



## SESC NOTES

- CONTRACTOR SHALL PLACE ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH THE MICHIGAN UNIFIED KEYING SYSTEM, AS SHOWN ON THIS SHEET.
- CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACK FILLING AND/OR GRADING OPERATIONS.
- SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
- THE CONTRACTOR SHALL LIMIT THE USE OF HEAVY EQUIPMENT AND OTHER CONSTRUCTION EQUIPMENT ON THE UNPROTECTED SUBGRADE.
- CLEANUP WILL BE DONE IN A MANNER TO ENSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
- THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENTATION CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITHIN 24 HOURS.
- TEMPORARY EROSION CONTROL MEASURES SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR UPON ESTABLISHMENT OF PERMANENT CONTROL MEASURES.
- CONSTRUCTION WILL NOT DISTURB MORE THAN 5 ACRES, THUS A NPDES STORM WATER DISCHARGE PERMIT WILL NOT BE REQUIRED.
- AREA OF DISTURBANCE IS 3.1 ACRES.
- ALL ROADS WITHIN THE INFLUENCE OF AND ADJACENT TO THE PROJECT MUST REMAIN CLEAN AT ALL TIMES. CONTRACTOR SHALL SWEEP STREETS AS DIRECTED BY THE CITY OF FLINT, GENESEE COUNTY DRAIN COMMISSION, OR THE ENGINEERING CONSULTANT.
- BEST MANAGEMENT PRACTICES FOR SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE USED ON THIS PROJECT AS SHOWN ON THE PLANS AND AS DEFINED BY THE ENGINEER.
- 12. THE CONTRACTOR SHALL SUBMIT A DETAILED SOIL EROSION AND 91, SOIL EROSION AND SEDIMENTATION CONTROL PERMIT, COPY TO BE PROVIDED TO THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE PAYMENT OF APPLICATION FEES, REVIEW FEES, INSPECTION FEES, BONDS, ETC. NO EARTH CHANGES OR EXCAVATION SHALL BE STARTED PRIOR TO THE ISSUANCE OF THIS PERMIT.
- 13. PROJECT IS LOCATED SOUTHEAST OF THE FLINT RIVER. PROJECT IS NOT WITHIN THE 100 YEAR FLOOD PLAIN.
- 14. THE FOLLOWING INDICATES SOIL EROSION KEY STANDARDS, ##, SEE MICHIGAN UNIFIED KEYING SYSTEM ON THIS SHEET FOR EROSION CONTROL KEY NUMBERS.
- TEMPORARY SEEDING SHALL BE MDOT TUF SEED MIXTURE PLACED ACCORDING TO MDOT SPECIFICATIONS. TEMPORARY SEEDING SHALL BE MAINTAINED DURING THE PERIOD OF CONSTRUCTION UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED.

## MAINTENANCE

MICHIGAN UNIFIED KEYING SYSTEM

MAY UTILIZE A VARIETY OF PLANT MATERIAL STABILIZES SOIL SLOWS RUNOFF VELOCITY FILTERS SEDIMENT FROM RUNOFF

ISES GEOTEXTILE FABRIC AND POSTS OR POLES FASY TO CONSTRUCT AND LOCATE AS NECESSARY

CHARACTERISTICS

PROTECTS AREAS WHICH CANNOT OTHERWISE BE PROTECTED, BUT INCREASES RUNOFF, VOLUME AND VELOCITY IRREGULAR SURFACE WILL HELP SLOW VELOCITY

KEEPS HIGH VELOCITY RUNOFF ON PAVED AREAS FROM LEAVING PAVED SURFACE COLLECTS AND CONDUCTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED

SYSTEM REMOVES COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS
CAN ACCEPT LARGE CONCENTRATIONS OF RUNOFF
CONDUCTS RUNOFF TO MUNICIPAL SENER SYSTEM OR STABILIZED OUTFALL LOCATION
USE CATCH BASINS TO COLLECT SEDIMENT

DETAIL

ALL MEASURES STATED ON THIS SITE MAP SHALL BE MAINTAINED BY THE CONTRACTOR IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE APPLICABLE PERMIT AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

- 1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
- 2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY BY THE CONTRACTOR TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHALL BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED, AT NO
- 3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE—HALF THE HEIGHT OF THE SILT FENCE.
- 4. RESPONSIBLE PERSON DURING CONSTRUCTION WILL BE THE CONTRACTOR. RESPONSIBLE PERSON AFTER CONSTRUCTED HAS CEASED AND THE SITE IS STABILIZED WILL BE THE OWNER.

# **CONSTRUCTION SEQUENCE**

- 1. IMPLEMENTATION OF TEMPORARY EROSION CONTROL MEASURES.
- 2. EXCAVATION AND STOCKPILING OF SOIL, REMOVAL OF MATERIALS, SELECTIVE GRADING, DIVERSIONS AS REQUIRED IN FIELD, PROTECTION OF STORM SEWER FACILITIES.
- 3. PERIODIC MAINTENANCE OF AFFECTED EROSION CONTROL MEASURES.
- 4. PERMANENT MEASURES; FINAL GRADING, PAVING AND HYDROSEEDING

# F FLIN STRUGRIT $\circ$

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CITY INFLUEN ATTERY

50% DESIGN 10/25/19 90% DESIGN 12/06/19 TL 100% DESIGN 02/28/20 TL FINAL EGLE 04/08/20 TL

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TOTAL DISTURBED AREA: 0.25 ACRES

**NEAREST WATERBODY:** THE FLINT RIVER IS LOCATED APPROXIMATELY 800 FT IN THE NORTHEASTERLY DIRECTION OF THE PROJECT SITE.

**SOIL TYPE:** 

SvA = Spinks-Oakville Loamy Sands, 0 to 2 percent \*PER THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) WEB SOIL SURVEY. LOCATED AT EXISTING MAJOR CONTOUR

websoilsurvey.nrcs.usda.gov AND DERIVED JUNE 2013.

FLOODPLAIN NOTE:

PER FEMA FIRM (FLOOD INSURANCE RATE MAP) 26049C0167D, PANELS 167 OF 475, THE SITE IS LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN). THE 100 YR FLOODPLAIN ELEVATION NEAREST TO THE SITE IS 697 FT.

# **LEGEND**

TEMPORARY SILT FENCE

EROSION CONTROL SYMBOL

TEMPORARY INLET CONSTRUCTION ENTRANCE

LIMITS OF DISTURBANCE/ PROJECT LIMITS WITHIN PROPERTY EXISTING MINOR CONTOUR

EXISTING DRAINAGE STRUCTURE EXISTING STORM SEWER

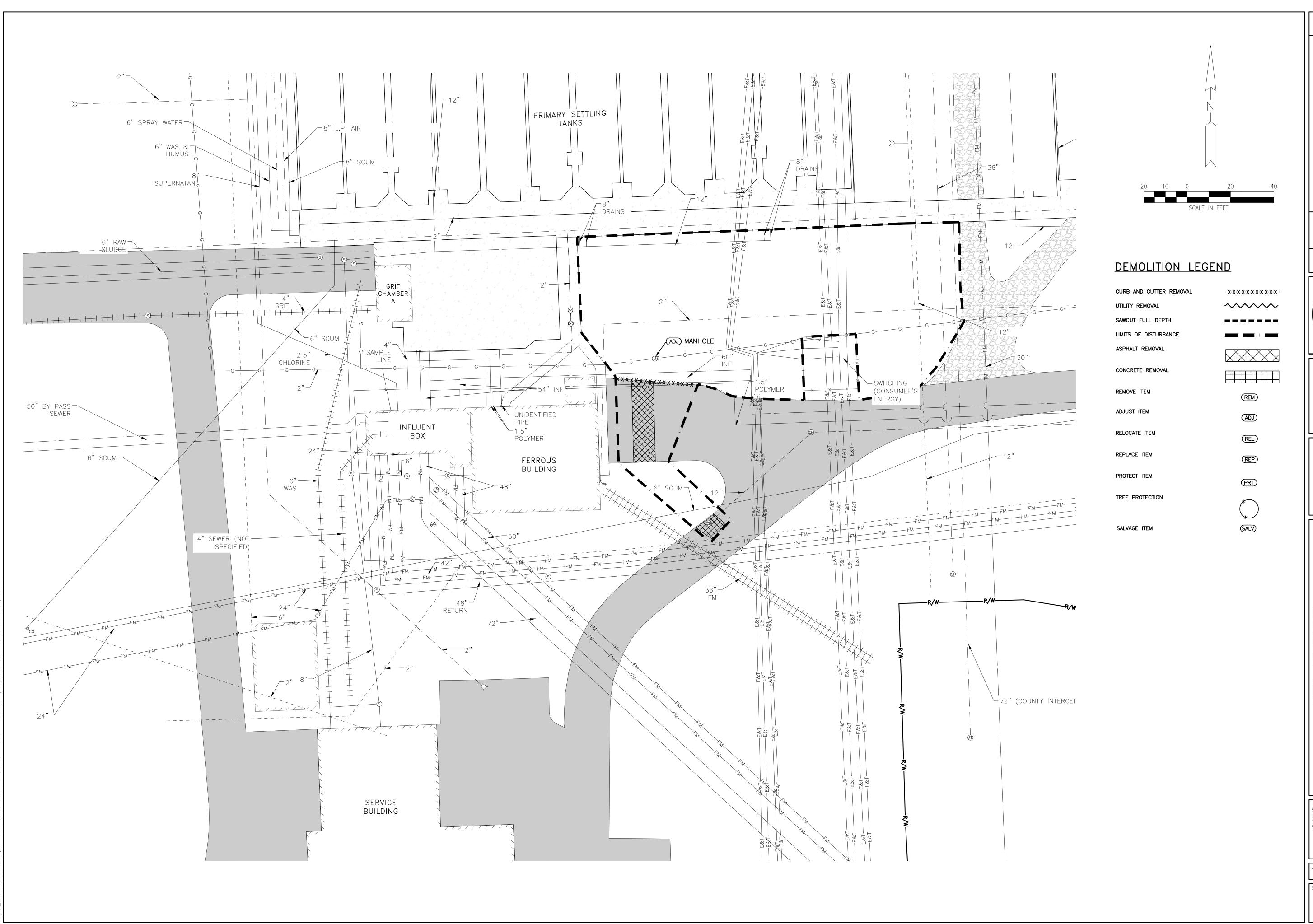
EXISTING OVERLAND FLOW

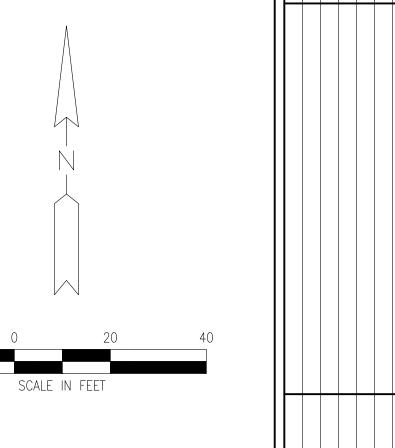
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# SOIL EROSION AND SEDIMENTATION CONTROL SCHEDULE

|                           |               | 2020 | ) —  |            | <b>→</b> 202 | 1 —  |       |     |     |     |     |      |      |
|---------------------------|---------------|------|------|------------|--------------|------|-------|-----|-----|-----|-----|------|------|
| CONSTRUCTION SEQUENCE     |               | ОСТ  | NOV  | DEC        | JAN          | FEB  | MAR   | APR | MAY | JUN | JUL | AUG  | SEP  |
| TEMPORARY SESC MEASURES   |               |      |      |            |              |      |       |     |     |     |     |      |      |
| STRIP AND STOCKPILE       |               |      |      |            |              |      |       |     |     |     |     |      |      |
| ROUGH GRADING             |               |      |      |            |              |      |       |     |     |     |     |      |      |
| UNDERGROUND UTILITIES     |               |      |      |            |              |      |       |     |     |     |     |      |      |
| ROAD INSTALLATION         | (N/A)         |      |      |            |              |      |       |     |     |     |     |      |      |
| BUILDING CONSTRUCTION     | (RENOVATIONS) |      |      |            |              |      |       |     |     |     |     |      |      |
| PERMANENT SESC MEASURES   |               |      |      |            |              |      |       |     |     |     |     |      |      |
| FINAL GRADE               |               |      |      |            |              |      |       |     |     |     |     |      |      |
| LANDSCAPING               |               |      |      |            |              |      |       |     |     |     |     |      |      |
|                           |               | Тоот | luo. | <b>DE0</b> | 1            | LEED | 1,445 |     |     |     | ·   | Luio | Toes |
| MAINTENANCE SEQUENCE      |               | ОСТ  | NOV  | DEC        | JAN          | FEB  | MAR   | APR | MAY | JUN | JUL | AUG  | SEP  |
| STREET SWEEPING           |               |      |      |            |              |      |       |     |     |     |     |      |      |
| SILT FENCING              | (N/A)         |      |      |            |              |      |       |     |     |     |     |      |      |
| MAINTAIN BUFFER STRIPS    |               |      |      |            |              |      |       |     |     |     |     |      |      |
| INLET STRUCTURES          |               |      |      |            |              |      |       |     |     |     |     |      |      |
| SEEDING AND MULCH         | (N/A)         |      |      |            |              |      |       |     |     |     |     |      |      |
| SEDIMENT BASINS           | (N/A)         |      |      |            |              |      |       |     |     |     |     |      |      |
| RIP-RAP                   | (N/A)         |      |      |            |              |      |       |     |     |     |     |      |      |
| REMOVE TEMPORARY MEASURES | 3             |      |      |            |              |      |       |     |     |     |     |      |      |











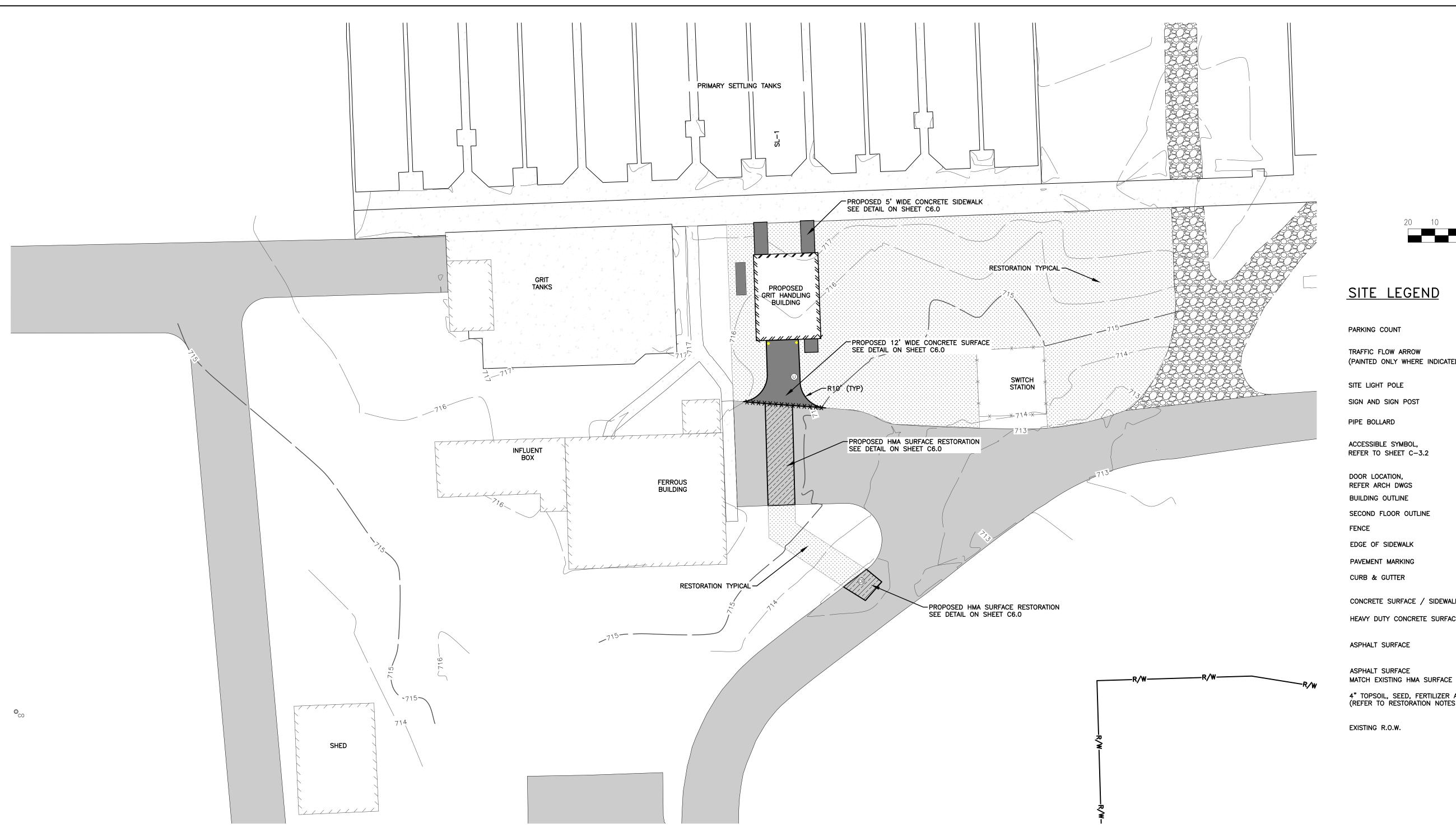
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CITY OF FLINT C INFLUENT STRUCTURE BATTERY A GRIT REHAB

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- WORK AND MATERIALS SHALL COMPLY WITH ALL TOWNSHIP/CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
- 2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING CURRENT MDOT STANDARD PLANS AS IDENTIFIED ON THE PLANS.

SITE PLAN NOTES

- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR SLOPE PAVING, SIDEWALKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM DRAINAGE, ETC. AS REQUIRED. WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COSTS SHALL BE INCLUDED IN THE BASE BID.
- 5. SITE LIGHTING SHALL BE DEFLECTED AS NOT TO BE DIRECTED ON ADJACENT PROPERTY. REFER TO ELECTRICAL DRAWINGS FOR SITE
- 6. ALL RADII SPECIFIED AT CURB AND GUTTER LOCATIONS ARE ALONG THE FACE OF THE CURB AND GUTTER.

- ALL BARRIER FREE WALKS, RAMPS, PARKING, SIGNAGE & STRIPING SHALL BE IN ACCORDANCE WITH MICHIGAN BARRIER FREE STANDARDS. DETECTABLE WARNING SURFACE SHALL BE INSTALLED AS REQ'D BY MICHIGAN BARRIER FREE STANDARDS AT ALL RAMPS AND OTHER LOCATIONS AS PROVIDED IN MICHIGAN BARRIER FREE STANDARDS. STRIPING SHALL BE WATERBORNE PAVEMENT MARKING PER MDOT
- SPECIFICATIONS, COLOR BLUE UNLESS OTHERWISE SPECIFIED. 8. ALL SIDEWALK RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARD PLAN R-28-H.
- 9. ALL CONCRETE CURB AND GUTTER SHALL BE CONSTRUCTED PER MDOT STANDARD PLAN R-30-F.
- 10. ALL NEW DRIVEWAY OPENINGS SHALL BE MDOT DETAIL M AND SHALL BE CONSTRUCTED PER MDOT STANDARD PLAN R-29-H.
- 11. A 1" THICK (MIN.) ISOLATION JOINT SHALL ALSO BE PLACED AT ALL LOCATIONS WHERE NEW CONCRETE MEETS ANY FIXED OBJECT SUCH AS CONCRETE WALKS, WALLS, BUILDINGS, CONCRETE FOUNDATIONS, CURBS,

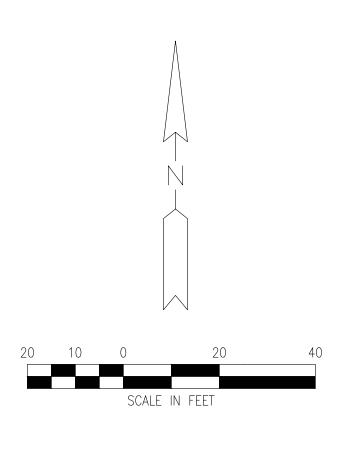
## PERMANENT RESTORATION NOTES

- 1. ALL ON-SITE UNPAVED AREAS DISTURBED BY GRADING OPERATIONS SHALL RECEIVE 4 INCHES OF TOPSOIL AND SHALL BE HYDROSEEDED.
  TOPSOIL SHALL BE PER ASTM D5268 AND SHALL BE NATURAL, FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING CHARACTERISTICS OF REPRESENTATIVE TOPSOIL IN THE VICINITY THAT PRODUCES HEAVY GROWTH. TOPSOIL SHALL HAVE A PH RANGE OF 5.5 TO 7.4 PERCENT, FREE FROM SUBSOIL, OBJECTIONABLE WEEDS, LITTER, SODS, STIFF CLAY, STONES LARGER THAN 1-INCH IN DIAMETER, STUMPS, ROOTS, TRASH, TOXIC SUBSTANCES, OR ANY OTHER MATERIAL WHICH MAY BE HARMFUL TO PLANT GROWTH OR HINDER PLANTING OPERATIONS. TOP SOIL SHALL CONTAIN A MINIMUM OF THREE PERCENT ORGANIC MATERIAL. IF EXISTING ONSITE TOPSOIL OR IMPORTED TOPSOIL DOES NOT MEET THESE REQUIREMENTS, THE TOPSOIL SHALL BE CONDITIONED UNTIL REQUIREMENTS ARE MET.
- 2. HYDROSEED FOR LAWN AREAS IS TO CONSIST OF A SEED MIXTURE AS FOLLOWS:

40% PERENNIAL RYEGRASS 20% KENTUCKY BLUEGRASS 10% NEW PORT KENTUCKY BLUEGRASS 30% PENN LAWN RED FESCUE

THE GRASS SEED MIXTURE SHALL BE SOWN UNIFORMLY AT A RATE OF

- 220-250 POUNDS PER ACRE. 3. FERTILIZER SHALL HAVE AN ANALYSIS OF 8-8-8 OR 10-10-10 OF NITROGEN, PHOSPHORUS AND POTASSIUM AND IS TO BE USED IN THE LAWN AREA HYDROSEED APPLICATION. FERTILIZER SHALL BE APPLIED AT THE RATE REQUIRED TO FURNISH 300 POUNDS PER ACRE.
- 4. MULCH SHALL BE STRAW, HAY OR EXCELSIOR. THE MULCH SHALL BE APPLIED AT A RATE OF 1,500 POUNDS PER ACRE WITH 30 POUNDS PER ACRE OF GLUE.
- 5. ADHESIVE SHALL BE TERR-TACK AR MULCH ADHESIVE.



### SITE LEGEND

PARKING COUNT TRAFFIC FLOW ARROW (PAINTED ONLY WHERE INDICATED)

SITE LIGHT POLE

ACCESSIBLE SYMBOL, REFER TO SHEET C-3.2

DOOR LOCATION, REFER ARCH DWGS BUILDING OUTLINE

SECOND FLOOR OUTLINE

EDGE OF SIDEWALK

PAVEMENT MARKING

CONCRETE SURFACE / SIDEWALK

HEAVY DUTY CONCRETE SURFACE

ASPHALT SURFACE

ASPHALT SURFACE

4" TOPSOIL, SEED, FERTILIZER AND MULCH

(REFER TO RESTORATION NOTES THIS SHEET)

EXISTING R.O.W.

