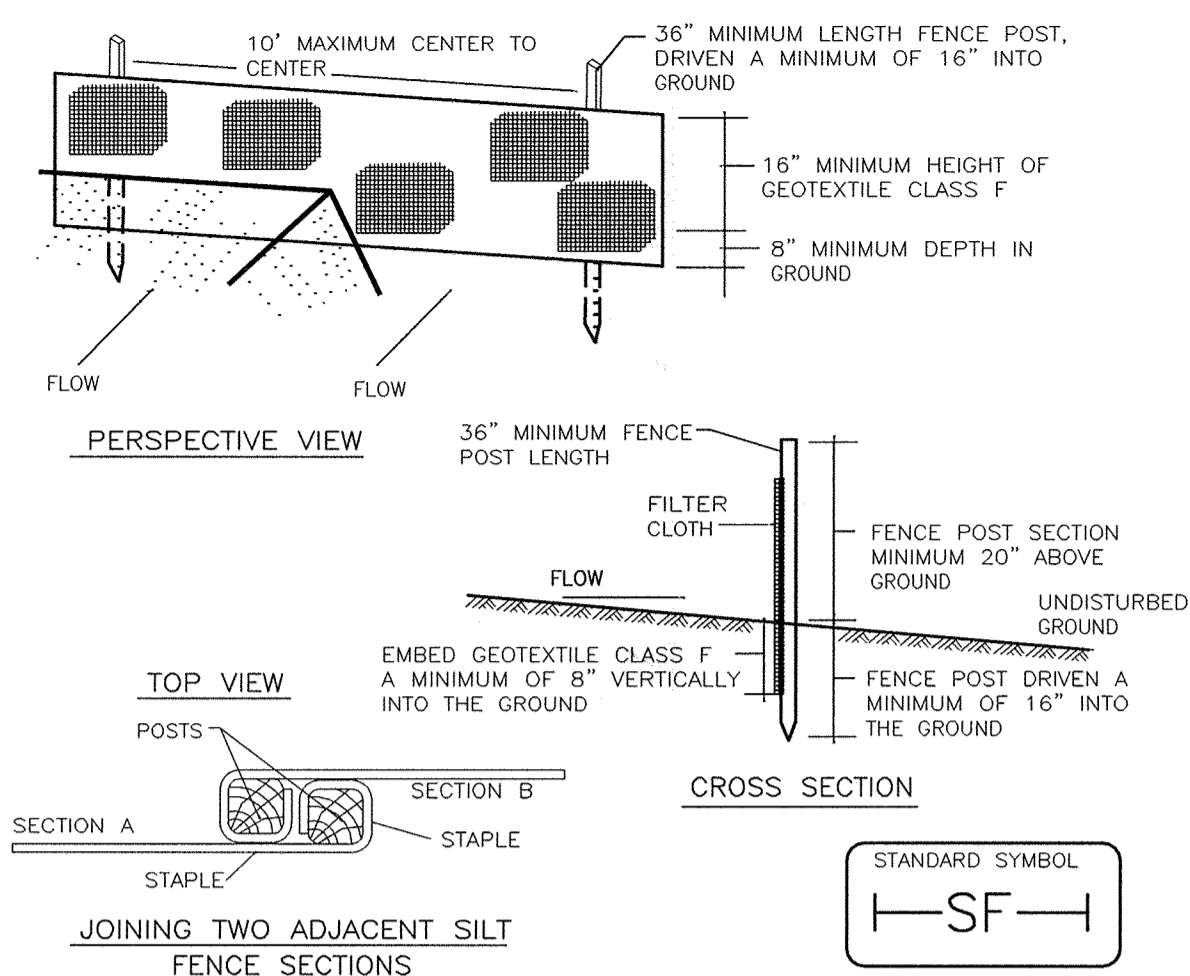
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. 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.

11. 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.

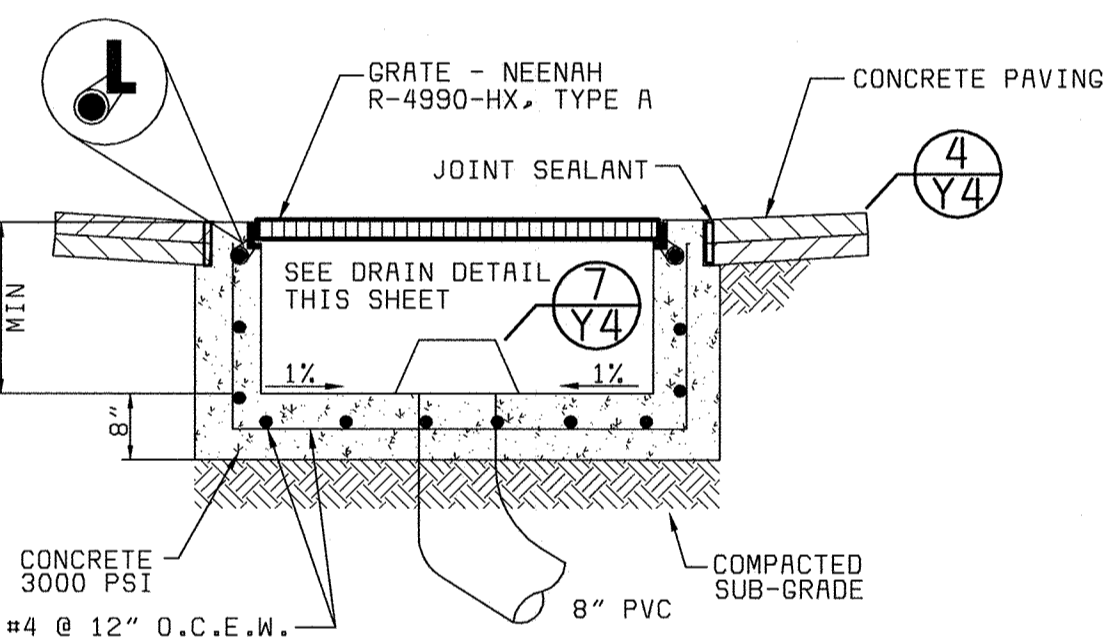
SILT FENCE



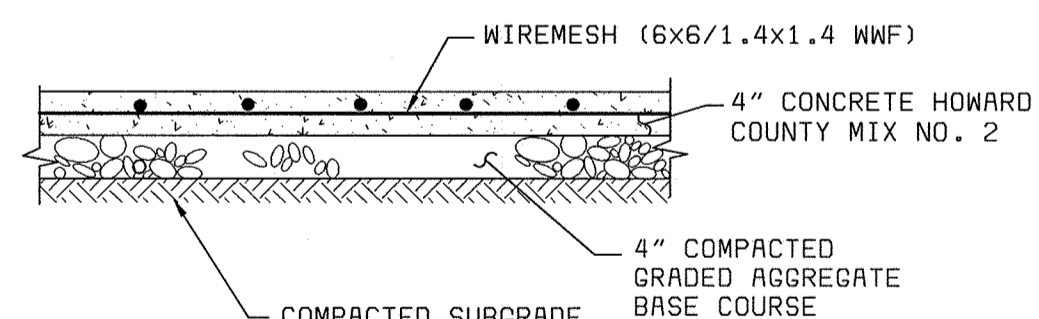
Construction Specifications

- 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.

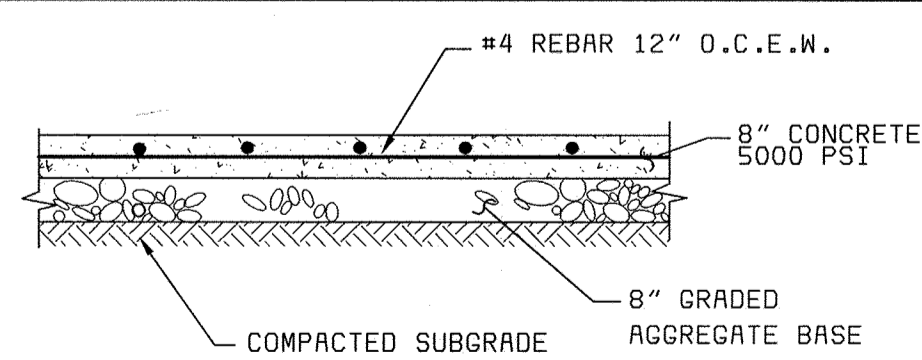
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



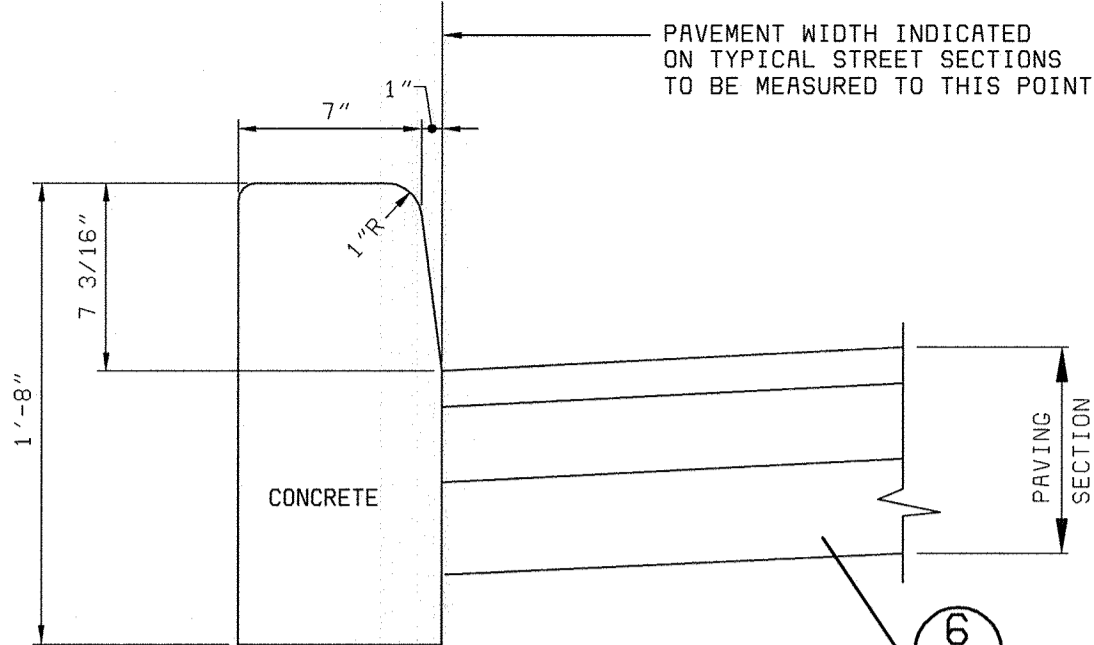
TRENCH DRAIN FOR TRUCK WASH (NOT TO SCALE) Y4



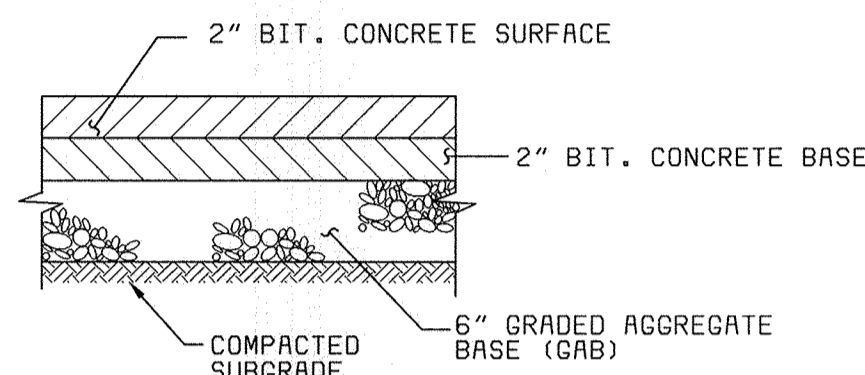
CONCRETE PAD/WALK DETAIL (NOT TO SCALE) Y4



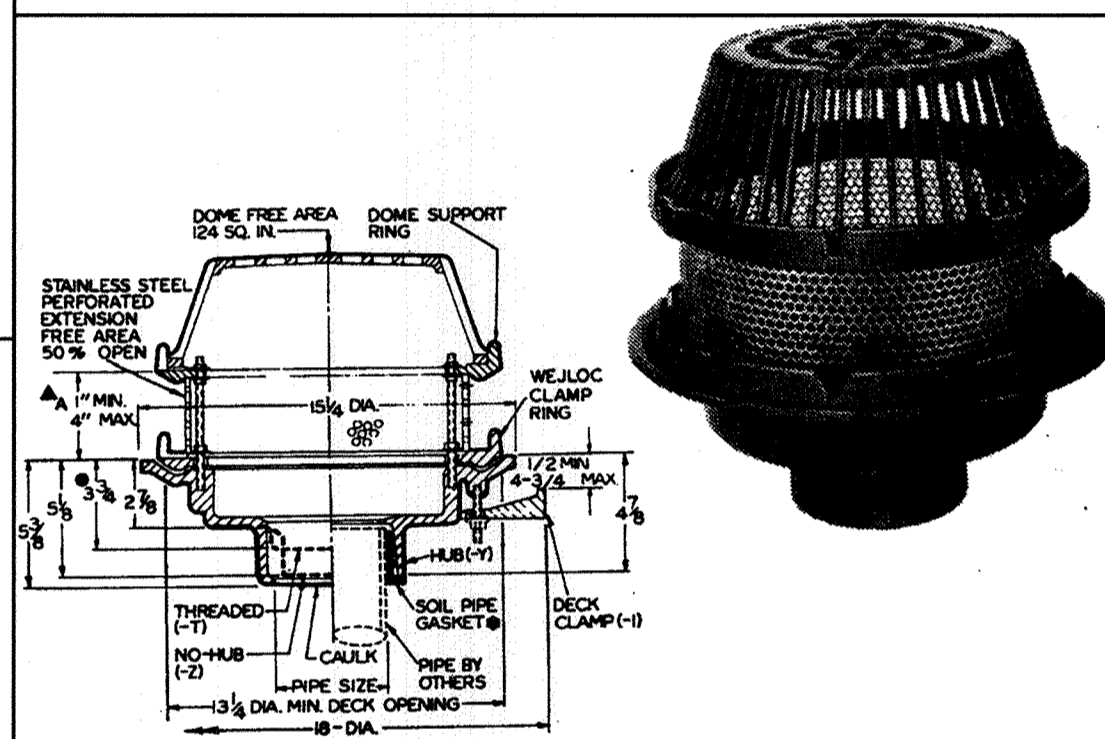
CONCRETE PAVING FOR TRUCK WASH (NOT TO SCALE) Y4



CURB DETAIL (NOT TO SCALE) Y4

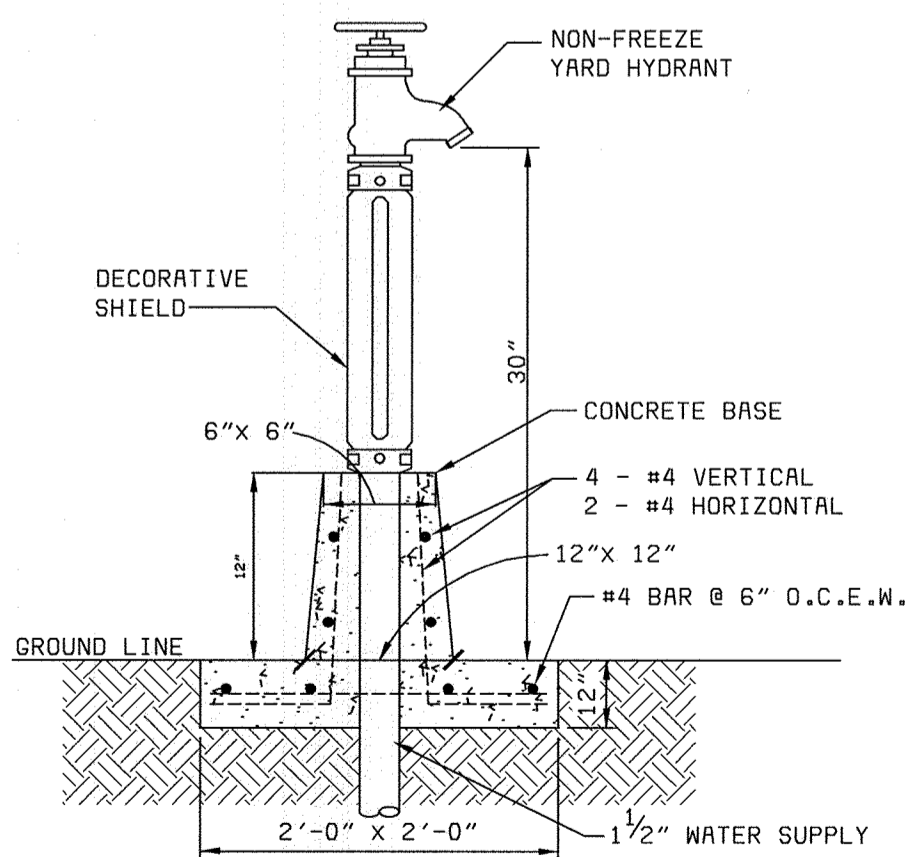


PAVING DETAIL (NOT TO SCALE) Y4

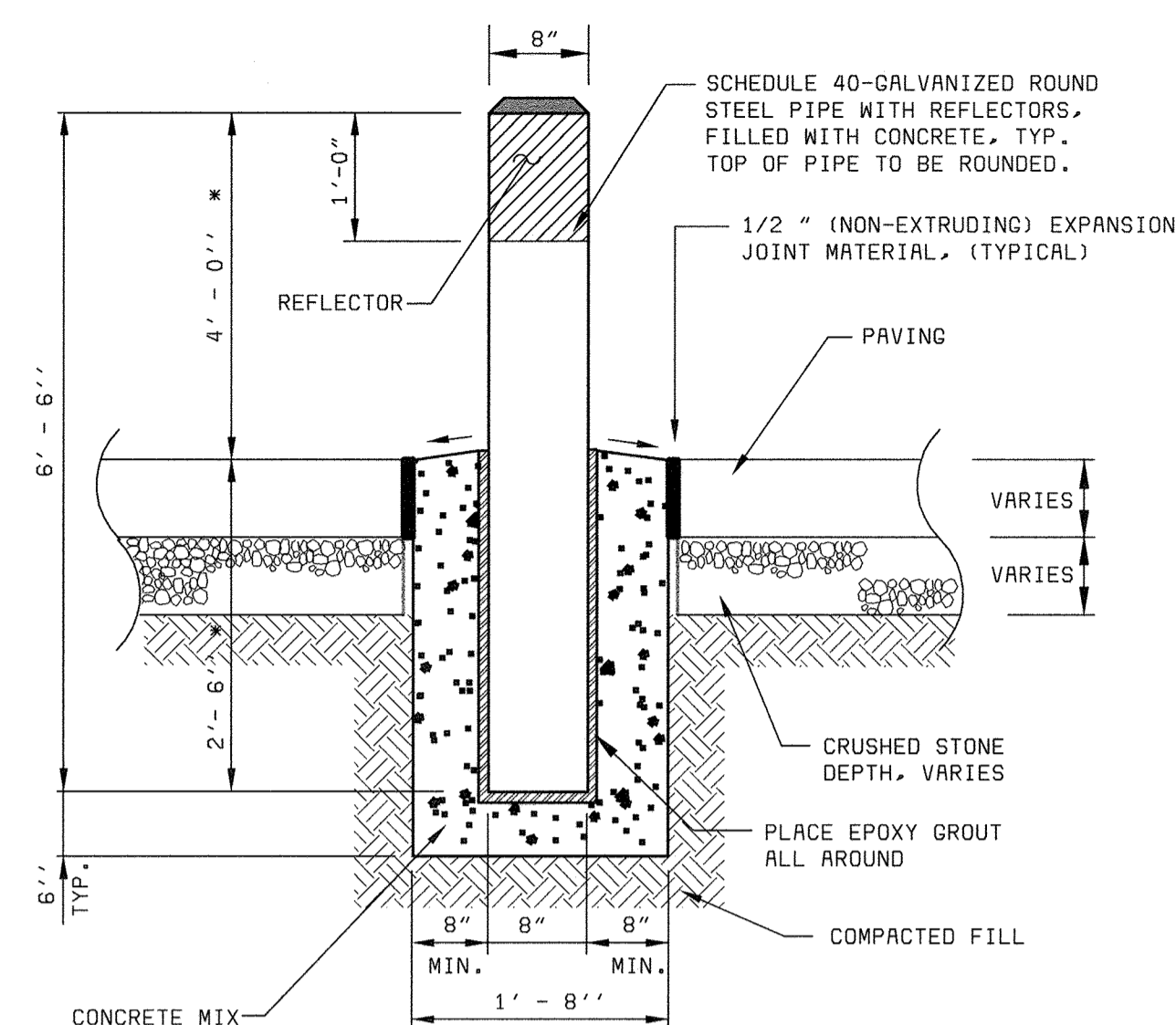


Series 2150-IRMA

DRAIN DETAIL (NOT TO SCALE) Y4



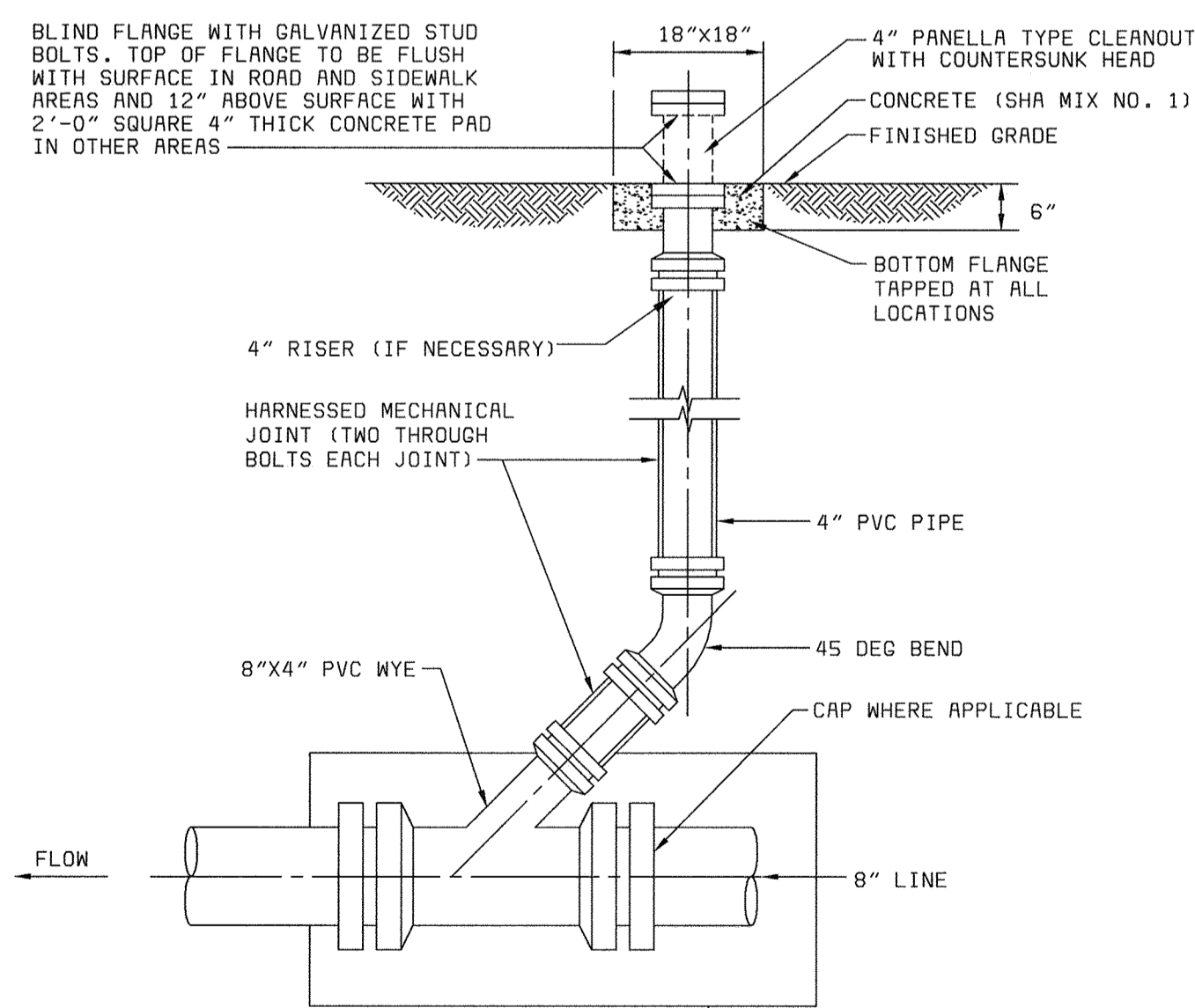
YARD HYDRANT DETAIL (NOT TO SCALE) Y4



PIPE BOLLARD DETAIL (NOT TO SCALE) Y4

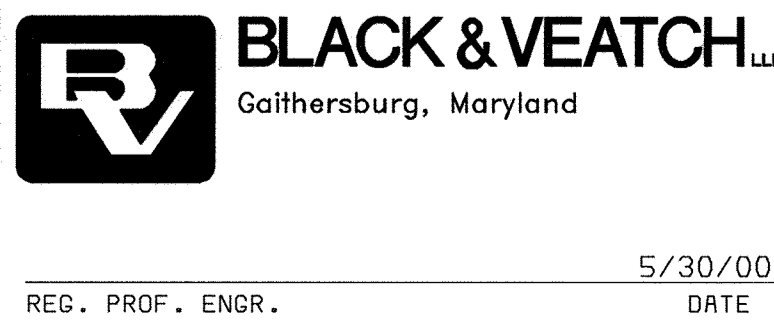
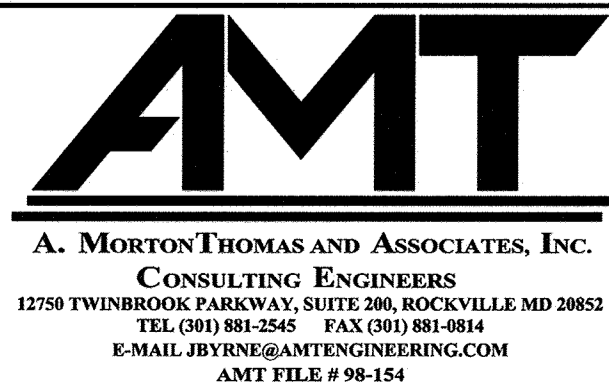
CONFORMS WITH ASTM-C564.

DRAIN 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	

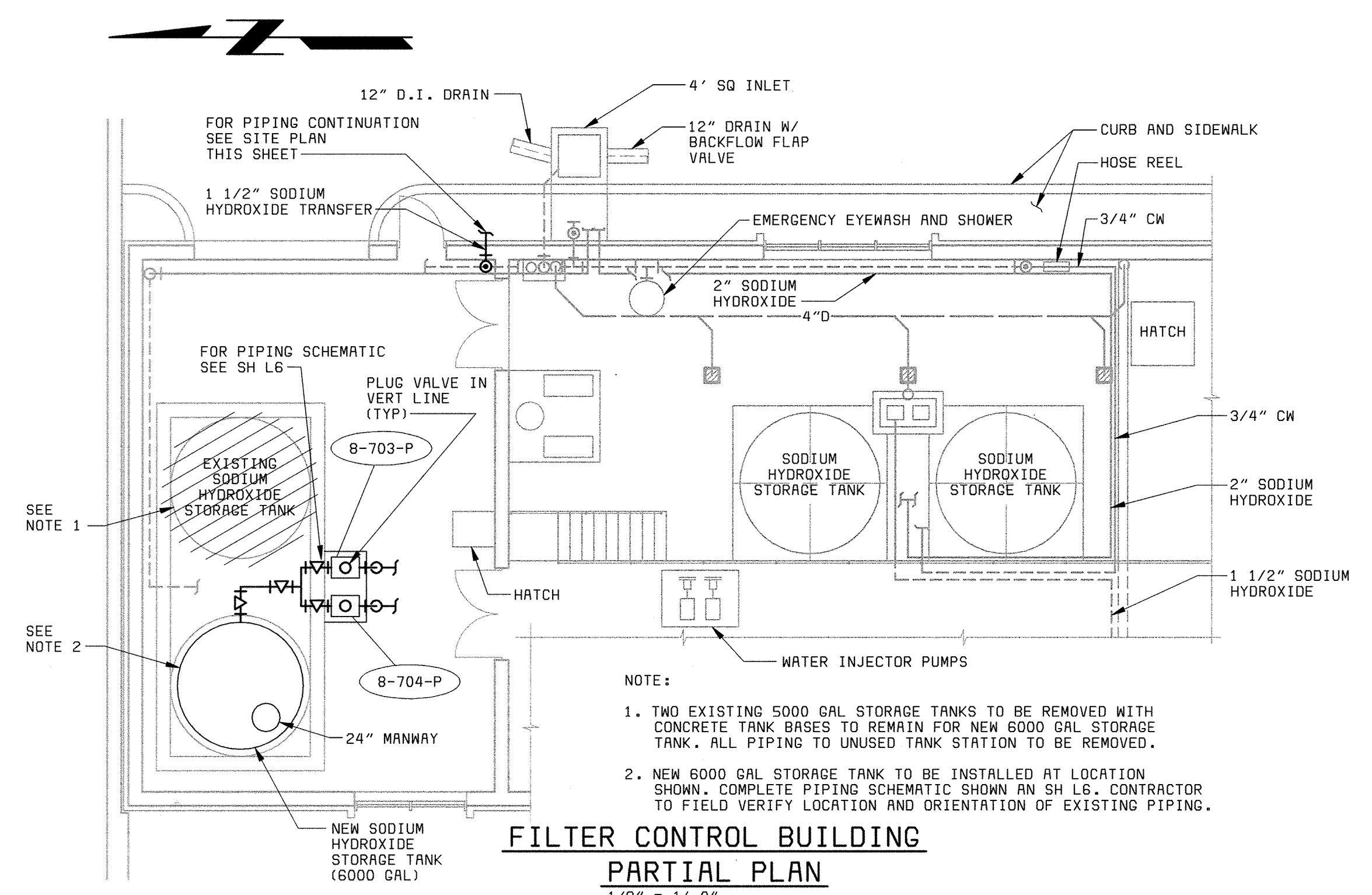
SITWORK

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

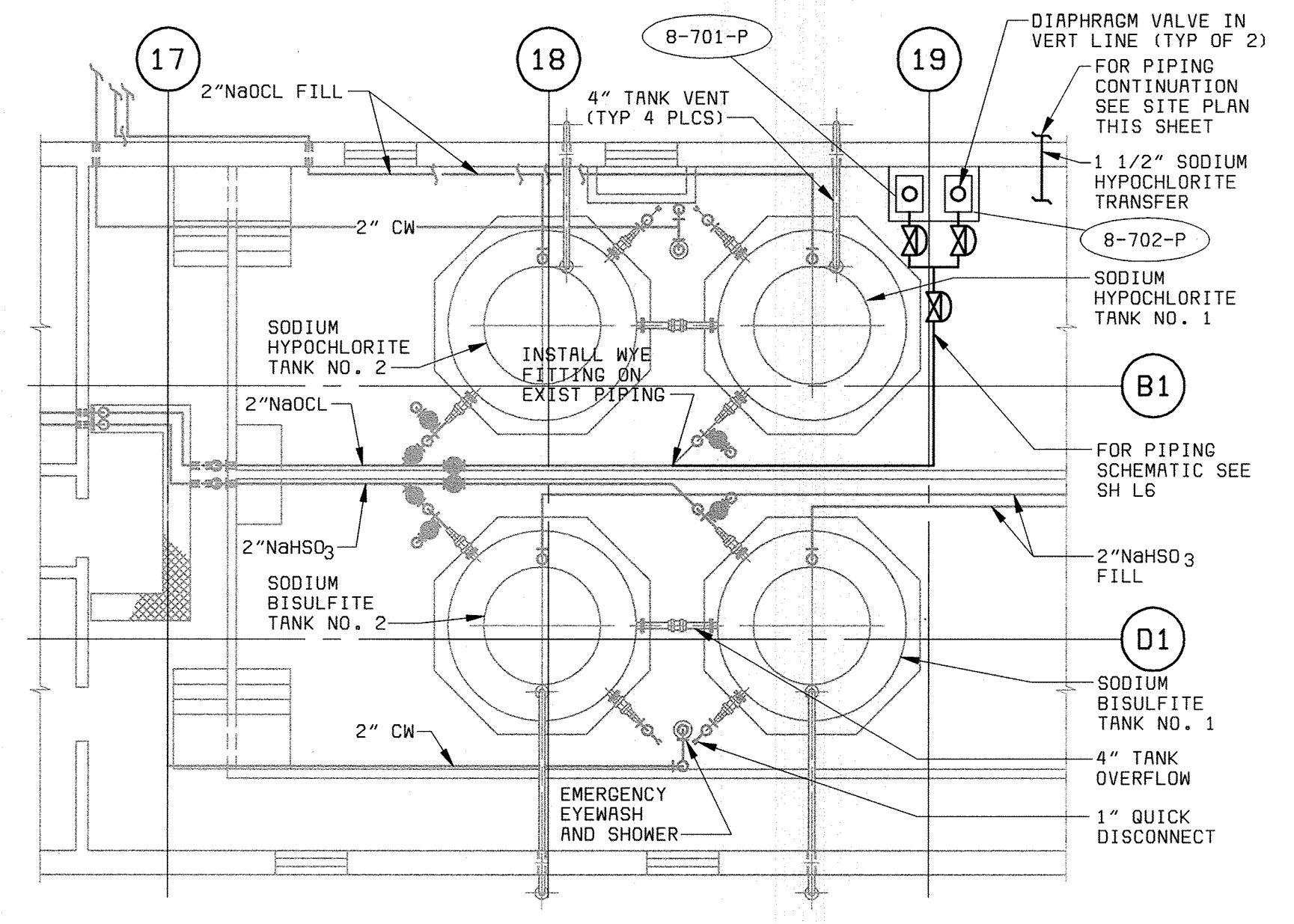
LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY

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

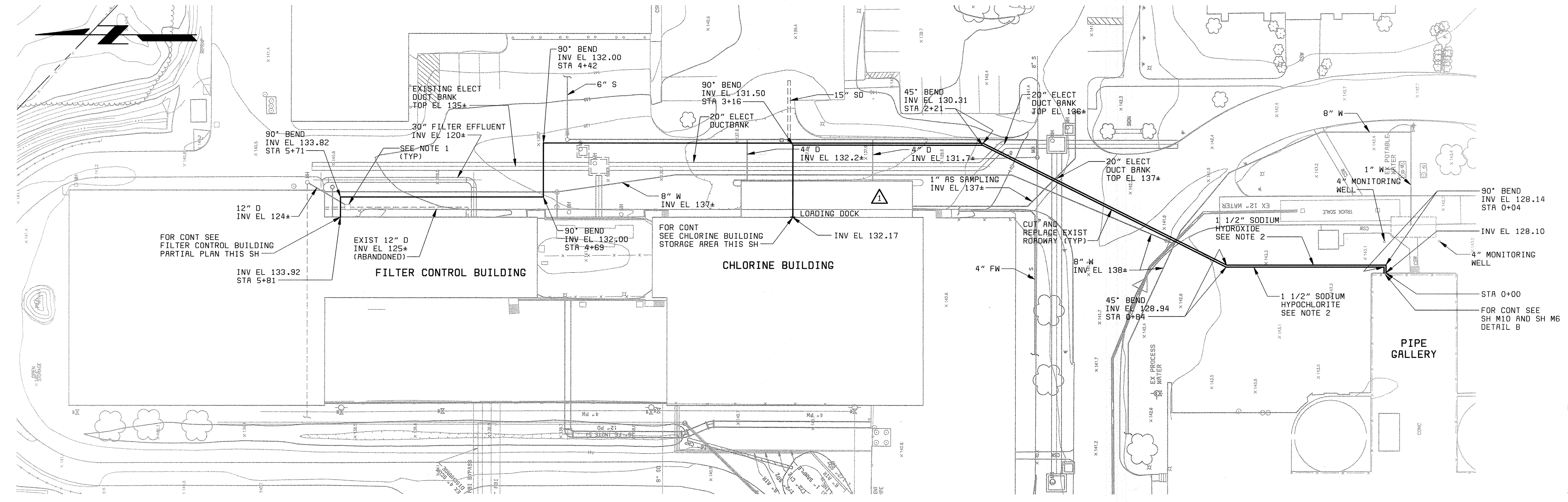
SCALE AS SHOWN SHEET 11 OF 150 Y4



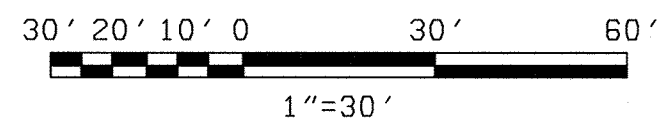
FILTER CONTROL BUILDING
PARTIAL PLAN
 1/8" = 1'-0"



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

056472 2
 F058472A

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

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

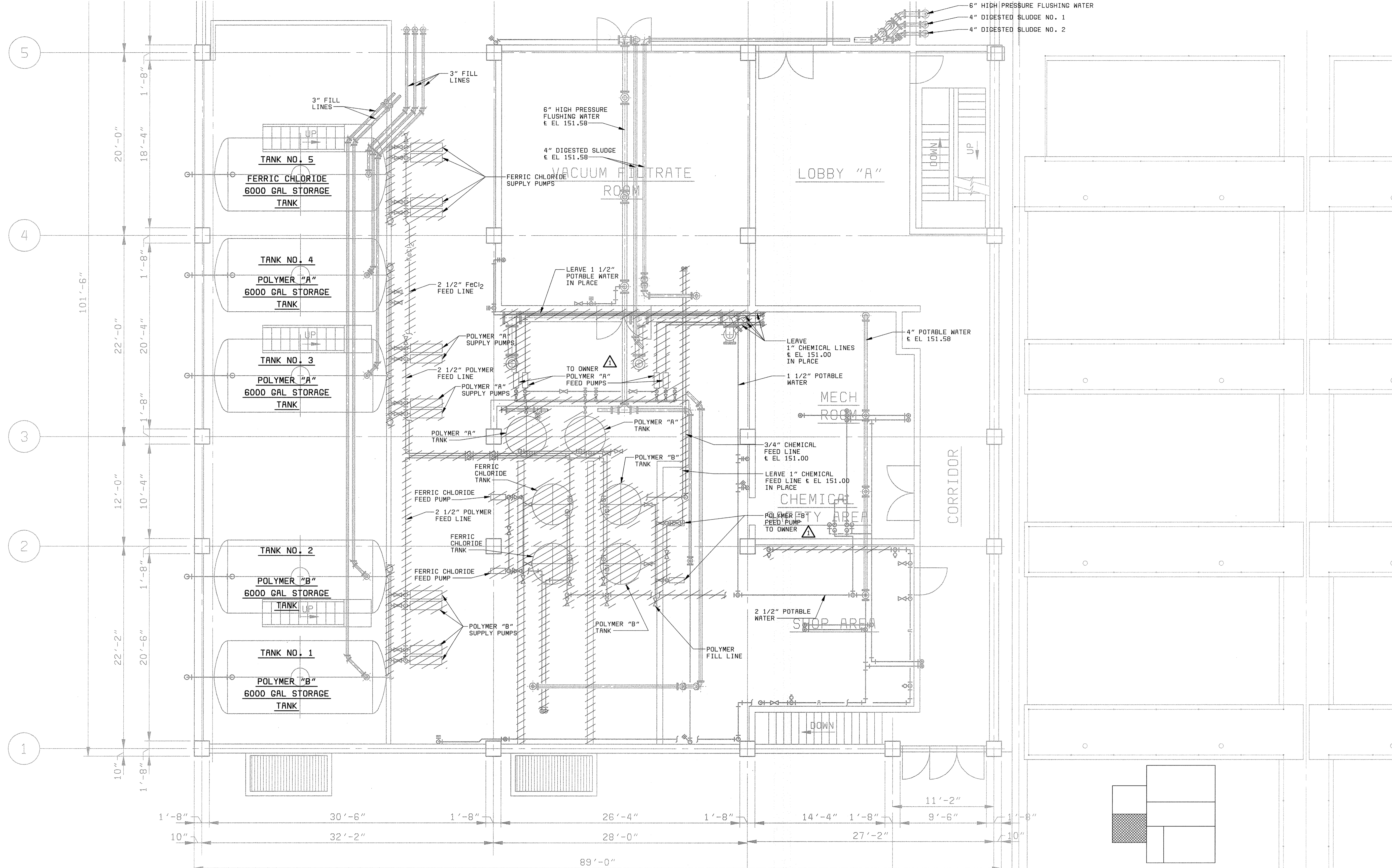
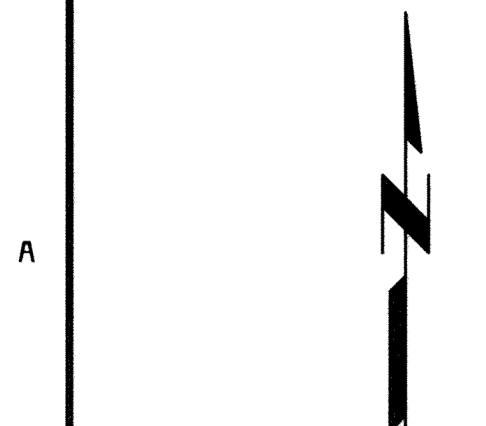
THIS DRAWING WAS
 ORIGINALLY APPROVED
 FOR CONSTRUCTION
 AND SEALED BY
 D MITT BOND
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 24676

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

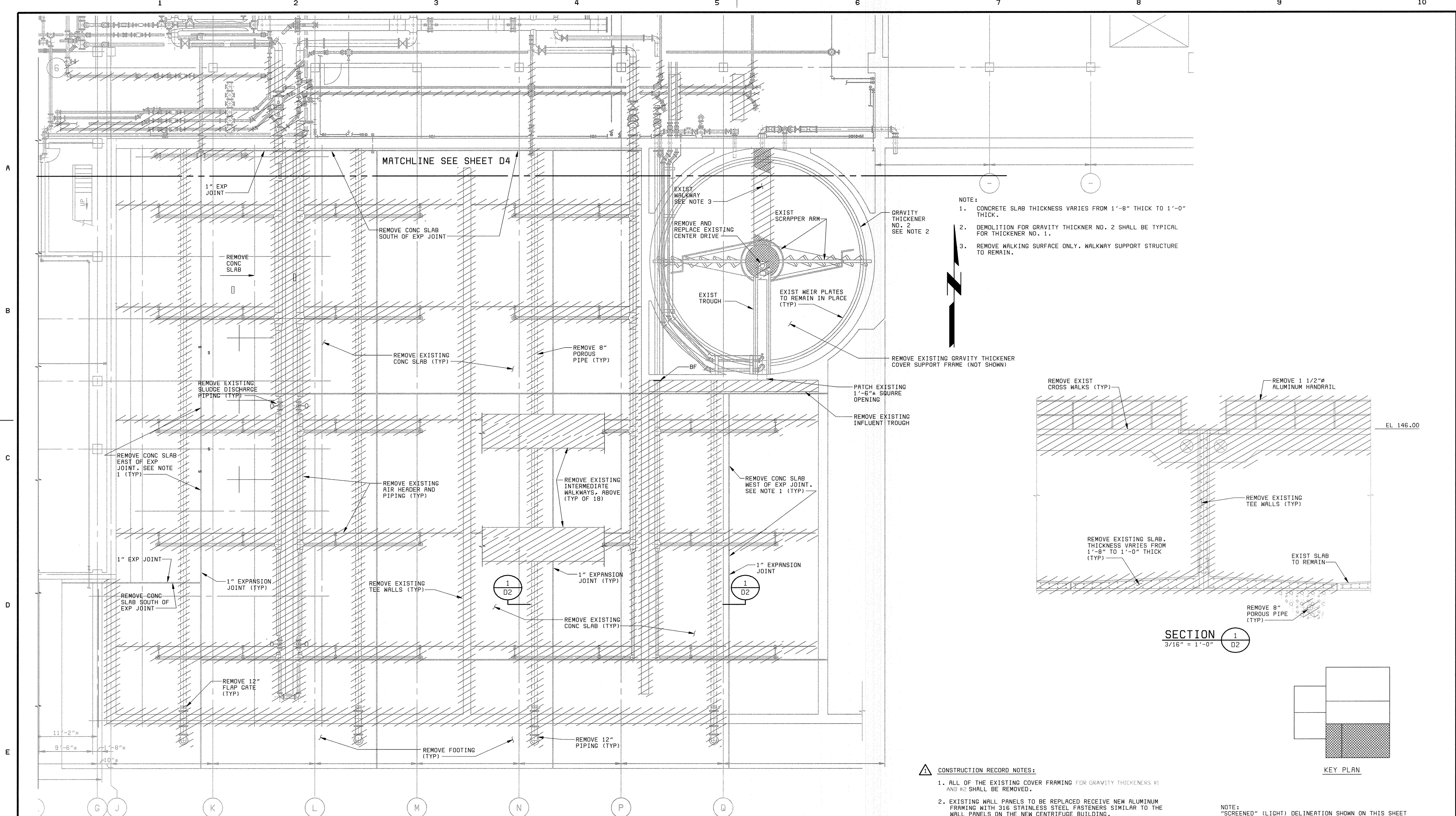
SCALE AS SHOWN
 SHEET 12 OF 150
Y5



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

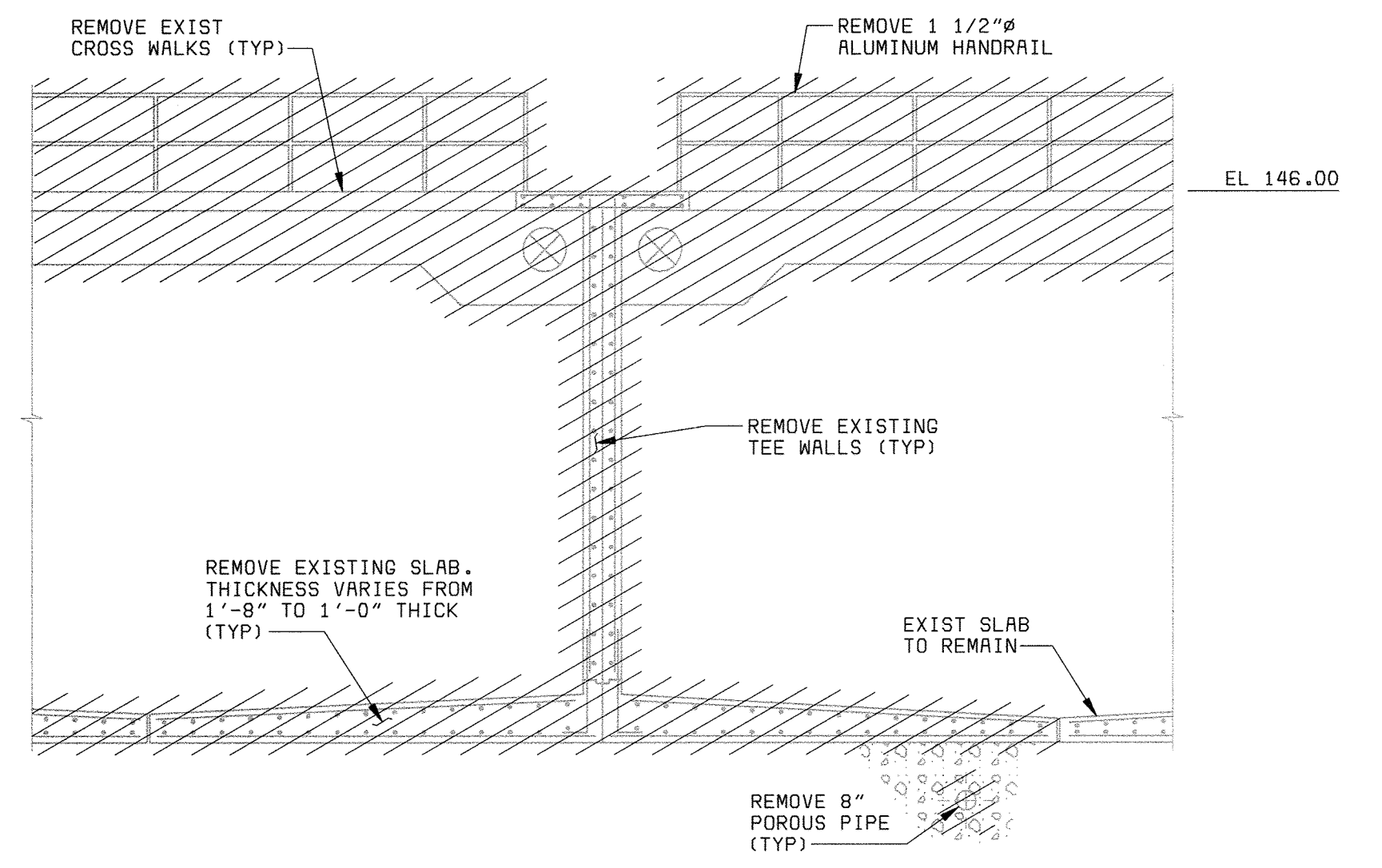
58472-401-323-C001: R00099002
 XREF: R00097338

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	

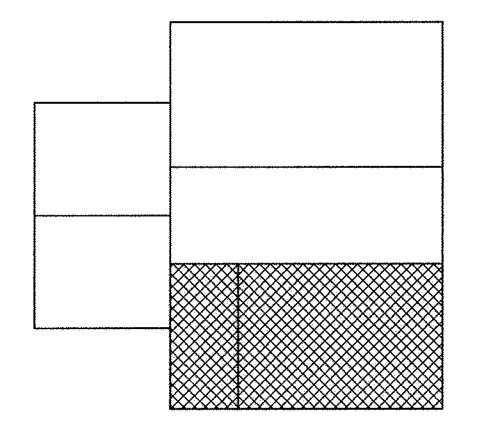


AEROBIC DIGESTER DEMOLITION PLAN
 1/8" = 1'-0"

- 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"



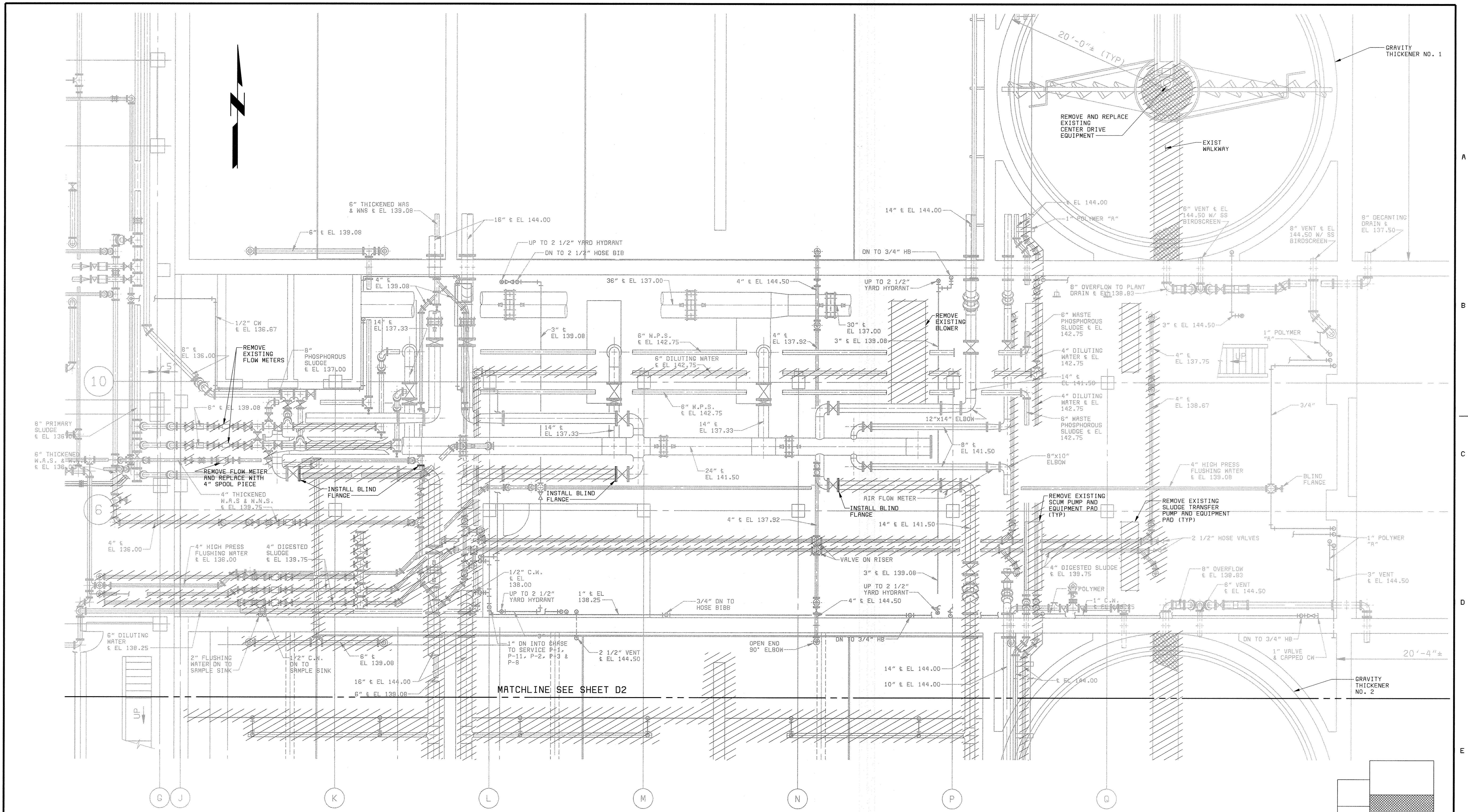
KEY PLAN

- 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.

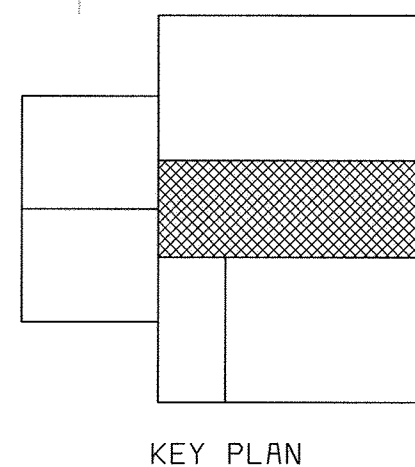
58472-401-323-C005: R0009855.DWG
 XREF: 58472-401-323-BAE1
 58472-401-323-PIPE

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 AEROBIC DIGESTER BASIN AREA DEMOLITION PLAN AND SECTION	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: RAB					NO. BY CK APP
			CHK: WLK					D2
			DATE: 5-30-00					



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.



58472-401-323-C002: A00089045.DWG
XREF: 58472-401-323-BRSE1
XREF: 58472-401-323-PTPE

058472 2
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
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	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

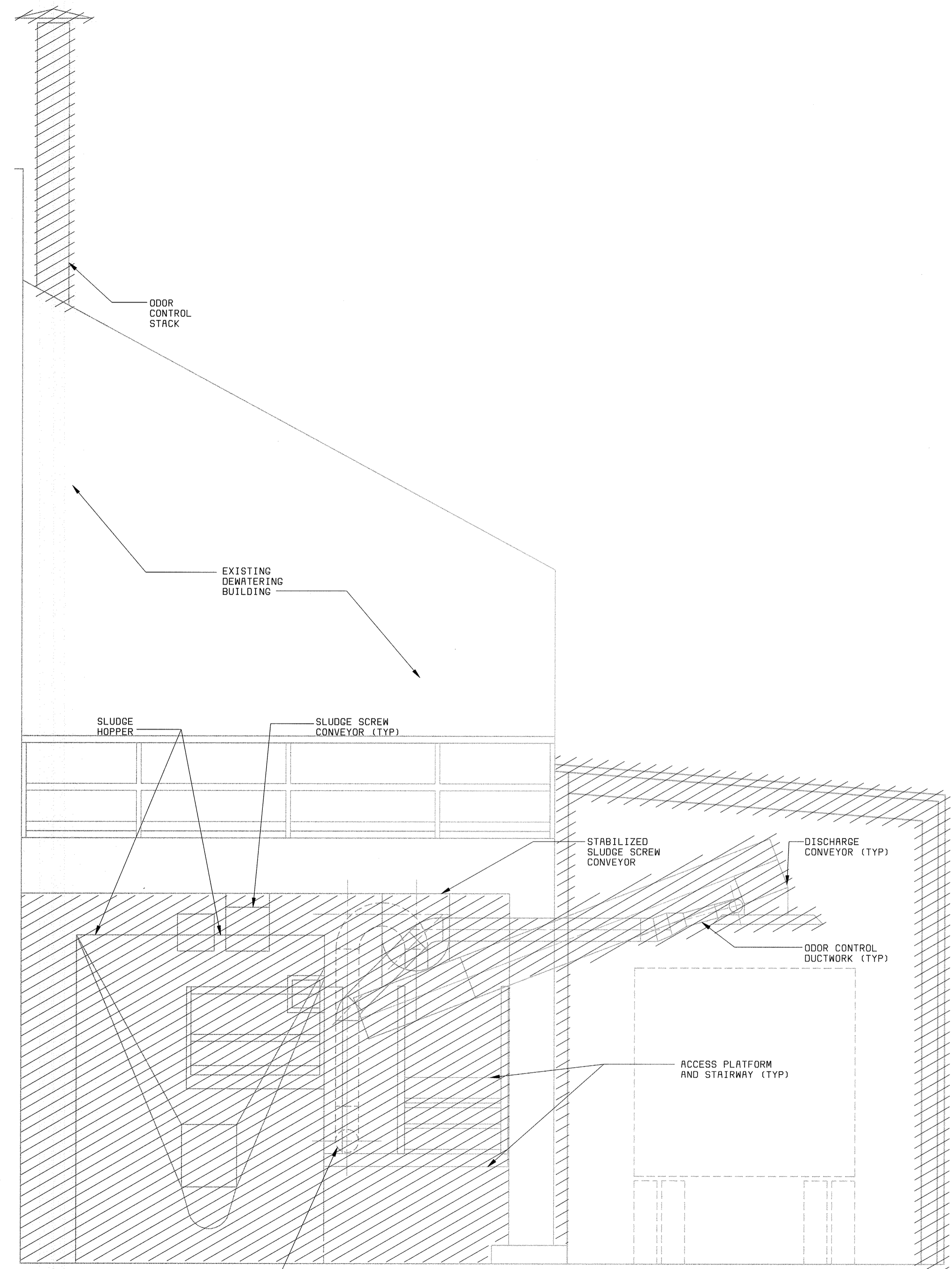
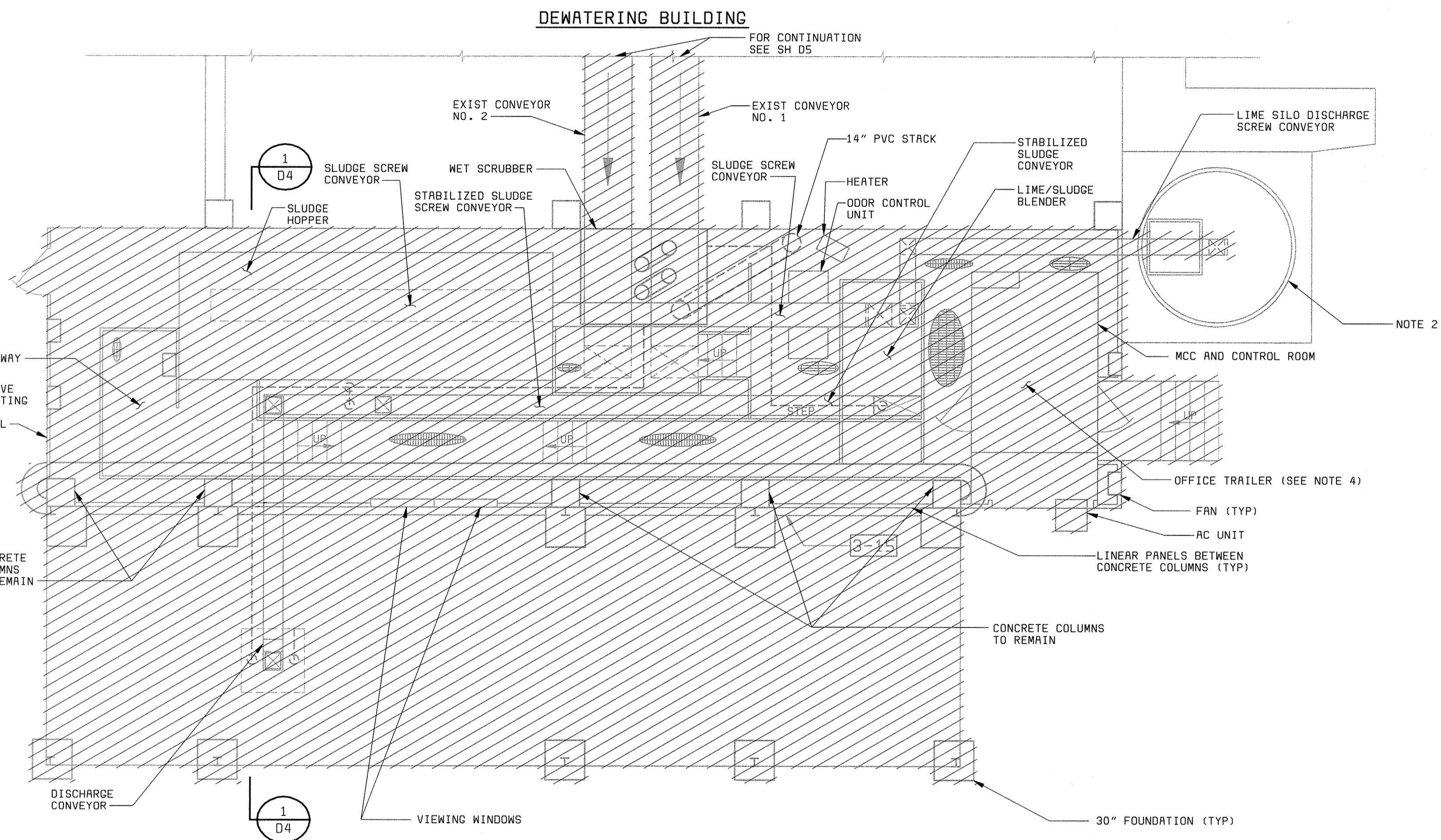
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15 OF 150

D3

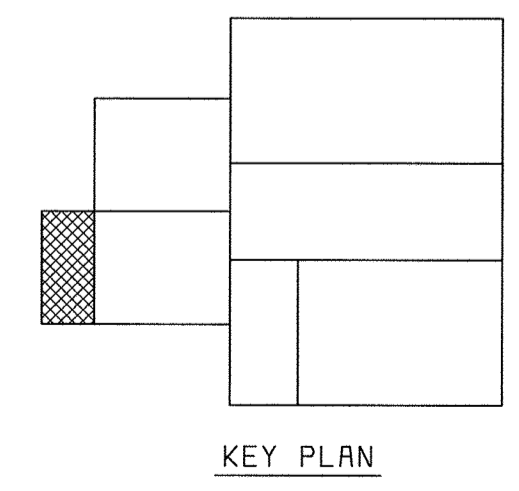
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DEMOLITION PARTIAL PLAN EL 152.00
3/16" = 1'-0"

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:**
- 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.
 - CONTRACTOR SHALL REMOVE THE EXISTING LIME SILO DISCHARGE SCREW CONVEYOR.
 - 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.
 - CONTRACTOR TO DELIVER SALVAGED TRAILER TO OWNER AT A LOCATION ACCEPTABLE TO PLANT STAFF.

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.

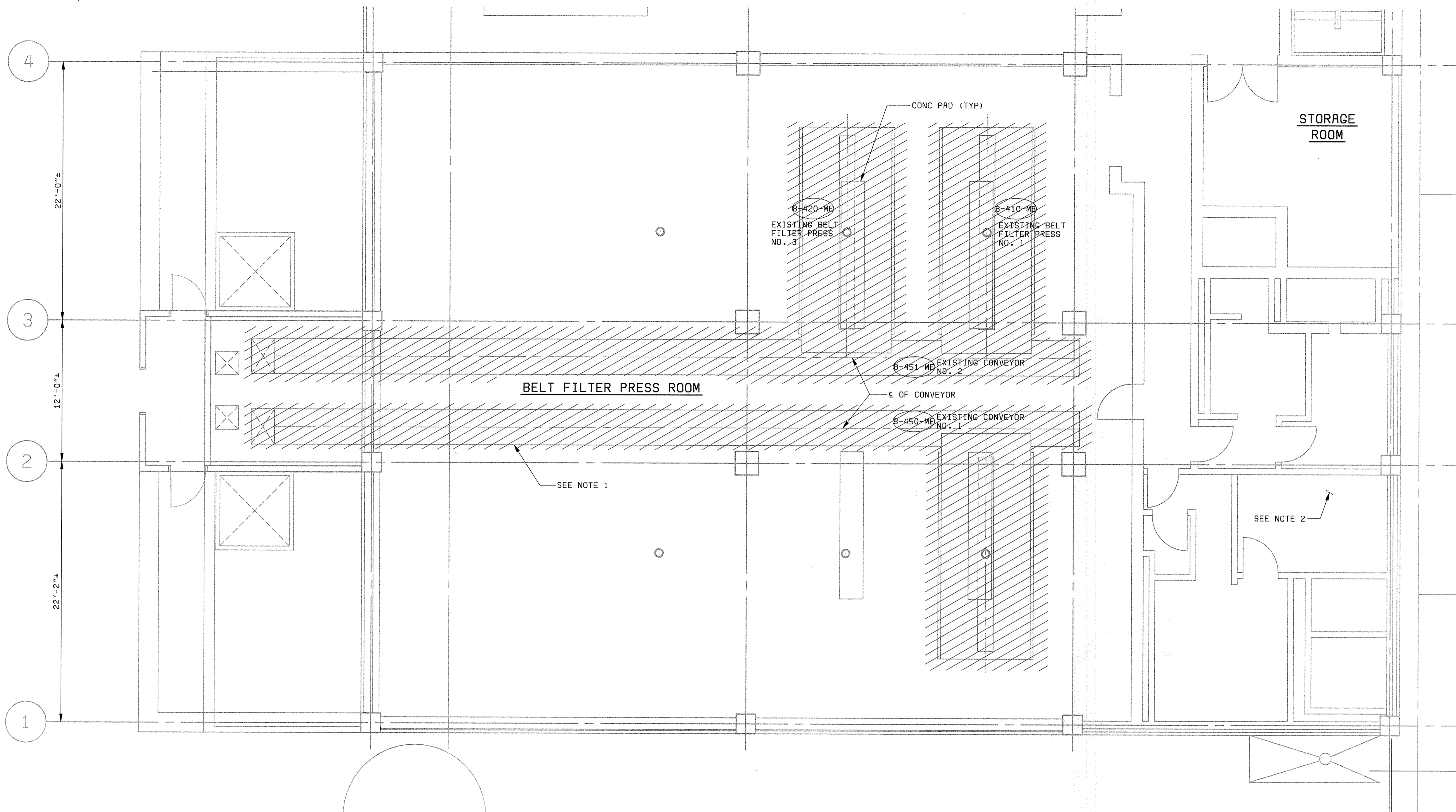
SECTION 1
3/8" = 1'-0" D4

58472-401-LB-C-00000833

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	RHH/RJR/RJR	NO.			BY

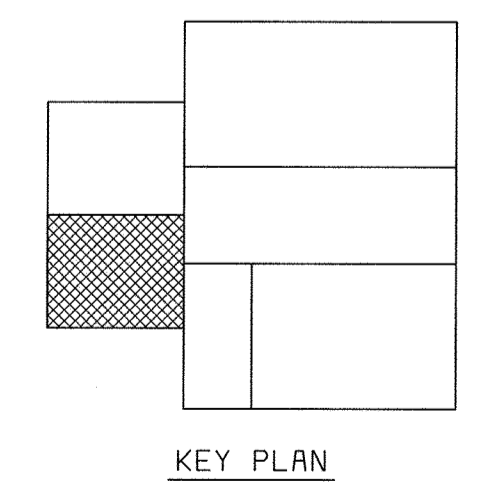
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PLAN AT EL 156.00
3/16" = 1'-0"

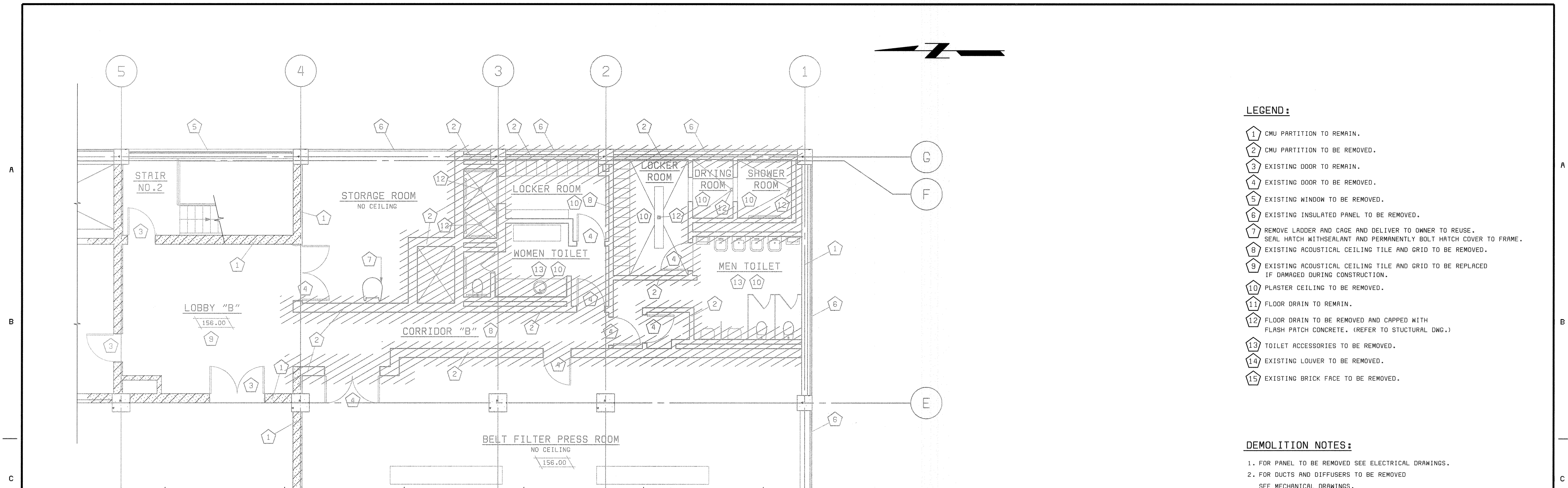
- NOTES:**
- CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND SUPPORTS FLUSH TO EXISTING FLOOR LEVEL.
 - FOR DETAILED DEMOLITION REQUIREMENTS IN THIS LOCATION REFERENCE SHEET DG.
 - "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS 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	 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 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		



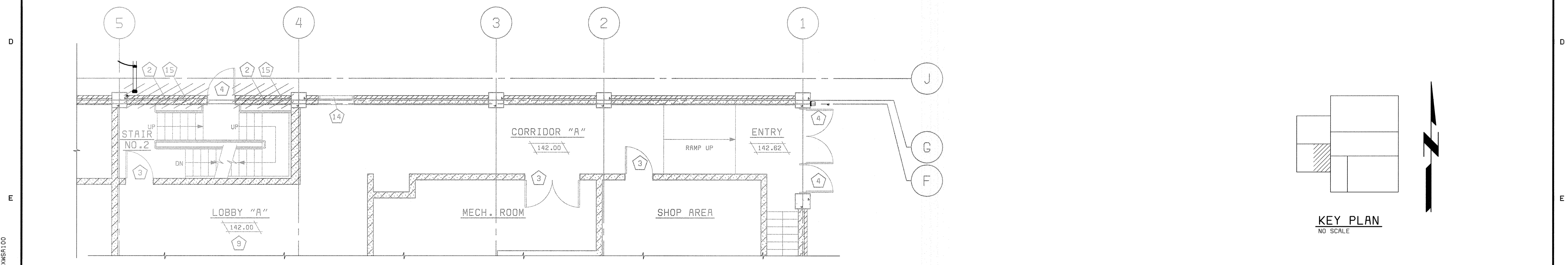
DEMOLITION PLAN ELEVATION 156.00' 1
3/16" = 1'-0" D6

LEGEND:

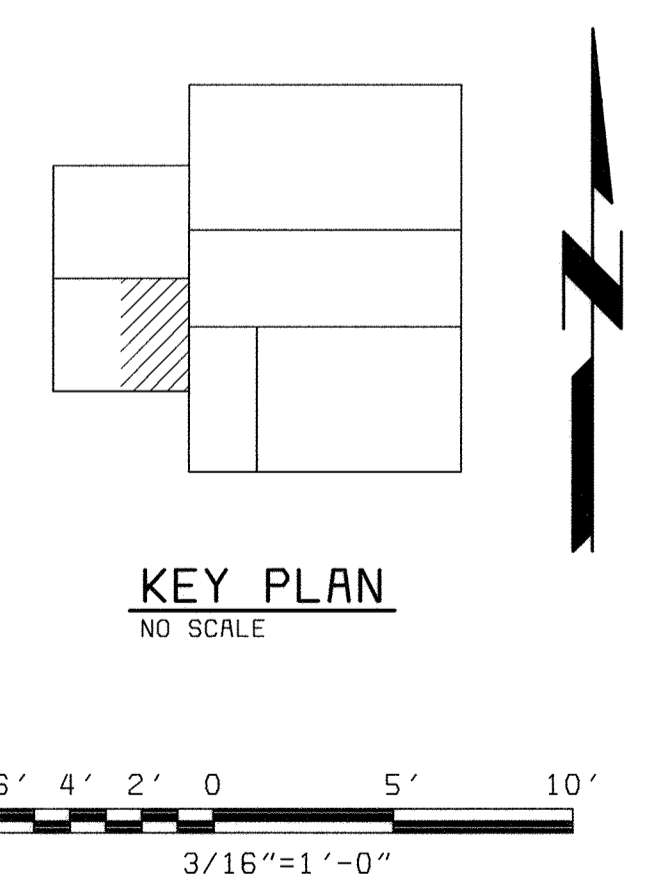
- 1 CMU PARTITION TO REMAIN.
- 2 CMU PARTITION TO BE REMOVED.
- 3 EXISTING DOOR TO REMAIN.
- 4 EXISTING DOOR TO BE REMOVED.
- 5 EXISTING WINDOW TO BE REMOVED.
- 6 EXISTING INSULATED PANEL TO BE REMOVED.
- 7 REMOVE LADDER AND CAGE AND DELIVER TO OWNER TO REUSE. SEAL HATCH WITHSEALANT AND PERMANENTLY BOLT 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.

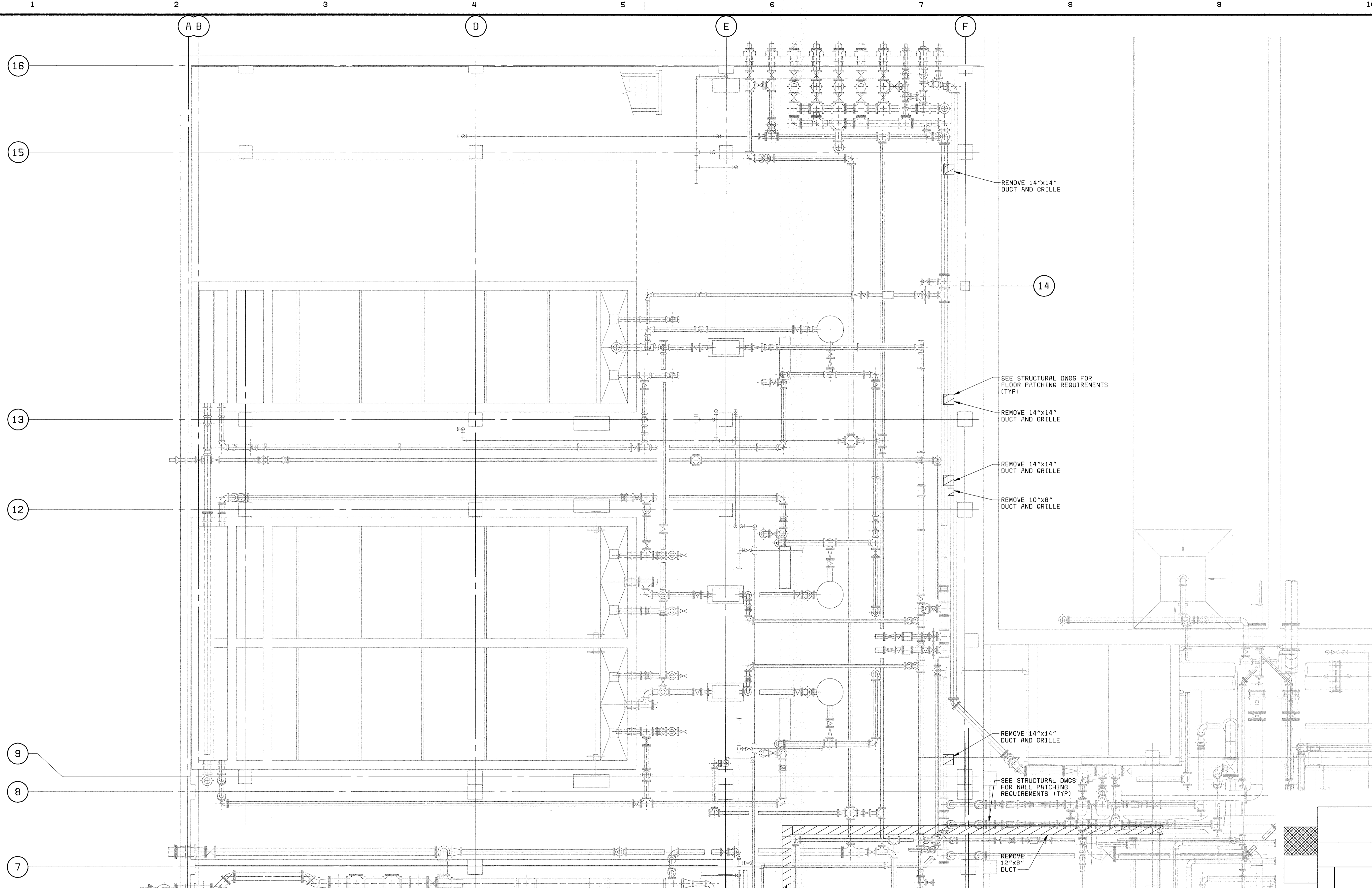


DEMOLITION PLAN ELEVATION 142.00' 2
3/16" = 1'-0" D6



X:\L000
 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 style="width: 50%;">07/26/04</td> <td style="width: 50%;">CONFORMED TO CONSTRUCTION RECORDS</td> <td style="width: 50%;">RHH/RJR/RJR</td> </tr> <tr> <td>DATE</td> <td>REVISIONS AND RECORD OF ISSUE</td> <td>NO. BY 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	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
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR												
DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP												



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

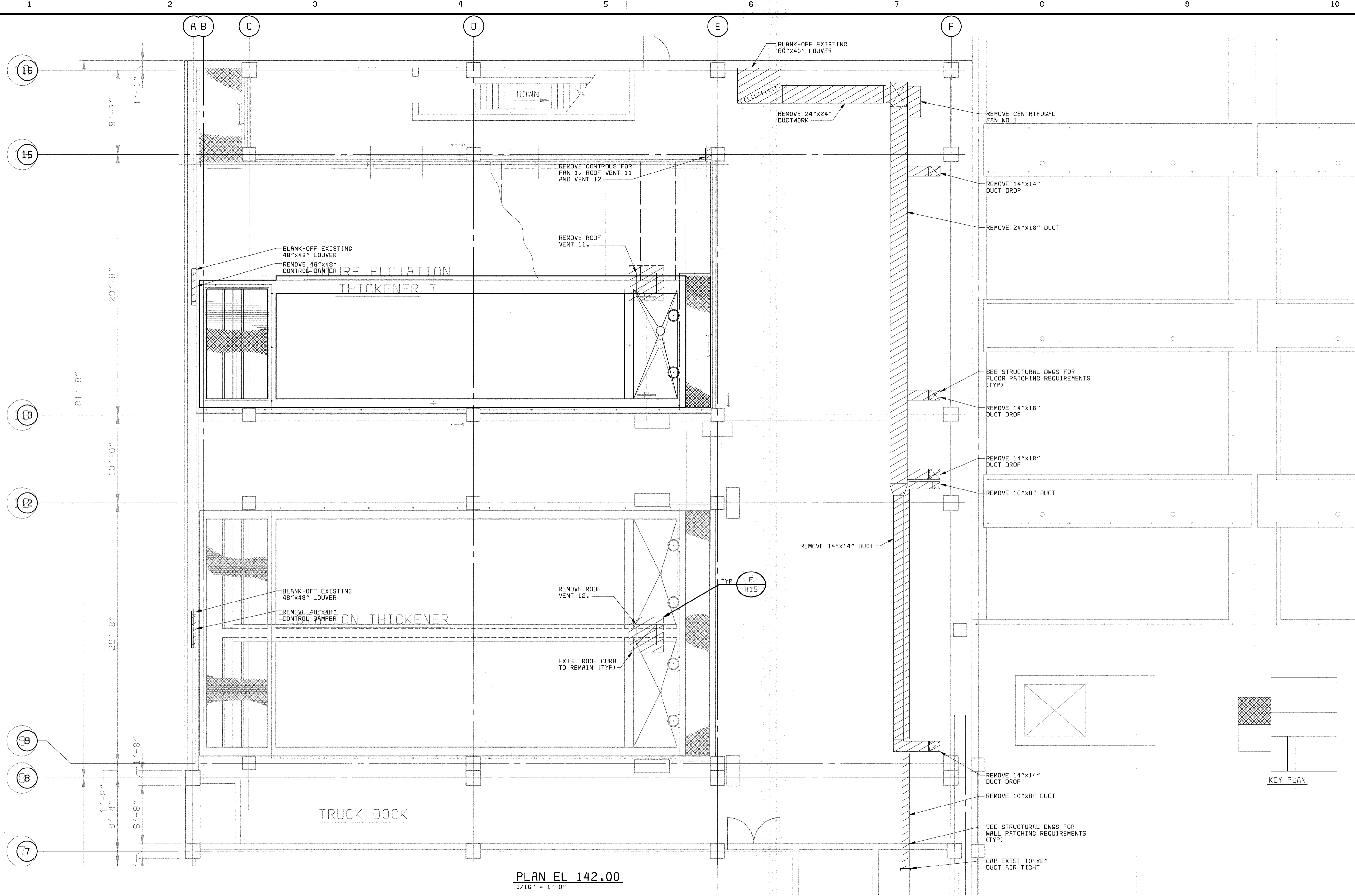
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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: 58472-401-323-0017
 XREF: 58472-401-323-PTPE3
 XREF: 58472-203-SLDS-S-A0000118
 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 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			RJR

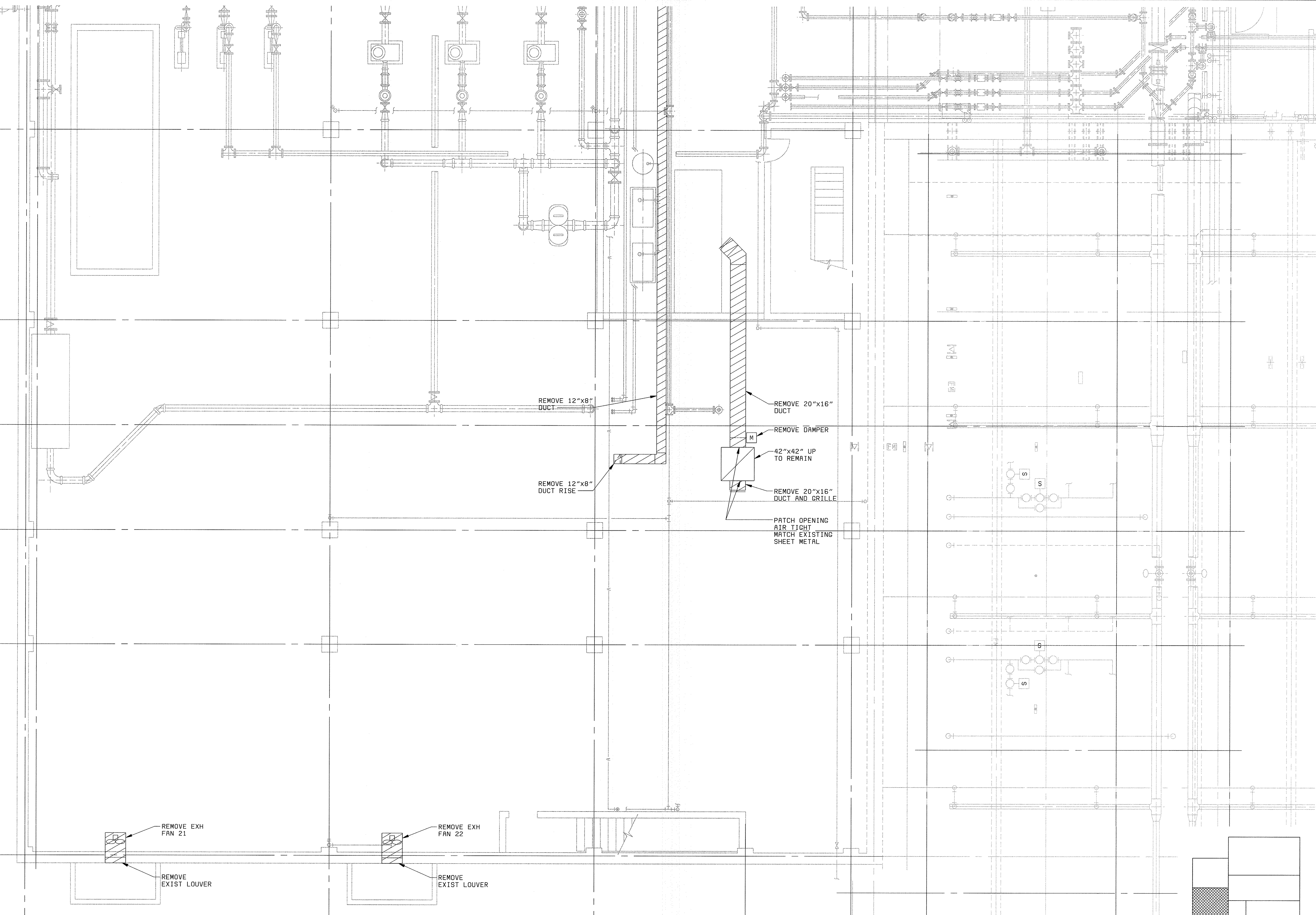
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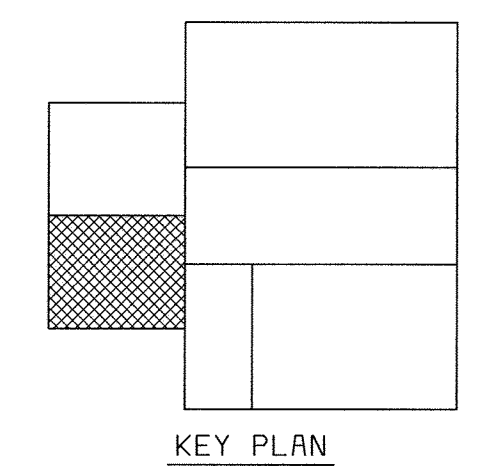
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PLAN EL 130.00
3/16" = 1'-0"



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

D58472.2
F058472A

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

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

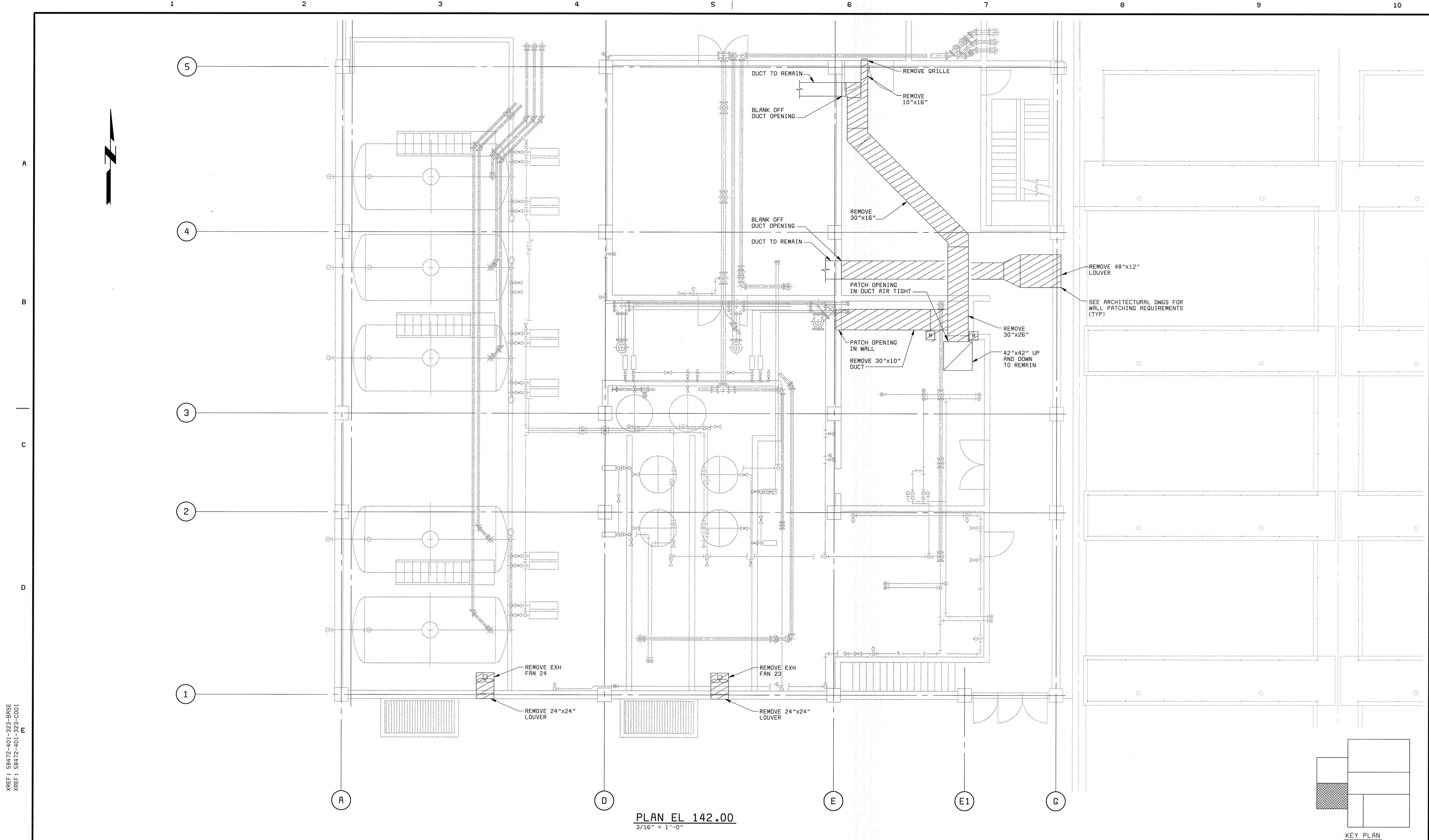
THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
MARTIN L. PAPE
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21992

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

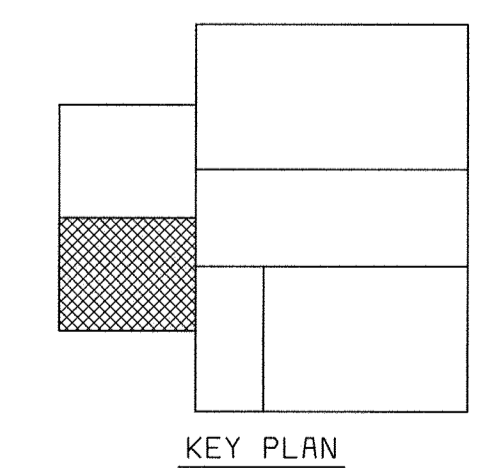
DEMOLITION
HVAC
CENTRATE DISPOSAL AREA
PLAN AT EL 130.00

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 142.00
3/16" = 1'-0"

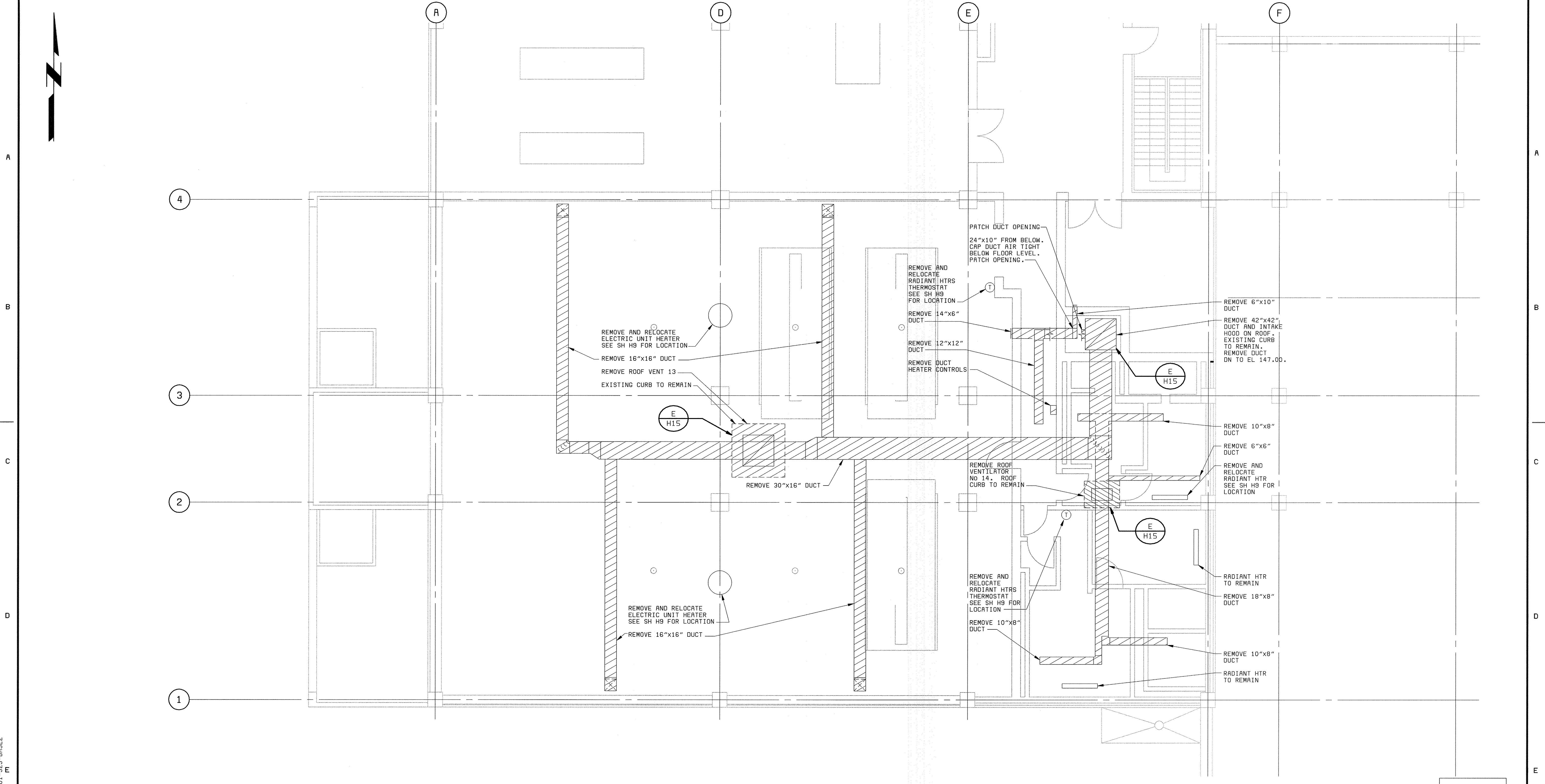


KEY PLAN

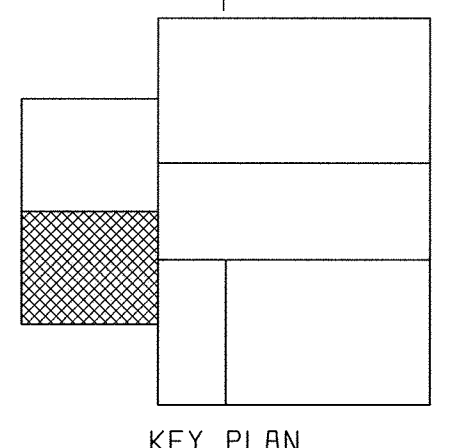
XREF: 58472-401-323-BASE
 XREF: 58472-401-323-C001

DS6472.2
 PS58472A

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	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>REVISIONS AND RECORD OF ISSUE</th> <th>NO.</th> <th>BY</th> <th>CK</th> <th>APP</th> </tr> </thead> <tbody> <tr> <td>07/26/04</td> <td>CONFORMED TO CONSTRUCTION RECORDS</td> <td></td> <td>RHH</td> <td>RJR</td> <td>RJR</td> </tr> </tbody> </table>	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR	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 SHOWN SHEET 22 OF 150 D10
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP														
07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR														




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

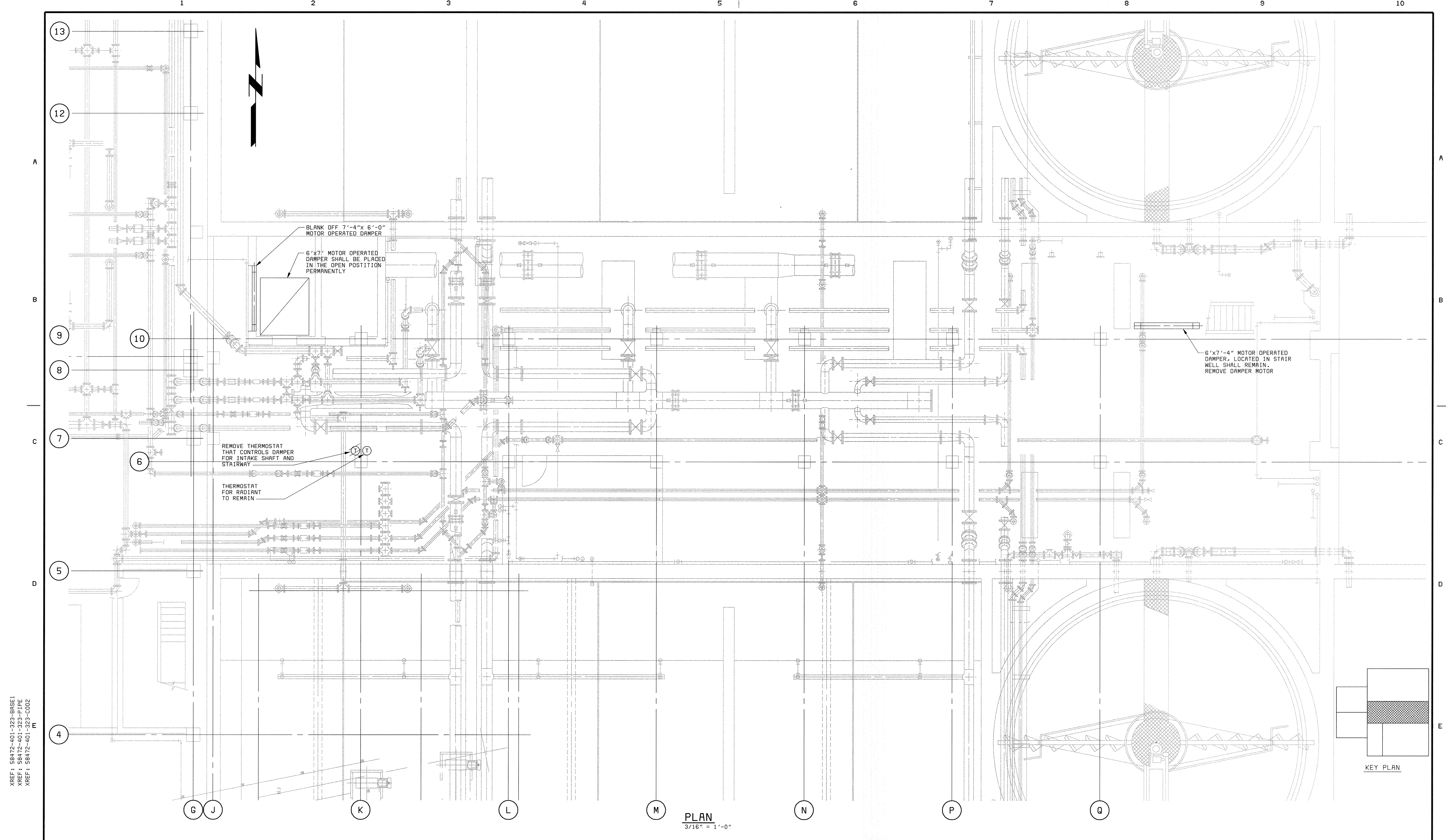


KEY PLAN

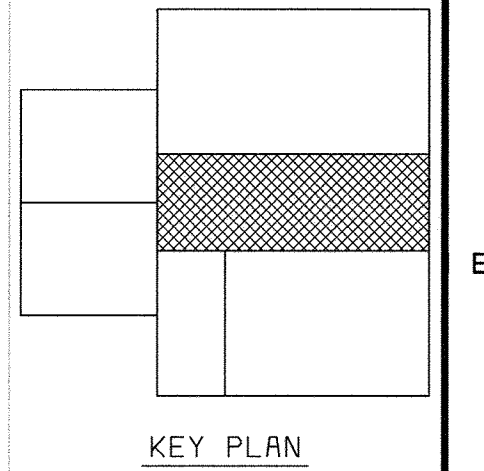
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 XREF: 58472-01-323-BASE2

DES: BWP
 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									DEMOLITION HVAC 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: BDL-LDW	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR	NO.	BY	CHK	APP	SHEET 23 OF 150			
			CHK: JEP											D11

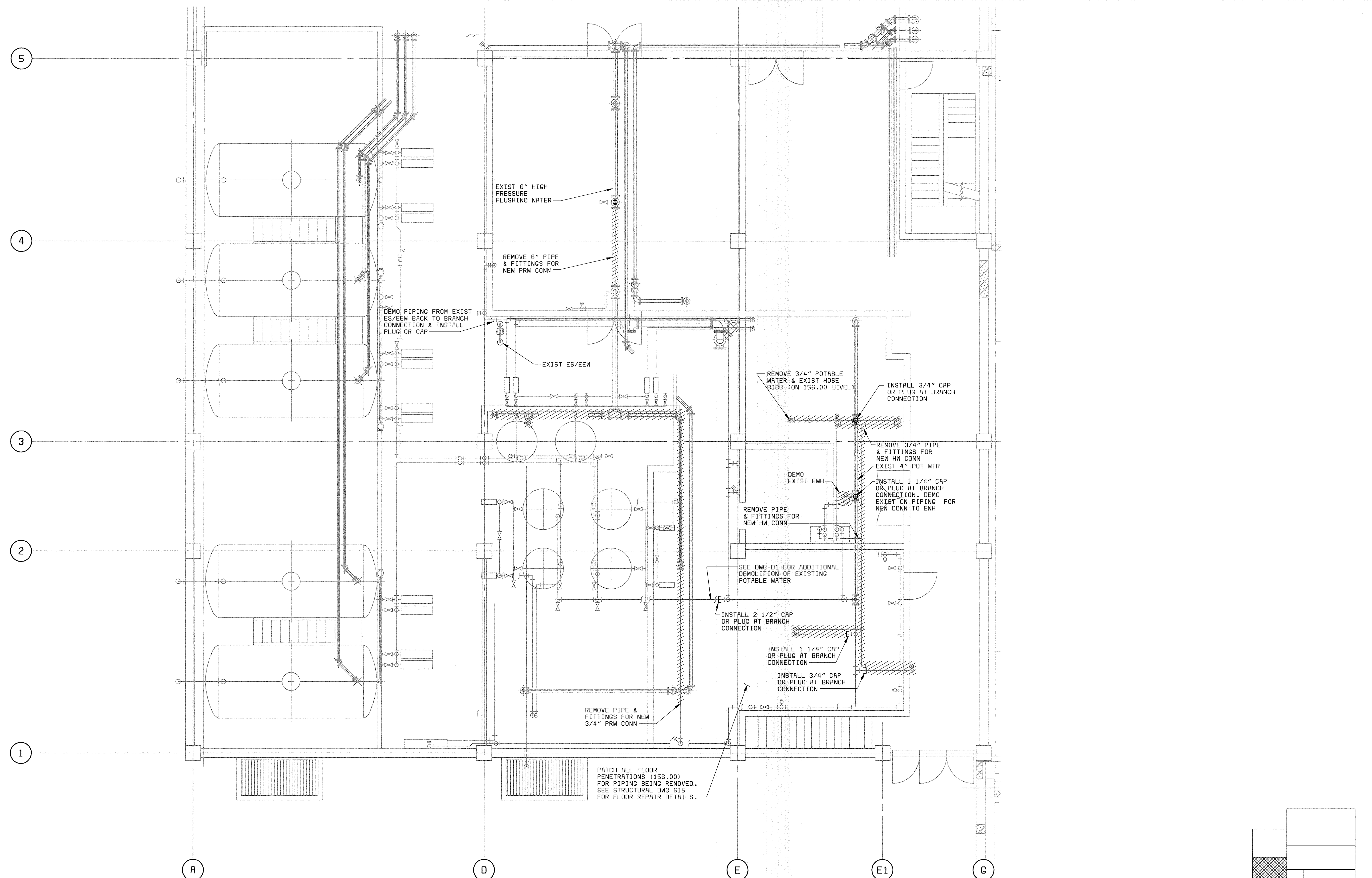


PLAN
3/16" = 1'-0"

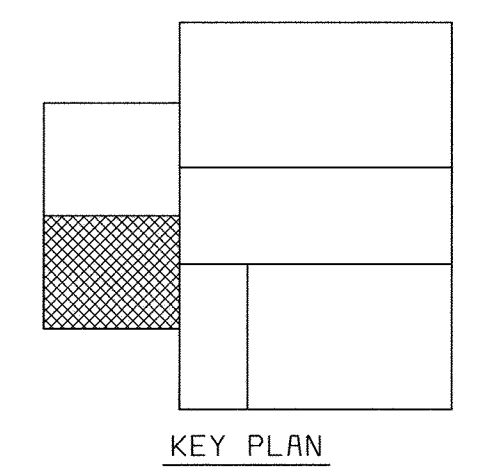


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 XREF: 58472-401-323-COUE

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 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: 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		D12	



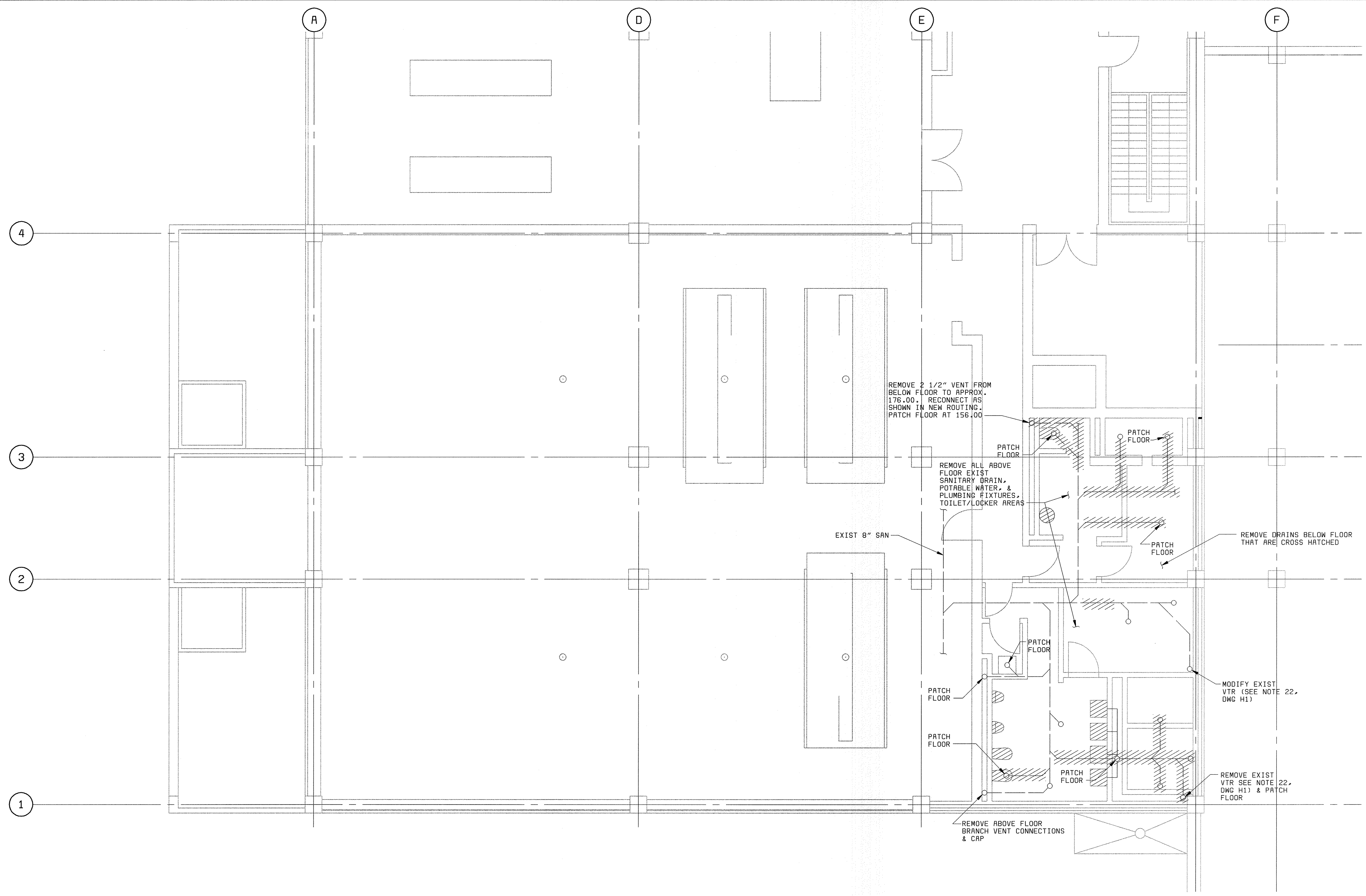
PLAN EL 142.00
3/16" = 1'-0"



KEY PLAN

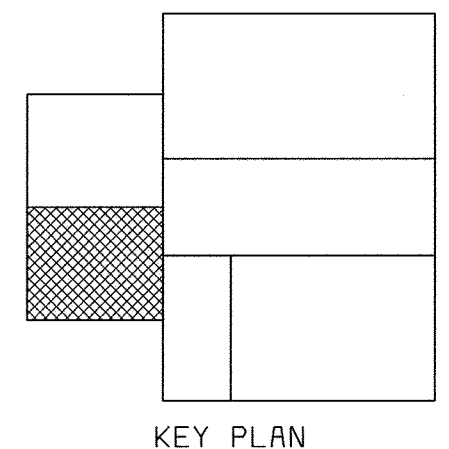
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 DRN: JPC
 CHK: MLP
 DATE: 5-30-00

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			RJR



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

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



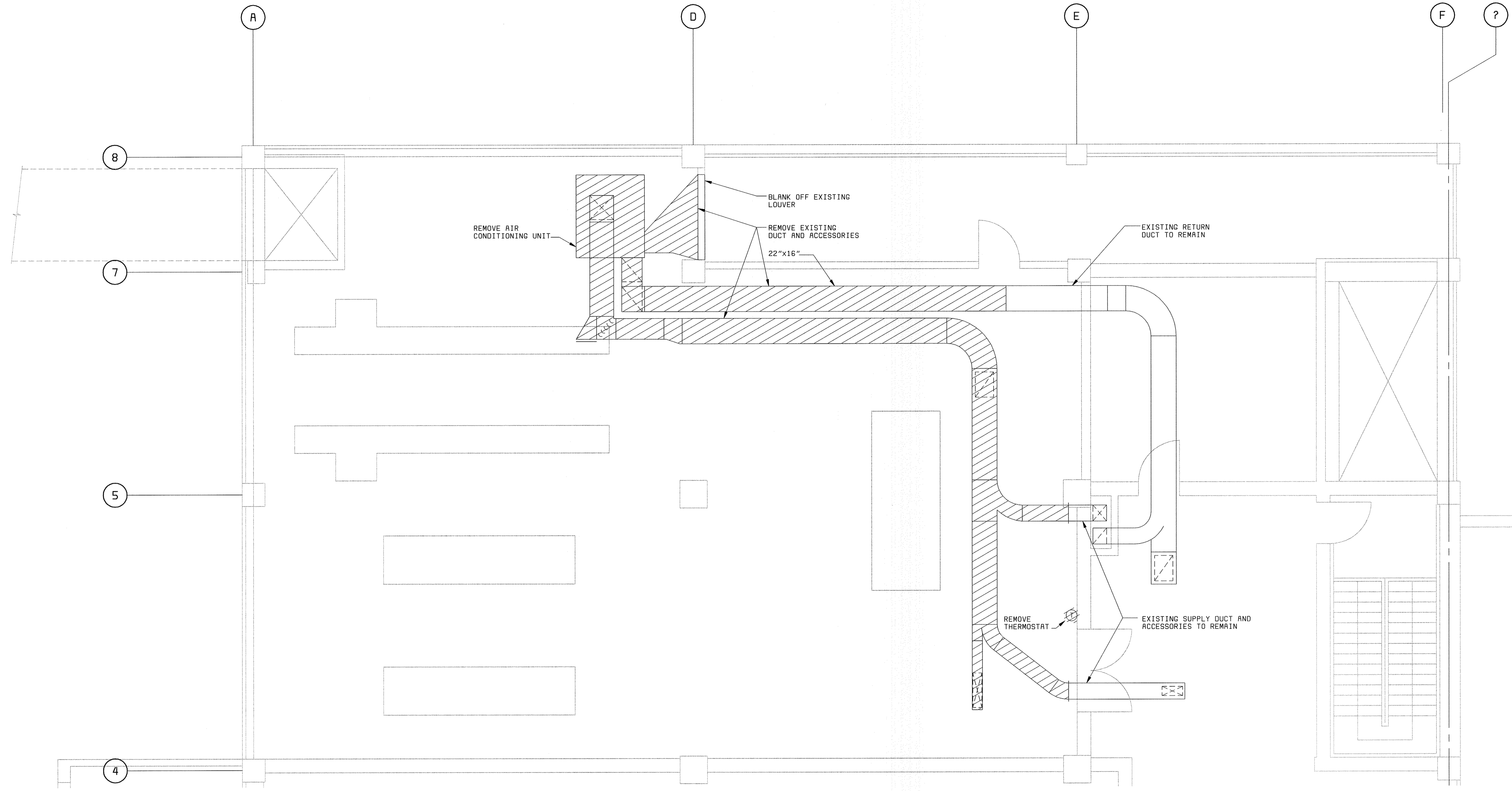
KEY PLAN

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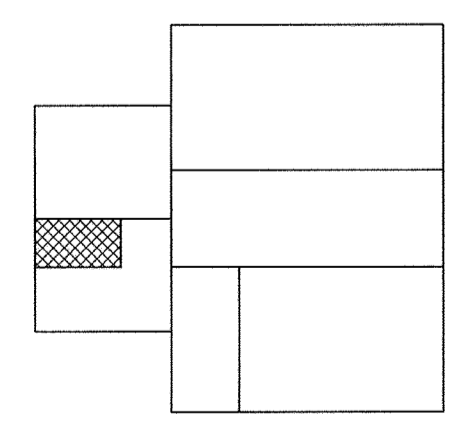
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC									DEMOLITION PLUMBING 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					

1 2 3 4 5 6 7 8 9 10




FLOOR PLAN ELEVATION 156.00

1/4" = 1'-0"



KEY PLAN

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,HX						DEMOLITION HVAC 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
			DRN: BDL,LDM								SHEET 27 OF 150
			CHK: JEP						D15		
			DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE						

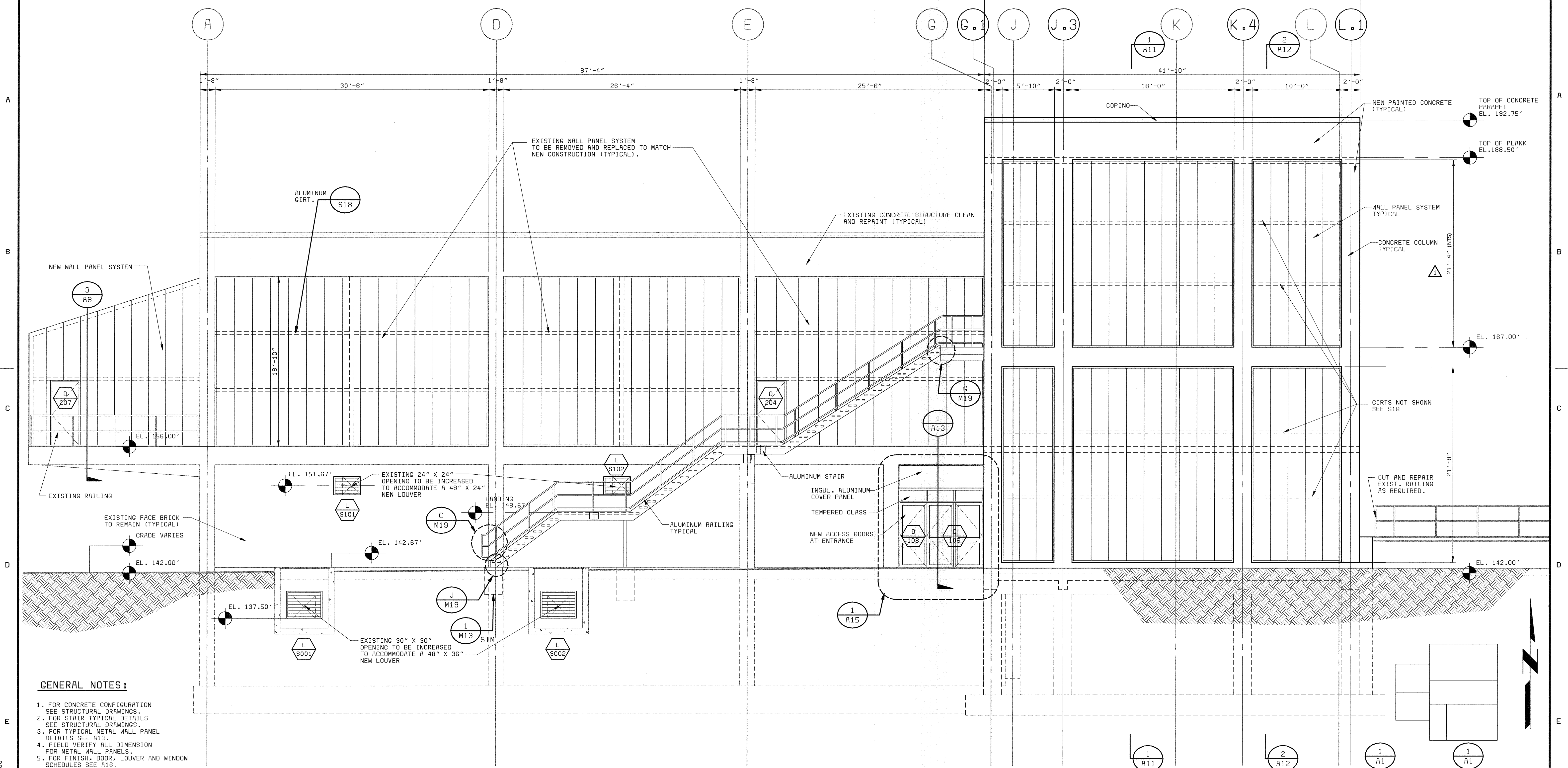
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058472-2
 F0584725

EXISTING CONSTRUCTION

NEW CONSTRUCTION

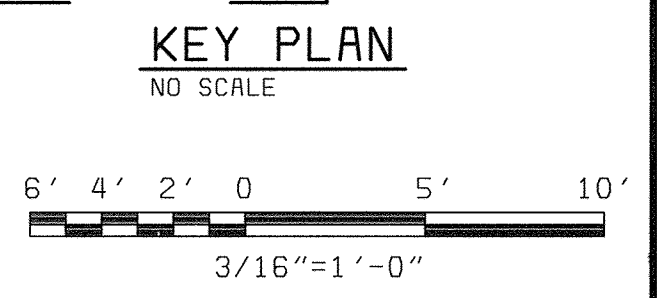
EXISTING CONSTRUCTION



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.

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

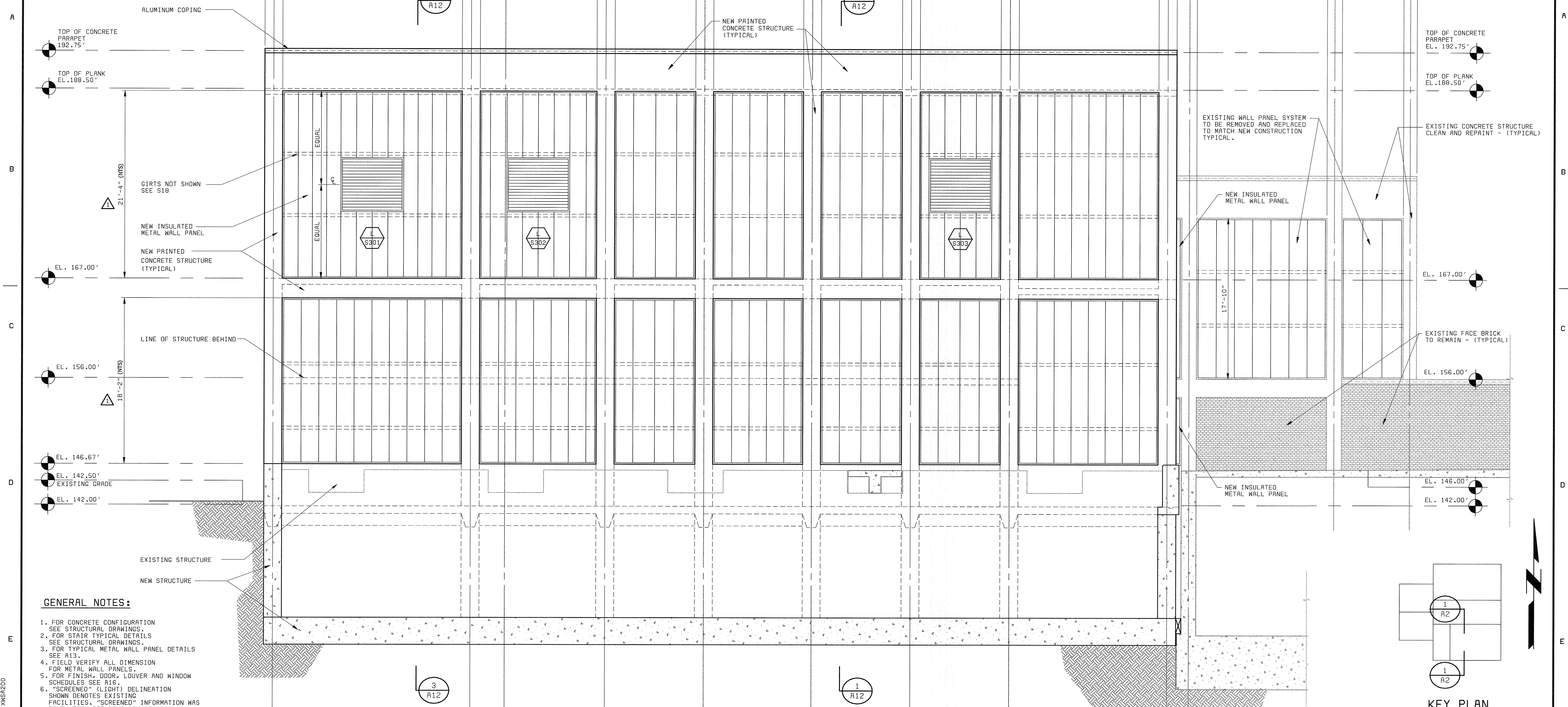
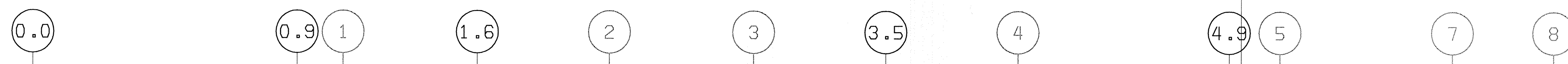


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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108 CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, 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	RHH/RJR/RJR												
ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION SOUTH 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 28 OF 150 A1

NEW CONSTRUCTION

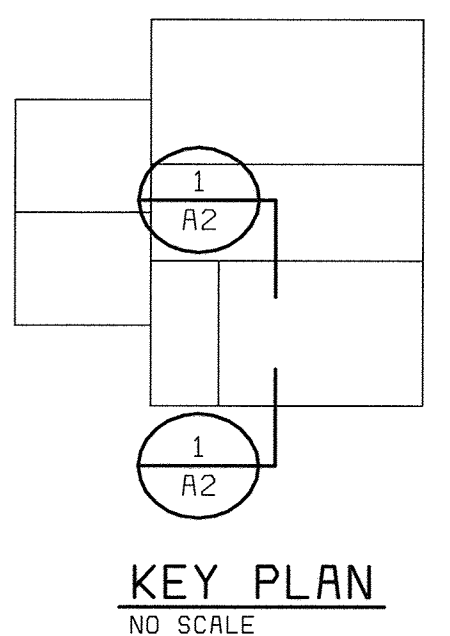
EXISTING CONSTRUCTION



GENERAL NOTES:

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3. FOR TYPICAL METAL WALL PANEL DETAILS SEE A13.
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EAST ELEVATION
3/16" = 1'-0"



6' 4' 2' 0 5' 10'
3/16"=1'-0"

XMLEG0 XM6R200

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



BLACK & VEATCH LP
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	NO.	BY	CK APP

ARCHITECTURAL

**CENTRIFUGE BUILDING EXPANSION
EAST 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

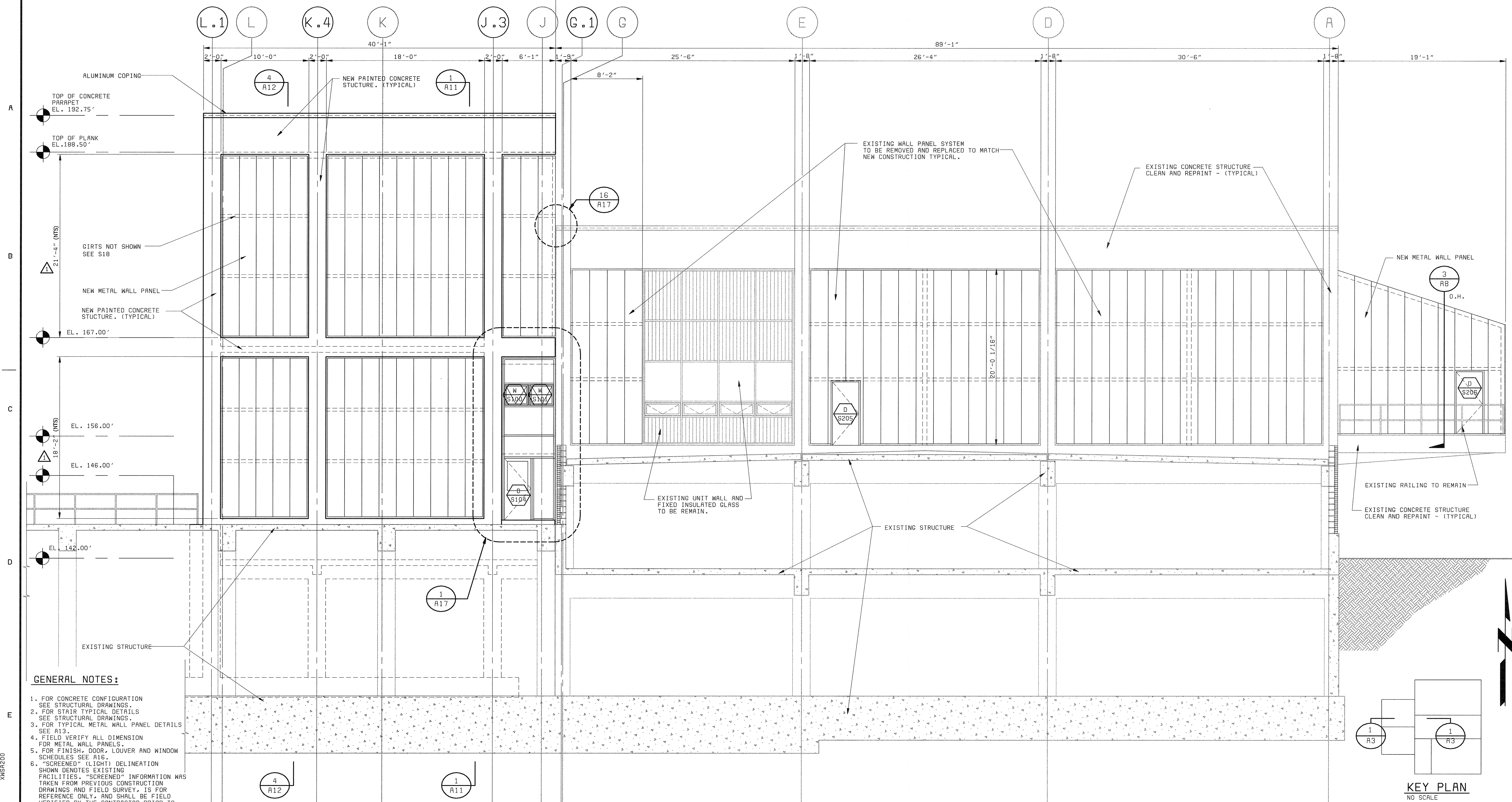
SCALE
AS
SHOWN

SHEET
29 OF 150

A2

NEW CONSTRUCTION

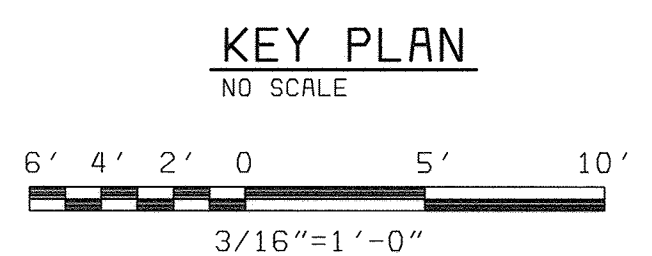
EXISTING CONSTRUCTION



GENERAL NOTES:

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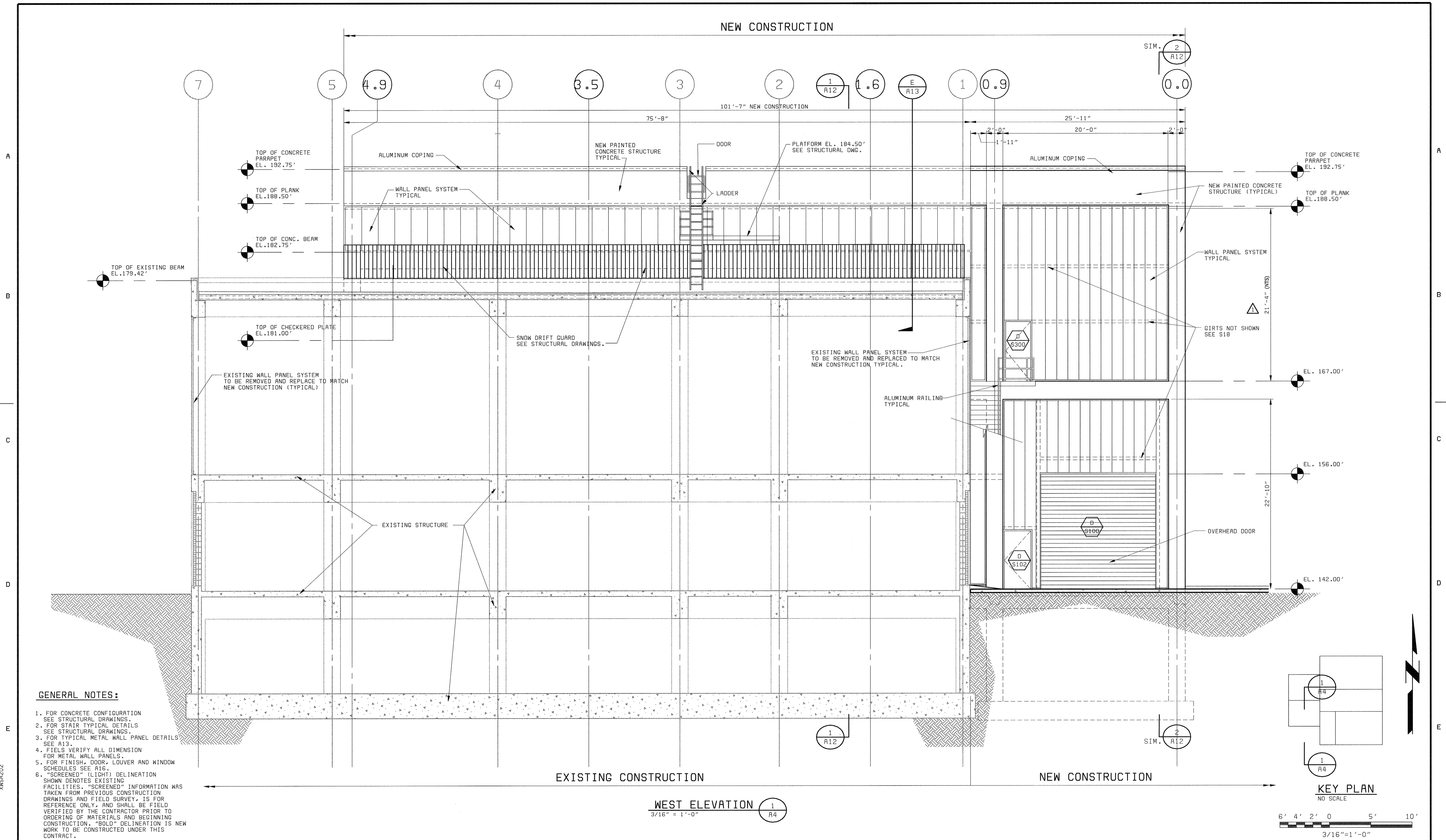
NORTH ELEVATION
3/16" = 1'-0"



XWLOGO XMSR200 D5E472.2 PDS6472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Architects • Designers • Planners Bryant Bryant Williams, P.C. <small>401 Connecticut Avenue NW, Suite 500 Washington, D.C. 20008 (202) 244-2108</small>	 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 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
			DRN: JS				SHEET 30 OF 150 A3
CHIEF, BUREAU OF UTILITIES DATE _____			CHK: CH				
			DATE: 5/30/00				

NEW CONSTRUCTION



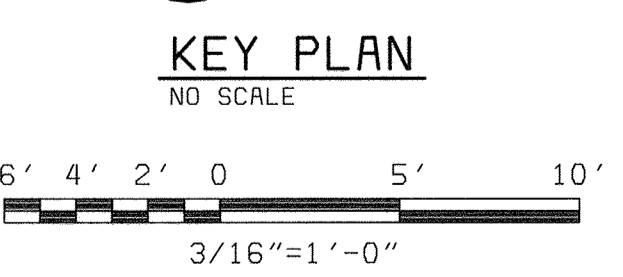
GENERAL NOTES:

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

NEW CONSTRUCTION

WEST ELEVATION 1/44
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	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH/RJR/RJR
CHIEF, BUREAU OF UTILITIES DATE	REG. PROF. ENGR. DATE	CHK: CH	DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP	A4

A

B

C

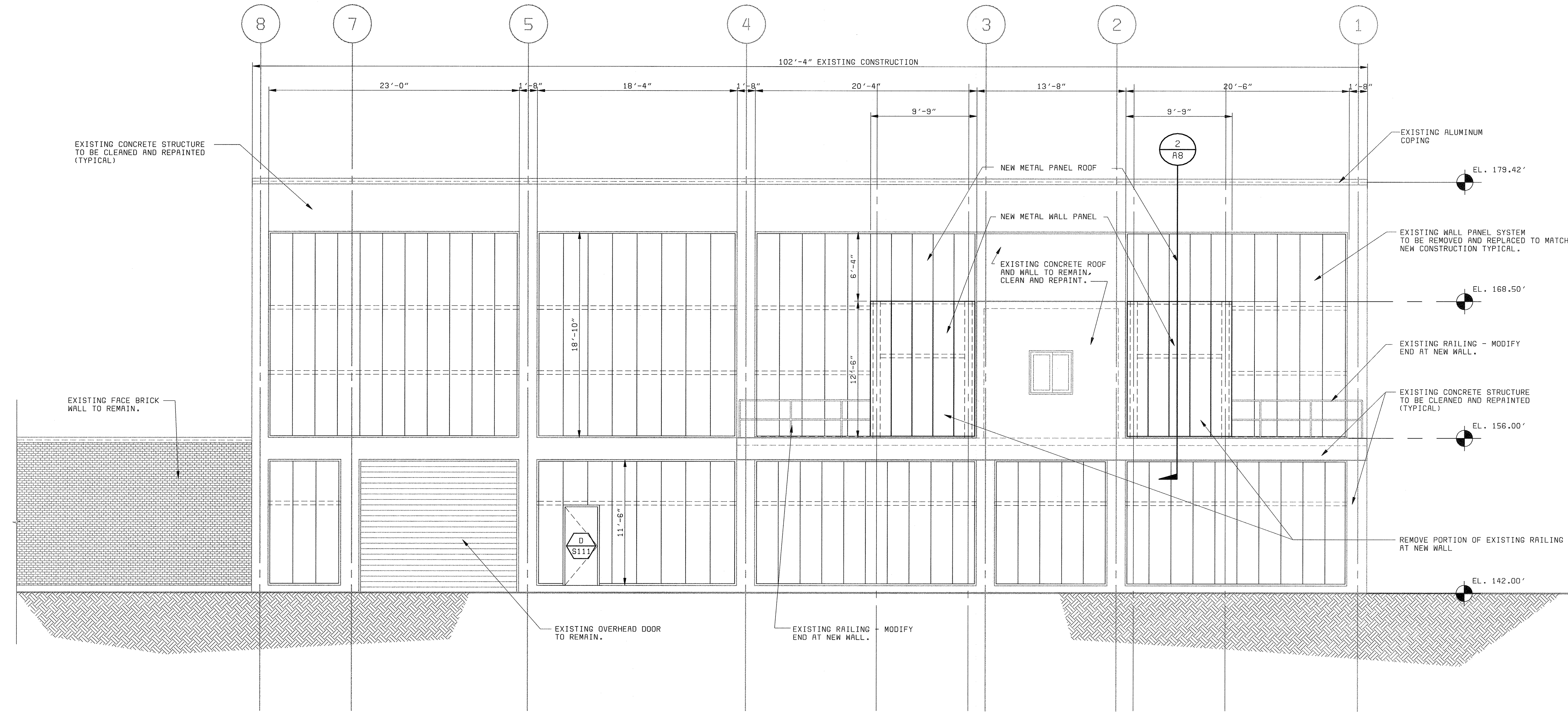
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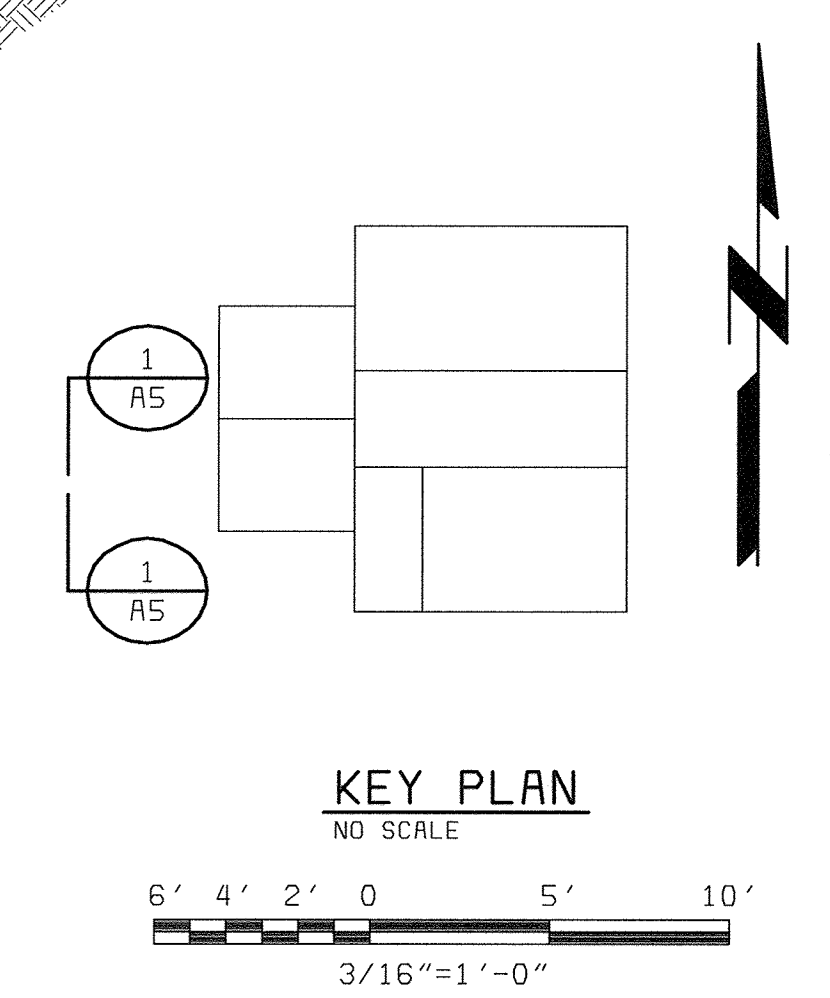
C

D



GENERAL NOTES:

1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
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WEST ELEVATION EXISTING BUILDING
3/16" = 1'-0"

X:\L000 XMSR200 D58472-2 P058472R

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
bbw Architects • Designers • Planners
Bryant Bryant Williams, P.C.
4201 Connecticut Avenue N.W., Suite 300
Washington, D.C. 20008 (202) 244-0108
CHIEF, BUREAU OF UTILITIES DATE

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
REG. PROF. ENGR. DATE

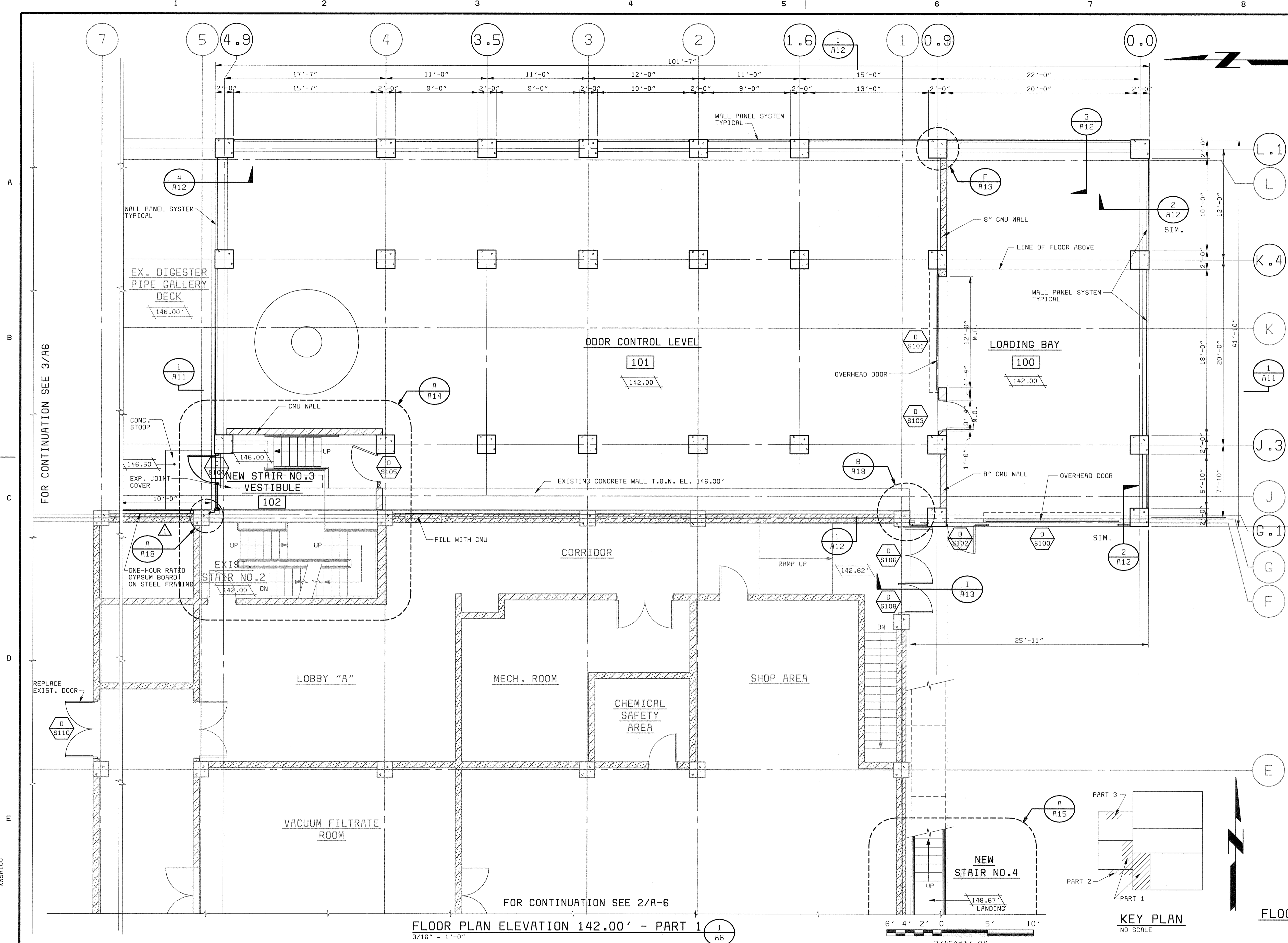
DES: CH/JS
DRN: JS
CHK: CH
DATE: 5/30/00

ARCHITECTURAL
CENTRIFUGE BUILDING EXPANSION
WEST ELEVATION
EXISTING BUILDING

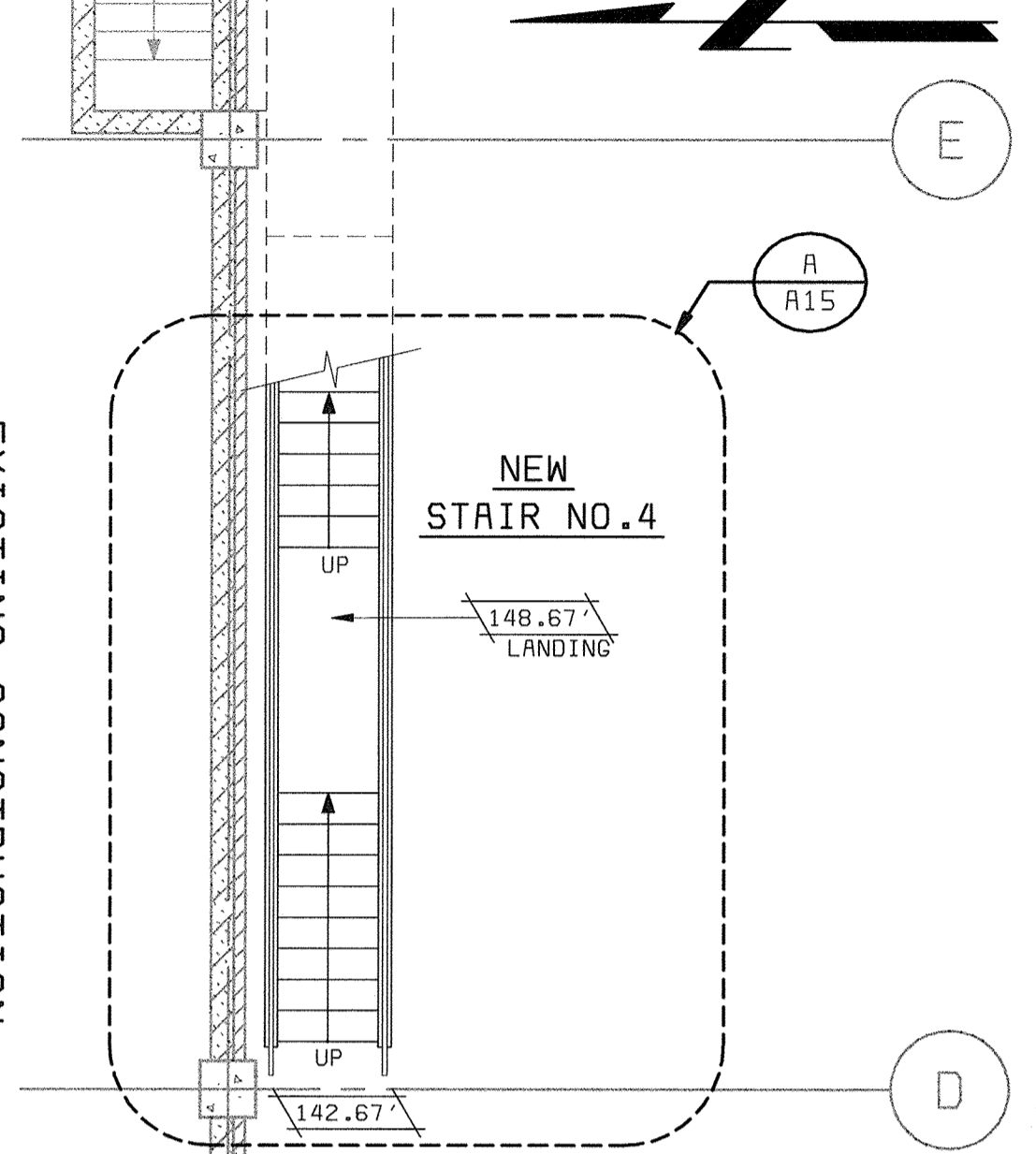
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

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

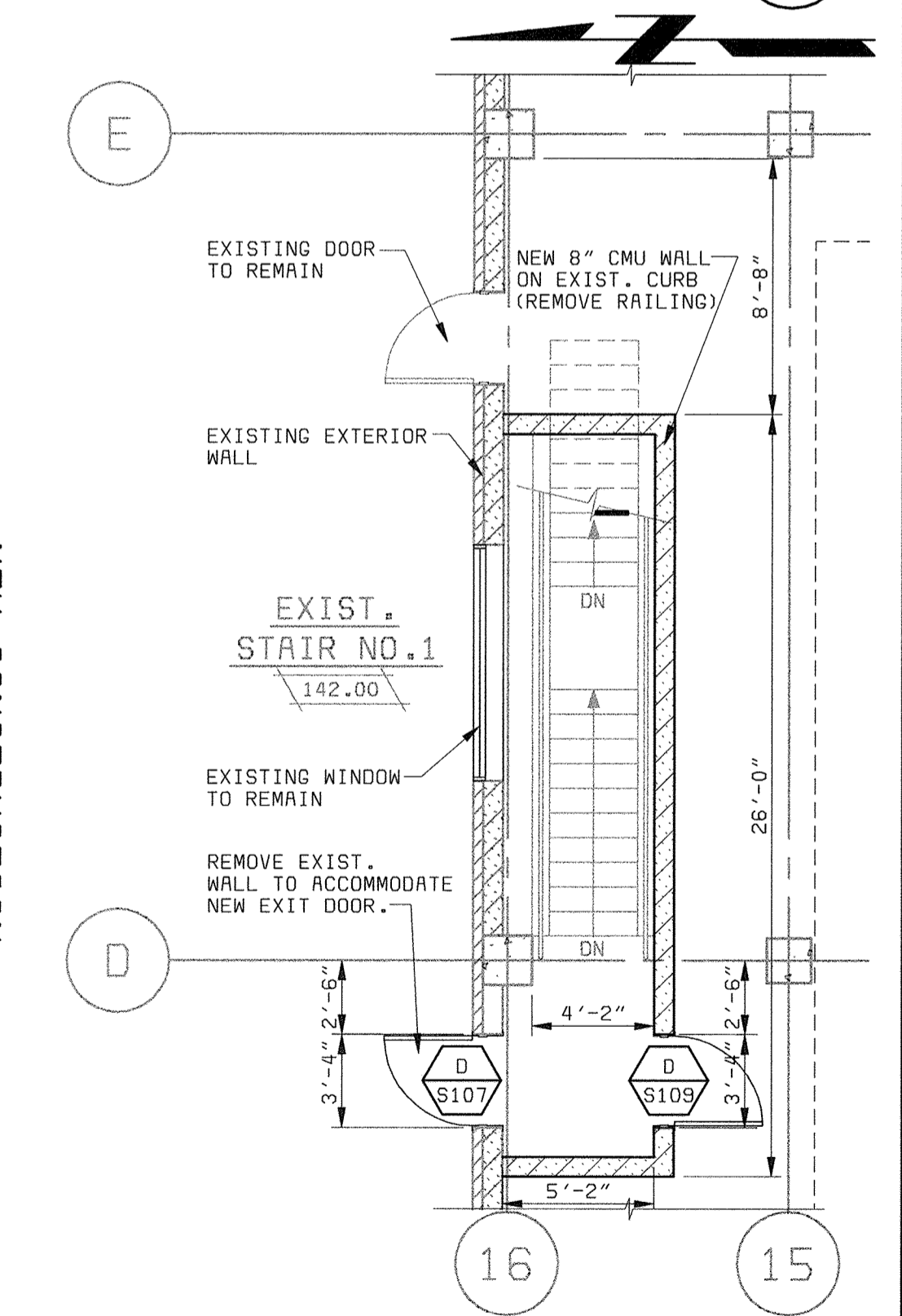
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SHEET 32 OF 150
A5



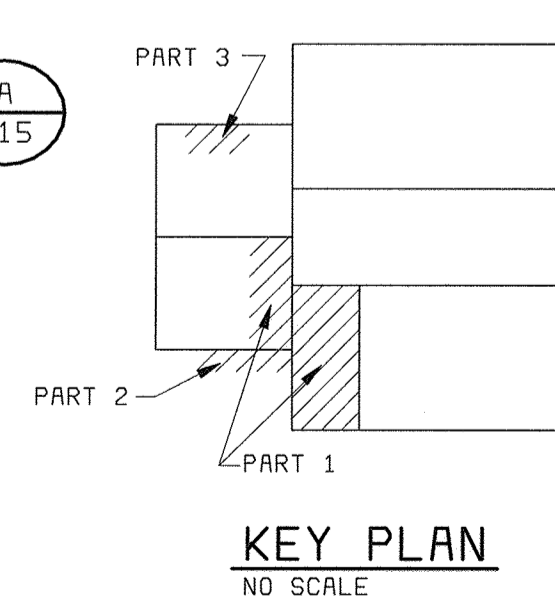
- GENERAL NOTES:**
1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
 2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
 3. FOR TYPICAL METAL WALL PANEL DETAILS SEE A13.
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 6. "SCREENED" (LIGHT) DELINEATION SHOWN DENOTES EXISTING FACILITIES. "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. 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"



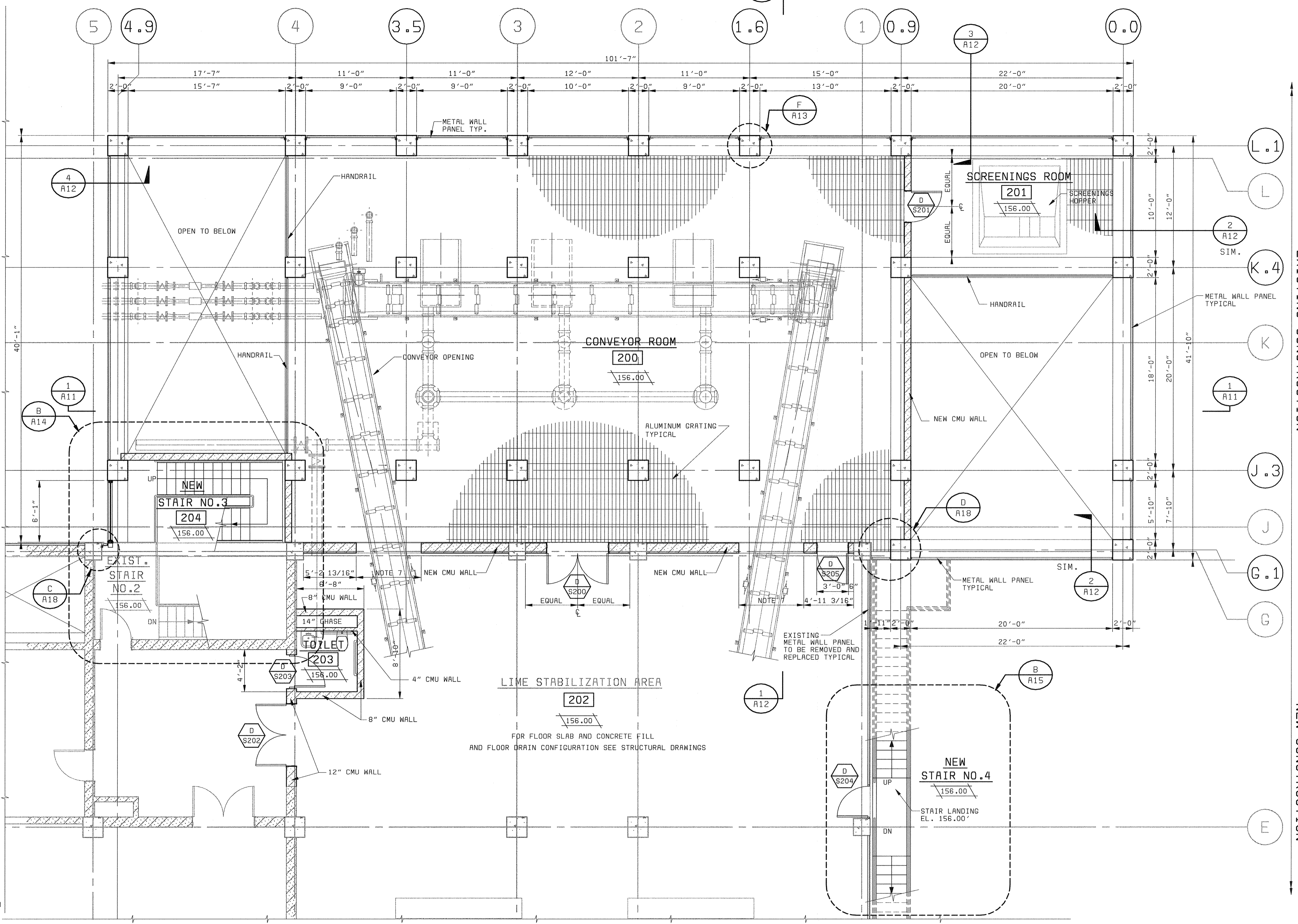
KEY PLAN
NO SCALE

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

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

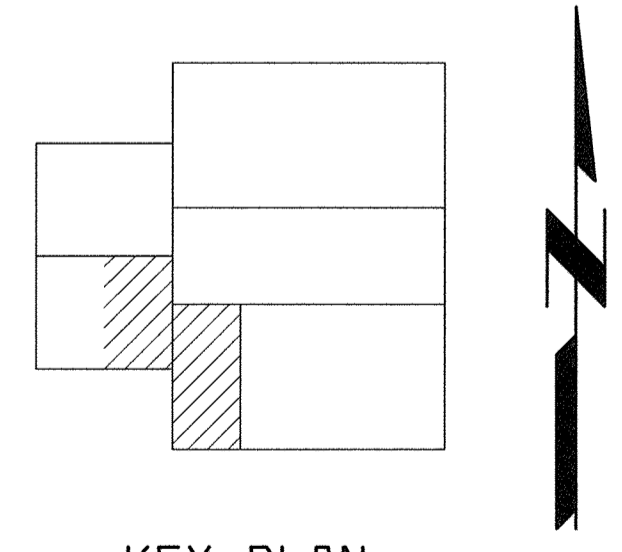
FLOOR PLAN ELEVATION 142.00' - PART 3
AT EXISTING STAIR N#1
3/16" = 1'-0"

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	DATE	NO. BY CK APP	HOWARD COUNTY, MARYLAND

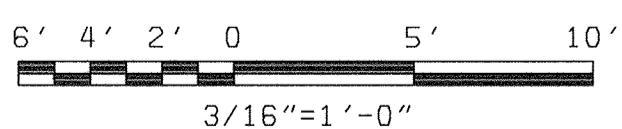


EXISTING CONSTRUCTION

NEW CONSTRUCTION



KEY PLAN
NO SCALE



GENERAL NOTES:

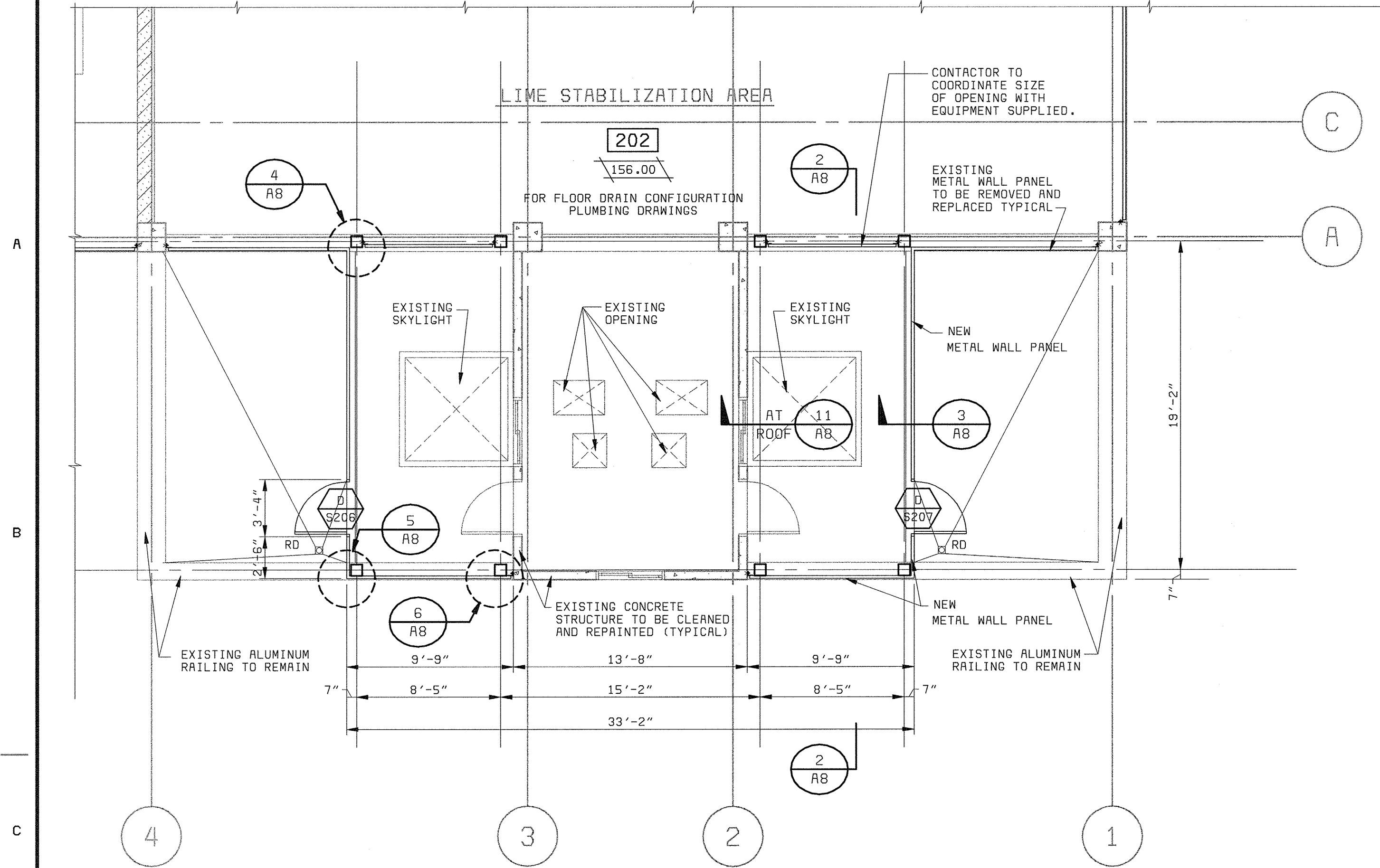
1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL METAL WALL PANEL DETAILS SEE A13.
4. FIELD VERIFY ALL DIMENSION FOR WALL PANELS.
5. FOR FINISH, DOOR, LOUVER AND WINDOW SCHEDULES SEE A16.
6. "SCREENED" (LIGHT) DELINEATION SHOWN 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.
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"

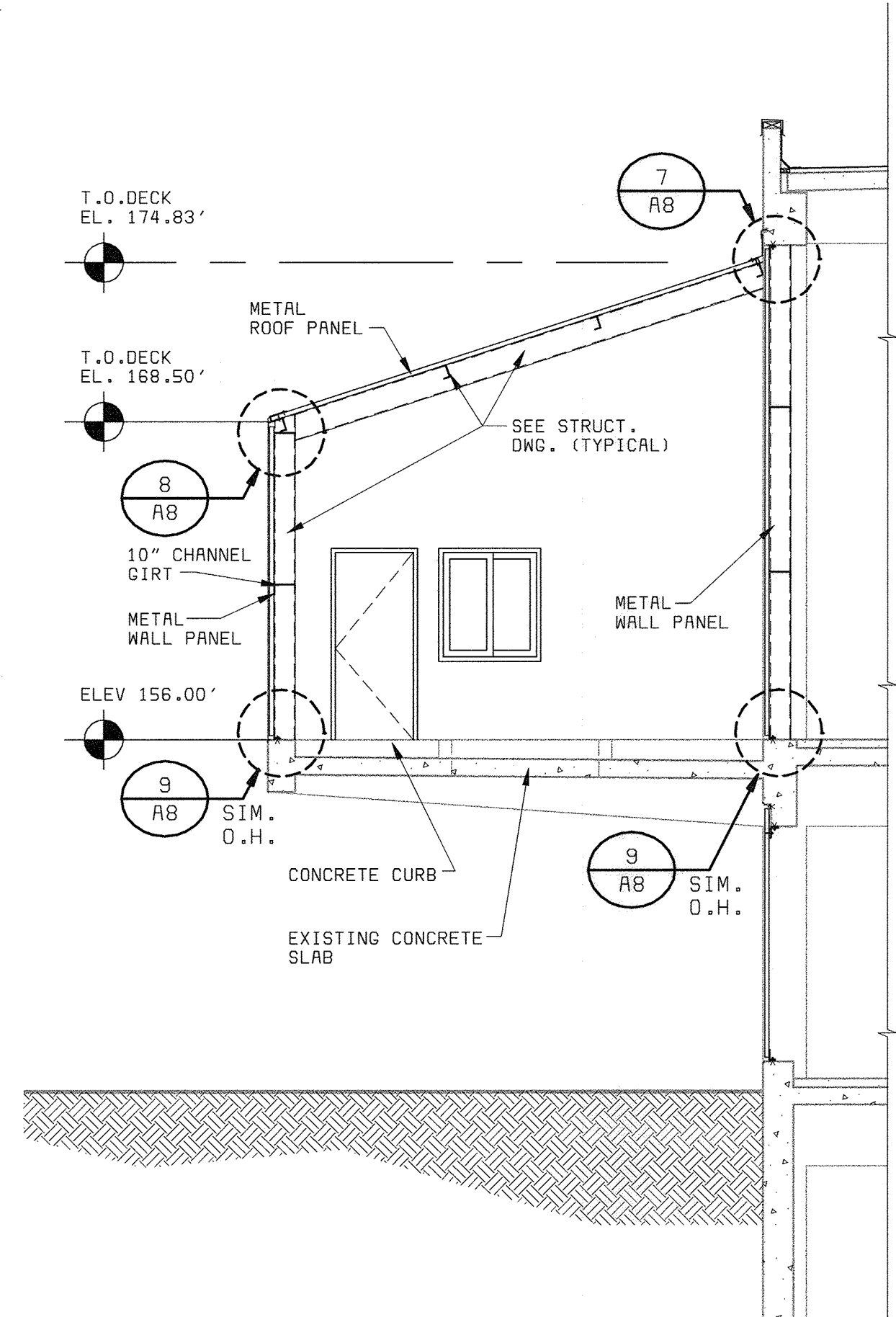
XKLO00 XNSR001 DBE472.2 PDSB472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 	BLACK & VEATCH Gaithersburg, Maryland ARCHITECTS • DESIGNERS • PLANNERS Bryant Bryant Williams, P.C. <small>4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2168</small>	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							ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION FLOOR PLAN AT ELEVATION 156.00' PART 1	A7
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE								

