

UTILITIES & MUNICIPALITIES

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<p>SOIL EROSION & SEDIMENTATION CONTROL GCDC—WWS G—4610 BEECHER ROAD FLINT, MI 48532 CONTACT: MARK STEPHENS PHONE: 810.732.7870</p>	



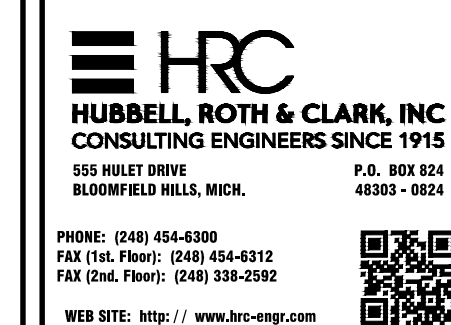
LOCATION MAP

SCALE: 1"=2640'
CITY OF FLINT
GENESEE COUNTY, MI
SECTION 4, T7N, R6E

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Know what's **below**.
Call before you dig.



JOB NO. COF107201F	SHEET G-001
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Flint, MI 48502
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






















































































































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


















































































































































































PROJECT MANAGER: - TIFFANY HARRISON
FIELD BOOK INFORMATION: -
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PROJECT MANAGER: FIELD BOOK INFORMATION: C:\PW\WORK\2\03989861\GDT-PLTS-NOTES AND LEGEND_1_03202020.DWG -- PLOTTED 5/22/2020 7:52 AM BY HARRISON, TIFFANY

	EXISTING	PROPOSED
CABLE TV		
CABLE TV POLE		
CABLE TV PEDESTAL		
OVERHEAD CABLE TELEVISION	—CTV—CTV—	—CTV—CTV—
UNDERGROUND CABLE TELEVISION	—UCTV—UCTV—	—UCTV—UCTV—
ELECTRICAL		
CIRCUIT BREAKER PANEL		
HANDHOLE		
MANHOLE		
OUTLET		
PEDESTAL		
TRANSFORMER BOX		
METER		
POWER POLE		
TRANSFORMER TOWER		
OVERHEAD ELECTRIC	—E—E—	—E—E—
UNDERGROUND ELECTRIC	—UE—UE—	—UE—UE—
GAS		
VENT		
BLOW OFF		
FILLER PIPE		
MANHOLE		
METER		
STOP BOX		
SHUTOFF VALVE		
GAS	—G—G—	—G—G—
MONUMENTS		
IRON (FOUND)		
IRON (SET)		
BENCH MARK		
BRASS PLATE		
CONCRETE NAIL		
DRILL HOLE		
GOVERNMENT CORNER		
GPS MONUMENT		
IRON PIPE		
MONUMENT BOX		
MONUMENT		
MERE STONE		
NGS MONUMENT		
NAIL & TAG		
PINCH IRON		
PK NAIL		
RAILROAD SPIKE		
RIGHT-OF-WAY MARKER		
SPIKE		
SHIPS SPIKE		
T-IRON		
USGS MONUMENT		
CROSS CUT		
CROSS CUT IN MONUMENT		
WOOD STAKE		
OVERHEAD UTILITIES		
DEADMAN ANCHOR		
FLOOD LIGHT		
GUY WIRE ANCHOR		
GUY POLE		
LAMP POLE		
METAL LIGHT POLE		
ORNAMENTAL LIGHT		
POLE BOX		
POWER & LIGHT POLE		
POWER & TELEPHONE POLE		
TELE, CTV, PWR & LIGHT POLE		
TELE, CTV, & POWER POLE		
TELE, & CTV POLE		
TELE, CTV, & LIGHT POLE		
TELE, & LIGHT POLE		
TELE, POWER, & LIGHT POLE		
MONO POLE		
UTILITY POLE		
OVERHEAD CABLE TV & TELEPHONE	—CTV&T—	—CTV&T—
OVERHEAD ELECTRIC & CABLE TV	—E&CTV—	—E&CTV—
OVERHEAD ELECTRIC, CABLE TV AND TELEPHONE	—E&CTV&T—	—E&CTV&T—

	EXISTING	PROPOSED
SANITARY SEWER		
CLEAN OUT		
PUMPSTATION MANHOLE		
SANITARY MANHOLE		
SEPTIC TANK		
SEWER VENT		
SEWER VALVE		
FORCEMAIN	—FM—FM—	—FM—FM—
SANITARY SEWER (<24"Ø)	—	—
SANITARY SEWER (>24"Ø; scaled)	—	—
SITE (MISCELLANEOUS)		
ABANDON ITEM		
ACCESSIBLE SYMBOL		
ADJUST ITEM		
FINISH GRADE	—	—
FLOW ARROW	—	—
PARKING COUNT		
RECONSTRUCT ITEM		
RELOCATE ITEM		
REMOVE ITEM		
SLOPE LABEL		
SPOT GRADE		
FLOOD LIGHT		
LAMP POLE		
LIGHT POLE (SINGLE LAMP)		
LIGHT POLE (DOUBLE LAMP 180°)		
LIGHT POLE (DOUBLE LAMP 90°)		
LIGHT POLE (THREE LAMP)		
LIGHT POLE (FOUR LAMP)		
ORNAMENTAL LIGHT POLE		
METAL LIGHT POLE		
STORM SEWER/DRAINAGE		
CATCH BASIN (ROUND GRATE)		
CATCH BASIN (SQUARE GRATE)		
CISTERN		
BOX CULVERT		
CULVERT HEADWALL		
CULVERT END SECTION		
DOWN SPOUT		
ROUND INLET		
SQUARE INLET		
STORM MANHOLE		
STORM SEWER STUB		
DITCH CENTERLINE	—	—
STORM SEWER (<24"Ø)	—	—
STORM SEWER (>24"Ø; scaled)	—	—
TELEPHONE		
TELEPHONE POLE		
TELEPHONE MANHOLE		
TELEPHONE PEDESTAL		
COMMUNICATIONS HANDHOLE		
FIRE CALL		
POLICE CALL		
PHONE BOOTH		
OVERHEAD TELEPHONE	—T—T—	—T—T—
UNDERGROUND TELEPHONE	—UT—UT—	—UT—UT—
TOPOGRAPHIC FEATURES		
AIR CONDITION UNIT		
ANTENNA		
BASKET BALL POST		
BATTERY BOX		
BILLBOARD SIGN BASE		
CAMERA TOWER		
CLIMBING BARS		
COLUMN		
FENCE CORNER		
FILL PORT		
FLAG POLE		
FOUNTAIN		
GAS PUMP		
GAS TANK (UNDERGROUND)		
HEAT PUMP		

	EXISTING	PROPOSED
TOPOGRAPHIC FEATURES (CONT.)		
HIGHWAY DELINEATOR		
LIGHT POLE BASE		
MAIL BOX		
MERRY-GO-ROUND		
MONITORING WELL		
NEWSPAPER BOX		
OIL WELL		
PARKING METER		
PIER		
PILING		
POST (ROUND)		
POST (SQUARE)		
ROCK		
RAILROAD SIGNAL		
SATELLITE DISH		
SIGN POST		
SLIDE (SPIRAL)		
SLIDE (STRAIGHT)		
SLIDE END		
SLIDE STEPS		
SOIL BORING		
SPRINKLER HEAD		
SPRINKLER JUNCTION BOX		
STATUE		
SWING SET END		
TETHER BALL POLE		
TRAFFIC SIGNAL		
UNDERGROUND MARKER		
U/G MARKER CABLE		
U/G MARKER ELECTRIC		
U/G MARKER FIBER OPTIC		
U/G MARKER GAS		
U/G MARKER TELEPHONE		
VOLLEY BALL POST		
WOOD STAKE		
<u>UNDERGROUND UTILITIES</u>		
UTILITY MANHOLE		
FIBER OPTIC		
OIL		
UNDERGROUND CTV & TELEPHONE		
UNDERGROUND ELEC. & CABLE TV		
UNDERGROUND ELEC. & TELEPHONE		
UNDERGROUND ELECTRIC, CABLE TV AND TELEPHONE		
<u>VEGETATION</u>		
CONIFEROUS BUSH		
CONIFEROUS TREE		
DECIDUOUS BUSH		
DECIDUOUS TREE		
MULTI-STEM CONIFEROUS TREE		
MULTI-STEM DECIDUOUS TREE		
STUMP		
BRUSH LINE		
EDGE OF WOODS		
HEDGE		
TREE ROW		
<u>WATER (DOMESTIC)</u>		
45° BEND		
AIR RELEASE VALVE		
BACKFLOW PREVENTER		
BLOW-OFF VALVE		
FAUCET		
FIRE DEPARTMENT CONNECTION		
FIRE HYDRANT		
ACCESS MANHOLE		
GATE VALVE WITH OFFSET OPERATOR		
CORROSION TEST STATION		

1. CONSTRUCTION PLANS, STANDARD SPECIFICATIONS & STANDARD DETAILS

2. BONDS AND INSURANCE

3. PRE-CONSTRUCTION MEETING

4. CONSTRUCTION STAKING

5. SHOP DRAWINGS

6. MATERIAL CERTIFICATIONS

7. NON-STOPPAGE CLAUSE

8. UTILITY MARKING

9. FIELD LOCATION OF UTILITIES

10. UTILITY INFORMATION

11. EXISTING UTILITIES

12. SUBSURFACE SOIL CONDITIONS

13. PERMITS AND FEES

25. AS-BUILT INFORMATION

THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF PART 91, ACT 451 OF P.A. 1994 FOR SOIL EROSION AND SEDIMENTATION CONTROL (SESC), AND WILL BE RESPONSIBLE FOR ALL MAINTENANCE UNTIL THE FINAL ACCEPTANCE OF THE PERMANENT CONTROL MEASURES BY THE AGENCY HAVING JURISDICTION. THE CONTRACTOR IS REQUIRED BY THE OWNER TO PREPARE AND SUBMIT A SOIL EROSION AND SEDIMENTATION CONTROL PLAN IN ORDER TO OBTAIN THE SOIL EROSION AND SEDIMENTATION CONTROL PERMIT, AND TO PAY ANY APPLICATION FEES AND BOND FEES NECESSARY TO OBTAIN THE PERMIT.

PRIOR TO FINAL ACCEPTANCE BY GOVERNING AGENCY, THE CONTRACTOR SHALL REQUEST A FINAL INSPECTION OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND RECEIVE WRITTEN APPROVAL FROM GOVERNING AGENCY. THE SOIL EROSION AND SEDIMENTATION CONTROL BOND WILL BE RELEASED UPON GOVERNING AGENCIES FINAL APPROVAL AND ACCEPTANCE OF THE NPDES.

THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A CERTIFIED STORM WATER OPERATOR AND COMPLY WITH THE PROVISIONS OF THE NPDES AND SESC PERMITS. THE CONTRACTOR SHALL MAINTAIN DITCH DRAINAGE DURING CONSTRUCTION AND SHALL NOT OBSTRUCT PUMP PUMP LEADS DISCHARGING INTO THE DITCH. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT ALL STORM SEWER FACILITIES, SUCH AS CATCH BASINS AND CULVERTS, DURING THE WORK. CULVERTS, CATCH BASINS, AND STORM SEWERS CONTAMINATED DURING THE WORK SHALL BE CLEANED.

CONTRACTOR SHALL OBTAIN ALL APPROPRIATE PERMITS AND WRITTEN PERMISSIONS FOR DISPOSAL OF EXCESS EXCAVATED MATERIAL. ALL EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR WITH ALL PERMITS, PERMISSIONS, AND LOCATIONS PROVIDED BY THE CONTRACTOR. ADJACENT PROPERTY OWNERS SHALL BE GIVEN PREFERENCE FOR DISPOSAL OF EXCESS MATERIAL. WRITTEN PERMISSION FOR DISPOSAL FROM THE PROPERTY OWNERS SHALL BE PROVIDED TO OWNER.

ALL WORK SHALL BE PERFORMED UNDER THE OBSERVATION OF A CONSTRUCTION OBSERVER FROM OWNER, LOCAL MUNICIPALITY HAVING JURISDICTION, AND/OR GOVERNING AGENCY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OBSERVING AGENCIES THREE (3) WORKING DAYS OR 72 HOURS PRIOR TO STARTING CONSTRUCTION TO ARRANGE FOR ON-SITE OBSERVATION AND TESTING. CUT SHEETS FOR ALL PIPE INSTALLATION AND RE-DITCHING SHALL BE PROVIDED TO THE GOVERNING AUTHORITY AND CONSTRUCTION OBSERVER A MINIMUM OF 24 HOURS PRIOR TO STARTING CONSTRUCTION WITH RESPECT TO THAT UTILITY. OWNER, LOCAL MUNICIPALITY HAVING JURISDICTION, OR GOVERNING AGENCY SHALL BE NOTIFIED FOR A FINAL INSPECTION.

ALL WORK, WORK PRACTICE AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL SAFETY GUIDELINES, OCCUPATION, HEALTH AND ENVIRONMENTAL REGULATIONS, AND ALSO OSHA AND ANSI CODES AS APPLICABLE. ALL WORK INSIDE A CONFINED SPACE, SUCH AS THE PIPE LINE, MANHOLES OR OTHER UNDERGROUND STRUCTURES, SHALL BE COORDINATED WITH THE UTILITY OWNER, AND ALL WORKER SAFETY REQUIREMENTS STRICTLY ENFORCED. THE CONTRACTOR, SHALL HAVE ITS SAFETY PLAN ON FILE WITH OWNER, INSPECTOR, AND ONE COPY ON SITE AT ALL TIMES.

EXCAVATION AND HAZARDOUS AREAS SHALL BE PROTECTED BY BARRICADES, SNOW FENCE, OR OTHER APPROPRIATE MEANS. BARRICADES LEFT IN PLACE AFTER DARK SHALL BE LIGHTED.

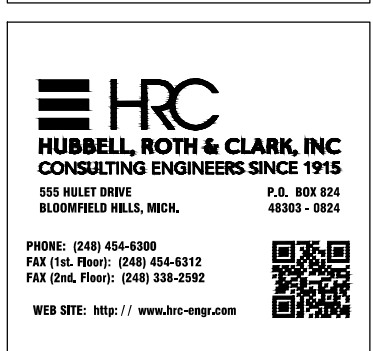
THE CONTRACTOR SHALL CONTROL NOISE, CARRY OUT A PROGRAM OF DUST CONTROL, AND SHALL ALLOW NO ON-SITE BURNING WITHOUT APPROVAL FROM LOCAL FIRE DEPARTMENT.

ALL TRENCH EXCAVATION WITHIN A ONE-ON-ONE ZONE OF INFLUENCE OF A ROADWAY, DRIVEWAY CROSSINGS, PARKING LOTS, OR AS OTHERWISE NOTED ON THE PLANS, SHALL BE BACKFILLED PER THE SCHEDULE OF BACKFILLING, FOUND IN THE SPECIFICATIONS AND DETAILS. IN ADDITION, SEE THE SPECIFICATIONS FOR THE REQUIREMENTS FOR THE COMPACTION PLAN. PROVIDE SATISFACTORY RESULTS OF DENSITY CHECKS ON COMPACTED SAND BACKFILL FROM CERTIFIED TESTING AGENCY.

ALL DISTURBED AREAS SHALL BE COMPLETELY RESTORED IN STRICT COMPLIANCE WITH THE SOIL EROSION AND SEDIMENTATION CONTROL (SESC) PLANS AND SPECIFICATIONS, AND TO THE SATISFACTION OF OWNER, GOVERNING AGENCY, COUNTY ROAD COMMISSION, MDOT, THE LOCAL MUNICIPALITY, AND THE PROPERTY OWNER. ALL COSTS FOR THE CLEANUP, RESTORATION WORK, AND OTHER INTERMEDIATE OPERATIONS INCLUDING BUT NOT LIMITED TO, CONSTRUCTION SIGNAGE, STREET SWEEPING, AND MAINTAINING EXISTING UTILITIES, SHALL BE CONSIDERED INCLUSIVE AND AT NO ADDITIONAL COST TO OWNER. AREAS DISTURBED DURING THE WORK SHALL RECEIVE A MINIMUM 4" APPLICATION OF SCREENED TOPSOIL, FERTILIZER, SEED, AND MULCH. ALL EXCESS MATERIALS, DEBRIS, AND SIMILAR ITEMS SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF IN ACCORDANCE WITH THE LAW. ALL GROUND SURFACES SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER PRIOR TO FINAL APPROVAL. RESTORATION ACTIVITIES SHALL BE NOT FURTHER THAN 500 FT BEHIND ACTIVE PIPE INSTALLATION UNLESS PRIOR WRITTEN APPROVAL HAS BEEN OBTAINED FROM OWNER/ENGINEER.

ALL FINAL ELEVATIONS OF MANHOLE CASTINGS, HYDRANTS, VALVES, AND VALVE BOXES SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE IN THE FIELD. ANY ADJUSTMENTS THAT ARE MADE SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE.

UPON COMPLETION OF THE WORK AND PRIOR TO FINAL APPROVAL FROM THE OWNER, THE CONTRACTOR SHALL FURNISH OWNER WITH ONE (1) COMPLETE SET OF AS-BUILTS PLANS.



CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
SLUDGE DEWATERING IMPROVEMENTS
GENERAL CIVIL NOTES

ISSUED FOR:	DATE:	BY:
50% REVIEW	2/17/20	JJA
90% REVIEW	3/20/20	JJA
100% REVIEW	4/17/20	JJA
IFB	6/01/20	JJA

JOB NO.
COF107201F

SHEET

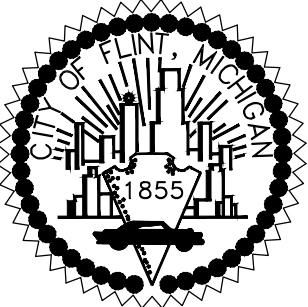
C-002

PROJECT MANAGER: C:\N\WORK\1039896\GDT-PLTS-C-003 CITY OF FLINT NOTES_1_03202020.DWG - C-003 - PLOTTED 5/22/2020 8:12 AM BY HARRISON, TIFFANY

GENERAL PLAN NOTES

1. FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1.800.482.7171 OR 811 OR GO TO WWW.MISSDIG.ORG A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH DRIVEN SIGN LOCATION AND EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.
2. IT IS THE INTENT THAT ALL GOVERNMENT CORNERS ON THIS PROJECT BE PRESERVED AND THAT, WHERE NECESSARY, MONUMENT BOXES BE PLACED OR ADJUSTED, WHETHER SHOWN OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING STAKES AND/OR FLAGS AT EACH PROPERTY IRON TO ENSURE THAT THEY ARE NOT REMOVED OR DISPLACED DURING CONSTRUCTION OPERATIONS. IF PROPERTY IRONS ARE REMOVED OR DISPLACED DUE TO THE CONTRACTORS OPERATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF THOSE IRONS, WITH AN APPROVED LICENSED SURVEYOR REGISTERED IN THE STATE OF MICHIGAN, AT HIS OWN COST.
3. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO: EXISTING UTILITIES, WATERMANS, AND EXISTING SANITARY OR STORM SEWERS; AND MARKED WATER, STORM AND SANITARY LEADS DURING CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ENGINEER OF ANY CONFLICTS BEFORE PLACING PROPOSED UTILITIES OR OTHER EXCAVATIONS WHICH ARE FOUND TO BE IN CONFLICT. LOCATIONS (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES IN THE PLANS ARE SHOWN BASED ON THE BEST INFORMATION MADE AVAILABLE TO THE ENGINEER. THE ENGINEER MAKES NO REPRESENTATION AS TO THE ACCURACY OF LOCATIONS SHOWN FOR UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE THE NECESSARY COORDINATION WITH UTILITY OWNERS AND TO LOCATE ALL UTILITIES (HORIZONTALLY AND VERTICALLY) INCLUDING SERVICE LEADS PRIOR TO PERFORMING WORK EFFECTING THOSE UTILITIES AND SERVICE LEADS (INCLUDING SERVICE LEADS TO PUBLIC WATER, STORM AND SANITARY SYSTEMS) AND TO PERFORM THE WORK IN A MANNER THAT DOES NOT HARM OR OBSTRUCT THE UTILITIES OR SERVICE LEADS. ALL COSTS TO PROTECT, REPAIR, OR TEMPORARILY BYPASS THEN RESTORE (TO THE SATISFACTION OF UTILITY OWNERS AND THE ENGINEER) UTILITIES AND SERVICE LEADS SHALL BE BORNE SOLELY BY THE CONTRACTOR.
4. CONTRACTOR IS RESPONSIBLE FOR METHODS TO PERFORM THE WORK EFFECTED BY EXISTING UTILITIES INCLUDING EXISTING PHONE COMPANY DUCT BANKS, CONDUITS, GAS LINES AND ALL OTHER UNDERGROUND STRUCTURES AND UTILITIES ENCOUNTERED. THE COSTS TO PERFORM THIS WORK WHICH MAY INCLUDE SHORING, FREE BORING, TUNNELING OR JACKING PIPE AND DEWATERING SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES OF DRAINAGE AND WATERMAIN PAY ITEMS.
5. THE SOIL BORING AND PAVEMENT CORE LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY INFERS THAT SUBSURFACE AND PAVEMENT CONDITIONS ARE THE SAME OTHER THAN THE EXACT LOCATION OF THE BORINGS AND CORES. REFER TO THE PLANS OR PROPOSAL FOR LOG OF BORINGS, IF PROVIDED.
- SUBMITTAL OF THEIR BID SHALL BE CONSIDERED PRIMA FACIE EVIDENCE THAT BIDDERS (AND PROSPECTIVE SUB CONTRACTORS) HAVE PERFORMED SITE INVESTIGATIONS AND OTHERWISE INVESTIGATED THE EXISTING SURFACE AND SUBSURFACE CONDITIONS, INCLUDING REVIEW OF BORING LOGS WHICH MAY BE INCLUDED IN THE PLANS OR PROPOSAL, TO THE BIDDER'S SATISFACTION, AND HAS INCLUDED ALL COSTS RELATED TO SURFACE AND SUBSURFACE CONDITIONS IN THE CONTRACT UNIT PRICES OF THE CONTRACT PAY ITEMS. ADDITIONAL COST AND TIME DUE TO SURFACE OR SUBSURFACE CONDITIONS SHALL NOT BE CONSIDERED AS A BASIS OF CLAIMS BY THE CONTRACTOR FOR ADDITIONAL COMPENSATION OR CONTRACT TIME. ALL DEWATERING OF TRENCHES OR GRADE BY ANY MEANS SHALL BE CONSIDERED TO HAVE BEEN INCLUDED IN THE CONTRACT UNIT PRICES OF EFFECTED CONTRACT PAY ITEMS.
6. ELEVATIONS SHOWN ON THESE PLANS ARE FROM NAVD88 DATUM.
7. PRE-CAST STRUCTURES MAY BE UTILIZED AS APPROVED BY THE ENGINEER. HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN PROPER HOLE ORIENTATION PRIOR TO ORDERING PRE-CAST STRUCTURE COMPONENTS. ALL COSTS TO REPLACE PRE-CAST STRUCTURE COMPONENTS THAT CAN NOT BE FIELD FIT SHALL BE BORNE SOLELY BY THE CONTRACTOR.
8. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNERS FOR ANY NECESSARY ADJUSTMENTS TO THEIR UTILITIES. CONSUMERS ENERGY POWER/LIGHT POLES AND AT&T UTILITY/LIGHT POLES TO BE RELOCATED BY UTILITY OWNERS ONLY. PRIVATELY OWNED PUBLIC UTILITIES (INCLUDING AT&T & CONSUMERS ENERGY) SPECIFIED FOR RELOCATION MAY OR MAY NOT BE RELOCATED PER PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS WORK WITH THE UTILITY COMPANY AND SCHEDULE HIS WORK IN ACCORDANCE WITH THE UTILITY COMPANY'S SCHEDULE. THE CONTRACTOR SHALL BID AND PLAN THE WORK ACCORDINGLY.
9. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO KEEP CONSTRUCTION DEBRIS FROM ENTERING ANY UTILITY STRUCTURE. CONSTRUCTION DEBRIS WHICH ENTERS ANY UTILITY STRUCTURE OR SPILLED ON THE NEW ROAD SHALL BE CLEANED UP (INCLUDING VACUUM TRUCK STRUCTURE CLEANOUT) BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
10. SUBGRADE UNDERCUTTING WILL BE PAID FOR SEPARATELY. SUBGRADE UNDERCUTTING QUANTITIES SHOWN ON THESE PLANS OR IN THE PROPOSAL REPRESENT QUANTITIES FOR ESTIMATING PURPOSES ONLY. ACTUAL LIMITS OF SUBGRADE UNDERCUTTING WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION, IF REQUIRED. REMOVAL OF HMA AND CONCRETE DRIVES, REGARDLESS OF THICKNESS OR MATERIAL COMPOSITION, INCLUDING SAWCUTTING OR MILLING AS DIRECTED BY THE ENGINEER, SHALL BE INCLUDED IN PAY ITEM PAVT, REM, MODIFIED.
- ALL EXCESS EXCAVATED MATERIALS SHALL BE THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT AN APPROVED LOCATION PROVIDED BY THE CONTRACTOR, WITH WRITTEN PERMISSION OF THE PROPERTY OWNER WHEN NOT OWNED BY THE CONTRACTOR.
11. 11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR COORDINATION WITH CITY GARBAGE COLLECTION (CONTACT 810.577.8095). THIS ARRANGEMENT AND COORDINATION MAY REQUIRE EFFORT, TIME AND COSTS TO THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE THESE COSTS AND INCLUDE THEM IN HIS BID AND PROGRESS SCHEDULE. COORDINATION AND COSTS TO THE CONTRACTOR FOR GARBAGE COLLECTION SHALL NOT BE CONSIDERED AS A BASIS OF CLAIMS FOR ADDITION COMPENSATION OR EXTENSION OF CONTRACT TIME.
12. ALL INTERSECTIONS ARE TO BE CONSIDERED AS COMPLETE UNITS AND THEIR GRADES DETERMINED BEFORE CONSTRUCTION. CLOSURES OF INTERSECTIONS AND ANY TRAFFIC CLOSURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR TRAFFIC CONTROL COORDINATION (CONTACT MR. ROD MCGAHA AT 810.766.7165. A MINIMUM OF THREE FULL WORKING DAYS PRIOR TO TRAFFIC DEVICE PLACEMENT. START AND END TIMES OF CLOSURES, SIGNS AND TRAFFIC CONTROL DEVICES PROPOSED, WITH DETOUR ROUTES AND TRAFFIC SHIFTS CLEARLY DEPICTED ON DETAIL DRAWINGS, SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. NO SIGNS OR TRAFFIC DEVICES FOR THIS TRAFFIC CONTROL MAY BE PLACED WITHOUT WRITTEN APPROVAL. NOTIFICATION TO POLICE, EMERGENCY VEHICLES, PUBLIC BUSING AND OTHERS WILL BE BY THE CITY. COSTS TO THE CONTRACTOR FOR TRAFFIC CONTROL COORDINATION SHALL NOT BE CONSIDERED AS A BASIS OF CLAIMS FOR ADDITIONAL COMPENSATION OR EXTENSION OF CONTRACT TIME.
13. WHERE TREES WITHIN THE RIGHT OF WAY ARE NOT SPECIFIED FOR REMOVAL, IT IS INTENDED TO PROTECT THOSE TREES AND TO PERFORM THE WORK IN A MANNER WHICH PREVENTS DAMAGE TO THE TREES AND THEIR ROOTS. THE CONTRACTOR SHALL PROTECT TREES WITHIN THE RIGHT OF WAY NOT SPECIFIED FOR REMOVAL AND SHALL INCLUDE ALL COSTS TO PROTECT THESE TREES IN THE CONTRACT UNIT PRICES OF EFFECTED PAY ITEMS.
14. ALL REMOVED SIGNS AND POSTS SHALL REMAIN PROPERTY OF THE CITY. CONTRACTOR SHALL COORDINATE PICK UP OF ALL STOCKPILED SIGNS AND POSTS WITH CITY OF FLINT TRAFFIC ENGINEERING SUPERVISOR ROD MCGAHA.