M V V

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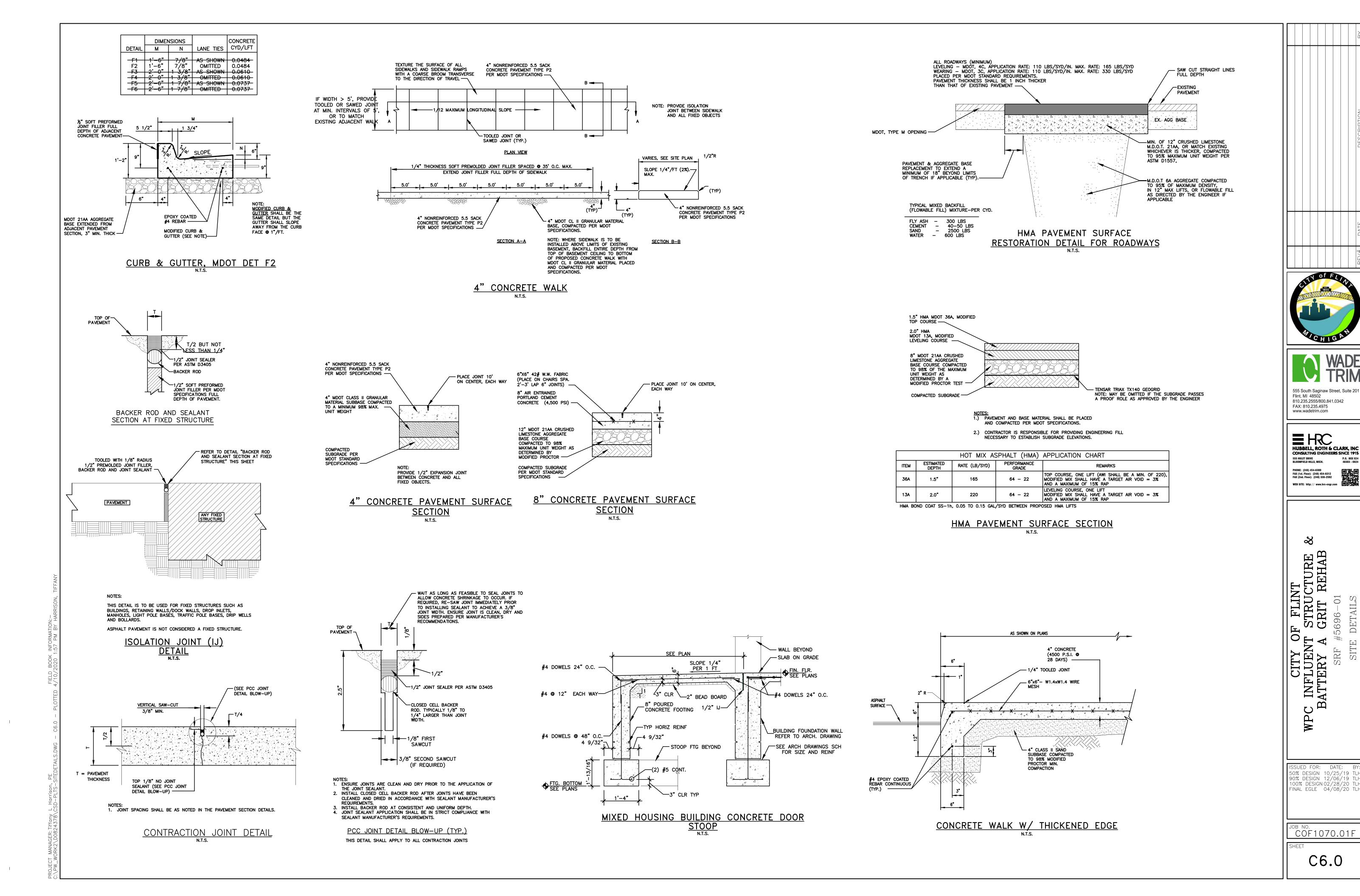
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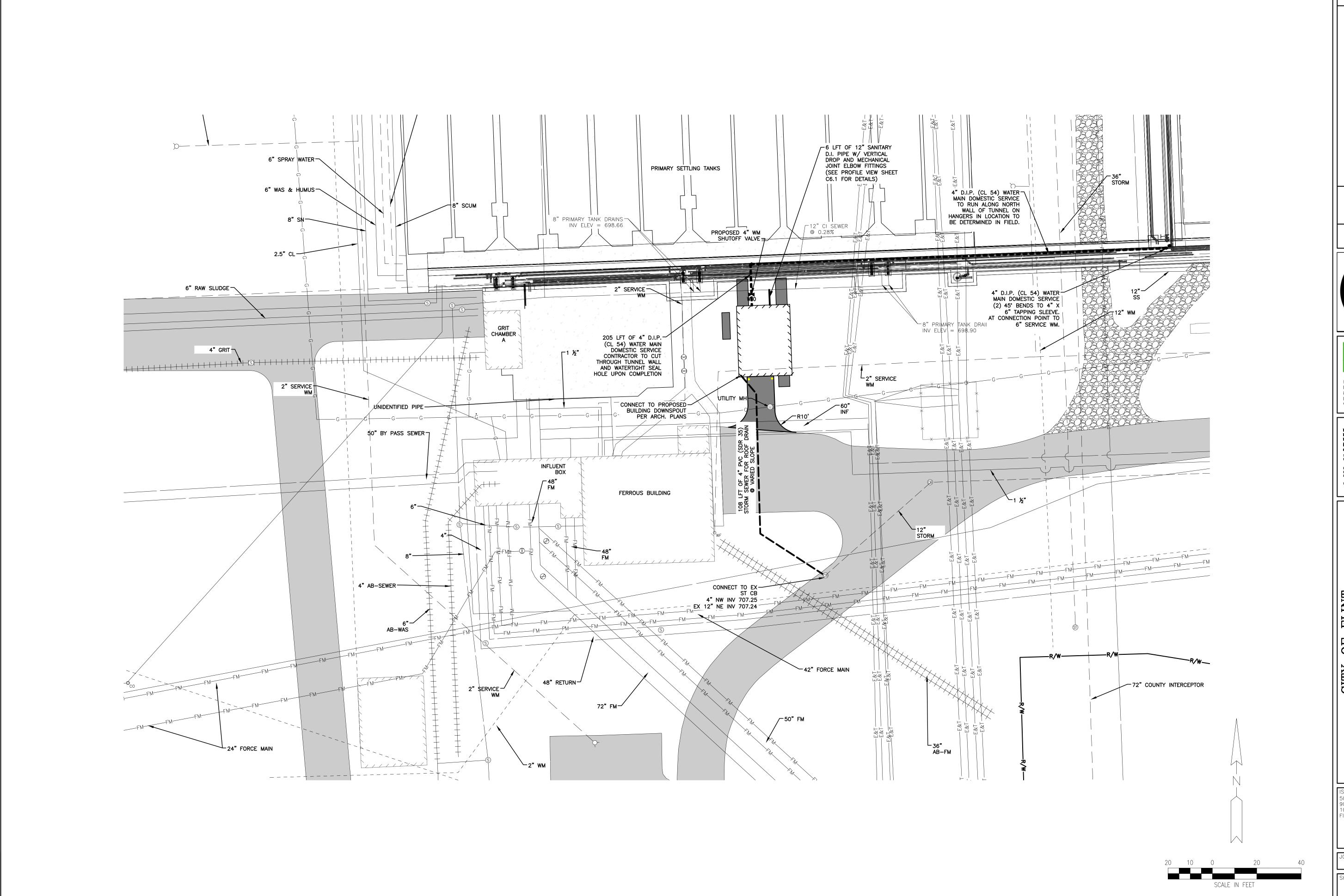
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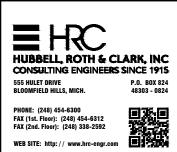
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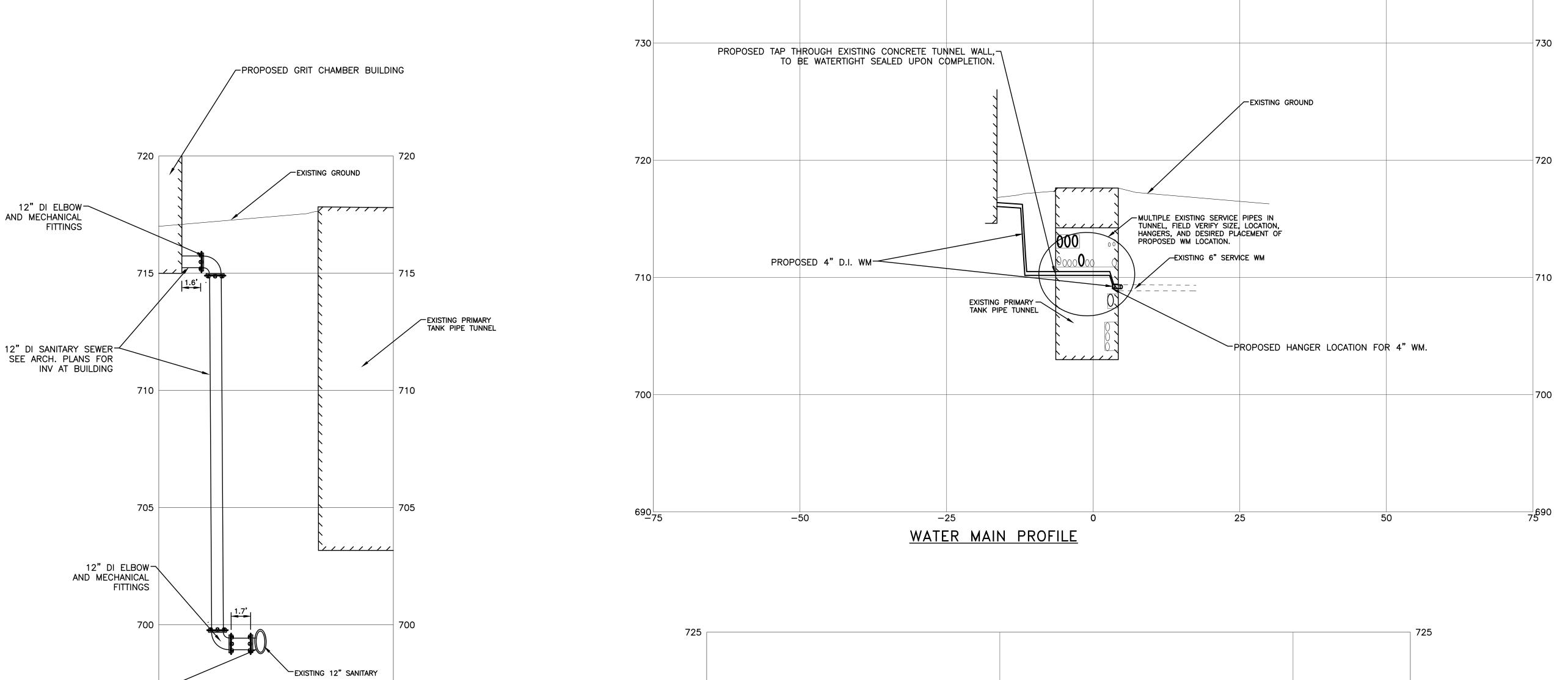


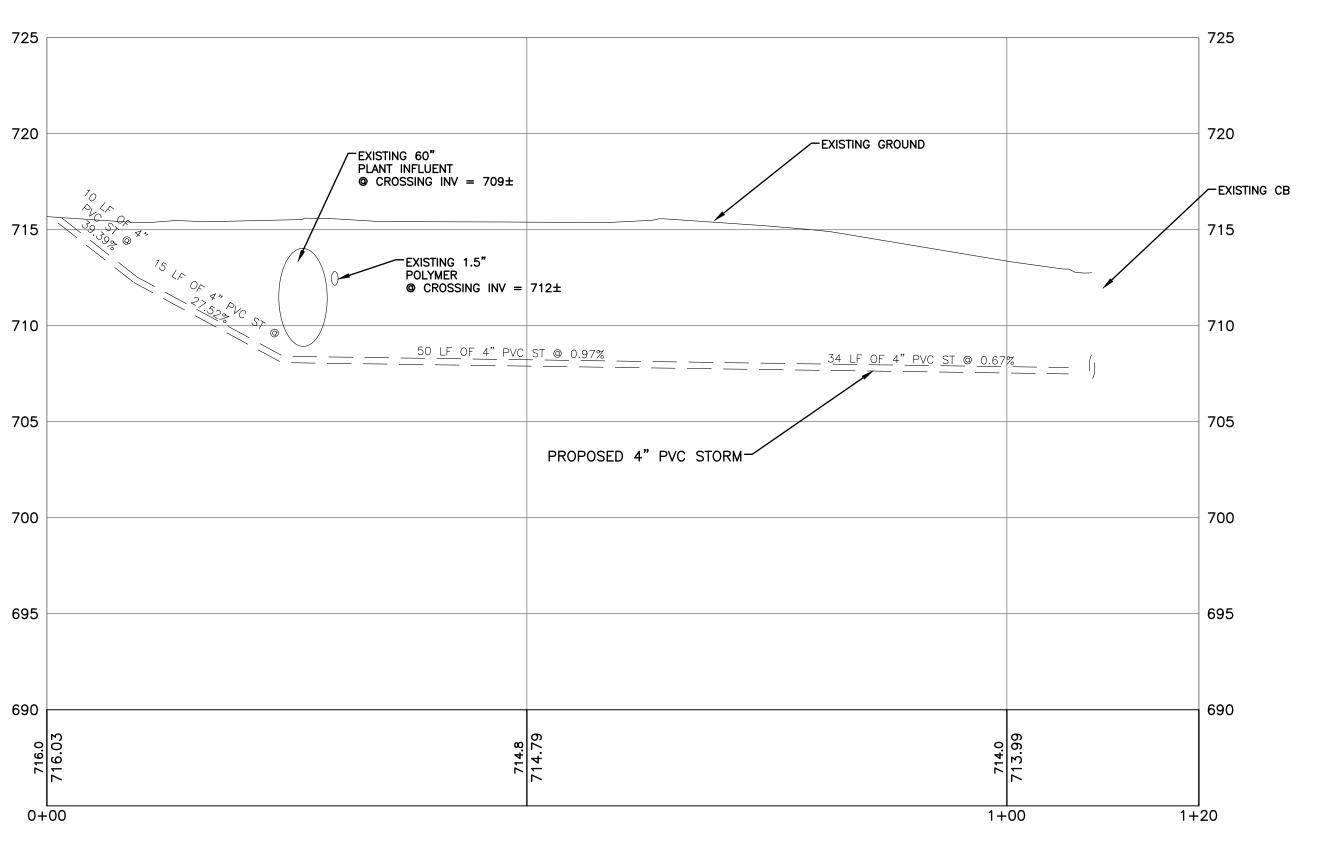


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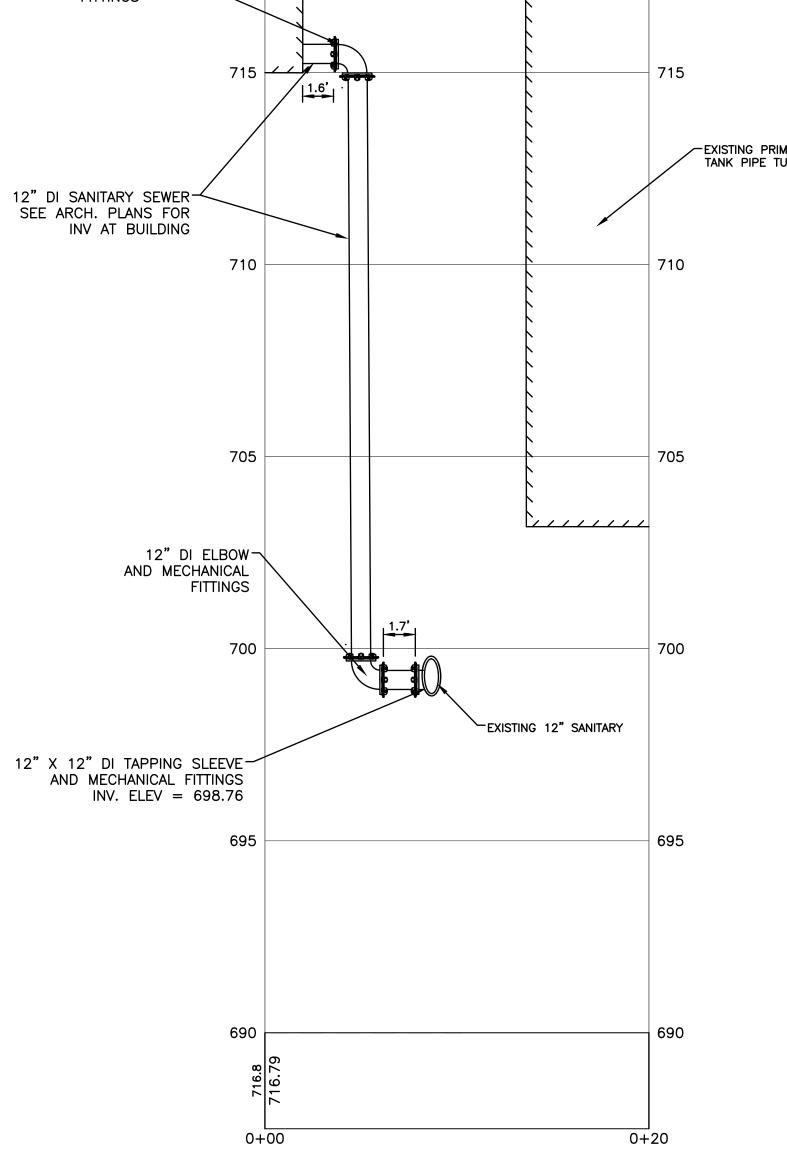
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STORM SEWER PROFILE



SANITARY SEWER PROFILE

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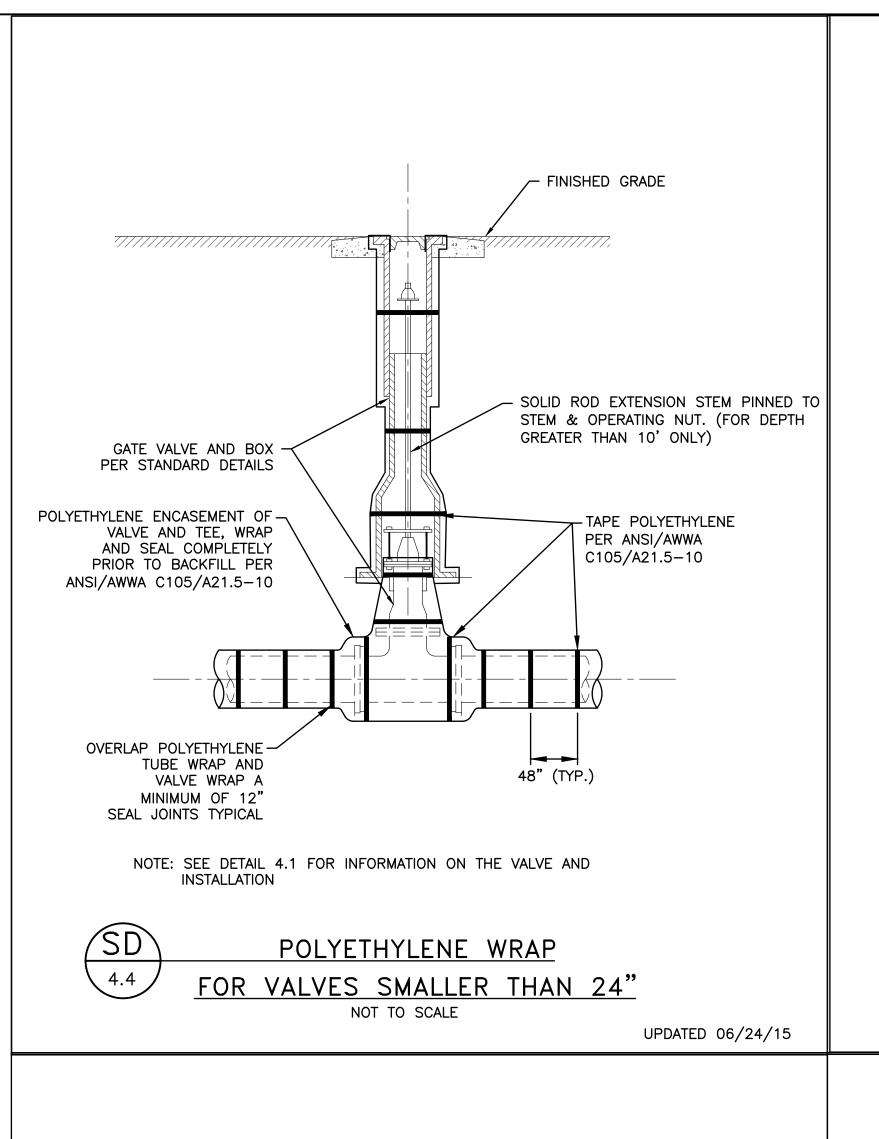
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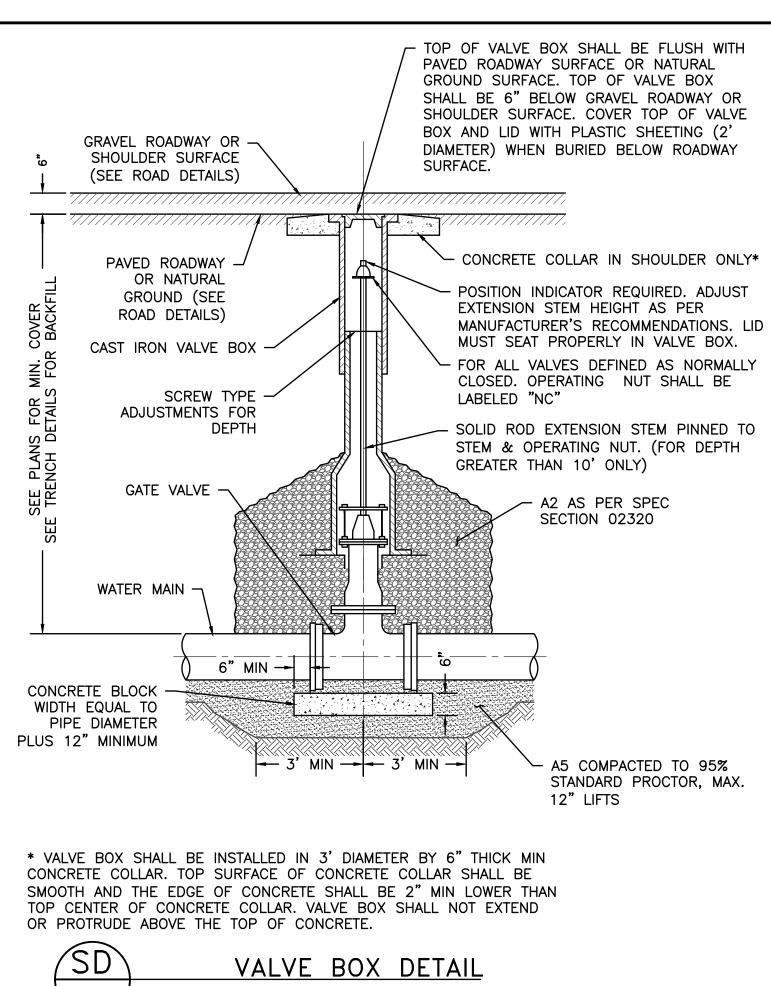
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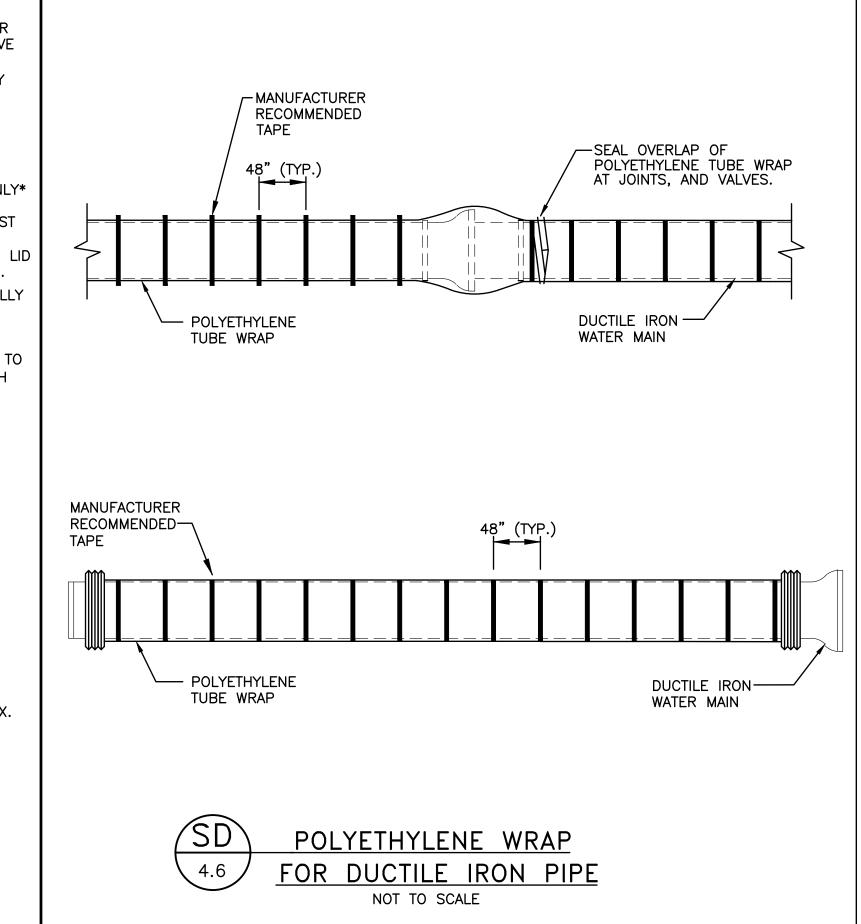
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C8.0





(FOR VALVES SMALLER THAN 24")



NOT TO SCALE

(CONTRACTOR SUPPLIED ALL)

MIN. COVER SEE PLANS MIN. COVER SEE PLANS 18" MIN CRUSHED MDOT -6AA LIMESTONE -SANITARY SEWER OR (A1)(TYP.) FOR SEPARATION STORM SEWER GREATER THAN 18"--USE 22° BENDS THE CONTRACTOR SHALL USE ADDITION TO THRUST BLOCKS.