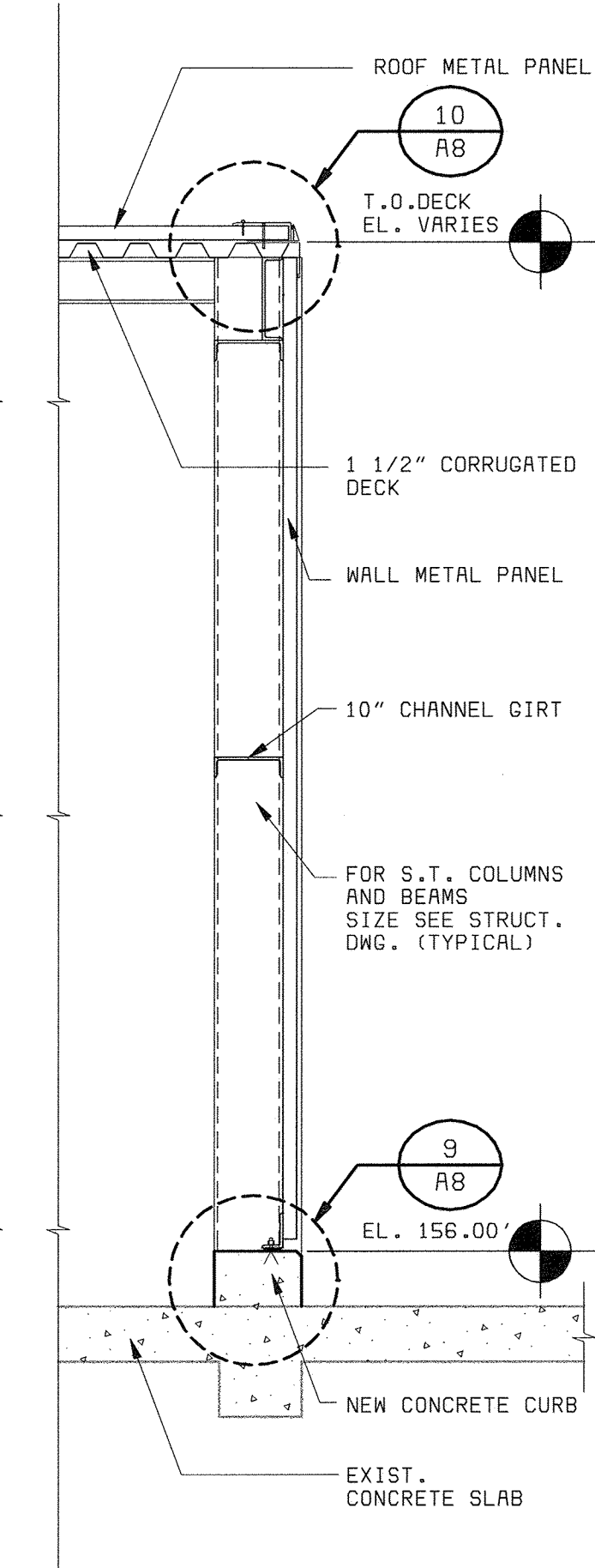
FOR CONTINUATION SEE 1/A7



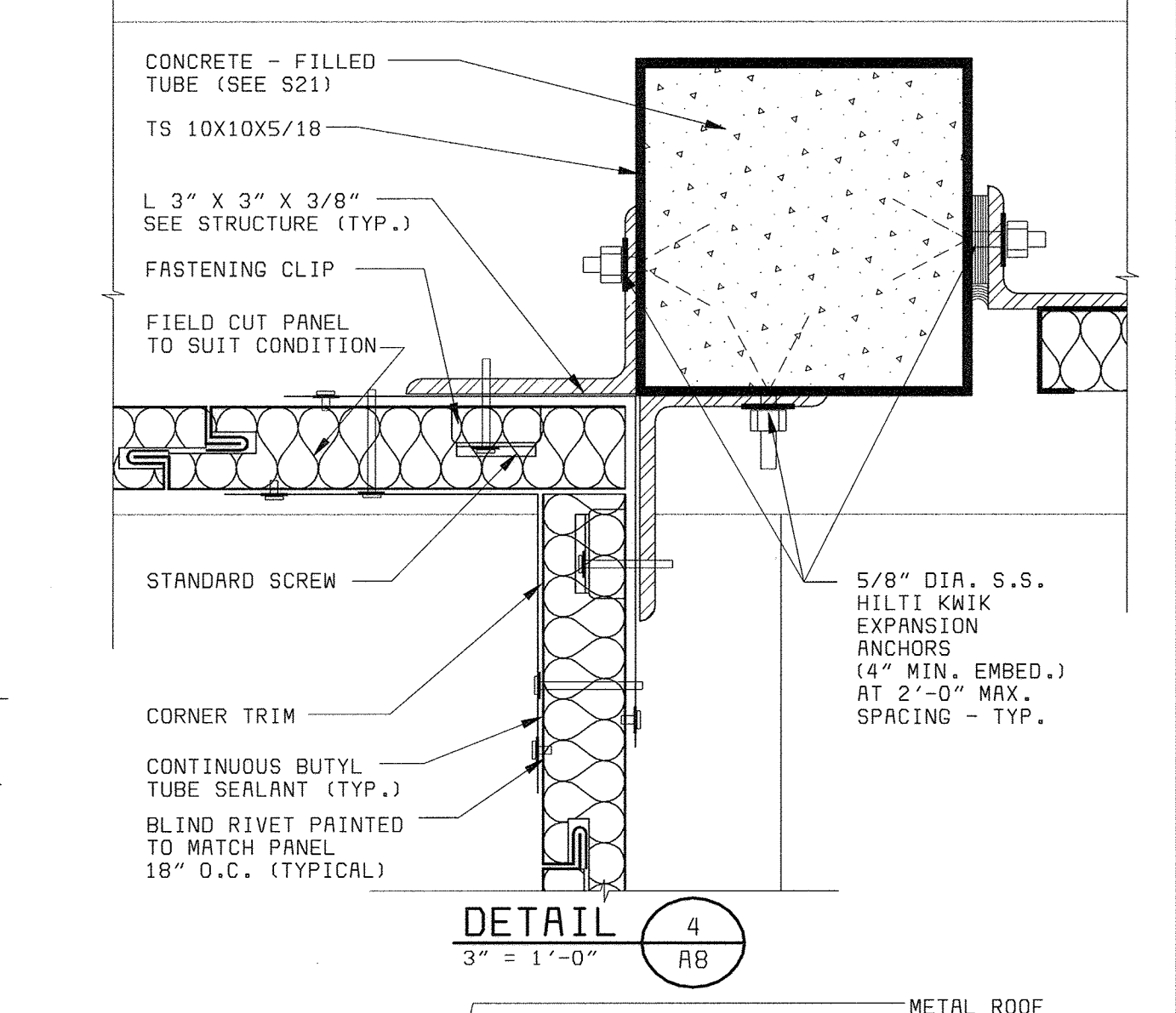
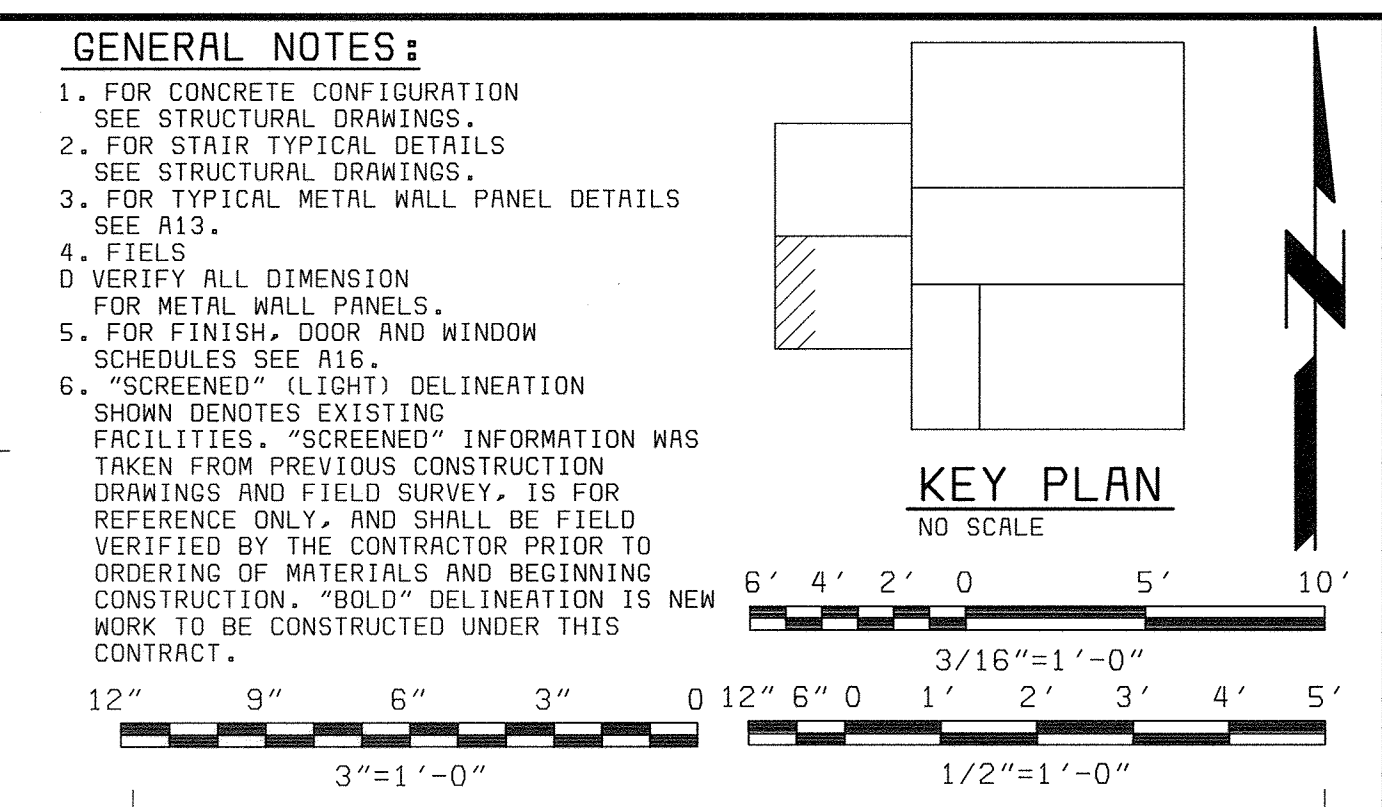
FLOOR PLAN ELEVATION 156.00'
PART 2
3/16" = 1'-0"



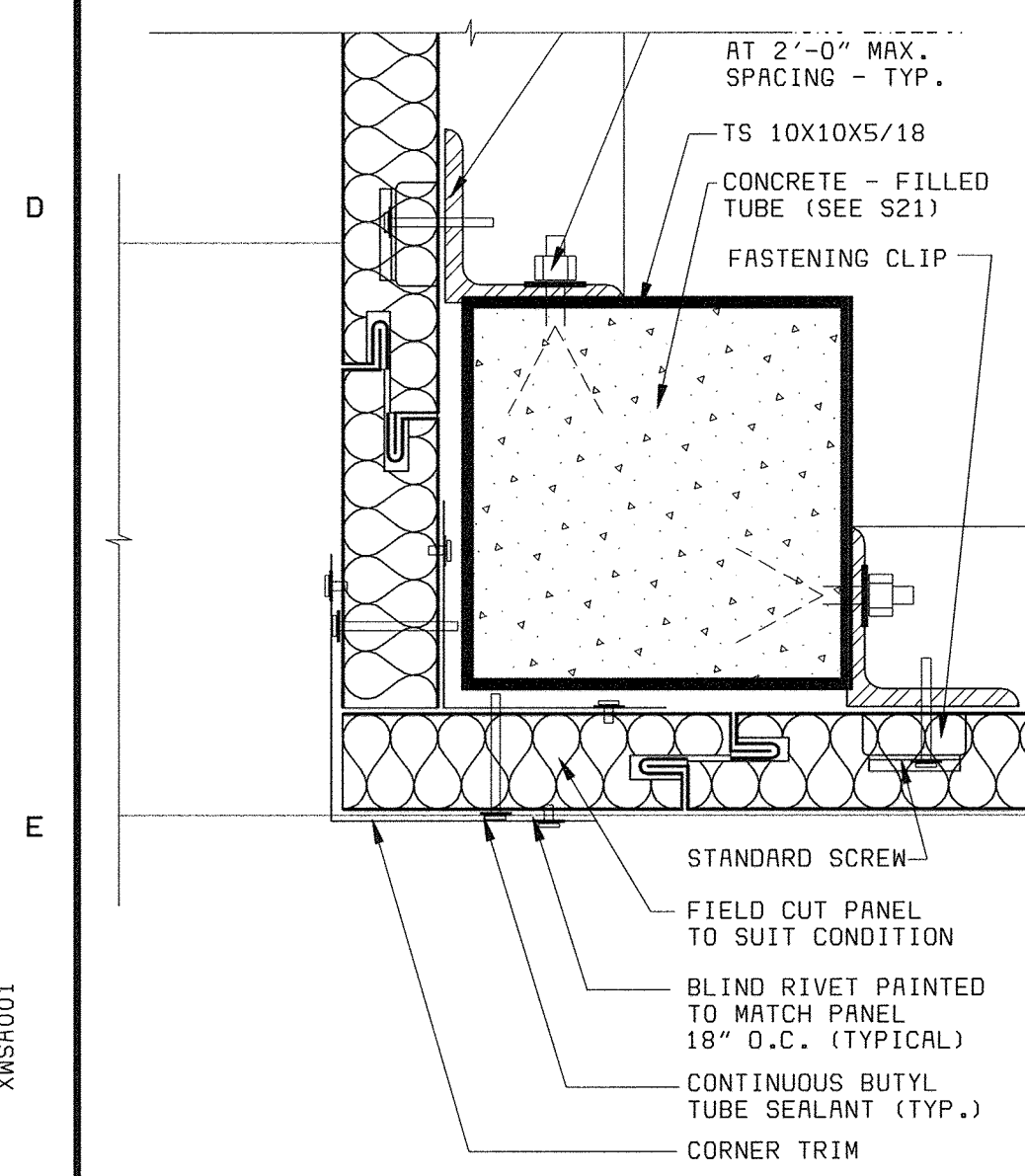
SECTION 2
3/16" = 1'-0"



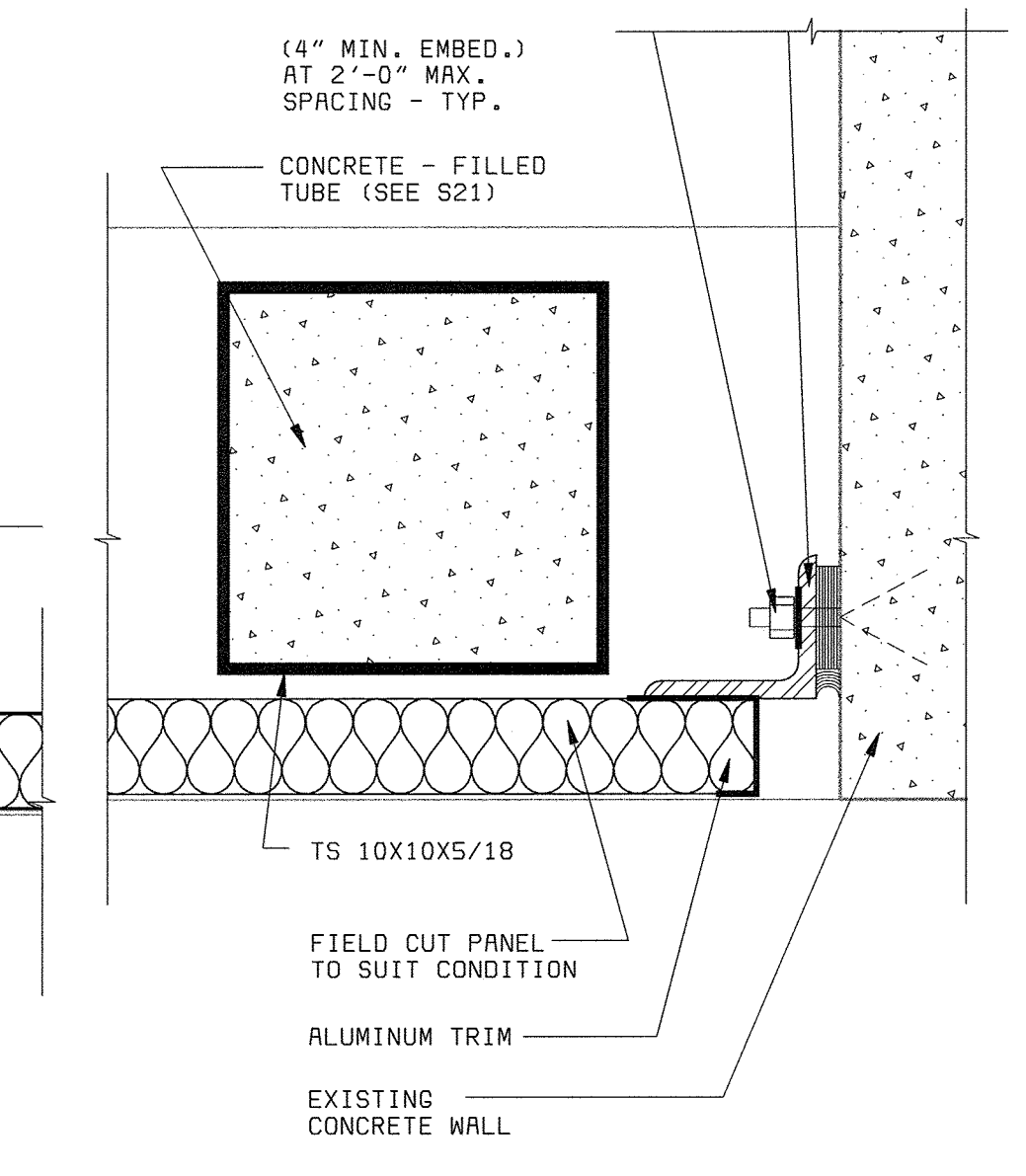
SECTION 3
3/16" = 1'-0"



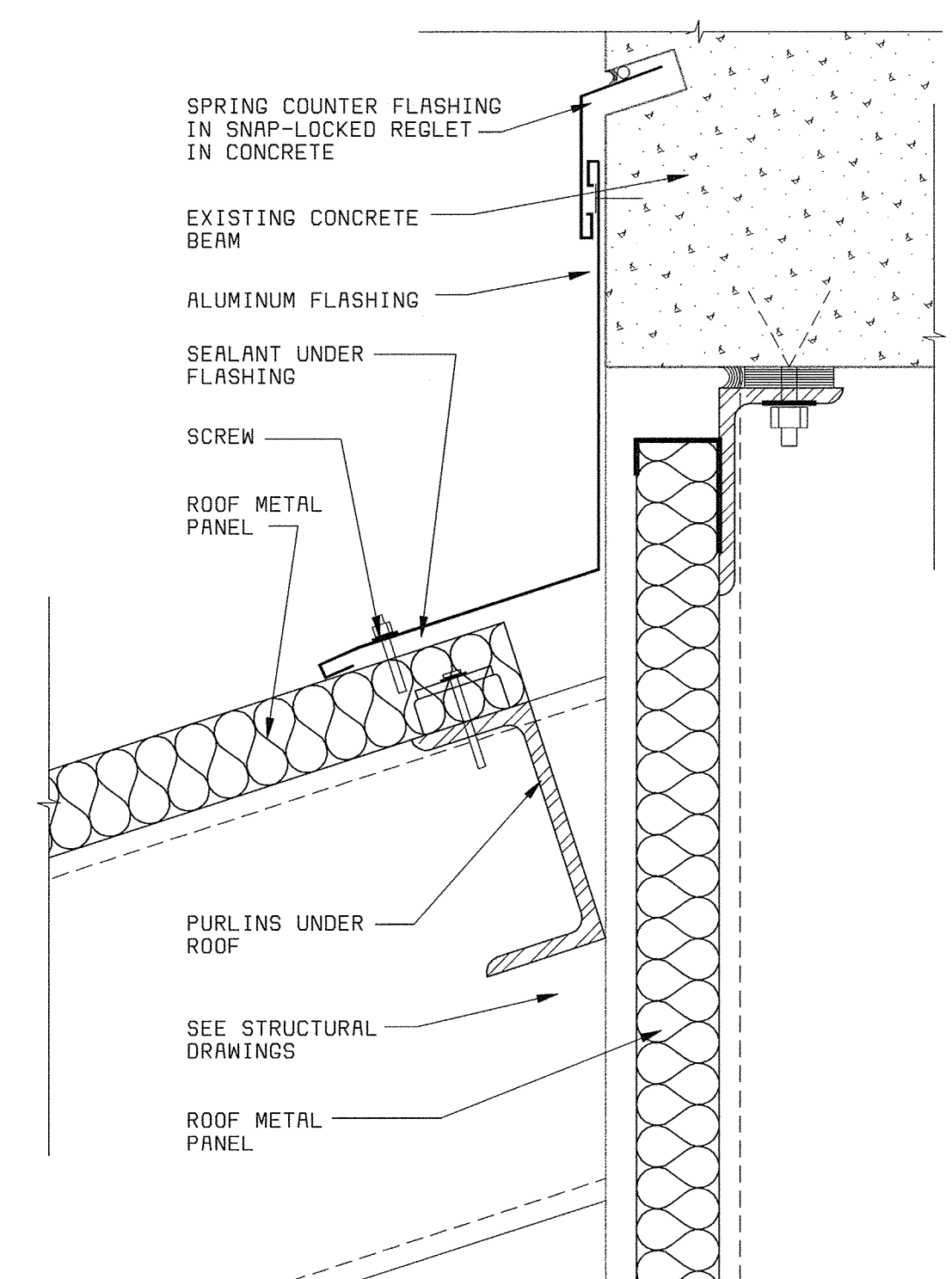
DETAIL 4
3" = 1'-0"



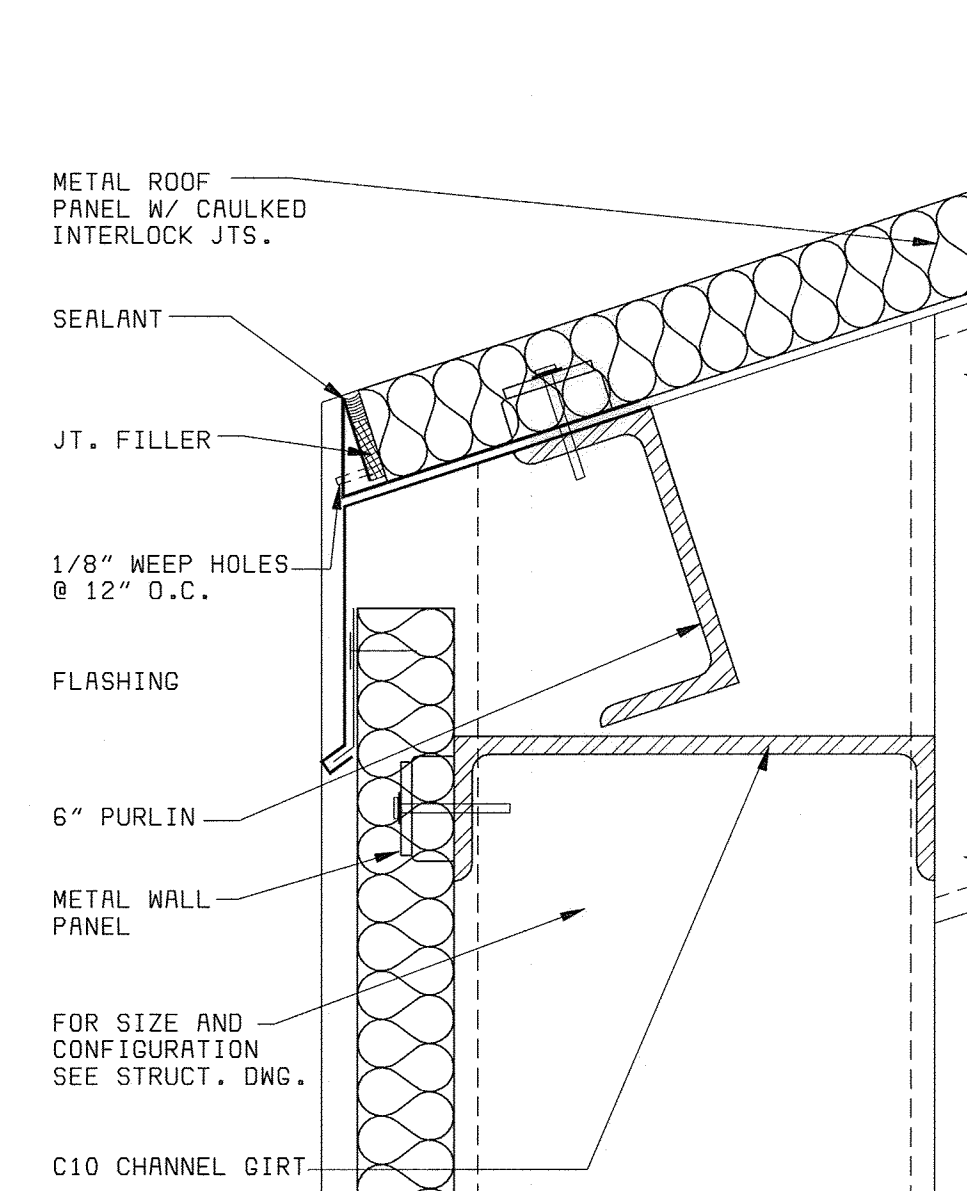
DETAIL 5
3" = 1'-0"



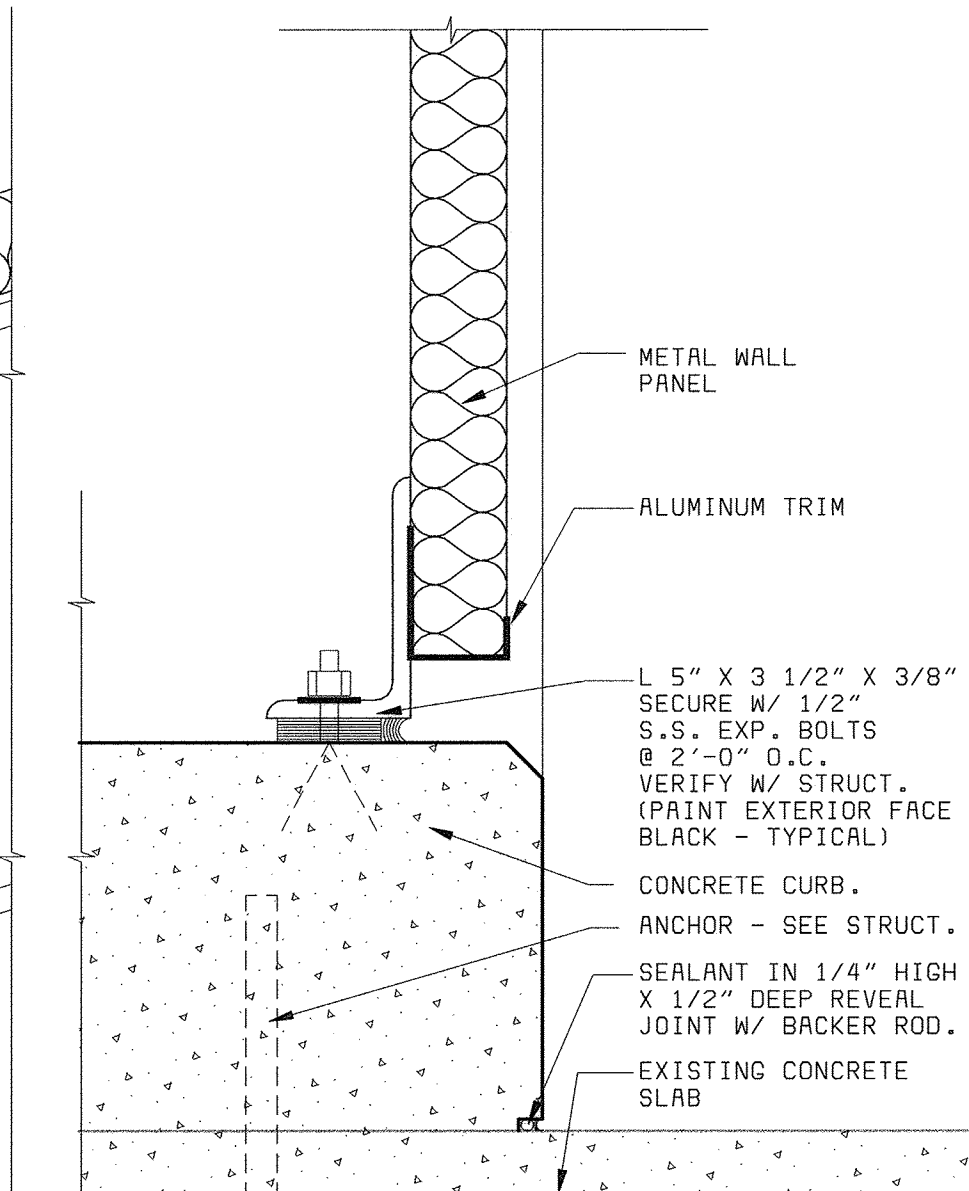
DETAIL 6
3" = 1'-0"



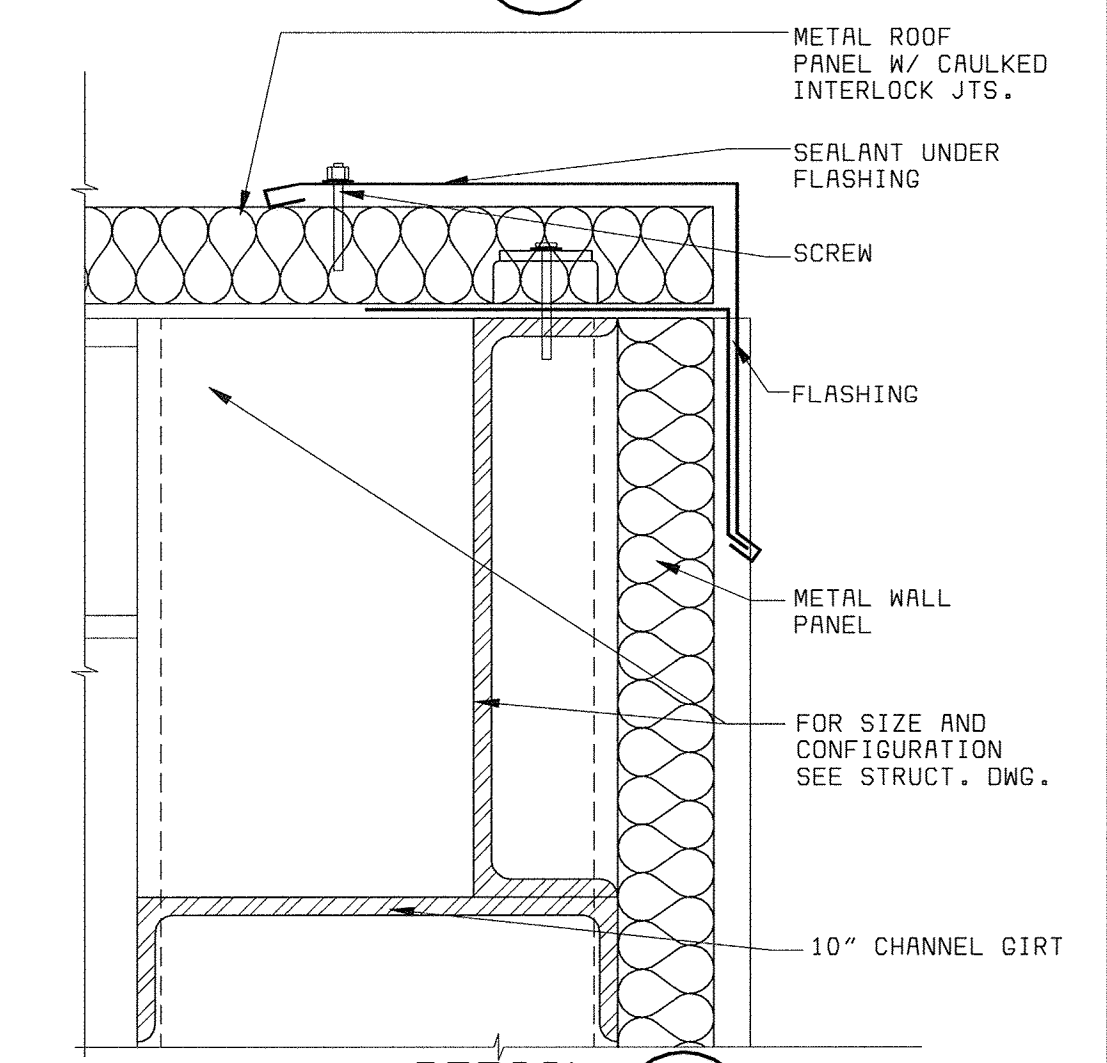
DETAIL 7
3" = 1'-0"



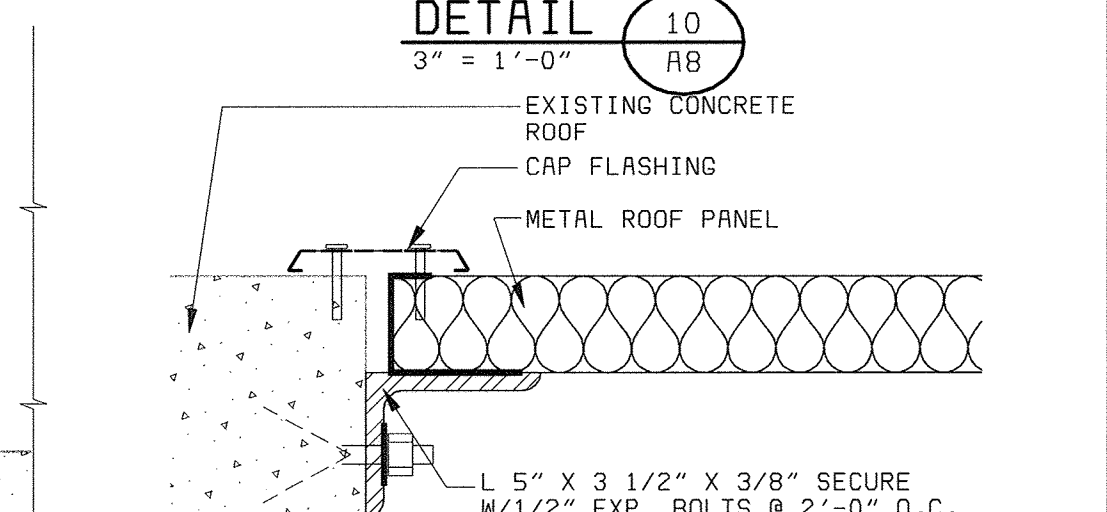
DETAIL 8
3" = 1'-0"



DETAIL 9
3" = 1'-0"



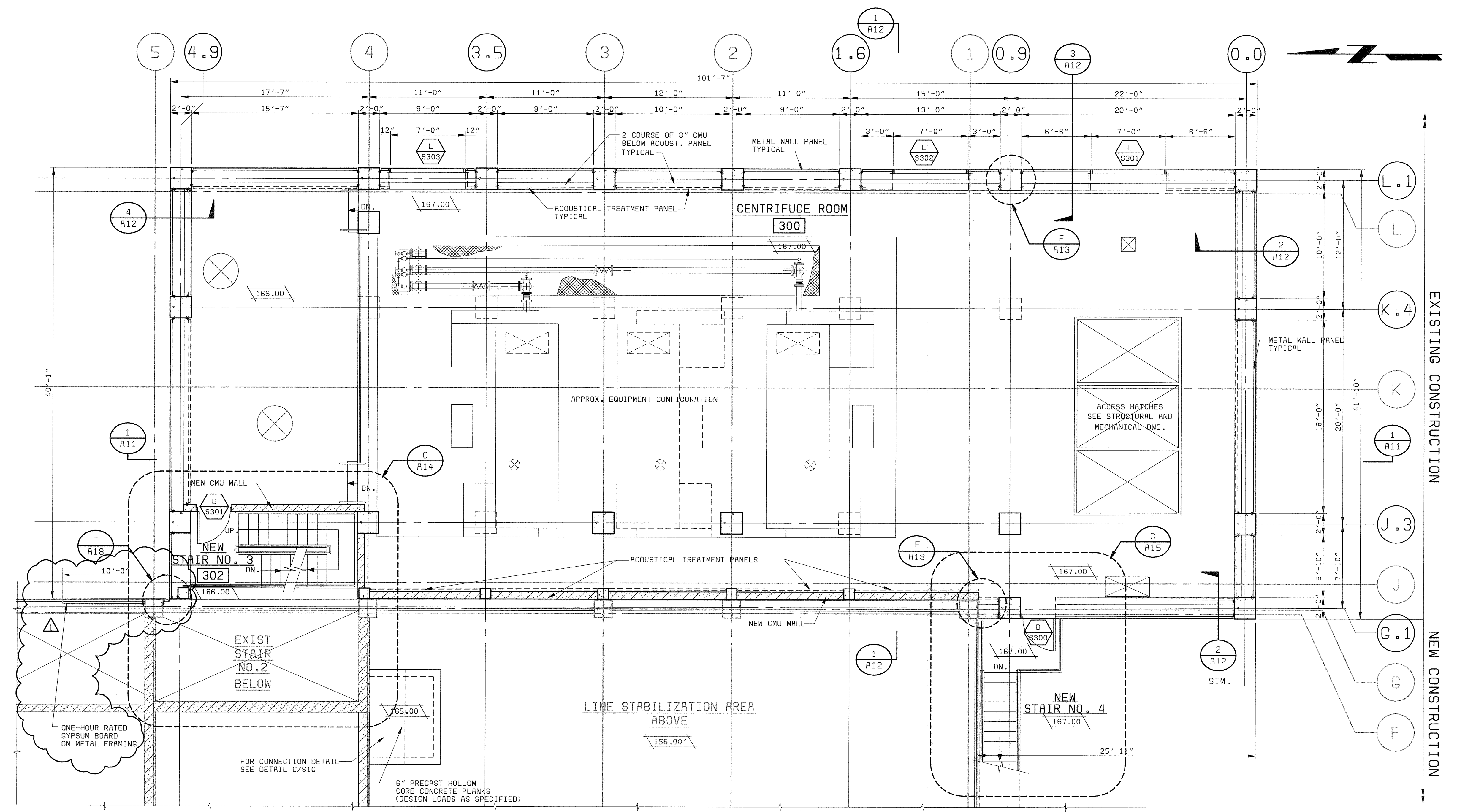
DETAIL 10
3" = 1'-0"



DETAIL 11
3" = 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 CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH LP 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	RHH/RJR/RJR 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-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 35 OF 150 A8
			DATE	DATE	DATE	DATE		

XWL000
 XWSR001
 XWSR001
 058472-2
 F058472A



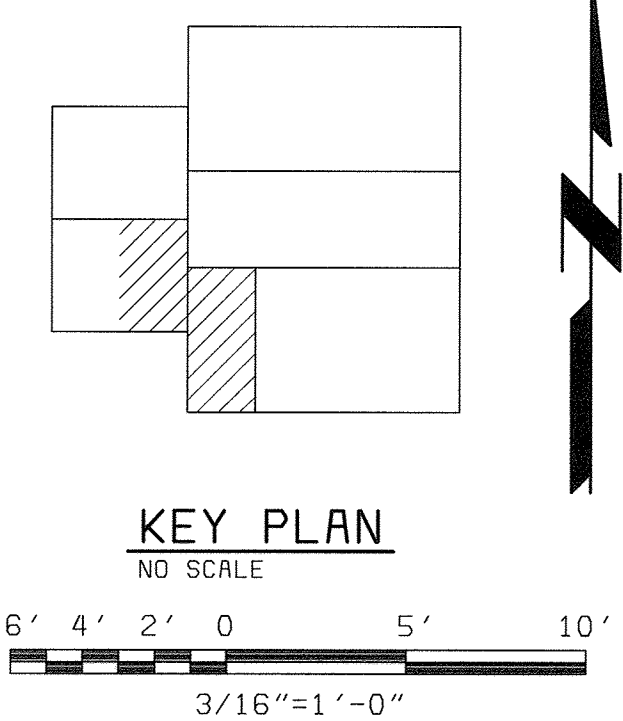
EXISTING CONSTRUCTION

NEW CONSTRUCTION

GENERAL NOTES:

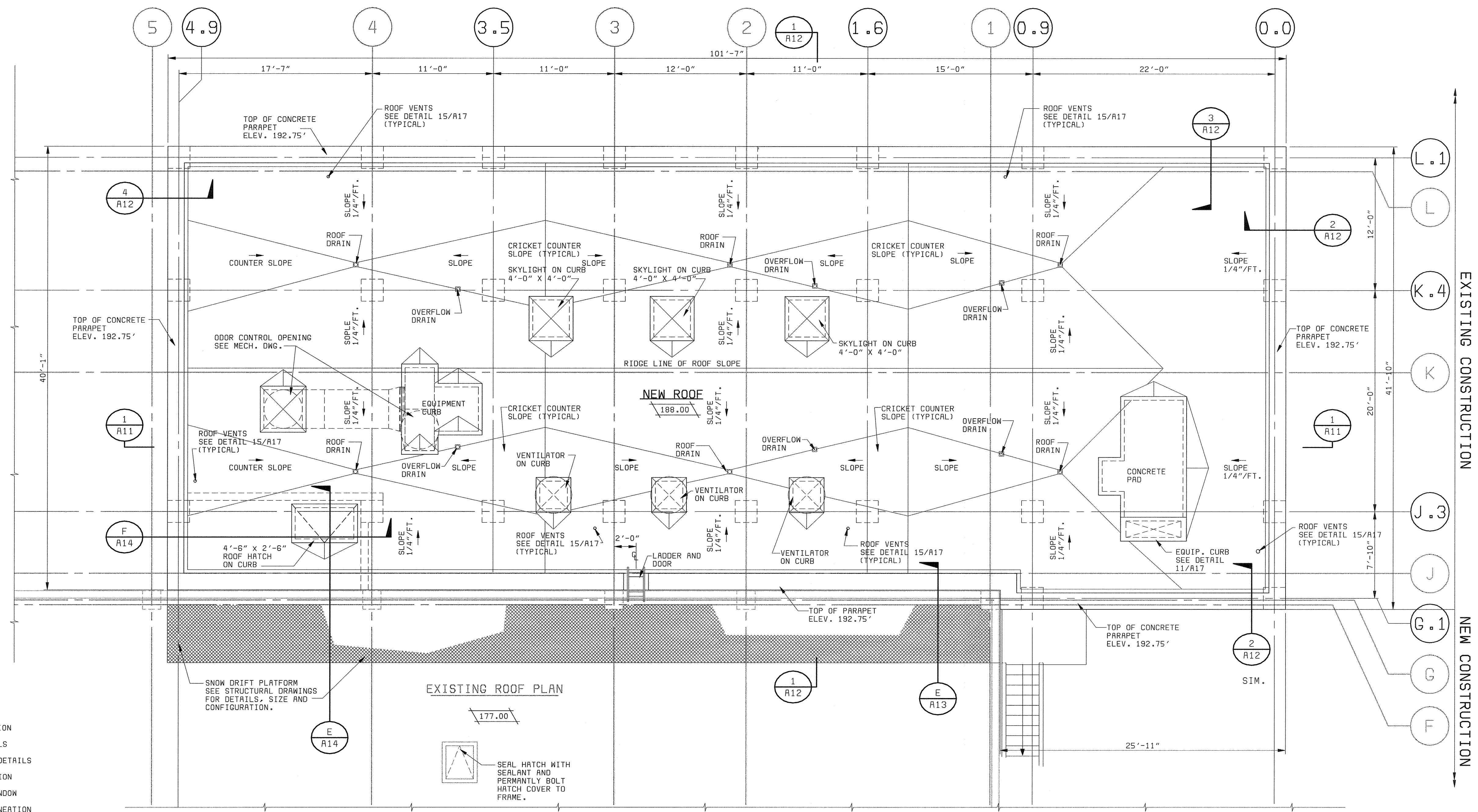
1. FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
3. FOR TYPICAL WALL PANEL DETAILS SEE A13.
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5. FOR FINISH, DOOR AND WINDOW SCHEDULES SEE A16.
6. "SCREENED" (LIGHT) DELINEATION SHOWN DENOTES 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.
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9. FOR MASONRY REINFORCING AND ANCHOR DETAILS SEE S20.

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



XWLOD0 XWSR002

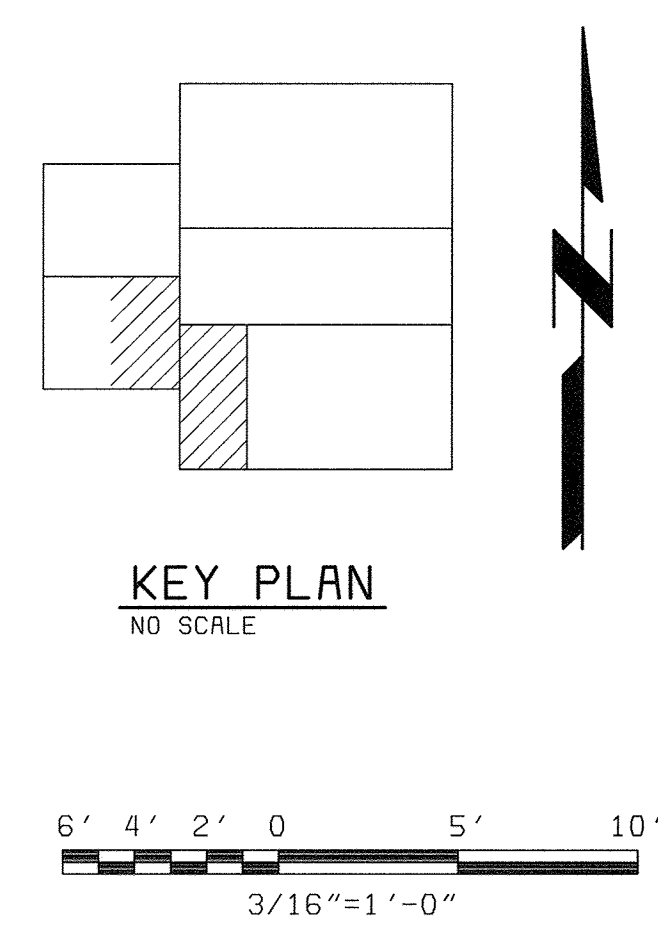
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	 Bryant Bryant Williams, P.C. 4201 Connecticut Avenue NW, Suite 500 Washington, D.C. 20008 (202) 244-2108	 BLACK & VEATCH Gaithersburg, Maryland	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES T. BRYANT A REGISTERED ARCHITECT 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 style="width: 20%;">07/26/04</td> <td style="width: 40%;">CONFORMED TO CONSTRUCTION RECORDS</td> <td style="width: 20%;">RHH</td> <td style="width: 20%;">RJR</td> </tr> <tr> <td>3/12/01</td> <td>ADD FIRE-RATED PARTITION</td> <td>CB</td> <td>CH</td> </tr> <tr> <td>DATE</td> <td>REVISIONS AND RECORD OF ISSUE</td> <td>NO.</td> <td>BY</td> </tr> </table>	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	3/12/01	ADD FIRE-RATED PARTITION	CB	CH	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	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	RHH	RJR																	
3/12/01	ADD FIRE-RATED PARTITION	CB	CH																	
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY																	



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.
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8. EQUIPMENT SHOWN ON ARCHITECTURE DRAWINGS IS ONLY FOR GENERAL ILLUSTRATION ONLY. SEE MECHANICAL DRAWINGS FOR EQUIPMENT CONFIGURATION AND LOCATION.
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"

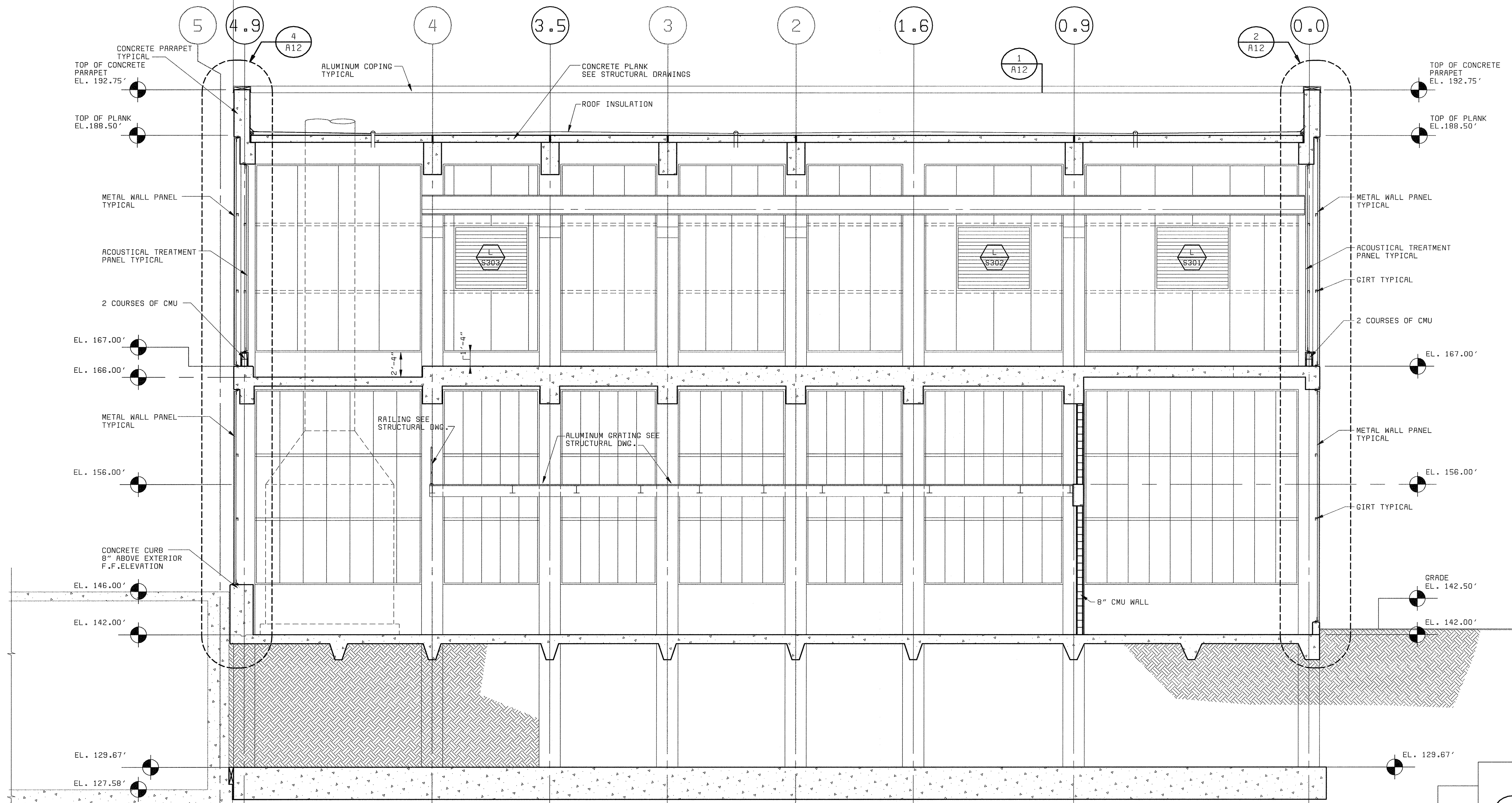


X:\L000 XMSR003
058472_2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND bbw Bryant Bryant Williams, P.C. <small>4201 Connecticut Avenue N.W., Suite 300 Washington, D.C. 20008 (202) 244-2108</small>	 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	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE NO. BY CK APP	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
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EXISTING CONSTRUCTION

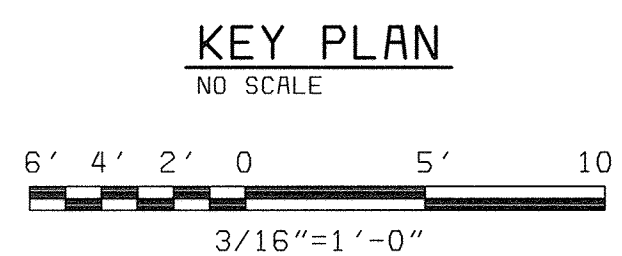
NEW CONSTRUCTION



GENERAL NOTES:

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2. FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
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SECTION "A" 1
3/16" = 1'-0" A1, A3, A6, A7, A9, A10, A12



XK1000
XKSR204
DE68472.2
F058472A

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

bbw Architects & Planners
Bryant Bryant Williams, P.C.
4201 Connecticut Avenue N.W., Suite 500
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	CK	APP			
	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR			

ARCHITECTURAL

CENTRIFUGE BUILDING EXPANSION
BUILDING SECTION "A"

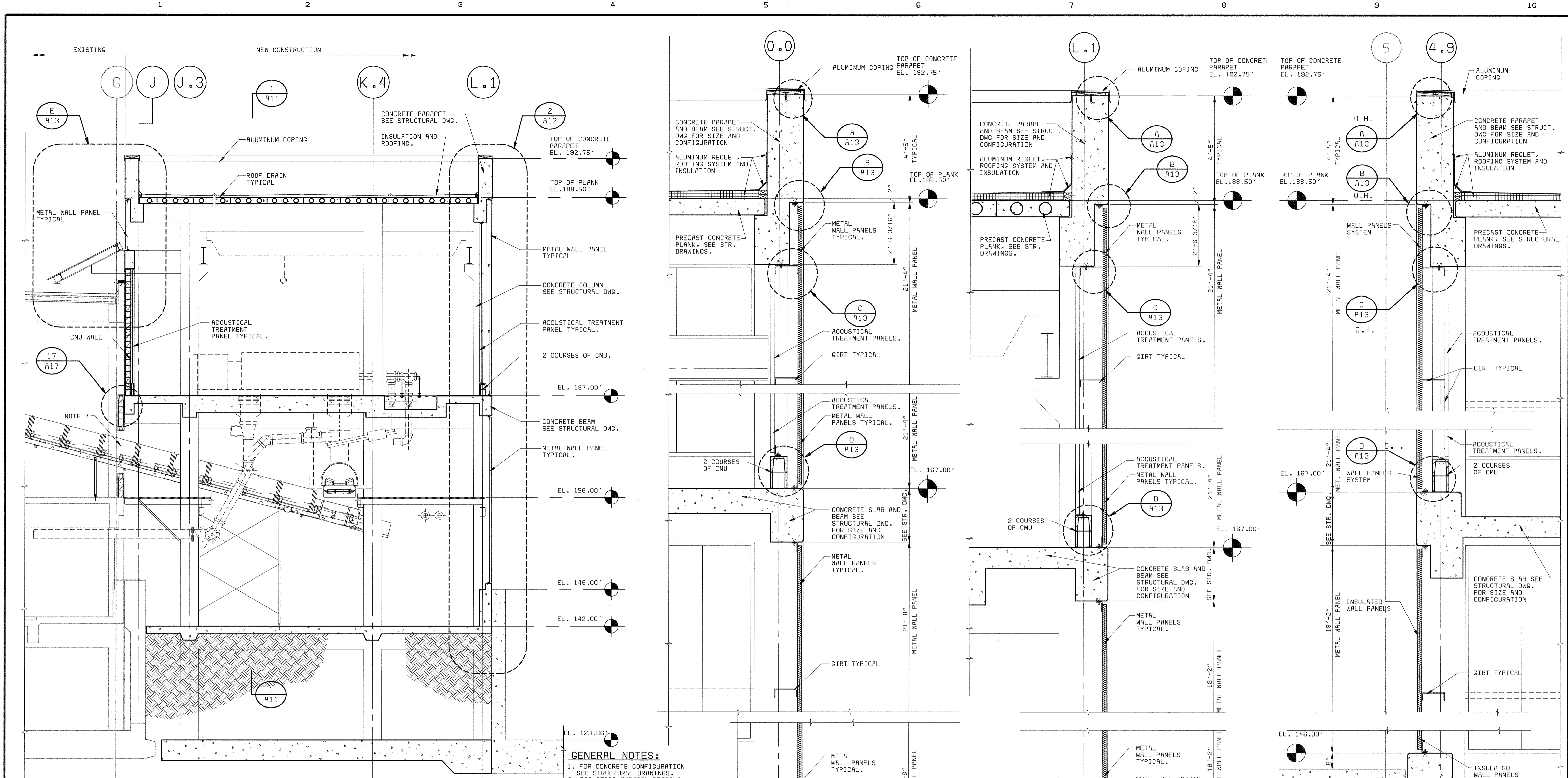
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

SCALE AS SHOWN

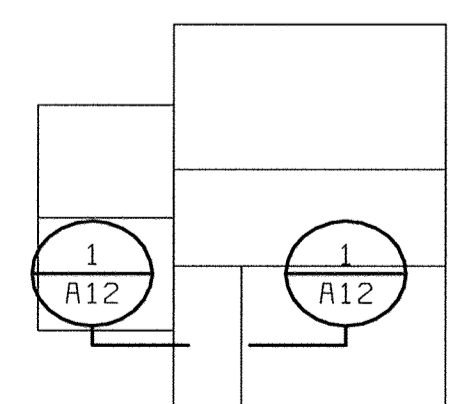
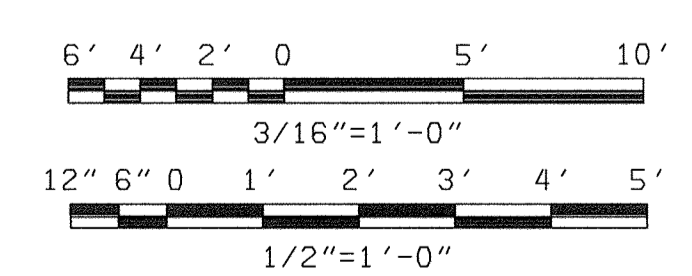
SHEET 38 OF 150

A11



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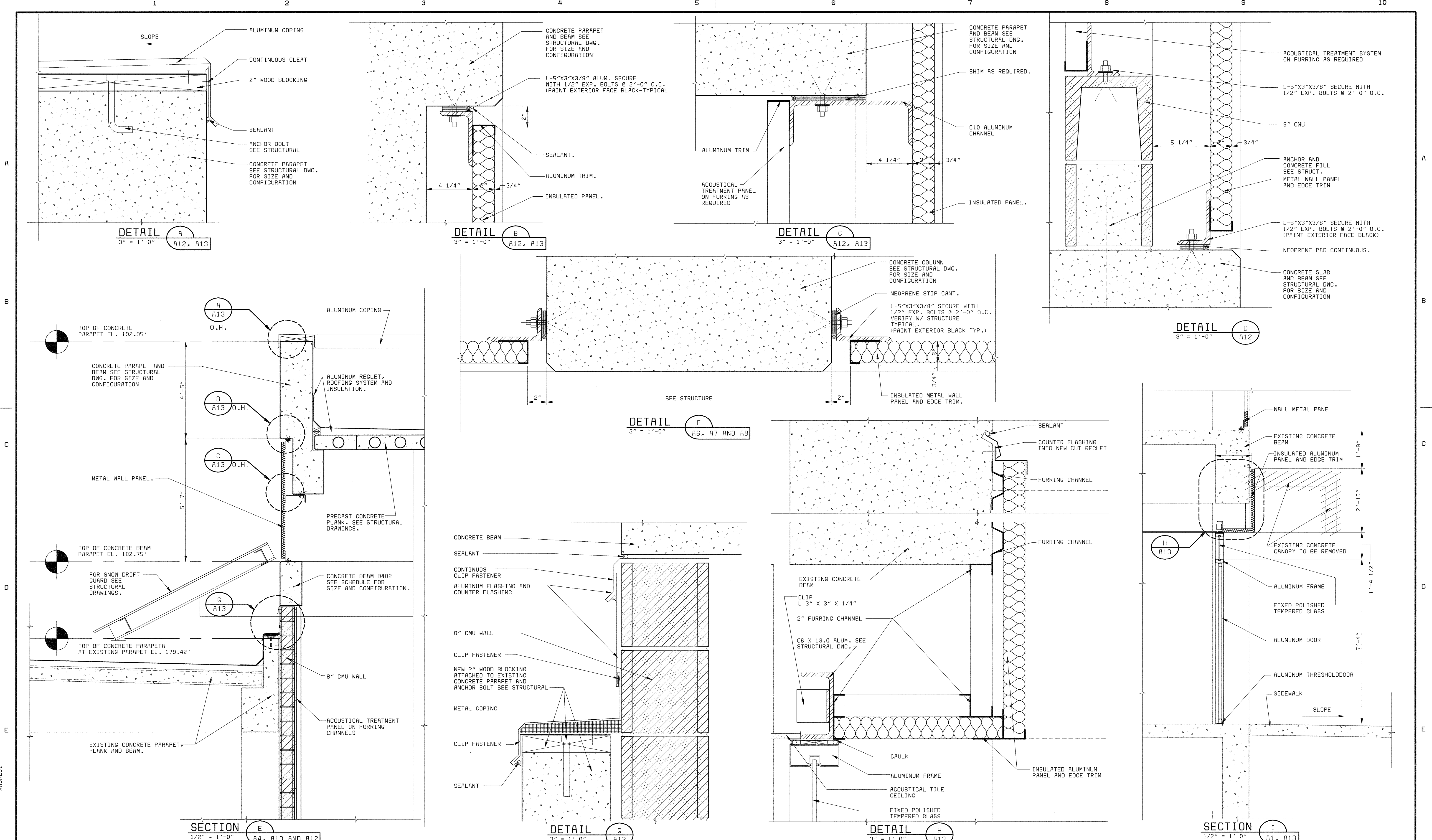
SECTION "B"
3/16" = 1'-0"
A2, A4, A6, A7, A9 AND A10



KEY PLAN
NO SCALE

X:\1000\XMR203\XMR201
06/17/2004 15:56:52

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 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									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: CJ	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR						
CHIEF, BUREAU OF UTILITIES DATE _____											A12		
ARCHITECTURAL CENTRIFUGE BUILDING EXPANSION BUILDING SECTION "B" AND WALL SECTIONS													



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

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		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

ARCHITECTURAL

**CENTRIFUGE BUILDING EXPANSION
 MISCELLANEOUS DETAILS**

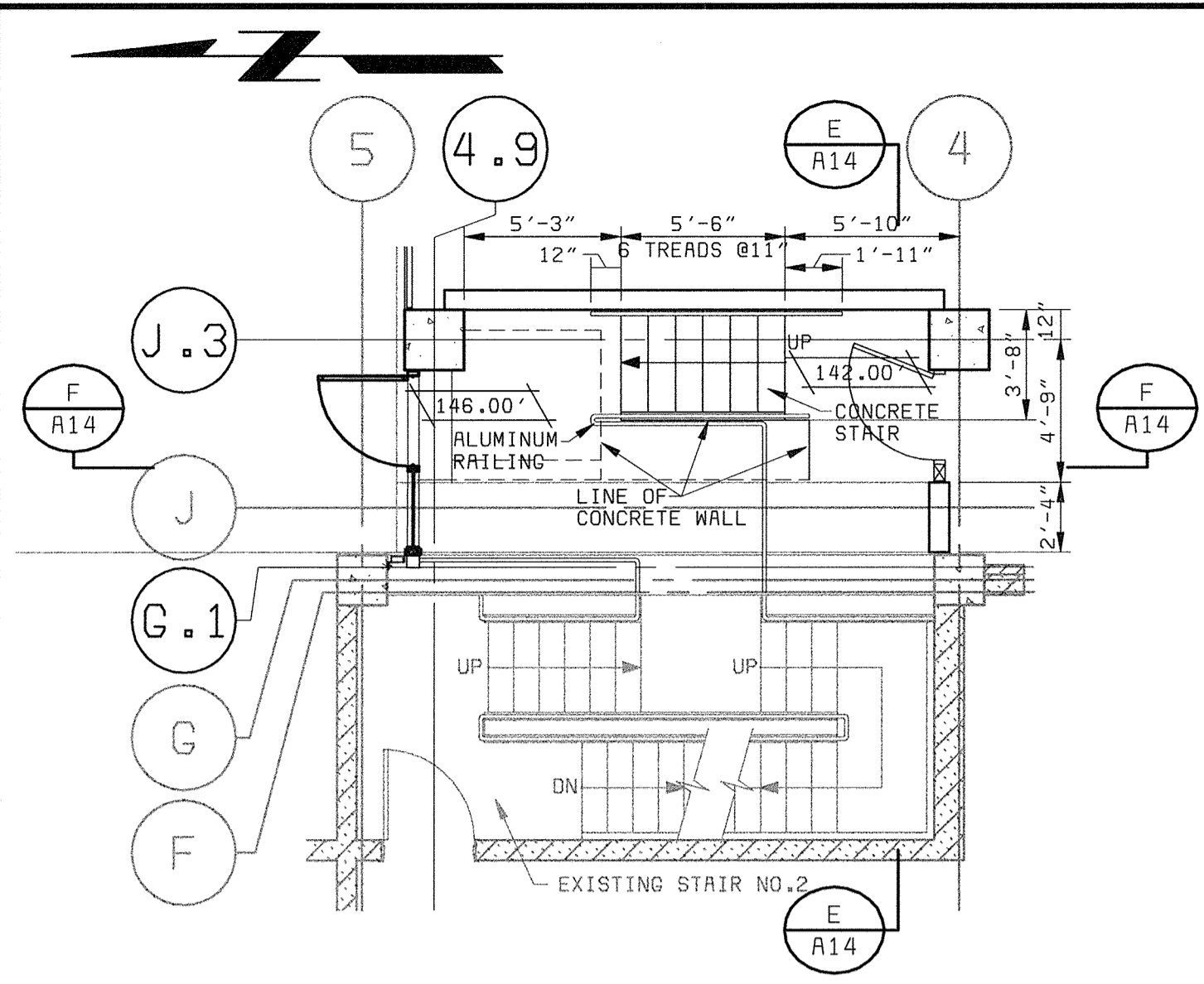
LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY

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

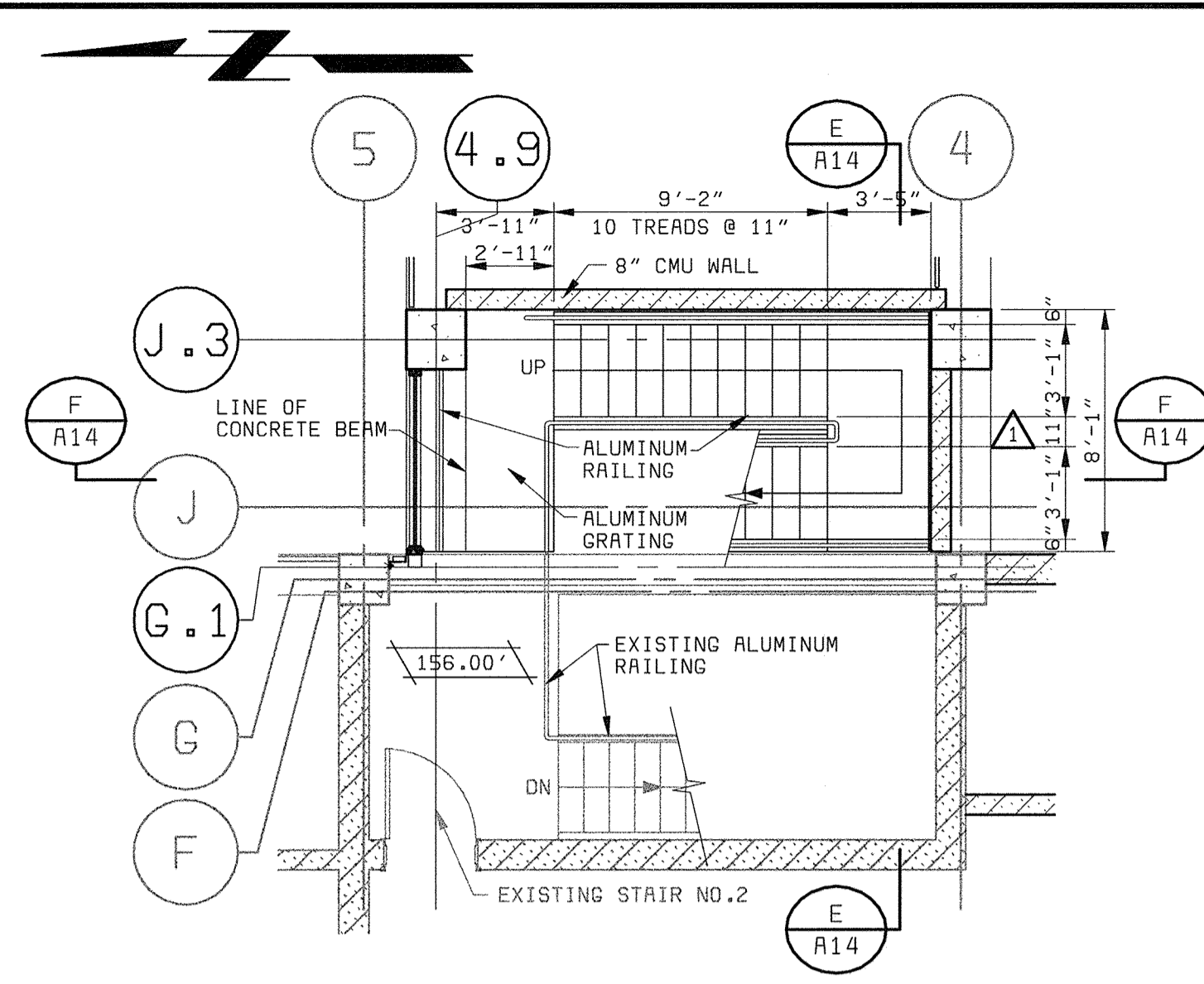
SCALE
 AS
 SHOWN

SHEET
 40 OF 150

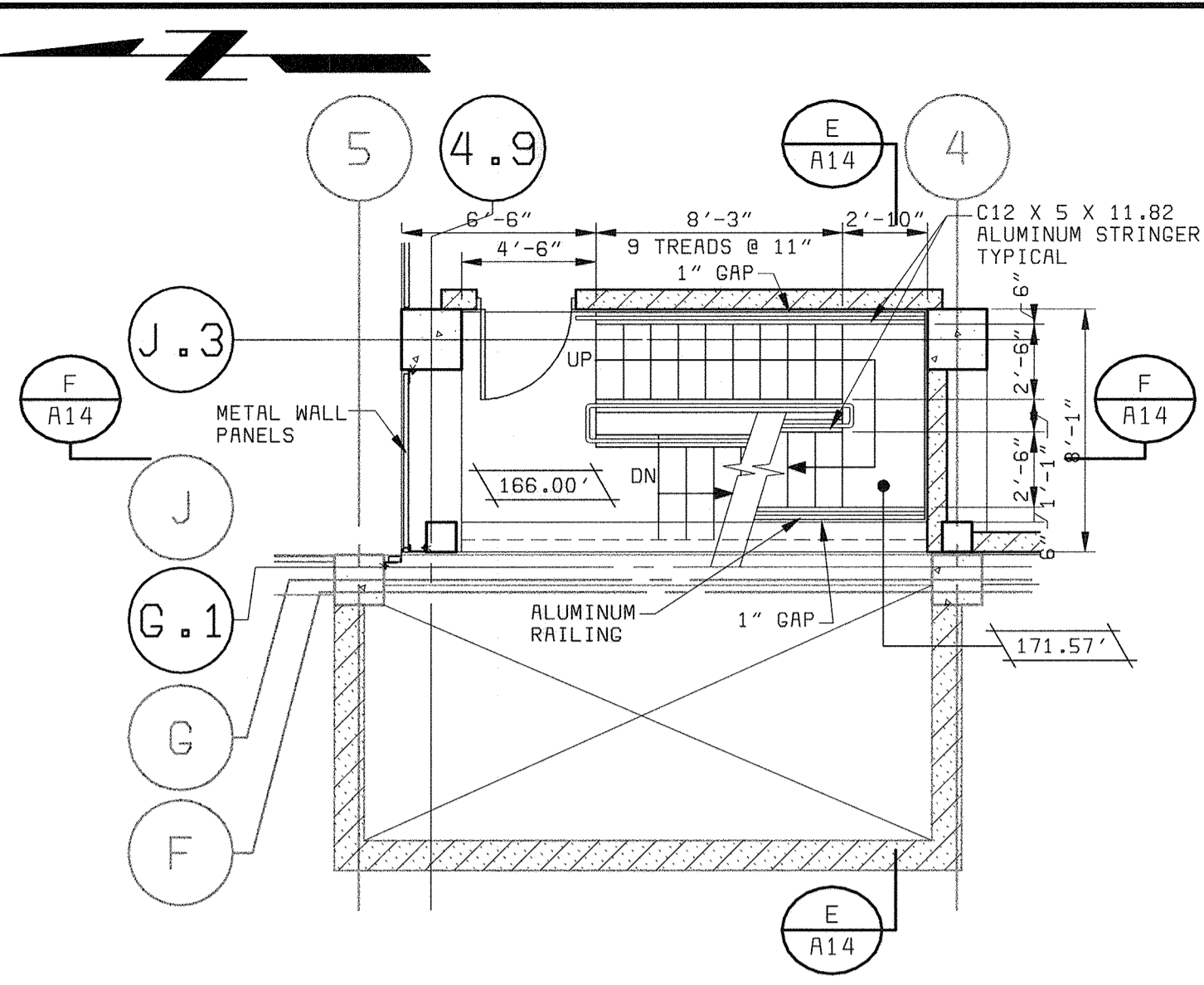
A13



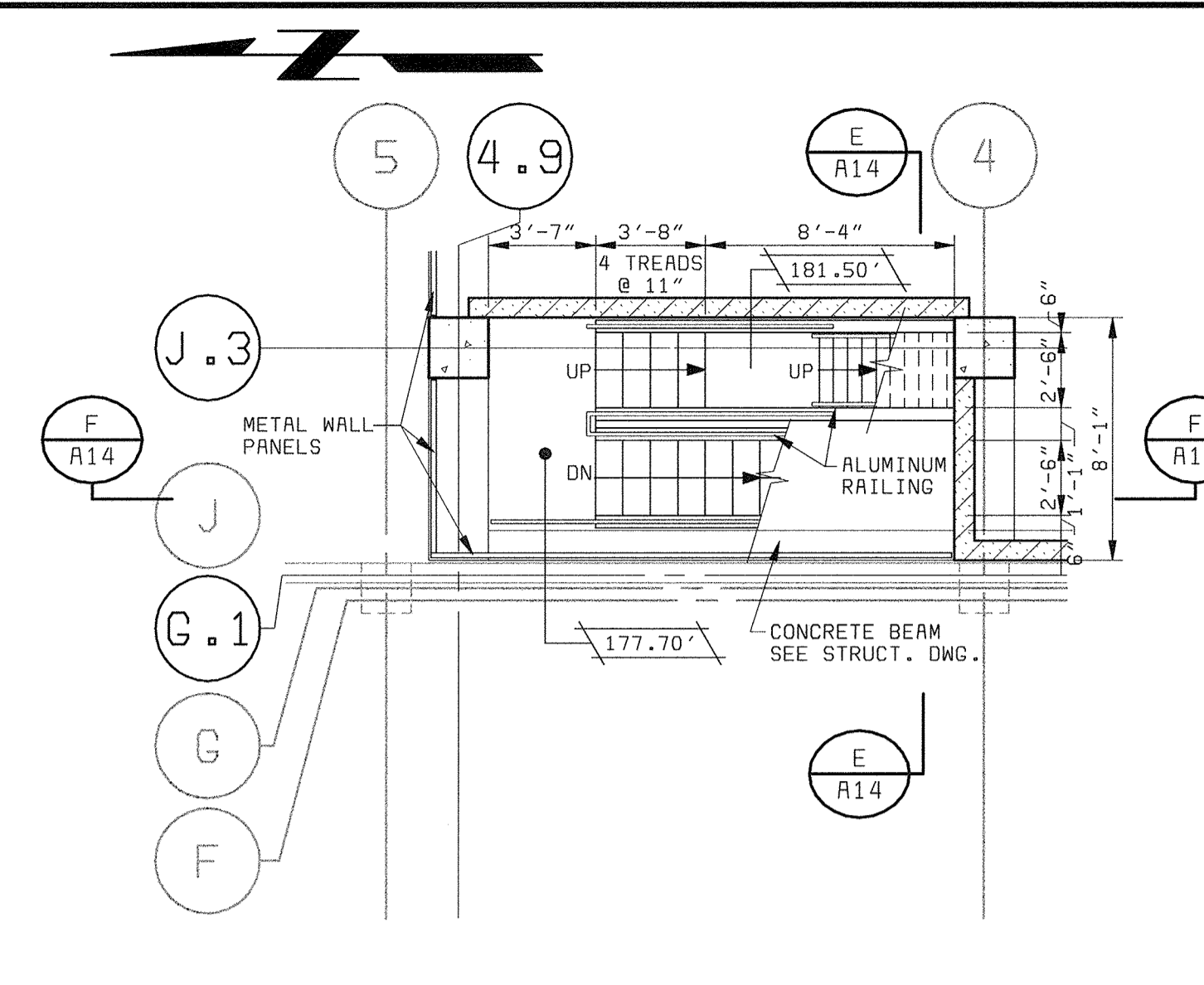
FLOOR PLAN STAIR NO. 3
@ ELEVATION 142.00'
3/16" = 1'-0"



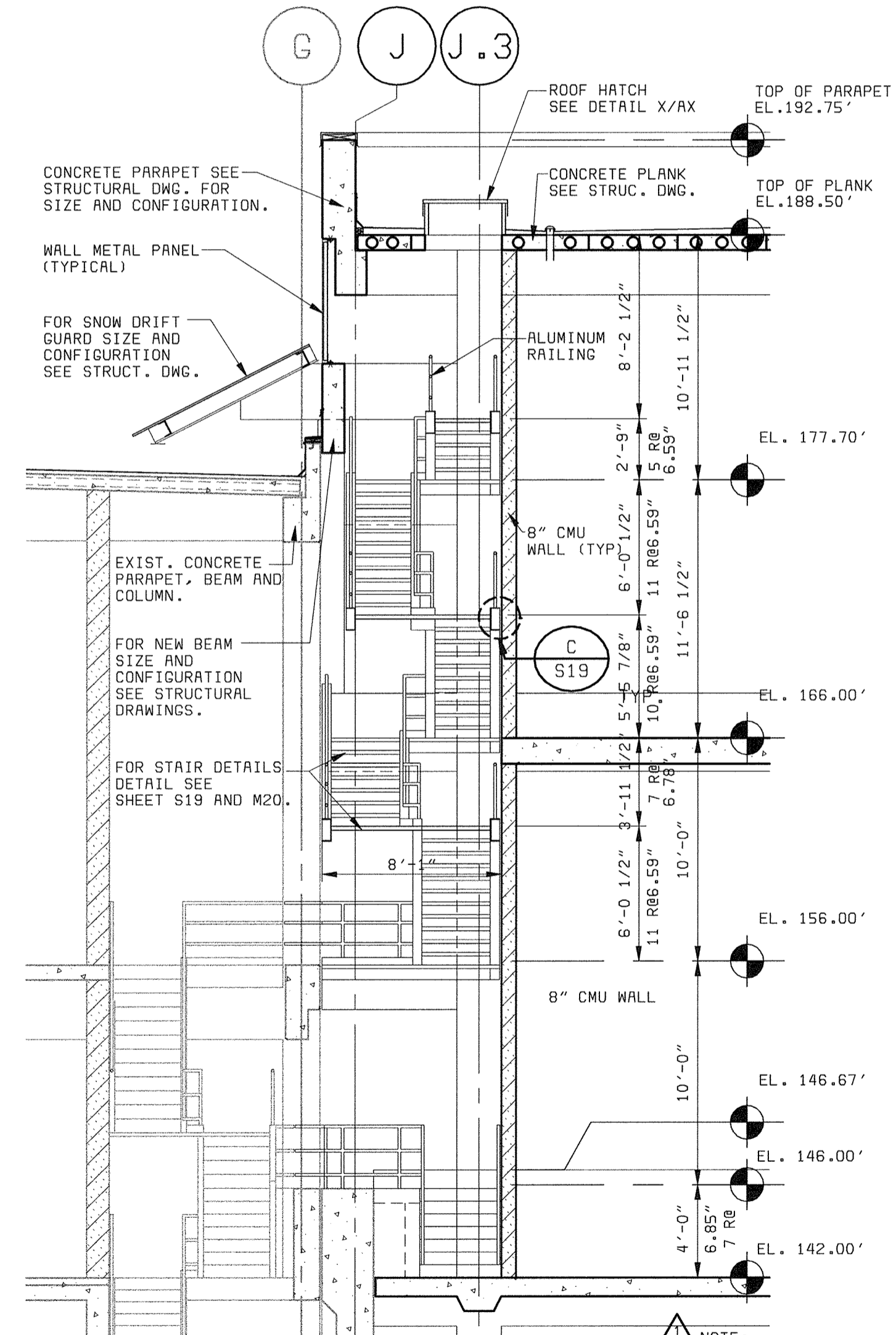
FLOOR PLAN STAIR NO. 3
@ ELEVATION 156.00'
3/16" = 1'-0"



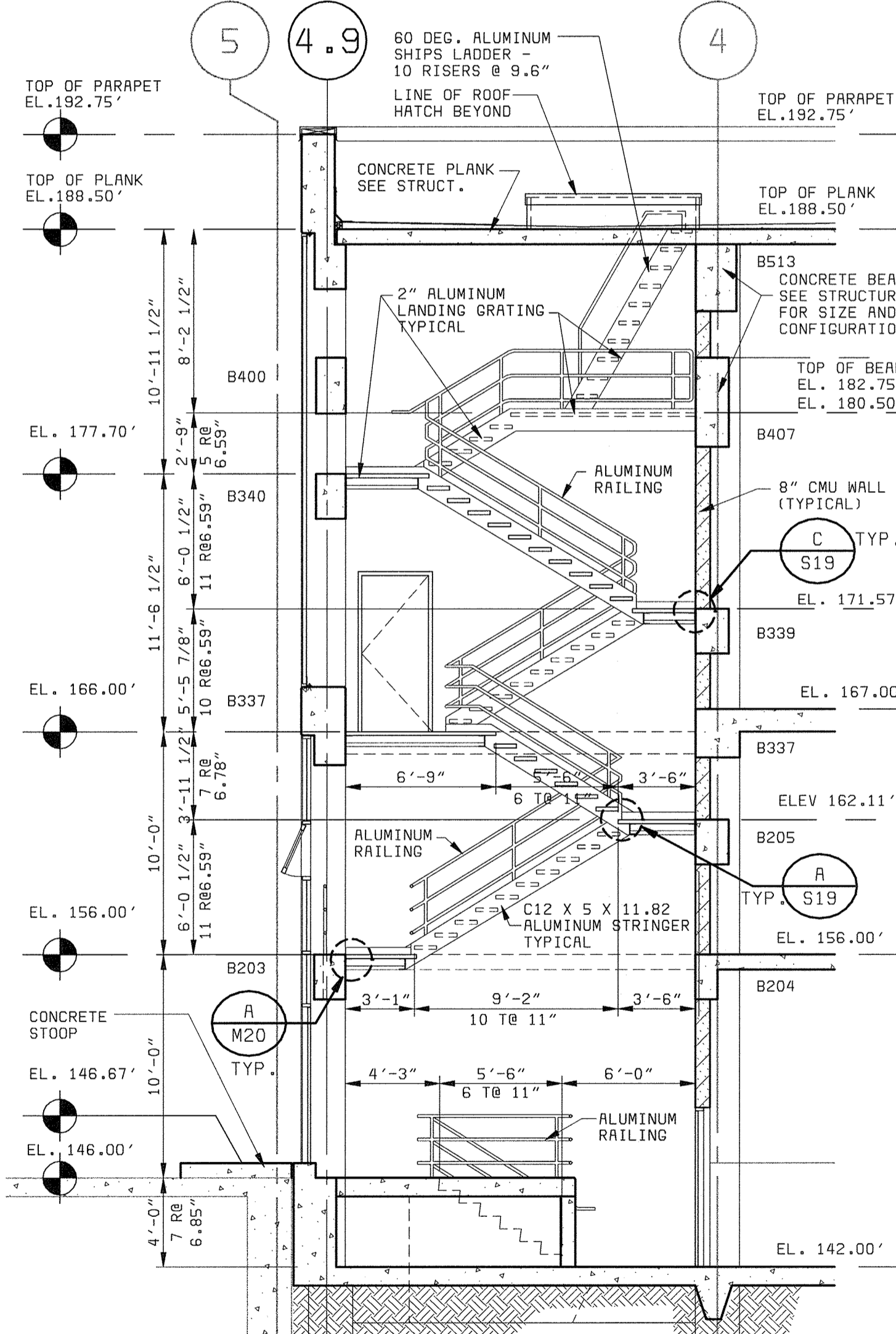
FLOOR PLAN STAIR NO. 3
@ ELEVATION 166.00'
3/16" = 1'-0"



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

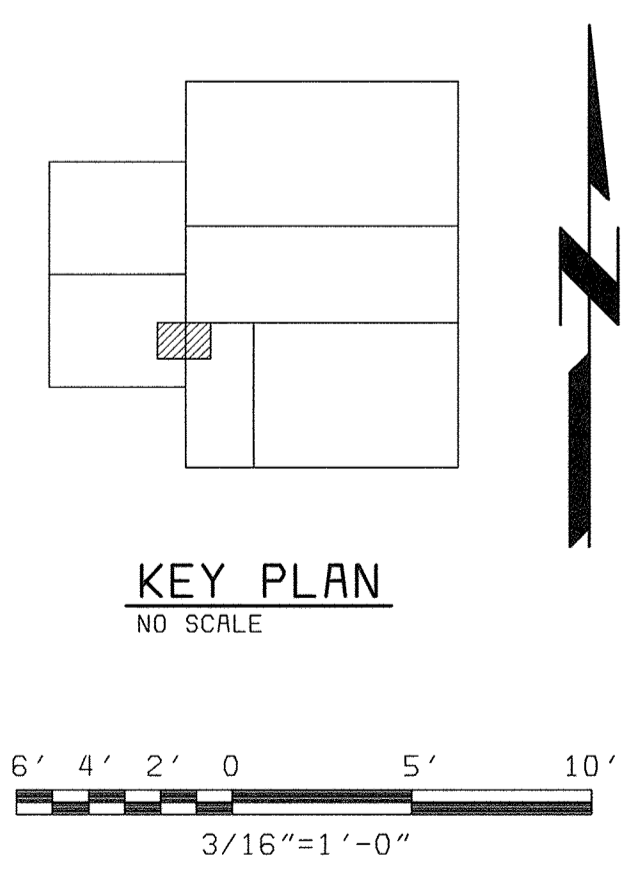


STAIR NO. 3 SECTION 1
3/16" = 1'-0"



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

- GENERAL NOTES:**
- FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
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 - EQUIPMENT SHOWN ON ARCHITECTURE DRAWINGS IS ONLY FOR GENERAL ILLUSTRATION ONLY. SEE MECHANICAL DRAWINGS FOR EQUIPMENT CONFIGURATION AND LOCATION.
 - 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

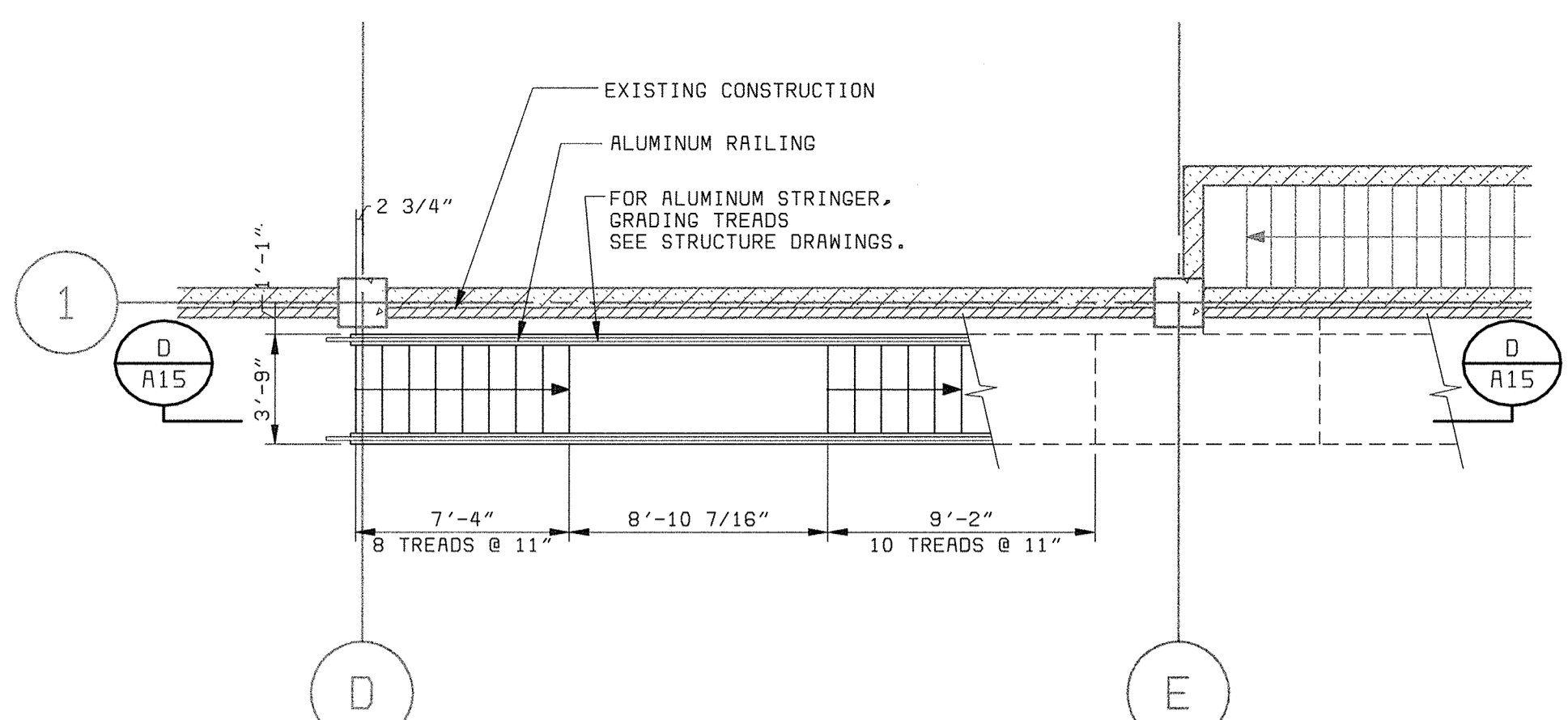
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY CHARLES I. BRYANT A REGISTERED ARCHITECT IN THE STATE OF MARYLAND, NO. 1377-R

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

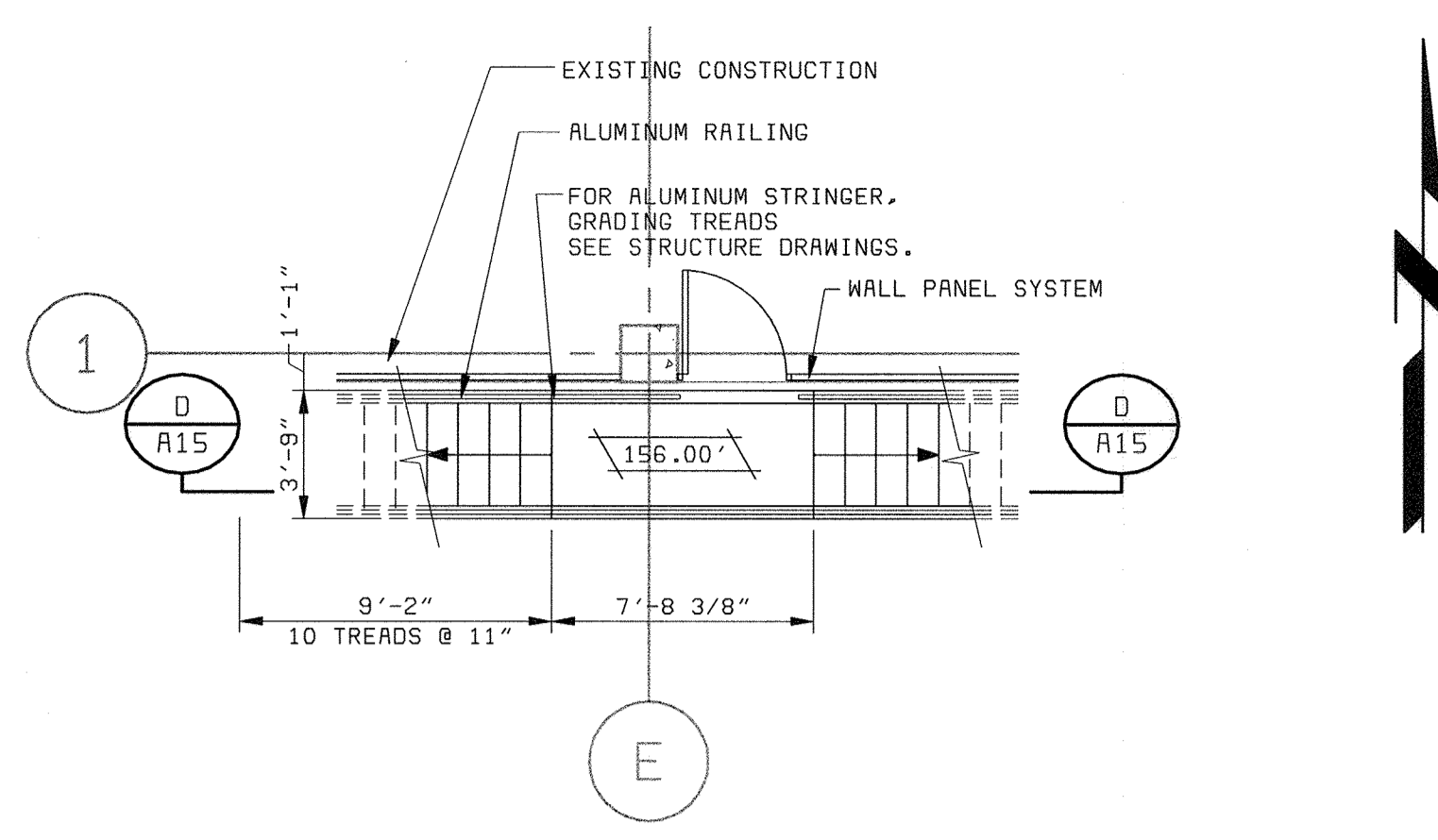
ARCHITECTURAL
CENTRIFUGE BUILDING EXPANSION STAIR NO. 3, RAILING DETAILS AND PLAN DETAILS

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

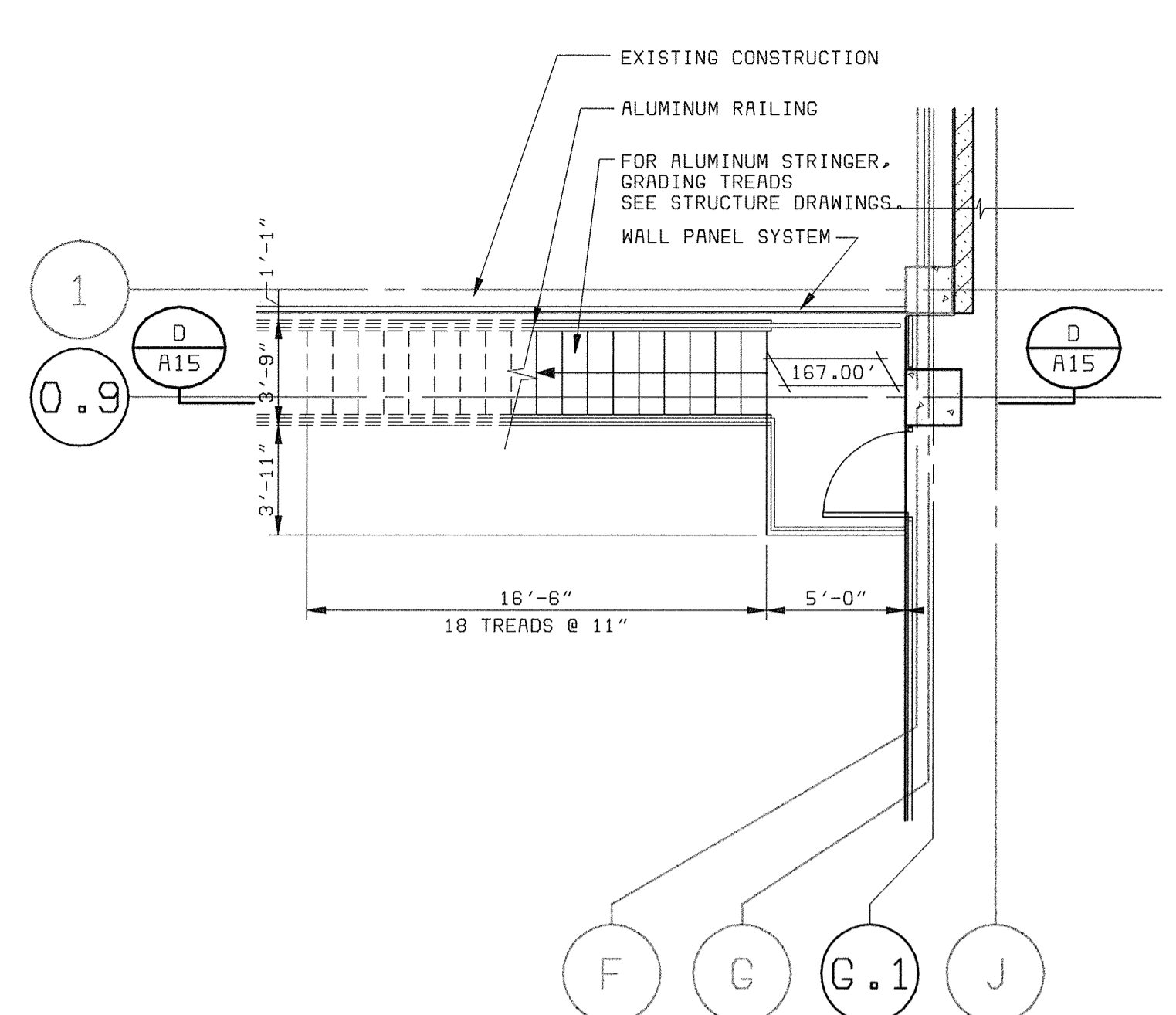
SCALE AS SHOWN
SHEET 41 OF 150
A14



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

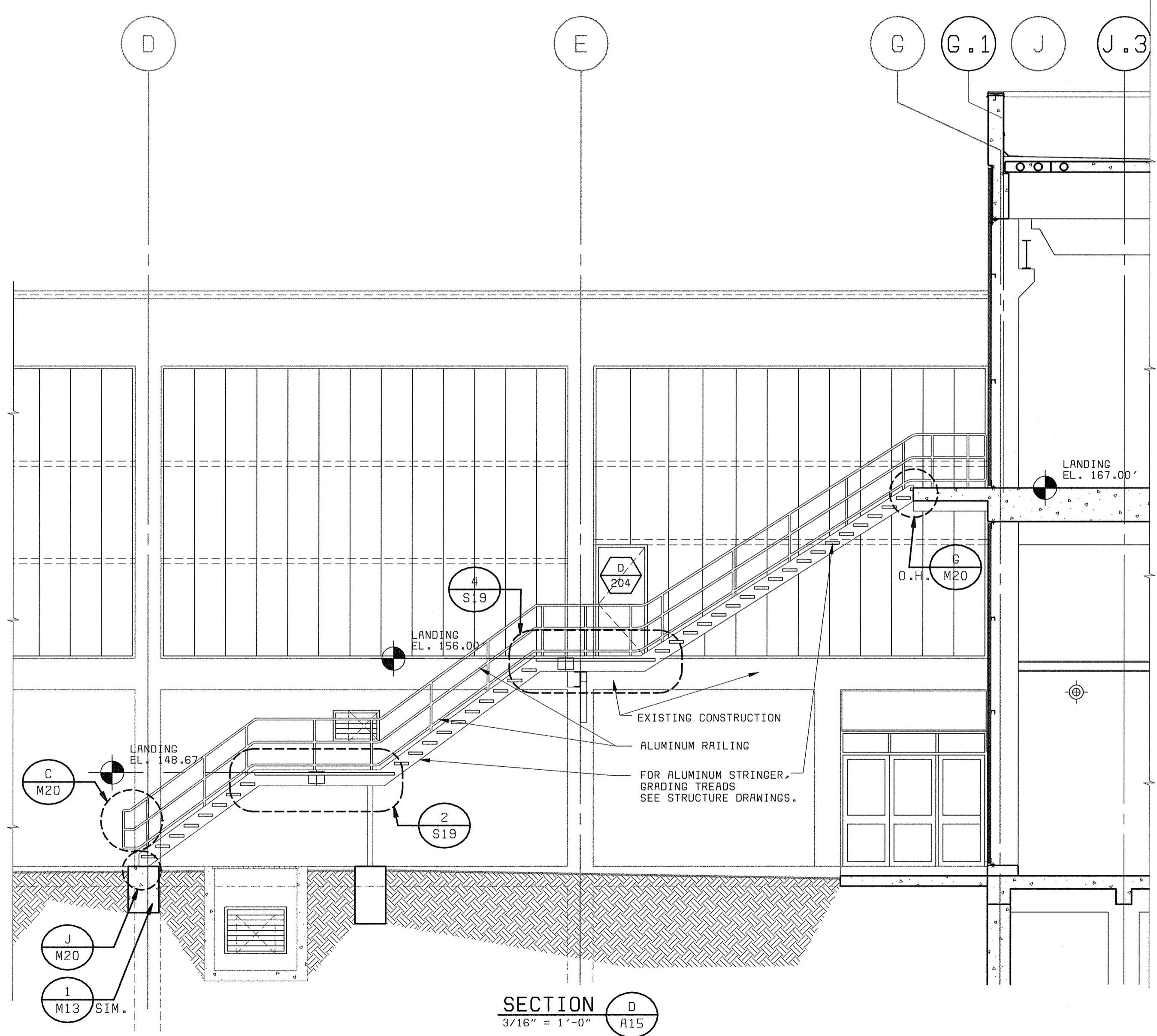


FLOOR PLAN STAIR N#4
@ ELEVATION 156.00'
 3/16" = 1'-0"

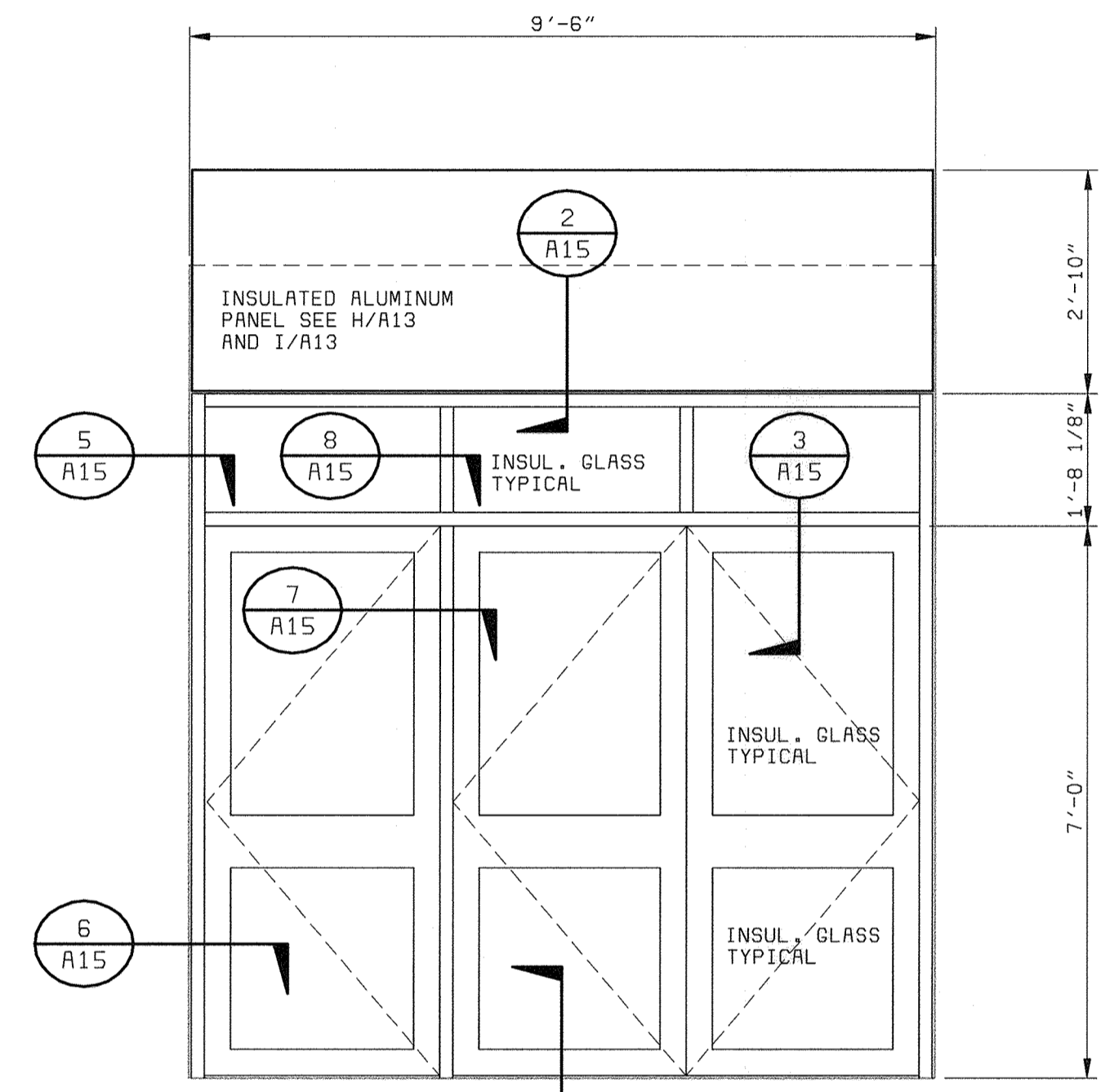


FLOOR PLAN STAIR N#4
@ ELEVATION 167.00'
 3/16" = 1'-0"

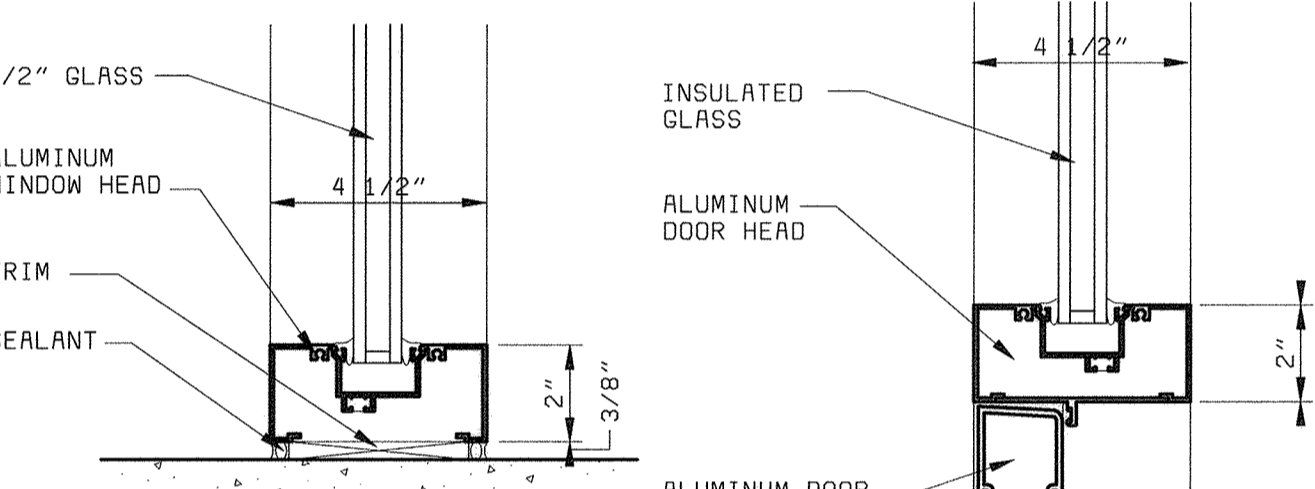
- GENERAL NOTES:**
- FOR CONCRETE CONFIGURATION SEE STRUCTURAL DRAWINGS.
 - FOR STAIR TYPICAL DETAILS SEE STRUCTURAL DRAWINGS.
 - FOR TYPICAL WALL PANEL DETAILS SEE A13.
 - FIELD VERIFY ALL DIMENSION FOR WALL PANELS.
 - FOR FINISH, DOOR AND WINDOW SCHEDULES SEE A16.
 - "SCREENED" (LIGHT) DELINEATION 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. "GOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
 - OPENING SIZE AS INDICATED ON DRAWINGS BY ROP TECHNOLOGIES, INC.
 - EQUIPMENT SHOWN ON ARCHITECTURE DRAWINGS IS ONLY FOR GENERAL ILLUSTRATION ONLY. SEE MECHANICAL DRAWINGS FOR EQUIPMENT CONFIGURATION AND LOCATION.



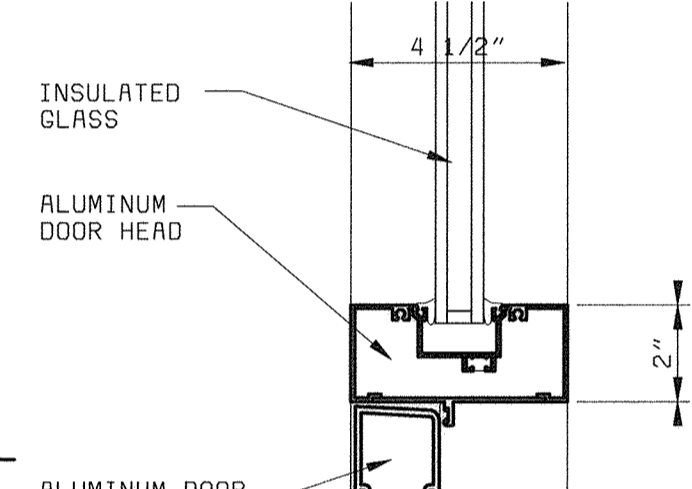
SECTION D
 3/16" = 1'-0"



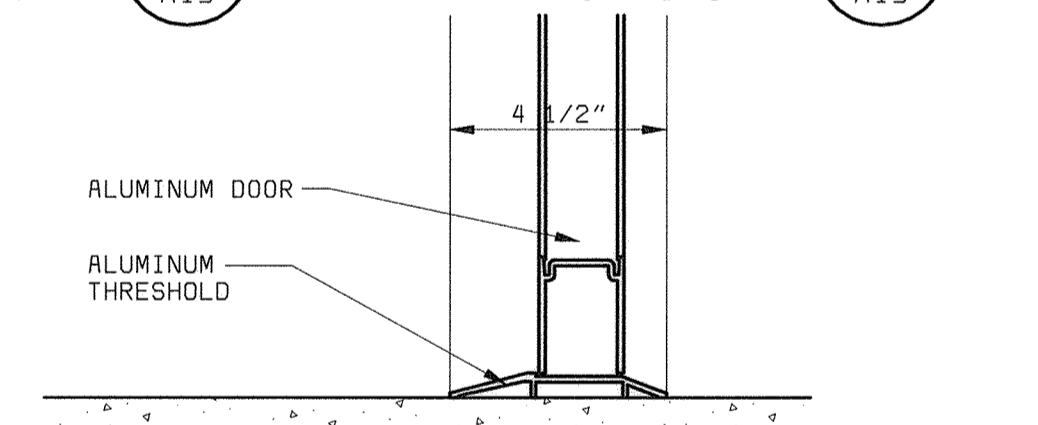
STOREFRONT ELEVATION 1
 1/2" = 1'-0"



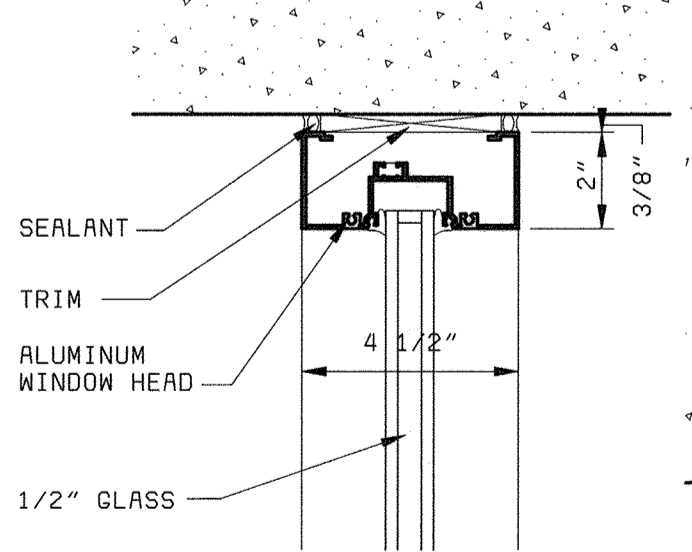
DETAIL 2
 3" = 1'-0"



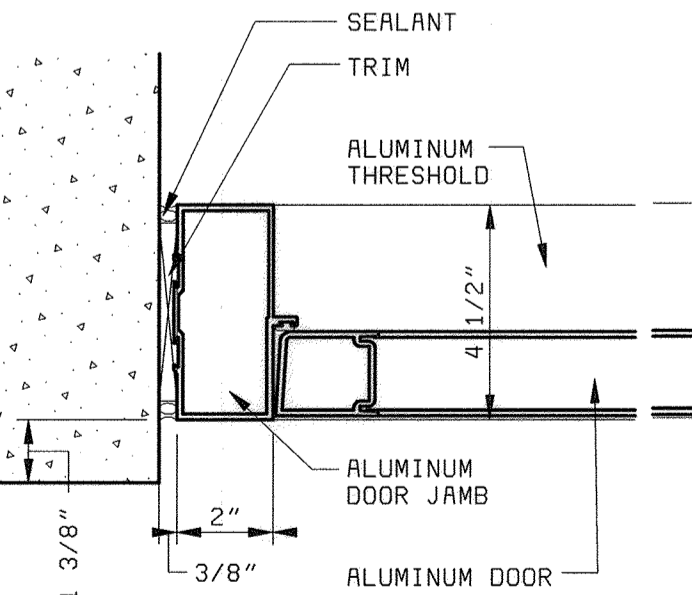
DETAIL 3
 3" = 1'-0"



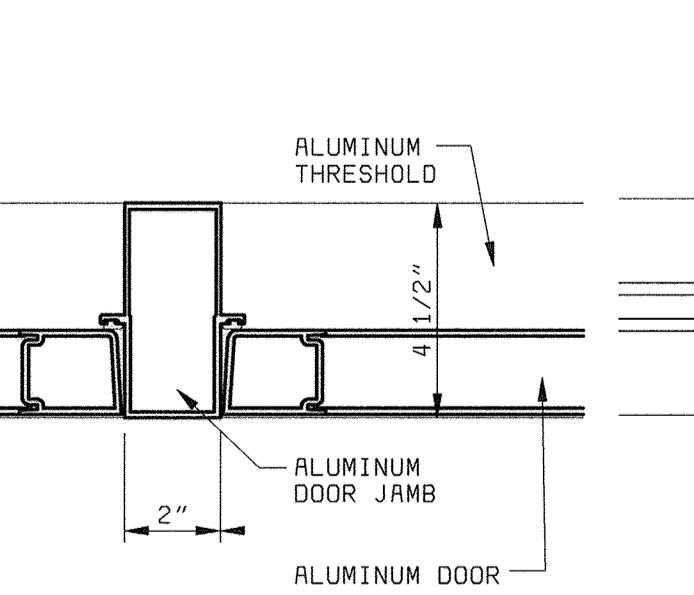
DETAIL 4
 3" = 1'-0"



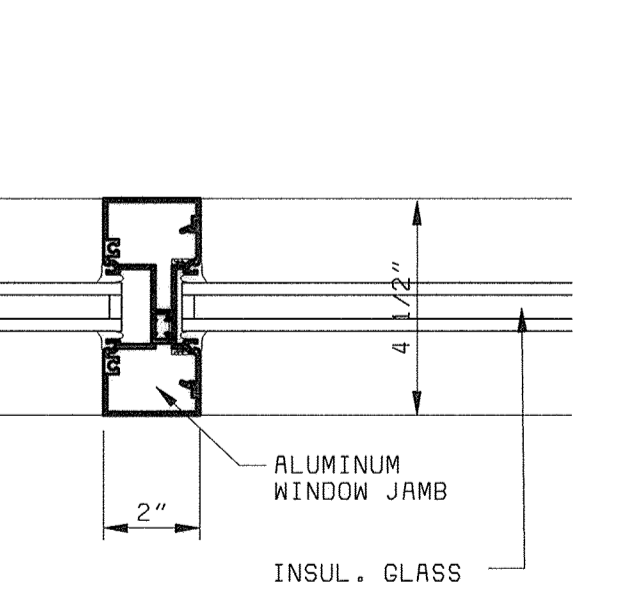
DETAIL 5
 3" = 1'-0"



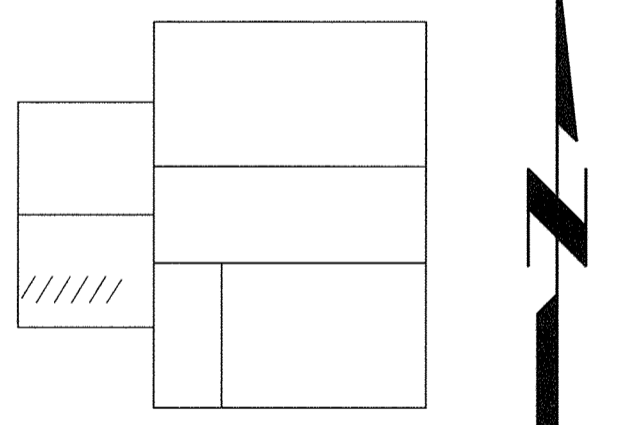
DETAIL 6
 3" = 1'-0"



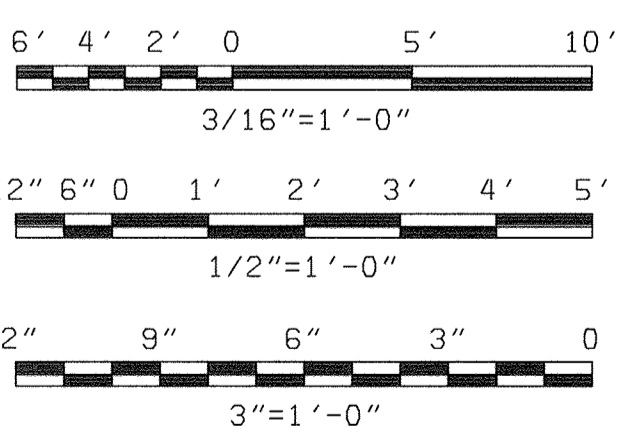
DETAIL 7
 3" = 1'-0"



DETAIL 8
 3" = 1'-0"



KEY PLAN
 NO SCALE



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND



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

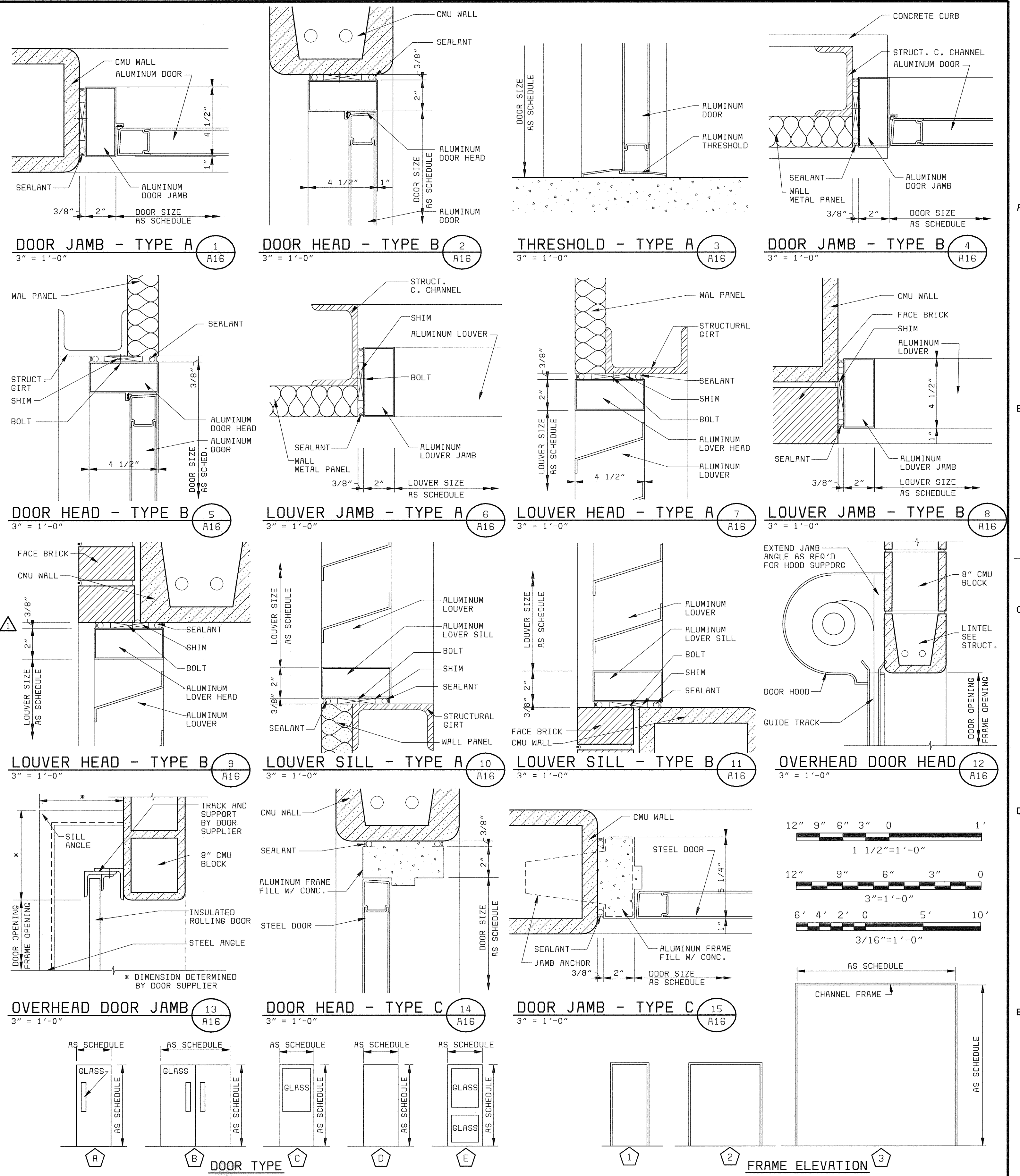
X:\LDCD\XWSR105

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 MATERIAL	FRAME ELEV.	LABEL	REMARKS
		W	H	T			HEAD	JAMB	THRESH				
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

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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

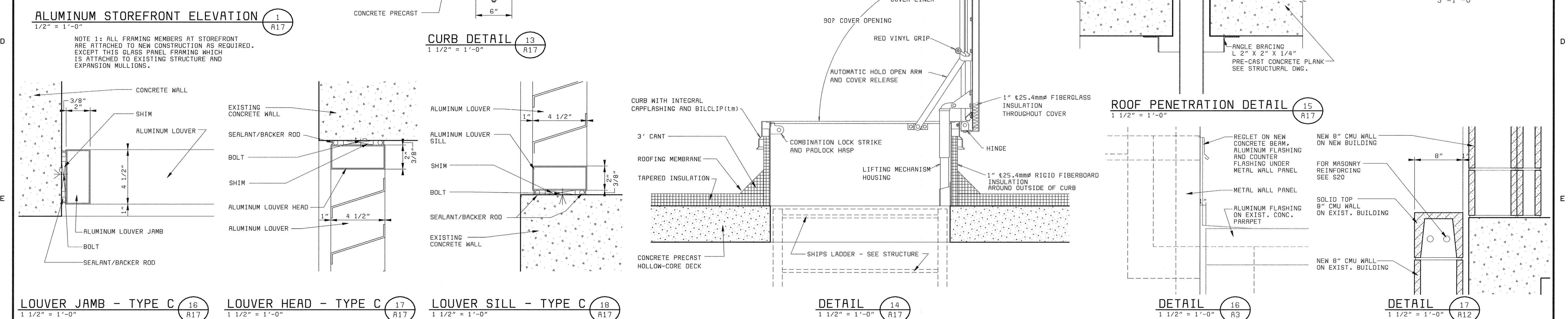
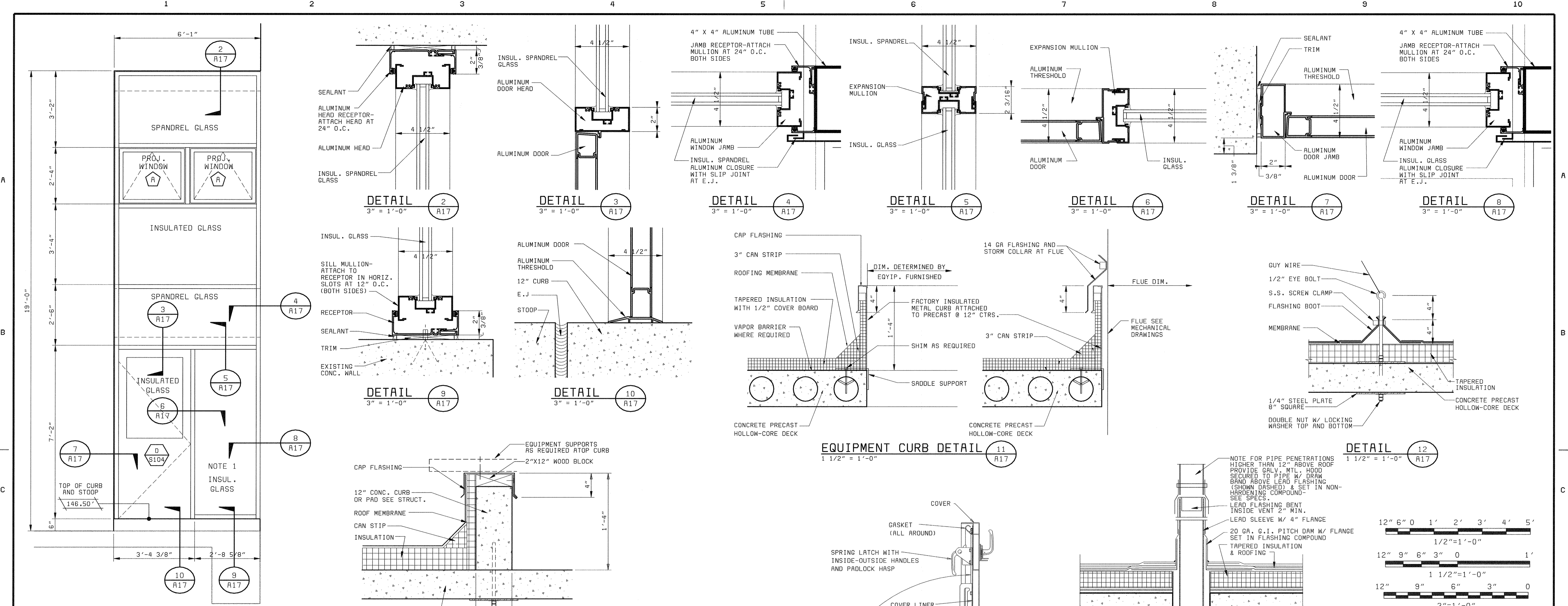
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

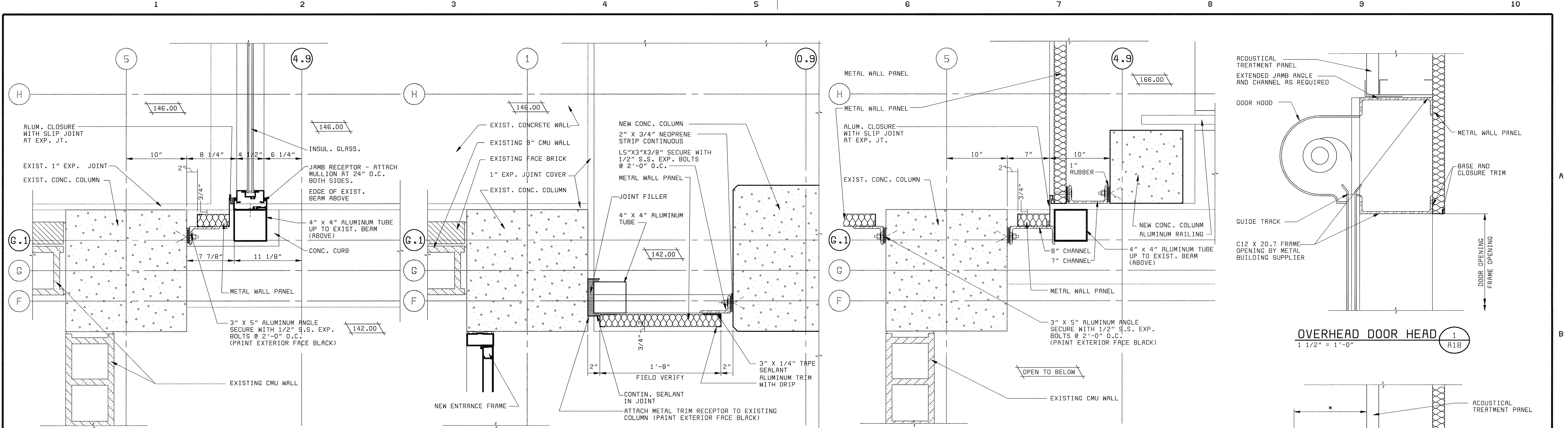
SCALE AS SHOWN

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

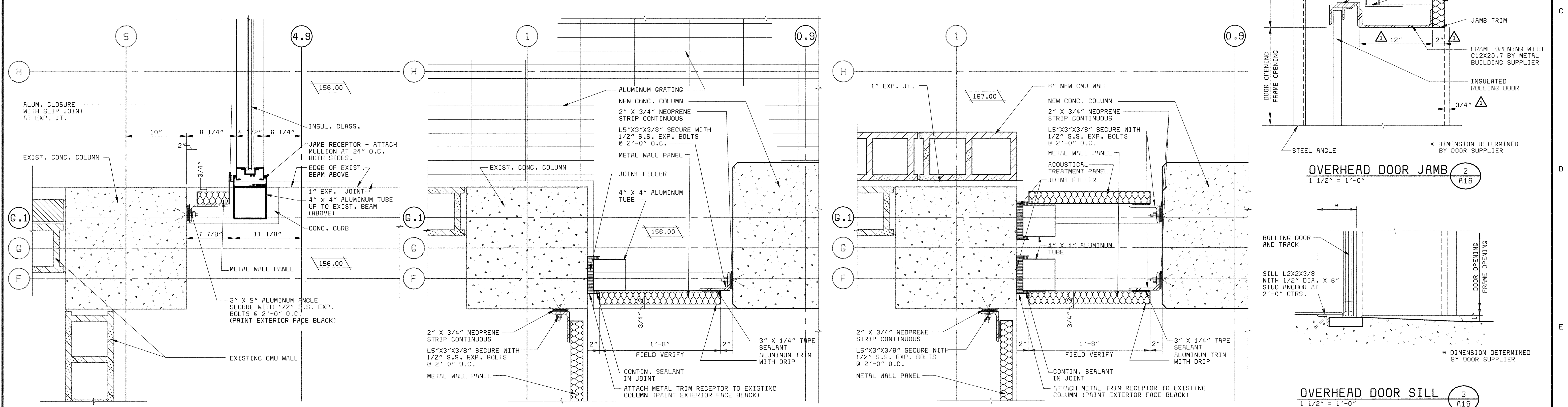


DETAIL A
1 1/2" = 1'-0" A18

DETAIL B
1 1/2" = 1'-0" A18

DETAIL E
1 1/2" = 1'-0" A18

OVERHEAD DOOR HEAD 1
1 1/2" = 1'-0" A18



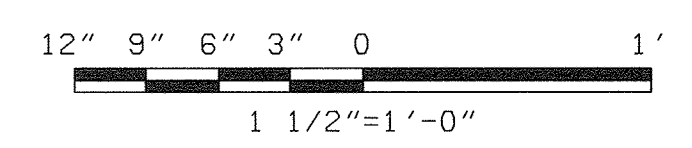
DETAIL C
1 1/2" = 1'-0" A18

DETAIL D
1 1/2" = 1'-0" A18

DETAIL F
1 1/2" = 1'-0" A18



OVERHEAD DOOR JAMB 2
1 1/2" = 1'-0" A18

OVERHEAD DOOR SILL 3
1 1/2" = 1'-0" A18

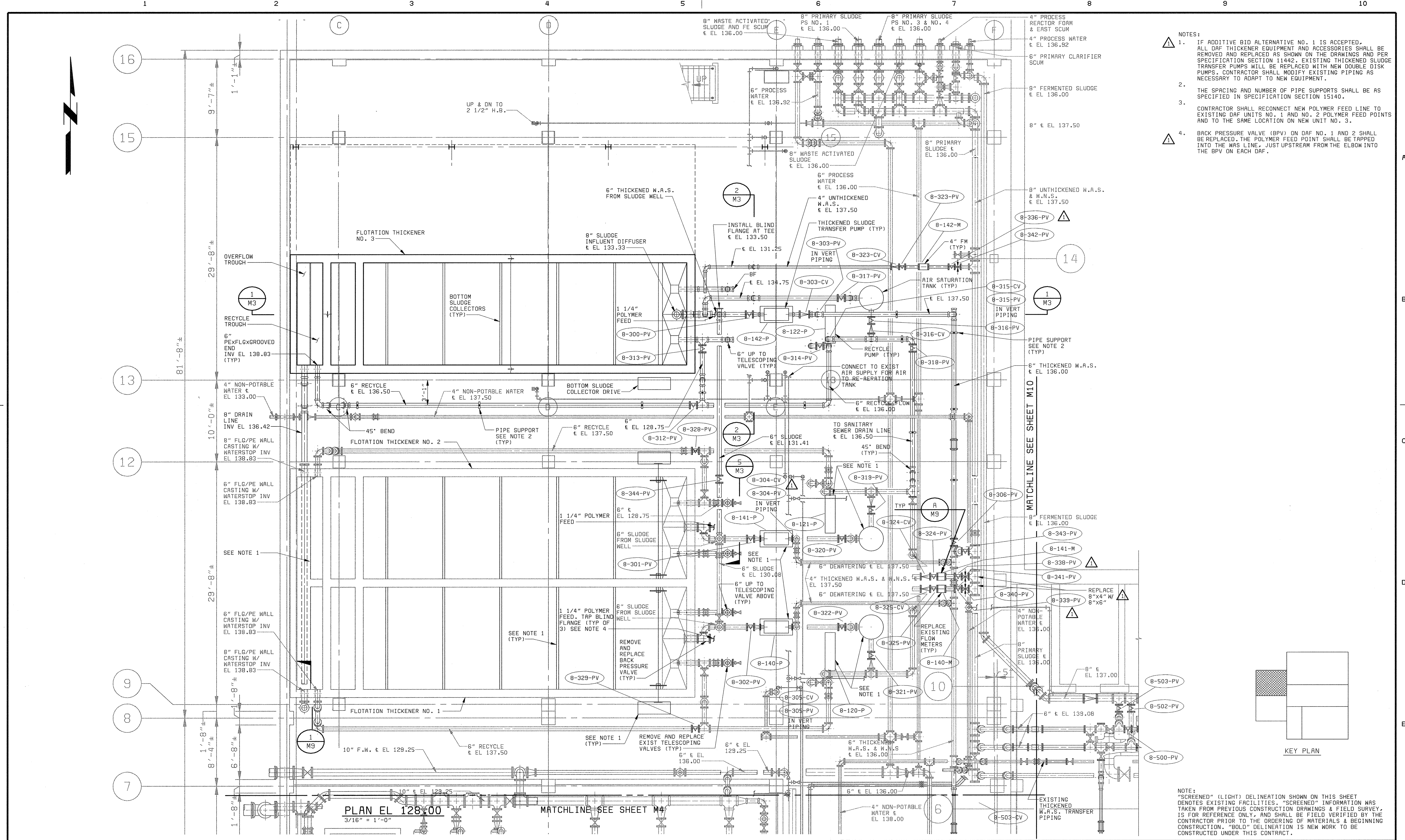


XKLOGO

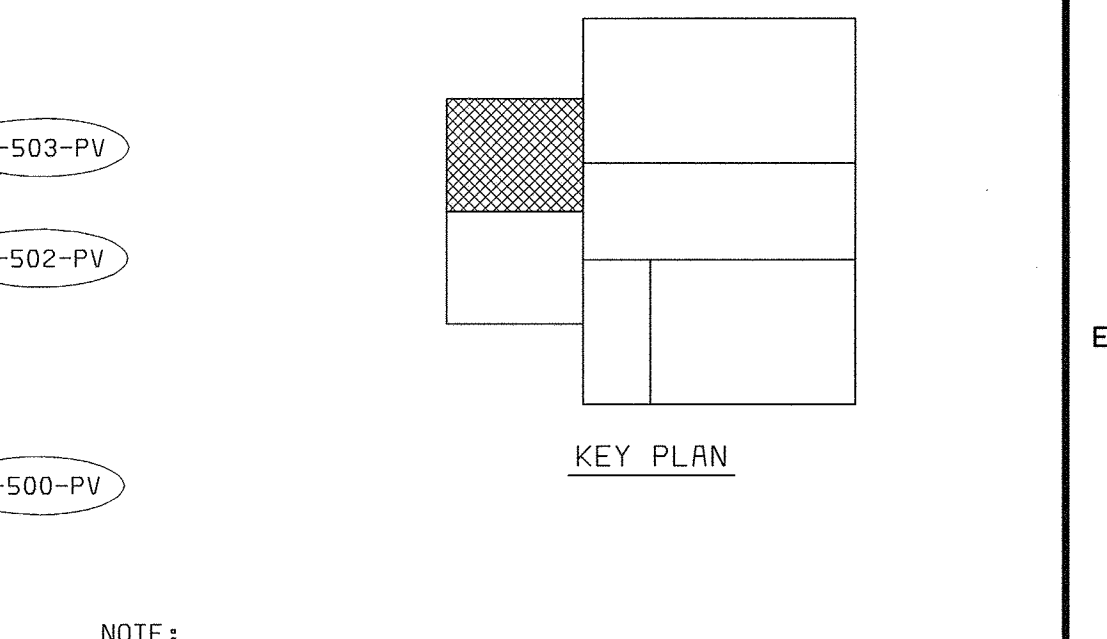
058472-2
F058472A

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  Architects • Designers • Planners Bryant Bryant Williams, P.C. 4201 Connecticut Avenue N.W., Suite 500 Washington, D.C. 20008 (202) 244-2108	 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 △ RHH/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
		CHIEF, BUREAU OF UTILITIES DATE REG. PROF. ENGR. DATE	DATE	DATE	DATE	DATE	DATE


58472-401-323-C003: 800989217.DWG
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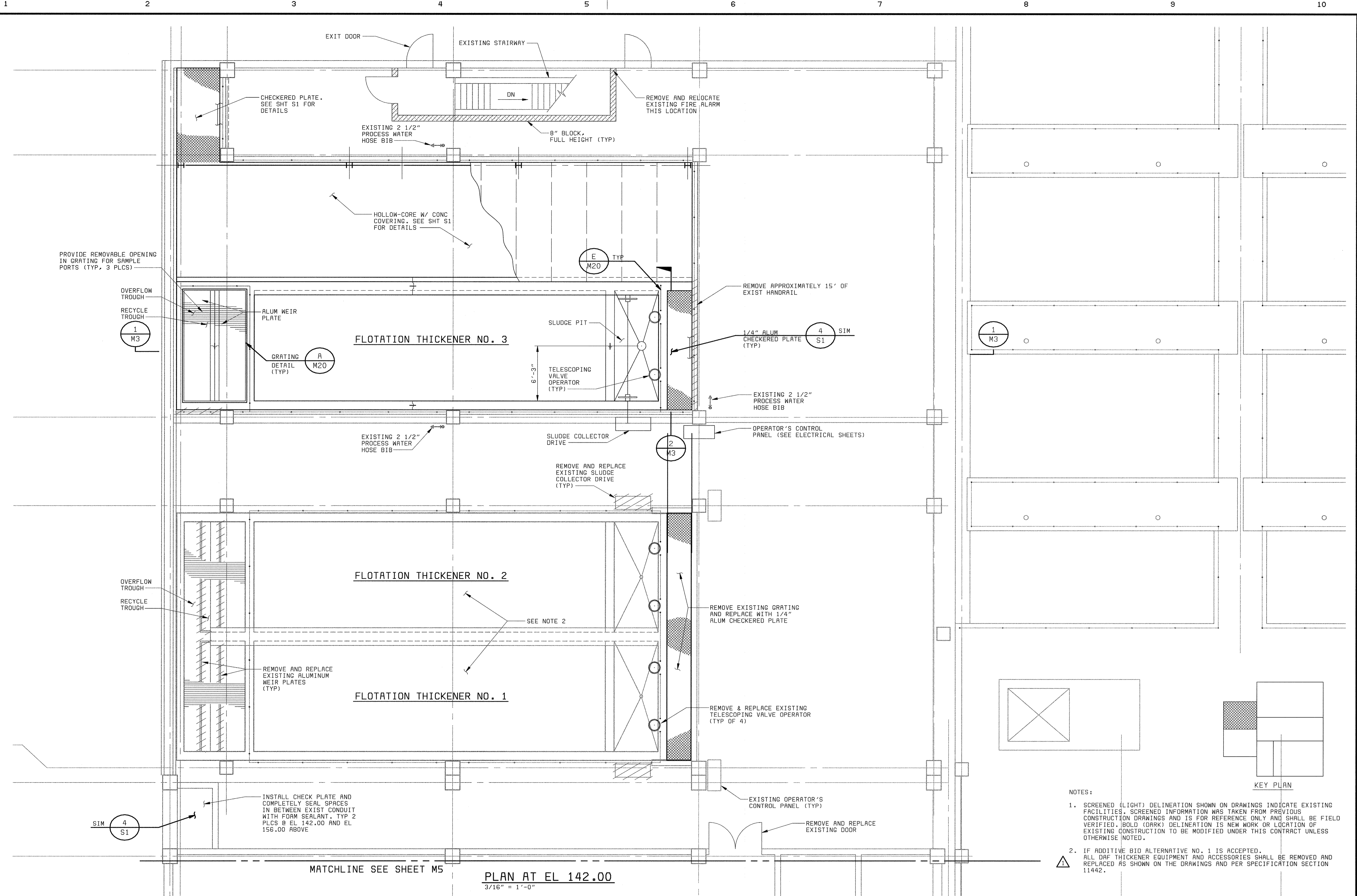


- NOTES:
- IF ADDITIVE BID ALTERNATIVE NO. 1 IS ACCEPTED, ALL DAF THICKENER EQUIPMENT AND ACCESSORIES SHALL BE REMOVED AND REPLACED AS SHOWN ON THE DRAWINGS AND PER SPECIFICATION SECTION 11442. EXISTING THICKENED SLUDGE TRANSFER PUMPS WILL BE REPLACED WITH NEW DOUBLE DISK PUMPS. CONTRACTOR SHALL MODIFY 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. "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  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	MECHANICAL DAF THICKENING AND STABILIZATION AREA			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	FLOTATION THICKENING AREA PLAN AT EL 128.00				SHEET 46 OF 150
CHIEF, BUREAU OF UTILITIES DATE _____	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH RJR RJR			M1
		REVISIONS AND RECORD OF ISSUE		NO. BY CK APP			



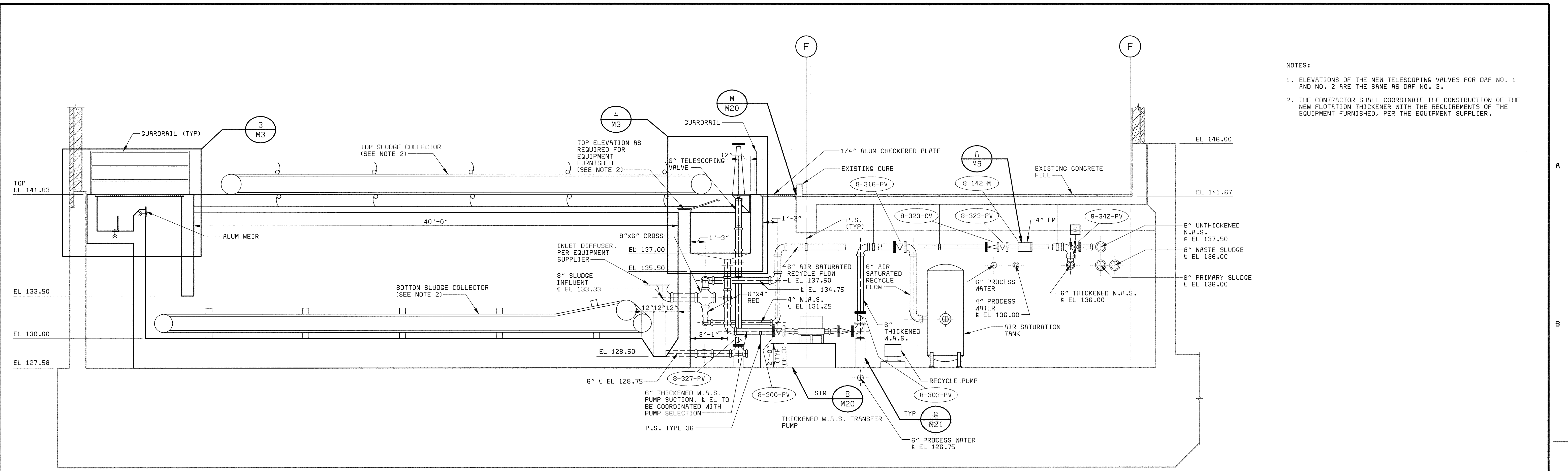
XREF : 58472-203-SOLLS-S-40000118
 XREF : 58472-401-323-PIPE3
 DES: 2
 PDS: 472A

- 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.

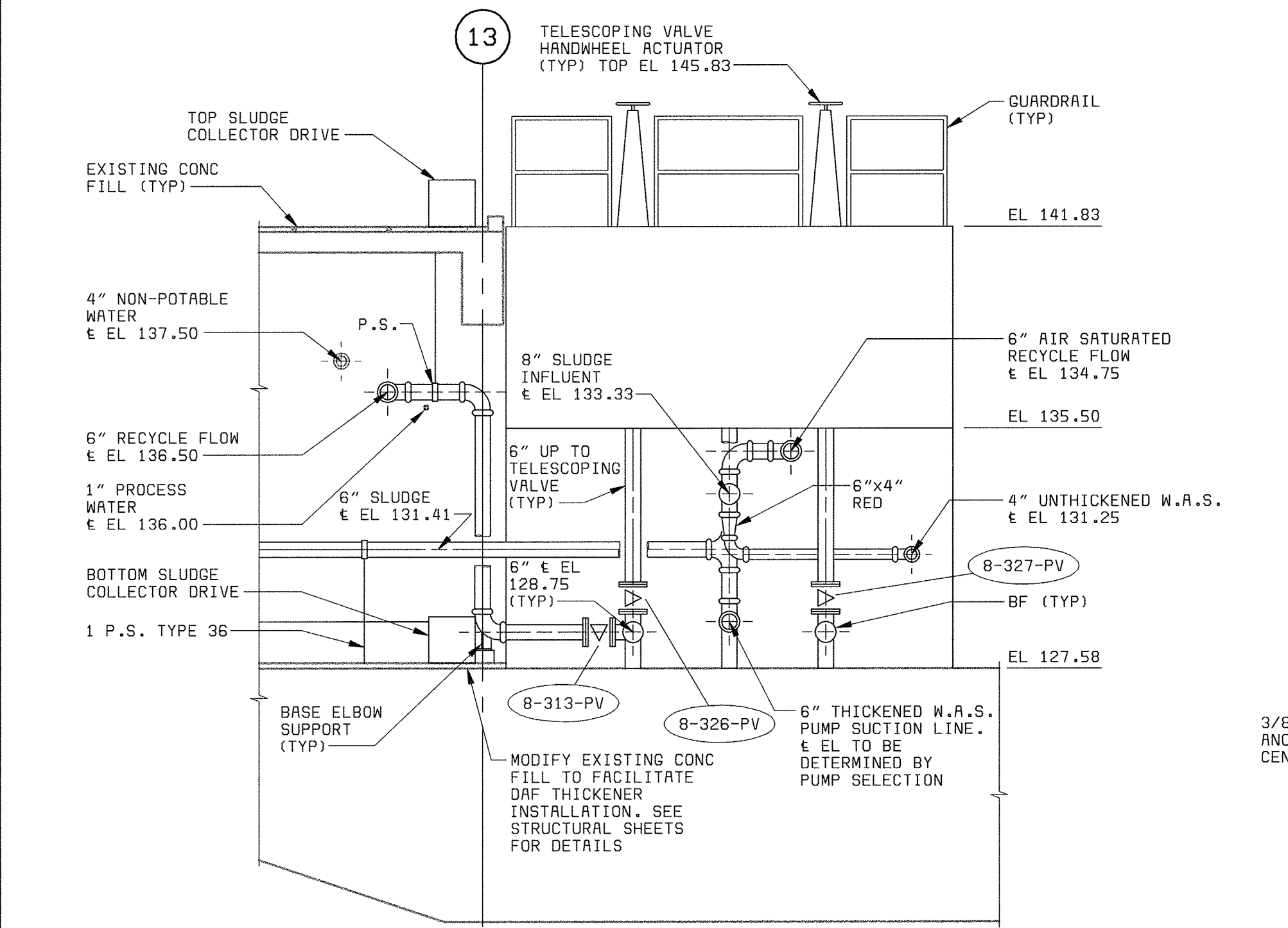
MATCHLINE SEE SHEET M5
PLAN AT EL 142.00
 3/16" = 1'-0"

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 REVISIONS AND RECORD OF ISSUE

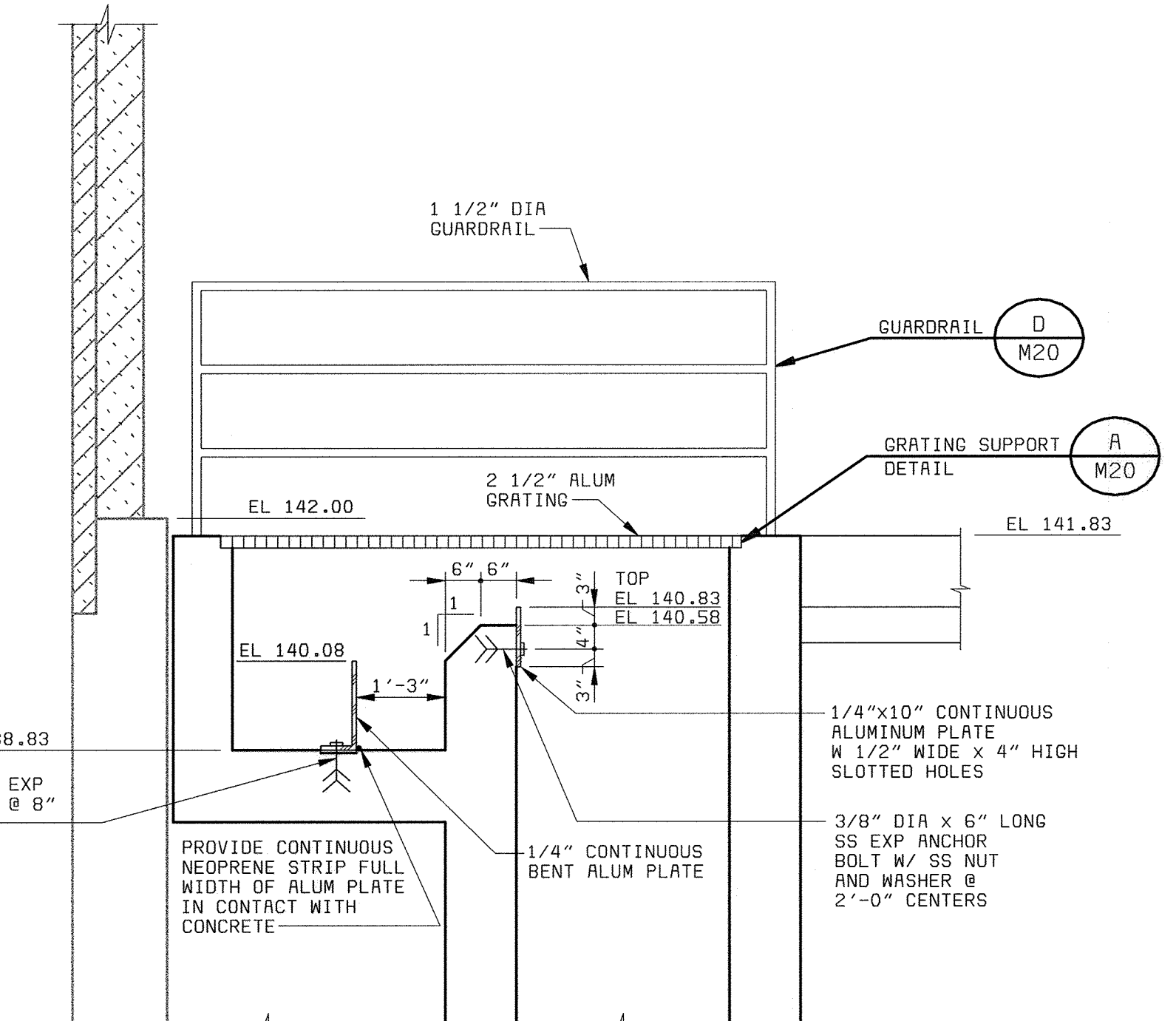
- NOTES:
- ELEVATIONS OF THE NEW TELESCOPING VALVES FOR DAF NO. 1 AND NO. 2 ARE THE SAME AS DAF NO. 3.
 - THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE NEW FLOTATION THICKENER WITH THE REQUIREMENTS OF THE EQUIPMENT FURNISHED, PER THE EQUIPMENT SUPPLIER.



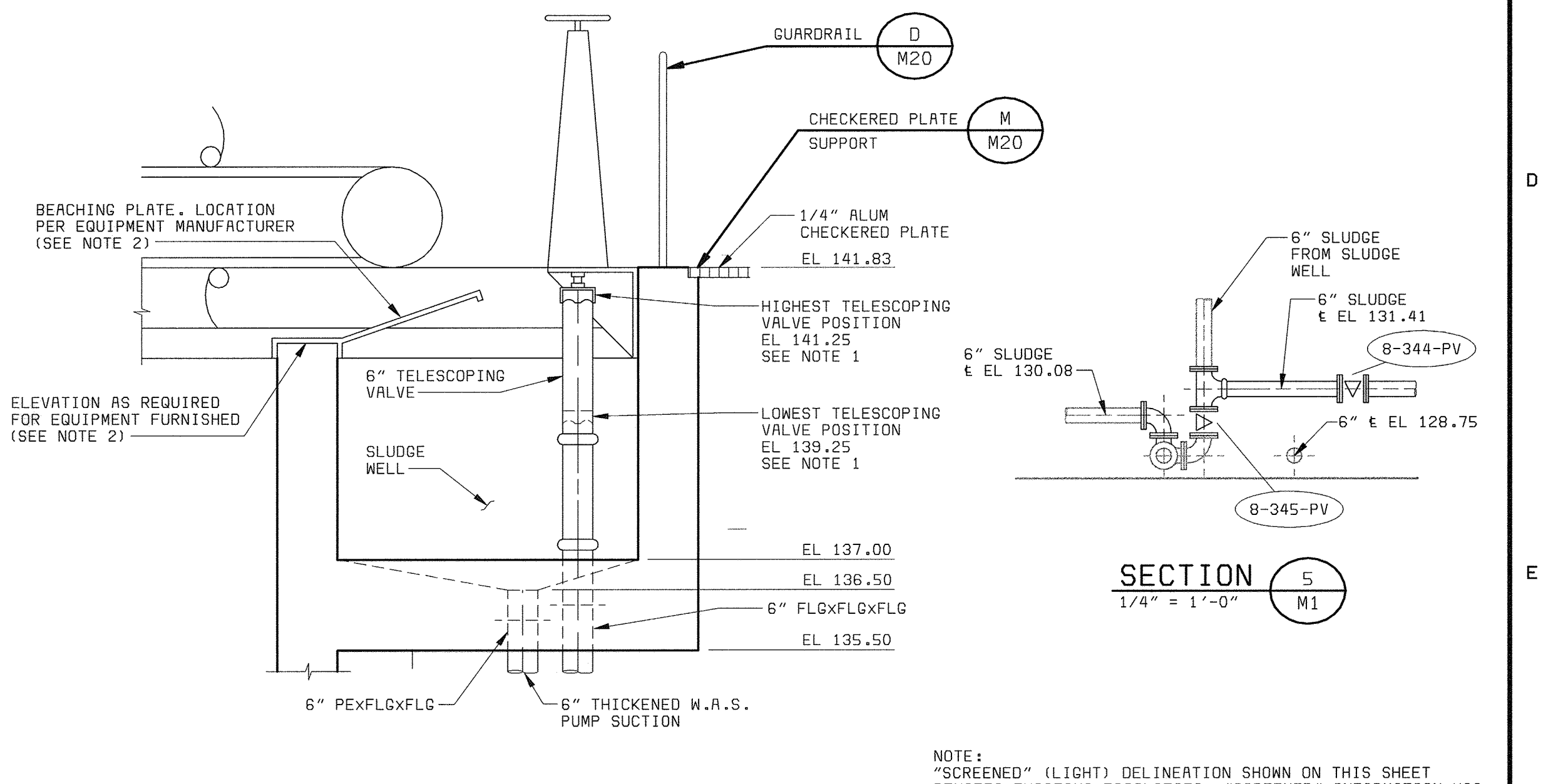
SECTION 1
1/4" = 1'-0" M1, M2



SECTION 2
1/4" = 1'-0" M1, M2



ENLARGED SECTION 3
1/2" = 1'-0" M3



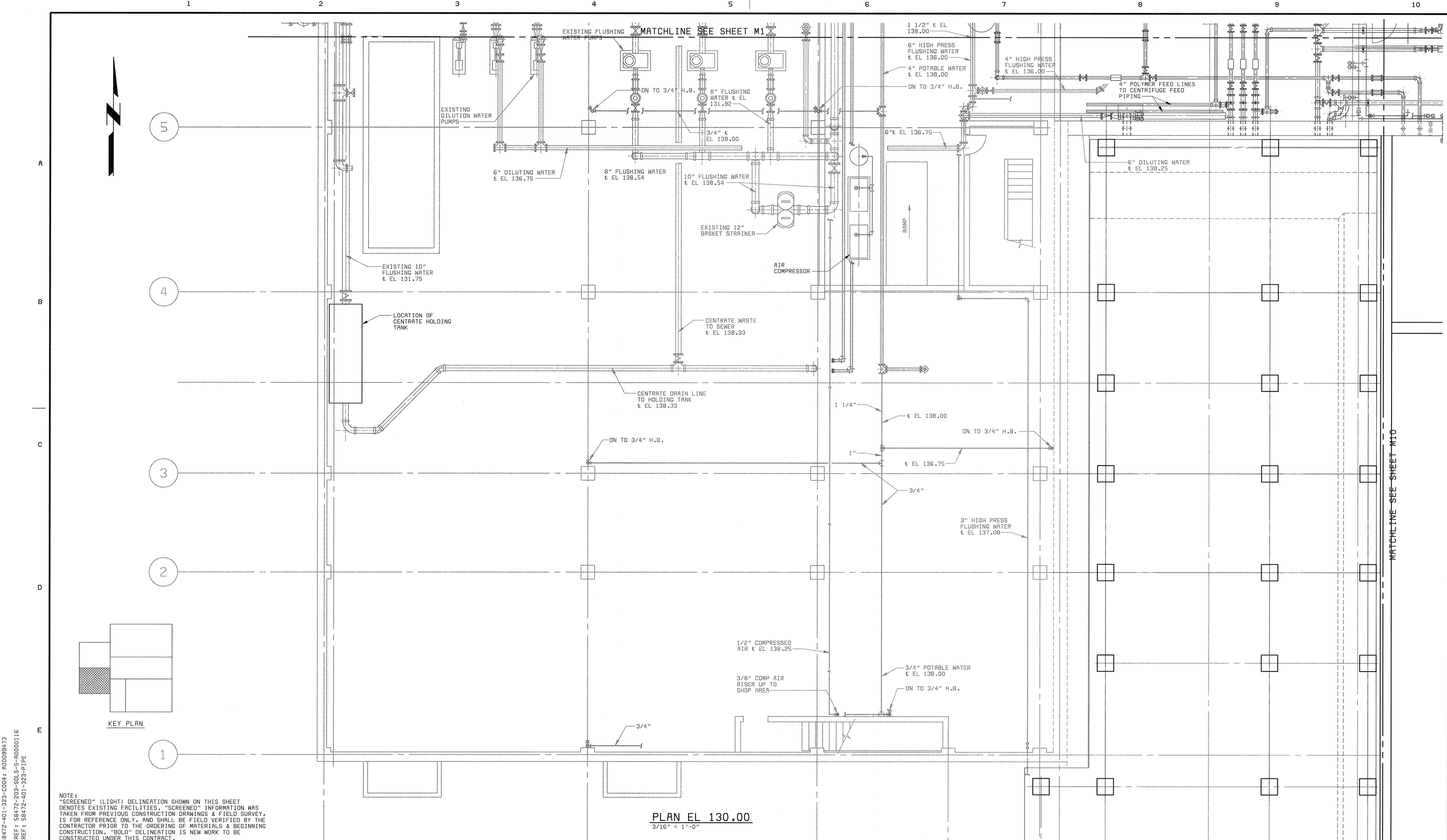
ENLARGED SECTION 4
1/2" = 1'-0" M3

SECTION 5
1/4" = 1'-0" M1

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-DAF-C-00000104

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 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
REVISIONS AND RECORD OF ISSUE NO. BY CK APP												M3



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

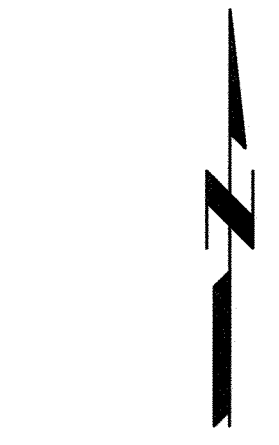
NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION.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

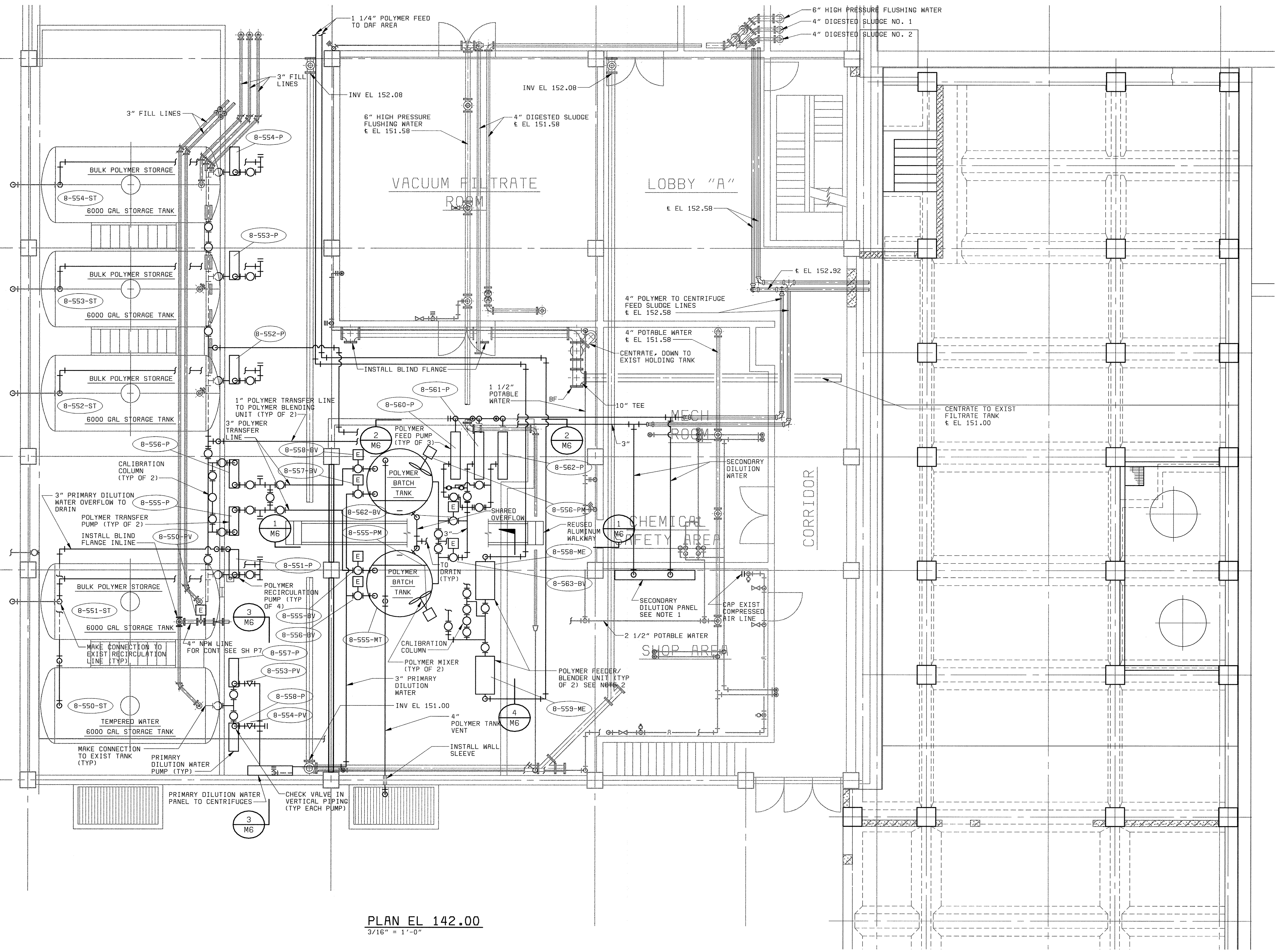
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D. MATT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: TJW/ACR						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	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR				M4
			DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE		NO. BY CK APP				

A
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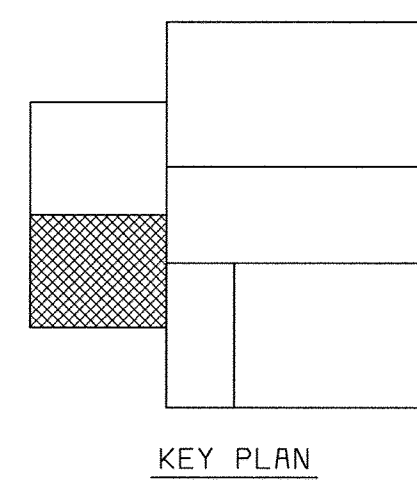


5
4
3
2
1



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

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.