DEPARTMENT OF PUBLIC WORKS ENGINEERING AND UTILITIES	
TITLE: Notes Sheet	
DRAWN BY:	REVISIONS:
CHECKED BY:	
SCALE: NO SCALE	SHEET



ISSUED FOR: DATE: BY:

50% REVIEW 2/17/20 JUA

90% REVIEW 3/20/20 JUA

100% REVIEW 4/17/20 JUA

IFB 6/01/20 JUA

JOB NO.

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C-003



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HUBBELL, ROTH & CLARK, INC.

CONSULTING ENGINEERS SINCE 1915

100 HILLET STREET P.O. BOX 101

BLOOMFIELD HILLS, MICH. 48303 - 0824

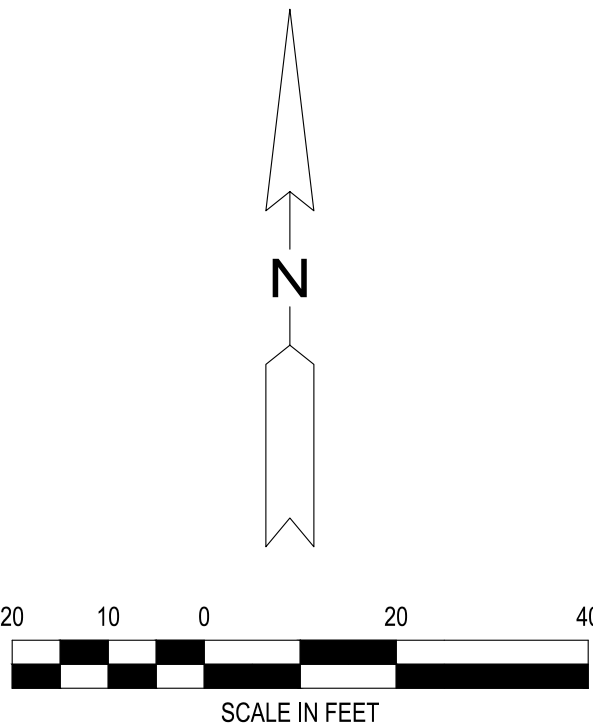
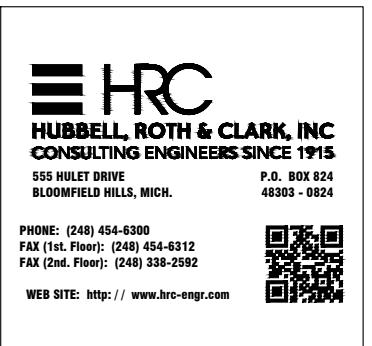
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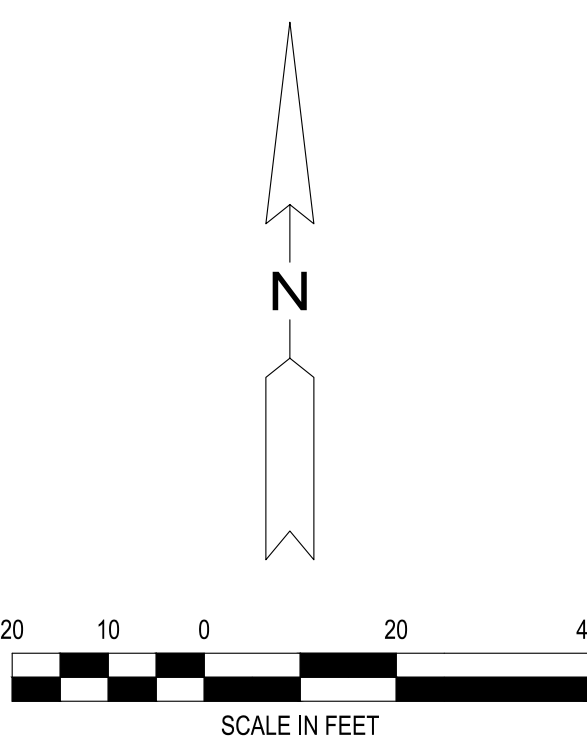
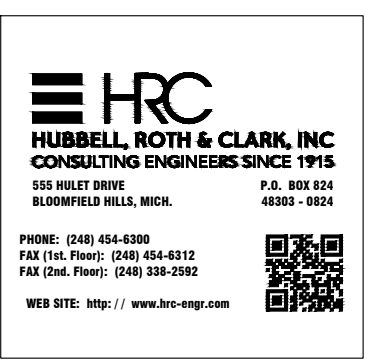
CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502
SLUDGE DEWATERING IMPROVEMENTS
CITY OF FLINT NOTE SHEET

The logo of the City of Flint, Michigan, is a circular emblem. It features a stylized bridge with a central arch and the year "1855" on it, spanning over a city skyline with several buildings. The background is a bright yellow sunburst. The words "CITY OF FLINT" are written in a black arc at the top, and "MICHIGAN" is written in a black arc at the bottom.

ISSUED FOR:	DATE:	BY:
50% REVIEW	2/17/20	JJA
90% REVIEW	3/20/20	JJA
100% REVIEW	4/17/20	JJA
IFB	6/01/20	JJA

SHEET

C-004

The logo of the City of Flint, Michigan, is a circular emblem. It features a stylized bridge spanning a river, with a city skyline in the background. The text "CITY OF FLINT" is arched across the top, and "MICHIGAN" is arched across the bottom. The year "1855" is inscribed on the bridge.

ISSUED FOR:	DATE:	BY:
50% REVIEW	2/17/20	JJA
90% REVIEW	3/20/20	JJA
100% REVIEW	4/17/20	JJA
IFB	6/01/20	JJA

SHEET

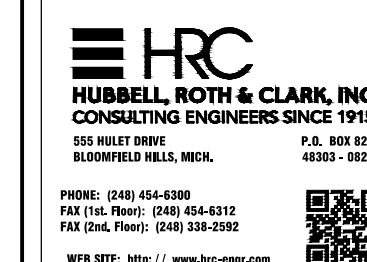
C-005



PLACE HOOK BOLTS INTO
MANHOLE TO BOND CONCRETE
ENCASEMENT WHEN DROP
CONNECTION EXCEEDS 2 FEET.

[illegible]

555 S. Saginaw Street, Suite 201
Flint, MI 48502
810.235.2555
www.wadetrin.com



CITY OF FLINT
1101 S. SAGINAW STREET
FLINT, MI 48502

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IFB	6/01/20	JJ

JOB NO.
COF107201F

SHEET
C-006

GENERAL

- STEEL

- MASONRY

- ### CAST-IN-PLACE CONCRETE

- ## MISCELLANEOUS

- ## DESIGN LOADS

- ## DEMOLITION

- 1 ISO VIEW
SCALE:

ALT	ALTERNATE	HK	HOOK
ALUM	ALUMINUM	HT	HEIGHT
B/	BOTTOM	ID	INSIDE DIAMETER
BLDG	BUILDING	IE	INVERT ELEVATION
BM	BEAM	IF	INSIDE FACE
BOT	BOTTOM	IN	INCHES
BSMT	BASEMENT	INFL	INFLUENT
CHAN	CHANNEL	INT	INTERIOR
CIP	CAST-IN-PLACE	JT	JOINT
CJ	CONSTRUCTION JOINT	KIP	THOUSAND POUNDS
CL	CENTER LINE	KB	KNEE BRACE
CLR	CLEAR	LP	LOW POINT
COL	COLUMN	LGTH	LENGTH
CONC	CONCRETE	MAX	MAXIMUM
CONST	CONSTANT	MECH	MECHANICAL
CONSTR	CONSTRUCTION	MFR	MANUFACTURER
CONT	CONTINUOUS	MIN	MINIMUM
CLSM	CONTROLLED LOW STRENGTH MATERIAL	MO	MASONRY OPENING
COR	CORNER	NF	NEAR FACE
CY	CUBIC YARD	NS	NEAR SIDE
DET	DETAIL	NTS	NOT TO SCALE
DIA / Ø	DIAMETER	NIC	NOT IN CONTRACT
DIAG	DIAGONAL	OC	ON CENTER
DISC	DISCONTINUOUS	OD	OUTSIDE DIAMETER
DIST	DISTANCE	OF	OUTSIDE FACE
DWLS	DOWELS	OPNG	OPENING
EJ	EXPANSION JOINT	PEMB	PRE-ENGINEERED METAL BUILDING
EE	EACH END	PSF	POUNDS PER SQ. FOOT
EF	EACH FACE	PSI	POUNDS PER SQ. INCH
EFF	EFFLUENT	REINF	REINFORCEMENT
ES	EACH SIDE	RE	REFER TO
EW	EACH WAY	RTB	RETENTION TREATMENT BASIN
EA	EACH		
EL/ ELEV	ELEVATION	SCHED	SCHEDULE
EX	EXISTING	SET	SETTLING
EXT	EXTERIOR/ EXTENSION	SHTS	SHEETS
FD	FLOOR DRAIN	SIM	SIMILAR
FF	FAR FACE	SJ	SLAB CONTROL JOINT
FFE	FINISHED FLOOR ELEVATION	SS	STAINLESS STEEL
FS	FAR SIDE	STIR	STIRRUPS
FIN	FINISH	STRUCT	STRUCTURAL
FL	FLOOR	TOS	ELEVATION TOP OF STRUCTURAL STEEL
FND	FOUNDATION	T/	TOP
FST	FINAL SETTLING TANK	TYP	TYPICAL
FT	FEET	UNO	UNLESS NOTED OTHERWISE
GALV	GALVANIZED	V	VERTICAL
GR	GRADE	WP	WORK POINT
H/ HORIZ	HORIZONTAL		
HP	HIGH POINT		

BAR SIZE	TENSION LAP LENGTH	* TOP BARS
#3	16"	22"
#4	20"	29"
#5	24"	36"
#6	29"	43"
#7	42"	63"
#8	48"	72"
#9	54"	81"
#10	61"	91"
#11	67"	101"

NOTES

-
- A circular professional engineer seal for the State of Michigan. The outer ring contains the text "STATE OF MICHIGAN" at the top and "LICENSED PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The center of the seal contains the text "TREVOR MACK BURKE", "ENGINEER", "No.", and the license number "6207068986". A blue ink signature is written across the center. Below the seal, the date "05-22-2020" is handwritten in blue ink.

CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
GENERAL NOTES, CODES, AND ABBREVIATIONS

ISSUED FOR:	DATE:	BY:
50% Review	2/17/20	JA
90% Review	3/20/20	JA
100% Review	4/17/20	JA
IFB	6/01/20	JA

JOB NO.
COF1072.01F

SHEET

S-100

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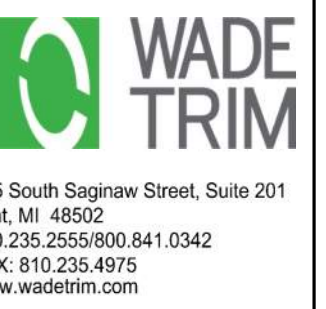
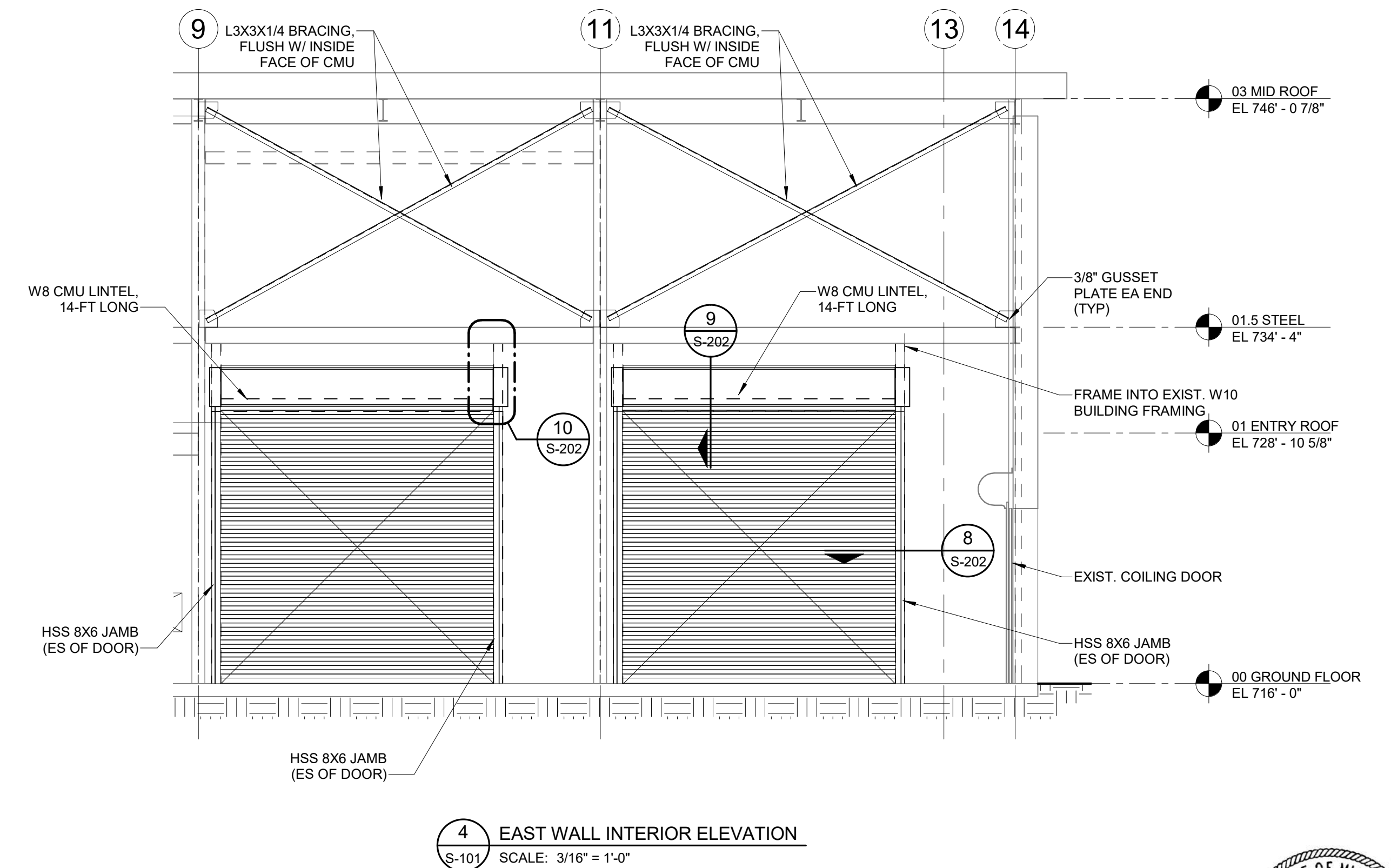
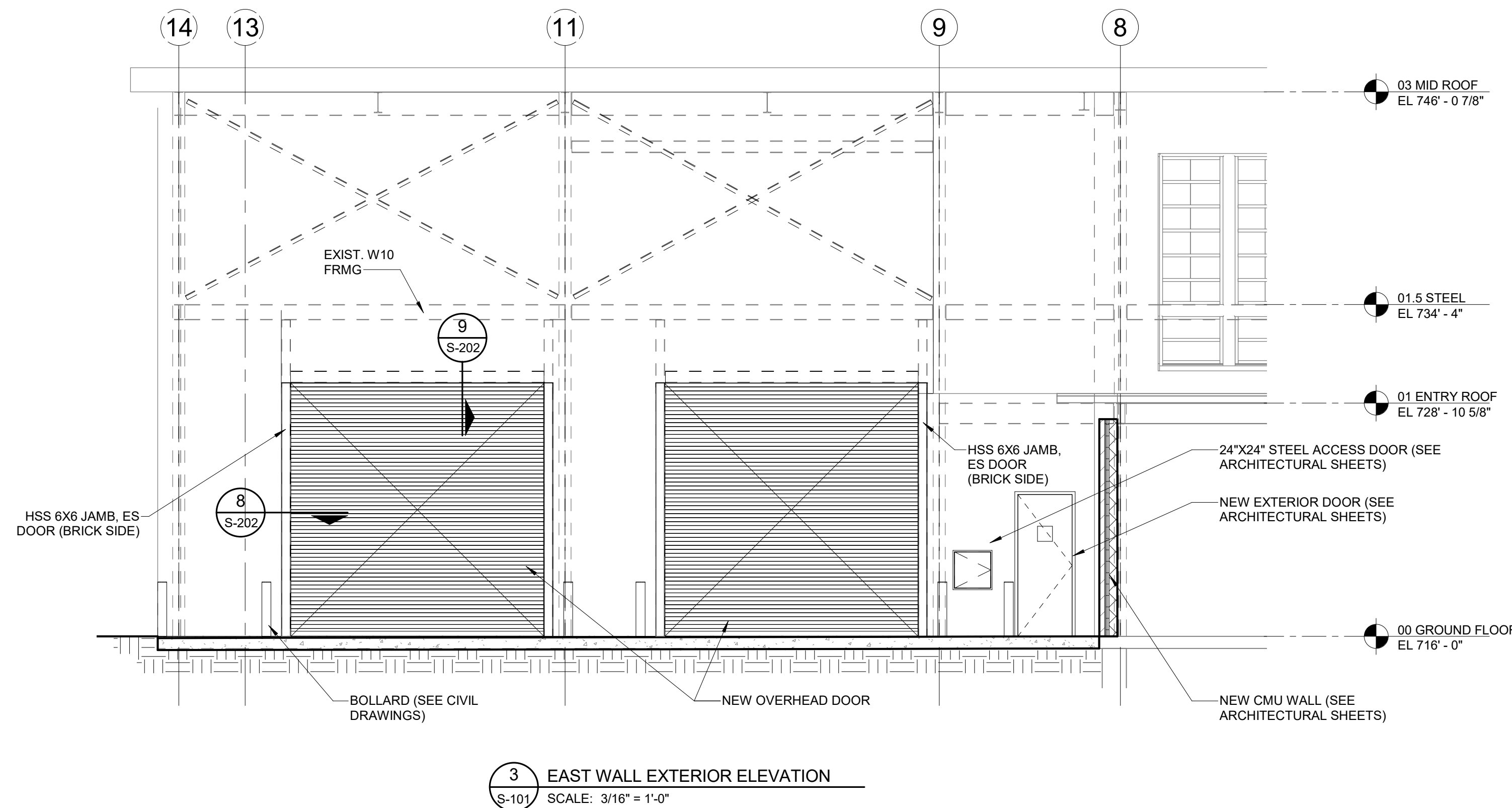
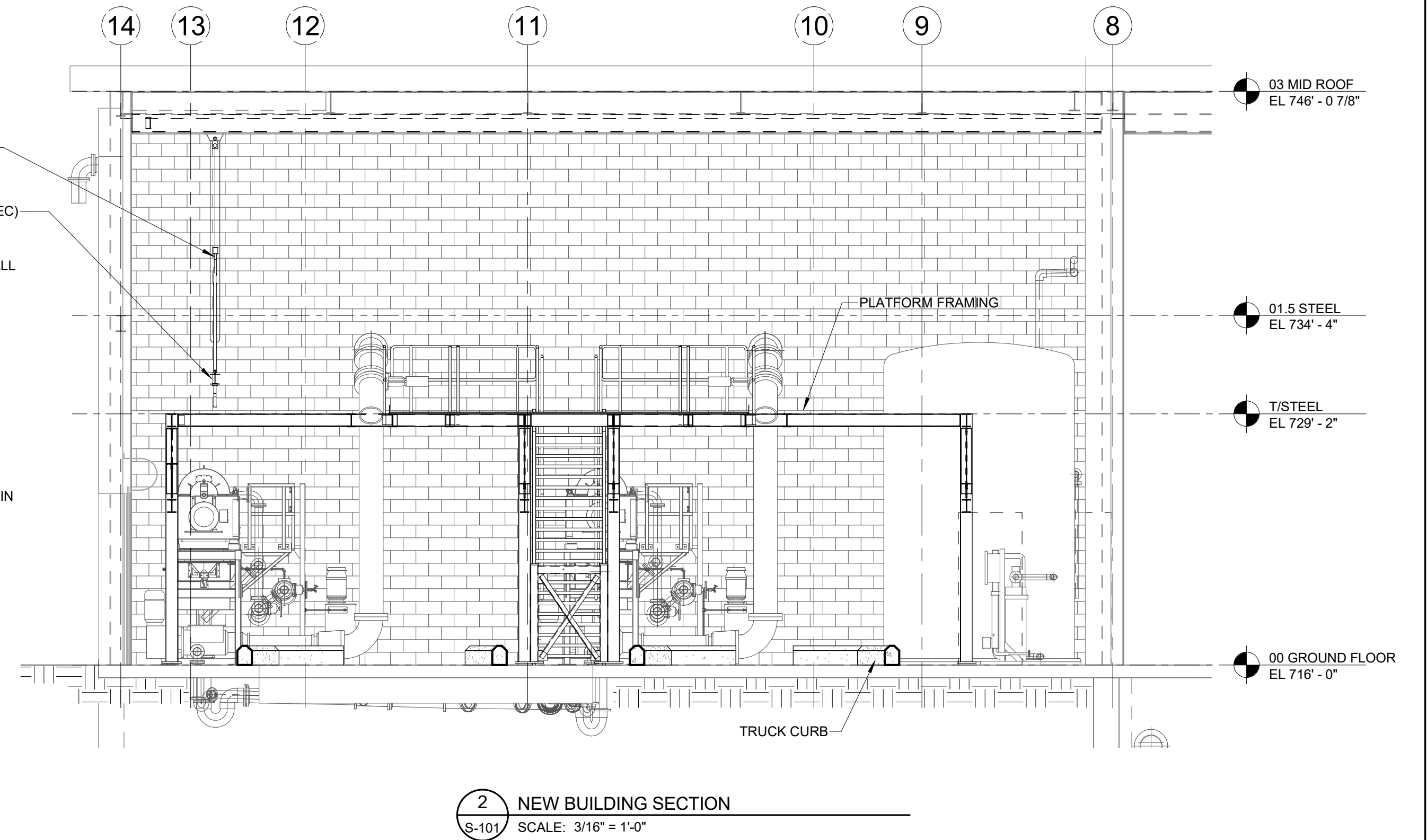
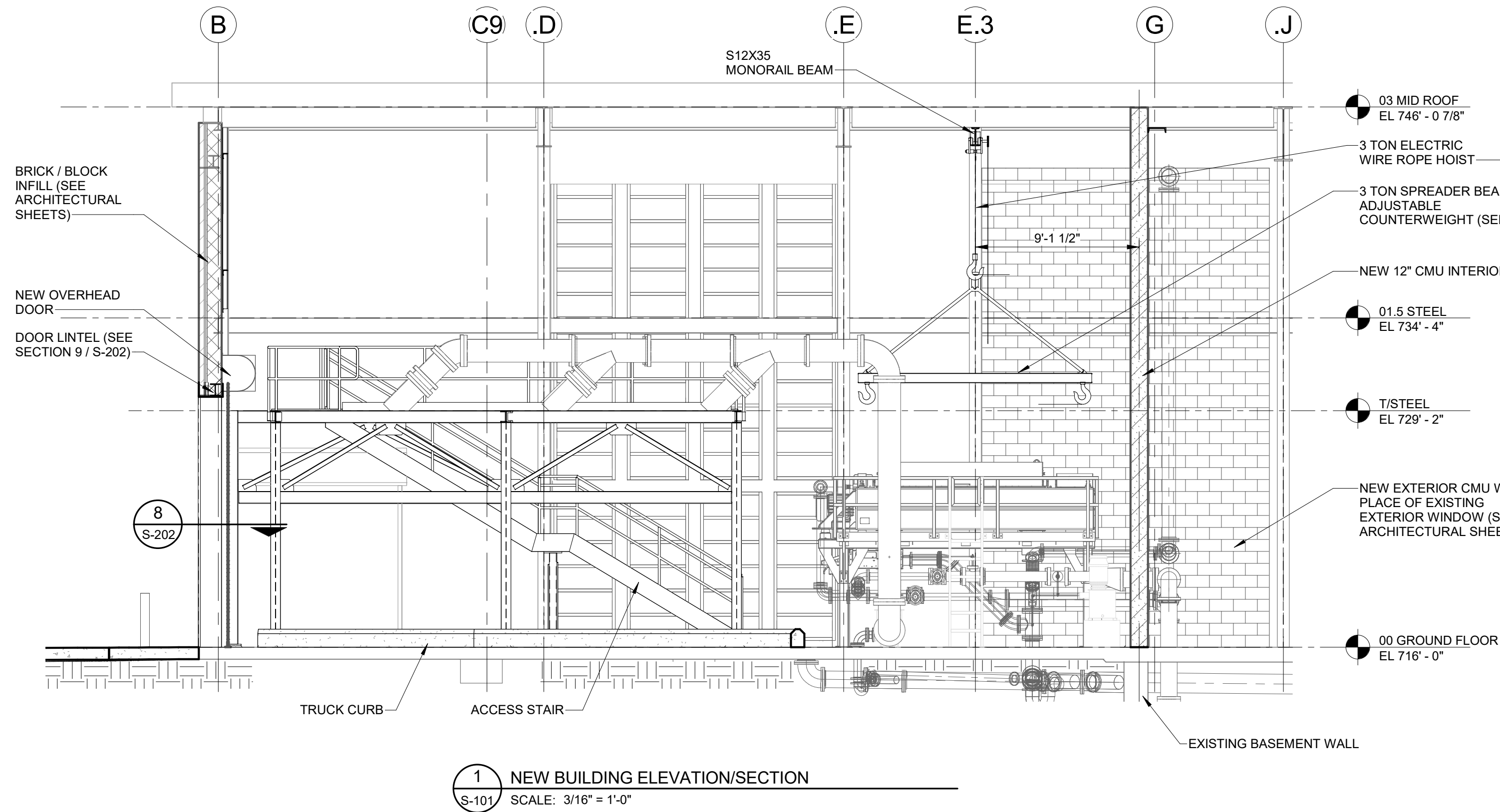