BACKFILLED WITH S1 OR S2 PER THE SCHEDULE OF BACKFILLING IN THE SPECIFICATIONS OR CONTRACT DRAWINGS SPRING LINE -A5 (MDOT CLASS IIA) SAND COMPACTED TO 90% STANDARD PROCTOR TO SPRING LINE OF PIPE 6" LOOSE A5 (MDOT TRENCH WIDTH CLASS IIA) SAND FOR 6-12" MAIN, MAXIMUM 30". FOR >12" MAIN, OUTSIDE DIA. + 12". SD 6"-36" PRESSURE PIPE BEDDING AND BACKFILL IN GREENBELT AREAS

OF THE ROAD

SEAL WITH APPROVED FLEXIBLE RUBBER BOOT

CIRCUMFERENTIAL WRAPS OF MANUFACTURER RECOMMENDED TAPE SHOULD BE PLACED AT NO GREATER THAN FOUR (4) FOOT INTERVALS ALONG THE BARREL OF THE PIPE WITH THE EXCESS FOLDED OVER TOP TO TAKE OUT EXCESS SLACK HELPING TO MINIMIZE THE SPACE BETWEEN THE POLYETHYLENE AND THE PIPE. COMPLETE THE INSTALLATION BY OVERLAPPING THE POLYETHYLENE TUBE WRAP, AROUND JOINTS AND VALVES, AT EACH END AND SEAL ENDS. INSTALL PER AWWA C105.

NOT TO SCALE

TYPICAL WRAP FOR DUCTILE IRON PIPE AT MANHOLE 4.7

SEAL TO PIPE WITH

MANUFACTURER

POLYETHYLENE TUBE WRAP

APPROVED RESTRAINED JOINTS IN

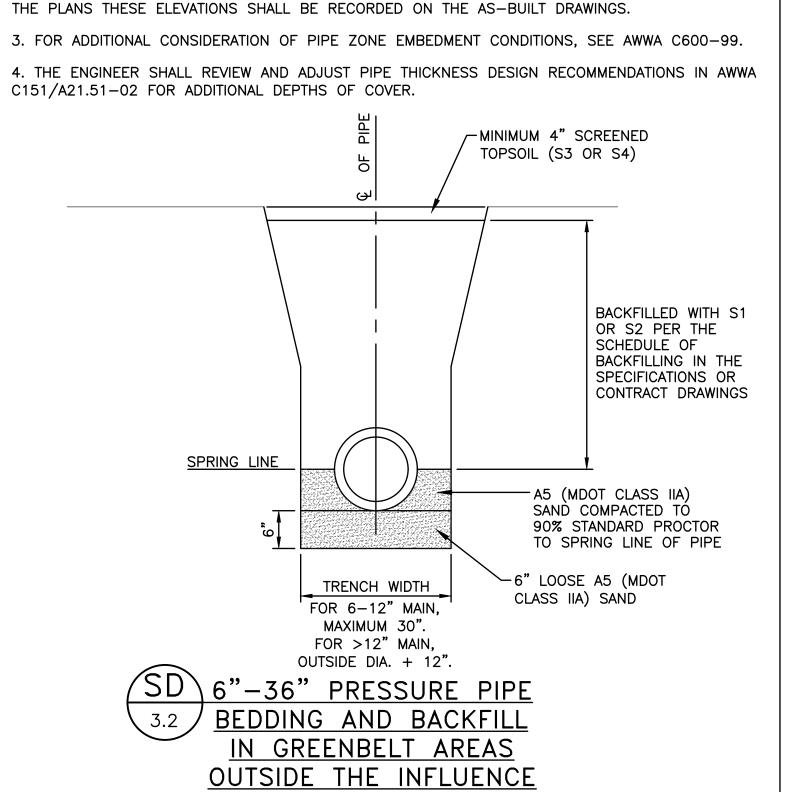
WATER TRANSMISSION MAIN **SEPARATION** NOT TO SCALE

UPDATED 06/24/15

1. THE CONTRACTOR SHALL PLACE AND COMPACT SAND BACKFILL A5 (MDOT CLASS IIA) TO 95% OF THE MATERIAL UNIT WEIGHT BY STANDARD PROCTOR ACROSS ALL ROADWAYS AND DRIVES PER THE SCHEDULE OF BACKFILLING OR CONTRACT DRAWINGS. THIS INCLUDES SERVICE LEADS UNLESS BORED. THE CONTRACTOR SHALL DO THE TESTING, WITH RESULTS SUBMITTED TO ENGINEER PRIOR TO FINAL ACCEPTANCE.

2. THE PRESSURE PIPE SHALL BE INSTALLED AT THE DEPTHS AND ELEVATIONS INDICATED ON THE PLANS THESE ELEVATIONS SHALL BE RECORDED ON THE AS-BUILT DRAWINGS.

C151/A21.51-02 FOR ADDITIONAL DEPTHS OF COVER.



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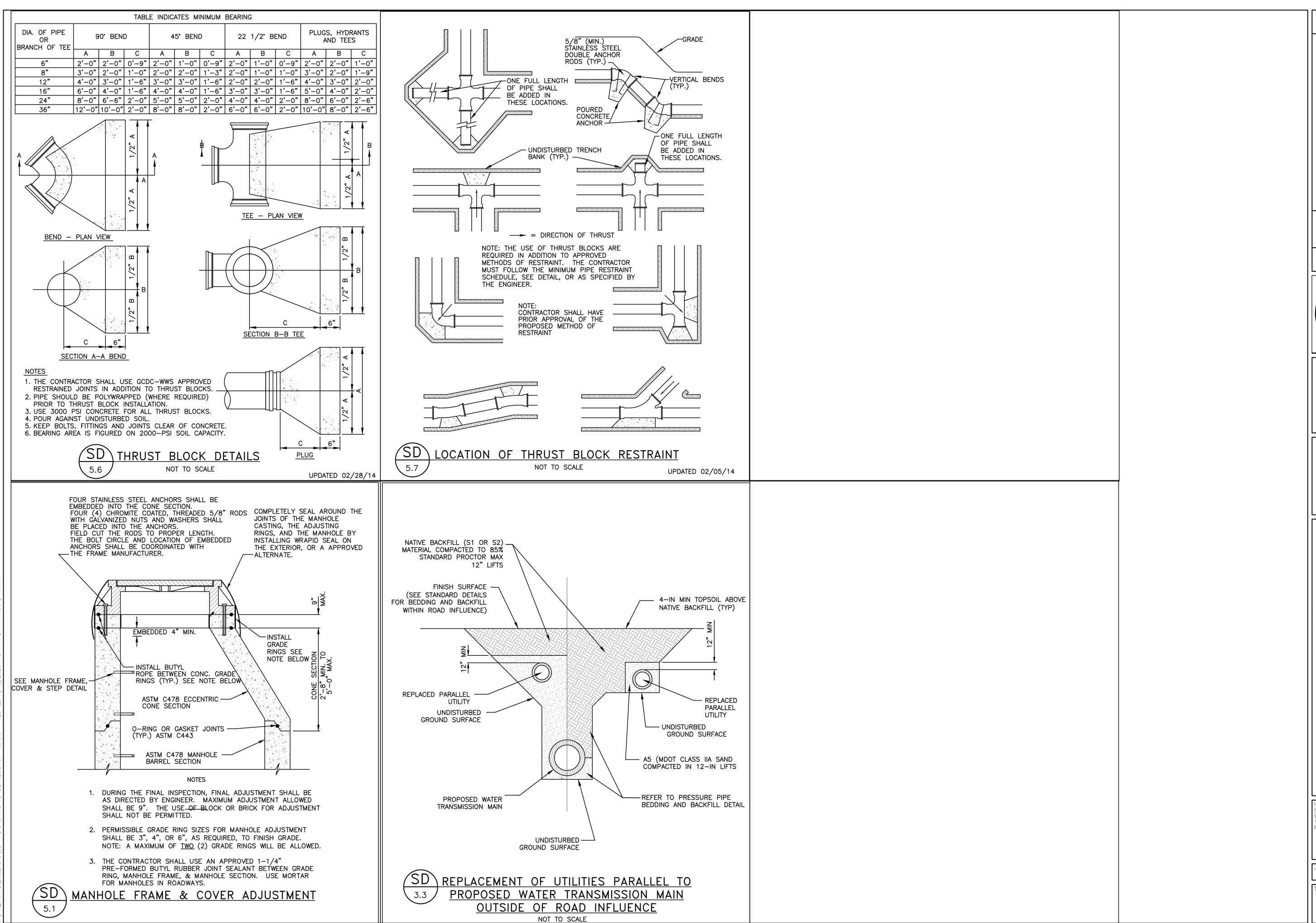
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RECOMMENDED









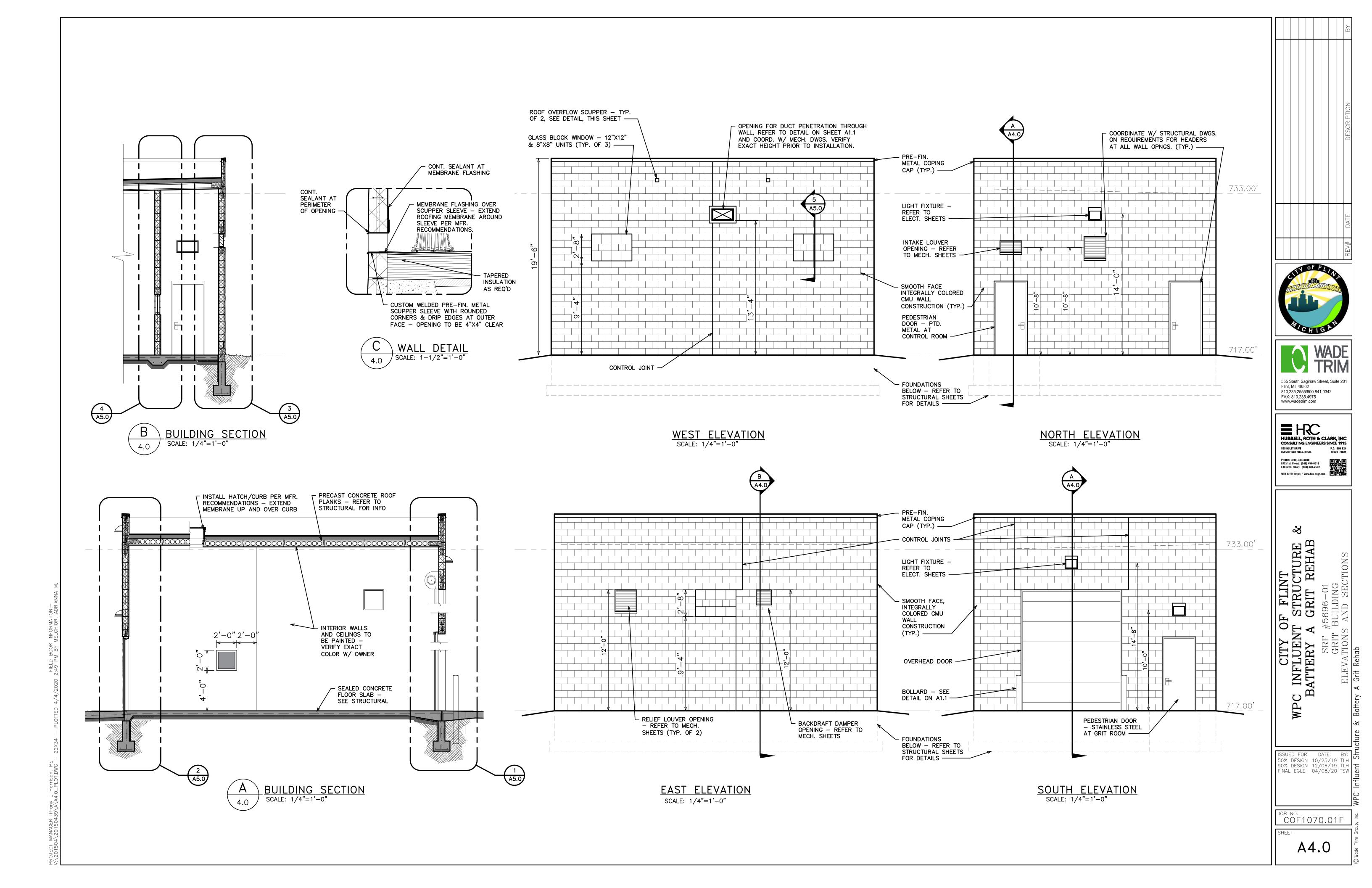
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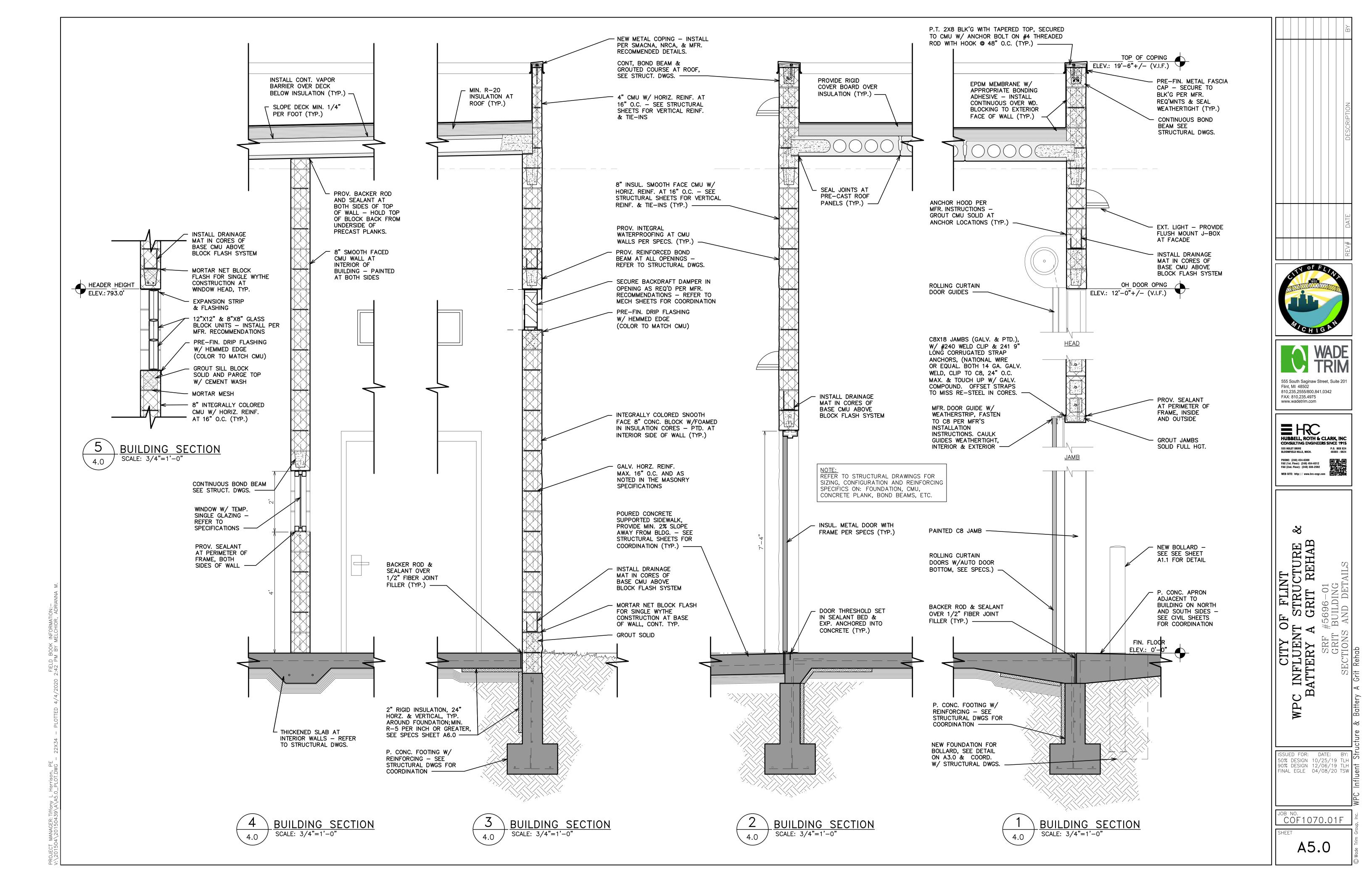
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#### **GENERAL REQUIREMENTS:**

- 1. CONTRACTOR SHALL COORDINATE ALL WORK PRIOR TO INSTALLATION OR FABRICATION OF ANY COMPONENTS. ALL OPENINGS SHALL ALSO BE COORDINATED. CONTRACTOR TO OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
- 2. ALL WORK MUST CONFORM TO ALL STATUTES OF THE MICHIGAN BUILDING CODE (EDITION IN EFFECT AT THE TIME OF PERMIT), ALL STATE, COUNTY AND LOCAL ORDINANCES/REGULATIONS, CURRENT BARRIER FREE REGULATIONS, MIOSHA STRUCTURAL GUIDELINES, ASTM STANDARD TESTING PROCEDURES, OWNER'S PRACTICES AND GENERALLY ACCEPTED DESIGN PRACTICES. IF DISCREPANCIES IN DRAWING APPEAR, WORK MUST BE DONE PER CODE.
- 3. ALL EXISTING DIMENSIONS, CONDITIONS, SIZES & LOCATIONS ARE TO BE FIELD
- 4. CONTRACTOR SHALL PROVIDE NEW OPENINGS AND SUPPORTS AS NOTED. FINAL OPENING DIMENSIONS, CONNECTION SIZES, CLEARANCES, ETC. MUST BE COORDINATED DURING CONSTRUCTION WITH APPROVED COMPONENTS. SEAL TIGHT ALL OPENINGS (ROOF, WALL AND CEILING), EQUIPMENT AND/OR PENETRATIONS - FROM AIR AND MOISTURE.
- 5. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND APPROVED MANUFACTURERS.
- ALL INSTALLATIONS TO BE COORDINATED WITH EXISTING CONDITIONS FOR PROPER SIZE, LOCATION AND PROVISIONS REQUIRED TO INSTALL COMPONENTS.
- 7. PIPING & CONDUIT HANGERS AND SUPPORT LOCATION ARE NOT SHOWN ON DRAWINGS. THE CONTRACTOR SHALL PROVIDE THE PIPING AND CONDUIT HANGERS AND SUPPORTS NECESSARY AS REQUIRED PER CODE.
- 8. CONTRACTOR SHALL PROVIDE ALL REQUIRED TRANSITIONS, FITTINGS AND APPURTENANT CONNECTIONS.
- 9. CONFIRM ANY COLOR SELECTIONS WITH OWNER. COLORS TO COORDINATE WITH EXISTING BUILDINGS ON SITE.
- 10. PREVENT GALVANIC ACTION AND OTHER FORMS OF CORROSION BY INSULATING METALS OR OTHER MATERIALS FROM DIRECT CONTACT WITH INCOMPATIBLE MATERIALS.
- 11. SHOP DRAWINGS AND PRODUCT DATA THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND PROJECT ENGINEER, SHOP DRAWINGS & PRODUCT DATA SUBMITTALS FOR ALL PRODUCTS AND COMPONENTS TO BE USED ON THIS PROJECT. MAINTAIN ONE COPY OF ALL APPROVED SUBMITTALS AT THE SITE FOR THE OWNER'S REFERENCE.
- 12. "RECORD" DRAWINGS THE CONTRACTOR SHALL MAINTAIN A SET OF "AS-BUILT" PRINTS, MARKED UP AT THE SITE, CONTAINING ALL "AS-BUILT" INFORMATION. TURN SET OVER TO OWNER UPON COMPLETION OF THE WORK.
- 13. INSTALL ALL MATERIALS IN COMPLIANCE W/ MFR. RECOMMENDATIONS AND CODE REQUIREMENTS.
- 14. CONTRACTOR MUST VERIFY ALL EXISTING UTILITY LOCATIONS PRIOR TO START OF DEMOLITION AND MAKE EVERY EFFORT TO PROTECT THEM OR RELOCATE AS REQUIRED.
- 15. ALL PERMANENT WOOD BLOCKING, SHEATHING, FRAMING, ETC. UTILIZED IN CONSTRUCTION TO BE FIRE RETARDANT TREATED.

## ARCHITECTURAL SPECIFICATIONS:

#### **CONCRETE FLOOR SEALANT:**

FLOOR SLAB ON GRADE SHALL RECEIVE A LIQUID SURFACE TREATMENT CONSISTING OF A WATER BASED, LIQUID CHEMICAL CONCRETE DUST PREVENTATIVE HARDENER. THE COMPOUND MUST CONTAIN A MINIMUM SOLIDS CONTENT OF 20% OF WHICH 50% IS SILICONATE, LIQUID SURFACE TREATMENT SHALL BE AS SUPPLIED BY CURECRETE CHEMICAL COMPANY, "ASHFORD FORMULA", OR PRE-APPROVED SUBSTITUTE. APPLICATION SHALL BE IN STRICT COMPLIANCE WITH THE DIRECTIONS OF THE MANUFACTURER, BUT NOT APPLIED PRIOR TO SUCCESSFUL COMPLETION OF A 7 DAY WET CURE ON NEWLY PLACE FLOOR SLABS. WHEN THE PRODUCT THICKENS, BUT NOT MORE THAN 60 MINUTES AFTER INITIAL APPLICATION, THE SURFACE SHALL THEN BE WASHED THOROUGHLY WITH A WALK BEHIND SCRUBBER OR SQUEEGEE OR VACUUMED TO REMOVE EXCESS LIQUID.

#### FIRE EXTINGUISHERS & ACCESSORIES

DRY CHEMICAL TYPE, UL299, HEAVY DUTY STEEL CYLINDER W/ PRESSURE GAGE; RECHARGEABLE UNIT; TYPE 20-A-120-B:C; PAINTED FINISH, COLOR RED. PROVIDE CHROMED STEEL MOUNTING BRACKETS & ALUM. WALL SIGNAGE (WHITE GOTHIC LETTERS ON RED BACKGROUND), BRADY SIGNAGE NO. 43294, 14X10, ALUM. PROVIDE (1) EXTINGUISHER WALL MOUNTED ON BLDG. INTERIOR ADJACENT TO MANDOORS, WITH SIGNAGE ABOVE EXTINGUISHER. (2) FIRE EXTINGUISHERS AND SIGNAGE REQUIRED.

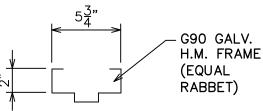
#### MISCELLANEOUS SIGNAGE

PROVIDE UNSAFE WATER SIGNAGE AT HOSE BIBBS. SIGNAGE SHALL BE BRADY SIGNS OR EQUAL, MODEL NUMBER 126352 WITH LABELING: DANGER, NON-POTABLE WATER, DO NOT DRINK. SIGN SHALL BE 10"X14" FABRICATED FROM PLASTIC (POLYSTYRENE) MATERIAL OR SIMILAR, NON-FERROUS SUBSTRATE. PROVIDE ONE SIGN FOR EACH HOSE BIBB.

#### FOUNDATION PERIMETER INSULATION

PERIMETER INSULATION BOARD UNDER FLOOR SLAB: MINIMUM 2 INCH THICK EXTRUDED POLYSTYRENE PER ASTM C578, TYPE IV, OF MINIMUM 25 PSI COMPRESSIVE STRENGTH.