KEY PLAN

58472-401-323-C016: R00098934
XREF: 58472-203-SLS-S-R0000118
D58472_2
F058472R

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
DRN: RAB.NAG
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
DAF THICKENING AND
STABILIZATION AREA

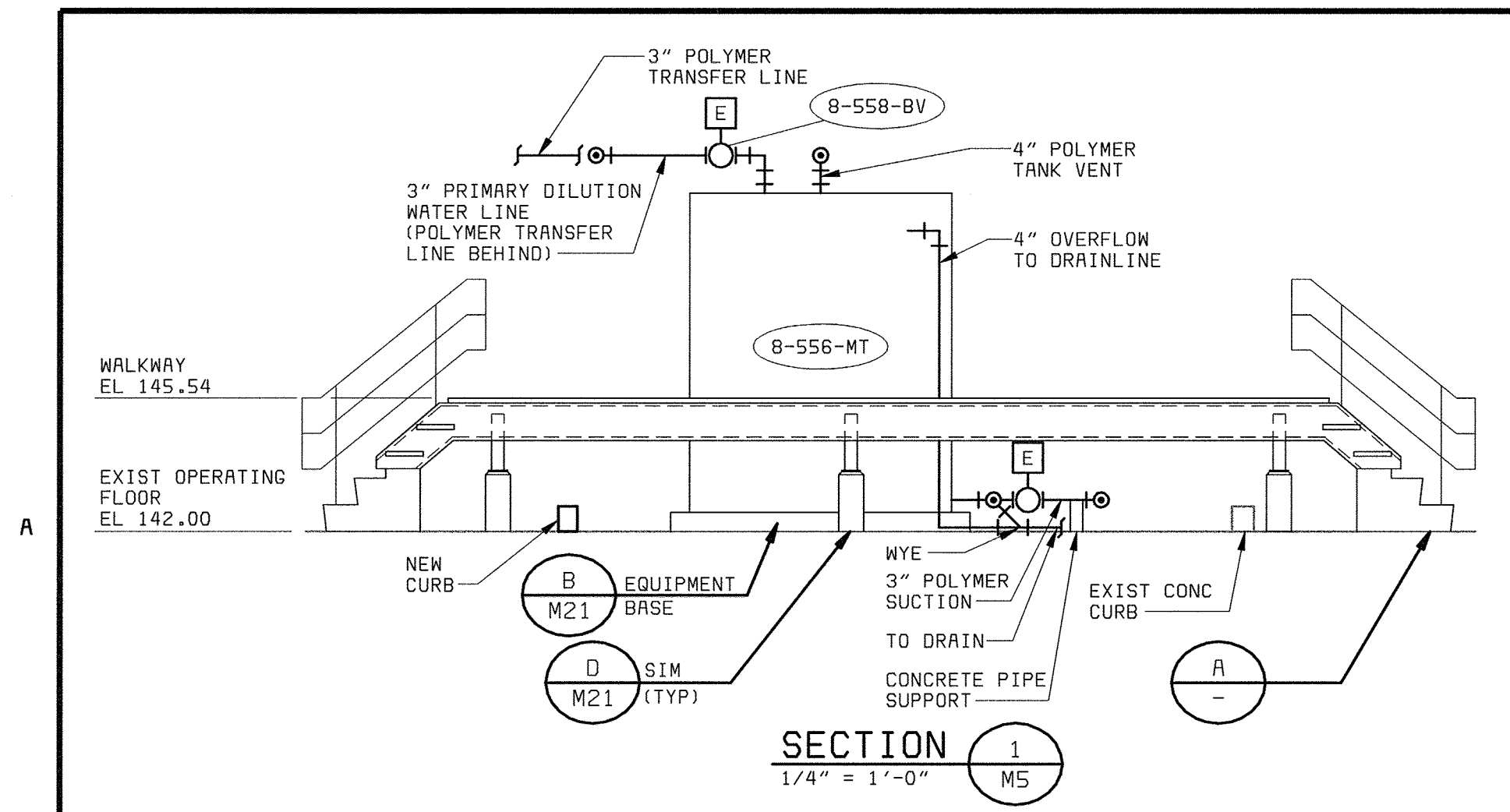
POLYMER FEED AREA
PLAN AT EL 142.00

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

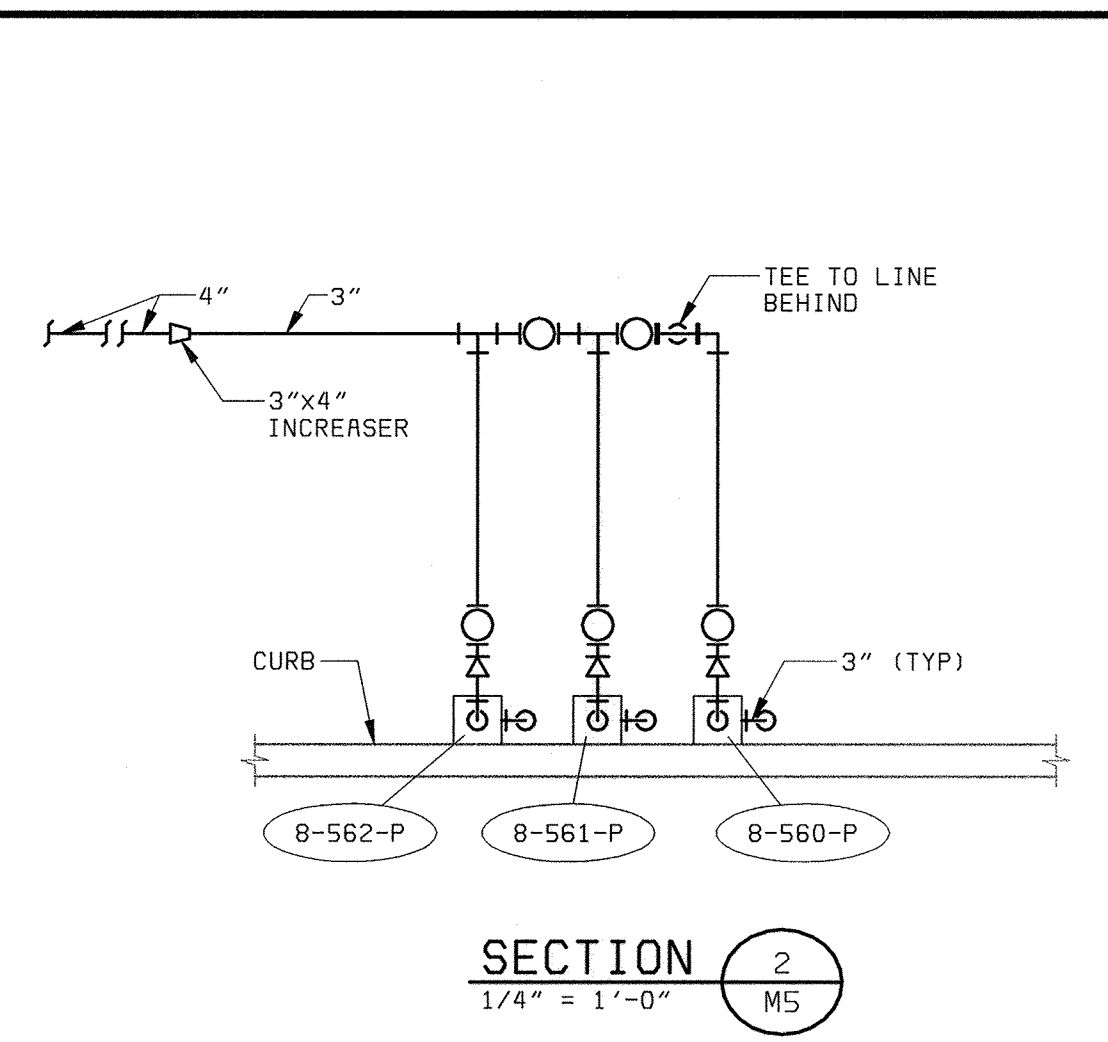
SCALE
AS
SHOWN

SHEET
50 OF 150

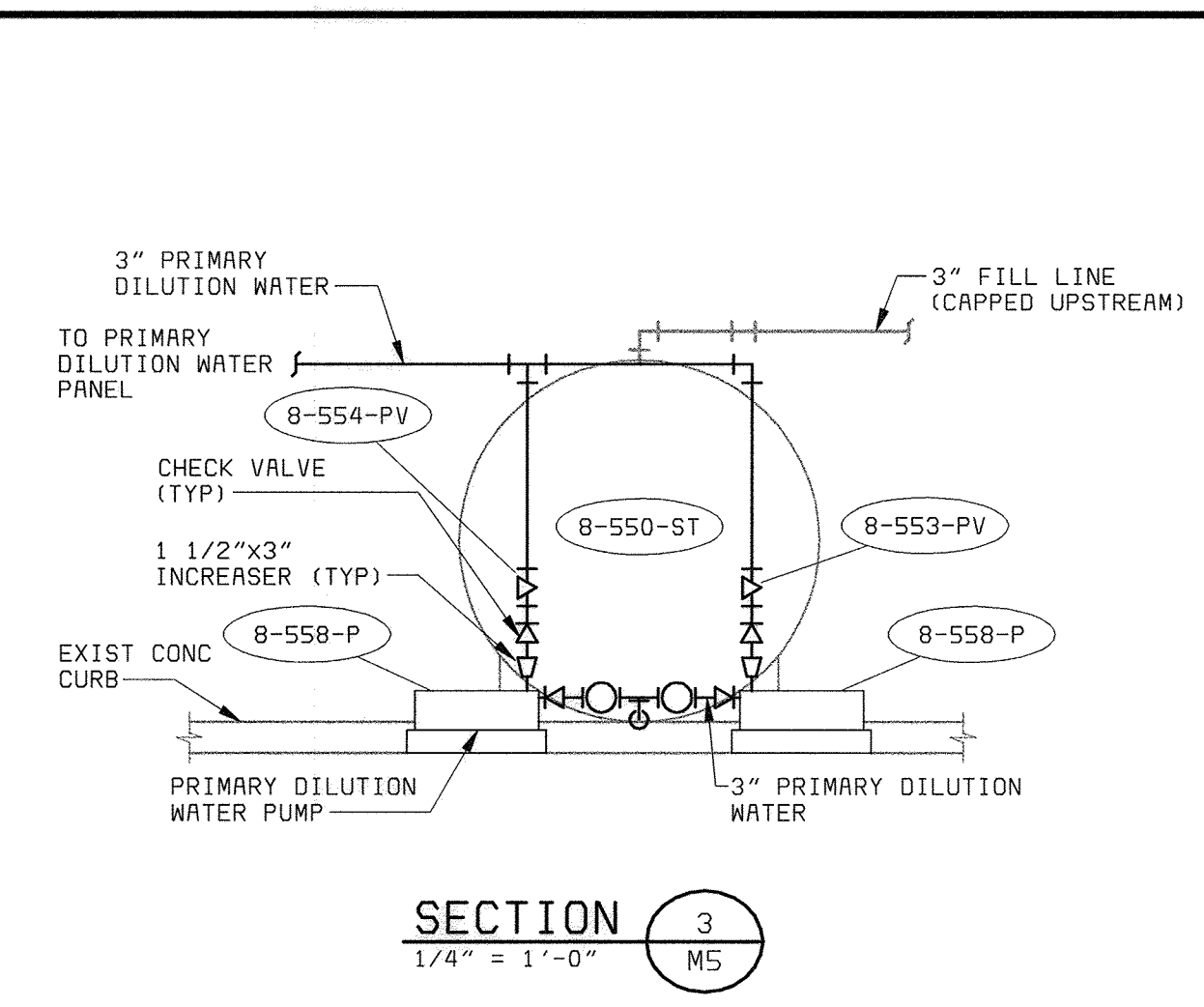
M5



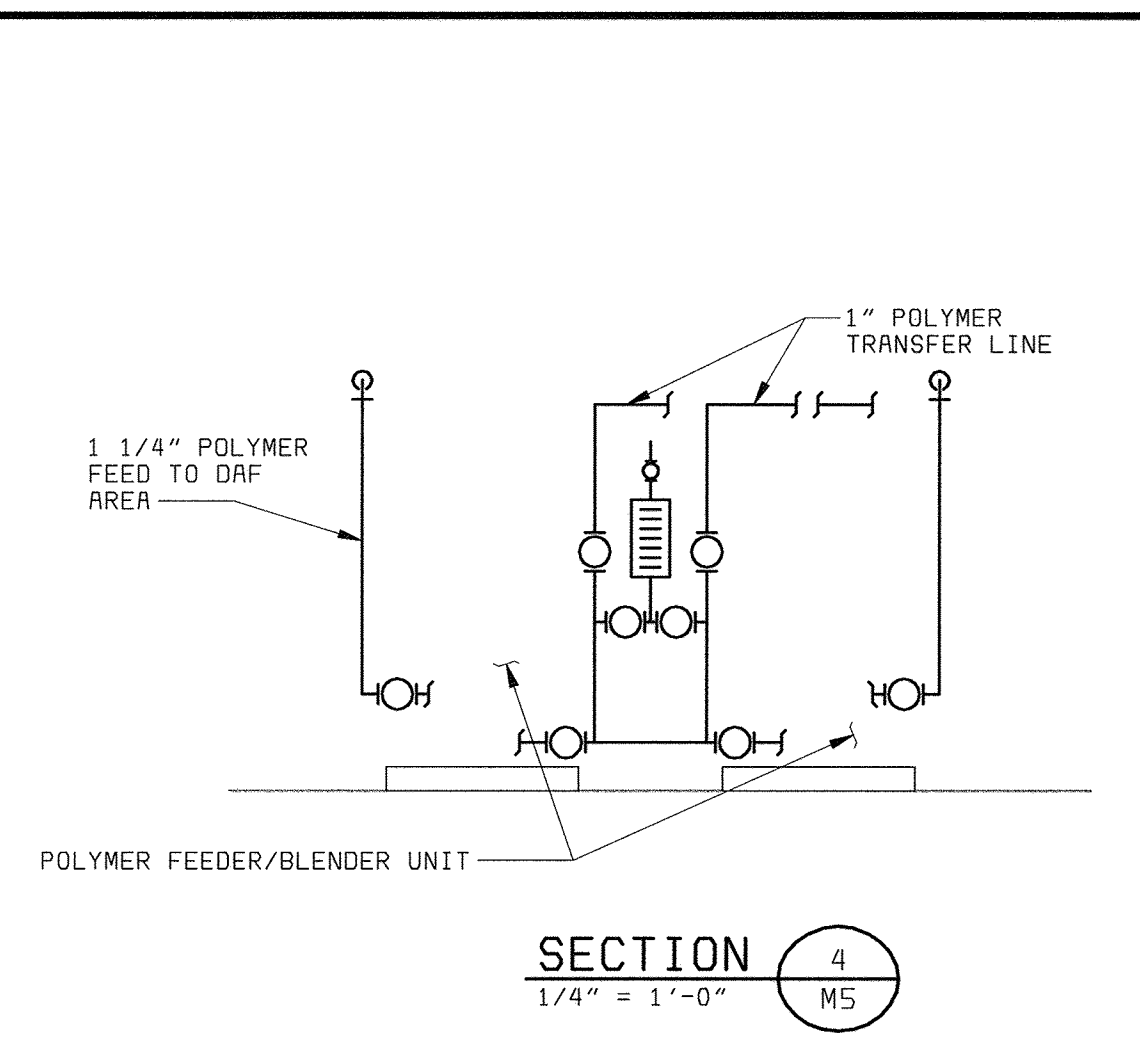
SECTION 1
1/4" = 1'-0"



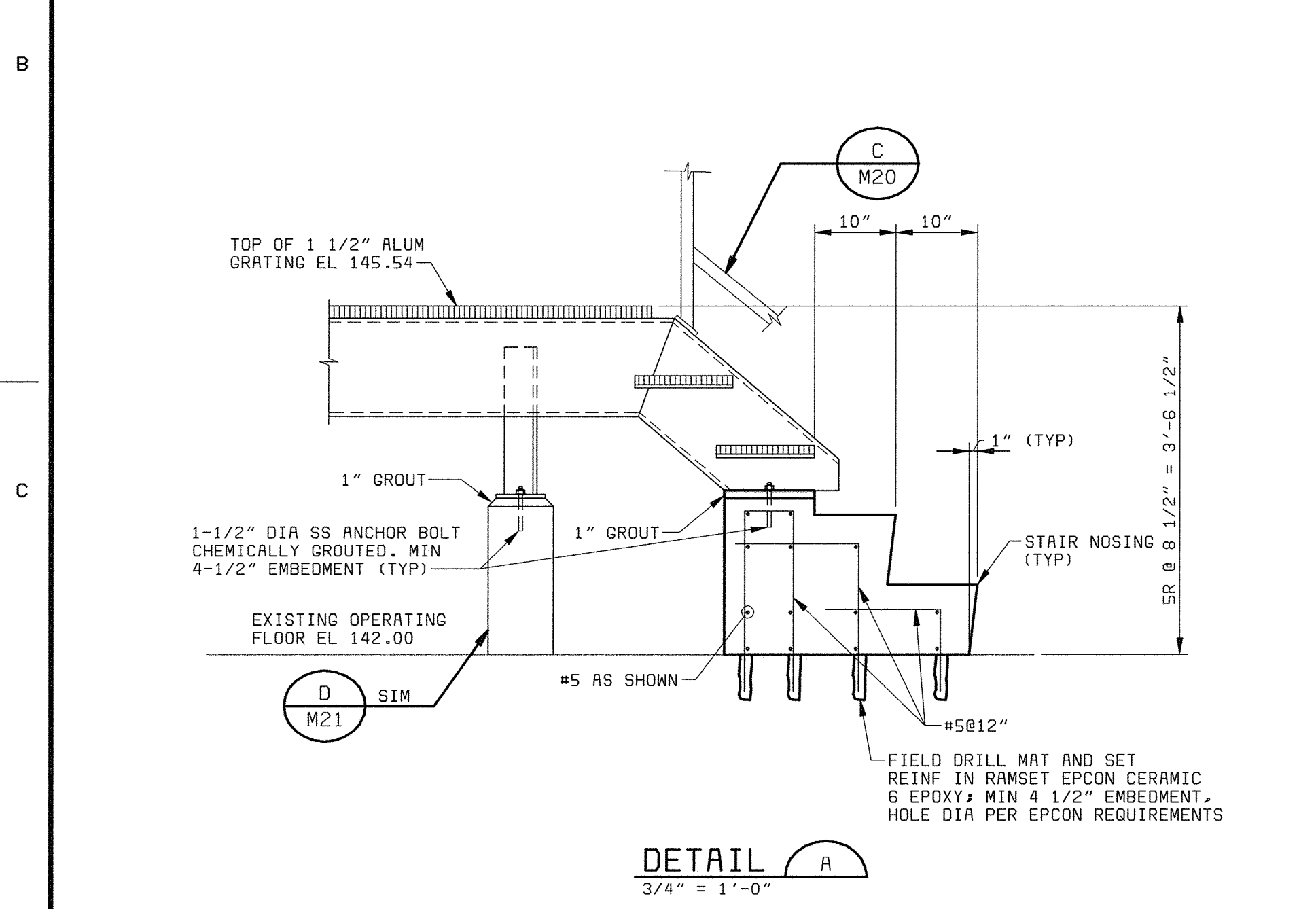
SECTION 2
1/4" = 1'-0"



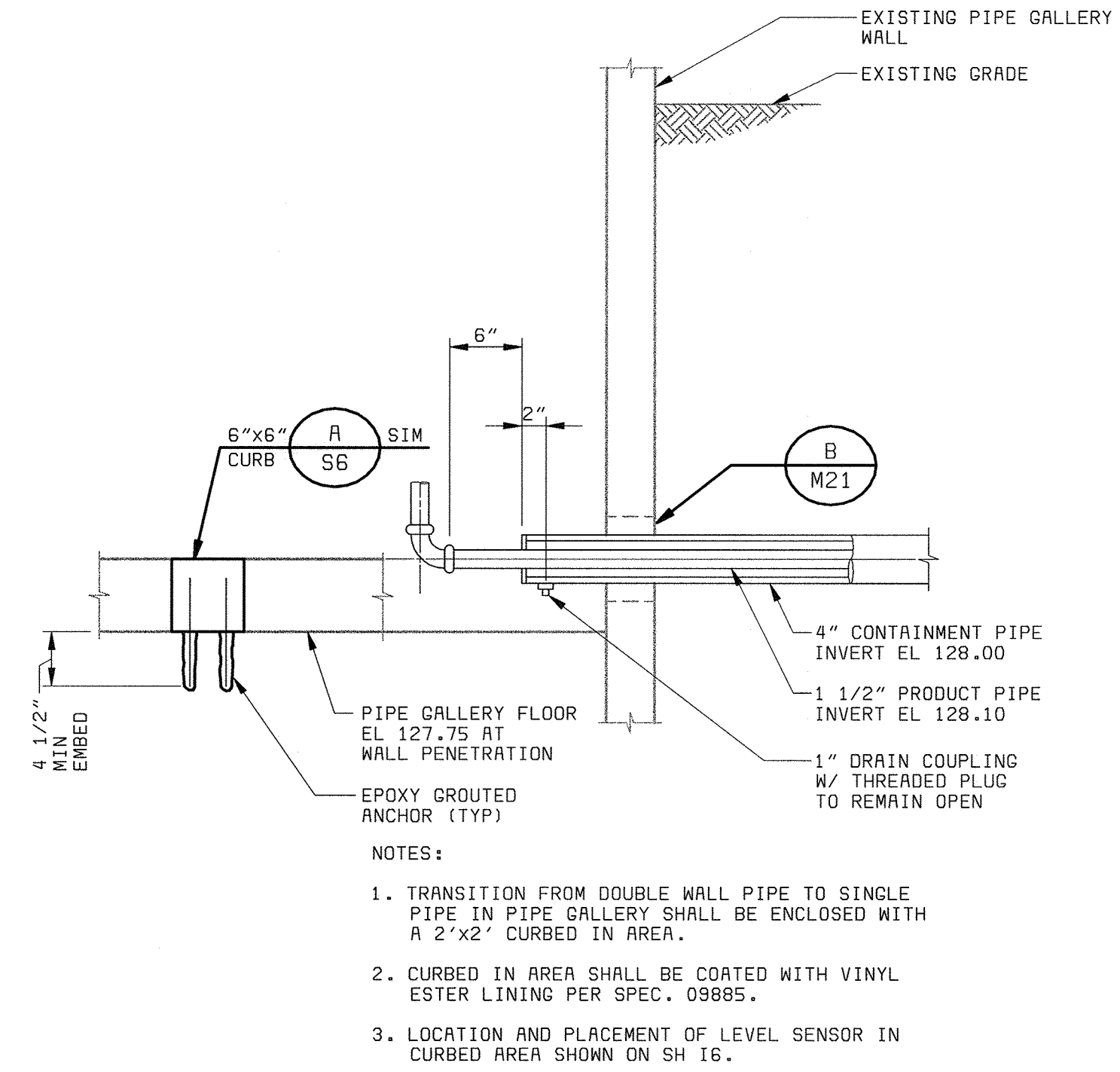
SECTION 3
1/4" = 1'-0"



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



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



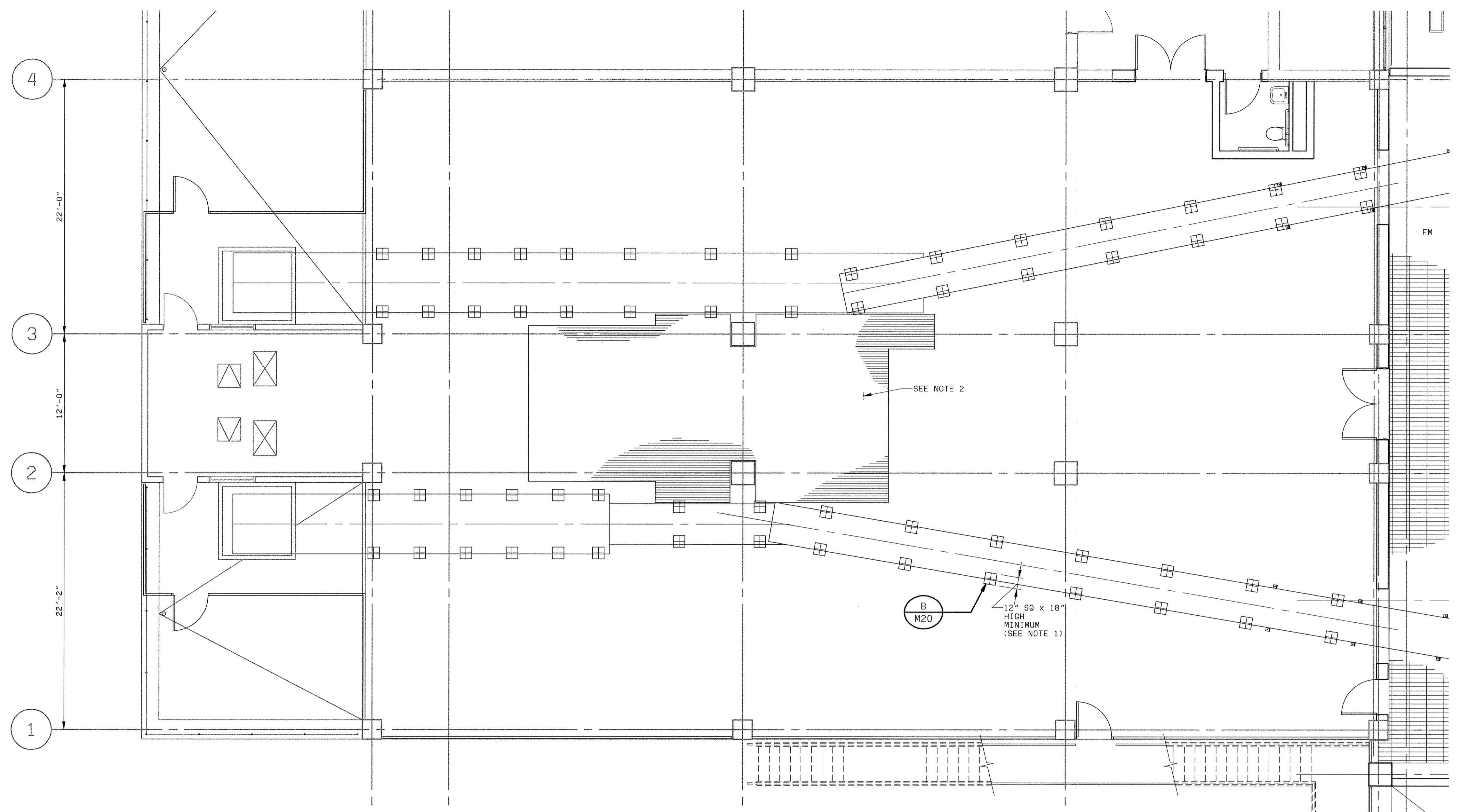
CONTAINMENT PIPE TRANSITION B
NO SCALE

- 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-0001258

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 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	

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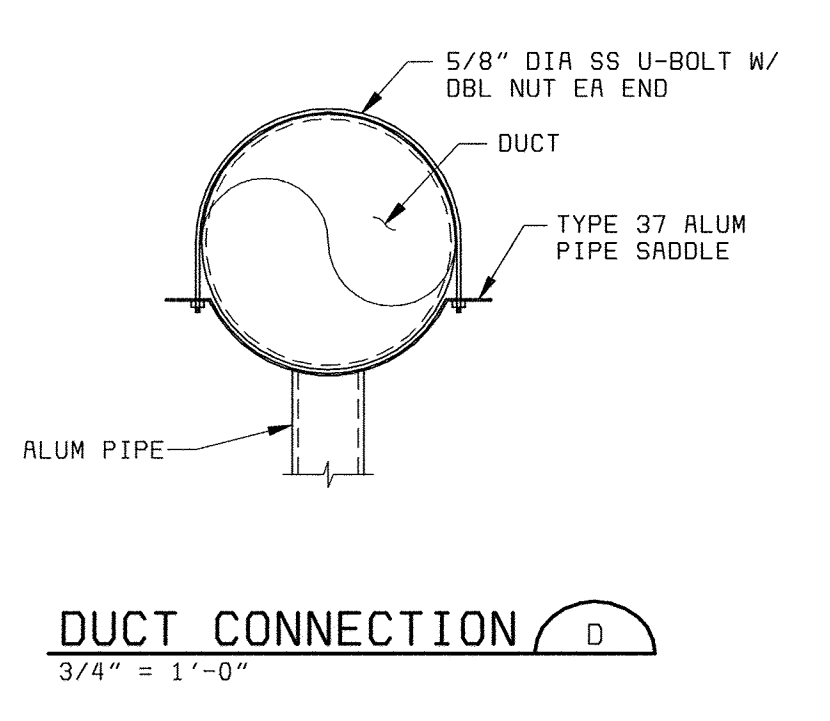
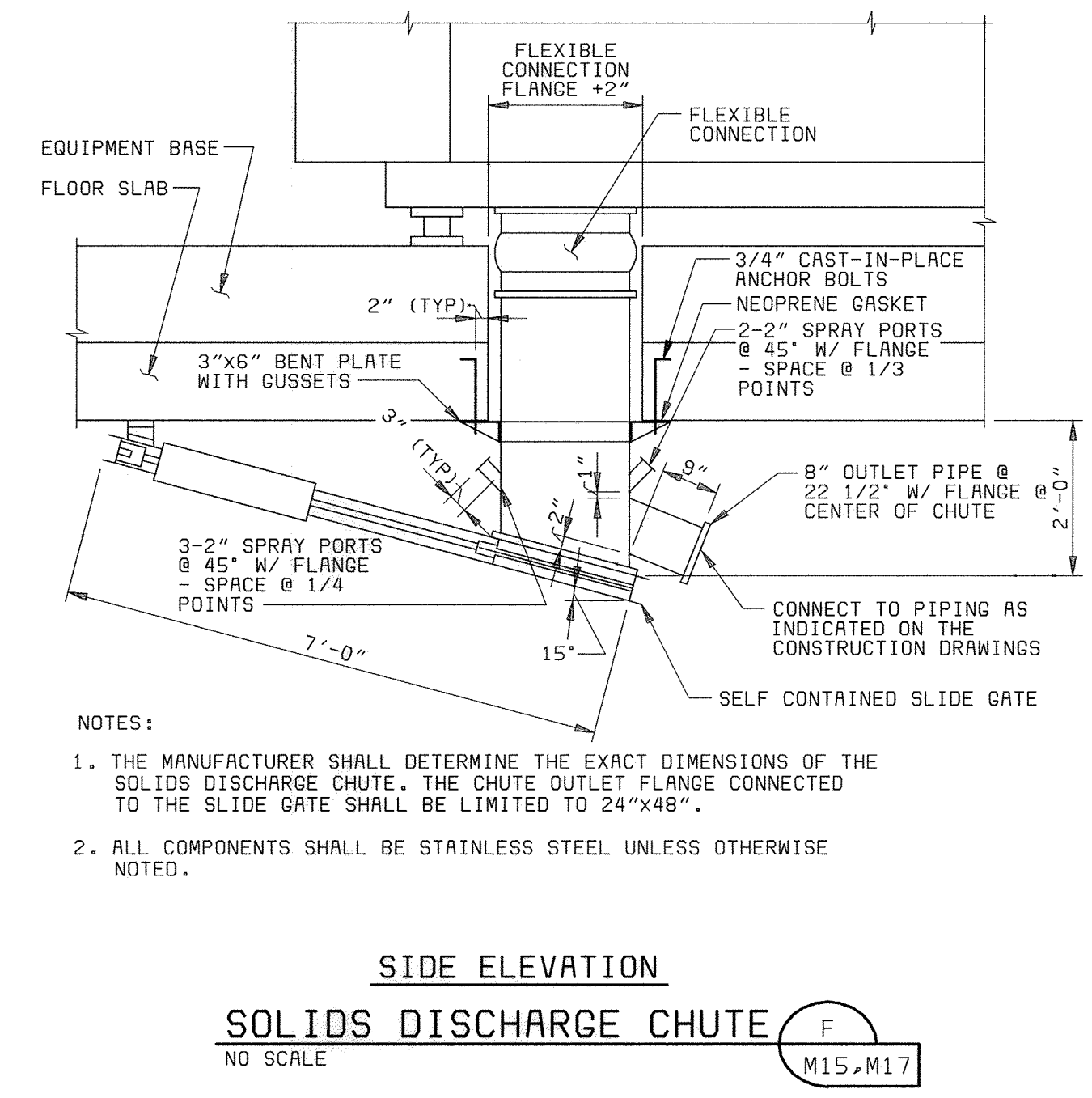
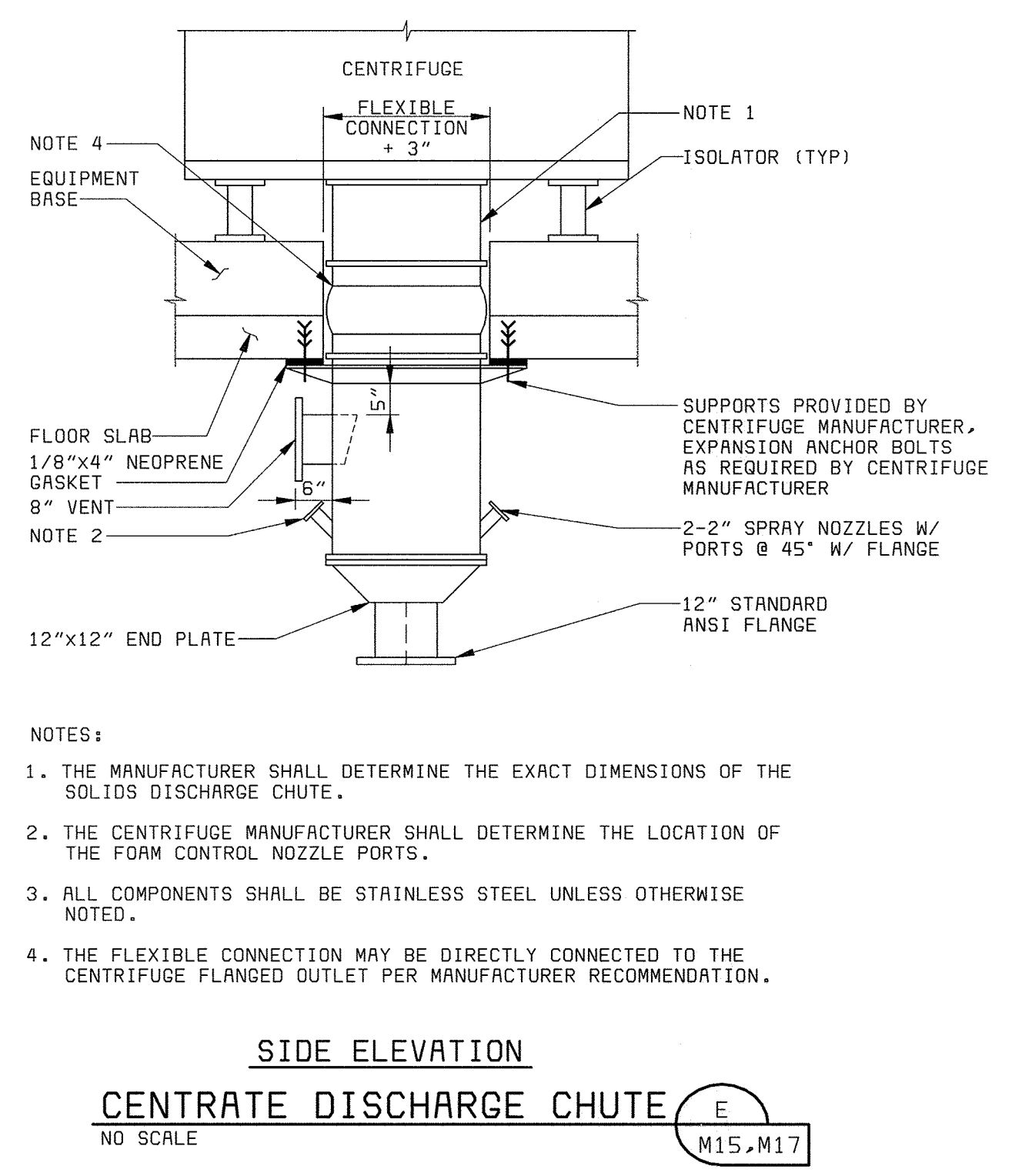
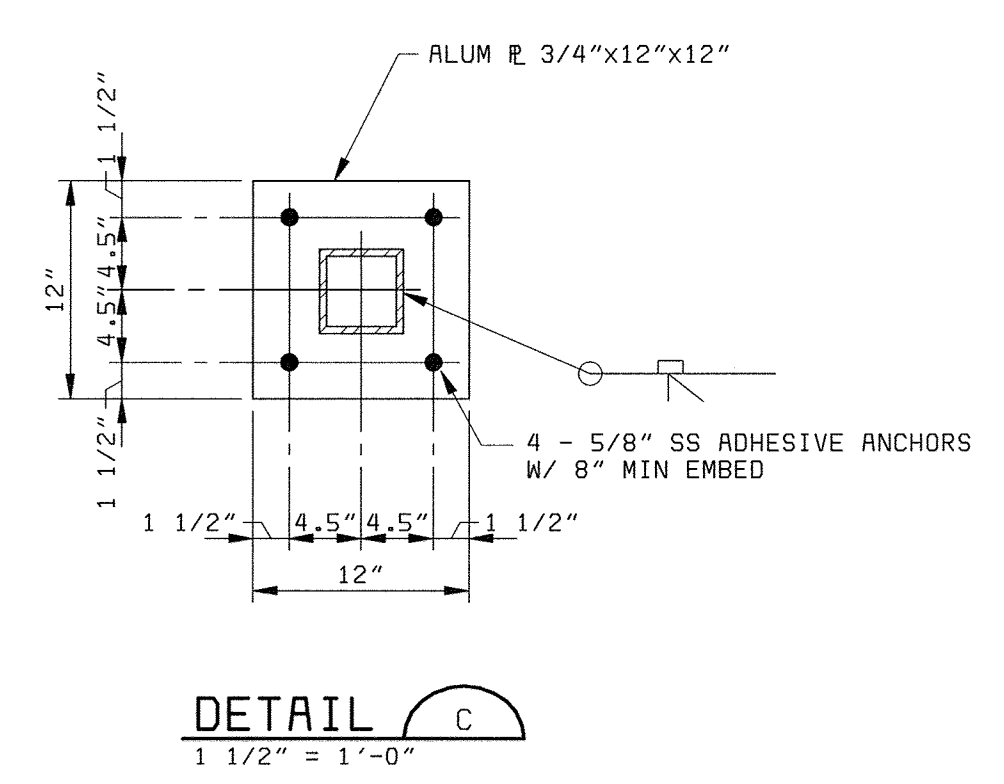
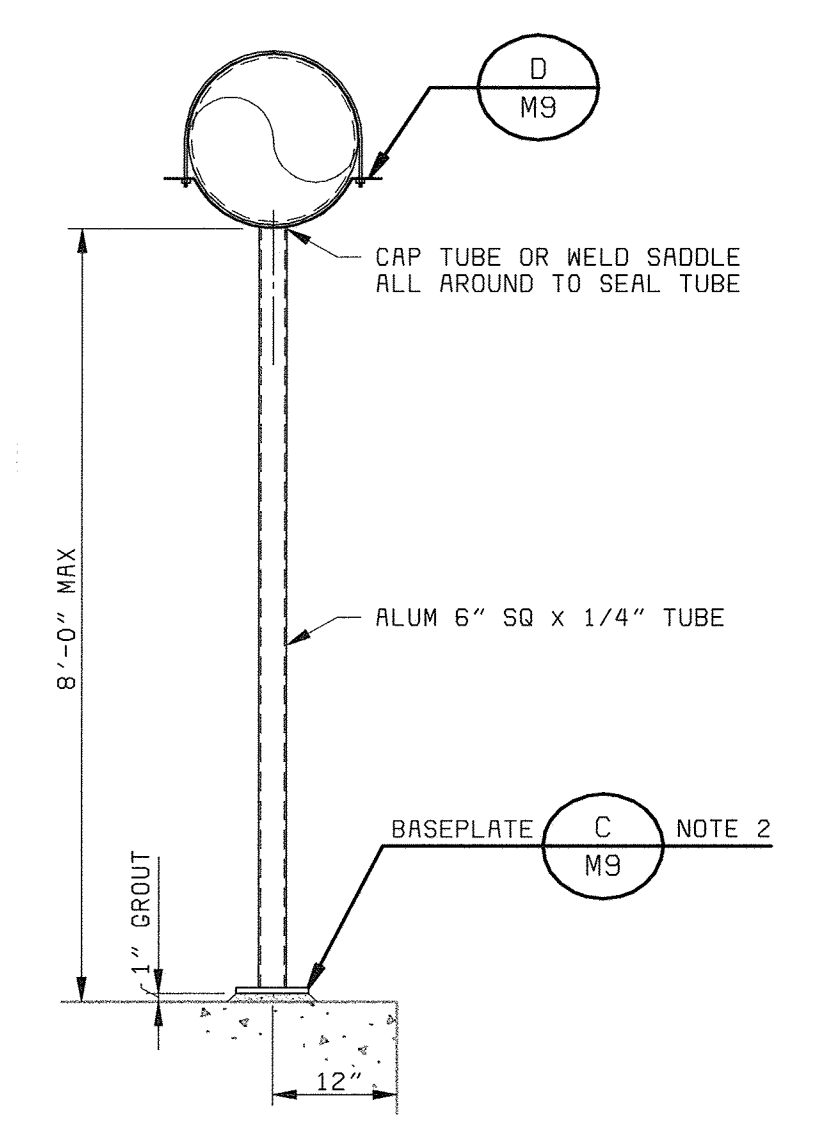
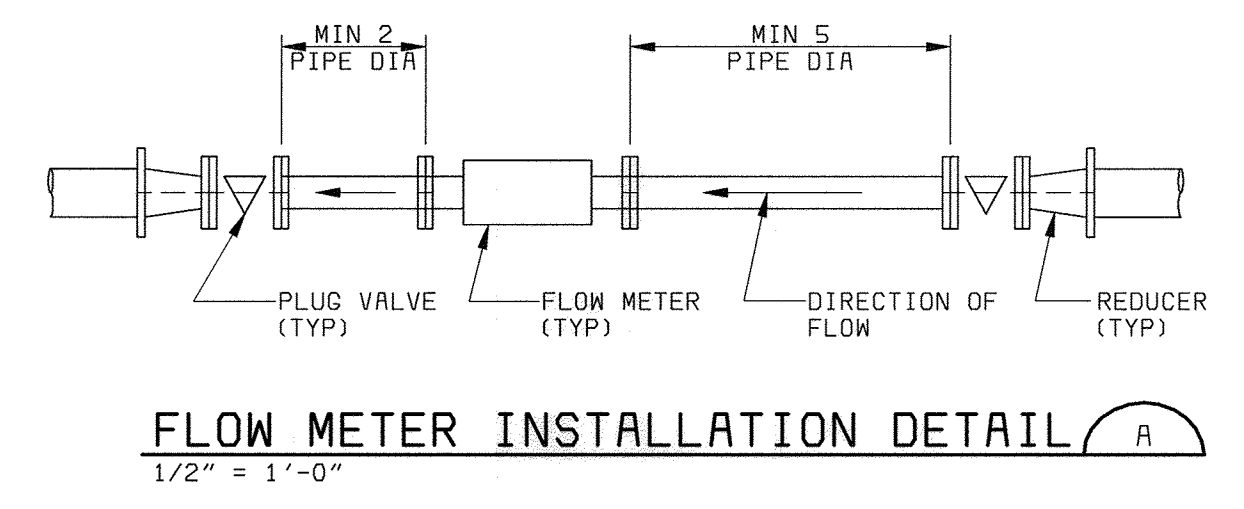
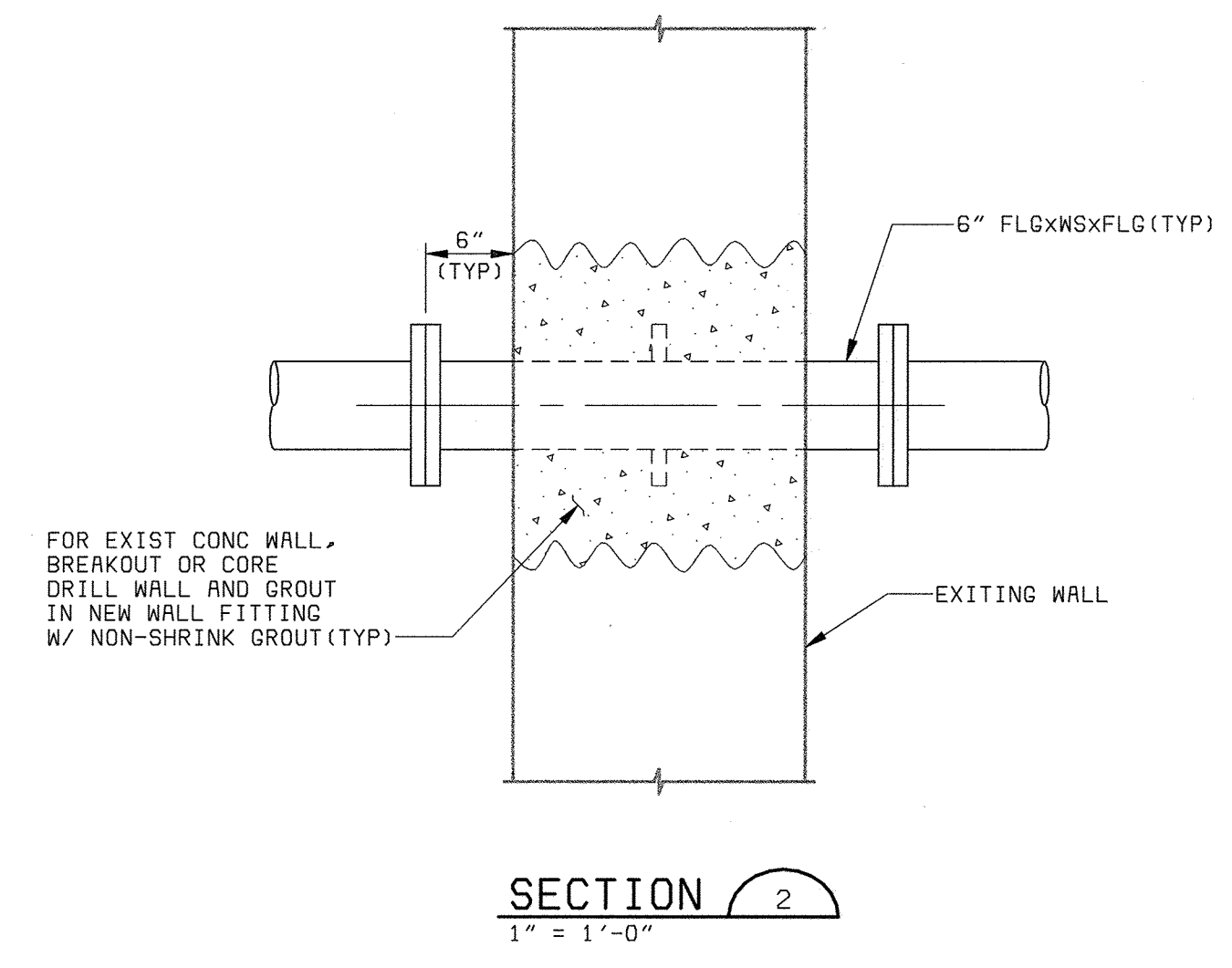
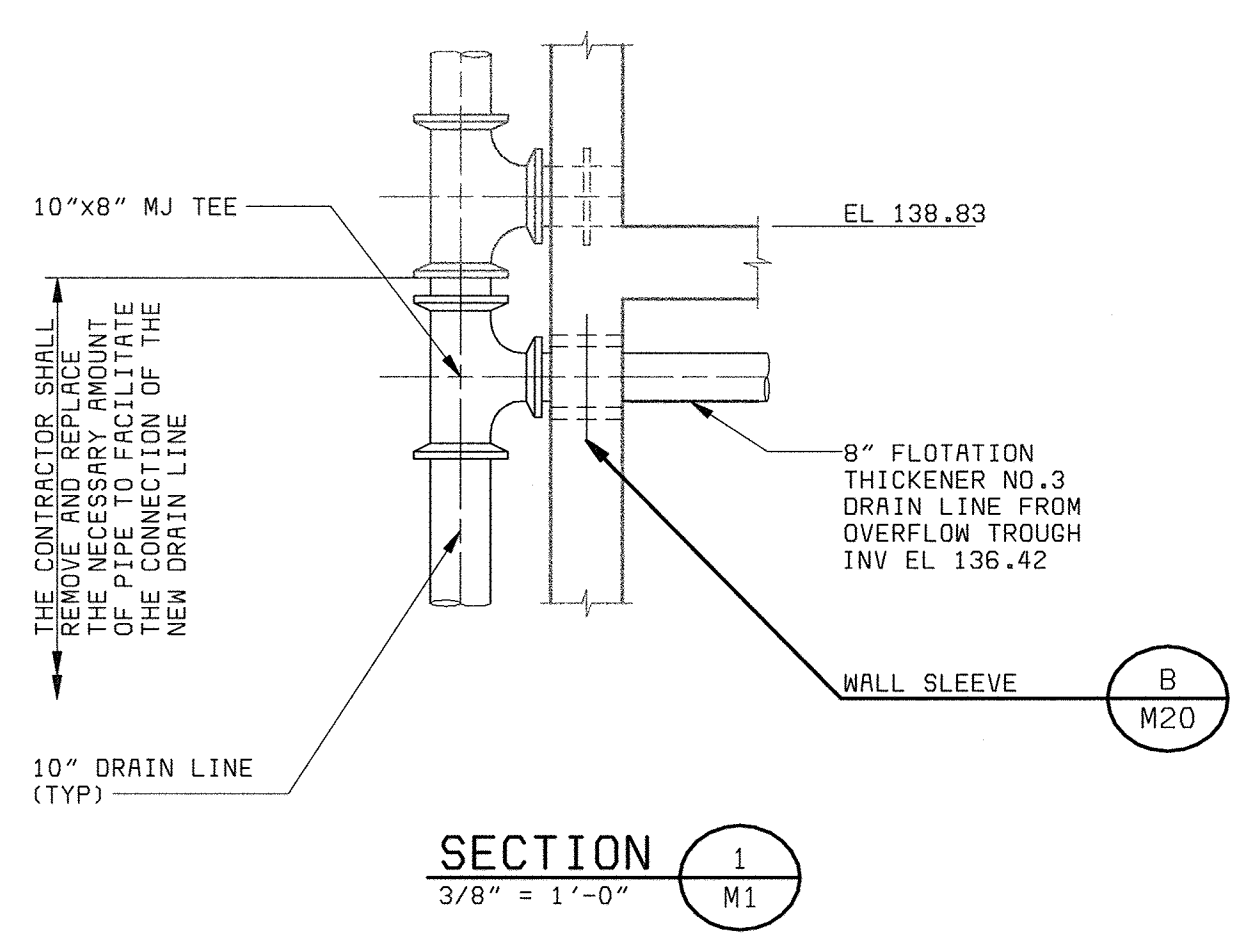
PLAN AT EL 156.00
3/16" = 1'-0"

- 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									M7
			DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR					
					REVISIONS AND RECORD OF ISSUE							



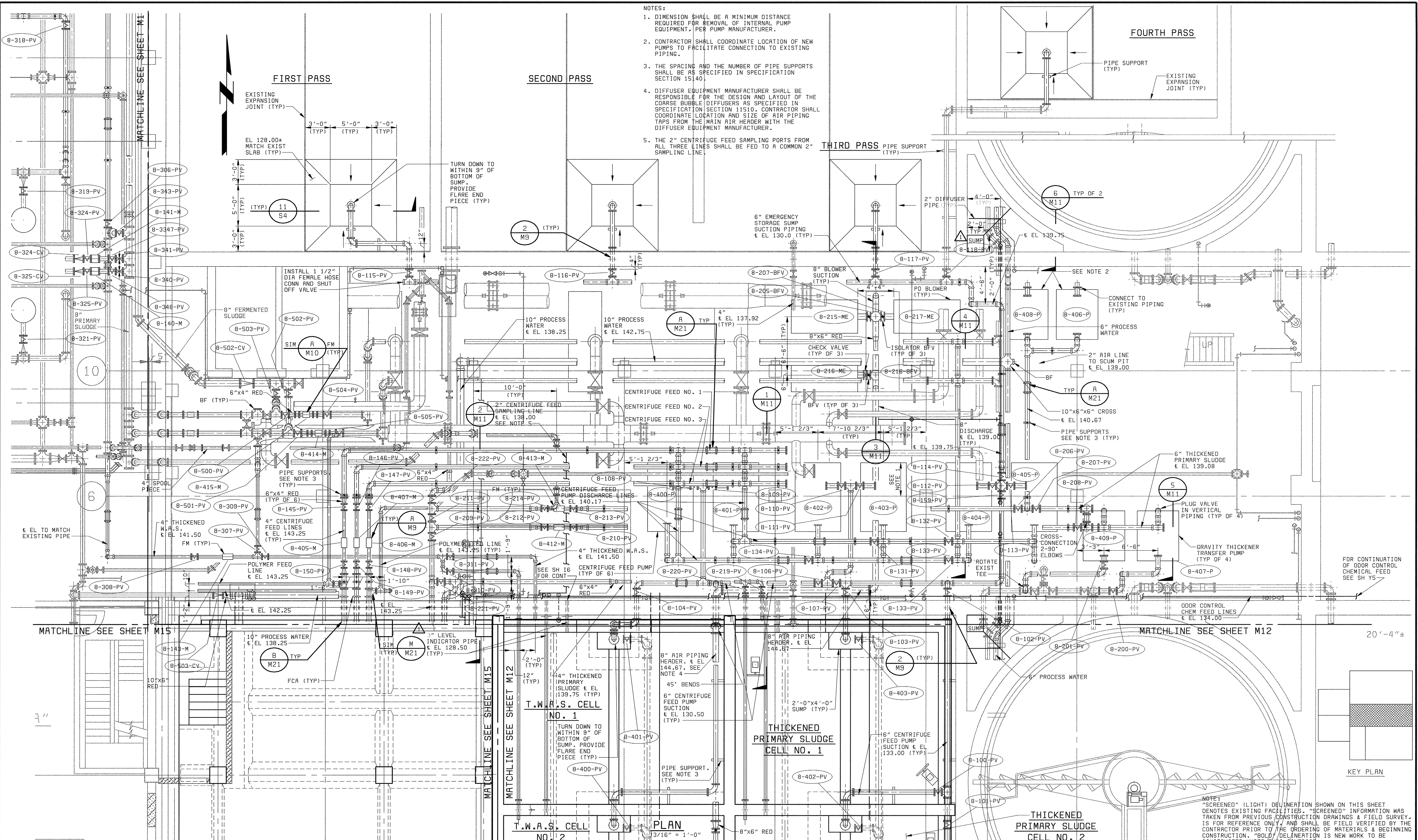
- NOTES:
1. THE MANUFACTURER SHALL DETERMINE THE EXACT DIMENSIONS OF THE SOLIDS DISCHARGE CHUTE.
 2. THE CENTRIFUGE MANUFACTURER SHALL DETERMINE THE LOCATION OF THE FLOW CONTROL NOZZLE PORTS.
 3. ALL COMPONENTS SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
 4. THE FLEXIBLE CONNECTION MAY BE DIRECTLY CONNECTED TO THE CENTRIFUGE FLANGED OUTLET PER MANUFACTURER RECOMMENDATION.

- NOTES:
1. THE MANUFACTURER SHALL DETERMINE THE EXACT DIMENSIONS OF THE SOLIDS DISCHARGE CHUTE. THE CHUTE OUTLET FLANGE CONNECTED TO THE SLIDE GATE SHALL BE LIMITED TO 24"x48".
 2. ALL COMPONENTS SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED.

58472-401-DAF-C-00000378

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 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
			DRN: BOB					SHEET 53 OF 150 M9
			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		

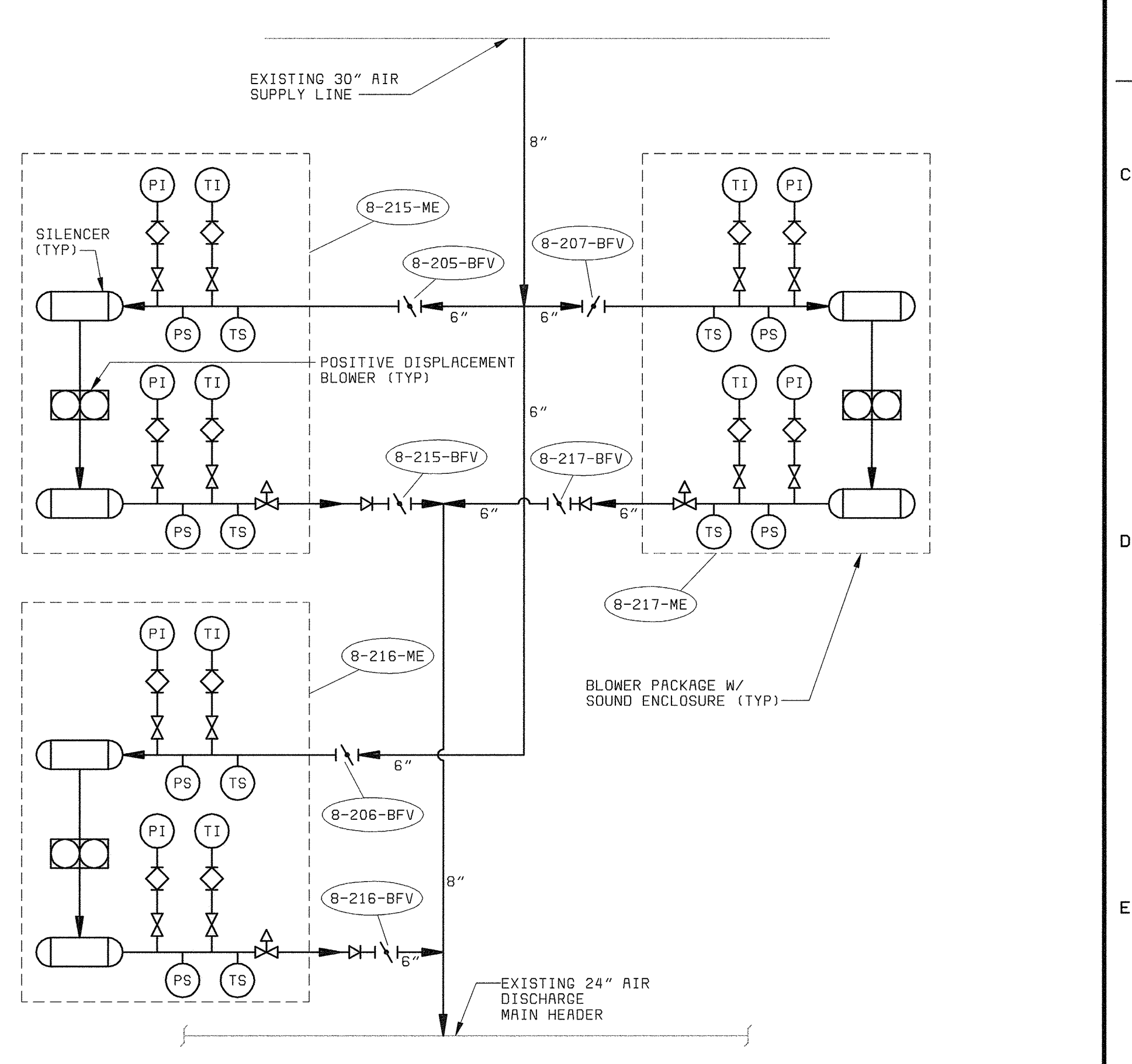
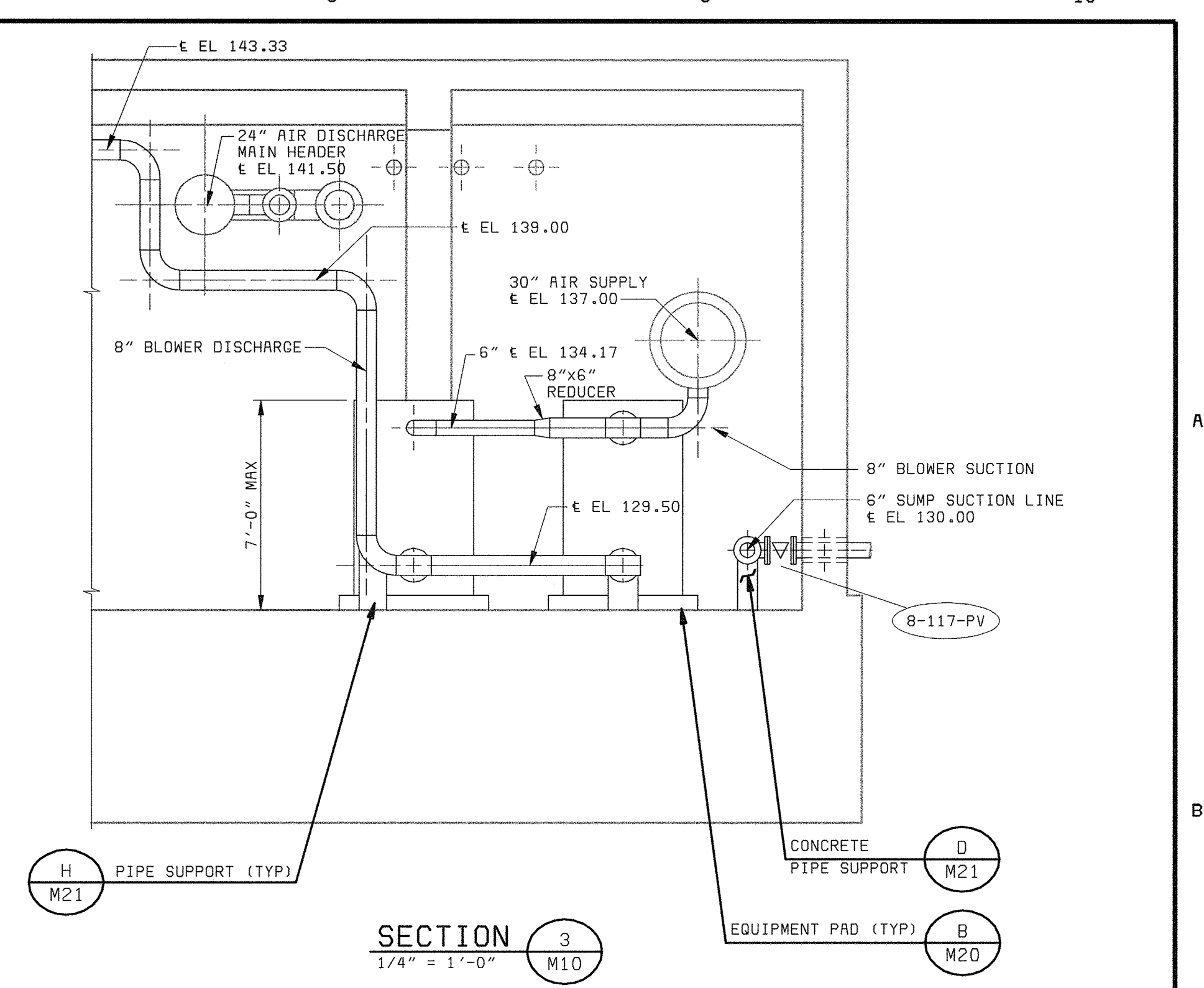
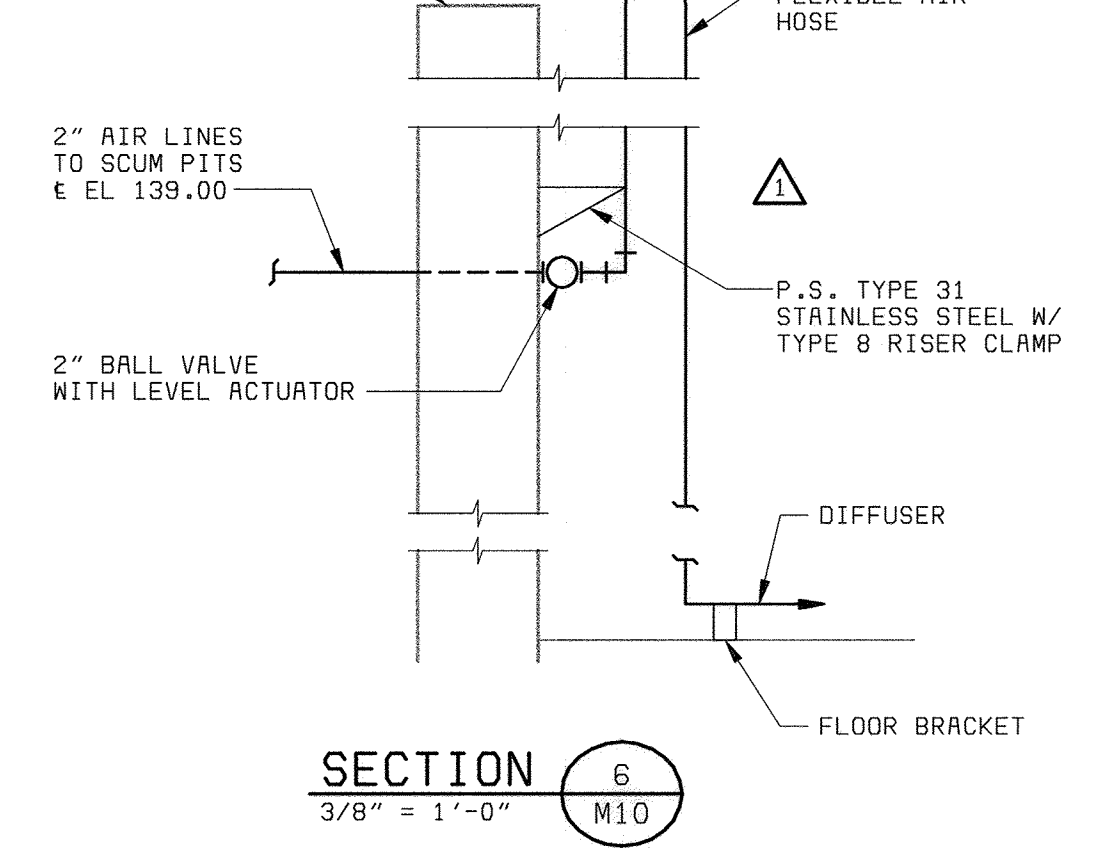
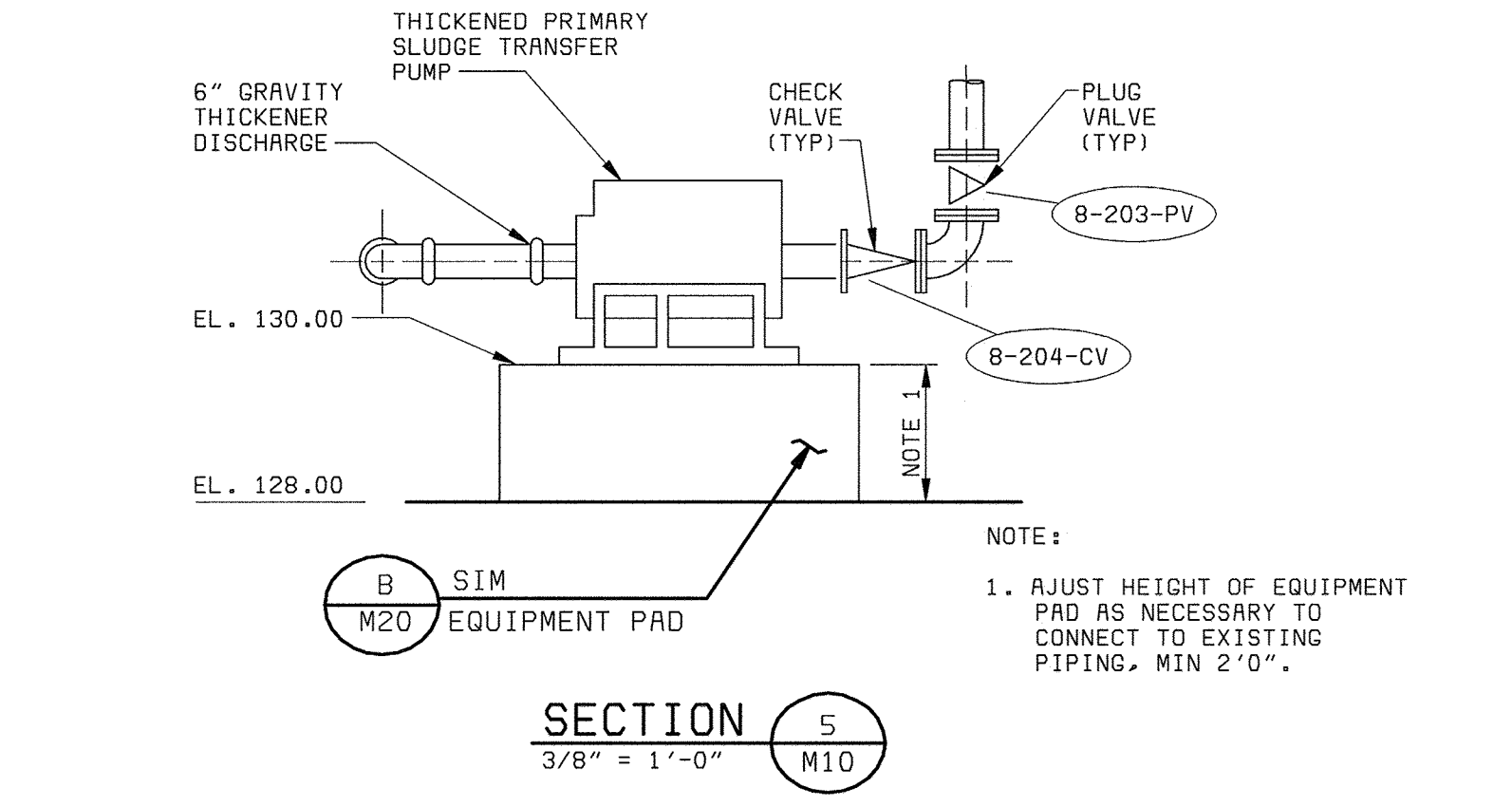
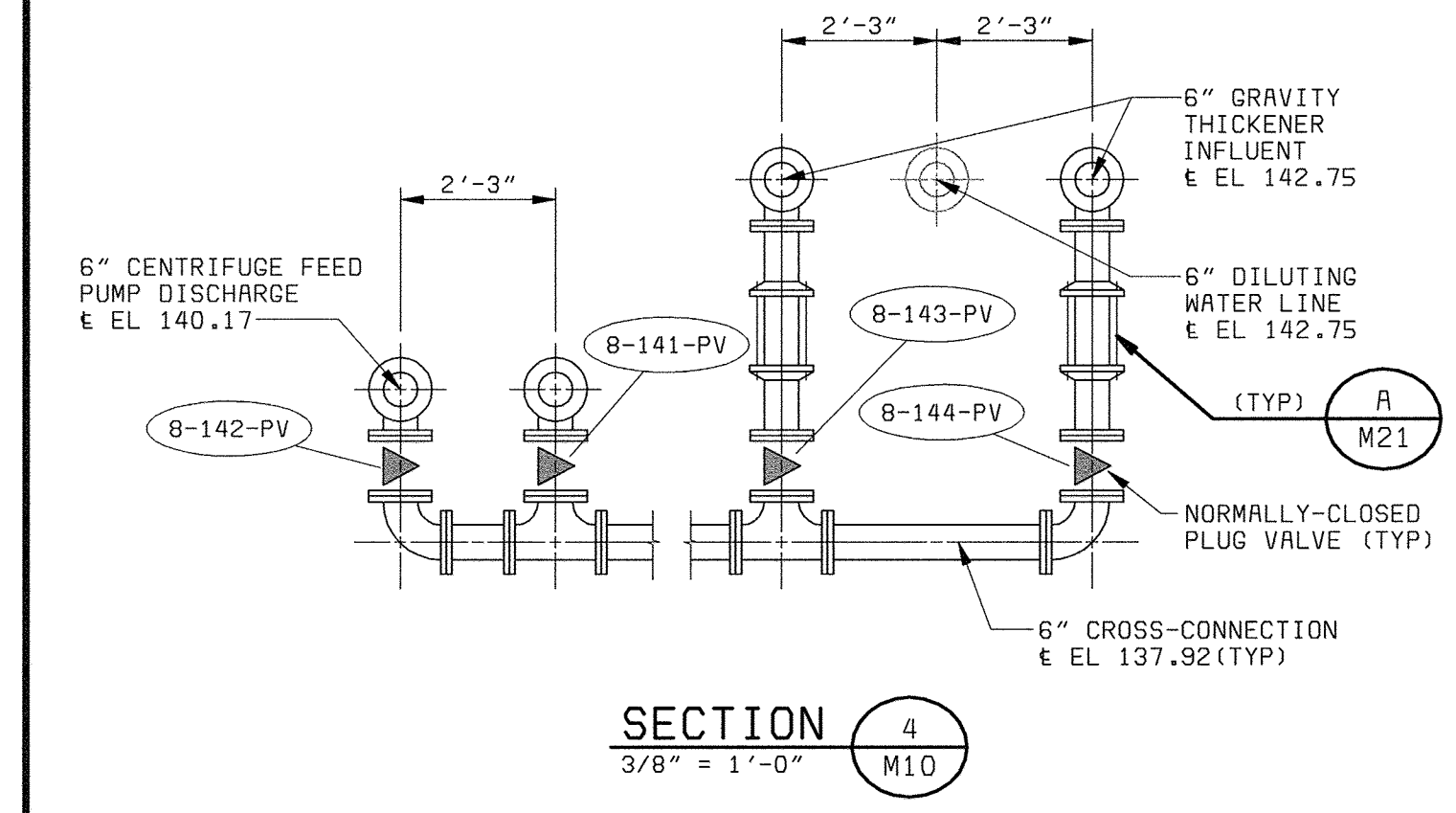
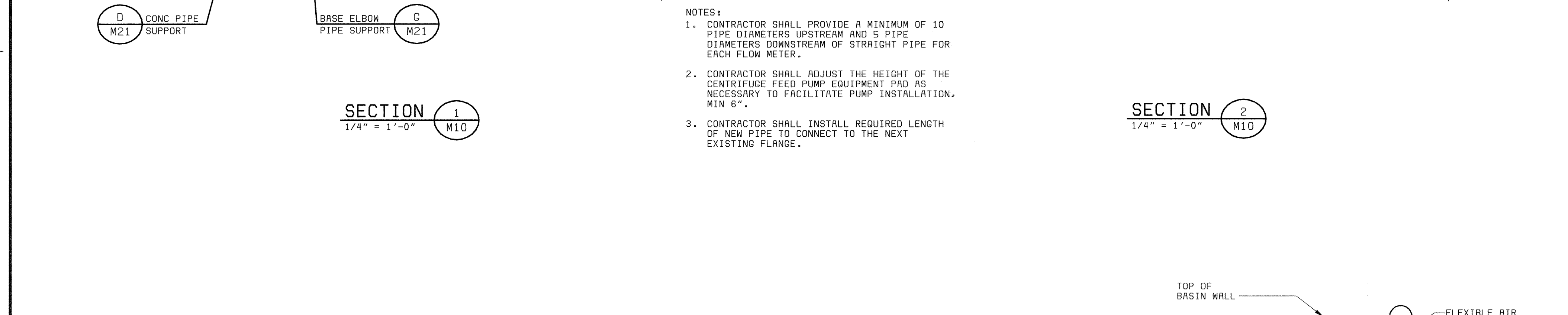
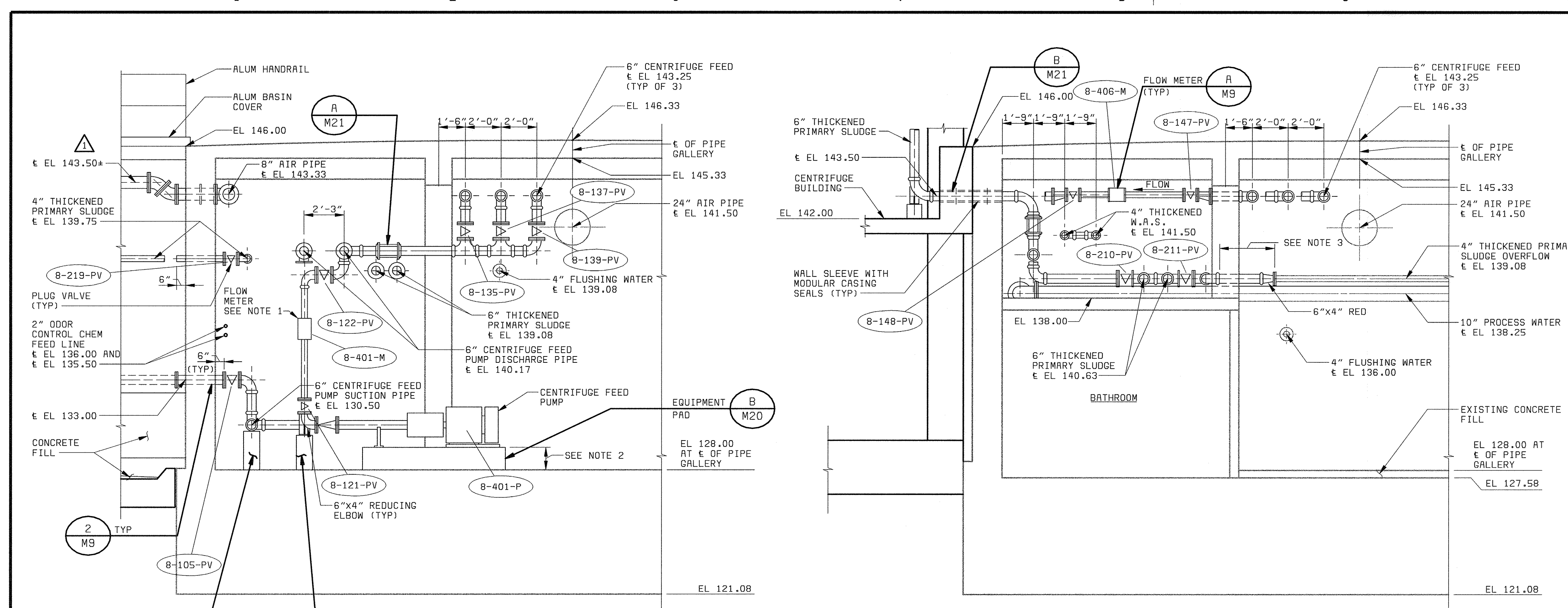
- NOTES:
1. DIMENSION SHALL BE A MINIMUM DISTANCE REQUIRED FOR REMOVAL OF INTERNAL PUMP EQUIPMENT, PER PUMP MANUFACTURER.
 2. CONTRACTOR SHALL COORDINATE LOCATION OF NEW PUMPS TO FACILITATE CONNECTION TO EXISTING PIPING.
 3. THE SPACING AND THE NUMBER OF PIPE SUPPORTS SHALL BE AS SPECIFIED IN SPECIFICATION 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. "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-C006: R0009670
 XREF: 58472-203-S0LS-S-R0000116
 XREF: 58472-203-S0LS-S-R0000118
 XREF: 58472-401-323-P1PE

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 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
CHIEF, BUREAU OF UTILITIES DATE _____		DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP	HOWARD COUNTY, MARYLAND		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.

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

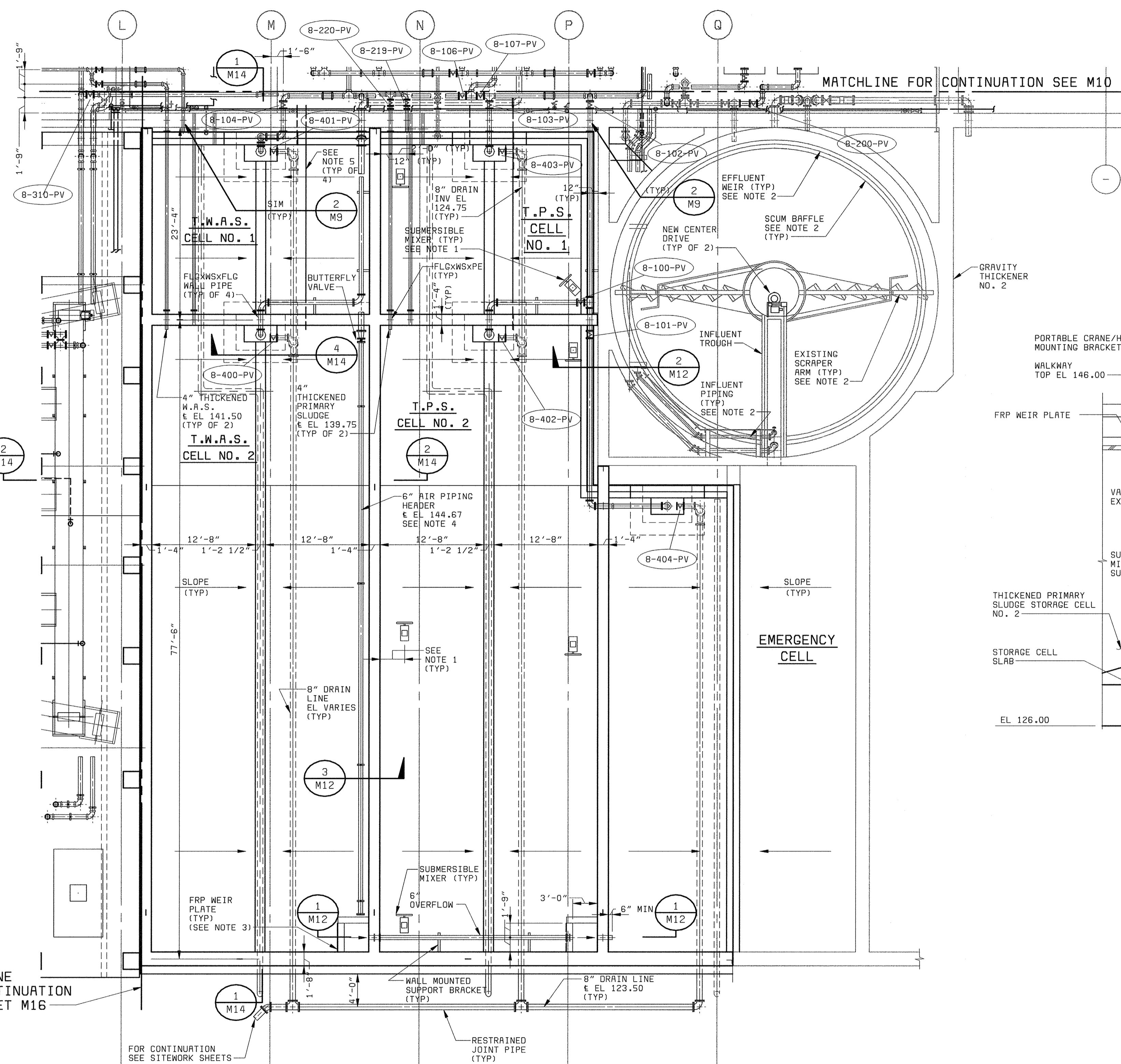
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

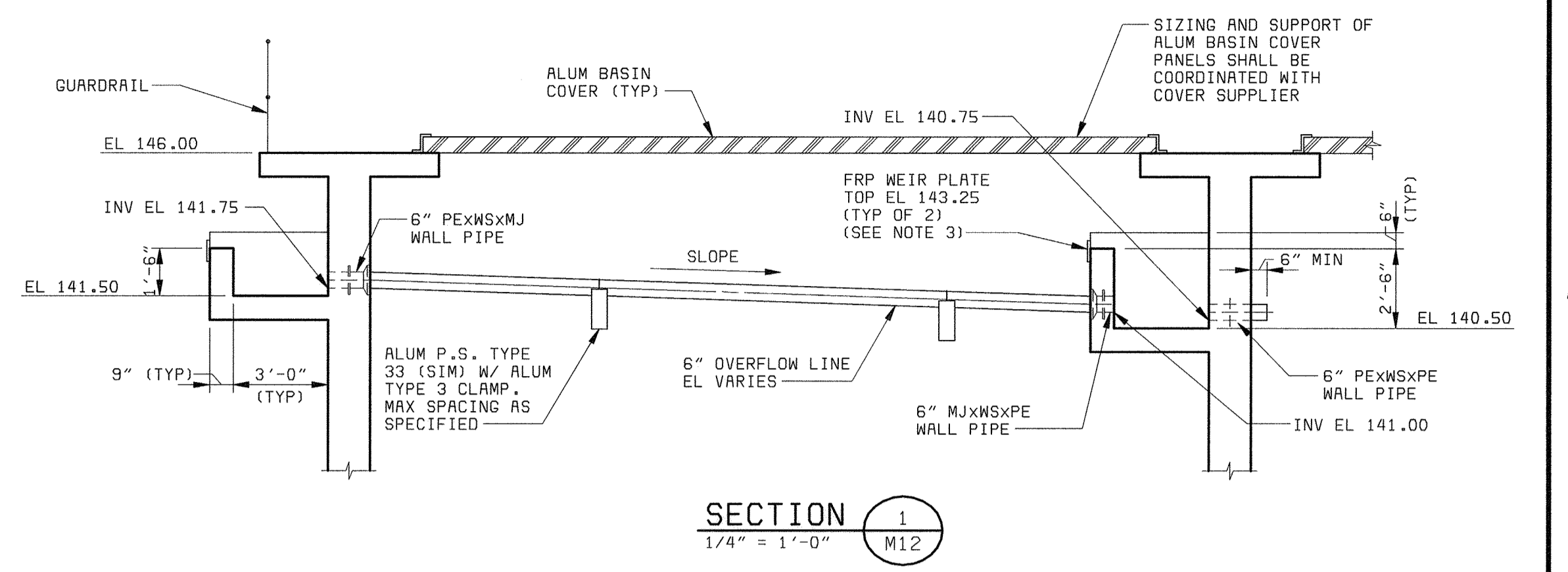
SHEET 55 OF 150

M11

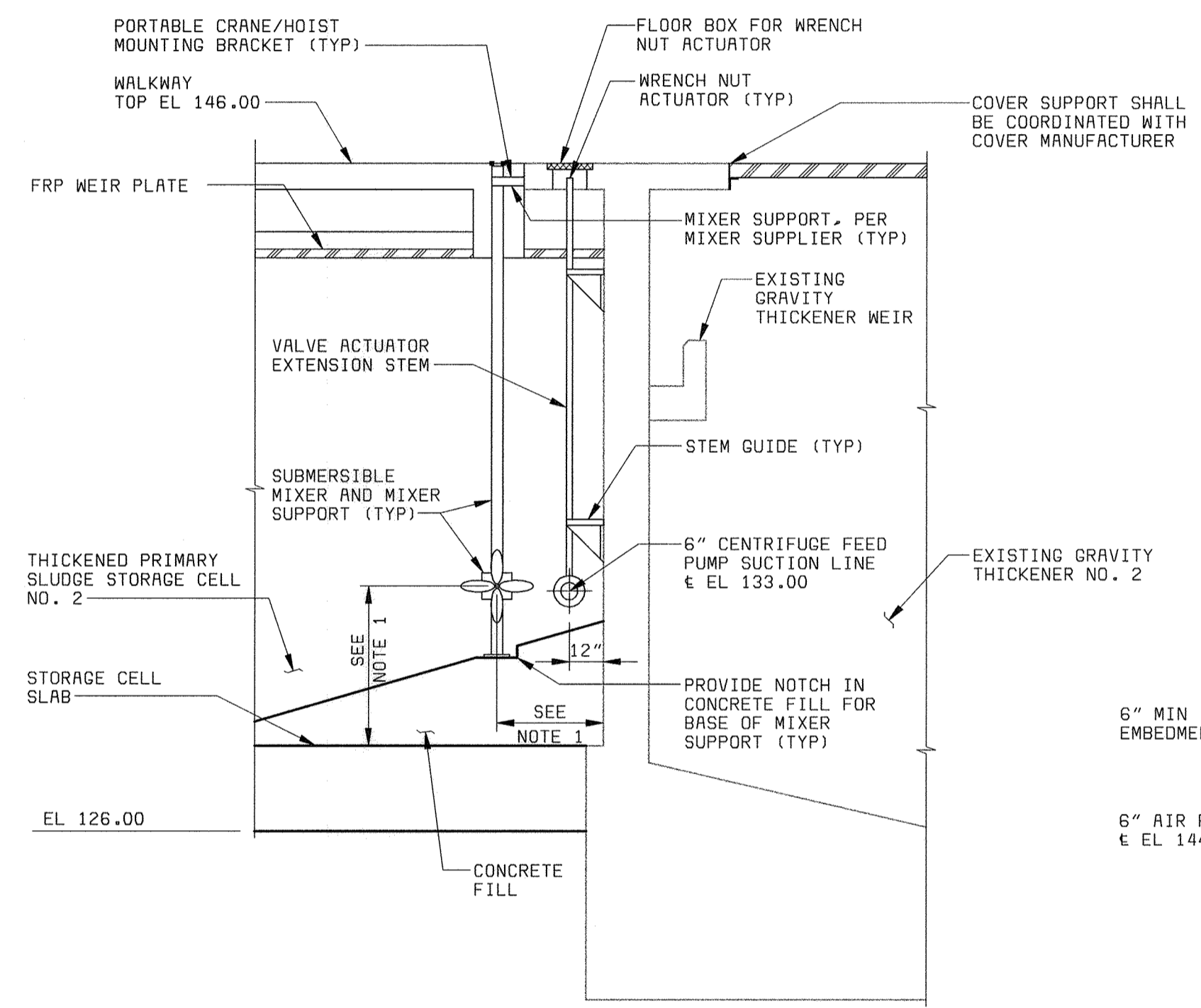
59472-401-SHT-C-0000045



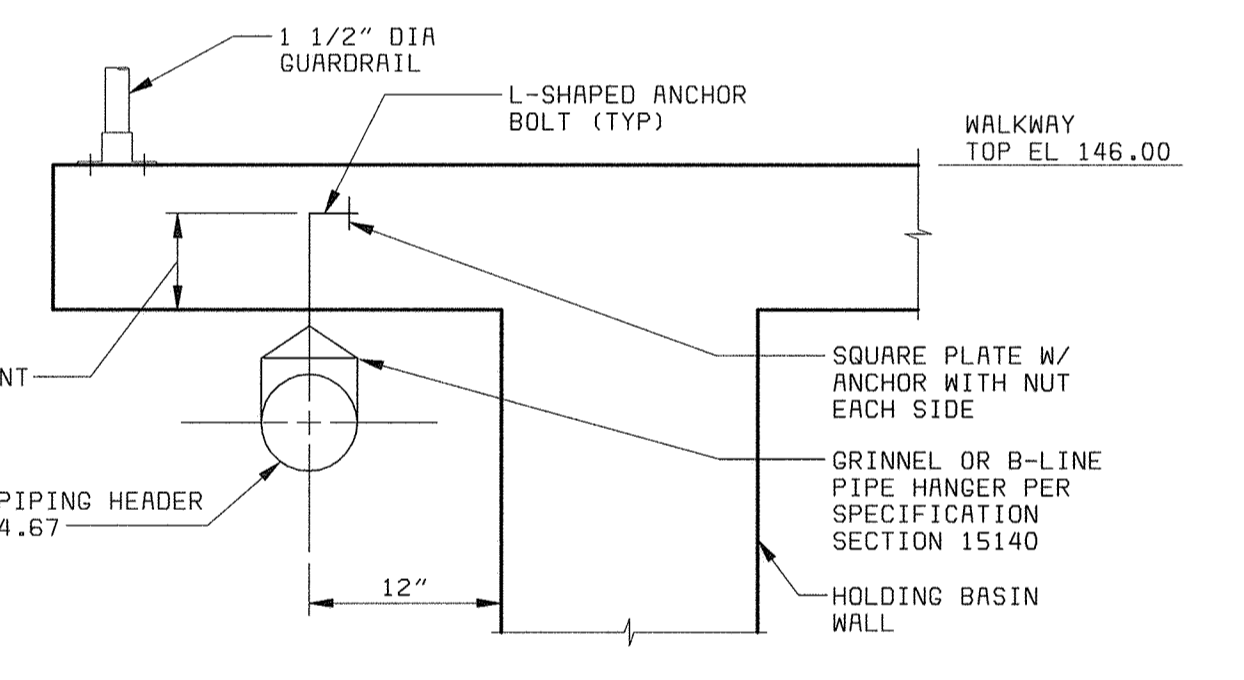
SECTIONAL PLAN
1/8" = 1'-0"



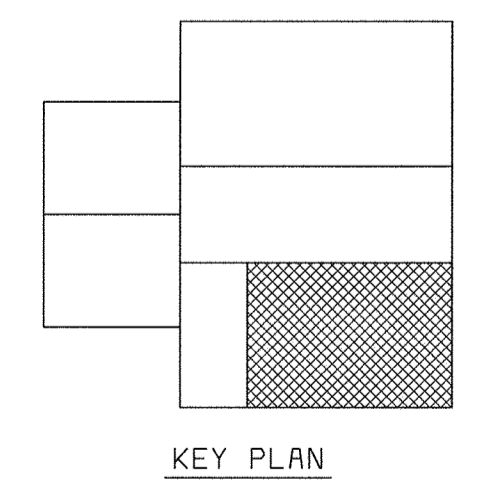
SECTION 1
1/4" = 1'-0"



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



SECTION 3
1" = 1'-0"



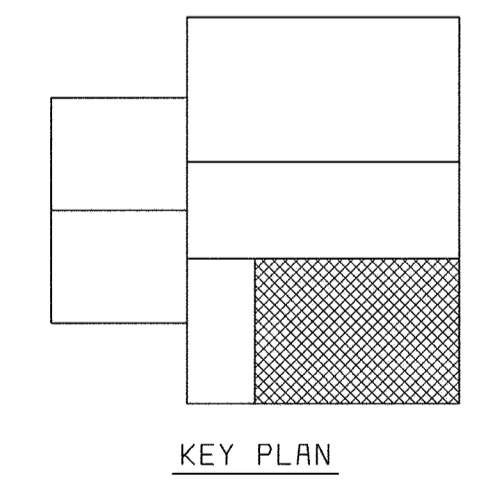
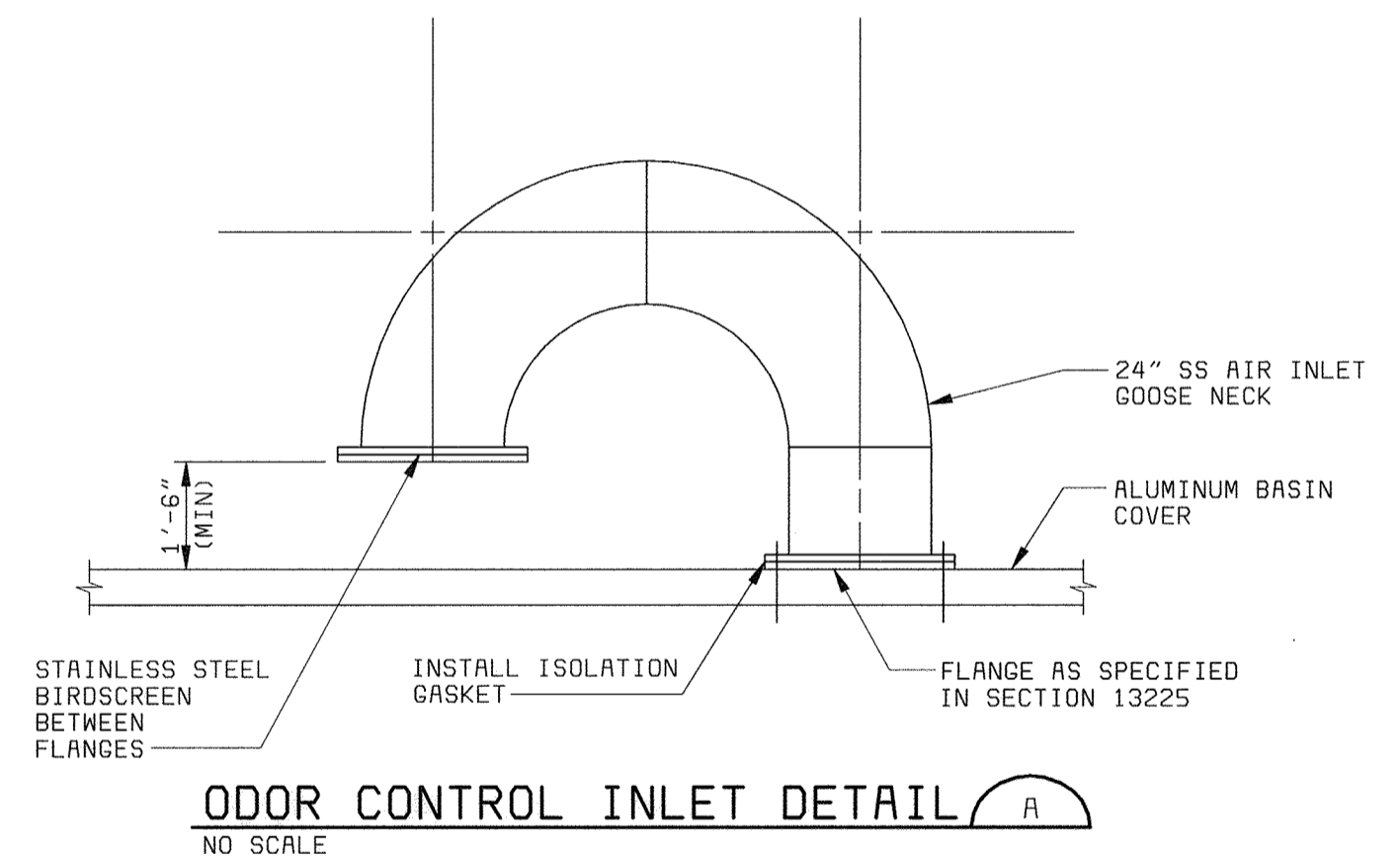
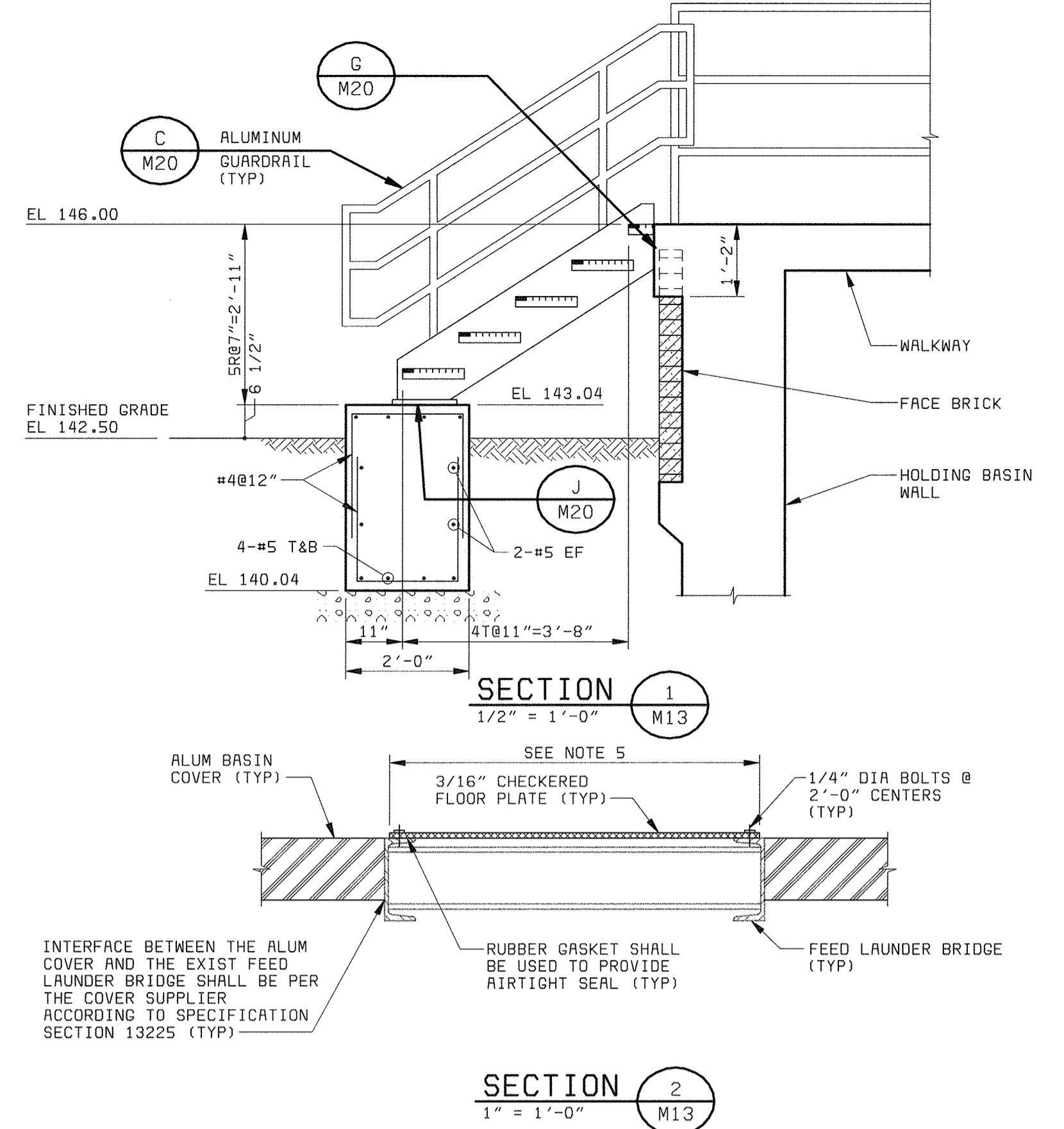
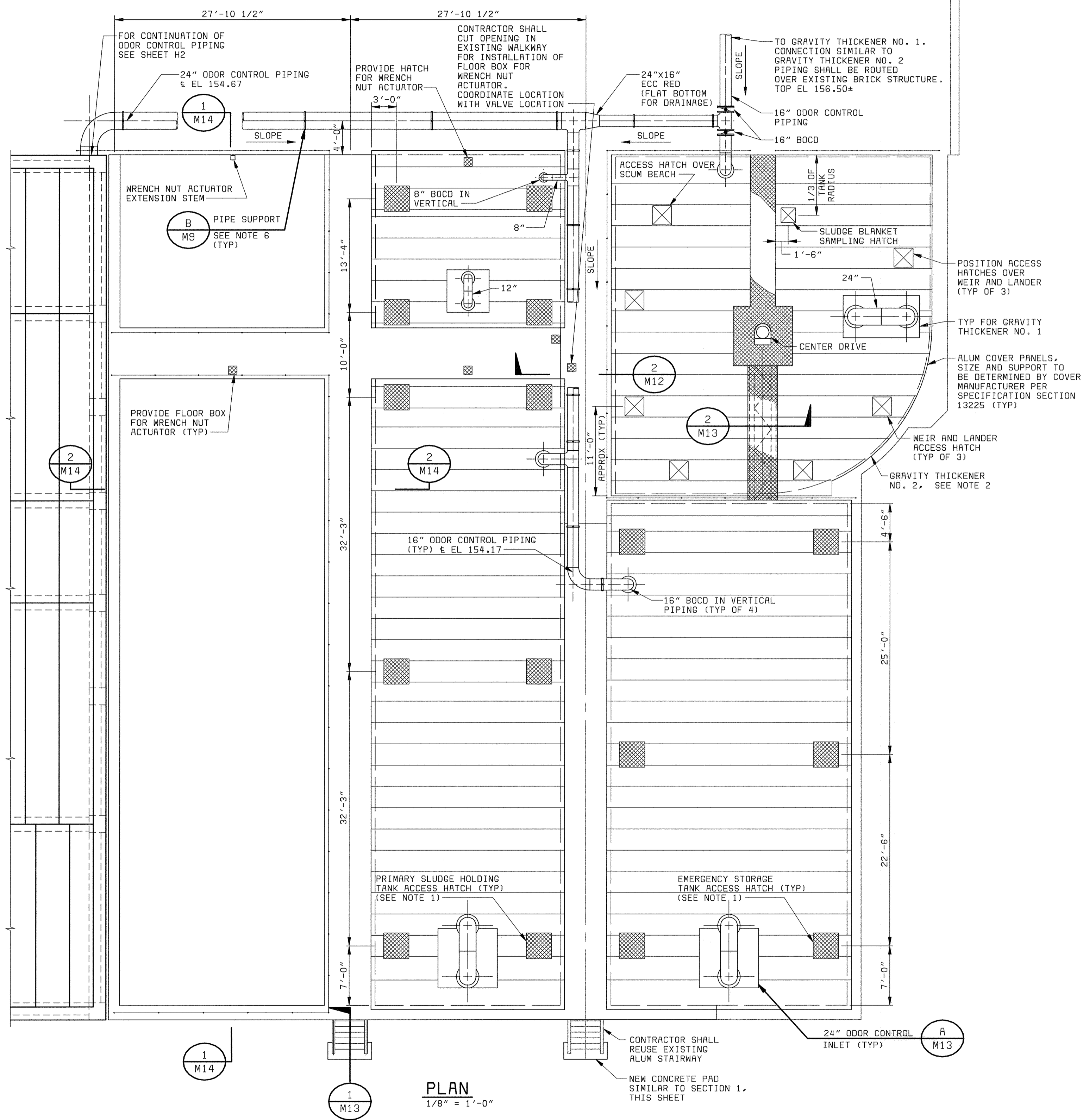
KEY PLAN

- 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 CAGE, 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. "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-C008; R00089703.DWG
XREF: 58472-203-S01-S-R0000116
58472-401-323-P-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 O MATI BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676 DATE	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								M12
			DATE: 5-30-00		07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR			



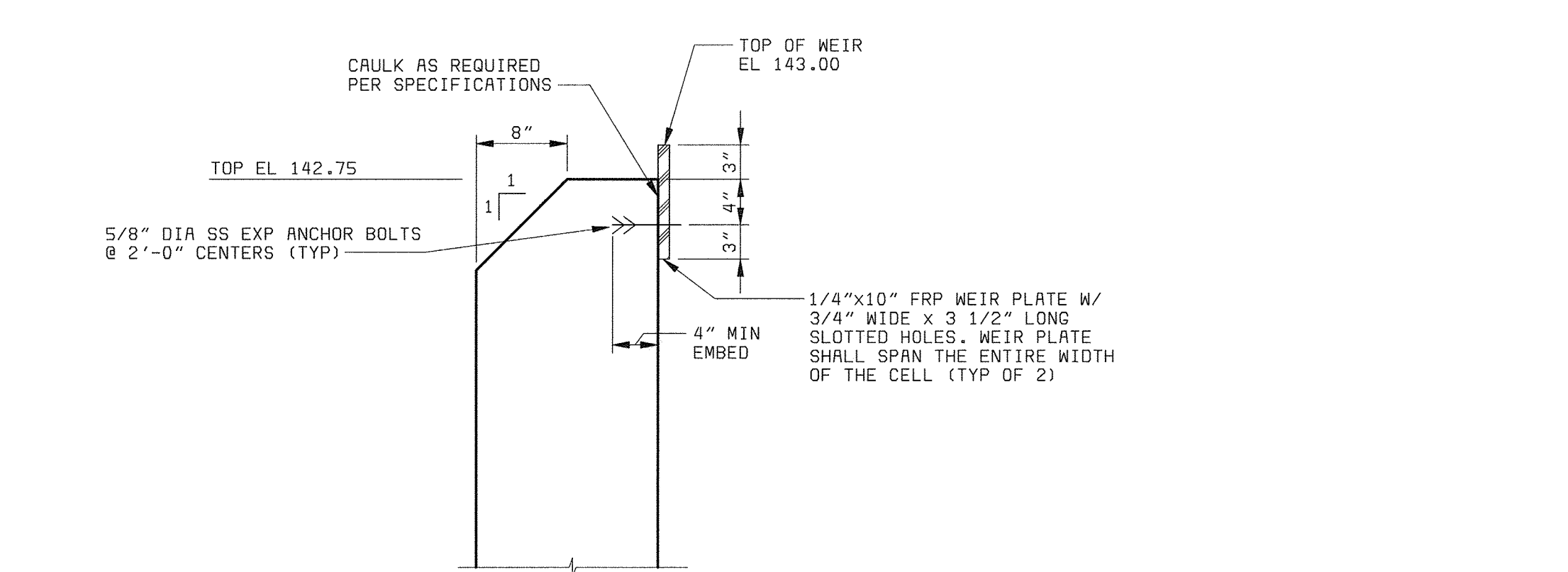
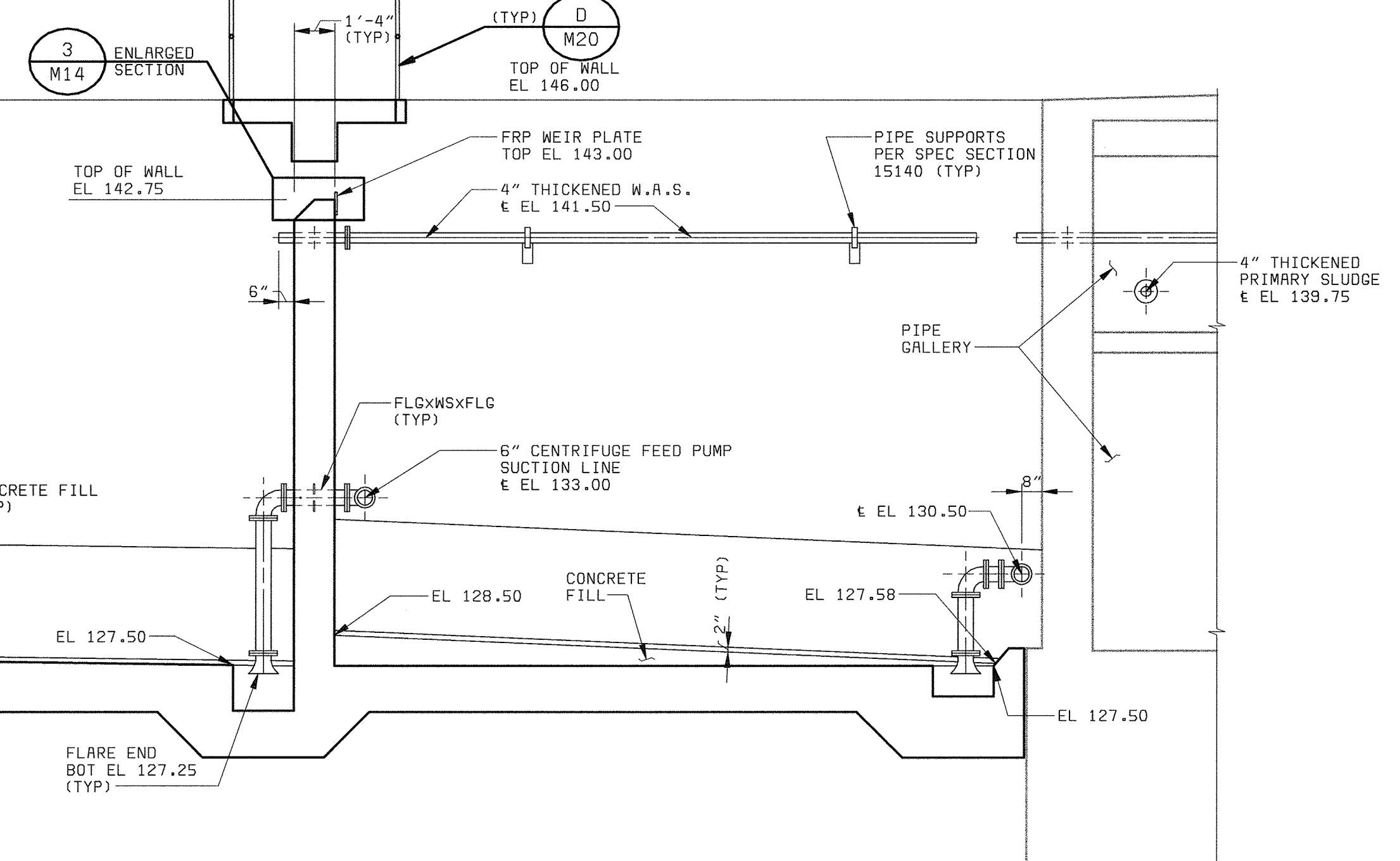
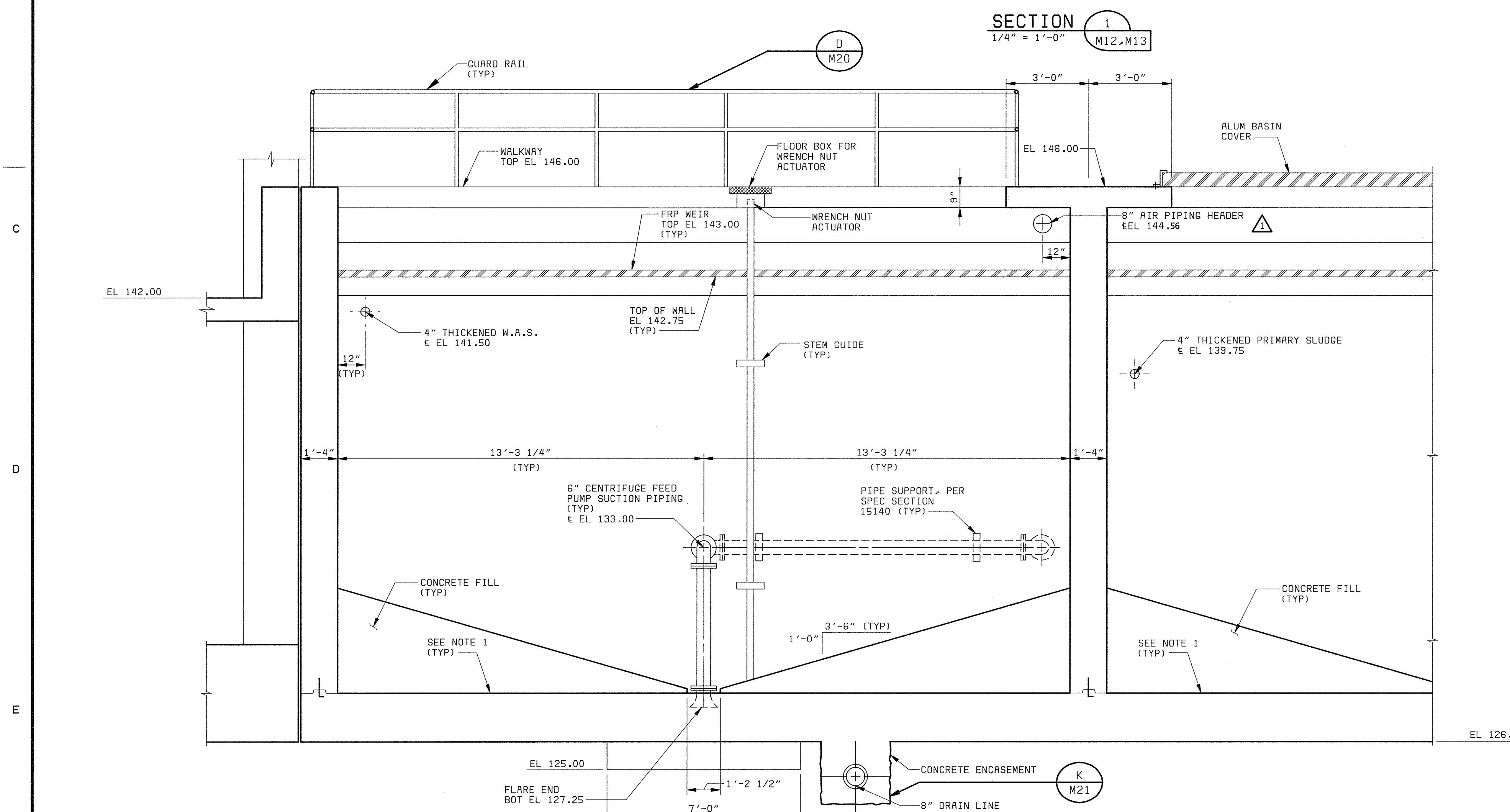
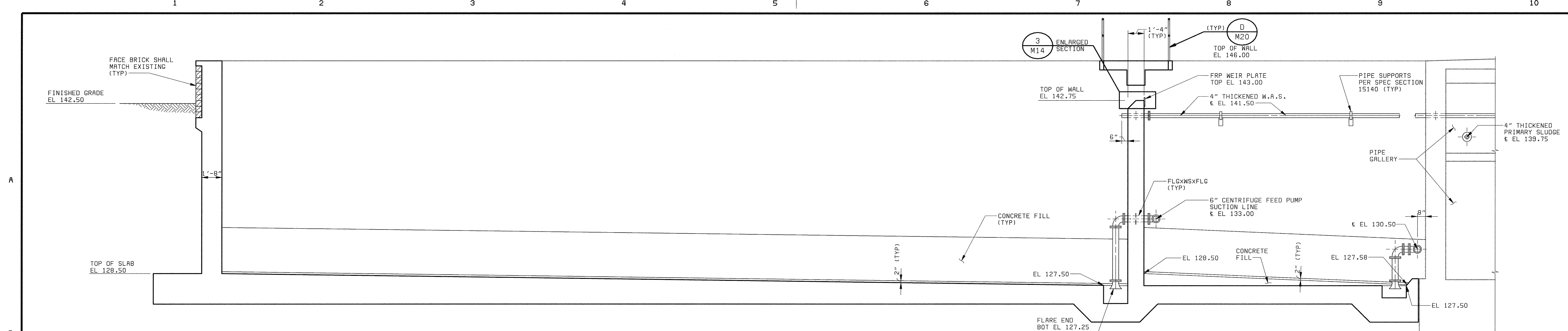
NOTE:
"SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION.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

- 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"

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			M13

58472-401-PPSPS-C-R0000019 - R0000019.DWG
 XREF: 58472-203-SOLS-S-R0000202
 058472_2
 F058472A

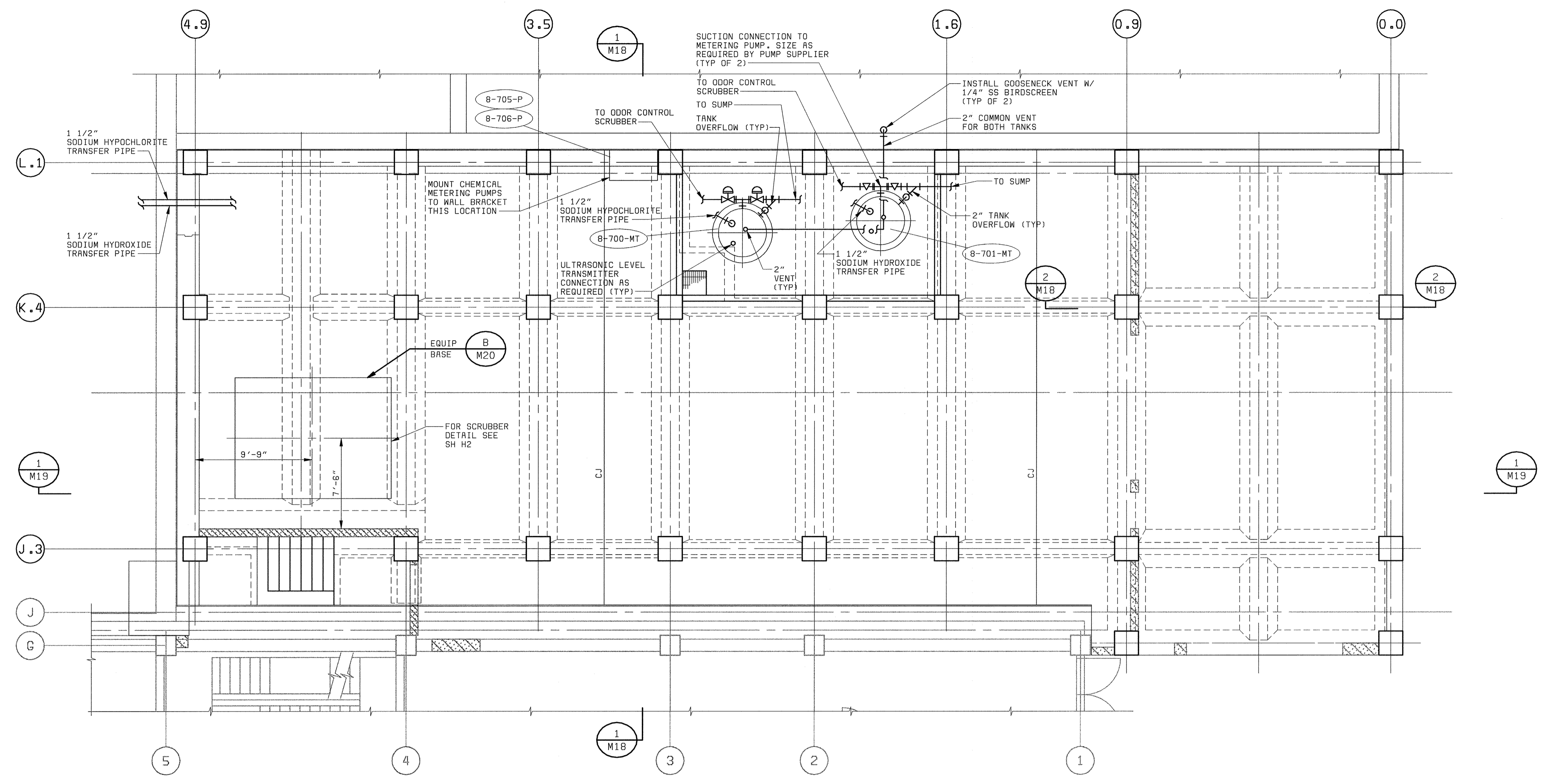


NOTE:
 1. TOP OF SLAB ELEVATION VARIES FROM EL 128.50 AT SOUTH END OF THE STORAGE CELL TO EL 127.50 AT NORTH END OF THE STORAGE CELL (TYP OF 4 CELLS).

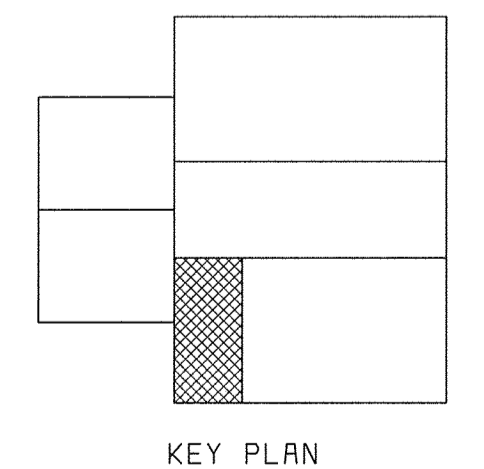
NOTE:
 "SCREENED" (LIGHT) DELINEATION SHOWN ON THIS SHEET DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM PREVIOUS CONSTRUCTION DRAWINGS & FIELD SURVEY. IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS & BEGINNING CONSTRUCTION.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

58472-401-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 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
			DRN: RAB, RB	CHK: WLK	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS					
											M14	



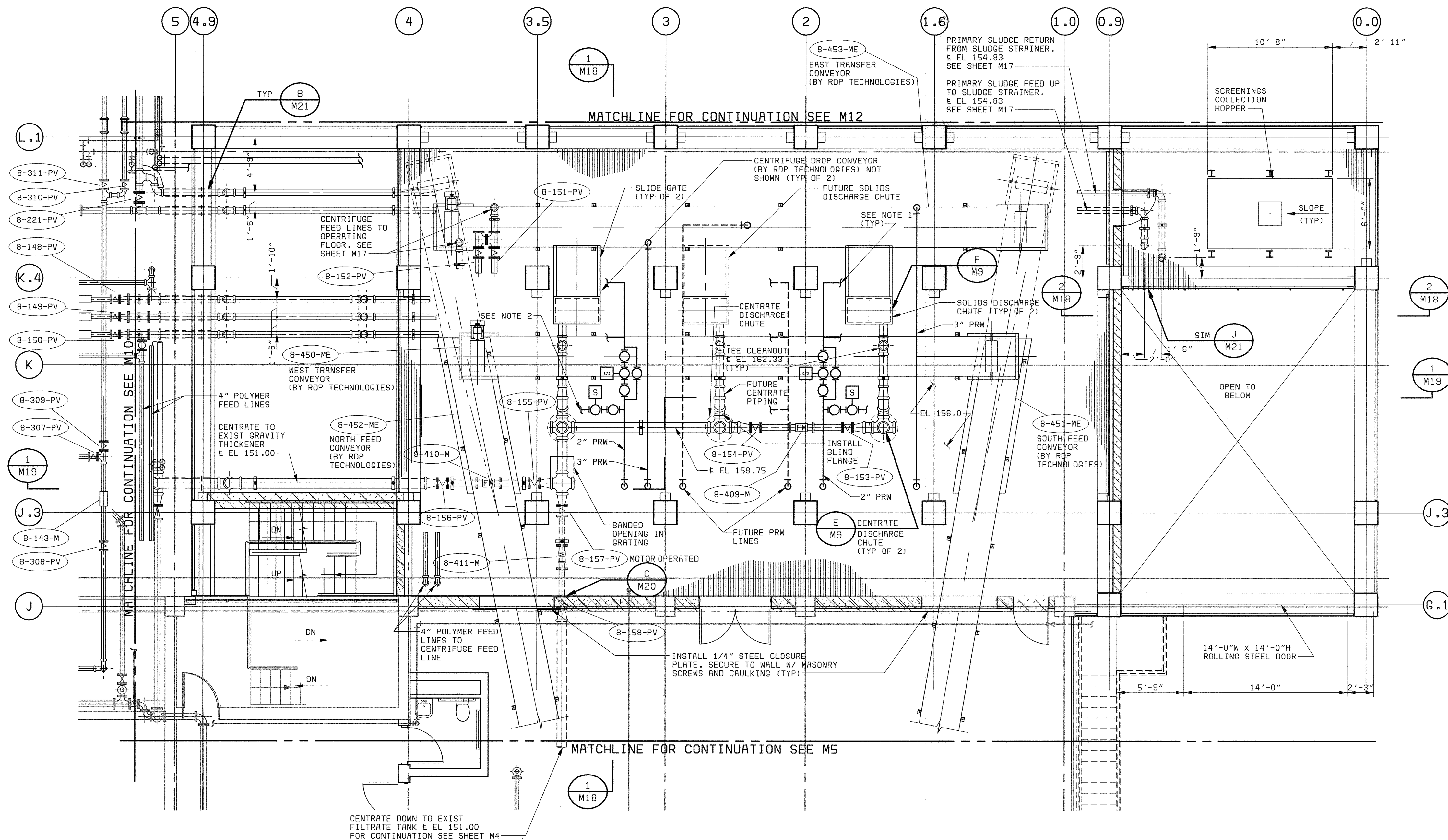
PLAN AT EL 142.00
3/16" = 1'-0"



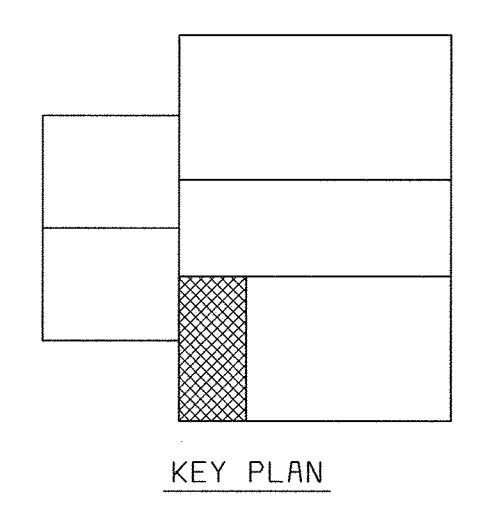
KEY PLAN

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			

58472-203-SDLS-S-00000118



- NOTES:
- 1. CONTRACTOR TO CONNECT TO FOAM CONTROL SPRAY NOZZLES ON SOLIDS AND CENTRATE DISCHARGE CHUTE. LOCATION OF SPRAY NOZZLES SHALL BE VERIFIED WITH CENTRIFUGE SUPPLIER.
 - 2. 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.

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

58472-401-323-C003: R00099112.DWG
58472-212-SOLS-A-R0000841
58472-401-323-PIPE
58472-203-SOLS-S-R0000120

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



BLACK & VEATCH^{LLP}
Gaithersburg, Maryland

REG. PROF. ENCR. 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

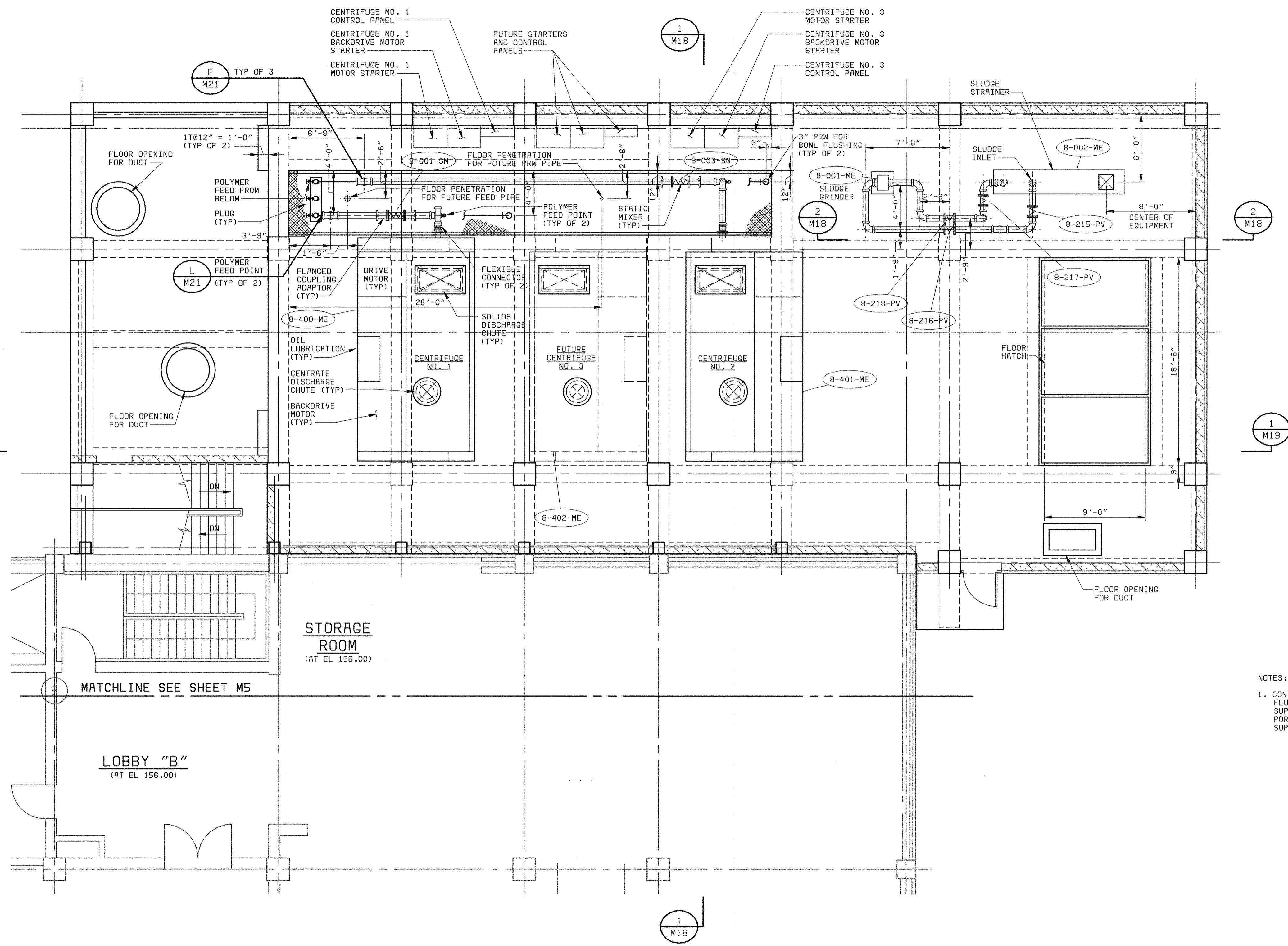
DES: TJW.ACR	
DRN: RAB	
CHK: WLK	
DATE: 5-30-00	

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

MECHANICAL
CENTRIFUGE BUILDING EXPANSION
CENTRIFUGE BUILDING EXPANSION
PLAN AT EL 156.00

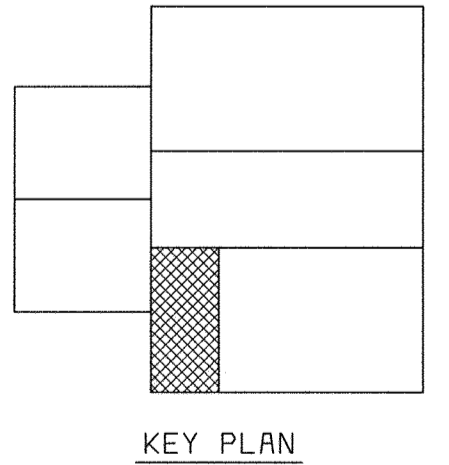
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS SHOWN
SHEET
60 OF 150
M16



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

NOTES:
1. 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.

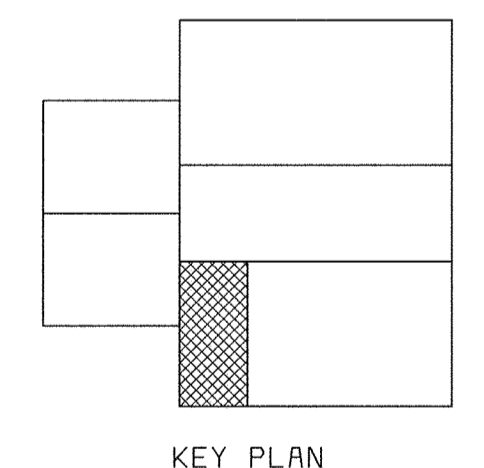
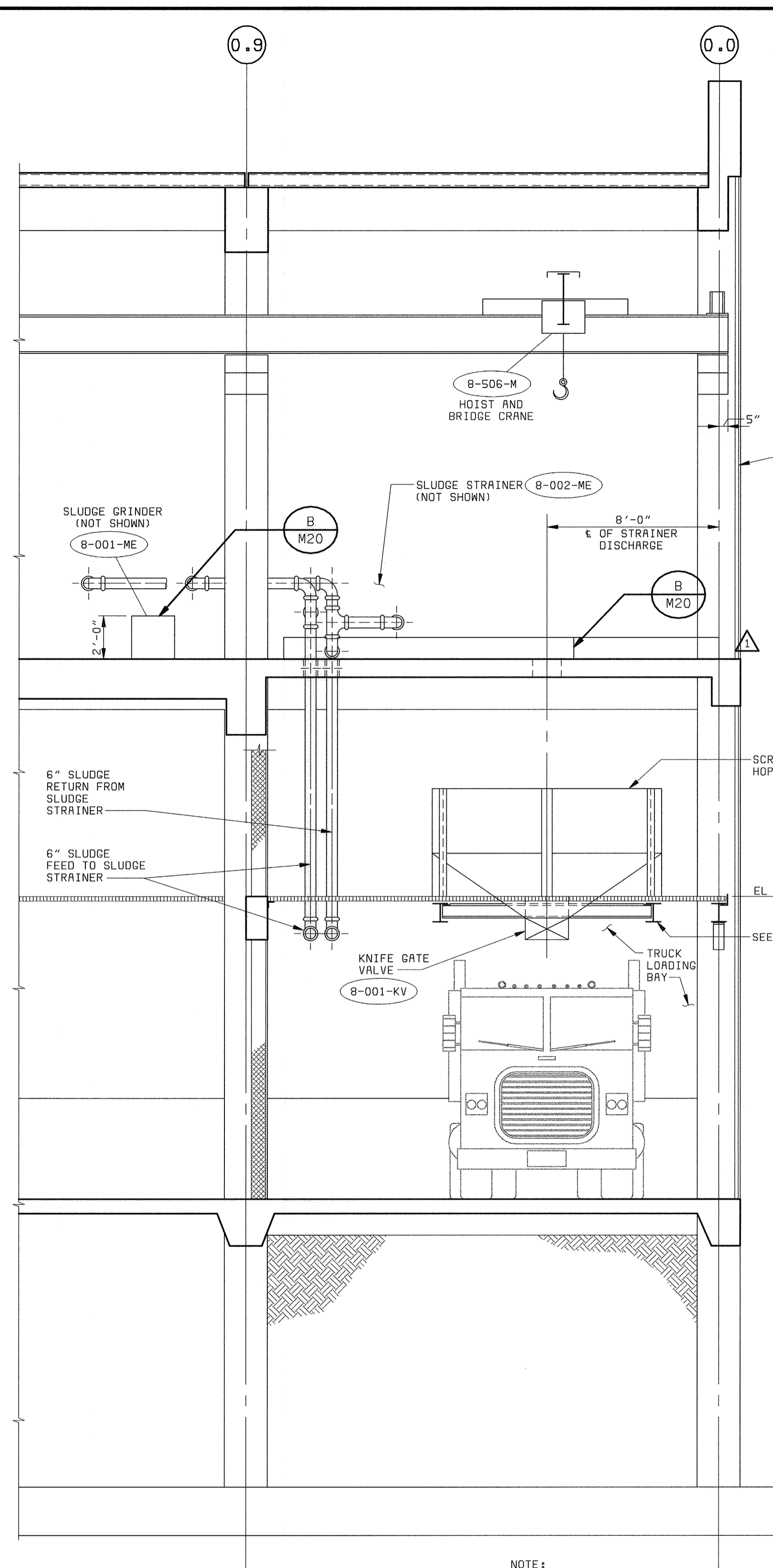
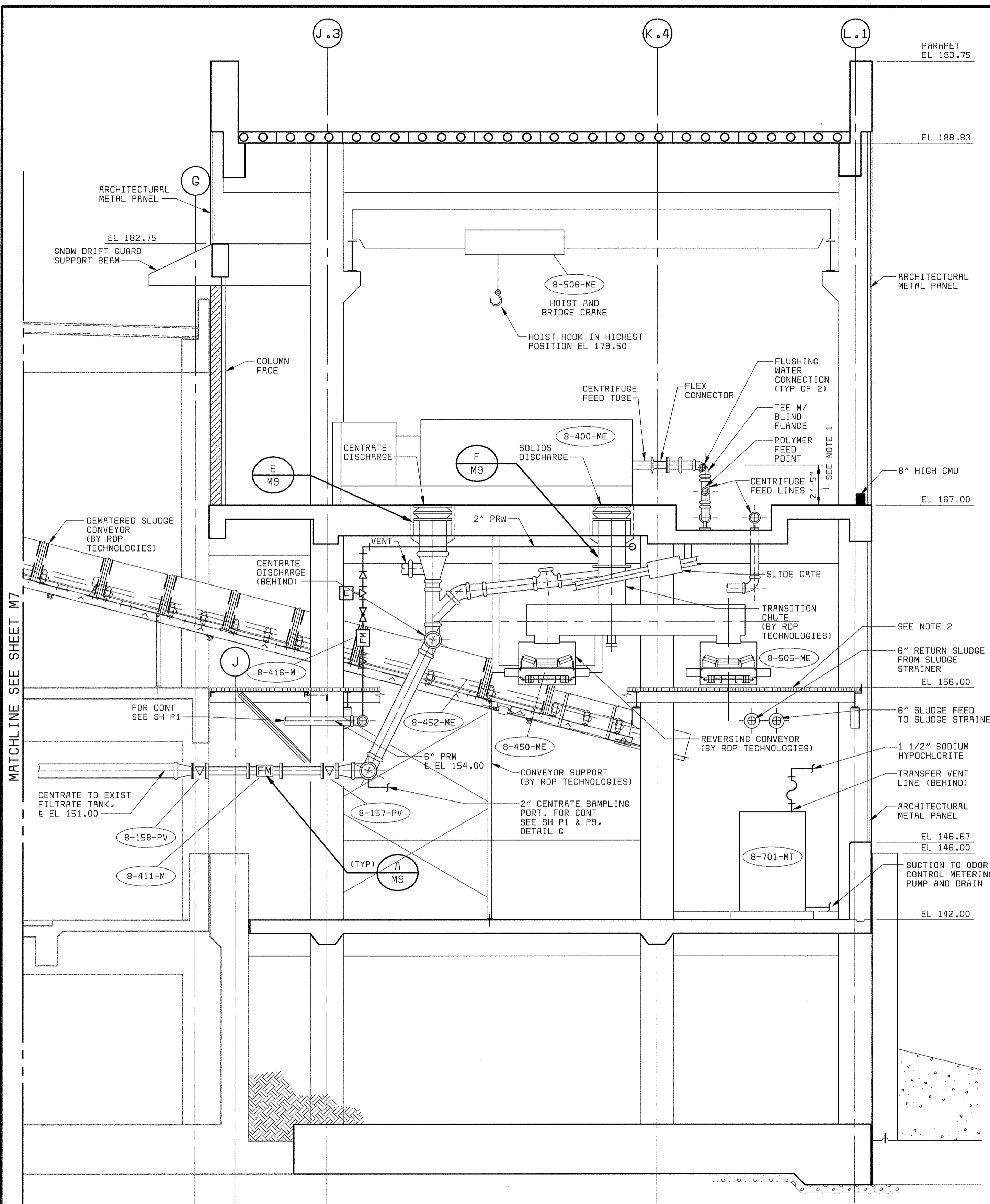


NOTE:
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58472-401-323-C010: R00099729
58472-203-S01S-S-R0000147
58472-203-S01S-S-R0000052
58472-204-S01S-H-R0000396

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



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:
 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

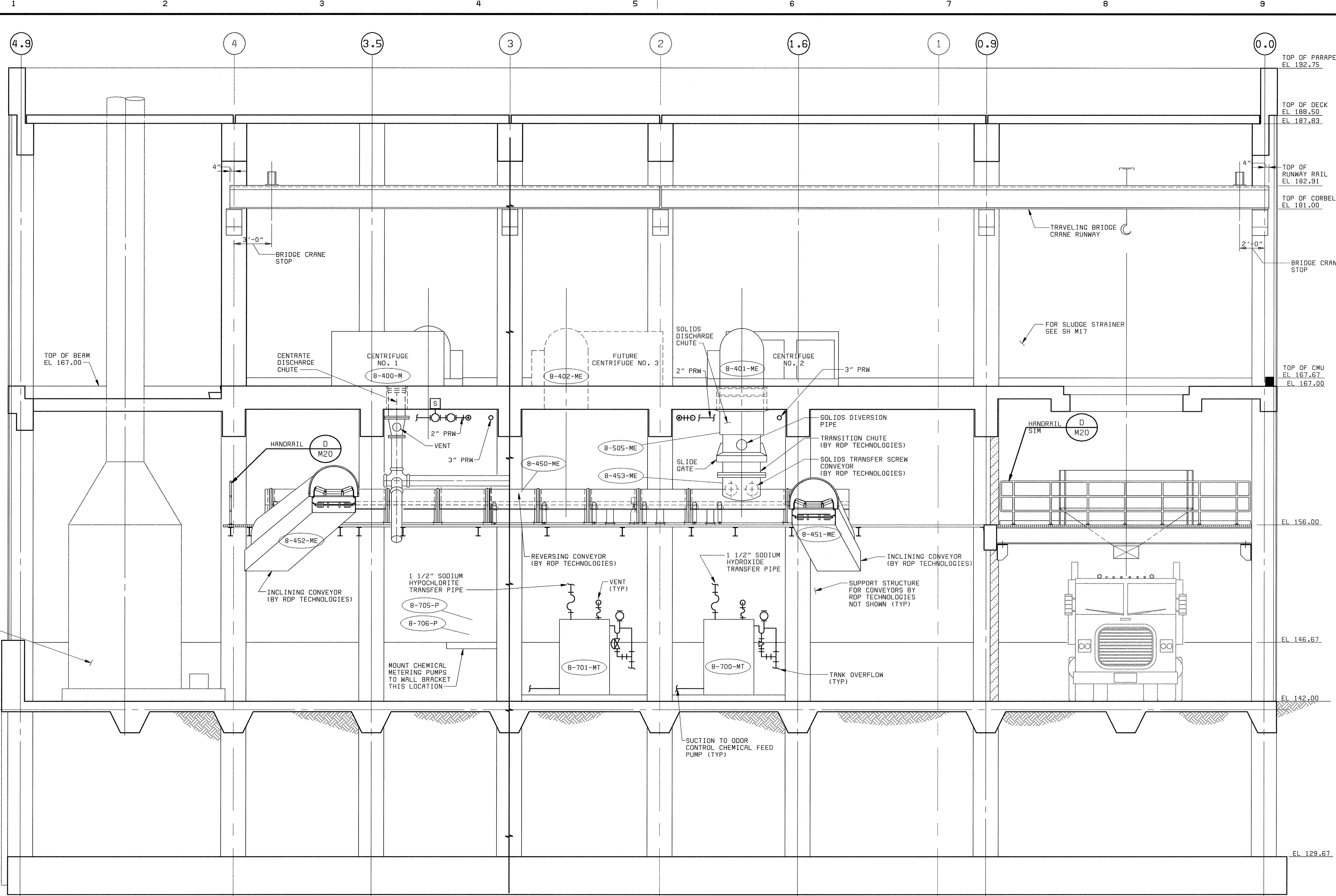
THIS DRAWING WAS
 ORIGINALLY APPROVED
 FOR CONSTRUCTION
 AND SEALED BY
 D MITT BOND
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 24676

DES:	ACR				
DRN:	RAB				
CHK:	WLK				
DATE:	5-30-04	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
		DATE		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

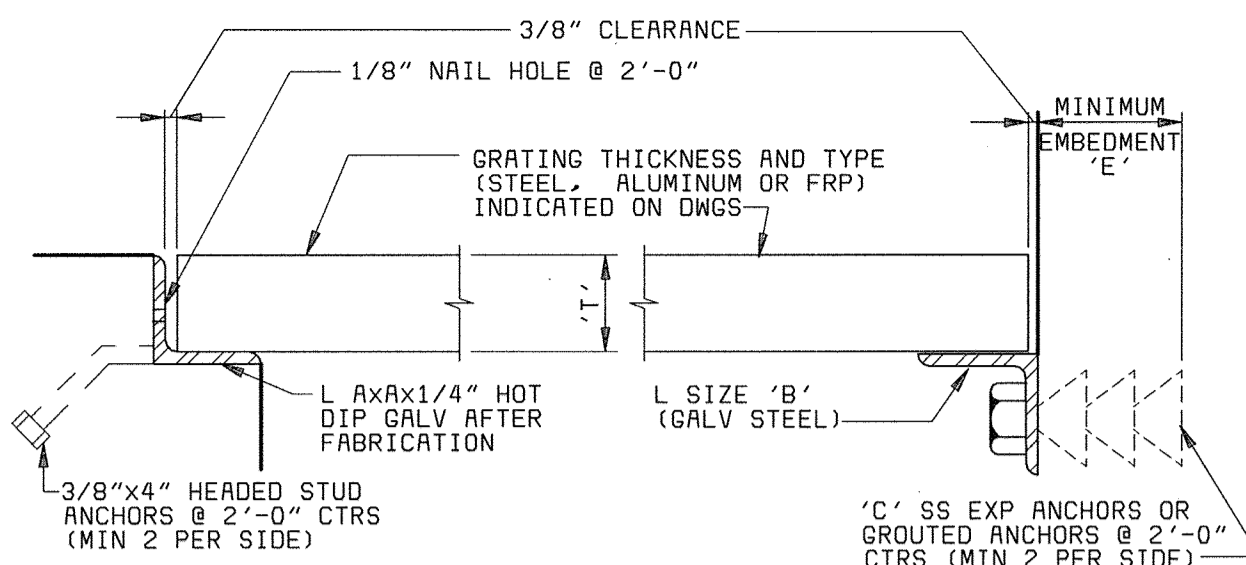


SECTION 1
 1/4" = 1'-0" M15, M16, M17, M18

NOTE:
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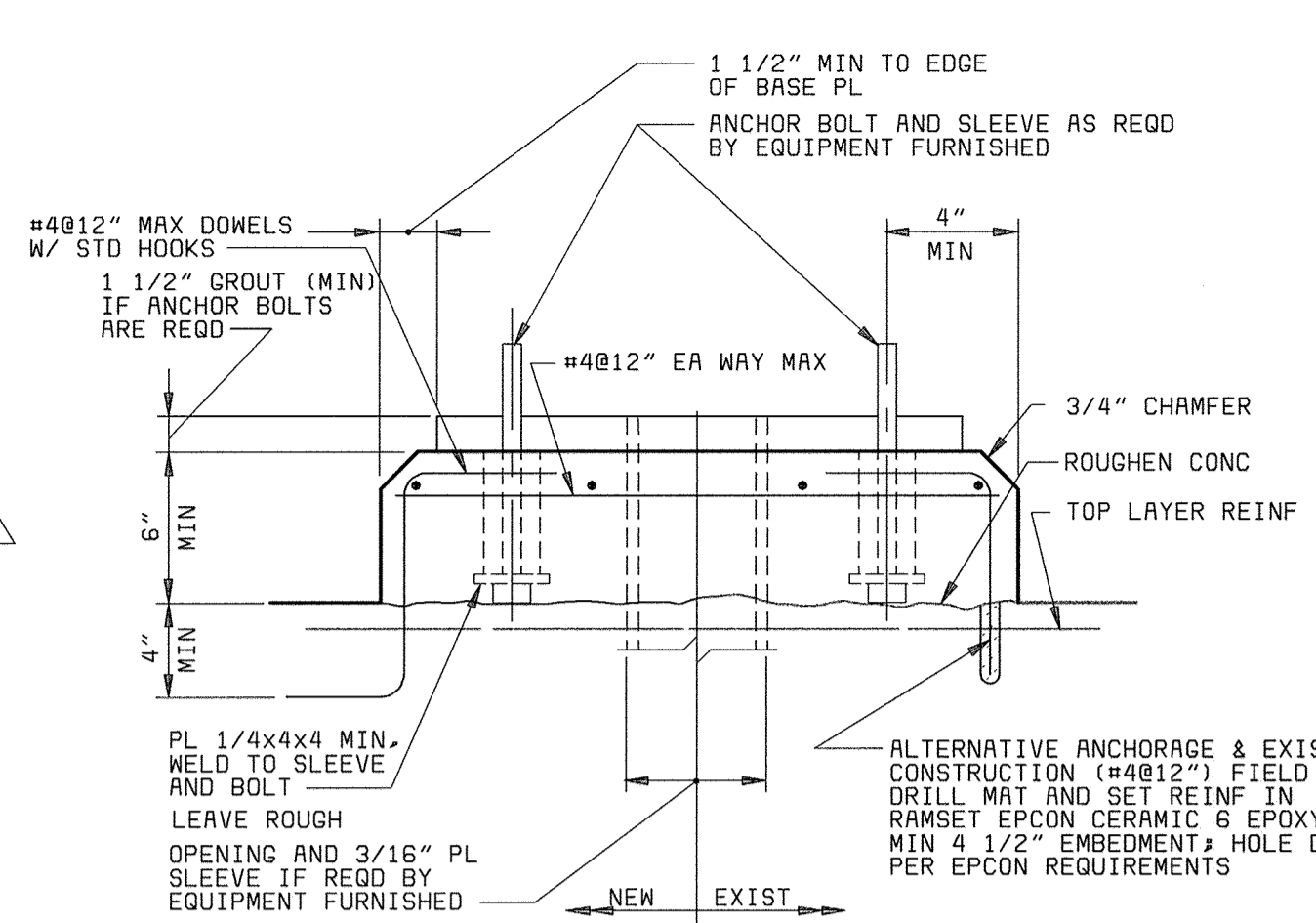
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676	DES: ACR							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 CK APP			SHEET 63 OF 150

58472-204-SOLS-S-R0000861

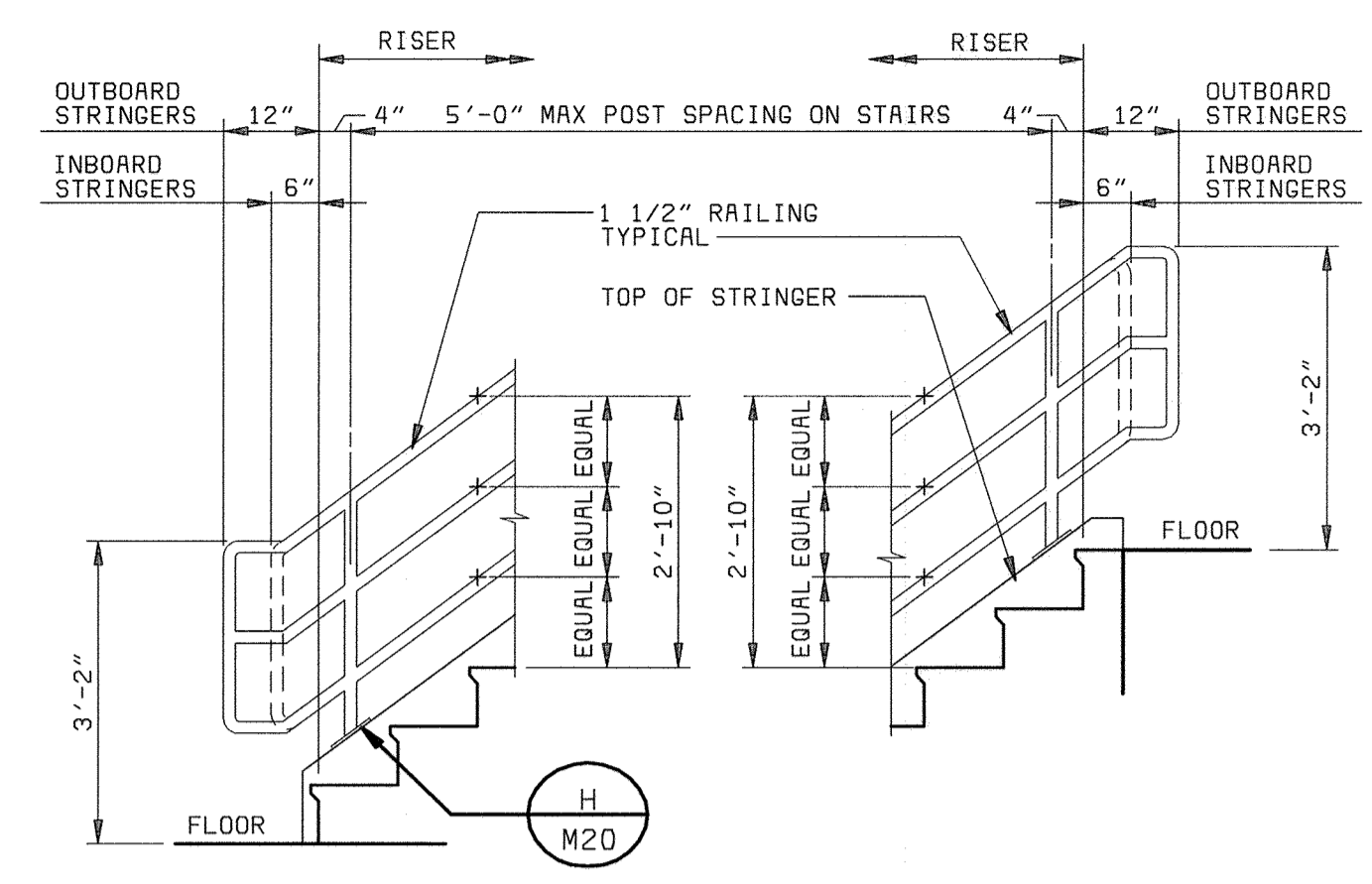


GRATING THICKNESS ('T')	L SIZE AXAX1/4	L SIZE 'B'	'C' EXP ANCHOR	
			DIA	MIN 'E'
1	1 1/4x1 1/4	2 1/2x2 1/2x1/4	1/2"	4 1/8"
1 1/4	1 1/2x1 1/2	2 1/2x2 1/2x1/4	1/2"	4 1/8"
1 1/2	1 3/4x1 3/4	2 1/2x2 1/2x1/4	1/2"	4 1/8"
1 3/4	2x2	3x3x3/8	3/4"	6 3/8"
2	2 1/2x2 1/2	3x3x3/8	3/4"	6 3/8"
2 1/4	2 1/2x2 1/2	3x3x3/8	3/4"	6 3/8"
2 1/2	3x3	3x3x3/8	3/4"	6 3/8"

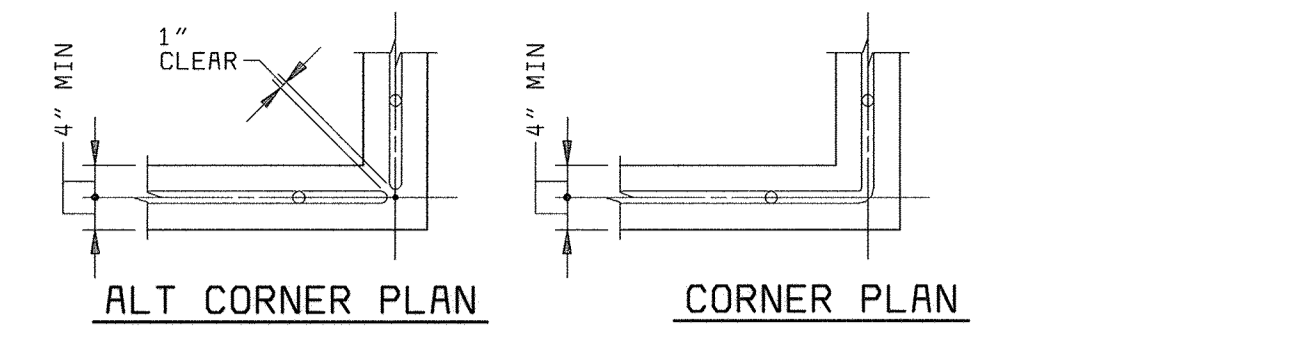
GRATING SUPPORT (A)
3" = 1'-0"



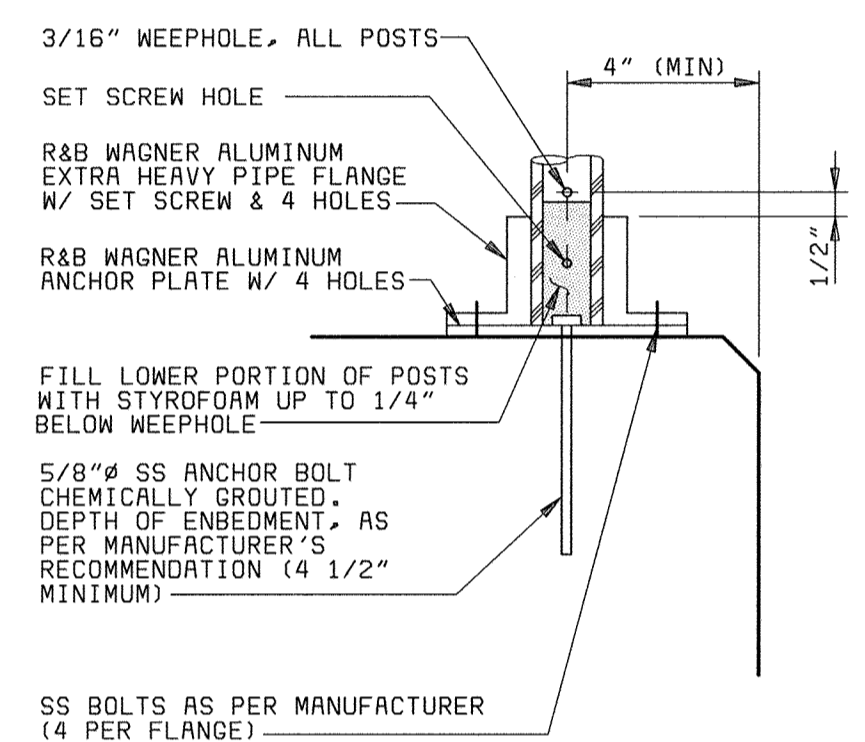
EQUIPMENT BASE (B)
NO SCALE



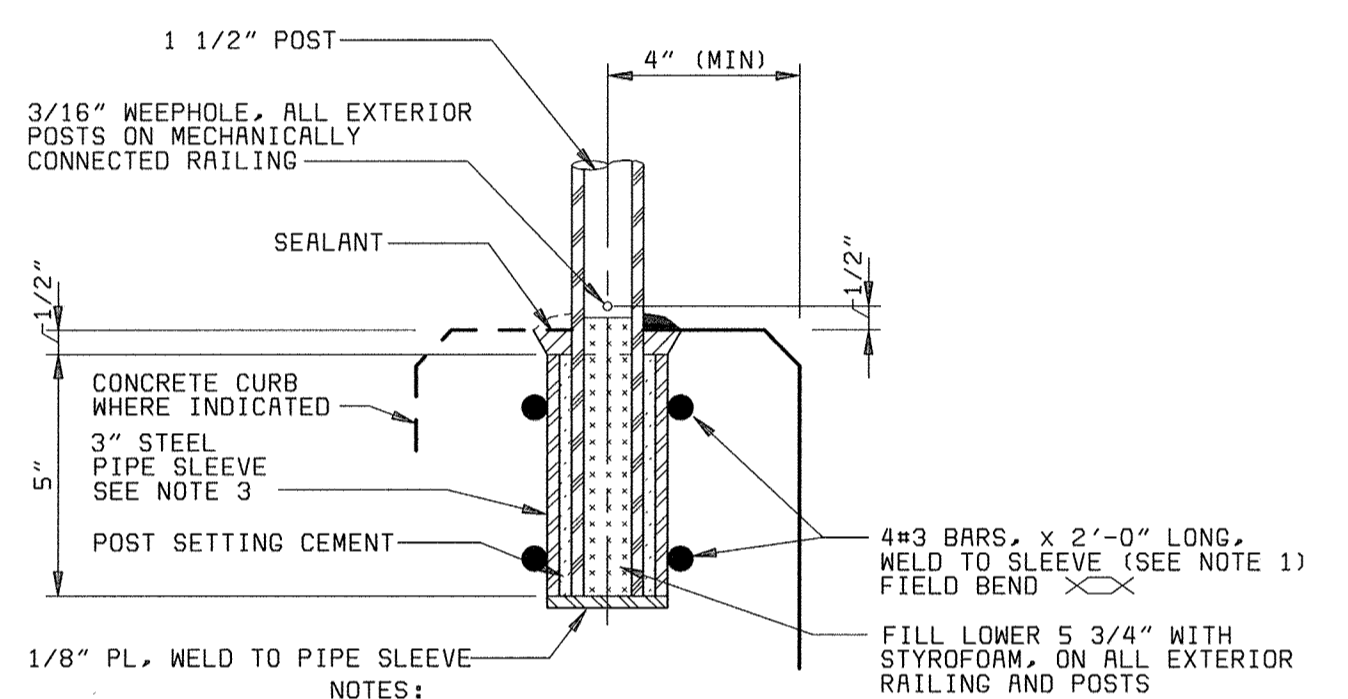
TYPICAL STAIR GUARDRAIL ELEVATION (C)
1/2" = 1'-0"



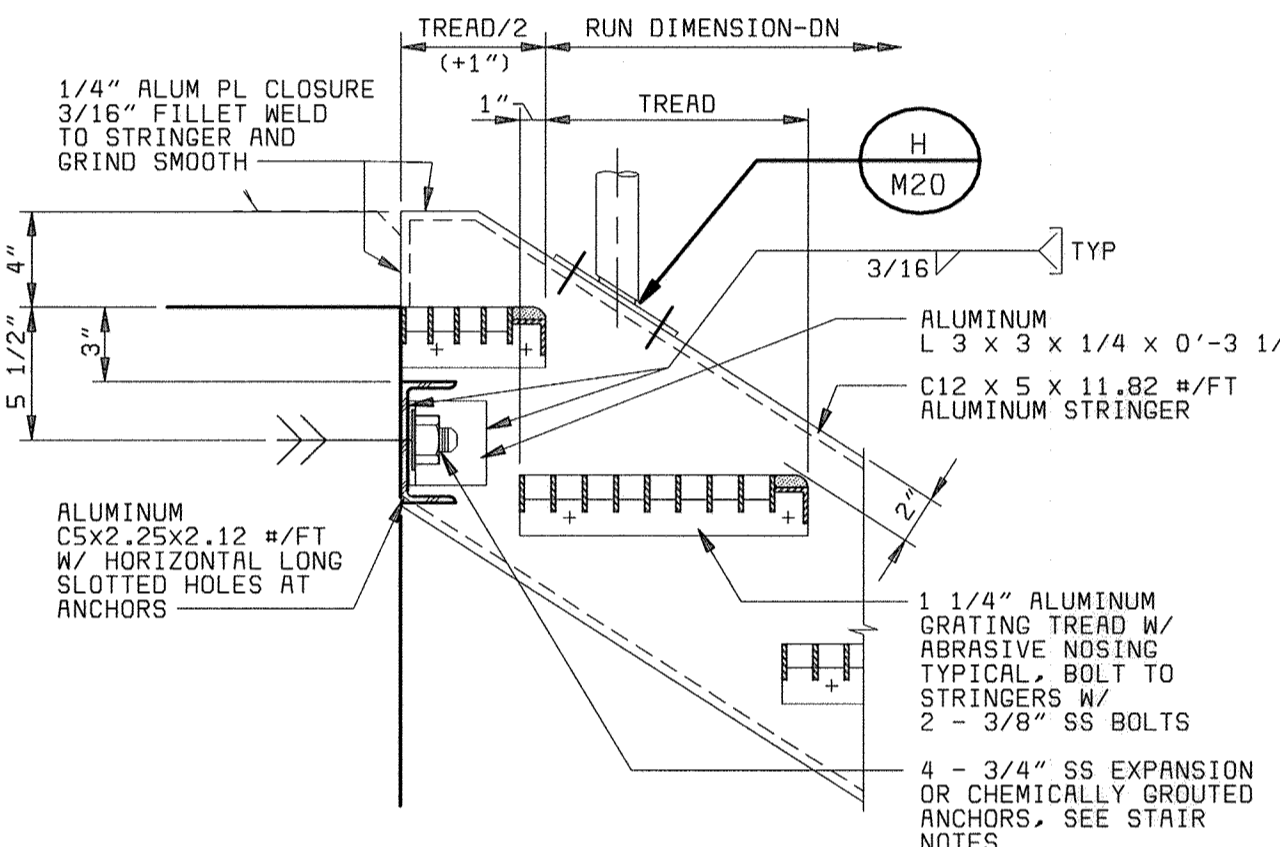
END TERMINATION CORNER
TYPICAL FIXED GUARDRAIL ELEVATION (D)
1/2" = 1'-0"



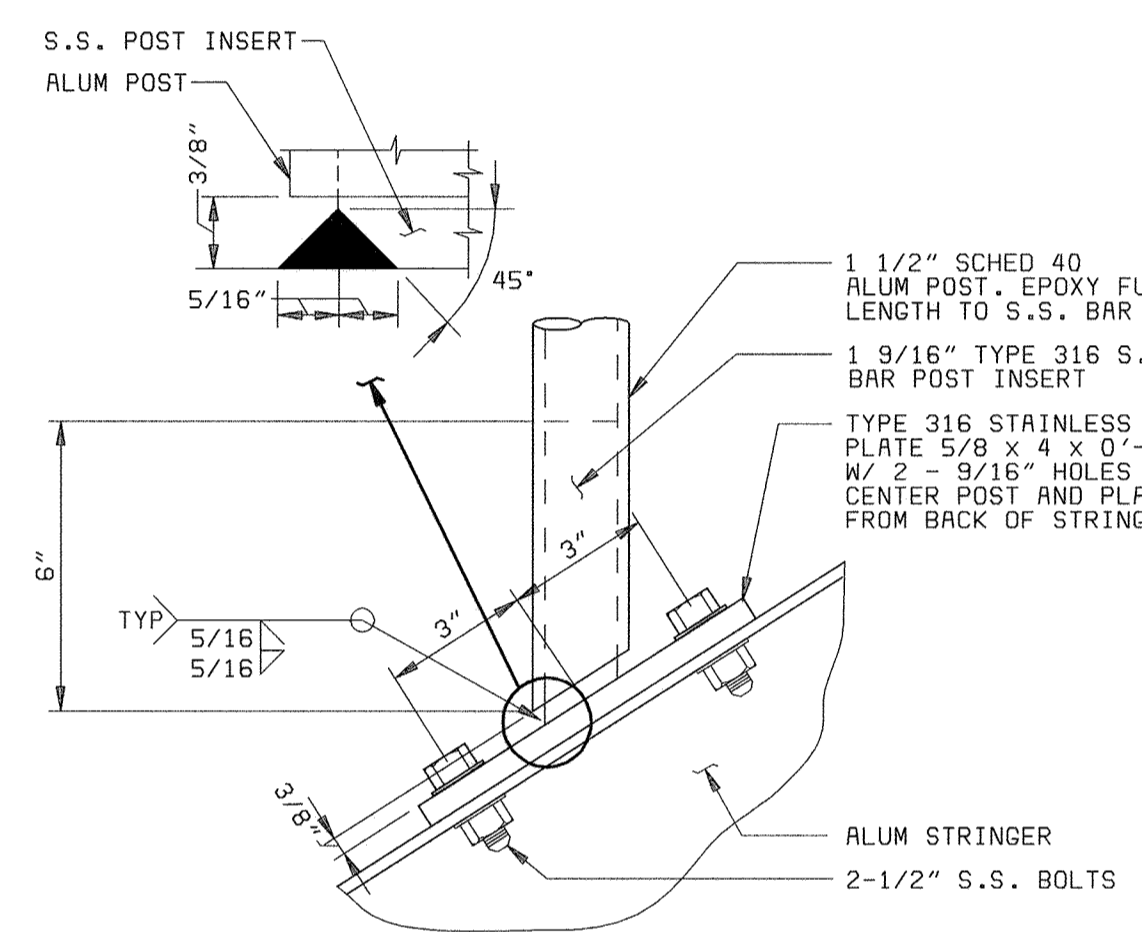
RAILING POST SETTING (E)
3" = 1'-0"



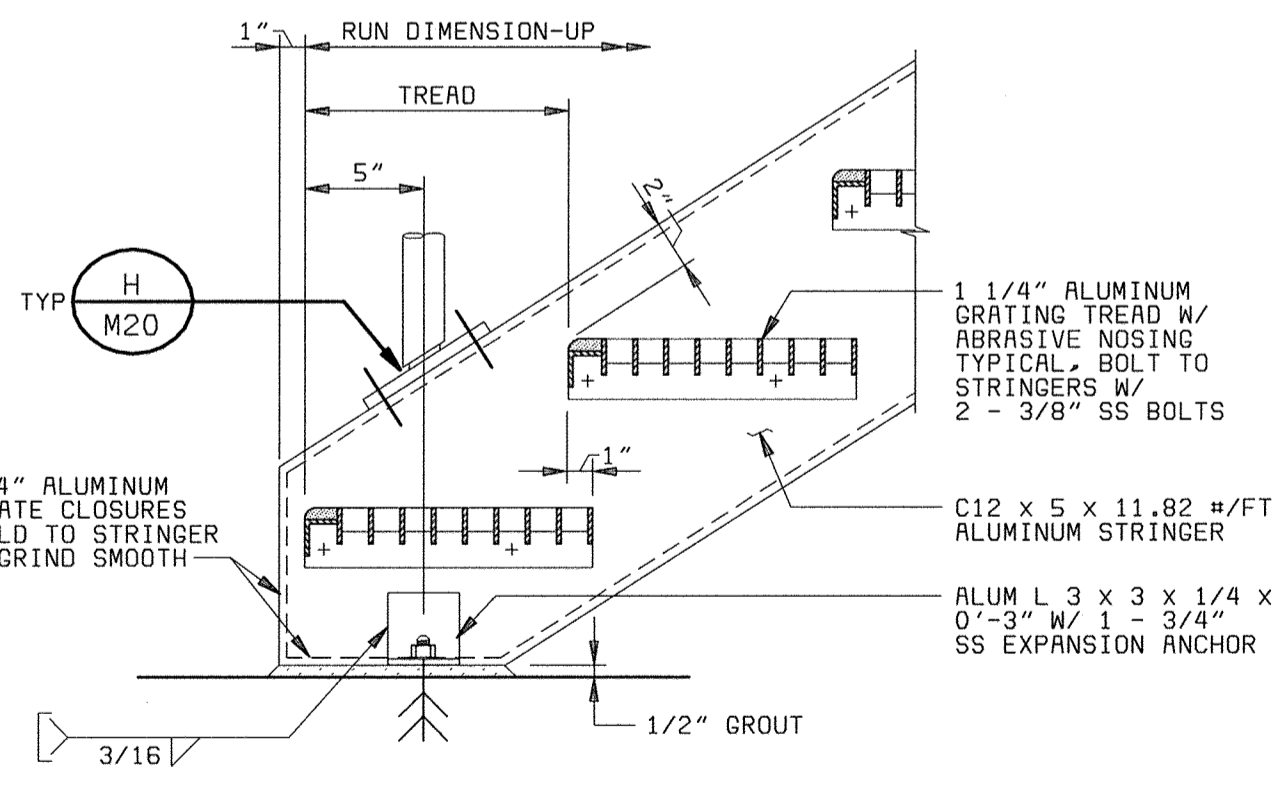
RAILING AND POST SETTING (F)
3" = 1'-0"



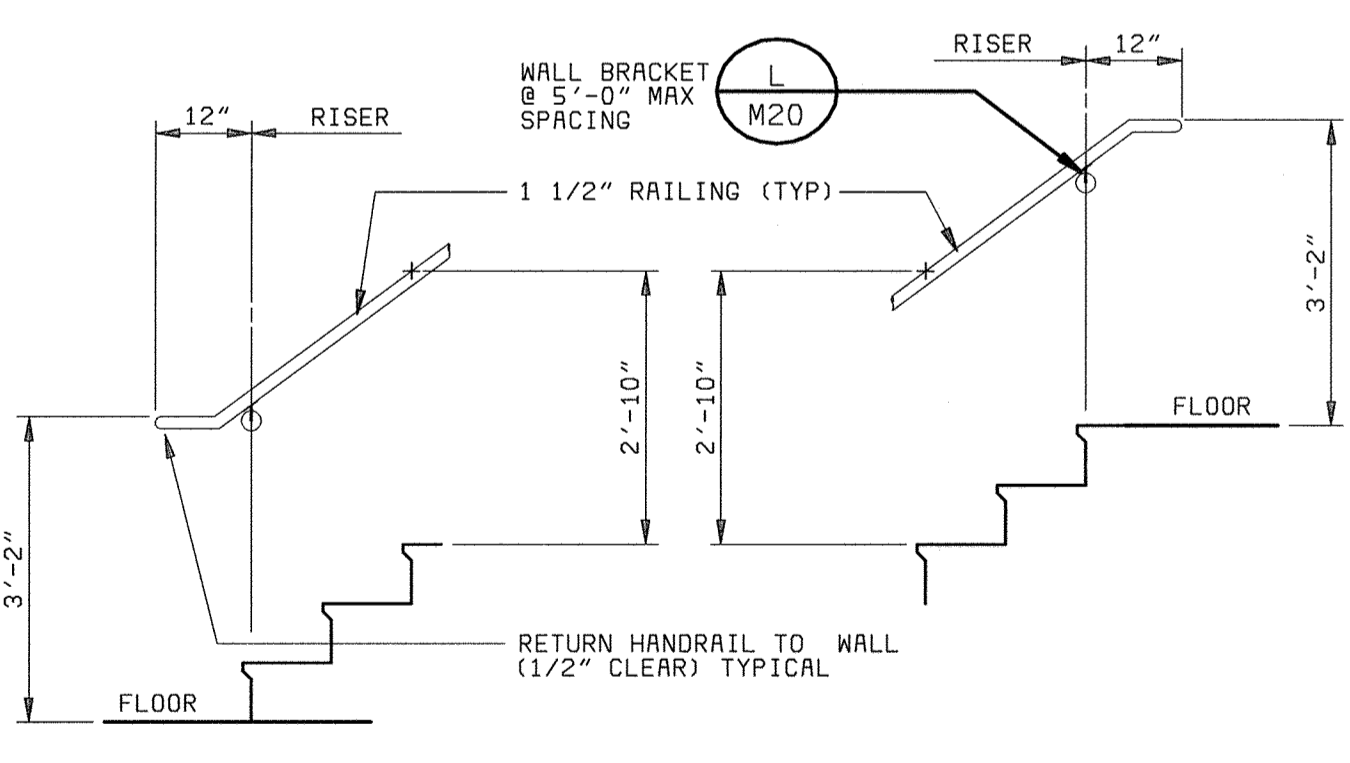
DETAIL (G)
1 1/2" = 1'-0"



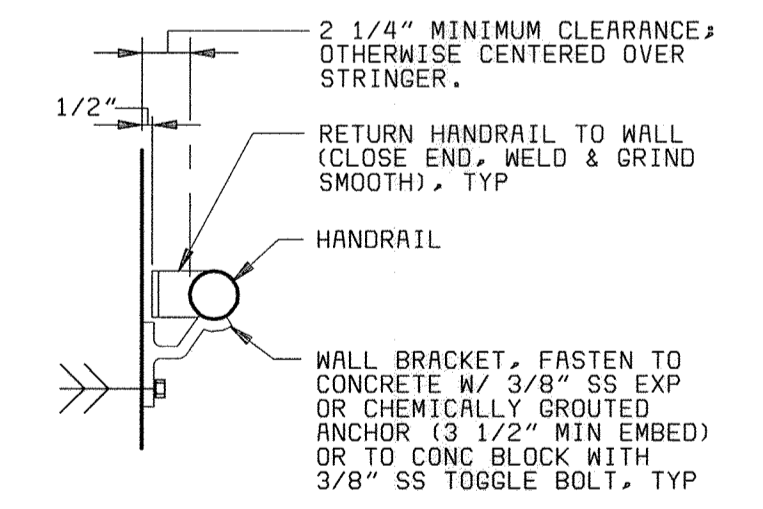
STAIR RAILING POST CONNECTION (H)
3" = 1'-0"



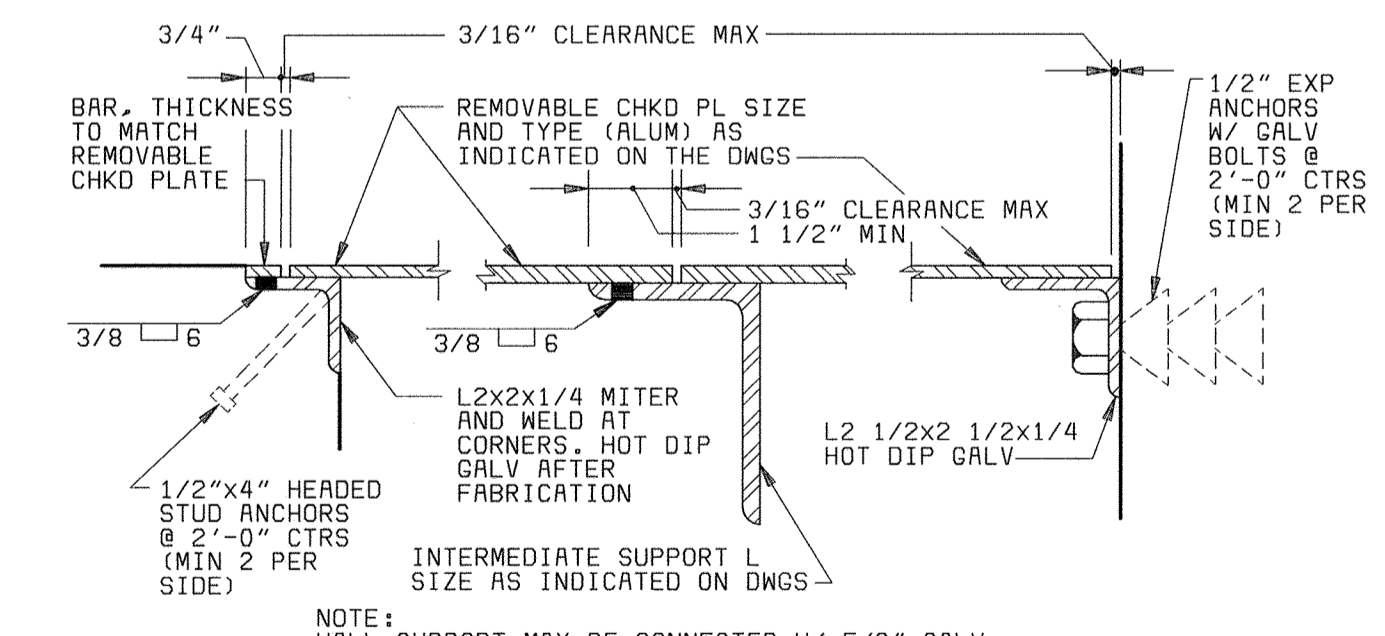
DETAIL (J)
1 1/2" = 1'-0"



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"

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					
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

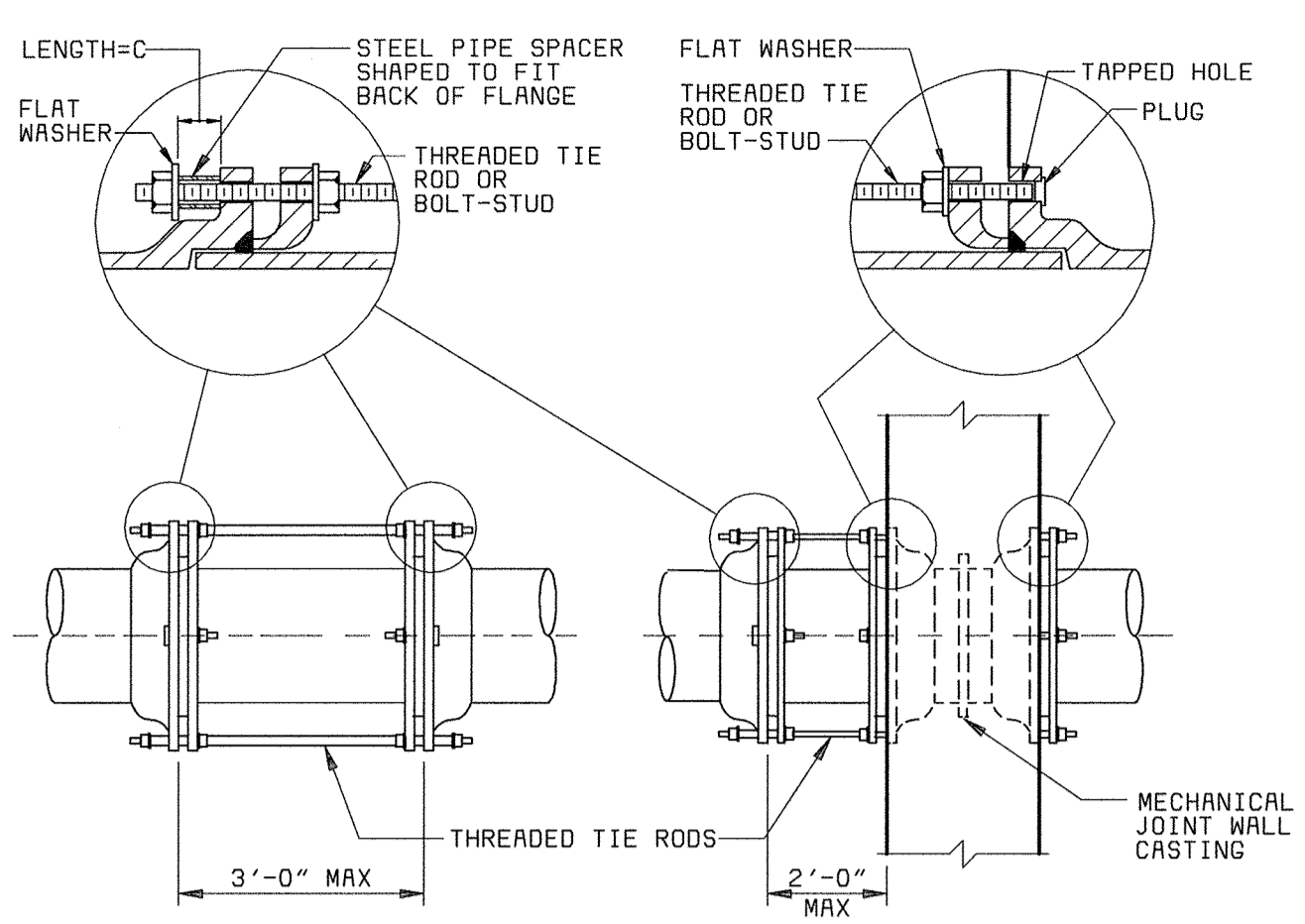
MECHANICAL GENERAL
CIVIL - MISCELLANEOUS DETAILS

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

58472-401-SHT-C-00000050

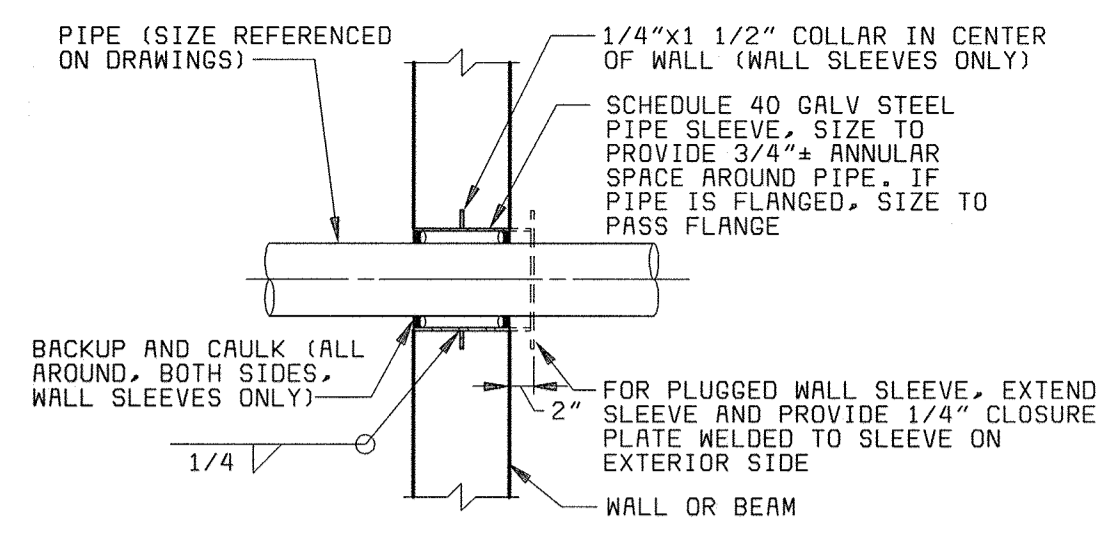
058472 2
FD58472A



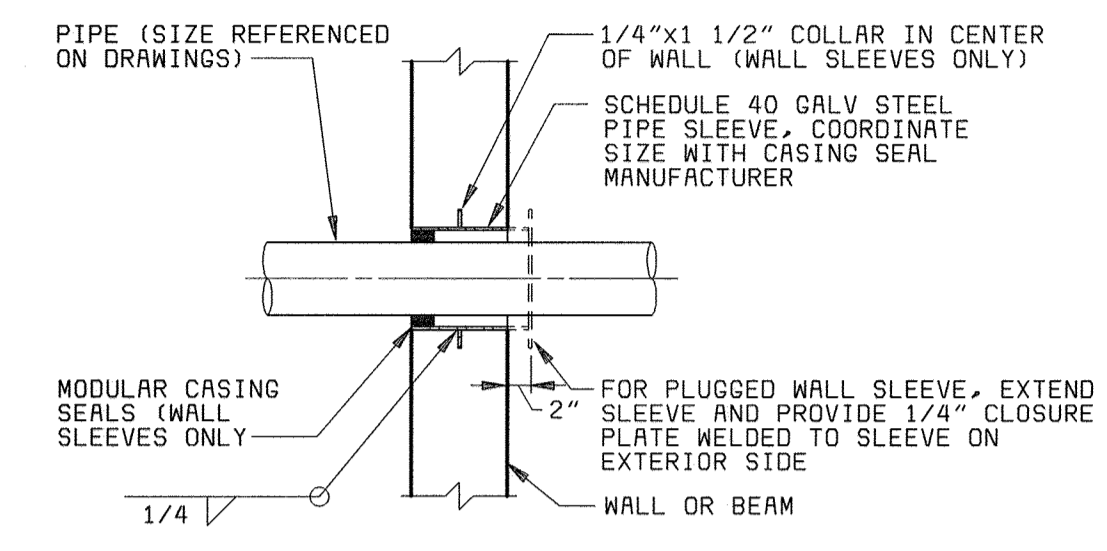
NOTES:

- 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.
- 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.
- 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.