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CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
BUILDING ELEVATIONS

ISSUED FOR: DATE: BY:
50% Review 2/17/20 JA
90% Review 3/20/20 JA
100% Review 4/17/20 JA
IFB 6/01/20 JA

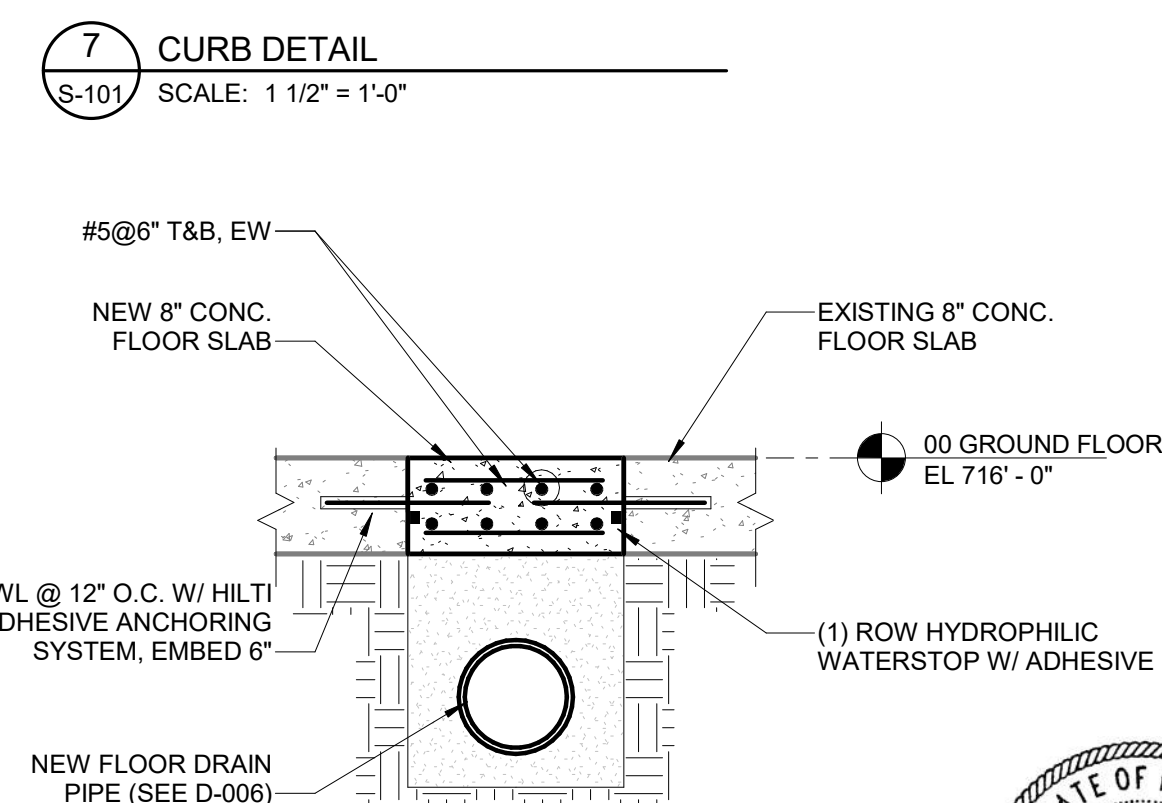
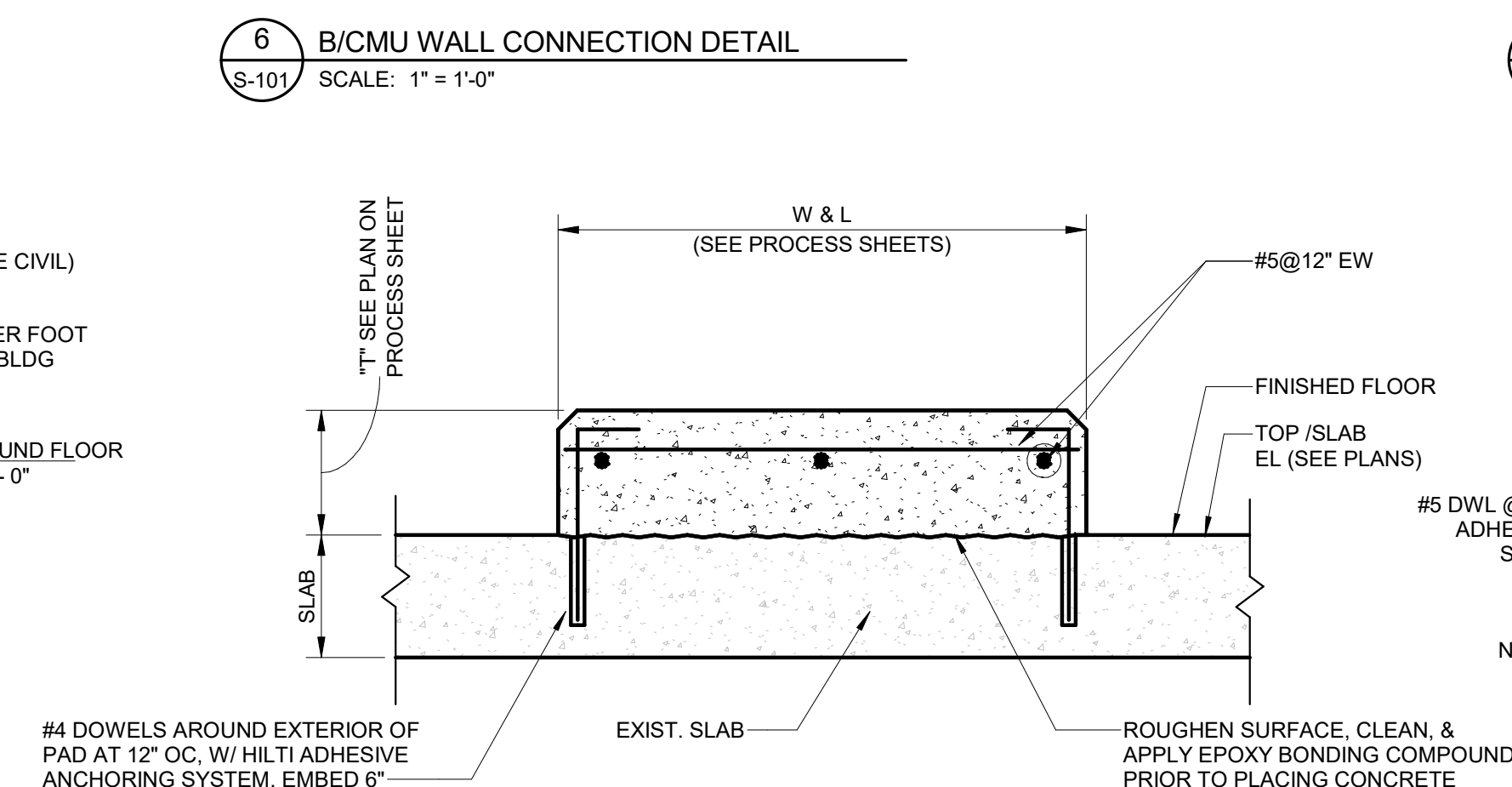
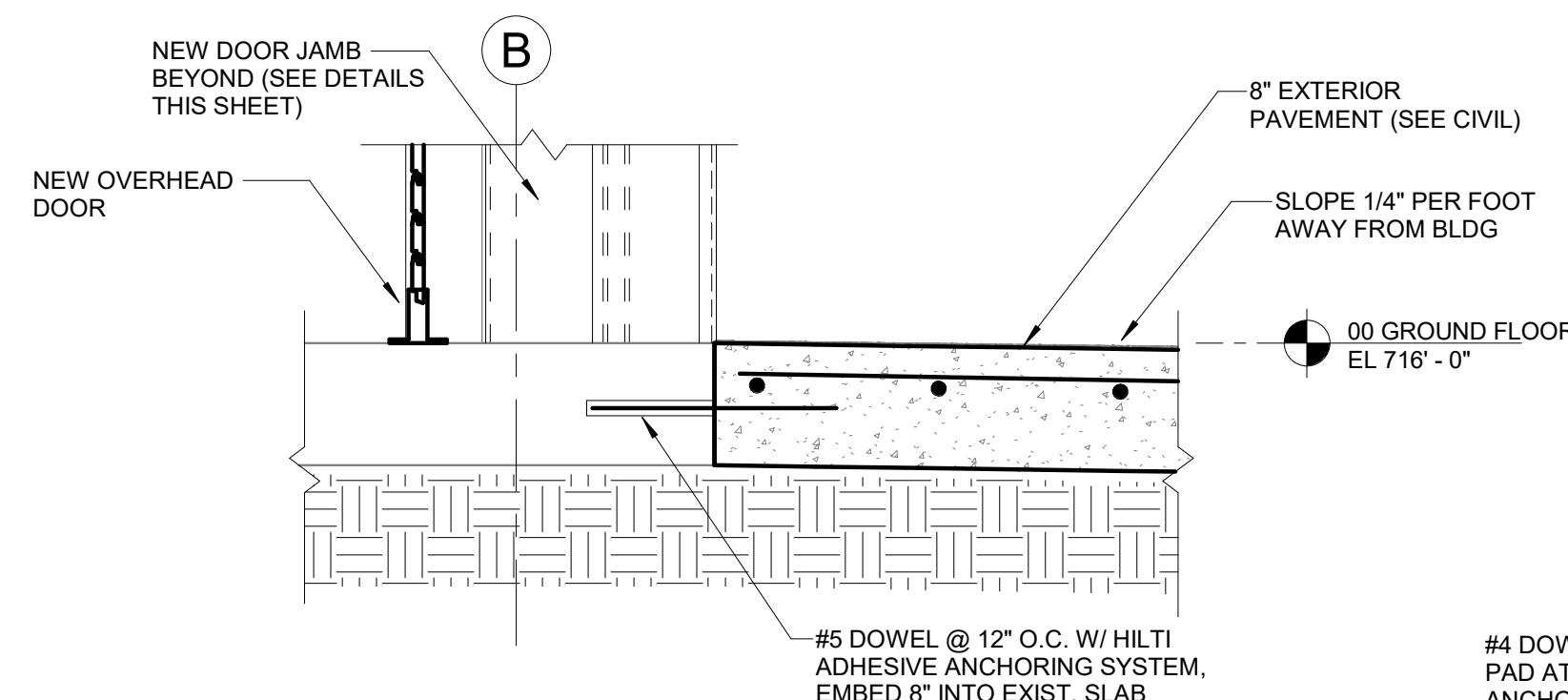
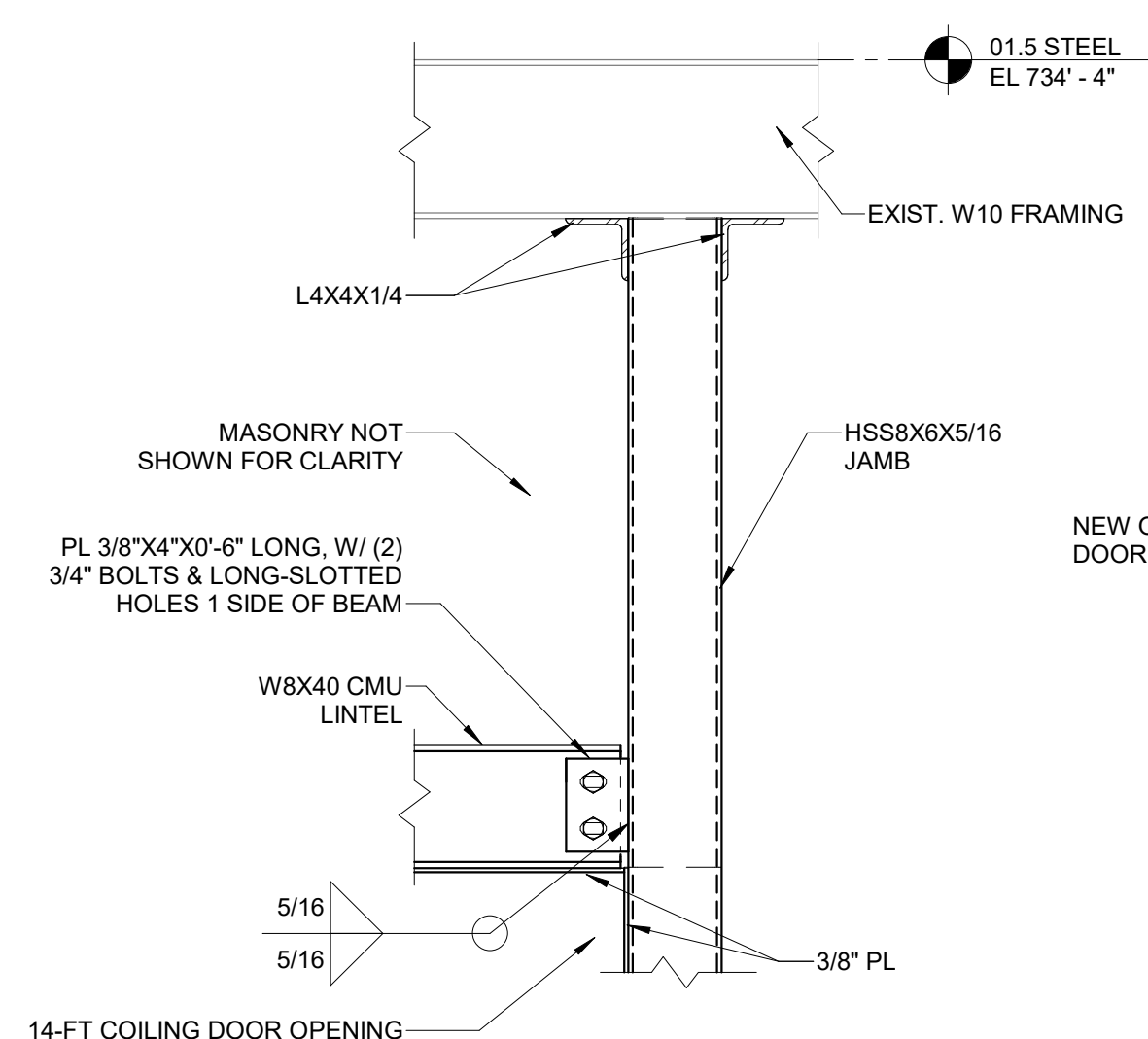
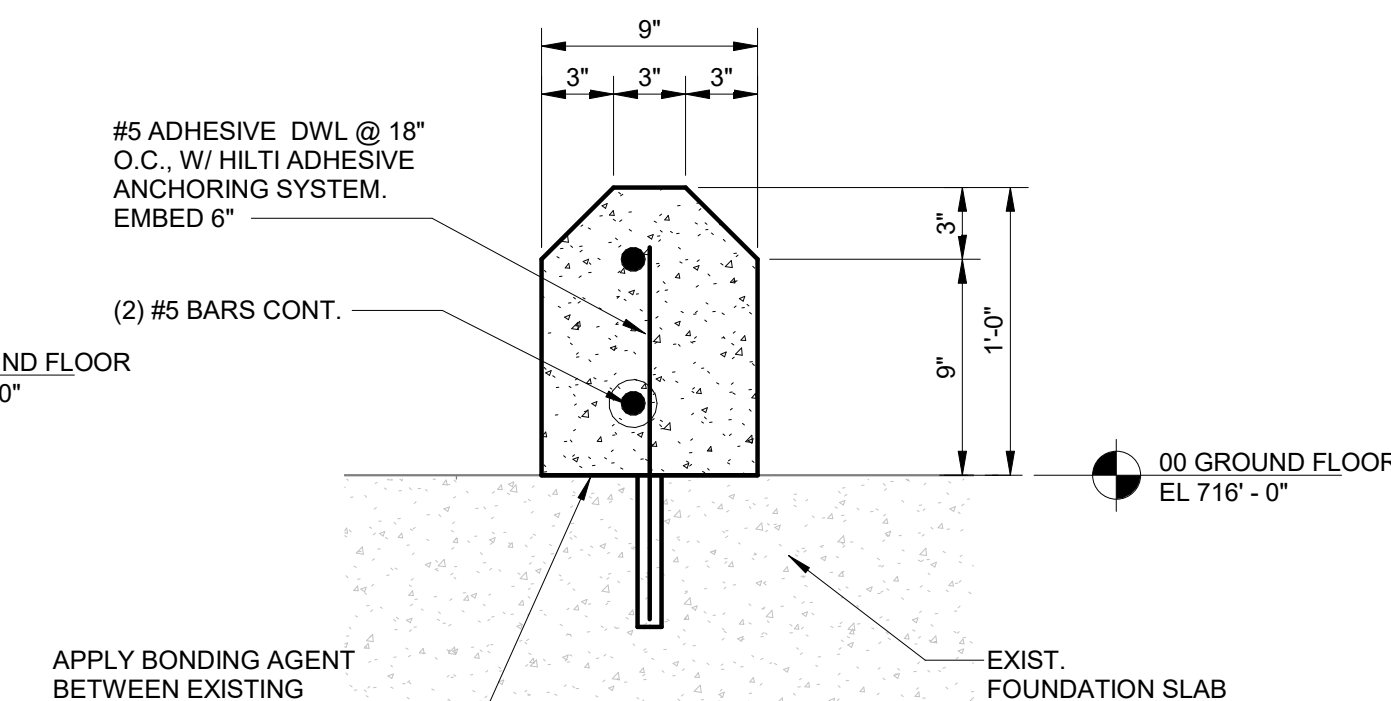
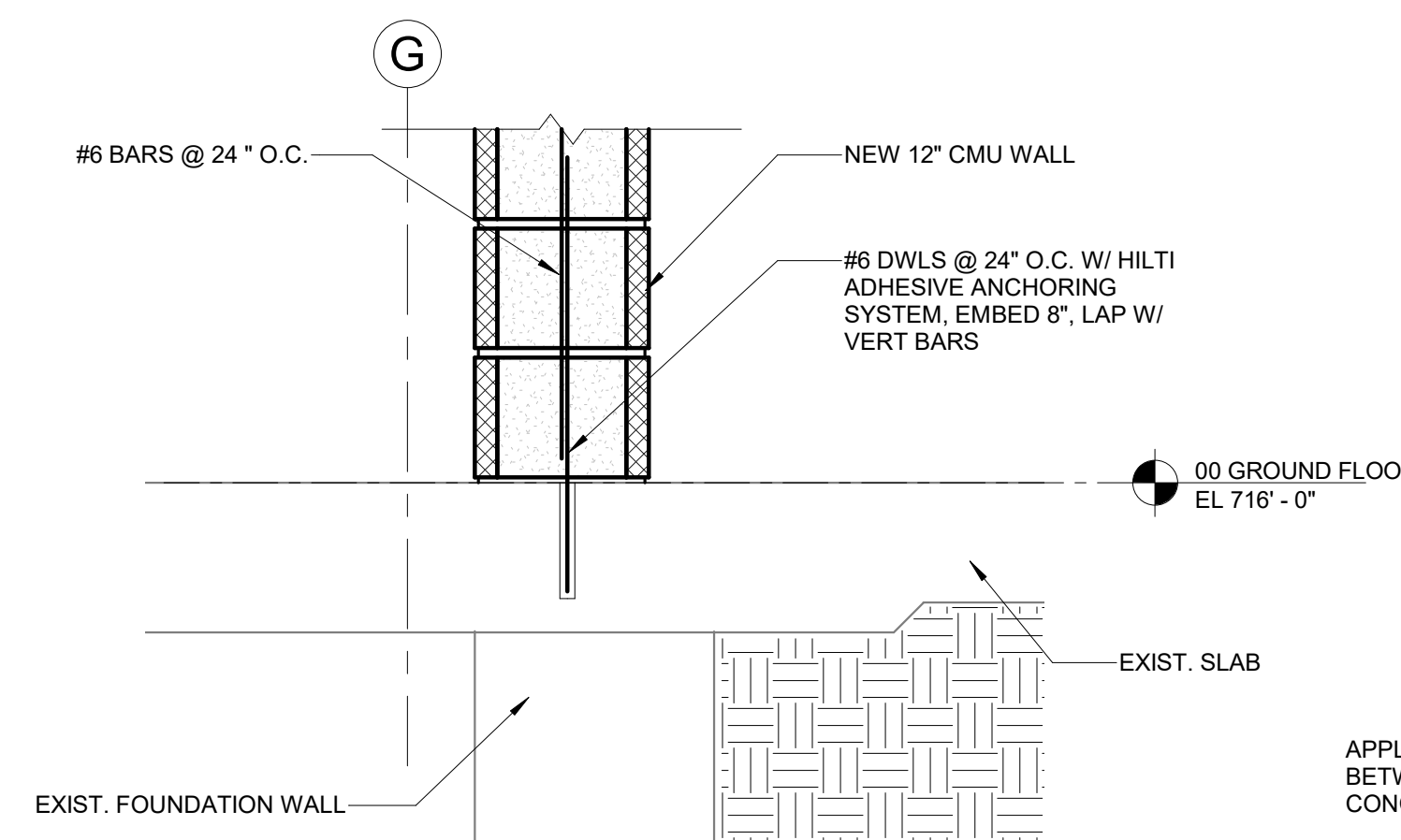
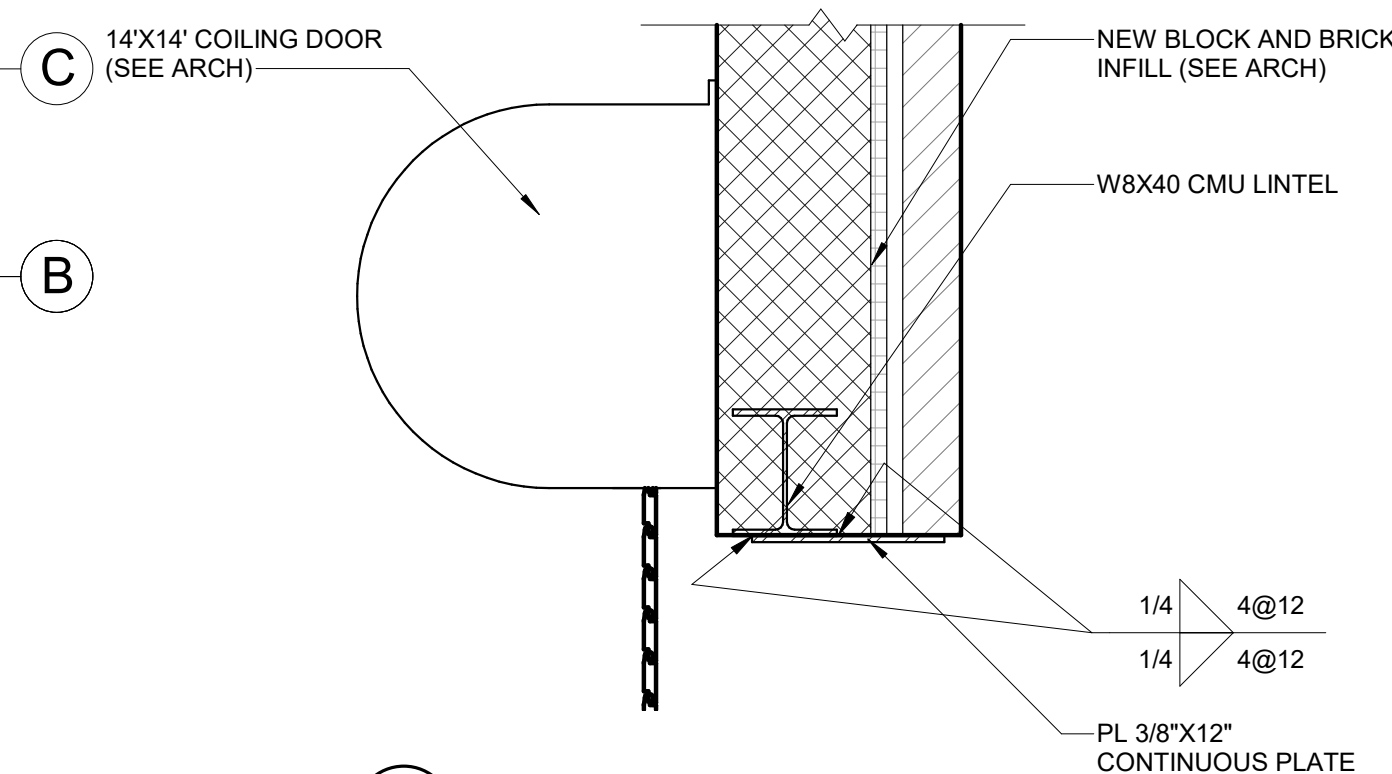
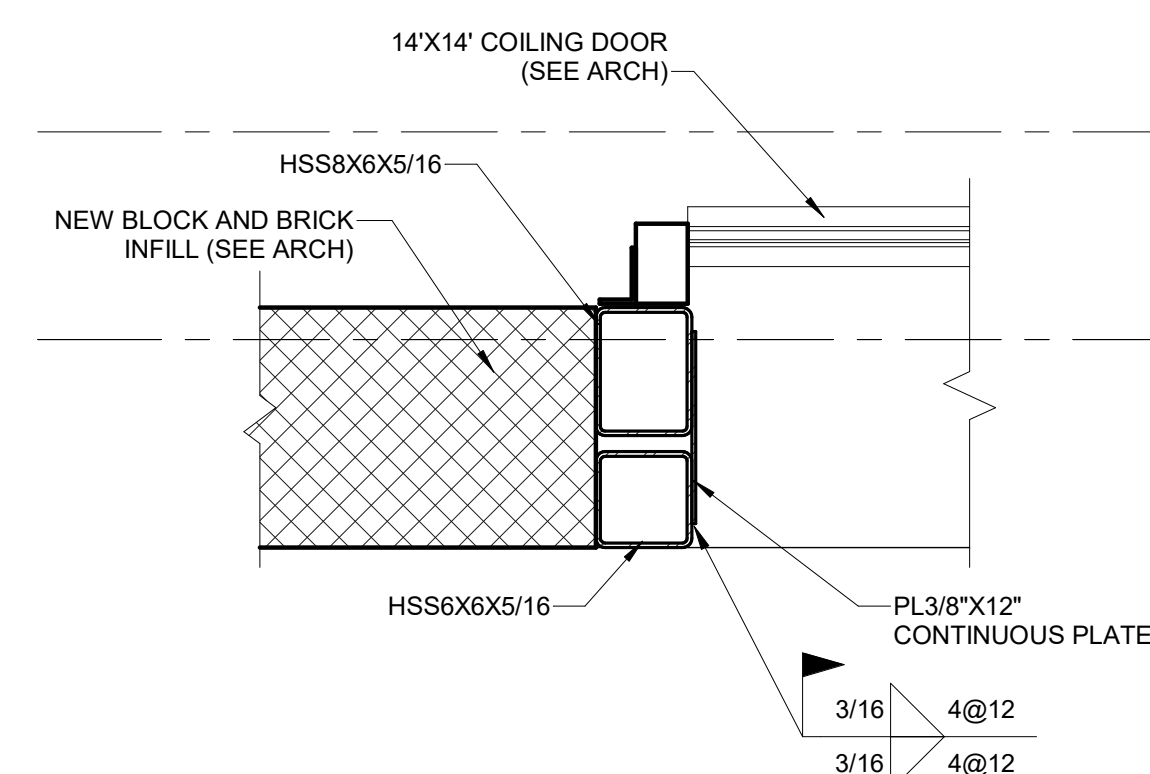
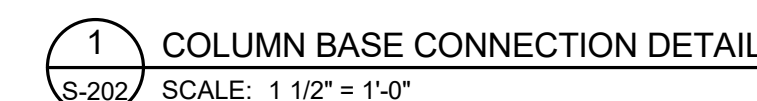
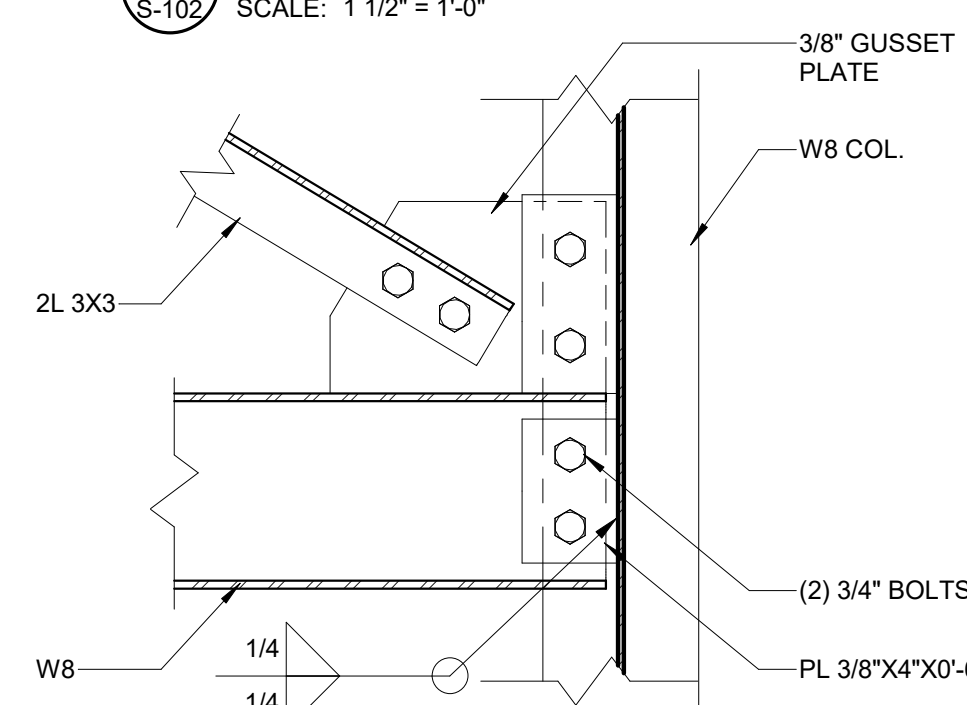
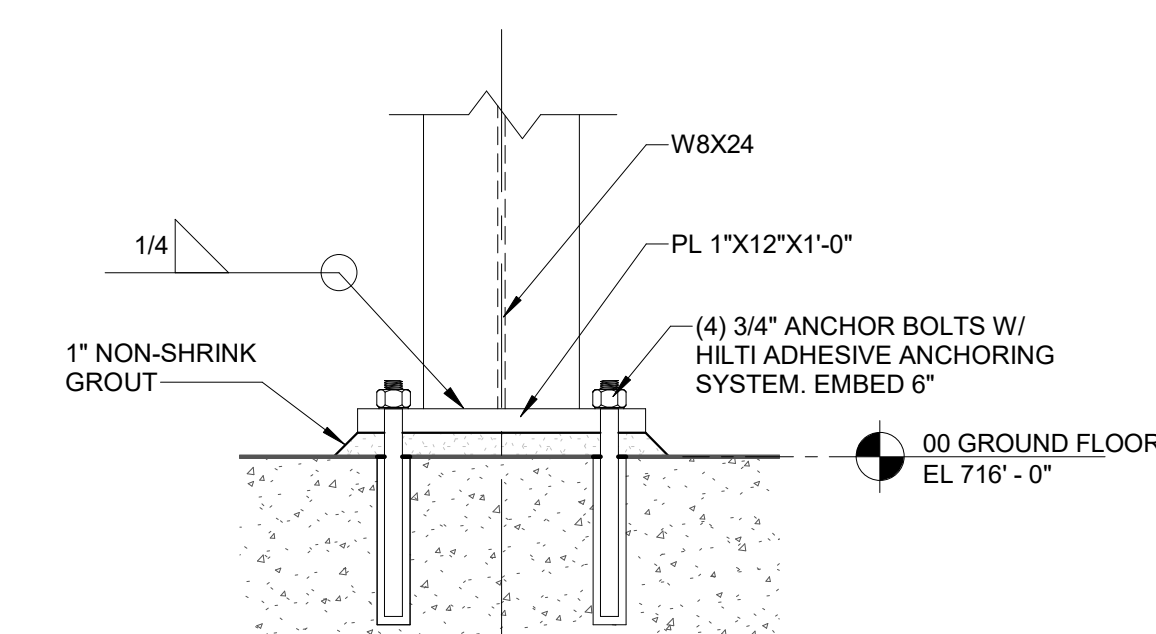
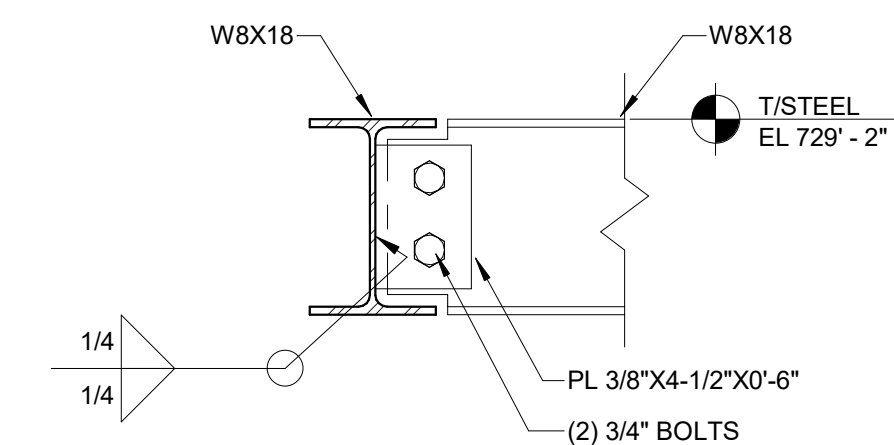
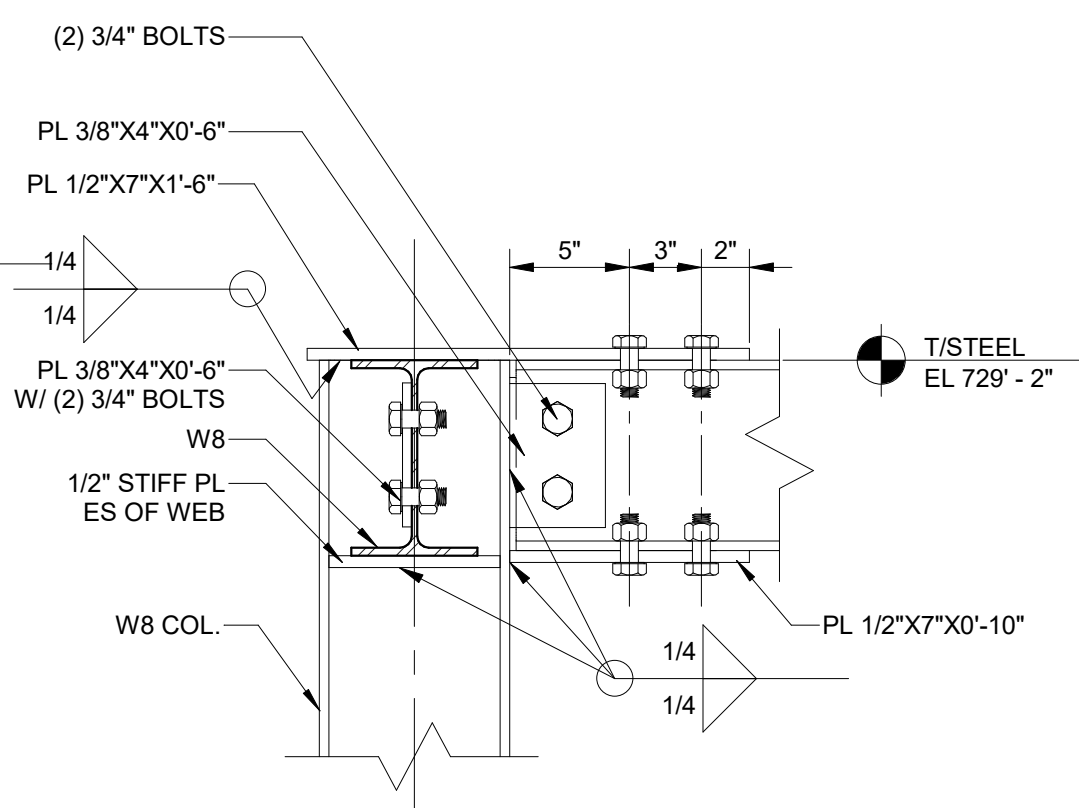
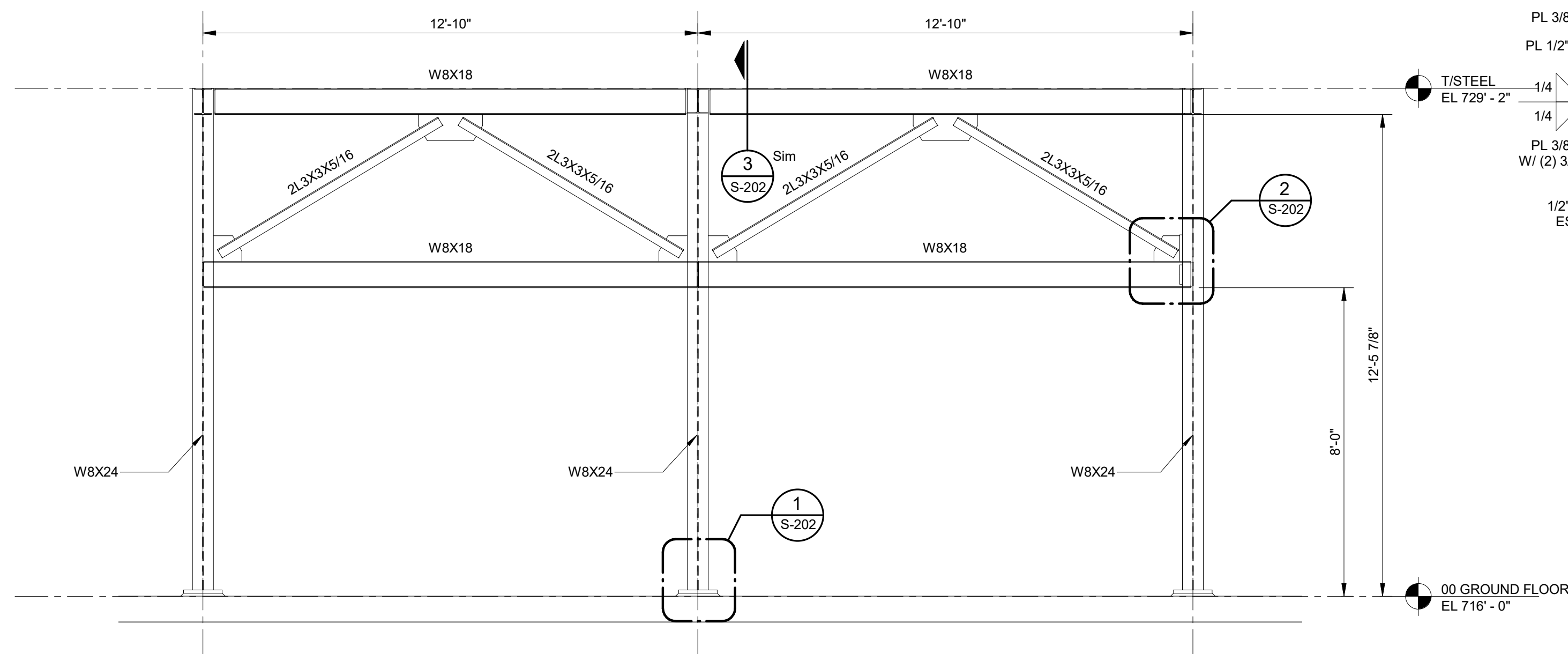
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SHEET