- a. DIVERSIFOAM PRODUCTS "CERTIFOAM" b. DOW CHEMICAL "STYROFOAM SQUARE EDGE"
- c. OWENS CORNING "FOAMULAR 250"



1. ALL FRAMES SHALI BE 2" HEAD & 2" JAMBS UNLESS SPECIFICALLY NOTED OTHERWISE.

NOTES:

TYP. DOOR FRAME CONFIGURATION SCALE: 1" = 1'-0"

2. BACKCOAT FRAMES PER SPECIFICATIONS PRIOR TO INSTALLATION.

### BUILDING CODE DATA:

#### APPLICABLE CODES

- 2015 MICHIGAN BUILDING CODE (MBC)
- 2015 MICHIGAN REHAB CODE FOR EXISTING BUILDINGS (MRCEB)
   2017 NATIONAL ELECTRIC CODE (NEC) WITH MICHIGAN AMENDMENTS.
- 2015 MICHIGAN MECHANICAL CODE
- 2015 MICHIGAN PLUMBING CODE • ICC ANSI A117.1 - 2009

#### BATTERY A GRIT BUILDING:

<u>USE GROUP (302):</u>

◆ FACTORY INDÚSTRIAL F-2 LOW HAZARD OCCUPANCY.

CONSTRUCTION TYPE (TABLE 601):
TYPE IIB. THERE IS NO FIRE SUPPRESSION SYSTEM IN THE BUILDING.

#### NOTE: GRIT ROOM IS CLASSIFIED AS A CLASS 1 / DIVISION 1 SPACE. FLOOR AREA (GROSS PER SECTION 1002):

• TOTAL GROSS SF = 675 SF

(SF SHOWN IS DEFINED AS 2015 MBC "FLOOR AREA, GROSS" UNDER SECTION 1002.1 DEFINITIONS)

#### OCCUPANT LOAD (1004)

SEE OCCUPANT LOAD TABLE 1004.1.1. FOR THE FOLLOWING:

1. INDUSTRIAL SPACES: 100 S.F. GROSS PER OCCUPANT

#### OCCUPANT CALCULATIONS:

675 SF/100 SF PER OCCUPANT = 7 OCCUPANTS PER CODE (1004.1) OCCUPÁNCY MAY BE REDUCED BY CODE OFFICIAL TO REFLECT ACTUÁL OCCUPANCY. THIS BUILDING IS A GRIT HANDLING FACILITY AND HOUSES EQUIPMENT AND GRIT CONTAINERS. THIS AREA IS NORMALLY UNOCCUPIED.

TRAVEL DISTANCE DOES NOT EXCEED 200 FEET FROM ANY POINT IN THE BUILDING.

#### **ENERGY CODE COMPLIANCE:**

#### BUILDING: SEMI-HEATED

ROOF DECK IS SLOPED FOR DRAINAGE. INSULATION ABOVE DECK IS R-30

INSULATION THICKNESS IS 5.5' 8" CMU BLOCK WITH FOAM INSULATION

AT UNGROUTED CORES

FILL ANNULAR SPACE

SIDES OF WALL -

MINERAL FIBER OR

OTHER PERMANENT

BACKER MATERIAL-

NOTES:

AROUND PENETRATION WITH

SEALANT. TOOL JOINT FLUSH

AROUND PENETRATION, BOTH

1. SEE MECH., PROCESS & ELECT. DWGS.

2. DETAIL IS SIMILAR FOR PIPING THRU

3. DETAIL SHOWN IS ABOVE GRADE USE

TYP. PIPE OR CONDUIT LESS

THAN 6" DIAMETER THRU WALL

FOR PIPE OR CONDUIT SIZE

CONC. WALLS ABOVE GRADE.

ONLY. USE LINK SEAL FOR

PENETRATIONS BELOW GRADE.

FLOORS: 2" THICK X 2' DEEP RIGID INSULATION AT PERIMETER OF SLAB

MASONRY WALL -

NEW H.M. DOOR

& FRAME

NEW METAL

SEALANT

THRESHOLD SET IN

GROUT BED; CAULK

PERIMETER W/

COUNTERSUNK GALV. EXPANSION

ANCHOR INTO

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

GENERIC WALL, SEE FLOOR

CORE DRILL HOLE

DIAMETER.

THRU WALL 1" LARGER

RESTEEL "BEYOND" OPNG;

OPNGS. W/ VERT. RESTEEL

LOCATIONS IN WALLS - SEE

LOCATIONS. CORE DRILLS

SHALL BE MIN. 1" AWAY

FROM VERT. RESTEEL

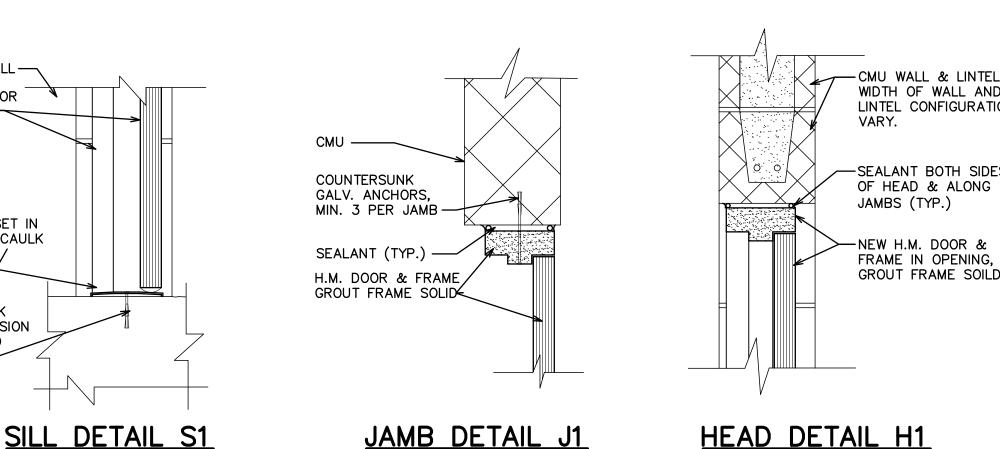
STRUCT. DWGS. FOR RESTEEL

COORDINATE CORE DRILL

THAN PENETRATION

PLAN FOR THICKNESS/TYPE

CONCRETE —



## STOP HORZ. REINF. 1" FROM JOINT -15 LB. FELT BOND BREAKER GROUT

#### %" JOINT W/ BACKER ROD & SEALANT IN CMU (BOTH FACES) GROUTED CMU W/ VERT. RESTEEL BOTH SIDES OF C.J. SEE STRUCT. DWGS. (BAR SIZE TO MATCH WALL REINF. U.N.O.) CAVITY SOLID

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

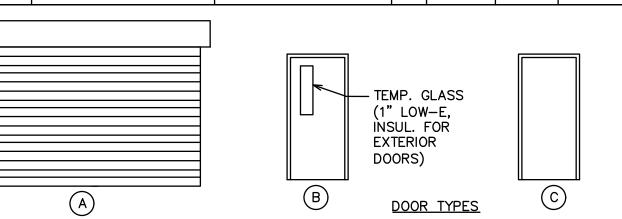
#### NOTES:

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

- 1. MICHIGAN TYPE CONTROL JOINT REQUIRED; PRE-FAB C.J. W/ USE OF SASH STYLE BLOCK NOT PERMITTED WITHOUT STRUCTURAL ENGINEER APPROVAL.
- 2. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR CONTROL JOINT LOCATIONS IN ALL WALLS.
- 3. PROVIDE CONTROL JOINTS AT DOOR LINTELS AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

TYP. MICHIGAN MASONRY **CONTROL JOINT** SCALE: 1" = 1'-0"

#### DOOR SCHEDULE JAMB | MATERIAL SILL HARDWARE DOOR LOCATION DETAIL DETAIL SET REMARKS SIZE (WXH) DOOR FRAME GRIT ROOM J1 | S1 S.S. | S.S. | NOTES 1, 2, 3 01 01 3'-0" X 7'-2" EQUIPMENT ROOM 3'-0" X 7'-2" | B | H1 J1 | S1 02 01 STL | STL | NOTES 1, 2, 3 GRIT ROOM 10'-0" X 12'-0" | A | 1-A5.0 | 1-A5.0 | 1-A5.0 | | S.S. | S.S. | NOTE 4 03 GRIT ROOM 3'-0" X 7'-2" | B | H1 01 S.S. | S.S. | NOTES 1, 2, 3 04



WIDTH OF WALL AND

LINTEL CONFIGURATION

-SEALANT BOTH SIDES

OF HEAD & ALONG

-NEW H.M. DOOR &

FRAME IN OPENING,

GROUT FRAME SOILD

JAMBS (TYP.)

### 1. SEE SECTION 08710 FOR DOOR HARDWARE. 2. SEE SECTIONS 08114 & 08115 FOR PAINTED

STEEL DOORS AND FRAMES, AND SECTION 08132 FOR STAINLESS STEEL DOORS AND FRAMES. 3. ALL FRAMES ARE 2" HIGH PROFILE, JAMS

AND HEADS. 4. SEE SECTION 08331 FOR OVERHEAD DOOR.

#### ROOM FINISH SCHEDULE ROOM DESCRIPTION FLOOR BASE CEILING WALLS REMARKS A. = MASONRY (PAINTED ATINTERIOR CMU ONLY) ROOM NAME GRIT ROOM NOTES 1 & 2 AlAI Α Α EQUIPMENT ROOM NOTES 1 & 2 | x | x | Α

- 1. ALL INTERIOR WALLS, AND CEILINGS SHALL BE PAINTED (U.N.O). REFER TO SPEC SECTION 09 9000 FOR COATINGS. CEILINGS AND WALLS MUST BE PAINTED PRIOR TO THE INSTALLATION OF EQUIPMENT. 2. CAULK ALL JOINTS IN CEILING PRIOR TO PAINTING.
- 3. IN ADDITION TO NEW PIPE BEING PAINTED UNDER THIS WORK SCOPE, THE EXISTING 54" DIAMETER PIPE IN THE LOWER LEVELS OF THE INFLUENT AND GRIT BUILDINGS IS TO BE PREPPED AND REPAINTED. REFER TO SPEC SECTION 09 9000 FOR ADDITIONAL REQUIREMENTS.

|                 | ABBREVI                               | ATIONS        |                             |
|-----------------|---------------------------------------|---------------|-----------------------------|
| A.B.            | -ANCHOR BOLT                          | FTG.          | -FOOTING                    |
| ABV.            | -ABOVE                                | GA.<br>GALV.  | −GUAGE<br>−GALVANIZED       |
| A.D.            | -ACCESS DOOR                          | GALV.<br>GR.  | -GRADE                      |
| ADJ.            | -ADJACENT, ADJUSTIBLE                 | H.            | -HIGH                       |
| A.F.F.<br>ALUM. | -ABOVE FINISHED FLOOR<br>-ALUMINUM    | H.M.          | -HOLLOW METAL               |
| ARCH.           | -ARCHITECTURAL                        | HD.           | -HEAD                       |
| B/B             | -BACK TO BACK                         | H.P.          | -HIGH POINT                 |
| BLDG.           | -BUILDING                             | HT.           | -HEIGHT                     |
| BLK.            | -BLOCK                                | HORZ.         | -HORIZONTAL                 |
| BOTT.           | -BOTTOM                               | I.E.          | -INVERT ELEVATION           |
| BRKT.           | -BRACKET                              | INSUL.        | -INSULATION                 |
| B.U.            | -BUILT-UP                             | INT.          | -INTERIOR                   |
| C.J.            | -CONTROL JOINT<br>-CONSTRUCTION JOINT | LB.           | -POUND                      |
| C.L.            | -CENTER LINE                          | LLH.          | -LONG LEG HORIZONTAL        |
|                 |                                       | LLV.          | -LONG LEG VERTICAL          |
| CEIL.           | -CEILING                              | L.P.          | -LOW POINT                  |
| CEM.            | -CEMENT                               | MAINT.        | -MAINTENANCE, MAINTAIN      |
| CMU             | -CONC. MASONRY UNIT                   | MAS.          | -MASONRY                    |
| C.O.            | -CLEAR OPENING                        | MAX.<br>MECH. | -MAXIMUM<br>-MECHANICAL     |
|                 | -CLEANOUT                             | MFR.          | -MANUFACTURER               |
| COL.            | -COLUMN                               | MIN.          | -MINIMUM                    |
| CONC.           | -CONCRETE                             | M.O.          | -MASONRY OPENING            |
| CONT.           | -CONTINUATION<br>-CONTINUE            | N.T.S.        | -NOT TO SCALE               |
|                 | -CONTINUOUS                           | 0.C.          | ON CENTER                   |
| CONT'R.         | -CONTRACTOR                           | OPNG.         | -OPENING                    |
| DIA.            | -DIAMETER                             | R.O.          | -ROUGH OPENING              |
| DIM.            | -DIMENSION                            | R.S.          | -ROOF SUMP                  |
| D.L.            | -DOOR LINTEL                          | REF.          | -REFERENCE                  |
| DN.             | -DOWN                                 | REINF.        | -REINFORCEMENT<br>-REQUIRED |
| D.O.            | -DOOR OPENING                         | REQ'D.<br>RM. | -ROOM                       |
| DWG.            | -DRAWING                              | RQMTS.        | -REQUIREMENTS               |
| EA.             | -EACH                                 | SCH.          | -SCHEDULE                   |
| E.J.            | -EXPANSION JOINT                      | SIM.          | -SIMILAR                    |
| EL.<br>ELEC.    | -ELEVATION<br>-ELECTRICAL             | SPECS.        | -SPECIFICATIONS             |
| ELEV.           | -ELECTRICAL<br>-ELEVATION             | S.S.          | -STAINLESS STEEL            |
| EQUIP.          | -EQUIPMENT                            |               | (300 SERIES)                |
| EXIST.          | -EXISTING                             | STL.          | -STEEL                      |
| EXP.            | -EXPANSION                            | STRUCT.       | -STRUCTURAL                 |
| EXT.            | -EXTERIOR                             | T/_           | -TOP                        |
| F.D.            | -FLOOR DRAIN                          | TYP.          | -TYPICAL                    |
| FDN.            | -FOUNDATION                           | U.N.O.        | -UNLESS NOTED<br>OTHERWISE  |
| FEX             | -FIRE EXTINGUISHER                    | VERT.         | -VERTICAL                   |
| FIN.            | -FINISH                               | W.            | -WIDTH                      |
| <b>-</b> 1      | -FINISHED                             |               | -WIDE                       |
| FL.<br>FLASH.   | -FLOOR<br>-FLASHING                   | w/            | -WITH                       |
| FLASH.<br>FLG.  | -FLASHING<br>-FLANGE                  | WD.           | -WOOD                       |
| FRP             | -FIBER REINF. PLASTIC                 | W.L.          | -WINDOW LINTEL              |
| FSTN.           | -FASTEN                               |               | -WATER LEVEL                |
| СТ              | FOOT FEET                             |               |                             |

-FOOT, FEET

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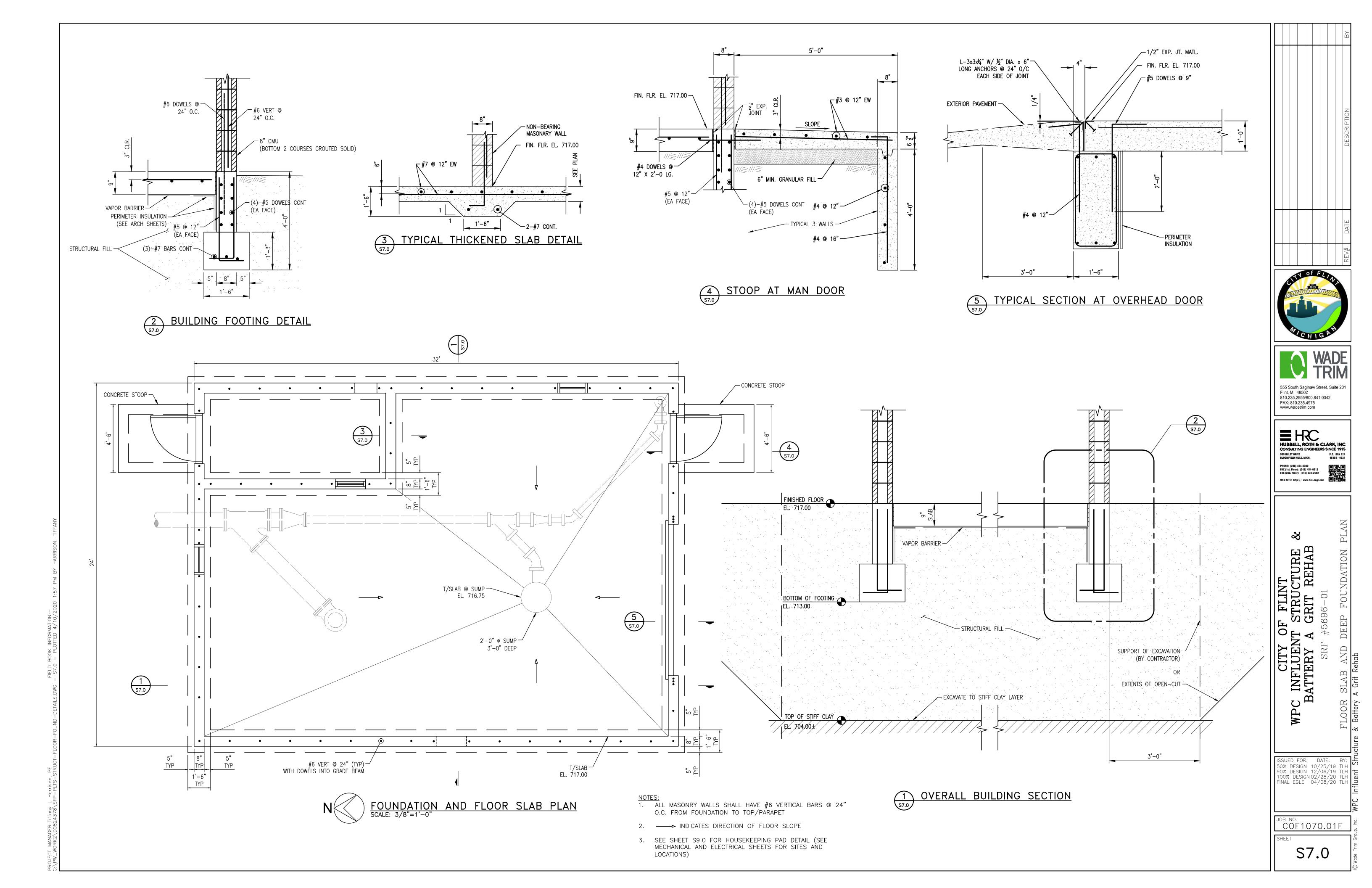
> **≡**HC **HUBBELL, ROTH & CLARK, INC** CONSULTING ENGINEERS SINCE 191 555 HULET DRIVE Bloomfield Hills, Mich. PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 338-2592 WEB SITE: http://www.hrc-engr.com

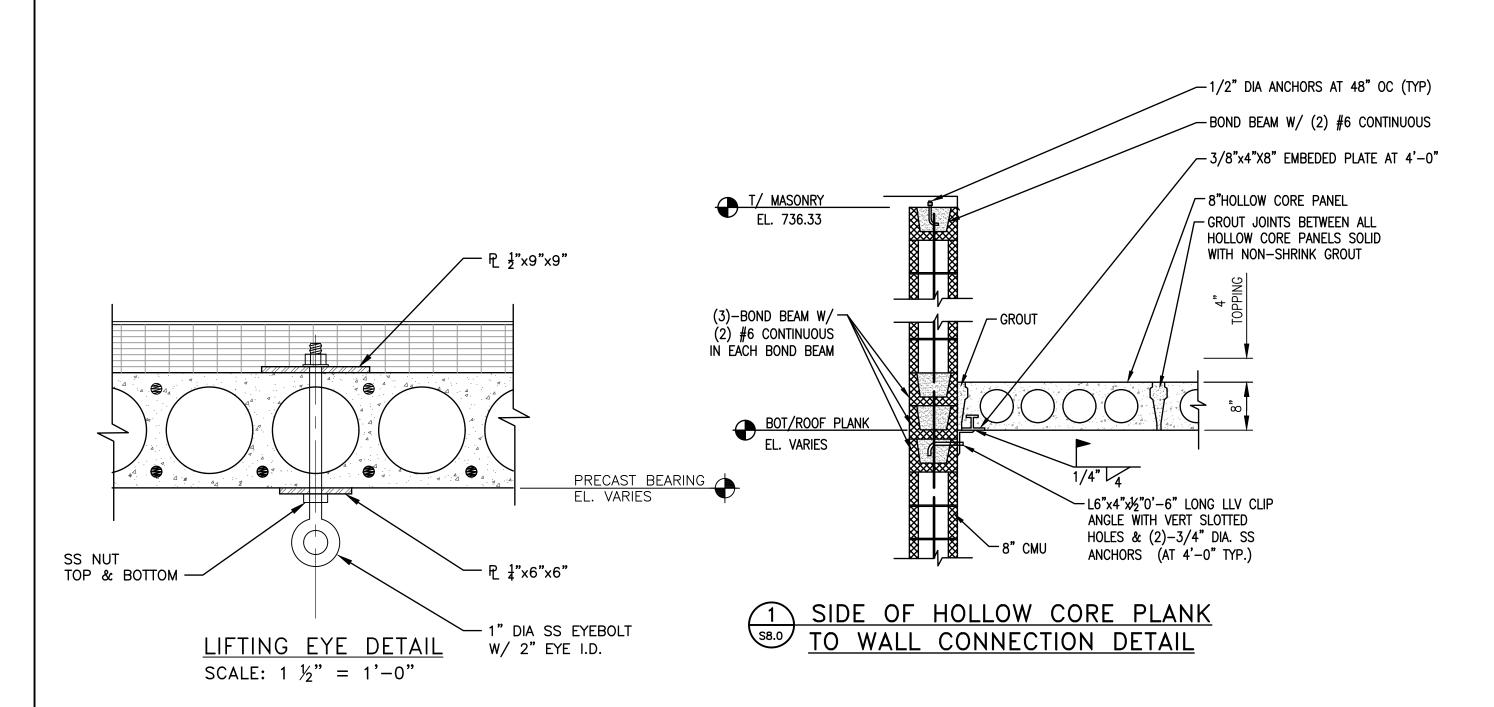
ICTURE REHAB

50% DESIGN 10/25/19 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW 0

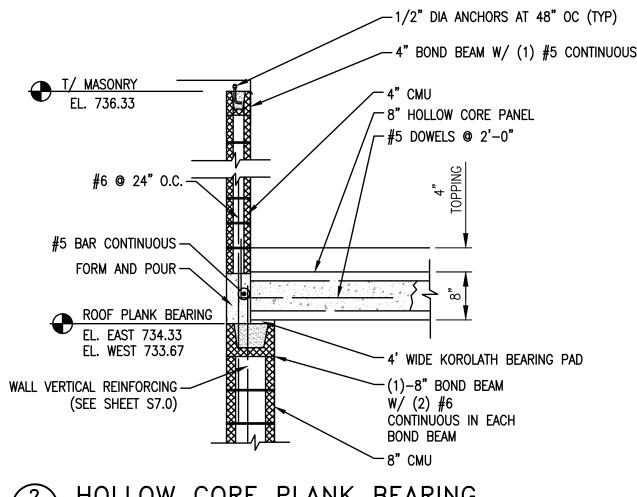
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1 (58.0)



DETAIL AT EXTERIOR WALL

└─ NEW LIFTING EYE ON UNDERSIDE OF ROOF PANEL

SHOP DRAWINGS DURING CONSTRUCTION SEE "LIFTING EYE DETAIL" THIS SHEET)

ROOF PLAN SCALE: 3/8"=1'-0"