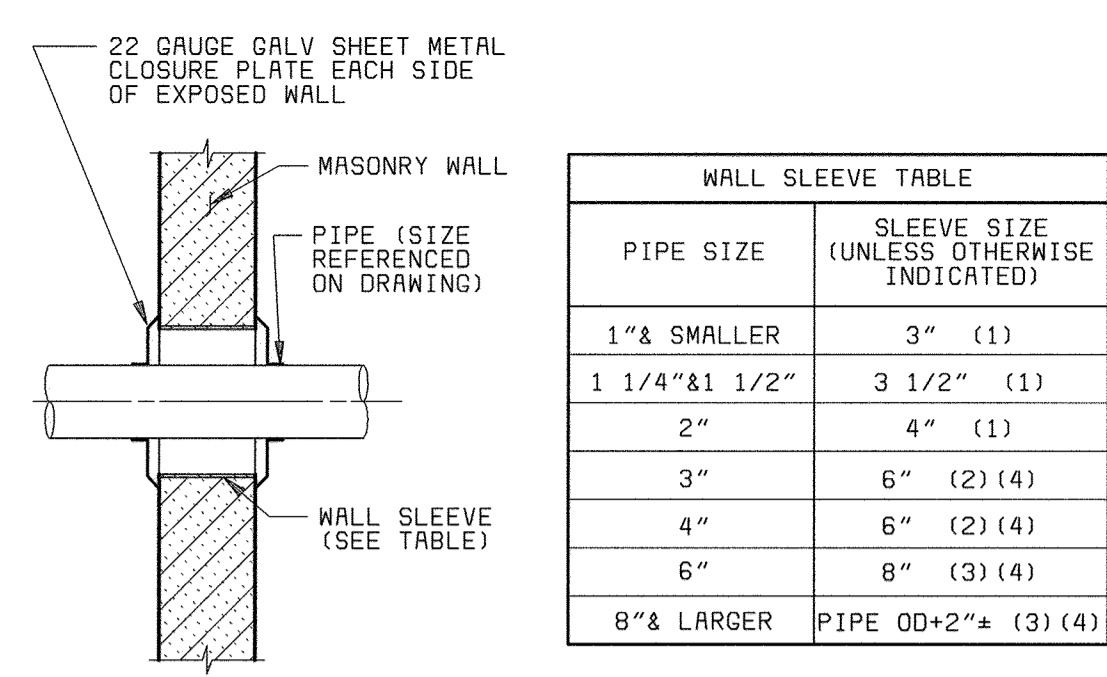
PIPE SIZE (IN)	MAXIMUM PRESSURE (PSI) (NOTE 1)	TIE RODS		PIPE SPACERS	
		NO. OF RODS (NOTE 2)	DIA (IN)	DIA (IN)	LENGTH (IN)
4	350 OR LESS	2	3/4	3/4	2 1/2
6	250 OR LESS	2	3/4	3/4	2 1/2
8	150 OR LESS	2	3/4	3/4	2 1/2
	300	4	3/4	3/4	2 1/2
	350	6	3/4	3/4	2 1/2
10	200 OR LESS	2	3/4	1	2 1/2
	350	4	3/4	1	2 1/2
12	150 OR LESS	2	3/4	1	2 1/2
	300	4	3/4	1	2 1/2
	350	6	3/4	1	2 1/2
14	100 OR LESS	2	3/4	1	3 1/2
	300	4	3/4	1	3 1/2
	350	6	3/4	1	3 1/2
16	150 OR LESS	4	3/4	1	3 1/2
	250	6	3/4	1	3 1/2
	350	8	3/4	1	3 1/2
18	150 OR LESS	4	3/4	1	3 1/2
	200	6	3/4	1	3 1/2
	300	8	3/4	1	3 1/2
	350	10	3/4	1	3 1/2
20	100 OR LESS	4	3/4	1	3 1/2
	150	6	3/4	1	3 1/2
	200	8	3/4	1	3 1/2
	300	10	3/4	1	3 1/2
	350	12	3/4	1	3 1/2
24	100 OR LESS	6	3/4	1	3 1/2
	150	8	3/4	1	3 1/2
	200	10	3/4	1	3 1/2
	250	12	3/4	1	3 1/2
	300	14	3/4	1	3 1/2
	350	16	3/4	1	3 1/2
30	100 OR LESS	8	1	1 1/4	4
	150	10	1	1 1/4	4
	200	12	1	1 1/4	4
	250	14	1	1 1/4	4
	300	16	1	1 1/4	4
36	100 OR LESS	8	1	1 1/4	4
	150	10	1	1 1/4	4
	200	12	1	1 1/4	4
	250	14	1	1 1/4	4
	300	16	1	1 1/4	4
	350	20	1 1/4	1 1/2	4
42	100 OR LESS	8	1 1/4	1 1/2	4
	150	12	1 1/4	1 1/2	4
	200	16	1 1/4	1 1/2	4
	250	20	1 1/4	1 1/2	4
	300	24	1 1/4	1 1/2	4
	350	28	1 1/4	1 1/2	4



FOR PIPE SMALLER THAN 2 1/2 INCH DIAMETER

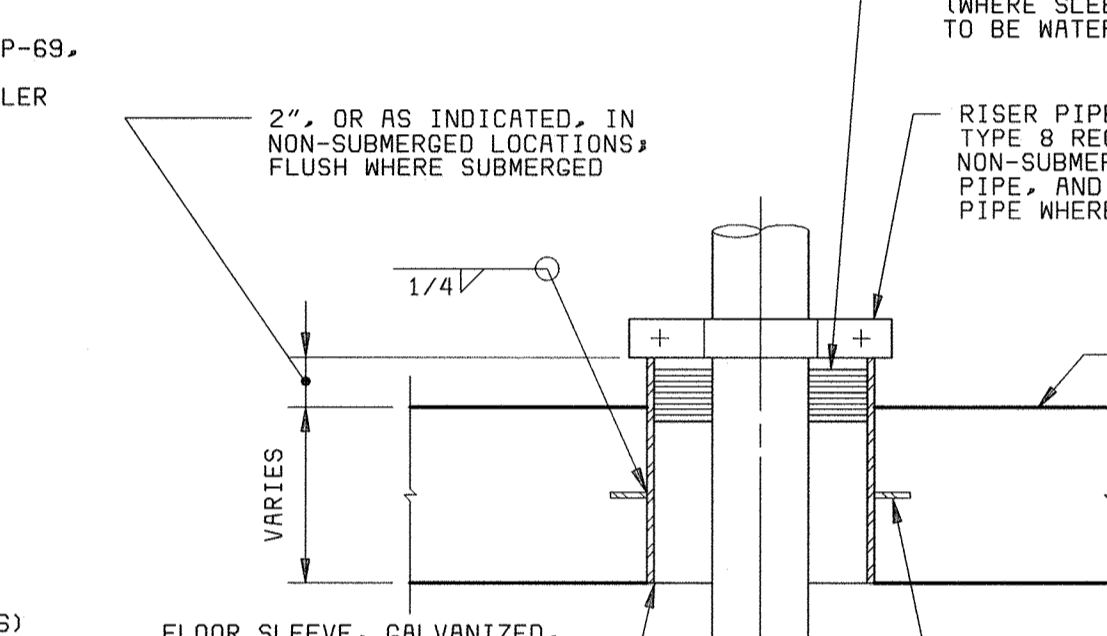
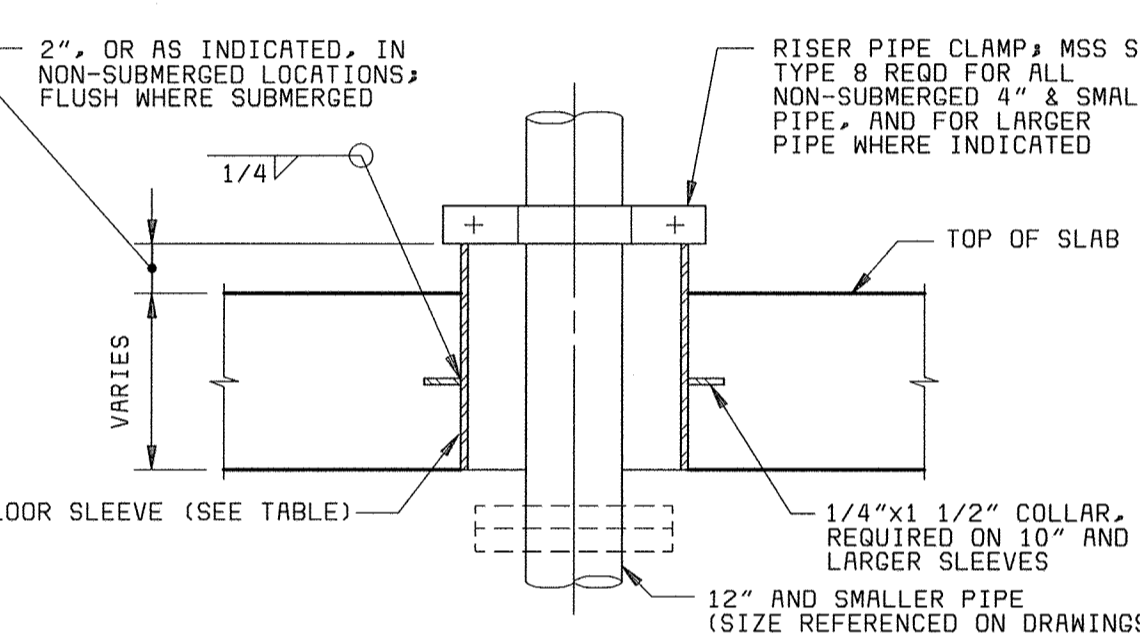
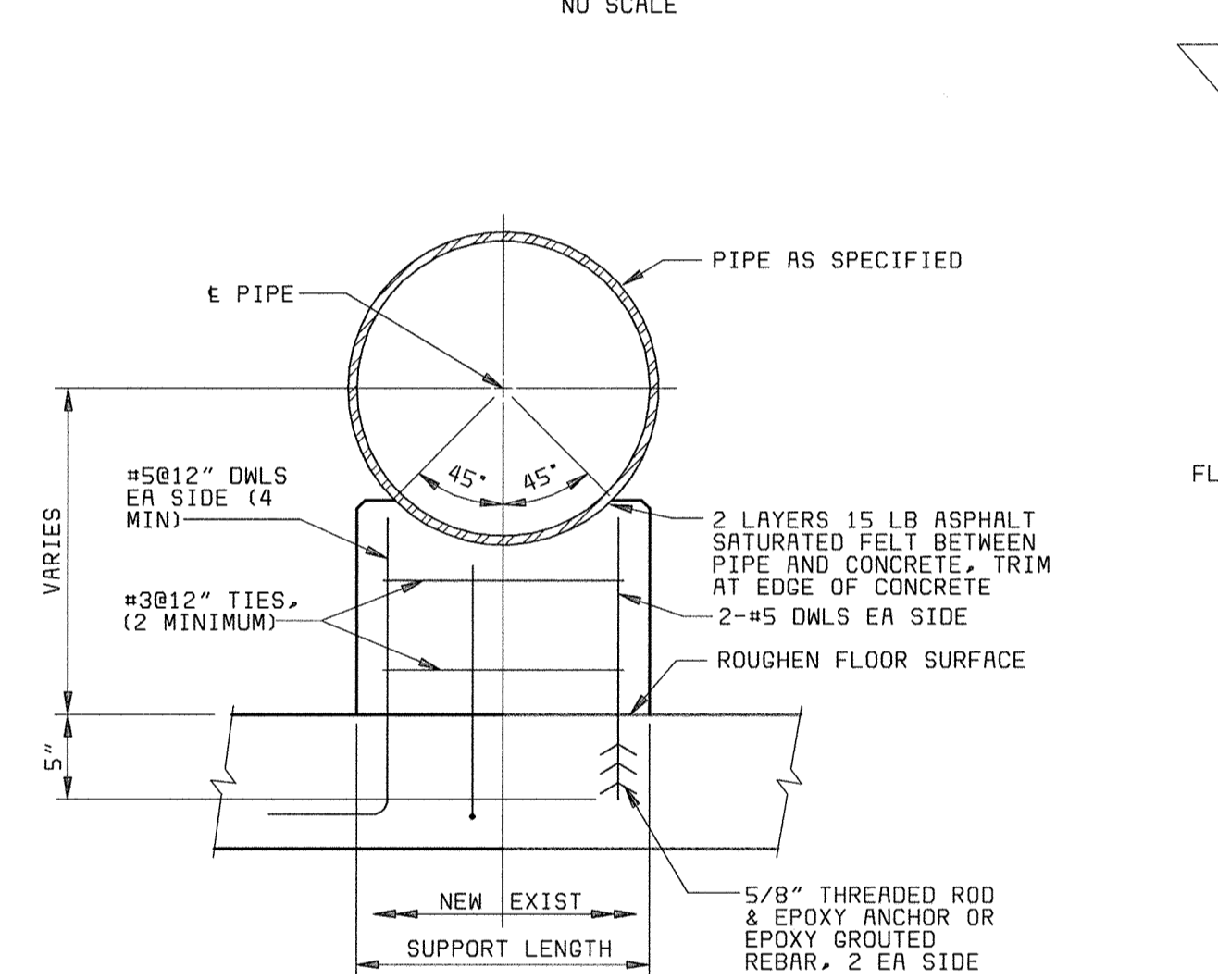


FOR PIPE 3 INCH TO 6 INCH DIAMETER



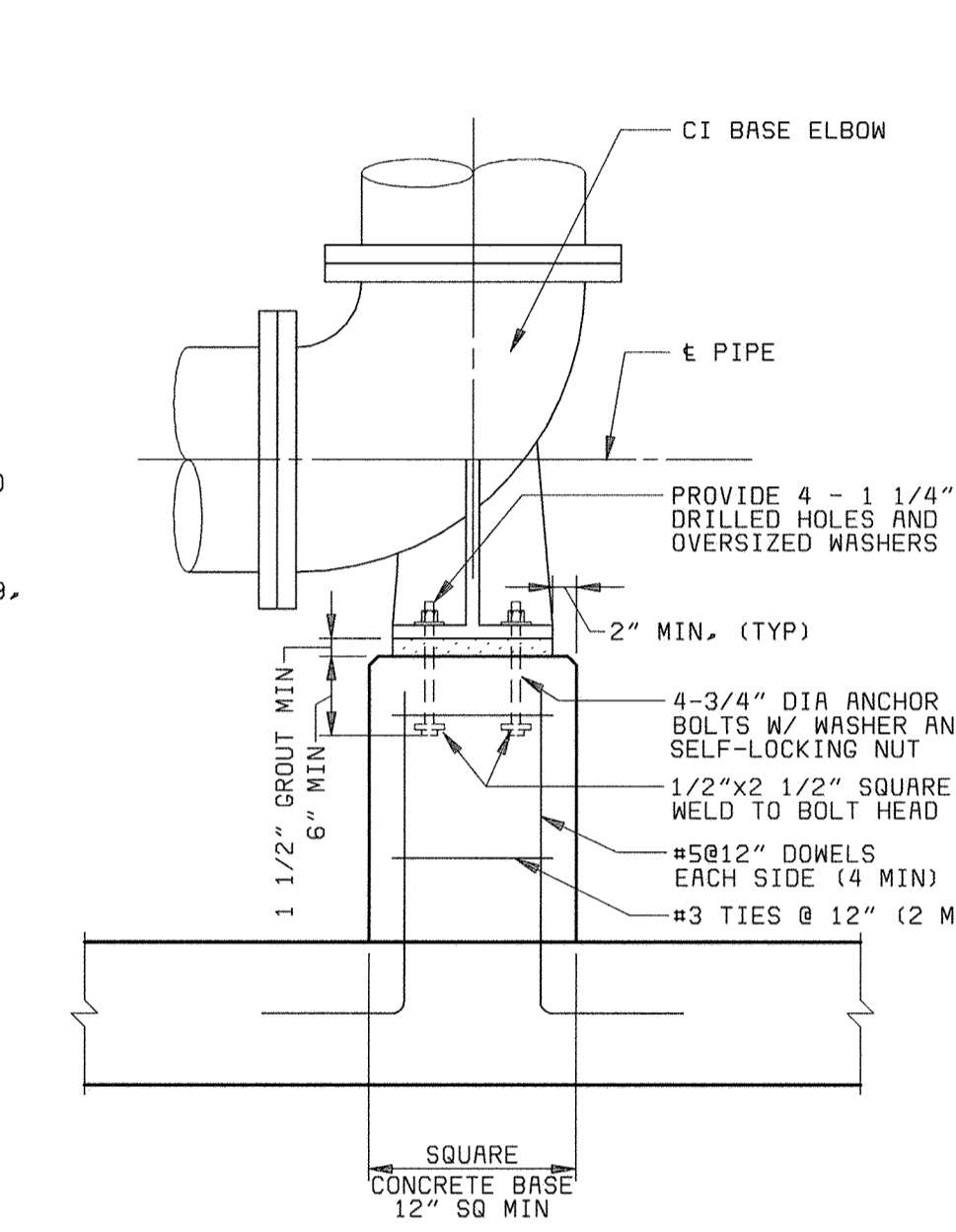
(1) SCHEDULE 40 GALV STEEL PIPE
 (2) SCHEDULE 20 GALV STEEL PIPE, MINIMUM
 (3) 1/4" MINIMUM WALL THICKNESS
 (4) IF PIPE IS FLANGED, USE SLEEVE LARGE ENOUGH FOR FLANGE TO PASS THROUGH

CIP MECHANICAL JOINTS WITH TIE RODS

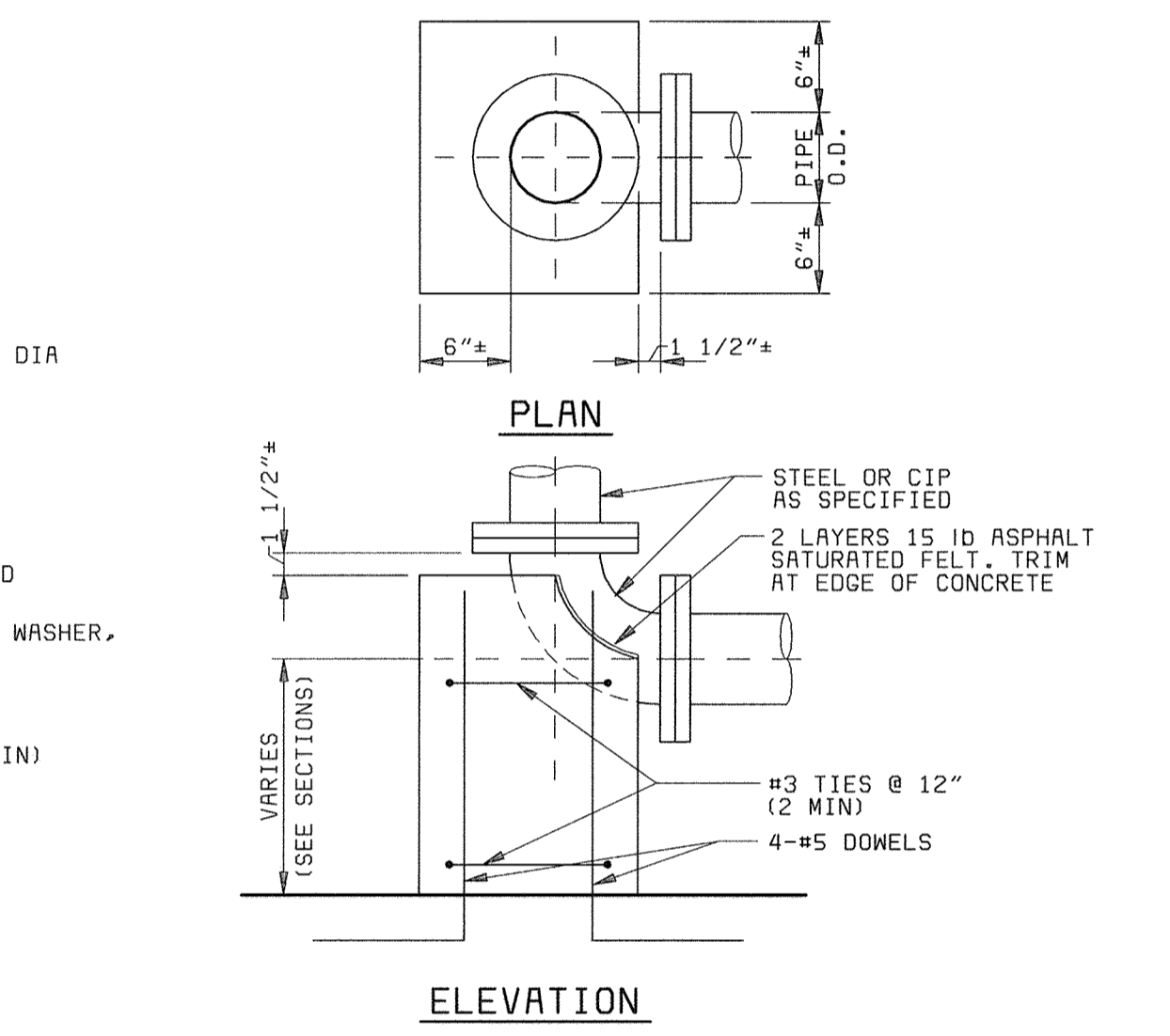


FLOOR SLEEVE WITH SEAL

MASONRY WALL SLEEVE



CONCRETE SUPPORT FOR CAST IRON BASE ELBOW



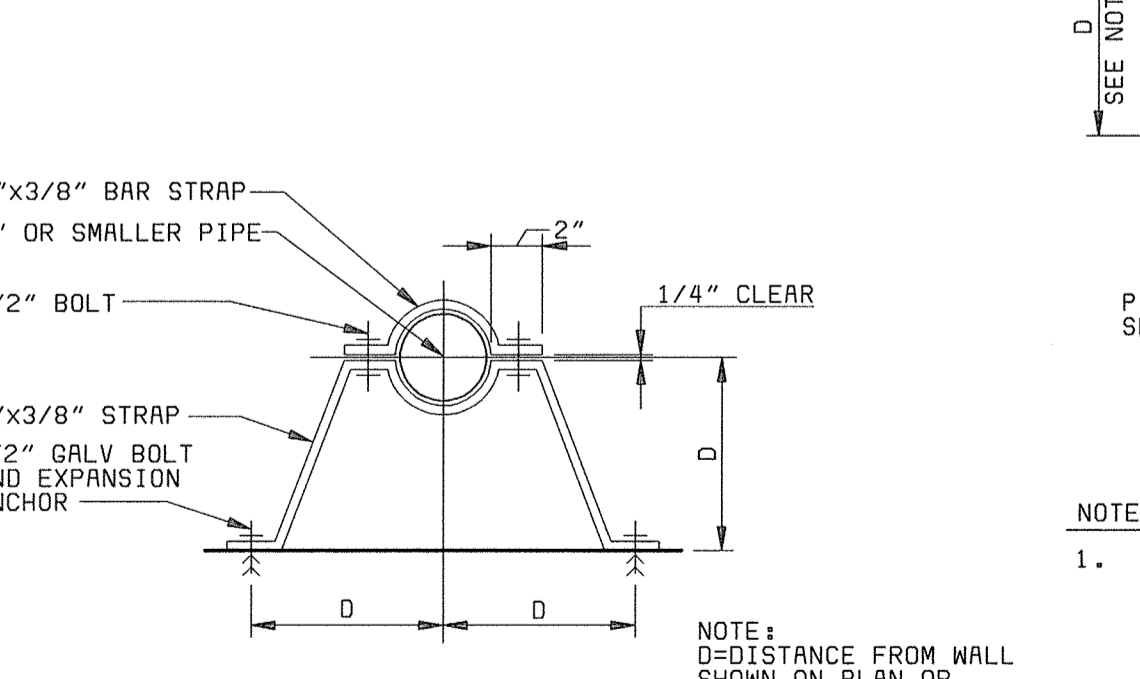
CONCRETE SUPPORT FOR PIPE ELBOW

NOTES:

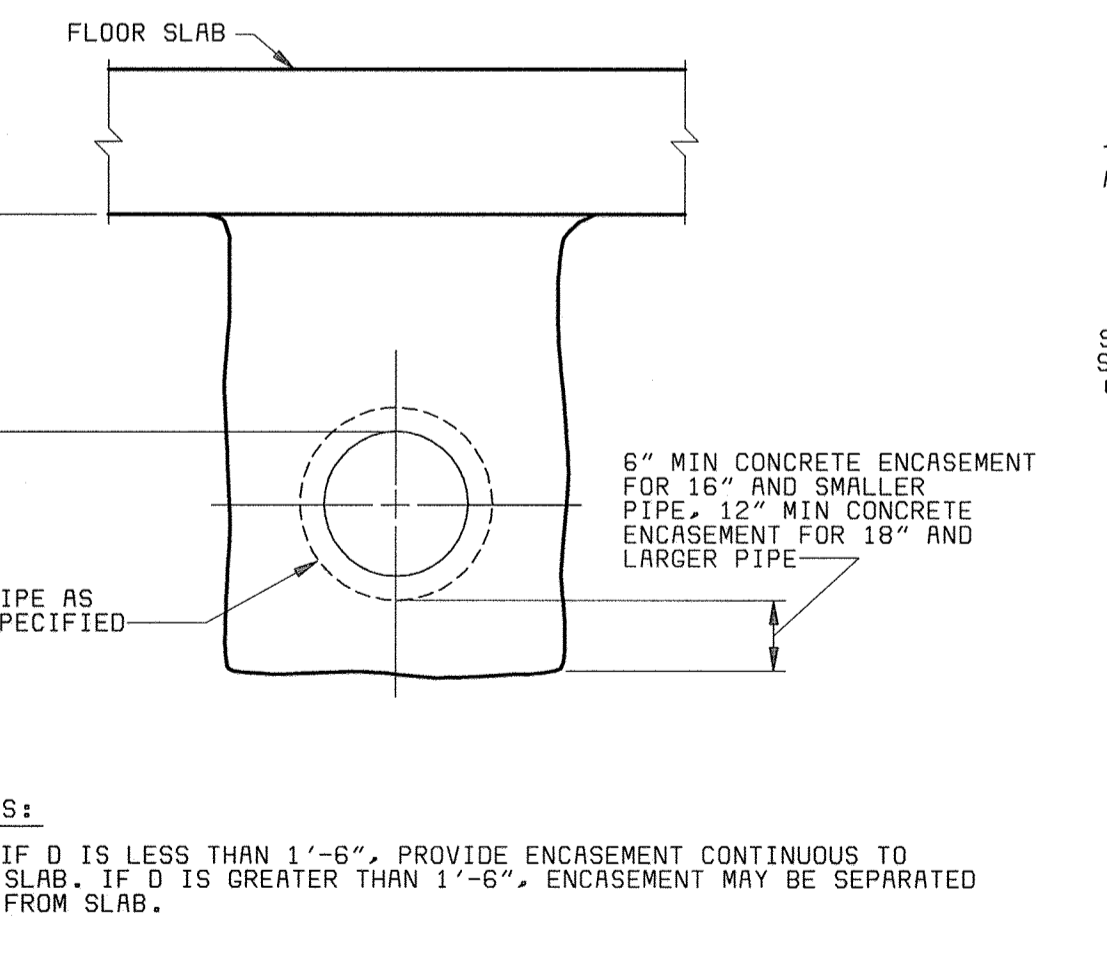
- SUPPORT WIDTH, 8" FOR 12" & SMALLER PIPE, 12" FOR 14" & LARGER PIPE.
- SUPPORT LENGTH, PIPE OD + 4" FOR 12" & SMALLER PIPE, PIPE OD FOR 14" & LARGER PIPE.

CONCRETE PIPE SUPPORT

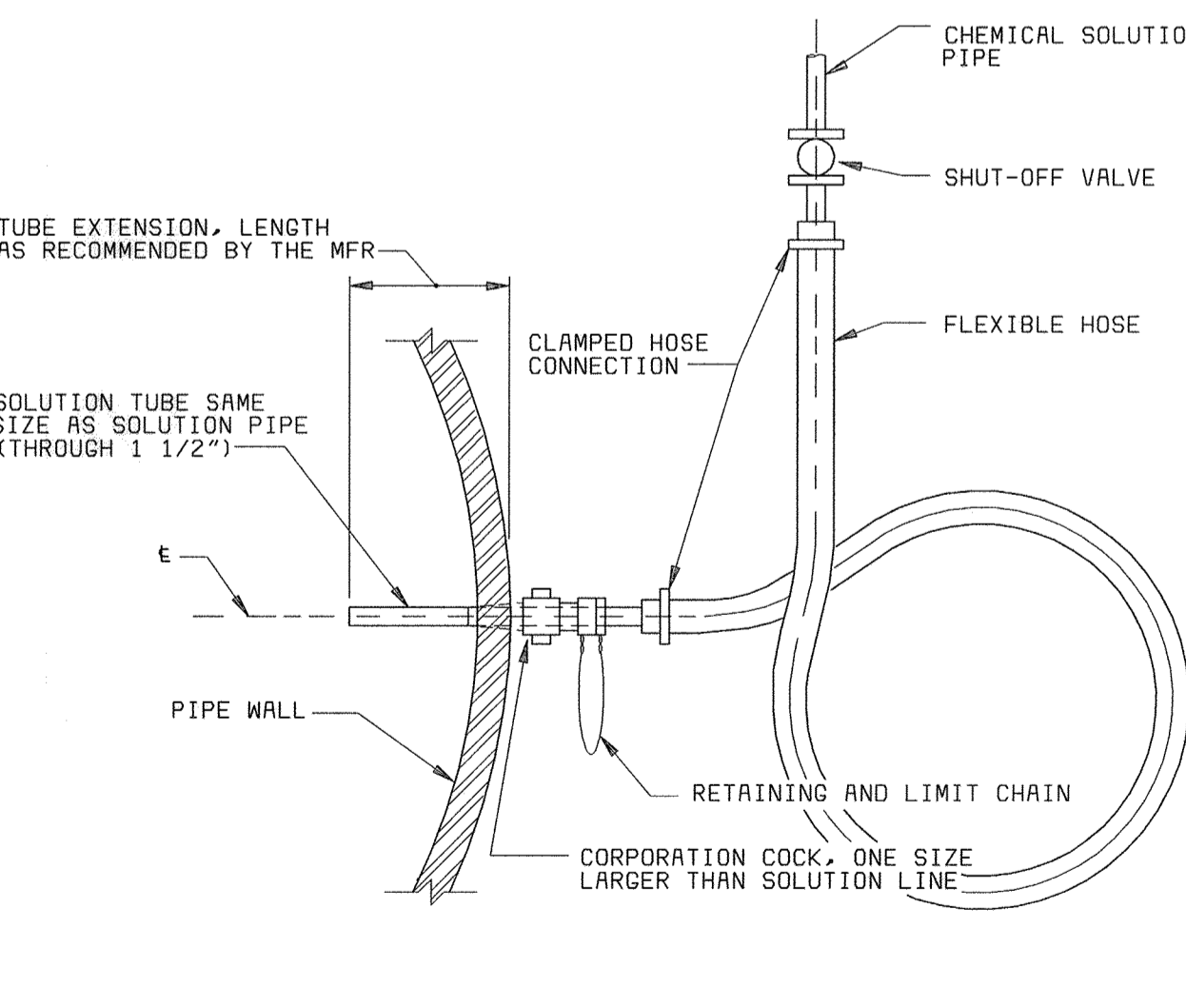
FLOOR SLEEVE



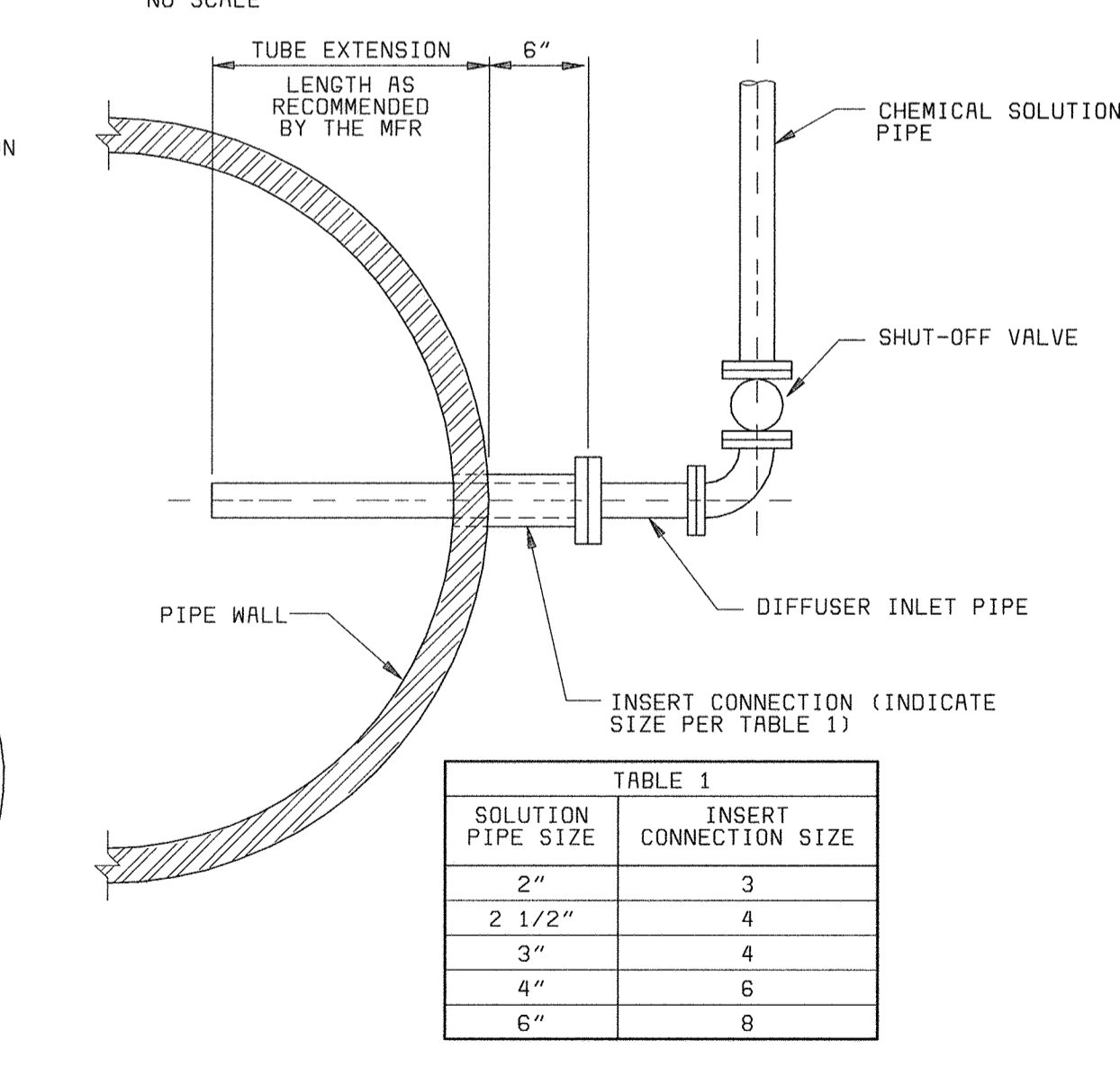
VERTICAL PIPE SUPPORT



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

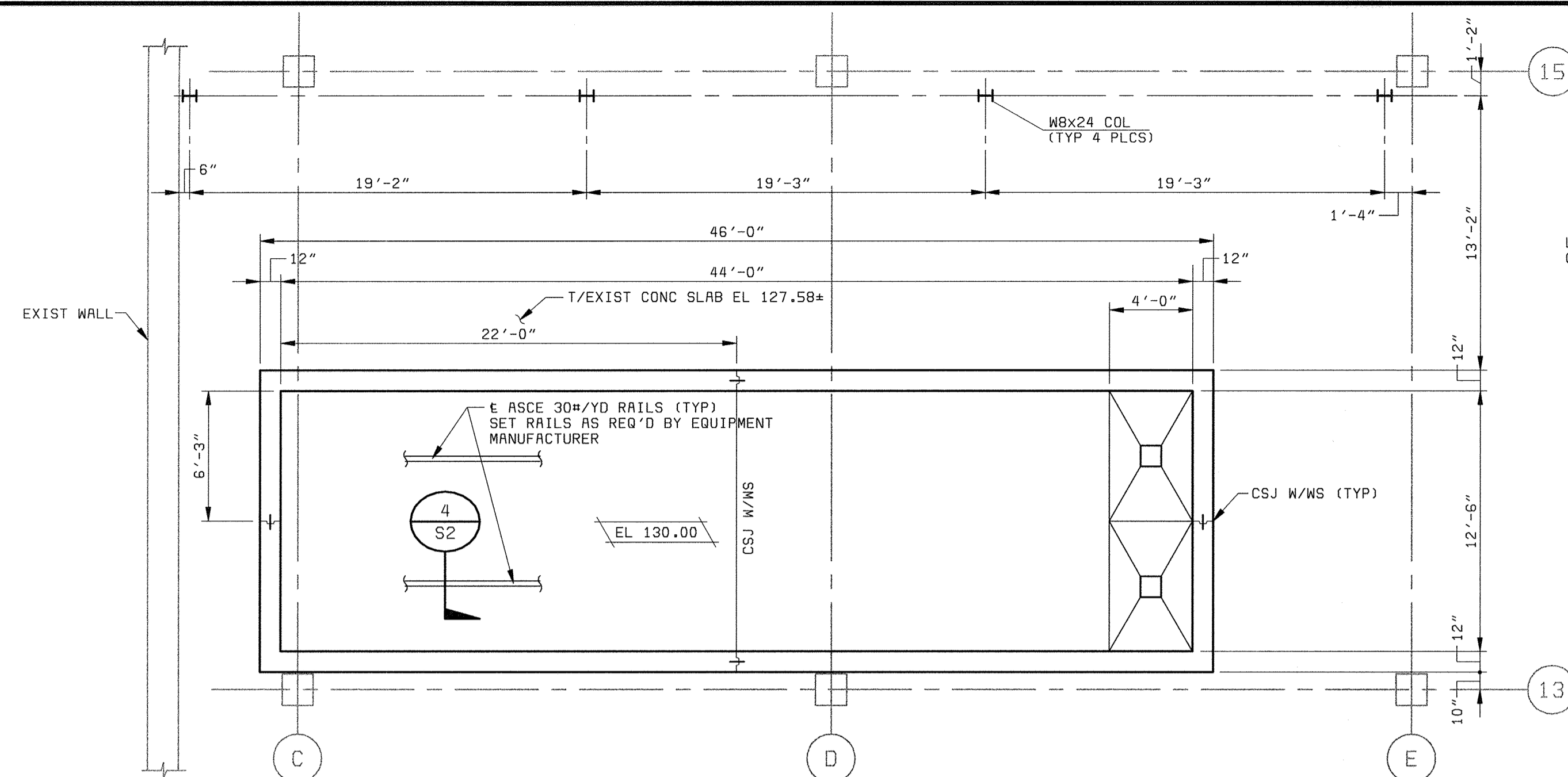
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY D MITT BOND A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 24676

DES: TJW					
DRN: NAG					
CHK: WLK					
DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK APP

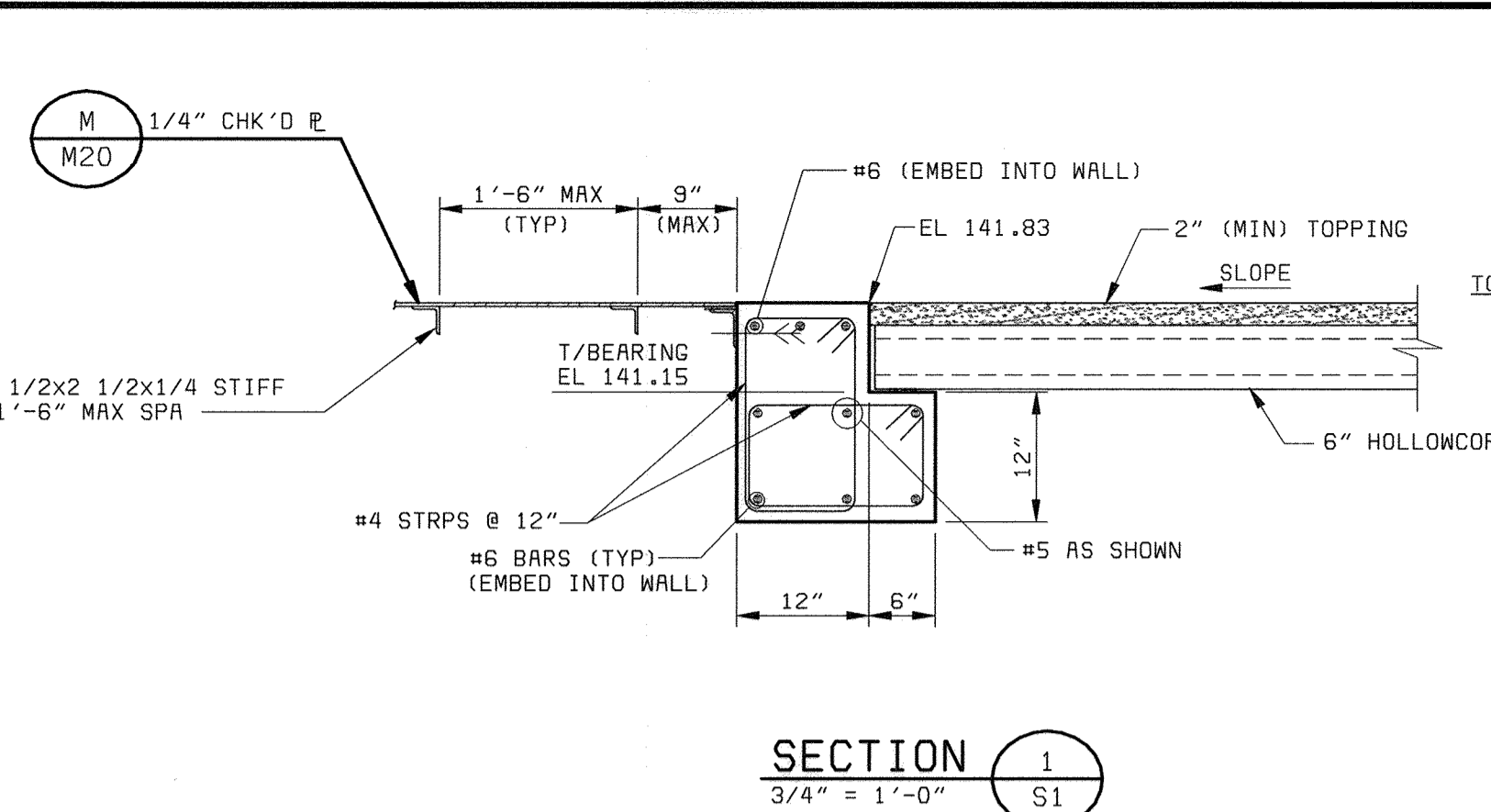
MECHANICAL GENERAL
 CIVIL - MISCELLANEOUS DETAILS

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

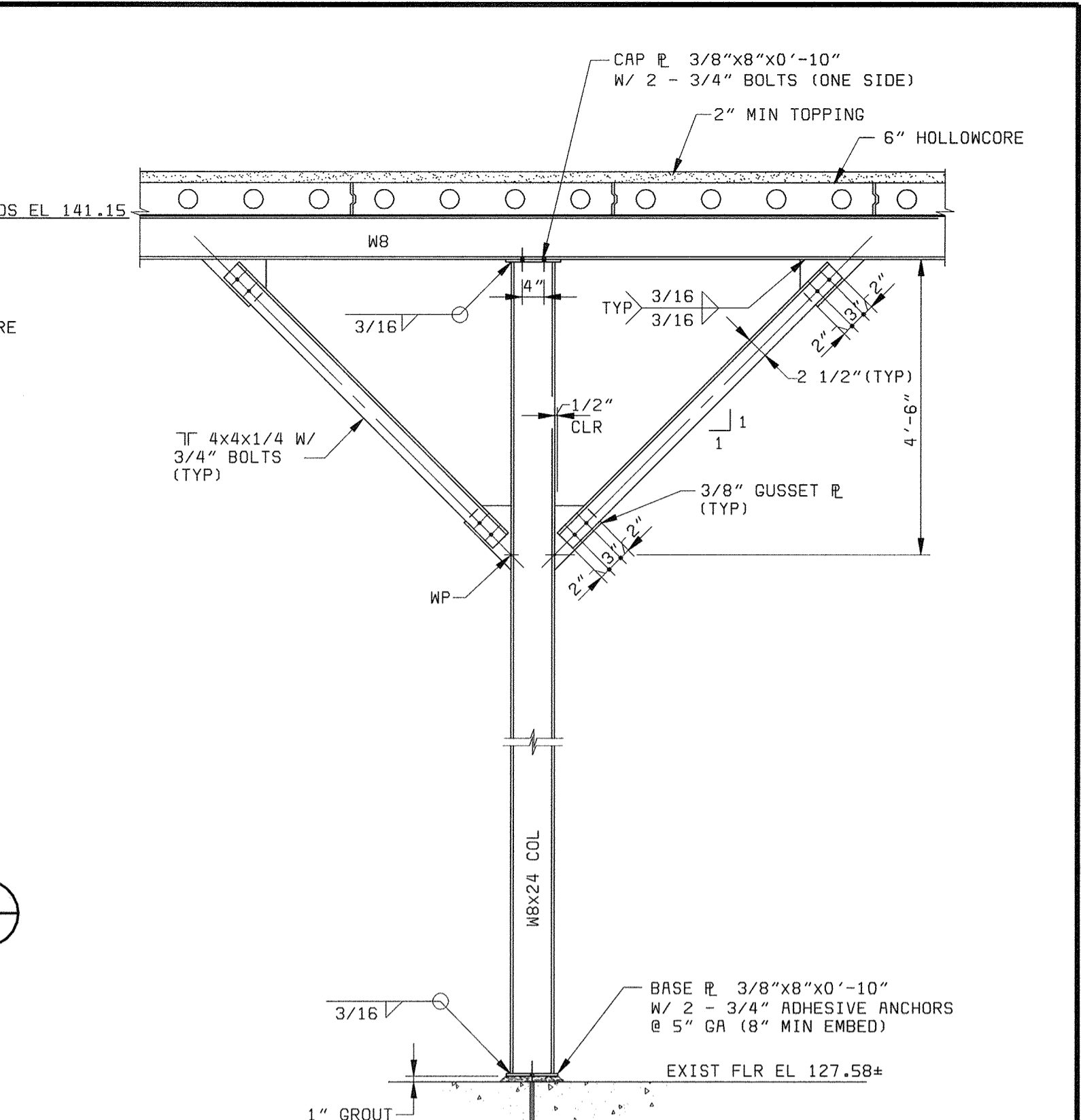
SCALE AS SHOWN
 SHEET 65 OF 150
 M21



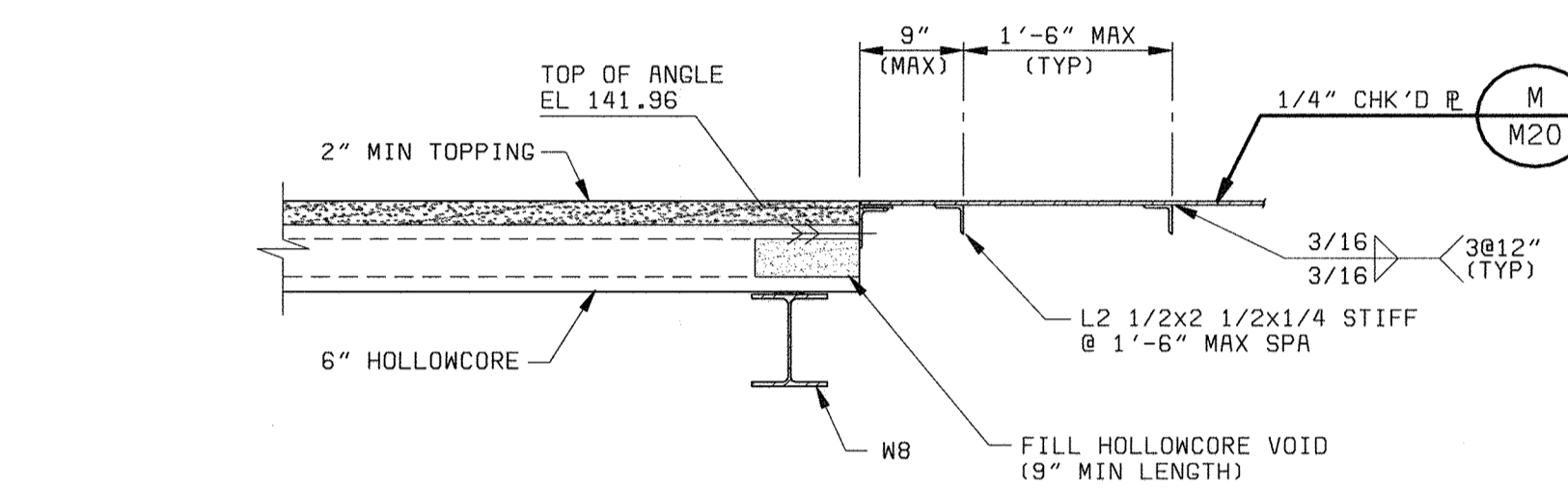
THICKENING TANK
PLAN AT EL. 130.00
 3/16" = 1'-0"



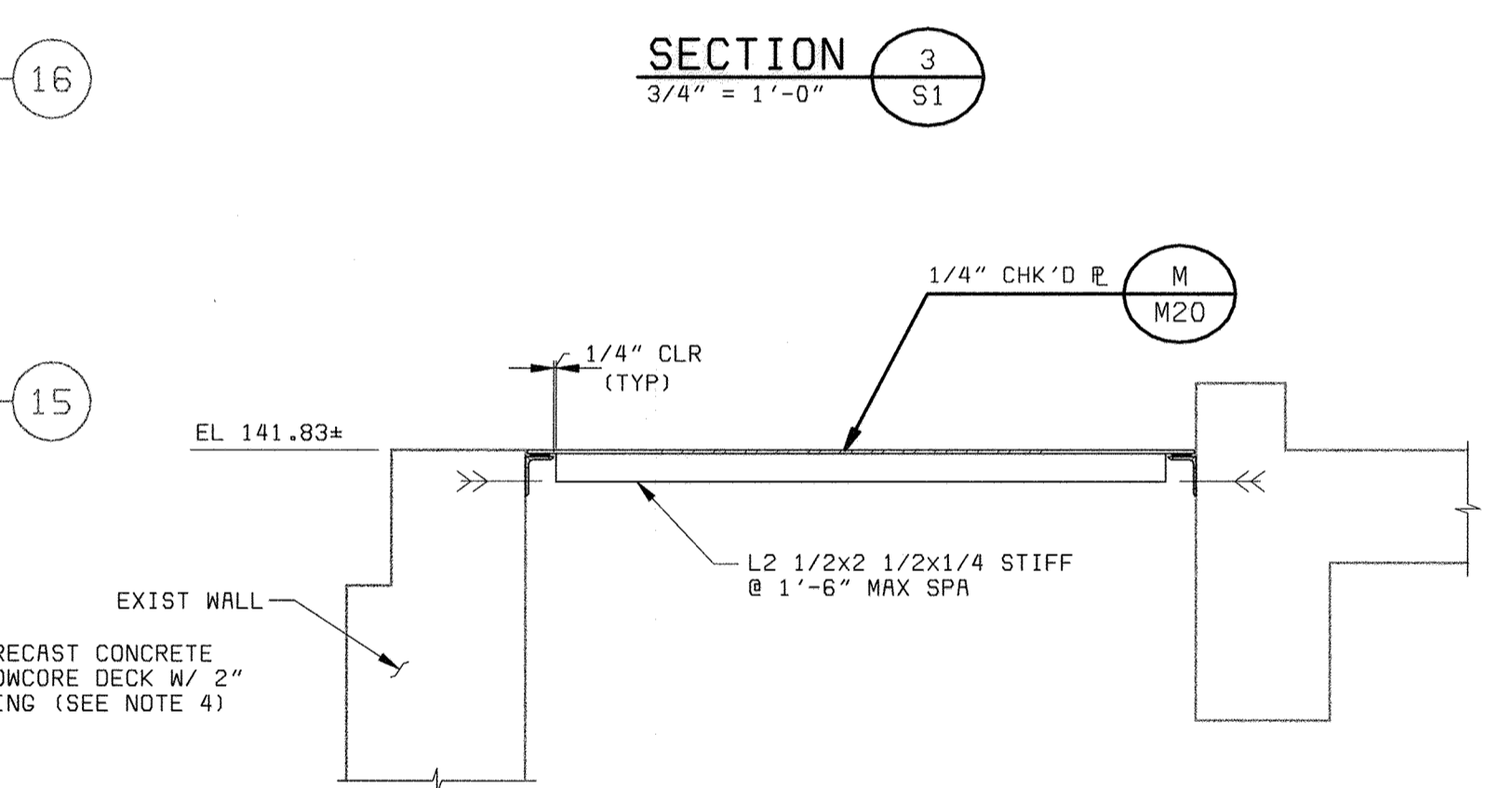
SECTION 1
 3/4" = 1'-0"



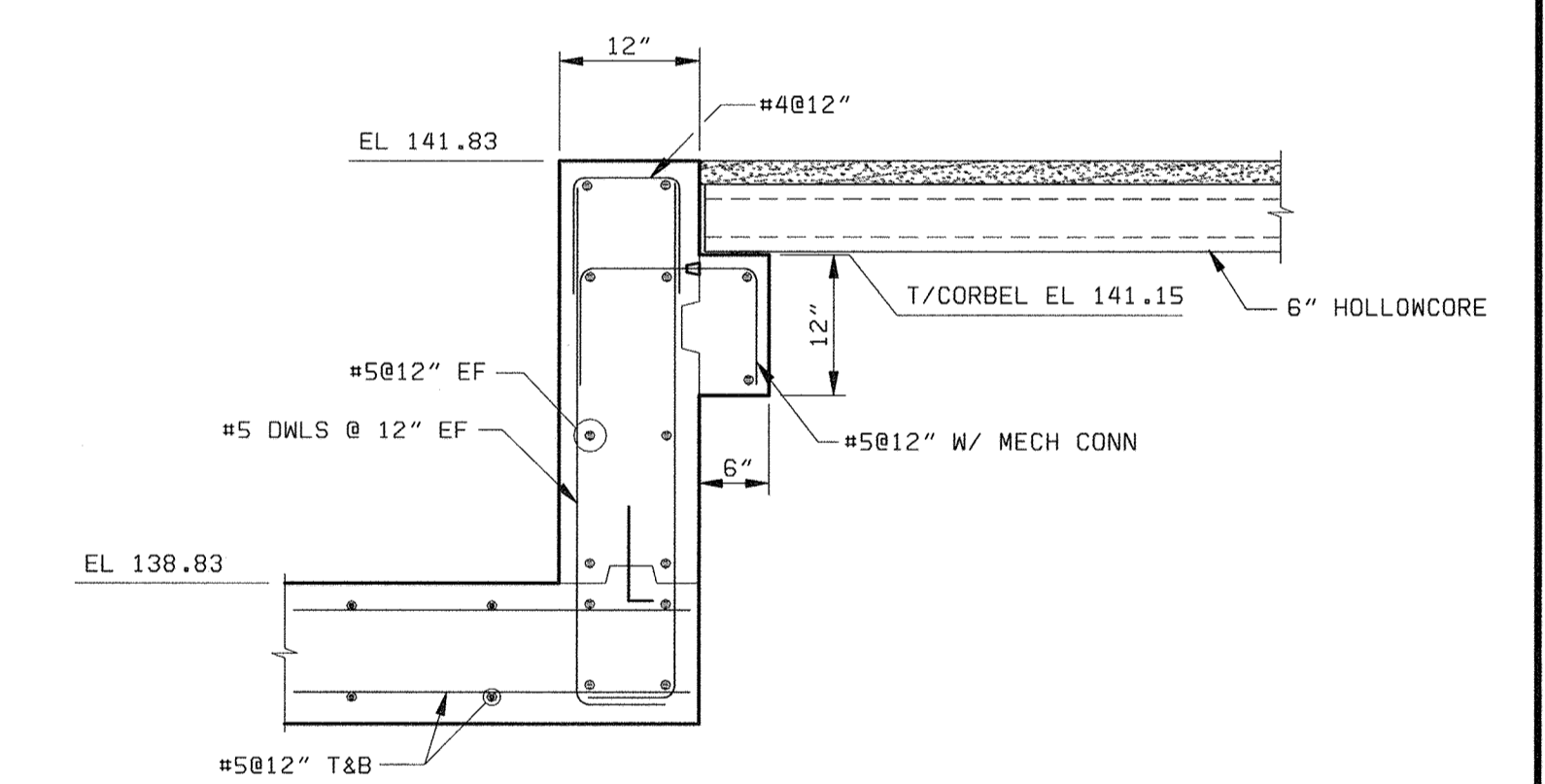
SECTION 2
 1/2" = 1'-0"



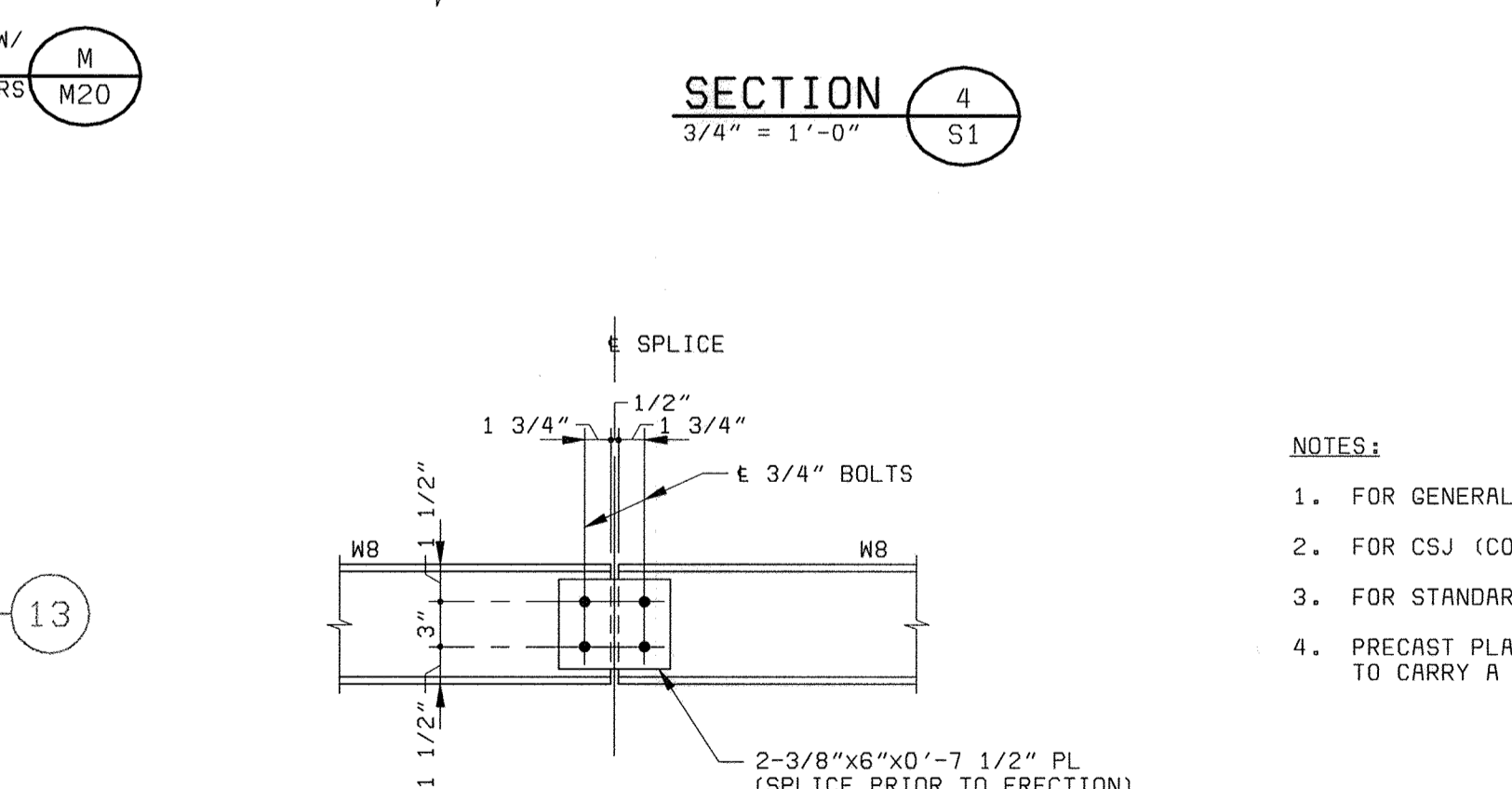
SECTION 3
 3/4" = 1'-0"



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

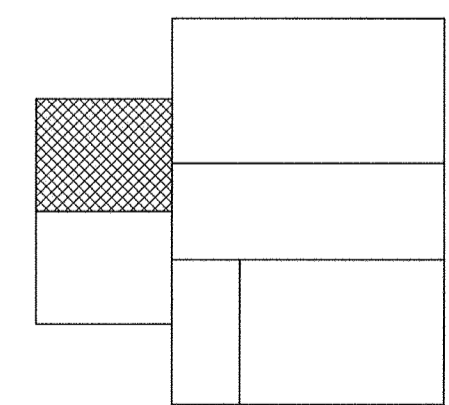


SECTION 5
 3/4" = 1'-0"

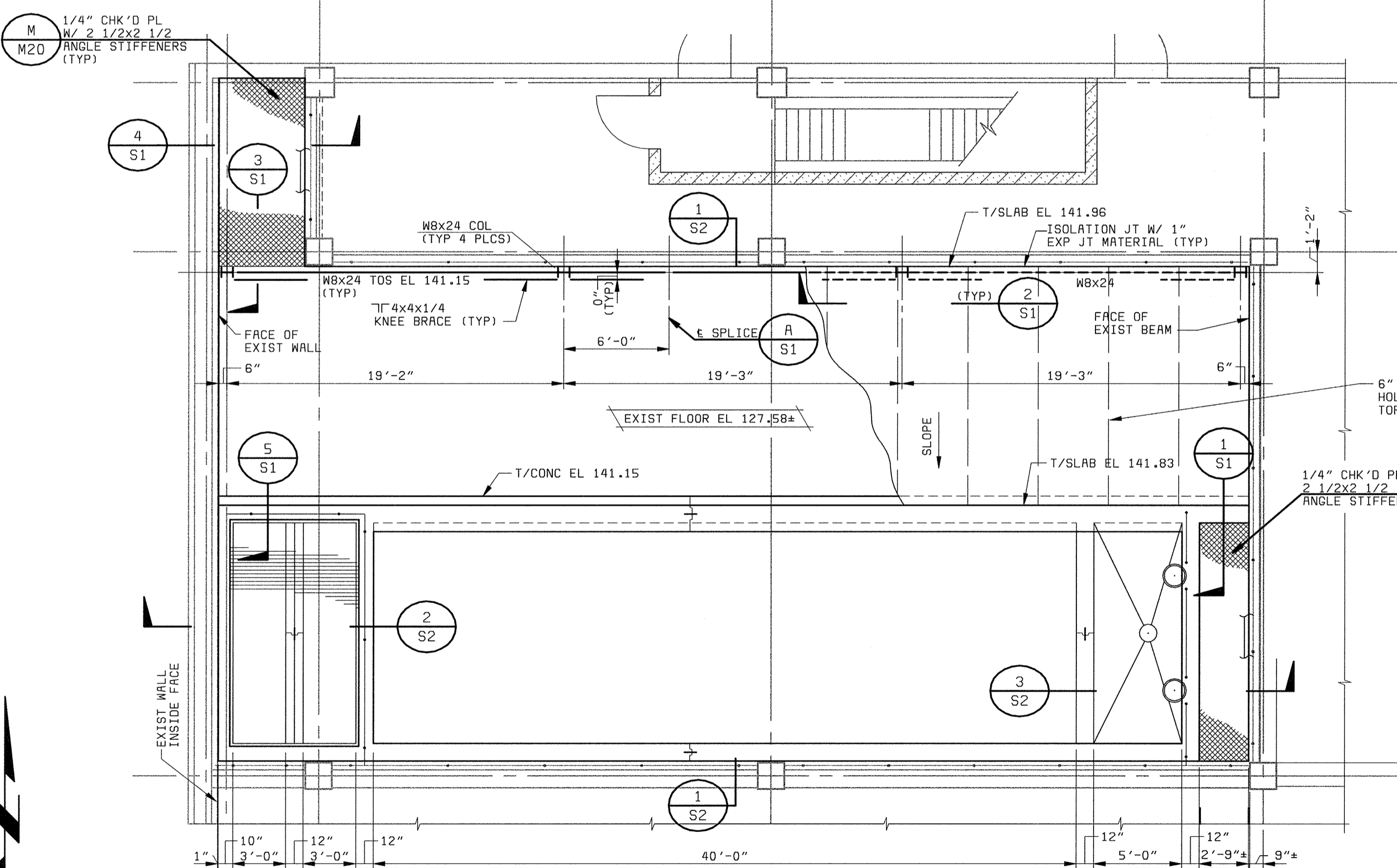


DETAIL A
 1" = 1'-0"

- 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.



KEY PLAN



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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND



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 AND SEALED BY
 THAY N. GOPALAKRISHNAN
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 19809

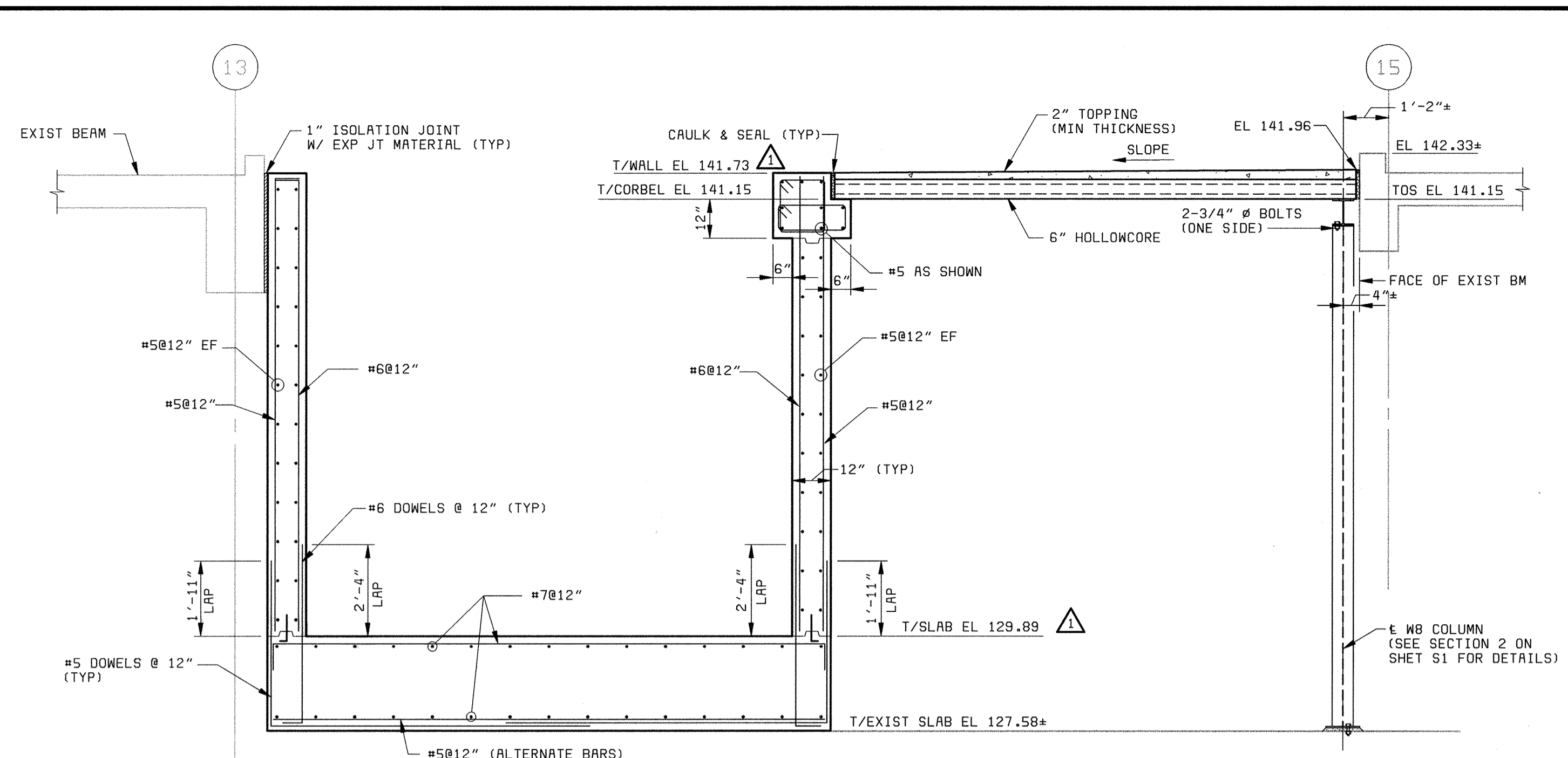
DES: TNG					
DRN: MAS					
CHK: JME					
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
		REVISIONS AND RECORD OF ISSUE		NO. BY CK APP	

STRUCTURAL
FLOTATION THICKENING TANK
PLANS, SECTIONS AND
DETAILS

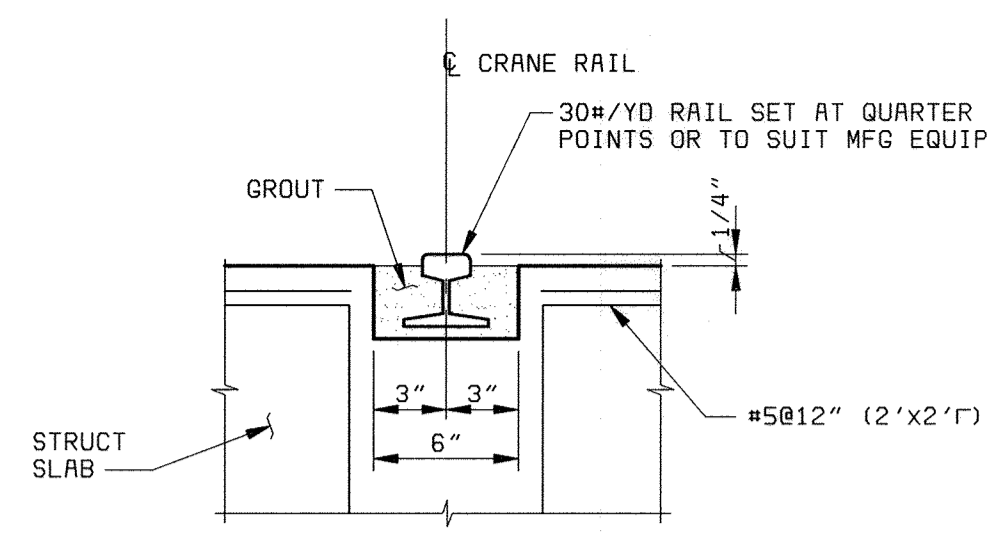
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE
 AS
 SHOWN
 SHEET
 66 OF 150
S1

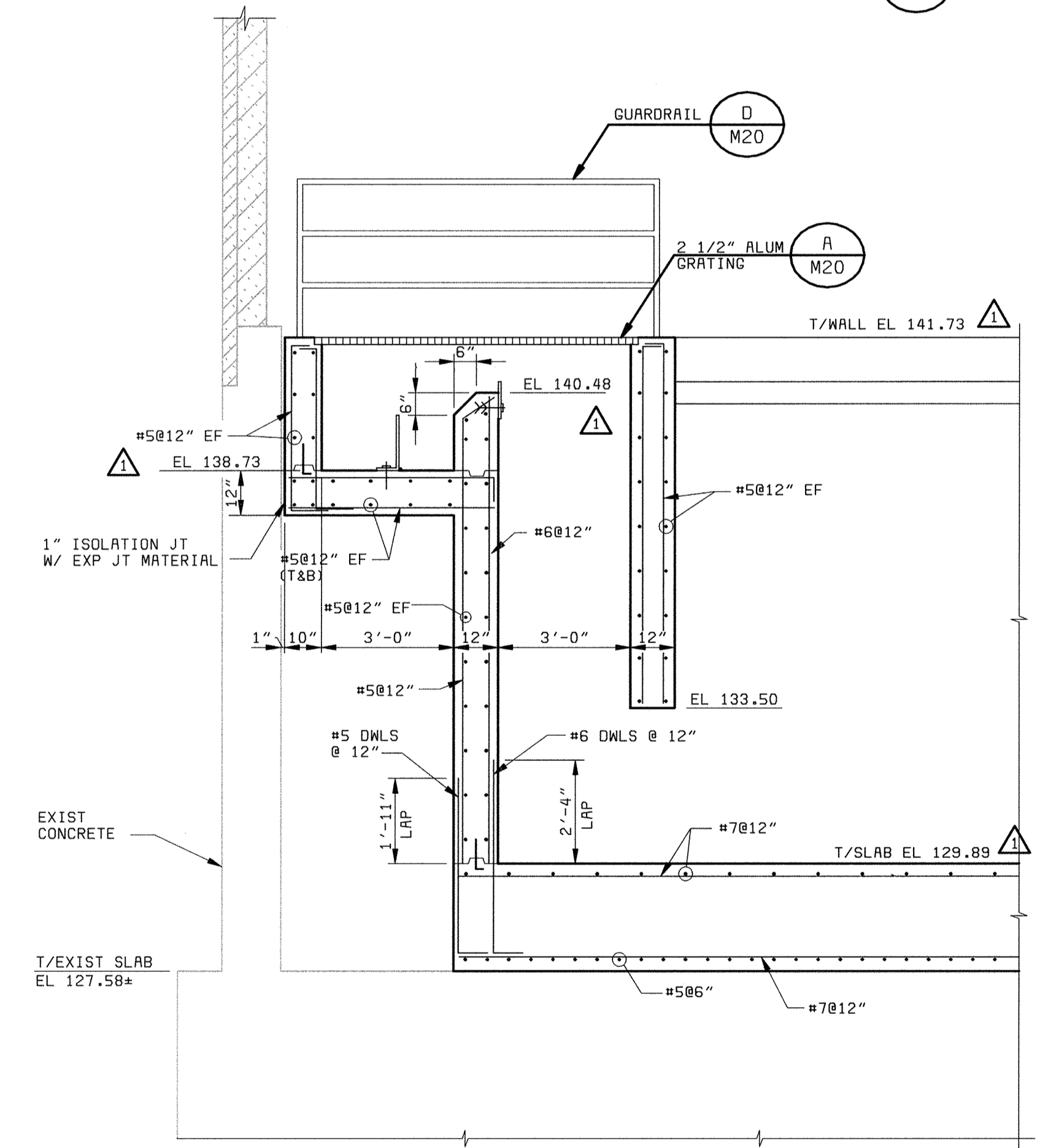
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 058472-2
 FD58472A
 58472-203-DAF-S-Z00000XB



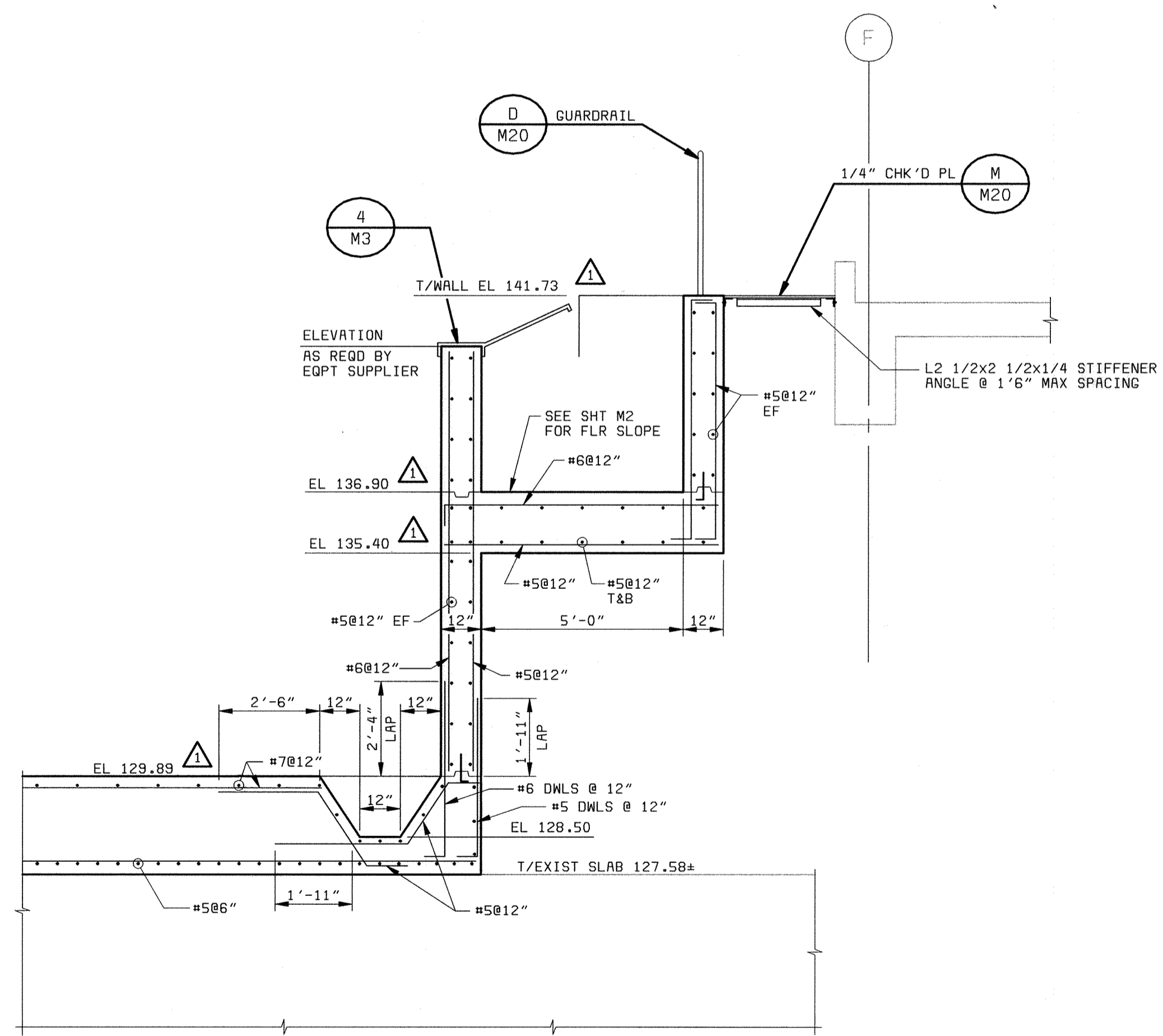
SECTION 1
3/8" = 1'-0" S2



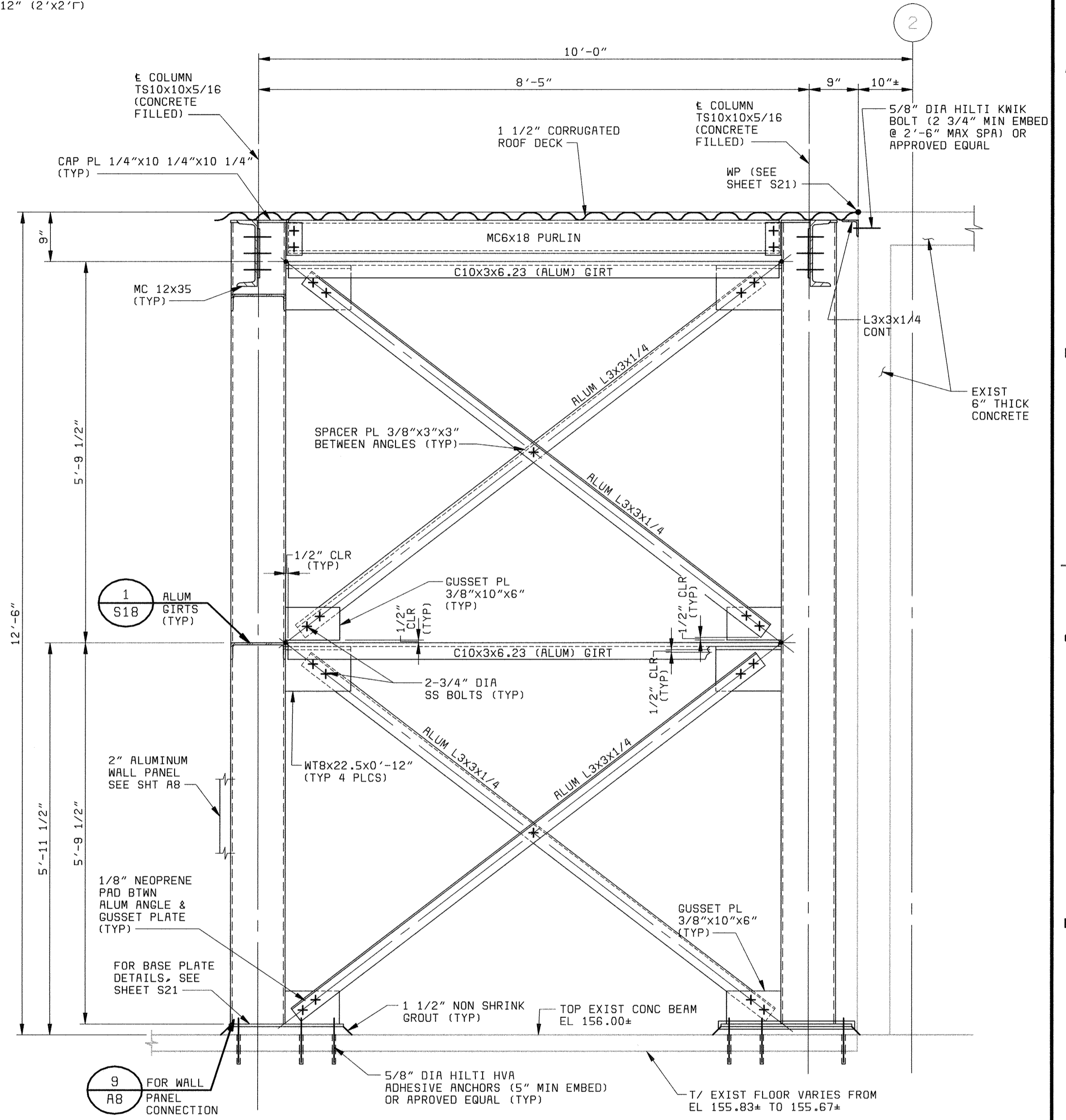
SECTION 4
1 1/2" = 1'-0" S2



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



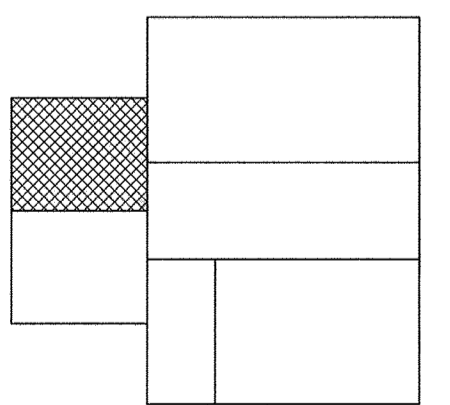
SECTION 3
3/8" = 1'-0" S2



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

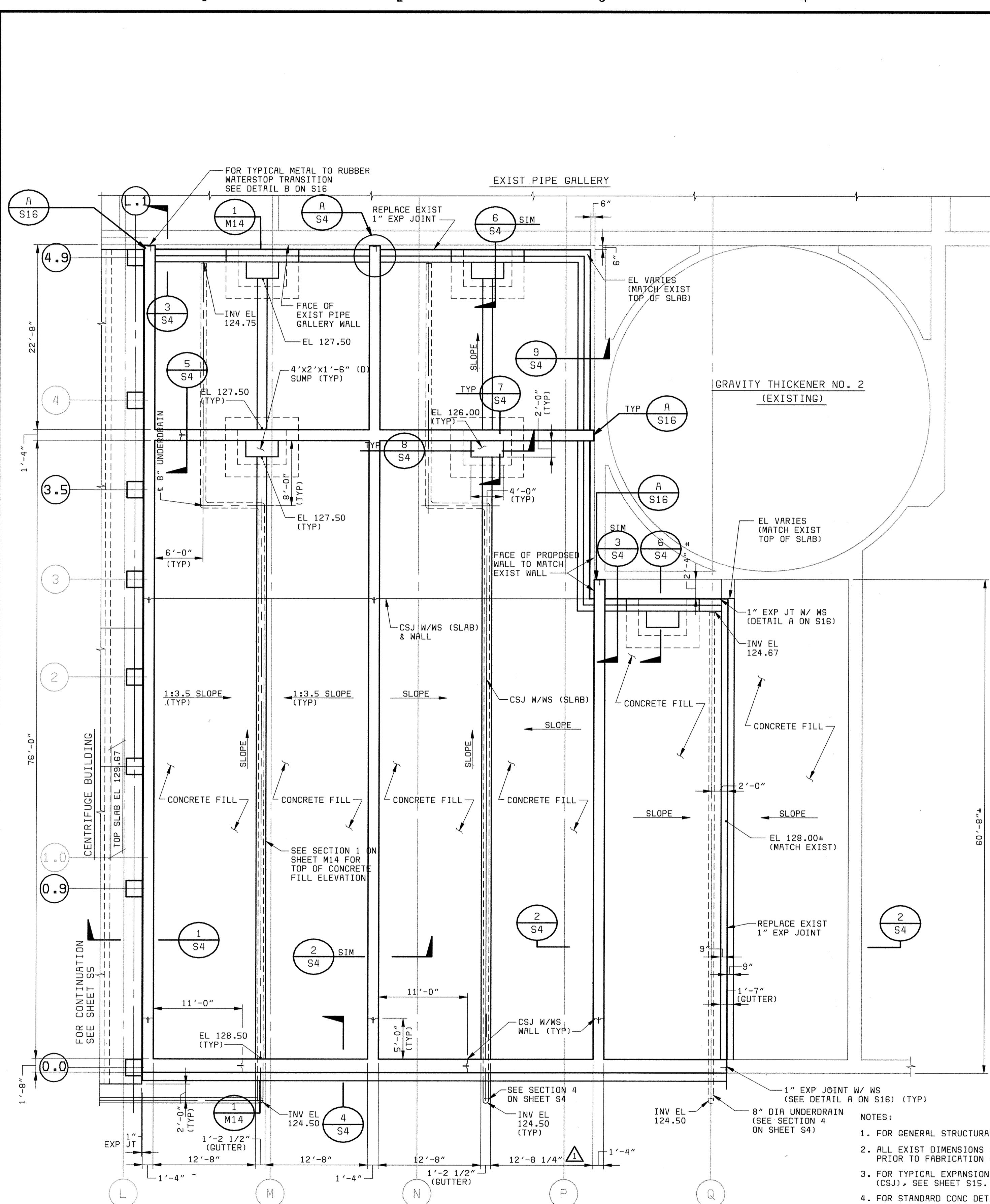
NOTE: ALL STRUCTURAL MEMBERS NOT SHOWN AS ALUMINUM SHALL BE STEEL

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

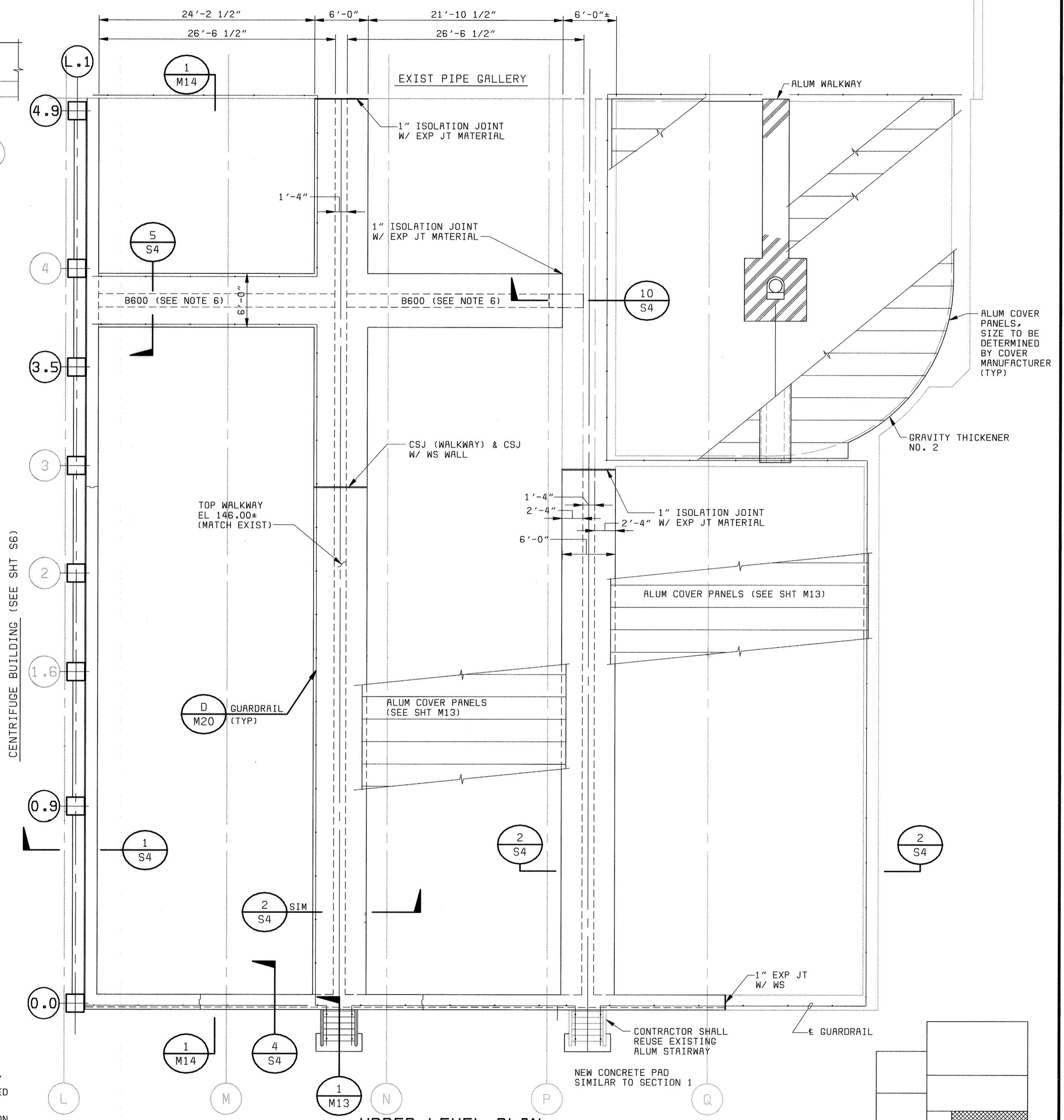


KEY PLAN

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 THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG					STRUCTURAL FLOTATION THICKENING TANK	LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY	SCALE AS SHOWN SHEET 67 OF 150 S2
			DRN: MAS,ALB	CHK: JME	DATE: 05/30/00	DATE	07/26/04			

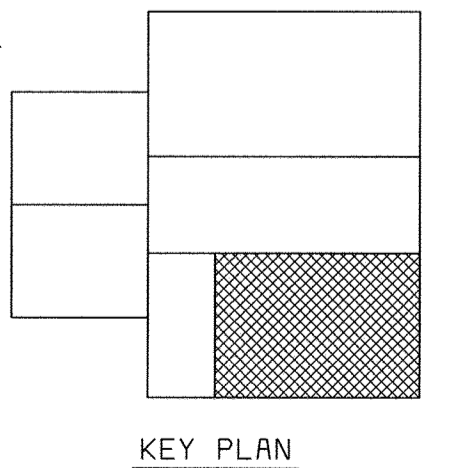


LOWER LEVEL PLAN
1/8" = 1'-0"



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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A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 19609

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

**STRUCTURAL
SOUTH SLUDGE HOLDING TANK AND
GRAVITY THICKENER NO. 2**

PLANS

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

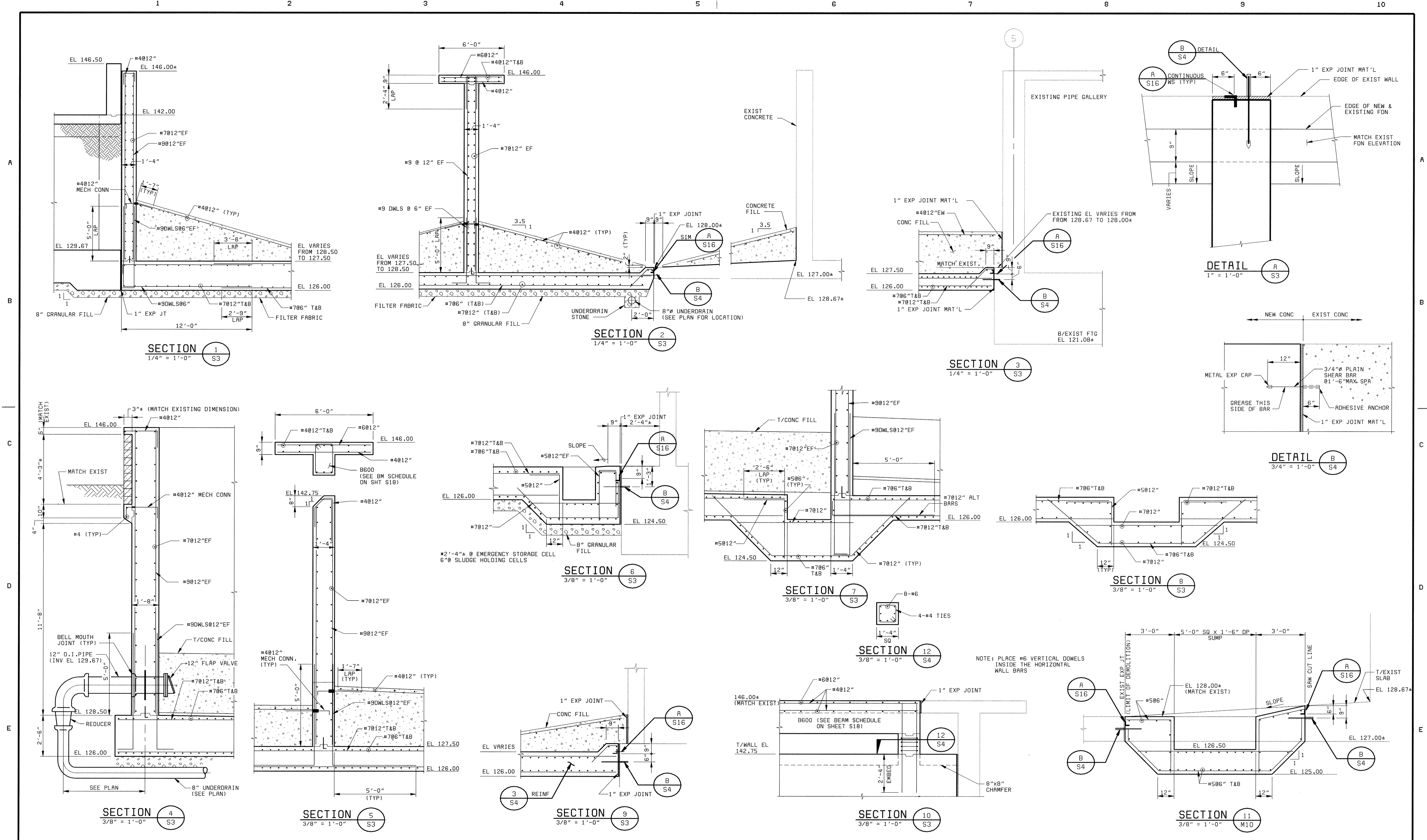
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
68 OF 150

S3

58472-203-SHT-S-200000Q9



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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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	RHH	RJR	RJR
DATE		REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

STRUCTURAL
SOUTH SLUDGE HOLDING TANK

SECTIONS AND DETAILS

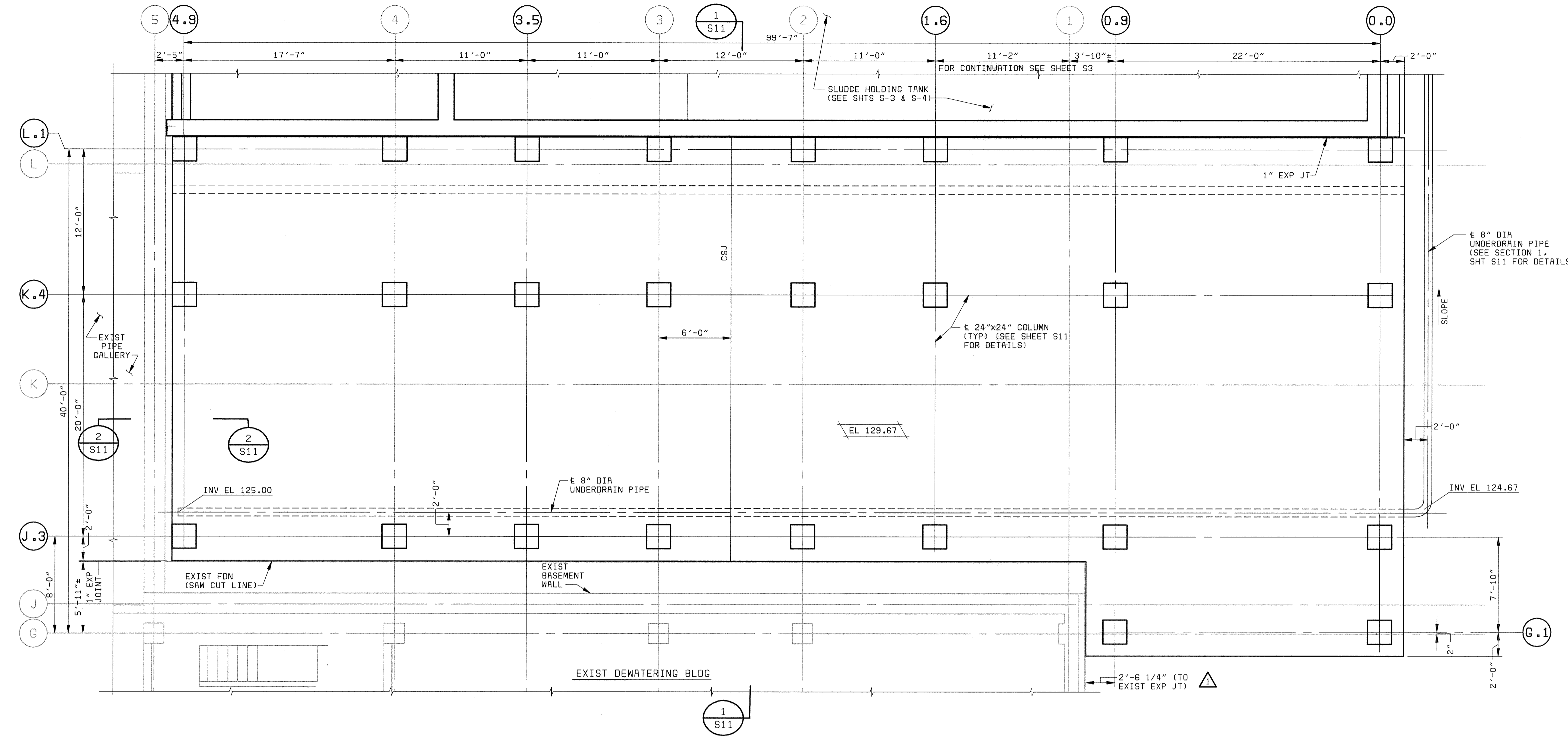
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

SCALE
AS
SHOWN

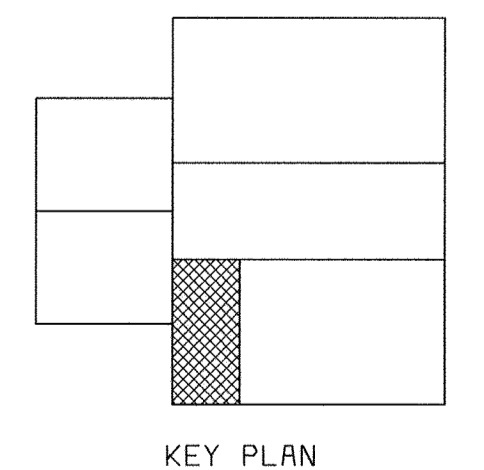
SHEET
69 OF 150

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
0584722
0584722

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
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 19609

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

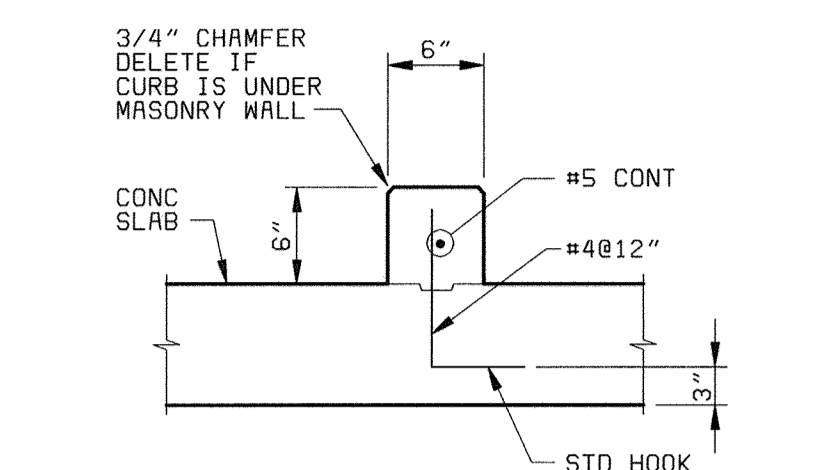
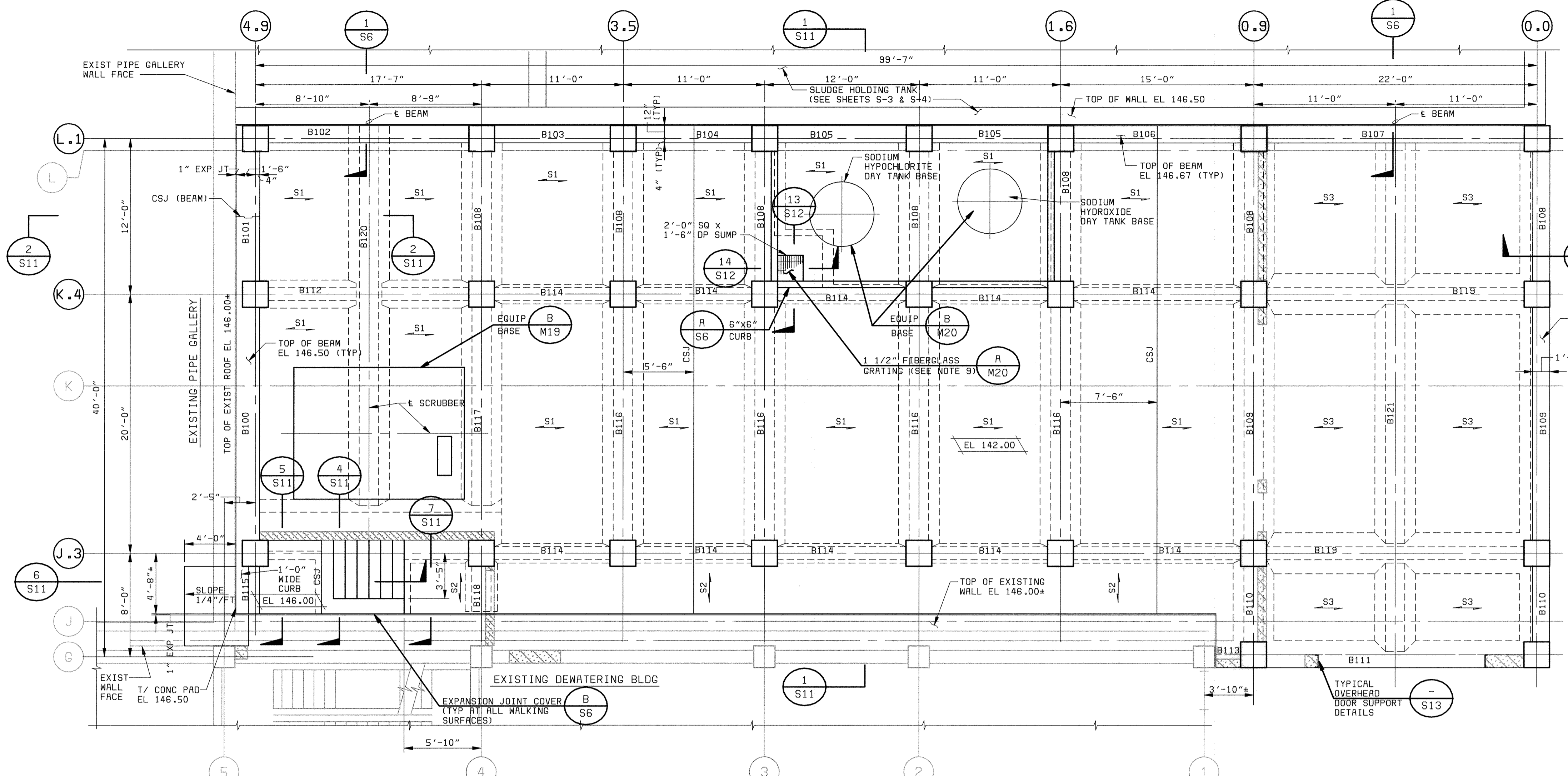
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

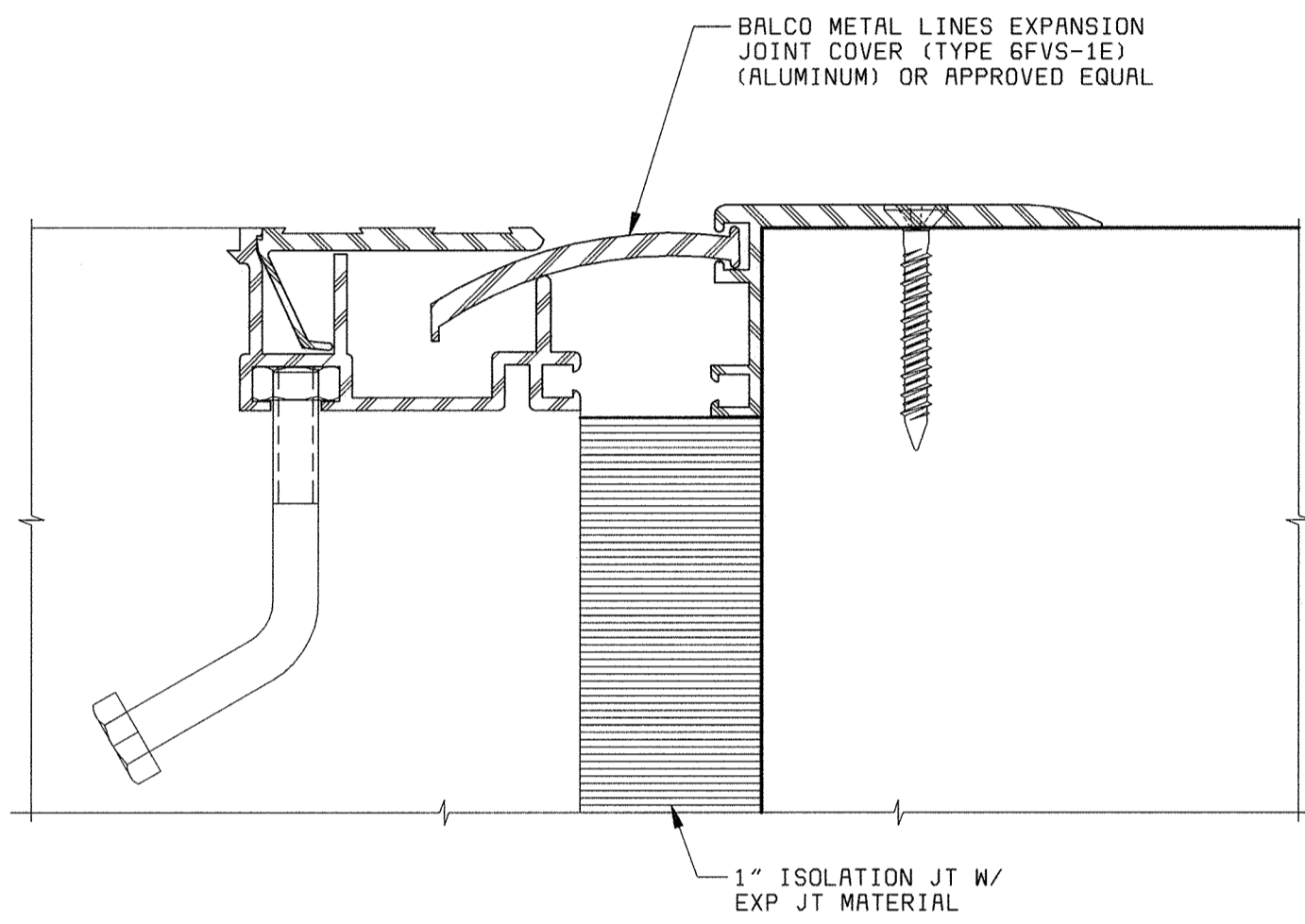
SCALE
AS
SHOWN

SHEET
70 OF 150

S5

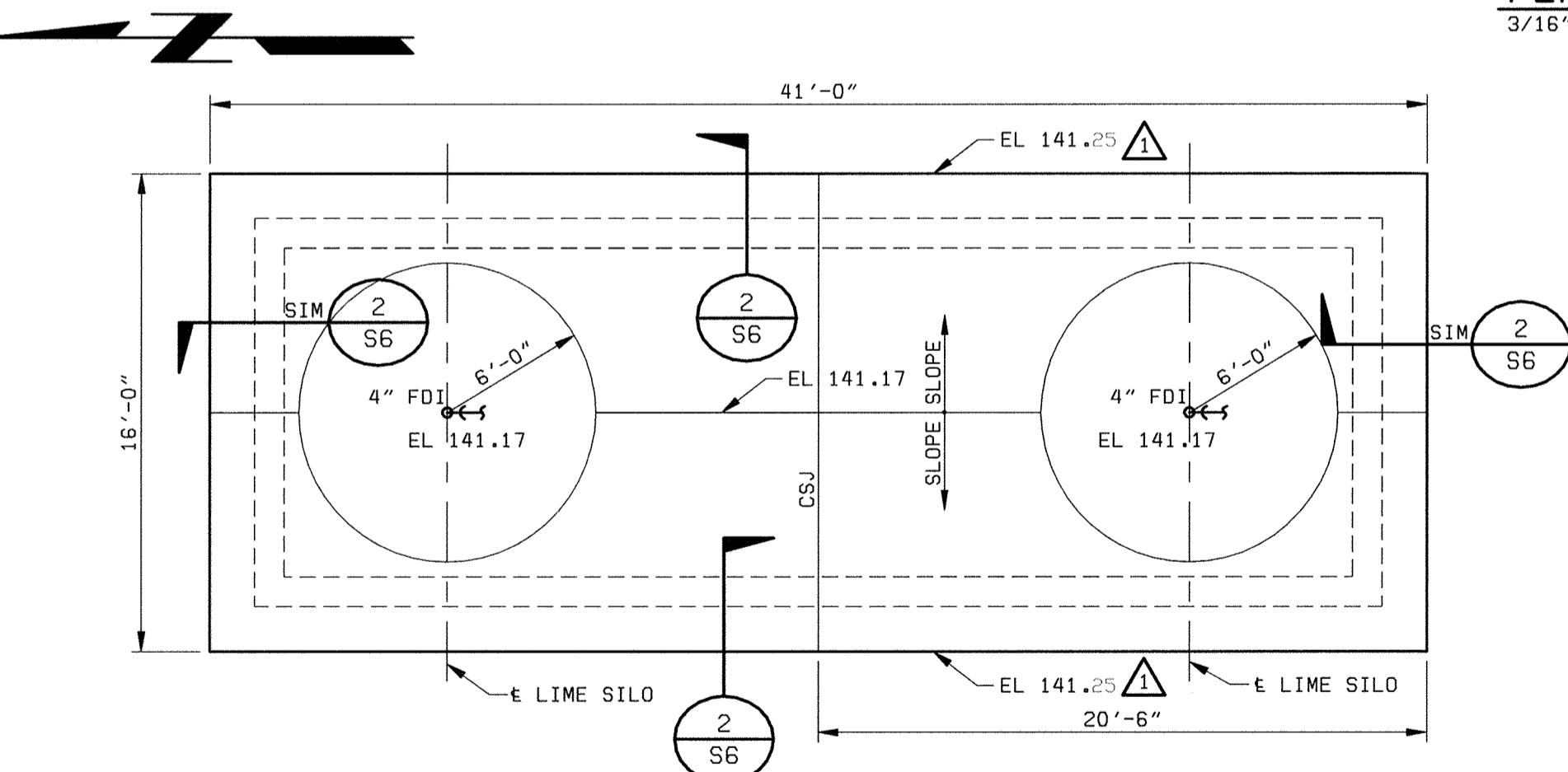


TYPICAL CONCRETE CURB
NO SCALE



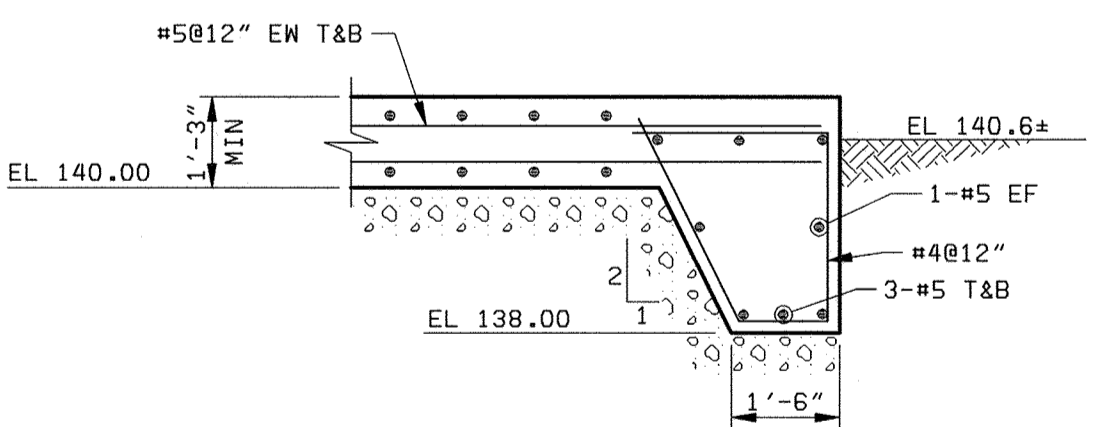
TYPICAL AT ALL WALKWAY SURFACES
EXPANSION JOINT COVER
NO SCALE

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

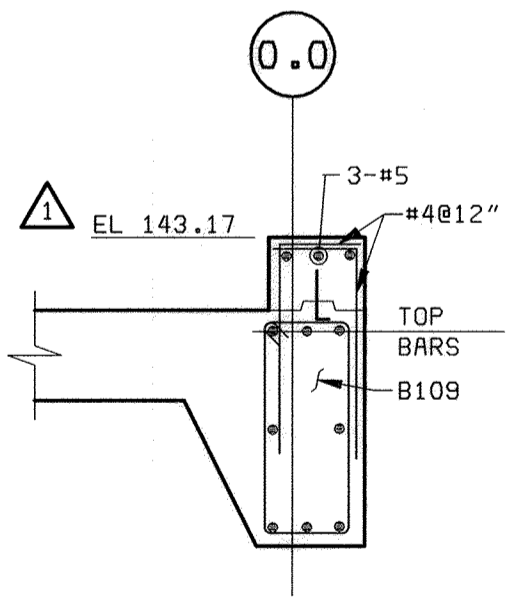


- NOTES:
1. THE PAD DIMENSIONS AND LOCATION SHALL BE VERIFIED WITH THE LIME SILO MANUFACTURER PRIOR TO FABRICATION OF REINFORCING STEEL.
 2. THE SLAB THICKNESS SHOWN IS MINIMUM THICKNESS. THE SLAB THICKNESS SHALL NOT BE LESS THAN THE SILO ANCHOR BOLTS +3".
 3. SEE RDP DRAWING NO. PE99004-700 FOR LIME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

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



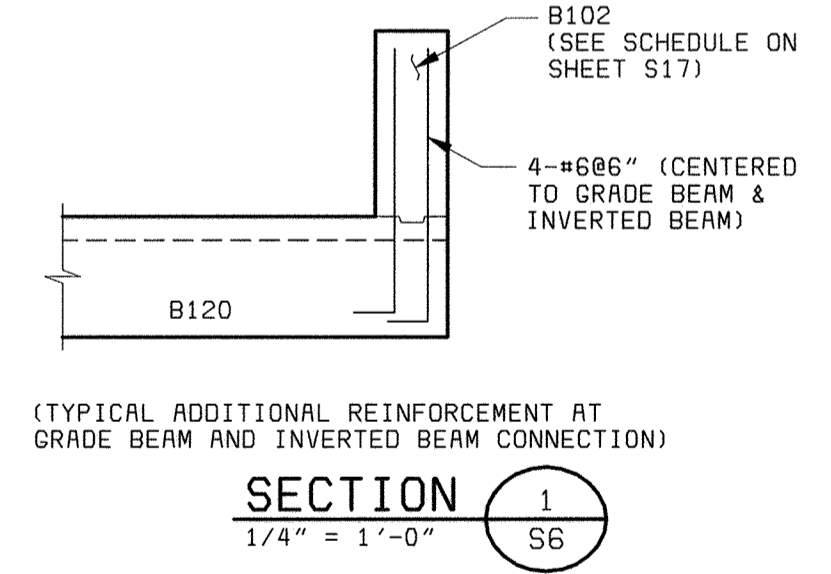
SECTION 2
3/8" = 1'-0"



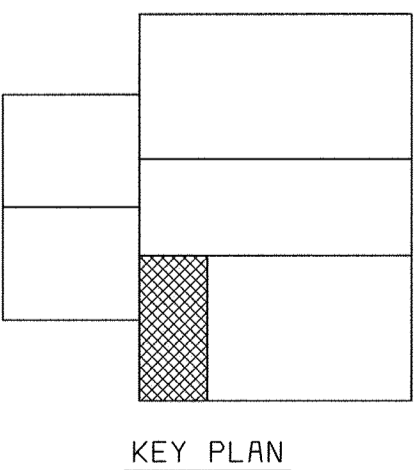
SECTION 3
3/8" = 1'-0"

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 FIBERGRATE 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.



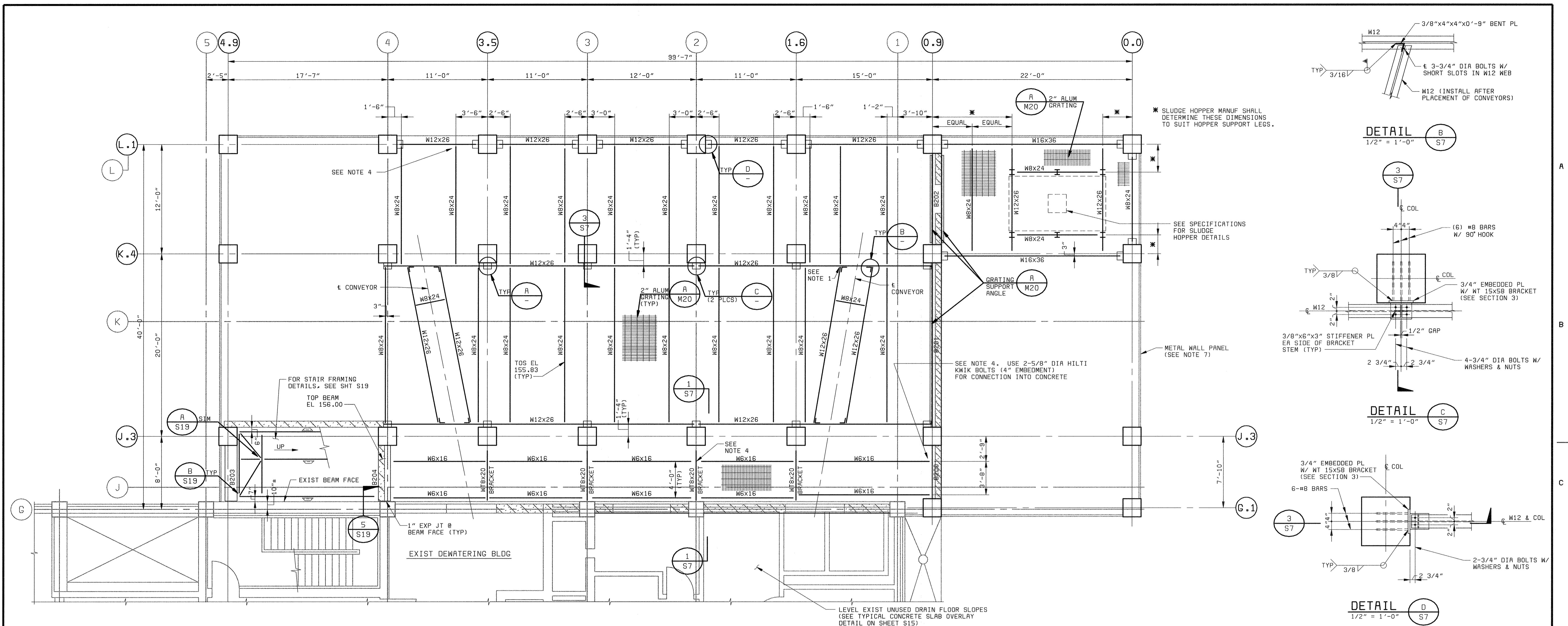
SECTION 1
1/4" = 1'-0"



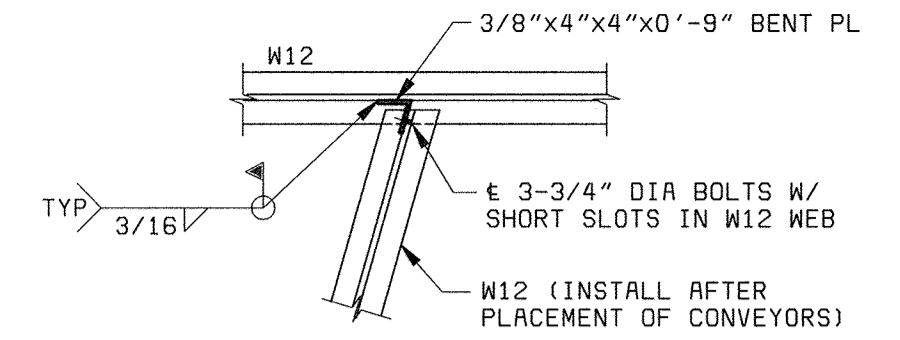
KEY PLAN

58472-203-SDL-S-R0000118
06/27/24
P0584724

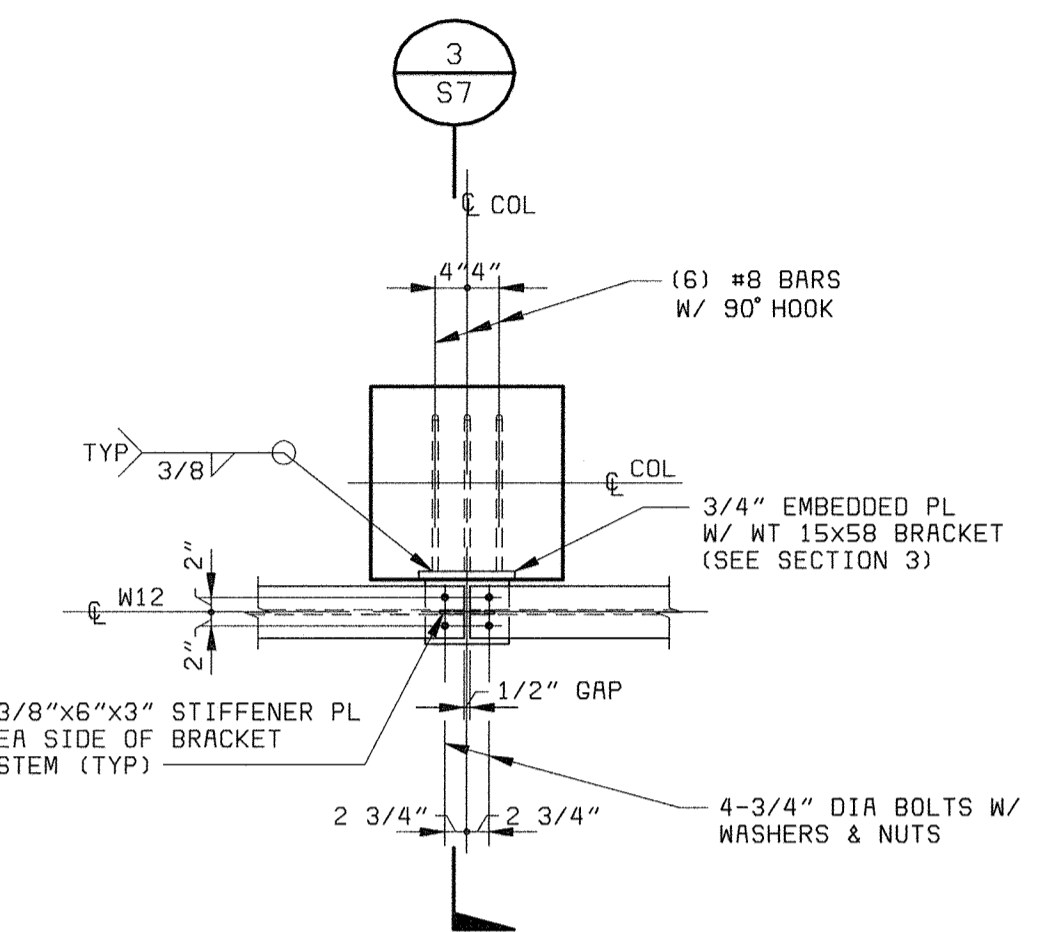
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG DRN: JRC CHK: JME DATE: 05/30/00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	STRUCTURAL CENTRIFUGE BUILDING EXPANSION PLAN AT EL 142.00 AND LIME SILO PAD 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 71 OF 150 S6
		CHIEF, BUREAU OF UTILITIES DATE _____	DATE _____	NO. BY CK APP	DATE	HOWARD COUNTY, MARYLAND



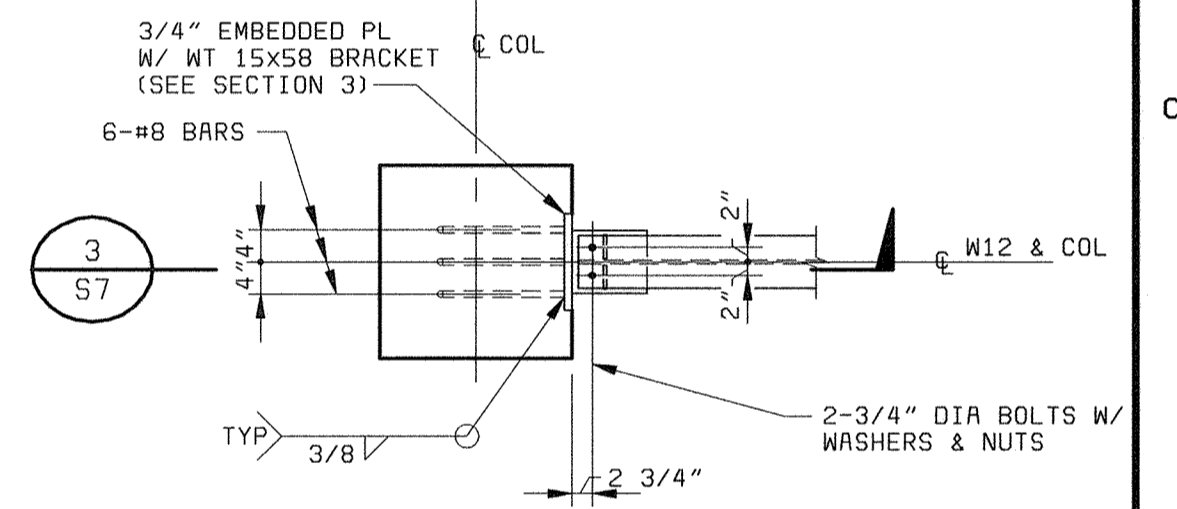
PLAN AT EL 156.00
3/16" = 1'-0"



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

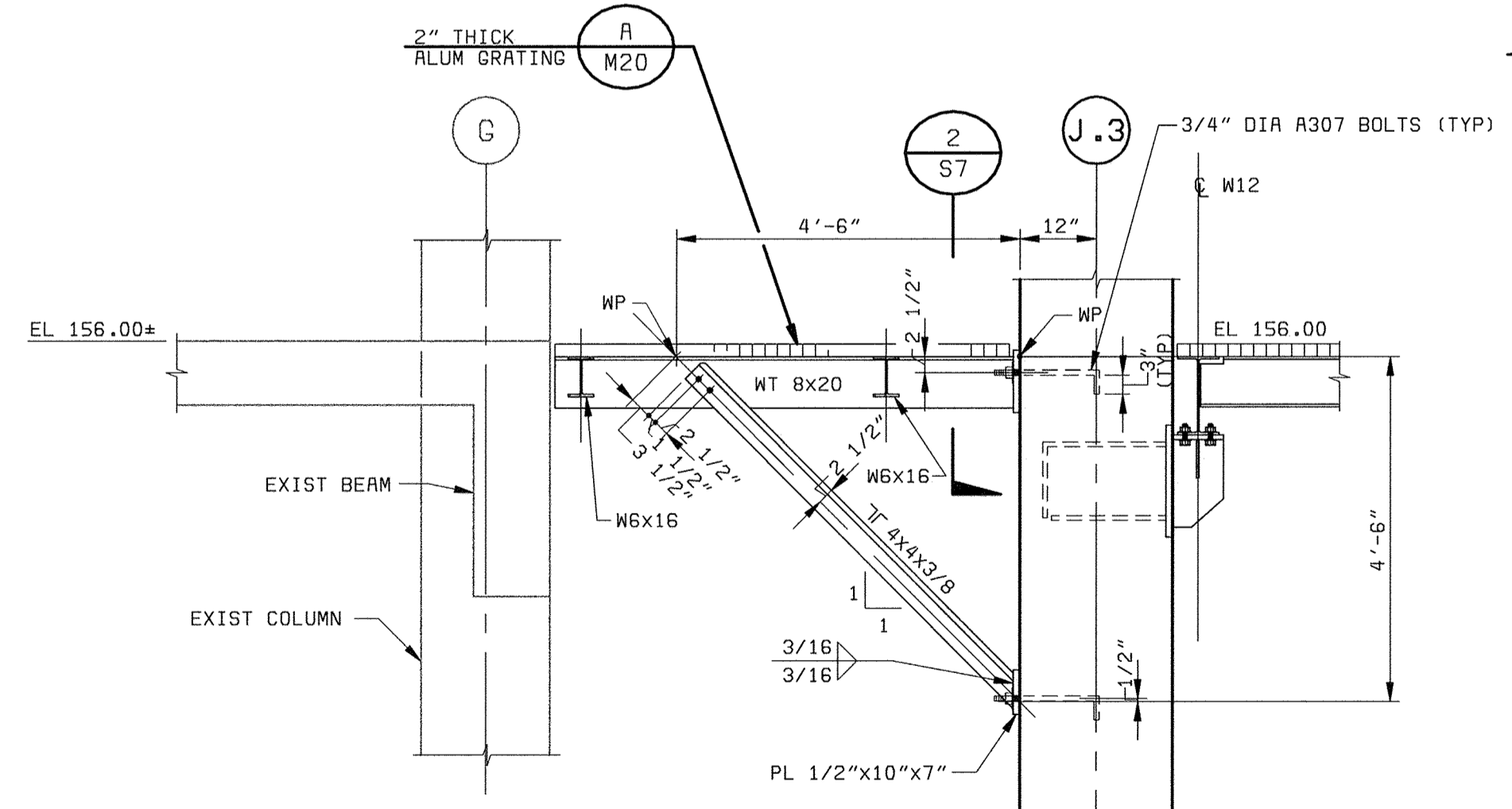


DETAIL C
1/2" = 1'-0"

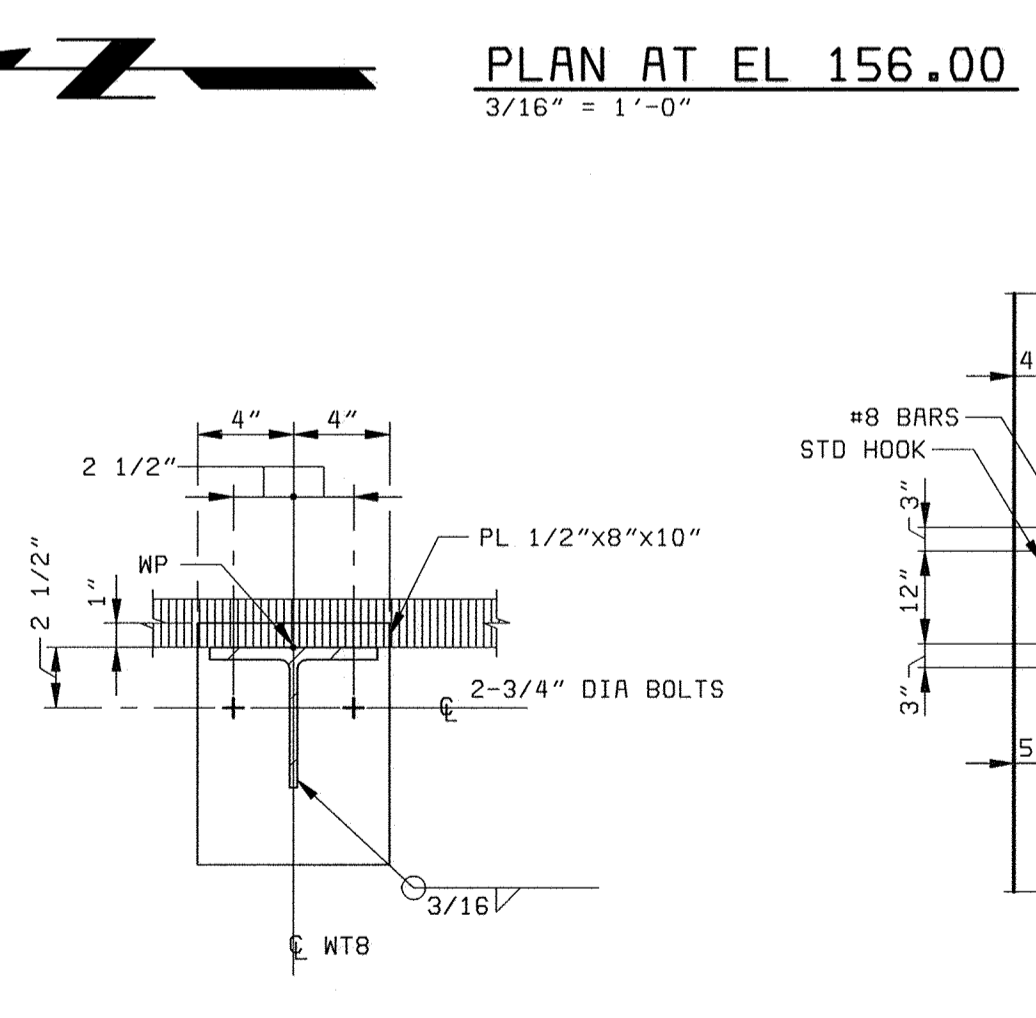


DETAIL D
1/2" = 1'-0"

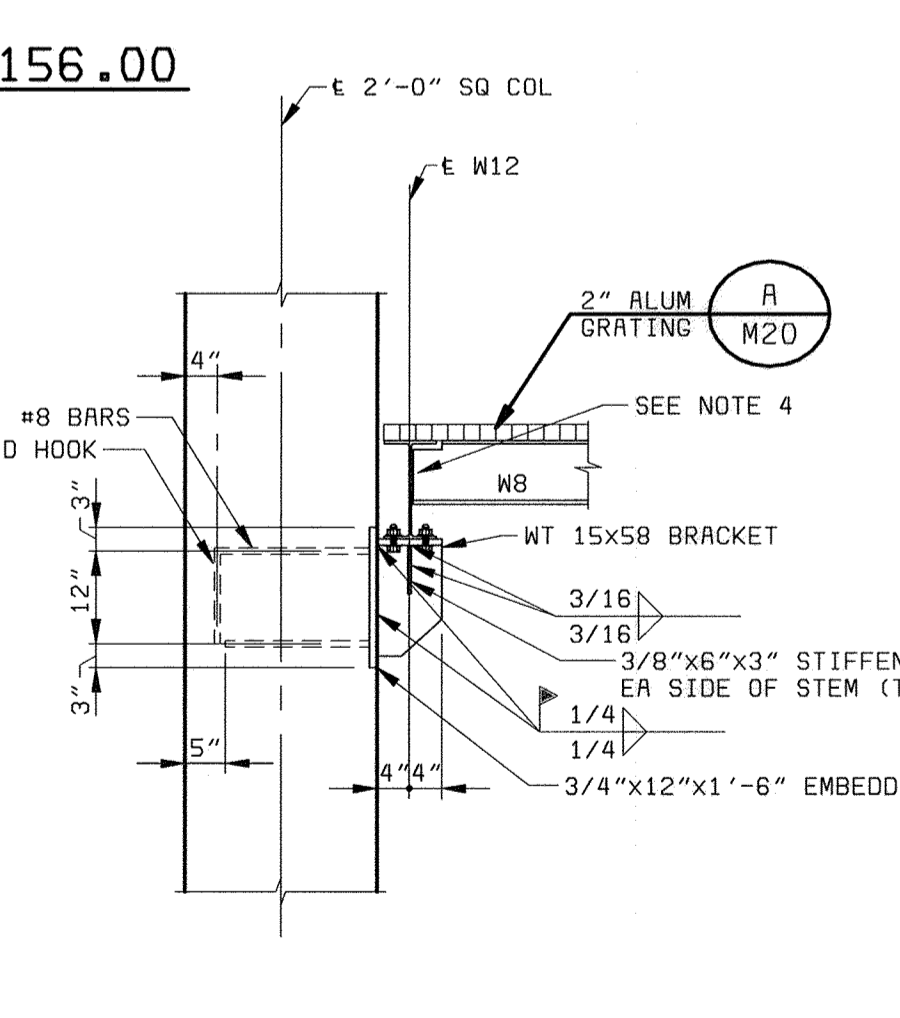
- NOTES:
1. VERIFY BEAM LAYOUT WITH CONVEYOR AND SLUDGE HOPPER MANUFACTURER PRIOR TO FABRICATION OF STEEL. BOLT HOLES FOR CONNECTION OF SKEWED BEAMS BESIDE CONVEYOR SHALL BE FIELD DRILLED AFTER CONVEYORS ARE IN PLACE.
 2. FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 3. ALL EXISTING DIMENSIONS SHALL BE 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.



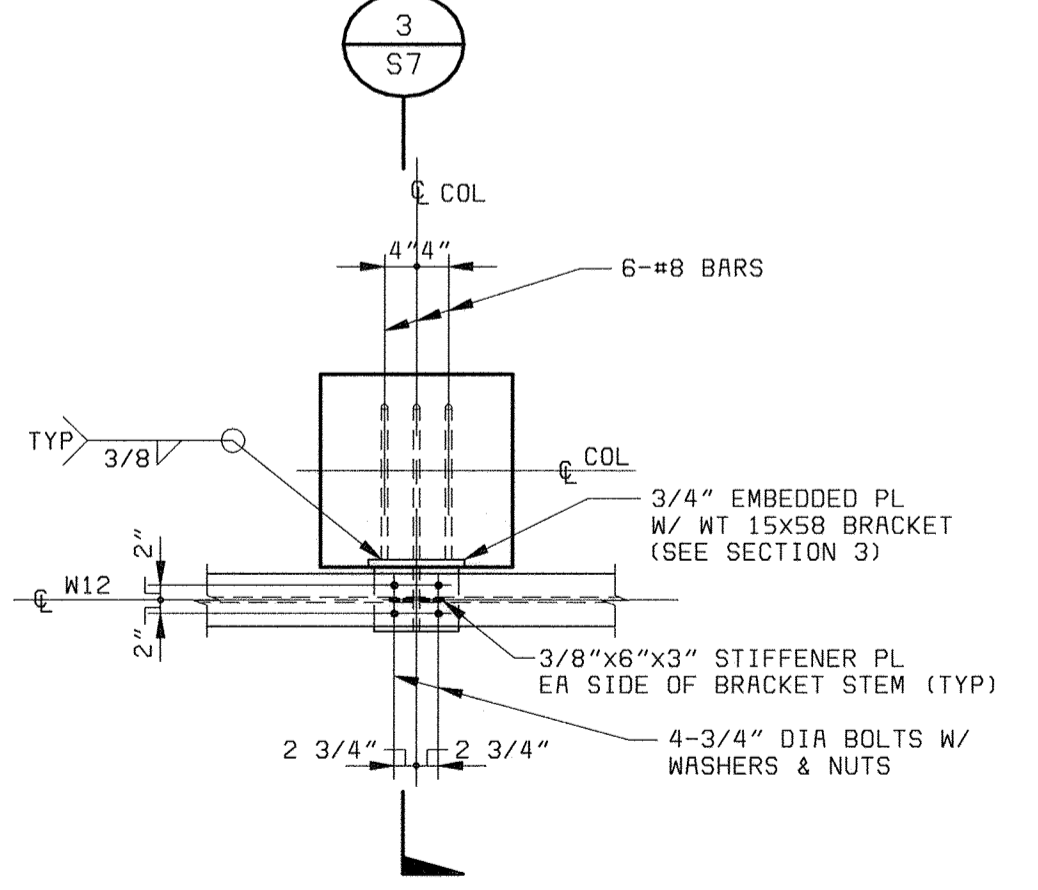
SECTION 1
1/2" = 1'-0"



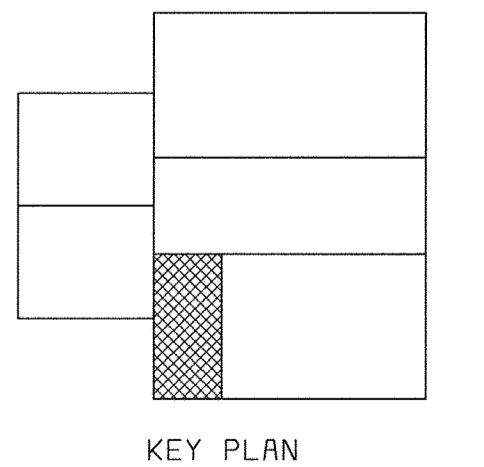
SECTION 2
1 1/2" = 1'-0"



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



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



KEY PLAN

58472-203-SDLS-S-R0000120

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. 19809

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

STRUCTURAL
CENTRIFUGE BUILDING EXPANSION

PLAN AT EL. 156.00
AND DETAILS

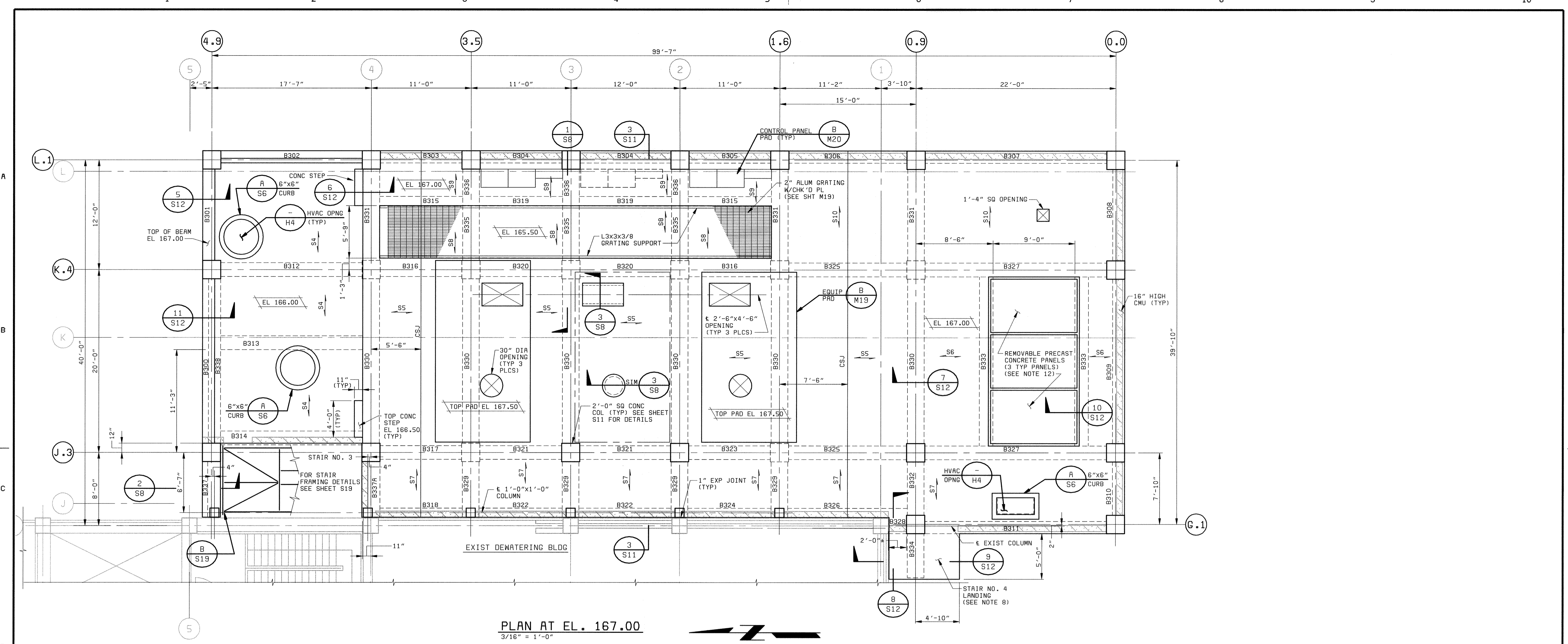
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

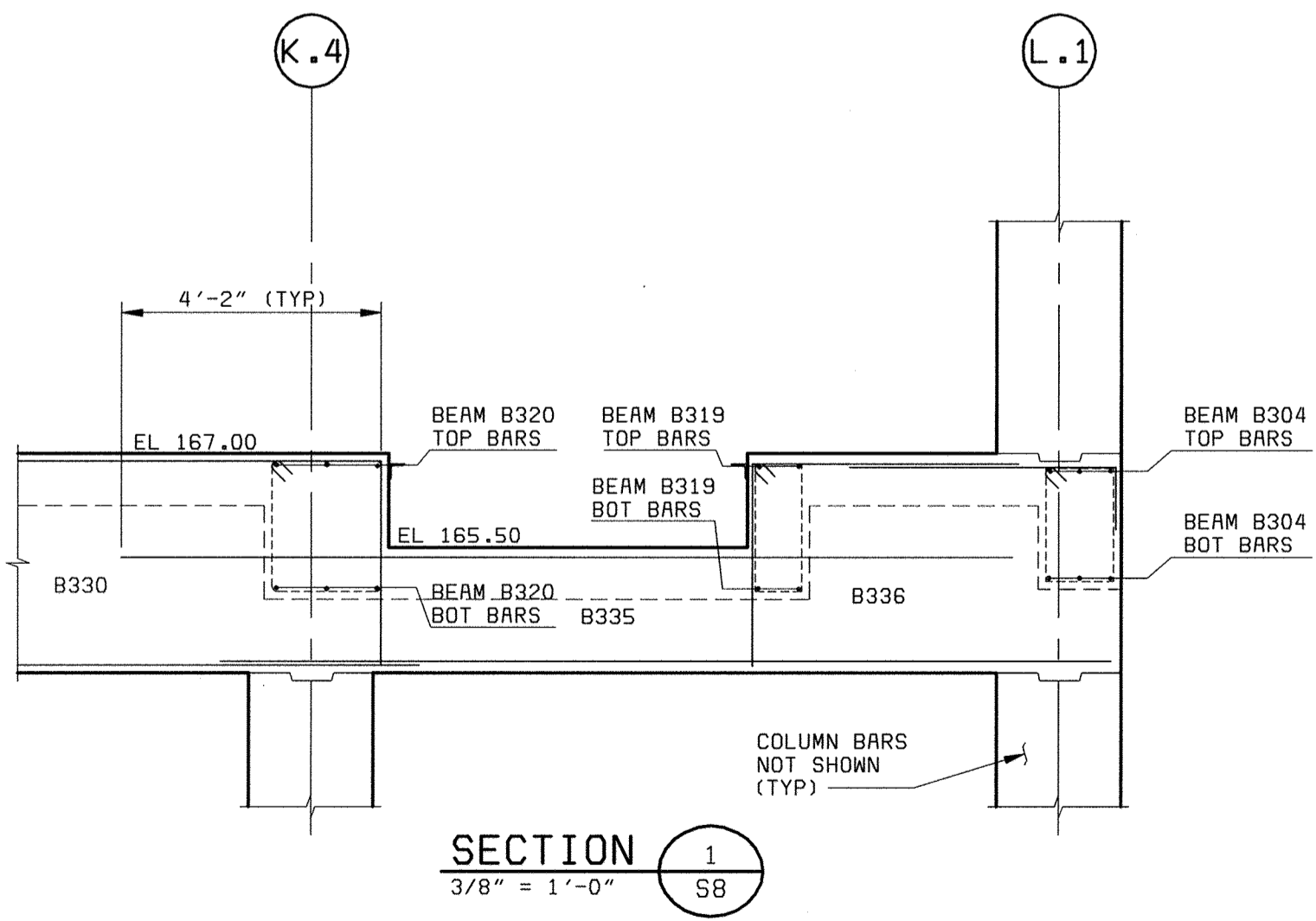
SCALE
AS
SHOWN

SHEET
72 OF 150

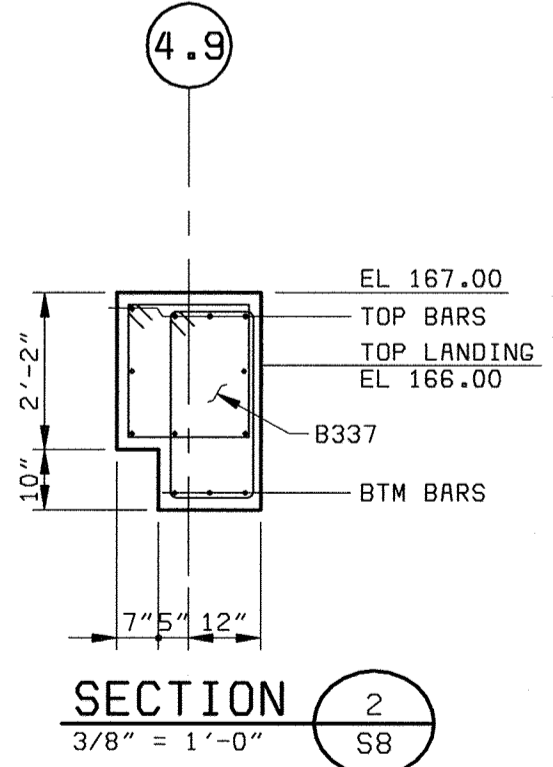
S7



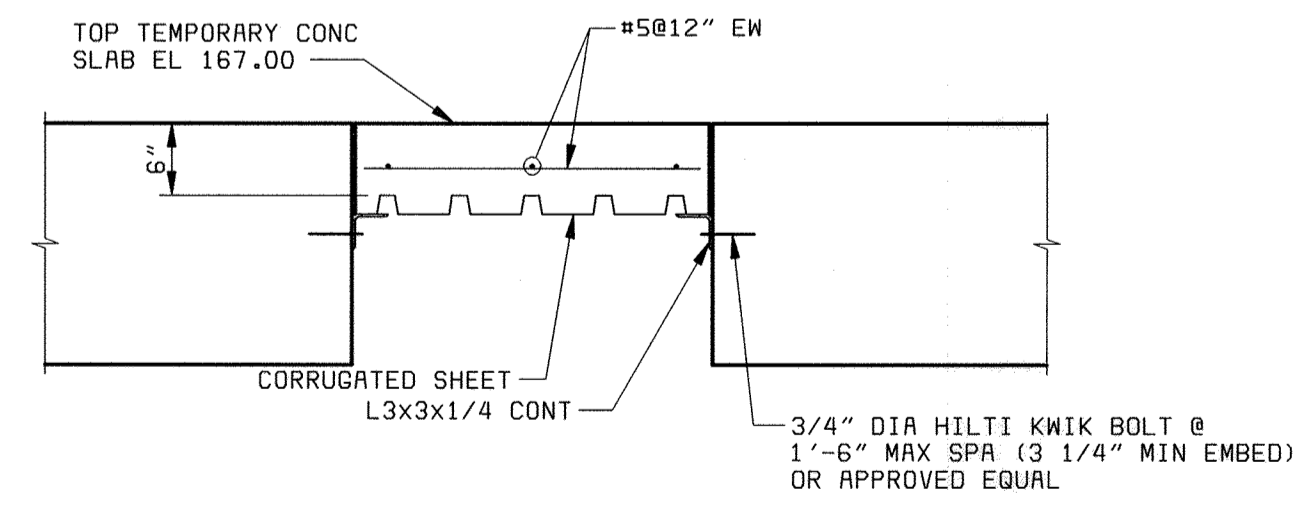
PLAN AT EL. 167.00
3/16" = 1'-0"



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



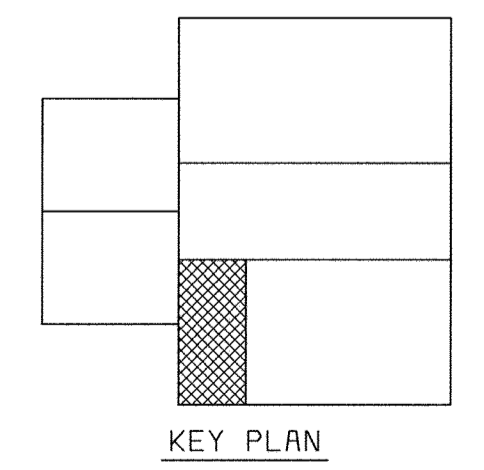
SECTION 2
3/8" = 1'-0"



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

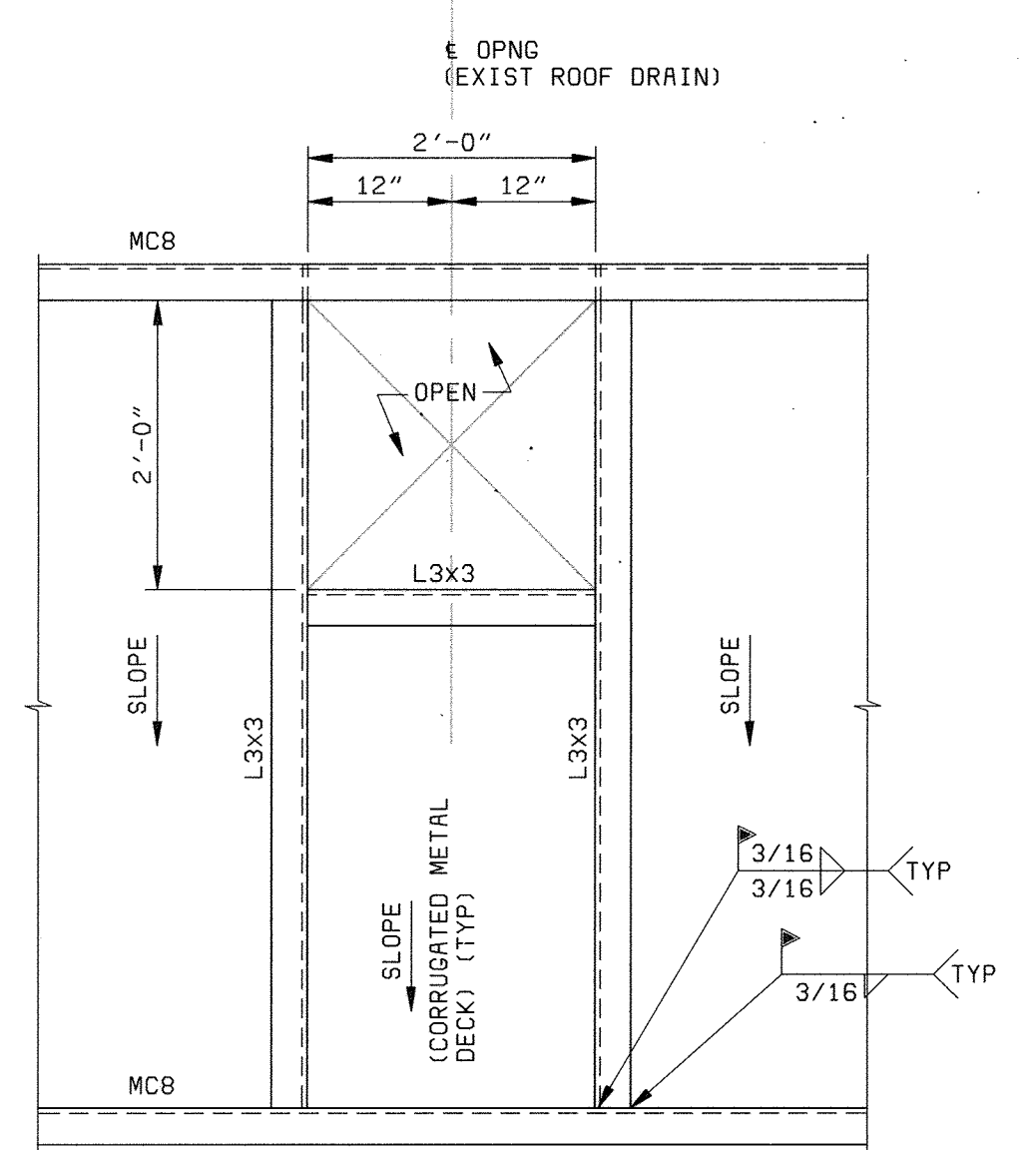
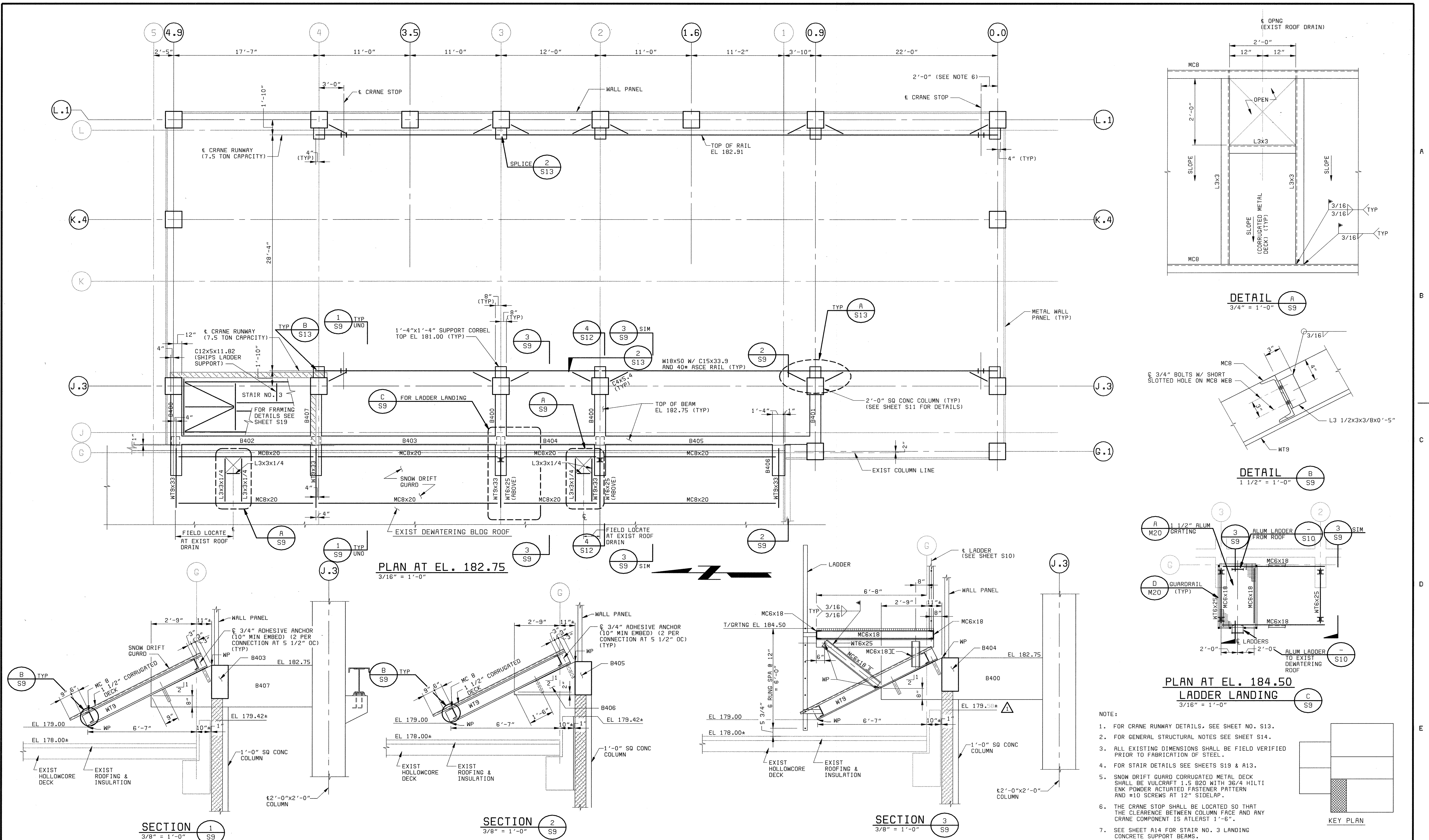
NOTES:

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.