S-201



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FAX (2nd Floor): (248) 338-2592

WEB SITE: <http://www.brc-engr.com>

CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
SECTIONS / DETAILS

ISSUED FOR:	DATE:	E
50% Review	2/17/20	J
90% Review	3/20/20	J
100% Review	4/17/20	J
IFB	6/01/20	J

JOB NO.
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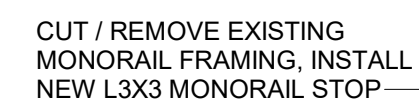
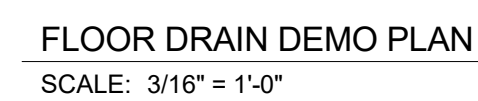
SHEET

S-202

Wade Trim Group, Inc.

PLOTTED 5/22/2020 11:11:28 AM

\\d0999346\COF107201F WPC-Sludge-Dewatering-Improvements S-17.rvt



STATE OF MICHIGAN
TREVOR MACK
BURKE
ENGINEER
No. 6201068986
LICENSED PROFESSIONAL ENGINEER
05-22-2020

ISSUED FOR:	DATE:	BY:
50% Review	2/17/20	JA
90% Review	3/20/20	JA
100% Review	4/17/20	JA
IFB	6/01/20	JA

JOB NO.
COF1072.01F

SHEET
SD-101

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APPLICABLE CODES:
 2015 MICHIGAN BUILDING CODE (MBC)
 2017 NATIONAL ELECTRICAL CODE
 2015 MICHIGAN MECHANICAL CODE
 2015 MICHIGAN PLUMBING CODE
 2015 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS (MRCEB)
 2015 INTERNATIONAL FIRE CODE
 2015 MICHIGAN UNIFORM ENERGY CODE
 ICC ANSI A117.1 - 2009

CONSTRUCTION TYPE (TABLE 601 & 602): II B

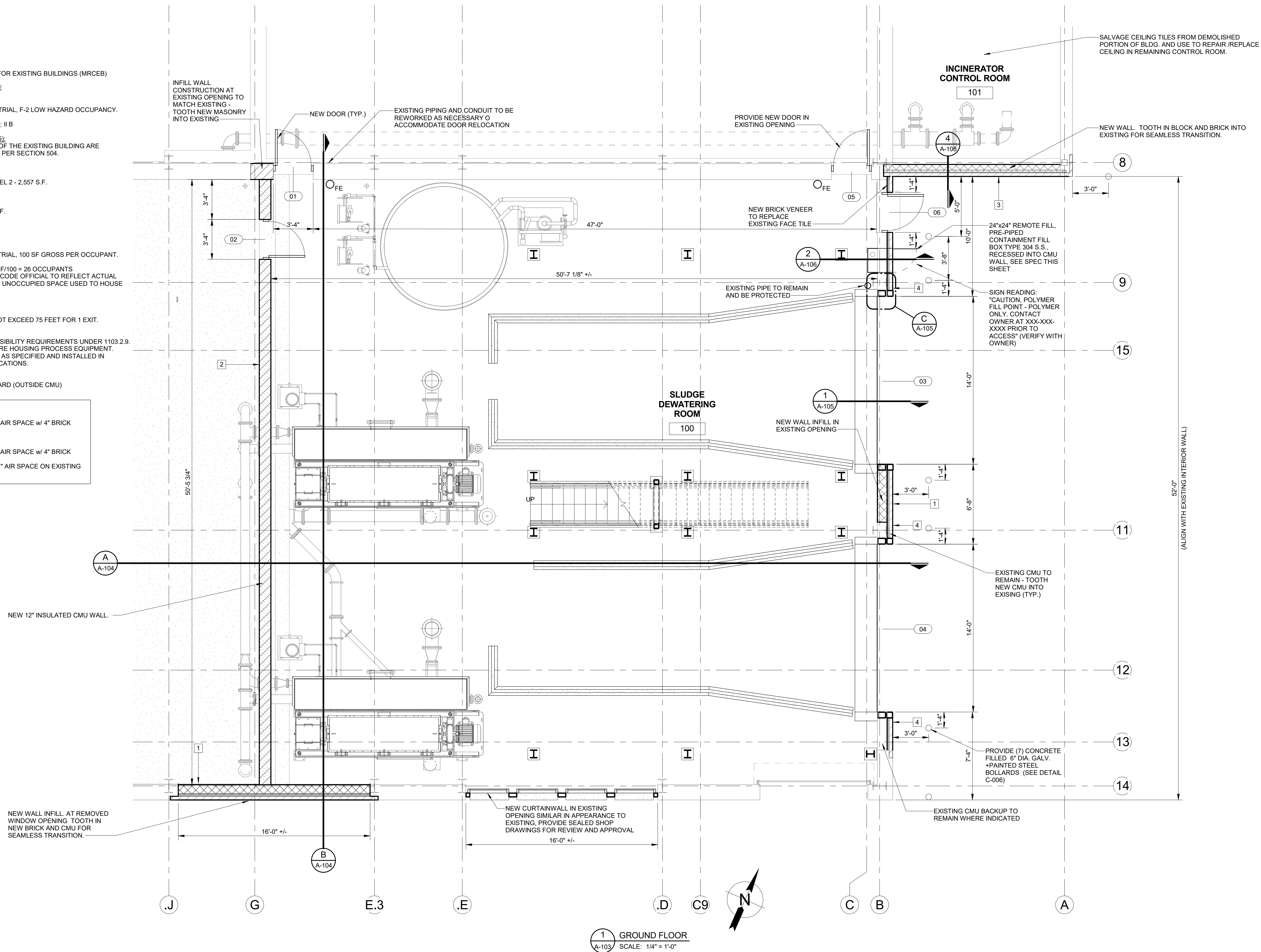
AFFECTED FLOOR AREA:
NEW SLUDGE DEWATERING ROOM, LEVEL 2 - 2,557 S.F.

OCCUPANT LOAD (TABLE 1004.1.2):
OCCUPANCY CLASSIFICATION IS INDUSTRIAL, 100 SF GROSS PER OCCUPANT.

TRAVEL DISTANCE (1006):
F-2 AREA:
DISTANCE TO AN EXIT ACCESS DOES NOT EXCEED 75 FEET FOR 1 EXIT.

ENERGY CODE COMPLIANCE:
WALLS: 2" R-6 RIGID INSULATION BOARD (OUTSIDE CMU)
DOOR: LOW-E INSULATED GLAZING

- 1 10" CMU w/ 1" RIGID INSULATION w/ 1" AIR SPACE w/ 4" BRICK
- 2 12" CMU
- 3 6" CMU w/ 2" RIGID INSULATION w/ 3/4" AIR SPACE w/ 4" BRICK
- 4 NEW 4" BRICK w/ 1" INSULATION AND 1" AIR SPACE ON EXIST CMU AND STRUCTURE



1 GROUND FLOOR
A-103 SCALE: 1/4" = 1'-0"

A photograph of a building's exterior showing a concrete roof and a brick wall. A red hatched area highlights a section of the roof and the wall above it. Arrows point from this area to a corresponding section in the adjacent image.