(COORDINATE LOCATION WITH APPROVED EQUIPMENT

─ SCUPPER

OPENING IN PRECAST FOR ROOF HATCH

(SEE ARCHITECTURAL SHEETS FOR SIZE,

-STEEL HANGER OR REINFORCING PANEL

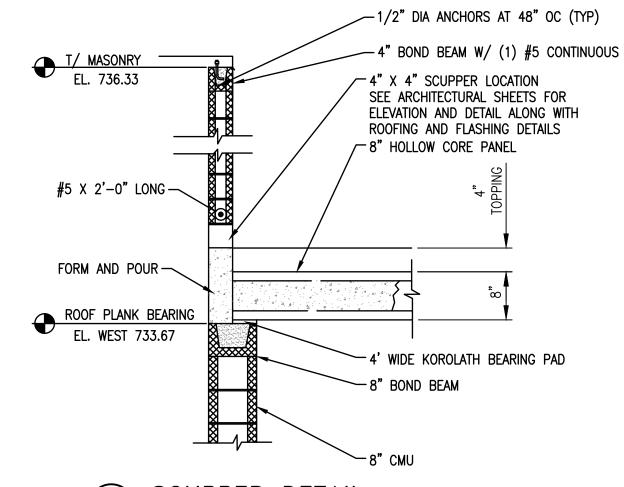
OPENINGS FOR ROOF

SHEETS) TYPICAL

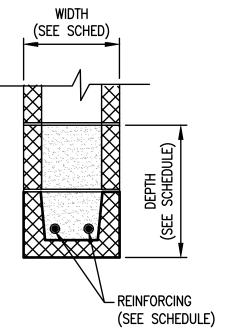
DRAINS (SEE PLUMBING

LOCATION, AND DETAILS)

FOR HATCH OPENING



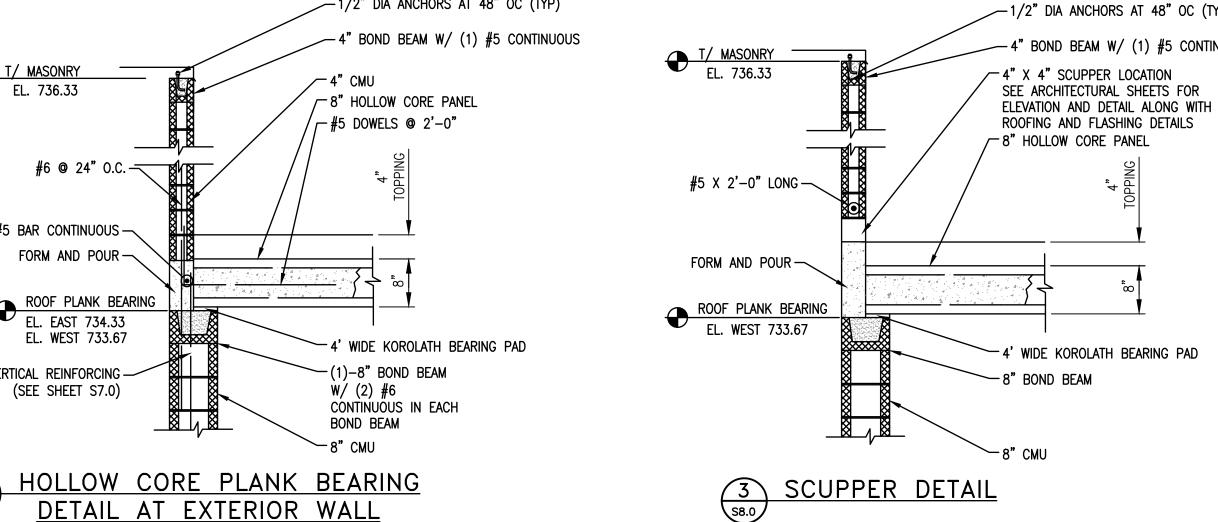
| <u>LINTEL SCHEDULE</u> |                |       |       |                                 |             |  |  |  |  |  |
|------------------------|----------------|-------|-------|---------------------------------|-------------|--|--|--|--|--|
| INTEL<br>UMBER         | LINTEL<br>TYPE | WIDTH | DEPTH | BEARING<br>LENGTH<br>(EACH END) | REINFORCING |  |  |  |  |  |
| L-1                    | Α              | 8"    | 8"    | 4"                              | (2)-#5      |  |  |  |  |  |
| L-2                    | Α              | 8"    | 16"   | 4"                              | (2)-#5      |  |  |  |  |  |
| L-3                    | Α              | 8"    | 8"    | 4"                              | (2)-#5      |  |  |  |  |  |

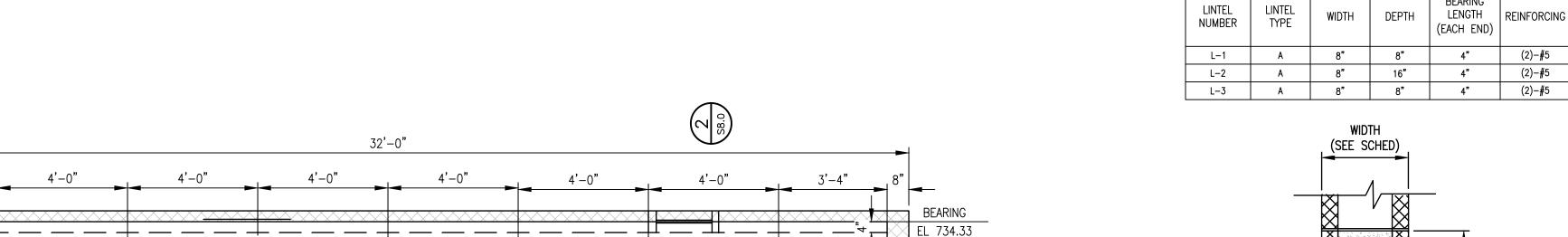


LINTEL TYPE A (CMU OR PRECAST CONCRETE LINTEL)

## <u>NOTES</u>

- 1. PRECAST CONCRETE ROOF PLANKS SHALL BE DESIGNED FOR THE FOLLOWING SUPERIMPOSED LOADS (LOADS IN ADDITION TO THE DEAD WEIGHT OF THE PANELS): A. DEAD LOADS - 15 LBS PER SQUARE FOOT
- 2. PRECAST MANUFACTURER SHALL DESIGN PRECAST HOLLOW CORE ROOF PLANK THE ROOF PENETRATION. HANGERS SHALL BE TYPE 316 STAINLESS STEEL OR GALVANIZED. DESIGN CALCULATIONS SHALL BE SEALED BY A PROFESSIONAL



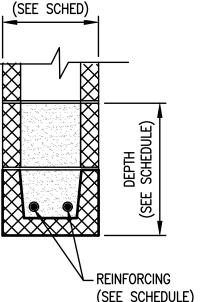


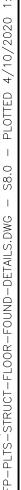
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-8" HOLLOW

CORE ROOF PANELS

BEARING





ROOF SLAB DESIGN NOTES

A. LIVE LOAD/SNOW LOAD: 35 PSF

ADDITION TO SELF WEIGHT OF ROOF PLANKS) LOADS.

C. DEAD WEIGHT OF ROOF TOP UNITS (SEE PLAN)

E. CONCENTRATED LOAD FOR LIFTING EYE: 1500 LBS

D. HANGING LOADS (DEAD LOADS): 15 PSF

PRECAST SLABS SHALL BE DESIGNED FOR THE FOLLOWING SUPERIMPOSED (IN

B. 4" CONCRETE TOPPING & ROOFING (DEAD LOAD): 50 PSF

B. LIVE LOAD - 30 LBS PER SQUARE FOOT

SYSTEM, INCLUDING HOLLOW CORE PLANKS AND ALL REQUIRED STEEL HANGERS AT ENGINEER REGISTERED IN THE STATE OF MICHIGAN.

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50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH 100% DESIGN 02/28/20 TLH FINAL EGLE 04/08/20 TLH

WADE

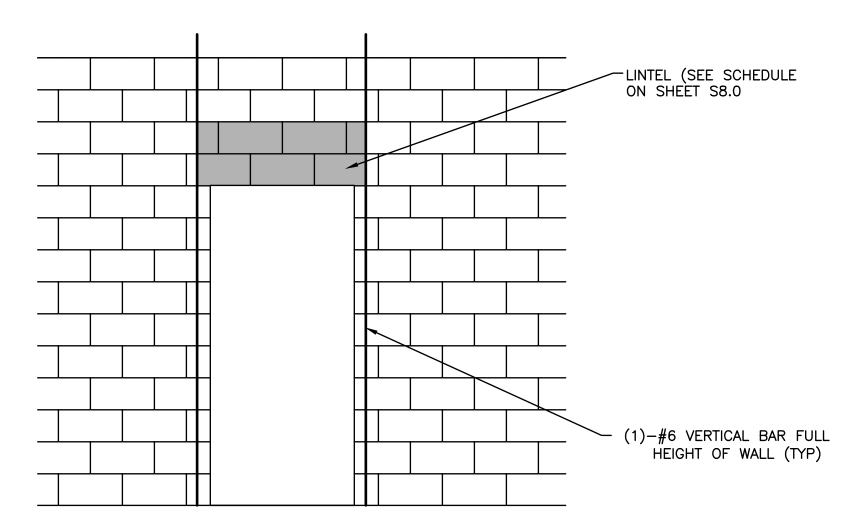
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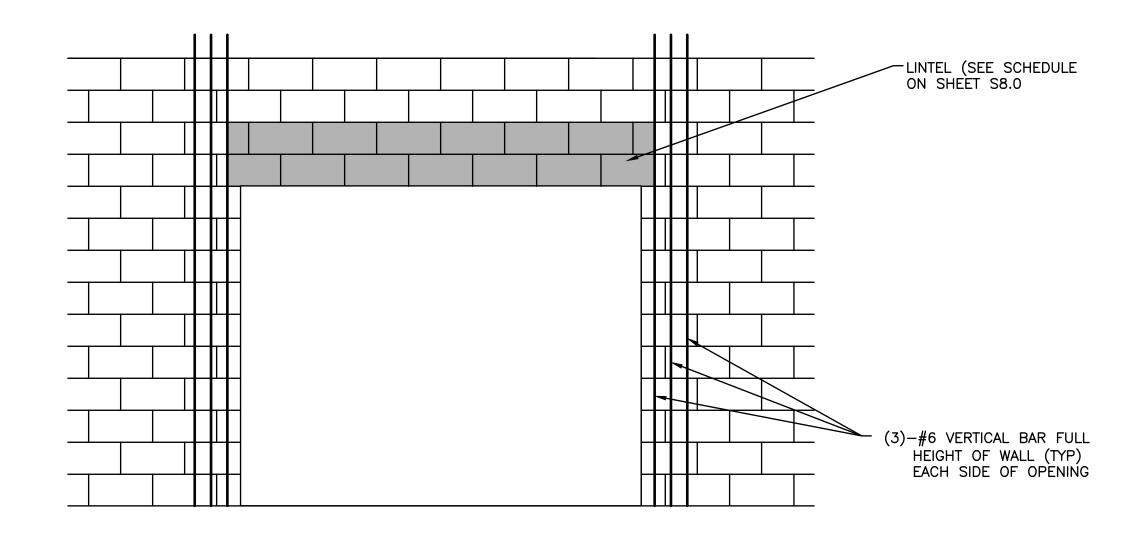
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CITY OF FLINT INFLUENT STRUCTURE ATTERY A GRIT REHAB

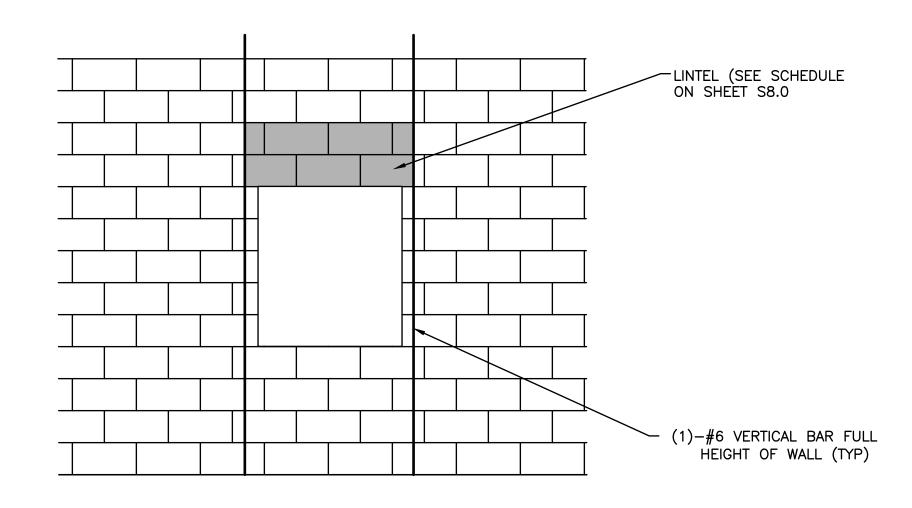
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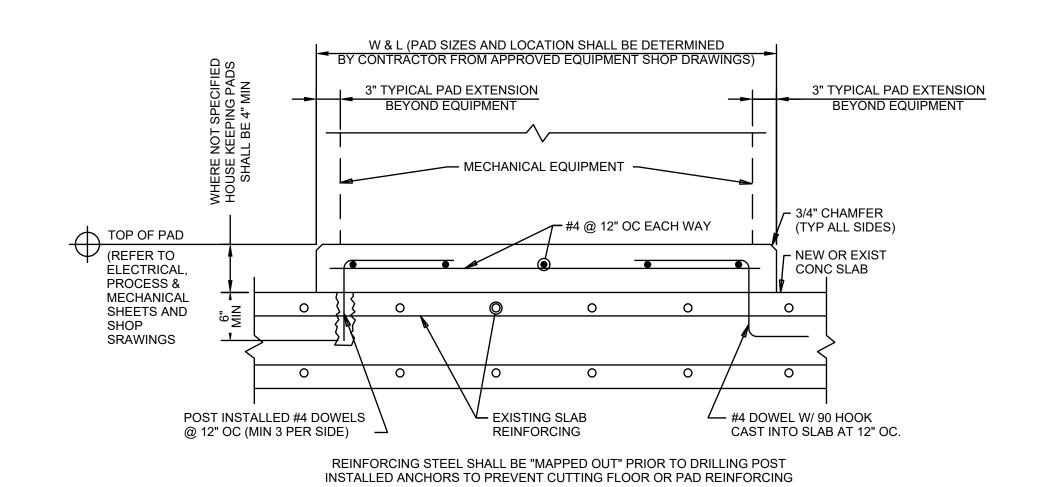
TYP MAN DOOR OPENING - LINTEL TYPE L-1



TYP OVERHEAD DOOR OPENING - LINTEL TYPE L-2



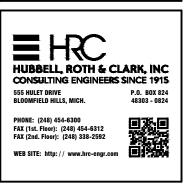
TYP WINDOW OR LOUVER OPENING - LINTEL TYPE L-3



TYPICAL HOUSE KEEPING AND EQUIPMENT PAD SCALE: 1" = 1'-0"

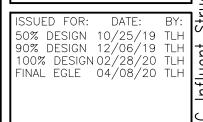


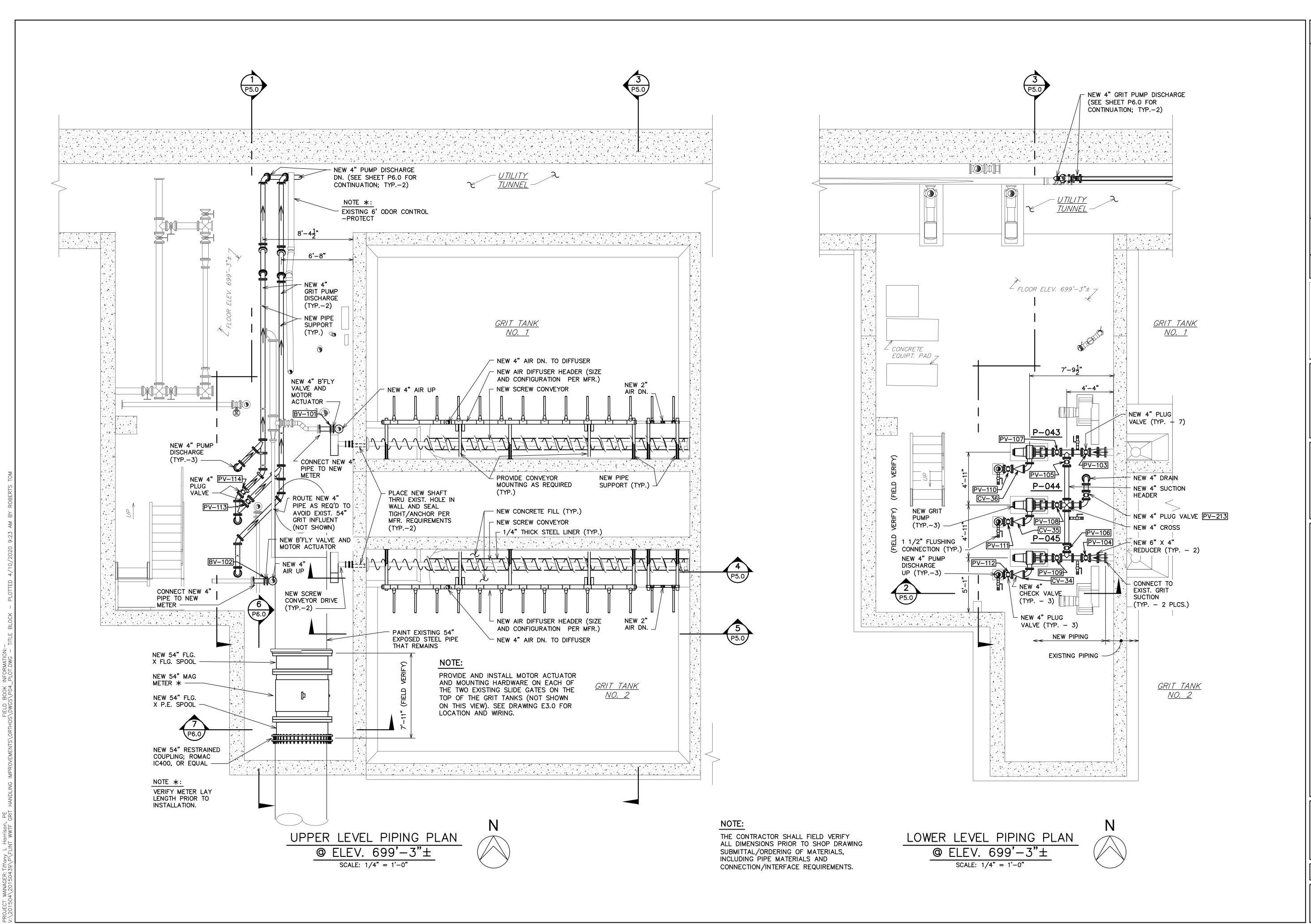












REV# DATE DATE

Page 10-20 FINAL EGLE SUBMITTAL DATE

DESCRIPTION





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CONSULTING ENGINEERS SINCE 1915
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BLOOMFIELD HILLS, MICH.
P.O. BOX 824
48303 - 0824

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555 HULET DRIVE BLOOMFIELD HILLS, MICH. 4830:

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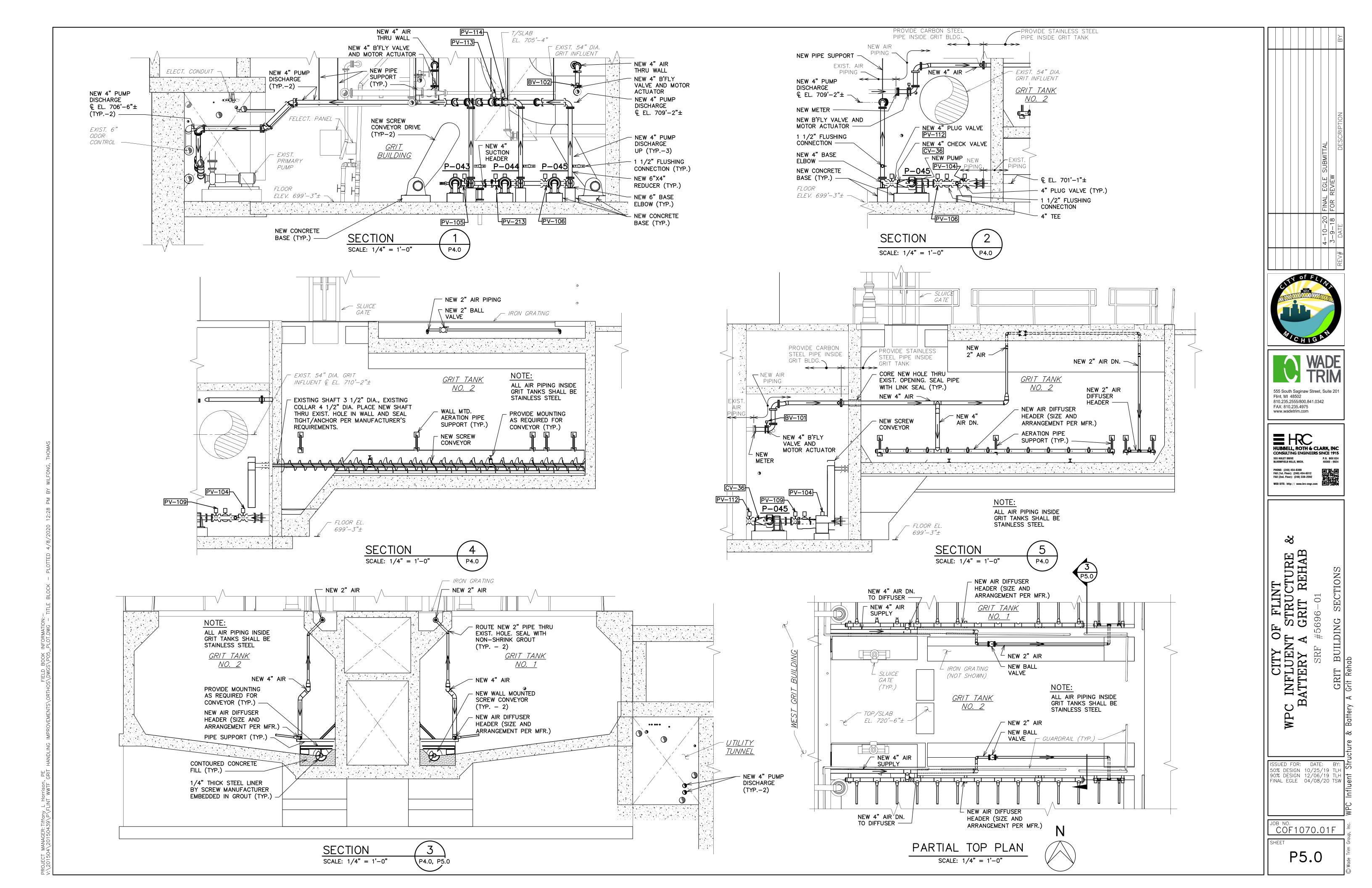
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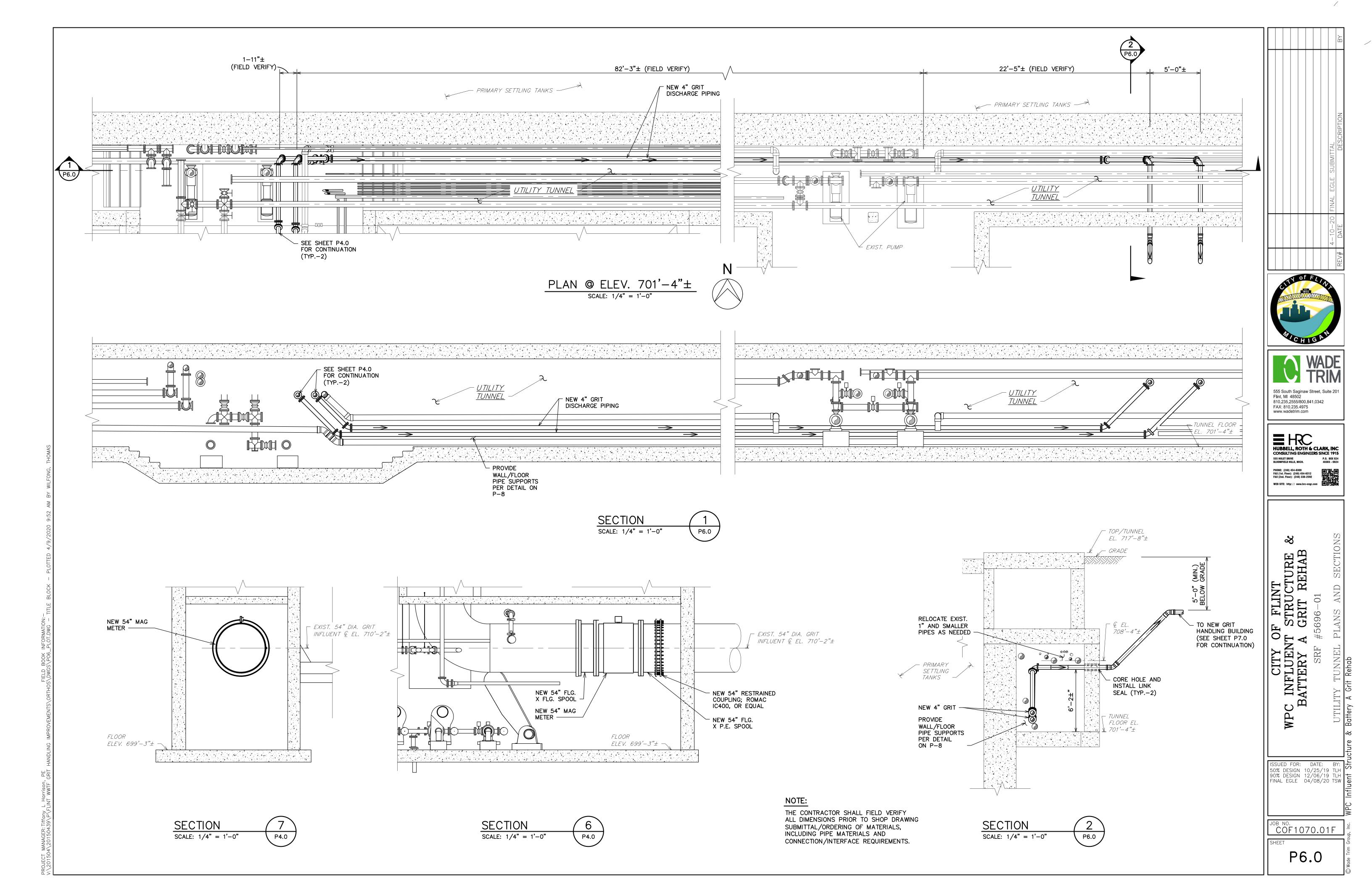
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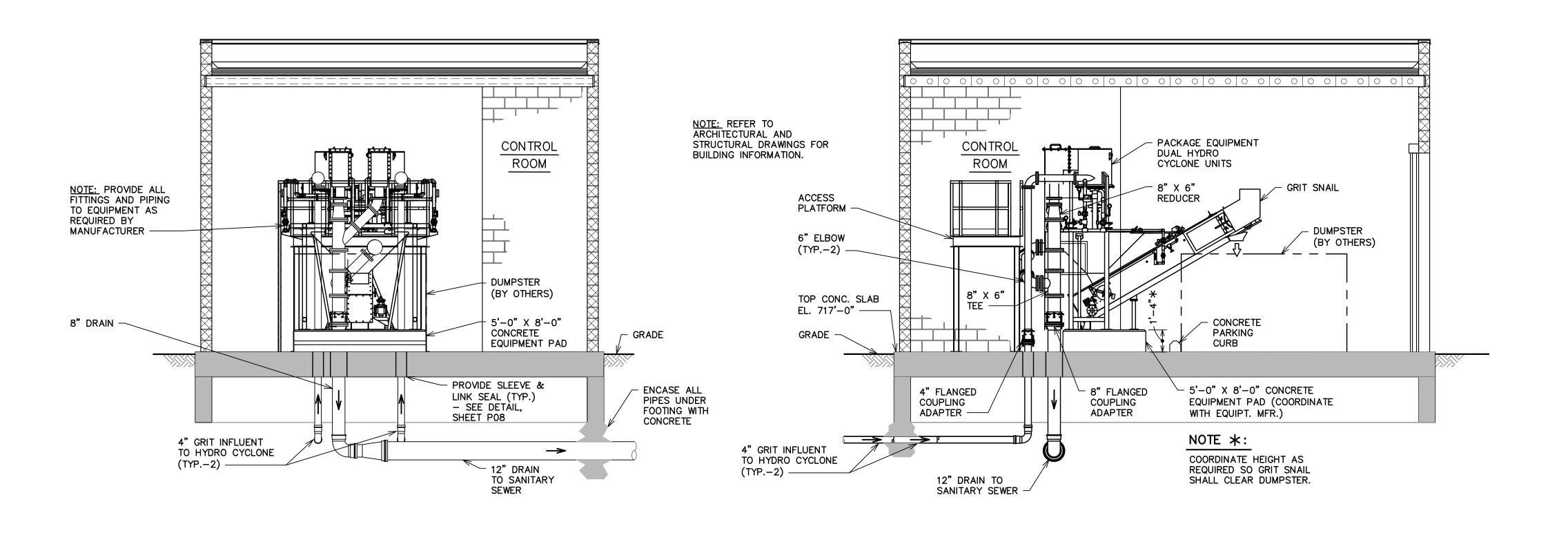
ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