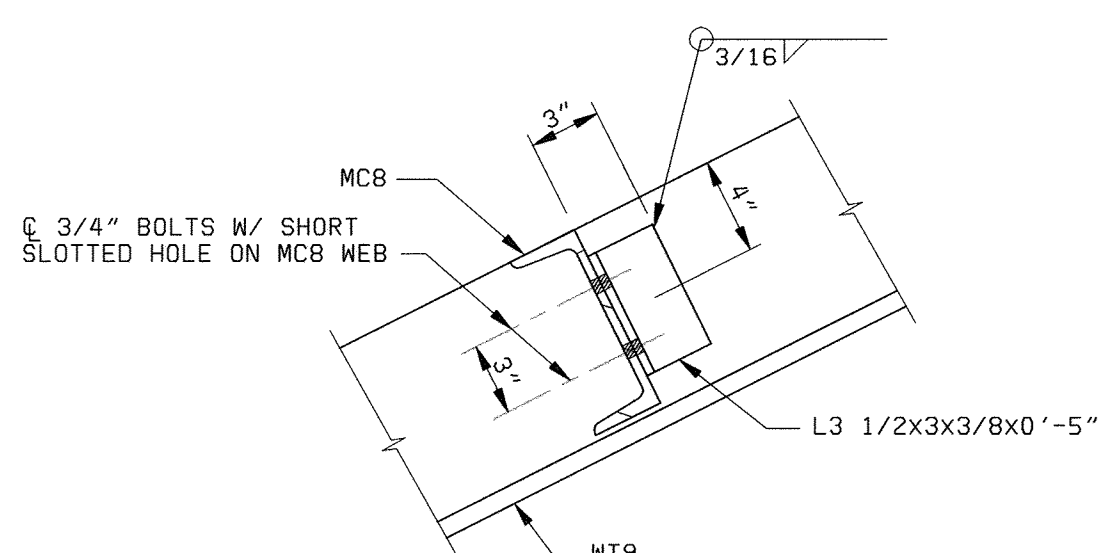


KEY PLAN

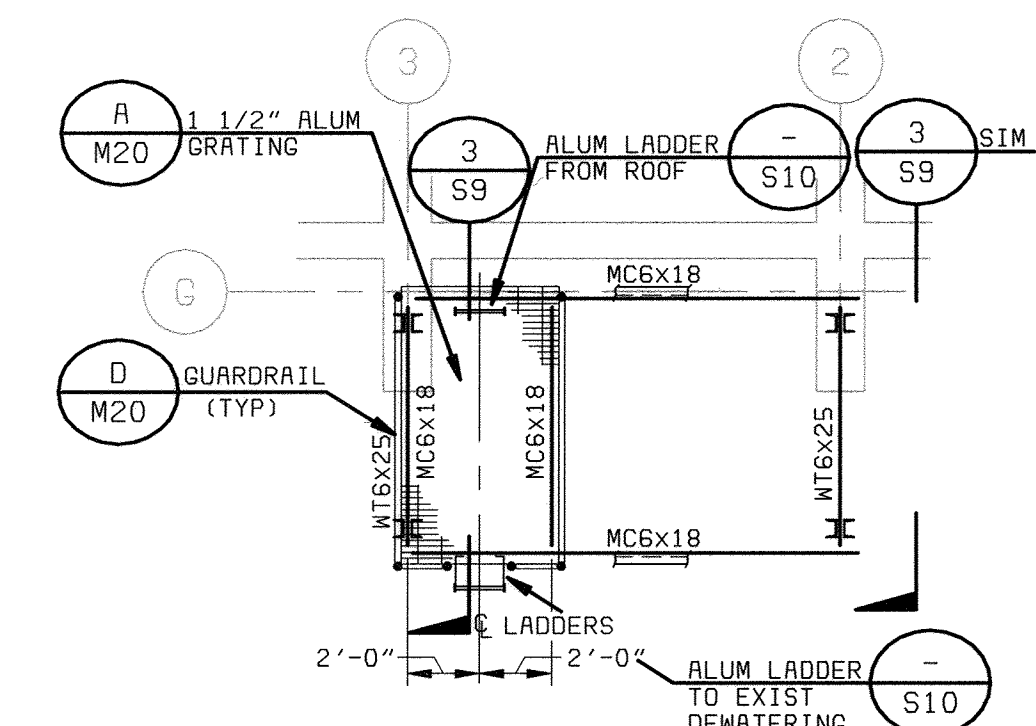
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG				STRUCTURAL CENTRIFUGE BUILDING EXPANSION PLAN AT EL. 167.00 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
			DRN: EAJ	CHK: JME	DATE: 07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHR/RJR/RJR
			DATE: 05/30/00						S8



DETAIL A
3/4" = 1'-0" S9

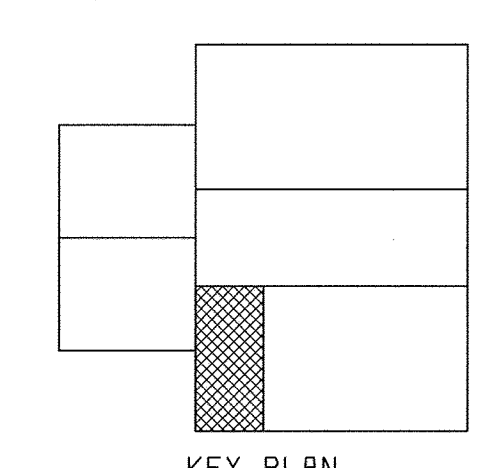


DETAIL B
1 1/2" = 1'-0" S9



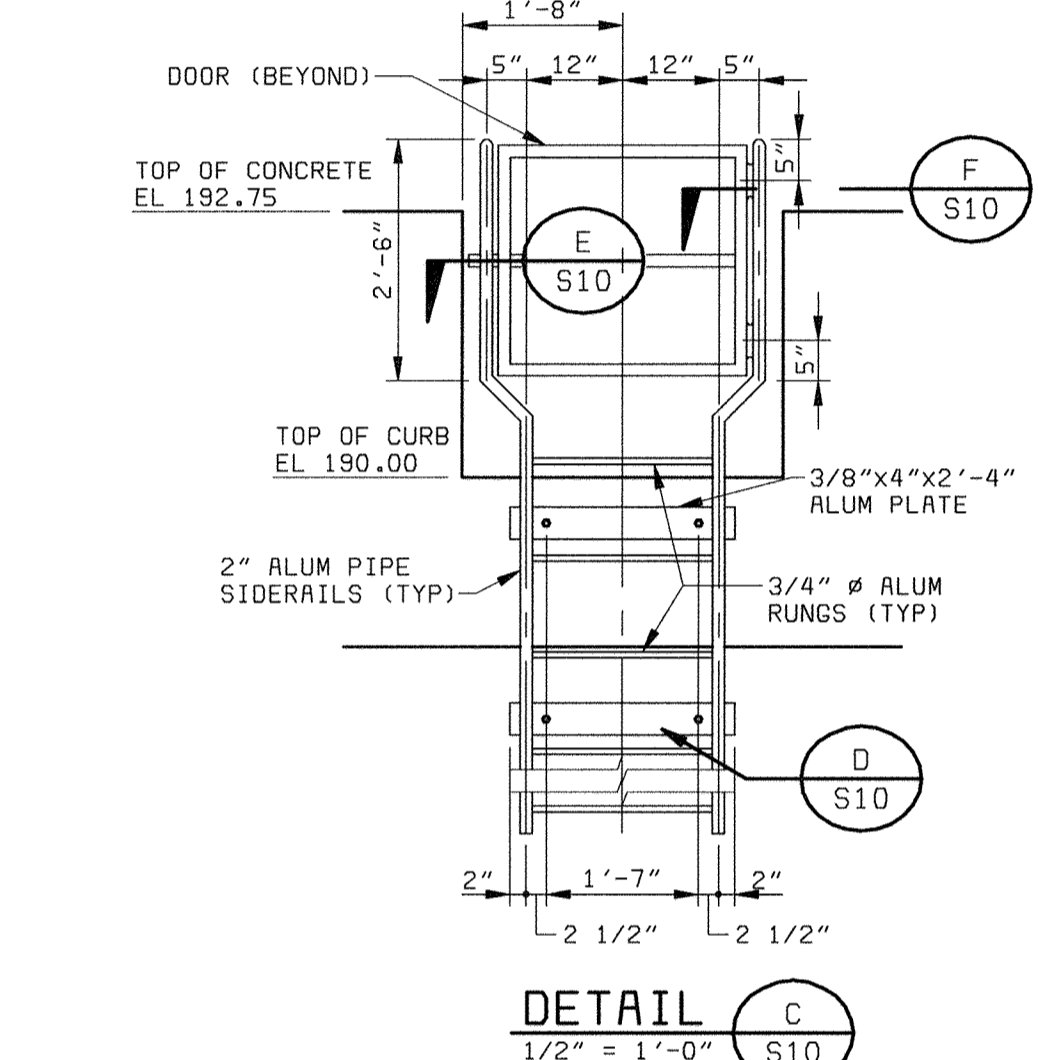
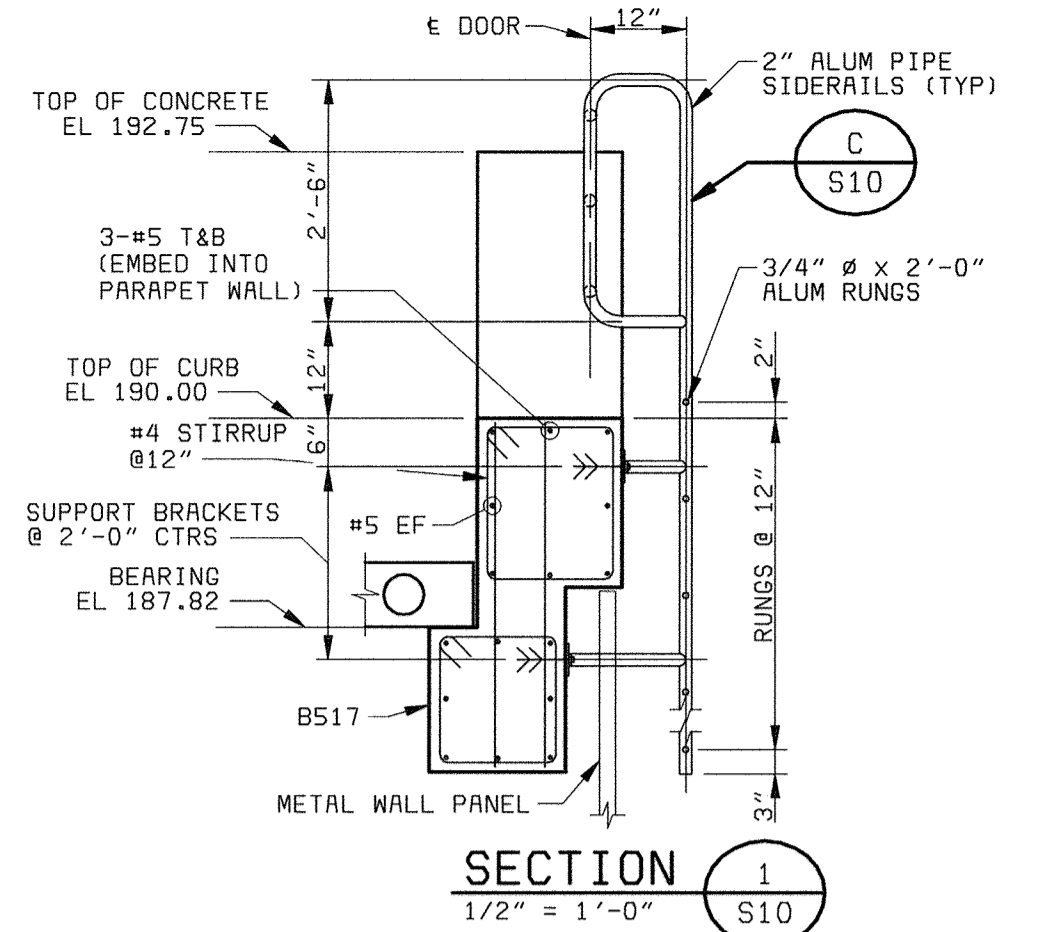
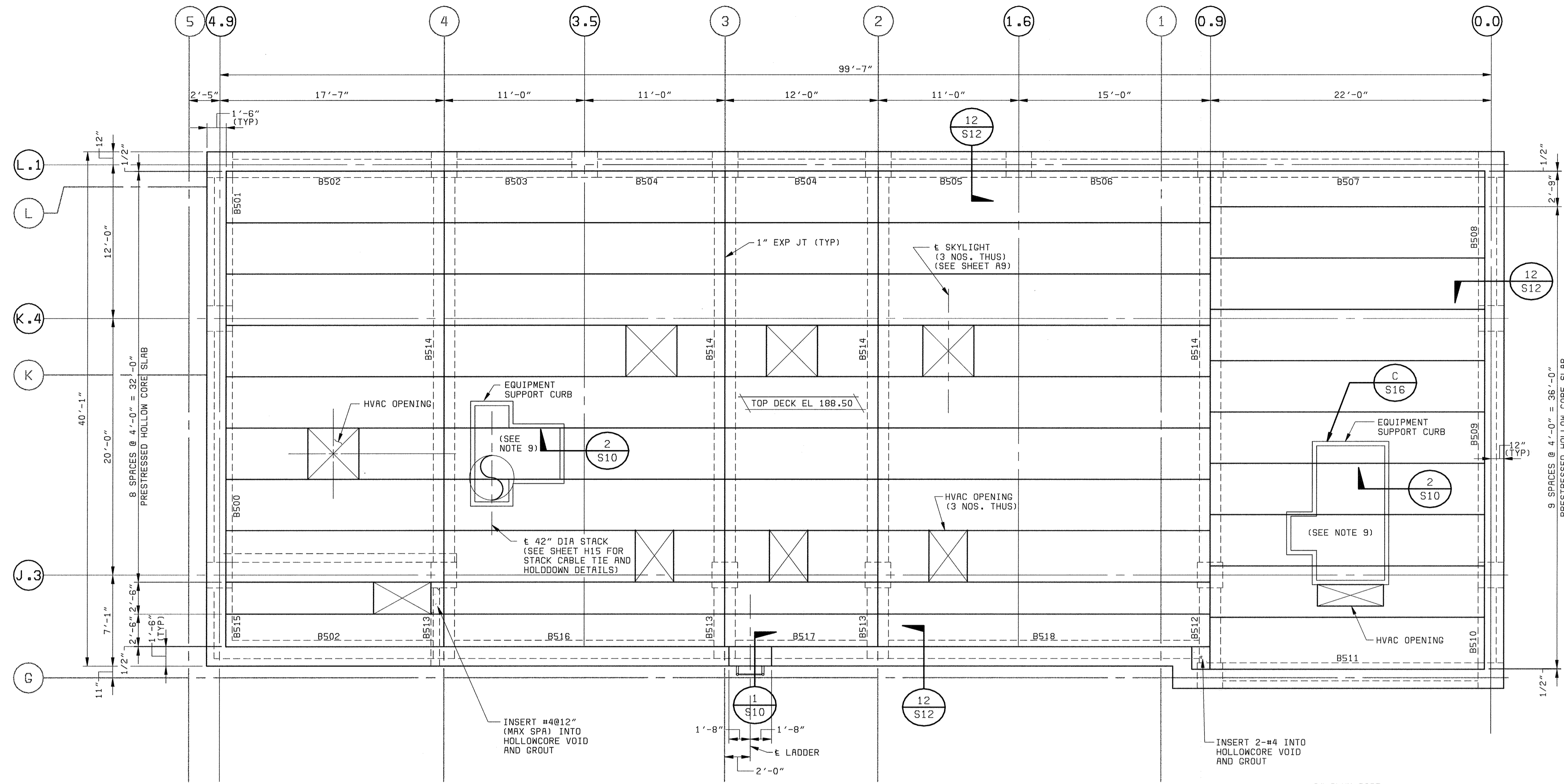
PLAN AT EL. 184.50
LADDER LANDING
3/16" = 1'-0" S9

- NOTE:
- FOR CRANE RUNWAY DETAILS, SEE SHEET NO. S13.
 - FOR GENERAL STRUCTURAL NOTES SEE SHEET S14.
 - ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION OF STEEL.
 - FOR STAIR DETAILS SEE SHEETS S19 & A13.
 - 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.
 - THE CRANE STOP SHALL BE LOCATED SO THAT THE CLEARANCE BETWEEN COLUMN FACE AND ANY CRANE COMPONENT IS AT LEAST 1'-6".
 - SEE SHEET A14 FOR STAIR NO. 3 LANDING CONCRETE SUPPORT BEAMS.



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	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
			07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	NO. BY CK APP	SHEET 74 OF 150 S9				

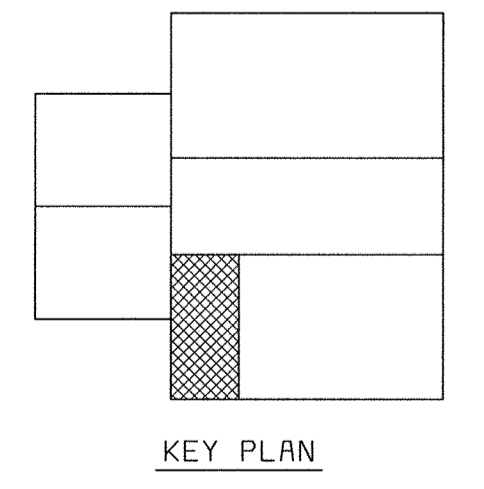
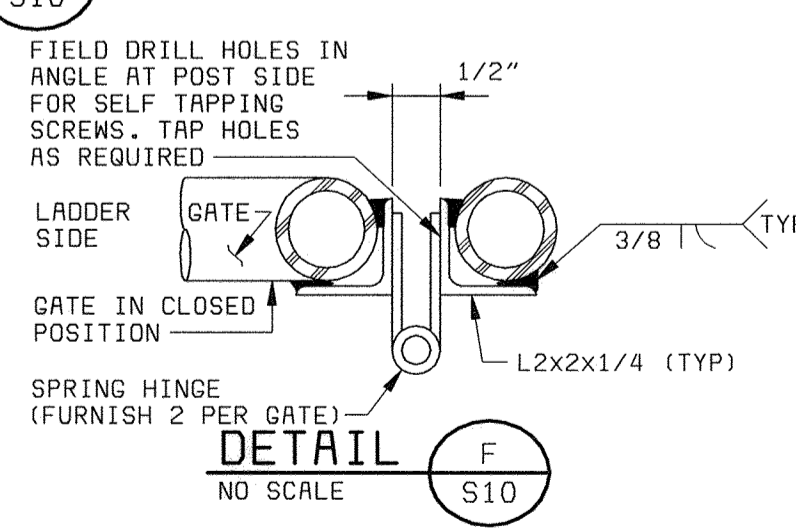
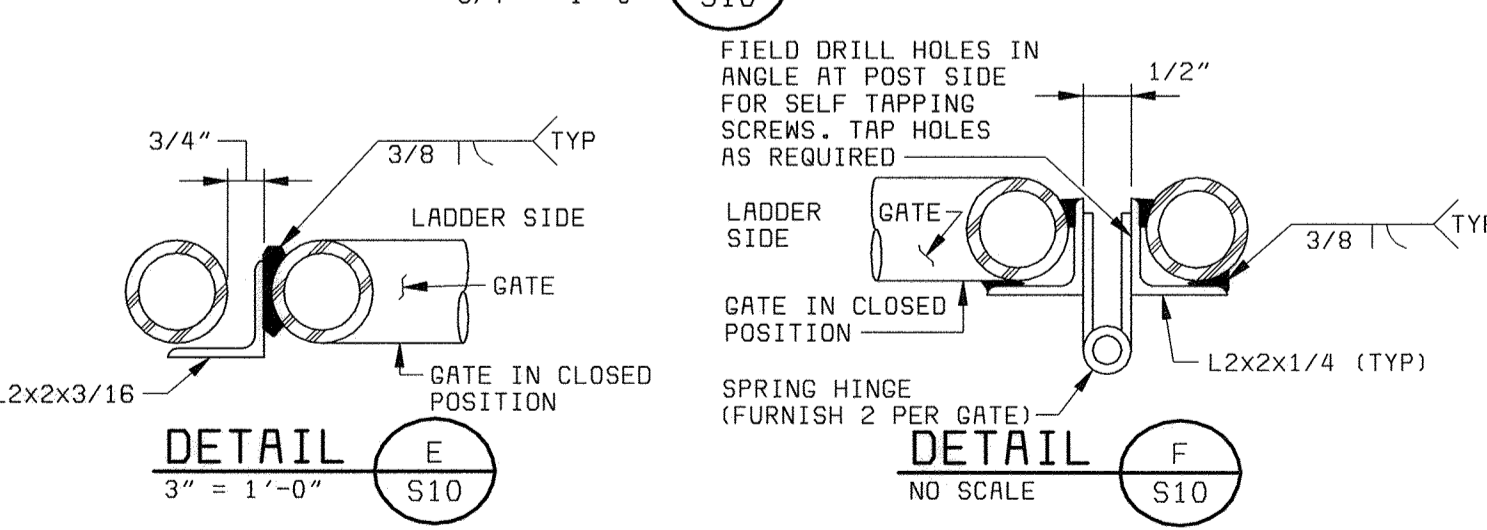
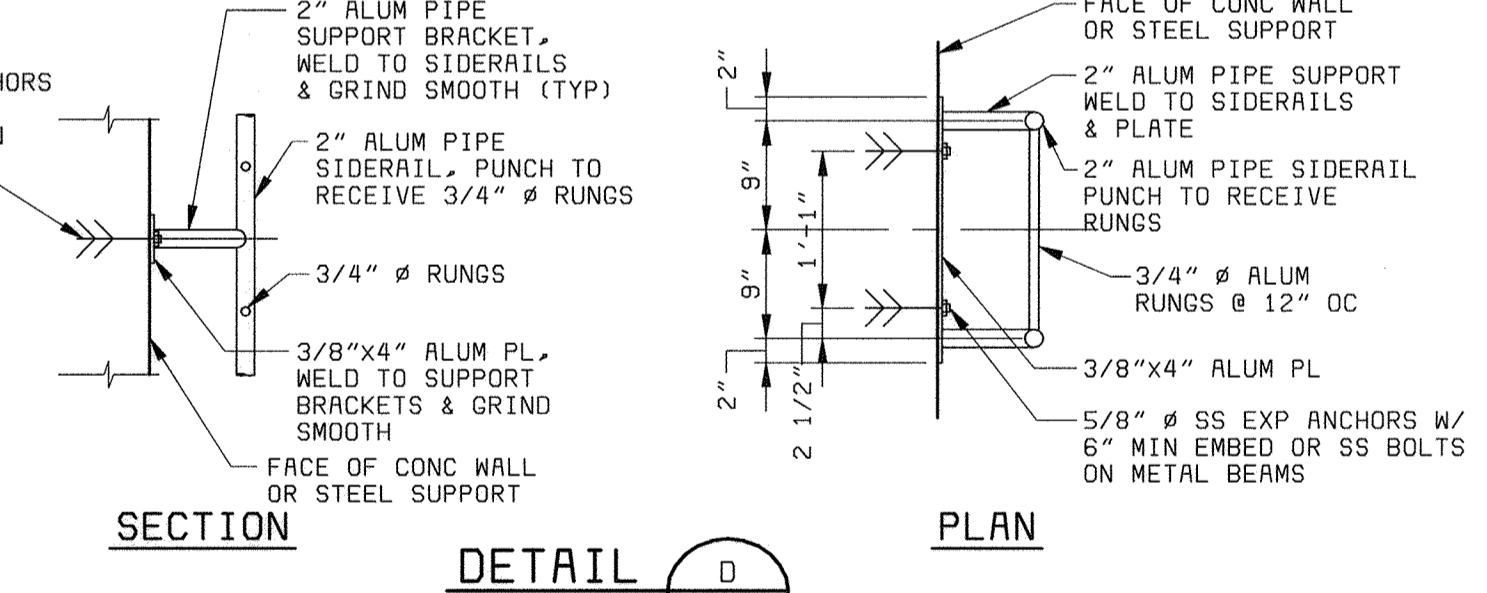
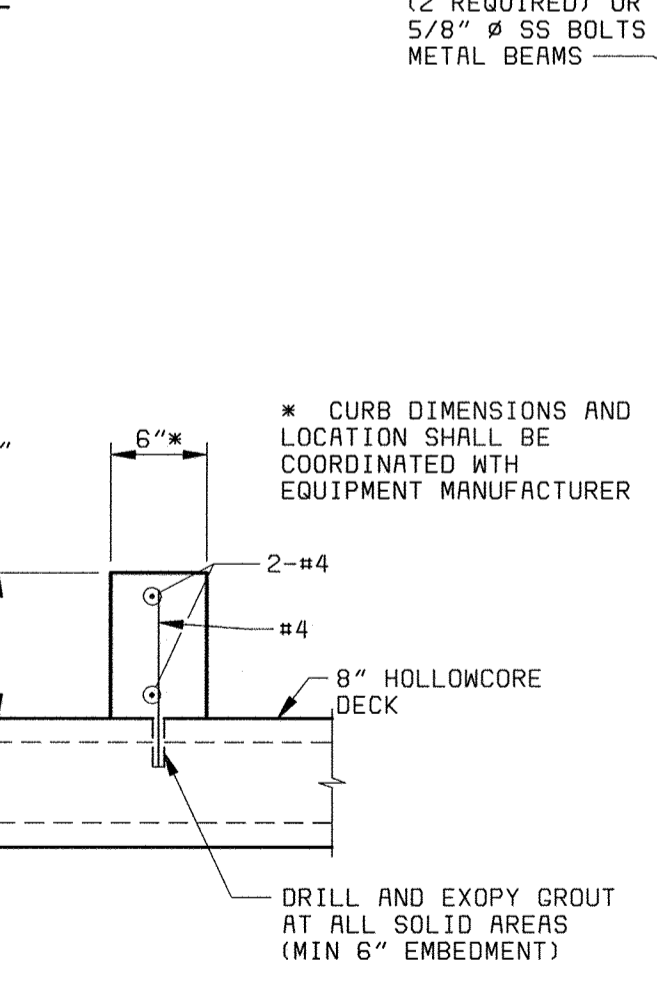
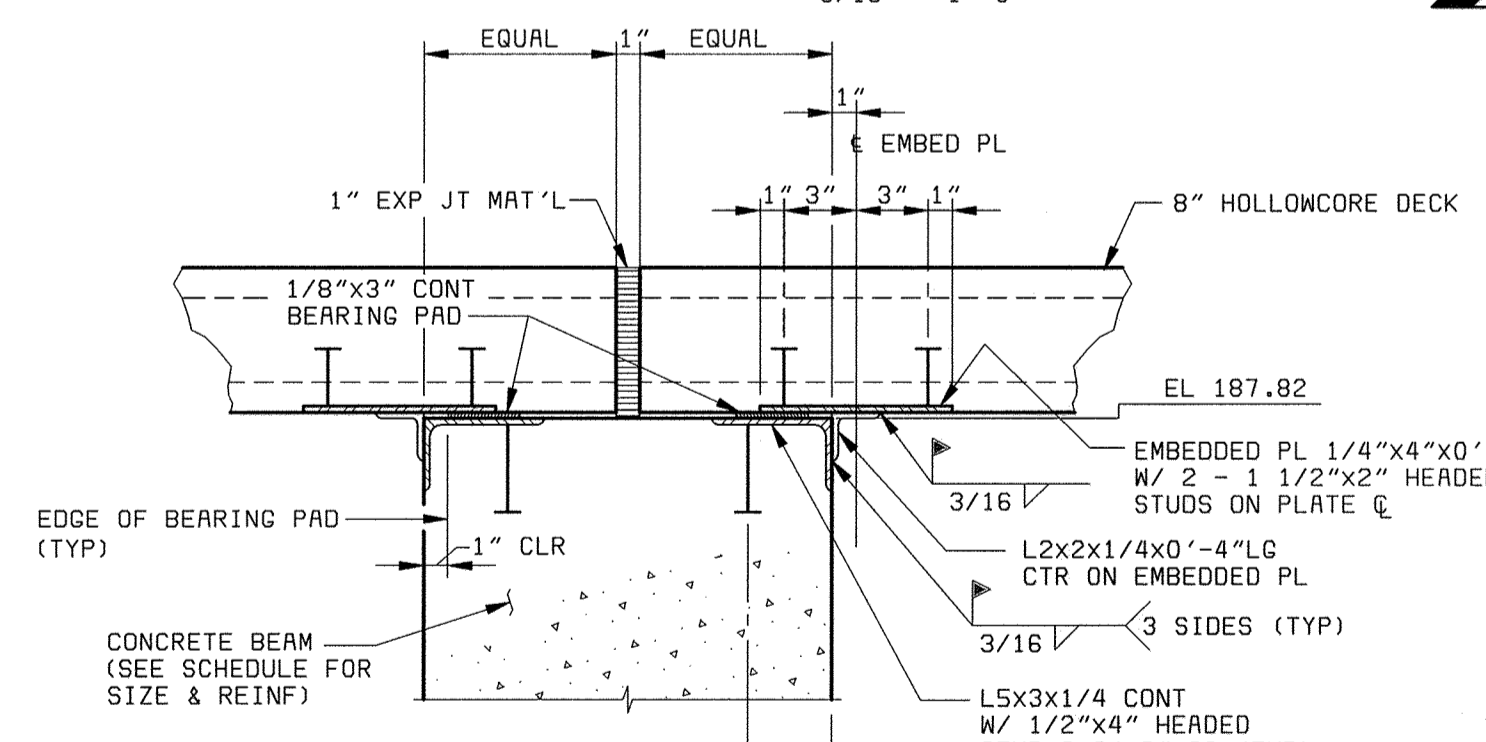
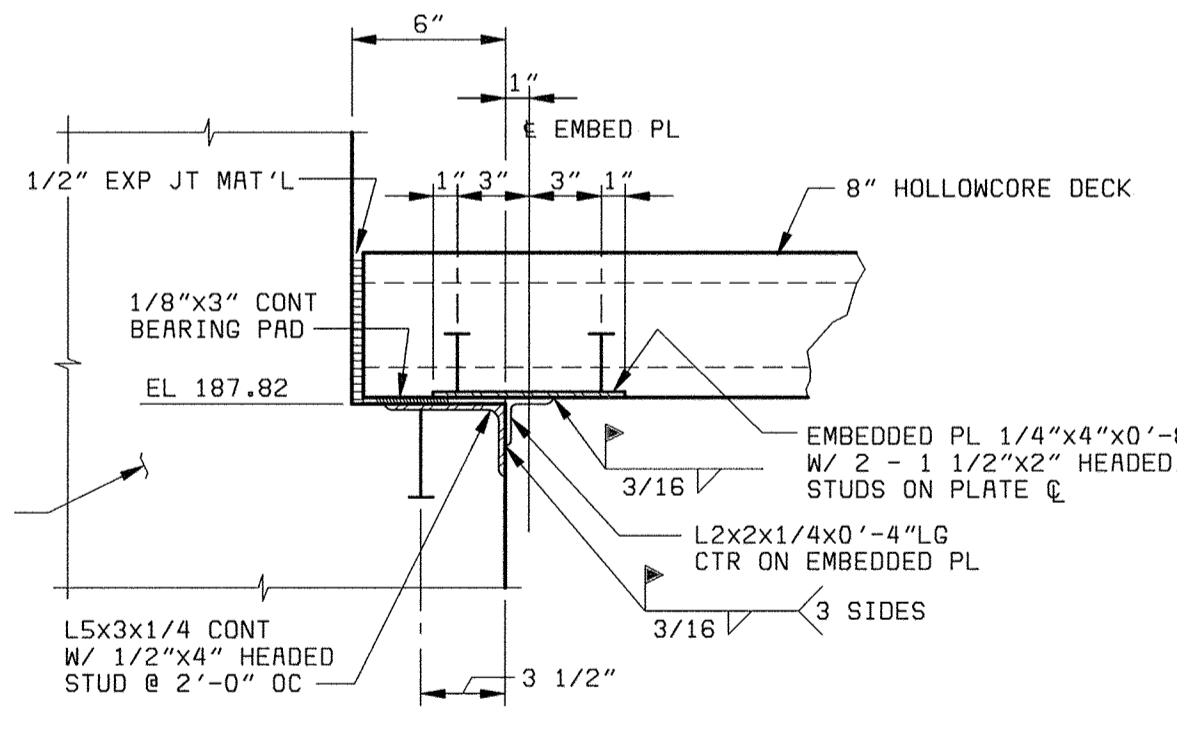
58472-203-SCLS-S-00000193
58472-203-SCLS-S-00000193
58472-203-SCLS-S-00000193



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.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND



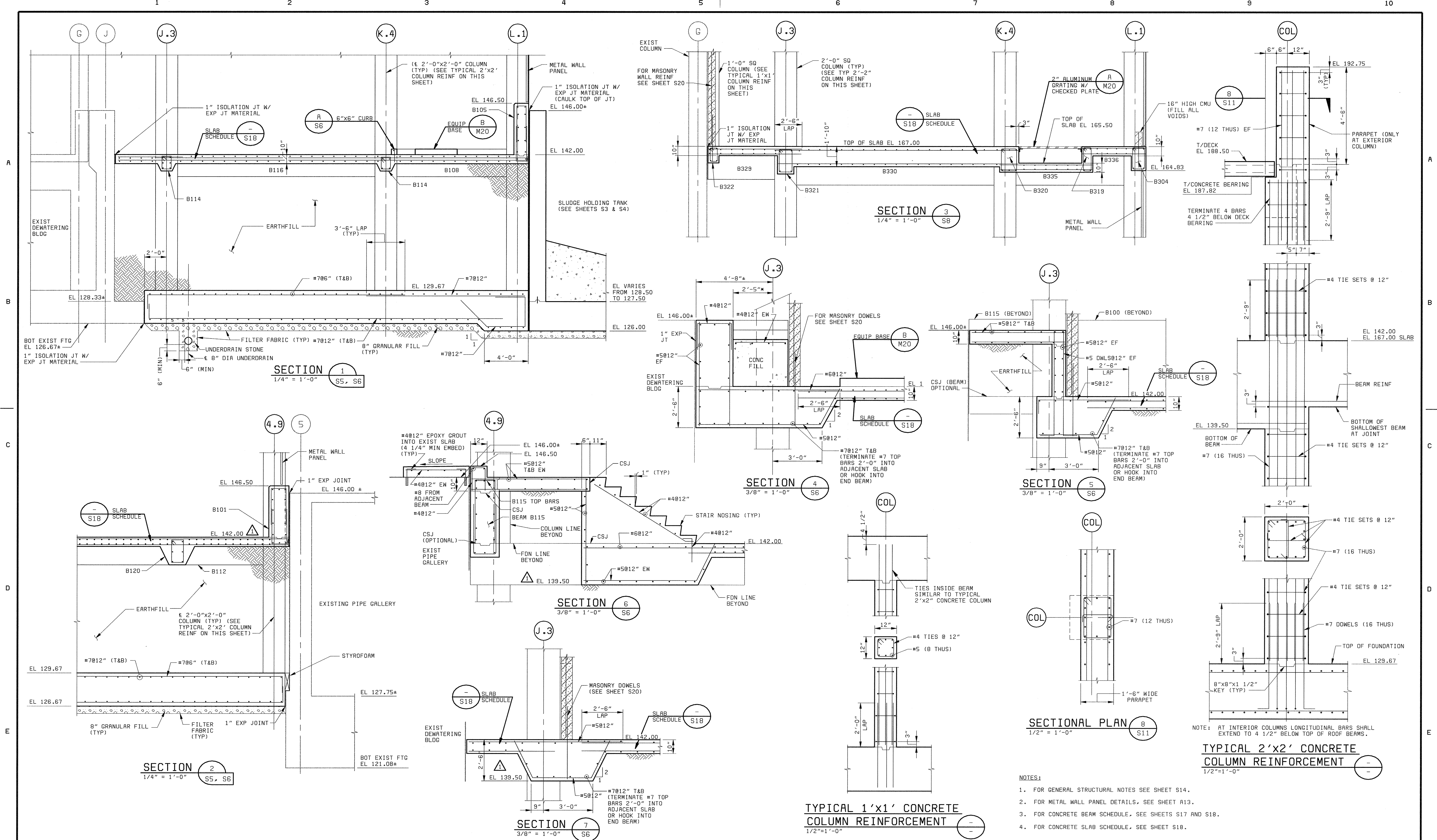
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DES: TNG	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
DRN: ECO			
CHK: JME			
DATE: 05/30/00			
	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP

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"

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: TNG					
DRN: MAS					
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

SECTIONS AND DETAILS

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

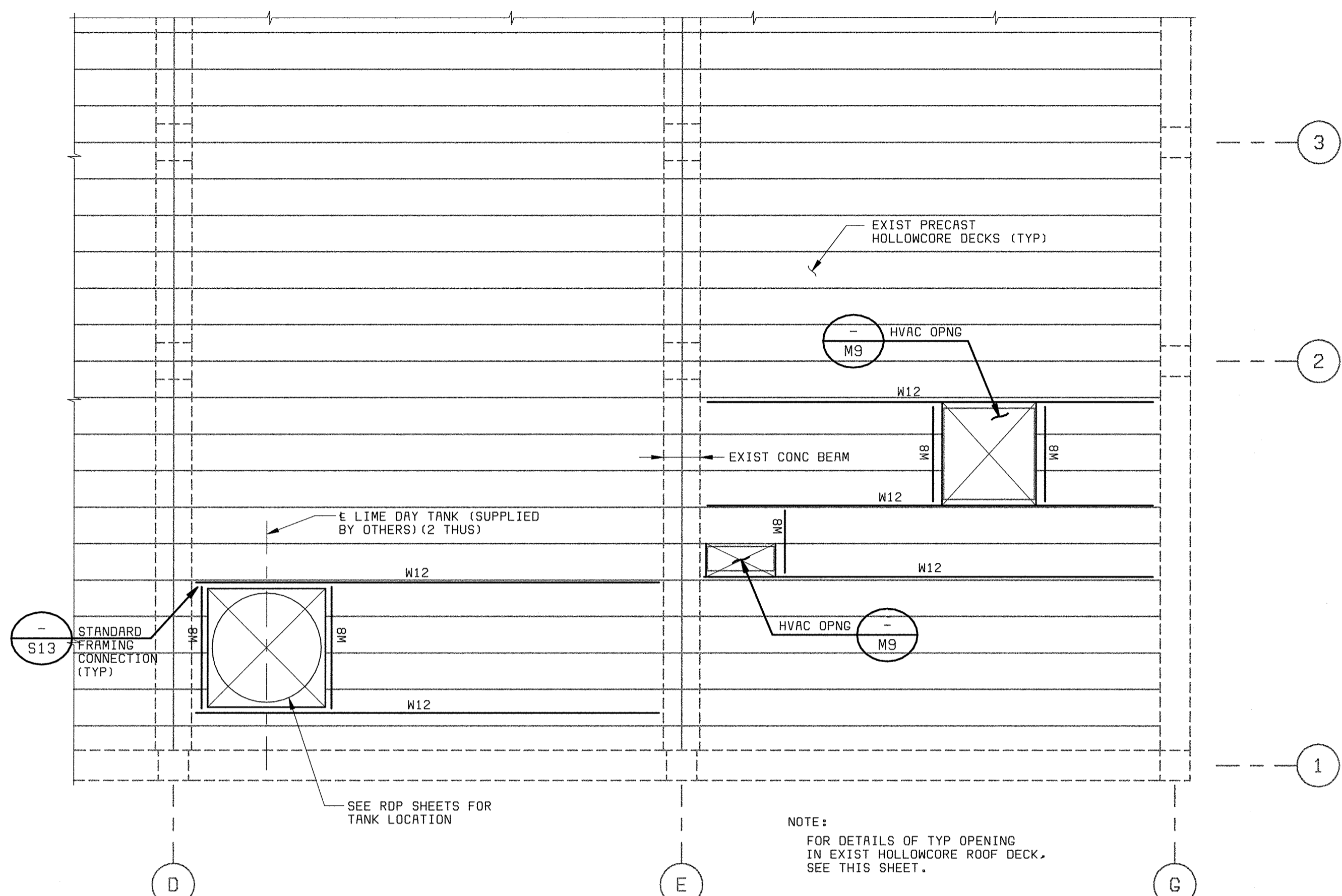
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

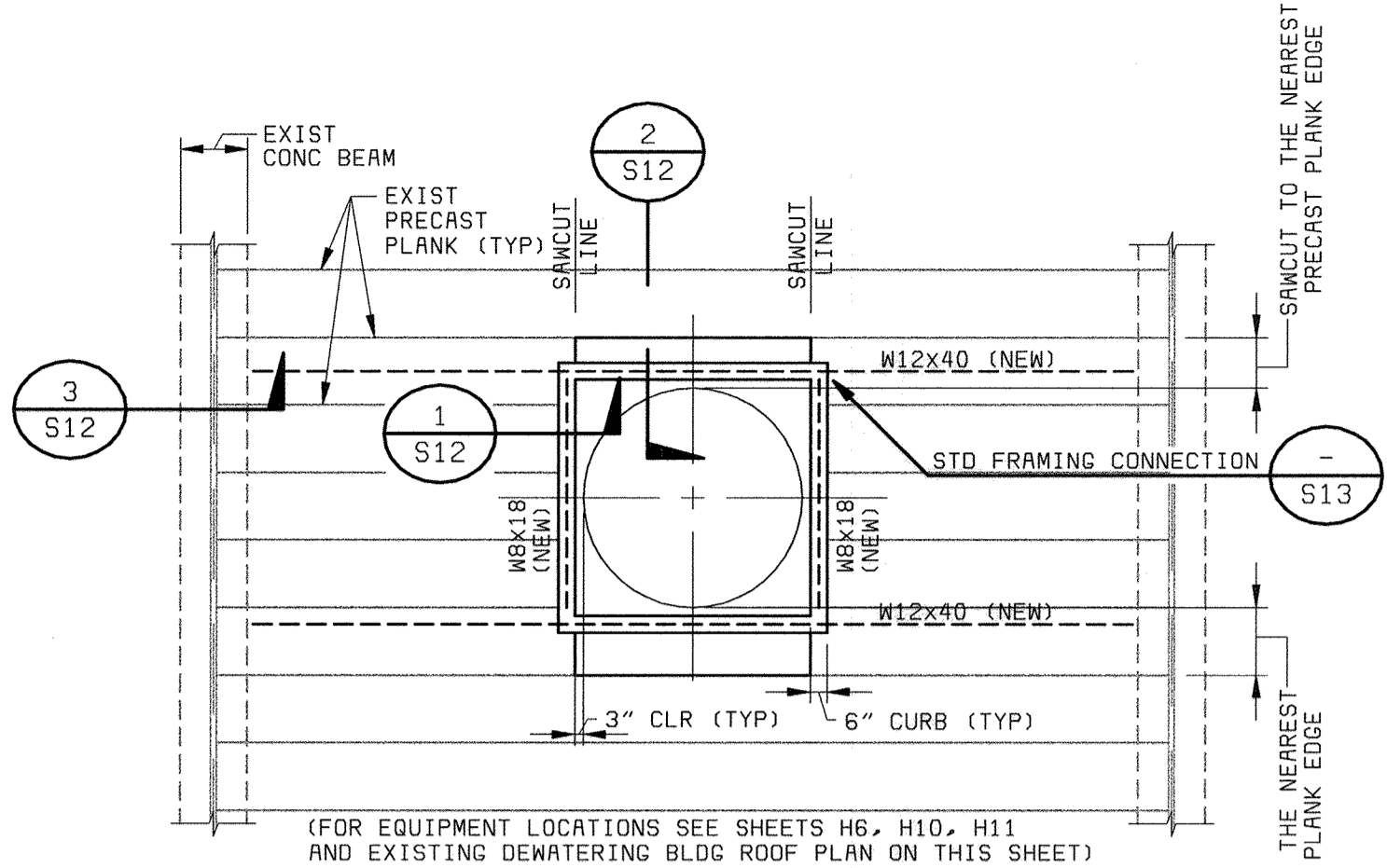
SCALE AS SHOWN

SHEET 76 OF 150

S11



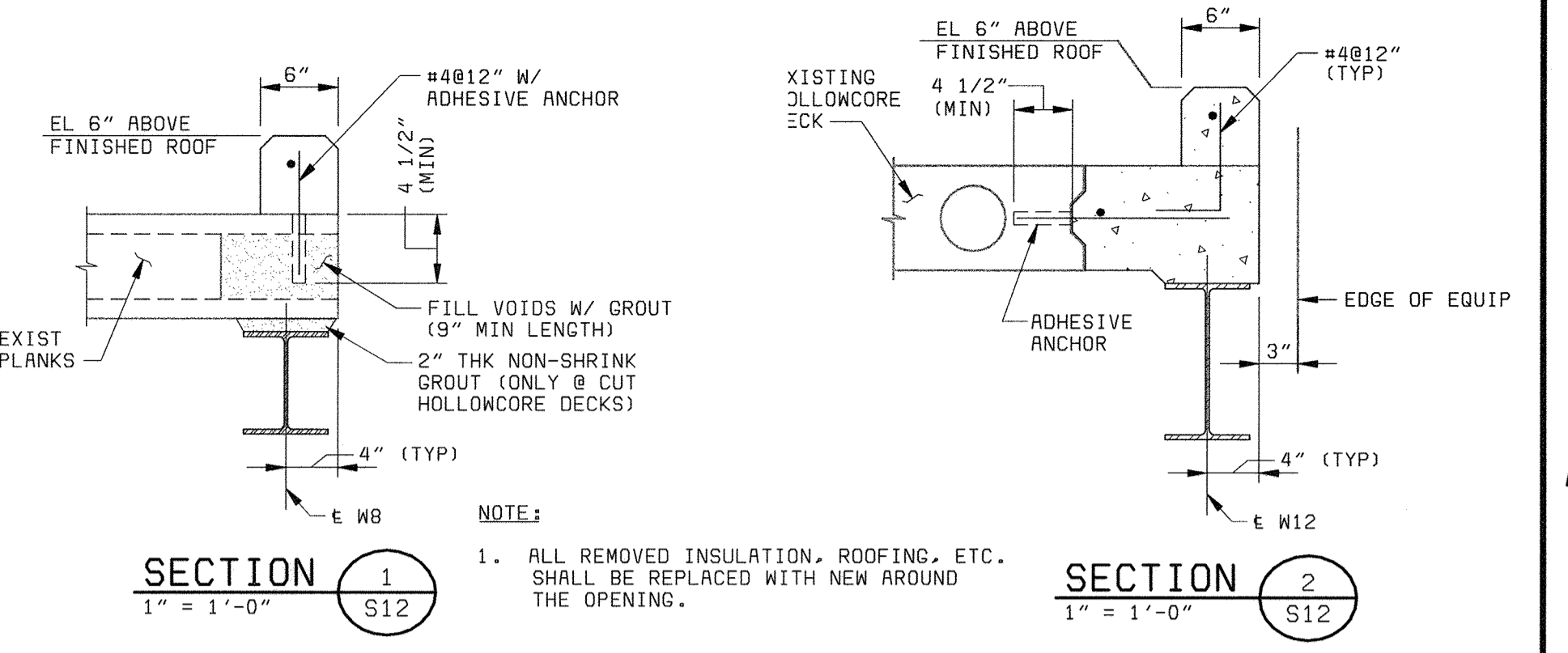
EXISTING DEWATERING BUILDING ROOF PLAN
3/16" = 1'-0"



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

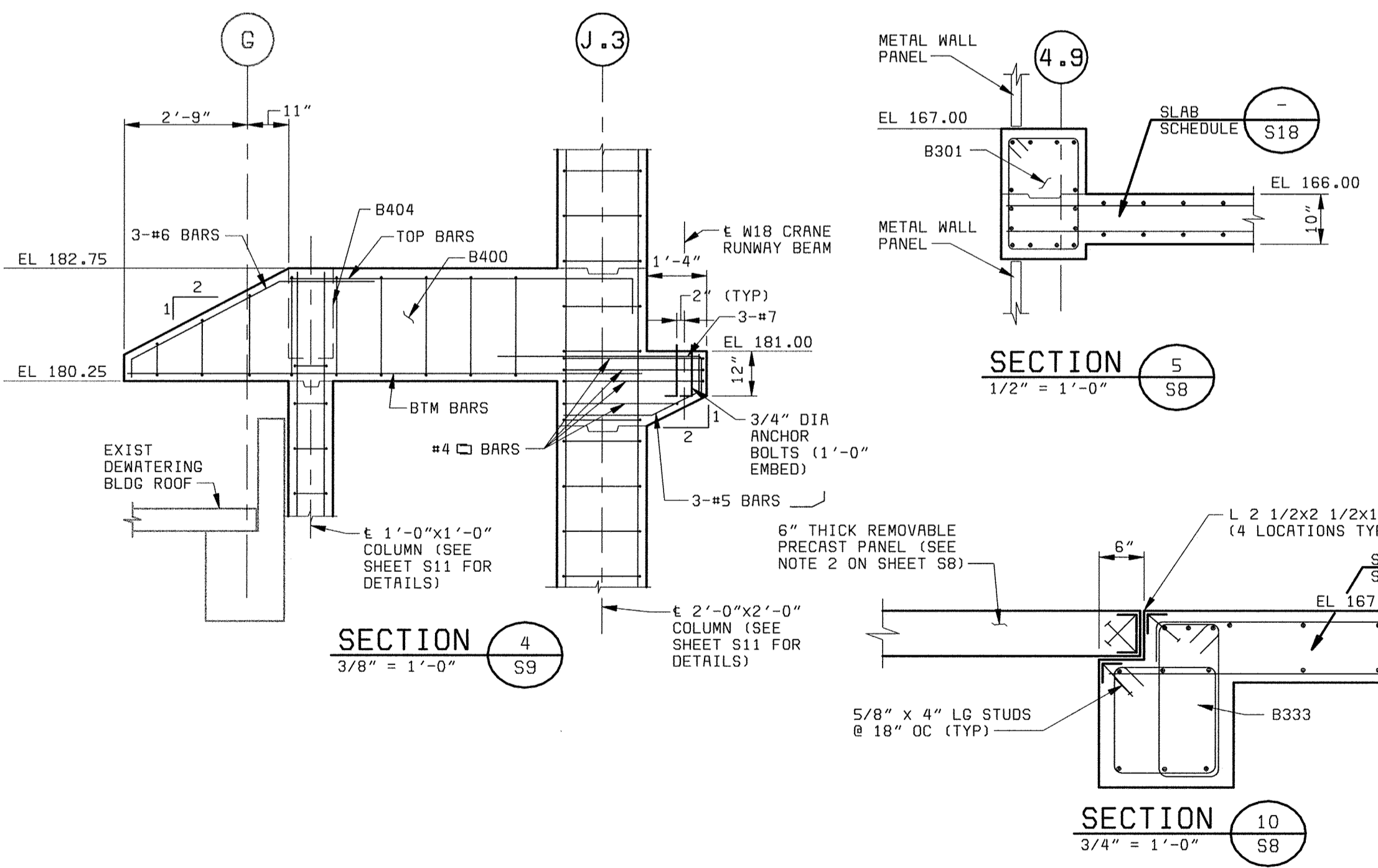
SEQUENCE OF CONSTRUCTION FOR CUTTING EXISTING ROOF

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"

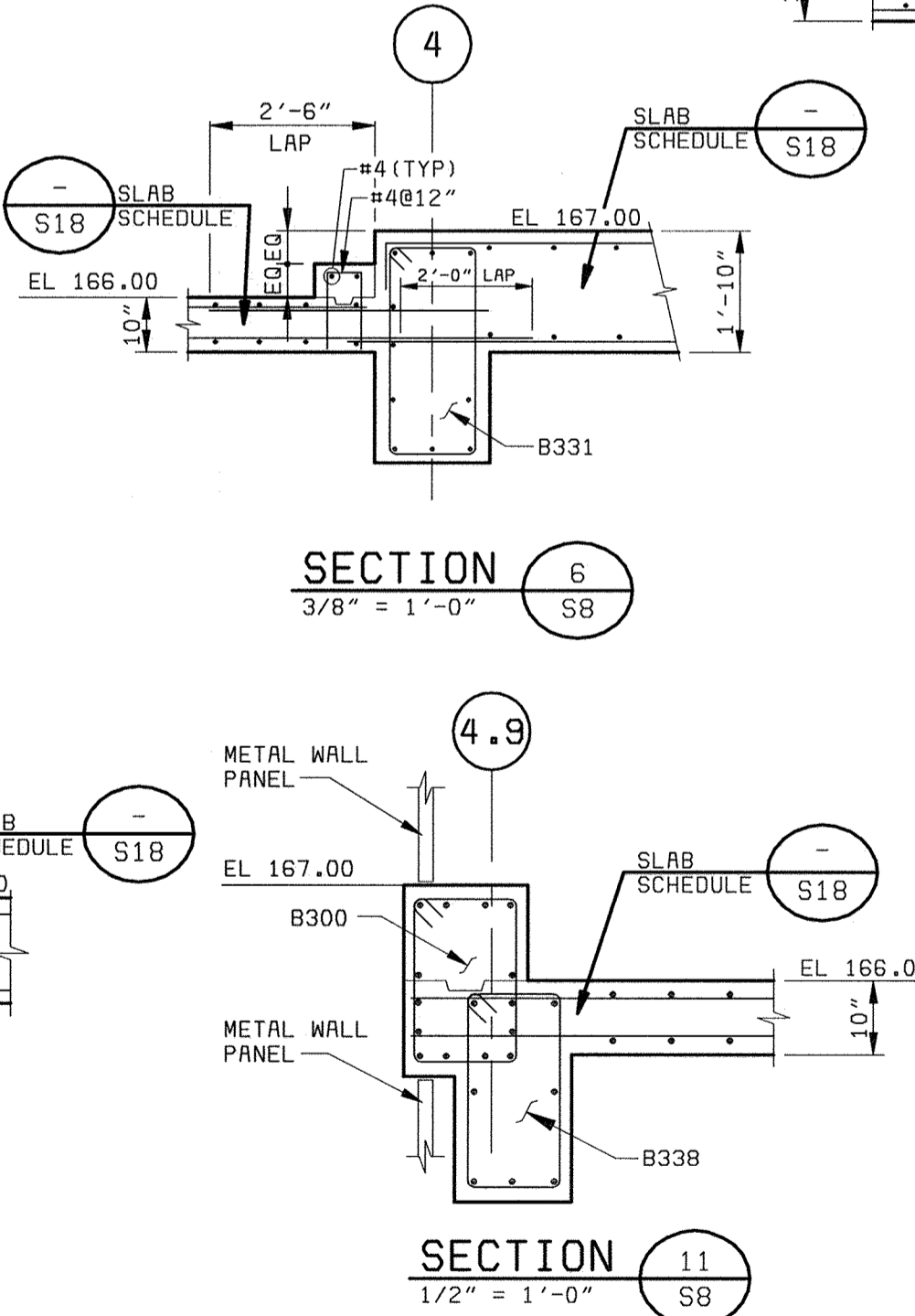


SECTION 4
3/8" = 1'-0"

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

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

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



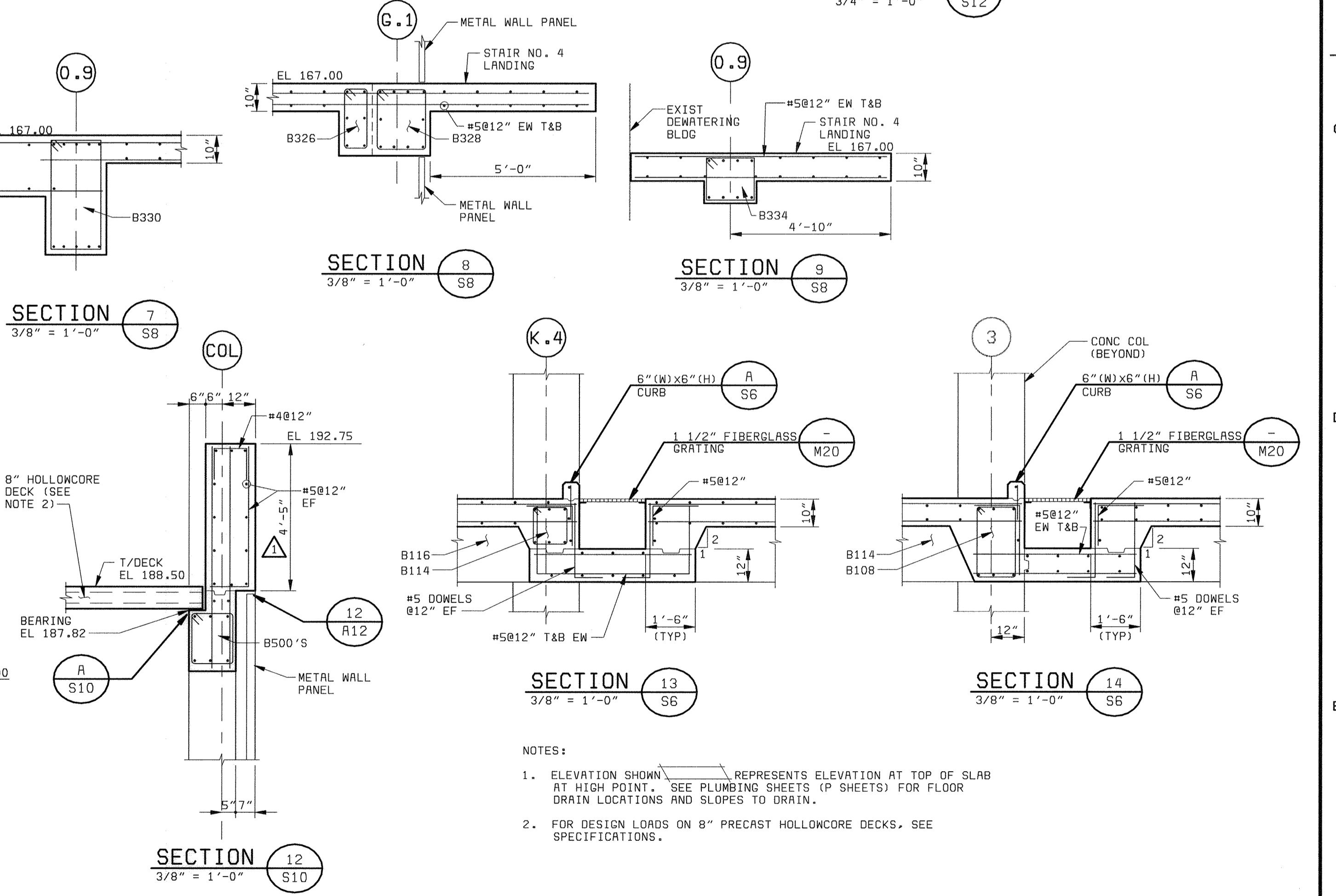
SECTION 6
3/8" = 1'-0"

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.

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

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

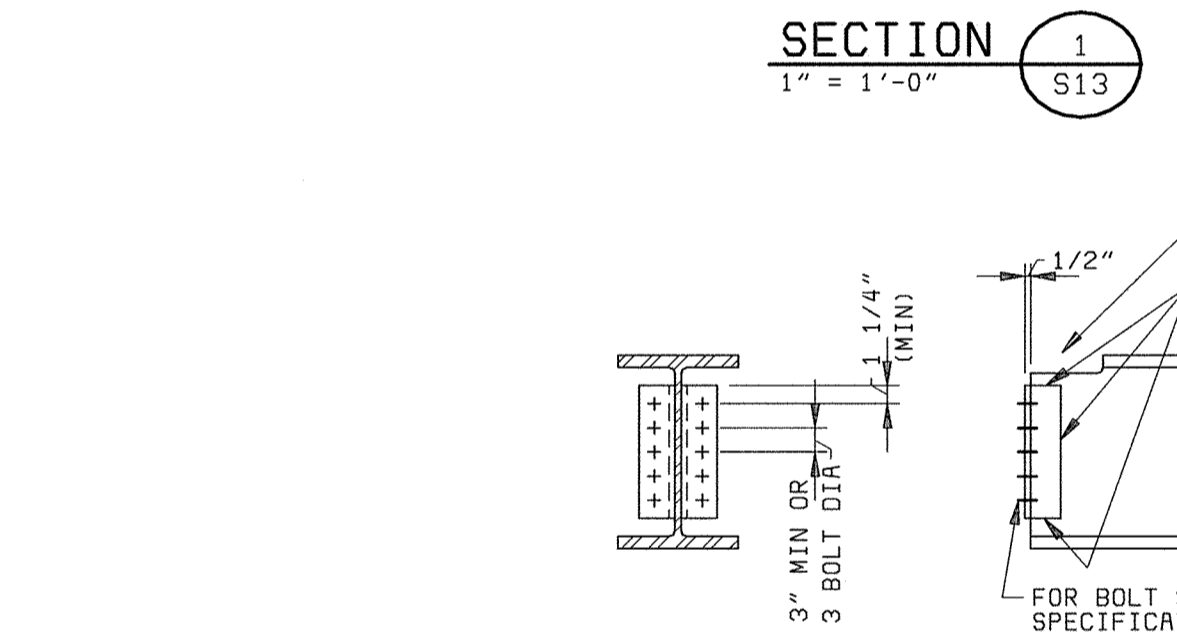
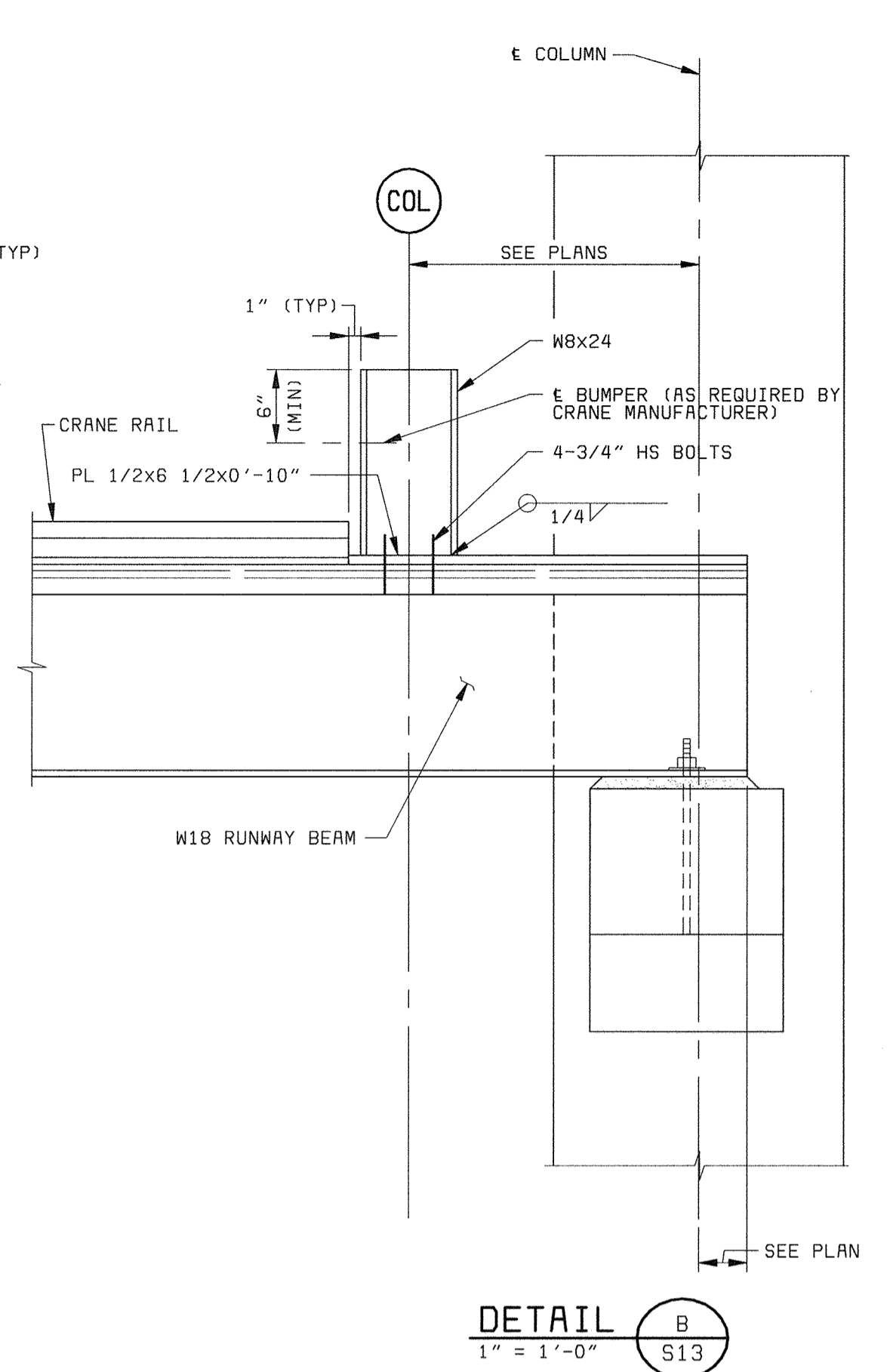
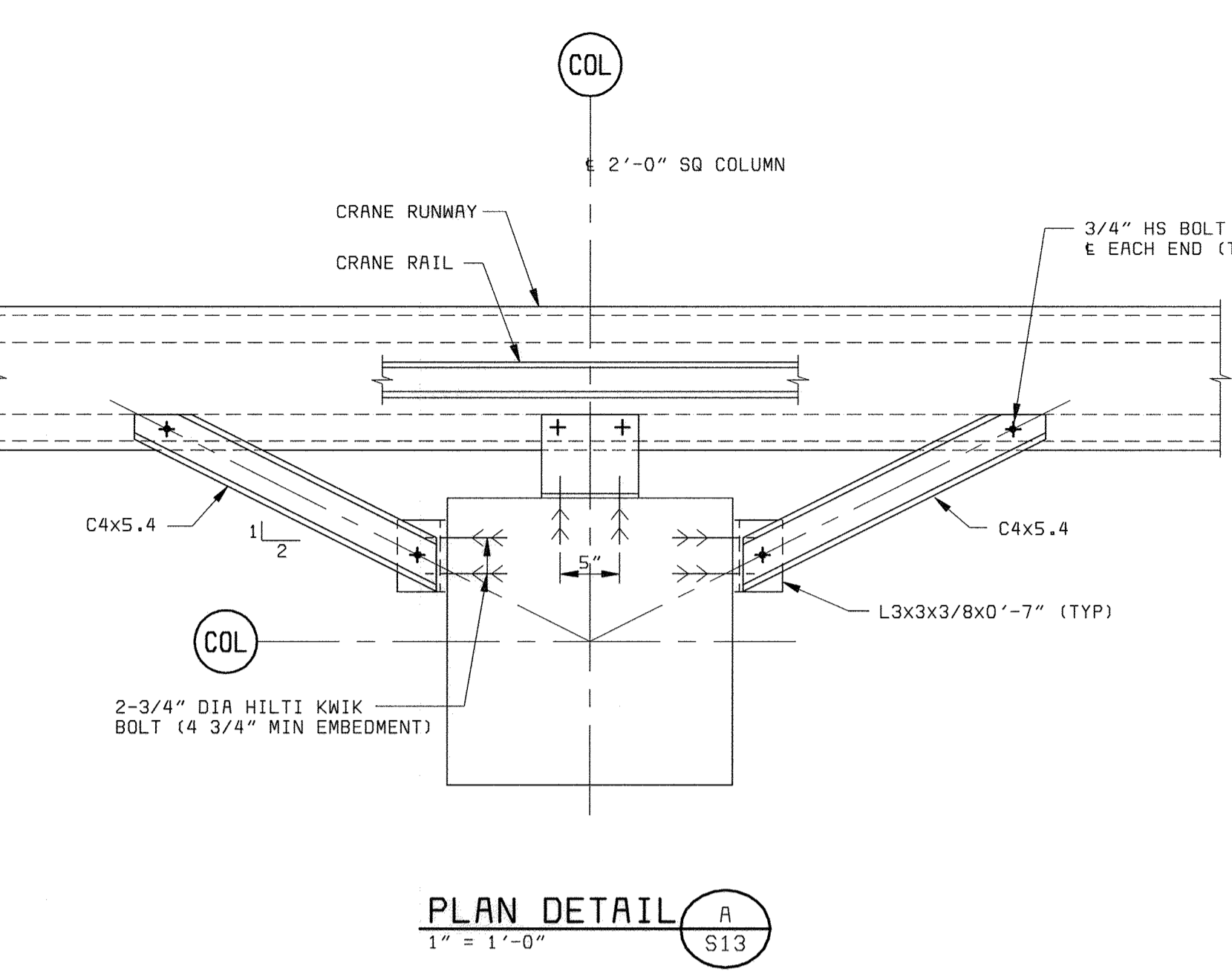
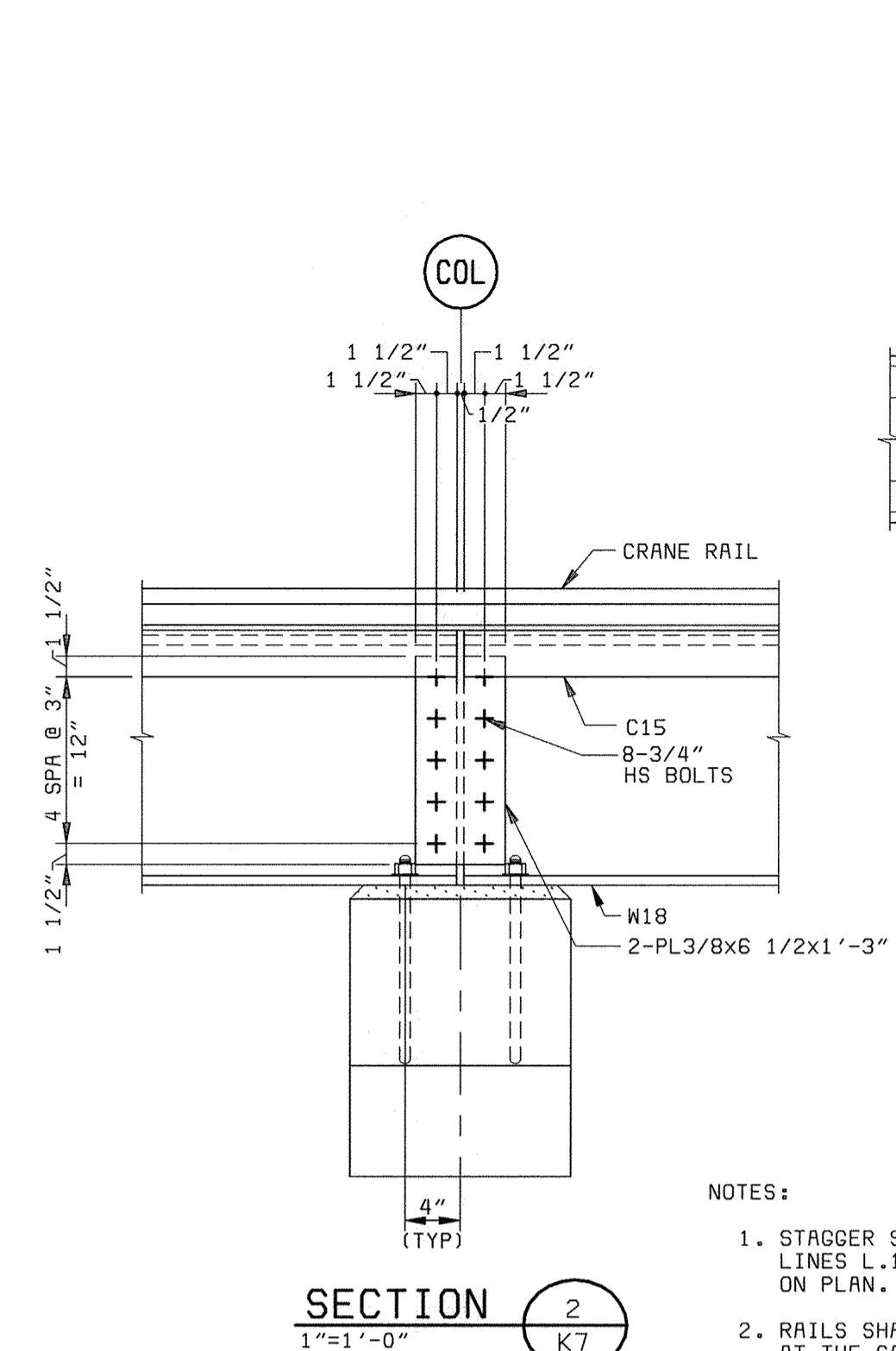
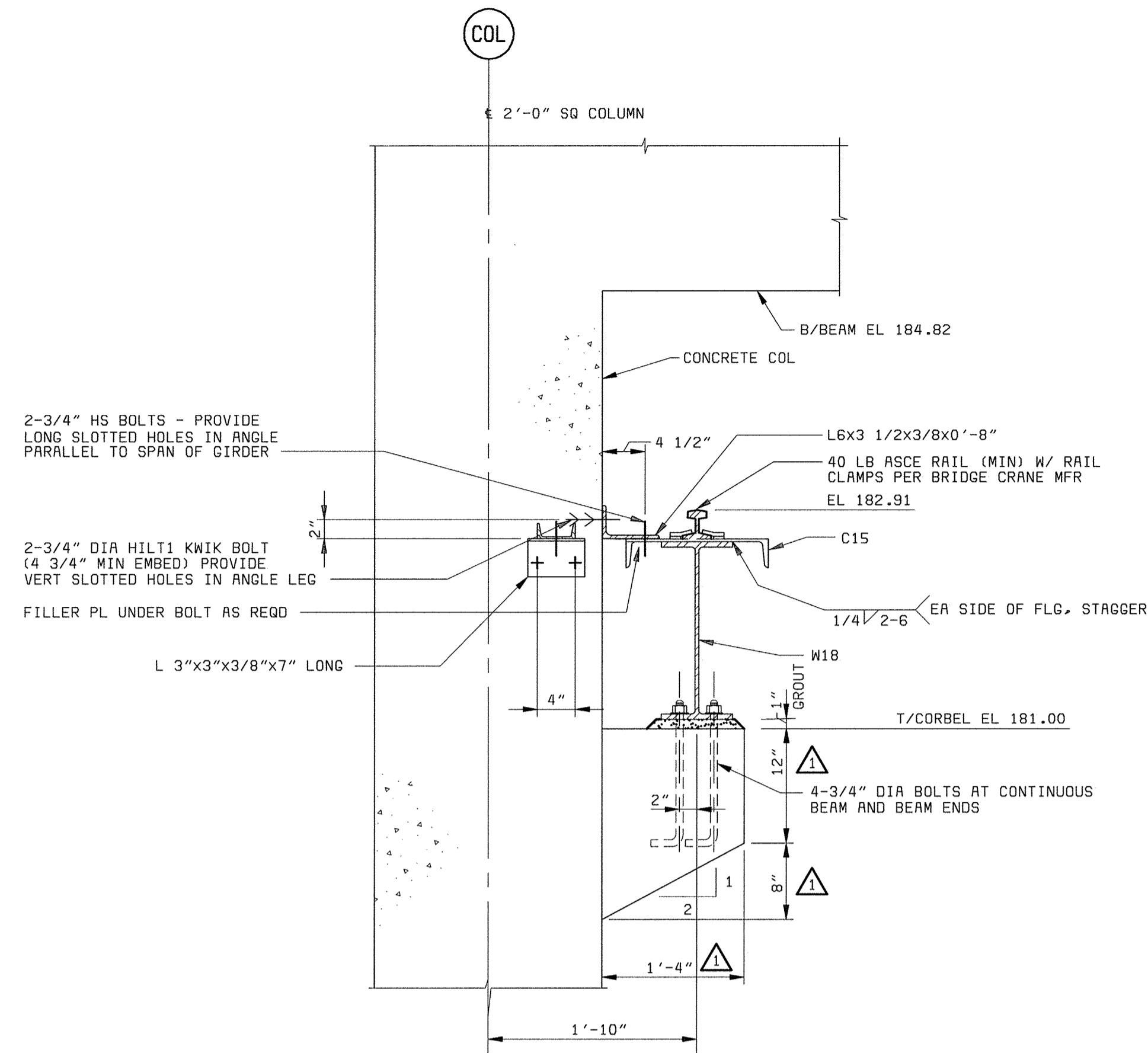
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NO. 19609

DES: TNG	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR
DRN: ALB			
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

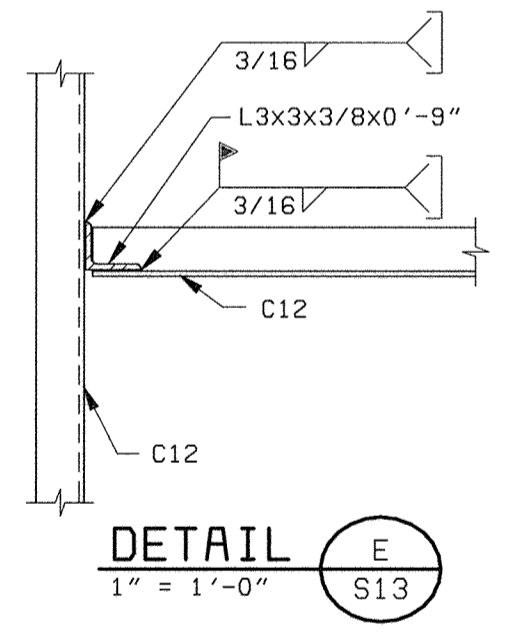
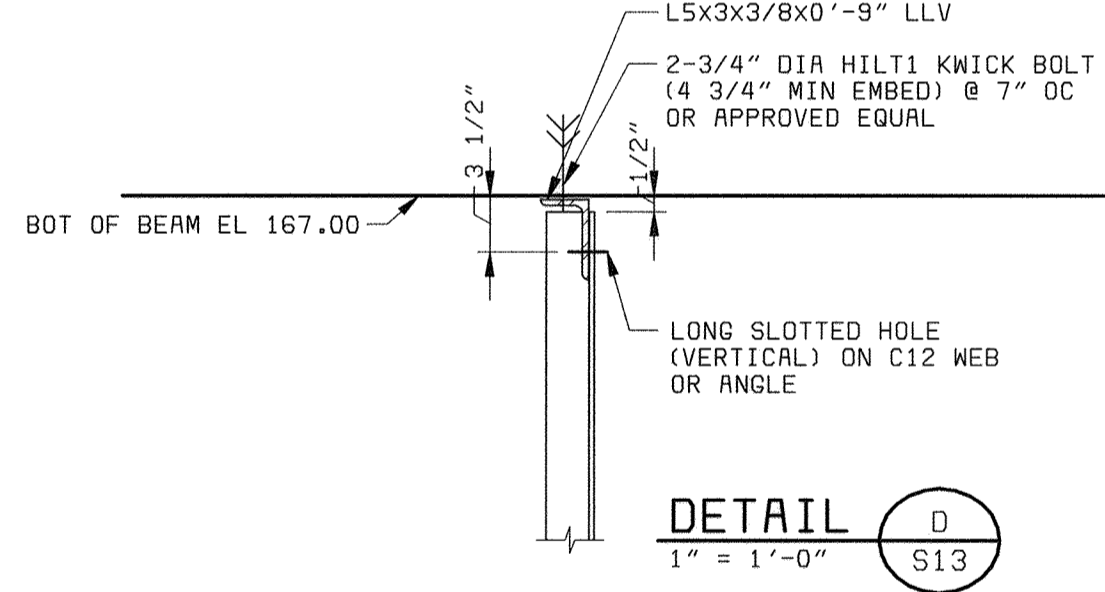
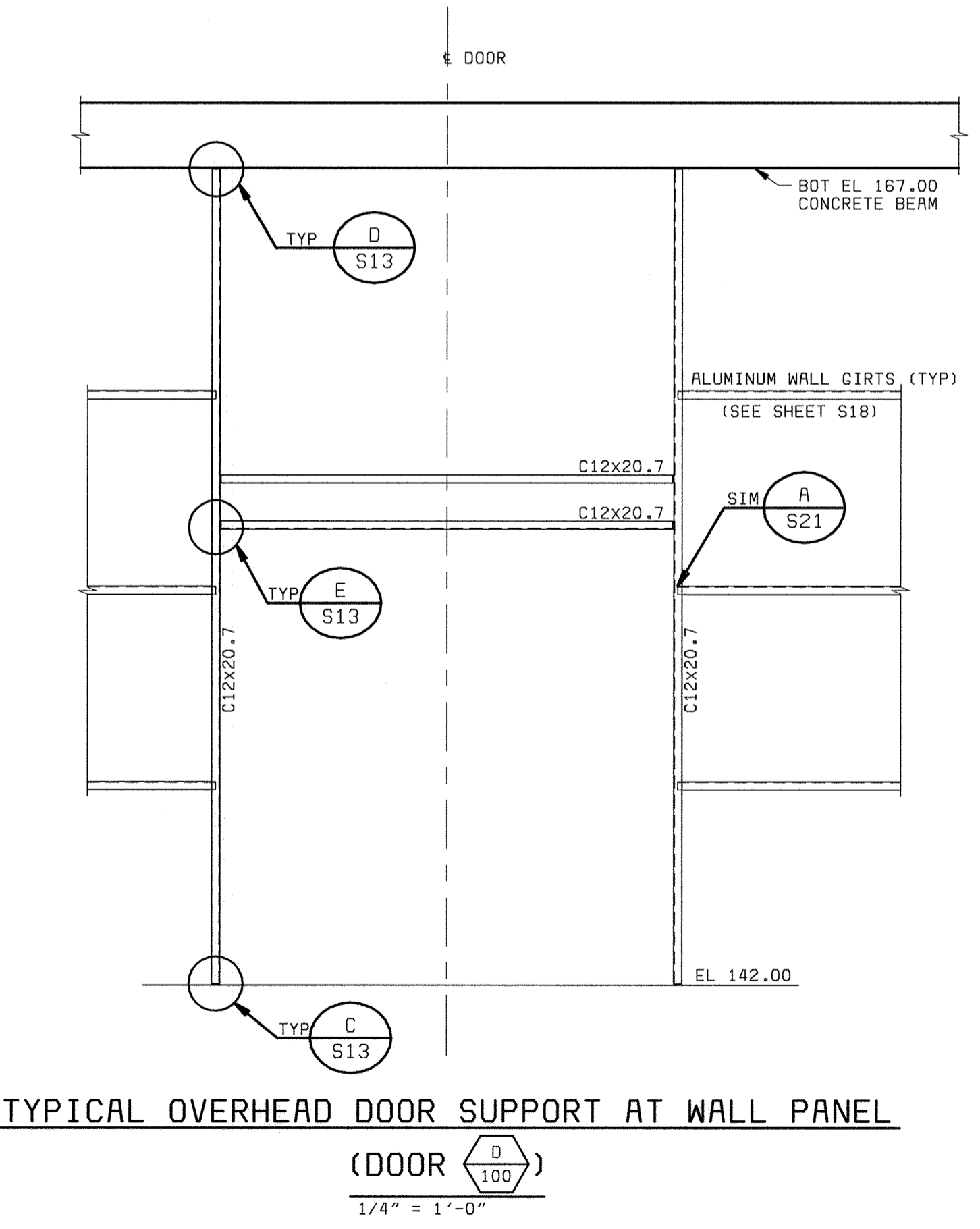


SHOP WELDED - FIELD BOLTED		
BEAM SIZE (ALL WEIGHTS)	NO OF BOLTS IN OSL	ANGLE SIZE
W36	20	2L'S 3 1/2x3x3/8
W33	18	2L'S 3 1/2x3x3/8
W30	16	2L'S 3 1/2x3x3/8
W27	14	2L'S 3 1/2x3x3/8
W24 & S24	12	2L'S 3 1/2x3x3/8
W21 & S20	10	2L'S 3 1/2x3x3/8
W18 & W18, S15 & S18, C15, MC18	8	2L'S 3 1/2x3x3/8
W12 & W14, 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

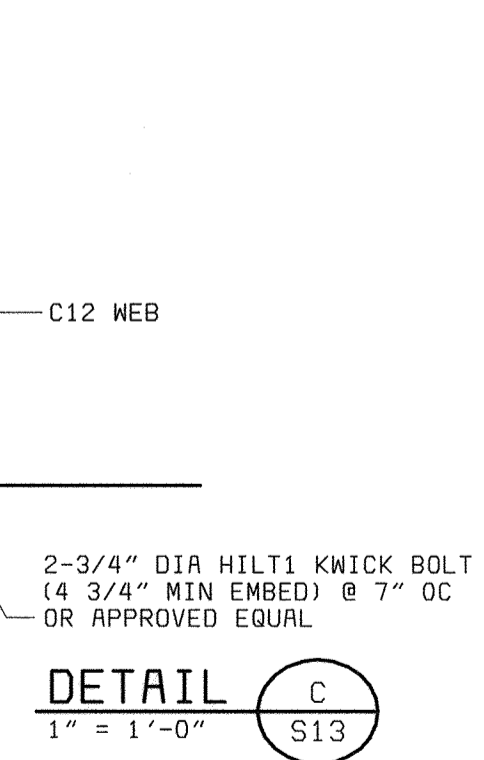
NOTES:
 1. 3 1/2" LEGS OUTSTANDING. 2L3x3x3/8 SHALL BE SUBSTITUTED WHERE ADEQUATE CLEARANCE DOES NOT EXIST FOR 3 1/2" LEGS
 2. AT CONTRACTOR OPTION, ANGLES MAY BE BOLTED TO BEAM WEB IN PLACE OF WELDING AS SHOWN. USING 1/2 THE NUMBER OF BOLTS LISTED IN THE TABLE. ANGLE SIZE TO BE 3 1/2x3 1/2x3/8.

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.



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, ALM			
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
 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:

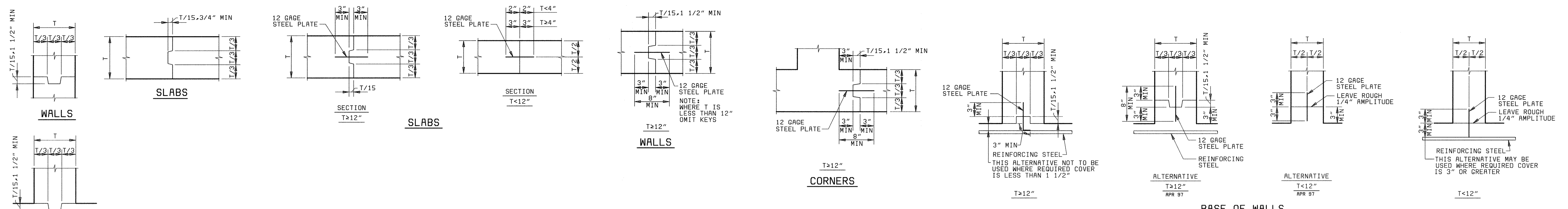
ELECTRICAL & CONTROL ROOMS	250 PSF
OPERATION AND PROCESS FLOORS	150 PSF
EQUIPMENT	ACTUAL
STAIRS/SERVICE PLATFORMS	100 PSF
GRATING AREAS	100 PSF
ALL FLOORS NOT INDICATED	100 PSF
ROOF	25 PSF
3. LATERAL EARTH PRESSURE AS PER SOILS REPORT.
4. LATERAL SURCHARGE EQUIVALENT OF 2 FT OF SOIL WHERE ADJACENT TO 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 CATEGORY	C

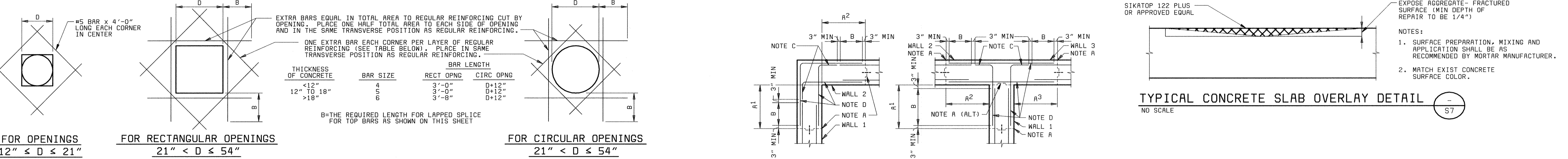
 ANALYSIS PROCEDURE.....EQUIVALENT LATERAL FORCE

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 RHH/RJR/RJR	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 _____			DATE _____ REVISIONS AND RECORD OF ISSUE NO. BY CK APP				

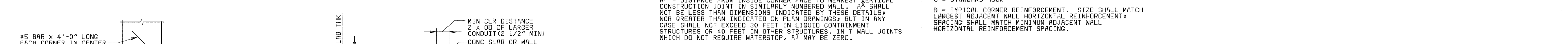


JOINTS WITH WATERSTOPS
TYPICAL CONSTRUCTION JOINTS

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 REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS)

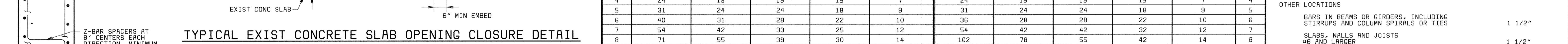


FOR OPENINGS 12" ≤ D ≤ 21"
 FOR RECTANGULAR OPENINGS 21" < D ≤ 54"
 FOR CIRCULAR OPENINGS 21" < D ≤ 54"

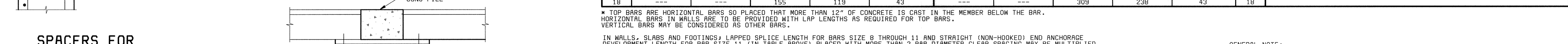
TYPICAL EXTRA REINFORCING AT ISOLATED RE-ENTRANT CORNERS
 (TYPICAL REQUIRED UNLESS ADDITIONAL REINFORCEMENT SPECIFICALLY INDICATED AT OPENINGS ON DRAWINGS)



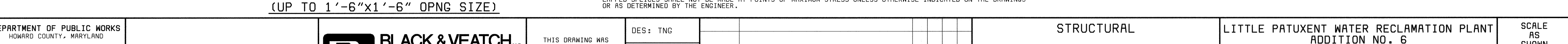
CONDUIT PLACING DETAIL
 NO SCALE



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)



MAIN REINFORCEMENT FOR ALL STRUCTURES
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.

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	119	119	19	11
14	---	---	105	81	33	---	---	210	162	33	14
18	---	---	155	119	43	---	---	309	238	43	18

* TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN WALLS ARE TO BE PROVIDED WITH LAP LENGTHS AS REQUIRED FOR TOP BARS. VERTICAL BARS MAY BE CONSIDERED AS OTHER BARS.

IN WALLS, SLABS AND FOOTINGS; LAPPED SPLICE LENGTH FOR BAR SIZE 8 THROUGH 11 AND STRAIGHT (NON-HOOKED) END ANCHORAGE DEVELOPMENT LENGTH FOR BAR SIZE 11 (IN THE TABLE ABOVE) PLACED WITH MORE THAN 2 BAR DIAMETER CLEAR SPACING MAY BE MULTIPLIED BY A FACTOR OF 0.7.

IN BEAMS, COLUMNS, WALLS, SLABS AND FOOTINGS; LAPPED SPLICE LENGTH AND STRAIGHT (NON-HOOKED) END ANCHORAGE DEVELOPMENT LENGTH FOR BAR SIZE 7 THROUGH 11 (IN THE TABLE ABOVE) PLACED WITH MORE THAN 5 BAR DIAMETER CLEAR SPACING MAY BE MULTIPLIED BY A FACTOR OF 0.8. THE MULTIPLICATION FACTORS OF 0.7 AND 0.8 MAY BE COMBINED ONLY FOR BARS COMMON TO THIS NOTE AND THE NOTE ABOVE.

LAPPED SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS UNLESS OTHERWISE INDICATED ON THE DRAWINGS OR AS DETERMINED BY THE ENGINEER.

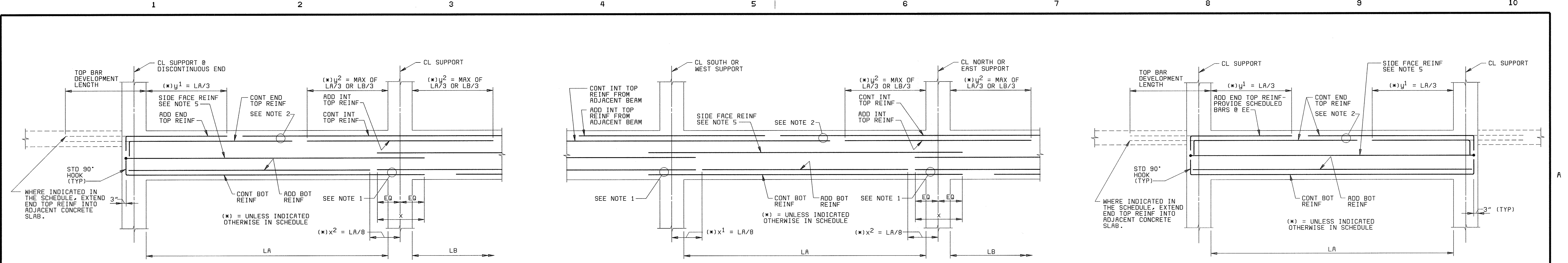
CONCRETE COVER FOR REINFORCEMENT

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	1 1/2"
#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.

GENERAL NOTE: DETAILS ON THIS SHEET APPLY TO ALL DRAWINGS UNLESS OTHERWISE NOTED

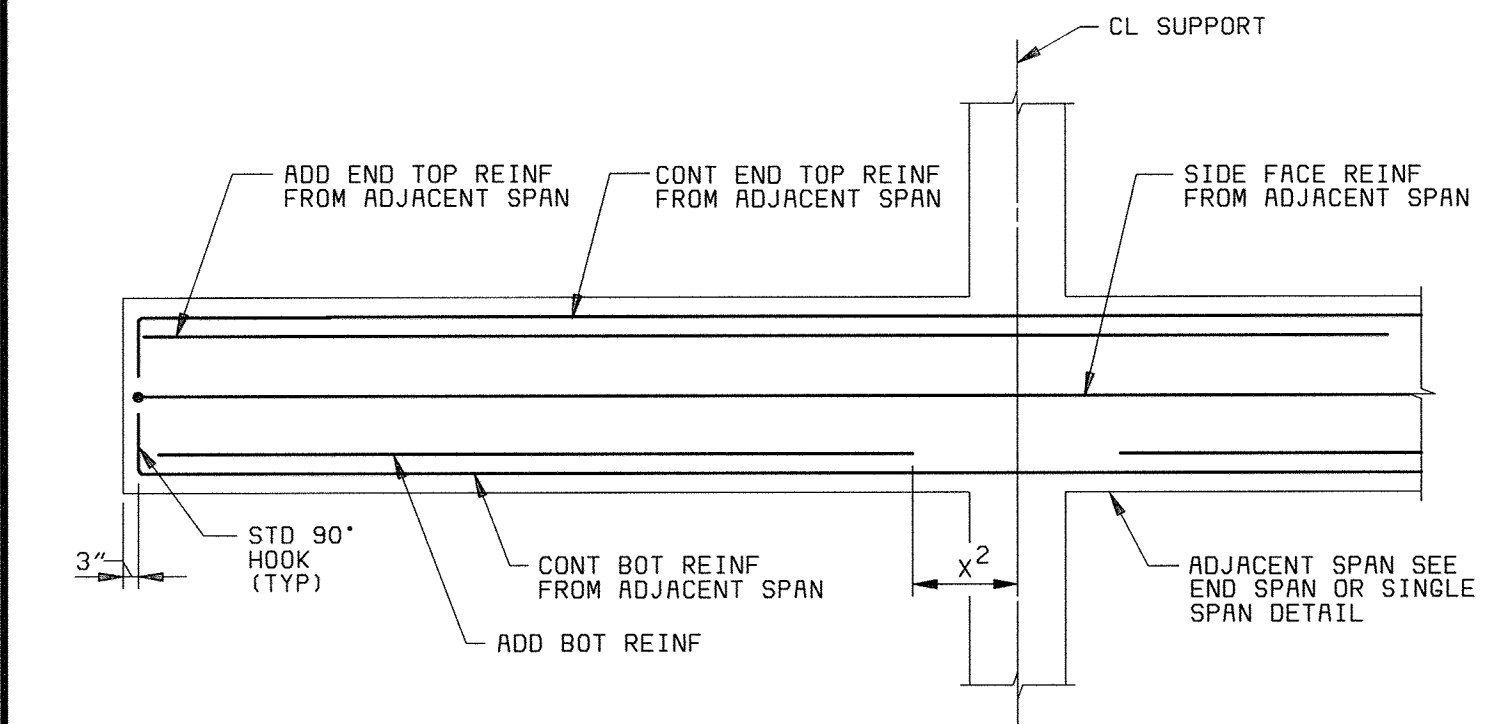
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609	DES: TNG								STRUCTURAL STANDARD CONCRETE 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: MAS	CHK: JME	DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHR/RJR/RJR					



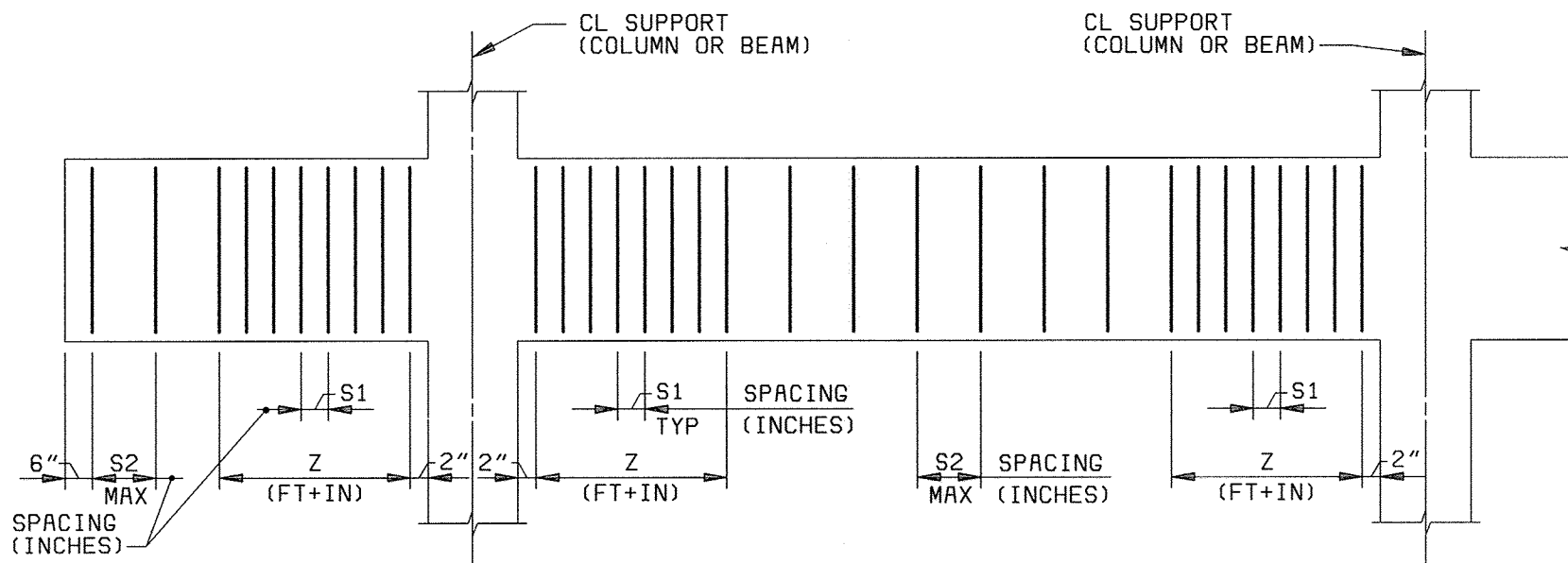
TYPE E-END SPAN

TYPE I-INTERIOR SPAN

TYPE S-SINGLE SPAN

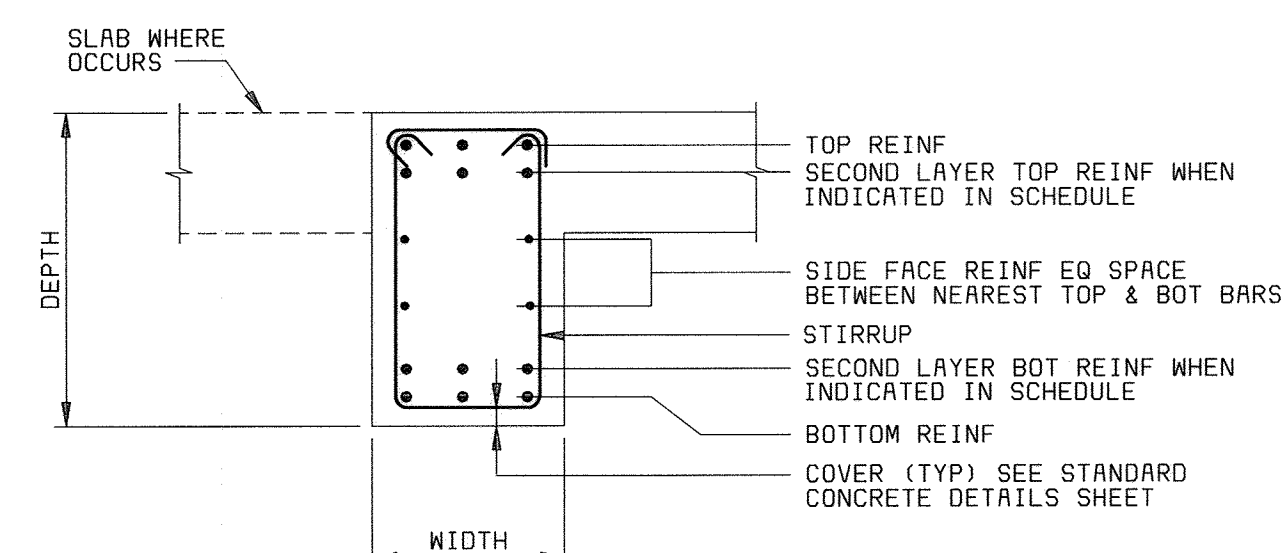


TYPE C-CANTILEVER SPAN

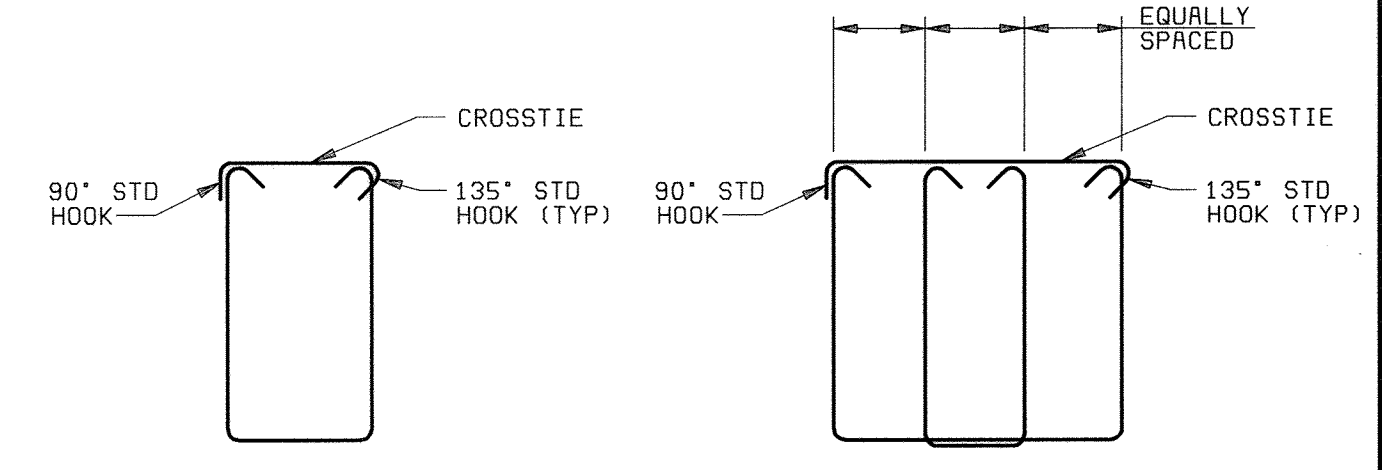


CANTILEVER SPAN END, INTERIOR OR SINGLE SPAN

STIRRUP SPACING LAYOUT

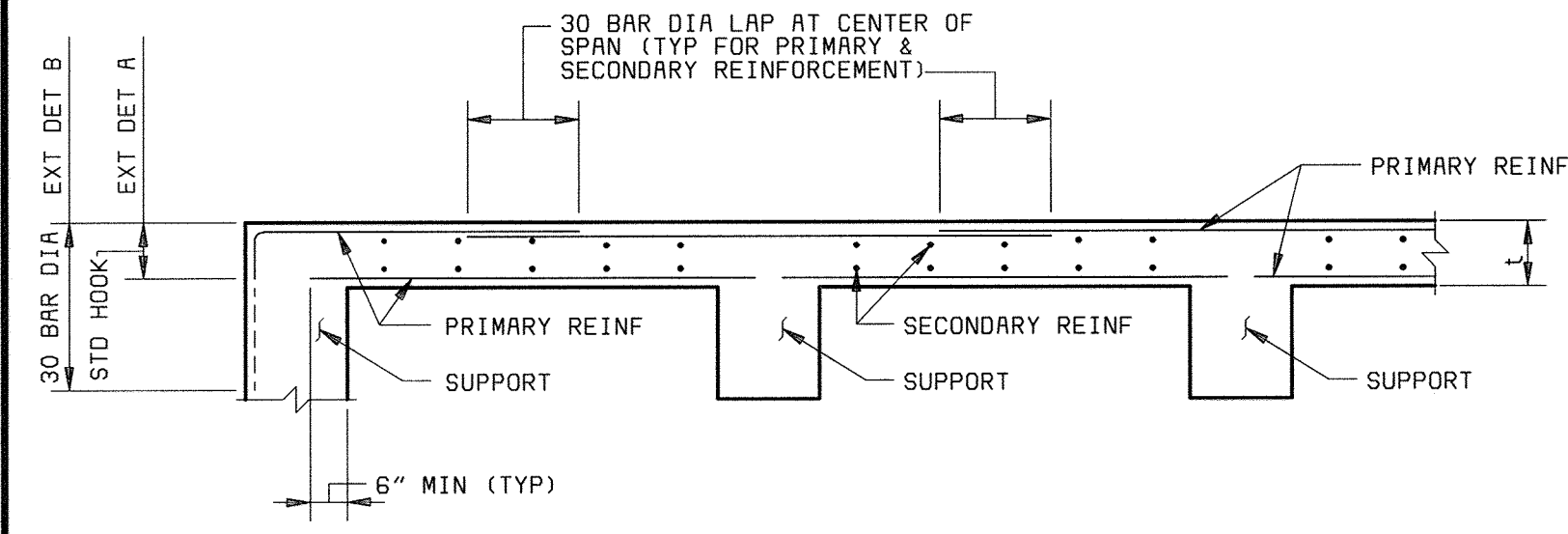


TYPICAL BEAM SECTION

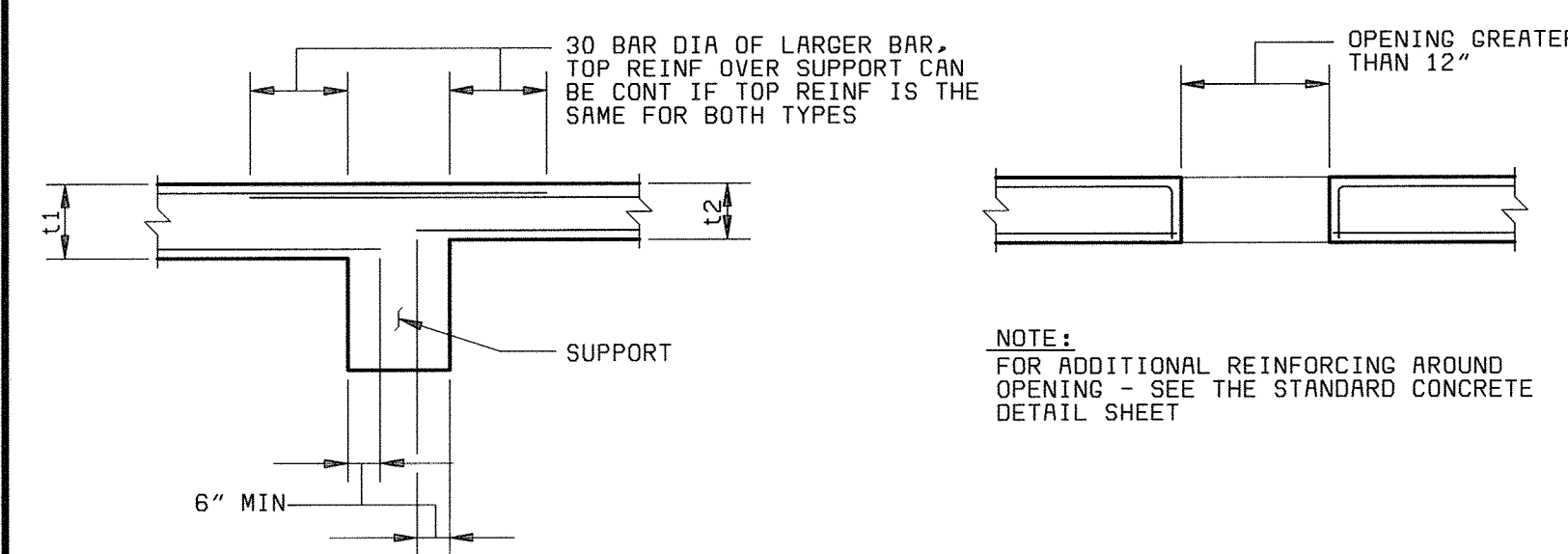


TYPE SA TYPE SB

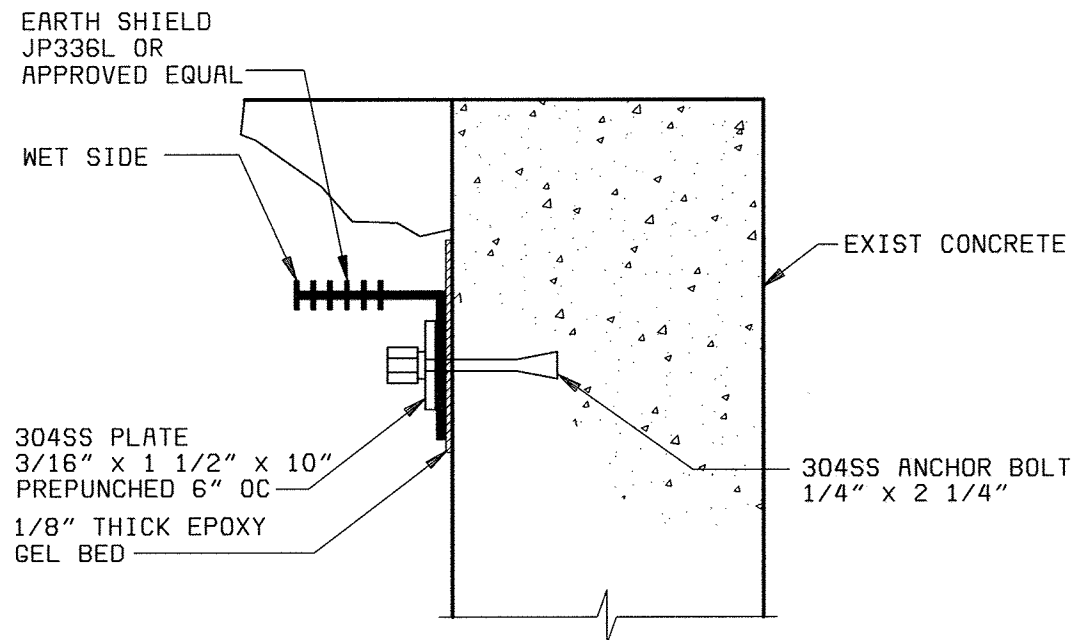
STIRRUP DETAILS



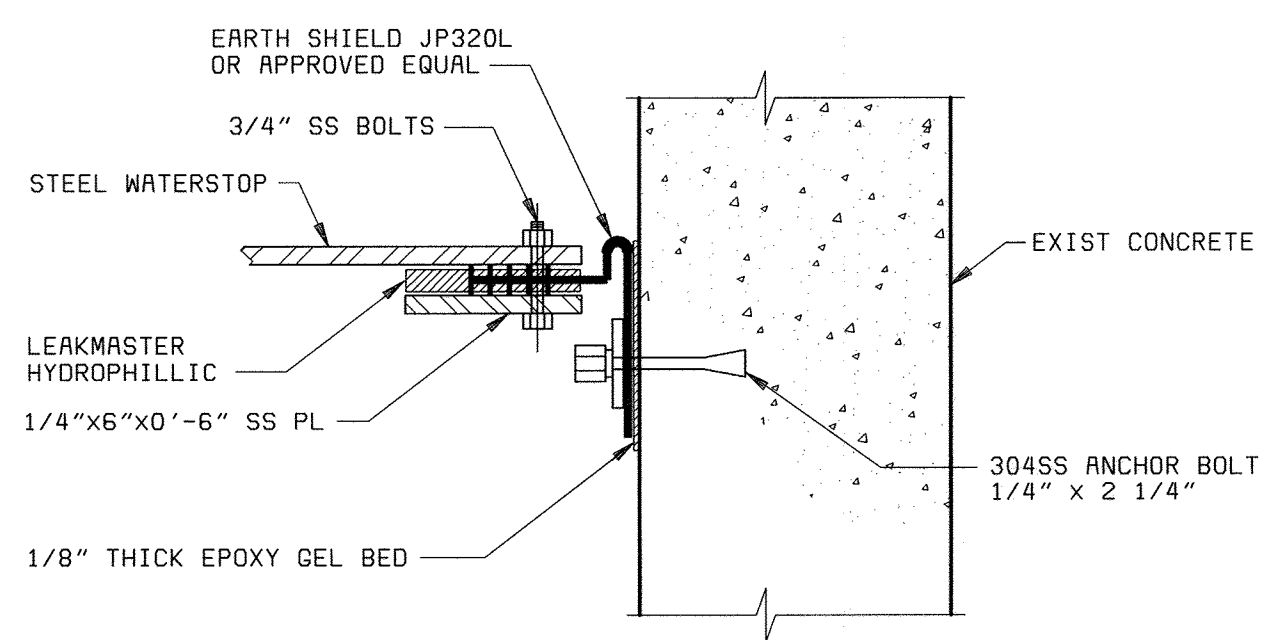
TYPICAL SUSPENDED SLAB DETAIL



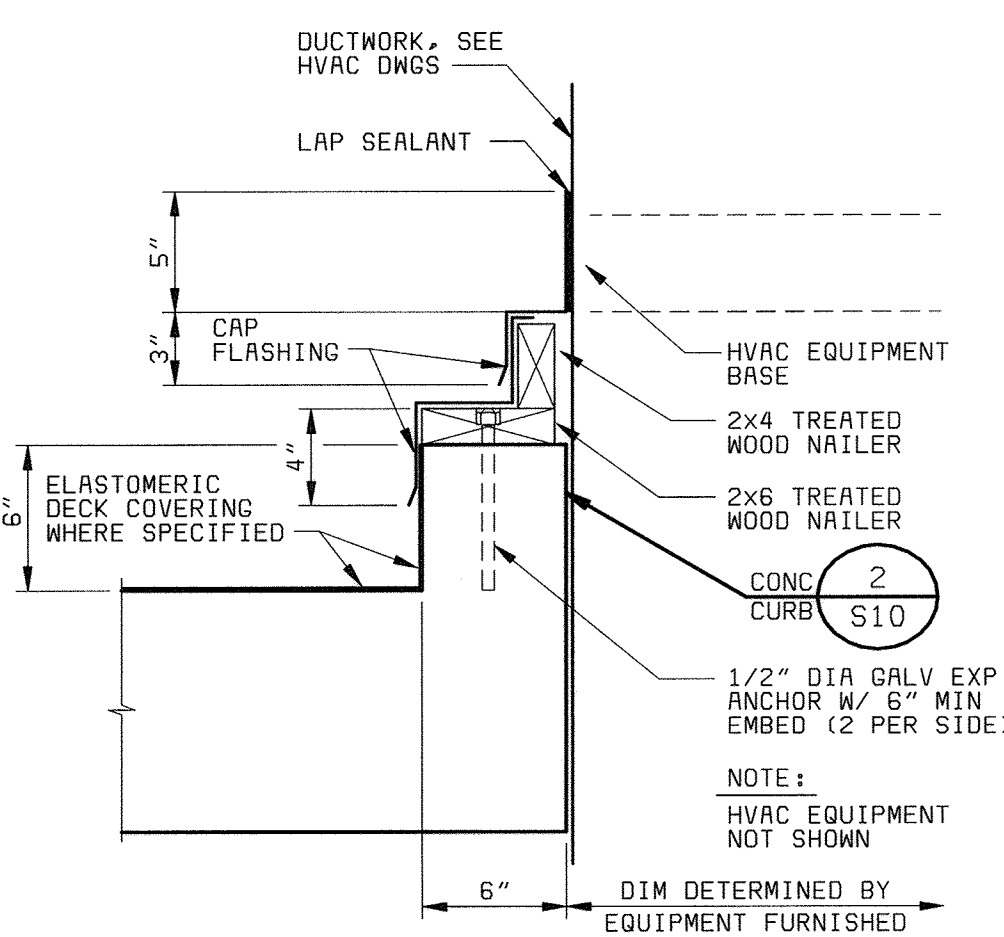
DETAIL AT OPENINGS



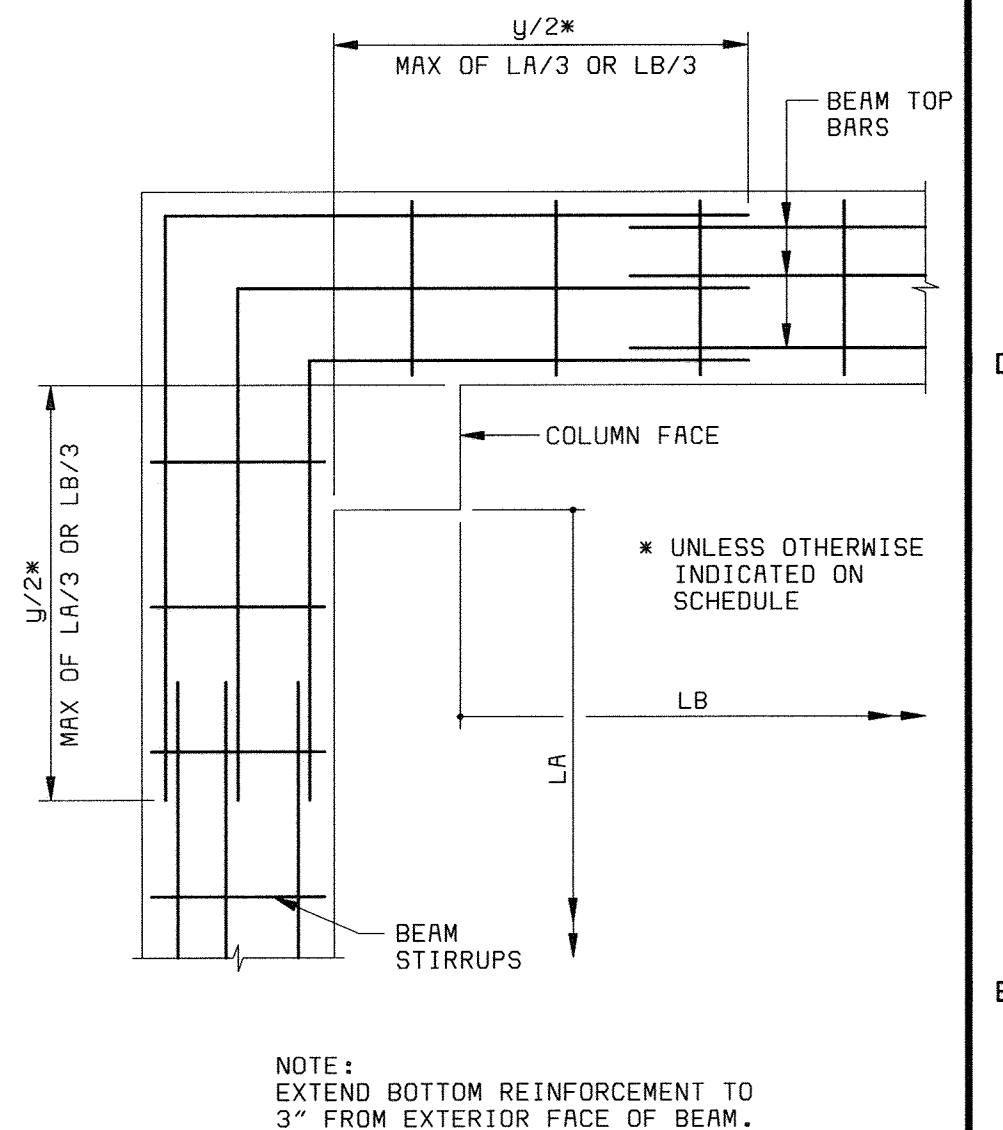
DETAIL A



DETAIL B



HVAC EQUIPMENT SUPPORT



TYPICAL BEAM TOP END REINFORCEMENT AT CORNERS (PLAN)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, 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: ALB					
CHK: JME					
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR
		REVISIONS AND RECORD OF ISSUE		NO.	BY

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
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SHOWN
SHEET
81 OF 150
S16

058472.2
P058472A

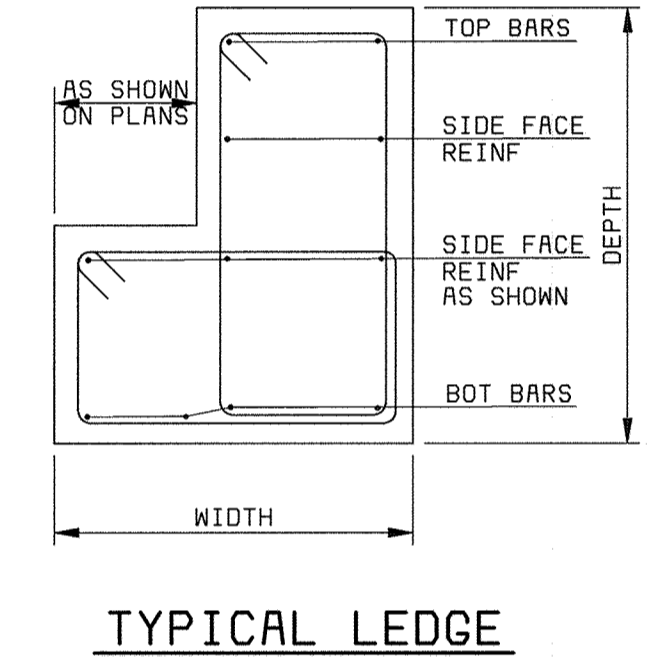
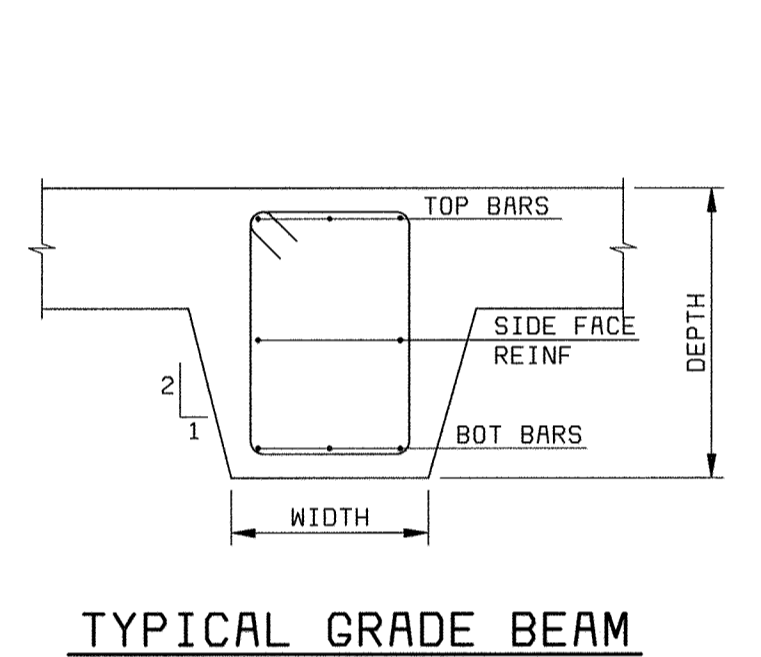
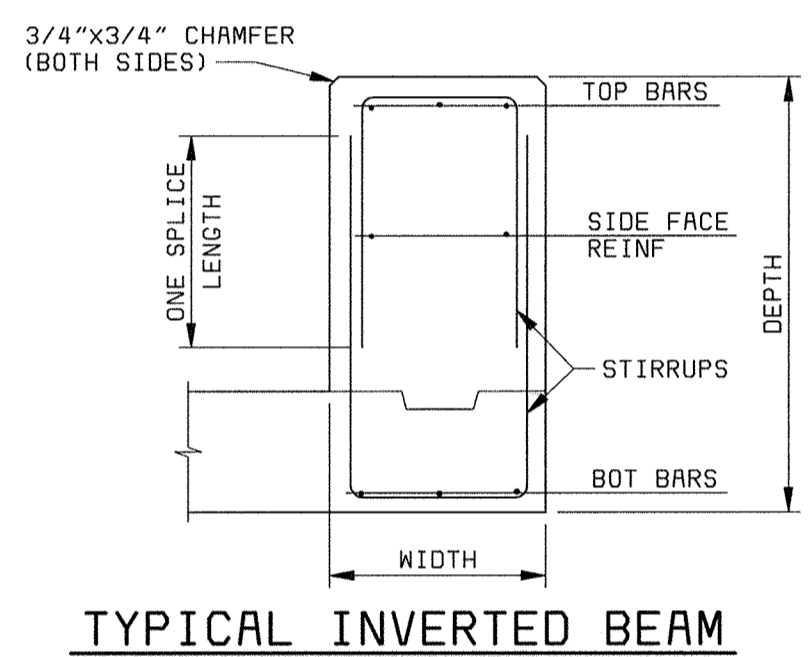
BEAM SCHEDULE

MARK	TYPE	BEAM SIZE		BOTTOM REINF			END TOP REINF		INT TOP REINF			SIDE FACE REINF (EF)	STIRRUPS				REMARKS			
		WIDTH	DEPTH	CONT	ADD	x	x ¹	x ²	CONT	ADD	y ¹		CONT	ADD	y ²	TYPE		SIZE	S1	Z
CENTRIFUGE BUILDING (EL 142.00 LEVEL GRADE BEAMS)																				
B100	I	22"	64"	5-#8							5-#8				#6@12"	SA	#4	12"	12"	INVERTED BEAM. SEE SHEET S18 (TYP) T&B BARS IN 2 LAYERS
B101	E	22"	64"		5-#8										#6@12"	SA	#4	12"	12"	INVERTED BEAM. SEE TYP END REINF @ CORNERS ON SHT S16
B102	E	16"	64"		5-#8										#6@12"	SA	#4	12"	12"	INVERTED BEAM. TOP & BOTTOM BARS IN TWO LAYERS
B103	I	16"	64"	5-#8							5-#8				#6@12"	SA	#4	12"	12"	INVERTED BEAM. TOP & BOTTOM BARS IN TWO LAYERS
B104	I	16"	64"	5-#8							5-#8				#6@12"	SA	#4	12"	12"	INVERTED BEAM. TOP & BOTTOM BARS IN TWO LAYERS
B105	I	16"	64"	5-#8							5-#8				#6@12"	SA	#4	12"	12"	INVERTED BEAM. TOP & BOTTOM BARS IN TWO LAYERS
B106	I	16"	64"	5-#8							5-#8				#6@12"	SA	#4	12"	12"	INVERTED BEAM. TOP & BOTTOM BARS IN TWO LAYERS
B107	E	16"	64"		5-#8										#6@12"	SA	#4	12"	12"	INVERTED BEAM. HOOK TOP BAR INTO END COLUMN
B108	E	18"	30"		3-#9						3-#9				#6@12"	SA	#4	10"	10"	GRADE BEAM-HOOK TOP BAR AT END COLUMN
B109	I	18"	30"	3-#9							3-#9				#6@12"	SA	#4	10"	10"	GRADE BEAM-SECTION 3 ON SHEET S6
B110	E	18"	30"		3-#9						3-#9				#6@12"	SA	#4	10"	10"	GRADE BEAM-HOOK TOP BAR AT END COLUMN
B111	E	18"	30"		3-#9						3-#9				#6@12"	SA	#4	12"	12"	SEE TYPICAL DETAIL GRADE BEAM
B112	E	12"	30"		4-#7			3" FROM EDGE			4-#7				#6@12"	SA	#4	12"	12"	GRADE BEAM - 4 BARS T&B IN TWO LAYERS
B113	C	18"	30"		3-#9			CONTINUOUS			3-#9				#6@12"	SA	#4	12"	12"	GRADE BEAM
B114	I	12"	18"	2-#7							4-#9				#6@12"	SA	#4	12"	12"	GRADE BEAM-INT TOP REINF FROM B119 IN TWO LAYERS
B115	C	22"	58"		5-#8			CONTINUOUS			3-#8				#6@12"	SA	#4	12"	12"	GRADE BEAM-EMBED TOP BARS INTO ADJACENT BEAM
B116	E	18"	30"		3-#8			SPLICE TO ADJ BEAM BARS			3-#8				#6@12"	SA	#4	12"	12"	GRADE BEAM
B117	I	18"	30"	3-#8							3-#9				#6@12"	SA	#4	12"	12"	GRADE BEAM
B118	C	18"	30"		3-#8			CONTINUOUS			3-#9				#6@12"	SA	#4	12"	12"	GRADE BEAM
B119	E	12"	30"		4-#9			3" FROM EDGE			4-#9				#6@12"	SA	#4	12"	12"	GRADE BEAM-HOOK TWO BARS AT END COLUMN
B120	S	18"	30"		3-#9						3-#9				#6@12"	SA	#4	10"	10"	GRADE BEAM
B121	S	18"	30"		3-#9						3-#9				#6@12"	SA	#4	10"	10"	GRADE BEAM
CENTRIFUGE BUILDING (EL 156.00 LEVEL)																				
B200	E	12"	24"		2-#9			SPLICE TO B201 BARS			2-#9				#6@12"	SA	#4	10"	10"	
B201	I	12"	24"	2-#9							2-#9				#6@12"	SA	#4	10"	10"	
B202	E	12"	24"		2-#9			SPLICE TO B201 BARS			2-#9				#6@12"	SA	#4	10"	10"	
B203	C	16"	24"		2-#7						2-#8				#6@12"	SA	#4	10"	10"	
B204	C	16"	24"		2-#7						2-#8				#6@12"	SA	#4	10"	10"	
B205	C	16"	24"		2-#7			3" FROM COLUMN EAST FACE			3-#8				#6@12"	SA	#4	10"	10"	STAIR NO. 3 EL 166.11 LANDING SUPPORT BEAM AT COLUMN
CENTRIFUGE BUILDING (EL 167.00 LEVEL)																				
B300	I	16"	26"	3-#8							3-#9				#6@12"	SA	#4	10"	10"	SEE SECTION 11 ON SHEET S12
B301	E	16"	26"		3-#8			SPLICE TO B300 BARS			3-#9				#6@12"	SA	#4	10"	10"	BEND END TOP (Γ) BARS INTO B302-SEE TYP DETAIL SHT16
B302	E	16"	26"		3-#8			SPLICE TO B303 BARS			3-#9				#6@12"	SA	#4	10"	10"	END TOP BAR FROM ADJ BEAM
B303	I	16"	26"	3-#8							3-#9				#6@12"	SA	#4	10"	10"	
B304	I	16"	26"	3-#8							3-#9				#6@12"	SA	#4	10"	10"	
B305	I	16"	26"	3-#8							3-#9				#6@12"	SA	#4	10"	10"	
B306	I	16"	26"	3-#8							3-#9				#6@12"	SA	#4	10"	10"	
B307	E	16"	26"		3-#8			SPLICE TO B306 BARS			3-#9				#6@12"	SA	#4	10"	10"	BEND END TOP (Γ) BARS INTO B308-SEE TYP DETAIL SHT16
B308	E	16"	26"		3-#8			SPLICE TO B309 BARS			3-#9				#6@12"	SA	#4	10"	10"	
B309	I	16"	26"	3-#8							3-#9				#6@12"	SA	#4	10"	10"	
B310	E	16"	26"		3-#8			SPLICE TO B309 BARS			3-#9				#6@12"	SA	#4	10"	10"	BEND END TOP (Γ) BARS INTO B311-SEE TYP DETAIL SHT16
B311	E	16"	26"		3-#8			CONTINUOUS			3-#9				#6@12"	SA	#4	10"	10"	
B312	E	18"	30"		3-#8			3" FROM EDGE			3-#8				#6@12"	SA	#4	10"	10"	EMBED TOP BAR INTO ADJACENT BEAM
B313	S	18"	30"		3-#8						3-#8				#6@12"	SA	#4	10"	10"	
B314	S	18"	30"		3-#8						3-#8				#6@12"	SA	#4	10"	10"	
B315	E	12"	28"		2-#7			SPLICE TO B319 BARS			2-#7				#6@12"	SA	#4	12"	12"	
B316	I	24"	28"	4-#7							4-#8				#6@12"	SA	#4	12"	12"	HOOK TOP END BAR INTO COLUMN/BEAM
B317	E	18"	28"		3-#7			SPLICE TO B321 BARS			3-#8				#6@12"	SA	#4	12"	12"	
B318	E	12"	24"		2-#7			SPLICE TO B322 BARS			2-#8				#6@12"	SA	#4	10"	10"	
B319	I	12"	28"	2-#7							2-#7				#6@12"	SA	#4	12"	12"	
B320	I	24"	28"	4-#7							4-#8				#6@12"	SA	#4	12"	12"	
B321	I	18"	28"	3-#7							3-#8				#6@12"	SA	#4	12"	12"	
B322	I	12"	24"	2-#7							2-#8				#6@12"	SA	#4	10"	10"	
B323	I	18"	28"	3-#7							3-#8				#6@12"	SA	#4	12"	12"	
B324	I	12"	24"	2-#7							2-#8				#6@12"	SA	#4	10"	10"	
B325	I	18"	28"	3-#7							3-#9				#6@12"	SA	#4	12"	12"	3-#8 TOP BARS FROM B316/B323 & 3-#9 FROM B327 (CONT)
B326	E	12"	24"		2-#7			SPLICE WITH B324 BARS			2-#8				#6@12"	SA	#4	10"	10"	
B327	E	18"	28"		3-#8			SPLICE WITH B325 BARS			3-#9				#6@12"	SA	#4	10"	10"	
B328	C	21"	26"		3-#8			CONTINUOUS			3-#9				#6@12"	SA	#4	10"	10"	
B329	C	22"	36"		4-#8			EMBED INTO ADJ BEAM		2-#10					#6@12"	SB	#4	12"	12"	EMBED ADDITIONAL 2 TOP BARS 7'-0" INTO ADJ BEAM
B330	I	22"	42"	4-#9							4-#10				#6@12"	SB	#4	12"	12"	AT PIPE CHASE, HOOK TOP BARS 3" FROM EDGE
B331	E	22"	42"		4-#9			SPLICE WITH B330 BARS			4-#10				#6@12"	SB	#4	12"	12"	
B332	I	22"	26"		4-#7			CONTINUOUS INTO B334			4-#10				#6@12"	SB	#4	12"	12"	
B333	S	18"	24"		3-#9						3-#8				#6@12"	LE	#4	10"	10"	SEE TYPICAL LEDGE SECTION ON SHEET S18
B334	C	22"	26"		4-#7			CONTINUOUS			4-#10				#6@12"	SB	#4	10"	10"	
B335	I	22"	24"	4-#9				CONTINUOUS			4-#9				#6@12"	SB	#4	12"	12"	SEE SECTION 1 ON SHEET S8
B336	E	22"	42"		4-#9			CONT FROM B335			4-#9				#6@12"	SB	#4	12"	12"	HOOK TOP BARS INTO END BEAMS
B337	C	24"	26"		4-#8			3" FROM EDGE		1-#9					#6@12"	SB	#4	12"	12"	HOOK ADD TOP BARS INTO COLUMN - SECTION 2 ON SHEET S8
B337A	C	24"	36"		4-#7			EMBED INTO ADJ BEAM		2-#10					#6@12"	SB	#4	12"	12"	EMBED ADDITIONAL 2 TOP BARS 7'-0" INTO ADJ BEAM
B338	S	16"	30"		3-#8						3-#8				#6@12"	SA	#4	12"	12"	SEE SECTION 11 ON SHEET S12
B339	C	16"	24"		2-#7			3" FROM COLUMN EAST FACE			3-#8				#6@12"	SA	#4	10"	10"	STAIR NO. 3 EL 171.57 LANDING SUPPORT BEAM AT COLUMN
B340	C	16"	24"		2-#7			3" FROM COLUMN EAST FACE			3-#8				#6@12"	SA	#4	10"	10"	STAIR NO. 3 EL 177.70 LANDING SUPPORT BEAM AT COLUMN

BEAM NOTES:

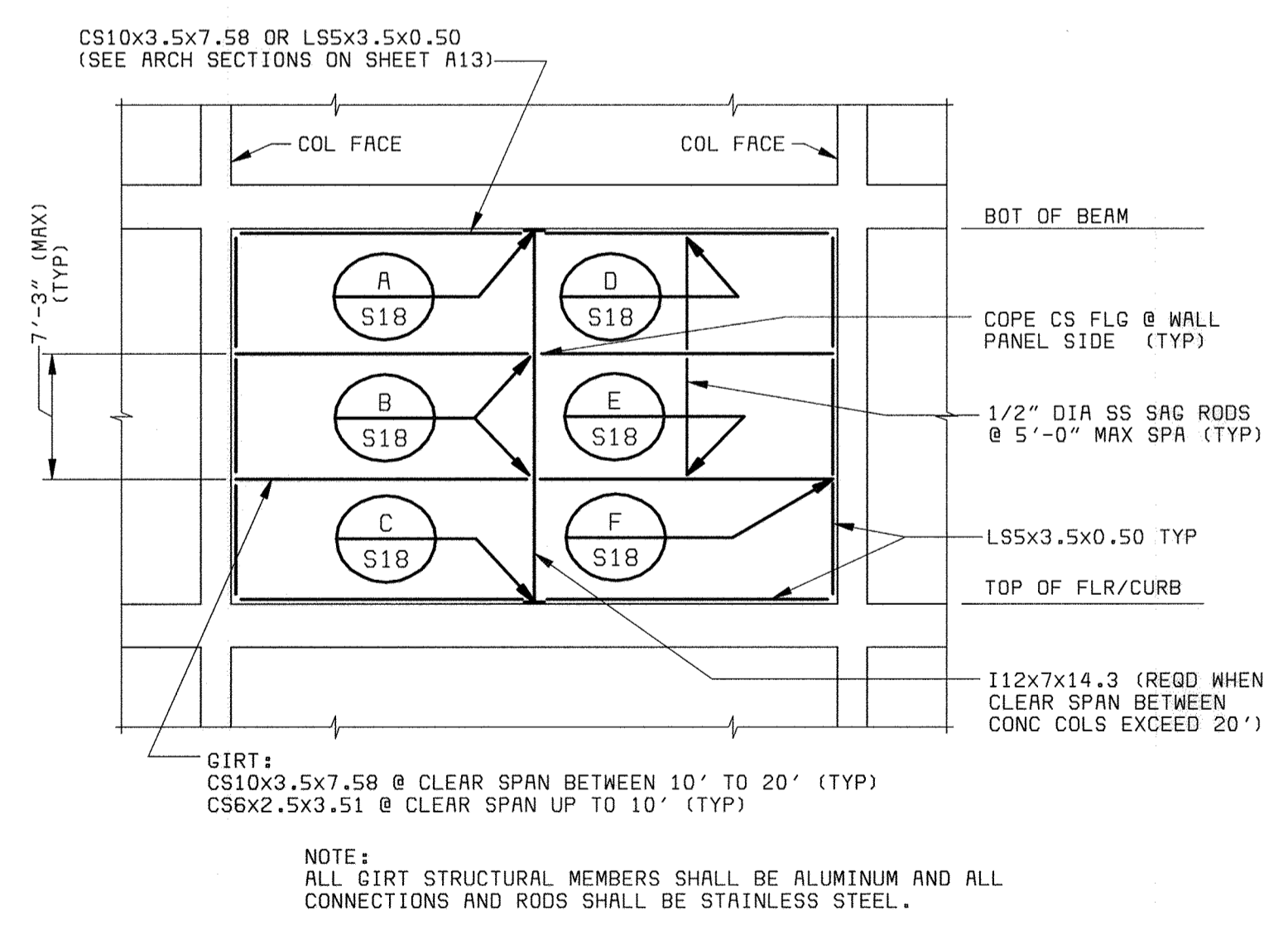
- UNLESS INDICATED OTHERWISE IN BEAM SCHEDULE, CONTINUOUS BOTTOM REINF SHALL HAVE LAP SPLICES CENTERED ON THE CENTERLINE OF THE SUPPORT USING 75% OF THE LAP SPlice LENGTH INDICATED ON THE STANDARD CONCRETE DETAILS SHEET. USE THE LAP SPlice REQUIREMENT OF THE SMALLER BOTTOM BAR IF BAR SIZES IN ADJACENT SPANS DIFFER. AT THE CONTRACTORS OPTION, BOTTOM REINF MAY BE MADE CONTINUOUS, WITHOUT SPLICING, ACROSS THE SUPPORT IF BARS IN THE ADJACENT SPAN ARE EQUAL IN SIZE AND QUANTITY.
- 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. USE THE LAP SPlice REQUIREMENT OF THE SMALLER TOP BAR, IF THE BAR SIZES EACH SIDE OF MIDSPAN DIFFER. AT THE CONTRACTORS OPTION, TOP REINF MAY BE MADE CONTINUOUS, WITHOUT SPLICING, IF THE TOP BARS EACH SIDE OF MIDSPAN ARE EQUAL IN SIZE AND QUANTITY.
- 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

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	X ¹	X ²	CONT	ADD	Y ¹		CONT	ADD	Y ²		TYPE	SIZE	S1
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				2-#7			#6@12"	SA	#4	12"		12"		
B403	I	12"	24"						2-#7			#6@12"	SA	#4	12"		12"		
B404	I	12"	24"						2-#7			#6@12"	SA	#4	12"		12"		
B405	E	12"	30"		2-#7				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 (r) END TOP REINF TO B502
B502	E	17"	24"		3-#8				3-#9			#6@12"	SA	#4	10"		10"		
B503	I	17"	24"	3-#8					3-#9			#6@12"	SA	#4	10"		10"		
B504	I	17"	24"	3-#8					3-#9			#6@12"	SA	#4	10"		10"		
B505	I	17"	24"	3-#8					3-#9			#6@12"	SA	#4	10"		10"		
B506	I	17"	24"	3-#8					3-#9			#6@12"	SA	#4	10"		10"		
B507	E	17"	24"		3-#8				3-#9			#6@12"	SA	#4	10"		10"		BEND (r) END TOP REINF TO B508
B508	E	17"	24"		3-#8				3-#9			#6@12"	SA	#4	10"		10"		
B509	I	17"	24"	3-#8					3-#9			#6@12"	SA	#4	10"		10"		
B510	E	17"	24"		3-#8				3-#9			#6@12"	SA	#4	10"		10"		BEND (r) END TOP REINF TO B511
B511	E	17"	24"		3-#8				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 (r) TOP LAYER TOP REINF TO ADJ BEAM TWO ADDITIONAL TOP BAR TO ANCHOR INTO ADJACENT BEAM
B516	I	17"	24"	3-#8					3-#9			#6@12"	SA	#4	10"		10"		
B517	I	17"	24"	3-#8					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

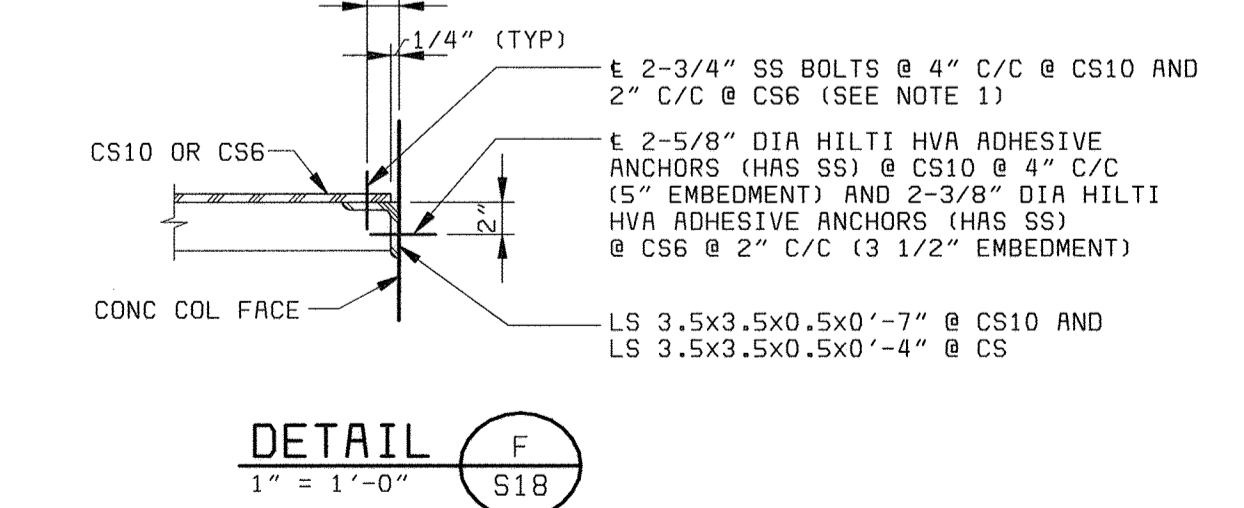
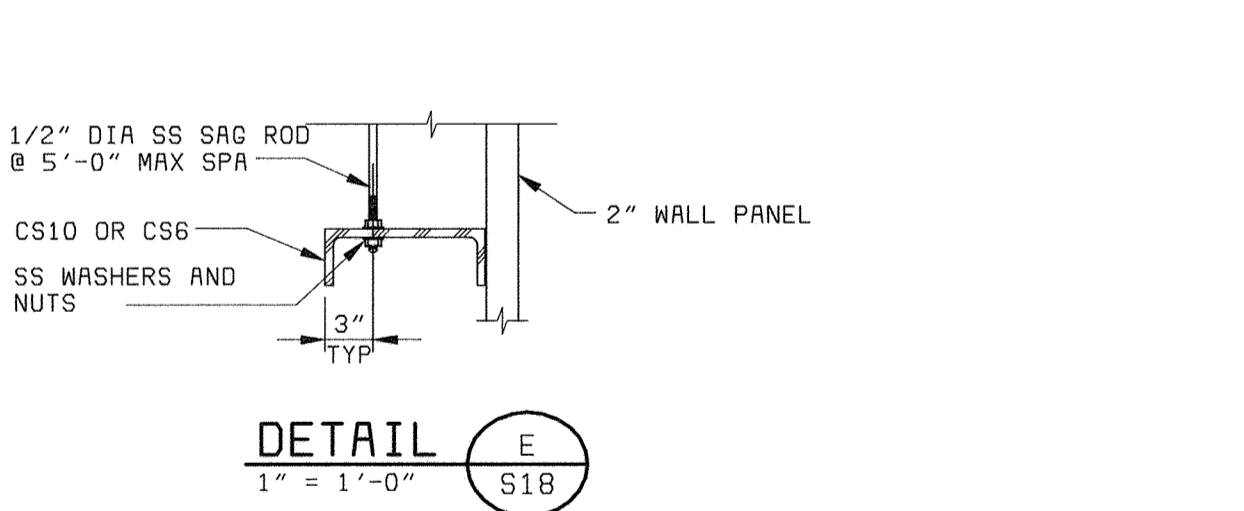
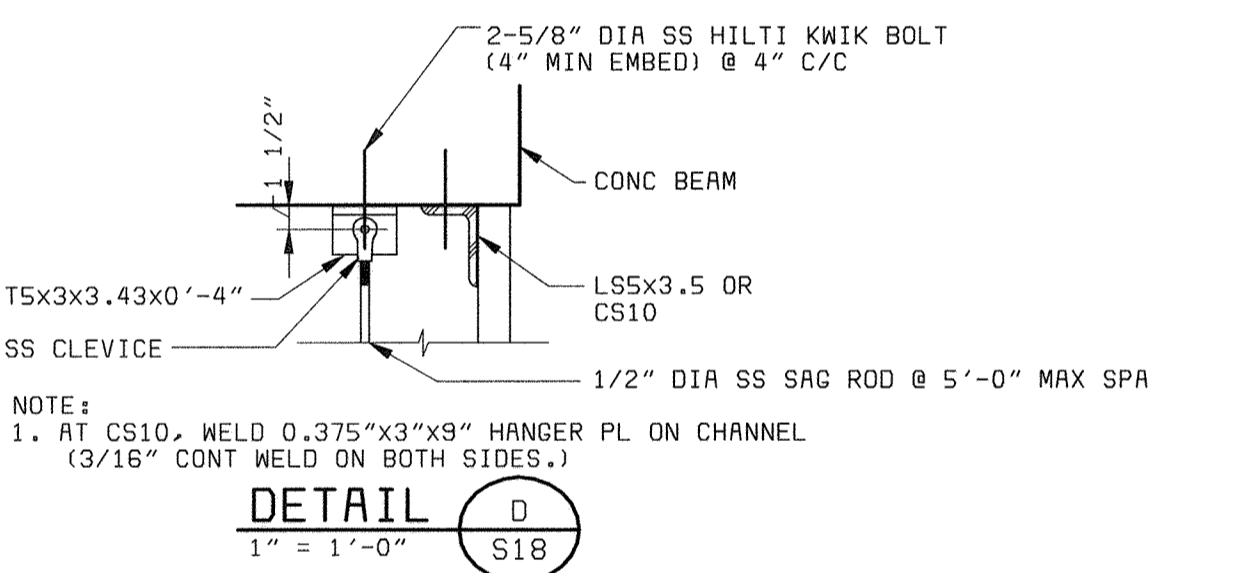
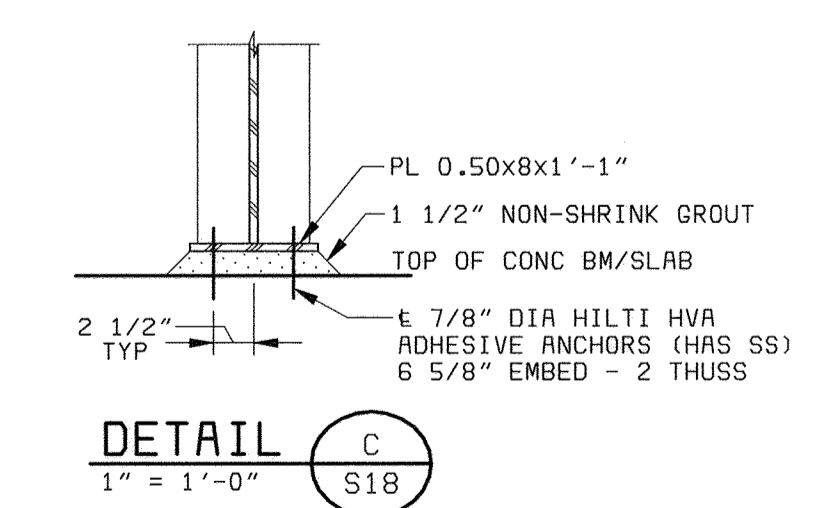
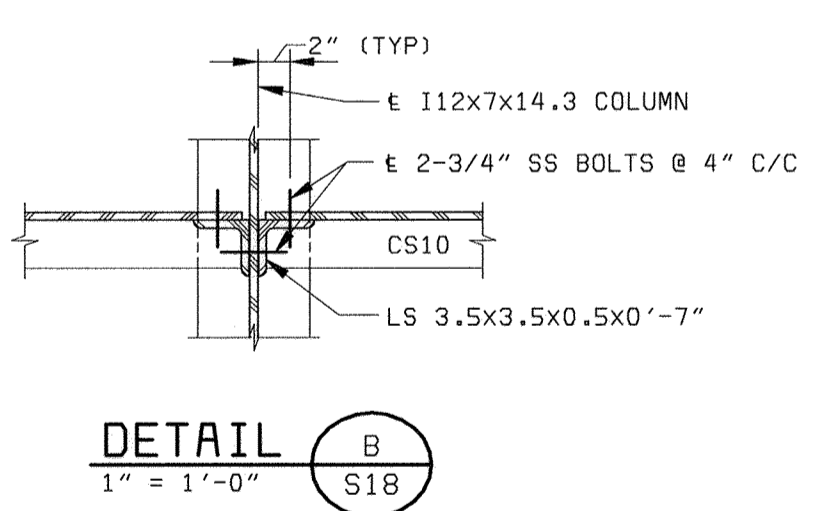
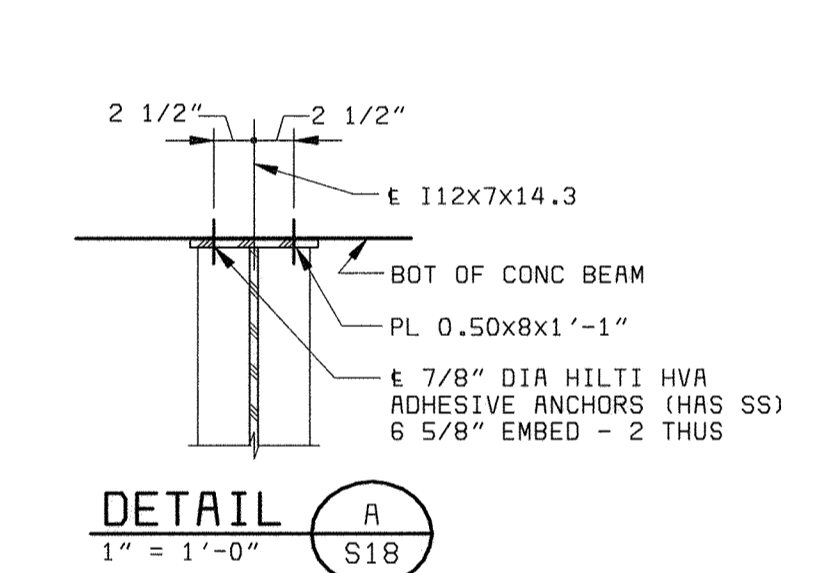


SLAB SCHEDULE							
SLAB TYPE	t	PRIMARY REINF		SECONDARY REINF		EXT DET	COMMENTS
		TOP	BOTTOM	TOP	BOTTOM		
CENTRIFUGE BUILDING EL 142.00 SLAB							
S1	10"	#5@6"	#5@6"	#4@12"	#4@12"	A	
S2	10"	#5@12"	#4@12"	#4@12"	#4@12"	A	
S3	14"	#5@6"	#5@6"	#4@12"	#4@12"	A	
CENTRIFUGE BUILDING EL 167.00 SLAB							
S4	10"	#5@6"	#5@6"	#4@12"	#4@12"	A	
S5	22"	#7@12"	#7@12"	#7@12"	#7@12"	A	
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.



NOTE:
 ALL GIRT STRUCTURAL MEMBERS SHALL BE ALUMINUM AND ALL CONNECTIONS AND RODS SHALL BE STAINLESS STEEL.



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

BLACK & VEATCH
 Gaithersburg, Maryland

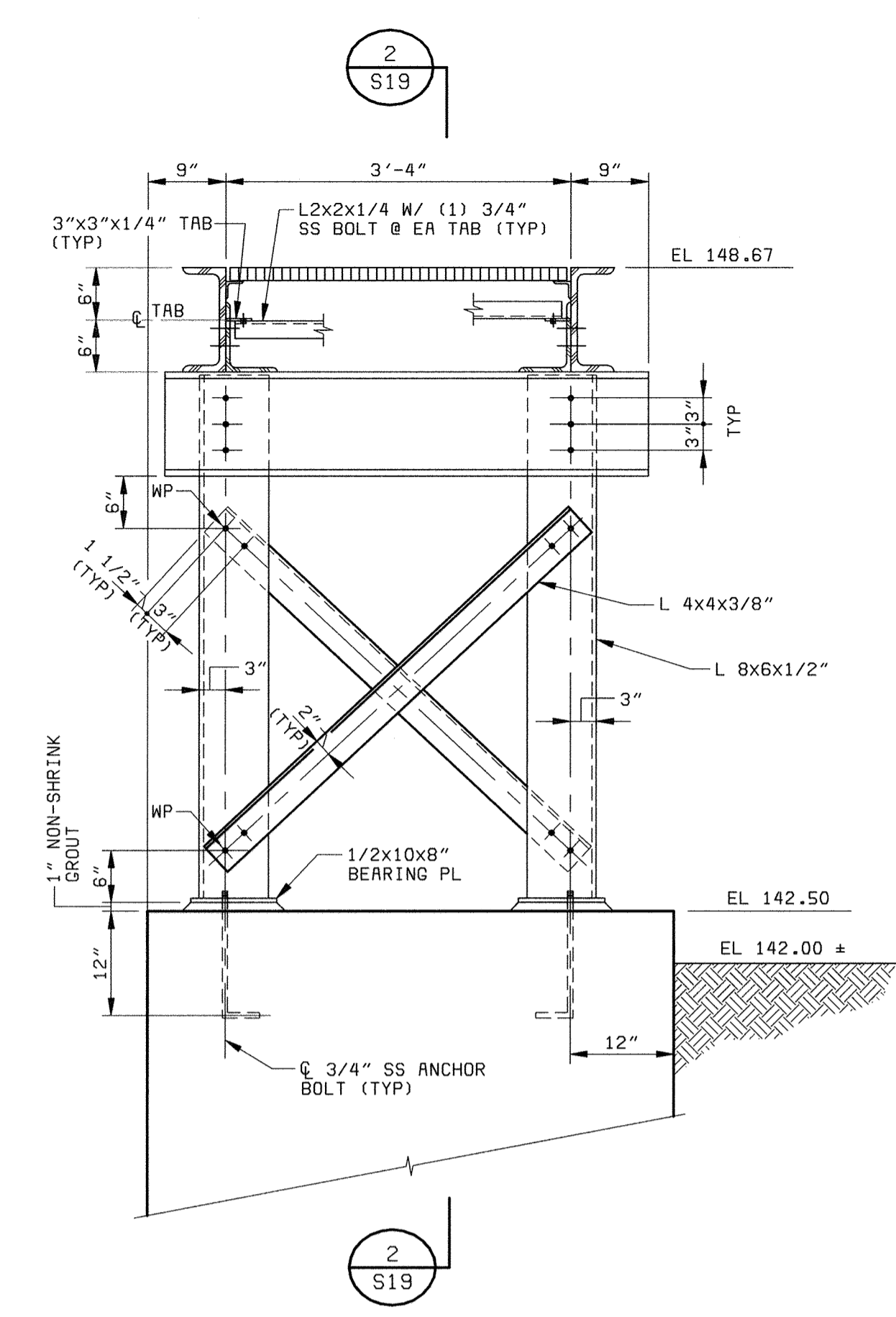
THIS DRAWING WAS
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 FOR CONSTRUCTION
 AND SEALED BY
 THAY N. GOPALKRISHNAN
 A REGISTERED
 PROFESSIONAL ENGINEER
 IN THE
 STATE OF MARYLAND,
 NO. 19609

DES: TNG					
DRN: MAS					
CHK: JME					
DATE: 05/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
		REVISIONS AND RECORD OF ISSUE			

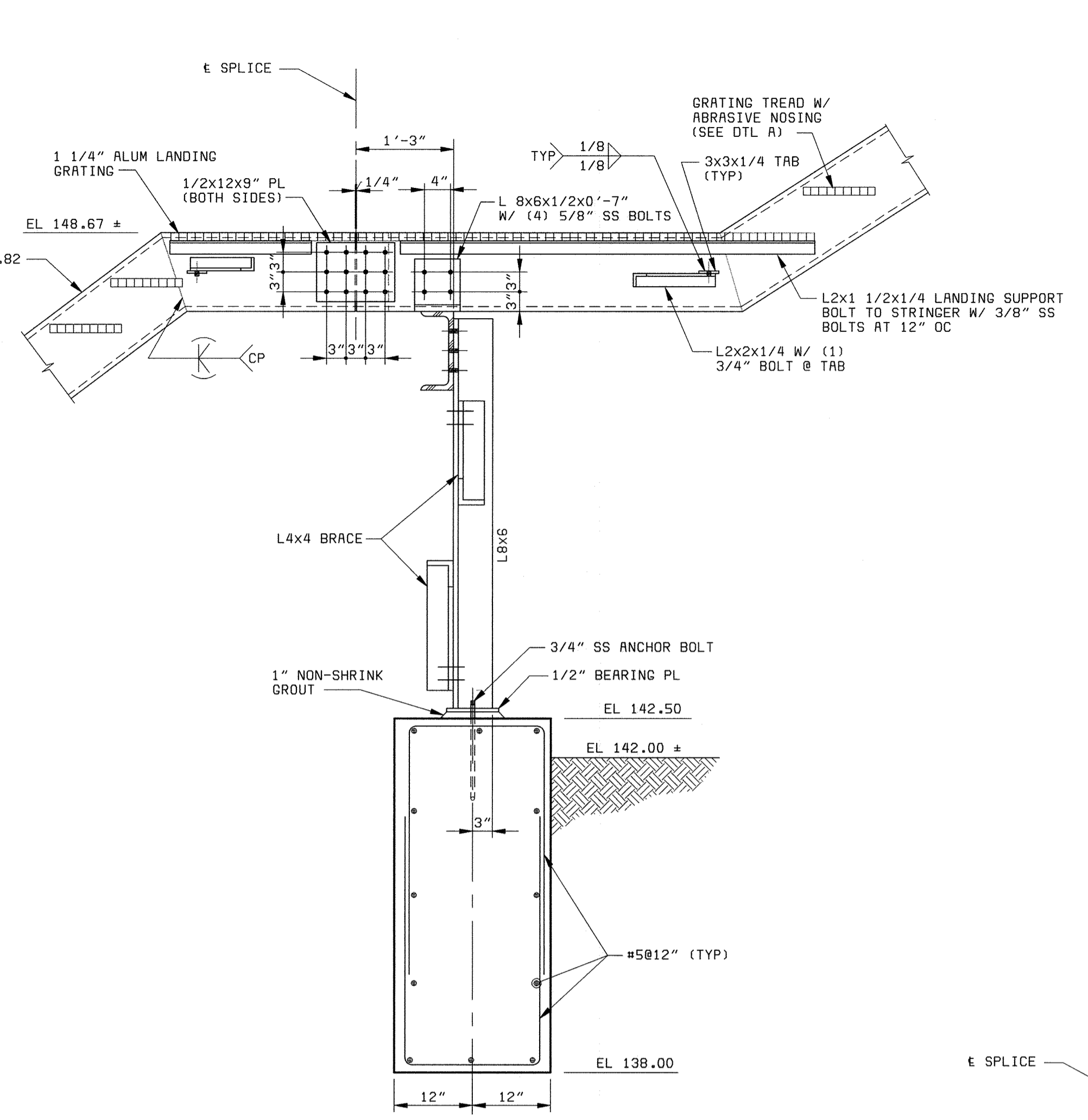
STRUCTURAL
 CONCRETE BEAM AND SLAB
 SCHEDULES AND DETAILS

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

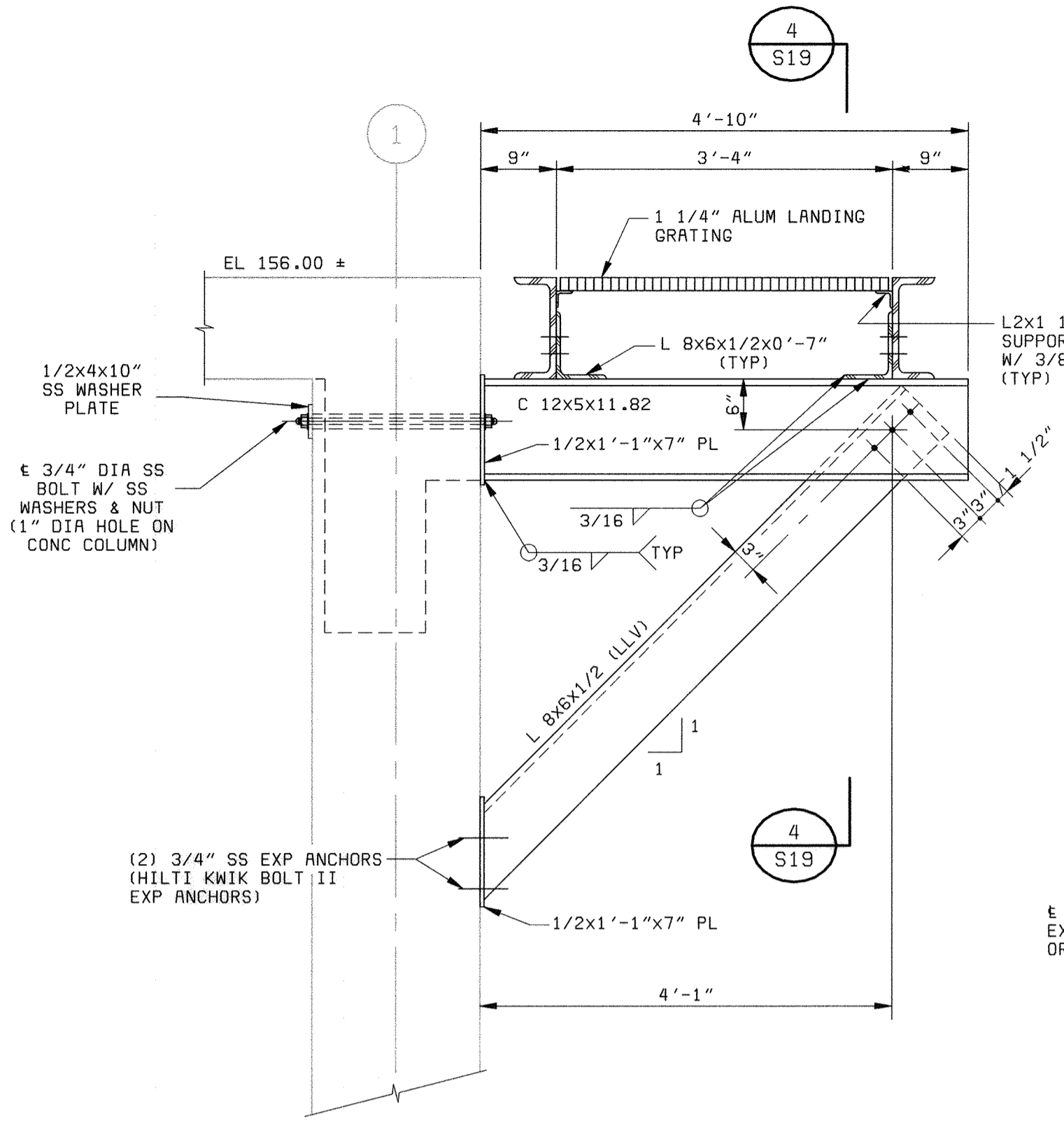
SCALE
 AS
 SHOWN
 SHEET
 83 OF 150
S18



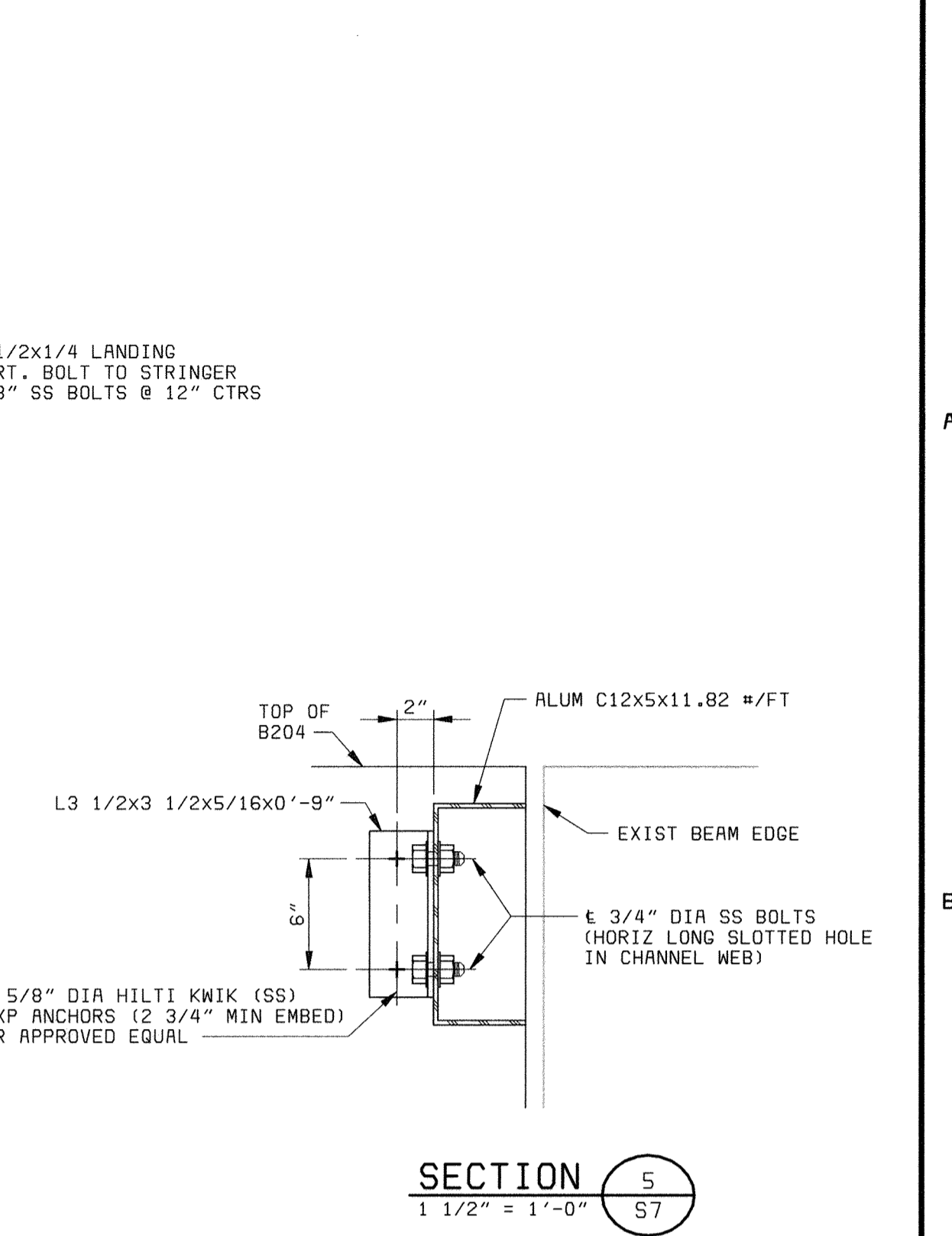
SECTION 1
3/4" = 1'-0"
(STAIR NO. 4)



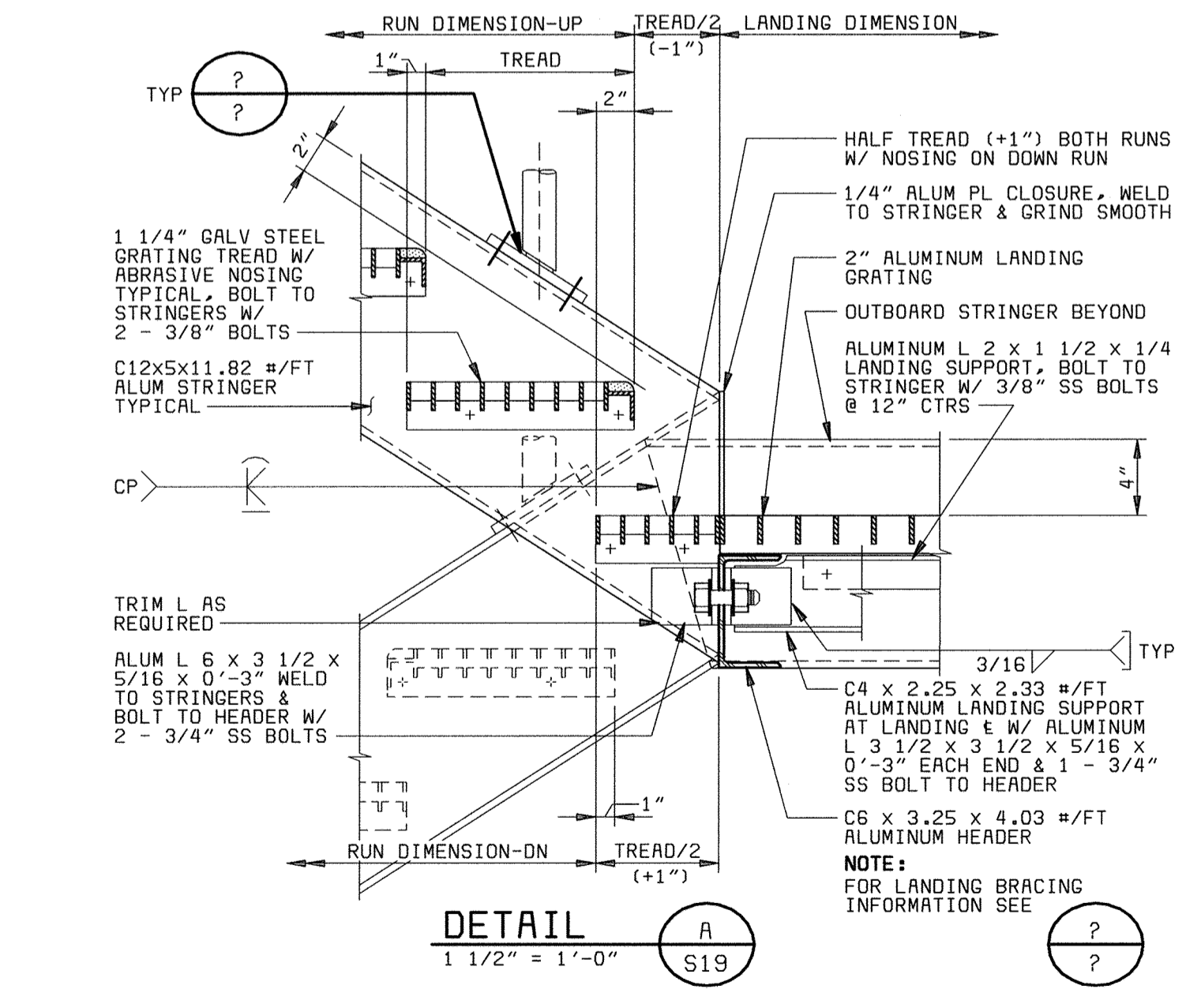
SECTION 2
3/4" = 1'-0"
(STAIR NO. 4)



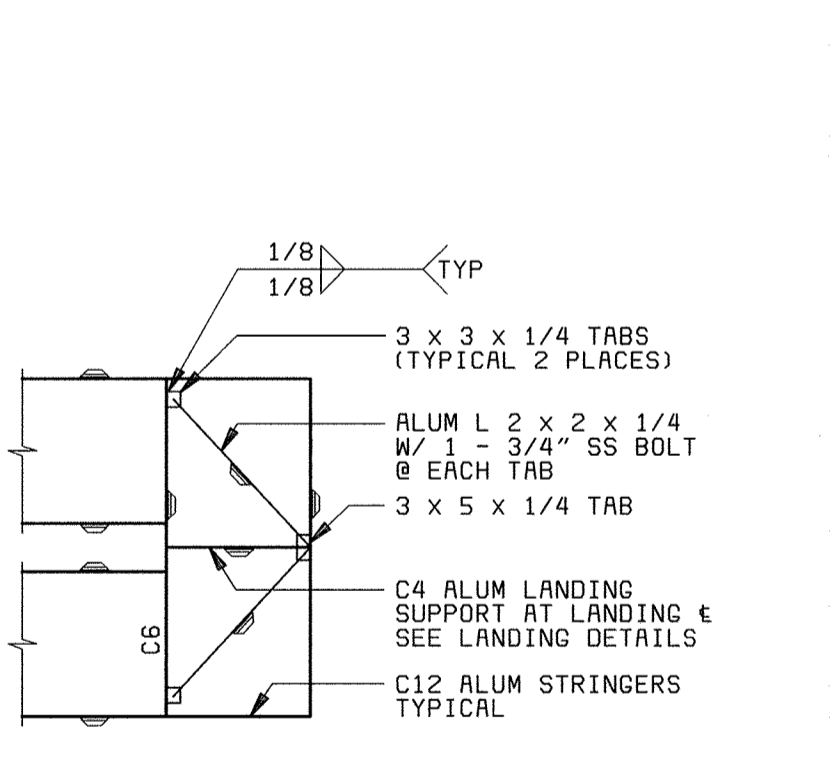
SECTION 3
3/4" = 1'-0"
(STAIR NO. 4)



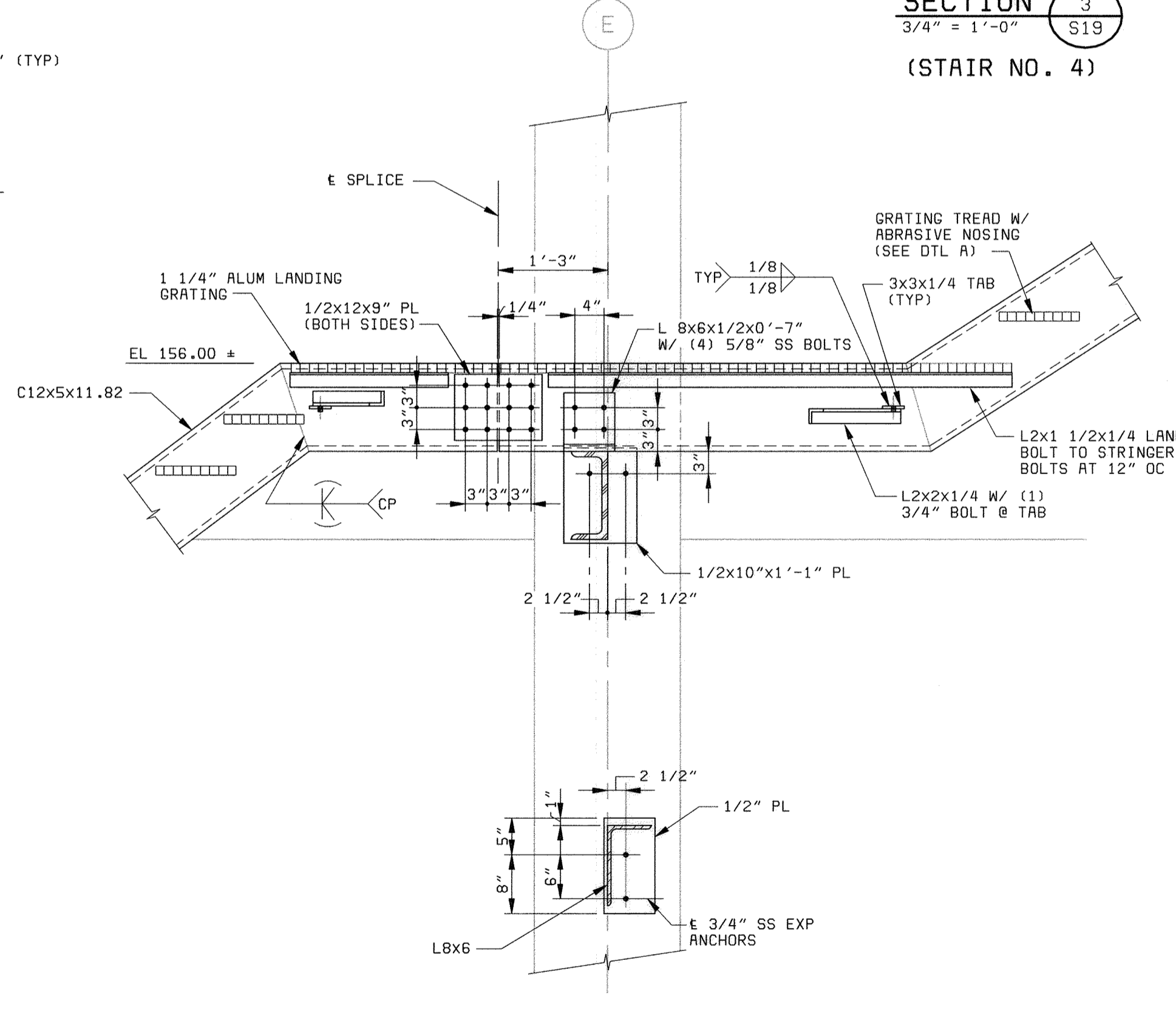
SECTION 5
1 1/2" = 1'-0"



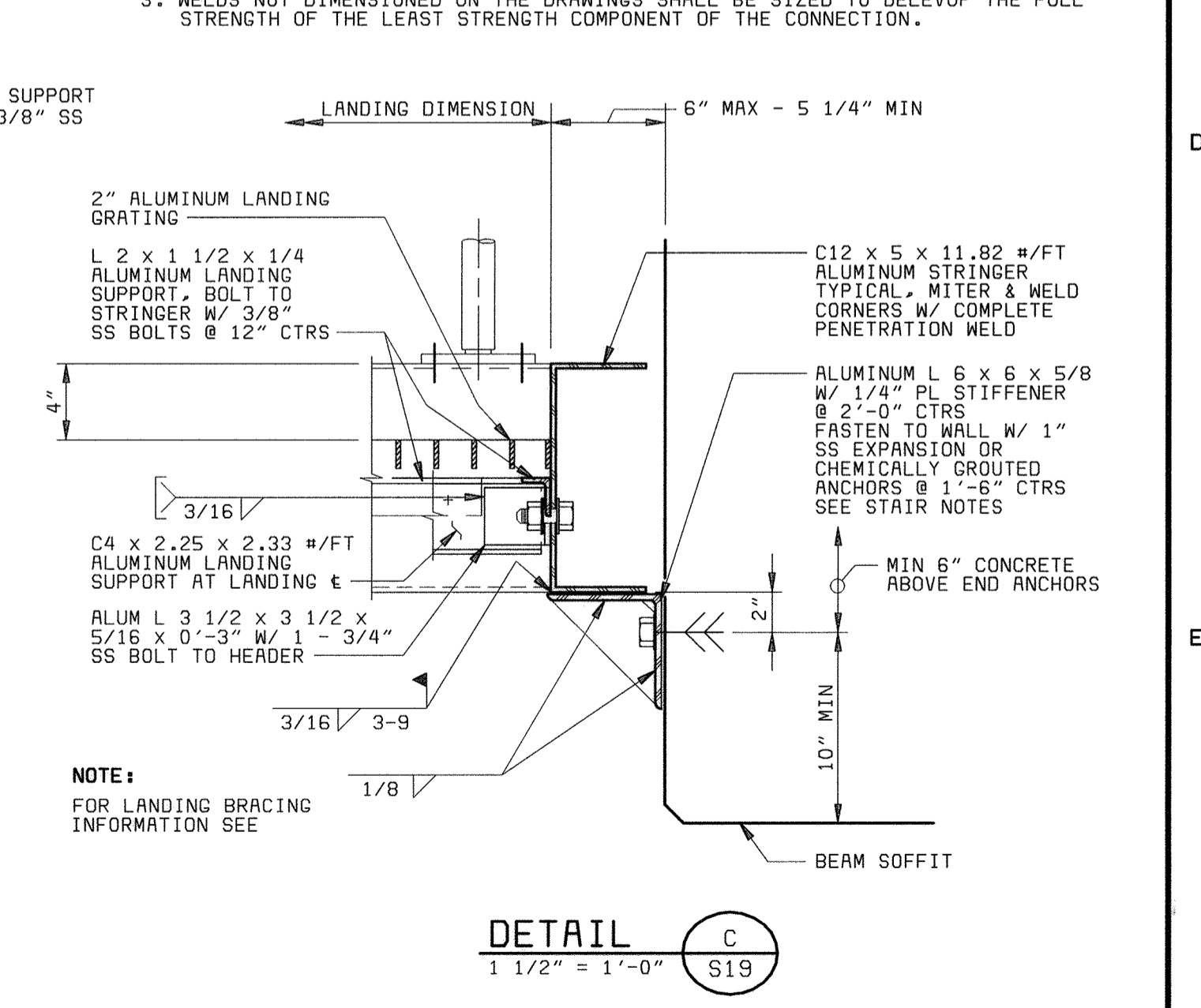
DETAIL A
1 1/2" = 1'-0"



LANDING BRACING B
NO SCALE



SECTION 4
3/4" = 1'-0"
(STAIR NO. 4)

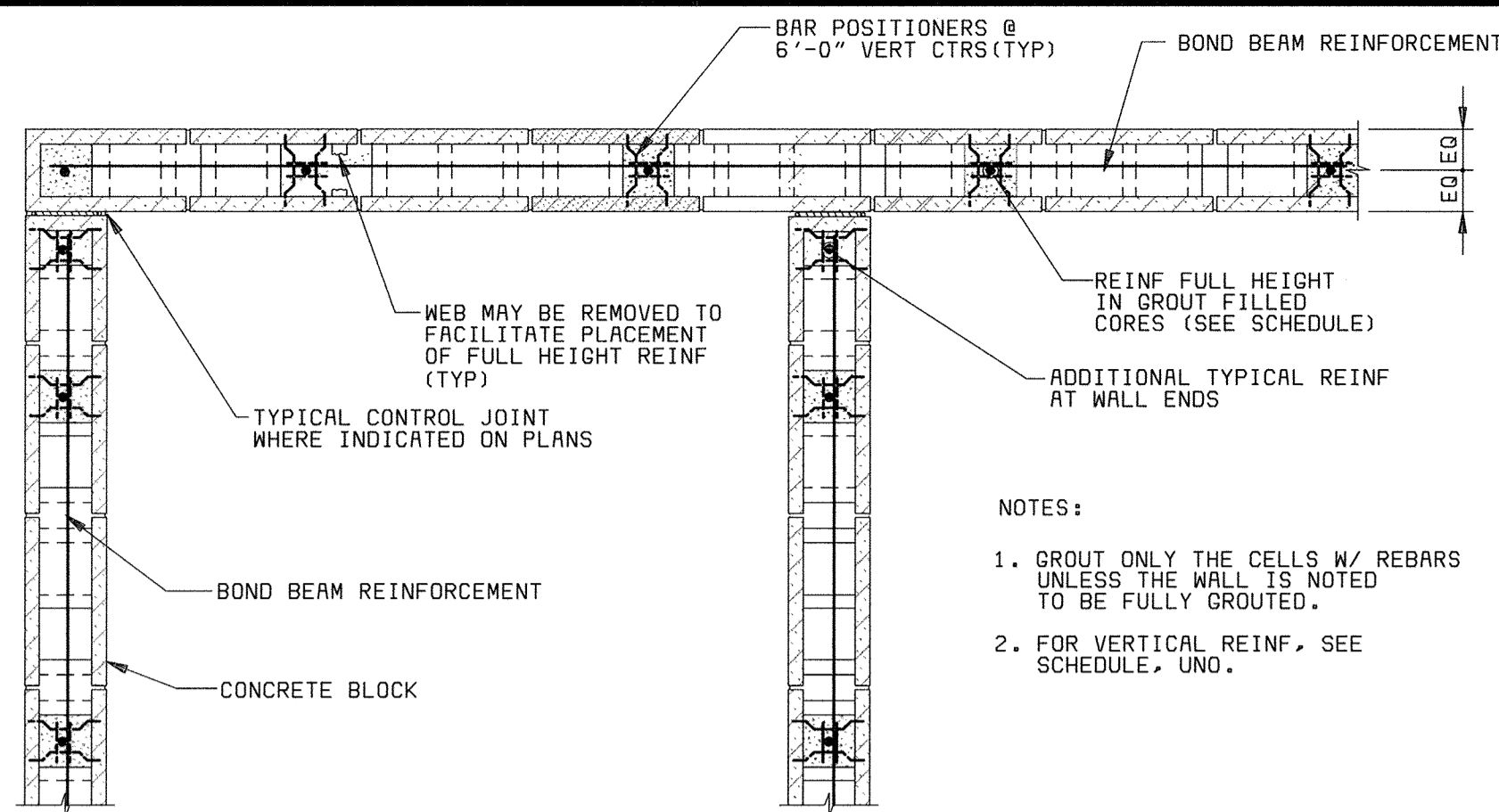


DETAIL C
1 1/2" = 1'-0"

ALUMINUM GRATING STAIR NOTES:

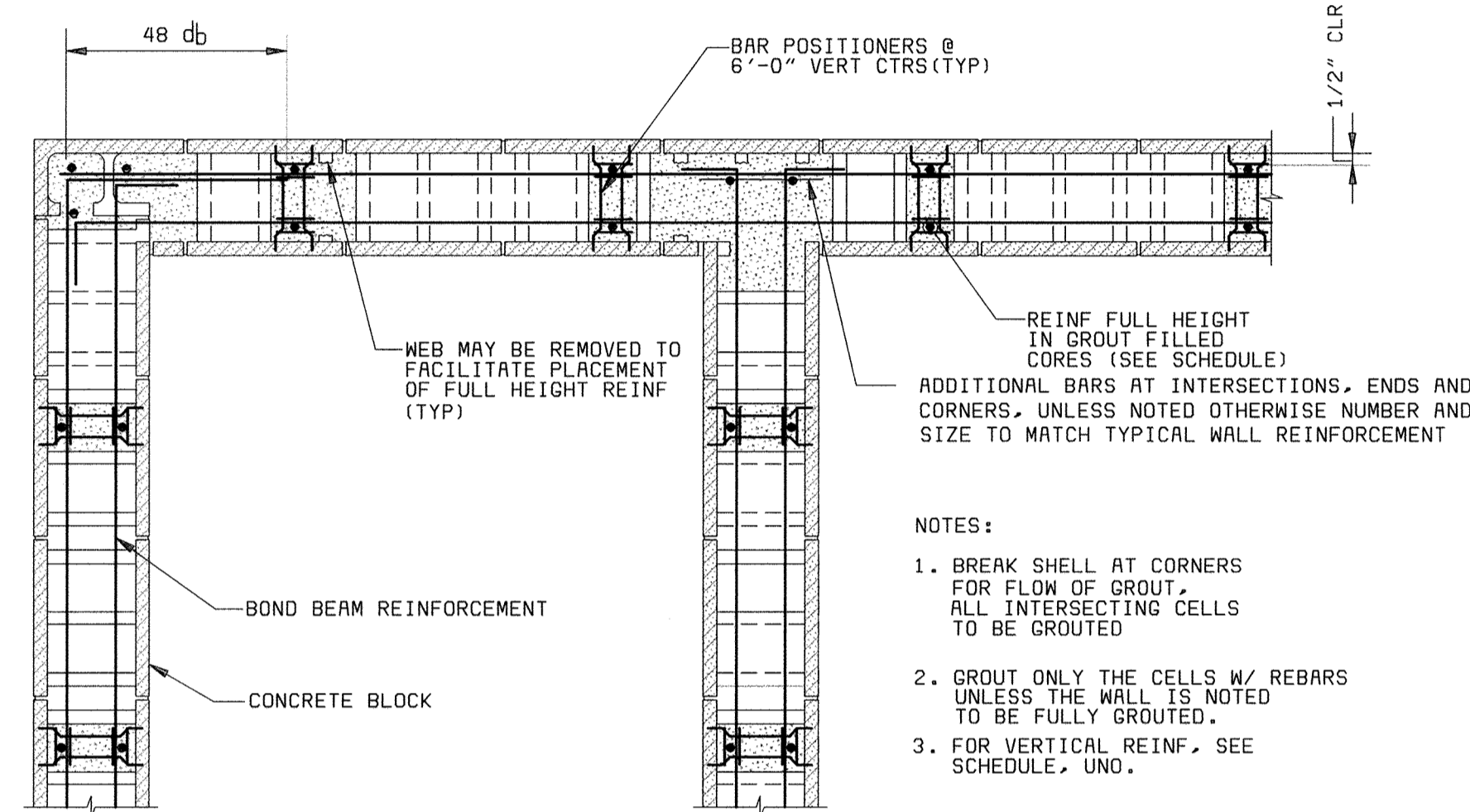
- ALL MISCELLANEOUS ALUMINUM SHAPES ON THIS SHEET TO BE ROLLED TO ALUMINUM ASSOCIATION STANDARD STRUCTURAL SHAPES.
- DESIGNATION LEGEND FOR ALUMINUM SHAPES:
CHANNEL C 12 x 5 x 11.822 #/FT
DEPTH 1 1/2"
FLANGE WIDTH 3"
MEMBER WEIGHT 3.8
ANGLE L 5 x 5 x 3/8
ANGLE 45°
- WELDS NOT DIMENSIONED ON THE DRAWINGS SHALL BE SIZED TO DEVELOP THE FULL STRENGTH OF THE LEAST STRENGTH COMPONENT OF THE CONNECTION.