—EXSITING ROOF TO REMAIN

Architectural drawing of a low roof plan. The drawing shows a rectangular roof area with a dashed line indicating the existing roof boundary. A new roof section is shown with a hatched pattern. Annotations include:

- EXISTING LOUVERS TO REMAIN (pointing to a vertical structure on the left)
- EXISTING ROOF TO REMAIN (pointing to the dashed line)
- PROVIDE NEW WATERTIGHT TRANSITION/FLASHING AT EDGE OF EXISTING ROOF AT NEW ROOF EDGE (pointing to the hatched area)
- PROVIDE NEW ROOF EDGE TERMINATION AT NEW WALL - MATCH/ALIGN WITH EXISTING AND INSTALL PER MFR. RECOMMENDATIONS TO COMPLY WITH EXISTING ROOF SYSTEM WARRANTY REQUIREMENTS. (pointing to the new roof edge)

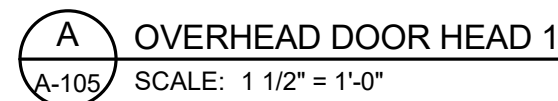
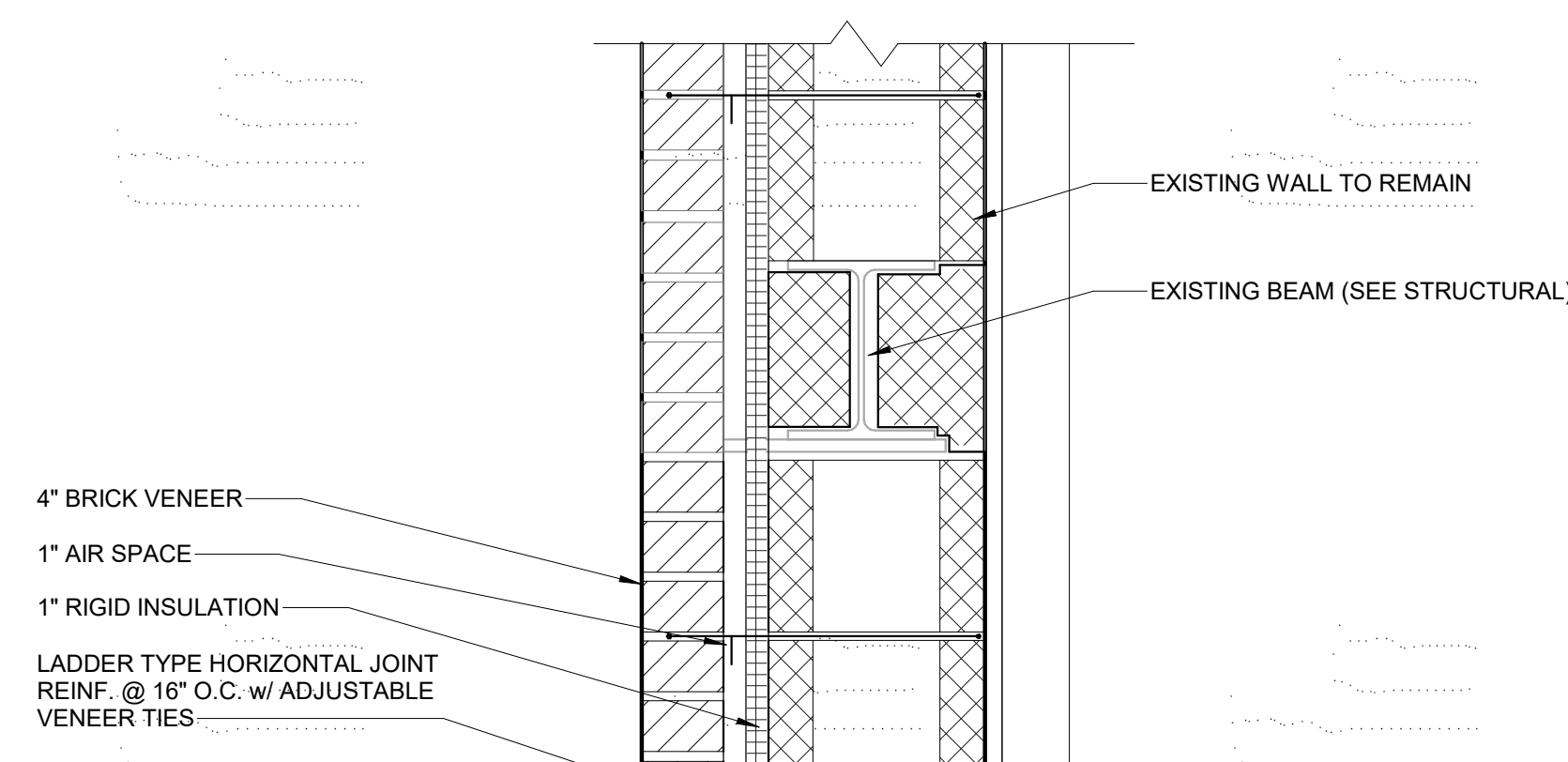
Dimensions are provided for the new roof section:

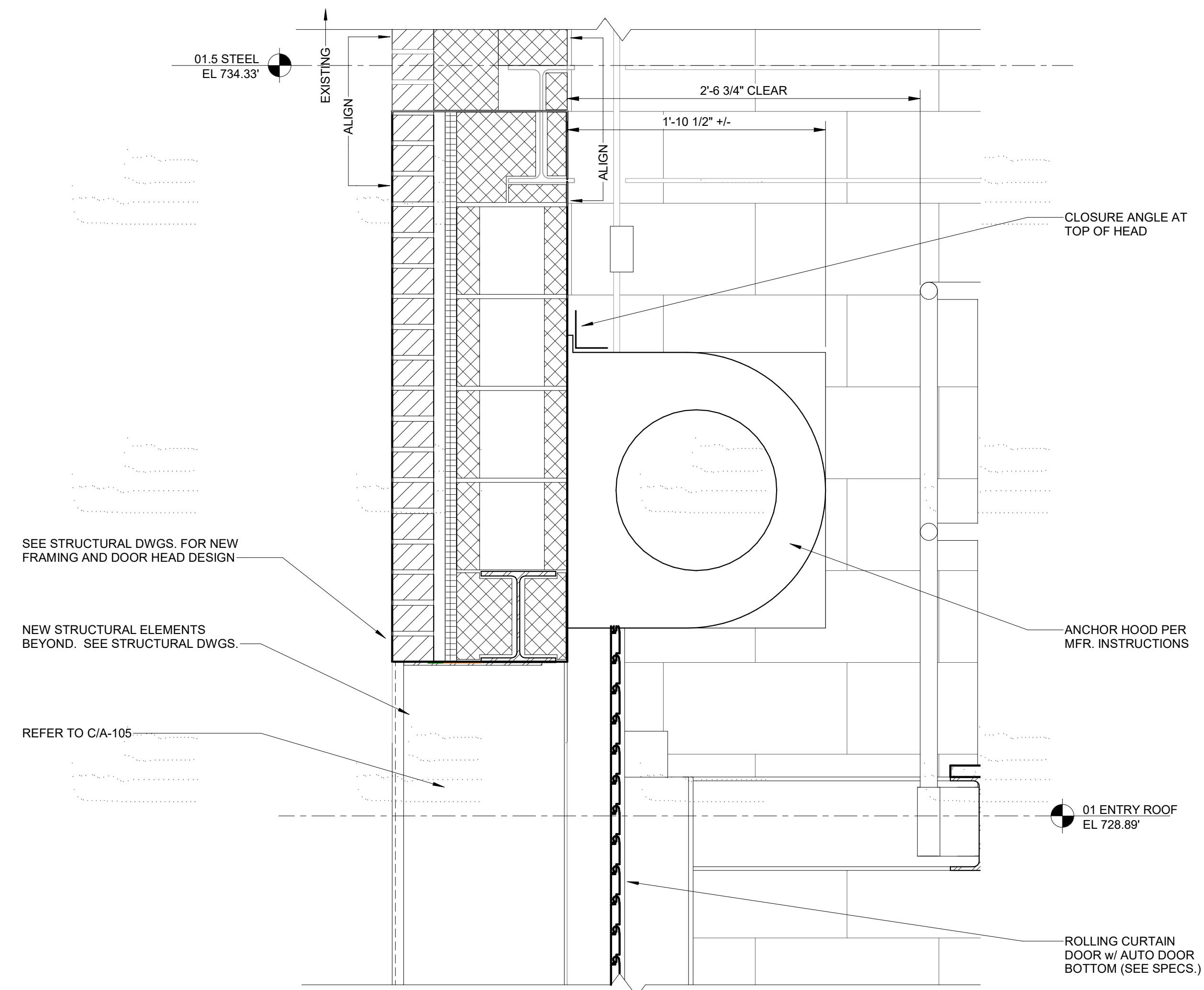
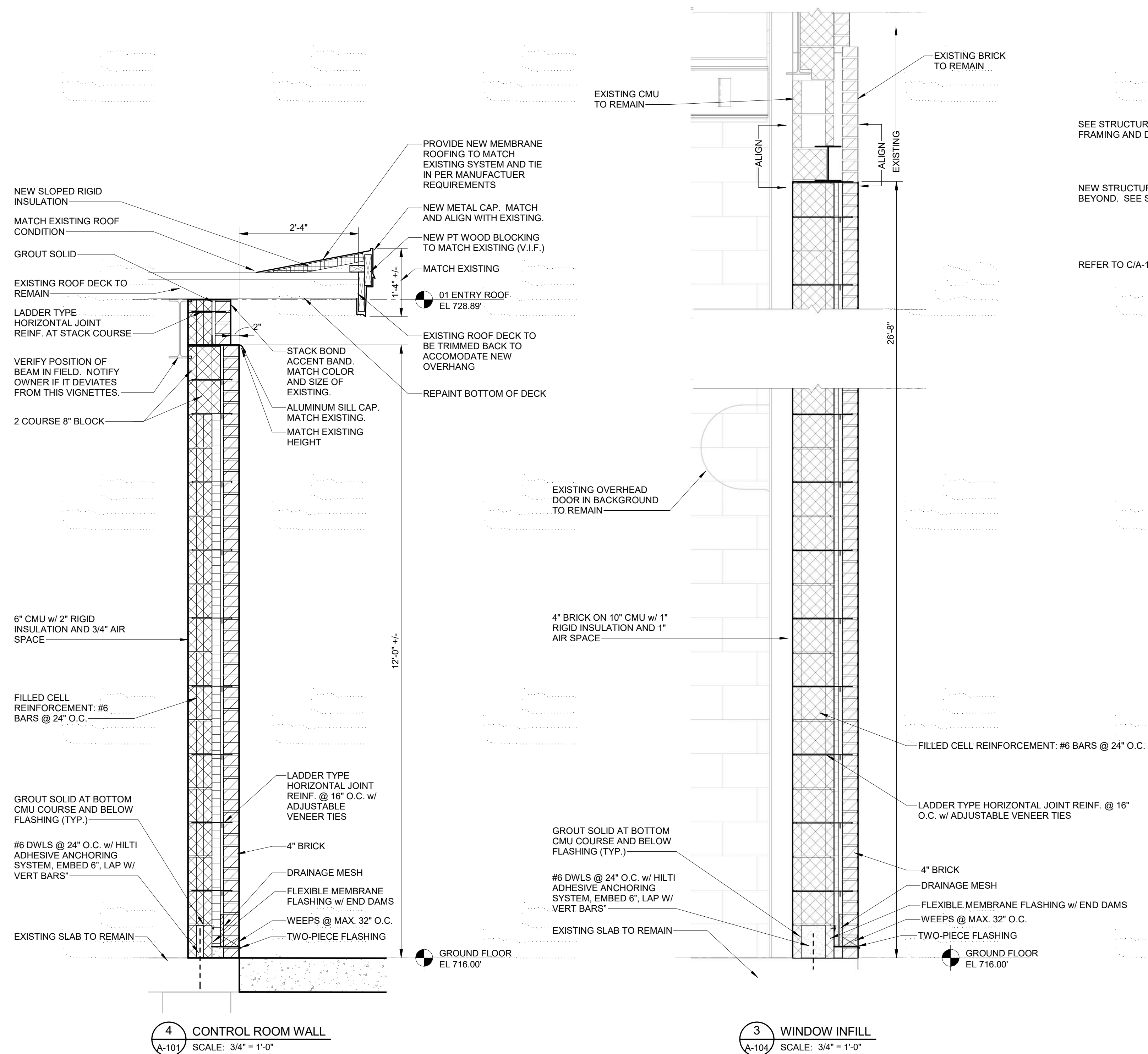
- 11'-3 5/8" +/- (width)
- 23'-2 3/8" +/- (length)
- 34'-6" +/- (total length)
- 17'-4" +/- (width of hatched area)

Grid lines are labeled 6.2, 7, and 8 vertically, and C horizontally. A north arrow is located in the bottom right corner.

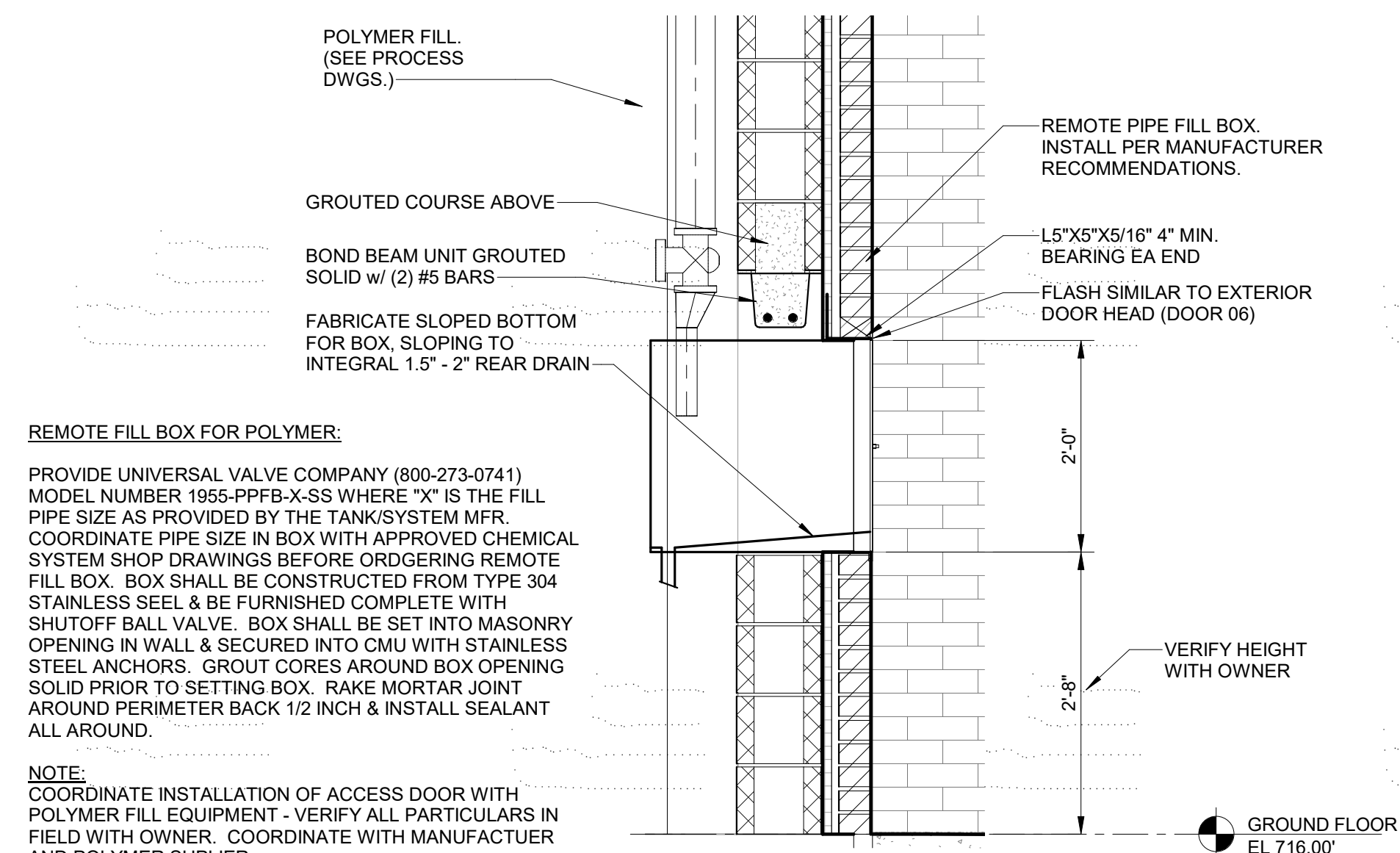
1 LOW ROOF PLAN
A-103 SCALE: 1/4" = 1'-0"

A-102





1 OVERHEAD HEAD 2
A-104 SCALE: 1 1/2" = 1'-0"



2 STEEL ACCESS DOOR SECTION
A-101 SCALE: 3/4" = 1'-0"

[illegible]

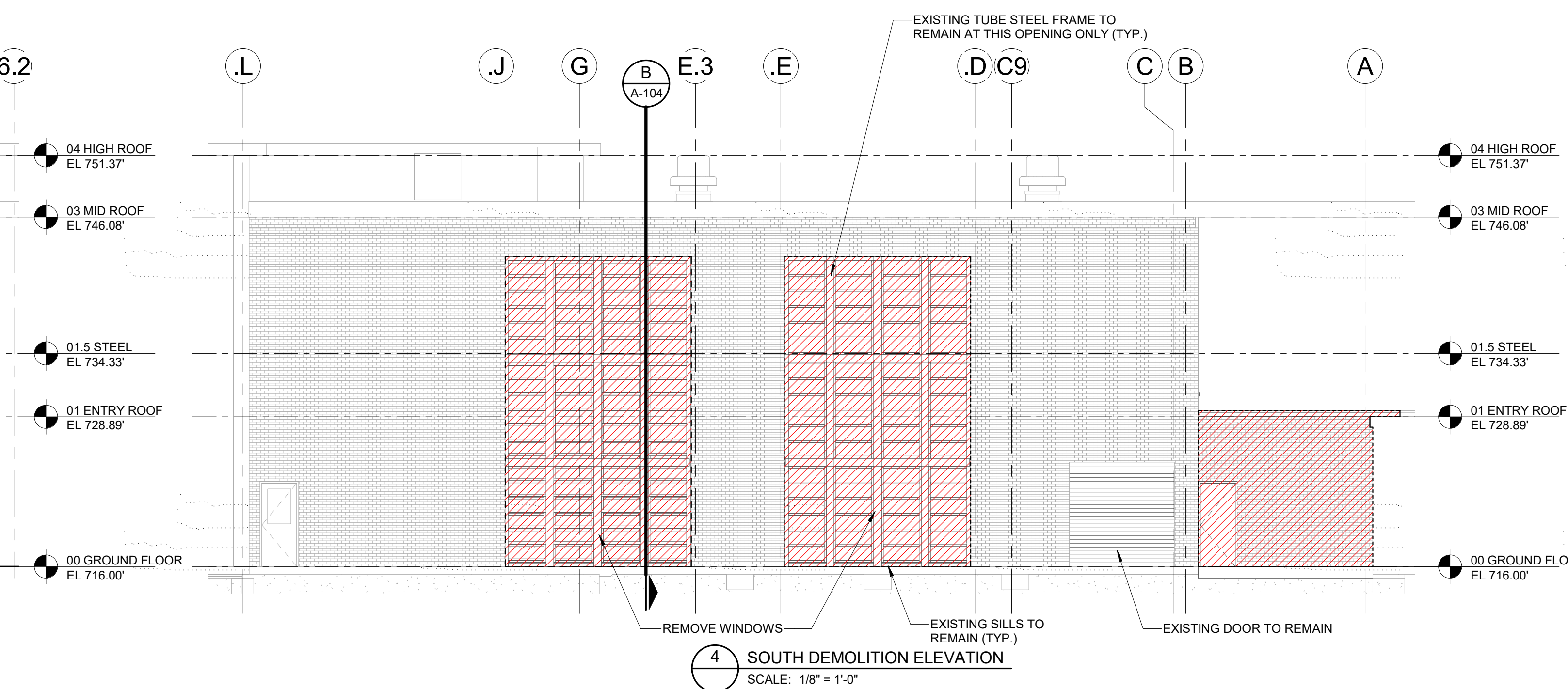
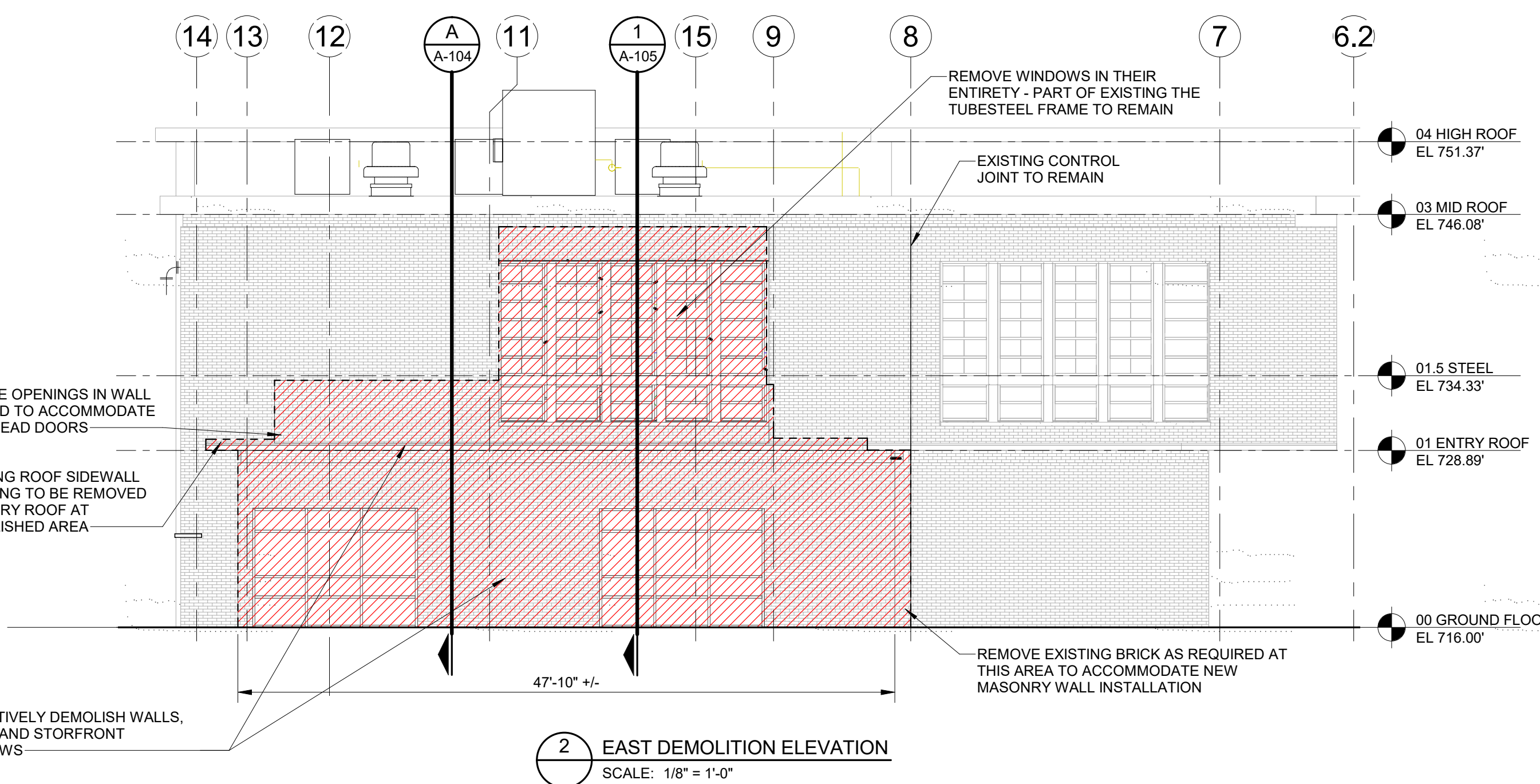
CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
SECTIONS & DETAILS

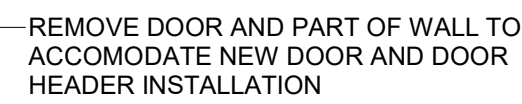
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JOB NO.
COF107201F

SHEET

A-106

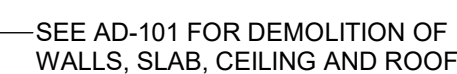
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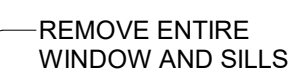
02 PHOTO
AD101