JOB NO. COF1070.01F

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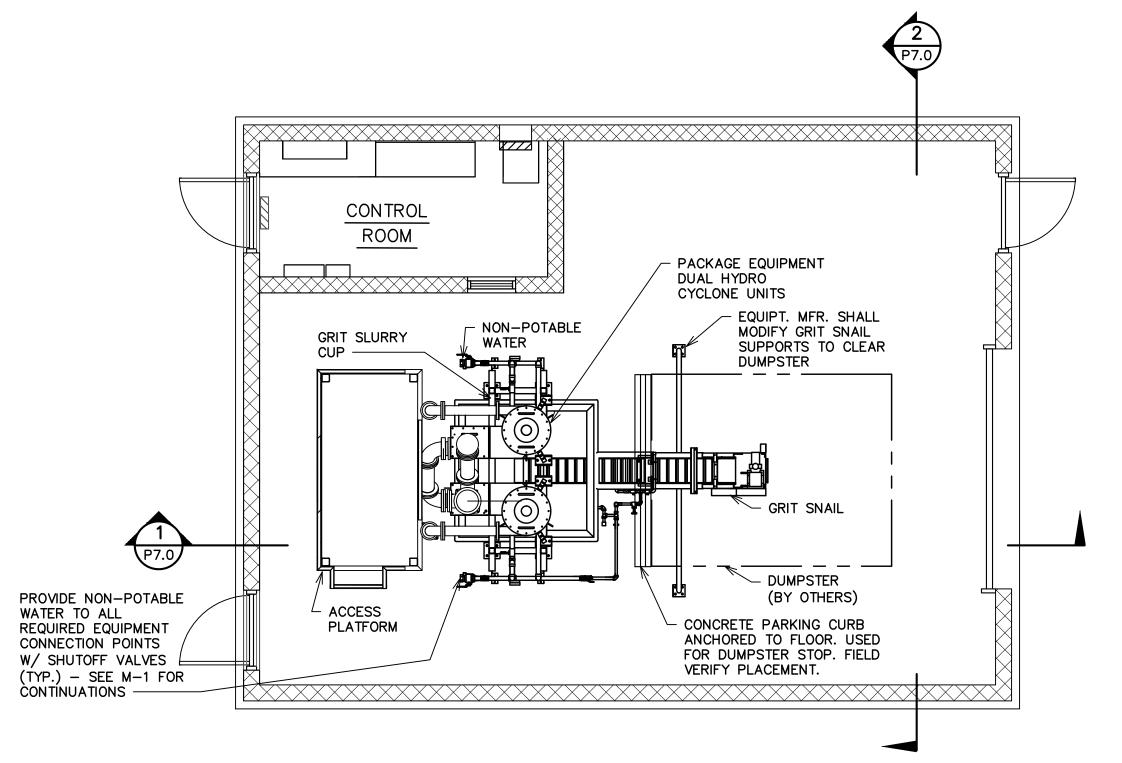
NOTE ★:

P7.0

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

SEE C SHEETS FOR CONTINUATION OF

UNDERGROUND PIPE



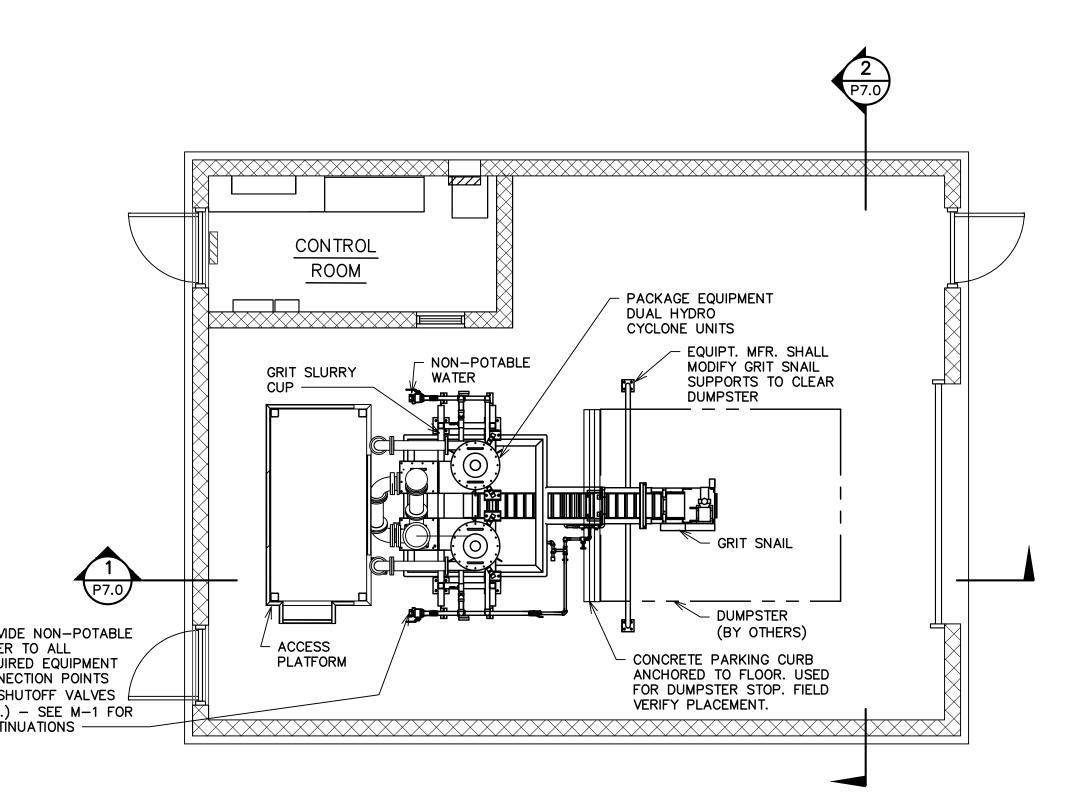
FLOOR PLAN — LOWER LEVEL PIPING

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

SECTION

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

P7.0







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F FLINT STRUCTURE GRIT REHAB CITY OF CINFLUENT S' BATTERY A G

ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

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P7.0

CONCRETE EQUIPMENT BASE DETAIL NO SCALE

NON-THRUST RESTRAINED

- PROVIDE TAR PAPER AS

BOND BREAKER (TYP.)

- FOR THE WIDTH OF

CONCRETE CRADLE,

SEE TABLE BELOW

CHAMFER ALL EDGES

PIPE SIZE CONCRETE

CRADLE

12"& LARGER 1'-2"

SMALLER

TLIAT

THAN 12"

(NON-THRUST

RESTRAINED ONLY)

THRUST RESTRAINED

#4 @ 12" VERT.

CONCRETE PIPE SUPPORT

NO SCALE

DWLS., E.F.

EMBED FLANGE

4" MIN. —

EMBED.

(TYP.)

ANCHOR (TYP.) —

CORE HOLE

AND EPOXY

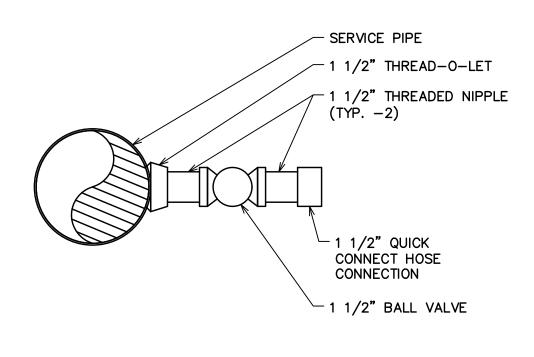
IN CRADLE -

# VALVE SCHEDULE (4" AND ABOVE)

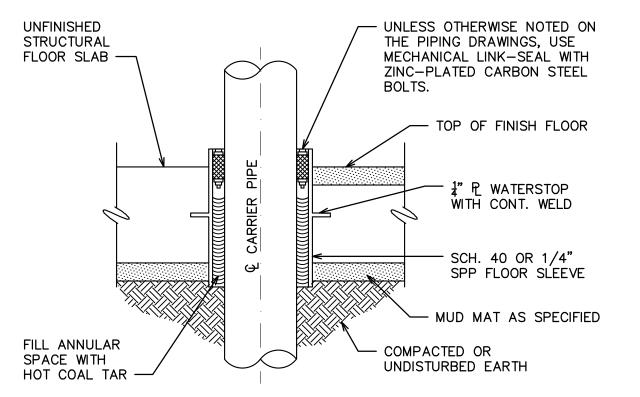
| <b>VALVE DESIGNATION</b> | SIZE | TYPE  | JOINT | FUNCTION            | OPERATOR         | ACCESSORIES | LOCATION                                 |
|--------------------------|------|-------|-------|---------------------|------------------|-------------|--|
| CV-34                    | 4"   | CHECK | FL    | GRIT PUMP CHECK     |                  |             | GRIT BUILDING, PUMP P-045 DISCHARGE PIPE |
| CV-35                    | 4"   | CHECK | FL    | GRIT PUMP CHECK     |                  |             | GRIT BUILDING, PUMP P-044 DISCHARGE PIPE |
| CV-36                    | 4"   | CHECK | FL    | GRIT PUMP CHECK     |                  |             | GRIT BUILDING, PUMP P-043 DISCHARGE PIPE |
| PV-103                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING, PUMP P-043 INLET PIPE     |
| PV-104                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING, PUMP P-045 INLET PIPE     |
| PV-105                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING                            |
| PV-106                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING                            |
| PV-107                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING, PUMP P-043 INLET PIPE     |
| PV-108                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING, PUMP P-044 INLET PIPE     |
| PV-109                   | 4"   | PLUG  | FL    | GRIT PUMP INTAKE    | HANDWHEEL        |             | GRIT BUILDING, PUMP P-045 INLET PIPE     |
| PV-110                   | 4"   | PLUG  | FL    | GRIT PUMP DISCHARGE | HANDWHEEL        |             | GRIT BUILDING, PUMP P-043 DISCHARGE PIPE |
| PV-111                   | 4"   | PLUG  | FL    | GRIT PUMP DISCHARGE | HANDWHEEL        |             | GRIT BUILDING, PUMP P-044 DISCHARGE PIPE |
| PV-112                   | 4"   | PLUG  | FL    | GRIT PUMP DISCHARGE | HANDWHEEL        |             | GRIT BUILDING, PUMP P-045 DISCHARGE PIPE |
| PV-113                   | 4"   | PLUG  | FL    | GRIT PUMP DISCHARGE | CHAINWHEEL (8')  |             | GRIT BUILDING, DISCHARGE PIPE            |
| PV-114                   | 4"   | PLUG  | FL    | GRIT PUMP DISCHARGE | CHAINWHEEL (8')  |             | GRIT BUILDING, DISCHARGE PIPE            |
| PV-213                   | 4"   | PLUG  | FL    | GRIT DRAIN          | HANDWHEEL        |             | GRIT BUILDING, DRAIN PIPE                |
| BV-101                   | 4"   | B'FLY | FL    | AIR-THROTTLING      | MOTOR/THROTTLING | LS(2)       | GRIT BUILDING, AIR SUPPLY                |
| BV-102                   | 4"   | B'FLY | FL    | AIR-THROTTLING      | MOTOR/THROTTLING | LS(2)       | GRIT BUILDING, AIR SUPPLY                |

# PROCESS PIPE SCHEDULE

| FUNCTION      | SIZE       | MATERIAL        | LOCATION  |  |
|---------------|------------|-----------------|-----------|--|
| AIR           | 4" & LESS  | STEEL           | BASEMENT  |  |
| AIR           | 4" & LESS  | STAINLESS STEEL | GRIT TANK |  |
| GRIT          | 12" & LESS | D.I.P.          | ALL       |  |
| GRIT INFLUENT | 54"        | D.I.P. OR STEEL | BASEMENT  |  |

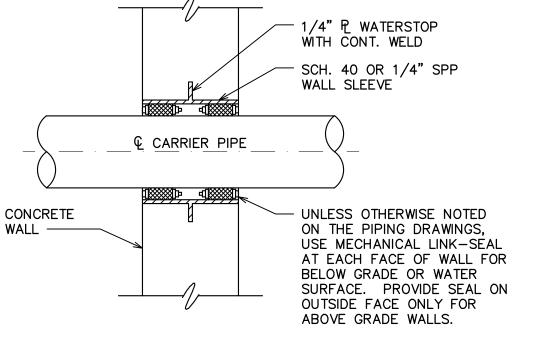


FLUSHING CONNECTION NO SCALE

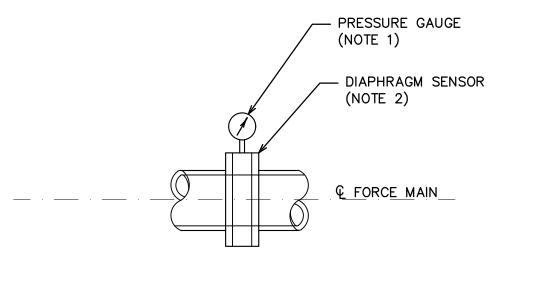


TYPICAL PIPE SLEEVE THROUGH BASE FLOOR SLAB

FOR PIPING 4" DIA. AND LARGER NO SCALE



TYPICAL PIPE/DUCT SLEEVE IN EXTERIOR WALL



#### TYPICAL PROCESS PRESSURE GAUGE NO SCALE

#### **DETAIL NOTES:**

- 1. PRESSURE RANGE SHALL BE 0-20 psi OVER SHUT OFF HEAD. CONTRACTOR TO COORDINATE WITH ENGINEER.
- 2. DIAPHRAGM PRESSURE SENSOR SHALL BE SERIES 40 BY RED VALVE OR APPROVED EQUAL.
- 3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION, MATERIALS & LOCATIONS REQUIRED.

NO SCALE

ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

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F FLINT STRUCTURE GRIT REHAB

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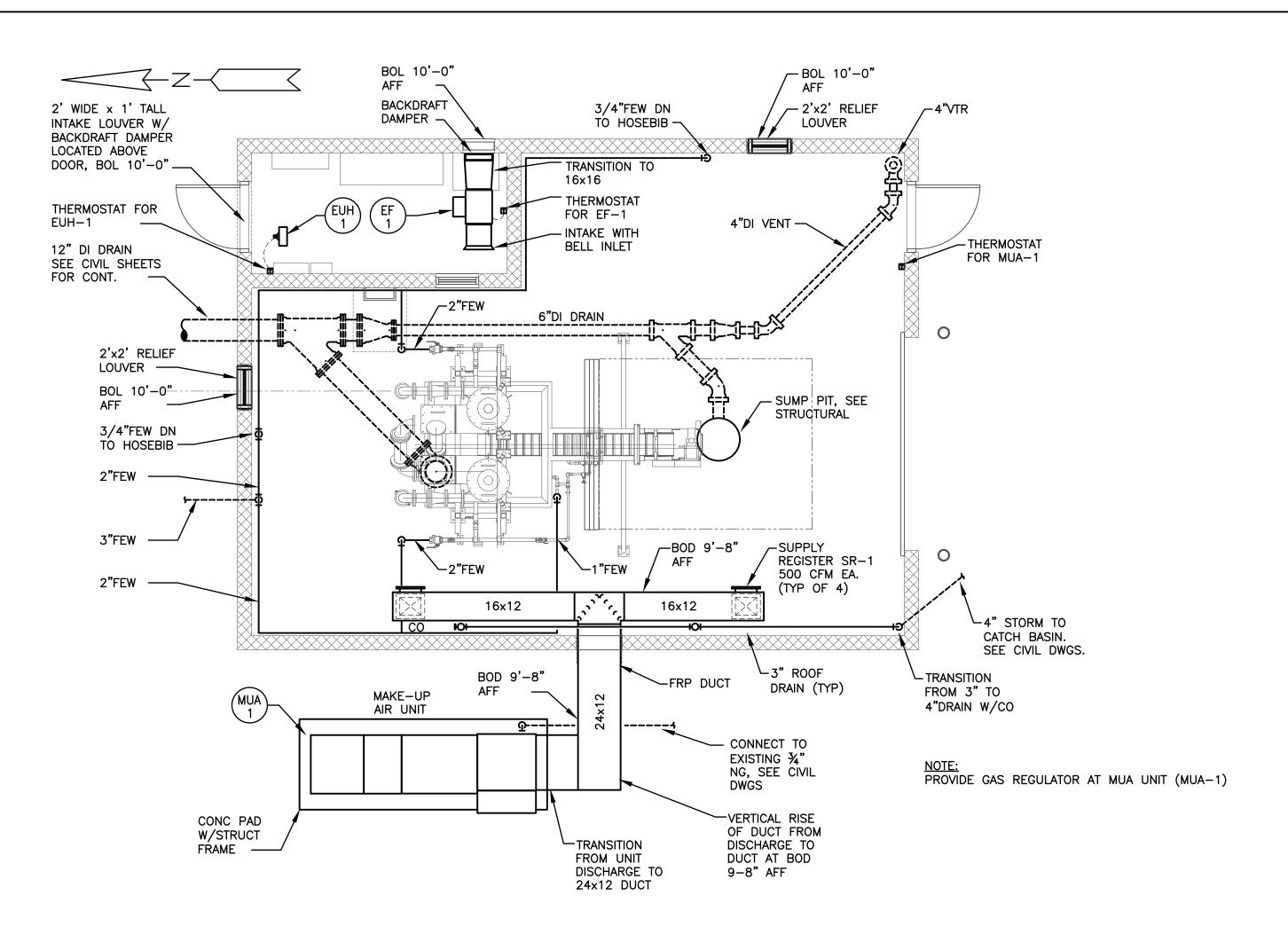
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COF1070.01F

P8.0



|   |      |                       |      |      |      | HEA   | ATING | AND V | 'ENTILA | TING UNITS          | (HV) |                          |          |   |
|---|------|-----------------------|------|------|------|-------|-------|-------|---------|---------------------|------|--------------------------|----------|---|
|   |      |                       |      |      | HP * | VOLTS |       |       | HEATI   | ng section dat      | Ā    |                          | TRANE    | REMARKS   |
| M | MARK | LOCATION              | CFM  | ESP  | RPM  | PHASE | EAT   | LAT   | MBH     | GAS PRESS.<br>REQ'D |      | MIN./MAX.<br>OUTSIDE AIR | MODEL NO | MOTOR SIZE BASED ON ESP AND ISP LOSSES WITH DIRTY FILTER* |
| M | UA-1 | grit bldg<br>exterior | 2000 | .75" | 1.5  | 480 3 | 0     | 110   | 250     | 6"                  | NA   | 100%                     | GRAA-1   | INDIRECT GAS<br>FIRED MUA                                 |

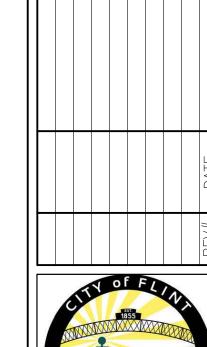
MUA-1 TO RUN CONTINUOUSLY, PROVIDING A 12AC/HR VENTILATION RATE. AIR IS RELIEVED THROUGH THE TWO RELIEF LOUVERS. UNIT SHALL BE PROVIDED WITH ADJUSTABLE DISCHARGE AIR TEMPERATURE CONTROL, WITH CUTOUT OF BURNER WHEN OUTSIDE TEMPERATURE IS ABOVE THE SET POINT OF THE OUTDOOR AIR TEMPERATURE SENSOR.

|       |              |     | ELECTRIC   | UNIT HEATERS | (EUH)       |                    |                 |
|-------|--------------|-----|------------|--------------|-------------|--------------------|-----------------|
| MARK  | LOCATION     | CFM | RPM HP     | MBH KW       | VOLTS PHASE | QMARK<br>MODEL NO. | REMARKS         |
| EUH-1 | CONTROL ROOM | 350 | 1600 1/100 | 10.2         | 480 3       | MUH03-41           | W/REMOTE T'STAT |

|      | EXHAUST FANS |     |     |       |       |         |           |   |  |  |  |
|------|--------------|-----|-----|-------|-------|---------|-----------|---|--|--|--|
|      |              |     |     | MOTOR | VOLTS | ROUGH   | JENCOFAN  | REMARKS                                       |  |  |  |
| MARK | LOCATION     | CFM | SP  | HP    | PHASE | OPENING | MODEL NO. | FURNISH ALL FANS WITH<br>DISCONNECT SWITCHES  |  |  |  |
| EF-1 | CONTROL ROOM | 300 | .33 | 1/4   | 115 1 | NA      | SQD 825   | W/16x16 BACKDRAFT DAMPER<br>AND REMOTE T'STAT |  |  |  |

|      | GRILLE, REGISTER AND DIFFUSER SCHEDULE |              |         |                    |  |  |  |  |  |  |  |
|------|--|--------------|---------|--------------------|--|--|--|--|--|--|--|
| MARK | LOCATION                               | CFM<br>RANGE | NECK    | NECK STYLE REMARKS |  |  |  |  |  |  |  |
| SR-1 | GRIT BLDG                              | 500          | 12 x 10 | TITUS<br>252FL     | STAINLESS STEEL, PAINTED<br>W/OPPOSED BLADE DAMPER |  |  |  |  |  |  |

EF-1 WILL ENERGIZE WHEN ADJUSTABLE THERMOSTAT CALLS FOR COOL. EUH-1 WILL ENERGIZE WITH A DROP IN ROOM TEMPERATURE BY THE WALL OR UNIT MOUNTED THERMOSTAT.