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 SHEET 84 OF 150 S19
			DRN: MAS	CHK: JME	DATE: 05/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK		



TYPICAL REINFORCING WITH CORNER CONTROL JOINTS

FROM EACH WALL FACE.
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"

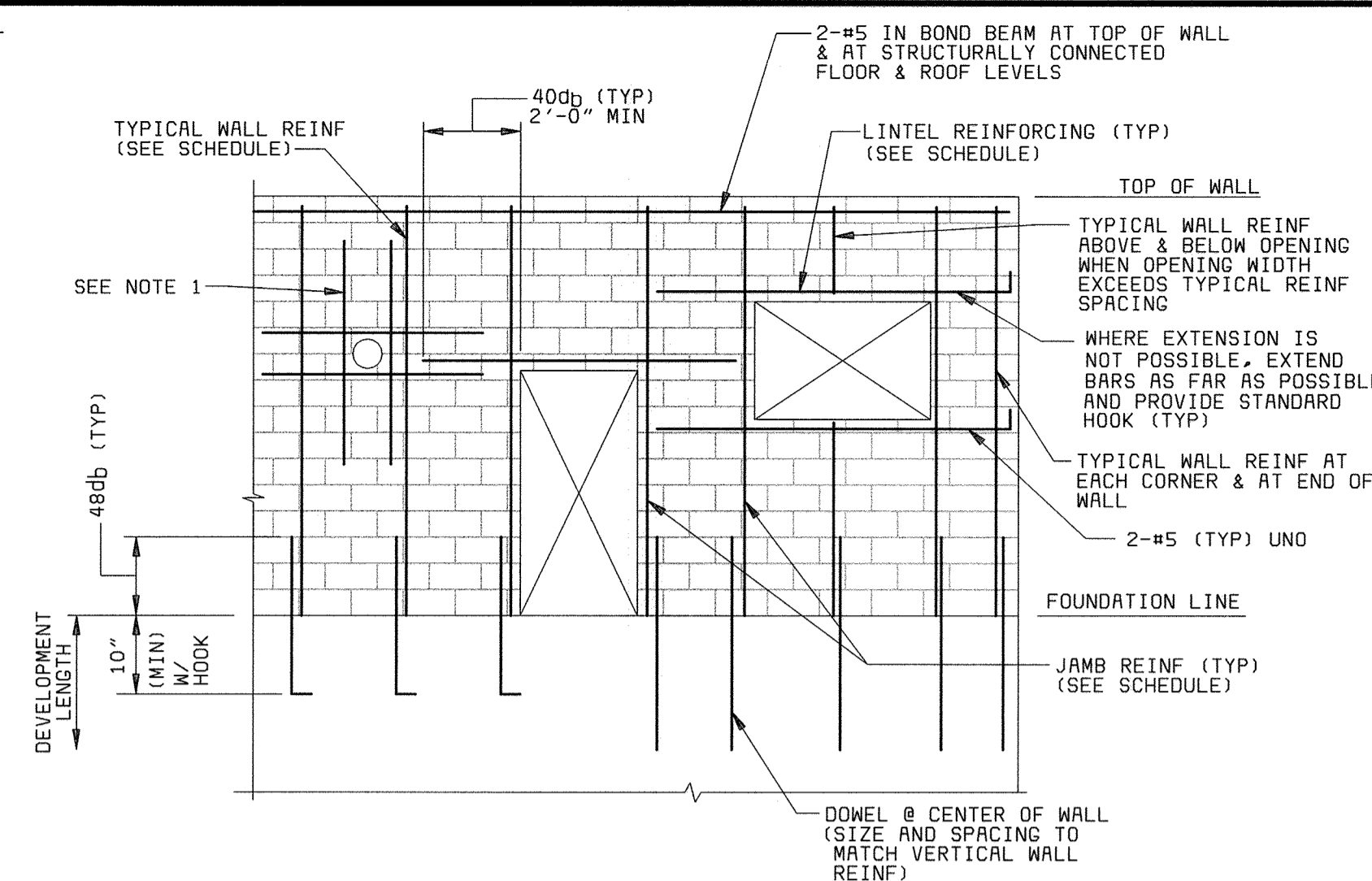
MINIMUM CMU WALL REINFORCING SCHEDULE (NOTE 5)					
(SPECIAL INSPECTION REQUIRED)					
WALL SIZE	WALL HEIGHT	VERTICAL REINFORCEMENT		HORIZONTAL REINFORCEMENT	
		EXTERIOR WALL	INTERIOR WALL	EXTERIOR WALL	INTERIOR WALL
12"	≤16'-0"	#5@48	#5@48	LADDER TYPE JOINT REINFORCEMENT @ 16" CTRS	LADDER TYPE JOINT 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



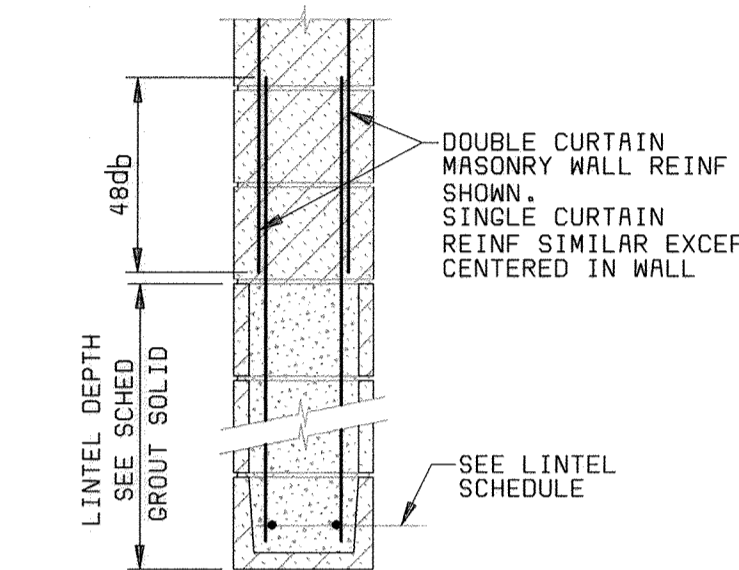
TYPICAL MASONRY REINFORCING ELEVATION

NO SCALE

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:

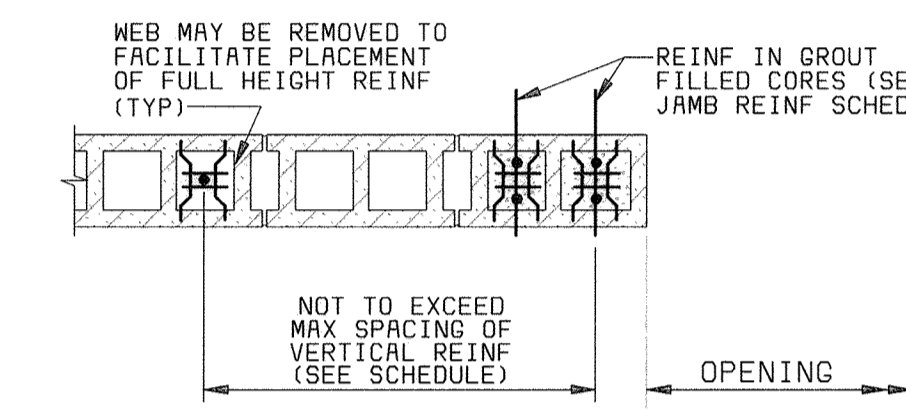
- BEAR ALL LINTELS A MINIMUM 2'-0" AT EACH END.
- REINFORCE LINTELS AS INDICATED ABOVE UNLESS NOTED OTHERWISE ON THE DRAWINGS.



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
	≤20'-0"	≤4'-0"	1-#6 EF	1-#5 EF
		≤7'-0"	1-#6 EF	1-#5 EF
8"	≤22'-0"	≤12'-0"	3-#6 EF	1-#5 EF
		≤4'-0"	1-#6 EF	1-#5 EF
	≤24'-0"	≤7'-0"	2-#6 EF	1-#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
	≤16'-0"	≤12'-0"	3-#6 EF	1-#5 EF
		≤4'-0"	1-#6 EF	1-#5 EF
≤18'-0"	≤7'-0"	2-#7 EF	1-#5 EF	
	≤4'-0"	2-#5 EF	1-#5 EF	



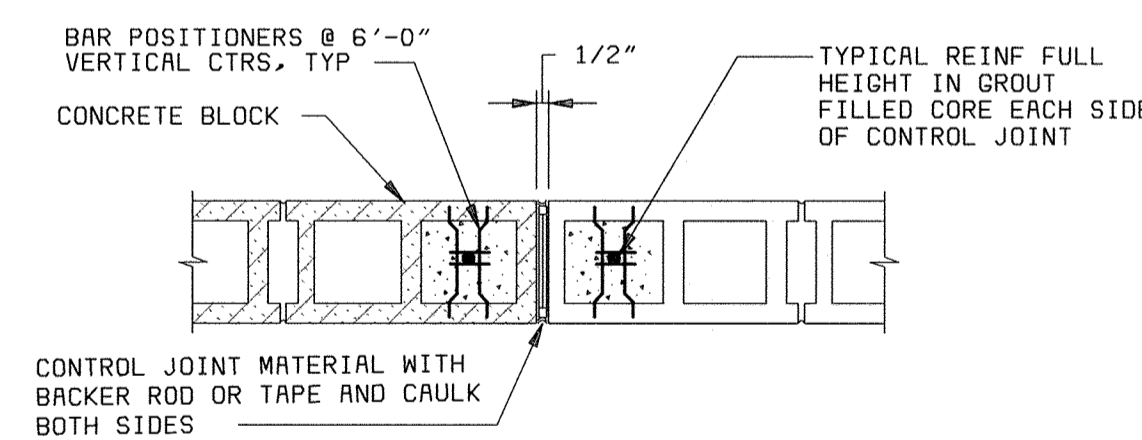
JAMB - PLAN

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

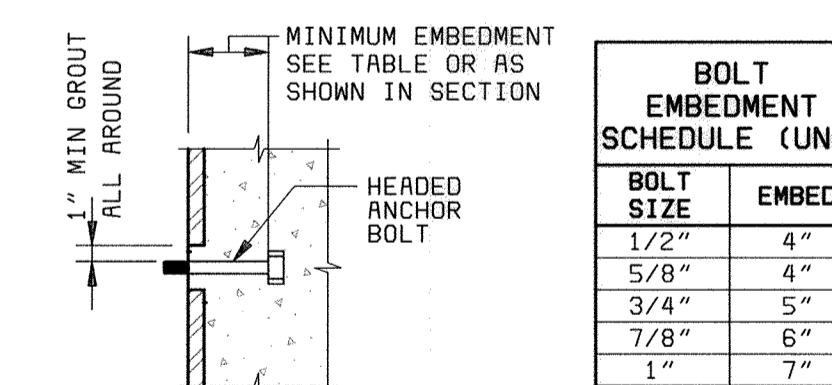


NOTES:

- 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.

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



REG. PROF. ENGR. DATE

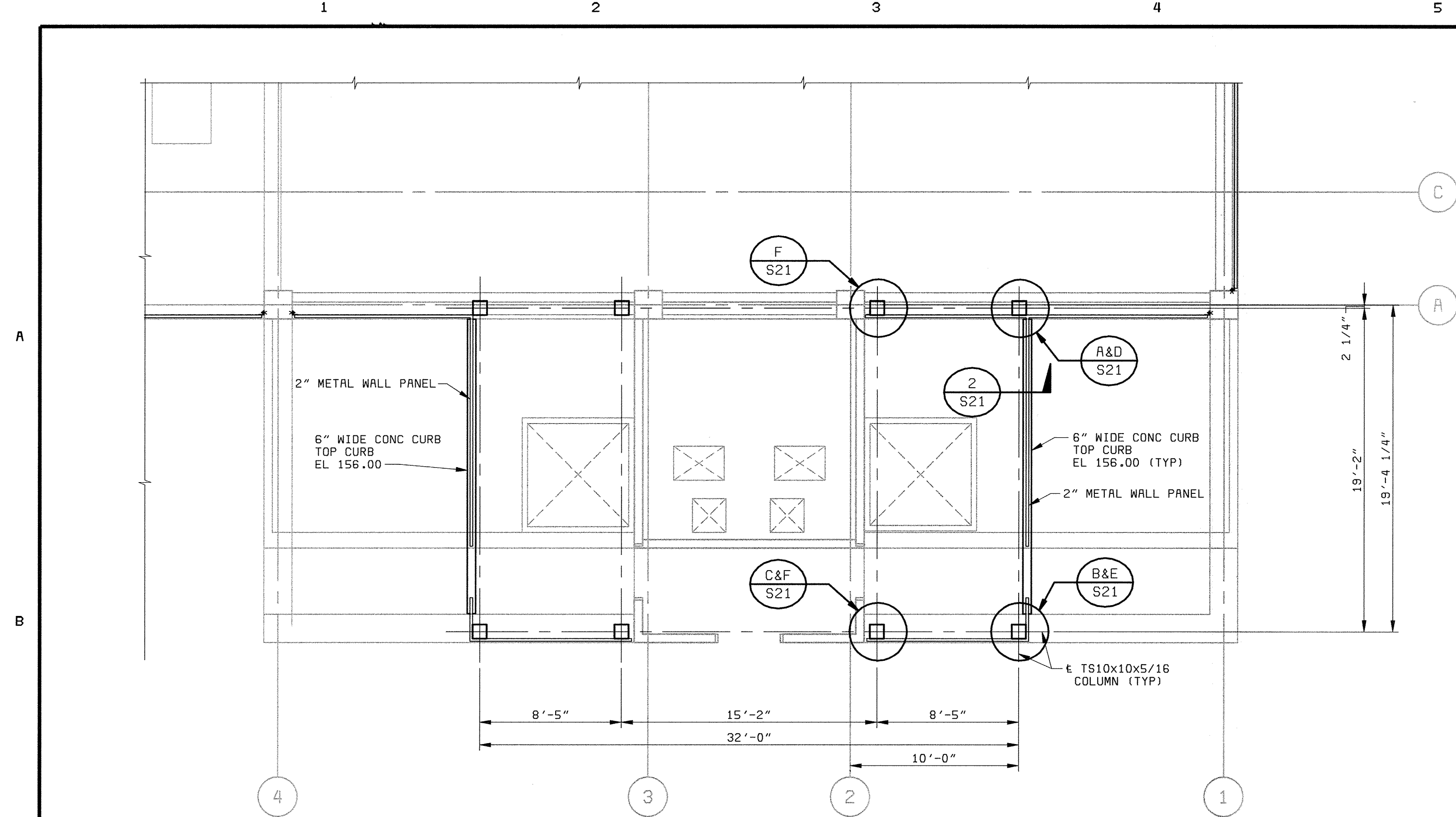
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY THAY N. GOPALAKRISHNAN A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 19609

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

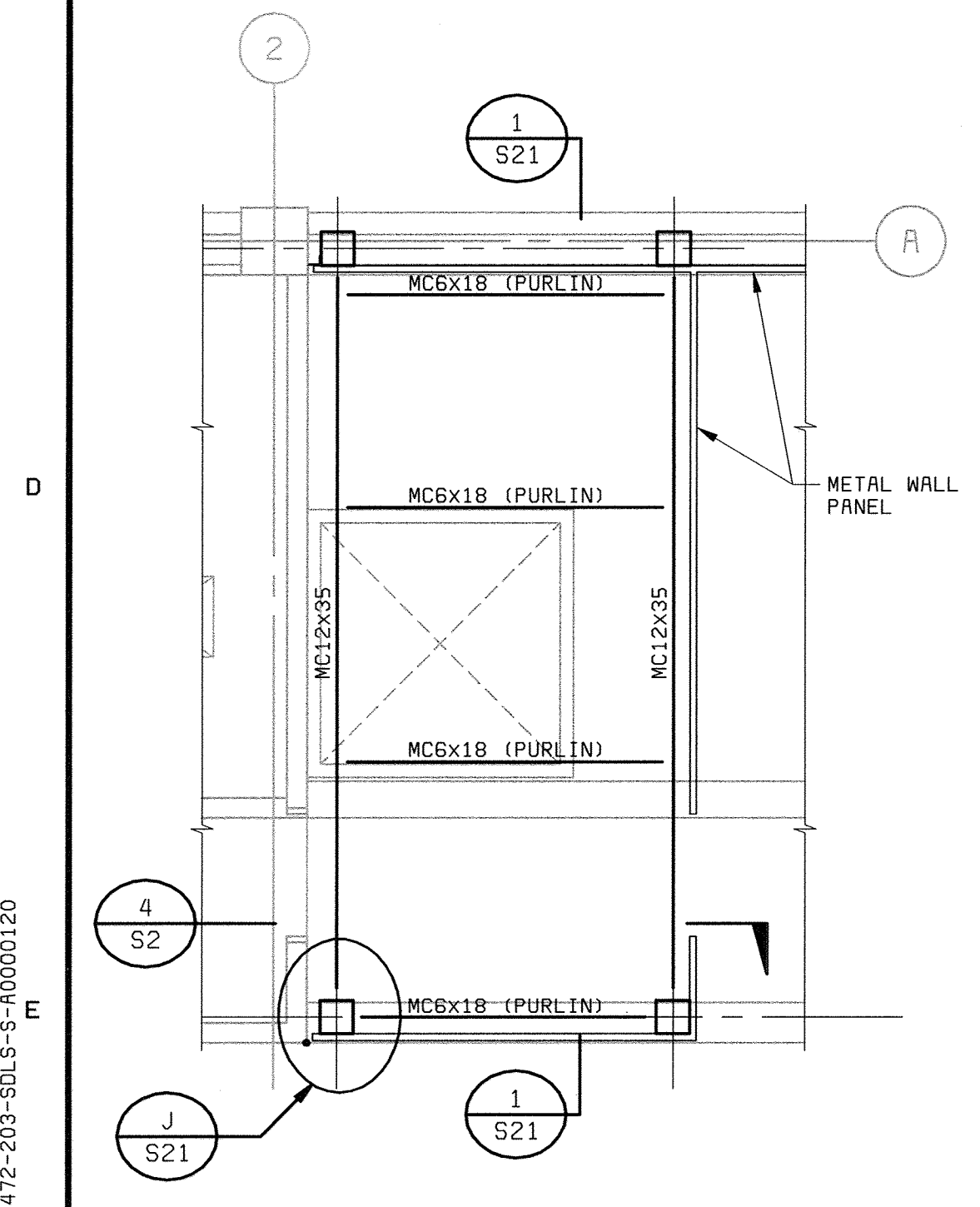
STRUCTURAL
STANDARD MASONRY DETAILS

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

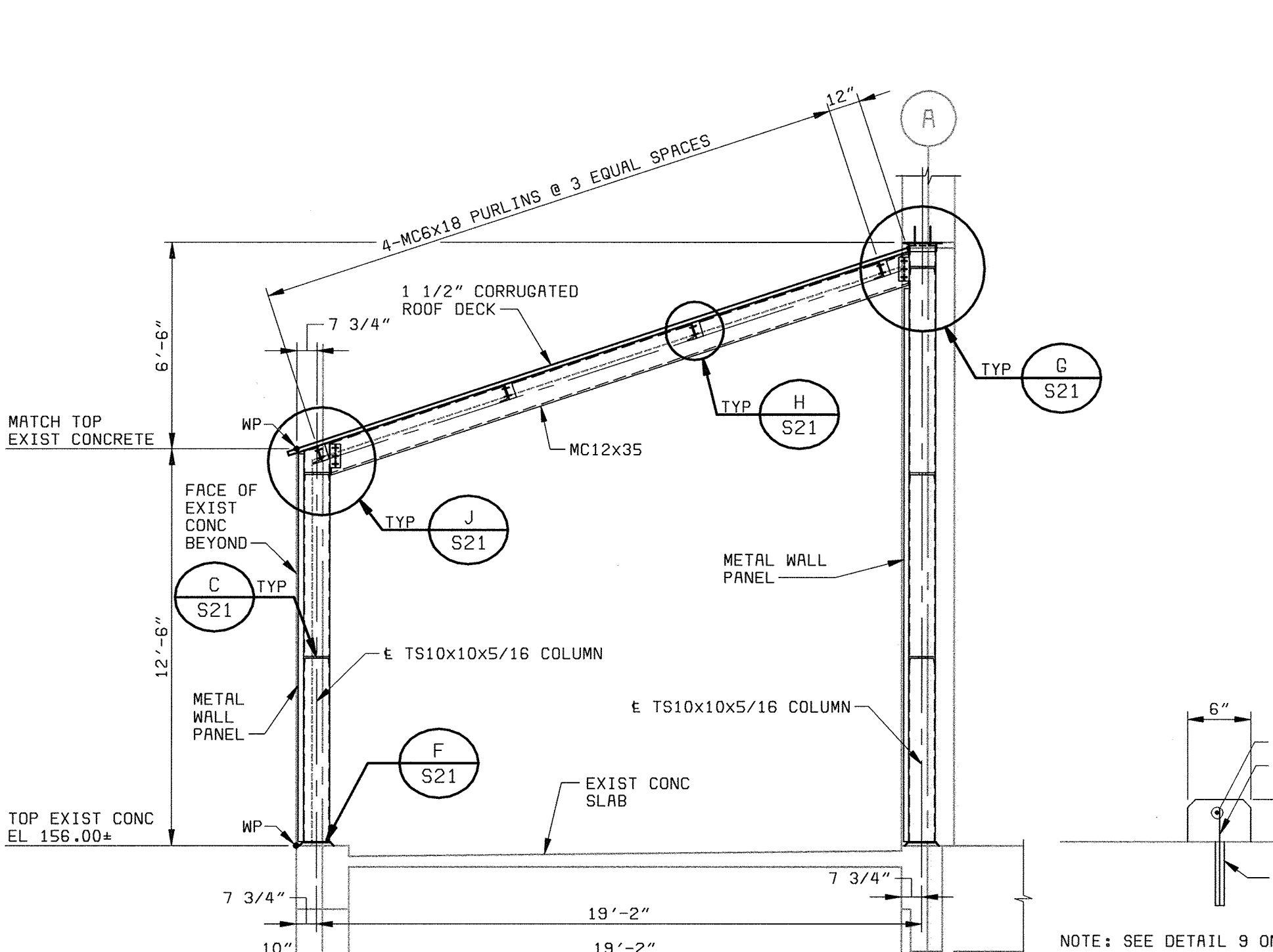
SCALE AS SHOWN
SHEET 85 OF 150
S20



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

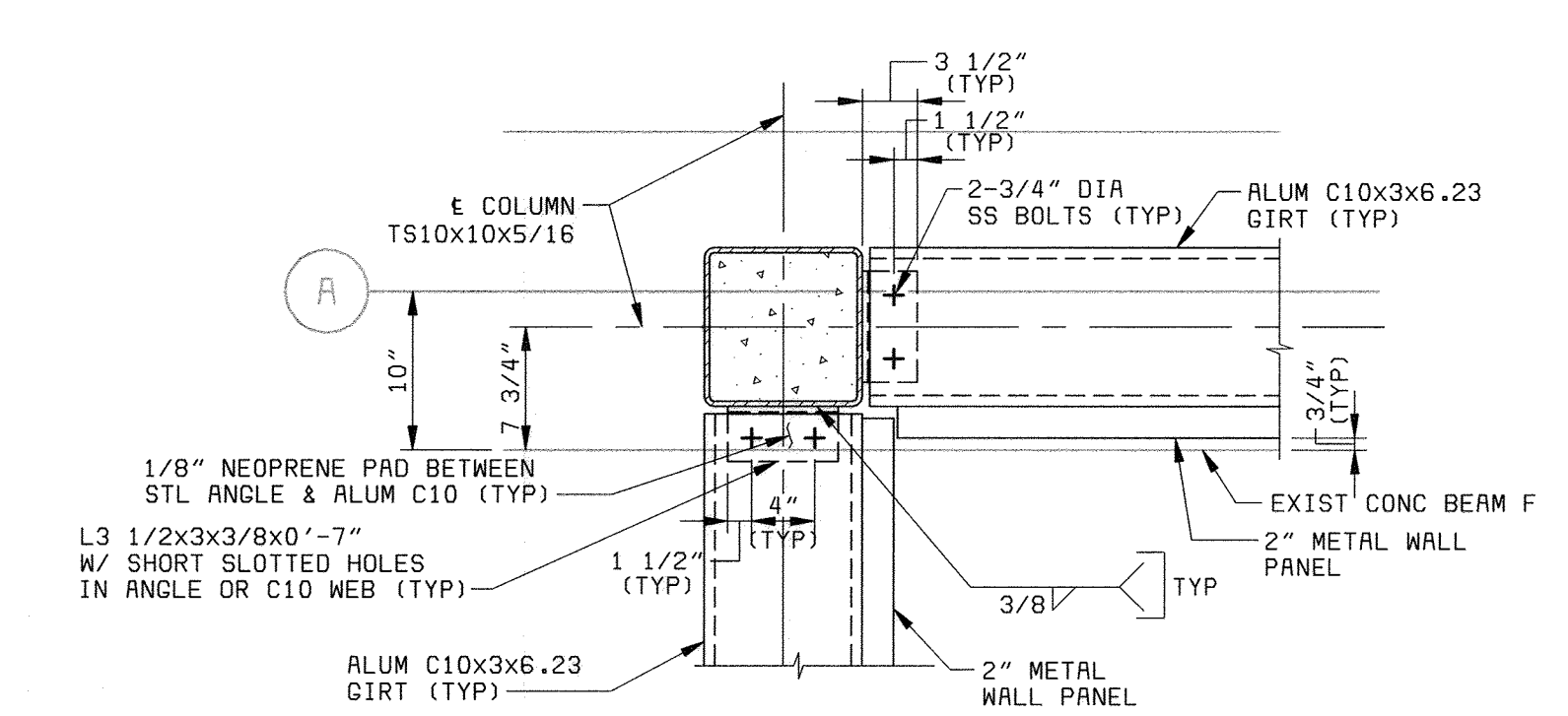


ROOF FRAMING PLAN
 (SOUTH SIDE, NORTH SIDE SIMILAR)
 1/4" = 1'-0"

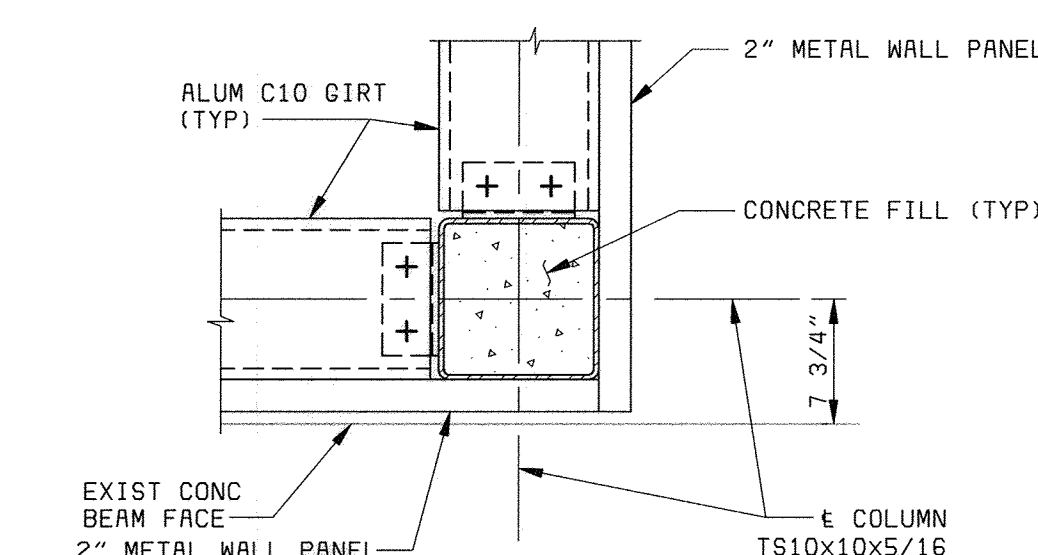


SECTION 1
 1/4" = 1'-0" S21

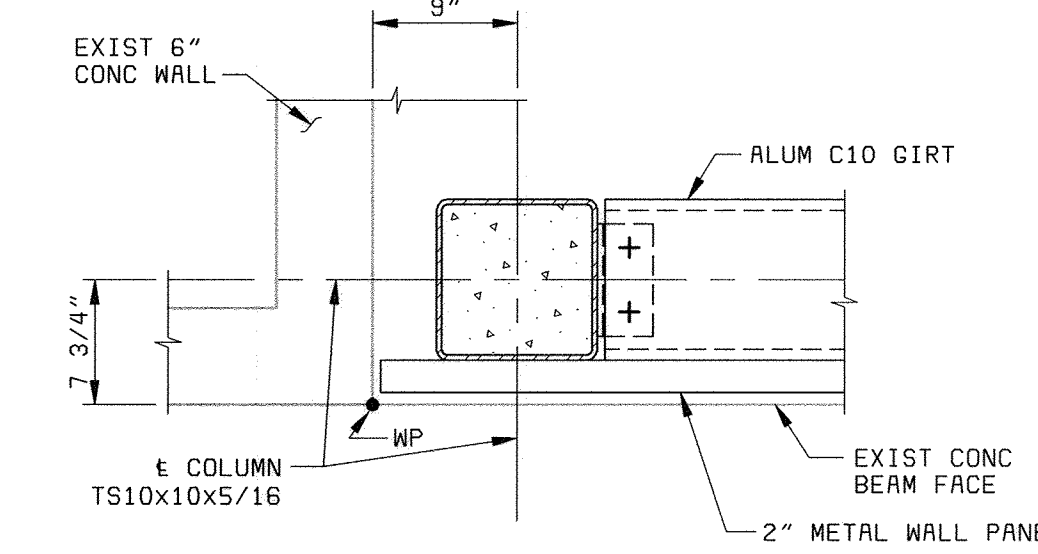
SECTION 2
 1" = 1'-0" S21



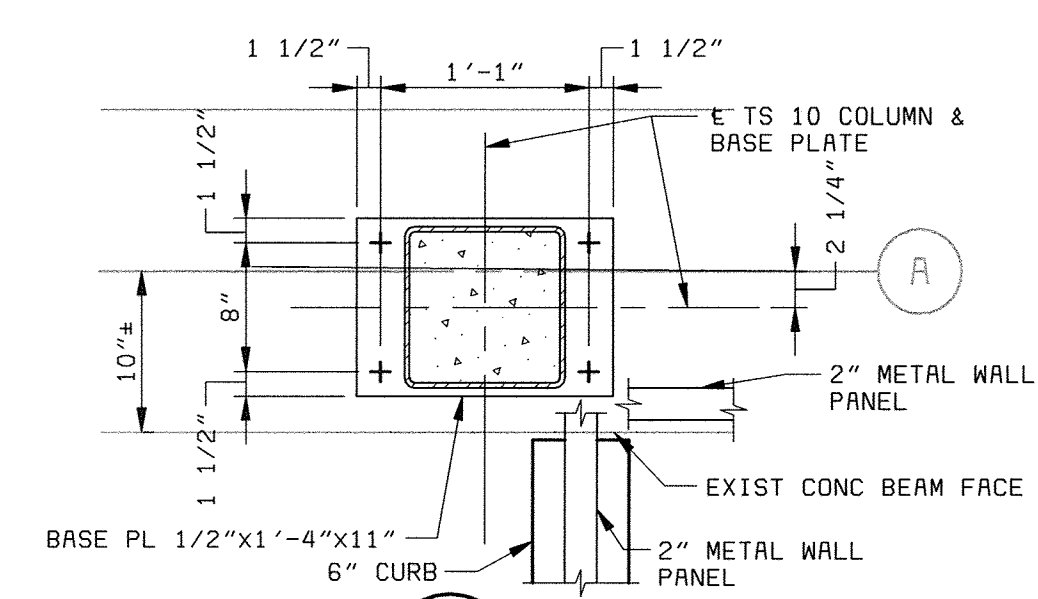
DETAIL A
 1" = 1'-0" S10



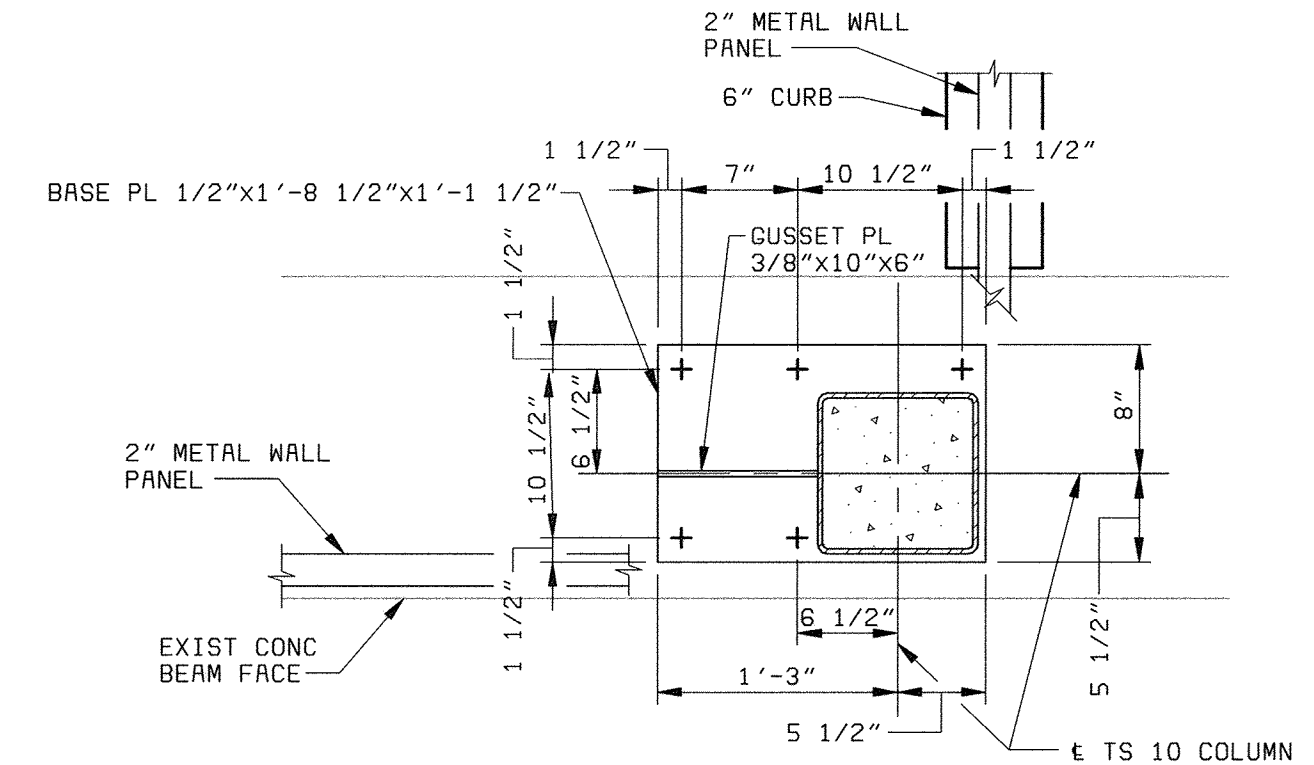
DETAIL B
 1" = 1'-0" S10



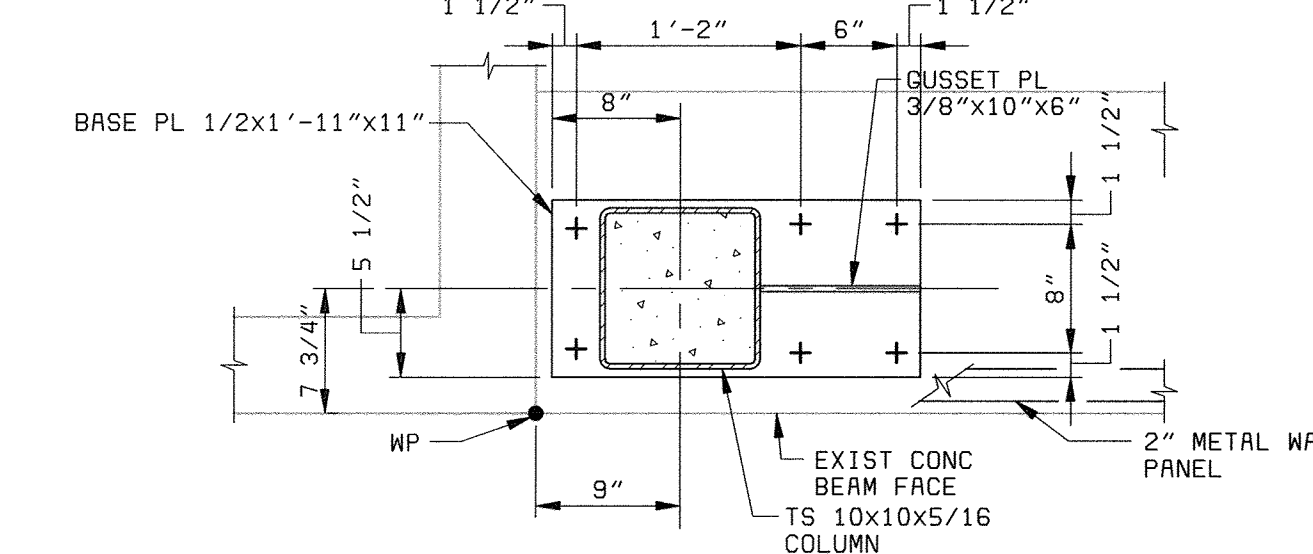
DETAIL C
 1" = 1'-0" S10



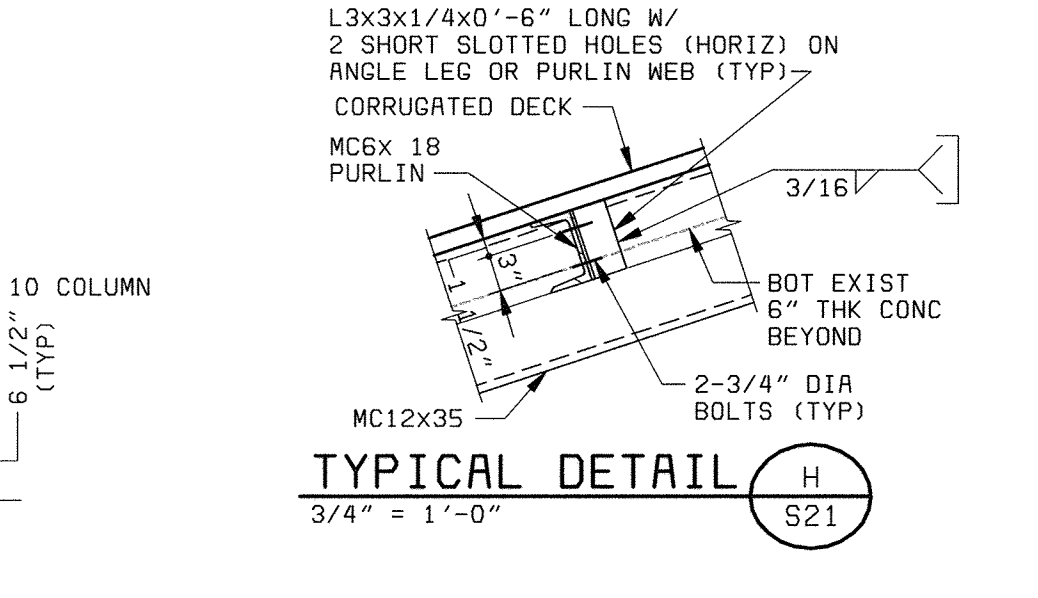
DETAIL D
 1" = 1'-0" S10



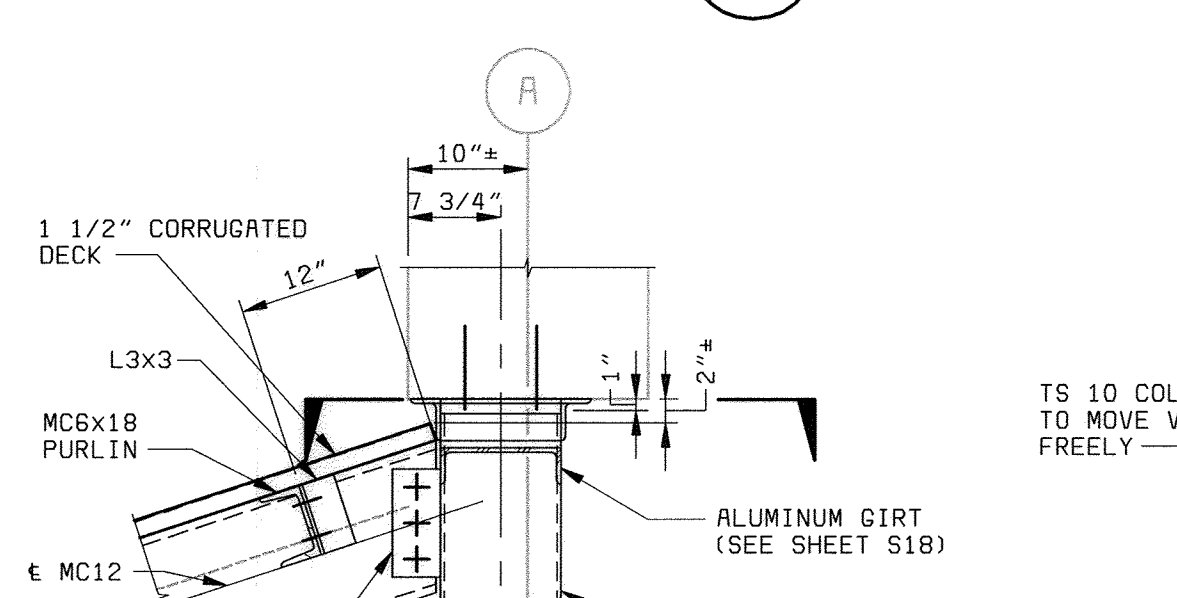
DETAIL E
 1" = 1'-0" S10



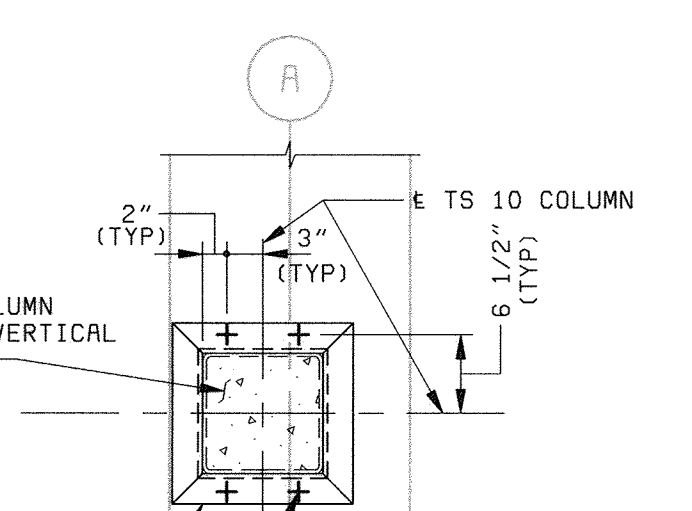
DETAIL F
 1" = 1'-0" S10



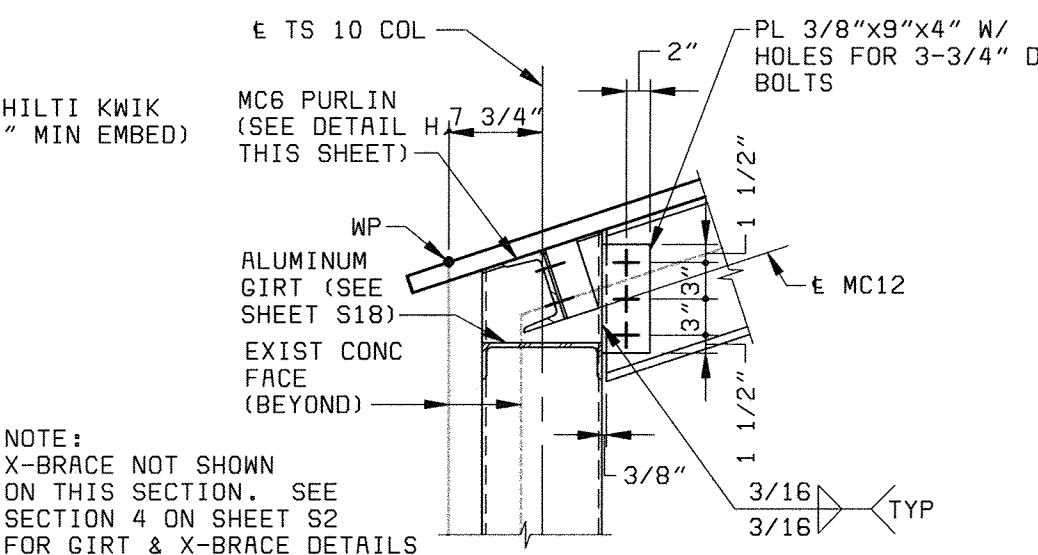
TYPICAL DETAIL H
 3/4" = 1'-0" S21



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



SECTION PLAN



TYPICAL DETAIL J
 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.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

BLACK & VEATCH
 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: 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

GENERAL MECHANICAL NOTES

Table of abbreviations for general, fuel gas, HVAC, and waste categories.

Table of abbreviations for pipe fittings, valves, and controls and instrumentation.

Table of abbreviations for HVAC, plumbing, and odor control categories.

- General mechanical notes 1-22 detailing installation and material requirements.

GENERAL

PIPE FITTINGS

VALVES

HVAC

PLUMBING

Legend symbols for general, pipe fittings, and waste categories.

Legend symbols for valves, HVAC, and controls and instrumentation.

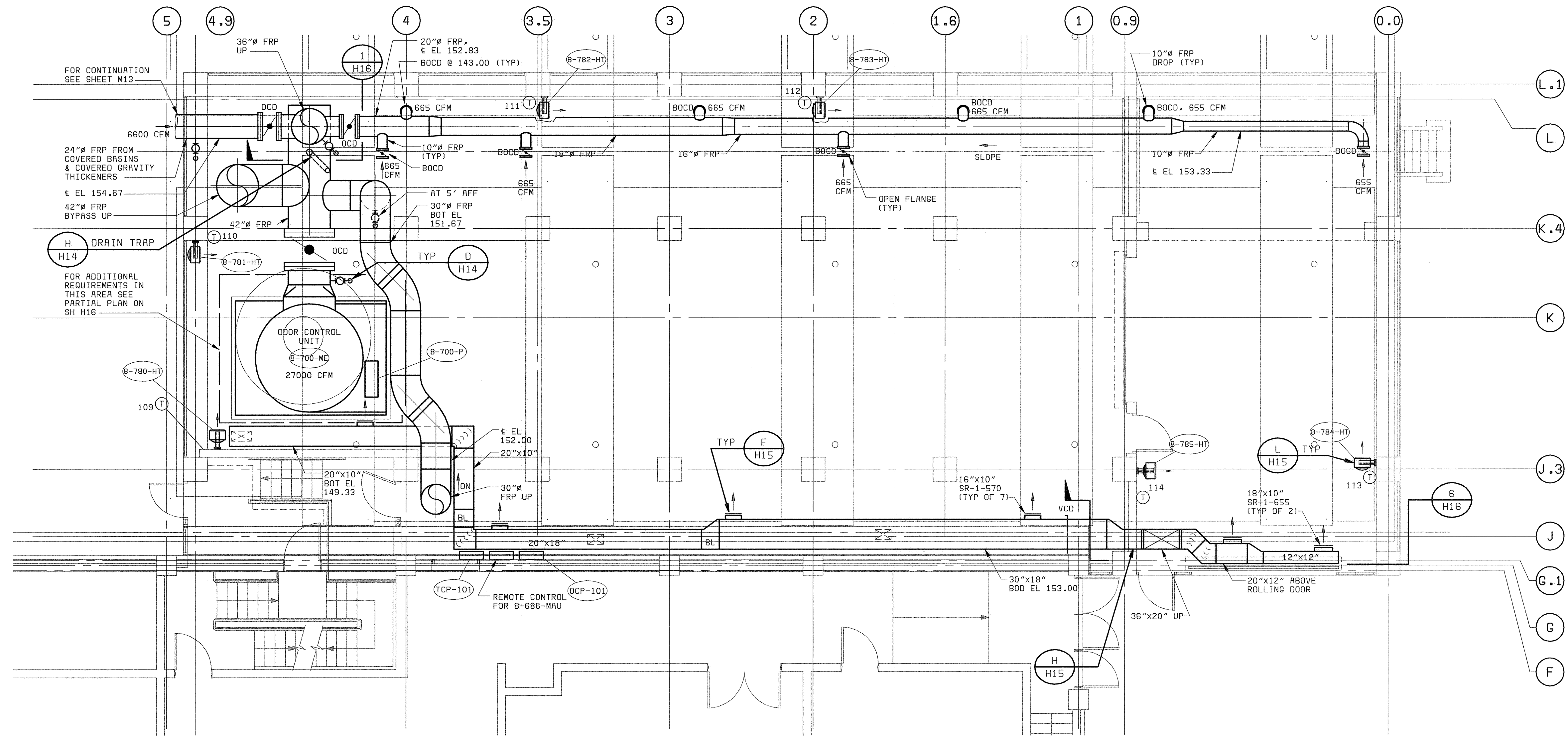
Legend symbols for plumbing and odor control.

- Plumbing (Schematic) symbols and Air Inlet and Outlet Identification details.

Project information including department name, logo for Black & Veatch, drawing title, scale, sheet number, and date.

Vertical text on the left margin.

Vertical text on the right margin.

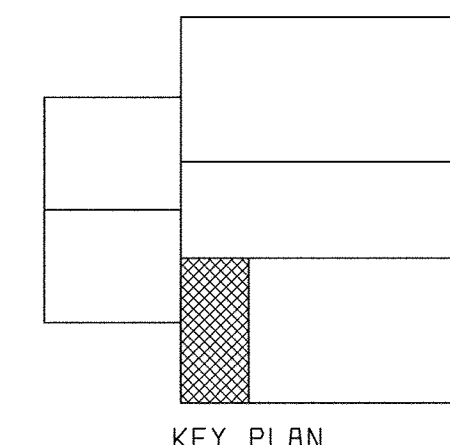


PLAN EL 142.00
3/16" = 1'-0"

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.

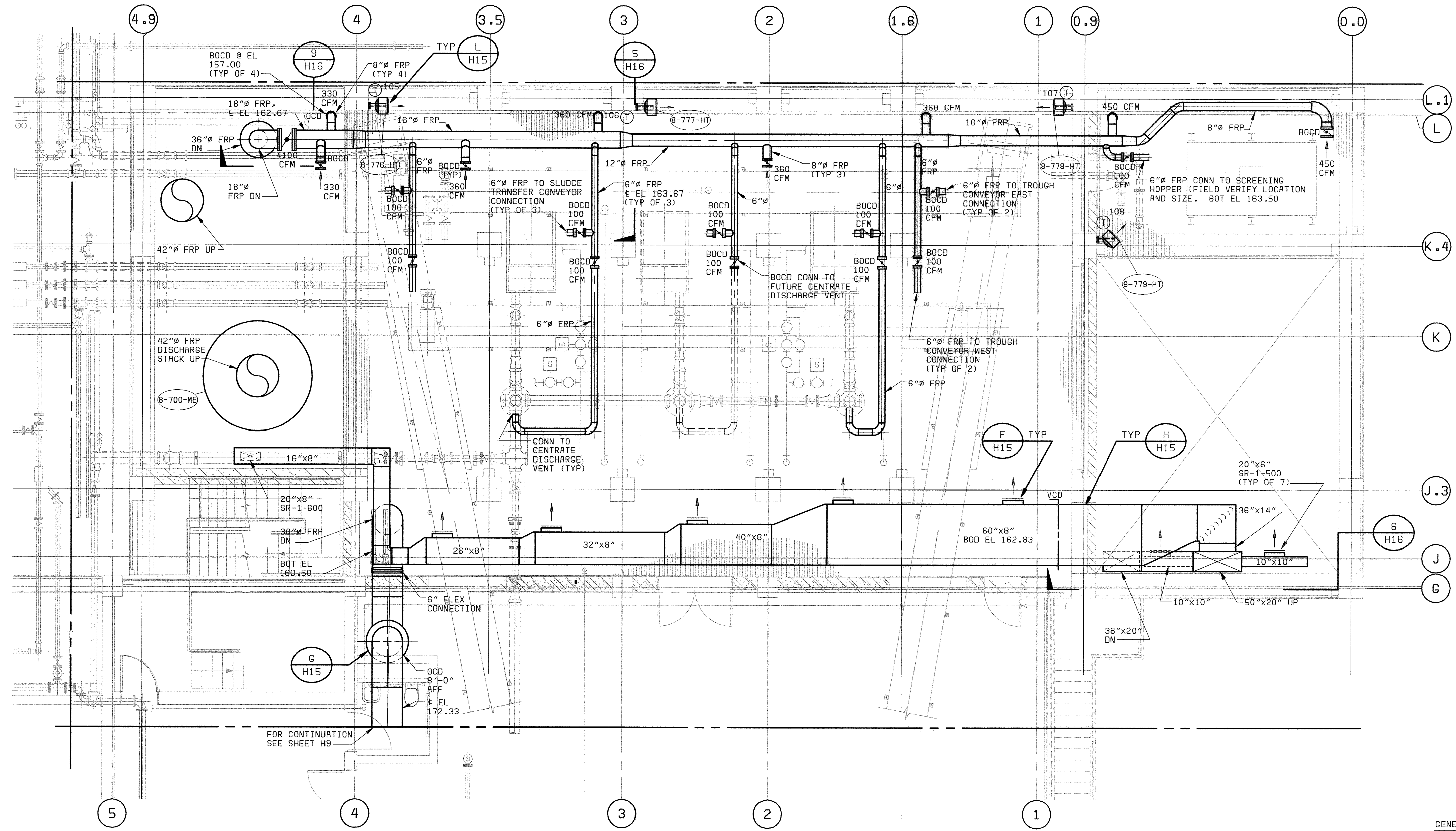


KEY PLAN

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 NO. BY CK APP	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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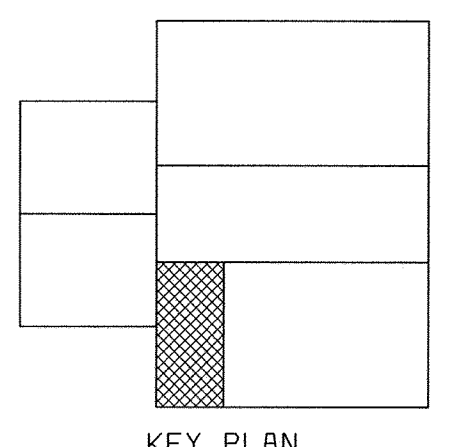
PLAN EL 156.00
3/16" = 1'-0"

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.

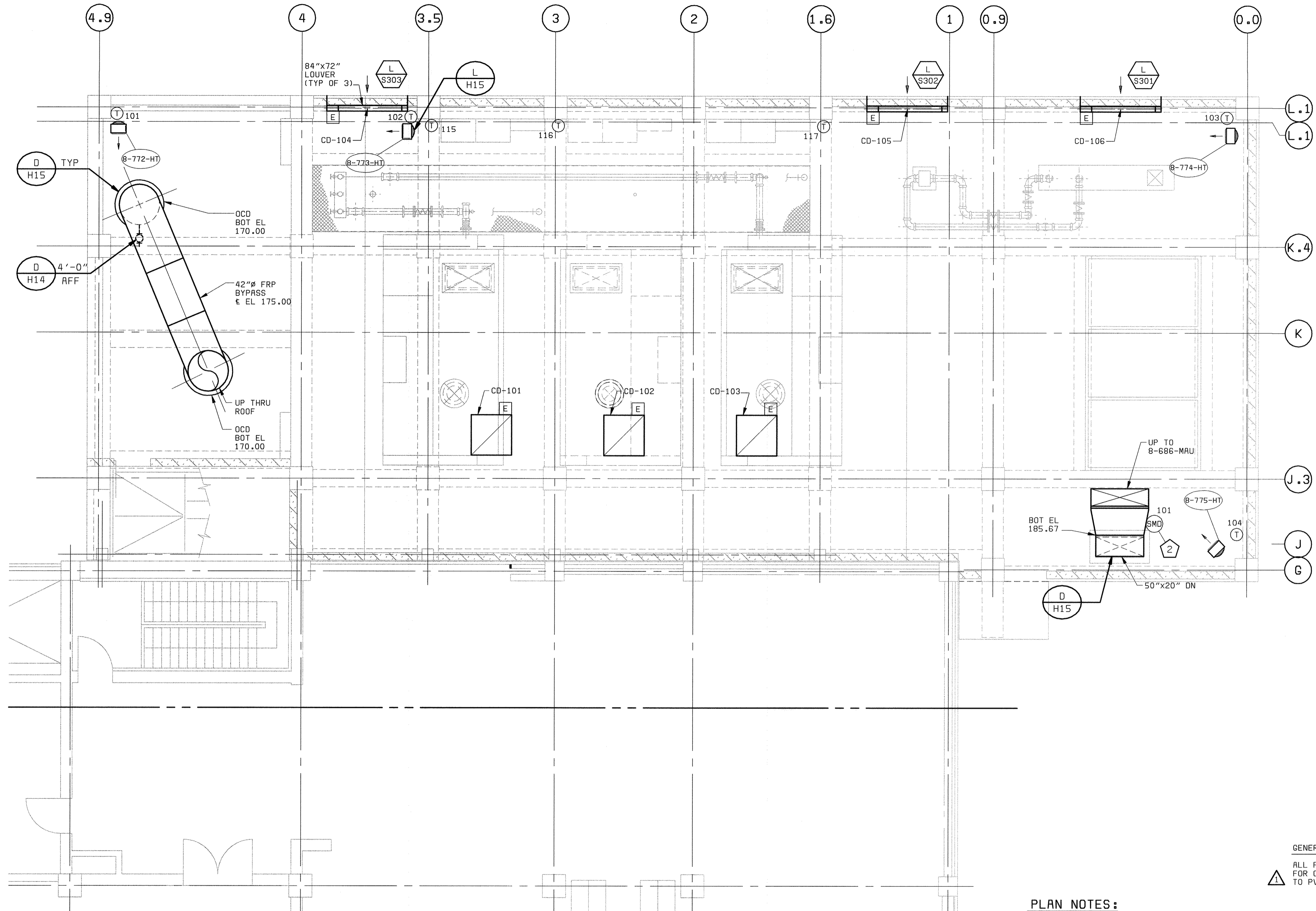


KEY PLAN

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

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

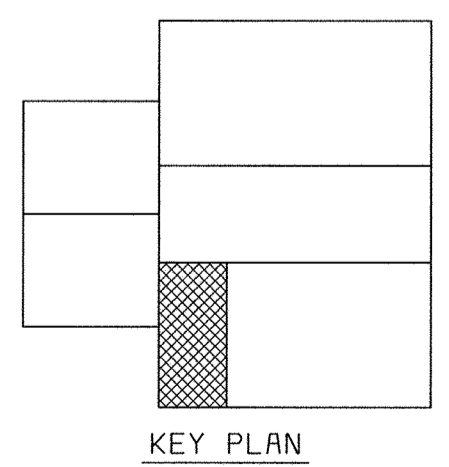


PLAN EL 166.00
3/16" = 1'-0"

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.



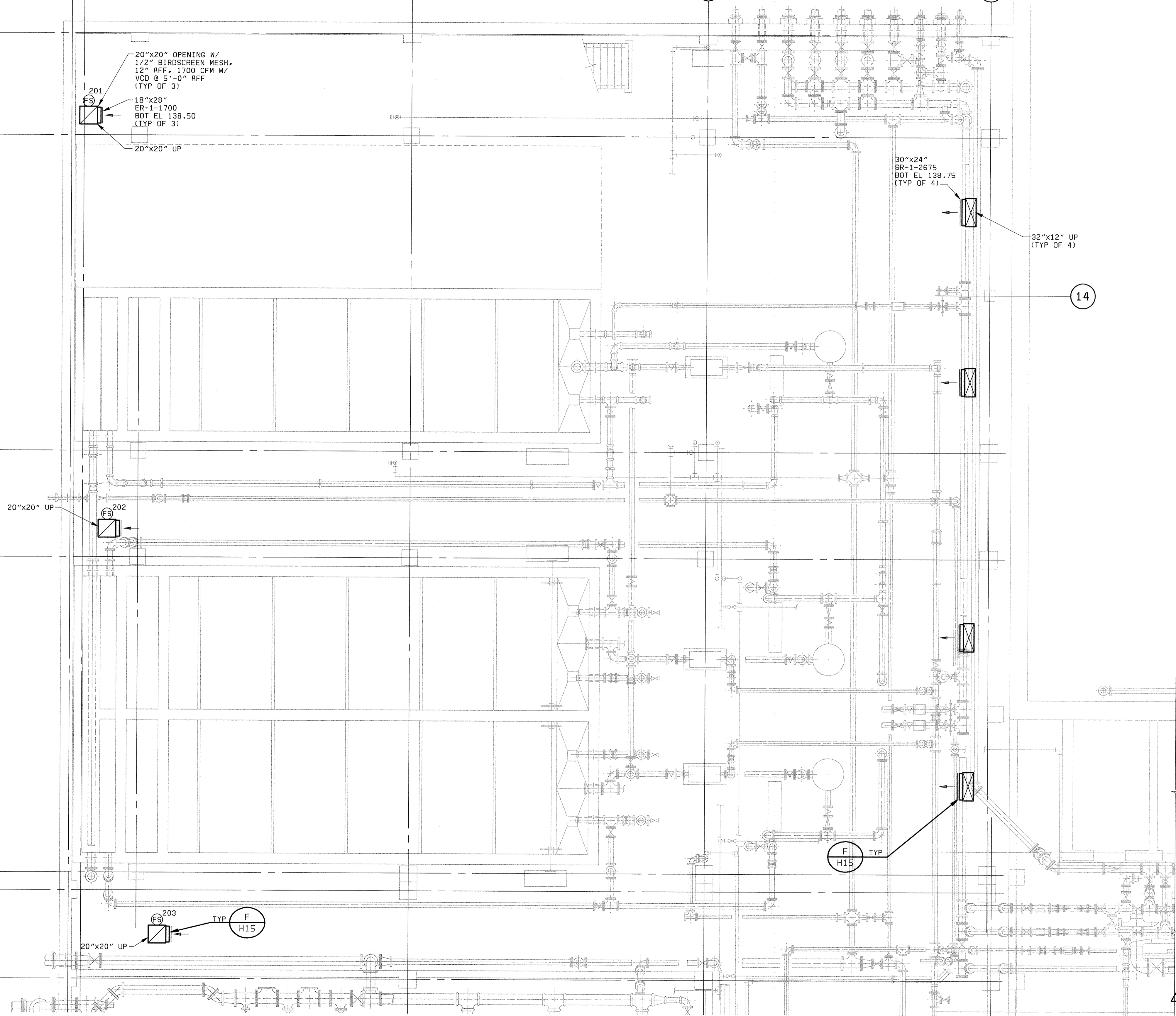
XREF: 58472-01-323-C010
 XREF: 58472-203-SOLS-S-A0000147
 XREF: 58472-01-323-PTPEZ

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,LW 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
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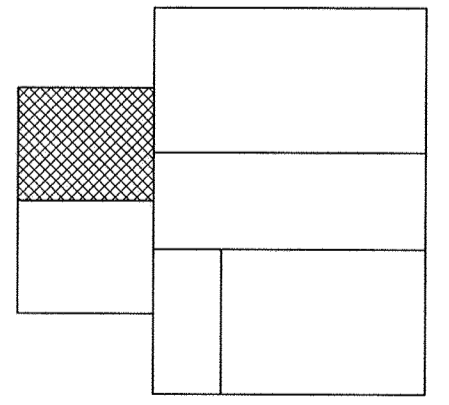


PLAN EL 128.00
3/16" = 1'-0"

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-BAE1

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			
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

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

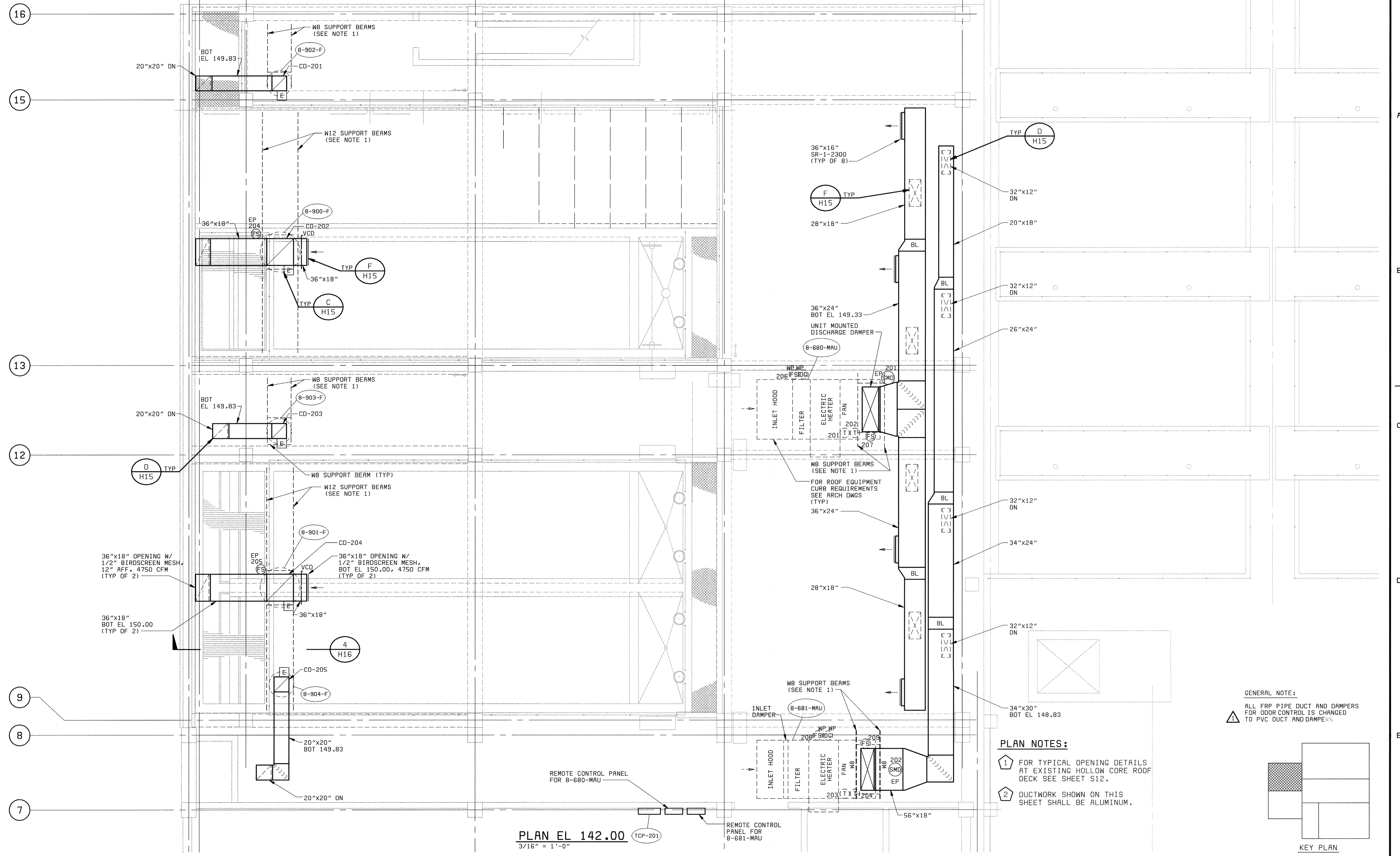
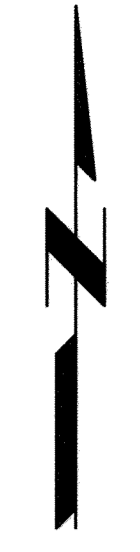
SCALE
AS
SHOWN

SHEET
91 OF 150

H5

1 2 3 4 5 6 7 8 9 10

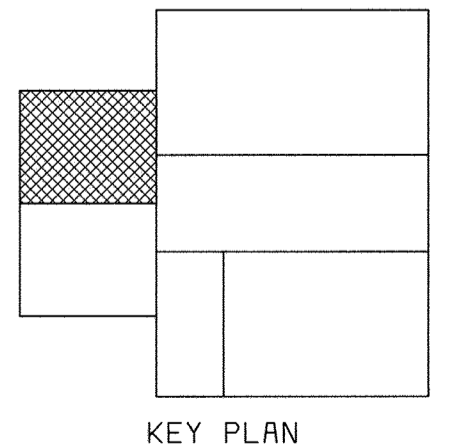
A B C D E F



PLAN NOTES:

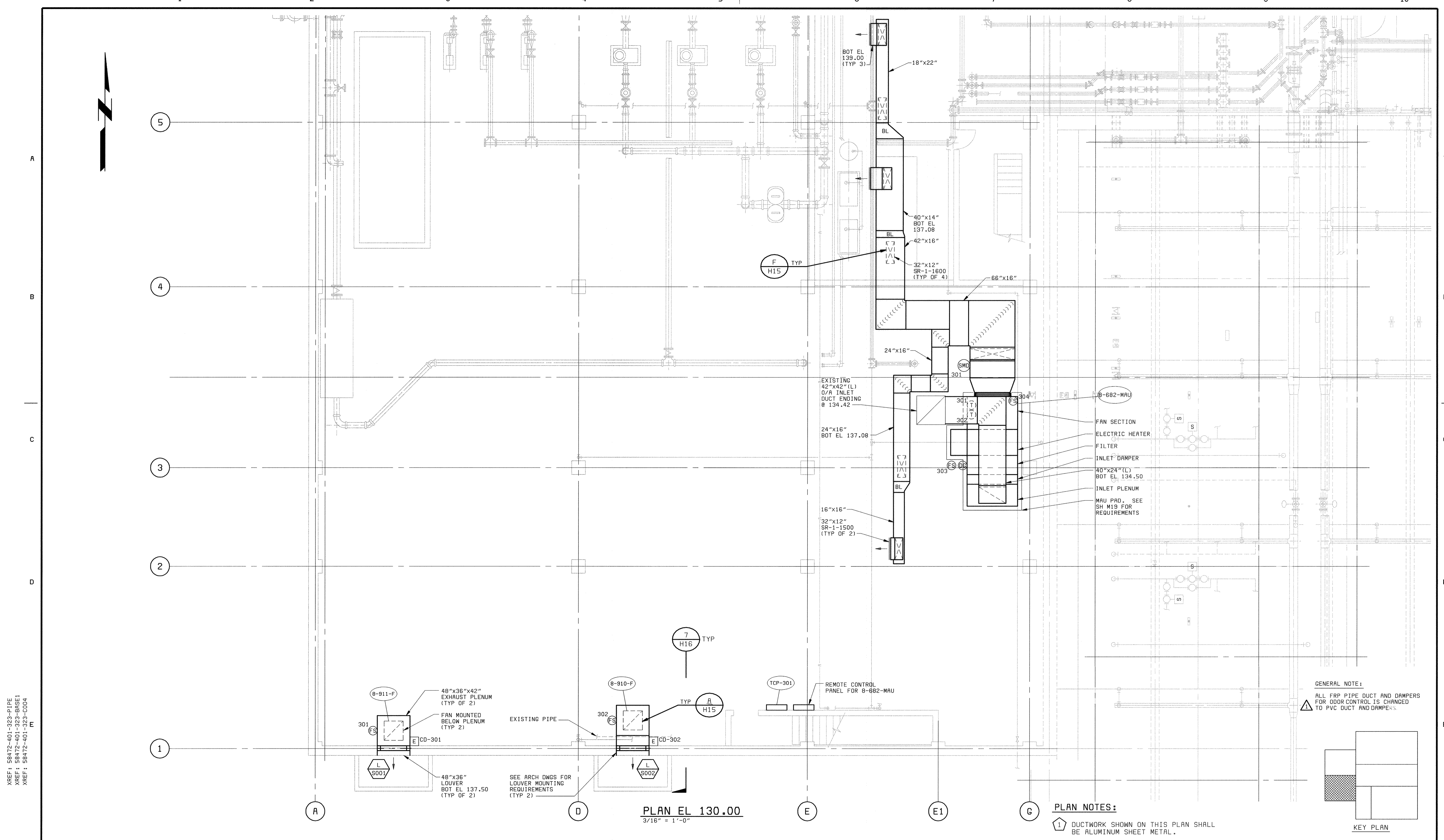
- 1 FOR TYPICAL OPENING DETAILS AT EXISTING HOLLOW CORE ROOF DECK SEE SHEET S12.
- 2 DUCTWORK SHOWN ON THIS SHEET SHALL BE ALUMINUM.

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



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

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, 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			LITTLE PATUXENT WATER RECLAMATION PLANT		SCALE AS SHOWN
			DRN: BDL, LDW	HVAC/ODOR CONTROL			ADDITION NO. 6		
CHIEF, BUREAU OF UTILITIES DATE	REG. PROF. ENGR. DATE		CHK: JEP	FLOTATION THICKENING AREA			CAPITAL PROJECT S-6205		
			DATE: 5-30-00	PLAN AT EL 142.00			CONTRACT NO. 20-3751		
				REVISIONS AND RECORD OF ISSUE			ELECTION DISTRICT NO. 6		
				NO. BY CK APP			HOWARD COUNTY, MARYLAND		
							H6		

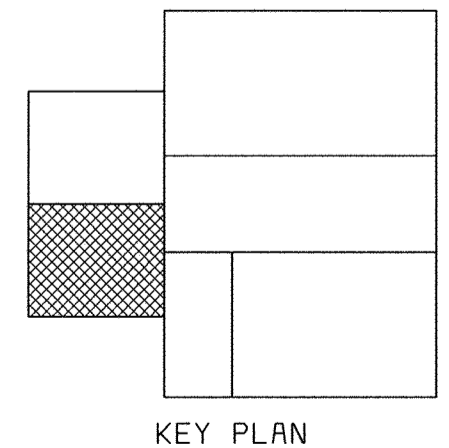


PLAN EL 130.00
3/16" = 1'-0"

PLAN NOTES:

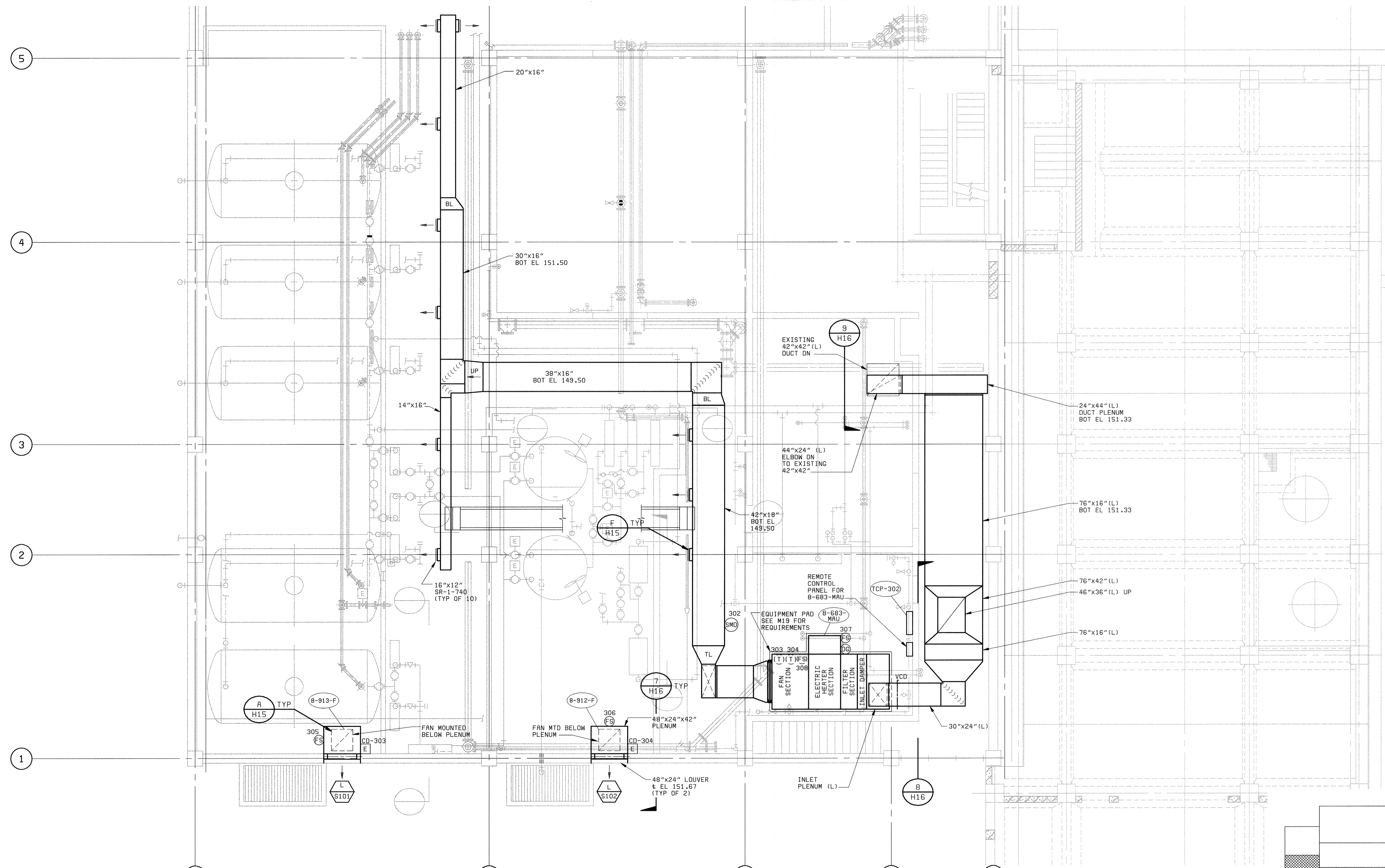
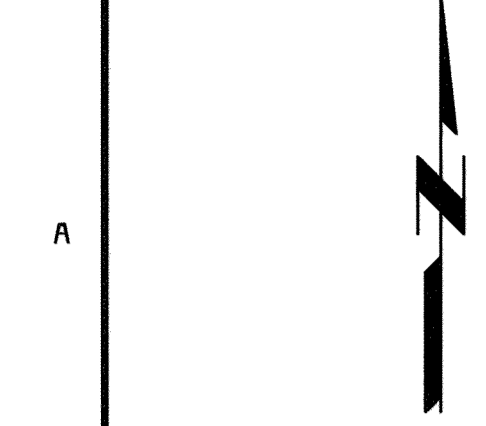
- 1 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL.

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



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

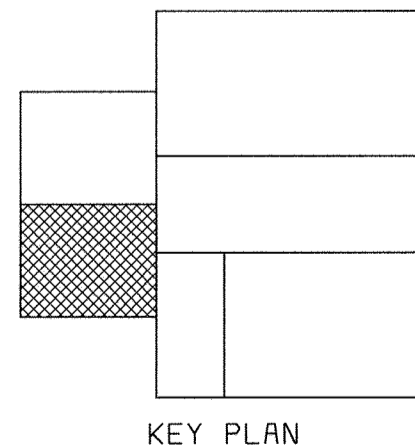
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: GWP, HX					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
			DRN: BDL, LDW	CHK: JEP	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH/RJR/RJR
									H7	



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 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL.



XREF: 58472-203-SOLS-S-R0000118
XREF: 58472-401-232-C016

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

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

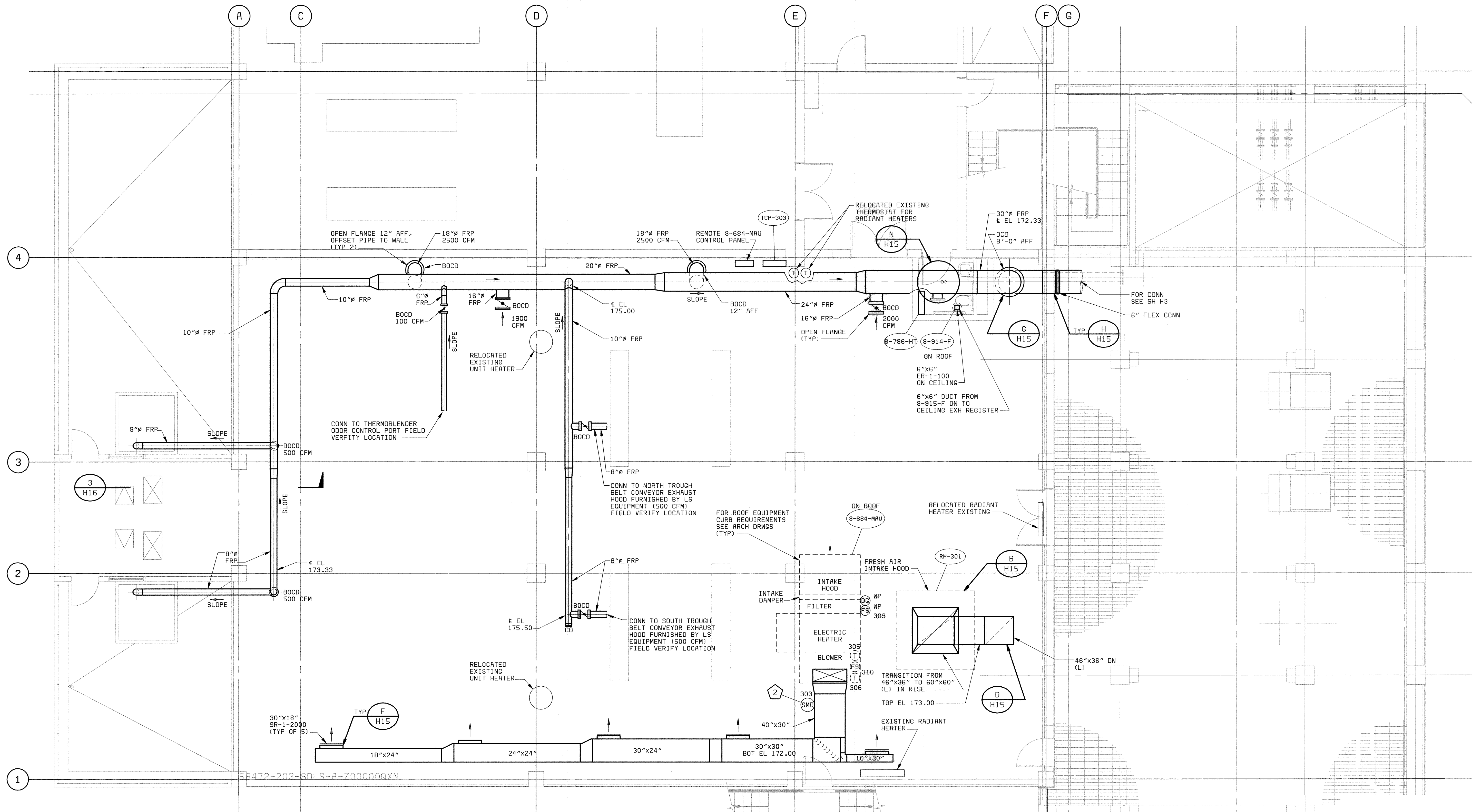
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND. NO. 21992

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

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

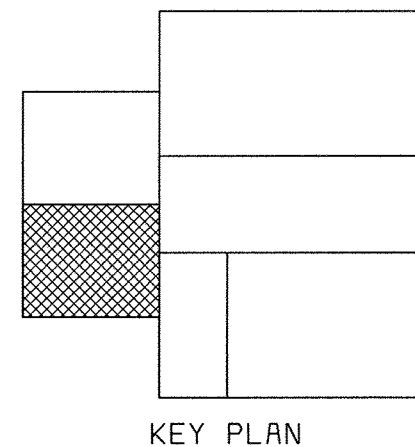


PLAN EL 156.00
3/16" = 1'-0"

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: 58472-01-08F-H-00000614

DES: GWP, HX
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

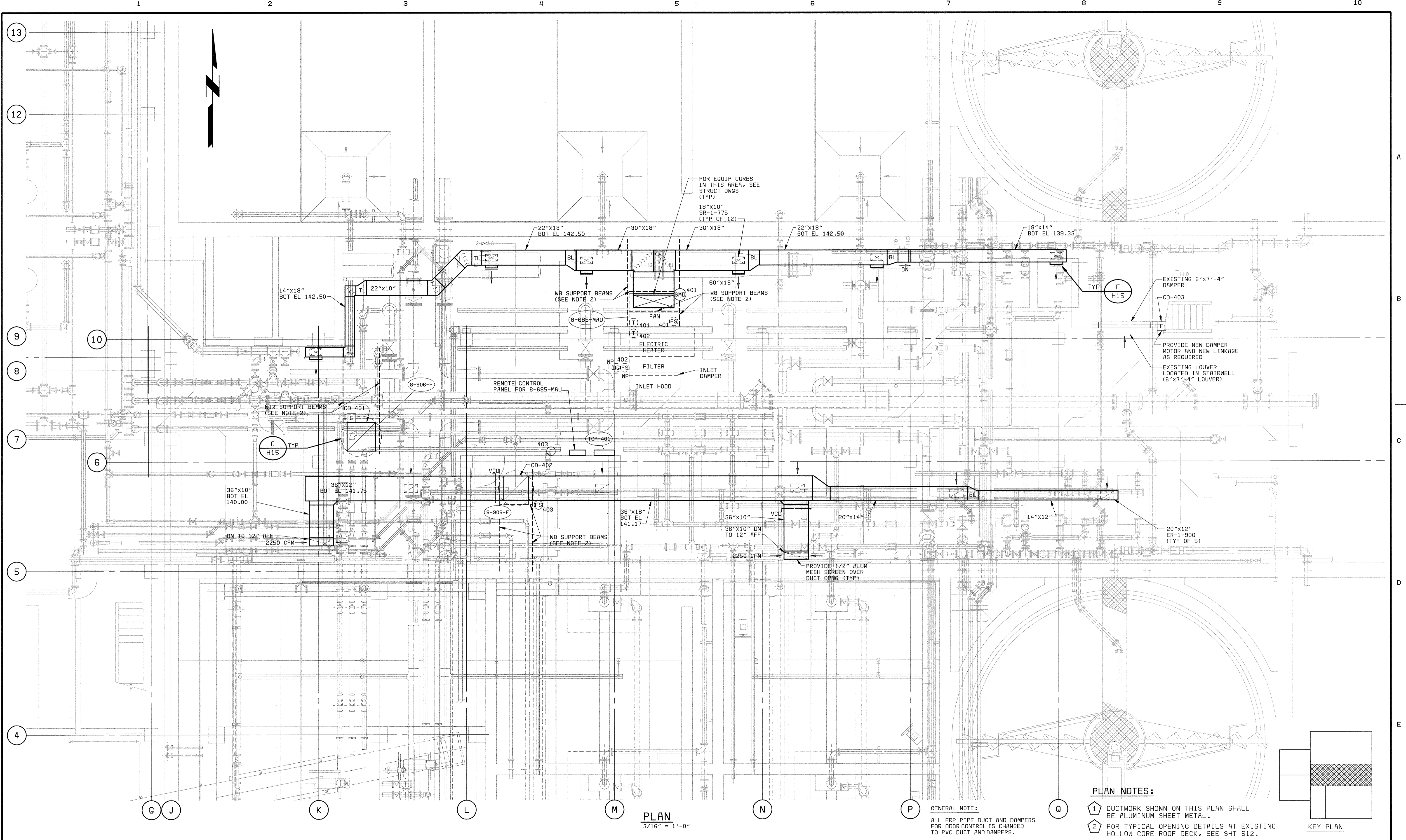
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992

DES: GWP, 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
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

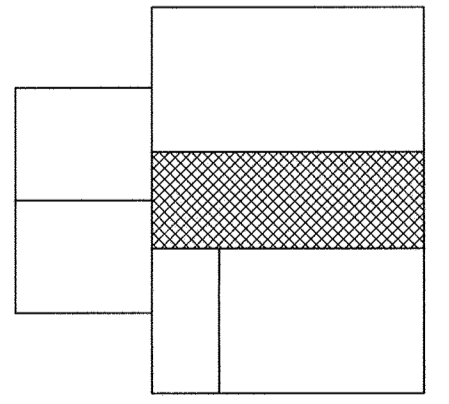


PLAN
3/16" = 1'-0"

PLAN NOTES:


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

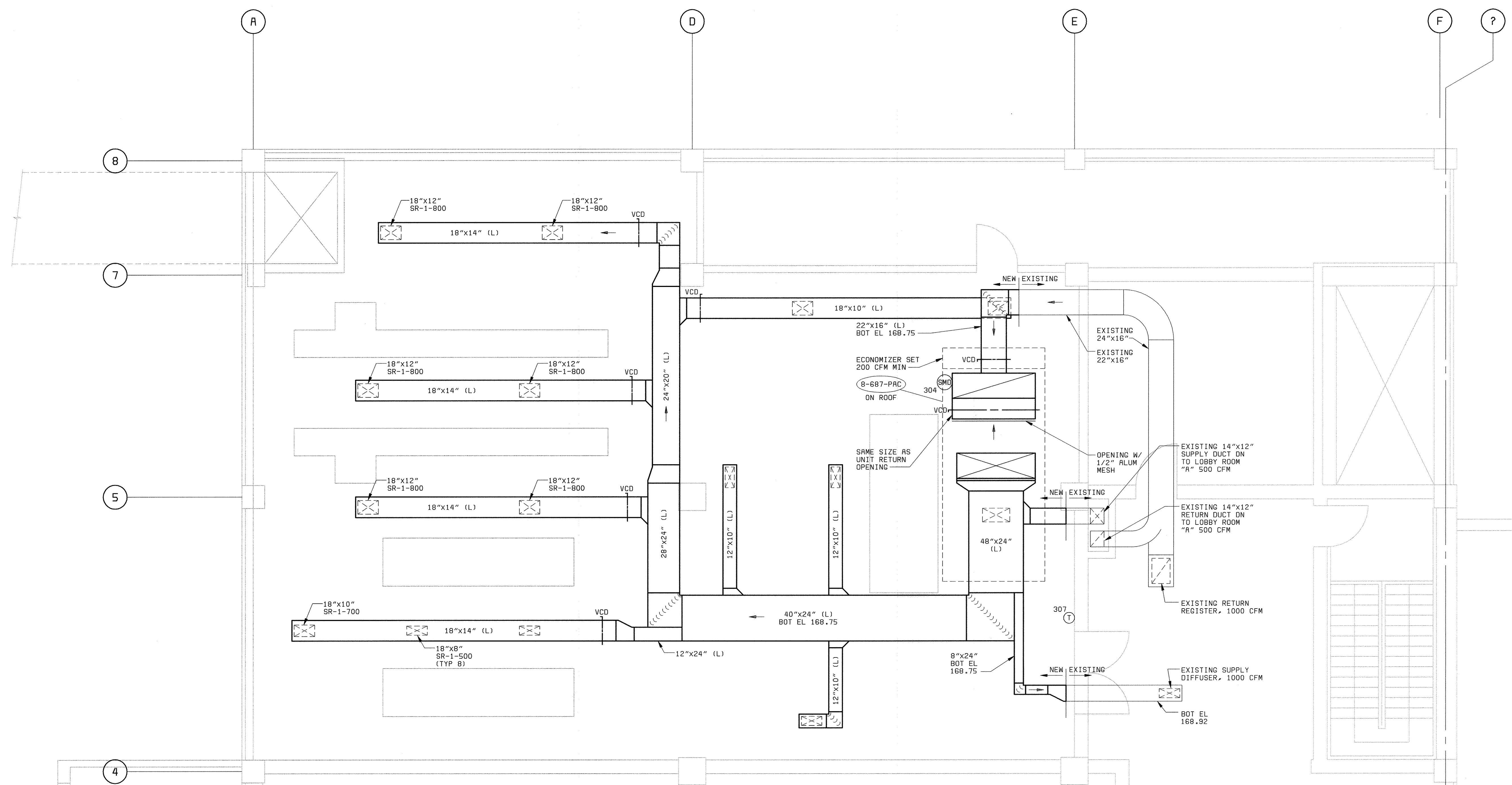
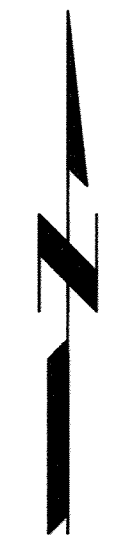
- 1 DUCTWORK SHOWN ON THIS PLAN SHALL BE ALUMINUM SHEET METAL.
- 2 FOR TYPICAL OPENING DETAILS AT EXISTING HOLLOW CORE ROOF DECK, SEE SHT S12.



KEY PLAN

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

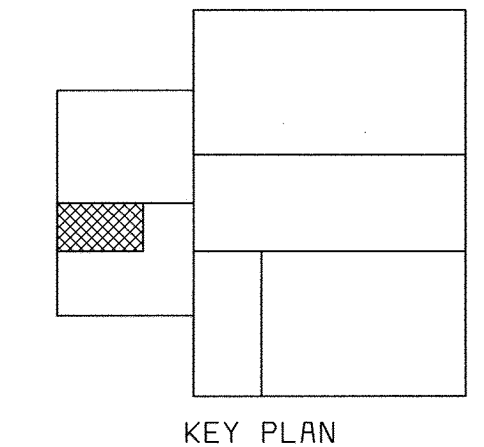
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND  BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. _____ DATE _____ CHIEF, BUREAU OF UTILITIES DATE _____	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, 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.LOW	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		H10



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.



58472-401-323-BASE2 (R00097415)
 DES:GWP
 DRN:BDL
 CHK:JEP

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

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

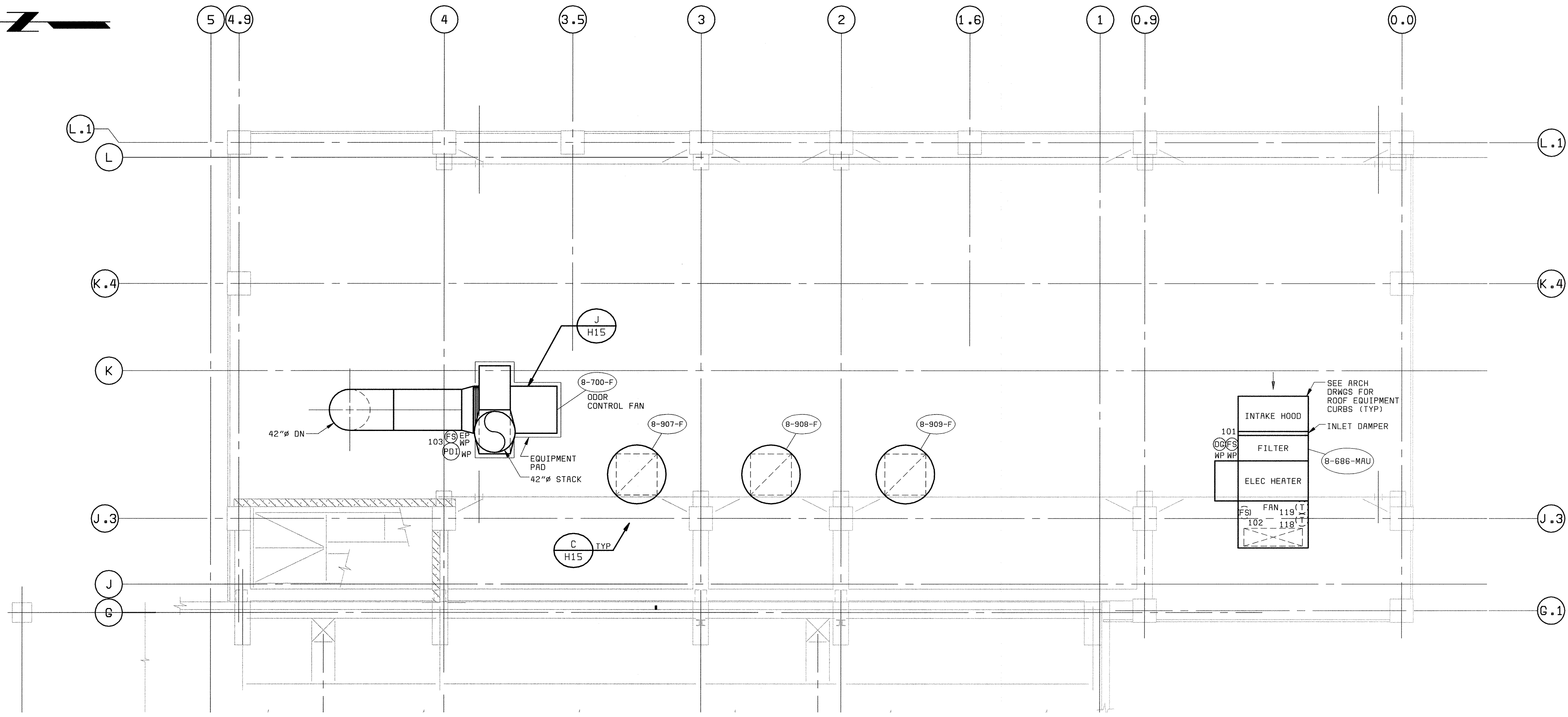
THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992

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

HVAC/PLUMBING
 HVAC/ODOR CONTROL
 ELECTRICAL ROOM
 PLAN - EL 156.00

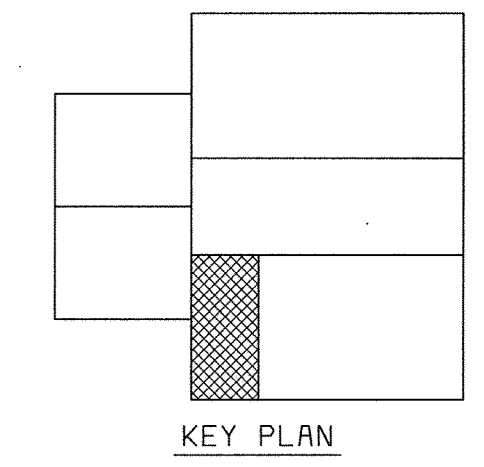
LITTLE PATUXENT WATER RECLAMATION PLANT
 ADDITION NO. 6
 SOLIDS PROCESSING FACILITY
 CAPITAL PROJECT S-6205
 CONTRACT NO. 20-3751
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 97 OF 150
 H11




ROOF PLAN EL 181.00
3/16" = 1'-0"

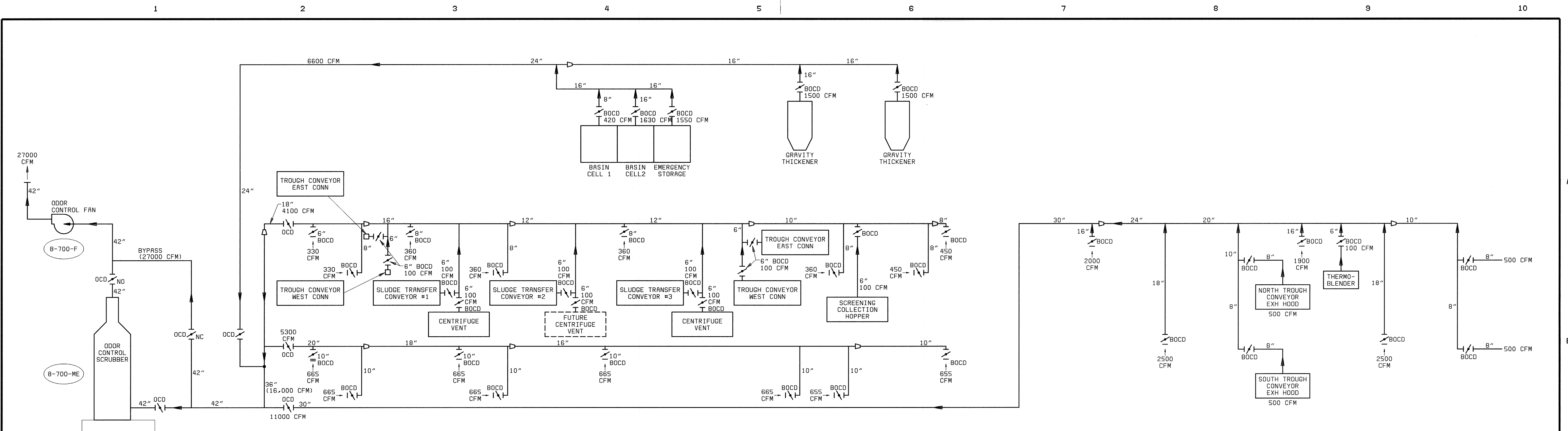
GENERAL NOTE:
ALL FRP PIPE DUCT AND DAMPERS FOR ODOR CONTROL IS CHANGED TO PVC DUCT AND DAMPERS.



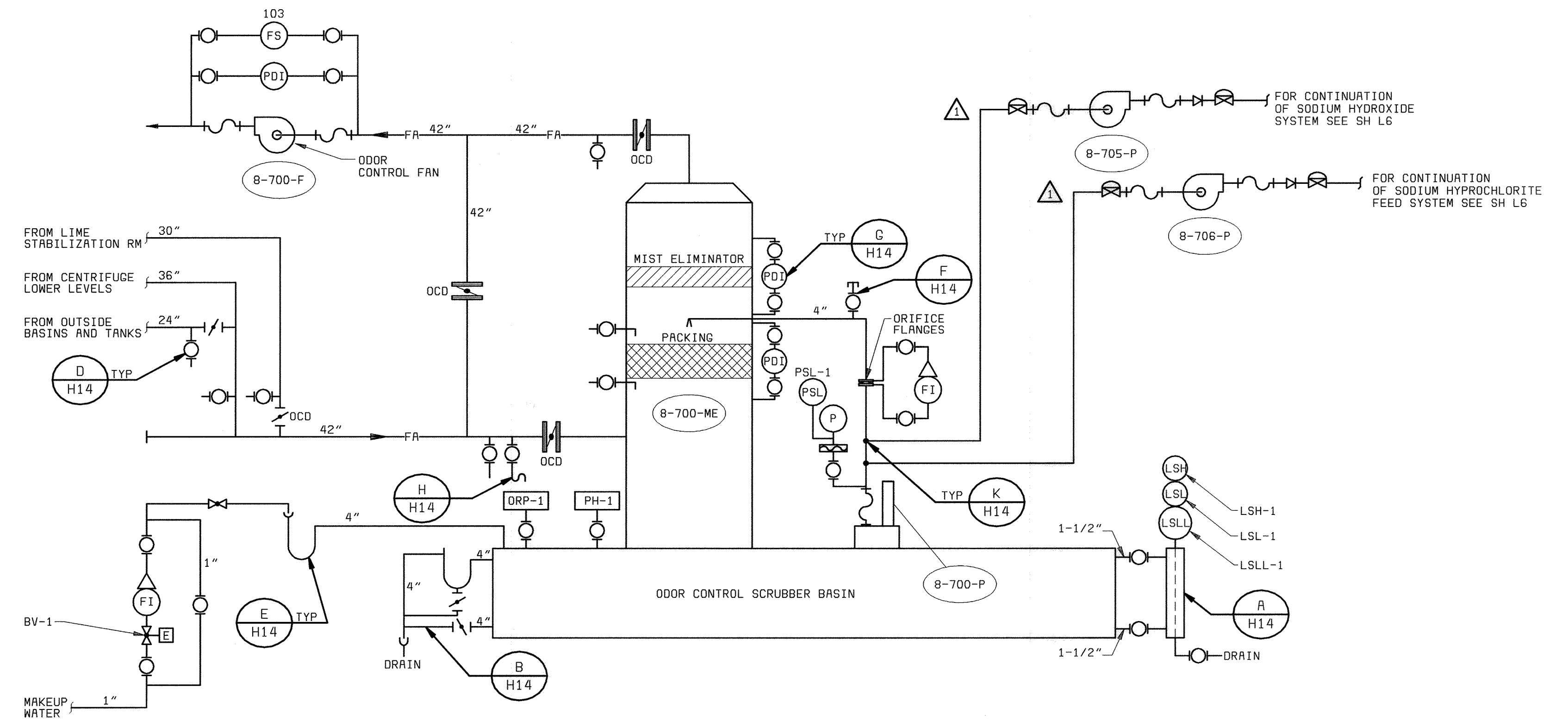
XREF: 58472-203-SDLS-S-R0000193
XREF: 58472-203-SDLS-S-R0000098

DES: GWP, HX
DRN: BDL, LDW
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	07/26/04 CONFORMED TO CONSTRUCTION RECORDS	RHH RJR/RJR	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					REVISIONS AND RECORD OF ISSUE



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

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

05/04/2005 10:06:31

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.

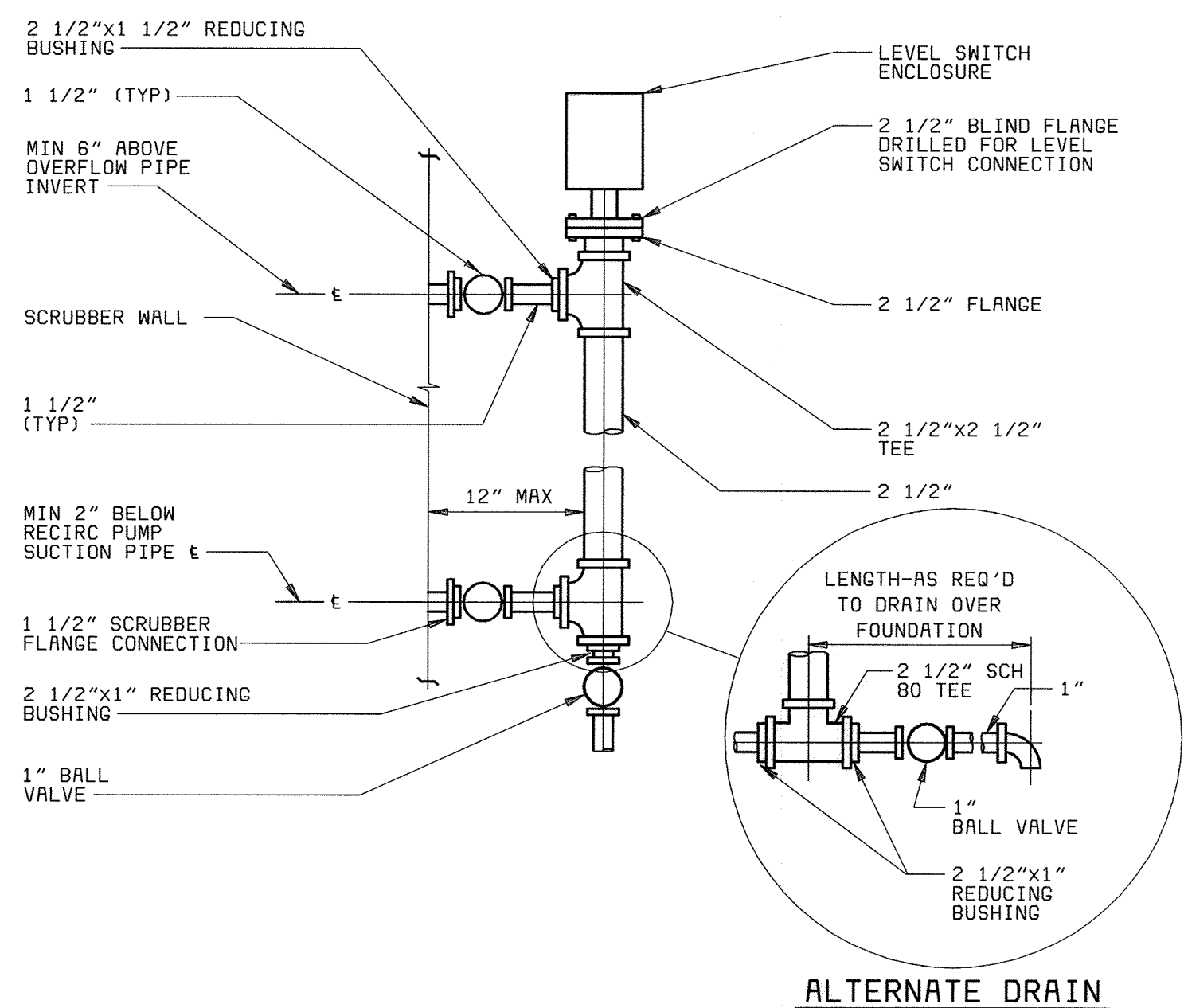
7. ODOR CONTROL PANEL OCP-101:

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:

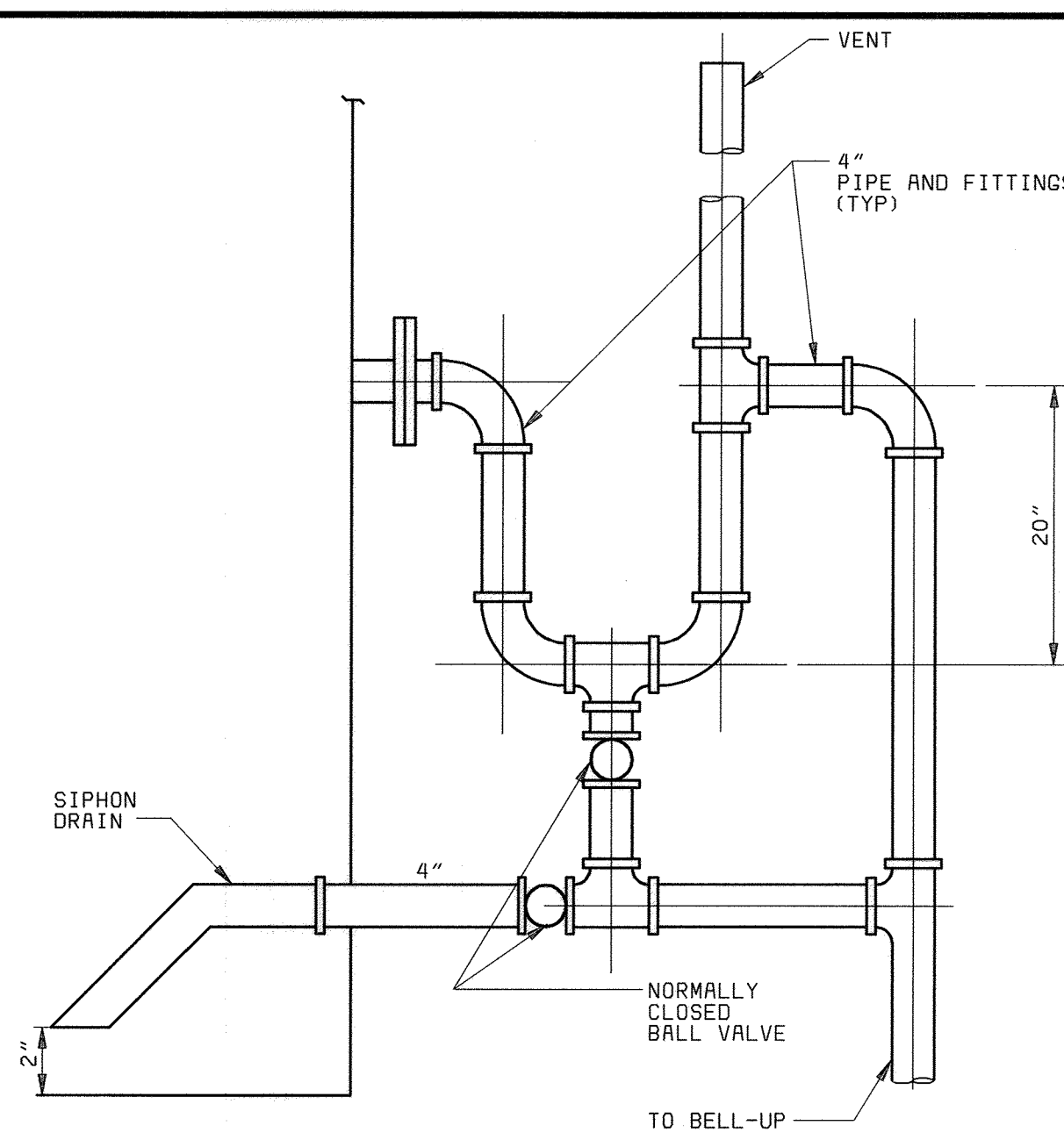
RED	- ENERGIZED
GREEN	- DE-ENERGIZED
WHITE	- STATUS
AMBER	- ALARM

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

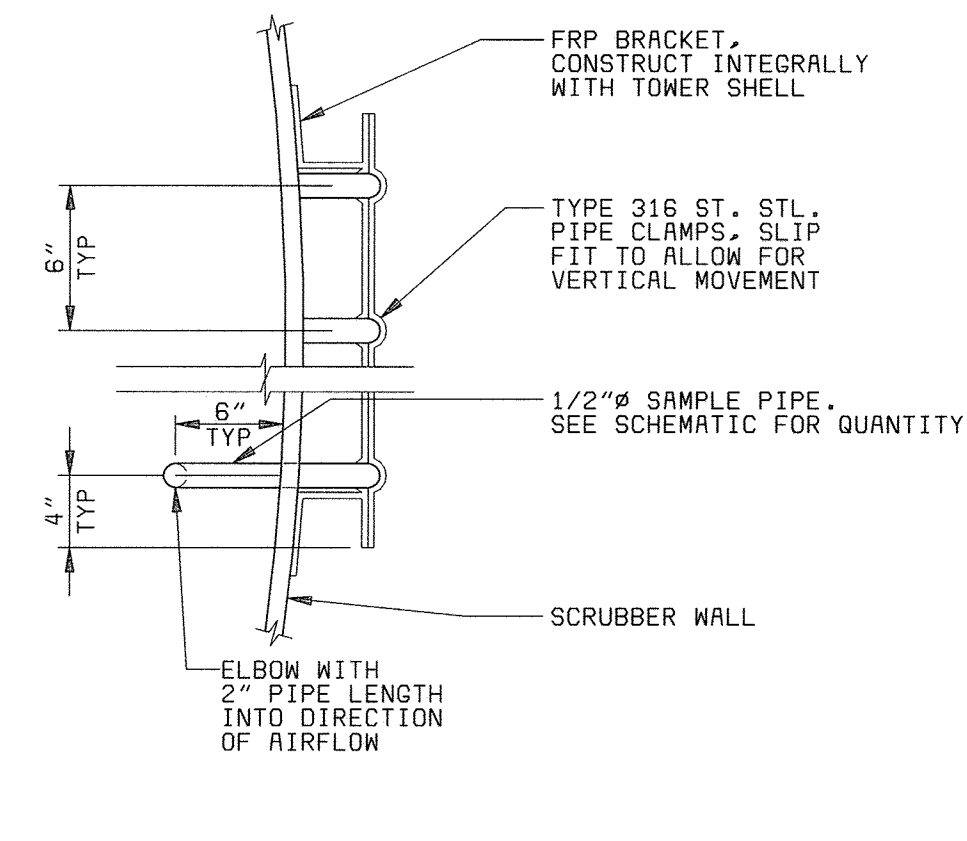
- A. INDICATING LIGHTS:
 - CONTROL POWER ON
- B. RUNNING LIGHTS AND SELECTOR SWITCHES
 - MAKEUP WATER SHUTOFF VALVE BV-1 OPEN
 - RECIRCULATION PUMP 8-700-P
 - CHEMICAL METERING PUMP 8-705-P
 - CHEMICAL METERING PUMP 8-706-P
- C. ALARM LIGHTS AND AUDIBLE ALARM CONTROL SYSTEM
 - LOW RECIRCULATION PRESSURE 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"



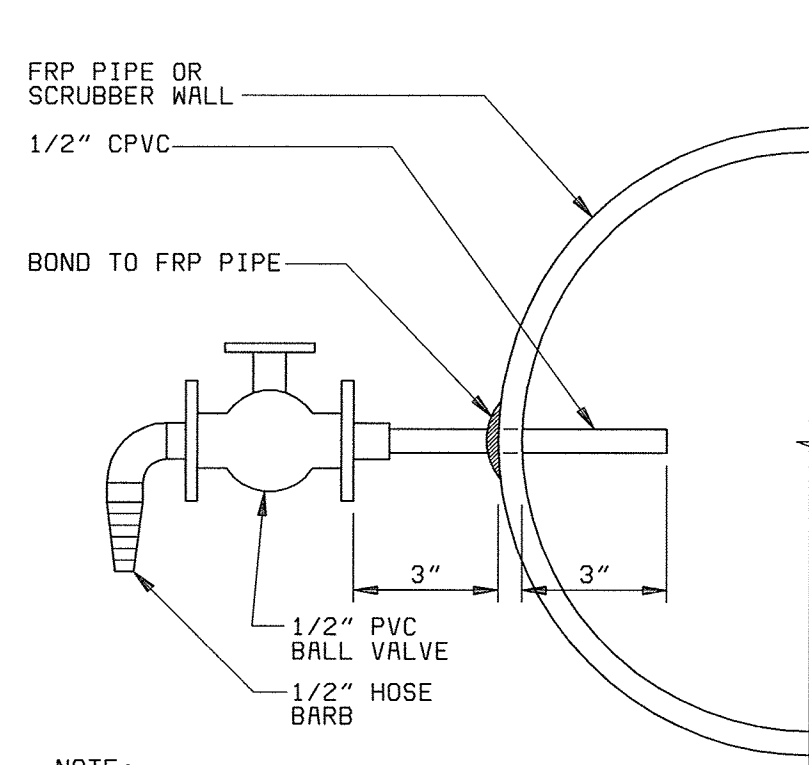
LEVEL GAUGE/SWITCH (A) H13,H16
NO SCALE



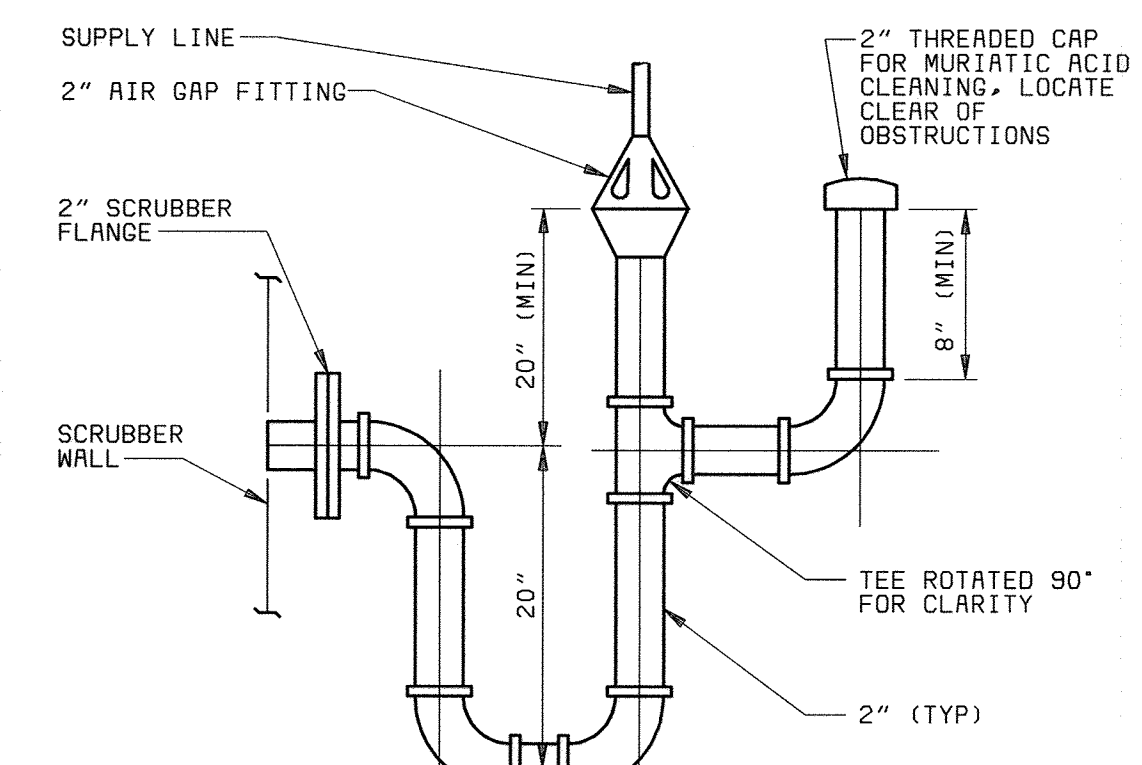
TANK OVERFLOW AND DRAIN (B) H13,H16
NO SCALE



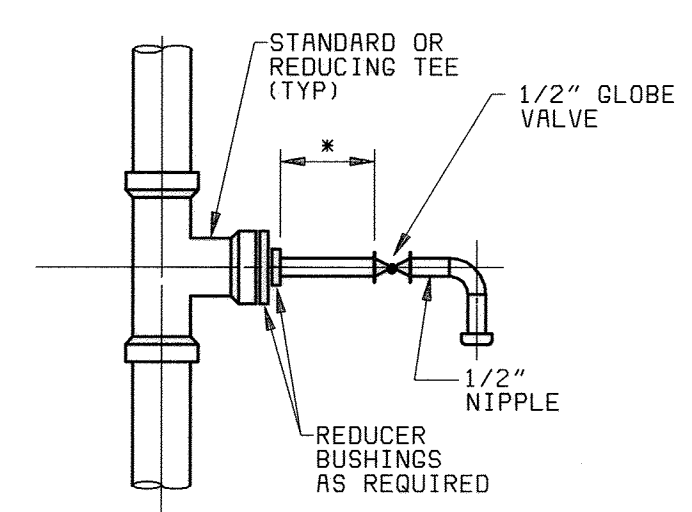
SAMPLE PIPE SUPPORT DETAIL (C)
NO SCALE



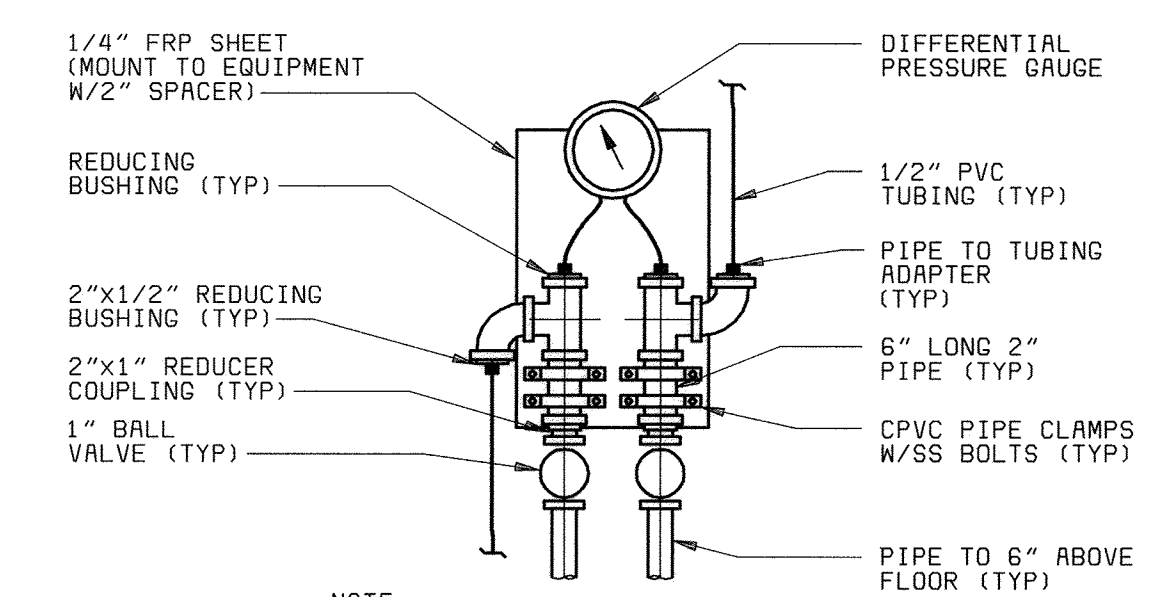
SAMPLE PORT DETAIL (D) H2,H4,H13,H16
NO SCALE



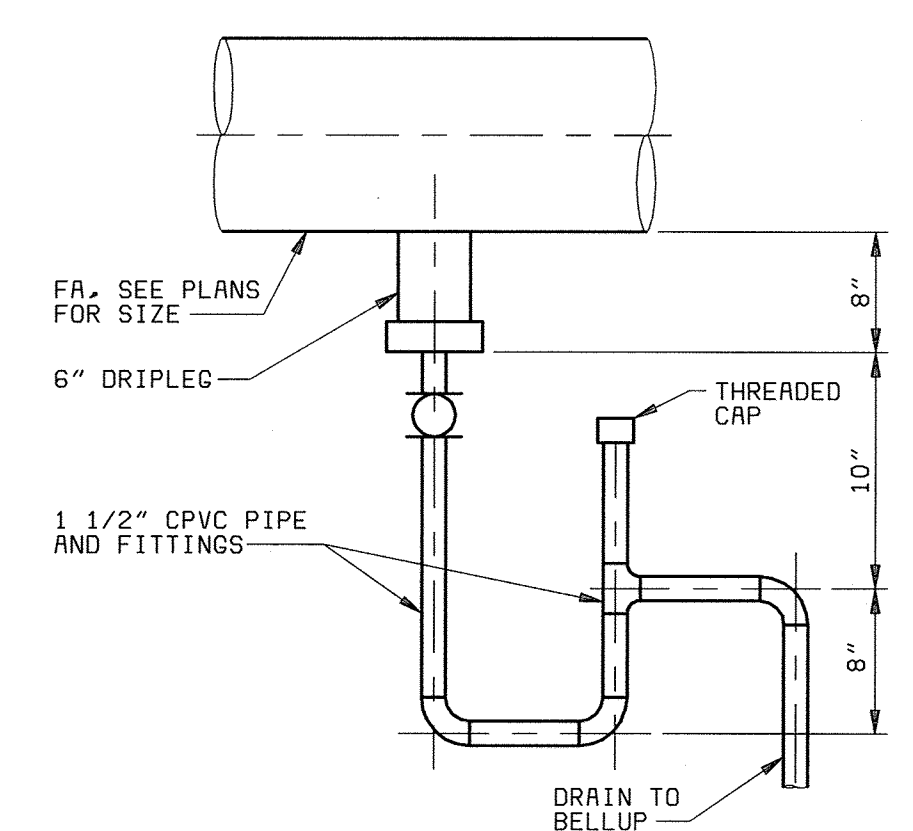
SCRUBBER MAKE-UP WATER AND ACID CLEANING CONNECTION (E) H13,H16
NO SCALE



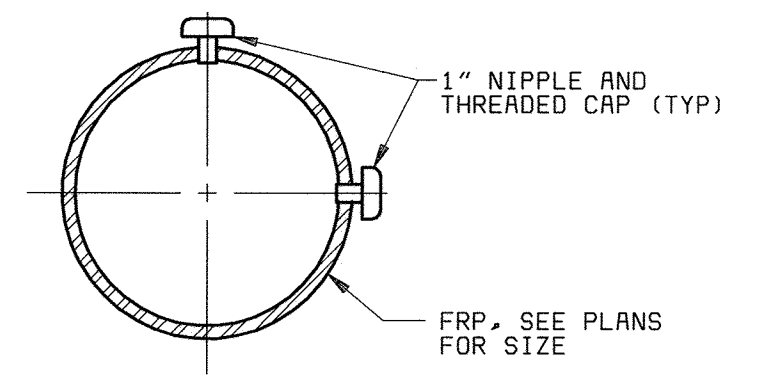
LIQUID SAMPLE TAP (F) H13
NO SCALE



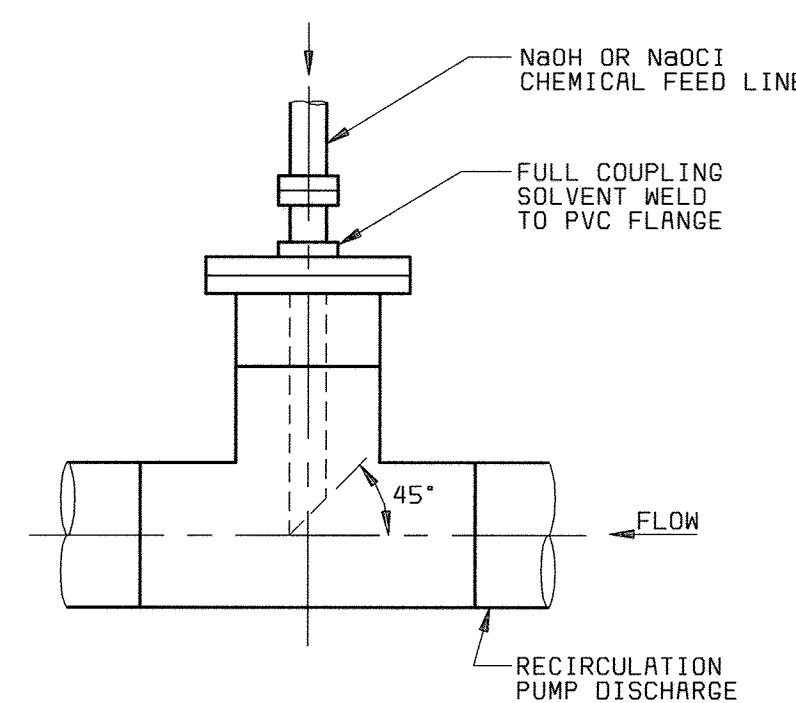
PRESSURE DIFFERENTIAL INDICATOR (G) H13,H16
NO SCALE



DRAIN TRAP (H) H2,H13
NO SCALE



INSTRUMENT TEST OPENING (J)
NO SCALE



CHEMICAL DIFFUSER (K) H13
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
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

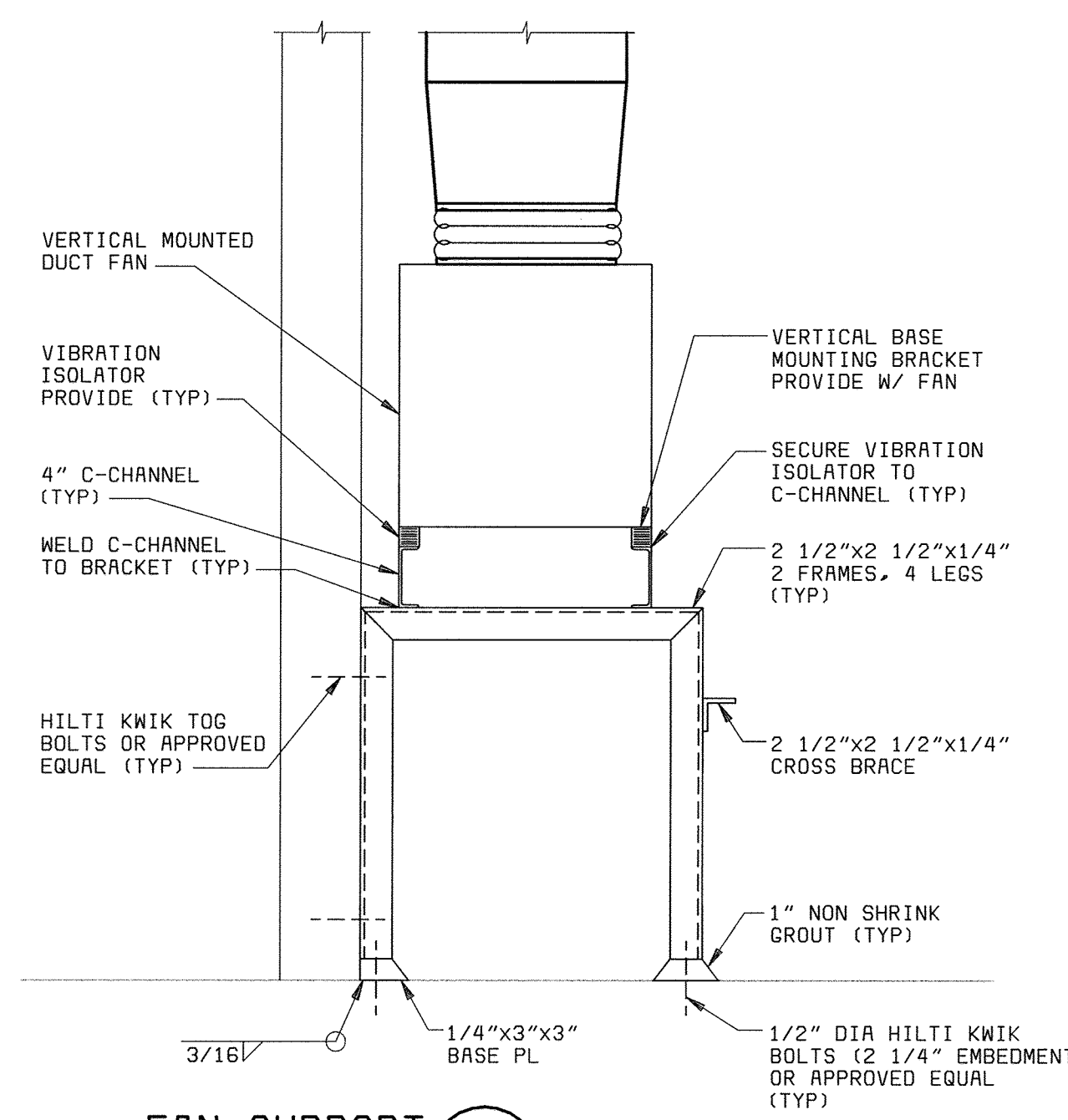
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DES: GWP					
DRN: BDL,LDW					
CHK: JEP					
DATE: 5-30-00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP
	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	

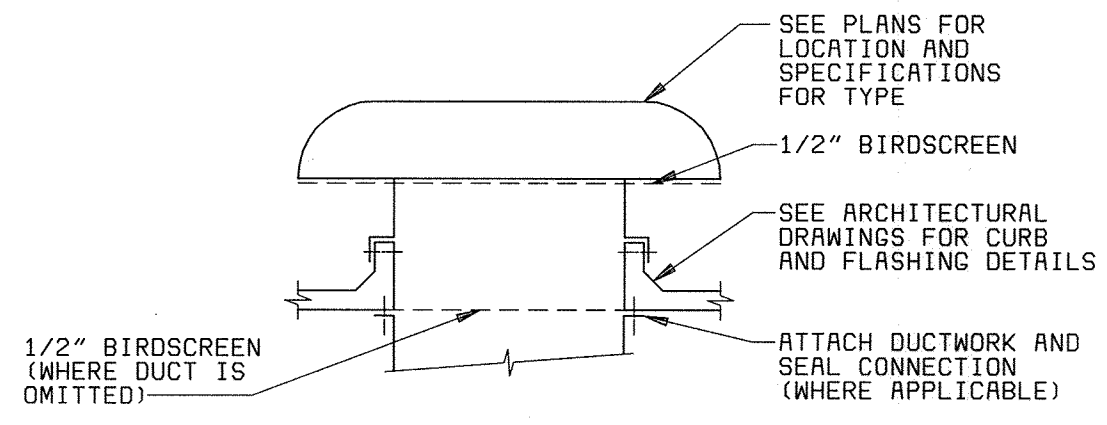
HVAC/PLUMBING
HVAC/ODOR CONTROL
ODOR CONTROL DETAILS AND SEQUENCE OF OPERATIONS

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

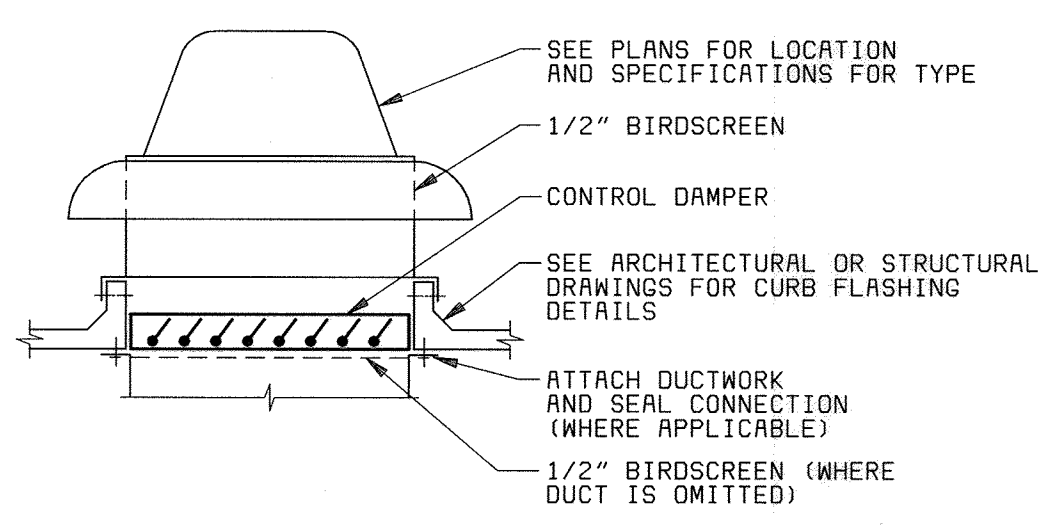
SCALE AS SHOWN
SHEET 100 OF 150
H14



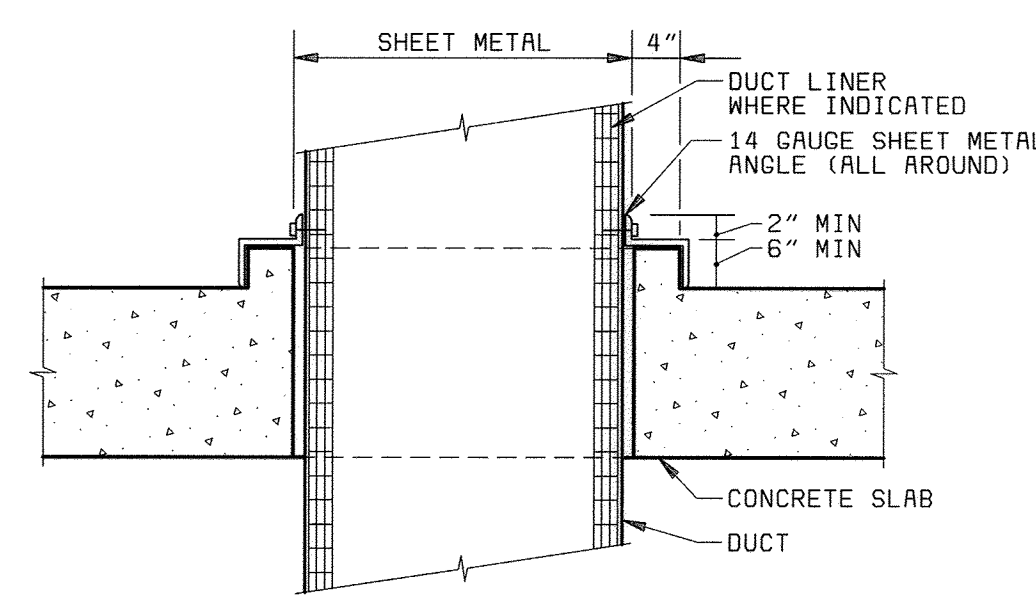
FAN SUPPORT (A)
NO SCALE
H7, H8, H16



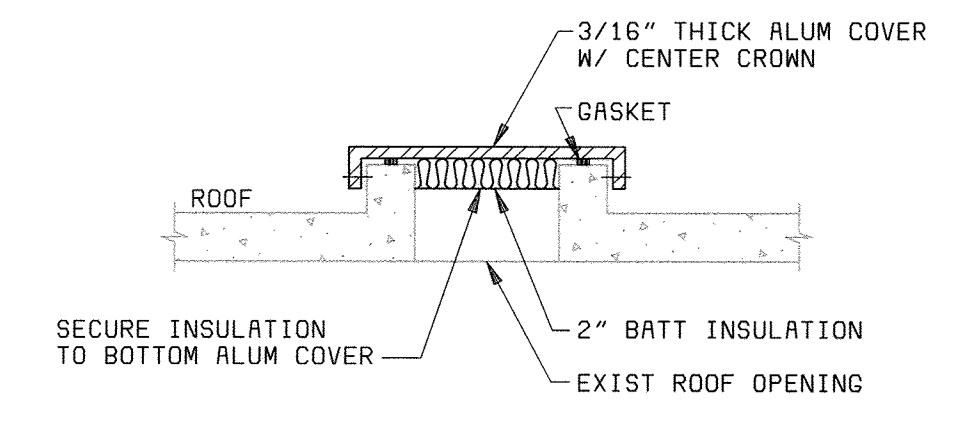
ROOF HOOD (B)
NO SCALE
H9



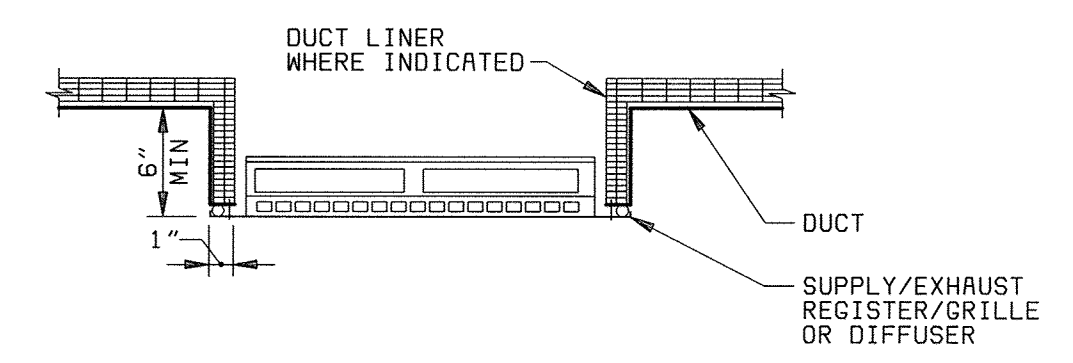
POWER ROOF VENTILATOR (C)
NO SCALE
H6, H10, H12



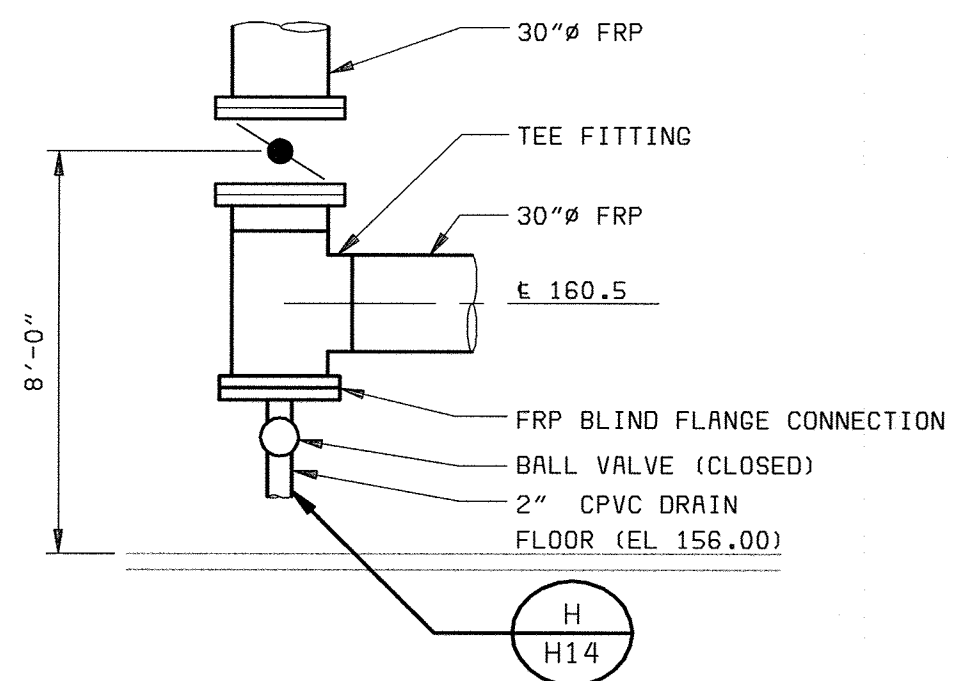
DUCT FLOOR SLEEVE (D)
NO SCALE
H4, H6, H9



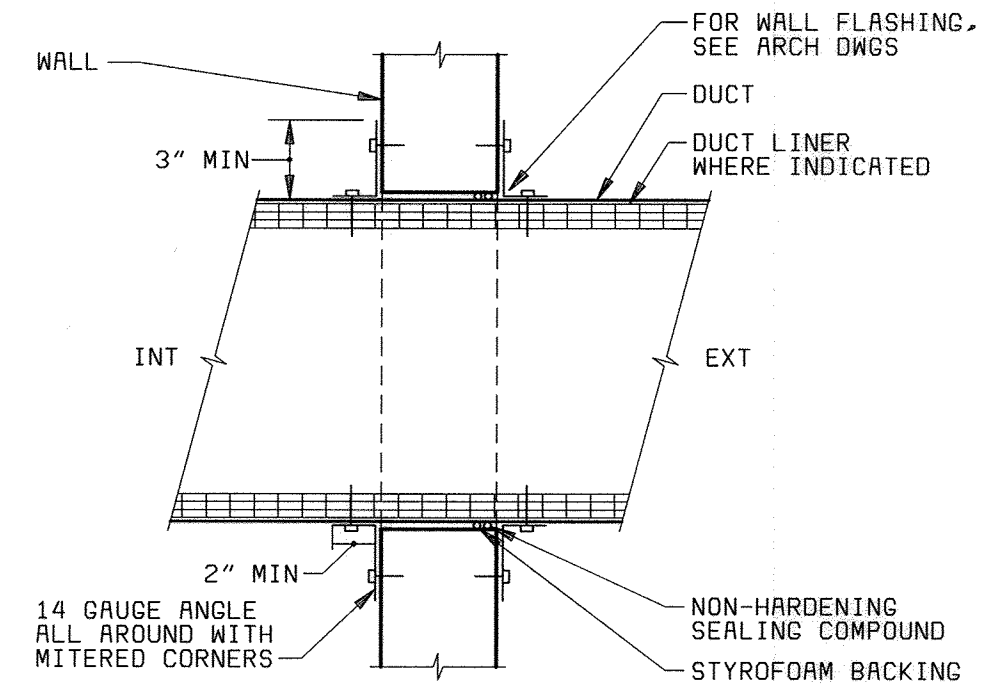
ROOF OPENING PATCH (E)
NO SCALE
D6, D9



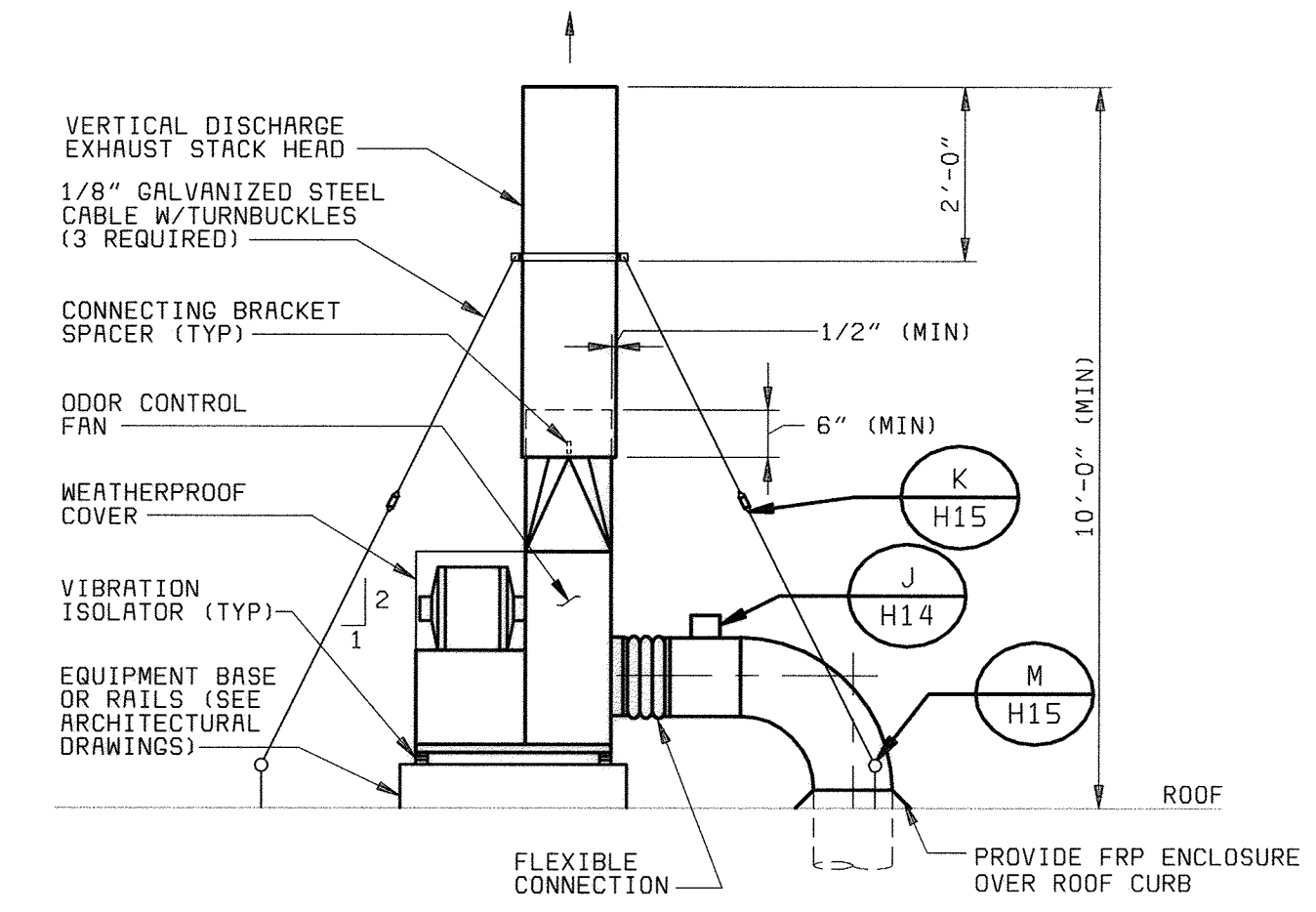
REGISTER/GRILLE (F)
NO SCALE
H2, H3, H5, H6, H7, H8, H9, H10



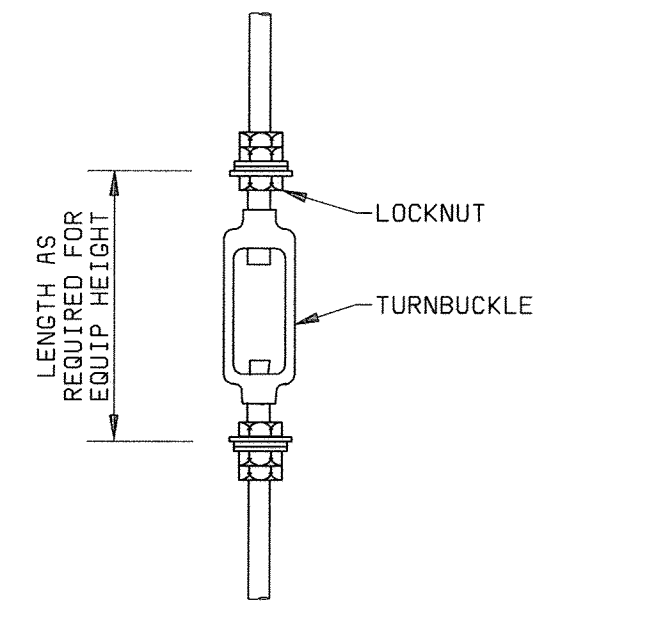
DRAIN CONNECTION (G)
NO SCALE
H9



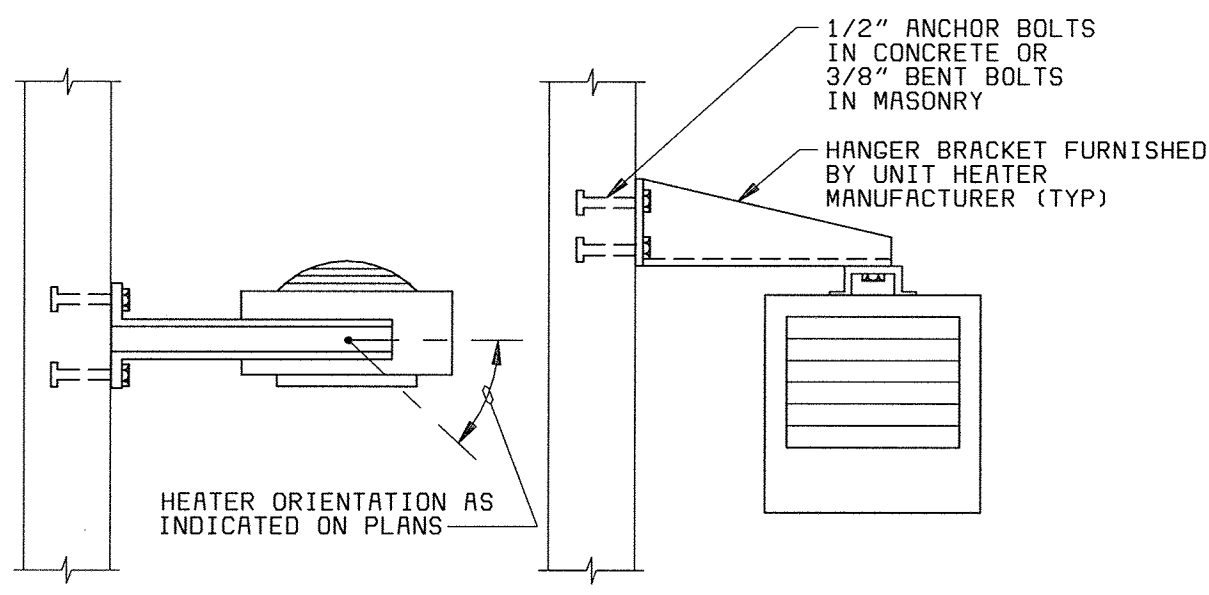
WALL PENETRATION (H)
NO SCALE
H2, H3, H9



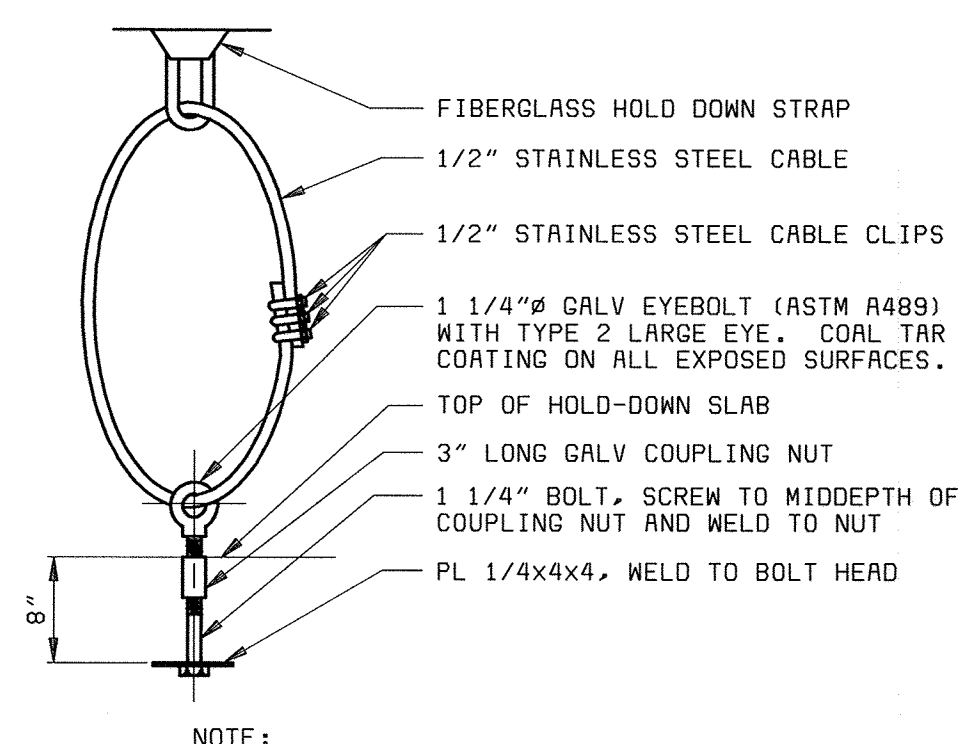
ROOF EXHAUST FAN (J)
NO SCALE
H12



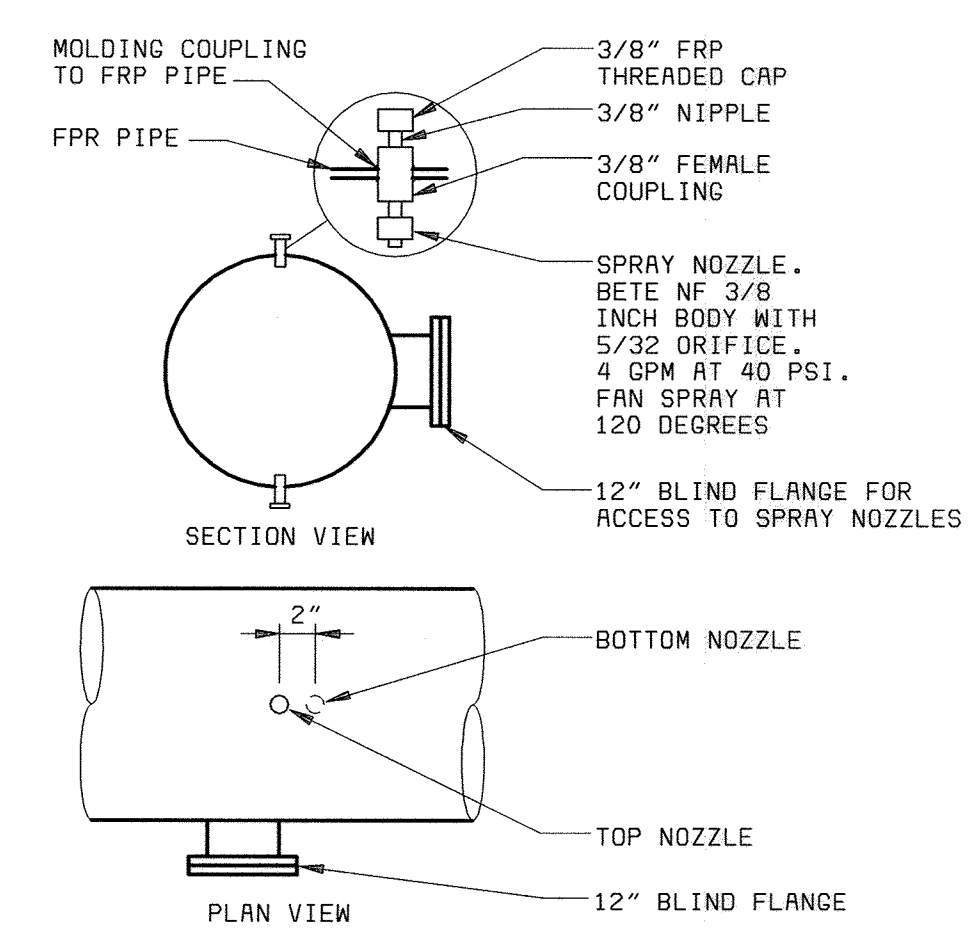
EQUIPMENT SUPPORT (K)
NO SCALE
H15



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

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

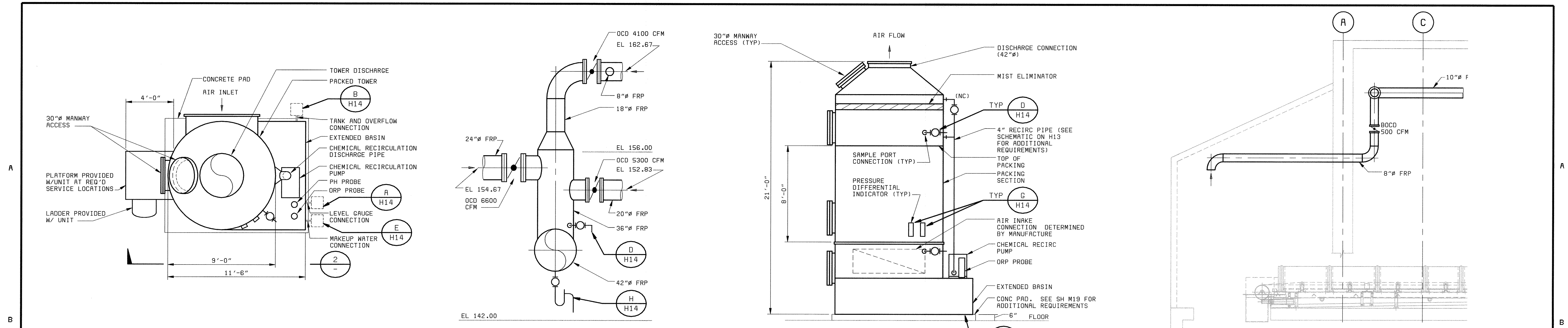
DES: GWP, HX					
DRN: BOL, LDW					
CHK: JEP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			
		REVISIONS AND RECORD OF ISSUE			

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

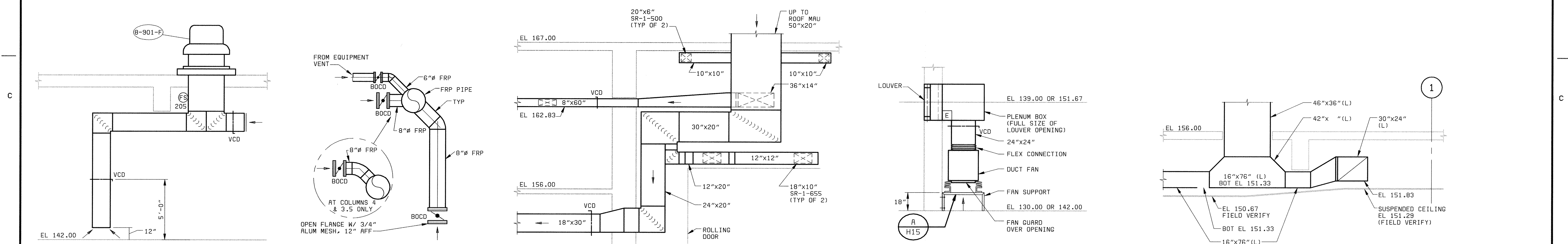


PARTIAL PLAN
1/4" = 1'-0"

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

SECTION 2
1/4" = 1'-0" (M19)

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



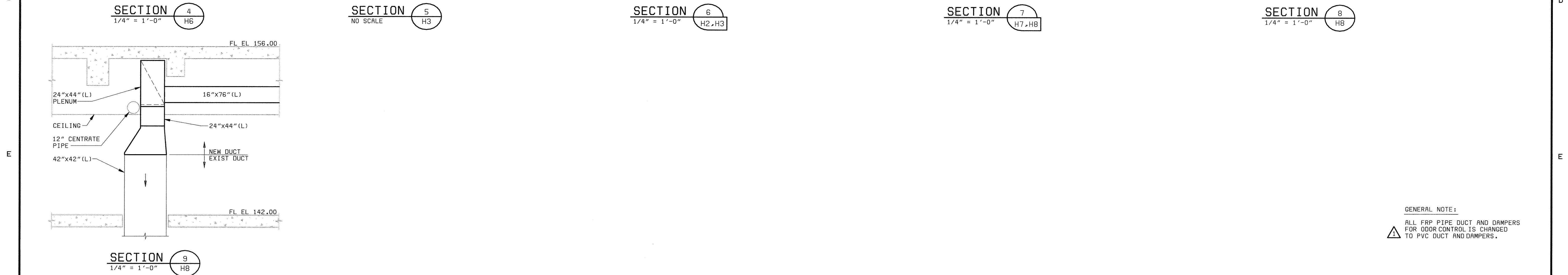
SECTION 4
1/4" = 1'-0" (H6)

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 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 PARTIAL 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 SHEET 102 of 150 H16
			DRN: BDL, LDW CHK: JEP DATE: 5-30-00	07/26/04 CONFORMED TO CONSTRUCTION RECORDS REVISIONS AND RECORD OF ISSUE	RHH/RJR/RJR NO. BY CK APP							

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 unit 8-687-PAC.