03 PHOTO
AD101



—SELECTIVELY
DEMOLISH PORTIONS
OF MASONRY WALL
ACCORDING TO
STRUCTURAL PLANS
AND SHEET AD-101



05 PHOTO
AD101



CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
DEMOLITION

ISSUED FOR:	DATE:	BY:
90% REVIEW	03-25-20	
100% REVIEW	4-17-20	JA
IFB	6-1-20	JA

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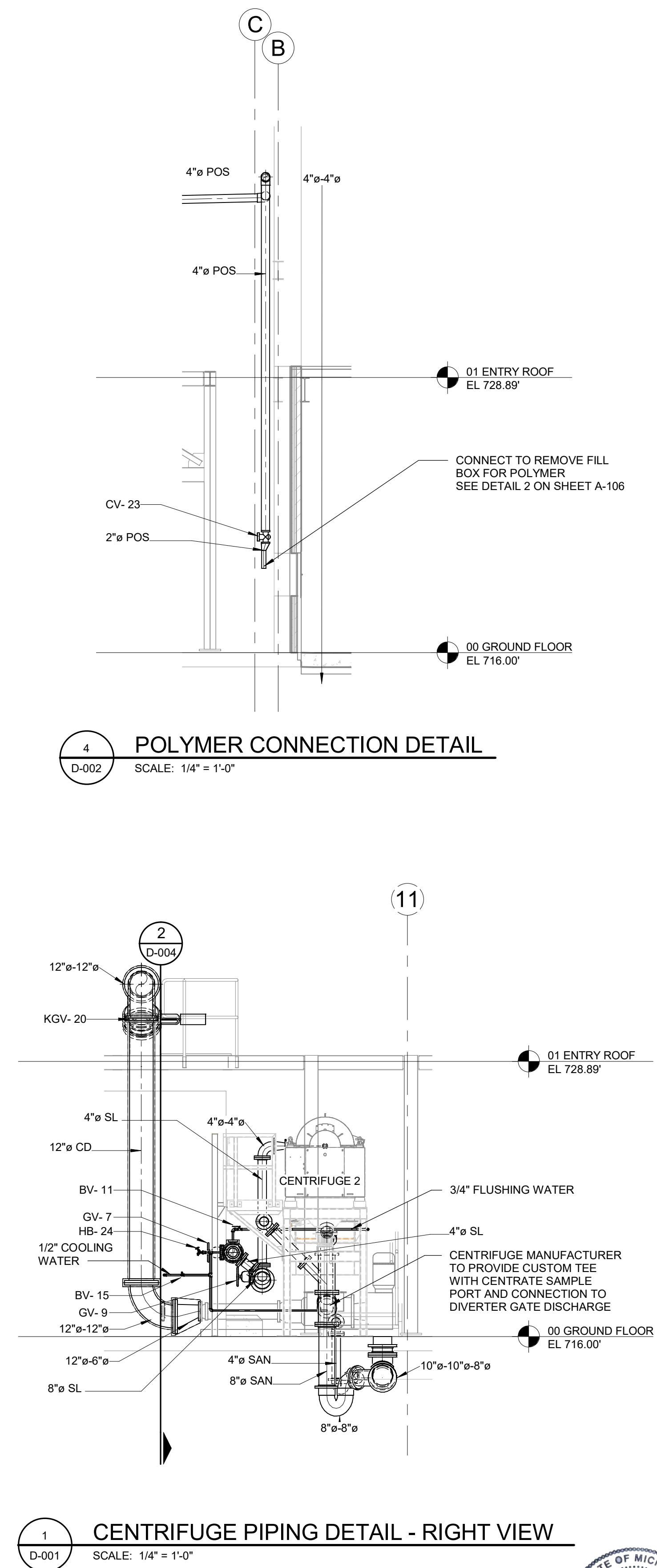
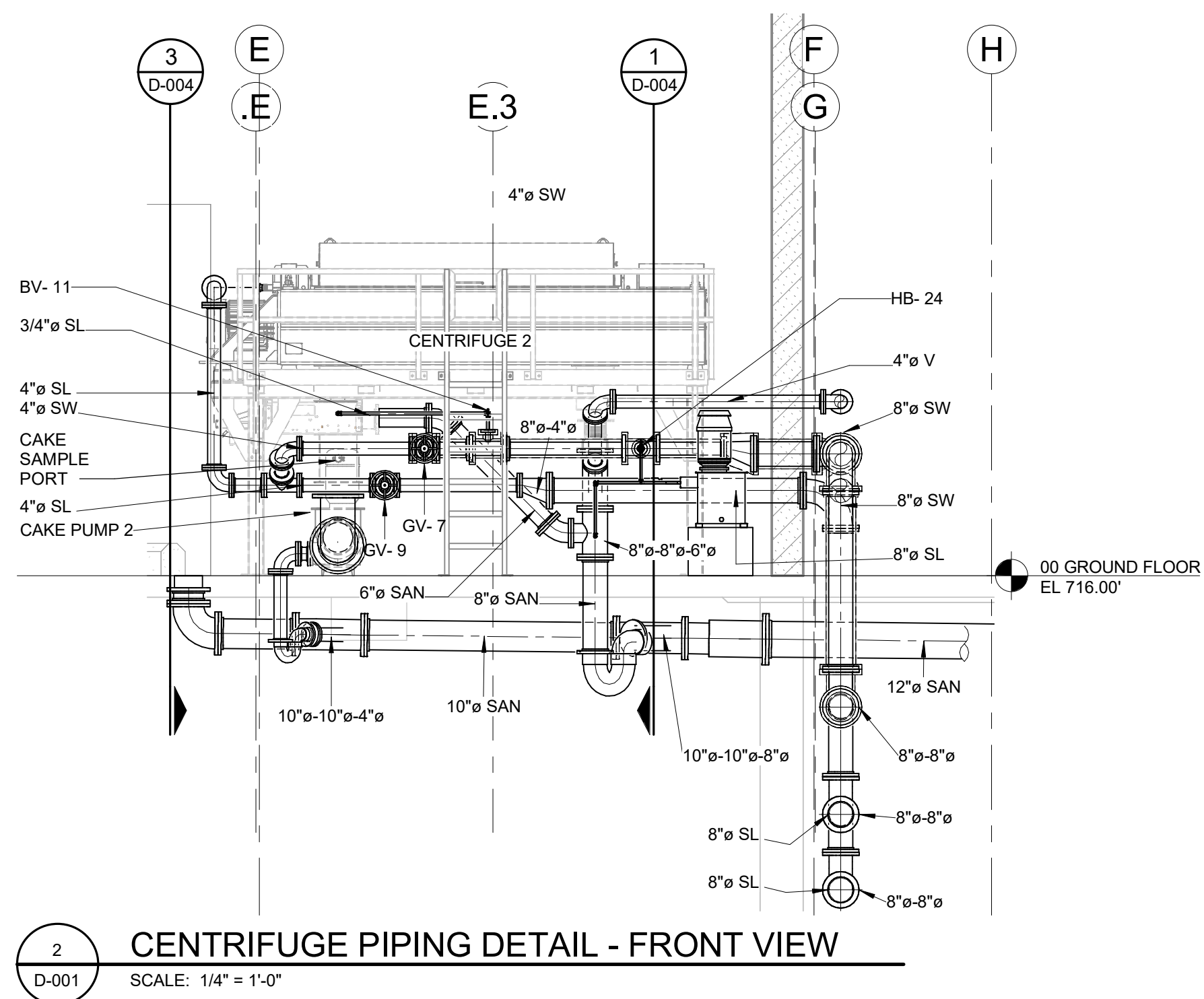
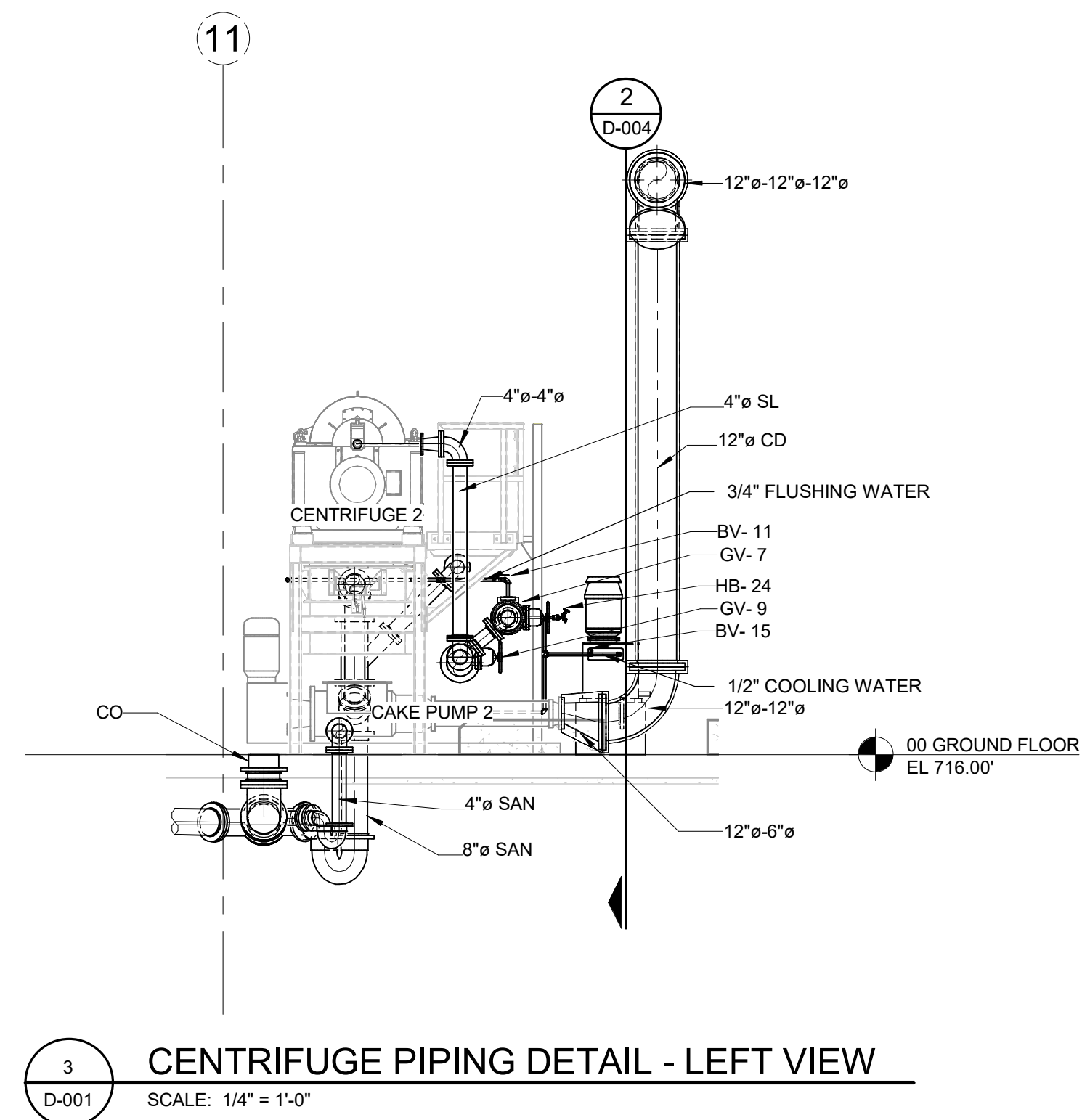
SHEET

AD-102



ALL ELBOWS ON SLUDGE AND CAKE PIPING SHALL BE LONG RADIUS

D-001



NOTES:

ALL REDUCERS ON SLUDGE LINES, CAKE LINES, AND SERVICE WATER LINES SHALL BE ECCENTRIC (TOPS FLAT).

ALL ELBOWS ON SLUDGE AND CAKE PIPING SHALL BE LONG RADIUS

[illegible]

CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
DETAILS

ISSUED FOR:	DATE:	BY:
00% REVIEW	03/25/2020	TH
00% REVIEW	04/17/2020	TH
FB	06/01/2020	TH

OB NO.
COF107201F

SHEET

D-004



PROPOSED
PIPE ROUTE

PROPOSED PIPE ROUTE



WADE
TRIM

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Flint, MI 48502
810.235.2555/800.841.0342
FAX: 810.235.4975
www.wadetrin.com

HRC
HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 HULEY DRIVE
BLOOMFIELD HILLS, MICH.

P.O. BOX 824
48303 - 0824

PHONE: (248) 454-6300
FAX (1st. Floor): (248) 454-8312
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WEB SITE: <http://www.hrc-enr.com>



CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
SLUDGE PIPING ROUTING DETAILS

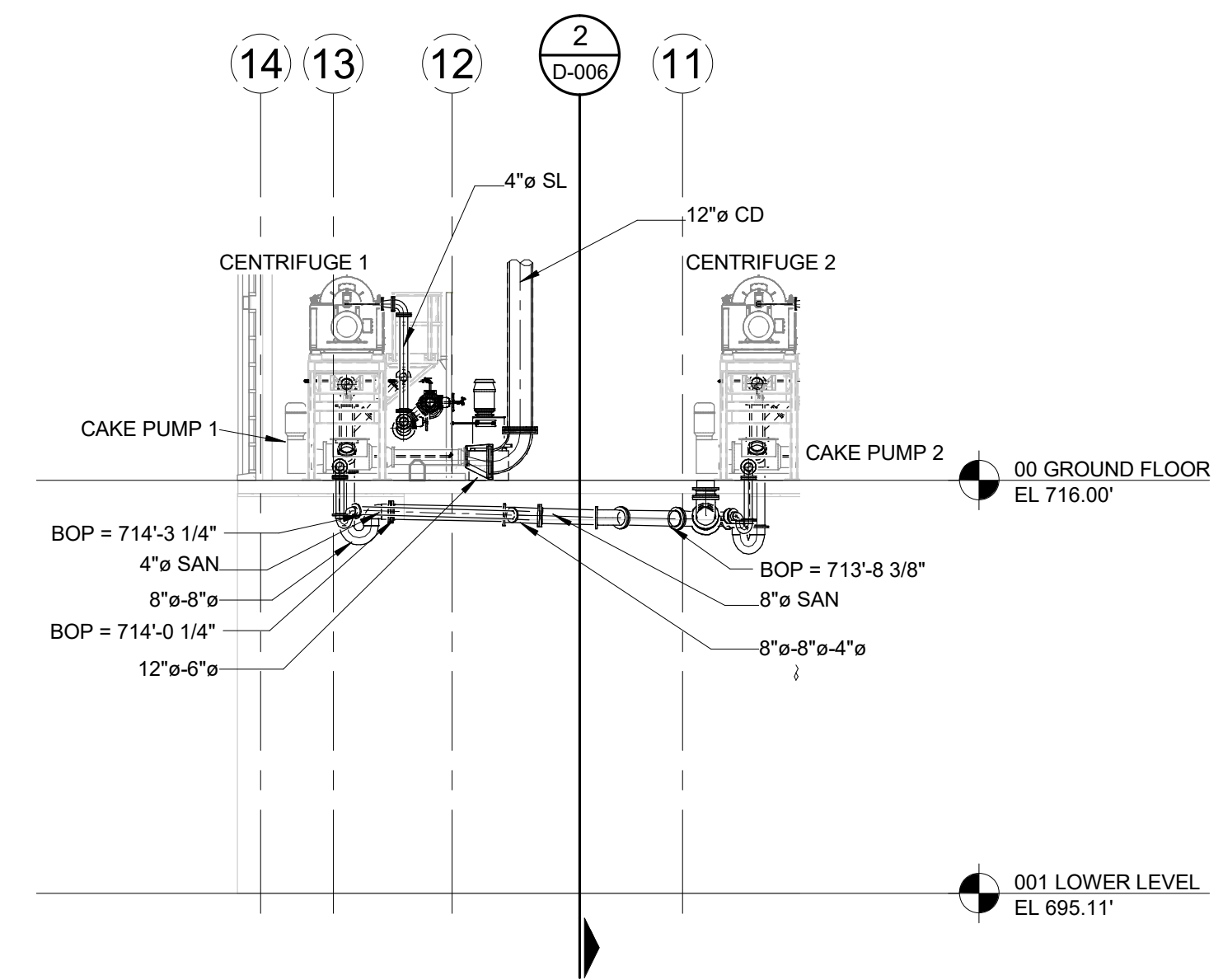
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100% REVIEW	04/17/2020	TH
IFB	06/01/2020	TH

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COF107201F

SHEET

D-005

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

























1 DRAIN DETAIL SECTION 1
D-006 SCALE: 1/8" = 1'-0"



0-006












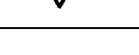

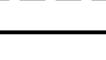




CERTAIN ITEMS IN THE LEGEND BELOW MAY NOT APPLY TO THIS PROJECT.
DARK PIPING INDICATES NEW PIPING AND LIGHT INDICATES EXISTING.

HVAC PIPING & VALVE LEGEND

	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	PRESSURE REGULATING VALVE
	PRESSURE REDUCING VALVE
	WATER BALANCE VALVE/CIRCUIT SETTER
	UNION
	FLANGED CONNECTION FOR EQUIPMENT REMOVAL
	BLIND FLANGE
	CAP OR PLUG
	QUICK CONNECTOR
	ELBOW - TURNED DOWN
	ELBOW - TURNED UP
	TEE - DOWN
	TEE - UP
	TOP CONNECTION
	BOTTOM CONNECTION
	REDUCER
	THERMOMETER WITH THERMOWELL
	PRESSURE GAUGE VALVE SHUTOFF
	DRAIN - 3/4 INCH BALL VALVE WITH HOSE END CONNECTION WITH BRASS CAP
	VENT - 1/2 INCH BALL VALVE WITH HOSE END CONNECTION WITH BRASS CAP
	PIPE BREAK
	WATER OR NATURAL GAS METER
	CONNECT TO EXISTING

CERTAIN ITEMS IN THE LEGEND BELOW MAY NOT APPLY TO THIS PROJECT.
DARK PIPING INDICATES NEW PIPING AND LIGHT INDICATES EXISTING.

HVAC DUCTWORK LEGEND

	SUPPLY AIR DUCT
	RETURN OR OUTSIDE AIR DUCT
	EXHAUST AIR DUCT
	4-WAY CEILING DIFFUSER
	DUCT TRANSITION
	BALANCED DAMPER
	DIFFERENTIAL PRESSURE SWITCH
	SMOKE DETECTOR (BY ELECTRICAL)
	STATIC PRESSURE SENSOR
	TEMPERATURE SENSOR
	THERMOSTAT
	AIRFLOW
	RECTANGULAR DUCT BREAK
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	NEW
	CONNECT TO EXISTING
	LIMIT OF DEMOLITION

CERTAIN ABBREVIATIONS LISTED BELOW MAY NOT APPLY TO THIS PROJECT.

HVAC ABBREVIATIONS

AAV	AUTOMATIC AIR VENT	F	FAREINHEIT	PSI	POUNDS PER SQUARE INCH
AC	ALTERNATING CURRENT	FCU	FAN COIL UNIT	PSIG	POUNDS PER SQUARE INCH GAUGE
ACB	ACTIVE CHILLED BEAM	FD	FIRE DAMPER	PVC	POLYVINYL CHLORIDE
ACC	AIR COOLED CHILLER	FDA	U.S. FOOD AND DRUG ADMINISTRATION	R	RELOCATED
ACD	AUTOMATIC CONTROLLED DAMPER	FF	FINISHED FLOOR	RA	RETURN AIR
ACCU	AIR COOLED CONDENSING UNIT	FG	FINISHED GRADE	REQ'D	REQUIRED
ACU	AIR CONDITIONING UNIT	FLA	FULL LOAD AMPS	RF	RETURN FAN
AD	ACCESS DOOR	FLEX	FLEXIBLE	RG	RETURN GRILLE
ADJ	ADJUSTABLE	FPB	FAN POWERED BOX	RH	RELATIVE HUMIDITY
AFF	ABOVE FINISHED FLOOR	FPM	FEET PER MINUTE	RHC	REHEAT COIL
AFG	ABOVE FINISHED GRADE	FT	FLASH TANK	RHG	REFRIGERANT HOT GAS
AHRI	AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE	F&T	FLOAT & THERMOSTATIC	RL	REFRIGERANT LIQUID
		FTR	FIN TUBE RADIATION	RM	ROOM
AHU	AIR HANDLING UNIT	G	GAS	RPM	REVOLUTIONS PER MINUTE
AMCA	AIR MOVEMENT AND CONTROL ASSOCIATION	GA	GAUGE	RR	RETURN REGISTER
		GAL	GALLON	R&R	REMOVE AND RELOCATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	GALV	GALVANIZED	RS	REFRIGERANT SUCTION
		GPH	GALLONS PER HOUR	RTD	RESISTANCE TEMPERATURE DETECTOR
AP	ACCESS PANEL	GPM	GALLONS PER MINUTE	RTU	ROOF TOP UNIT
APD	AIR PRESSURE DROP	HB	HOSE BIB (CONNECTION)	SA	SUPPLY AIR
ASJ	ALL SERVICE JACKET	HX	HEAT EXCHANGER	SD	SMOKE DAMPER
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HP	HORSEPOWER	SEN	SENSIBLE
		HPS	HIGH PRESSURE STEAM	SF	SUPPLY FAN
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	HUM	HUMIDIFIER	SFD	COMBINATION SMOKE AND FIRE DAMPER
		HVAC	HEATING VENTILATION AND AIR CONDITIONING	SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
BAS	BUILDING AUTOMATION SYSTEM				
BD	BACK-DRAFT DAMPER	HWR	HOT WATER RETURN	SP	STATIC PRESSURE
BFF	BELOW FINISHED FLOOR	HWS	HOT WATER SUPPLY	SR	SUPPLY REGISTER
BFG	BELOW FINISHED GRADE	HZ	HERTZ	SQ	SQUARE
BHP	BRAKE HORSE POWER	IAQ	INDOOR AIR QUALITY	SQ FT	SQUARE FEET
BOD	BOTTOM OF DUCT	ID	INSIDE DIAMETER	STD	STANDARD
BTU	BRITISH THERMAL UNIT	IFB	INTEGRAL FACE AND BYPASS	STM	STEAM
BTUH	BTU PER HOUR	IN	INCHES	T	THERMOSTAT
C	CELSIUS	I/O	INPUT/OUTPUT	TCP/IP	TRANSMISSION CONTROL PROTOCOL/INTERNET PROTOCOL
CD	CEILING DIFFUSER	KW	KILOWATT		
CF	CUBIC FEET	LAT	LEAVING AIR TEMPERATURECO	TD	TRANSFER AIR DUCT
CFM	CUBIC FEET PER MINUTE	LBS	POUNDS	TEAO	TOTALLY ENCLOSED AIR OVER
CH	CHILLER (WATER-COOLED)	LD	LINEAR DIFFUSER	TEFC	TOTALLY ENCLOSED FAN COOLED
CHW	CHILLED WATER	LPS	LOW PRESSURE STEAM	TEMP	TEMPERATURE
CHWP	CHILLED WATER PUMP	LVR	LOUVER	TG	TRANSFER GRILLE
CHWR	CHILLED WATER RETURN	LWT	LEAVING WATER TEMPERATURE	TON	12,000 BTU (COOLING CAPACITY)
CHWS	CHILLED WATER SUPPLY	MA	MAKE-UP AIR OR MILLIAMPS	TYP	TYPICAL
CM	CENTIMETERS	MAU	MAKE-UP AIR UNIT	UC	UNDER COUNTER
CO	CARBON MONOXIDE	MAX	MAXIMUM	UH	UNIT HEATER
CONN	CONNECTION	MBH	1000 BTUH	UL	UNDERWRITERS LABRATORIES
CT	COOLING TOWER	MC	MECHANICAL CONTRACTOR	V	VOLTS
CUH	CABINET UNIT HEATER	MERV	MINIMUM EFFICIENCY REPORTING VALUE	VA	VOLT AMPS
CWP	CONDENSER WATER PUMP	MIN	MINIMUM	VAV	VARIABLE AIR VOLUME
CWR	CONDENSER WATER RETURN	MM	MILLIMETERS	VFD	VARIABLE FREQUENCY DRIVE
CWS	CONDENSER WATER SUPPLY	MPH	MILES PER HOUR	VTR	VENT THRU ROOF
D	DRAIN	N	NEW WORK	VVT	VARIABLE VOLUME AND TEMPERATURE
DB	DRY BULB	NC	NORMALLY CLOSED	WB	WET BULB
DC	DIRECT CURRENT	NEC	NATIONAL ELECTRIC CODE	WC	WATER COLUMN
DDC	DIRECT DIGITAL CONTROL	NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION	WFS	WATER FLOW SWITCH
DEG	DEGREE			WG	WATER GAUGE
DIA	DIAMETER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	WPD	WATER PRESSURE DROP
DIM	DIMENSION	NIC	NOT IN CONTRACT		
DN	DOWN	NO	NORMALLY OPEN		
DP	DIFFERENTIAL PRESSURE	NPS	NOMINAL PIPE SIZE		
D&R	DISCONNECT & REMOVE	NPT	NATIONAL PIPE THREAD		
DWG(S)	DRAWING(S)	OA	OUTSIDE AIR		
DWH	DOMESTIC WATER HEATER	OD	OUTSIDE DIAMETER		
E	EXISTING	ODP	OPEN DRIP PROOF		
EA	EXHAUST AIR	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION		
EAT	ENTERING AIR TEMPERATURE				
EC	ELECTRICAL CONTRACTOR	OS&Y	OUTSIDE SCREW AND YOKE		
EF	EXHAUST FAN	PCB	PASSIVE CHILLED BEAM		
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	PCF	POUNDS PER CUBIC FOOT		
		PD	PRESSURE DROP		
ER	EXHAUST REGISTER	PDF	PORTABLE DOCUMENT FORMAT		
ERU	ENERGY RECOVERY UNIT	PRV	PRESSURE REDUCING VALVE		
EUH	ELECTRIC UNIT HEATER				
EWT	ENTERING WATER TEMPERATURE				
EXH	EXHAUST				

GENERAL MECHANICAL NOTES:

1. FOR ROOF PENETRATION DETAILS SEE ARCHITECTURAL AND STRUCTURAL DWGS.
2. INSTALL ALL NEW WORK IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE BEST APPROXIMATES ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
4. COORDINATE CONSTRUCTION OF ALL HVAC WORK WITH ARCHITECTURAL, STRUCTURAL, PLUMBING, PROCESS, ELECTRICAL, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
5. ALL HVAC WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER.
6. MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF PIPES AND SUSPENDED EQUIPMENT THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
7. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
8. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION SHALL BE FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR.
9. ALL EQUIPMENT, PIPING, ETC. SHALL BE SUPPORTED AS REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
10. IF THERE IS ANY DEVIATION BETWEEN THE SPECIFICATIONS AND DRAWINGS THE CONTRACTOR SHALL ADHERE TO THE MORE STRINGENT CONDITION.

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CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
HVAC GENERAL NOTES AND LEGENDS

ISSUED FOR:	DATE:	BY:
50% REVIEW	2/17/20BGK	
90% REVIEW	3/20/20BGK	
100% REVIEW	4/17/20BGK	
IFB	6/1/20 BGK	

JOB NO.
COF107201F

SHEET

M-001

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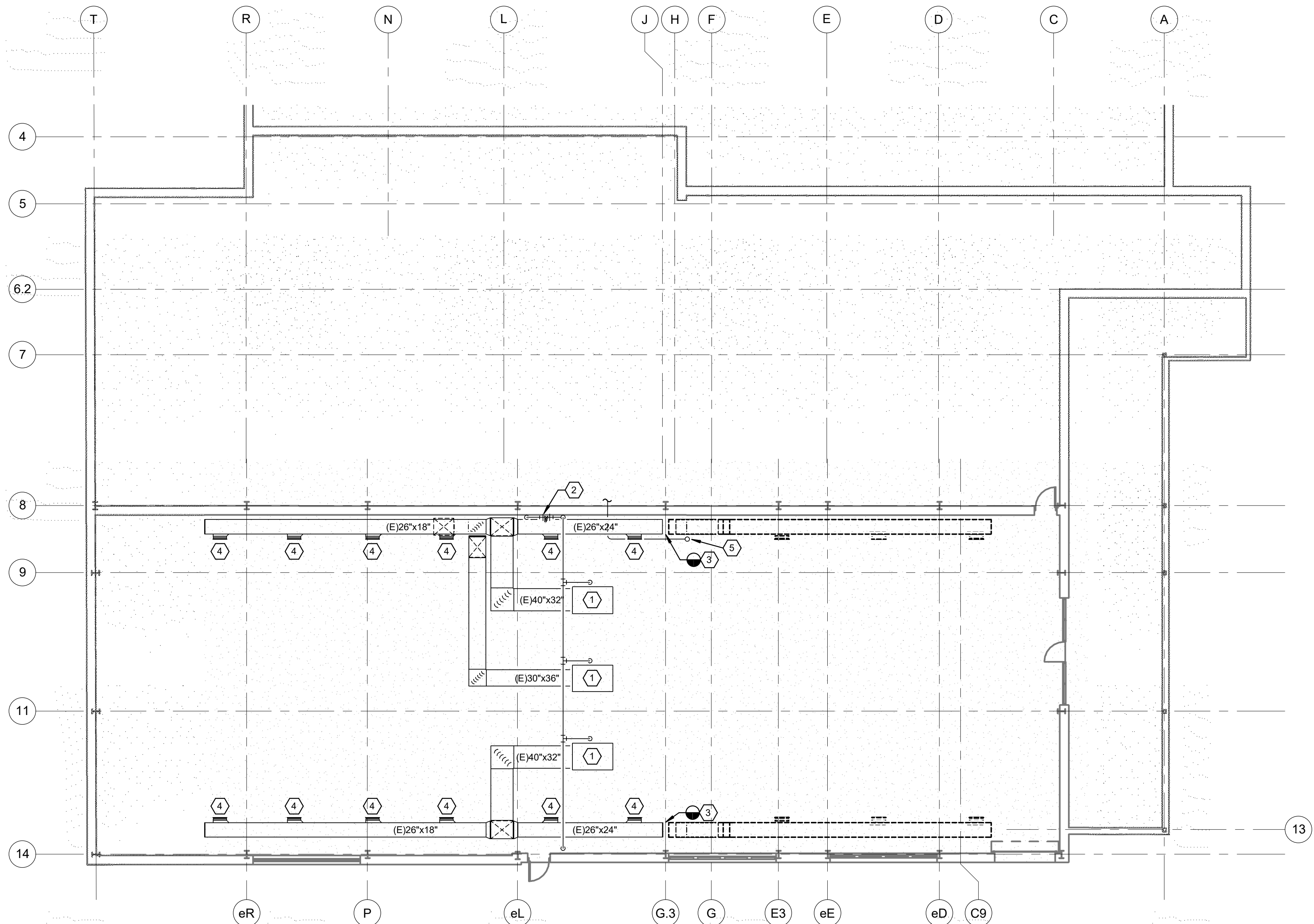
5-21-20

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2 HVAC DUCTWORK DEMOLITION DETAILS

SCALE: NONE



1 HVAC DEMOLITION PLAN

SCALE: 3/32" = 1'-0"

DEMOLITION NOTES

1. IN EVERY INSTANCE OF DEMOLITION AND/OR REMODELING, THE CONTRACTOR SHALL FIGURE A COMPLETE JOB AS NONE OTHER SHALL BE ACCEPTED.
2. THE DRAWINGS ARE TO BE USED ONLY AS A GUIDELINE FOR DEMOLITION. THE CONTRACTOR MUST VISIT THE SITE PRIOR TO BIDDING TO VERIFY ALL WORK REQUIRED FOR A COMPLETE JOB & INCLUDE THE COST OF SUCH WORK IN HIS BID.
3. THE CONTRACTOR SHALL MAINTAIN EXISTING SERVICES TO & IN THE EXISTING AREA AS REQUIRED.
4. IF NECESSARY, THE CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES IN THE EXISTING AREAS.
5. ANY MECHANICAL EQUIPMENT & DEVICES SHOWN AS BEING REMOVED SHALL BE REMOVED COMPLETE INCLUDING SUPPORTING STEEL AND TEMPERATURE CONTROLS.
6. ALL WALLS, CEILINGS, FLOORS, ETC., BEING DISTURBED BY THE WORK SHALL BE RETURNED TO FINISHED CONDITIONS TO MATCH EXISTING BY THE CONTRACTOR & HE SHALL DO HIS OWN CUTTING & PATCHING AS NECESSARY UNDER HIS CONTRACT.
7. EXISTING EQUIPMENT AND MATERIALS SHALL BE TURNED OVER TO THE OWNER. IF NOT REQUIRED BY OWNER, THE CONTRACTOR SHALL REMOVE SAID EQUIPMENT AND MATERIALS FROM THE PREMISES DISPOSE OF IN A LEGAL MANNER.