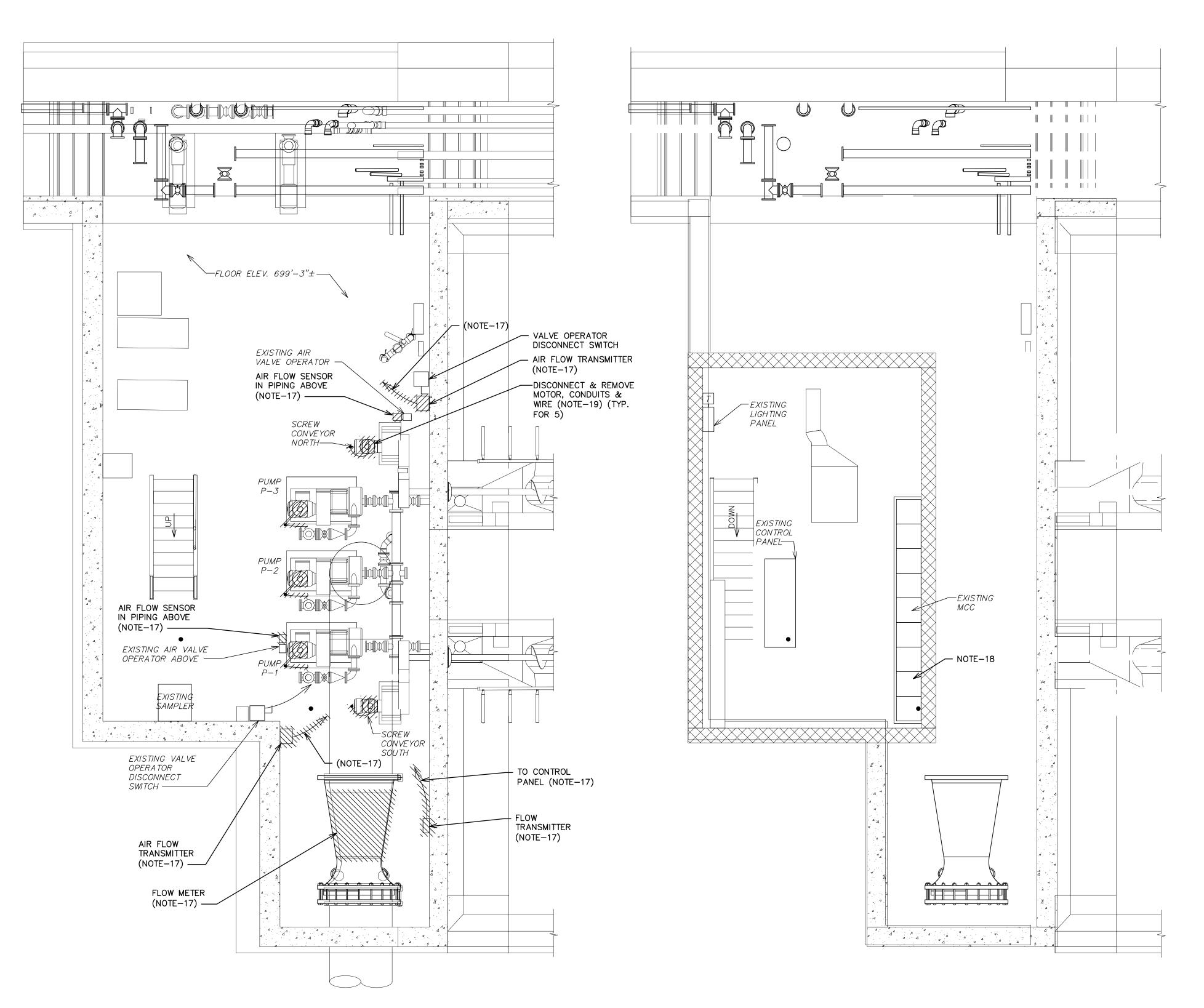


CITY OF FLINT
INFLUENT STRUCTURE 8
BATTERY A GRIT REHAB
SRF #5696-01

ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH 100% DESIGN 02/28/20 TLH FINAL EGLE 04/08/20 TLH

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M1.0



ELECTRICAL LOWER LEVEL POWER PLAN EL. 699'-3"±

SCALE: 1/4" = 1/-0"

ELECTRICAL GRADE LEVEL POWER PLAN EL. 720'-9"±

SCALE: 1/4" = 1/-0"

## **ELECTRICAL DEMOLITION NOTES:**

(APPLIES TO ALL DWGS. WHERE APPLICABLE)

- 1. THE CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY CHECK THE FIELD CONDITIONS AND THE EXISTING ELECTRICAL INSTALLATION PRIOR TO SUBMITTING A BID.
- 2. ALL DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER.
- 3. ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDE REMOVING OF EXISTING LIGHTING FIXTURES, DISCONNECT SWITCHES, WIRE, CONDUIT, BOXES, ETC., AS INDICATED ON THE DRAWINGS AND SHALL BE BY
- 4. REMOVE ALL CONDUIT, WIRE, HANGERS, CLAMPS, ETC., THAT ARE NOT BEING REUSED UNLESS CONCEALED ABOVE CEILINGS OR IN WALLS, WHICH MAY BE ABANDONED AND LEFT IN PLACE. CONDUIT IN FLOOR SLAB SHALL BE CUT FLUSH WITH SLAB AND PLUGGED WITH NON-SHRINK GROUT.
- 5. REMOVE ALL WIRE IN EXISTING CONCEALED ABANDONED CIRCUITS. EXISTING CONCEALED CONDUITS (IF APPLICABLE) MAY BE RE-USED FOR NEW WIRING.
- 6. EXISTING CONDUITS AND BRANCH CIRCUIT WIRING MAY BE REUSED WHERE APPLICABLE. IF CONDUIT AND WIRING IS NOT REUSED IT SHALL BE REMOVED.
- 7. ALL OPENINGS CREATED BY REMOVAL OF CONDUITS THROUGH EXISTING WALLS OR FLOORS SHALL BE SEALED TO MATCH EXISTING.
- 8. REVISE ALL EXISTING LIGHTING PANEL DIRECTORIES AND MCC NAMEPLATES TO REFLECT ALL REVISIONS TO BRANCH CIRCUIT BREAKERS IN THE EXISTING PANELS AND MCC'S.
- 9. VERIFY REMOVAL OF ALL EXISTING POWER AND CONTROL WIRING WITH THE OWNER PRIOR TO START OF DEMOLITION WORK.
- 10. ALL SALVAGED ELECTRICAL EQUIPMENT SHALL BECOME THE PROPERTY OF THE OWNER AND SHALL BE STORED AT AN ON SITE LOCATION AS DIRECTED BY THE OWNER.
- 11. ALL EXISTING PANELBOARDS, LIGHTING FIXTURES, WIRING DEVICES, TELEPHONE OUTLETS, ETC., SHALL REMAIN IN THEIR EXISTING LOCATIONS, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 12. REMOVE EQUIPMENT AS SHOWN, INCLUDING ALL ASSOCIATED CONDUIT AND WIRE.
- 13. ALL EXISTING ELECTRICAL EQUIPMENT SHALL BE REMOVED. ALL ABANDONED EXPOSED CONDUIT SHALL BE REMOVED.
- 14. COORDINATE TERMINATION OF SERVICE WITH THE DTE ENERGY CO. (REF. NOTES ON SHEET E1 FOR CONTACT PERSON). DTE ENERGY CO. SHALL DISCONNECT SERVICE TO THE SITES. CONTRACTOR SHALL PULL WIRES FROM UNDERGROUND CONDUITS, AND CUT OFF CONDUITS BELOW GRADE WHEN ABANDONED.
- 15. ALL EXISTING LIGHTING FIXTURES, WIRING DEVICES, ELECTRICAL EQUIPMENT, PANELS, ETC. SHALL REMAIN IN THEIR EXISTING LOCATIONS, UNLESS OTHERWISE NOTED ON THE PLANS.
- 16. ALL INTERRUPTIONS OF POWER (IF REQUIRED) FOR DISCONNECTING OR CONNECTIONS OF POWER FOR THE NEW PUMP INSTALLATION SHALL BE AS AUTHORIZED BY THE OWNER.
- 17. REMOVE WIRE BACK TO SOURCE, CONDUIT MAY BE RE-USED WHERE POSSIBLE. REMOVE UNUSED CONDUIT. COORDINATE WITH DWG. #D-1 FOR EXACT EQUIPMENT LOCATIONS.
- 18. REMOVE MOTOR STARTERS FOR SCREW CONVEYOR NORTH AND SOUTH. REMOVE CONTROL WIRE BACK TO MCC CONTROL LOGIX UNIT. MCC BUCKETS TO BE RE-USED IF POSSIBLE. EXISTING STARTERS ARE LOCATED IN BOTTOM TWO MCC BUCKETS/SPACES OF SECTION.
- 19. REMOVE CONDUIT TO FLOOR PLUG CONDUIT AND SEAL WITH NON-METALLIC, NON-SHRINK GROUT TO MATCH EXISTING FLOOR.





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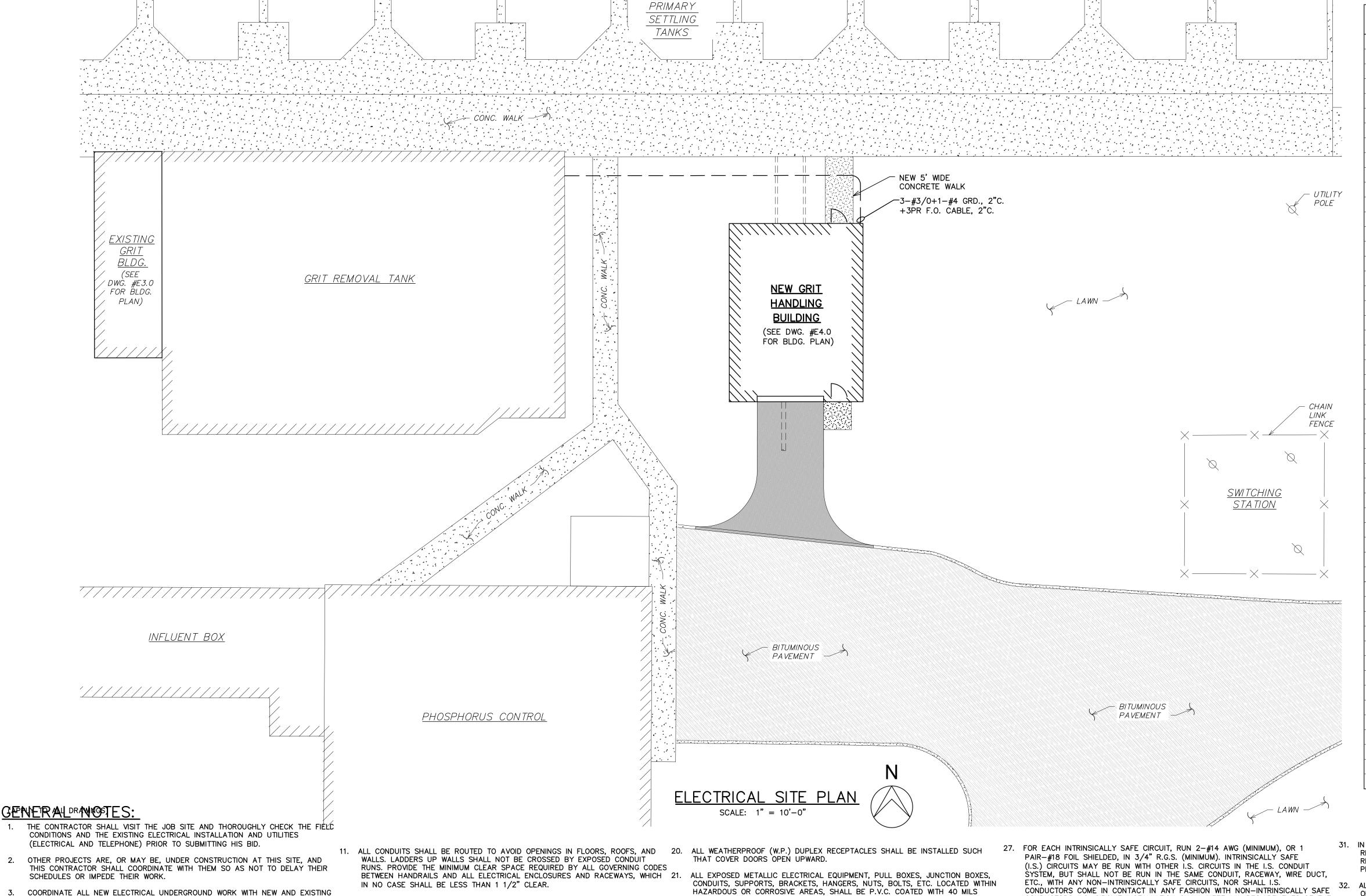
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F FLINT STRUCTURE GRIT REHAB CITY OF CINFLUENT SA BATTERY A G

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LIGHTING FIXTURE EMERGENCY LIGHTING FIXTURE, TYPE "EM" OR "EMXP" EXIT LIGHT SINGLE POLE SWITCH COMBINATION STARTER (THREE PHASE) MANUAL STARTER (SINGLE PHASE; P = PILOT LIGHT) DISCONNECT SWITCH (F=FUSED) SELECTOR SWITCH PUSHBUTTON STATION (SEE WIRING DIAG'S FOR TYPE) FLOW SWITCH PRESSURE SWITCH LIMIT SWITCH SOLENOID VALVE OPERATOR LIGHTING PANELBOARD DISTRIBUTION PANELBOARD CONTROL PANEL 120 V. DUPLEX RECEPTACLE JUNCTION BOX  $\square_{\mathsf{P.B.}}$ PULL BOX THERMOSTAT MOTOR, 1 PHASE MOTOR, 3 PHASE \_\_\_\_\_ CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALL CONDUIT RUN CONCEALED IN OR BELOW FLOOR SLAB CONDUIT RUN EXPOSED DISTRIBUTION PANEL POSITION NUMBER MCC POSITION NUMBER  $-\boxtimes$ CONDUIT SEALING FITTING BUILDING GROUND CONDUCTOR COPPER GROUND ROD, 3/4" DIA. X 10'-0" LONG DIRECT BURIAL R.G.S. CONDUIT DIRECT BURIAL POLYVINYL CHLORIDE CONDUIT SCHED. 40 POLYVINYL CHLORIDE CONDUIT RIGID GALVANIZED STEEL A.F.F. ABOVE FINISHED FLOOR WATERTIGHT (NEMA 4) WATERTIGHT, CORROSION RESISTANT (NEMA 4X) WEATHERPROOF (NEMA 3R) EXPLOSIONPROOF (NEMA 7) X.P. CONDUIT MOTOR CONTROL CENTER GROUND CONDUCTOR INTRINSICALLY SAFE I.S. VARIABLE FREQUENCY CONTROLLER CIRCUIT BREAKER C.B. CONTROL PANEL LIGHTING PANEL LPA CIRCUIT 6 (OTHER PANELS SIMILAR) LPA-6 30 AMP, 3 POLE (OTHER SIZES SIMILAR) EQUIPMENT, ETC. TO BE REMOVED

ELECTRICAL LEGEND

LIGHTING FIXTURE PENDANT OR CEILING MOUNTED LIGHTING FIXTURE WALL OR STANCHION MOUNTED

- UNDERGROUND UTILITIES BEFORE INSTALLATION.
- ALL EMPTY CONDUITS AND/OR EMPTY DUCTS IN DUCT BANKS SHALL BE PROVIDED WITH A FISH LINE.
- ALL DIRECT BURIED CONDUITS SHALL BE 30" BELOW GRADE (MIN.), AND SHALL SLOPE (MINIMUM 3" PER 100') TO MANHOLES, HANDHOLES, CABLE VAULTS, OR OTHER STRUCTURES.
- EXCEPT WHERE ENTERING MANHOLES, HANDHOLES, BUILDINGS, LIGHT POLE BASES, AND TRANSFORMER PAD. UNDERGROUND CONDUITS AND/OR DUCTS SHALL BE RIGID GALVANIZED STEEL WITHIN 10'-0" OF THE STRUCTURE. ALL CONDUITS AND/OR DUCTS UNDER BUILDINGS SHALL BE RIGID GALVANIZED STEEL.
- PROVIDE WATERTIGHT HUBS AT CONDUIT ENTRANCES TO ALL ENCLOSURES ENCLOSURES MOUNTED INDOORS. ALL NEMA TYPE 4 & 4X ENCLOSURES, EXCEPT

  16. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING THOSE IN CORROSIVE AREAS, SHALL BE EQUIPPED WITH A DRAIN/BREATHER
- EXPANSION OR EXPANSION/DEFLECTION FITTINGS SHALL BE PROVIDED FOR ALL CONDUITS CROSSING BUILDING EXPANSION JOINTS.
- ALL POWER FEEDERS SHALL BE RUN IN INDIVIDUAL CONDUITS, FROM SOURCE TO LOAD, AS INDICATED IN SCHEDULES, WIRING DIAGRAMS, OR BY HOME RUNS ON
- 10. ALL ELECTRICAL WORK SHALL COMPLY WITH N.E.C., AND THE CITY OF FLINT LOCAL CODES, ORDINANCES, AND REGULATIONS INCLUDING MISOHA.

- 12. ALL CONDUITS FOR 480VAC POWER FEEDERS, BRANCH CIRCUITS, AND INSTRUMENTATION SHALL BE RUN EXPOSED OVERHEAD, UNLESS SHOWN OTHERWISE ON THE PLANS.
- 13. ALL ELECTRICAL FLOOR MOUNTED EQUIPMENT SUCH AS MOTORS, CONTROL PANELS, AND METALLIC SUPPORT RACKS SHALL HAVE A #2 (UNLESS OTHERWISE NOTED) BARE GROUND CONDUCTOR TIE BETWEEN THE MOTOR FRAME, ENCLOSURE OR SUPPORT LEG AND THE BUILDING GROUND SYSTEM.
- ALL UNDERGROUND CONDUITS AND/OR DUCTS IN DUCT BANKS SHALL BE P.V.C., 14. GROUND CONDUCTOR SPLICING AND BONDING SHALL BE ACCOMPLISHED BY THE USE OF EXOTHERMIC WELDING.
  - 15. PROVIDE A GREEN GROUND CONDUCTOR IN ALL SYSTEMS CONDUITS, EXCEPT INSTRUMENT SIGNAL AND ALARM CONDUITS, INCLUDING BRANCH CIRCUIT CONDUITS FOR LIGHTING AND RECEPTACLES. GROUND CONDUCTOR SIZING SHALL BE PER N.E.C. TABLE 250-95 (MINIMUM) WHERE NOT SIZED ON THE DRAWINGS.
    - FIXTURES AND ELECTRICAL DEVICES WITH MECHANICAL PIPING AND DUCTWORK BEFORE INSTALLATION.
  - 17. ALL THREADED MECHANICAL CONNECTIONS ON ELECTRICAL EQUIPMENT (CONDUIT, 26. FOR ALL 120 VAC LIGHTING AND RECEPTACLE CIRCUITS, RUN 2-#12 (MINIMUM) COUPLINGS, JUNCTION BOXES, ETC.) INSTALLED WITHIN WET AREAS, HAZARDOUS AREAS, OR OUTDOORS SHALL BE COATED WITH ANTI-SEIZE COMPOUND PRIOR TO INSTALLATION.
  - ALL WALL AND RACK MOUNTED CONTROL STATIONS, RECEPTACLES, AND LIGHTING SWITCHES SHALL BE 4'-0" A.F.F., UNLESS NOTED OTHERWISE ON THE PLANS.
  - 19. ALL WALL AND RACK MOUNTED DISCONNECT SWITCHES, CONTROL PANELS, AND LIGHTING PANELS SHALL BE 5'-6" TO TOP, ABOVE FINISHED FLOOR.

- HAZARDOUS OR CORROSIVE AREAS, SHALL BE P.V.C. COATED WITH 40 MILS (MIN.) COVERING. WHERE FACTORY P.V.C. COATING IS NOT AVAILABLE OR WHERE P.V.C. COATING WOULD VOID U.L. LISTING OR LABELING, FACTORY OR FIELD COATING WITH A CORROSION RESISTANT, EPOXY PAINT SHALL BE PROVIDED.
- 22. ALL PENETRATIONS OF FIRE WALLS OR FLOORS SHALL BE SEALED AFTER INSTALLATION OF CONDUIT WITH A FIRE RETARDANT SEALANT THAT IS RATED THE SAME AS THE FIRE WALL OR FLOOR.
- 23. ALL CONDUITS AND/OR SLEEVES THAT PASS THROUGH WALLS OR FLOORS SEPARATING HAZARDOUS AREAS FROM NON-HAZARDOUS AREAS SHALL BE SEALED GAS TIGHT WITH NON-METALLIC, NON-SHRINK GROUT AFTER CONDUIT IS INSTALLED.
- SPACE BETWEEN WALL AND EQUIPMENT (PROVIDE NON-CORROSIVE SPACERS OR BRACKETS AS REQUIRED).
- 25. ALL ELECTRICAL EQUIPMENT AND WIRING WITHIN THE WET WELL, GRIT ROOM, AND GRIT WASHER AREA SHALL BE INSTALLED IN ACCORDANCE WITH THE N.E.C. REQUIREMENTS FOR CLASS I, DIVISION 1, GROUP D HAZARDOUS LOCATIONS.
- + #12 GRD., 3/4"C. TO THE LIGHTING PANELBOARD INDICATED, UNLESS NOTED OTHERWISE. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR BRANCH CIRCUIT WIRING.