NOTES: 1. OUTDOOR COIL ENTERING AIR TEMPERATURE: COOLING -95 F. 2. THE EQUIPMENT SHALL HAVE A MINIMUM EFFICIENCY AT THE ARI STANDARD RATING CONDITIONS OF NOT LESS THAN 8.5. 3. THE EQUIPMENT SHALL HAVE THE MINIMUM 2 CAPACITY STEP REDUCTIONS. REMARKS: 1. PROVIDE LOW AMBIENT COOLING PACKAGE. 2. PROVIDE ECONOMIZER WITH DRY BULB CONTROLS AND POWER EXHAUST (1.0 HP). 3. PROVIDE HOT GAS BYPASS.

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 unit 8-700-F and 8-701-F.

NOTE: 1. FAN SHALL BE SHIPPED CRATED TO JOB SITE. FAN SHALL REMAIN CRATED FOR LONG TERM STORAGE AND PLACED AT A LOCATION DETERMINED BY THE OWNER. THE FAN SHALL HAVE THE MOTOR SPACE HEATER POWER WIRING EXTENDED FOR CONNECTION TO A POWER SOURCE WITHOUT UNCRATING THE FAN.

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 unit 8-700-P.

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 WC), REMARKS. Includes unit 8-700-ME.

ROOF HOOD SCHEDULE

Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), AIR PD (IN WC), TYPE, THROAT SIZE (INxIN), REMARKS. Includes unit RH-301.

TYPE NOTES: I - INTAKE. REMARKS: (1) 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.

AIR OUTLET & INLET DEVICE SCHEDULE

Table with columns: SYMBOL, MODEL, FRAME/BORDER, MATERIAL, FINISH, DAMPER TYPE, ACCESSORIES, REMARKS. Includes units SR-1, ER-1, EG-1.

NOTES: (1) 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 units from 8-900-F to 8-914-F.

DRIVE NOTES: D - DIRECT, B - BELT. REMARKS: (1) - CENTRIFUGAL, (2) - EXPLOSION-PROOF.

HEATER SCHEDULE

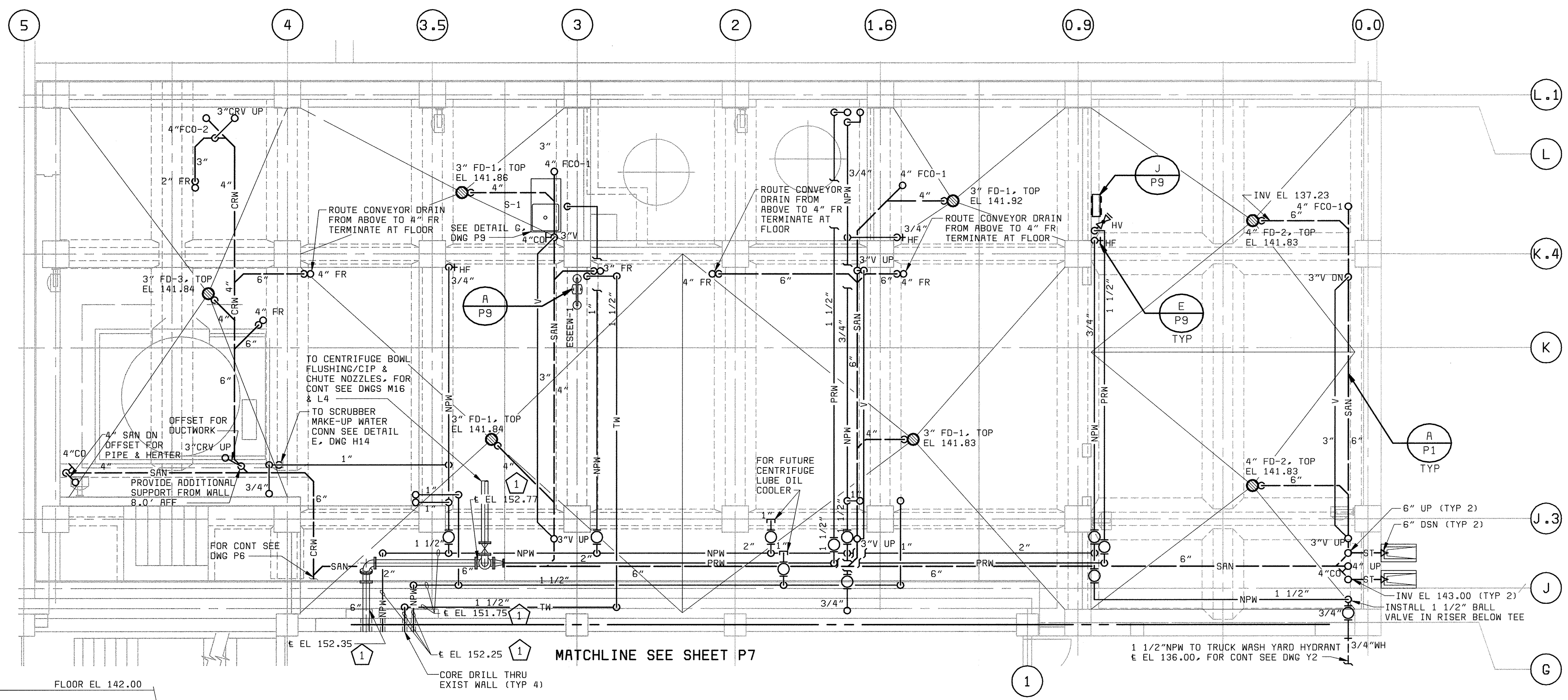
Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), AIR PD (IN WC), OUTPUT CAPACITY (BTUH, KW), WATER FLOW (GPM), WATER PD (FT), MOTOR HP, POWER SUPPLY VOLTS/PHASE, APPROX WT (LBS), REMARKS. Lists units from 8-772-HT to 8-786-HT.

MAKEUP AIR UNIT SCHEDULE

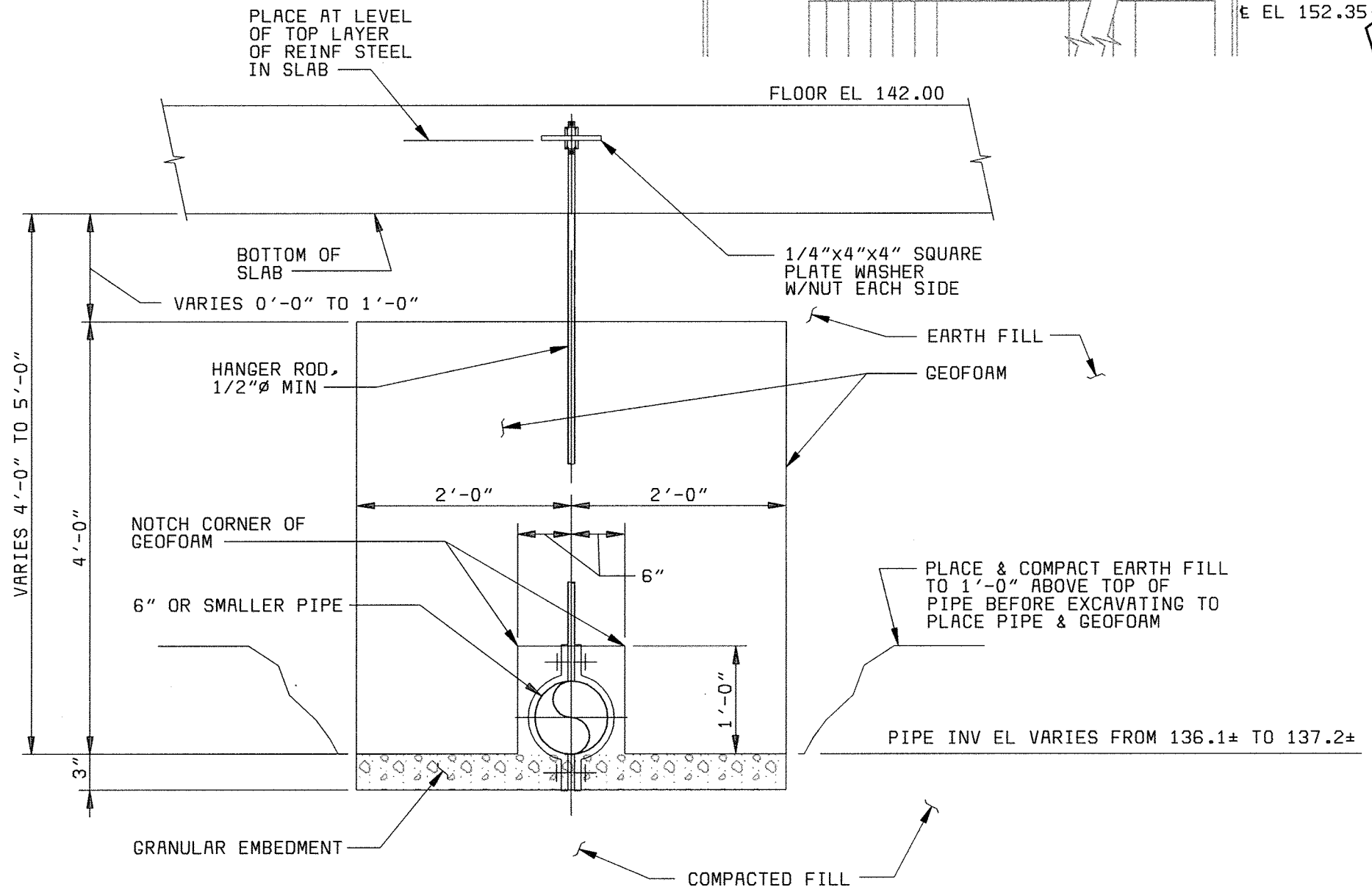
Table with columns: UNIT NO, LOCATION, AIRFLOW (CFM), ESP (IN WG), MOTOR HP, POWER SUPPLY VOLTS/PHASE, HEATER CAPACITY (BTUH), MIN WHEEL DIA (IN), APPROX WT (LBS), REMARKS. Lists units from 8-680-MAU to 8-686-MAU.

REMARKS: (1) - FILTER VELOCITY SHALL NOT EXCEED 350 FEET PER MINUTE. (2) - SPRING TYPE VIBRATION ISOLATORS.

Project header information including: DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MARYLAND; BLACK & VEATCH logo and contact info; PROJECT TITLE: HVAC/PLUMBING, HVAC/ODOR CONTROL, LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY; SHEET 103 OF 150, H17.



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

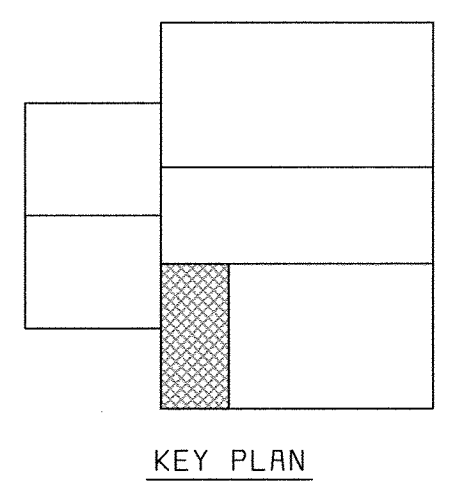


BELOW SLAB DRAINAGE SUPPORT DETAIL
NO SCALE

- 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:

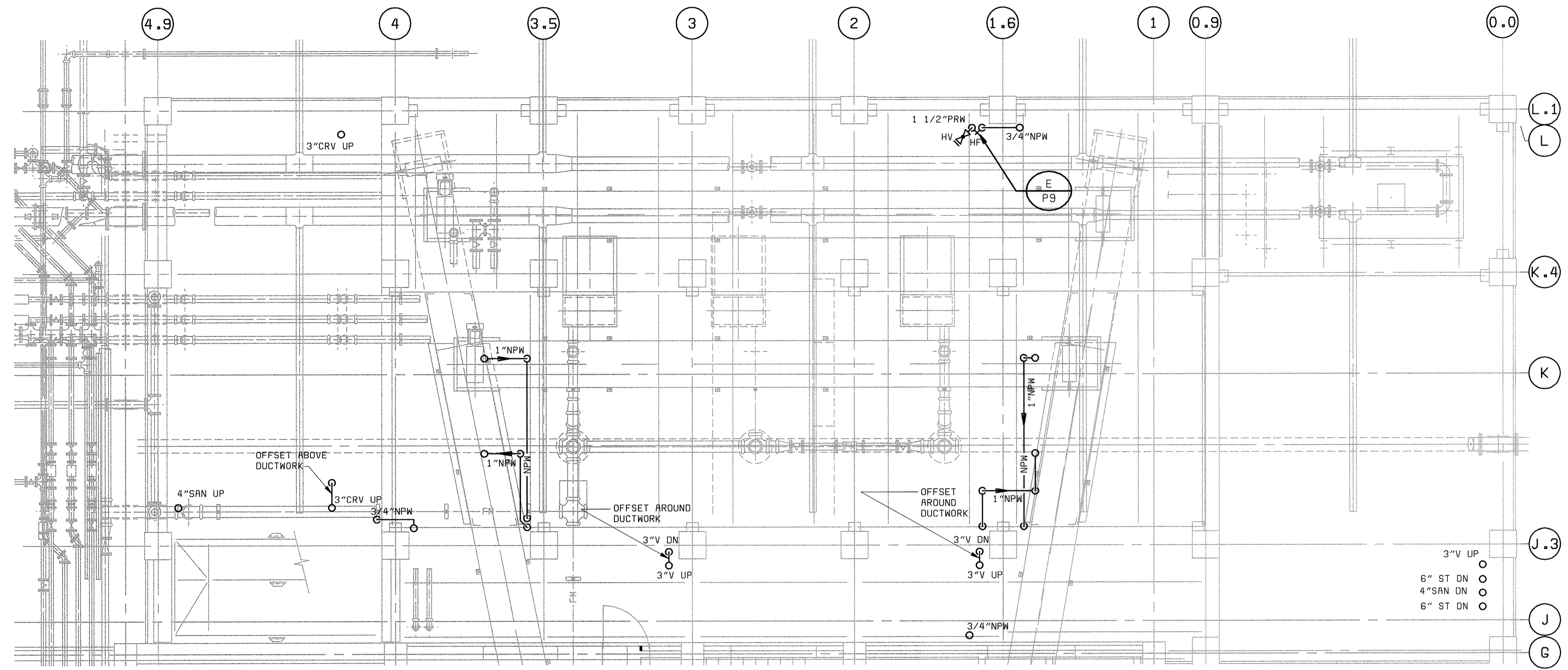
1 ELEVATIONS SHOWN ARE FOR REFERENCE ONLY. FIELD VERIFY BEFORE PIPE FABRICATION.



XREF: 58472-001-322-PIPE
XREF: 58472-203-SOLS-S-R0000018

D66472
P58472R

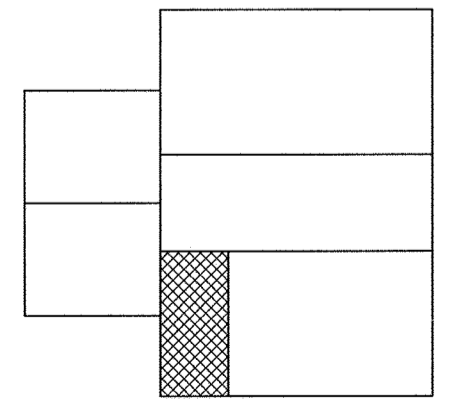
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC								HVAC/PLUMBING PLUMBING 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: 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:

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



KEY PLAN

58472-401-203-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
Gaithersburg, Maryland
REG. PROF. ENGR. DATE

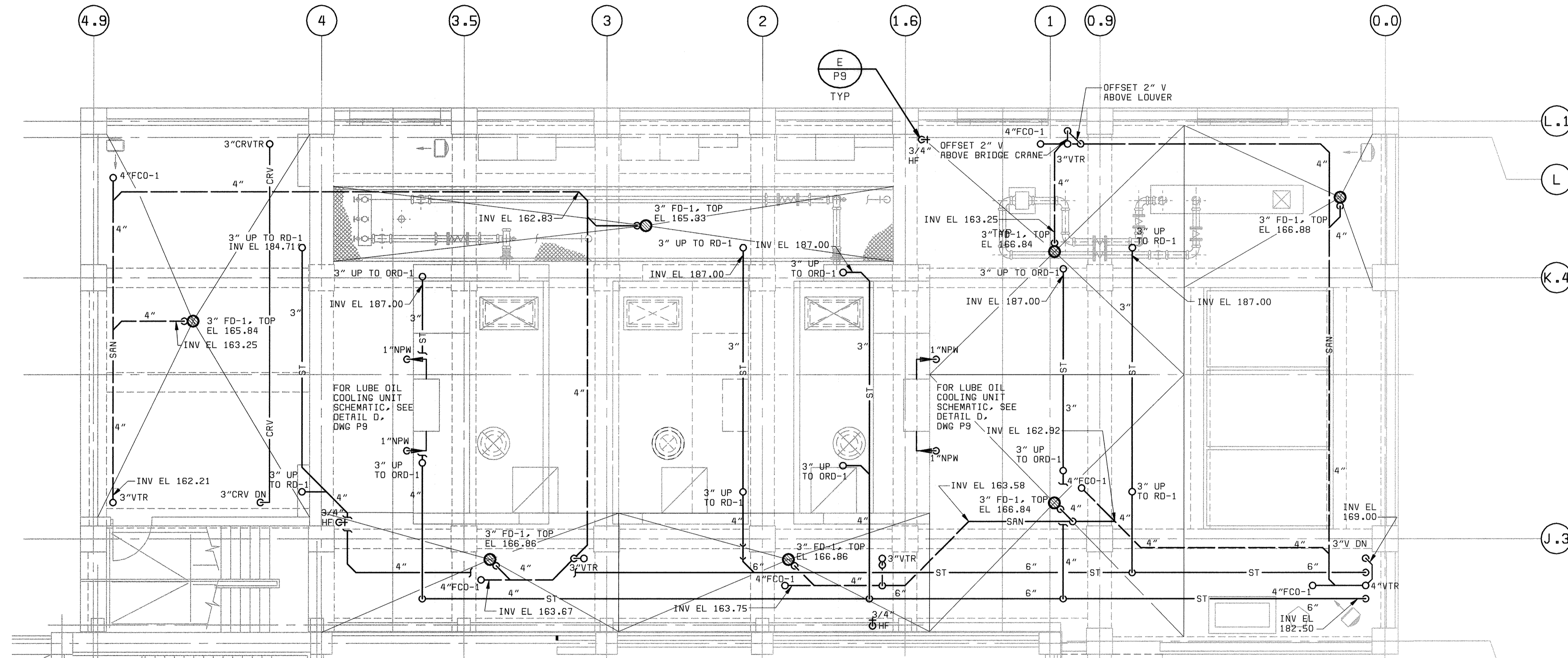
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IN THE
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NO. 21992

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

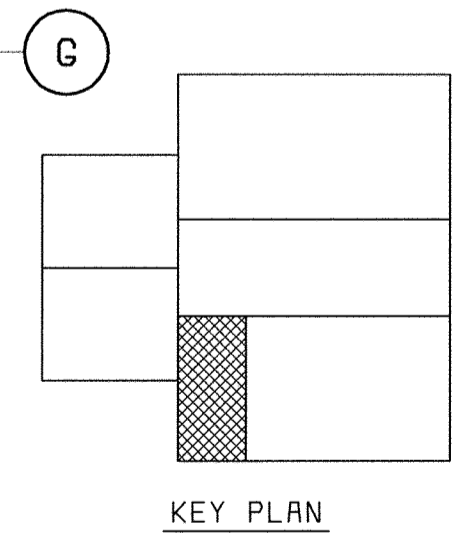
HVAC/PLUMBING
PLUMBING
CENTRIFUGE BUILDING EXPANSION
PLAN AT EL 156.00

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"



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
Gaithersburg, Maryland

REG. PROF. ENGR.

DATE

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NO. 21992

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

07/26/04
DATE

CONFORMED TO CONSTRUCTION RECORDS
REVISIONS AND RECORD OF ISSUE

RHH/RJR/RJR
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

EXIST 4" POTABLE
WATER SUPPLY
E EL 133.00*

W-201
F
P9

BFP-201

BFP-202

REMOVE EXIST WATER SUPPLY
PIPING FROM HERE TO FLANGE
AT WALL

4" CW NPK
2" CW NPK
E EL 137.08

E EL 136.00

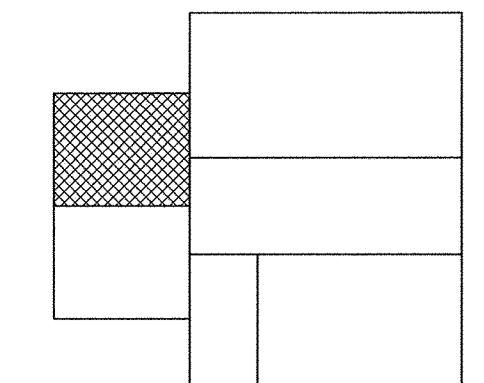
E EL 137.08

MATCHLINE SEE SHEET P6

MATCHLINE SEE SHEET P5

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

PLAN NOTES:
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

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DES: JPC					
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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
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
108 OF 150
P4

1 2 3 4 5 6 7 8 9 10

A

B

C

D

E

A

B

C

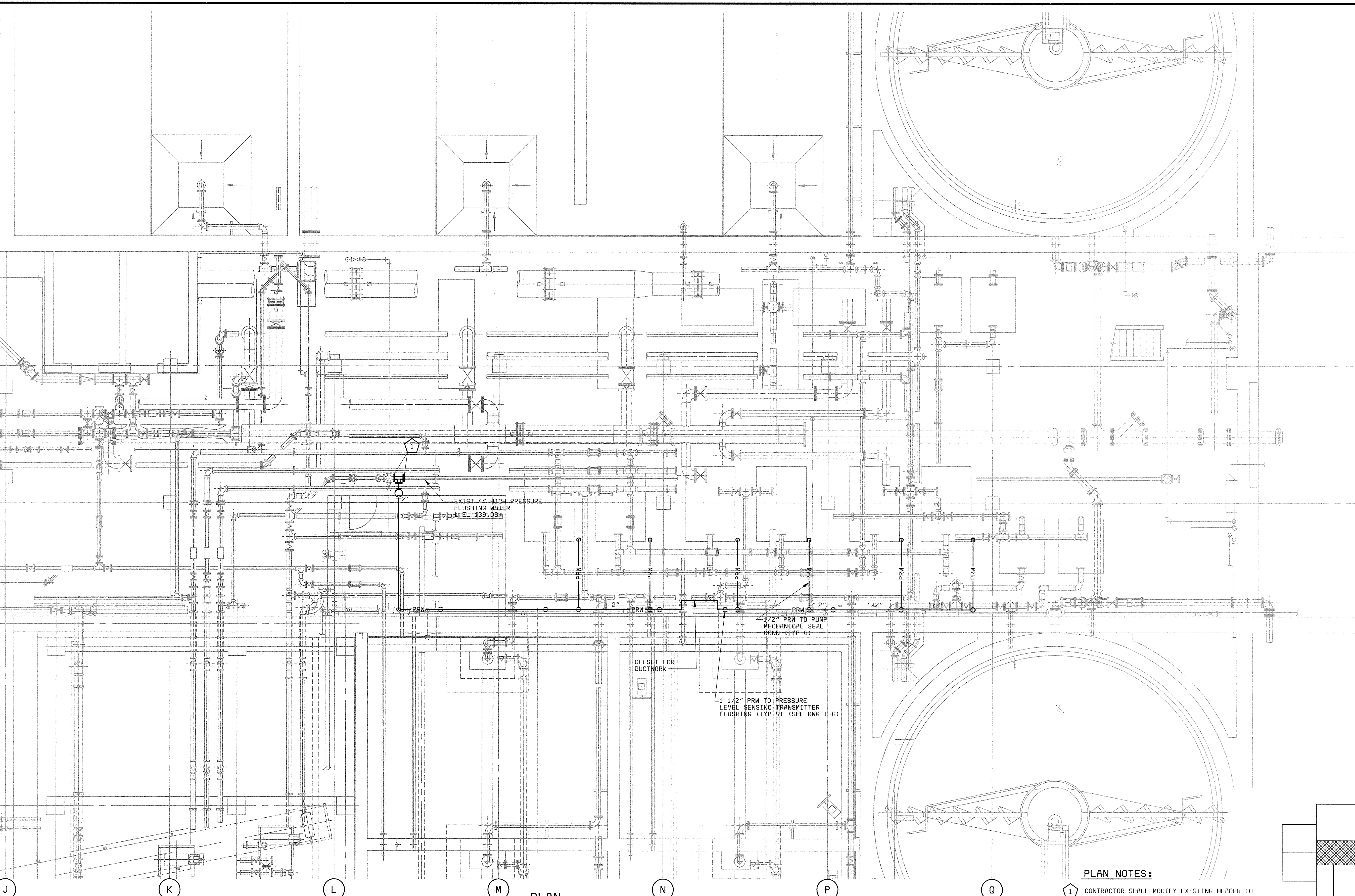
D

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



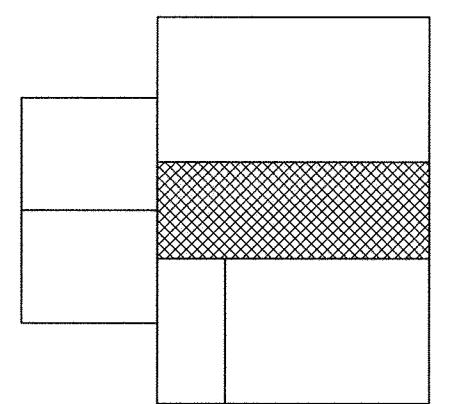
EXIST 4" HIGH PRESSURE
FLUSHING WATER
ELEV 139.08

1 1/2" PRN TO PUMP
MECHANICAL SEAL
CONN (TYP 6)

1 1/2" PRN TO PRESSURE
LEVEL SENSING TRANSMITTER
FLUSHING (TYP 5) (SEE DWG I-6)

OFFSET FOR
DUCTWORK

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



PLAN
3/16" = 1'-0"

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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NO. 21992

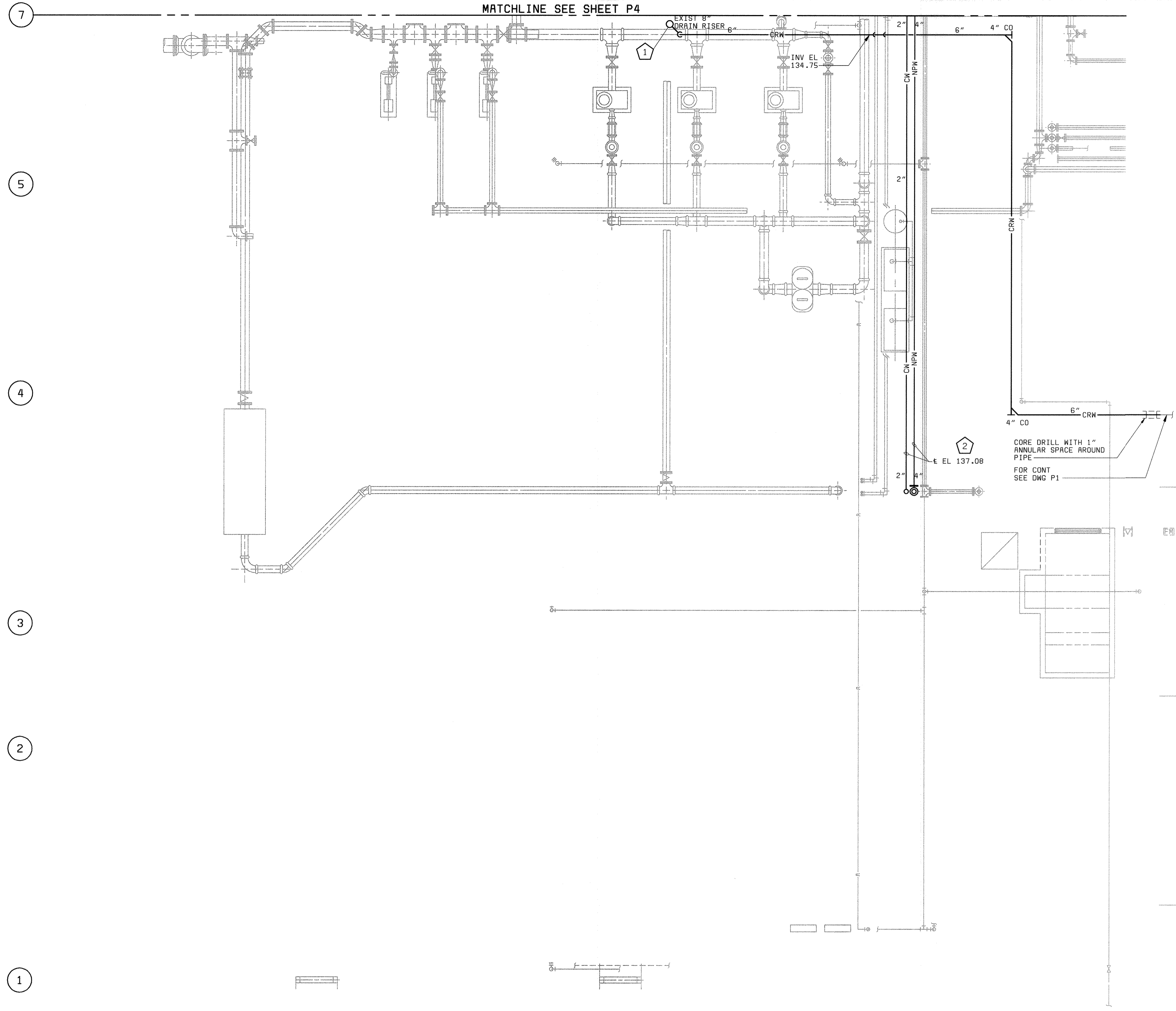
DES: JPC					
DRN: JPC					
CHK: MLP					
DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
		REVISIONS AND RECORD OF ISSUE	NO.	BY	APP

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

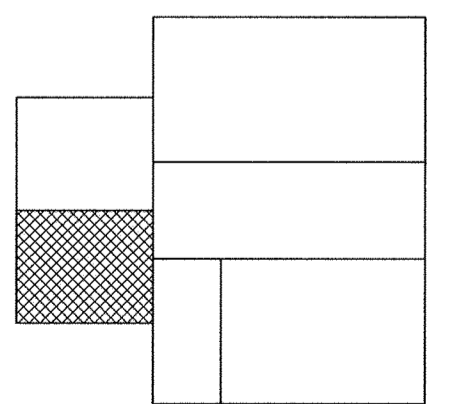
SCALE
AS
SHOWN
SHEET
109 OF 150
P5

MATCHLINE SEE SHEET P4



2
CORE DRILL WITH 1" ANNU-LAR 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.

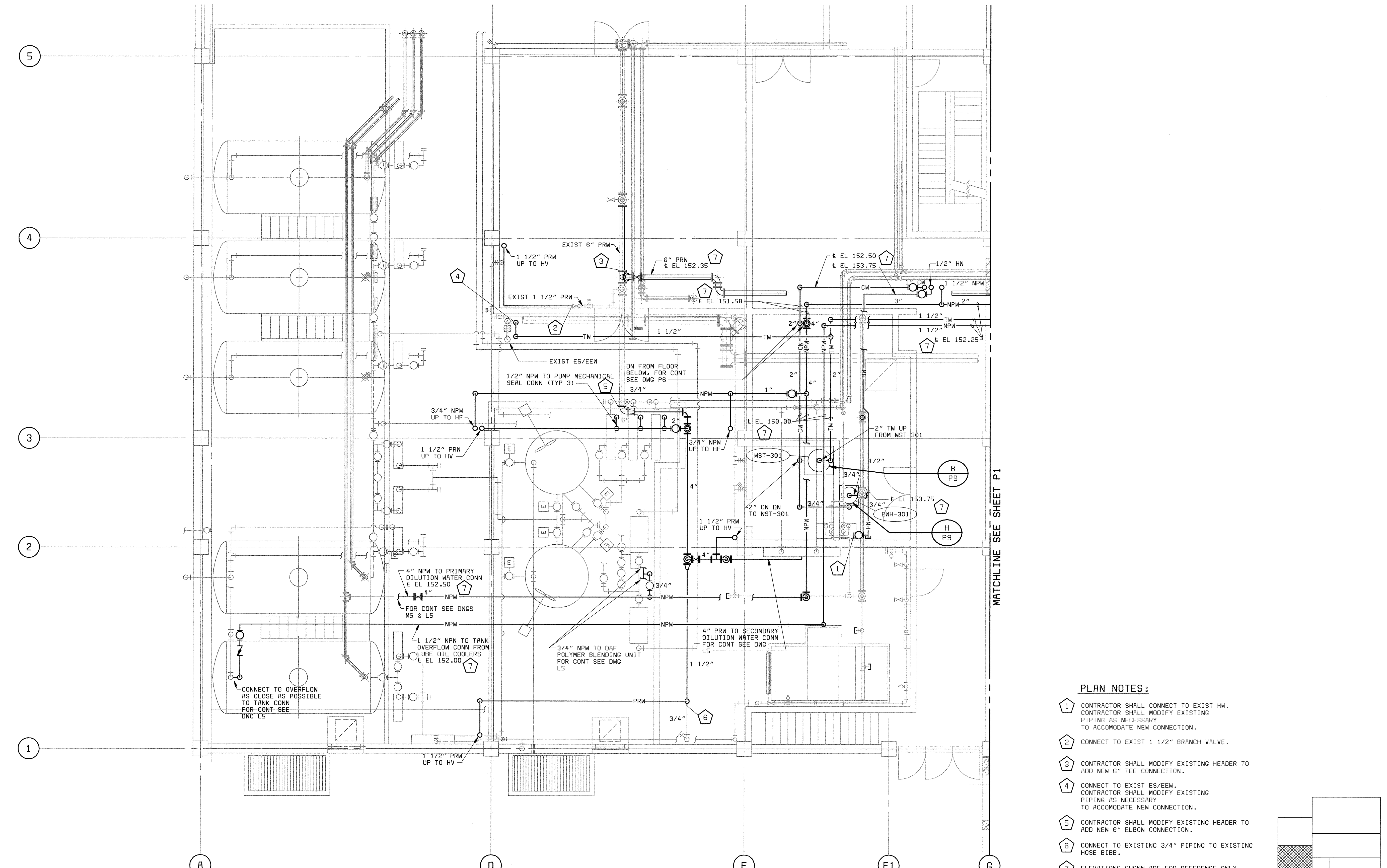
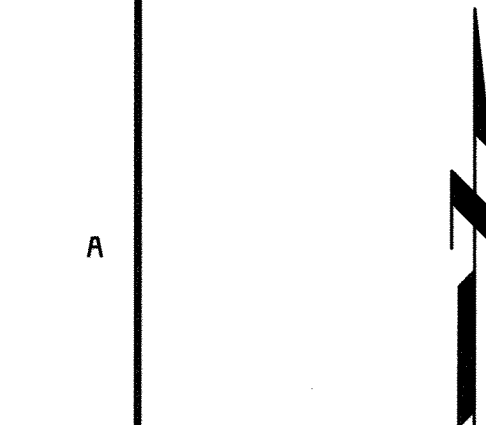


KEY PLAN

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

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

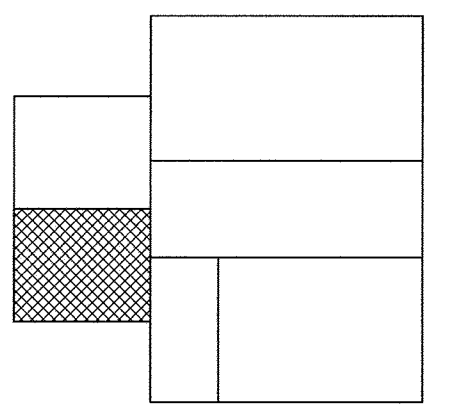
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC				HVAC/PLUMBING 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						SHEET 110 OF 150 P6
			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			



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

MATCHLINE SEE SHEET P1

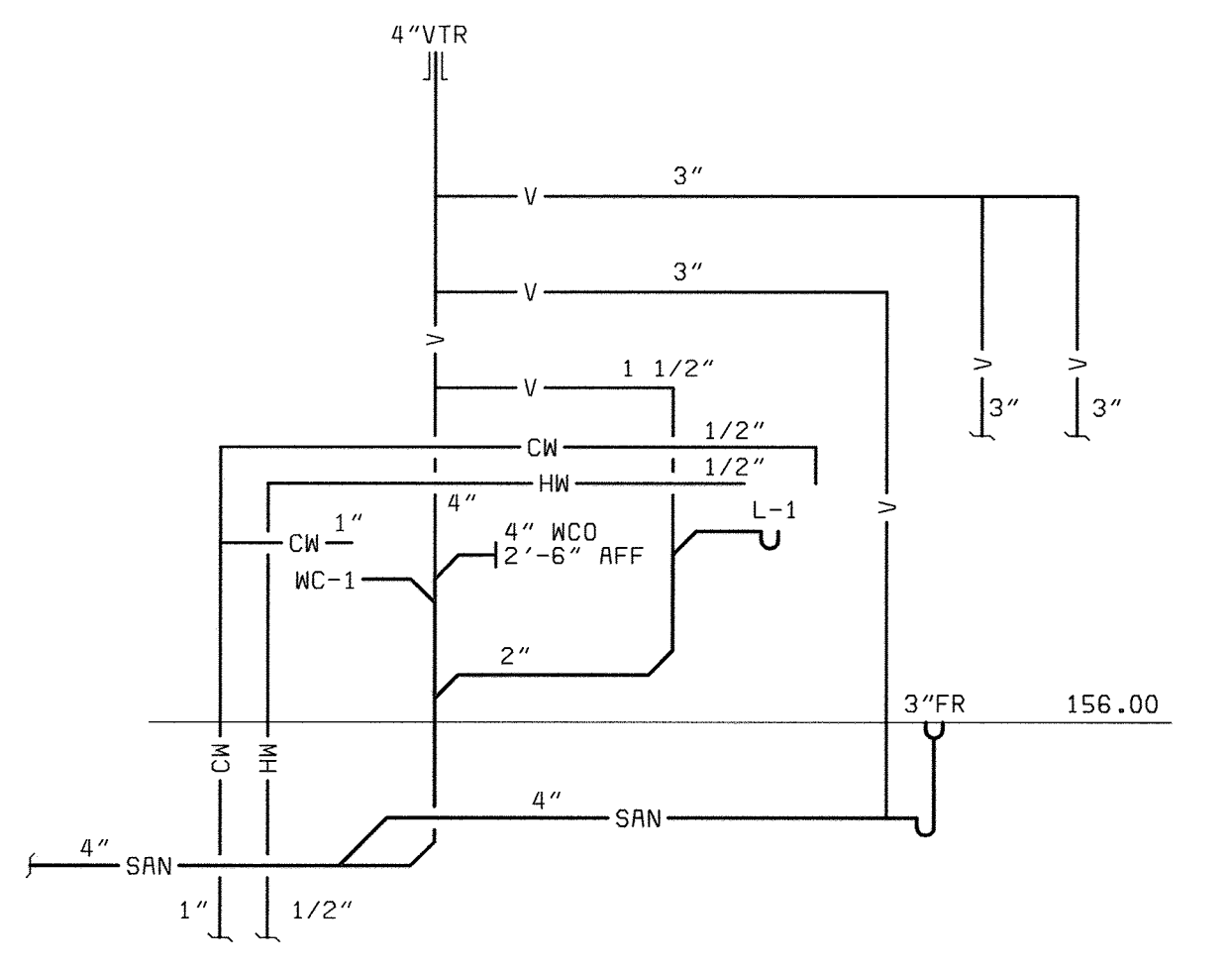
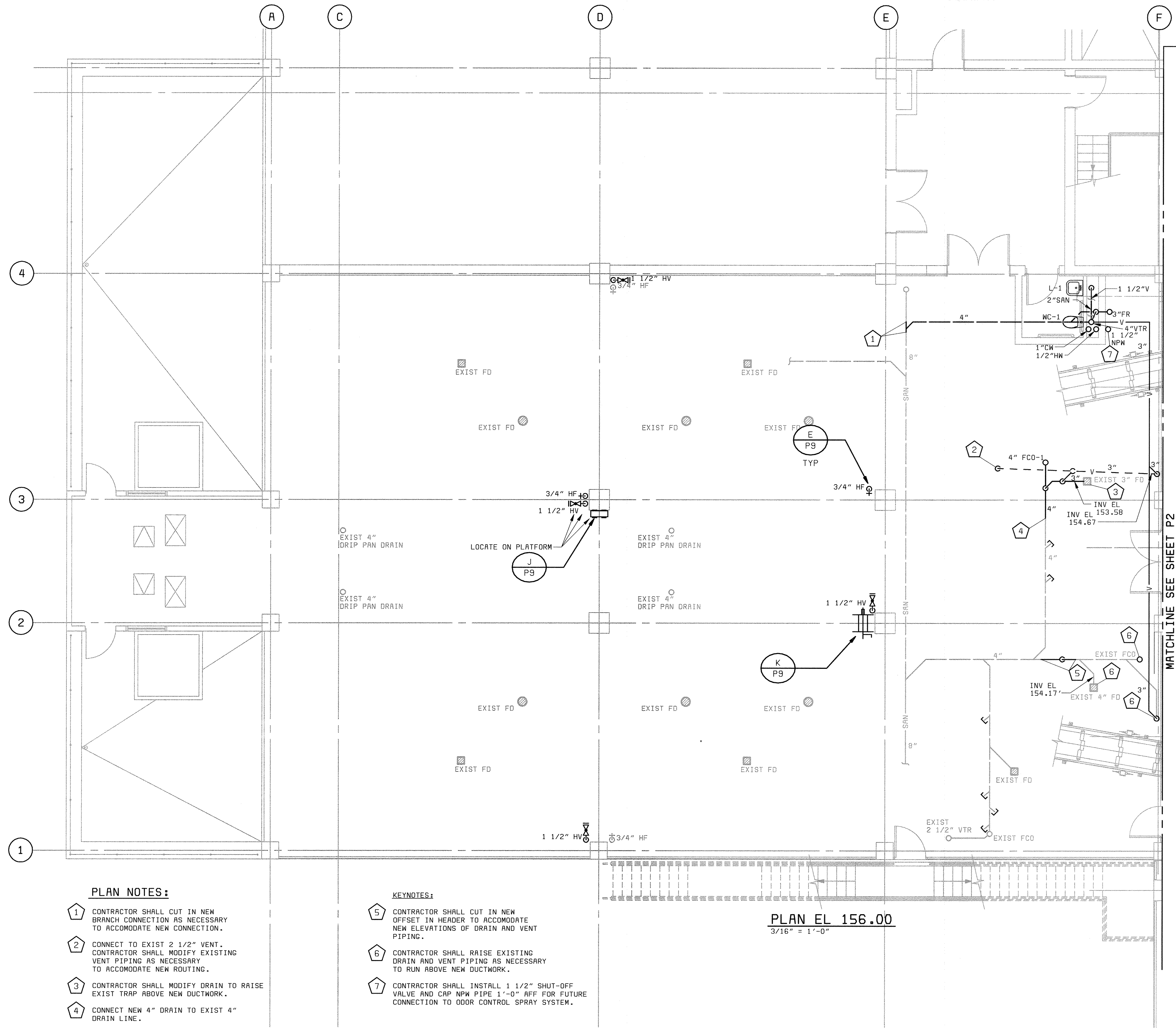
- PLAN NOTES:**
- 1 CONTRACTOR SHALL CONNECT TO EXIST HW. CONTRACTOR SHALL MODIFY EXISTING PIPING AS NECESSARY TO ACCOMMODATE NEW CONNECTION.
 - 2 CONNECT TO EXIST 1 1/2" BRANCH VALVE.
 - 3 CONTRACTOR SHALL MODIFY EXISTING HEADER TO ADD NEW 6" TEE CONNECTION.
 - 4 CONNECT TO EXIST ES/EEM. CONTRACTOR SHALL MODIFY EXISTING PIPING AS NECESSARY TO ACCOMMODATE NEW CONNECTION.
 - 5 CONTRACTOR SHALL MODIFY EXISTING HEADER TO ADD NEW 6" ELBOW CONNECTION.
 - 6 CONNECT TO EXISTING 3/4" PIPING TO EXISTING HOSE BIBB.
 - 7 ELEVATIONS SHOWN ARE FOR REFERENCE ONLY. FIELD VERIFY BEFORE PIPE FABRICATION.



KEY PLAN

XREF: 58472-204-SOLS-HH-R0000542
XREF: 58472-401-232-C016
068472.2
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 MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC							HVAC/PLUMBING 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	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR				
												P7



RESTROOM RISER DIAGRAM
NO SCALE

PLAN NOTES:

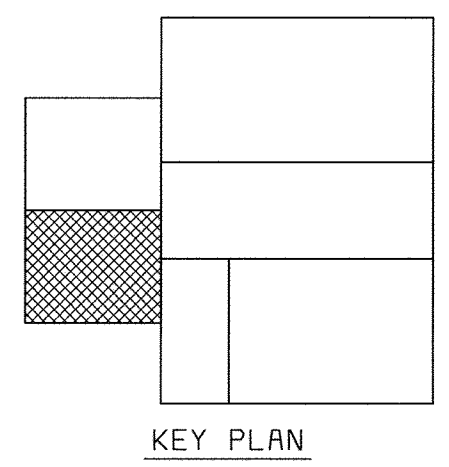
- 1 CONTRACTOR SHALL CUT IN NEW BRANCH CONNECTION AS NECESSARY TO ACCOMMODATE NEW CONNECTION.
- 2 CONNECT TO EXIST 2 1/2" VENT. CONTRACTOR SHALL MODIFY EXISTING VENT PIPING AS NECESSARY TO ACCOMMODATE NEW ROUTING.
- 3 CONTRACTOR SHALL MODIFY DRAIN TO RAISE EXIST TRAP ABOVE NEW DUCTWORK.
- 4 CONNECT NEW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

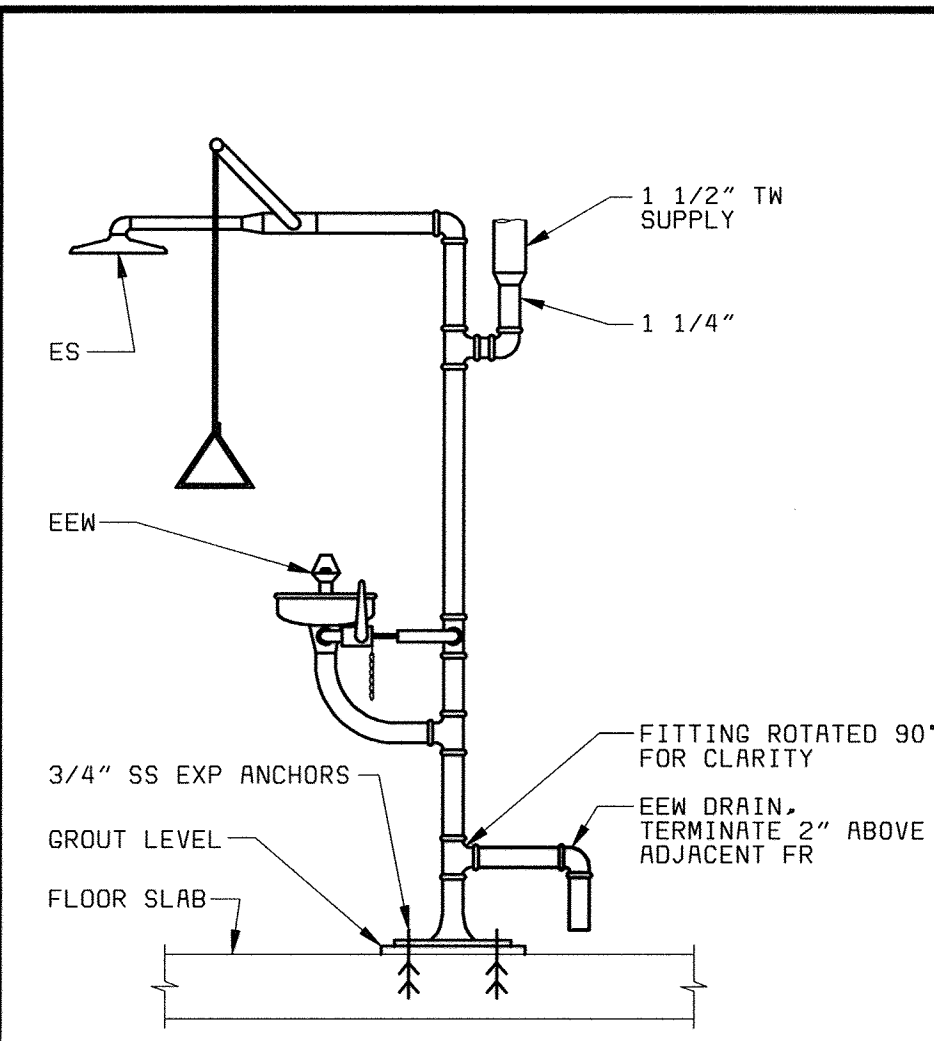


KEY PLAN

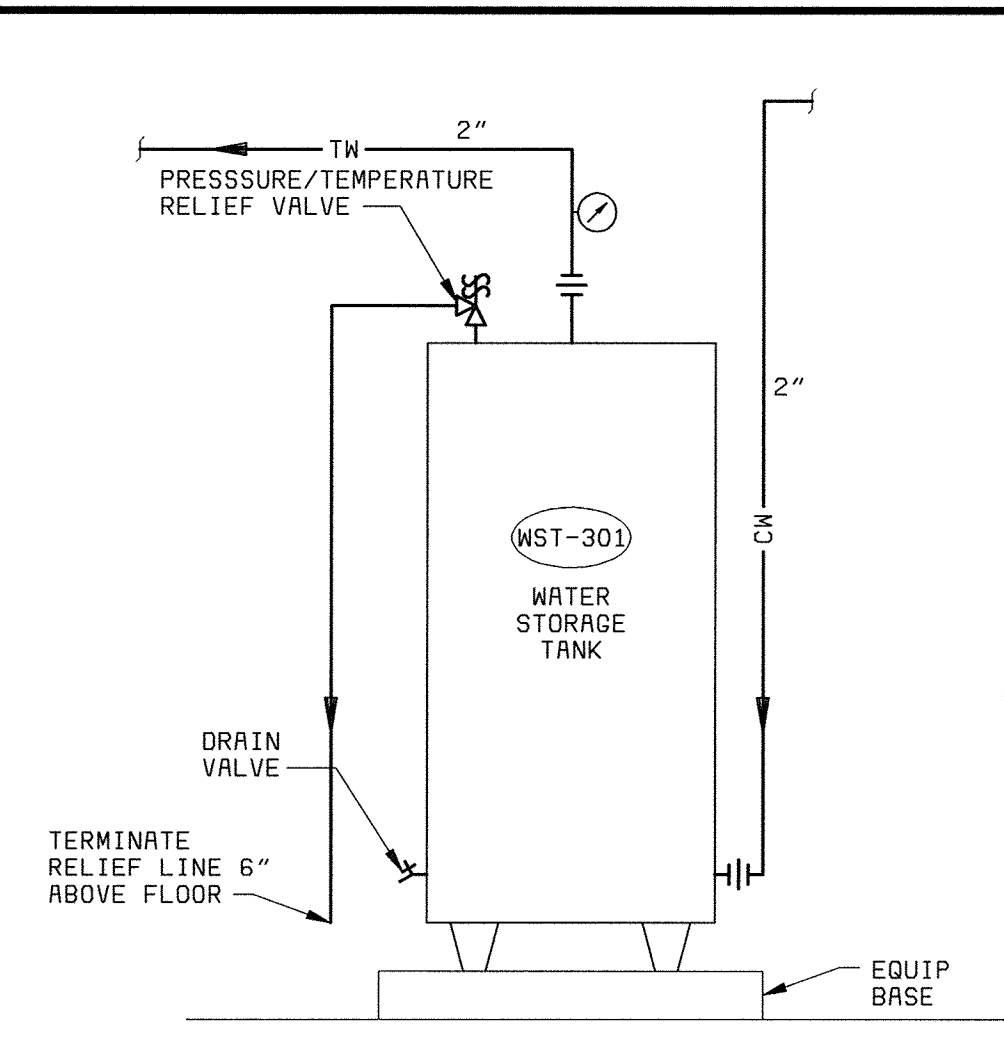
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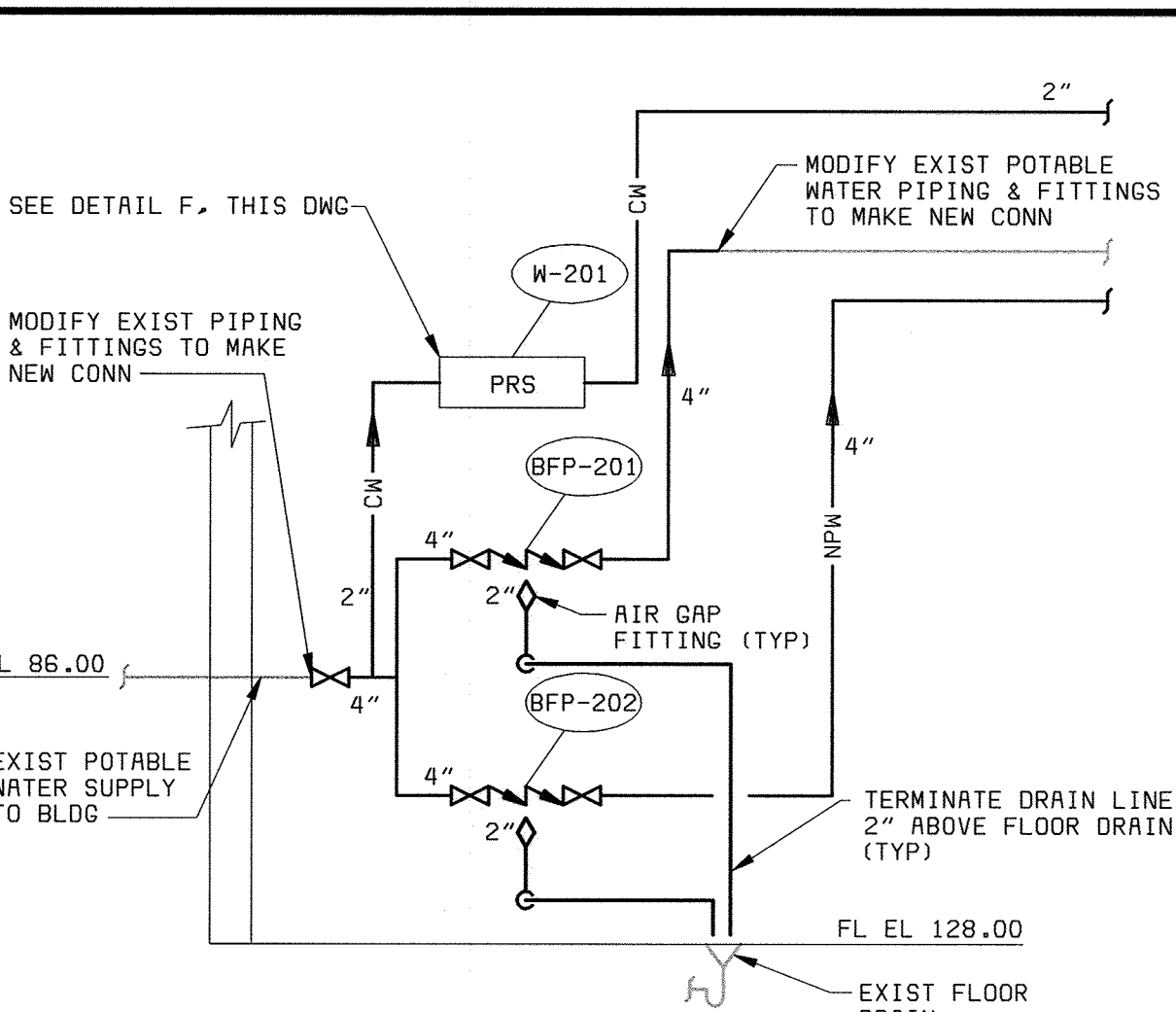
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY MARTIN L. PAPE A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21992	DES: JPC							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
			DRN: JPC	CHK: MLP	DATE: 5-30-00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH/RJR/RJR				



EMERGENCY SHOWER AND EYEWASH PIPING DETAIL (A)
NO SCALE



WST-301 PIPING DETAIL (B)
NO SCALE

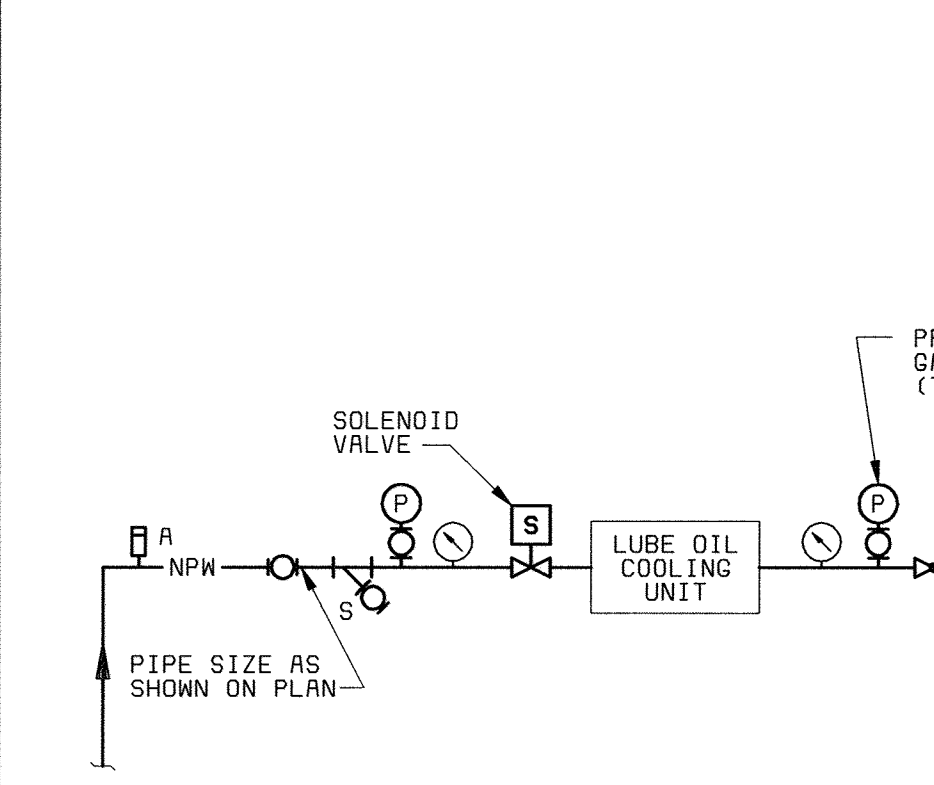


BUILDING WATER SUPPLY SCHEMATIC (C)
NO SCALE

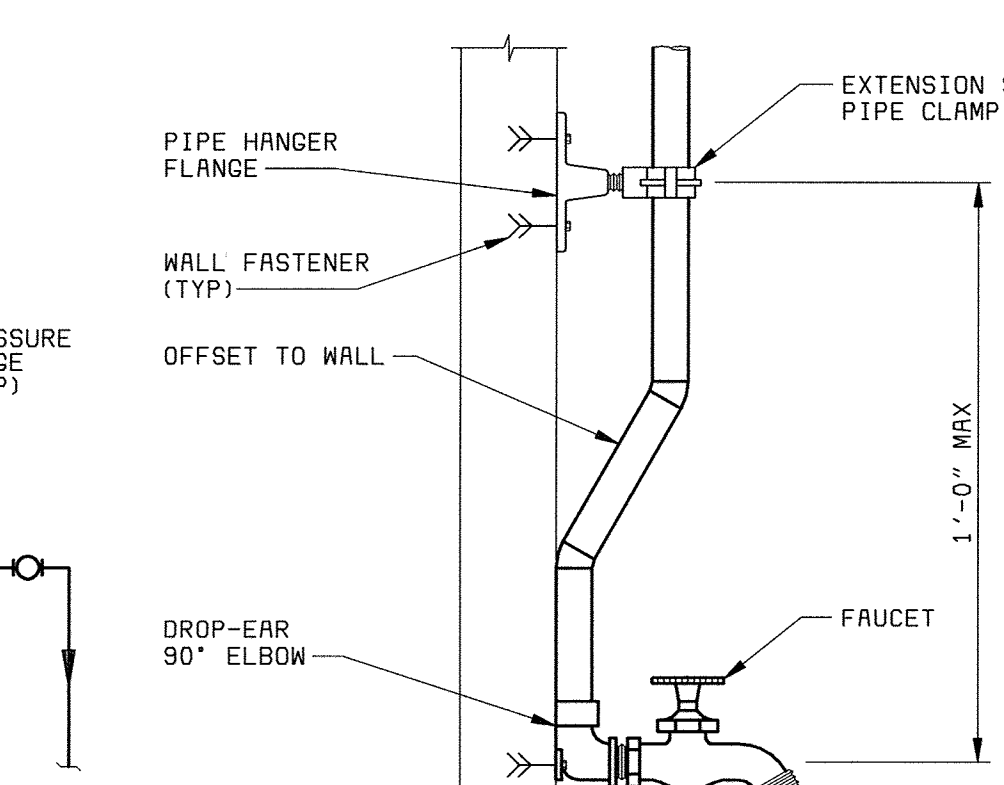
UNIT NO	SERVICE	BODY SIZE (IN)	MAXIMUM FLOW (GPM)	MAXIMUM PD (PSI)	MANUFACTURER MODEL	REMARKS
BFP-201	POTABLE WATER SERVICE	4	190	13	FEBCO 860	
BFP-202	NONPOTABLE WATER SERVICE	4	219	13	FEBCO 860	

NOTES:

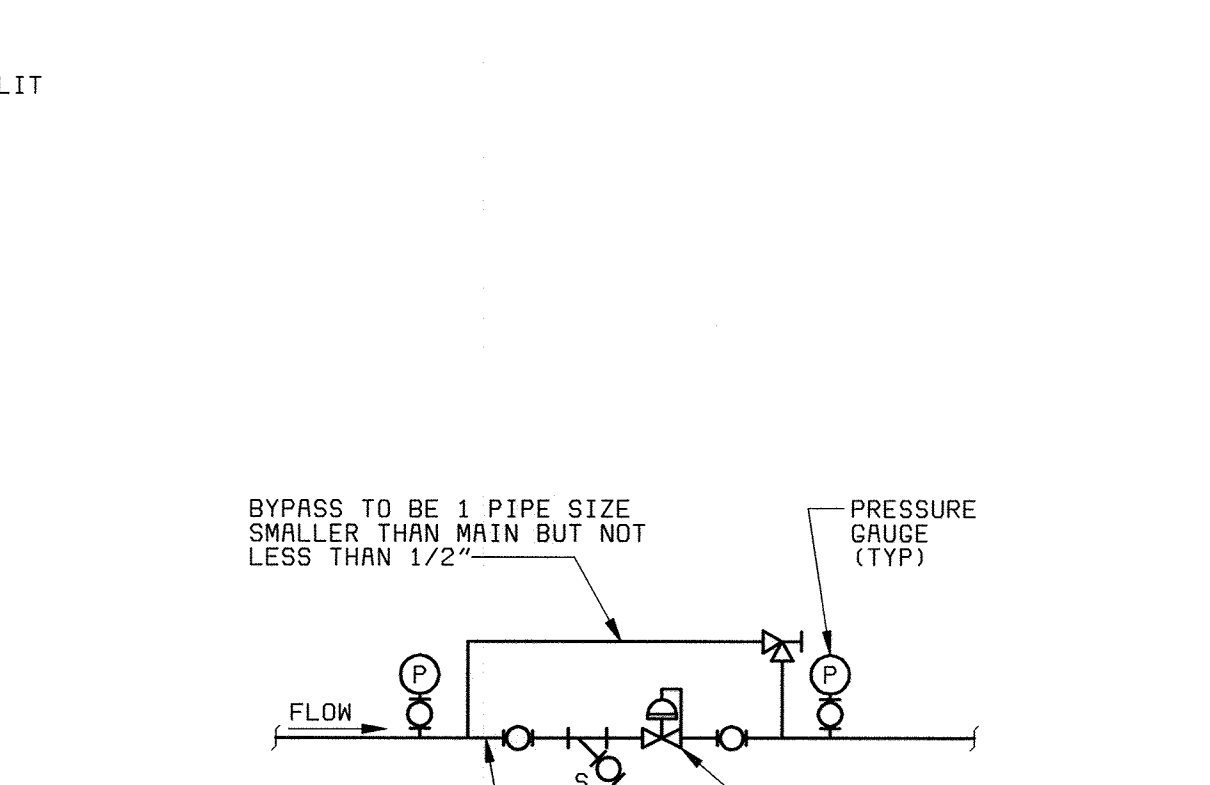
LABEL	DESCRIPTION	MANUFACTURER MODEL	REMARKS
ES/EEW-1	EMERGENCY SHOWER/EYE/FACEWASH COMBINATION, PEDESTAL MOUNTED, 1-1/4 INCH IPS SUPPLY.	HAWS-8346	
L-1	LAVATORY, WALL HUNG, 21 X 18 INCHES, WITH 2.0 GPM AERATED FAUCET AND POP-UP DRAIN.	LAVATORY-KOHLER K-2005 KINGSTON FAUCET-KOHLER K-15583 CORALAIS	
WC-1	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

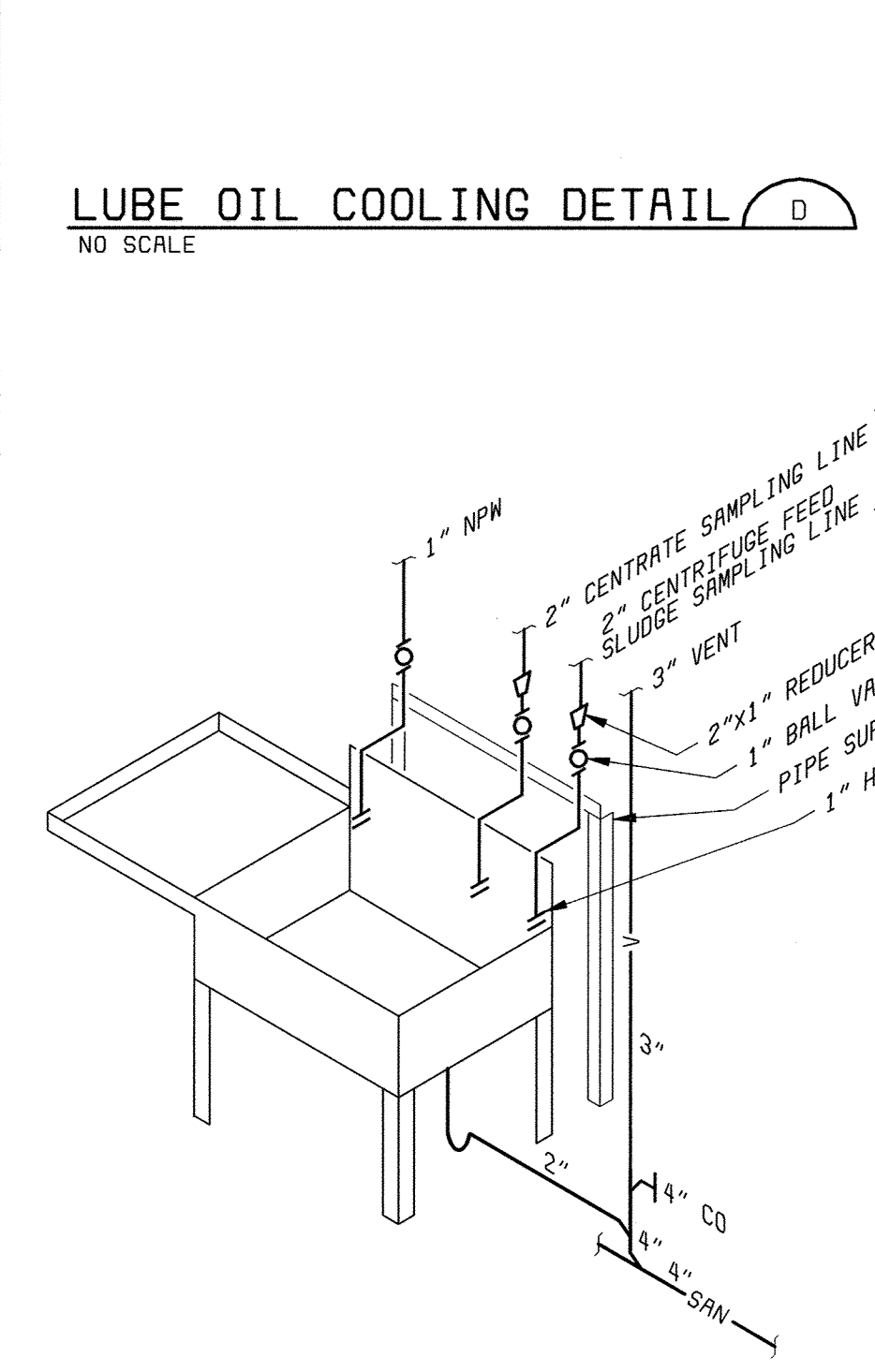


PRESSURE REDUCING STATION (PRS) DETAIL (F)
NO SCALE

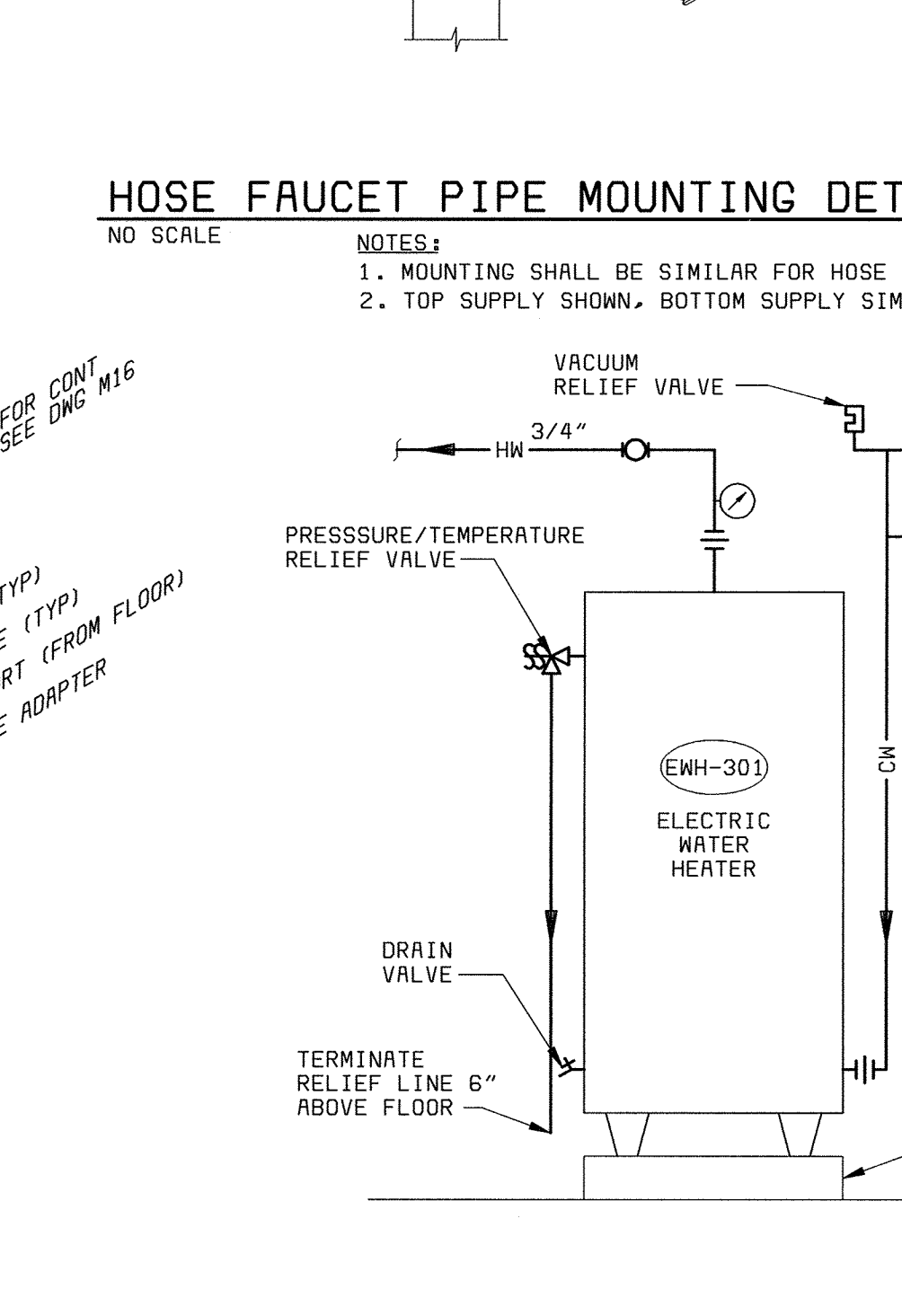
UNIT NO	SERVICE	TYPE*	FLOW RATE**			REDUCED PRESSURE SETPOINT PSIG	INLET PRESSURE PSIG		MINIMUM PRESSURE AT MAX FLOW PSIG	REMARKS
			MAX	ORD	MIN		MAX	MIN		
W-201	CW TO POTABLE WATER SYSTEM	DA	50	5	0	70	90	80	65	

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

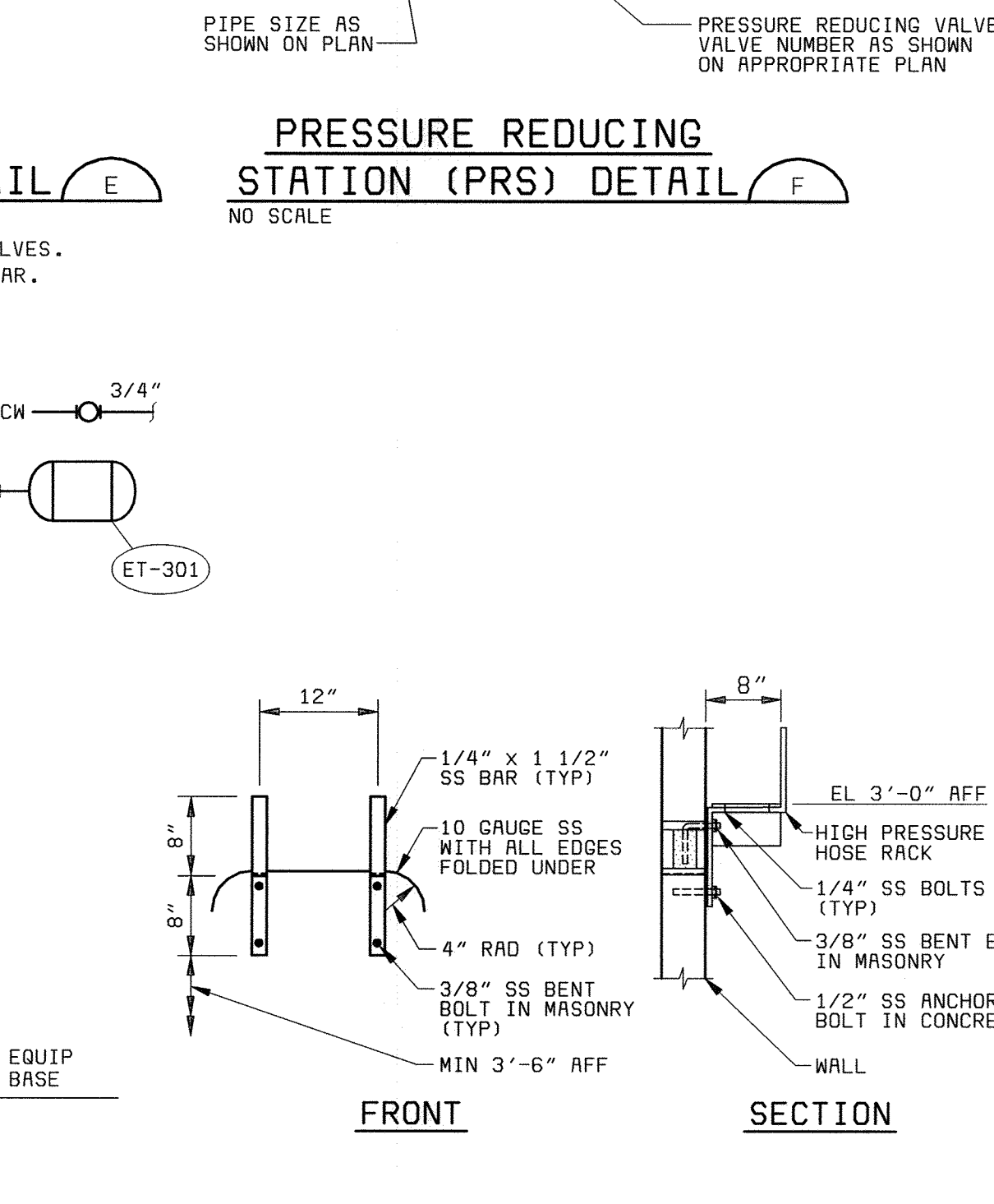
REMARKS:



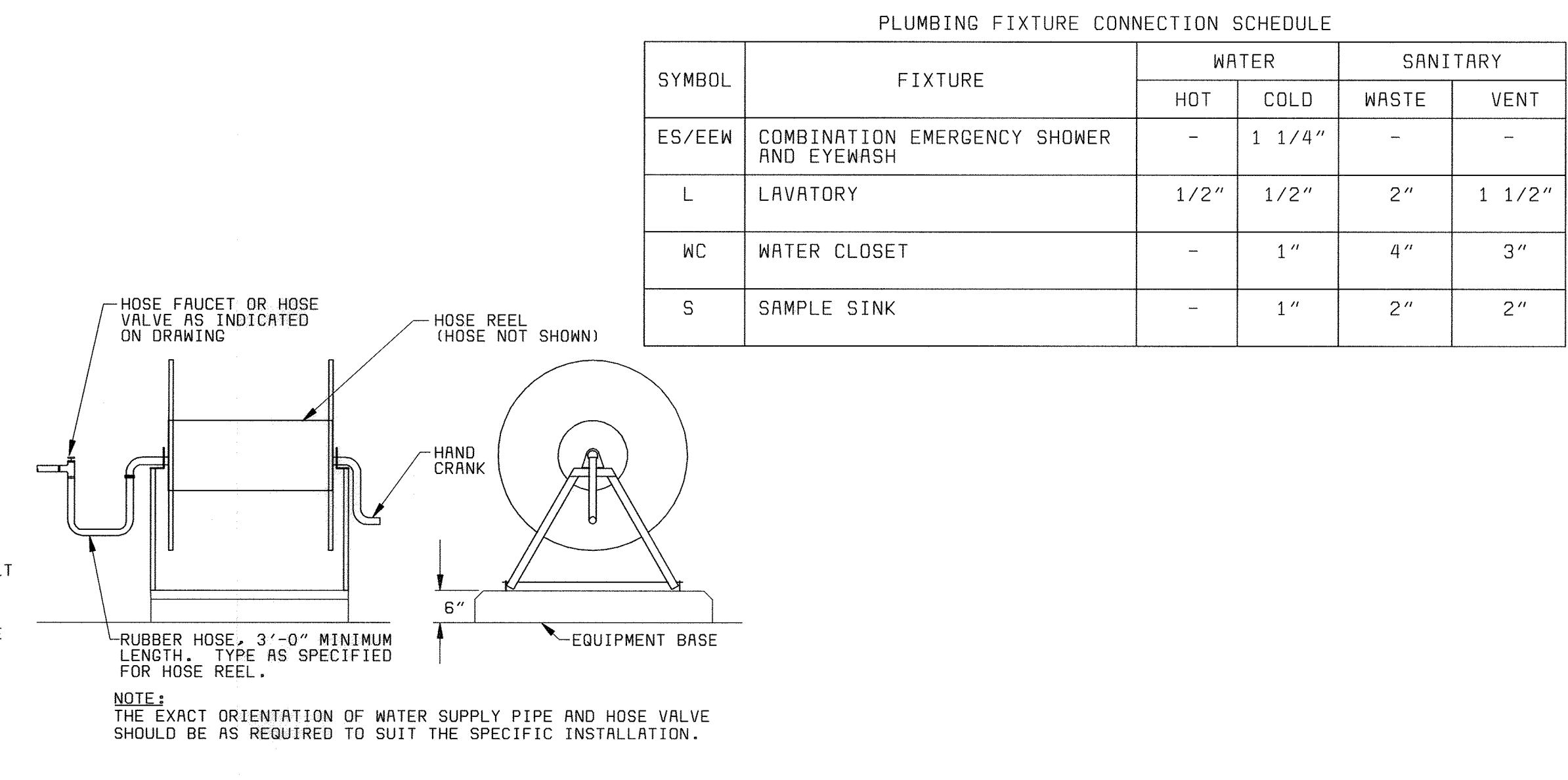
SAMPLE SINK PIPING DETAIL (G)
NO SCALE



EWH-301 PIPING DETAIL (H)
NO SCALE



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



HOSE REEL DETAIL (K)
NO SCALE

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

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
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
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A

B

C

D

E

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A

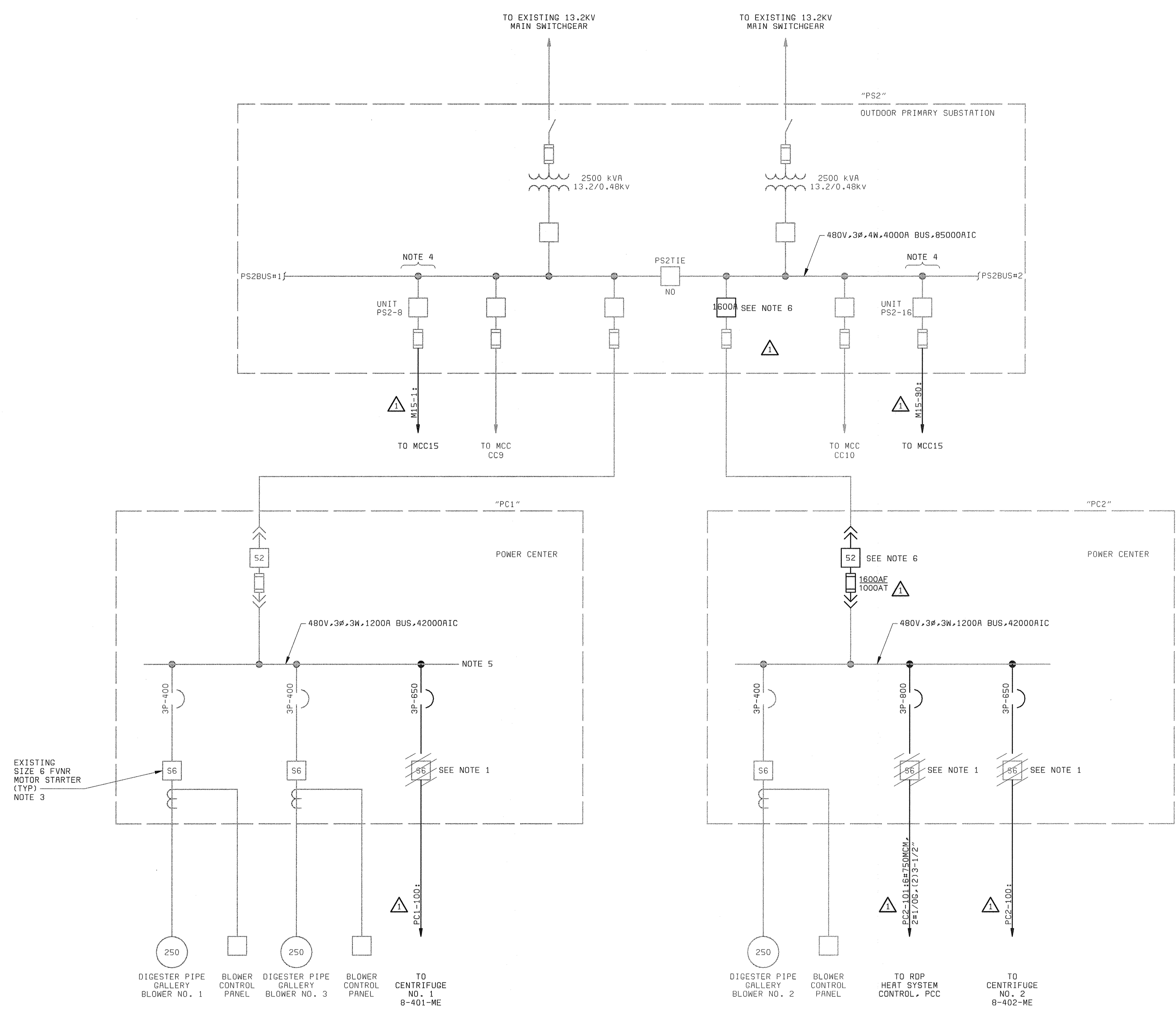
B

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

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: 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**

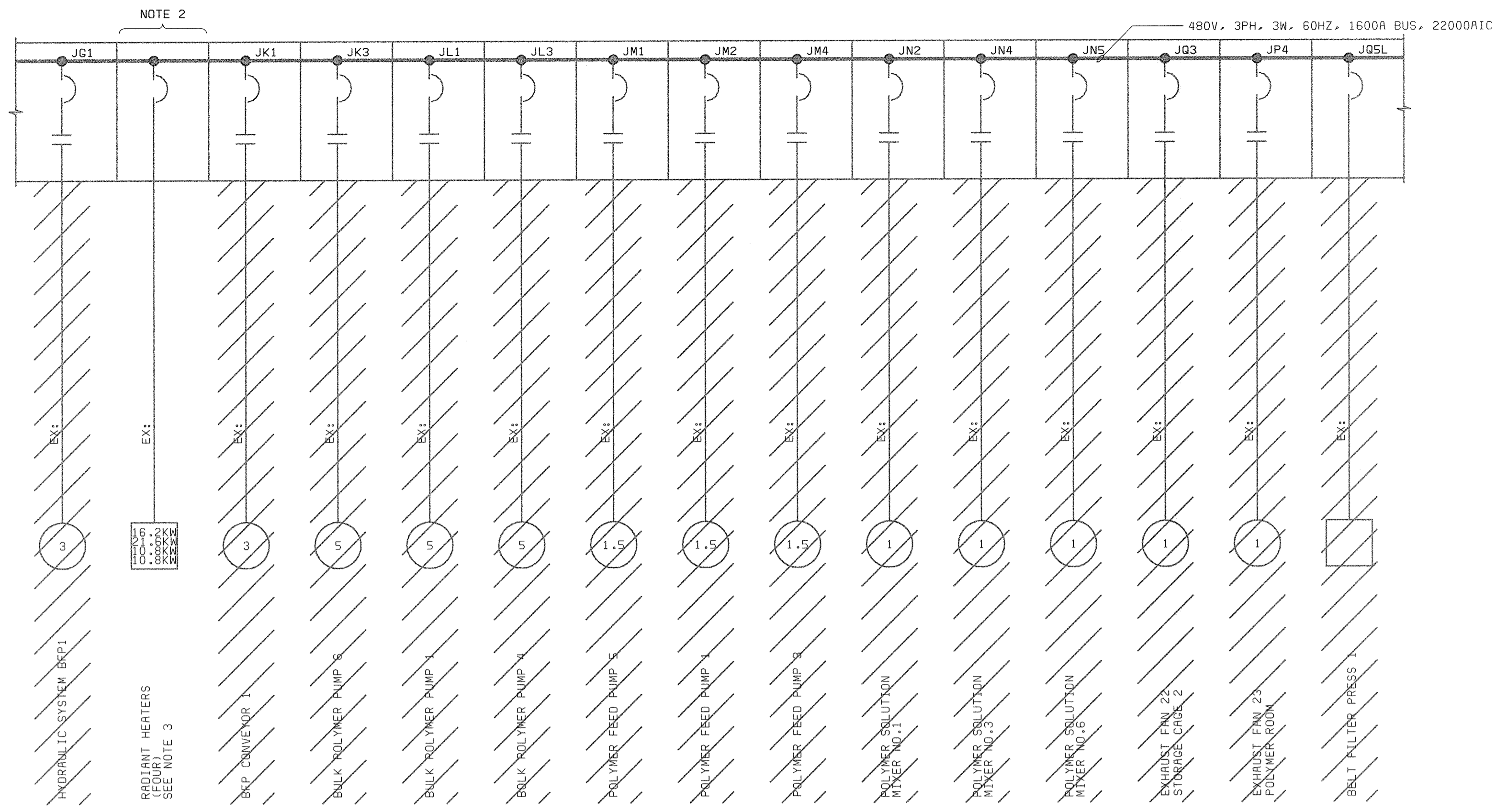
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

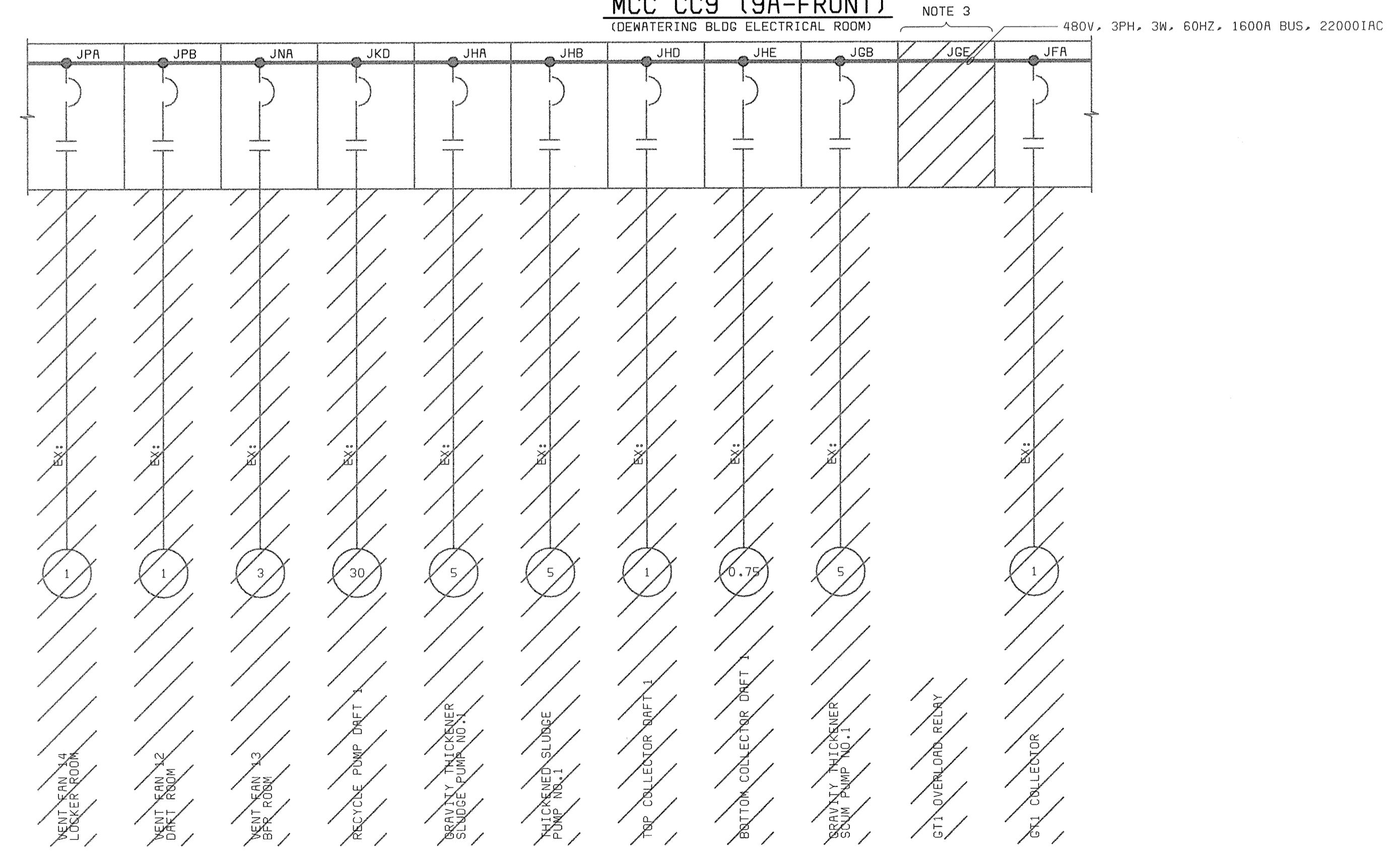
SHEET
115 OF 150

E2

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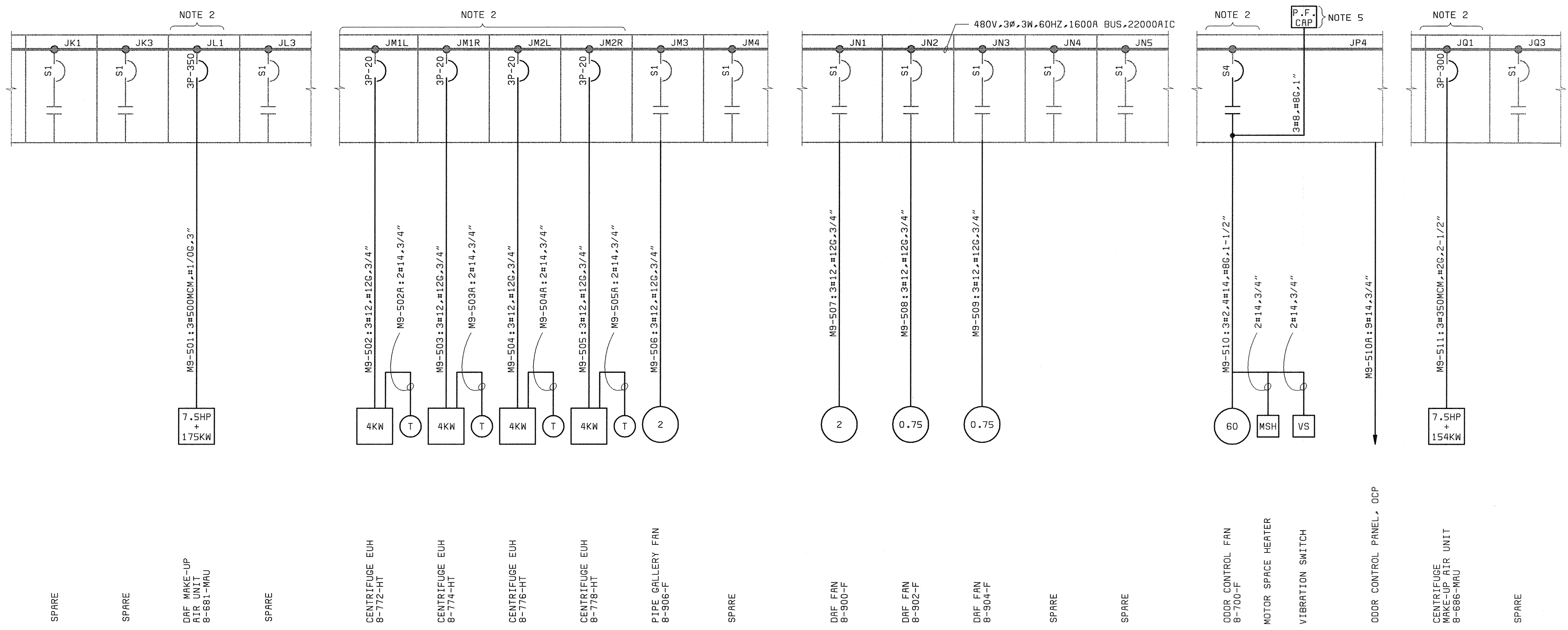
MCC CC9 (9A-FRONT)
(DEWATERING BLDG ELECTRICAL ROOM)



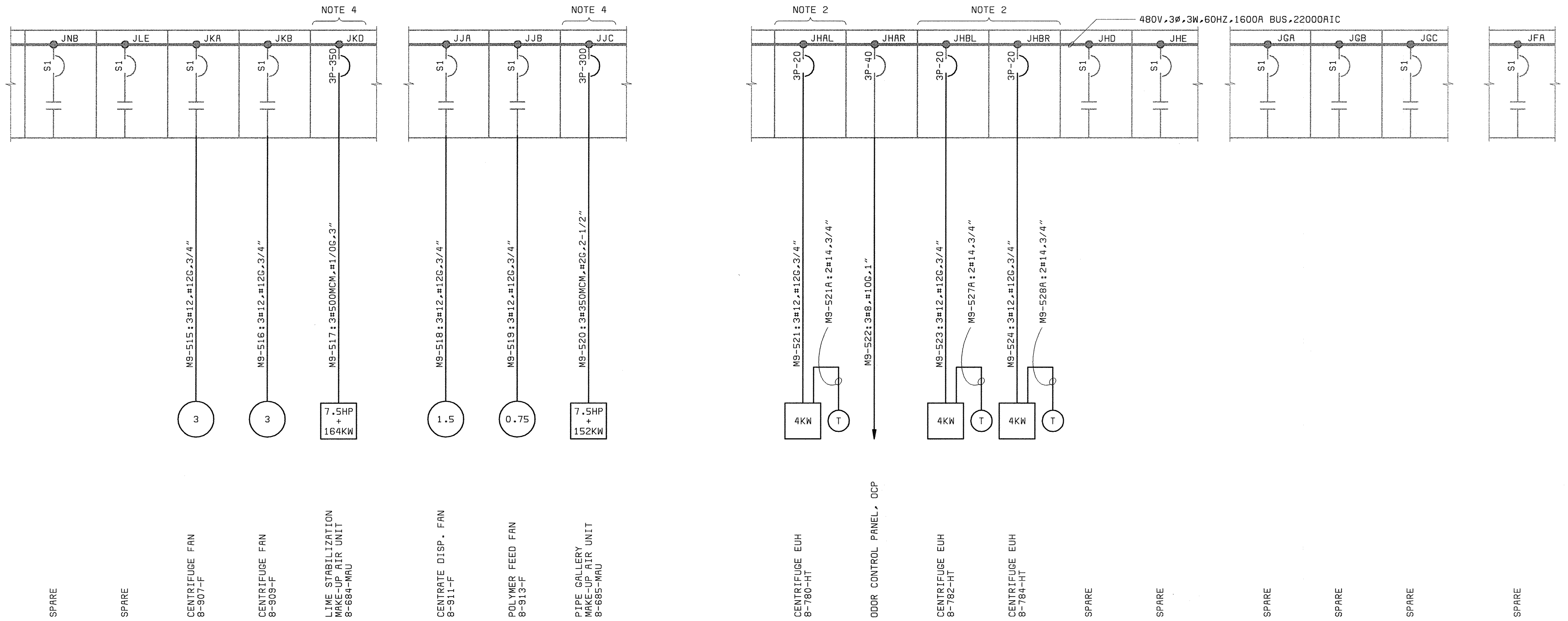
MCC CC9 (9B-REAR)
(DEWATERING BLDG ELECTRICAL ROOM)

- 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 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



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



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

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 8-778B-780-HT	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						

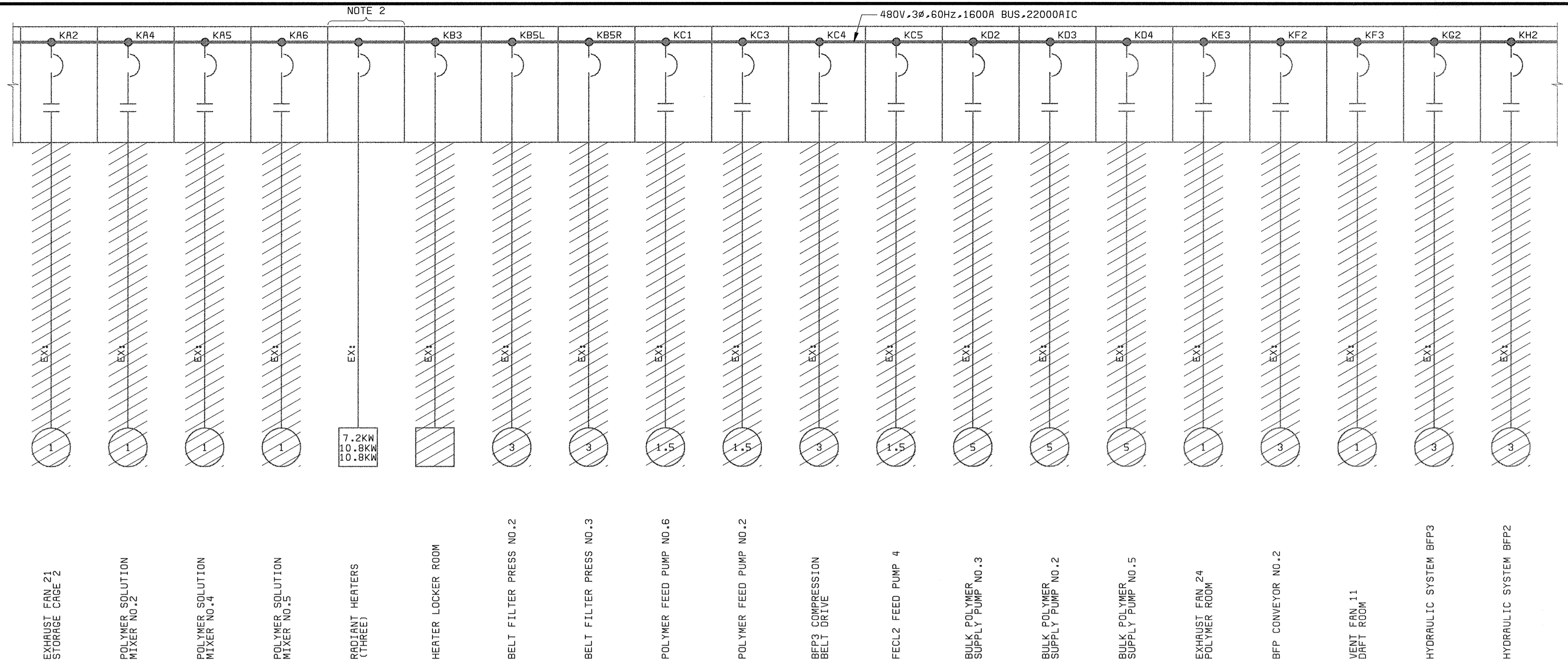
MCC CC9 (9A-FRONT)
ELEVATION MODIFICATIONS
NO SCALE

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
SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	SPARE	RETURN PUMP NO.3
								SPARE

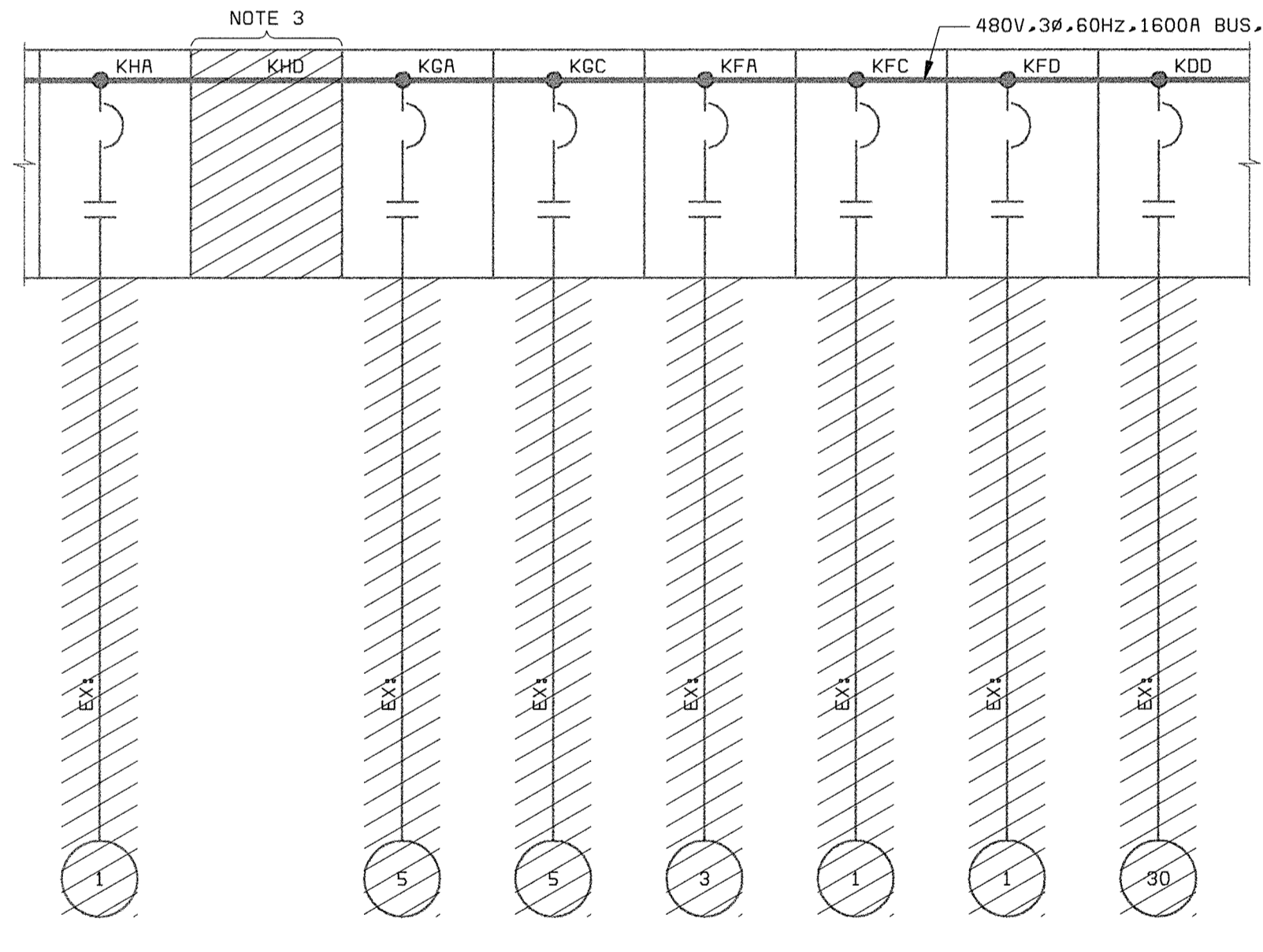
MCC CC9 (9B-REAR)
ELEVATION MODIFICATIONS
NO SCALE

- 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.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENCR. 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 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
			DRN: MDR,DAH	CHK: JTF	DATE: 5/30/00	DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH			RJR
											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

BLACK & VEATCH
Gathersburg, Maryland

REG. PROF. ENGR. DATE

THIS DRAWING WAS
ORIGINALLY APPROVED
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AND SEALED BY
DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
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**

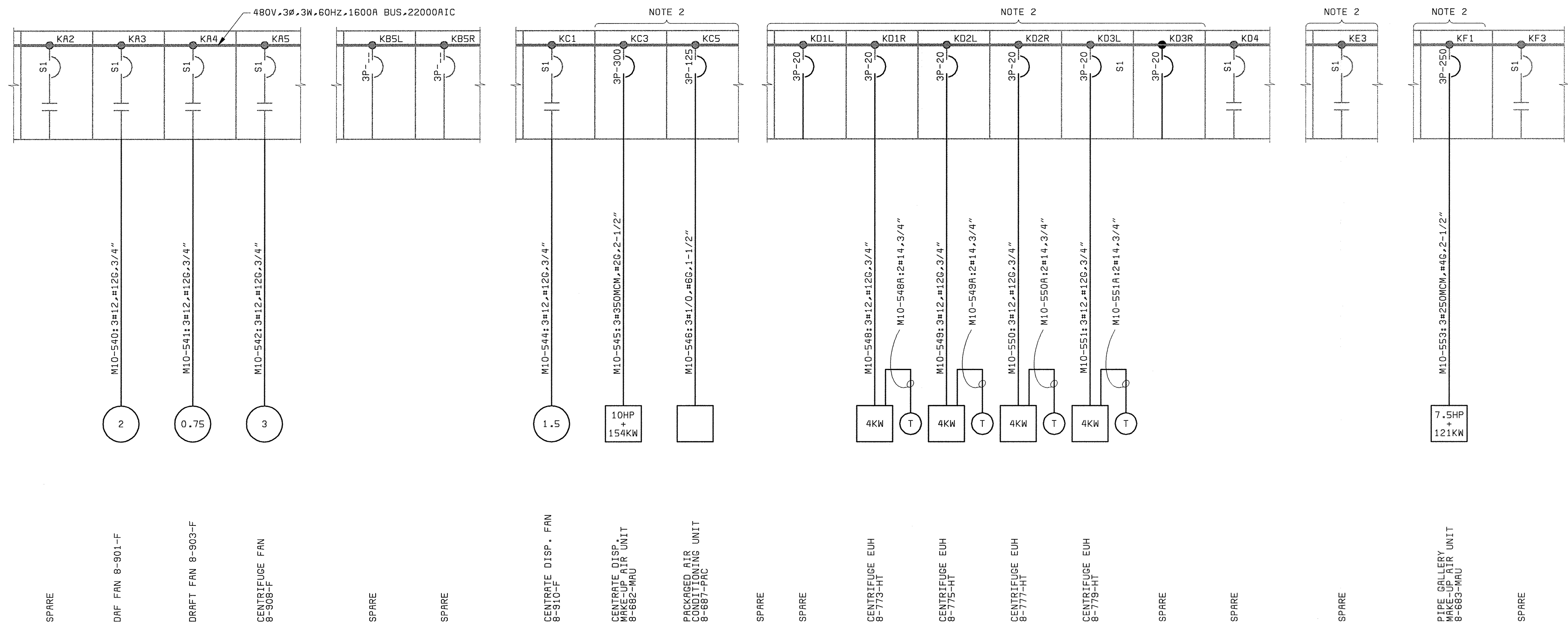
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

SCALE AS SHOWN

SHEET 118 OF 150

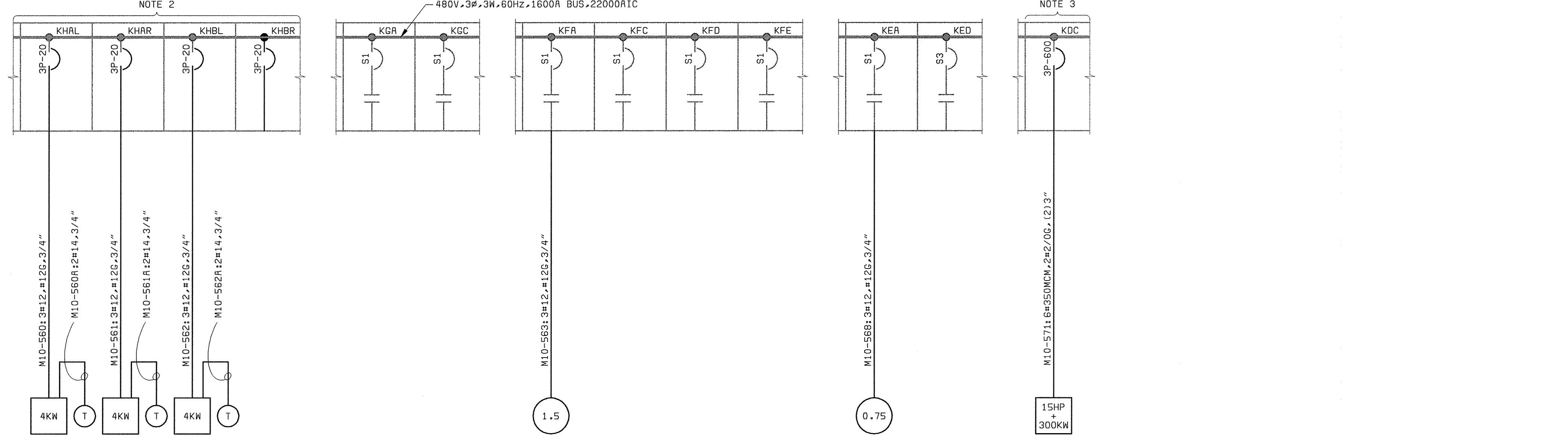
E5



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-HT	EUH 8-777-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	
CENTRIFUGAL 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-HT	EUH 8-783-HT	SPARE	PIPE CALL 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

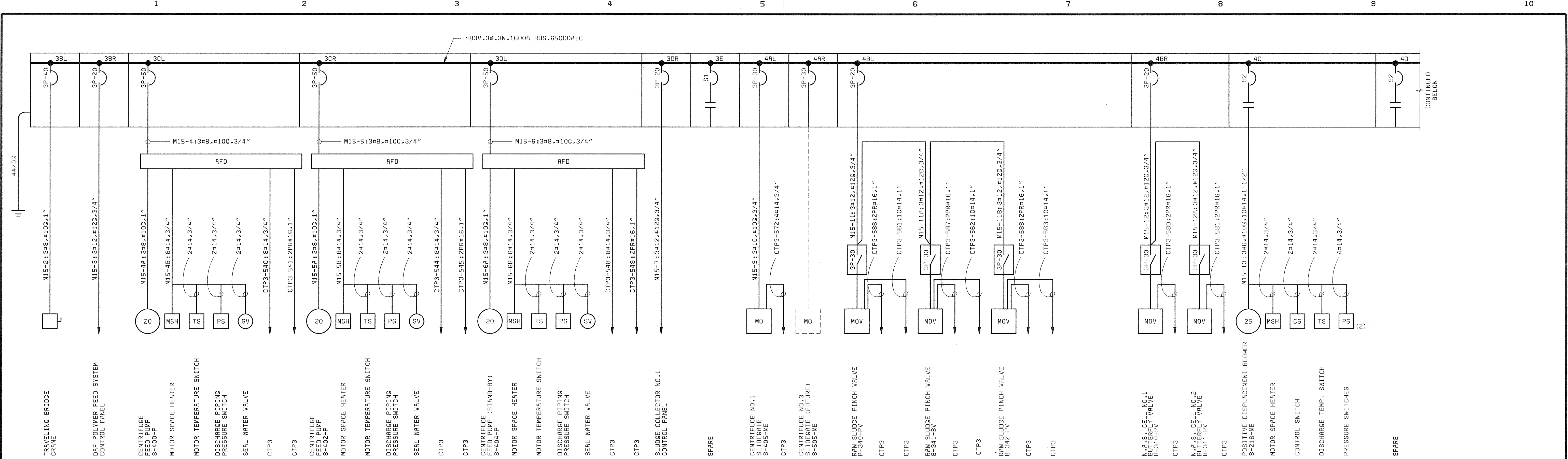
DES: GNS					
DRN: MDR,DAH					
CHK: JTF					
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP
				RHH	RJR

ELECTRICAL
MOTOR CONTROL CENTER CC10
ONE-LINE DIAGRAMS
MODIFIED

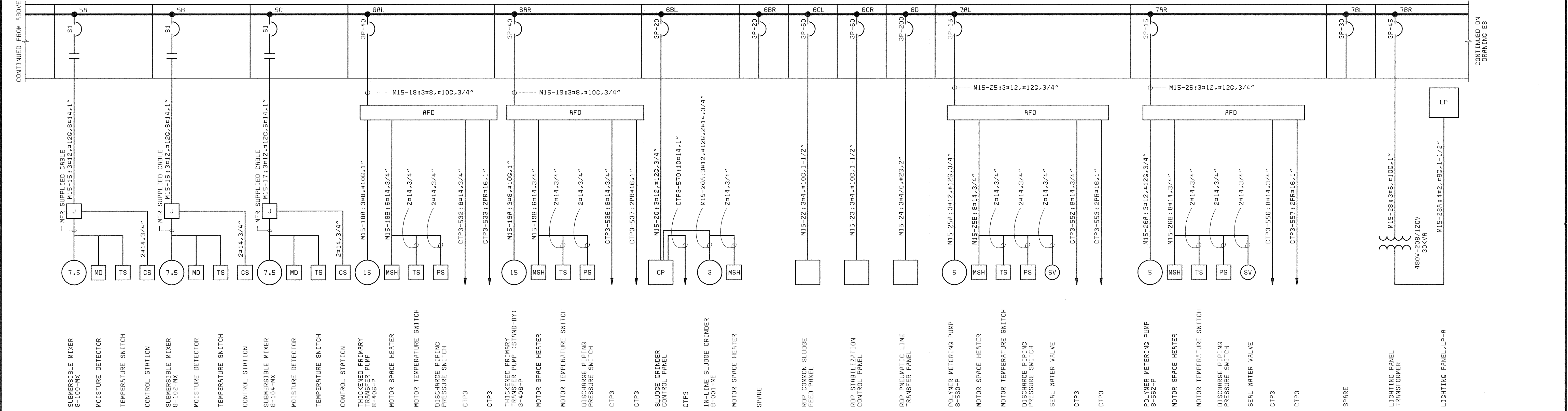
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 119 OF 150
E6

056472.2
F056472A



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

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

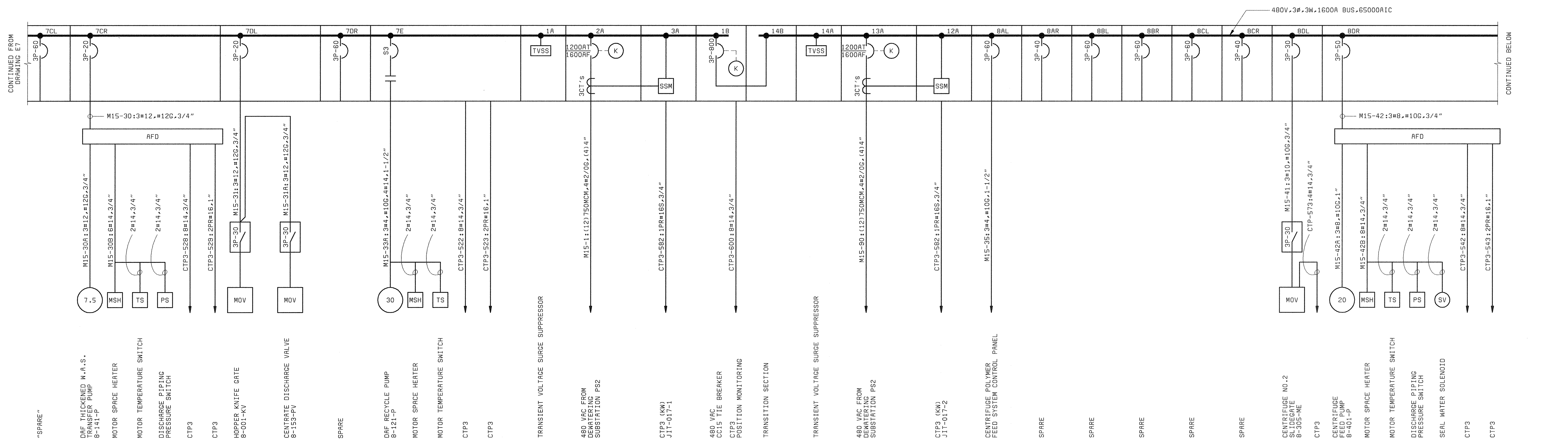
DES: GNS					
DRN: DAH					
CHK: JTF					
DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP
				RHH	RJR/RJR

ELECTRICAL
MOTOR CONTROL CENTER MCC15
ONE-LINE DIAGRAMS

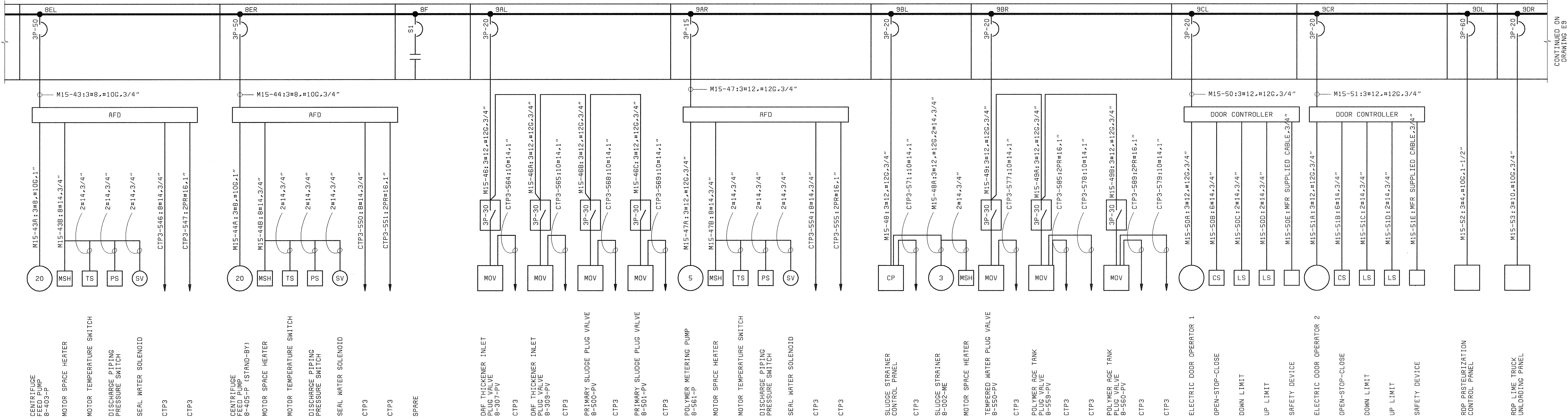
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 120 OF 150
E7

058472.2
F058472A



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

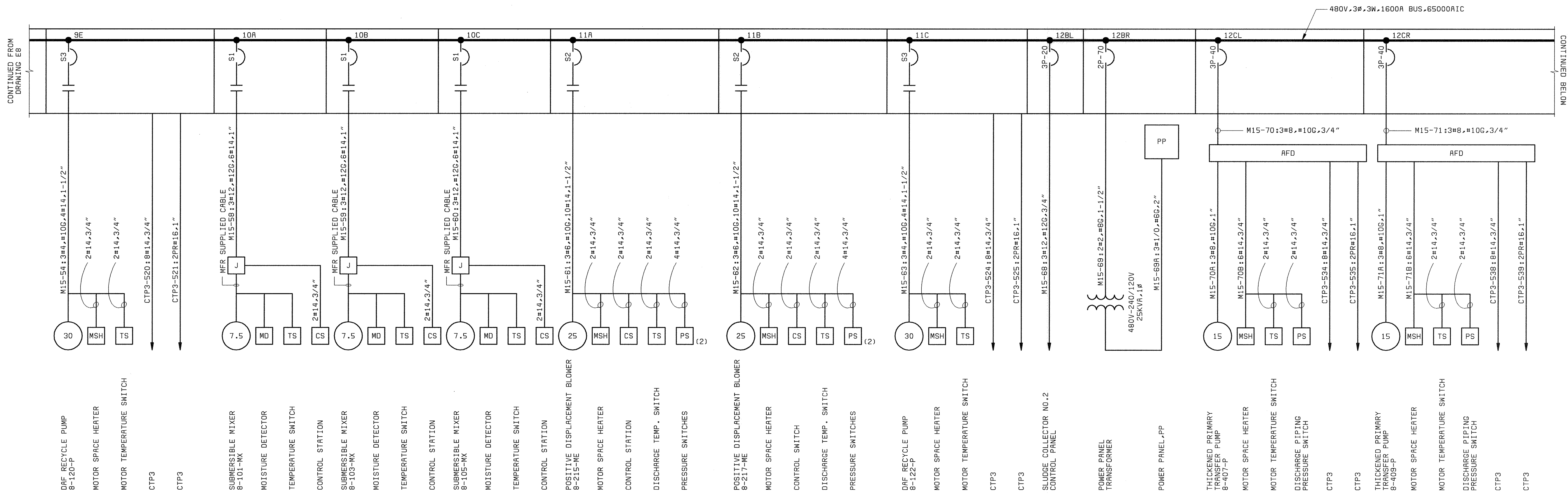


MCC15 (REAR) ONE-LINE (CONTINUED)
(DEWATERING BLDG ELECTRICAL ROOM)

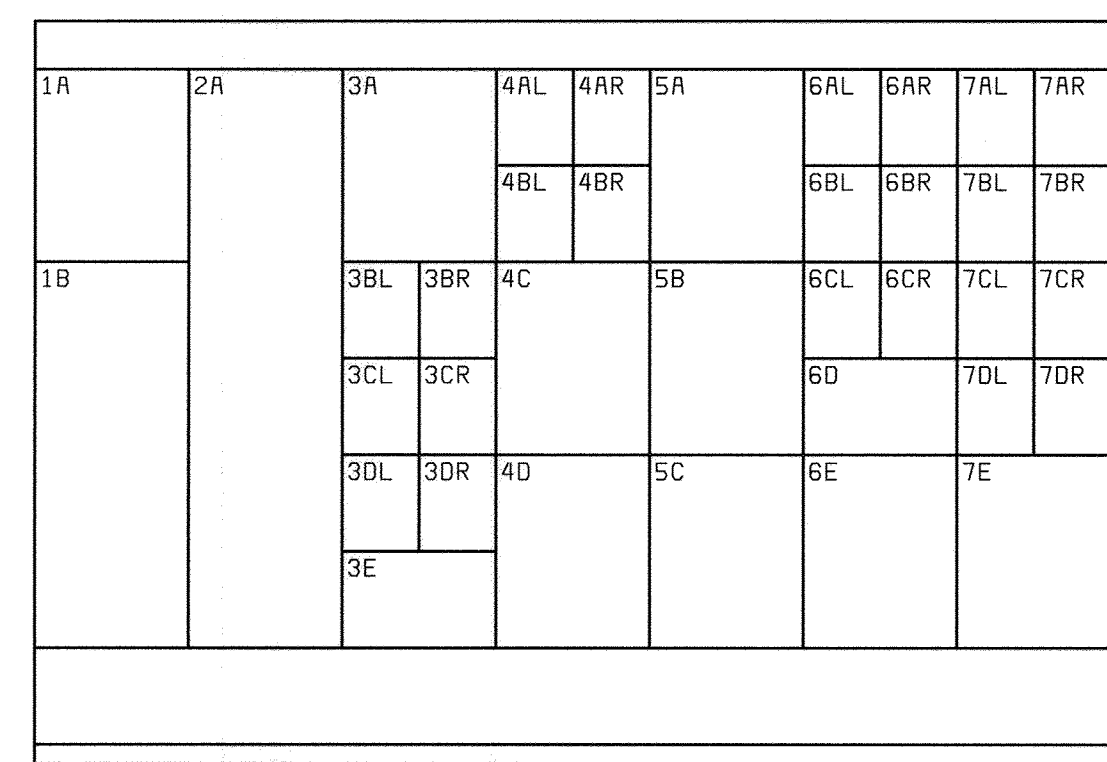
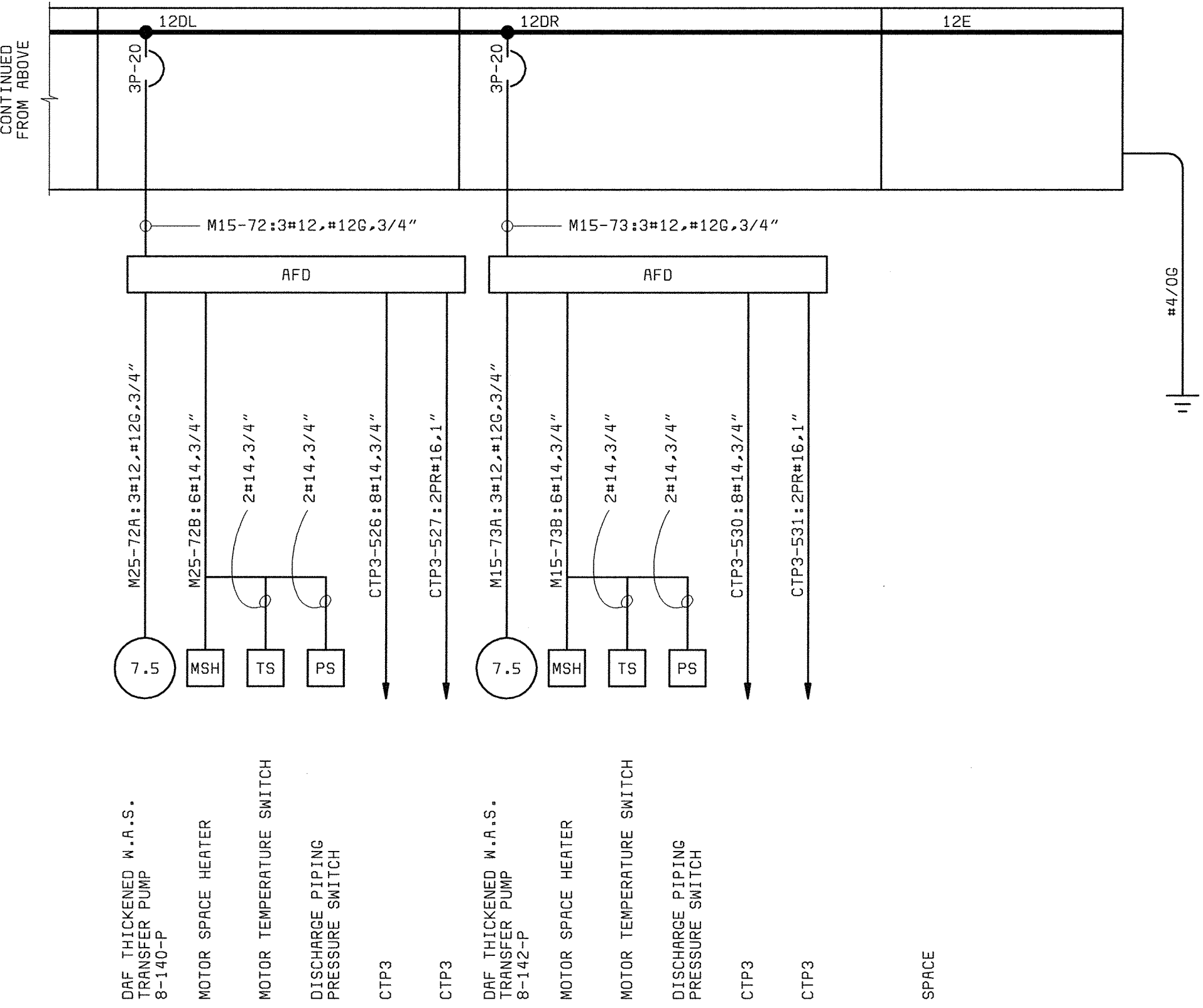
NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS 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: GNS DRN: MDR,DAH CHK: JTF DATE: 07/26/04 CONFORMED TO CONSTRUCTION RECORDS 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 121 OF 150 E8
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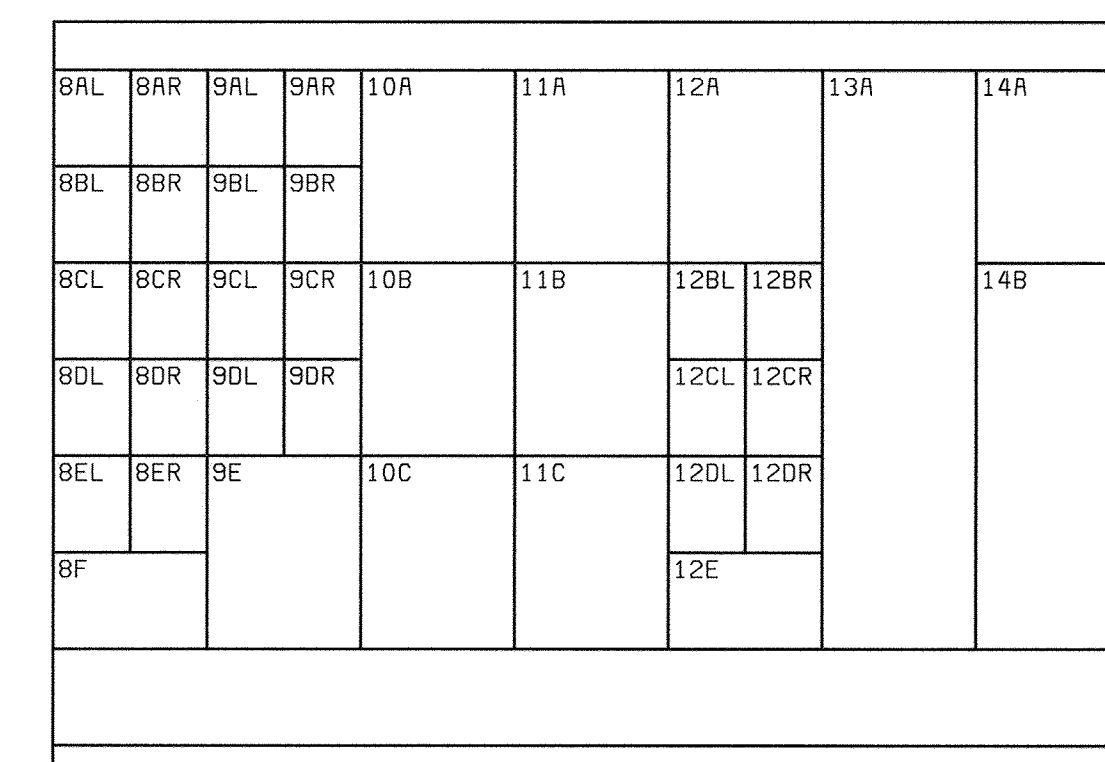
058472.2
F058472A



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

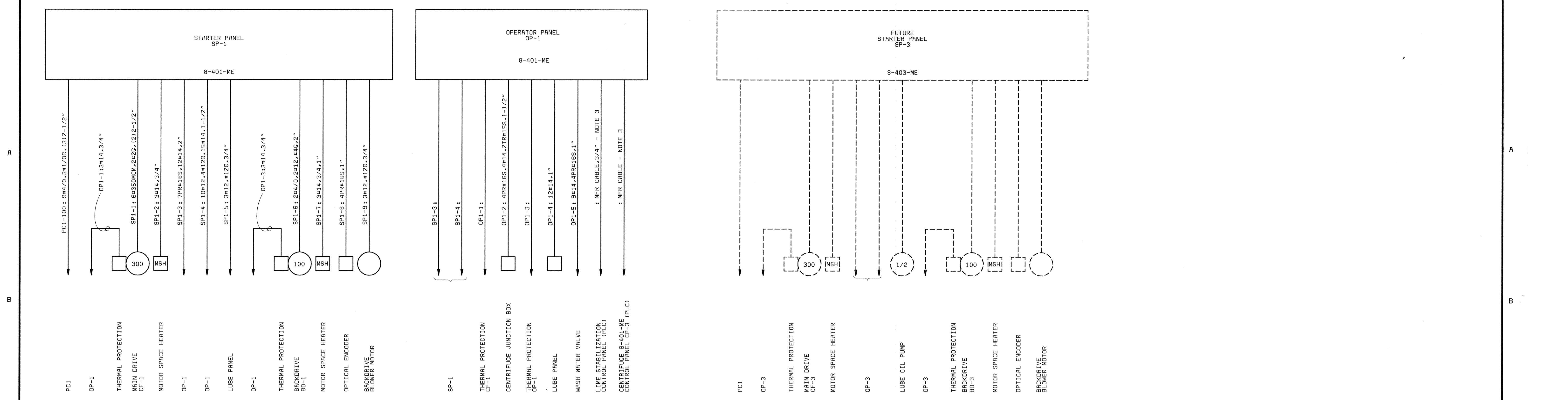
THIS DRAWING WAS
ORIGINALLY APPROVED
FOR CONSTRUCTION
AND SEALED BY
DONALD R. STEVENS
A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

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

ELECTRICAL
MOTOR CONTROL CENTER MCC15
ONE-LINE DIAGRAM CONTINUED

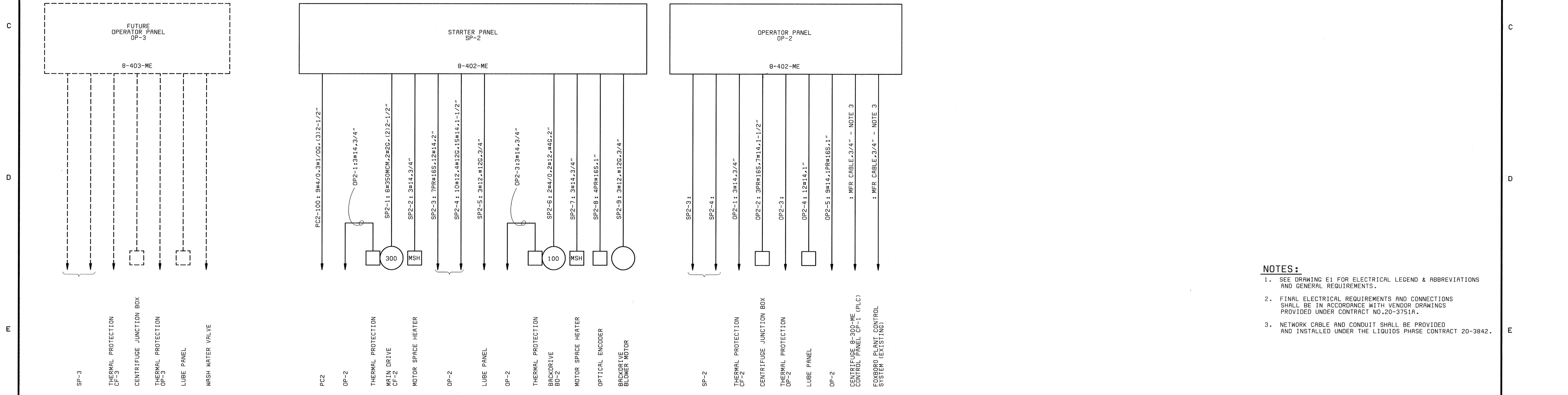
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
122 OF 150
E9



CENTRIFUGE 8-401-ME ONE-LINES

FUTURE CENTRIFUGE 8-403-ME ONE-LINES

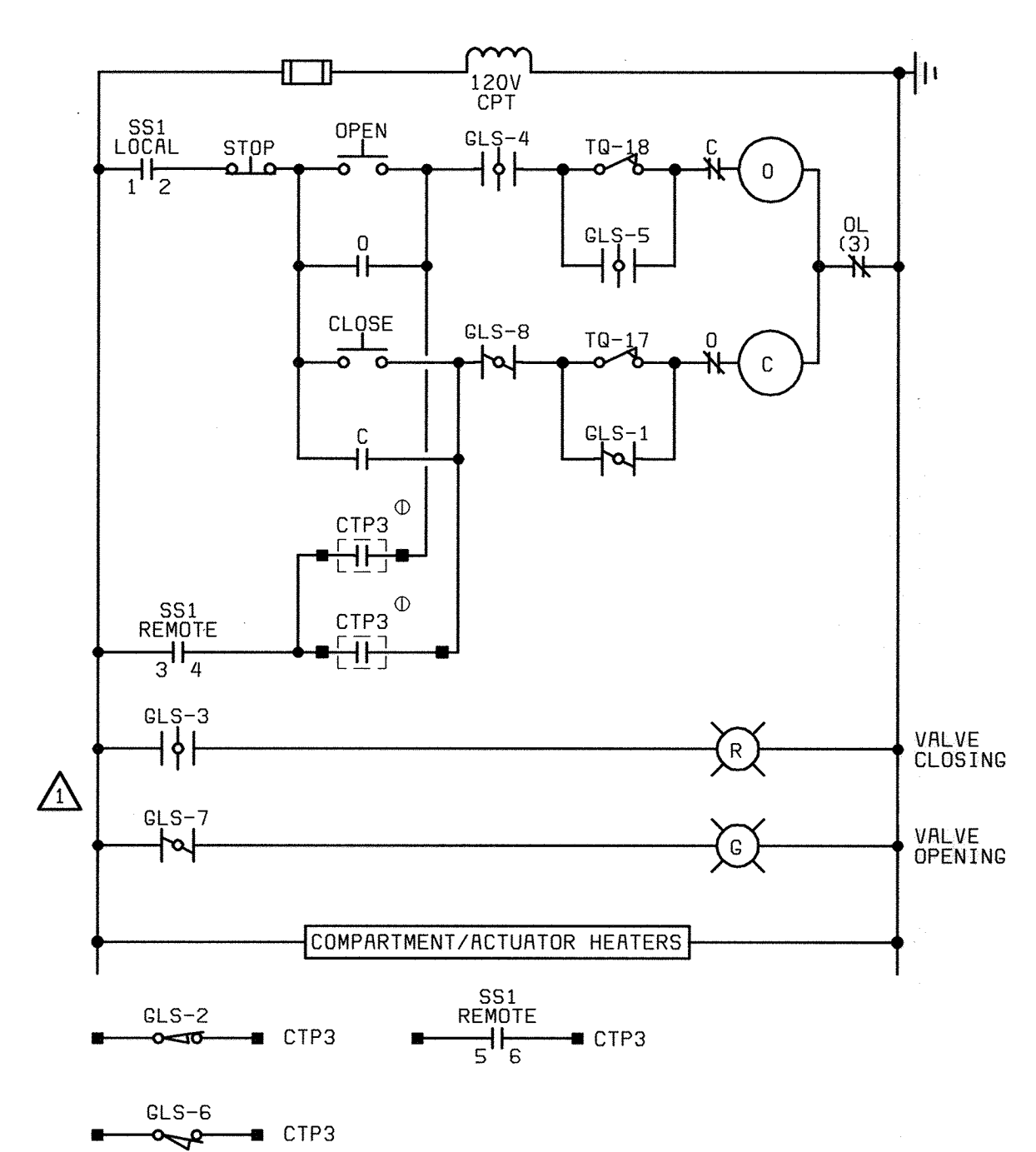
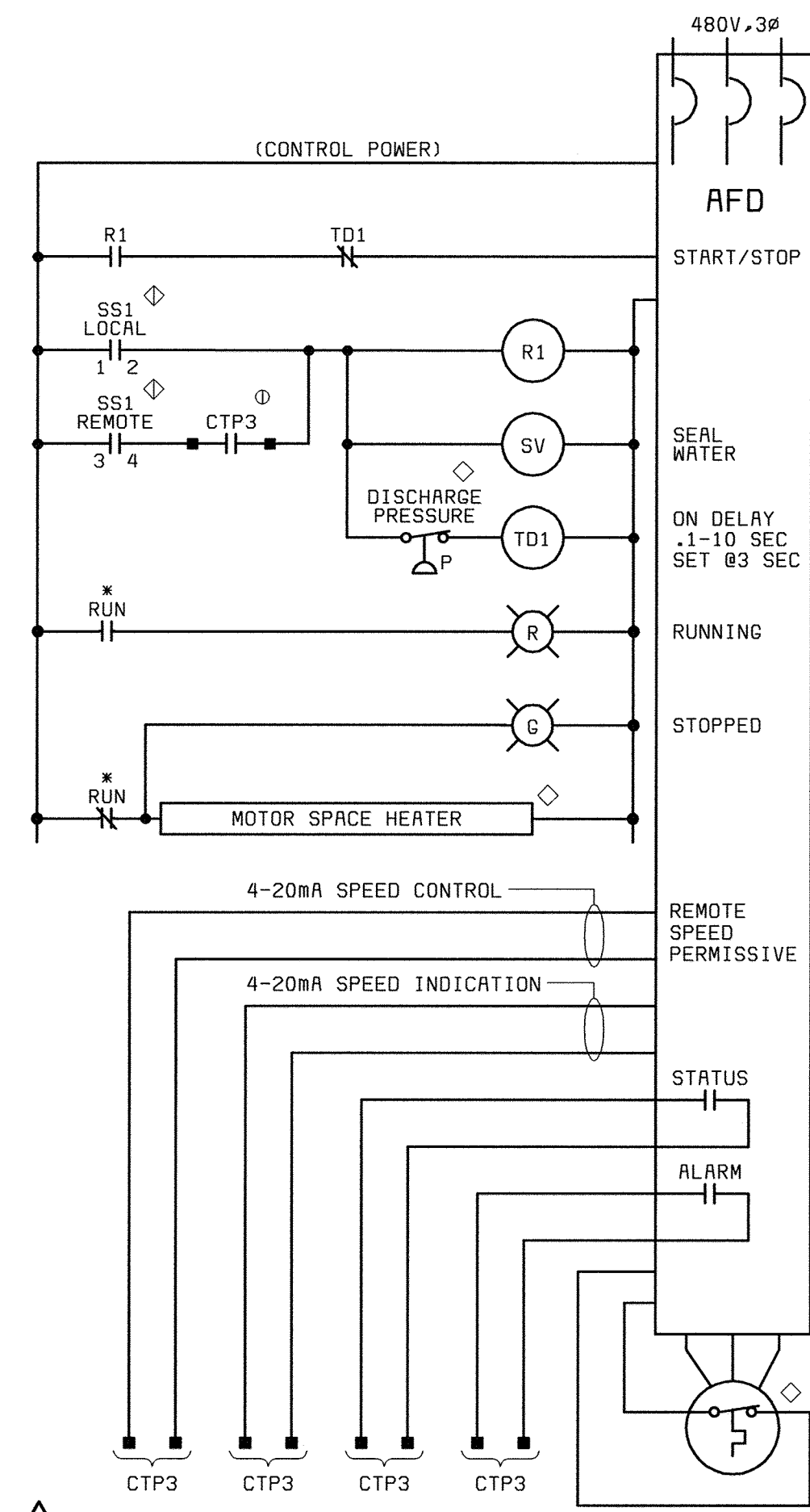


FUTURE CENTRIFUGE 8-403-ME ONE-LINES (CONTINUED)

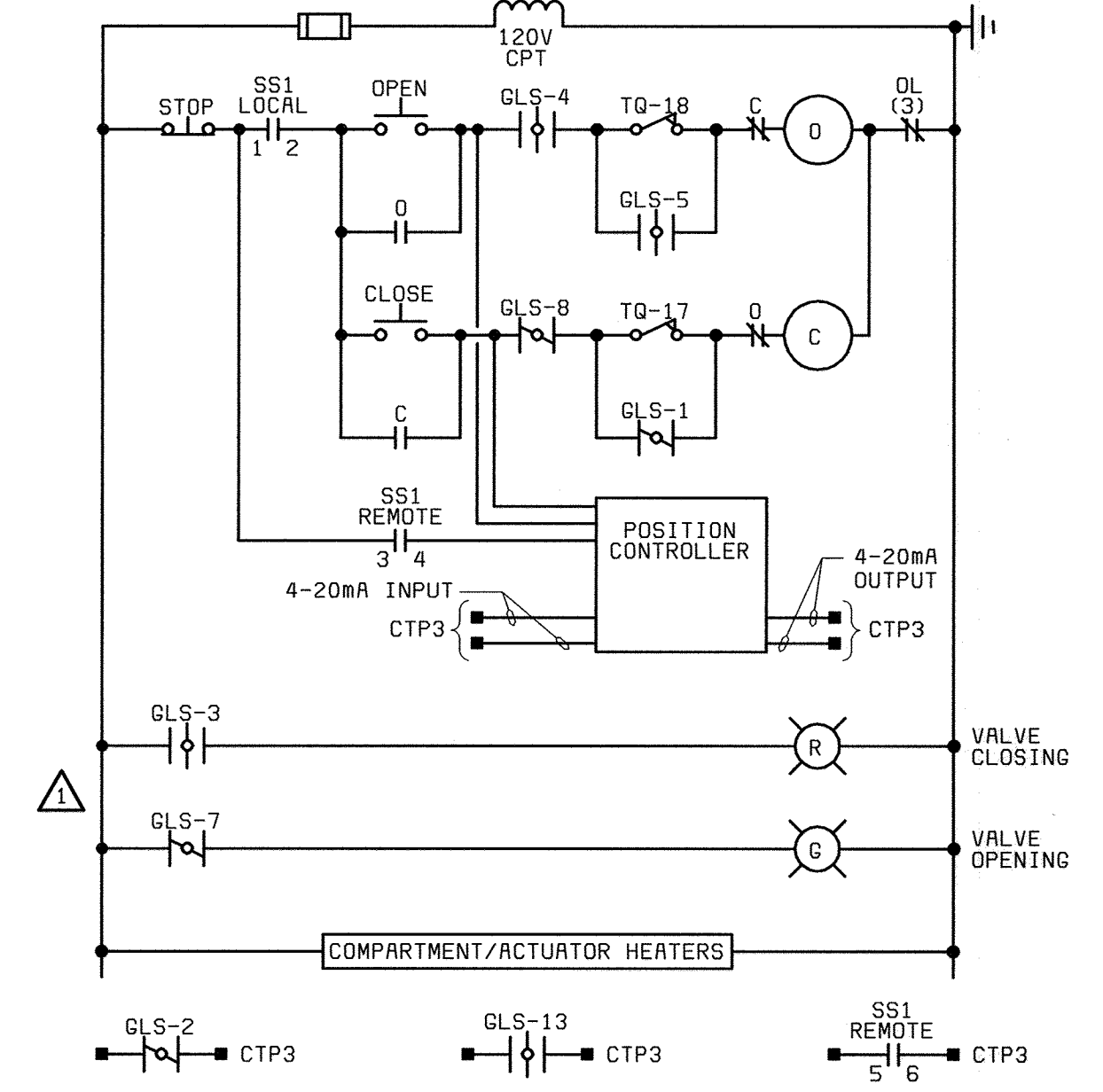
CENTRIFUGE 8-402-ME ONE-LINES

- 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.

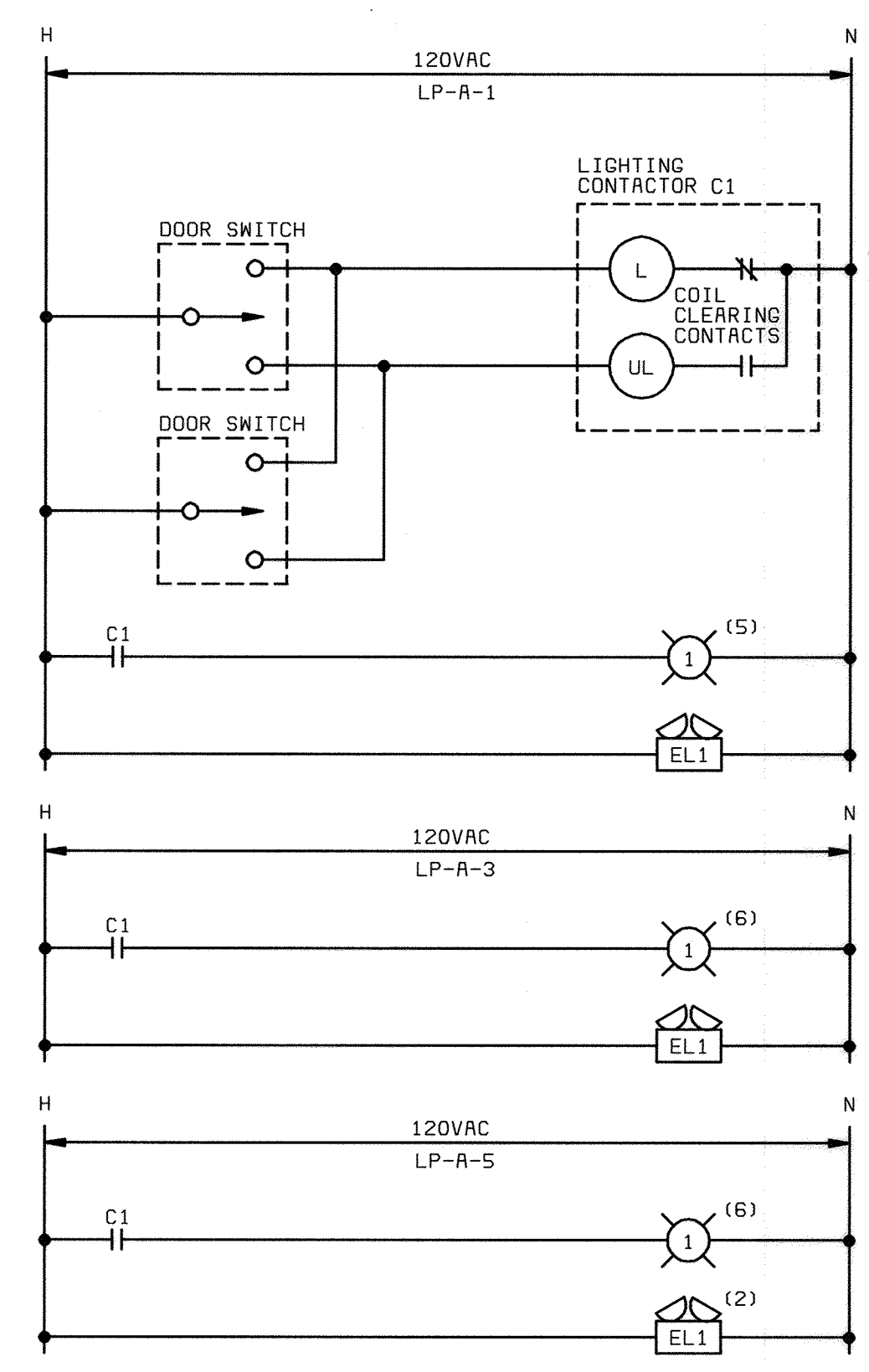
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: 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			RJR
			DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			E10



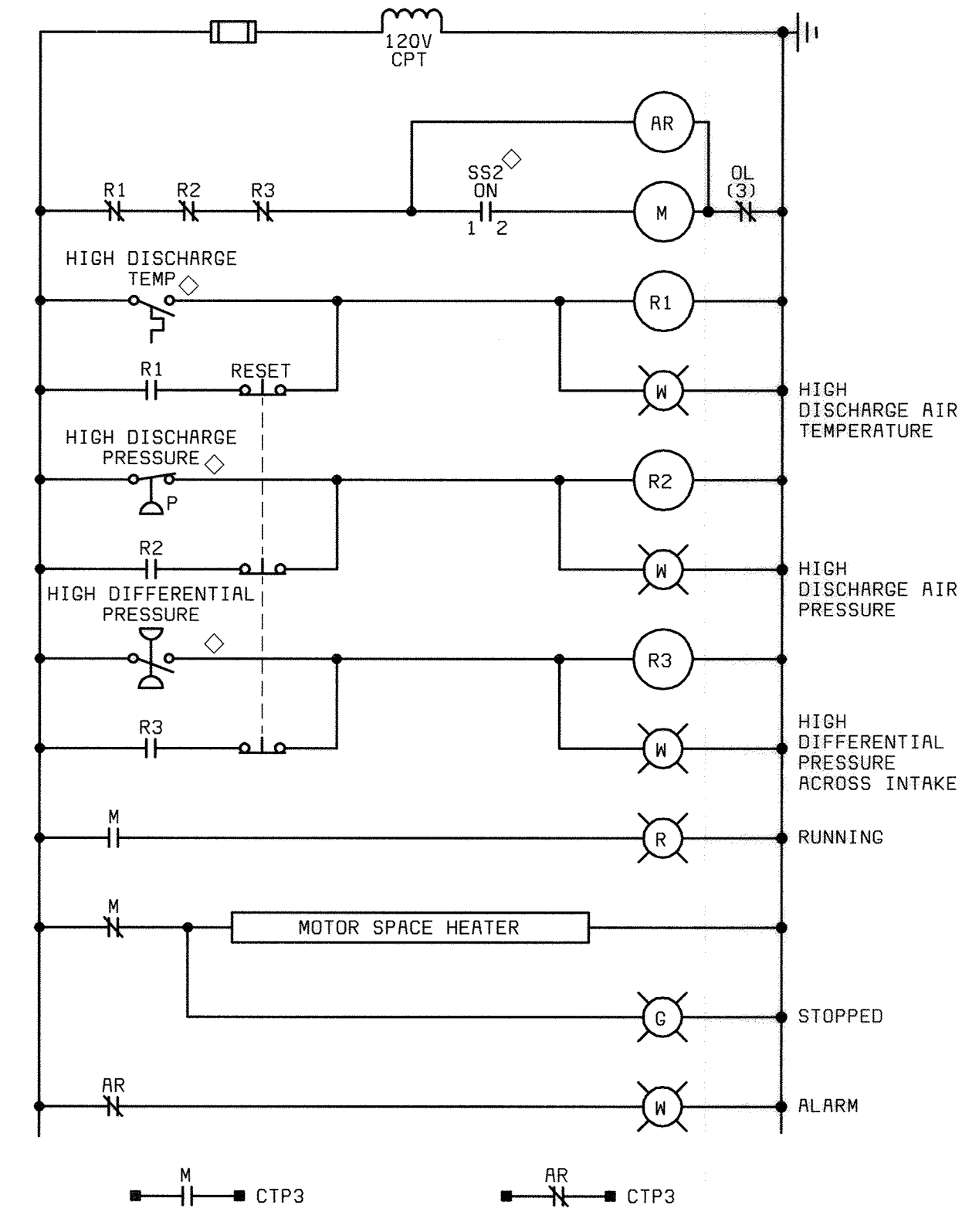
TYPICAL VALVE OPEN/CLOSE (O/C) ELECTRIC ACTUATOR



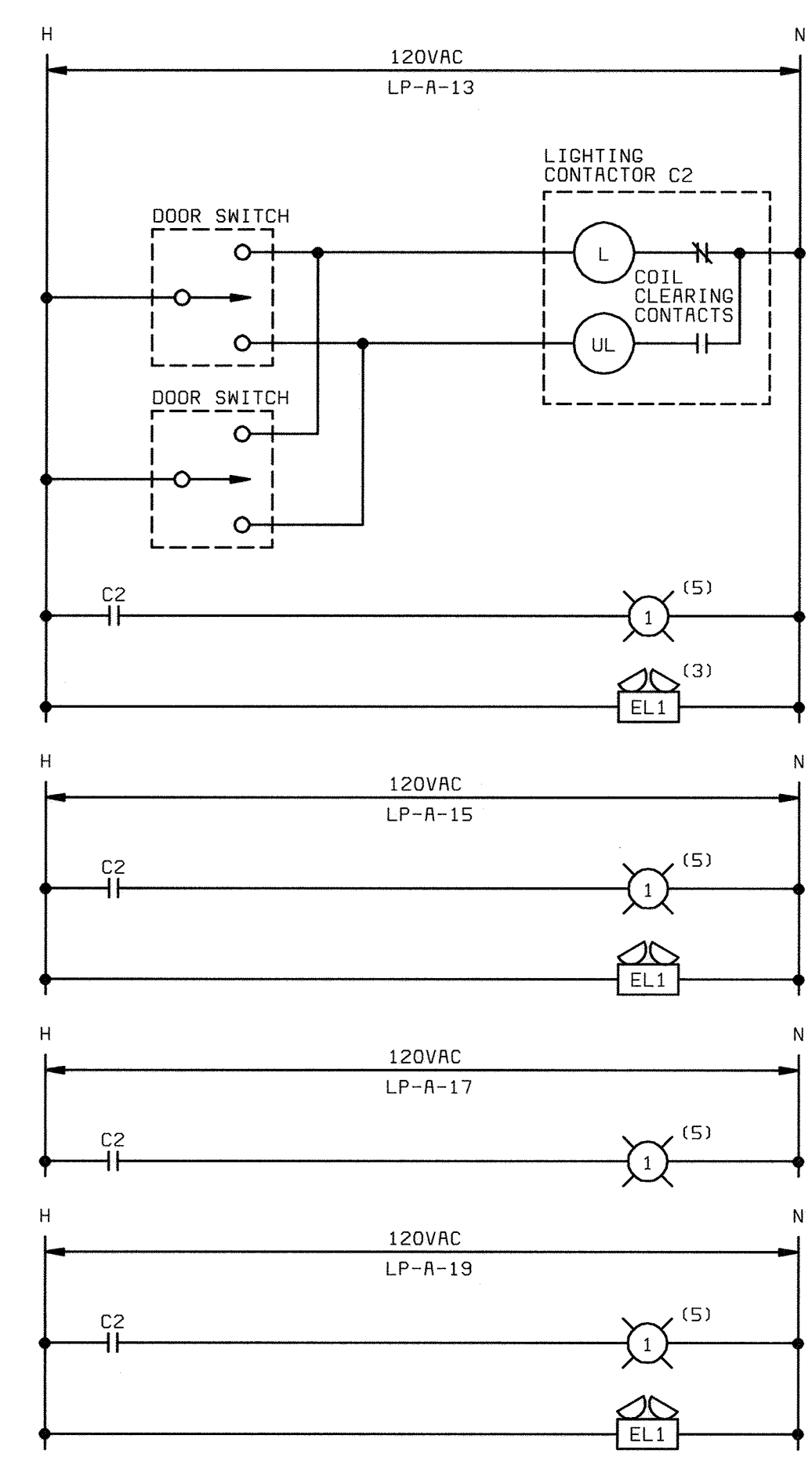
TYPICAL MODULATING VALVE ELECTRIC OPERATOR



LIGHTING CONTACTOR C1



POSITIVE DISPLACEMENT BLOWERS 8-215-ME THRU 8-217-ME



LIGHTING CONTACTOR C2

GEARED LIMIT SWITCH DEVELOPMENT:
(VALVE SHOWN IN FULL OPEN POSITION)

ROT OR	GLS CONTACT	ACTUATOR POSITION		
		FULL OPEN 0%	INTERMEDIATE POSITION (90%)	FULL CLOSED 100%
1	1			
1	2			
1	3			
1	4			
1	5			
1	6			
1	7			
1	8			
1	9			
1	10			
1	11			
1	12			
1	13			
1	14			
1	15			
1	16			
2	1			
2	2			
2	3			
2	4			
2	5			
2	6			
2	7			
2	8			
2	9			
2	10			
2	11			
2	12			
2	13			
2	14			
2	15			
2	16			

TQ/17 OPENS ON HIGH CLOSING TORQUE
TQ/18 OPENS ON HIGH OPENING TORQUE
-CONTACT CLOSED

SWITCH DEVELOPMENTS:

SS1 CONTACTS	POSITION		
	LOCAL	OFF	REMOTE
1-2	X		X
3-4			X
5-6			X
7-8	X		

SS2 CONTACTS	POSITION	
	ON	OFF
1-2	X	

DEVICE LEGEND:

- ◇ AT DRIVEN EQUIPMENT
- ◇ AT LOCAL CONTROL PANEL OR STATION
- ◇ CONTROL TERMINATION PANEL, CTP3 (PIU-3)

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. COORDINATE WITH MIXER SUPPLIER PRIOR TO SHOP DRAWING SUBMITTALS. IF 24V POWER SUPPLY IS REQUIRED FOR RELAYING, 120/24V CPT SHALL BE PROVIDED FOR INSTALLATION IN MCC.