SHEET KEYNOTES

1. EXISTING AIR HANDLING UNIT ON MEZZANINE TO REMAIN.
2. EXISTING PRESSURE REDUCING VALVE AND ASSOCIATED NATURAL GAS PIPING ON MEZZANINE TO REMAIN.
3. REMOVE EXISTING DUCTWORK AND ASSOCIATED DIFFUSERS BEYOND NEW DEMISING WALL AND CAP.
4. EXISTING GRILLES TO REMAIN.
5. EXISTING 12" PIPE TO REMAIN.



CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
HVAC DEMOLITION PLAN

ISSUED FOR: DATE: BY:
50% REVIEW 2/17/20BKG
90% REVIEW 3/20/20BKG
100% REVIEW 4/11/20BKG
IFB 6/1/20 BKG

JOB NO.
COF107201F

SHEET

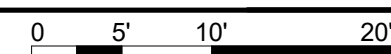
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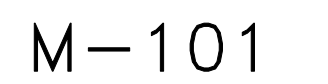


HVAC FLOOR PLAN

SCALE: 3/32" = 1'-0"



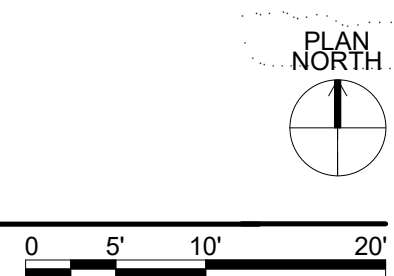
NATURAL GAS PIPING IS BASED ON 2015 IFGC, FOR 5 PSI. GAS AT 92 FEET TOTAL DEVELOPED LENGTH.



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5-21-20



SCALE: 3/32" = 1'-0"

M-102

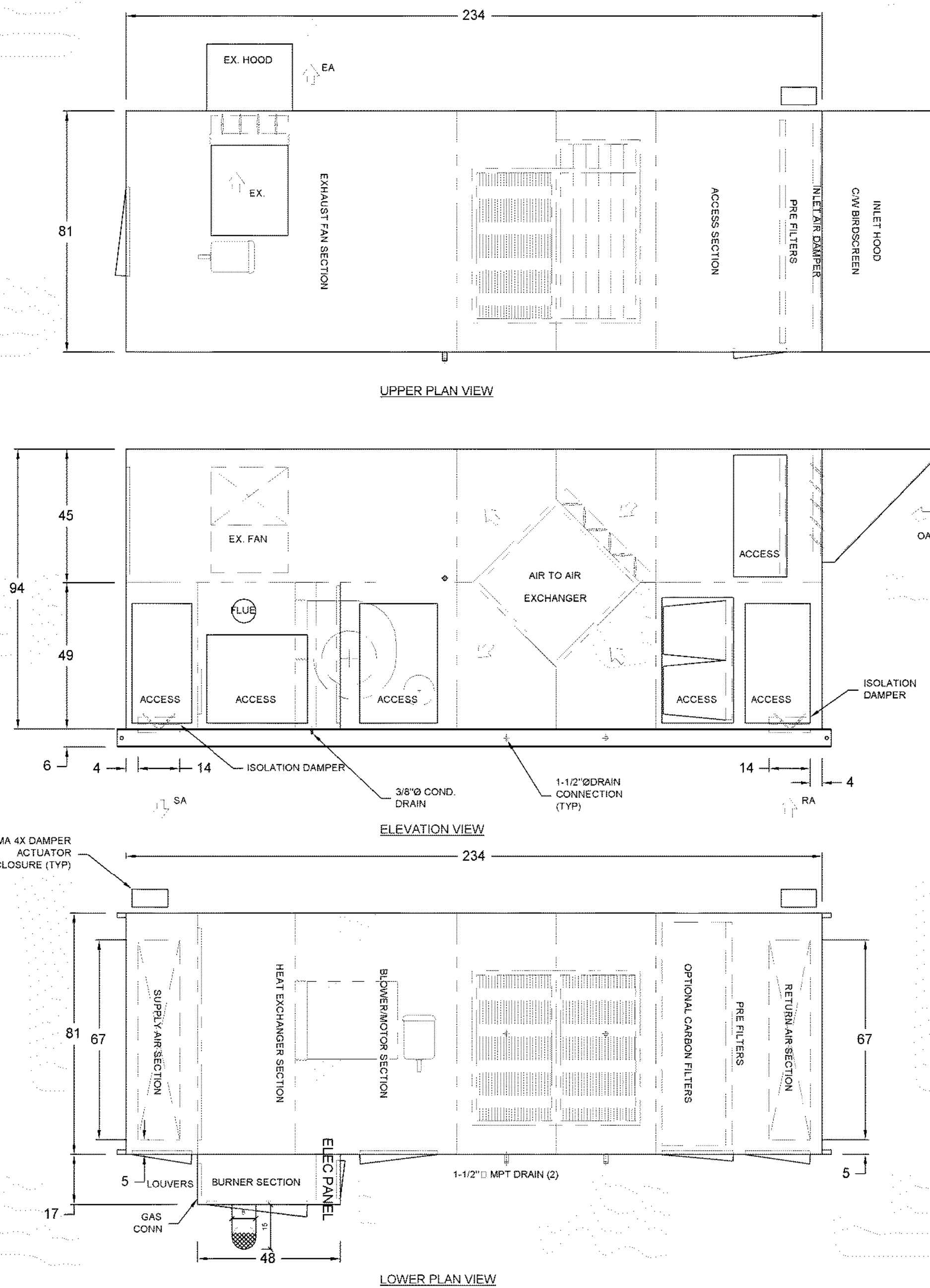
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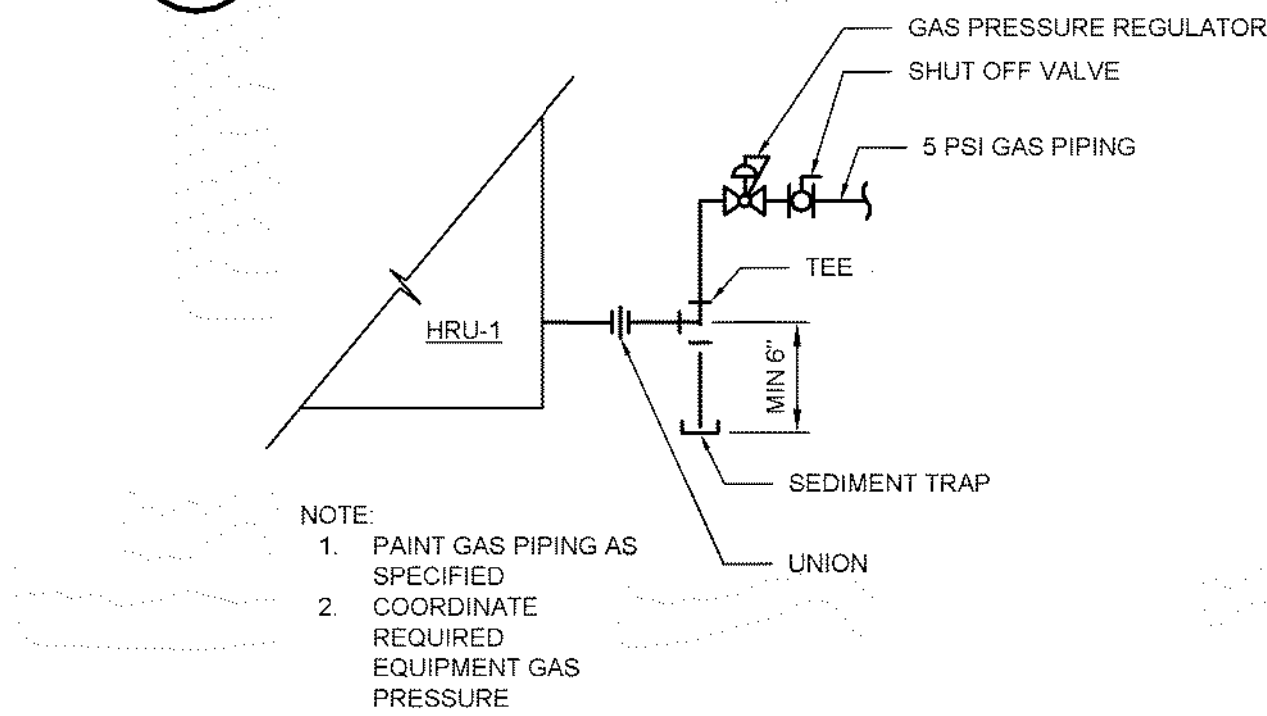
3 HEAT RECOVERY UNIT SECTIONS

NOT TO SCALE



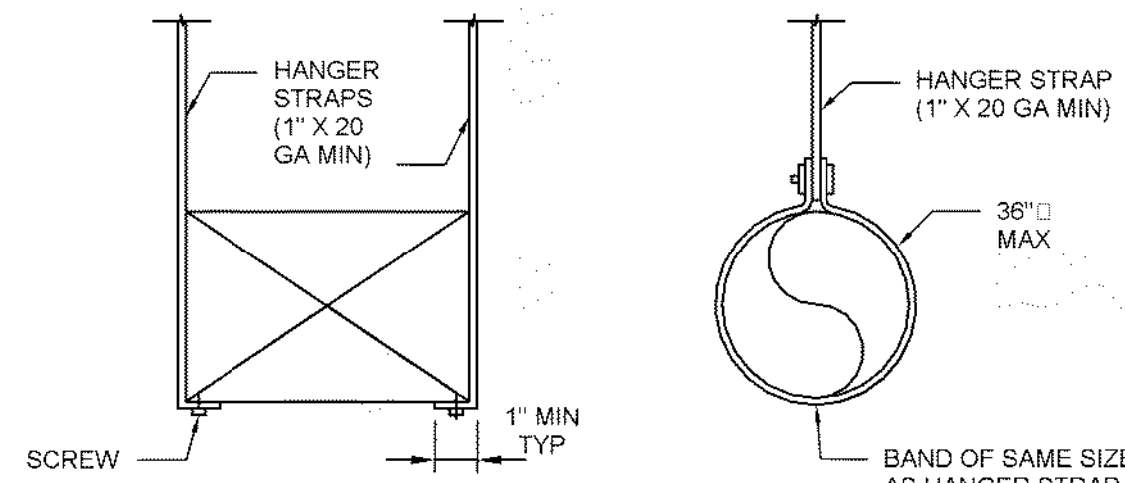
2 GAS EQUIPMENT CONNECTION

NOT TO SCALE



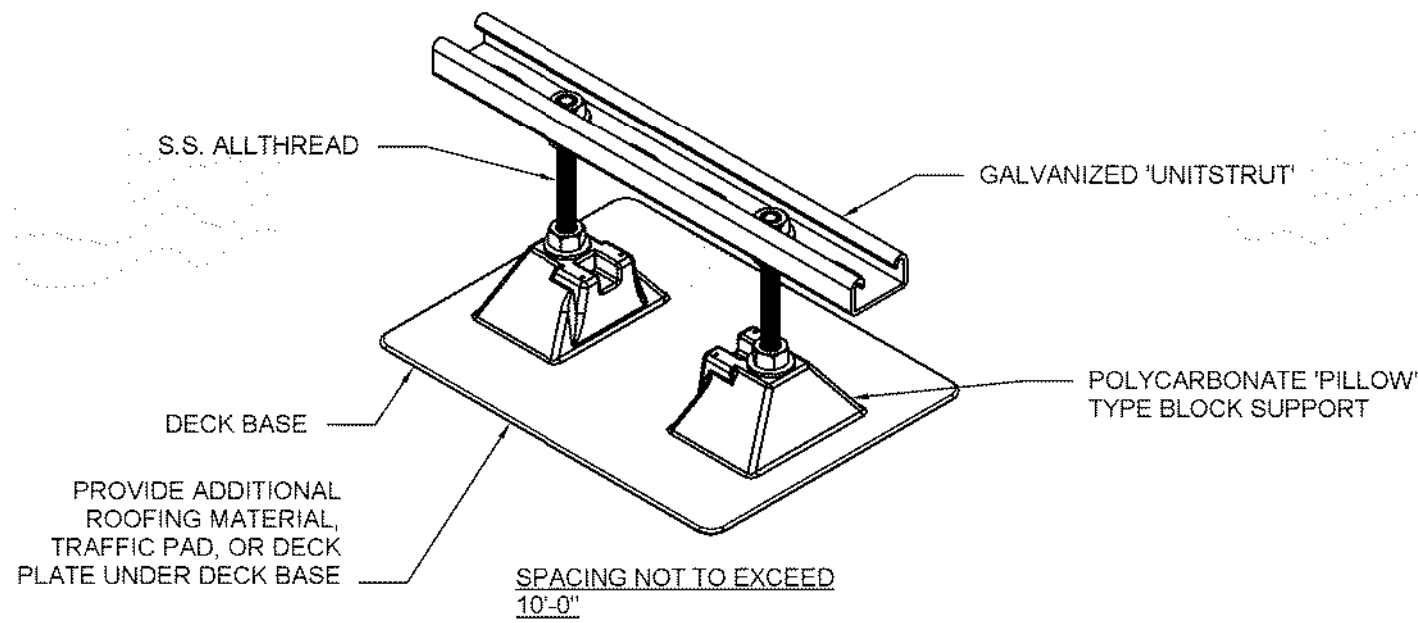
1 DUCT HANGERS

NOT TO SCALE



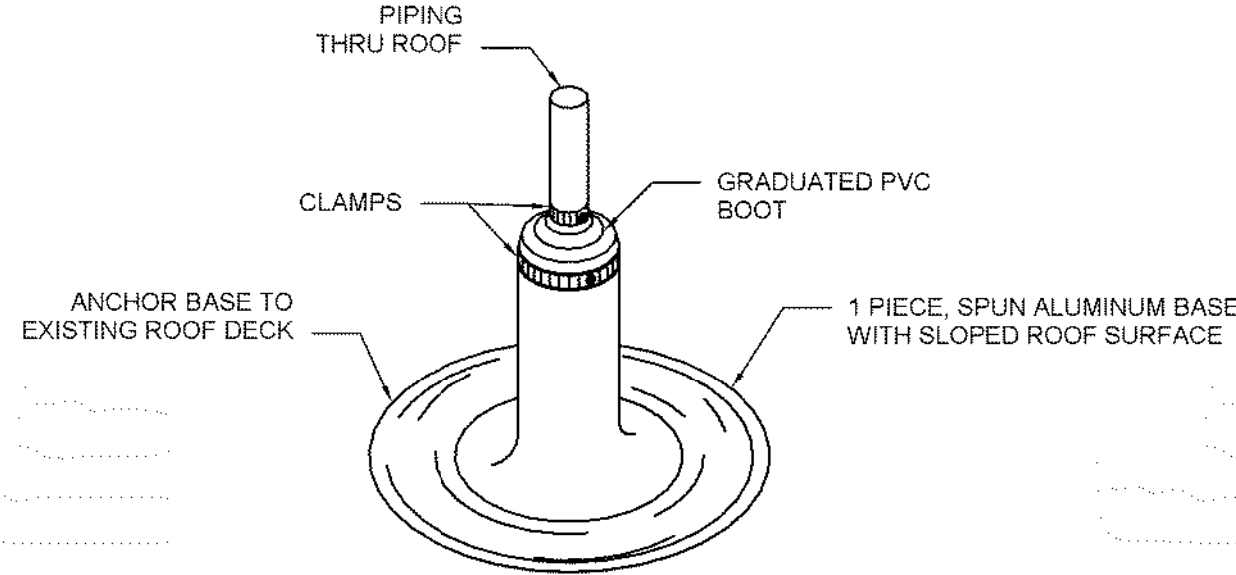
5 ROOF MOUNTED PIPE SUPPORT

NOT TO SCALE



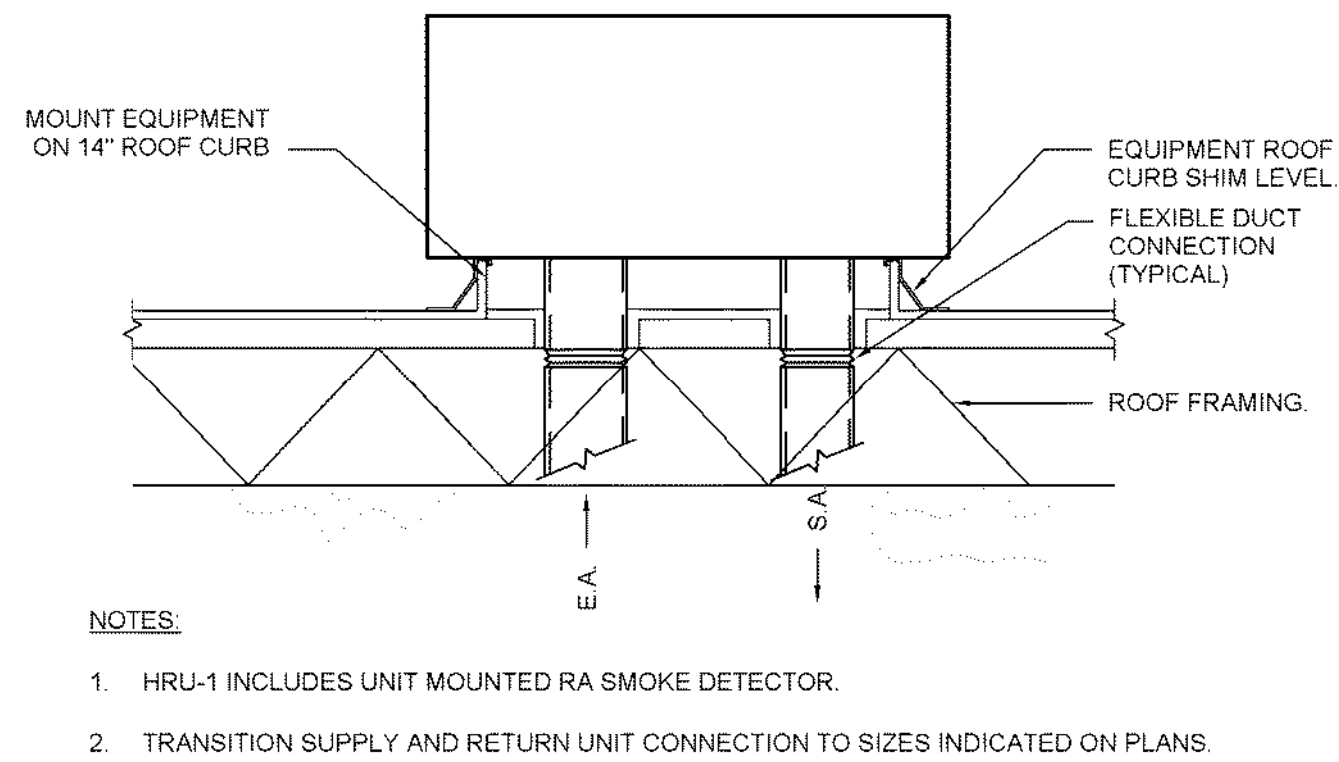
6 SINGLE PIPE SEAL

NOT TO SCALE



4 ROOFTOP UNIT INSTALLATION DETAIL

NOT TO SCALE



HEAT RECOVERY UNIT (GAS) SCHEDULE																													
GENERAL				SUPPLY FAN			EXHAUST FAN			ELECTRICAL DATA				HEAT PLATE DATA								HEATING DATA					WEIGHT (LBS)	UNIT SELECTION BASED ON:	NOTES
MARK	LOCATION	UNIT TYPE	DISCHARGE POSITION	CFM	ESP IN. W.C.	MINIMUM MOTOR HP	CFM	ESP IN. W.C.	MINIMUM MOTOR HP	MCA	MOCP	FLA	UNIT VOLTAGE	HEATING								BURNER TYPE	GAS			TEMP RISE °F			
														TEMP EFF	OA EAT DBWB °F	SA LAT °F	SA PD in W.C.	ENERGY RECOVERY MBH	RA EAT DB °F	EA LAT °F/RH%	EA PD in W.C.		INPUT MBH	OUTPUT MBH	PRESSURE IN. W.C.				
HRU-1	ROOF	CONSTANT VOLUME	VERTICAL	8120	0.75	7.5	8120	0.25	7.5	33.3	45	11.9	460/3/60	58%	-2/-3	38.4	0.85	351	65	28.1/100	0.91	INDIRECT (MODULATING)	1000	810	7	92	8,500	ENGINEERED AIR DJS100/O/MV/HRA	1-7
NOTES:																													
1. PROVIDE 304 STAINLESS STEEL SCREWS, HARDWARE, ETC. EPOXY COATED FANS AND HOUSING																													
2. HEAT PLATE TO HAVE CORROSION RESISTANT COATING.																													
3. NEMA 4X ELECTRICAL COMPONENTS TO INCLUDE: CONTROL CABINET, DISCONNECT, VFDS, DAMPER ACTUATOR ENCLOSURES, & LOW LIMIT.																													
4. WIRING TO BE THHN AND RUN IN ALUMINUM CONDUIT WITH LIQUID TIGHT FITTINGS.																													
5. ALL BARE METAL NOT SS TO BE HERESITE OR EPOXY COATED.																													
6. ALL SENSORS NOT PROTECTED TO BE HERESITE OR CONFORMAL COATED.																													