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: 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

SCHEMATIC DRAWINGS

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

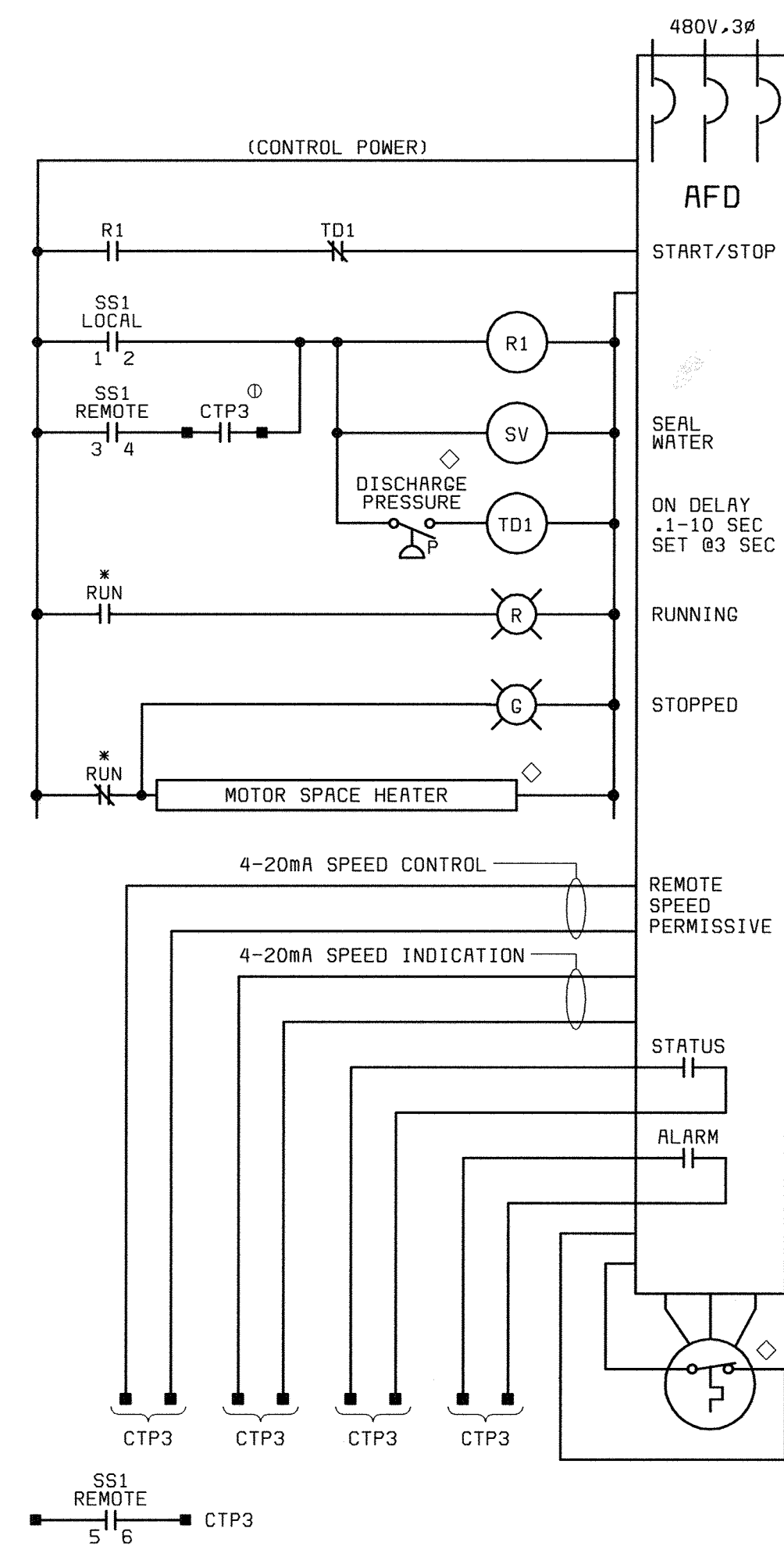
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6

HOWARD COUNTY, MARYLAND

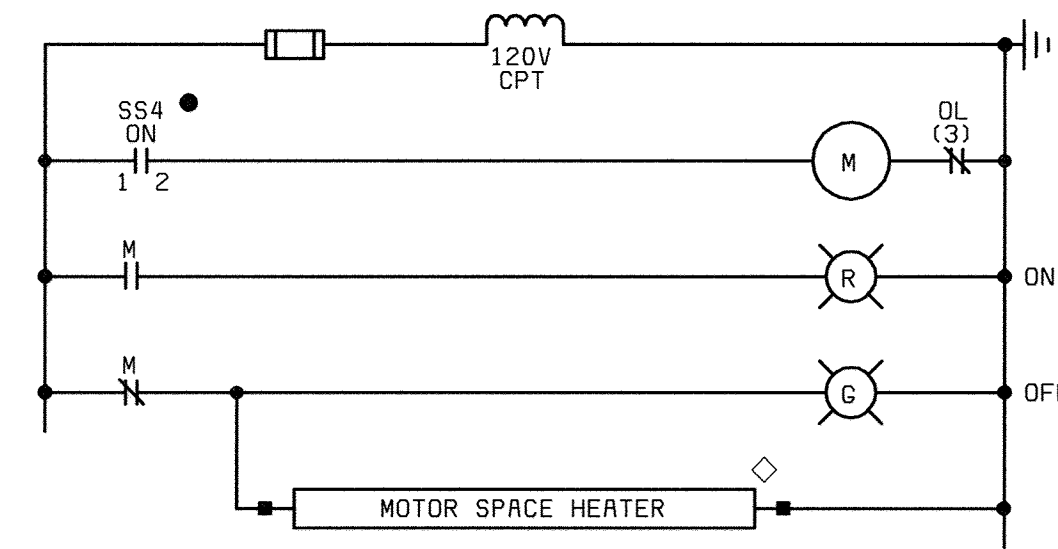
SCALE AS SHOWN

SHEET 124 OF 150

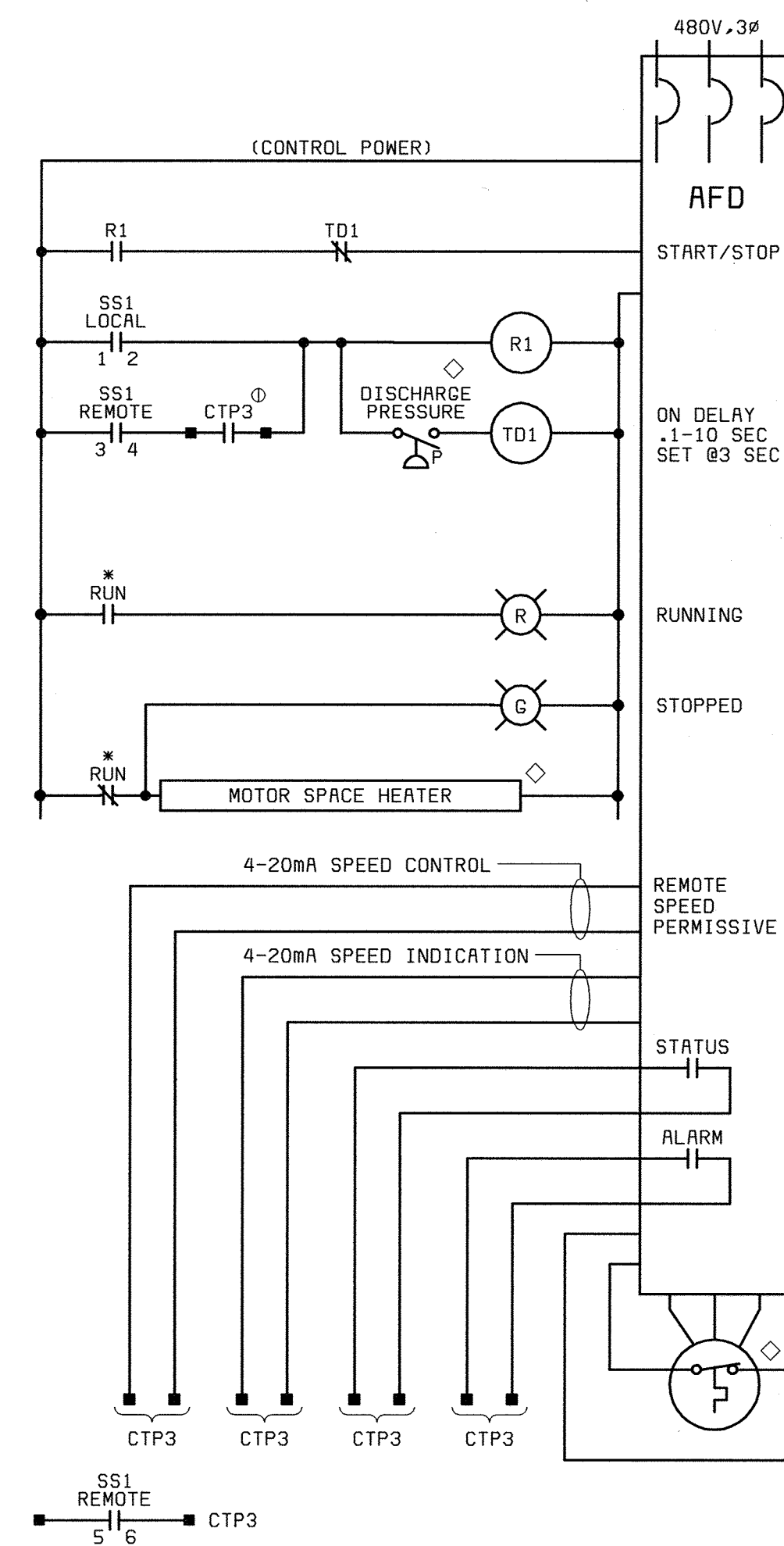
E11



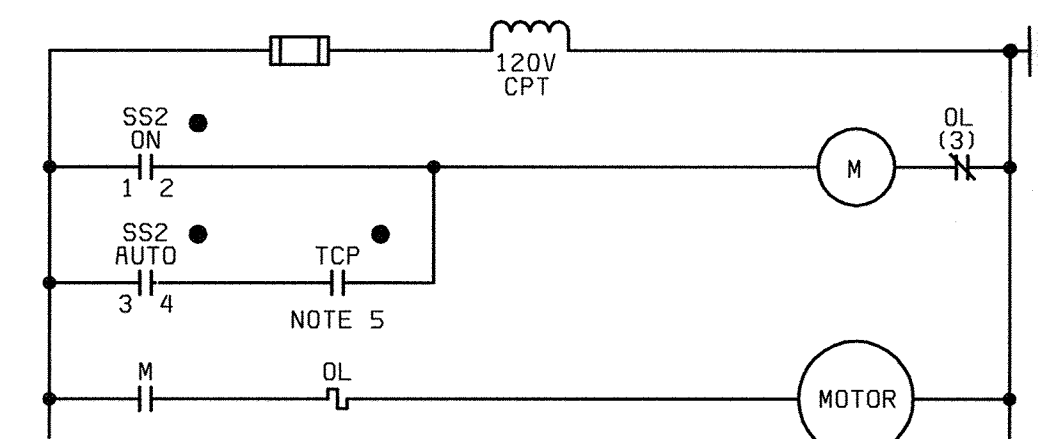
CENTRIFUGE FEED PUMPS
8-400-P THRU 8-405-P
* DENOTES INTERLOCKS PROVIDED BY AFD



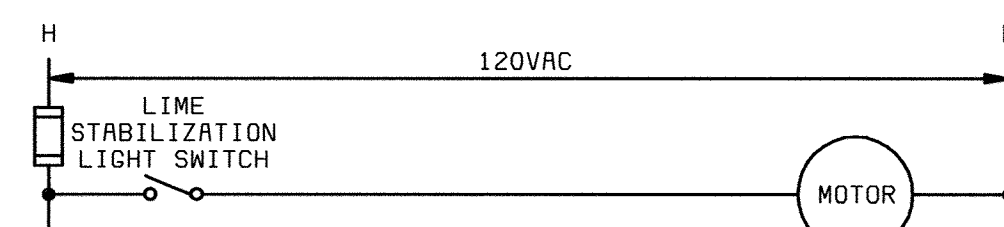
ODOR CONTROL FAN
8-700-F



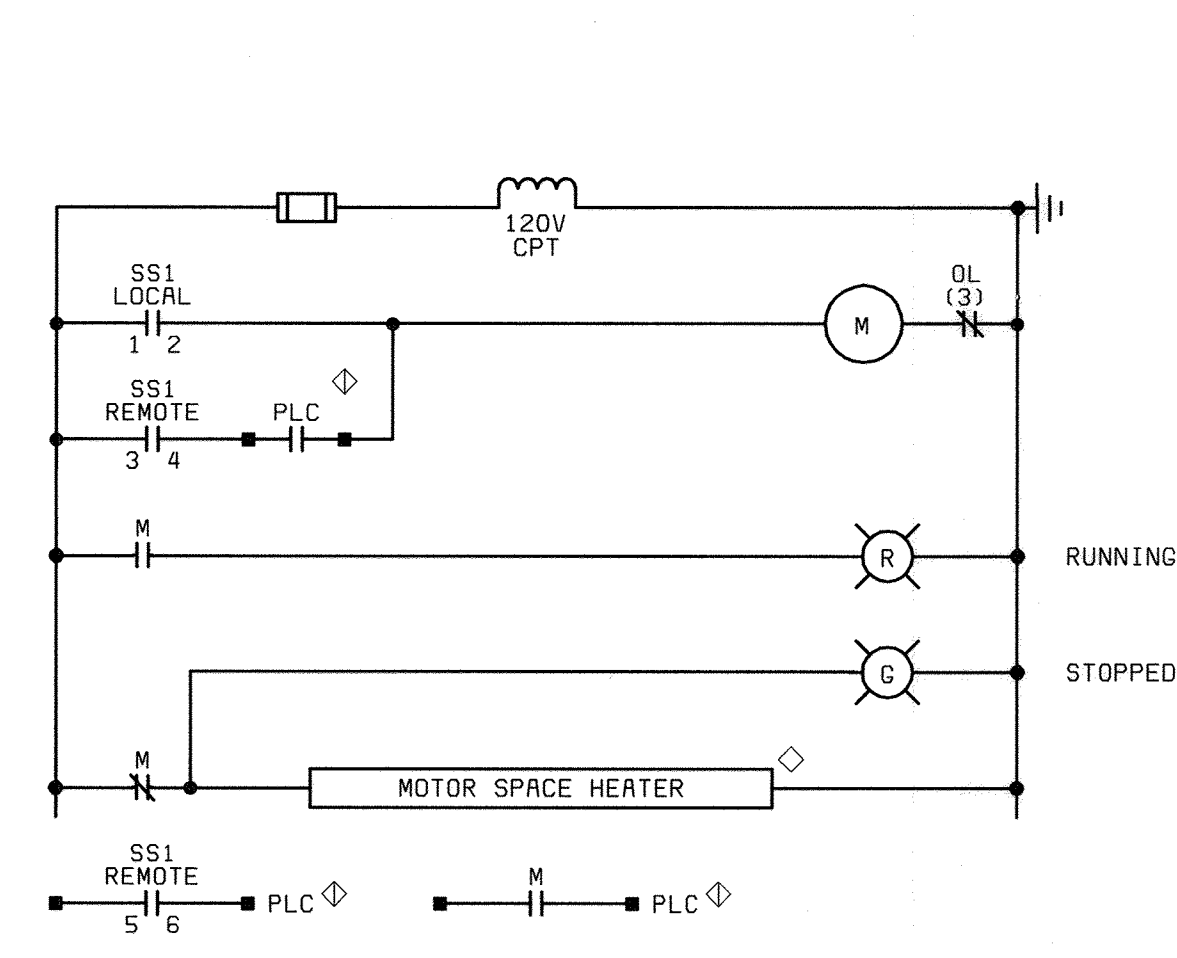
THICKENED PRIMARY TRANSFER PUMPS
8-406-P THRU 8-409-P,
DAF THICKENED W.A.S. TRANSFER PUMPS
8-140-P THRU 8-142-P



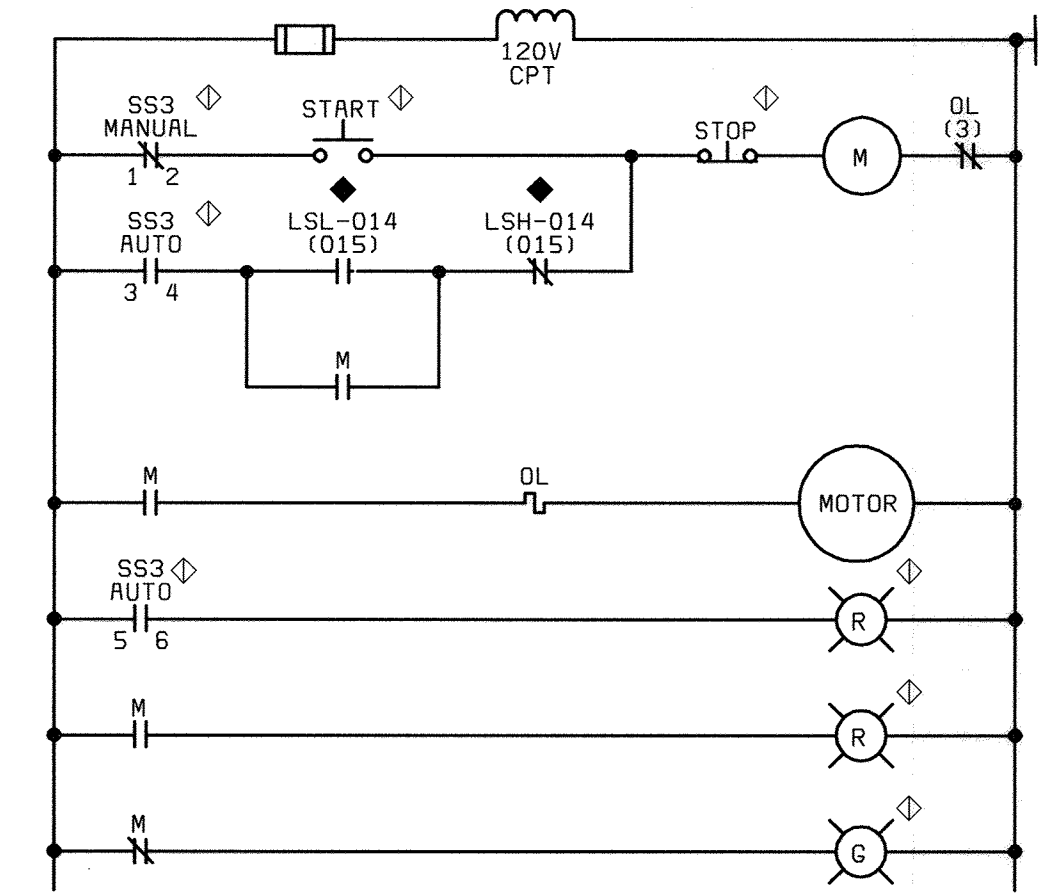
TYPICAL PRV AND DUCT FANS



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

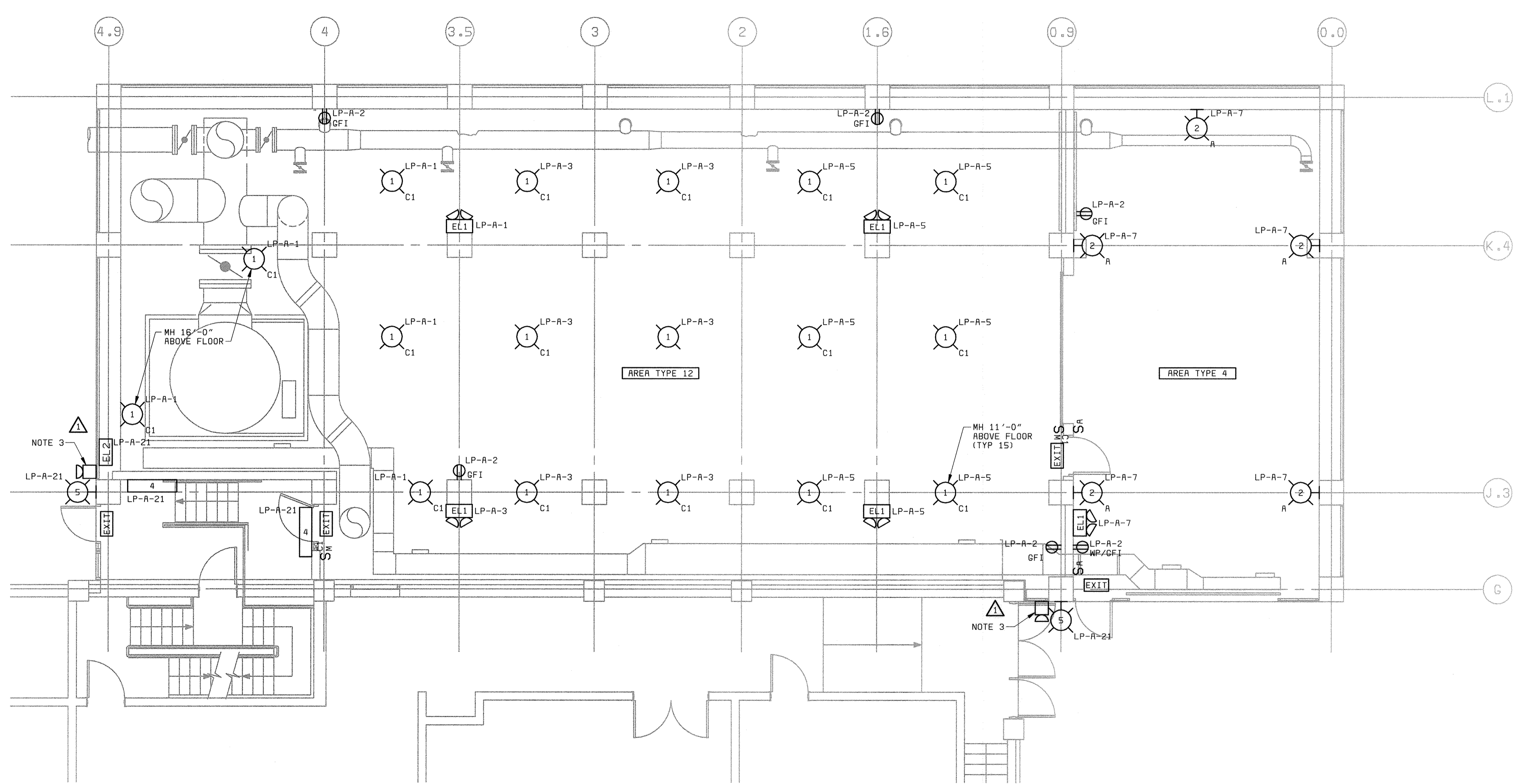
DES: GNS					
DRN: DAH					
CHK: JTF					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE		NO.	BY CK APP

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

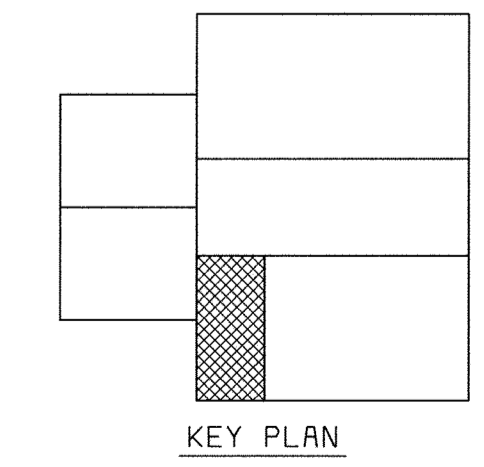
SCALE AS SHOWN
SHEET 125 OF 150
E12

058472-2
F058472A



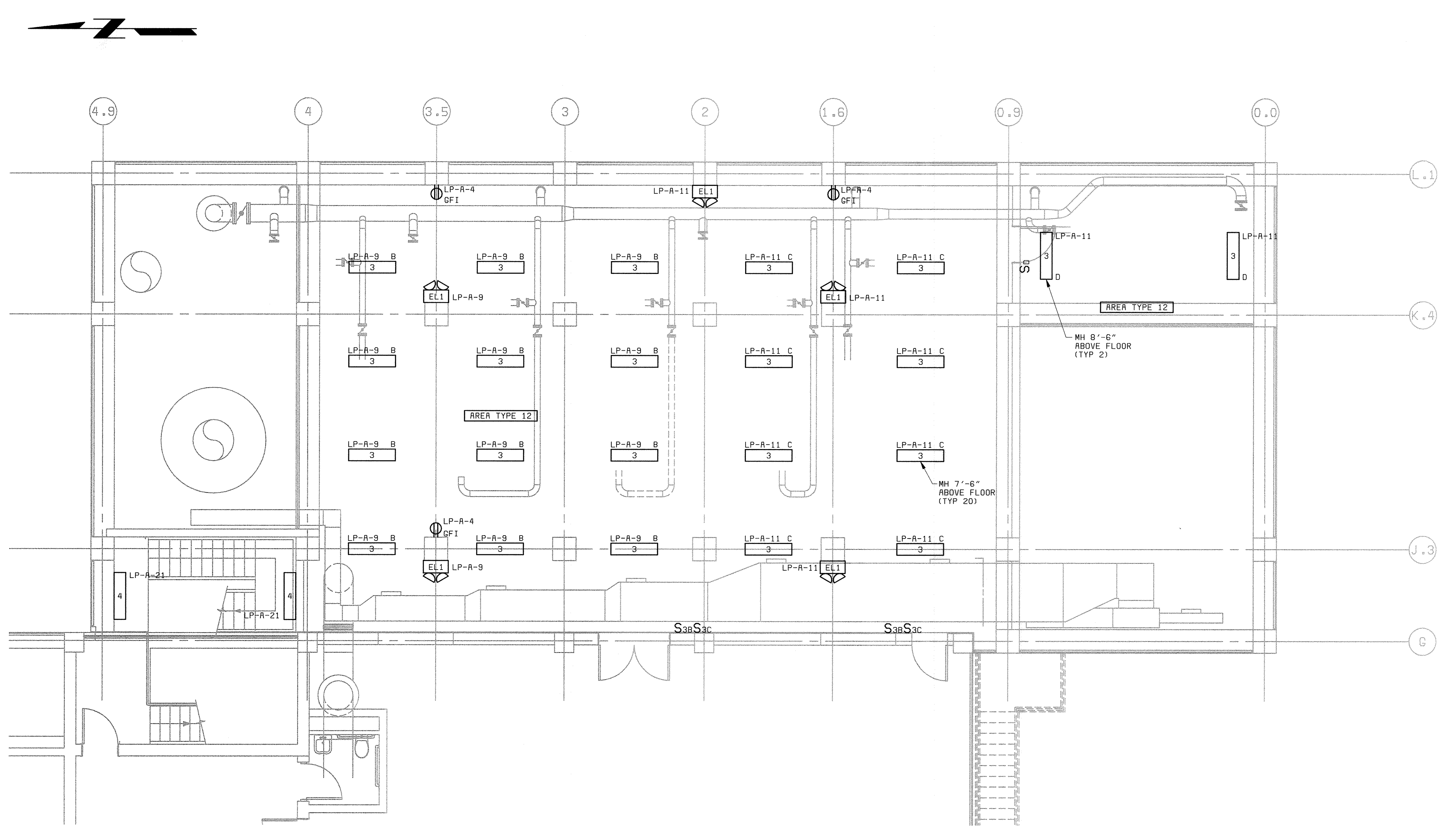
FLOOR PLAN ELEVATION 142.00
3/16"=1'-0"

- 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-Z00000657
05/04/2005 13:36:53

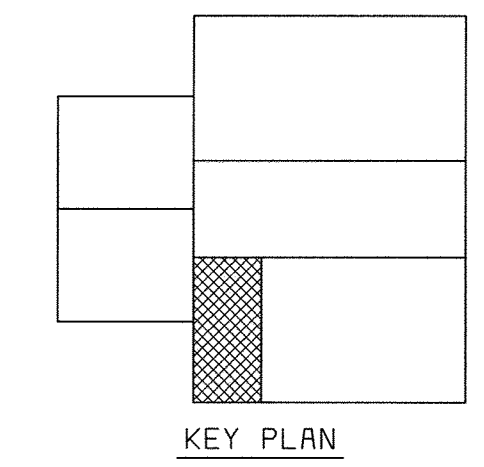
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: 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			E13
			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-10000284
58472-212-SDLS-R-10000841

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

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

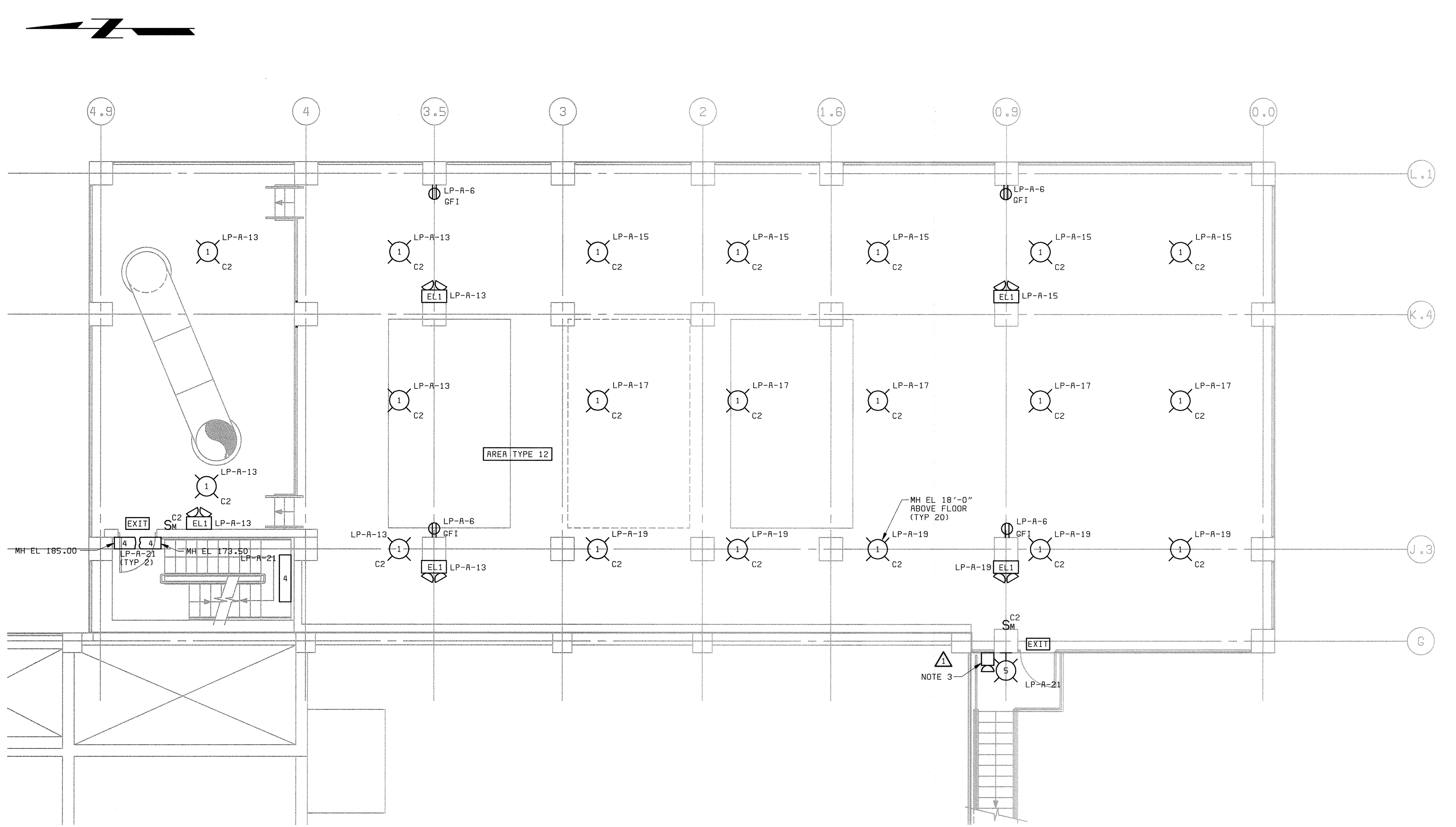
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STATE OF MARYLAND,
NO. 21876

DES: GNS,JCB							
DRN: JGT,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
CENTRIFUGE BUILDING EXPANSION
LIGHTING PLAN AT EL. 156.00

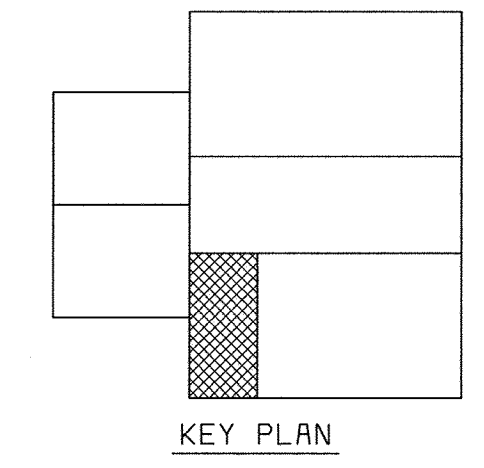
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
127 OF 150
E14



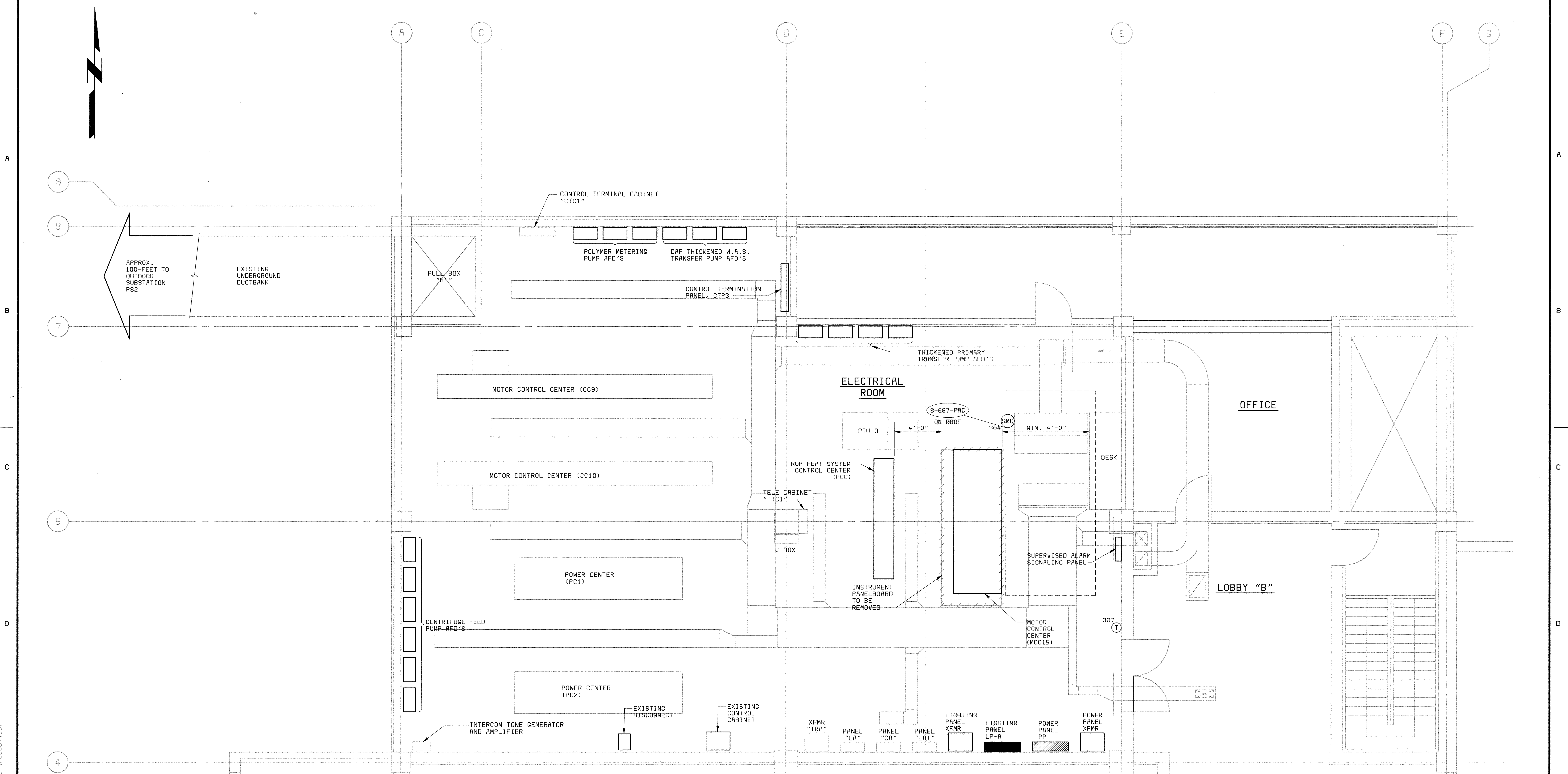
FLOOR PLAN ELEVATION 167.00
3/16"=1'-0"

- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - SEE FIXTURE SCHEDULE ON DRAWING E28.
 - EMERGENCY LIGHTING UNIT (EL2) REMOTE HEAD MOUNTED NEXT TO FIXTURE OR 8'-8" ABOVE FLOOR. SEE DRAWING E13 FOR LOCATION OF EL2.



58472-212-SDLS-A-R0000843
05/04/2005 13:41:16

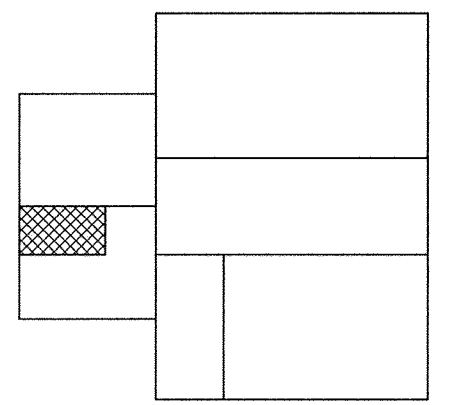
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	 BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: GNS,JCB							ELECTRICAL CENTRIFUGE BUILDING EXPANSION LIGHTING PLAN AT EL. 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: JGT,JCB	CHK: JTF	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR			07/27/01
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE			NO.	BY	CK	APP	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.



KEY PLAN

58472-206-DAF-E-Z0000026
58472-401-323-BASE2 (R00097415)
06/04/2004
PDSB472A

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
			DRN: JGT.MAS2	CHK: JTF	DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR		
			ELECTRICAL			ELECTRICAL ROOM POWER PLAN			E16			

A

B

C

D

E

A

B

C

D

E

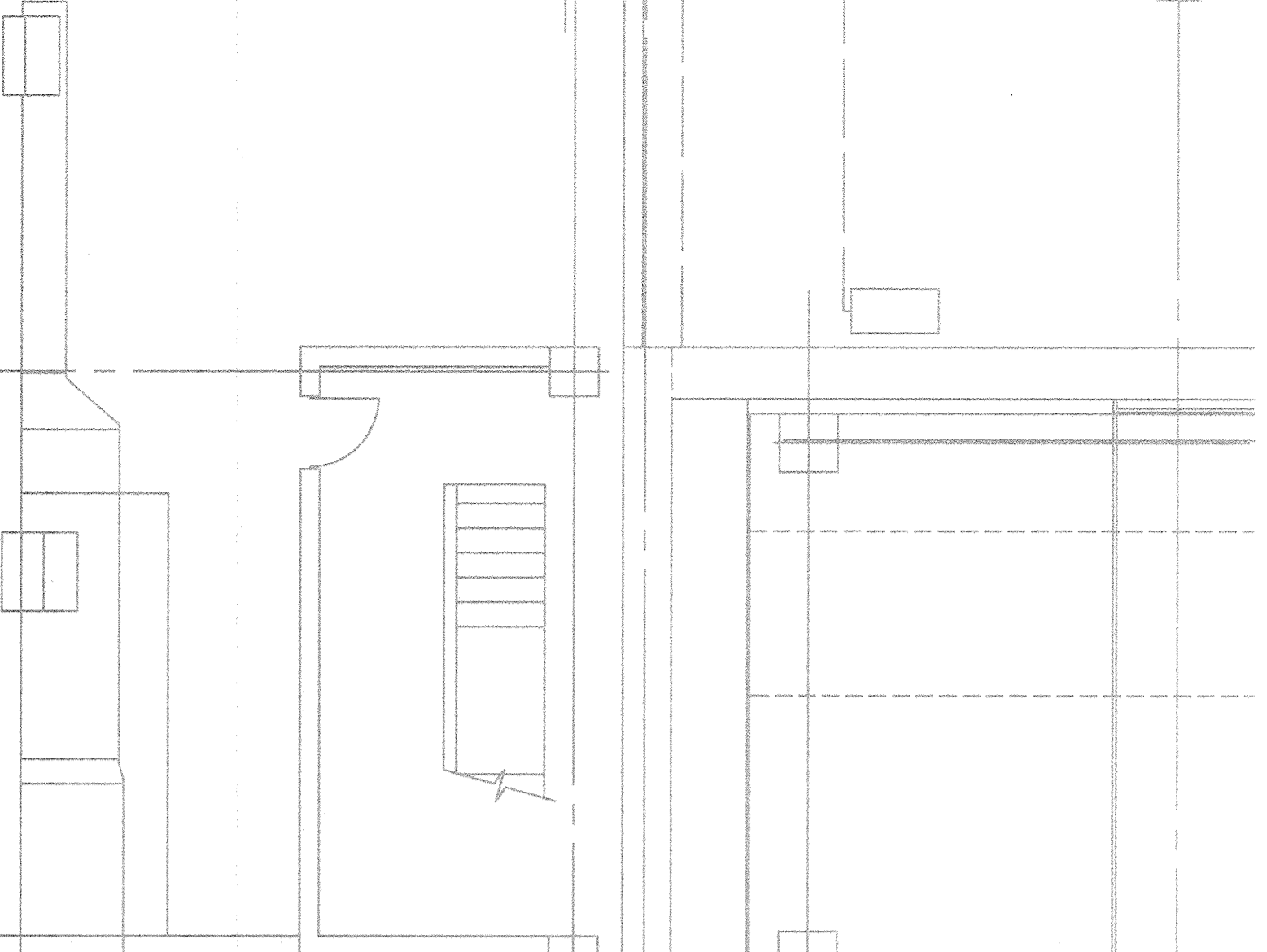
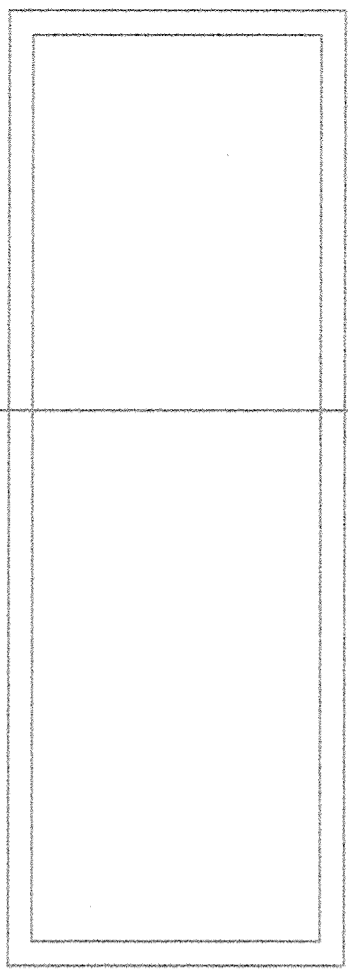
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4

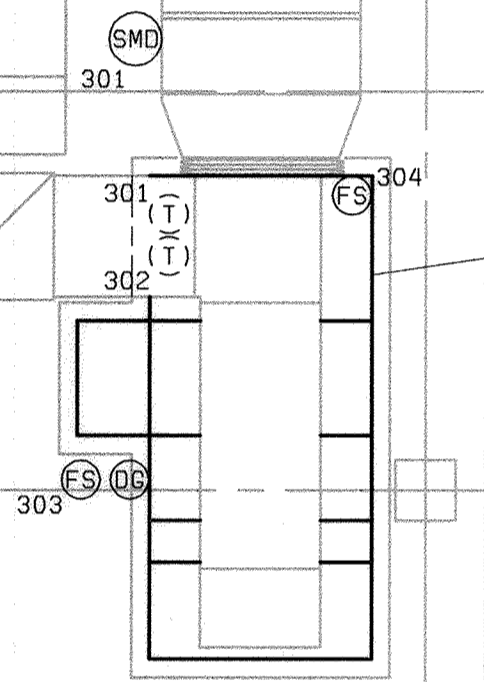
3

2

1



AREA TYPE 12



8-682-MRU

8-910-F

8-911-F

TCP-301

A

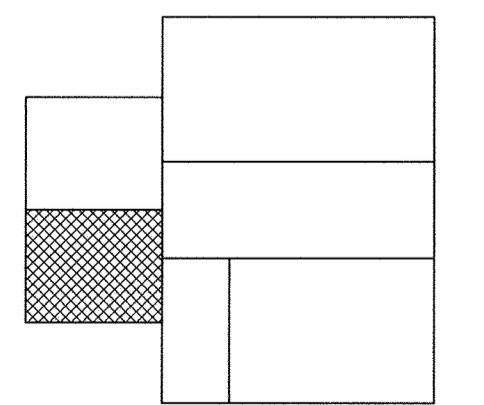
D

E

E1

G

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



KEY PLAN

58472-206-SDLS-H-00000540
58472-401-323-816E1 (A00097349)
R

08/03/2004
RDSB/72R

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CHIEF, BUREAU OF UTILITIES DATE

BLACK & VEATCH LLP
Gaithersburg, Maryland

REG. PROF. ENGR. DATE

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DONALD R. STEVENS
A REGISTERED
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IN THE
STATE OF MARYLAND,
NO. 21876

DES: GNS									
DRN: JCB									
CHK: JTF									
DATE: 5/30/00									
DATE	07/26/04	CONFORMED TO CONSTRUCTION RECORDS				RHH	RJR	RJR	
		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

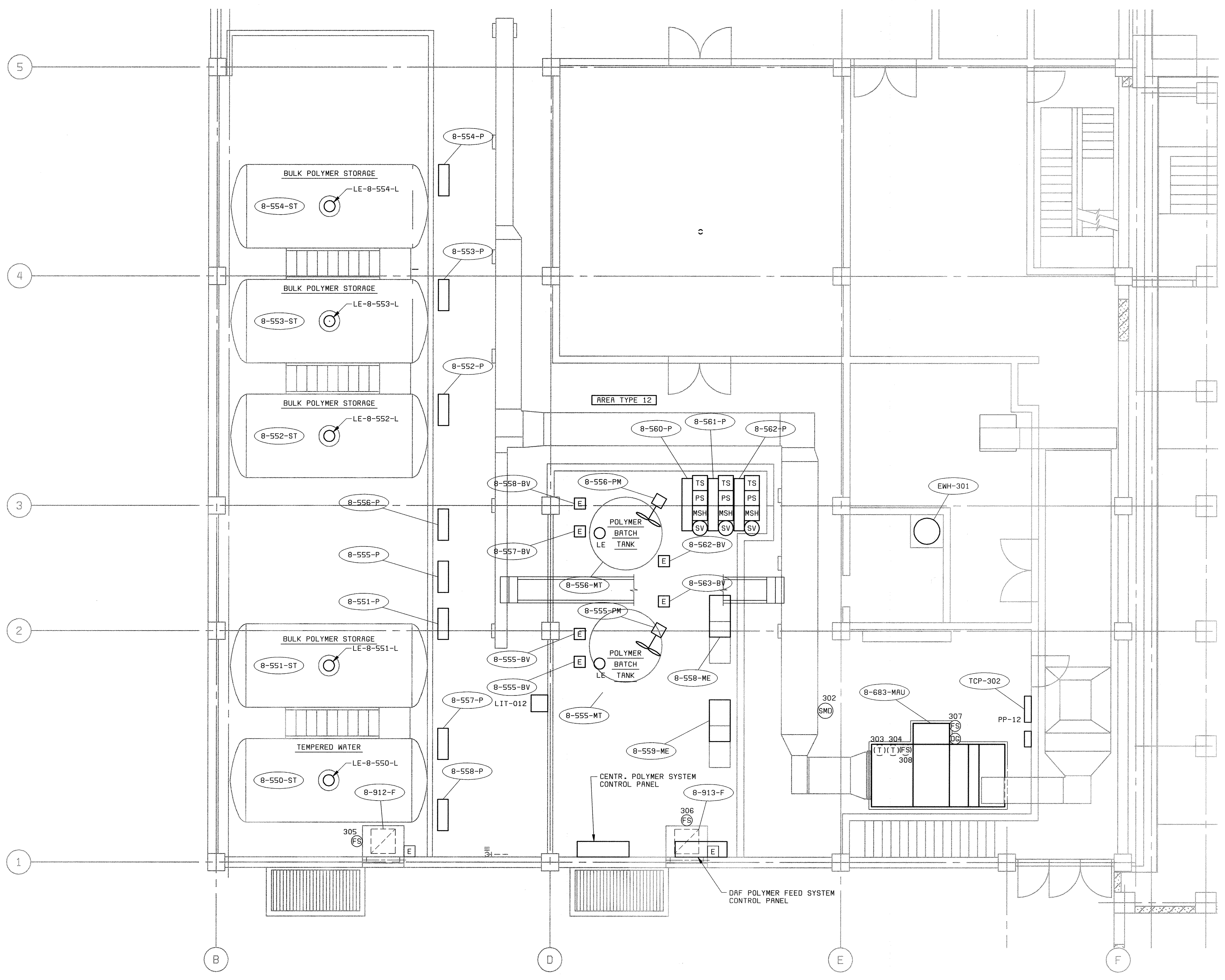
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

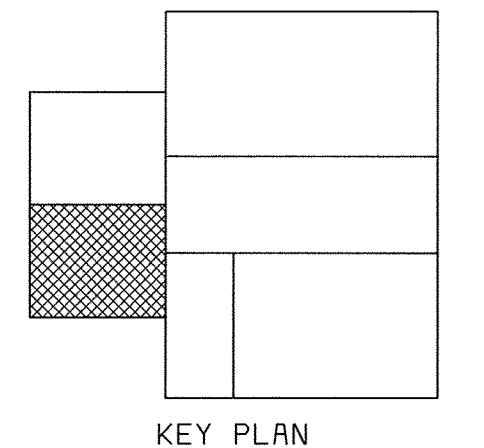
SHEET
130 of 150

E17

A
B
C
D
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 (R00098934)
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

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					
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**

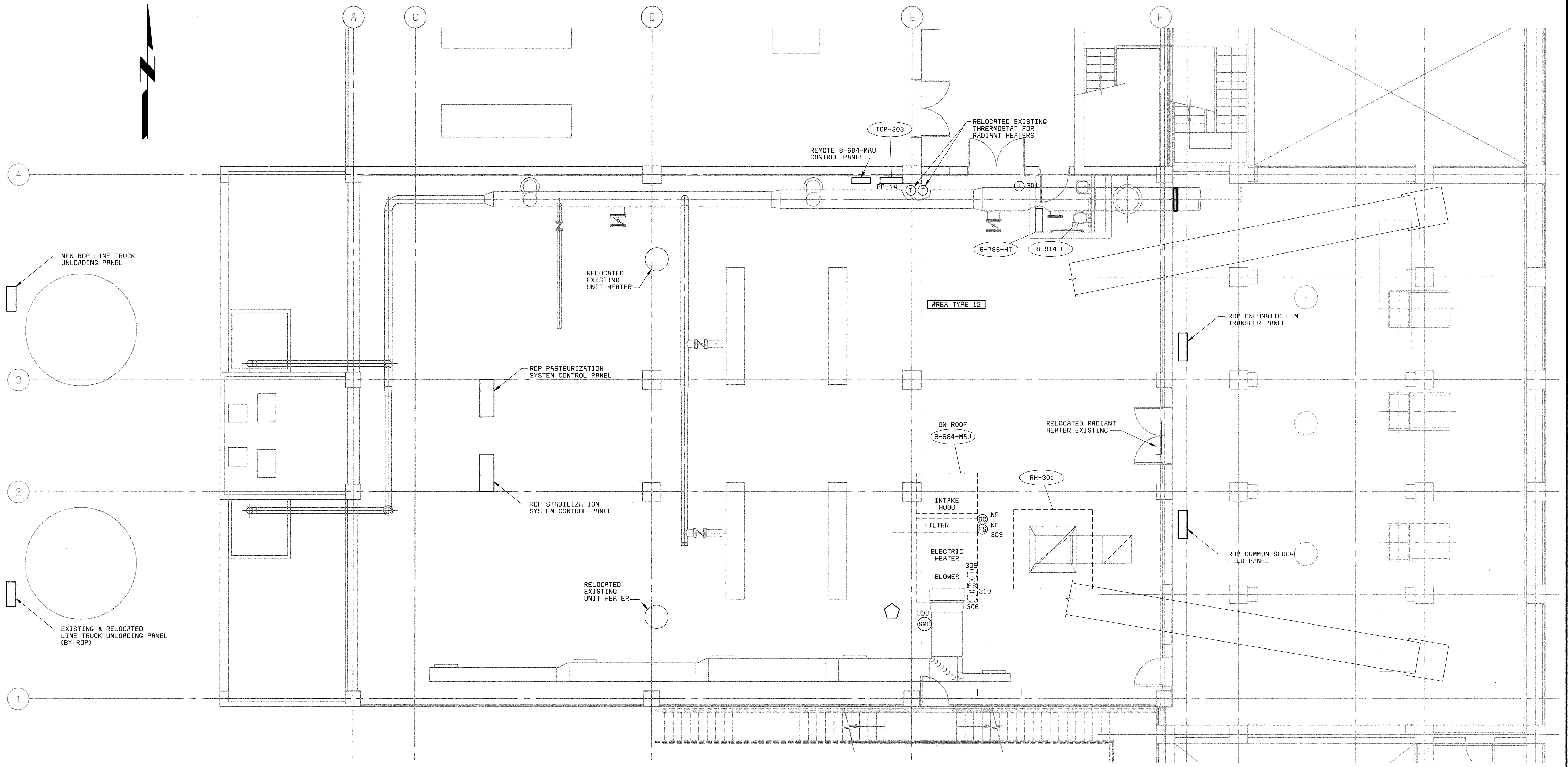
**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**

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

SCALE
AS
SHOWN

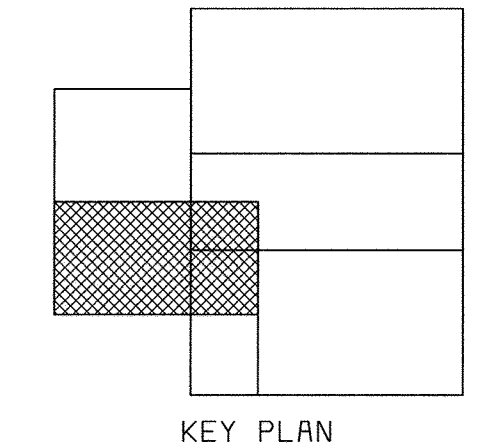
SHEET
131 OF 150

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.



KEY PLAN

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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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

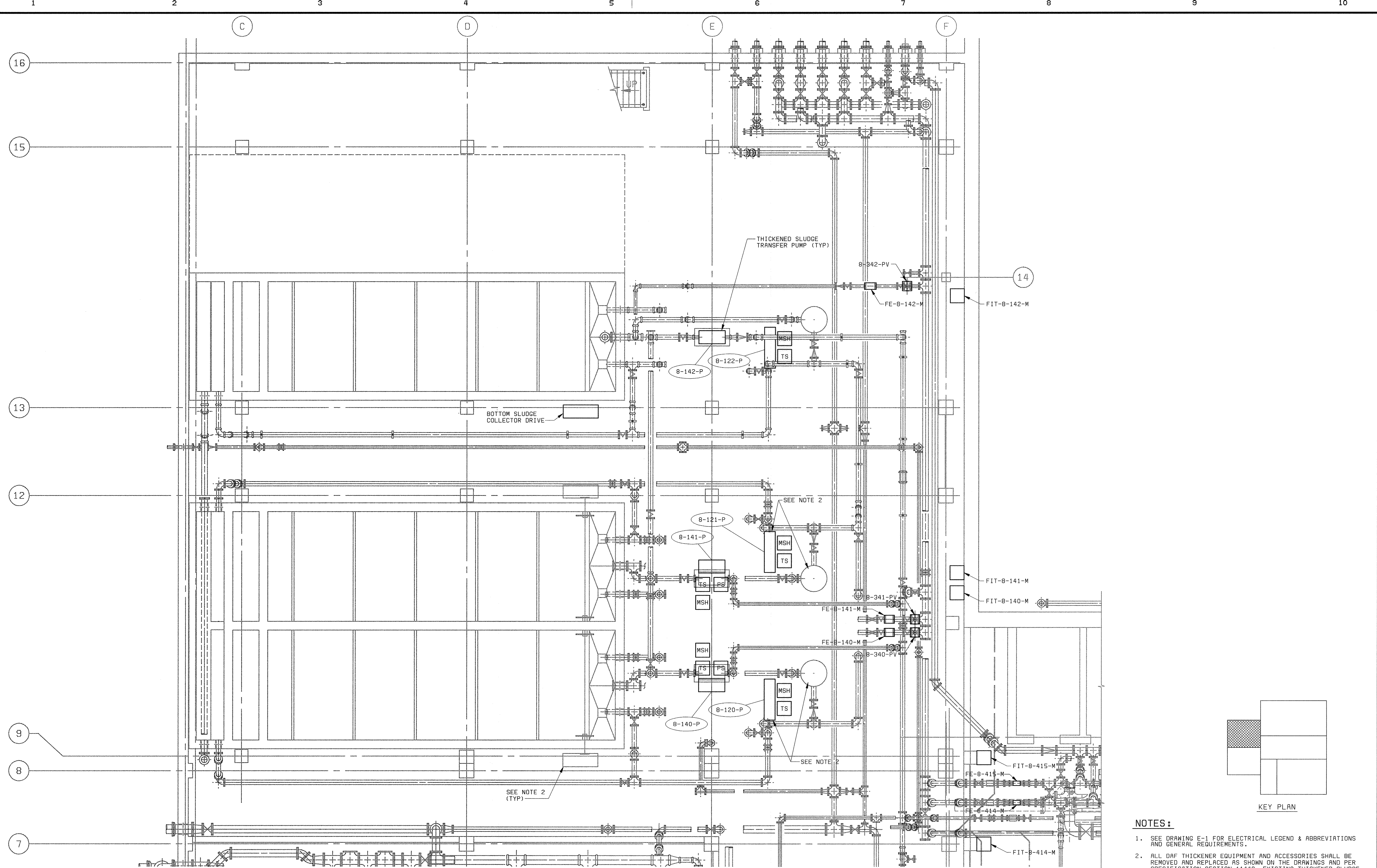
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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:**
- SEE DRAWING E-1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - 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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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	CHK APP

ELECTRICAL

FLOTATION THICKENING AREA
PLAN AT EL 128.00

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

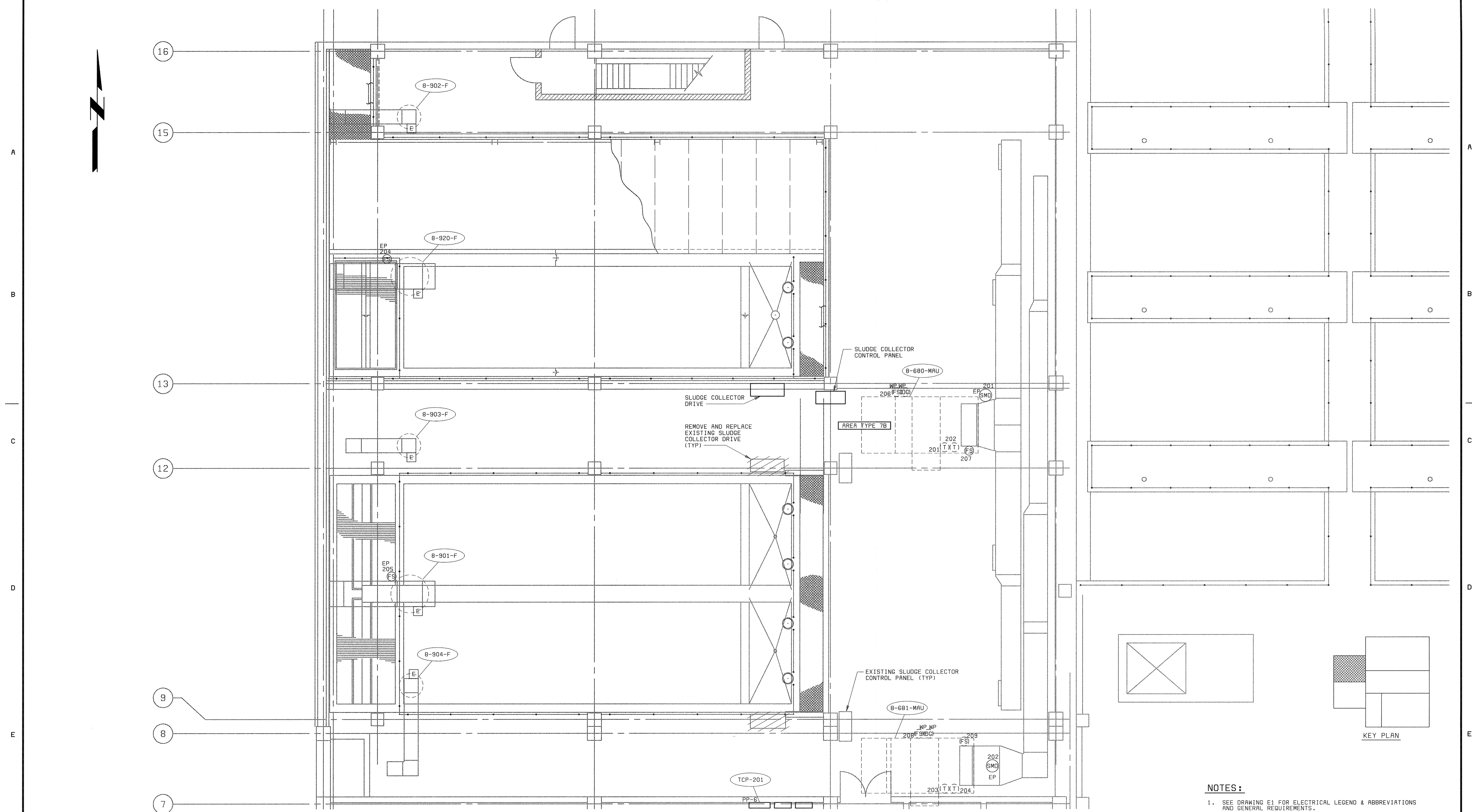
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
133 OF 150

E20

1 2 3 4 5 6 7 8 9 10



PLAN AT EL 142.00
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

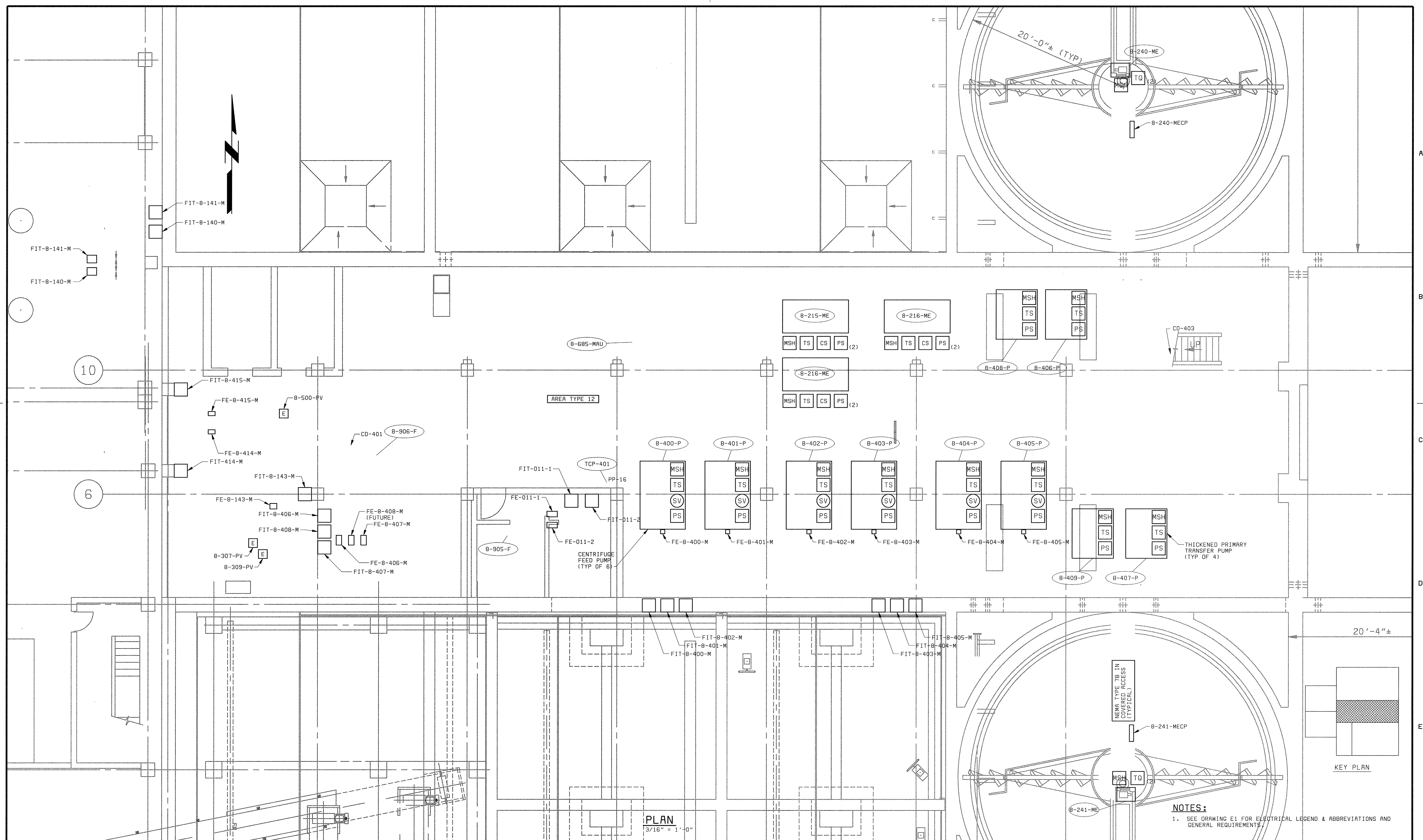
THIS DRAWING WAS
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IN THE
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NO. 21876

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	APP

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
SHEET
134 OF 150
E21



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

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STATE OF MARYLAND,
NO. 21876

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

ELECTRICAL
**SLUDGE STORAGE AND
PRIMARY SLUDGE THICKENER AREA
POWER PLAN**

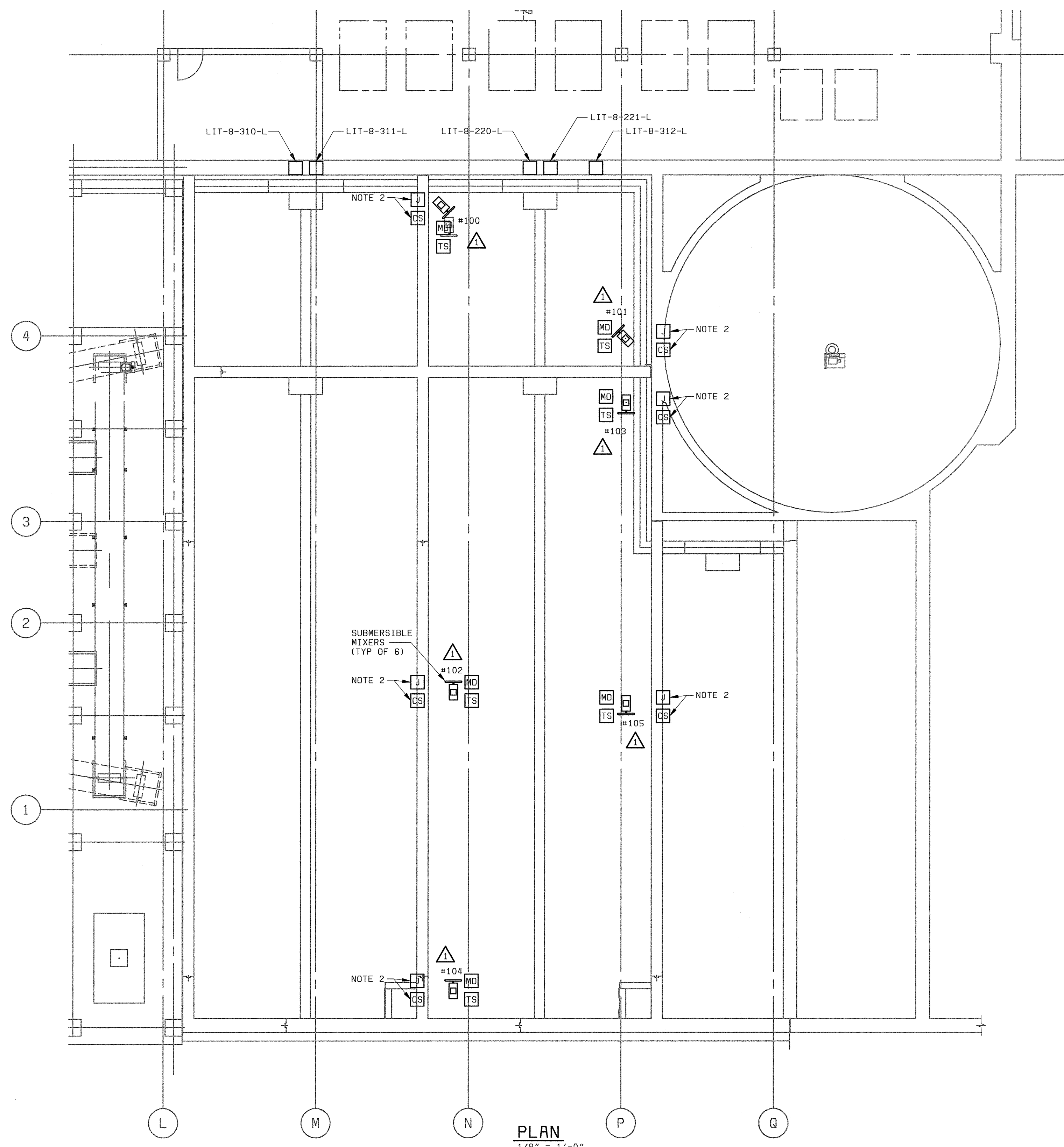
**LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY**
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN
SHEET
135 OF 150
E22

058472_2
FD58472R

A
B
C
D
E

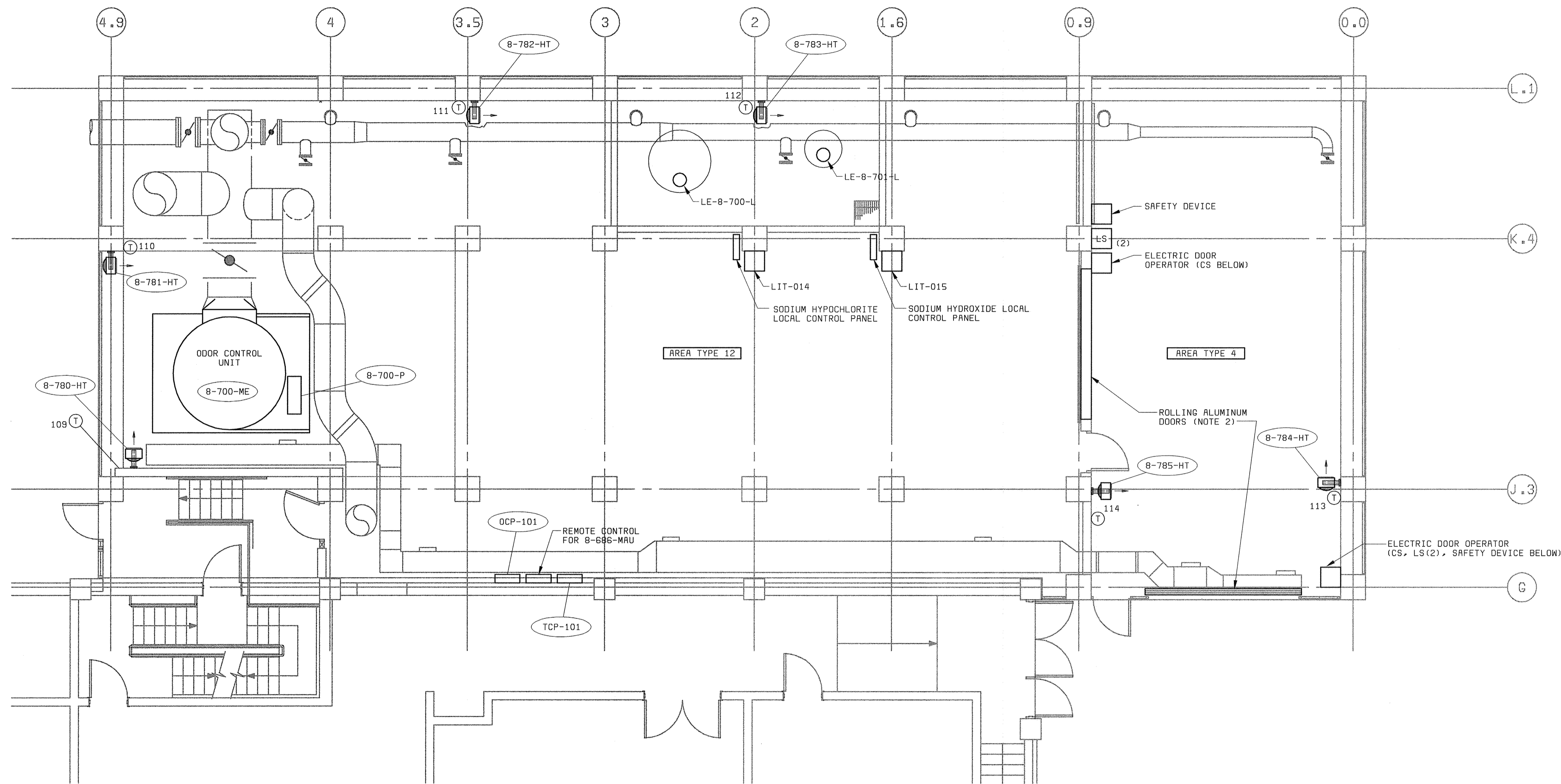
A
B
C
D
E



PLAN
1/8" = 1'-0"

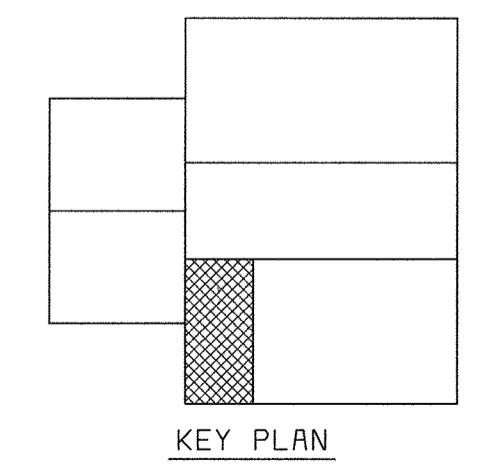
- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - MIXER JUNCTION BOXES AND CONTROL STATIONS SHALL BE INSTALLED ON THE WALKWAYS LOCATED ABOVE ON THE NEXT LEVEL.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gathersburg, Maryland REG. PROF. ENCR. 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	NO.	BY	CK	APP	



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

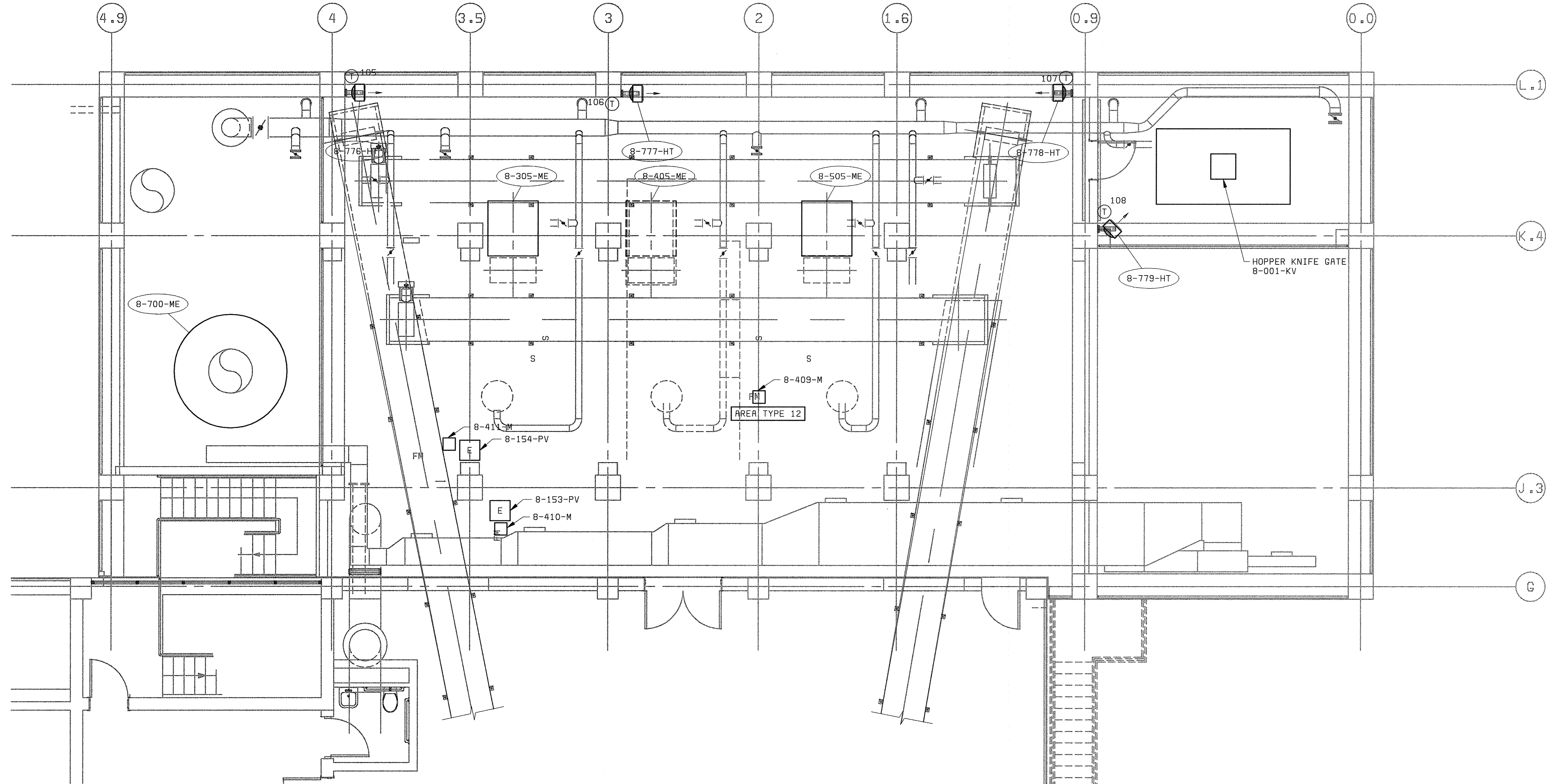
- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - REFER TO ARCHITECTURAL DRAWINGS FOR ROLLING DOOR DETAILS.



58472-212-SOLS-H-00000837
58472-204-SOLS-H-00000426

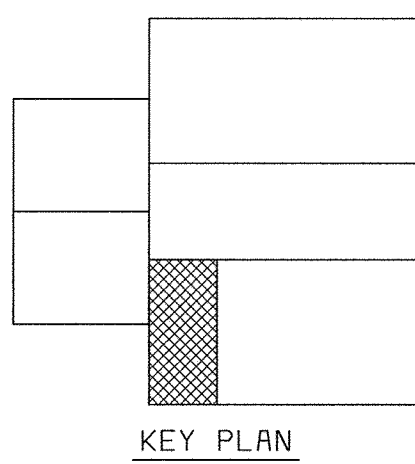
058472.2
F058472A

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									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										E24
			DATE: 5/30/00	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP				
				07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR				
ELECTRICAL CENTRIFUGE BUILDING EXPANSION POWER PLAN AT EL 142.00													



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

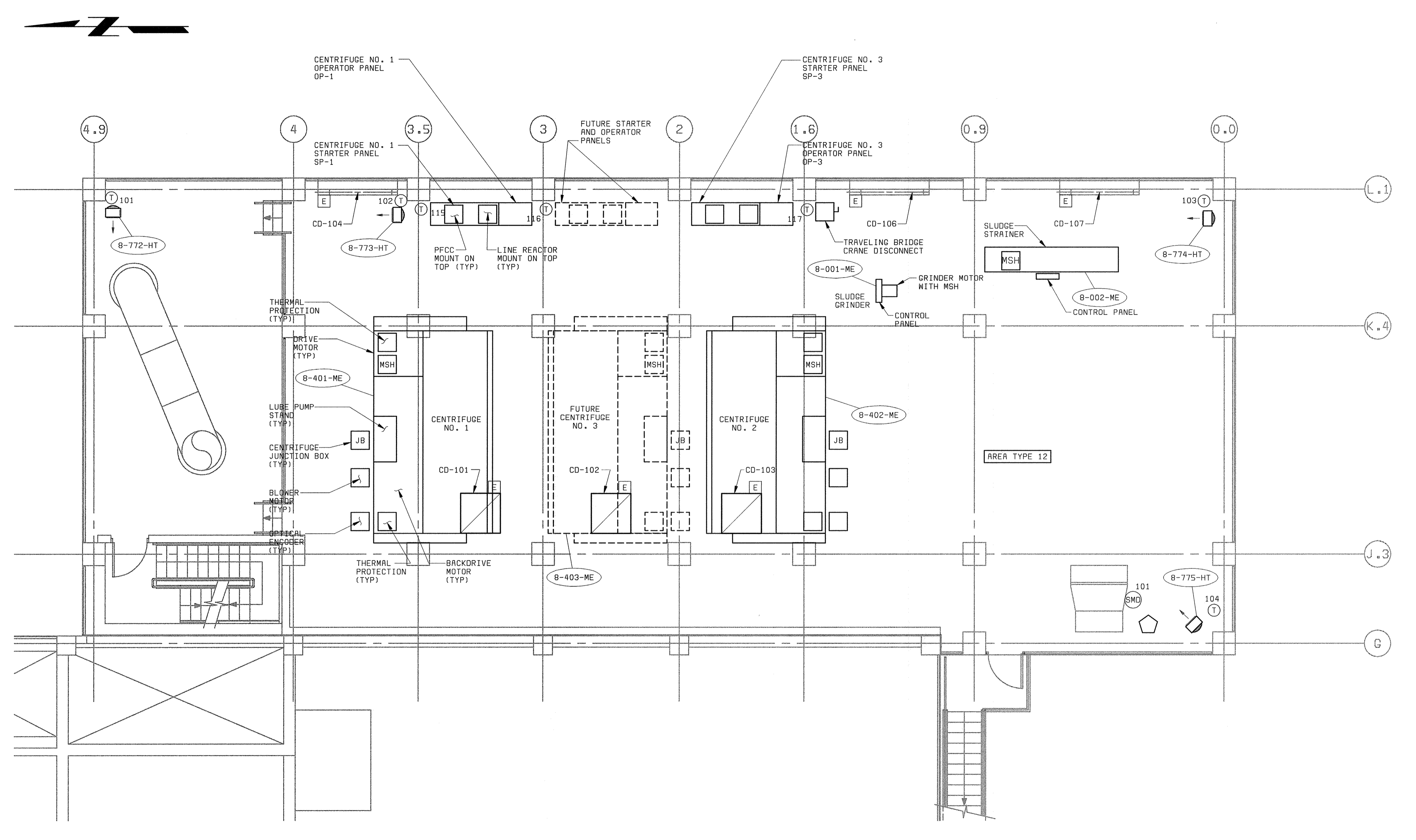
NOTES:
1. SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.



58472-401-323-PIPE (A00099236)
58472-204-SOLS-H-A0000384
58472-212-SOLS-A-A0000841

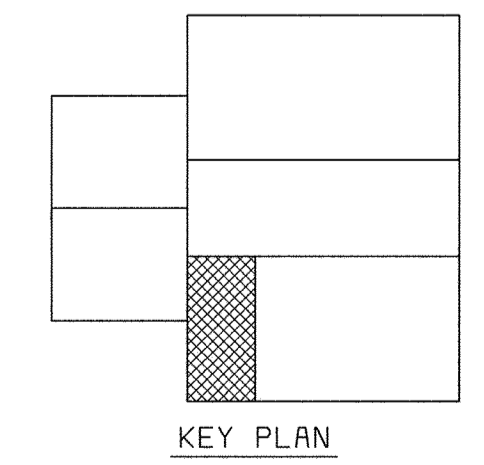
058472_2
F058472A

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		



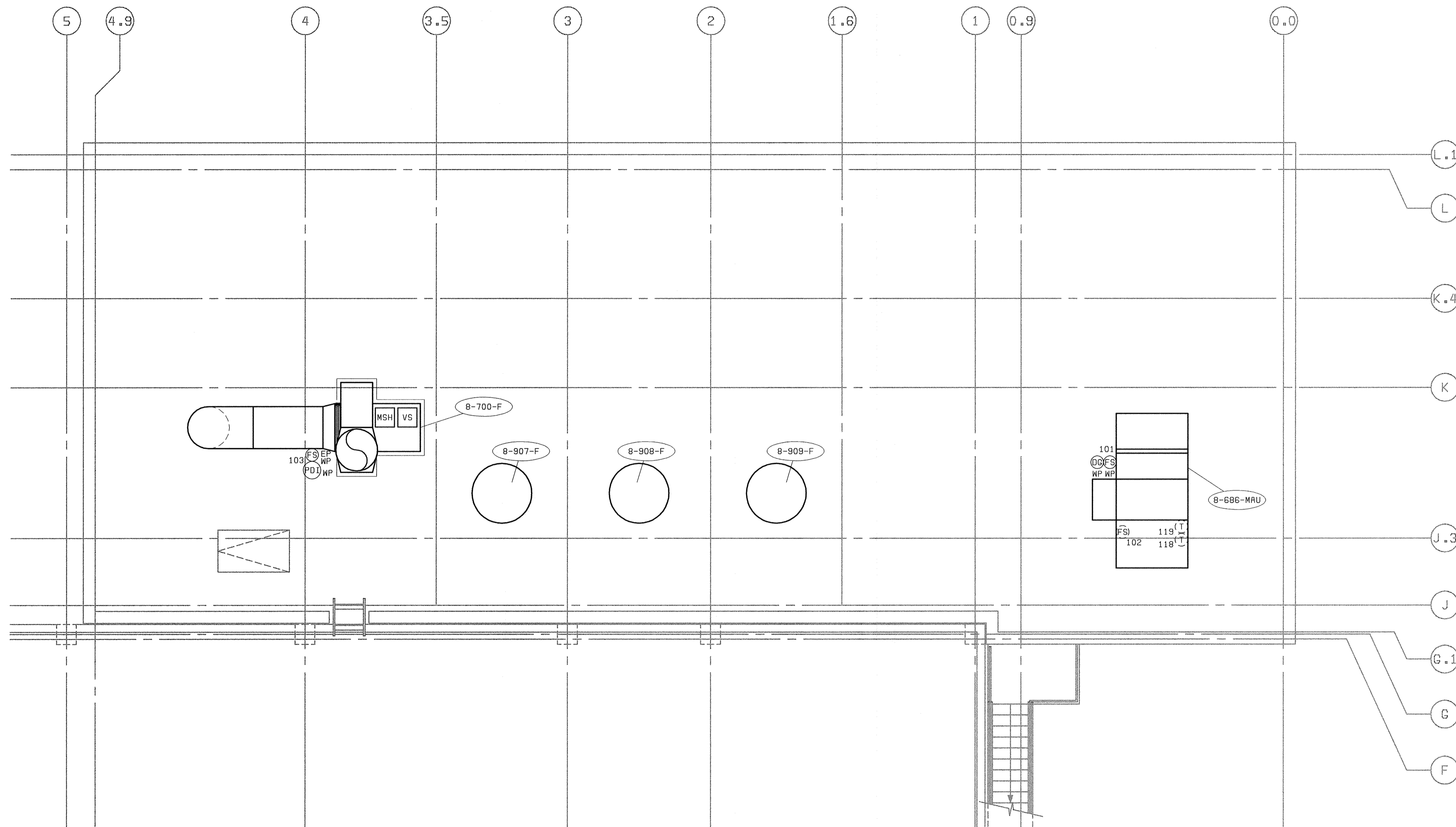
FLOOR PLAN ELEVATION 167.00
3/16"=1'-0"

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

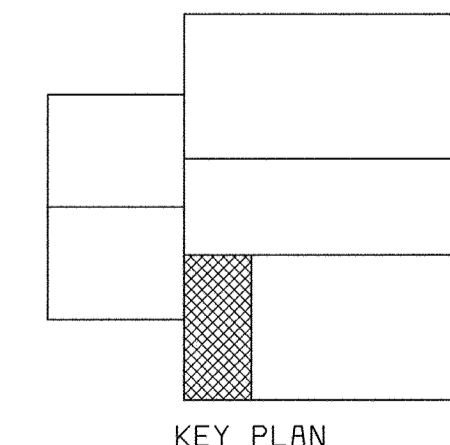


58472-204-SOLS-H-A0000386
58472-212-SOLS-H-A0000843
058472 2
F058472A

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



ROOF PLAN EL 181.00
3/16" = 1'-0"



KEY PLAN

58472-206-SOLS-H-A0000592
58472-212-SOLS-A-A0000847

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: 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				
												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		
				SERVICE: 120/208V, 3Ø, 4W, S/N				RATING: 100A				LOCATION: DEWATERING BUILDING ELECTRICAL ROOM						
"A"	"B"	"C"		LOAD				P	BKR	CKT#	BKR	P	LOAD			"A"	"B"	"C"
1050	1260	1260		LIGHTS - EL 142.00				1	20	1	2	20	RECP - EL 142.00			1080		
780				LIGHTS - EL 142.00				1	20	3	4	20	RECP - EL 156.00				720	
	610			LIGHTS - EL 142.00				1	20	5	6	20	RECP - EL 167.00					720
1050				LIGHTS - EL 156.00				1	20	7	8	20	SPARE			0		
				LIGHTS - EL 156.00				1	20	9	10	20	SPARE				0	
				LIGHTS - EL 167.00				1	20	11	12	20	SPARE					0
1050				LIGHTS - EL 167.00				1	20	13	14	20	SPARE			0		
	1050			LIGHTS - EL 167.00				1	20	15	16	20	SPARE				0	
				LIGHTS - EL 167.00				1	20	17	18	20	SPARE					0
				LIGHTS - EL 167.00				1	30	19	20	30	SPARE			0		
	586			LIGHTS - STAIRS & OUTSIDE				1	20	21	22	30	SPARE				0	
				SPARE				1	30	23	24	30	SPARE					0
3930				TOTAL "A" →							← TOTAL "A"			1080				
	3470			TOTAL "B" →							← TOTAL "B"				720			
				TOTAL "C" →							← TOTAL "C"					720		
			TOTAL LOAD =															
			13,316															

PHASE				PANELBOARD: POWER PANEL PP				BUS: COPPER				MAINS: 2P-125A MAIN BREAKER				PHASE		
				SERVICE: 120/240V, 1Ø, 4W, S/N				RATING: 125A (MIN)				LOCATION: DEWATERING BUILDING ELECTRICAL ROOM						
"A"	"B"	"C"		LOAD				P	BKR	CKT#	BKR	P	LOAD			"A"	"B"	"C"
3600				ELECTRIC WATER HEATER EWH-302				1	40	1	2	20	TEMPERATURE CONTROL PANEL TCP-101			225		
1270				LIME STABILIZATION WALL HEATER 8-786-HT				1	20	3	4	20	TEMPERATURE CONTROL PANEL TCP-201			250		
104				POLYMER FEED FAN 8-914-F				1	20	5	6	20	TEMPERATURE CONTROL PANEL TCP-301			200		
720				SODIUM HYDROXIDE TRANSFER PUMPS				1	20	7	8	20	TEMPERATURE CONTROL PANEL TCP-302			200		
500				POLYMER FEED PUMP CONTROLLER, 8-558-P				1	20	9	10	20	TEMPERATURE CONTROL PANEL TCP-303			150		
500				POLYMER FEED PUMP CONTROLLER, 8-559-P				1	20	11	12	20	TEMPERATURE CONTROL PANEL TCP-401			200		
720				SODIUM HYPOCHLORITE TRANSFER PUMPS				1	20	13	14	20	TEMPERATURE CONTROL PANEL TCP-402			175		
200				CENTRIFUGE BUILDING SOLENOID VALVES				1	20	15	16	20	BLOWER ENCLOSURE FAN/HEATER			1000		
1000				BLOWER ENCLOSURE FAN/HEATER				1	20	17	18	20	BLOWER ENCLOSURE FAN/HEATER			1000		
200				INSTRUMENTATION				1	30	19	20	40	AIR COMPRESSOR CONTROL VALVES			100		
200				INSTRUMENTATION				1	20	21	22	40	INSTRUMENTATION			300		
300				SUPERVISED ALARM PANEL				1	20	23	24	20	INSTRUMENTATION			300		
0				SPARE				-	20	25	26	20	INSTRUMENTATION			300		
0				SPARE				-	20	27	28	20	INSTRUMENTATION			300		
0				SPARE				-	20	29	30	20	SPARE			0		
9,314				TOTAL →							← 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
Gaiithersburg, Maryland

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IN THE
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NO. 21876

REG. PROF. ENGR. DATE

DES: GNS

DRN: MDR, DAH

CHK: JTF

DATE: 5/30/00

DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH	RJR	RJR
07/27/01	EMERG. EGRESS LIGHTING AT EXTERIOR DOORS		MEP	GNS	

ELECTRICAL

MISCELLANEOUS
DETAILS AND SCHEDULES

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

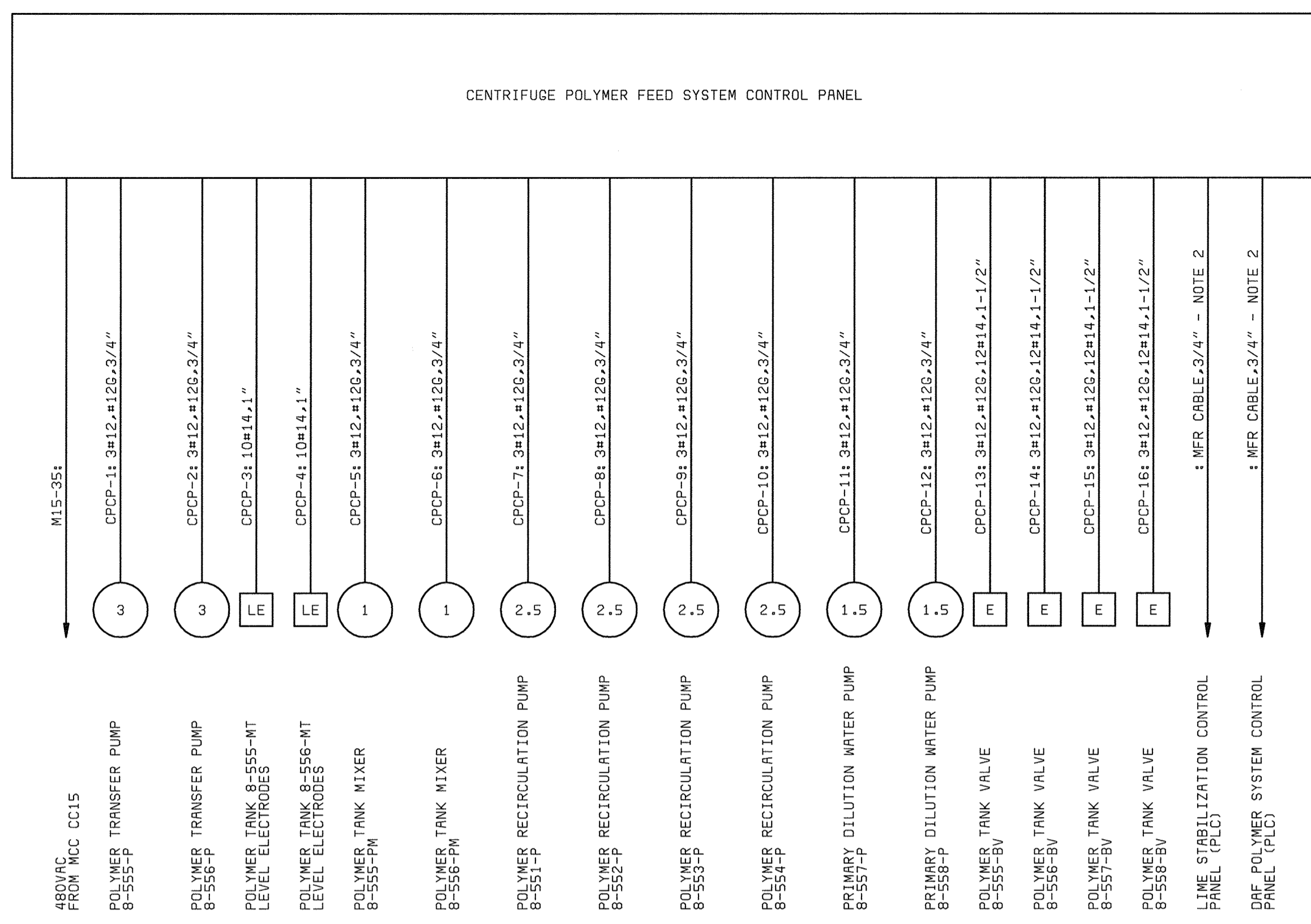
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

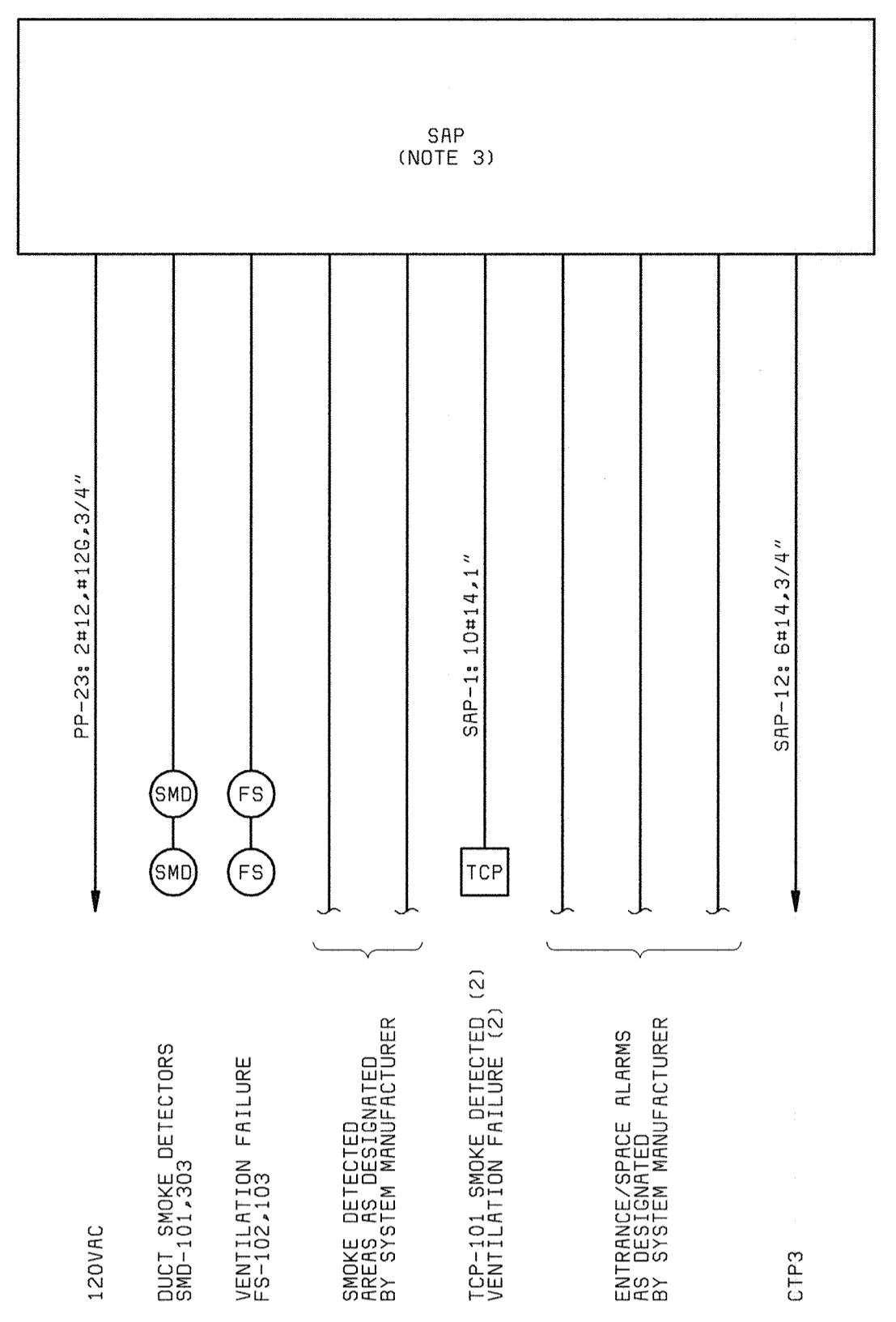
SHEET 141 OF 150

E28

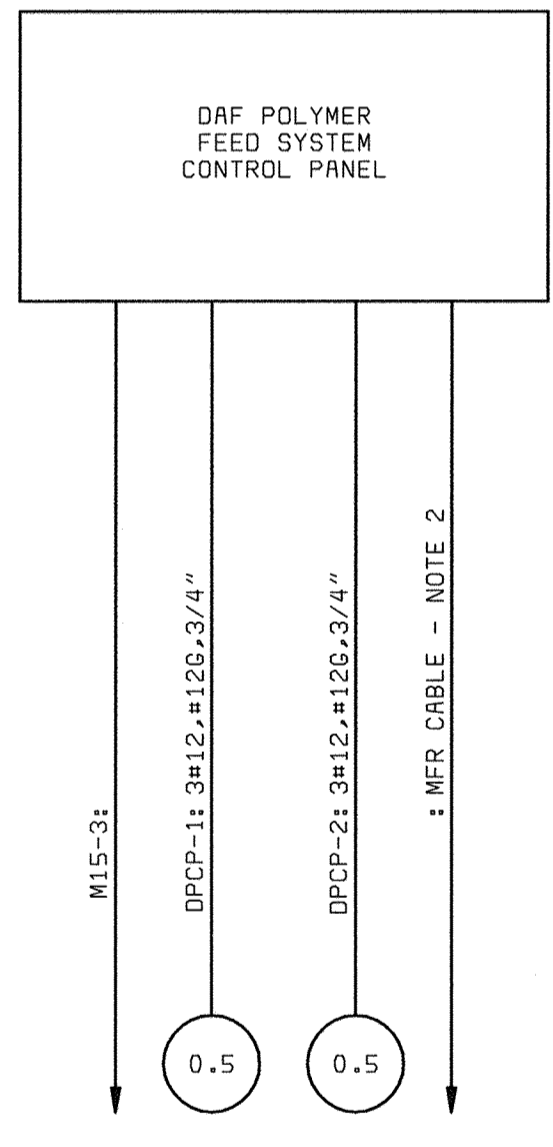
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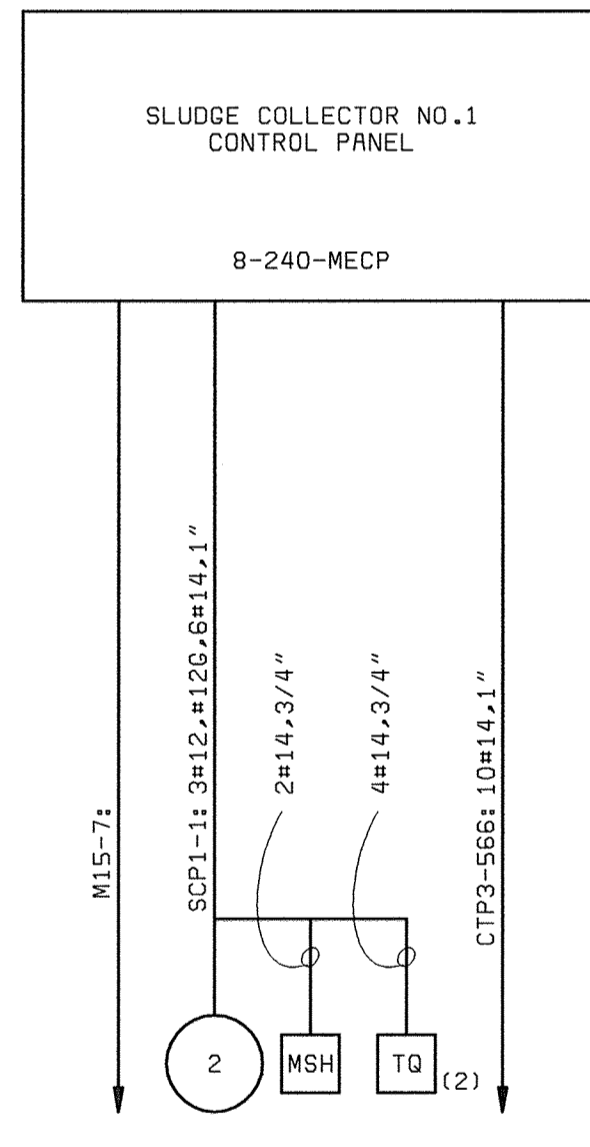
CENTRIFUGE POLYMER FEED SYSTEM ONE-LINE
(DEWATERING BUILDING POLYMER FEED AREA)



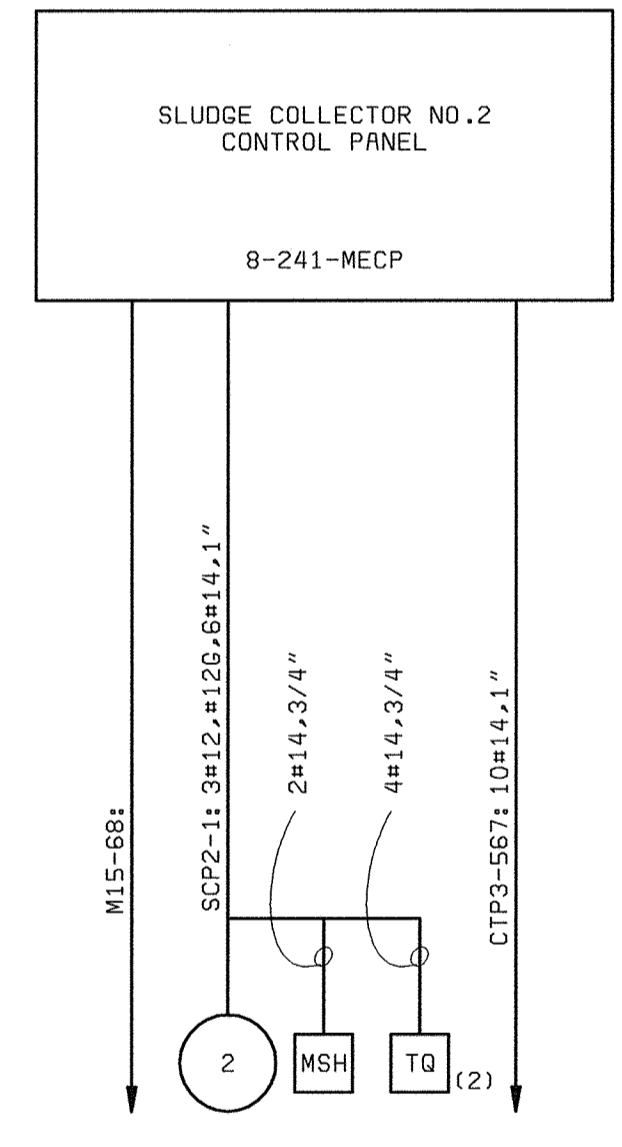
SUPERVISED ALARM PANEL (SAP) ONE-LINE
(DEWATERING BUILDING ELECTRICAL ROOM)



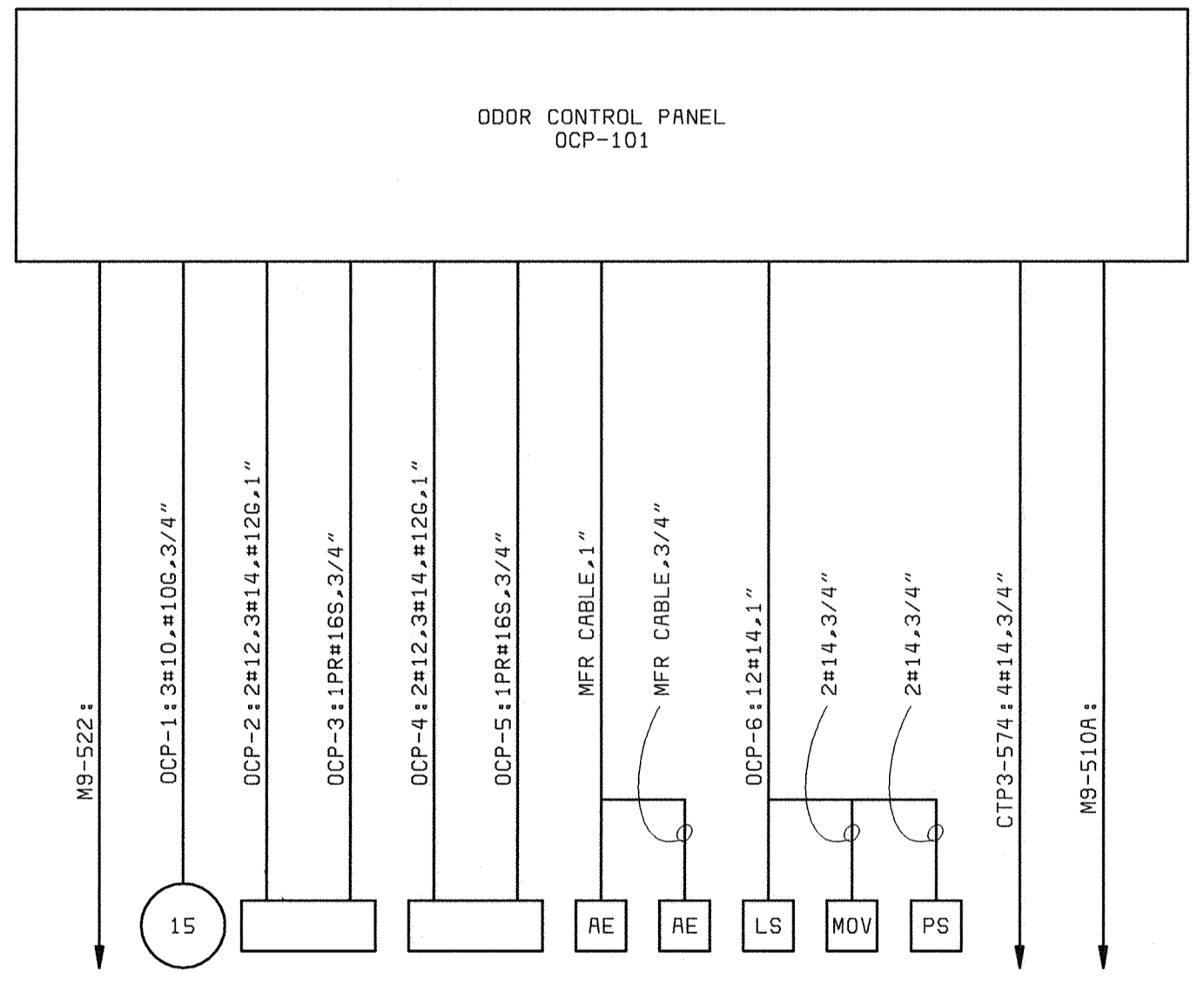
DAF POLYMER FEED SYSTEM ONE-LINE
(DEWATERING BUILDING POLYMER FEED AREA)



SLUDGE COLLECTOR CONTROL ONE-LINES
(DEWATERING BUILDING FLOTATION THICKENING AREA)



SLUDGE COLLECTOR CONTROL ONE-LINES
(DEWATERING BUILDING FLOTATION THICKENING AREA)

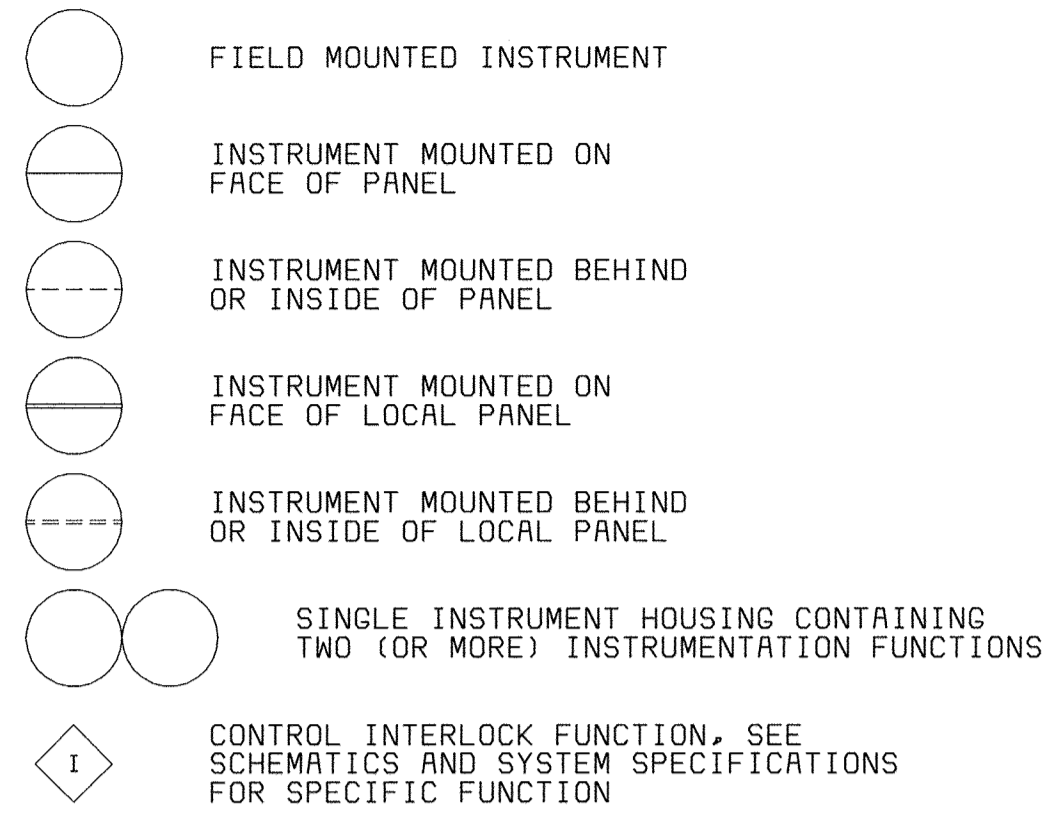


OCP-101 ONE-LINE
(CENTRIFUGE BUILDING)

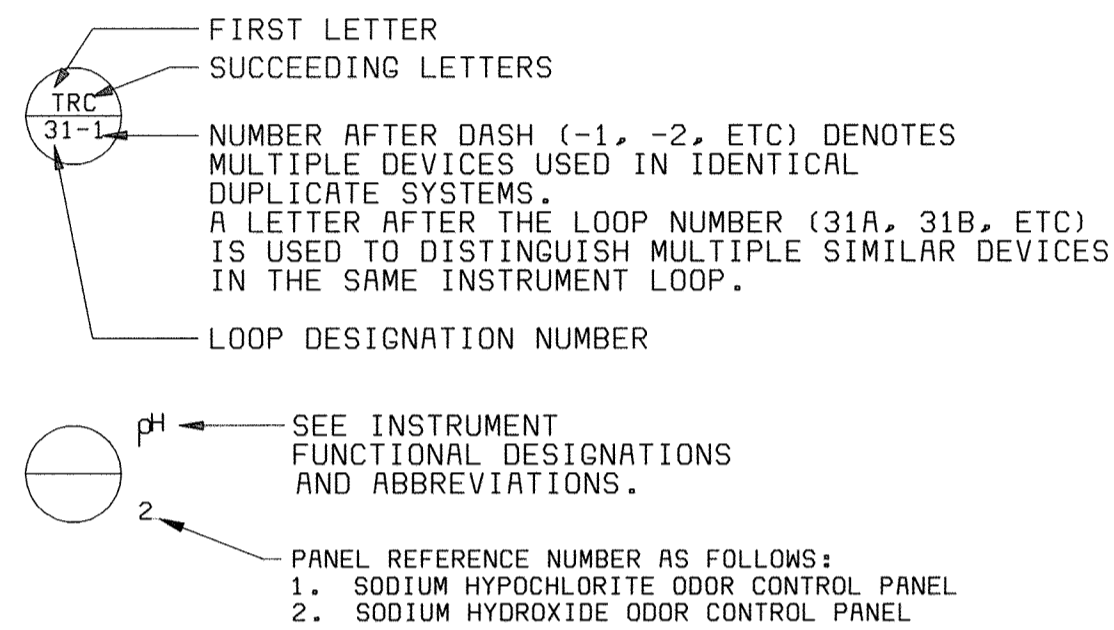
- NOTES:**
- SEE DRAWING E1 FOR ELECTRICAL LEGEND & ABBREVIATIONS AND GENERAL REQUIREMENTS.
 - NETWORK CABLE AND CONDUIT SHALL BE PROVIDED AND INSTALLED UNDER THE LIQUIDS PHASE CONTRACT.
 - THE SUPERVISED ALARM SIGNALING SYSTEM SHALL BE DESIGNED AND PROVIDED BY THE SYSTEM MANUFACTURER, INCLUDING CABLE 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 8-500-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	 Gaithersburg, 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 REG. PROF. ENGR. DATE	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

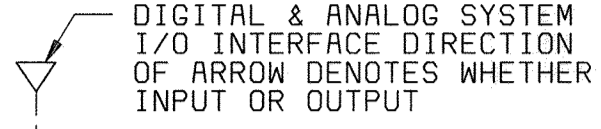


TAG NUMBERS MEANINGS OF IDENTIFICATION LETTERS

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

- K GAIN OR ATTENUATE (INPUT:OUTPUT)
- K GAIN AND REVERSE
- Σ ADD OR SUM (ADD AND SUBTRACT)
- Δ SUBTRACT (DIFFERENCE)
- √ EXTRACT SQUARE ROOT
- ÷ DIVIDE
- F(X) CHARACTERIZE SIGNAL
- > HIGH-SELECT
- < LOW-SELECT
- X MULTIPLY
- ∫ INTEGRATE (TIME INTEGRAL)
- CH₄ METHANE
- CL₂ CHLORINE RESIDUAL
- CO₂ CARBON DIOXIDE
- DO DISSOLVED OXYGEN
- LEL LOWER EXPLOSIVE LIMIT
- MCC MOTOR CONTROL CENTER
- MLSS MIXED LIQUOR SUSPENDED SOLIDS
- O₂ OXYGEN (PURITY)
- pH pH CELL
- TURB TURBIDITY

HAND SWITCH DESIGNATIONS

- HOR HAND-OFF-AUTO
- LR LOCAL REMOTE
- OC OPEN-CLOSE
- OO ON-OFF
- LOR LOCAL-OFF-REMOTE
- OOA ON-OFF-AUTO
- OCR OPEN-CLOSE-REMOTE
- OOD ON-OFF-REMOTE

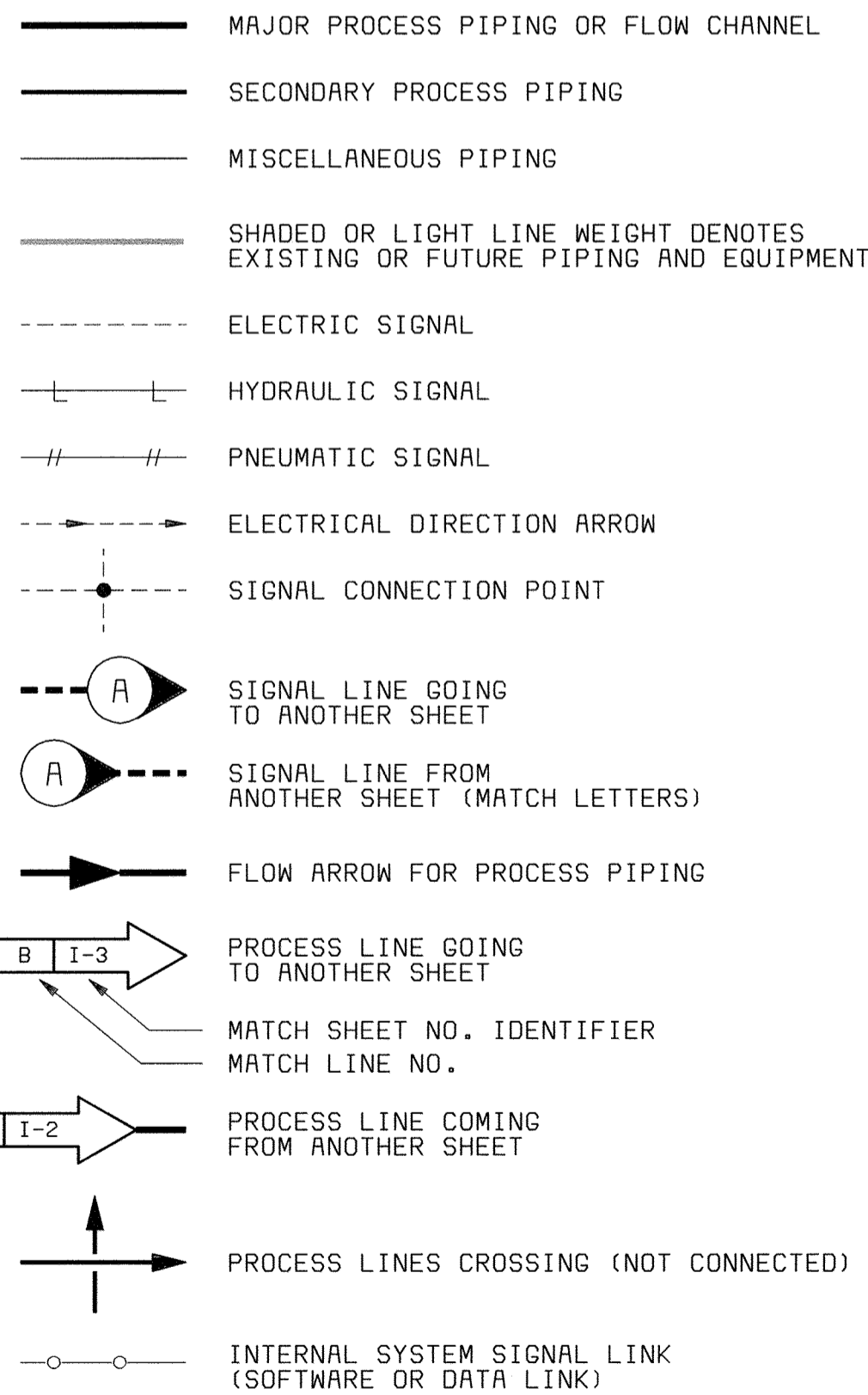
POWER SUPPLY ABBREVIATIONS

- AS AIR SUPPLY
- ES ELECTRIC SUPPLY
- GS GAS SUPPLY
- HS HYDRAULIC SUPPLY
- NS NITROGEN SUPPLY
- SS STEAM SUPPLY
- WS WATER SUPPLY
- AS POWER SUPPLY SOURCE LABEL, USED ONLY WHERE NECESSARY TO HELP CLARIFY AN INSTRUMENT OR SYSTEM FUNCTION.

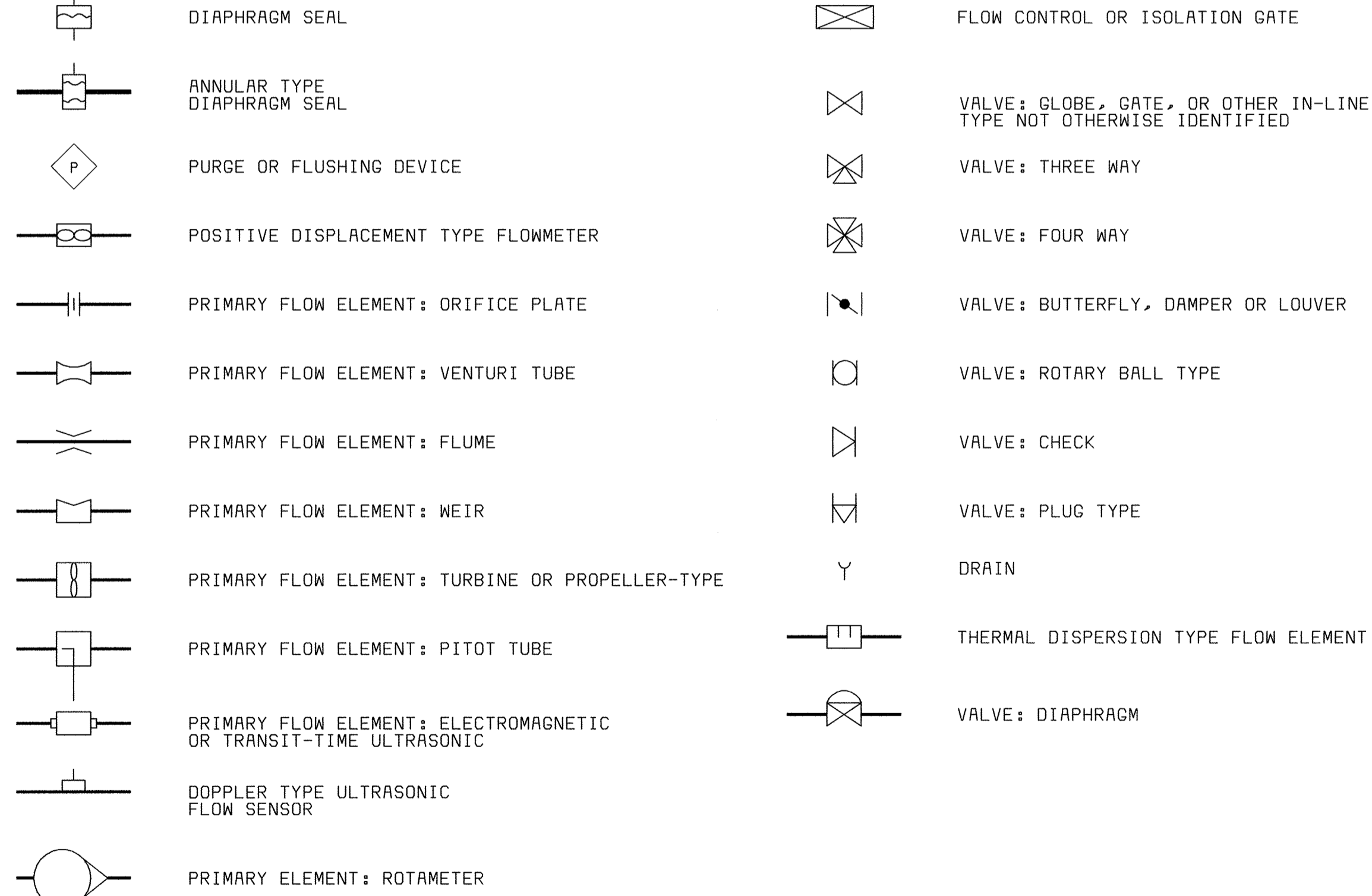
GENERAL NOTES

- 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.

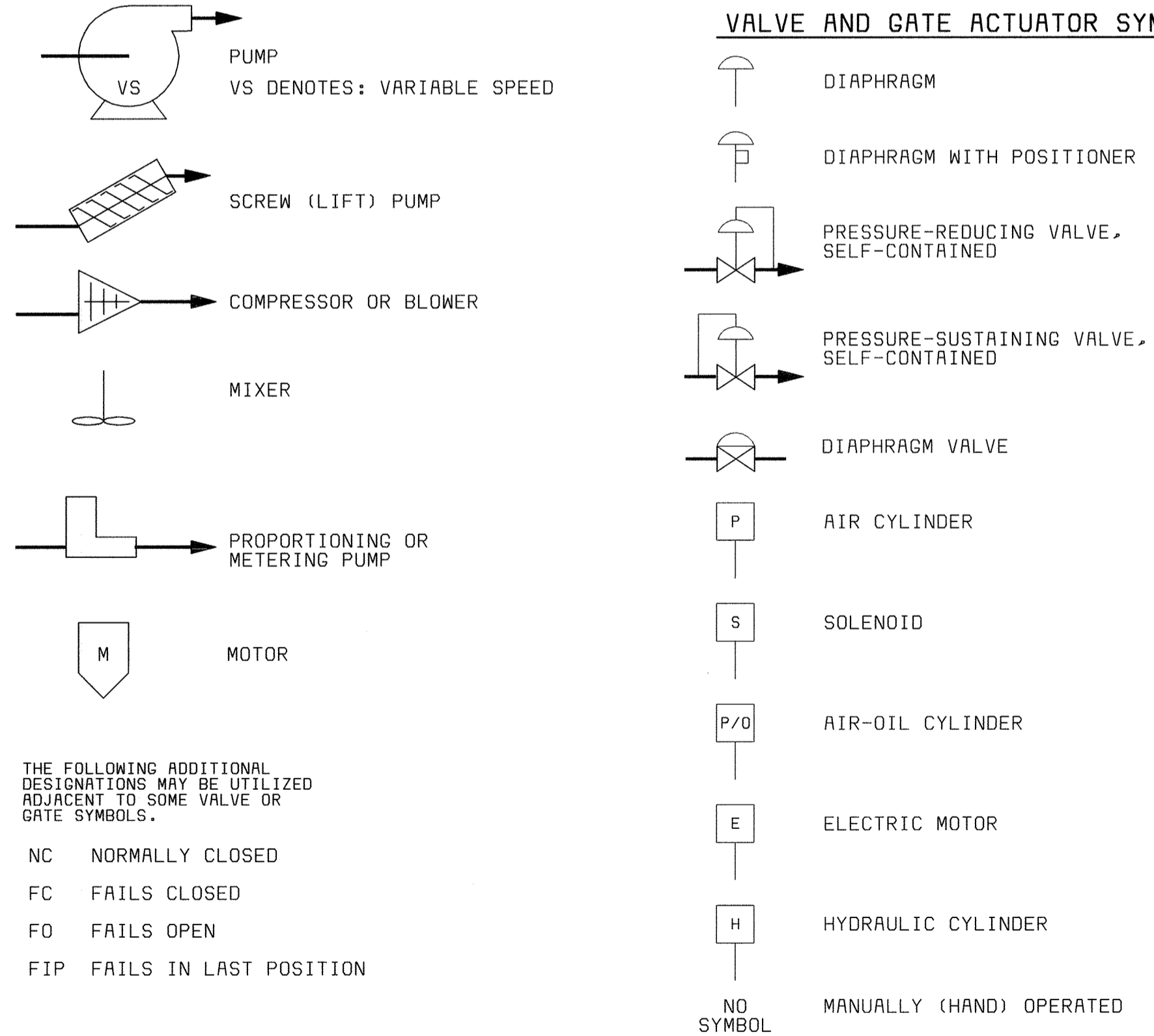
LINE SYMBOLS



PROCESS DEVICE SYMBOLS



VALVE AND GATE ACTUATOR SYMBOLS



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A REGISTERED
PROFESSIONAL ENGINEER
IN THE
STATE OF MARYLAND,
NO. 21876

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

INSTRUMENTATION

P & ID
LEGEND & ABBREVIATIONS

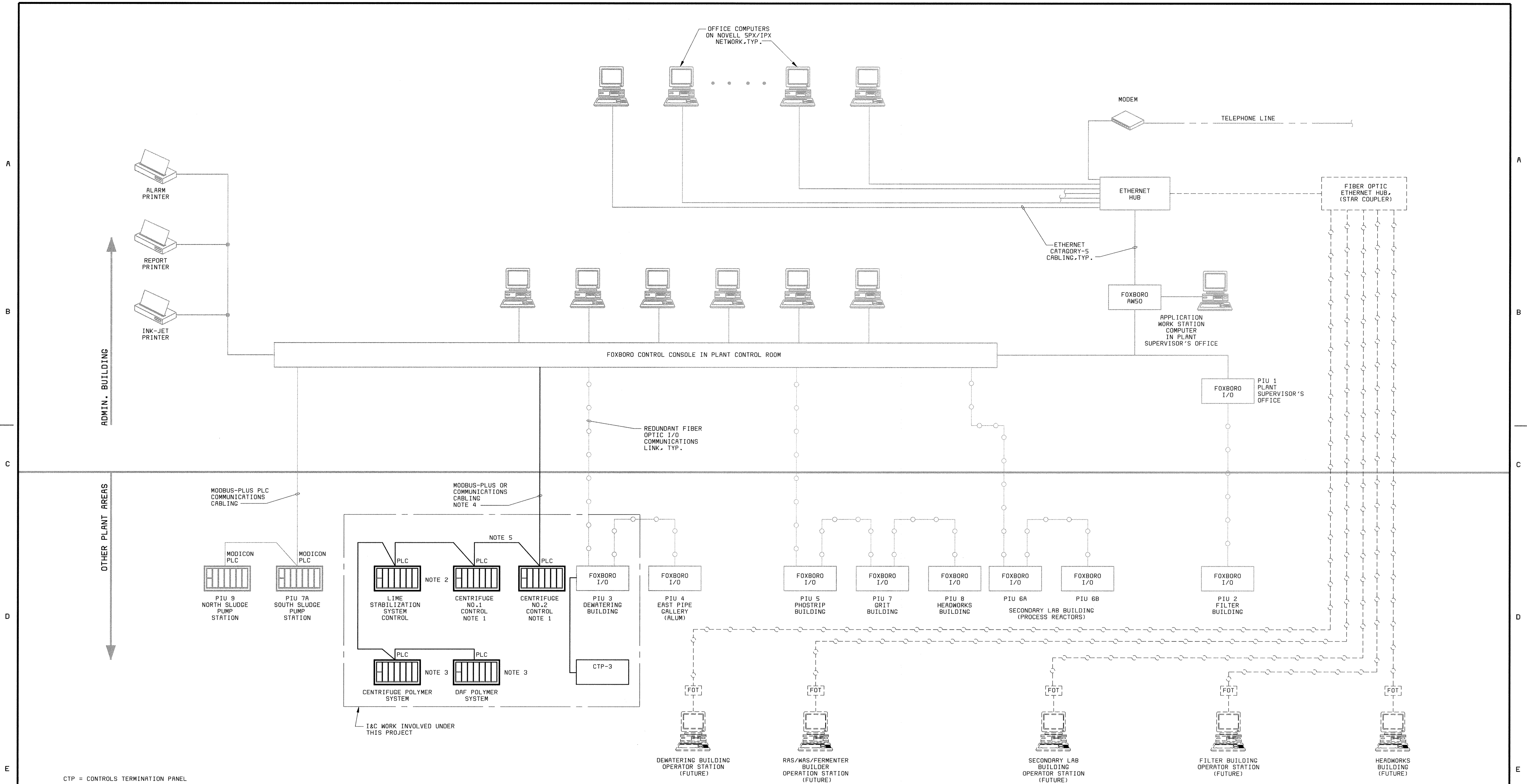
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

SCALE
AS
SHOWN

SHEET
143 OF 150

I 1

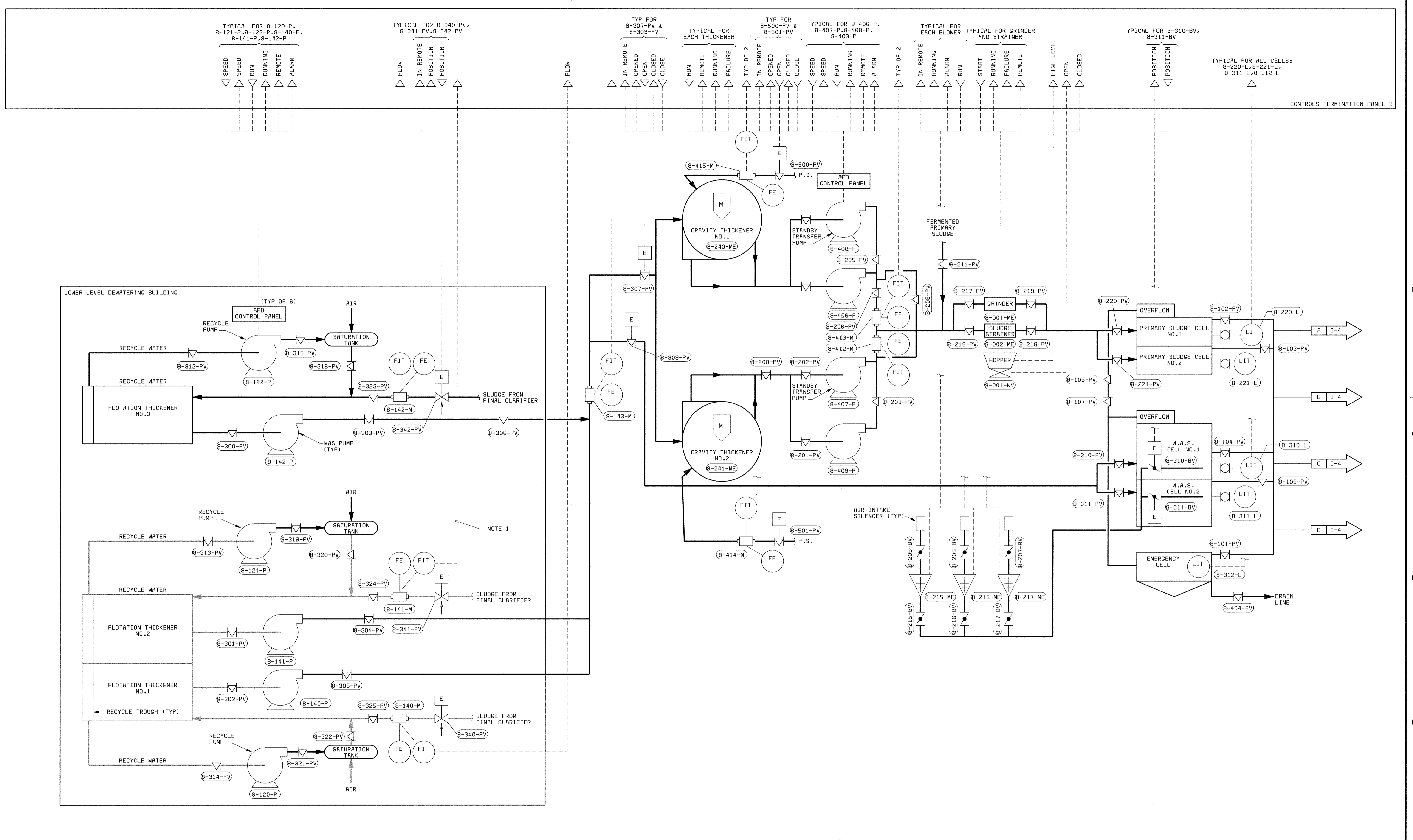


CTP = CONTROLS TERMINATION PANEL

I&C WORK INVOLVED UNDER THIS PROJECT

- NOTES:**
1. PROVIDES UNDER A SEPARATE EQUIPMENT PROCUREMENT CONTRACT.
 2. PROVIDED BY CHEMICAL FEED SECTION 1127.
 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	07/26/04	CONFORMED TO CONSTRUCTION RECORDS			RHH	RJR	RJR		
				DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP			



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

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Gaithersburg, Maryland

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NO. 21876

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DRN: DAH	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP
CHK: PWM					
DATE: 5/30/00					

INSTRUMENTATION

SOLIDS PROCESSING P&ID

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

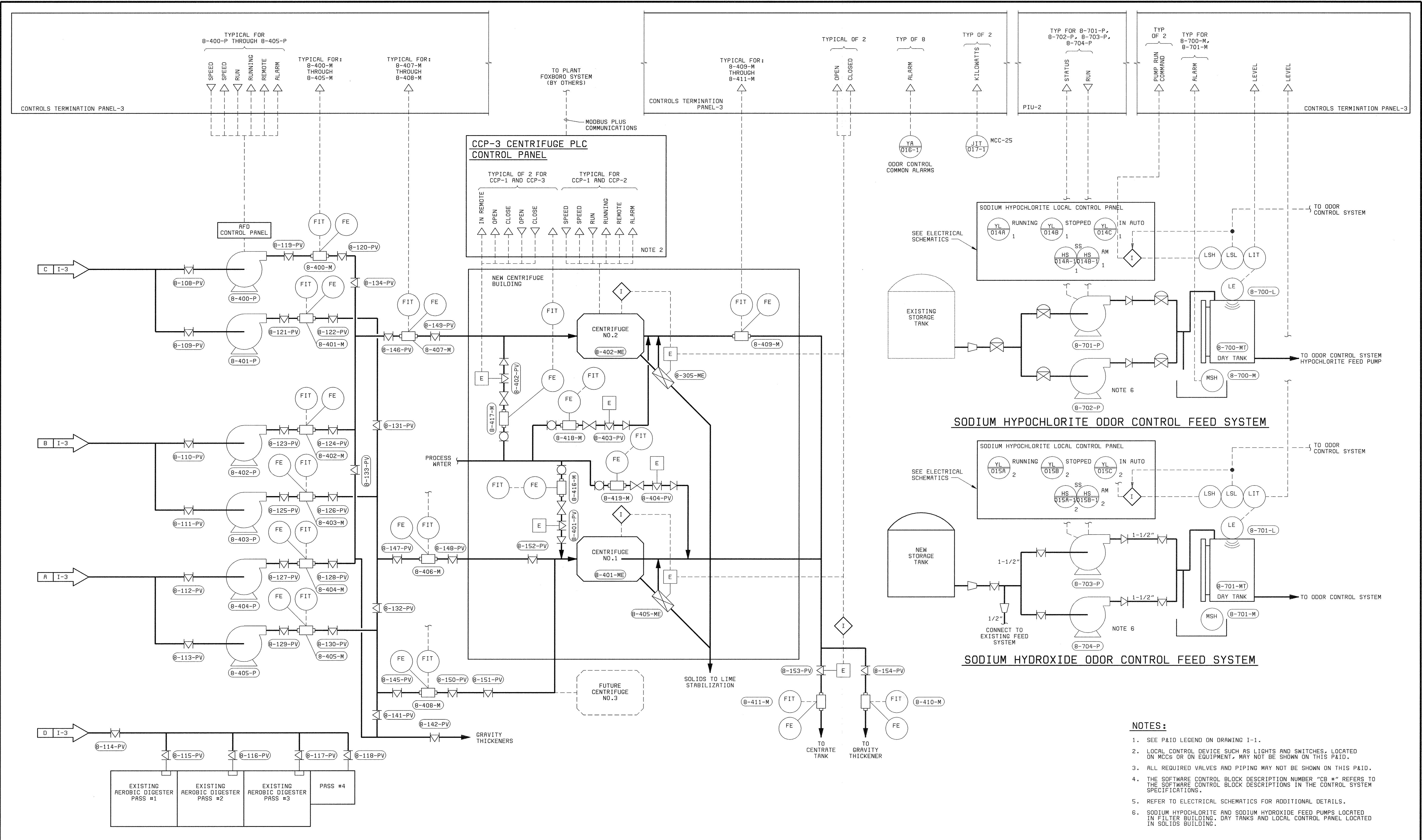
CAPITAL PROJECT S-6205
CONTRACT NO. 20-3751
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

SCALE
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SHOWN

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145 OF 150

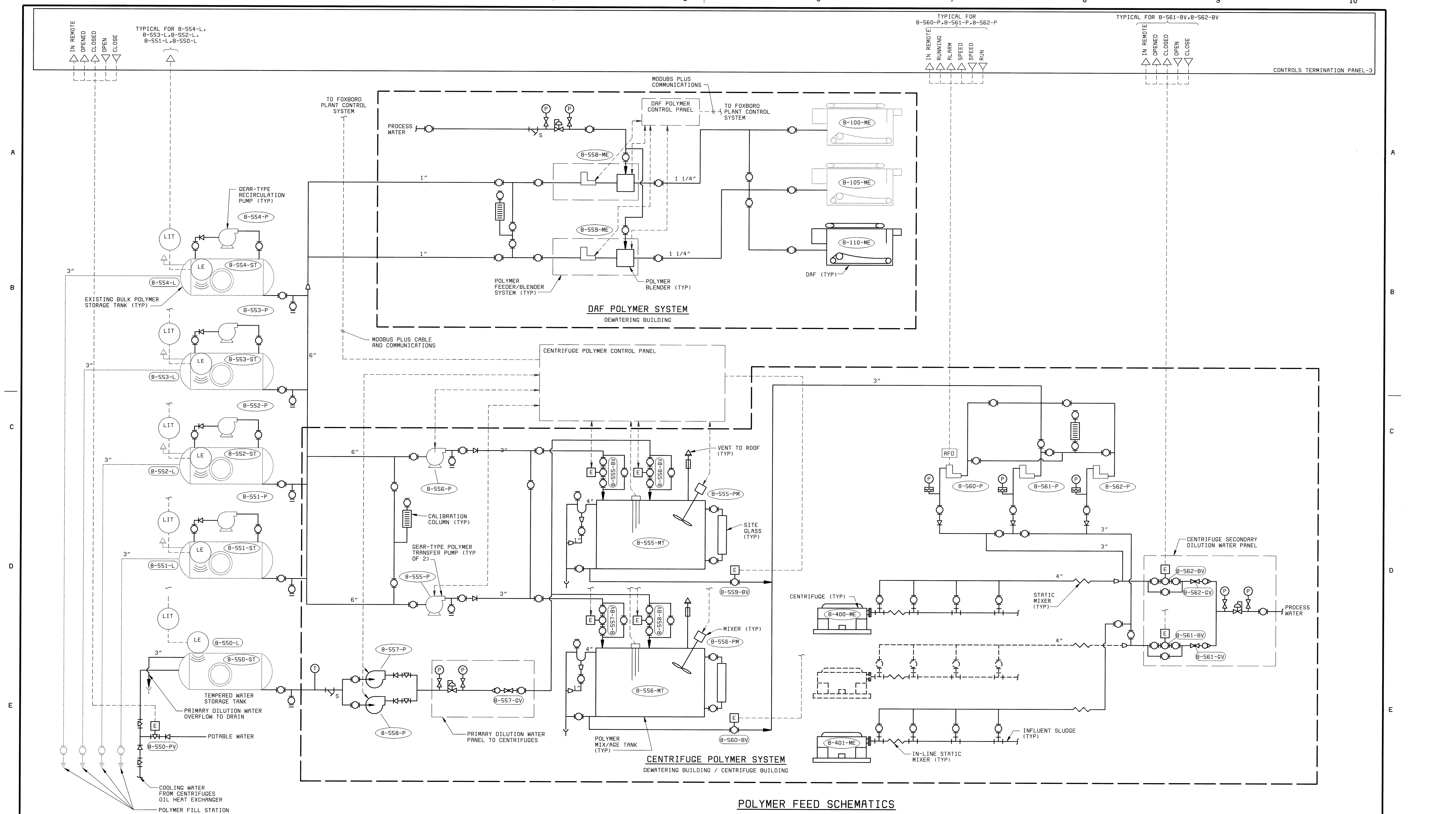
13

DS8472-2
P058472A



- 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.

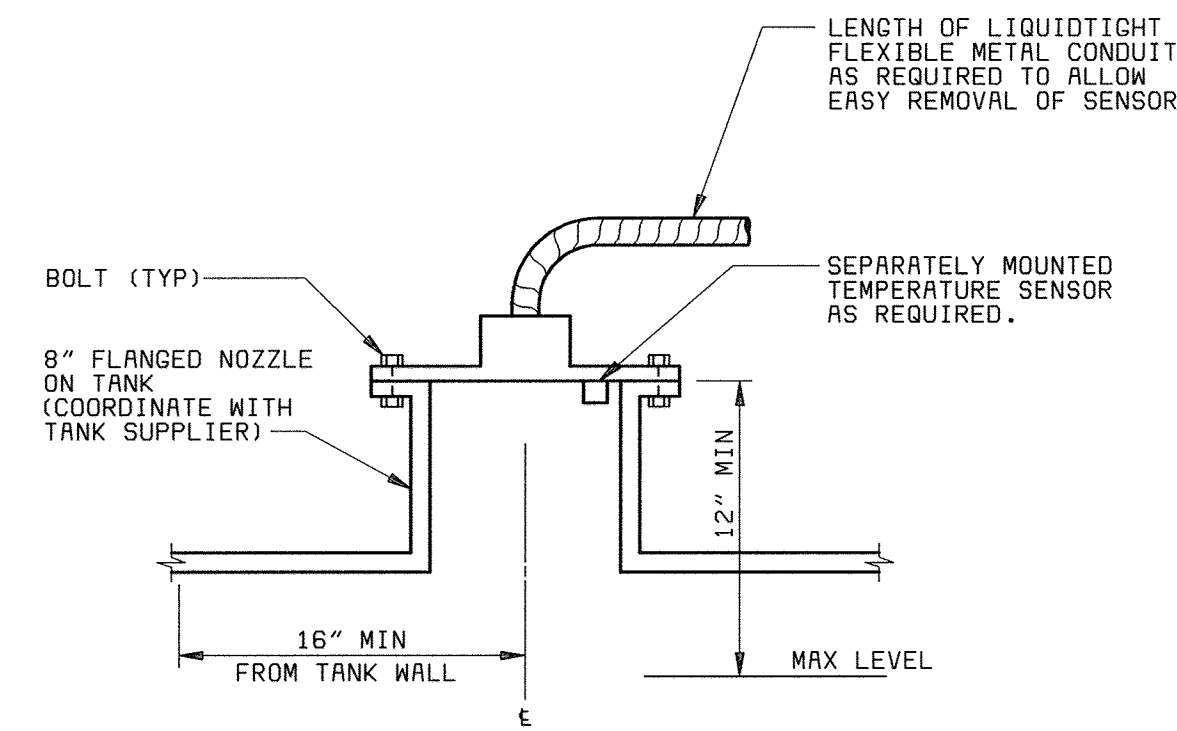
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND CHIEF, BUREAU OF UTILITIES DATE	BLACK & VEATCH Gaithersburg, Maryland REG. PROF. ENGR. DATE	THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876	DES: RLS							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	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHH	RJR	RJR			I 4
			DATE: 5/30/00		REVISIONS AND RECORD OF ISSUE	NO.	BY	APP			



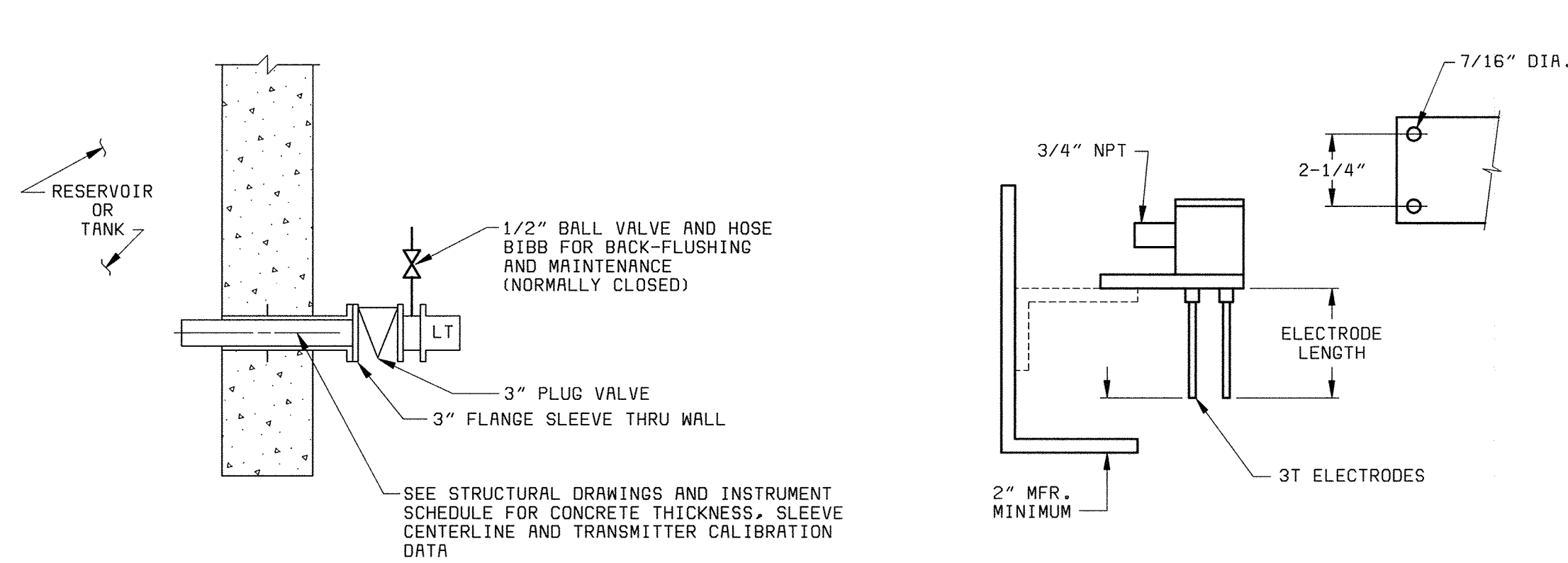
POLYMER FEED SCHEMATICS

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p>	<p>BLACK & VEATCH LLP Gaithersburg, Maryland</p>	<p>THIS DRAWING WAS ORIGINALLY APPROVED FOR CONSTRUCTION AND SEALED BY DONALD R. STEVENS A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF MARYLAND, NO. 21876</p>	<p>DES: RLS DRN: DAH CHK: PWM DATE: 5/30/00</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>07/26/04</td> <td>CONFORMED TO CONSTRUCTION RECORDS</td> <td>RHR/RJR/RJR</td> </tr> <tr> <td>DATE</td> <td>REVISIONS AND RECORD OF ISSUE</td> <td>NO. BY CK APP</td> </tr> </table>	07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHR/RJR/RJR	DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP	<p>INSTRUMENTATION</p> <p>POLYMER FEED SCHEMATIC</p>	<p>LITTLE PATUXENT WATER RECLAMATION PLANT ADDITION NO. 6 SOLIDS PROCESSING FACILITY</p> <p>CAPITAL PROJECT S-6205 CONTRACT NO. 20-3751 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 147 of 150</p> <p>I5</p>
07/26/04	CONFORMED TO CONSTRUCTION RECORDS	RHR/RJR/RJR											
DATE	REVISIONS AND RECORD OF ISSUE	NO. BY CK APP											
<p>CHIEF, BUREAU OF UTILITIES DATE _____</p>		<p>REG. PROF. ENGR. _____ DATE _____</p>											

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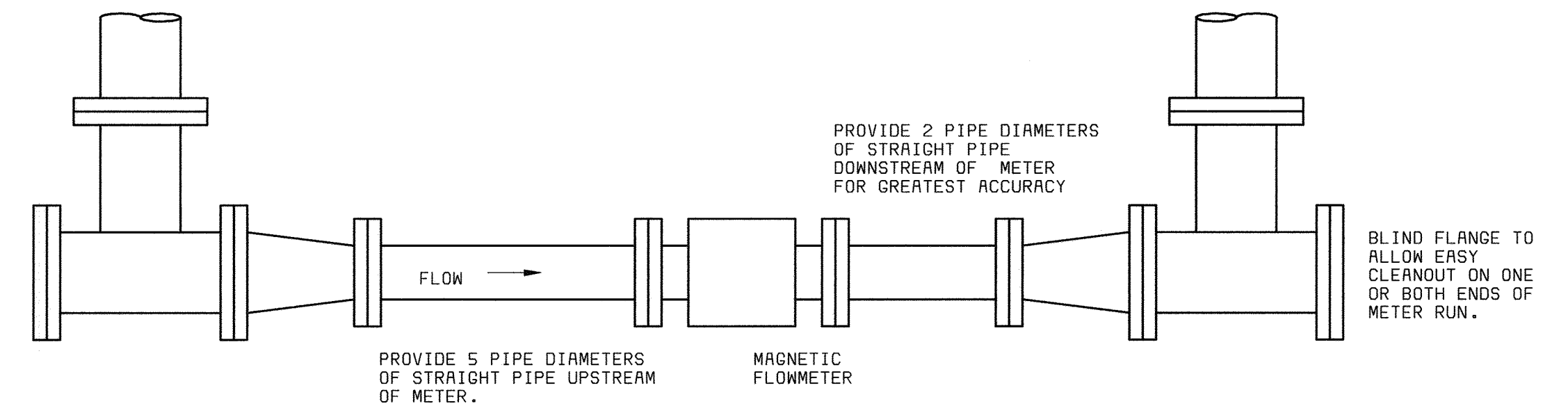


**ULTRASONIC LEVEL SENSOR
INSTALLATION DETAIL**
NO SCALE
TYPICAL FOR: 8-700-L, 8-701-L, 8-550-L

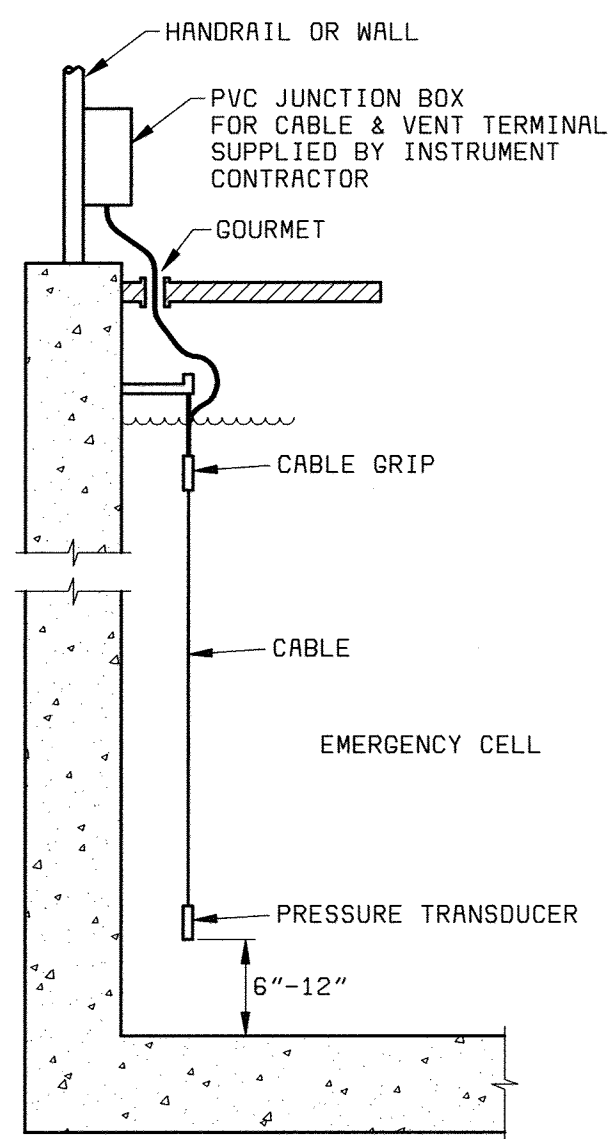


**FLANGE MOUNTED PRESSURE SENSING
LEVEL TRANSMITTER INSTALLATION DETAIL**
NO SCALE
TYPICAL FOR: 8-220-L, 8-221-L, 8-310-L, 8-311-L

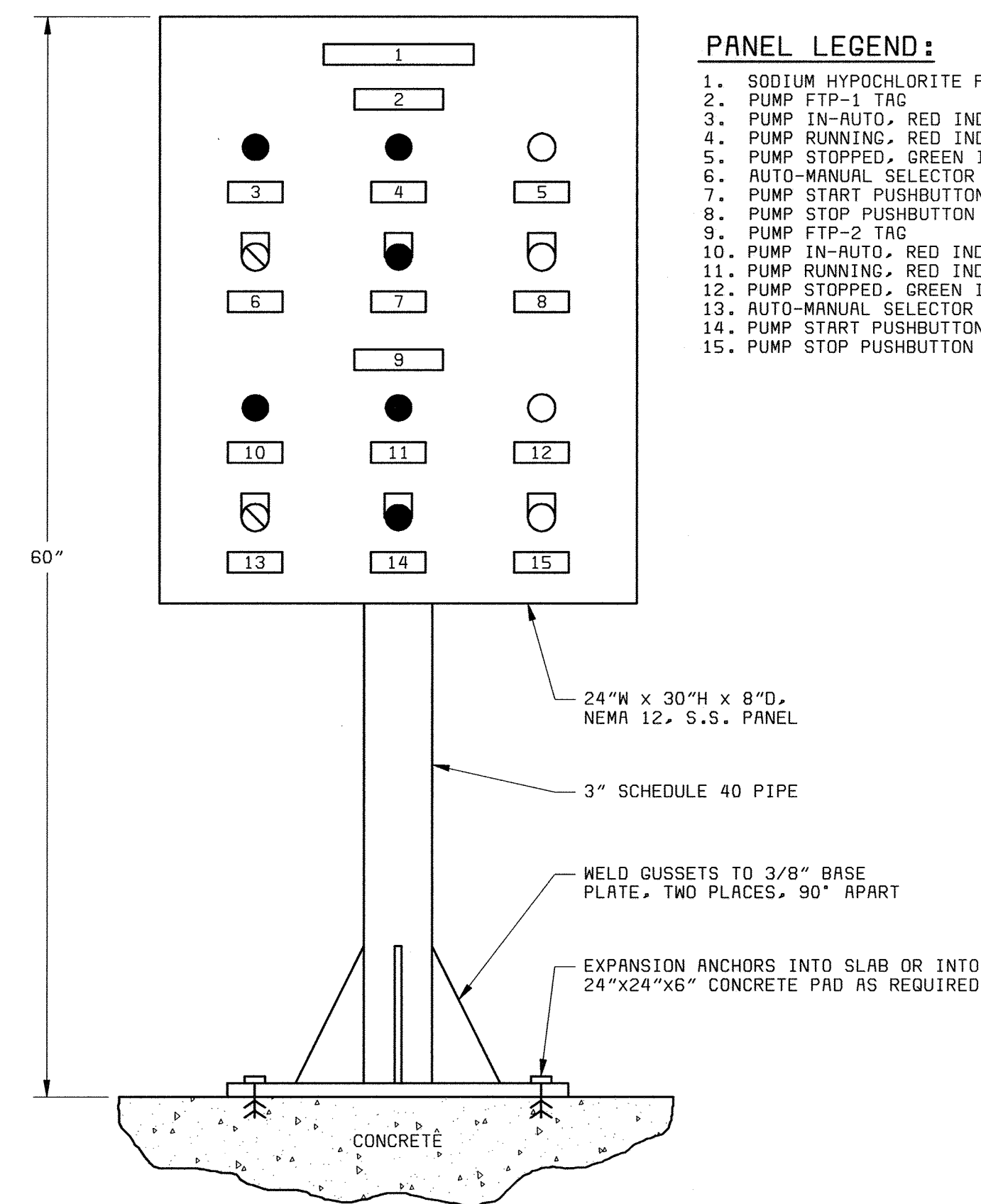
**ELECTRODE/CONDUCTANCE RELAY
LEVEL SWITCH**
NO SCALE
TYPICAL FOR: 8-700-M, 8-701-M



**TYPICAL MAGNETIC FLOWMETER INSTALLATION
WITH CLEAN-OUTS**
NO SCALE

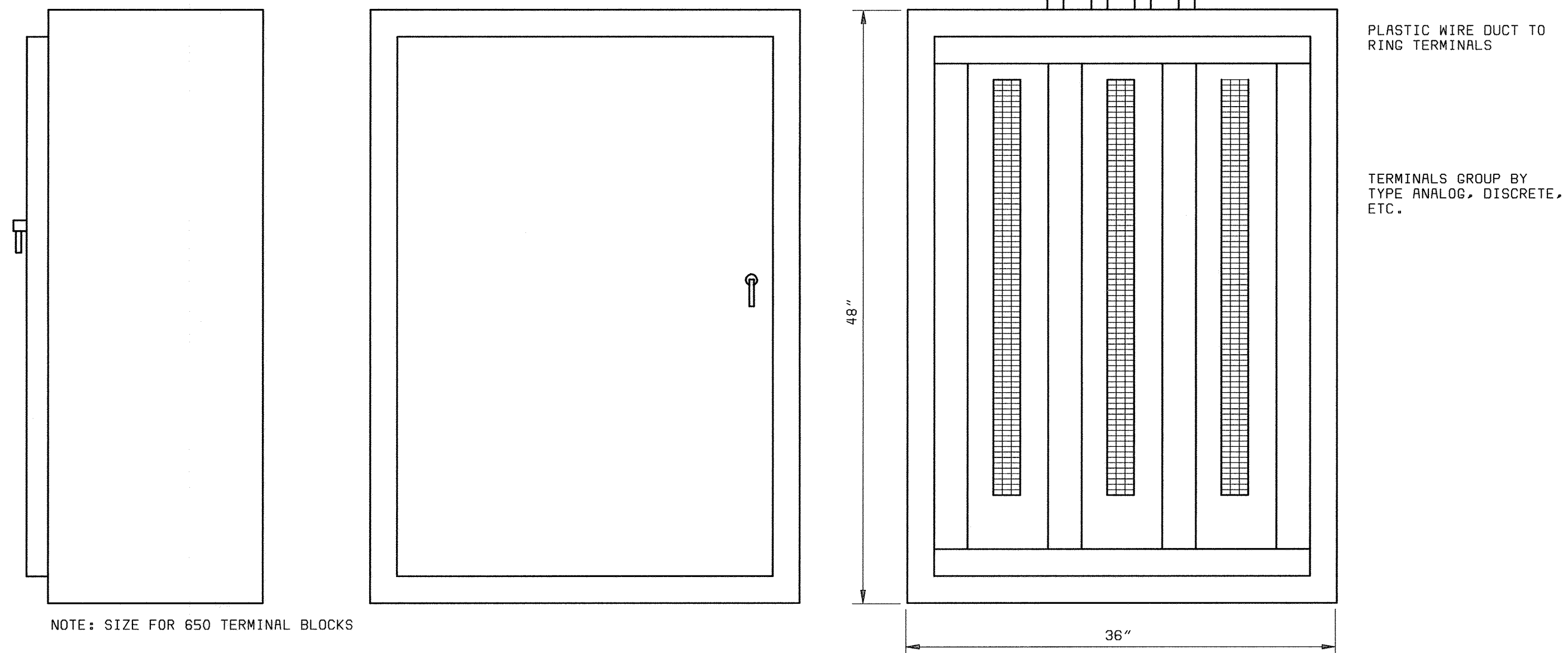


SUBMERSIBLE PRESSURE SENSOR DETAIL
NO SCALE
TYPICAL FOR: 8-312-L



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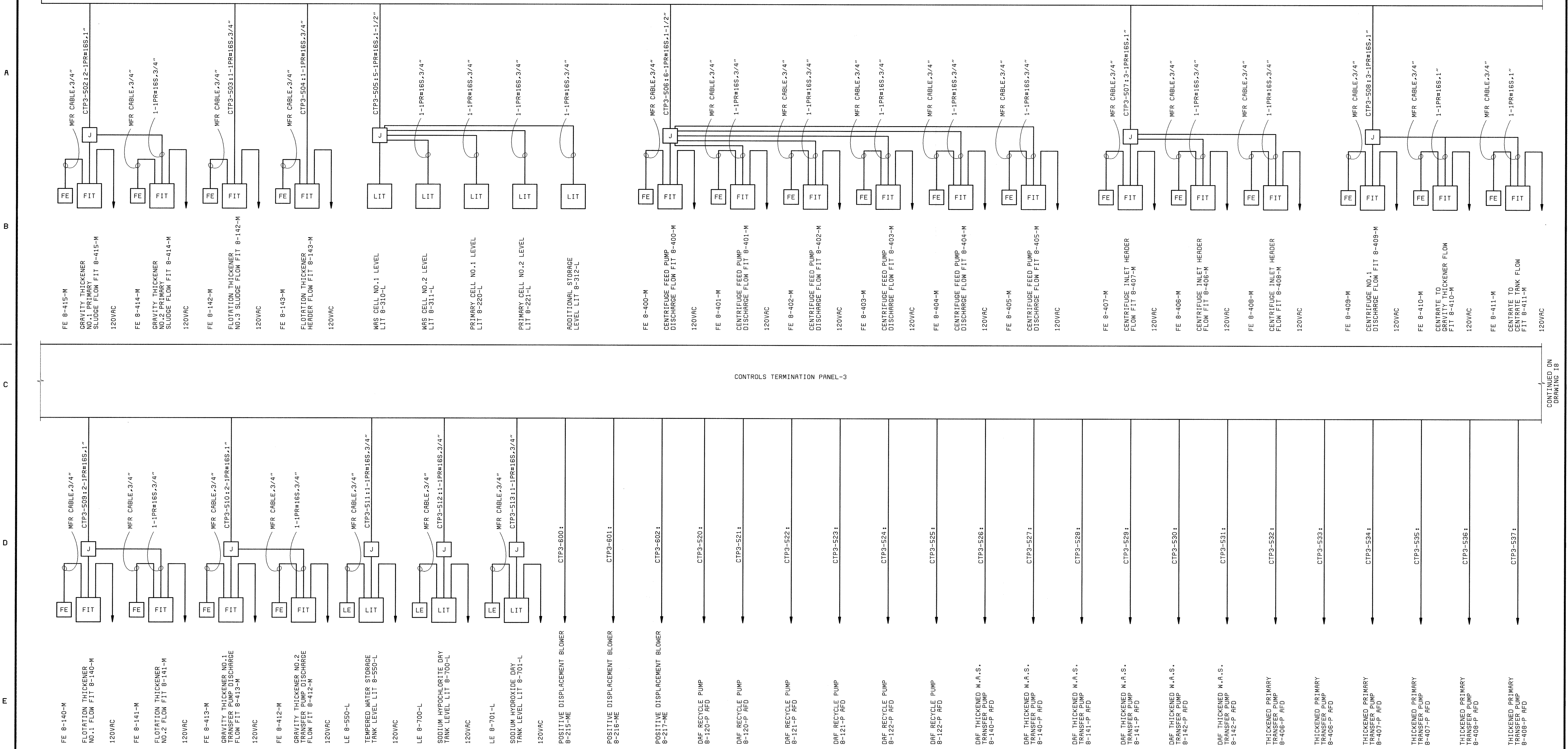
DES: RLS					
DRN: DAH					
CHK: PWM					
DATE: 5/30/00	07/26/04	CONFORMED TO CONSTRUCTION RECORDS		RHH/RJR/RJR	
	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK APP

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

BLACK & VEATCH
Gathersburg, Maryland

REG. PROF. ENGR. 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	APP

INSTRUMENTATION
ONE-LINE DIAGRAM

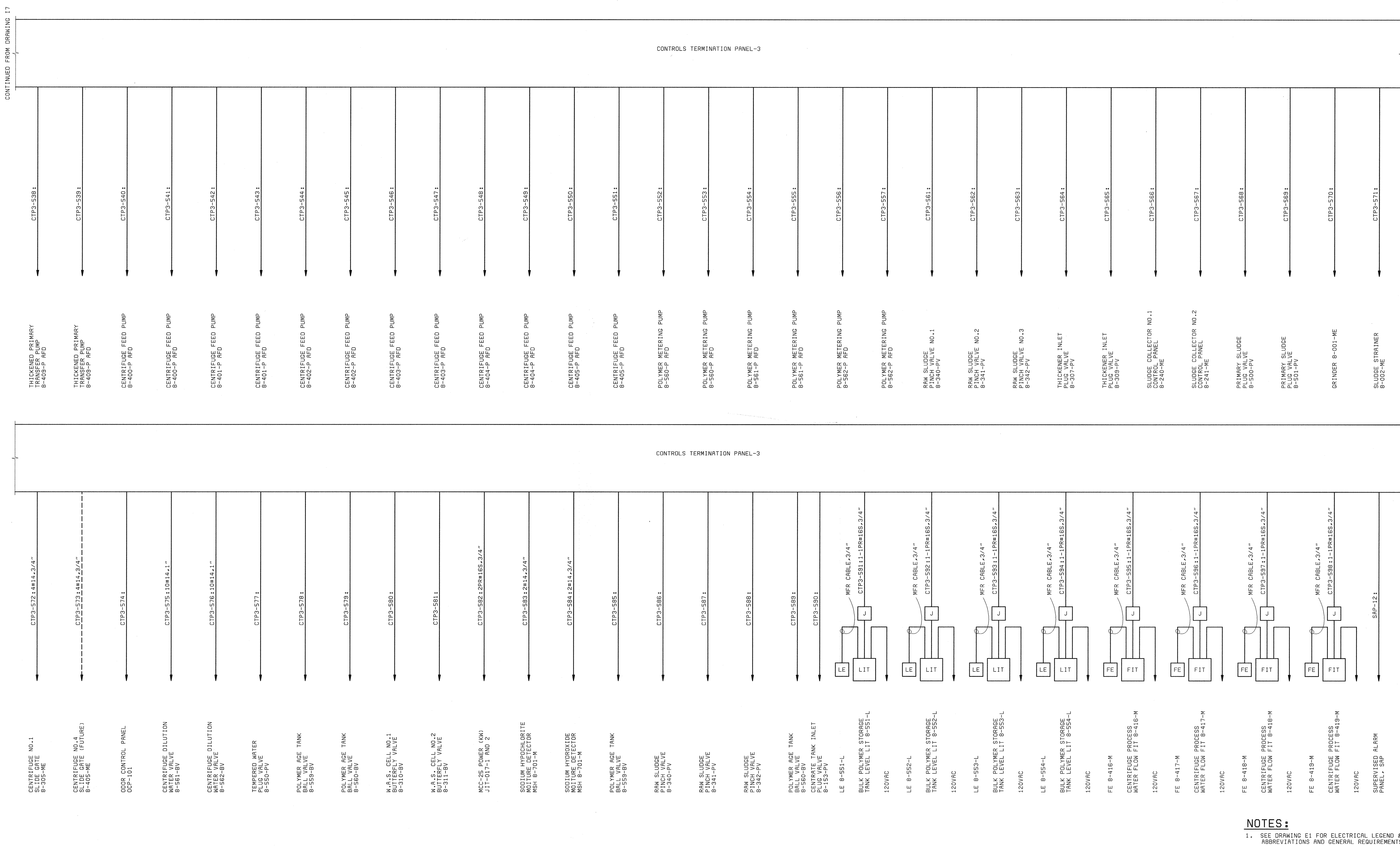
LITTLE PATUXENT WATER RECLAMATION PLANT
ADDITION NO. 6
SOLIDS PROCESSING FACILITY

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

SCALE
AS
SHOWN

SHEET
149 OF 150

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

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



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DES: GNS					
DRN: MOR,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
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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