AIR DISTRIBUTION DEVICE SCHEDULE					
MARK	TYPE	FRAME TYPE	DAMPER TYPE	NOMINAL SIZE IN	UNIT SELECTION BASED ON:
SG-1	LOUVERED FACE	SURFACE-MOUNT	OPPOSED BLADE	24x10	TITUS 300FS

CITY OF FLINT
MICHIGAN

WADE TRIM
555 South Saginaw Street, Suite 201
Flint, MI 48502
810.235.2535/800.841.0342
FAX: 810.235.4975
www.wadetrिम.com

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ENGINEERING

CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
HVAC SCHEDULES AND DETAILS

ISSUED FOR: 50% REVIEW
DATE: 2/17/20BKG
BY: 3/20/20BKG
100% REVIEW: 4/17/20BKG
IFB: 6/1/20 BKG

JOB NO.
COF107201F

SHEET
M-103

5-21-20

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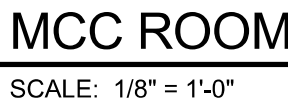
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 0.235.2555/800.841.0342
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 (2nd. Floor): (248) 338-2592
 WEB SITE: [http:// www.hre-engr.com](http://www.hre-engr.com)

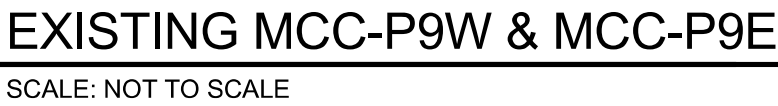
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% REVIEW	2/17/20AS	
% REVIEW	3/20/20AS	
% REVIEW	4/14/20AS	
	6/01/20AS	

3 NO.
COF107201F

E-101



1. REFER TO SHEET E-106 FOR MCC ELEVATIONS



SHEET

E-102



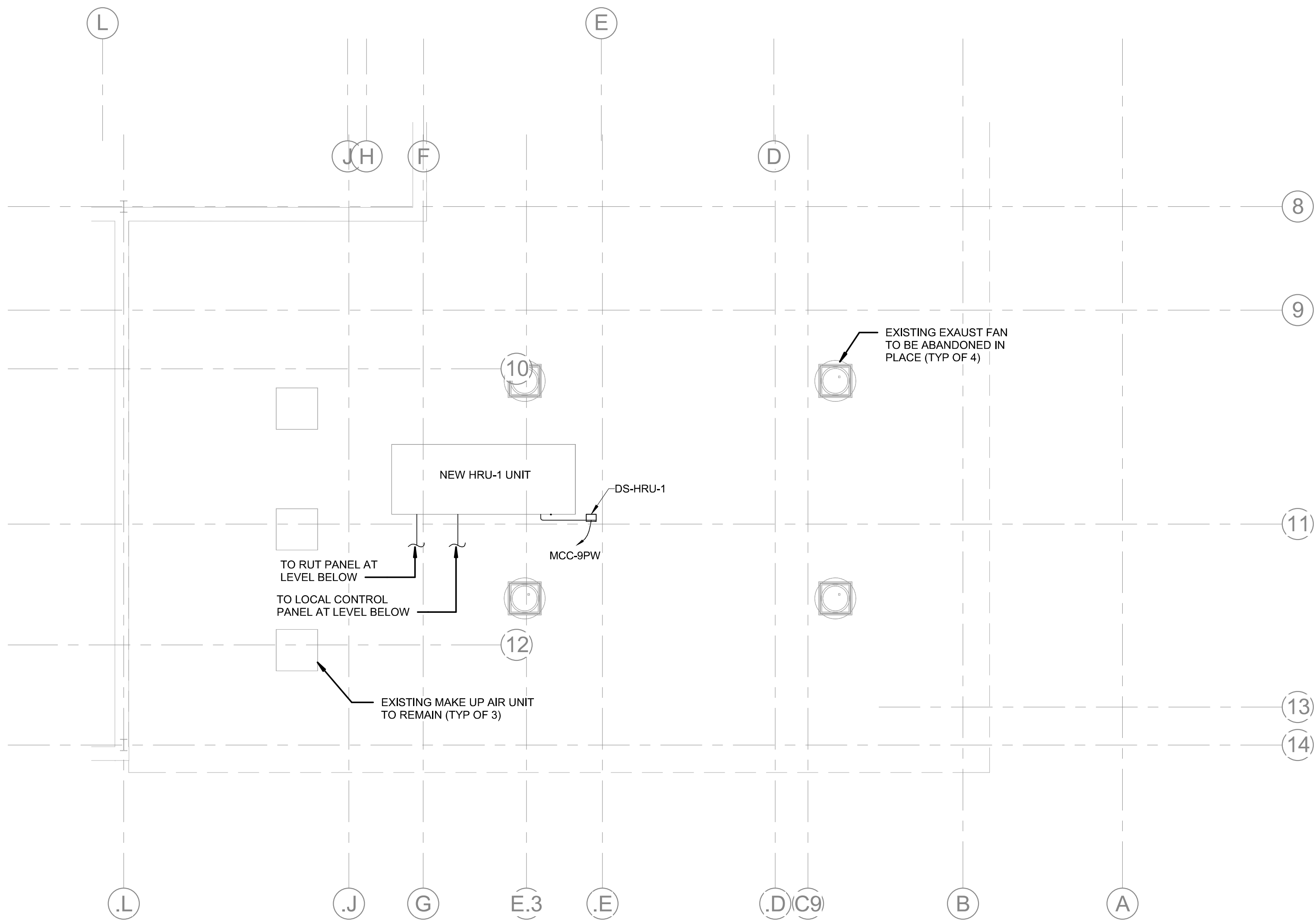


WATER SUPPLY PUMPS TO BE REPLACED IN KIND.
DISCONNECT AND RECONNECT CONDUITS AND WIRES
PROVIDE ALL ANCILLARY MATERIALS AS REQUIRED
FOR INSTALLATION.

E-103



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ROOF PLAN

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

GENERAL NOTES:

- A. REFER TO DRAWING E-105 FOR ONE-LINE DIAGRAMS AND CABLE SCHEDULE.

REV#	DATE	DESCRIPTION	BY
A	04/17/2020	90% REVIEW	AMS



CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
ELECTRICAL ROOF PLAN

ISSUED FOR:	DATE:	BY:
50% REVIEW	2/17/20AS	
90% REVIEW	3/20/20AS	
100% REVIEW	4/17/20AS	
IFB	6/01/20AS	

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E-104



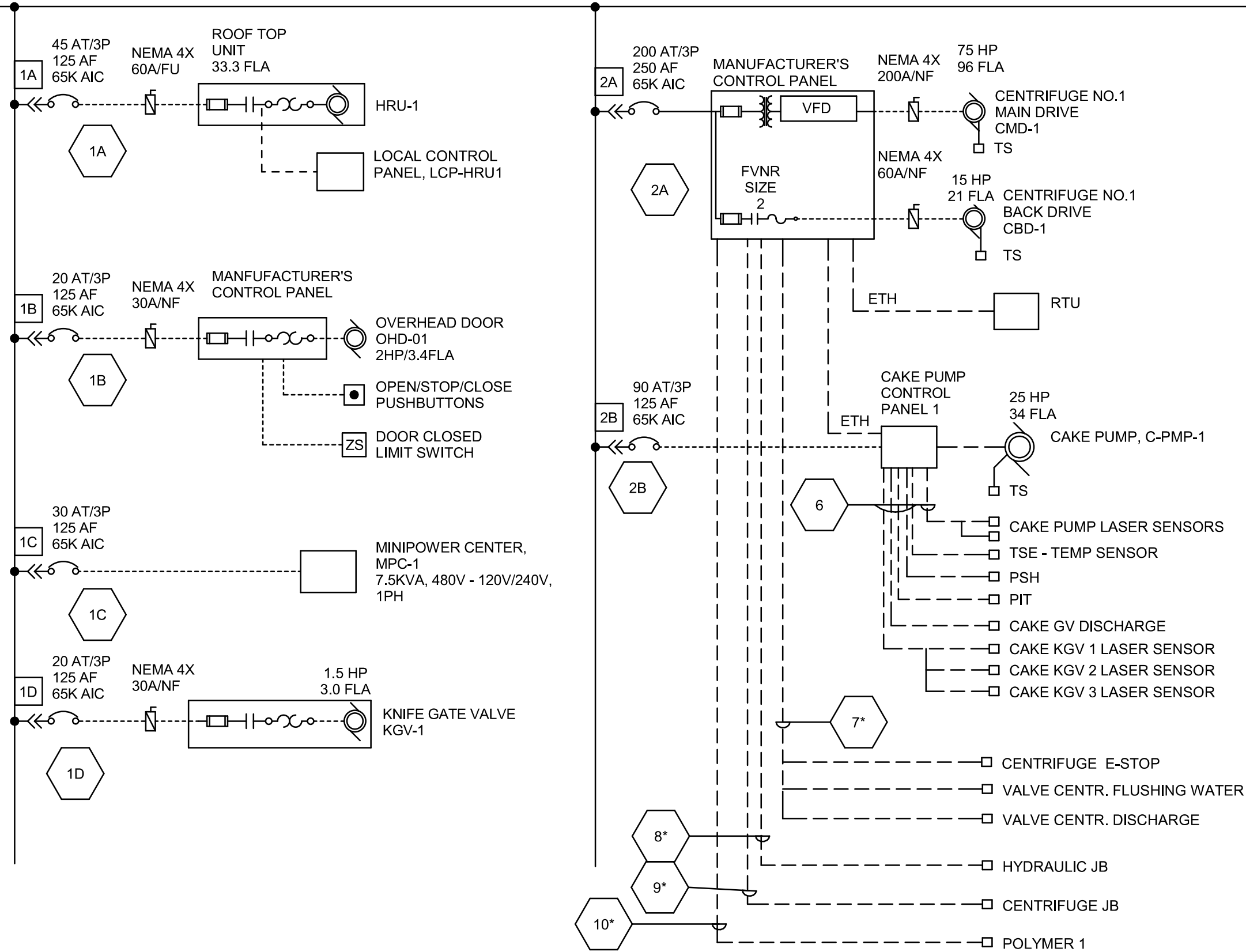
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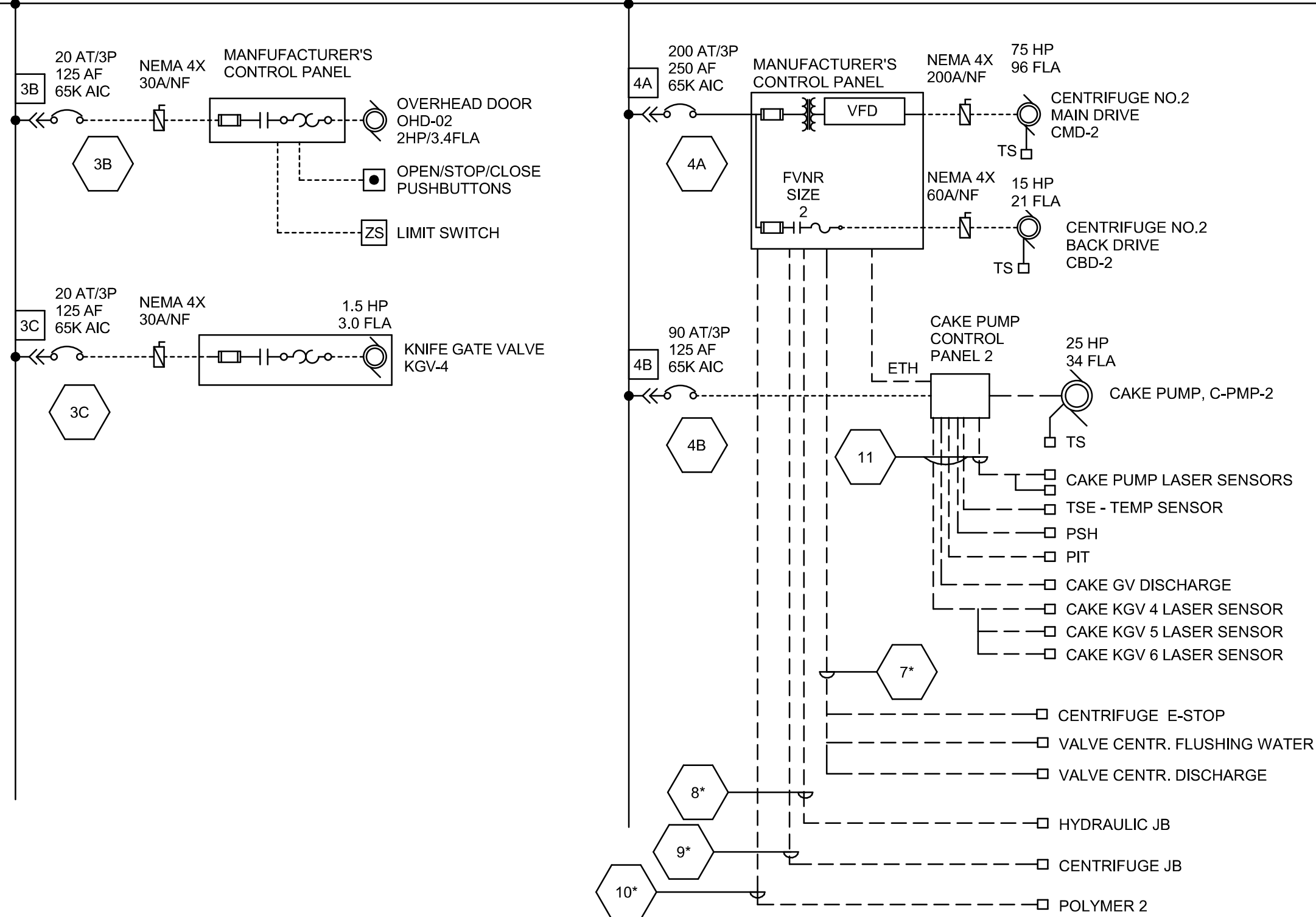
ONE-LINE DIAGRAMS

SCALE: NOT TO SCALE

EXISTING MCC-P9W MODIFICATIONS
BUS RATING: 600 VAC, 1600 AMP,
3-PHASE, 4-WIRE, 65KA S.C. SYM. WITHSTAND



EXISTING MCC-P9E MODIFICATIONS
BUS RATING: 600 VAC, 1600 AMP,
3-PHASE, 4-WIRE, 65KA S.C. SYM. WITHSTAND



CABLE SCHEDULE

NO.	CONDUIT LABEL	FROM	TO	CONDUIT SIZE	CONDUIT TYPE	CABLE QTY AND SIZE	CABLE VOLT	INSULATION TYPE	COMMENTS
1A	HRU-1-PWR1 HRU-1-PWR2 HRU-1-ETH1	MCC-P9W 1A DISC SW HRU-1	DISC SW LCP	1" 1" 3/4"	AL AL AL	3#8 & 1#10 GND 3#8 & 1#10 GND 10#14 + 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
1B	OHD1-PWR1 OHD1-PWR2 OHD1-PWR3 OHD1-CTRL1 OHD1-CTRL2	MCC-P9W 1B DISC SW OH CP OH CP OH CP	DISC SW OH CP MOTOR CONTROL STATION LIMIT SW	3/4" 3/4" 3/4" 3/4" 3/4"	AL AL AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 3#12 + 2#14 & 1#12 GND 6#14 + 1#14 GND 2#14 + 1#14 GND	600V 600V 600V 600V 600V	THWN-2 THWN-2 THWN-2 THWN-2 THWN-2	
1C	MPC1-PWR1	MCC-P9W 1D MPC		3/4"	AL	3#10 & 1#10 GND	600V	THWN-2	
1D	MV-1-PWR1 MV-1-PWR2 MV-1-CTRL1	MCC-P9W 2C DISC SW DISC SW CAKE PUMP CP 1	DISC SW DISC SW KGV-1	3/4" 3/4" 3/4"	AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 12#14 & 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
2A	CENTF1-PWR1 CENTF1-PWR2 CENTF1-PWR3 CENTF1-PWR4 CENTF1-PWR5 CENTF1-CTRL1 CENTF1-CTRL2	MCC-P9W 2A CENTRIFUGE CP DISC SW CENTRIFUGE CP DISC SW MOTOR CMD-1 DISC SW MOTOR CBD-1 CAKE PUMP CP 1 CENTRIFUGE CP	CENTRIFUGE CP DISC SW MOTOR CMD-1 DISC SW MOTOR CBD-1 CAKE PUMP CP 1 RTU	2" 1 1/2" 1 1/2" 3/4" 3/4" 1" 1"	AL AL AL AL AL AL AL	3#3/0 & 1#6 GND 3#1 + 2#14 & 1#8 GND 3#1 + 2#14 & 1#8 GND 3#10 + 2#14 & 1#10 GND 3#10 + 2#14 & 1#10 GND 3#10 + 2#14 & 1#10 GND ETHERNET CABLE	600V 600V 600V 600V 600V 300V 300V	THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 PVC PVC	
2B	PCP-1-PWR1 PCP-1-PWR2	MCC-P9W 2B CAKE PUMP CP 1	CAKE PUMP CP 1 MOTOR C-PMP-1	1" 1"	AL AL	3#3 & 1#8 GND 3#8 + 2#14 & 1#10 GND	600V 600V	THWN-2 THWN-2	
2C	MV-3-PWR1 MV-3-PWR2 MV-3-CTRL1	MCC-P9W 2C DISC SW DISC SW CAKE PUMP CP 1	DISC SW KGV-2 KGV-2	3/4" 3/4" 3/4"	AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 12#14 & 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
2D	MV-5-PWR1 MV-5-PWR2 MV-5-CTRL1	MCC-P9W 2D DISC SW DISC SW CAKE PUMP CP 2	DISC SW KGV-3 KGV-3	3/4" 3/4" 3/4"	AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 12#14 & 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
2E	RCCP-PWR1 RCCP-CTRL1	MCC-P9W 2E RC-CP RTU	RC-CP RTU	3/4" 3/4"	AL AL	3#12 & 1#12 GND 10#14 (6 SPARES)	600V 600V	THWN-2 THWN-2	RUNNING AUTO ALARM
3B	OHD2-PWR1 OHD2-PWR2 OHD2-PWR3 OHD2-CTRL1 OHD2-CTRL2	MCC-P9E 3B DISC SW OH2 CP OH2 CP OH2 CP	DISC SW OH2 CP MOTOR CONTROL STATION LIMIT SW	3/4" 3/4" 3/4" 3/4" 3/4"	AL AL AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 3#12 + 2#14 & 1#12 GND 6#14 + 1#14 GND 2#14 + 1#14 GND	600V 600V 600V 600V 600V	THWN-2 THWN-2 THWN-2 THWN-2 THWN-2	
3C	MV-2-PWR1 MV-2-PWR2 MV-2-CTRL1	MCC-P9E 3C DISC SW DISC SW CAKE PUMP CP 1	DISC SW KGV-4 KGV-4	3/4" 3/4" 3/4"	AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 12#14 & 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
4A	CENTF2-PWR1 CENTF2-PWR2 CENTF2-PWR3 CENTF2-PWR4 CENTF2-PWR5 CENTF2-CTRL1 CENTF2-CTRL2	MCC-P9E 4A CENTRIFUGE CP DISC SW CENTRIFUGE CP DISC SW CENTRIFUGE CP CENTRIFUGE CP	CENTRIFUGE CP DISC SW MOTOR CMD-2 DISC SW MOTOR CBD-2 CAKE PUMP CP 2 RTU	2" 1 1/2" 1 1/2" 3/4" 3/4" 1" 1"	AL AL AL AL AL AL AL	3#3/0 & 1#6 GND 3#1 + 2#14 & 1#8 GND 3#1 + 2#14 & 1#8 GND 3#10 + 2#14 & 1#10 GND 3#10 + 2#14 & 1#10 GND ETHERNET CABLE ETHERNET CABLE	600V 600V 600V 600V 600V 300V 300V	THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 PVC PVC	
4B	PCP-2-PWR1 PCP-2-PWR2	MCC-P9E 4B CAKE PUMP CP 2	CAKE PUMP CP 2 MOTOR C-PMP-2	1" 1"	AL AL	3#3 & 1#8 GND 3#8 + 2#14 & 1#10 GND	600V 600V	THWN-2 THWN-2	
4C	MV-4-PWR1 MV-4-PWR2 MV-4-CTRL1	MCC-P9E 4C DISC SW DISC SW CAKE PUMP CP 2	DISC SW KGV-5 KGV-5	3/4" 3/4" 3/4"	AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 12#14 & 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
5D	MV-6-PWR1 MV-6-PWR2 MV-6-CTRL1	MCC-P9E 5D DISC SW DISC SW CAKE PUMP CP 2	DISC SW KGV-6 KGV-6	3/4" 3/4" 3/4"	AL AL AL	3#12 & 1#12 GND 3#12 & 1#12 GND 12#14 & 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
6	CKLS-PWR1 CKLS-CTRL1 CKTSE-CTRL CKPSH-CTRL CKPIT-CTRL CKVDSCH-PWR CKGVLS-PWR1 CKGVLS-CTRL1 CKGVLS-PWR2 CKGVLS-CTRL2 CKGVLS-PWR3 CKGVLS-CTRL3	CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1 CAKE PUMP CP 1	CAKE LASER S CAKE LASER S TSE PSH PIT CAKE VALVE DISCH. CAKE KGV LASER S 1 CAKE KGV LASER S 1 CAKE KGV LASER S 2 CAKE KGV LASER S 2 CAKE KGV LASER S 3 CAKE KGV LASER S 3	3/4" 3/4" 3/4" 3/4" 3/4" 1" 3/4" 3/4" 3/4" 3/4" 3/4" 3/4"	AL AL AL AL AL AL AL AL AL AL AL AL	(2) 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND	600V 600V 600V 600V 600V 600V 600V 600V 600V 600V 600V 600V	THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2	
7*	CENT-ESTOP-PWR CENT-VFW-PWR CENT-VDSCH-PWR	CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP *	E-STOP VALVE FLUSH, WATER VALVE DISCHARGE	3/4" 1" 1"	AL AL AL	2#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
8*	HYD-JB-PWR HYD-OILL-CTRL HYD-OILHT-CTRL HYD-FOV-PWR HYD-FCV-CTRL HYD-OILPRESS-PWR HYD-OILPRESS-CTRL HYD-SPARE-PWR HYD-SPARE-CTRL	CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP *	E-STOP VALVE FLUSH, WATER VALVE DISCHARGE	3/4" 1" 1"	AL AL AL	2#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
9*	CENT-GRSE-PWR CENT-GRSELL-CTRL CENT-BOWL-PWR CENT-BOWL-CTRL CENT-VIB-PWR CENT-VIB-CTRL CENT-SOLBTEMP-PWR CENT-SOLBTEMP-CTRL CENT-LIQBTEMP-PWR CENT-LIQBTEMP-CTRL CENT-SPARE-PWR CENT-SPARE-CTRL	CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP *	E-STOP VALVE FLUSH, WATER VALVE DISCHARGE	3/4" 1" 1"	AL AL AL	2#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
10*	POLY-FS-CTRL POLY-DWP-CTRL POLY-SOL-PWRL POLY-RUN-CTRL POLY-SSP-CTRL POLY-RNGN-CTRL POLY-REM-CTRL POLY-ALRM-CTRL POLY-SFBBCK-CTRL POLY-SPRE-CTRL	CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP * CENTRIFUGE CP *	E-STOP VALVE FLUSH, WATER VALVE DISCHARGE	3/4" 1" 1"	AL AL AL	2#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND 2#14 + 10#14 + 1#14 GND	600V 600V 600V	THWN-2 THWN-2 THWN-2	
11	CKLS2-PWR1 CKLS2-CTRL1 CKTSE2-CTRL CKPSH2-CTRL CKPIT2-CTRL CKVDSCH2-PWR CKGVLS2-PWR1 CKGVLS2-CTRL1 CKGVLS2-PWR2 CKGVLS2-CTRL2 CKGVLS2-PWR3 CKGVLS2-CTRL3	CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2 CAKE PUMP CP 2	CAKE LASER S CAKE LASER S TSE PSH PIT CAKE VALVE DISCH. CAKE KGV LASER S 4 CAKE KGV LASER S 4 CAKE KGV LASER S 5 CAKE KGV LASER S 5 CAKE KGV LASER S 6 CAKE KGV LASER S 6	3/4" 1" 3/4" 3/4" 3/4" 1" 3/4" 3/4" 3/4" 3/4" 3/4" 3/4"	AL AL AL AL AL AL AL AL AL AL AL AL	(2) 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND 2#14 + 1#14 GND	600V 600V 600V 600V 600V 600V 600V 600V 600V 600V 600V 600V	THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2 THWN-2	

NOTE:

*** INDICATES SPECIFIC LABEL FOR EQUIPMENT. REPLACE *** AS INDICATED IN THE TABLE BELOW (E.G. "POLYMER JB ** WILL BE "POLYMER JB 1" AND "POLYMER JB 2")

EQUIPMENT SPECIFIC LABEL TABLE

	EQUIPMENT	GENERIC LABEL	SPECIFIC LABEL	COMMENTS
FOR	CENTRIFUGE CP 1 & CP 2 CENTRIFUGE JB 1 & JB 2 HYDRAULIC JB 1 & JB 2 POLYMER 1 & POLYMER 2	REPLACE *** WITH	1 OR 2	POWER, CONTROL



ISSUED FOR: DATE: BY:
50% REVIEW 2/17/20AS
90% REVIEW 3/20/20AS
100% REVIEW 4/17/20AS
IFB 6/01/20AS

JOB NO.
COF107201F

SHEET

E-105

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1A	INCINERATOR POLYMER PUMP # 1	SLUDGE VALVE VBM-2B, VBM-14	LOOKS BLANK	EXHAUST FAN EF-35	AIR COMPRESSOR 2 WEST	RETURN AIR FAN RA-1	BLANK
1B		SLUDGE VALVE VBM-15, VBM-16		EXHAUST FAN EF-36		NORTH ROOF VENTILATOR	
1C		INCINERATOR #3 FEED SCREW A		EXHAUST FAN EF-42	EXHAUST FAN EF-46	PANEL VIEW	MAIN INCOMING CIRCUIT BREAKER
1D		INCINERATOR #3 FEED SCREW B		EXHAUST FAN EF-41	EXHAUST FAN EF-48	SOUTH ROOF VENTILATOR	
2B	LOOKS BLANK	INCINERATOR #4 FEED SCREW A	SUPPLY FAN SF-14	MAKE UP AIR AHU SF-19	WELDER FEEDER		
2C		INCINERATOR #4 FEED SCREW B	SUPPLY FAN SF-15	MACERATOR			
2D	INCINERATOR #4 LIVE BOTTOM HOPPER B	INCINERATOR SOUTH VENTILATION FAN	JIB CRANE		ROFF VENTILATOR SF-44		
2E		INCINERATOR #3 LIVE BOTTOM HOPPER A	DUPLEX SUMP PUMP				
2A		INCINERATOR #3 LIVE BOTTOM HOPPER B					
SPACE							

RETURN AIR FAN RA-2	SF-3H	SUPPLY FAN SF-16	MACERATOR	WATER PUMP	CCP-001	NO LABEL VFD BUCKET	INCINERATOR POLYMER PUMP #2		
		SUPPLY FAN SF-17		SCREW CONVEYOR	BLANK				
METERING UNIT	LIGHTING PANEL L-7	AIR COMPRESSOR 1 EAST	EXHAUST FAN EF-37	3B	DP-1	NO LABEL VFD BUCKET	TRASH COMPACTOR		
	LIGHTING PANEL L-8			3C					
MAIN INCOMING CIRCUIT BREAKER	DEPACKAING SYSTEM	EXHAUST FAN EF-39	HVAC DISTRIBUTION PANEL	4B	WEST POLYMER PANEL	BLANK	INCINERATOR #2 LIVE BOTTOM HOPPER B		
	ODOR CONTROL PANEL L-12	EXHAUST FAN EF-47		4C					
	DEVICENET REDUNDANT POWER SUPPLY	EXHAUST FAN EF-40	FILTER FLOOR PANEL	4D	EAST POLYMER PANEL	BLANK			
		EXHAUST FAN EF-38		4E					
		DEVICENET PORT							
	INCINERATOR SLUDGE PUMP #1								
				INCINERATOR NORTH VENTILATION FAN					

EXISTING MCC P9W & P9E MODIFICATIONS

[illegible]

E-106





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CITY OF FLINT
1101 SAGINAW STREET, FLINT, MICHIGAN 48502
FLINT WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING IMPROVEMENTS
ELECTRICAL DETAILS

ISSUED FOR:	DATE:	BY:
50% REVIEW	2/17/20AS	
90% REVIEW	3/20/20AS	
100% REVIEW	4/17/20AS	
IFB	6/01/20AS	

JOB NO.
COF107201F

SHEET
E-107