- CONDUCTORS, I.S. CIRCUIT INSTALLATION SHALL MEET ALL REQUIREMENTS OF THE
- 28. 4-20 MA, INSTRUMENT SIGNAL AND DC TOTALIZED PULSE CABLES, MAY BE RUN WITH OTHER INSTRUMENT SIGNAL CABLES IN THE INSTRUMENT CONDUIT SYSTEM. INSTRUMENT SIGNALS SHALL NOT BE RUN IN THE SAME CONDUIT WITH ANY OTHER TYPE OF ALARM, CONTROL AND/OR POWER WIRING.
- 29. DC ALARM WIRING SHALL BE #14 AWG AND MAY BE RUN WITH OTHER ALARM WIRING IN THE ALARM CONDUÏT SYSTEM. ALARM WIRING SHALL NOT BE RUN IN THE SAME CONDUIT WITH ANY OTHER TYPE INSTRUMENT SIGNAL, CONTROL, OR POWER WIRING, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- 24. ALL WALL MOUNTED ELECTRICAL EQUIPMENT SHALL HAVE A 1/2" (MINIMUM) AIR 30. 120VAC CONTROL AND GRAPHIC WIRING SHALL BE #14 AWG MINIMUM AND MAY BE RUN IN THE SAME CONDUIT WITH ASSOCIATED POWER WIRING. 120VAC CONTROL AND GRAPHIC WIRING SHALL NOT BE RUN IN THE SAME CONDUIT WITH ANY OTHER TYPE INSTRUMENT SIGNAL, ALARM, OR UNASSOCIATED CONTROL OR POWER WIRING, UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- 31. IN AREAS WHERE ELECTRICAL WORK DISTURBS EXISTING SOD, GROUND SHALL BE REGRADED AS REQUIRED AND SOD SHALL BE REPAIRED OR REPLACED, AS REQUIRED, TO RETURN THE SITE TO A CONDITION MEETING OR EXCEEDING THAT PRIOR TO THE BEGINNING OF WORK.
- 32. ALL SALVAGED MATERIALS SHALL BE TURNED OVER TO THE OWNER OR DISPOSED OF AS DIRECTED BY THE OWNER.
- LATEST REVISIONS OF N.E.C. ARTICLE 504, ANSI/ISA RP-12.6, AND ANSI/UL 913. 33. HAND DIG WHERE REQUIRED TO LOCATE EXISTING UTILITIES PRIOR TO INSTALLATION OF THE NEW DIRECT BURIAL CONDUIT.

# NOTICE

ALL EXISTING UTILITIES SHOWN ON THIS TOPOGRAPHIC SURVEY HAVE BEEN TAKEN FROM VISUAL OBSERVATION, AND RECORD MAPPING, WHERE AVAILABLE. NO GUARANTEE IS MADE. OR SHOULD BE ASSUMED, AS TO THE COMPLETENESS OR ACCURACY OF THE UTILITIES SHOWN ON THIS DRAWING. PARTIES UTILIZING THIS INFORMATION SHALL FIELD VERIFY THE ACCURACY AND COMPLETENESS PRIOR TO CONSTRUCTION ACTIVITIES.

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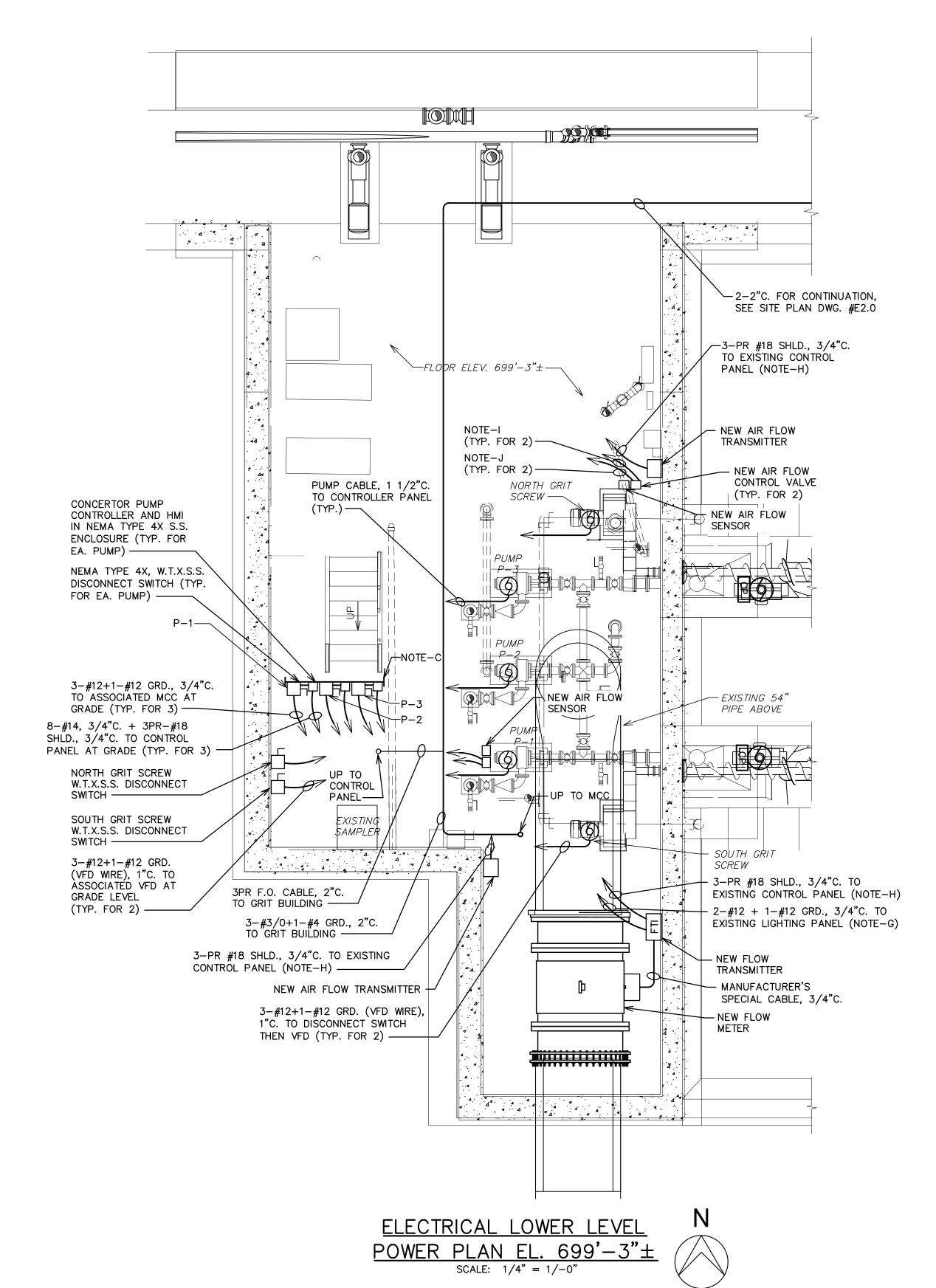
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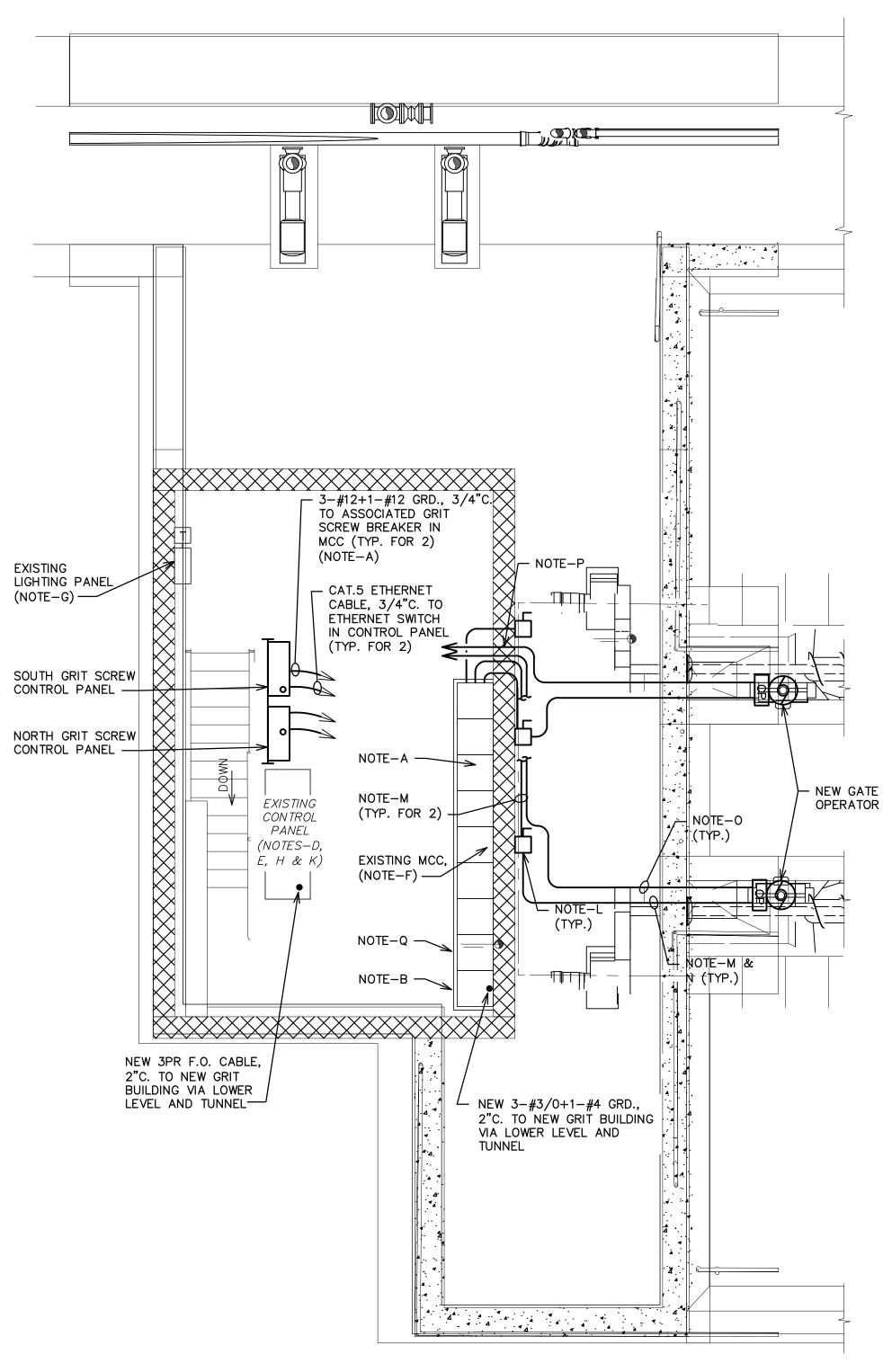
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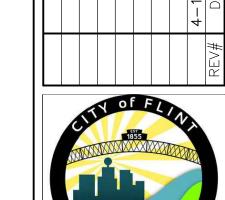
ELECTRICAL GRADE LEVEL POWER PLAN EL. 720'-9"±

SCALE: 1/4" = 1/-0"



## **NOTES:**

- A. IN MCC SECTION, INSTALL ONE (1) NEW 3P., 20A., CIRCUIT BREAKER IN EACH EXISTING BUCKET FOR SCREW CONVEYOR NORTH & SCREW CONVEYOR SOUTH BUCKET. IN MCC PROVIDE & INSTALL DEVICENET SYSTEM ACCESSORY & 2-#14 TO PLC FOR EACH NEW CIRCUIT BREAKER.
- B. IN EXISTING MCC SECTION, INSTALL ONE (1) NEW 3P., 100A., CIRCUIT BREAKER IN EXISTING SPACE/BUCKET FOR THE NEW GRIT BUILDING. FURNISH AND INSTALL NEW MCC DOOR(S) AS REQUIRED. IN MCC PROVIDE & INSTALL DEVICENET SYSTEM ACCESSORY & 2-#14 TO PLC FOR EACH NEW CIRCUIT
- C. MOUNT EQUIPMENT RACK TO ALLOW 6'-6" CLEAR HEIGHT AROUND EQUIPMENT.
- D. CONNECT NEW FIBER-OPTIC CABLE TO SPARE F.O. PORT TO ALLOW COMMUNICATIONS TO THE EXISTING SCADA SYSTEM.
- E. CONNECT NEW CAT5 CABLE FROM VFD'S TO EXISTING SPARE PORTS IN THE F.O. CAT5 CONVERTER.
- F. FOR NEW GRIT PUMPS 1, 2 & 3, REPLACE EACH EXISTING MCC BUCKET WITH NEW BUCKET INCLUDING 20A., 3-POLE CIRCUIT BREAKER. IN MCC PROVIDE & INSTALL DEVICENET SYSTEM ACCESSORY & 2-#14 TO PLC FOR EACH NEW CIRCUIT
- G. IN EXISTING LIGHTING PANEL, INSTALL ONE (1) NEW 20A., 1-POLE CIRCUIT BREAKER TO POWER NEW FLOW TRANSMITTER. NEW CIRCUIT BREAKER SHALL MATCH EXISTING BREAKERS & PANEL MANUFACTURER.
- H. RE-USE EXISTING CONDUIT BACK TO CONTROL PANEL WHERE POSSIBLE. CONNECT NEW FLOW SIGNAL TO EXISTING PLC ANALOG INPUT.
- I. NEW 3-#12 + 1-#12 GRD., 3/4"C. TO EXISTING CIRCUIT BREAKER IN MCC. RE-USE EXISTING CONDUIT WHERE POSSIBLE.
- NEW 3PR-#18 SHLD., 3/4"C. TO PLC IN CONTROL PANEL. RECONNECT TO EXISTING INPUTS. RE-USE EXISTING CONDUIT WHERE POSSIBLE.
- K. PROVIDE 24VDC POWER, AND FUSED TERMINAL BLOCKS, FOR I/O FROM GRIT PUMP CONTROLLERS AS REQUIRED.
- L. NEW 600V., 30A., 3-POLE W.T.X., STAINLESS STEEL DISCONNECT SWITCH.
- M. 3-#12 + 1-#12 GRD., 3/4°C.
- N. ROUTE CONDUITS OVERHEAD, MAINTAIN 7'-0" OVERHEAD CLEARANCE MINIMUM.
- 0. 4-#14 (24VDC) + 3PR-#18 SHLD., 3/4°C. + 4-#14 (120VDC) SIGNAL), 3/4"C. TO PLC IN EXISTING CONTROL PANEL.
- P. CORE DRILL WALL FOR NEW CONDUIT PENETRATIONS. CONDUIT PENETRATIONS SHALL BE ADJACENT TO EXISTING MCC.
- Q. IN EXISTING MCC SECTION, INSTALL TWO (2) NEW 3P., 30A., CIRCUIT BREAKERS IN EXISTING SPACE/BUCKET FOR NEW GATE OPERATORS. FURNISH AND INSTALL NEW MCC DOOR(S)/COVER(S) AS REQUIRED. IN MCC PROVIDE AND INSTALL DEVICENET SYSTEM ACCESSORY AND 2-#14 TO PLC FOR EACH CIRCUIT BREAKER.





555 South Saginaw Street, Suite 201 Flint, MI 48502 810.235.2555/800.841.0342 FAX: 810.235.4975 www.wadetrim.com



PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 338-2592 WEB SITE: http://www.hrc-engr.com

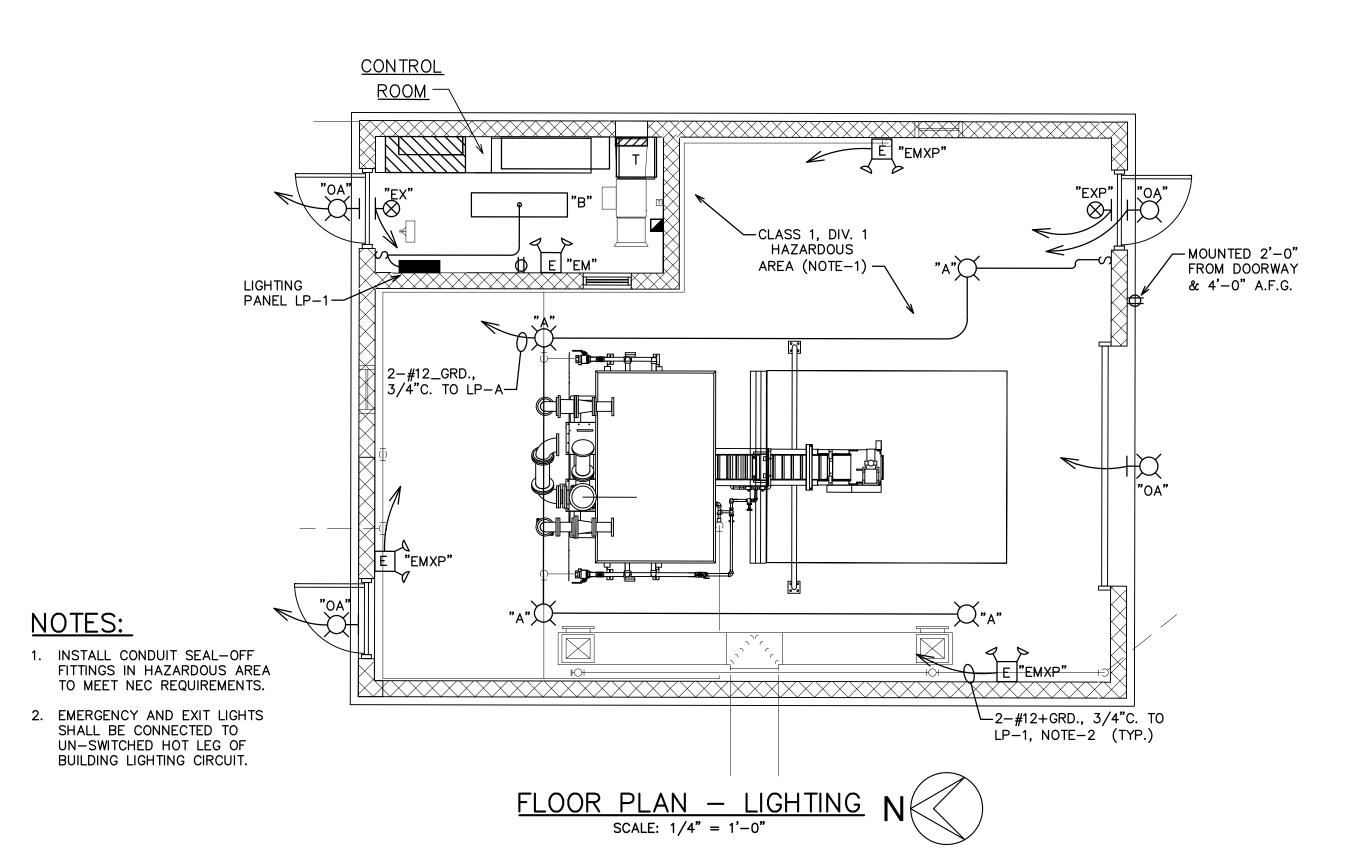
F FLINT STRUCTURE GRIT REHAB

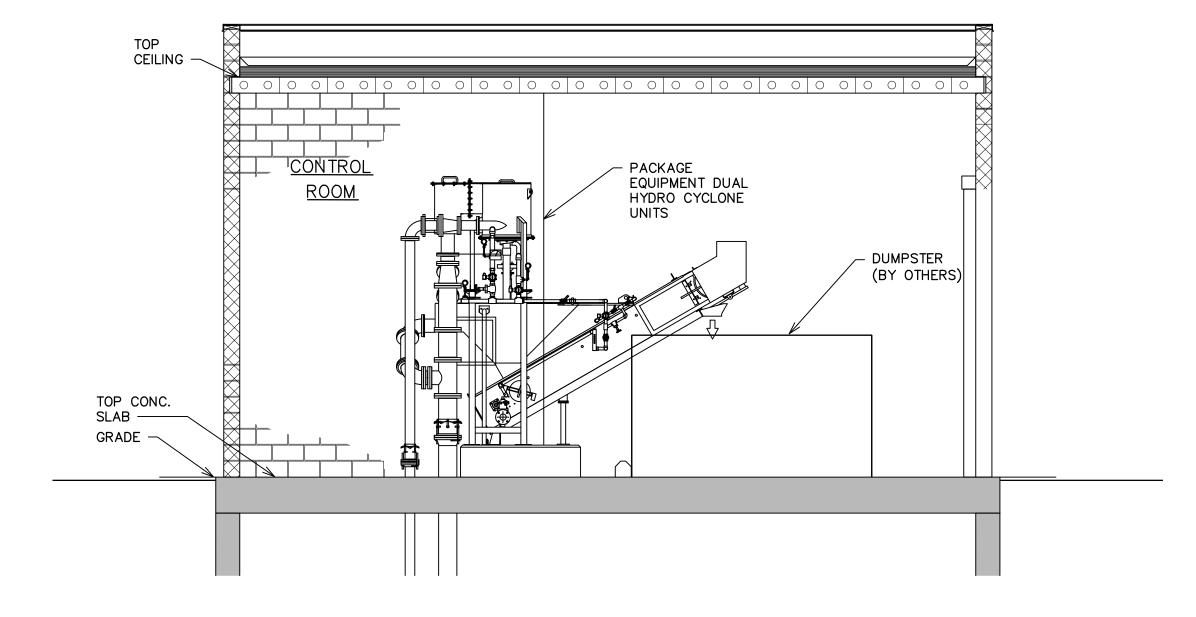
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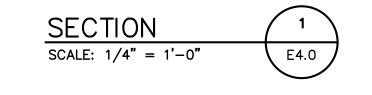
ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

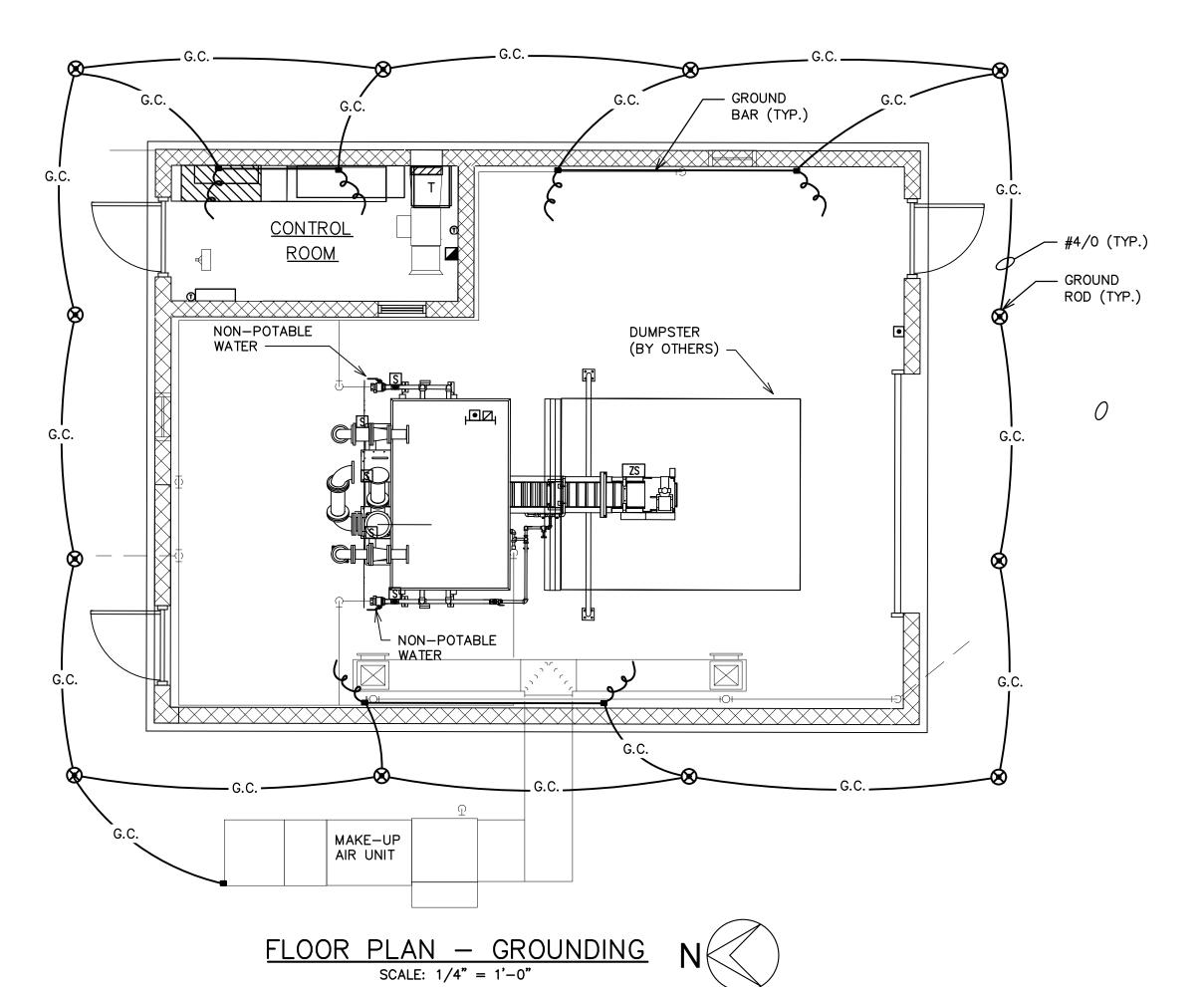
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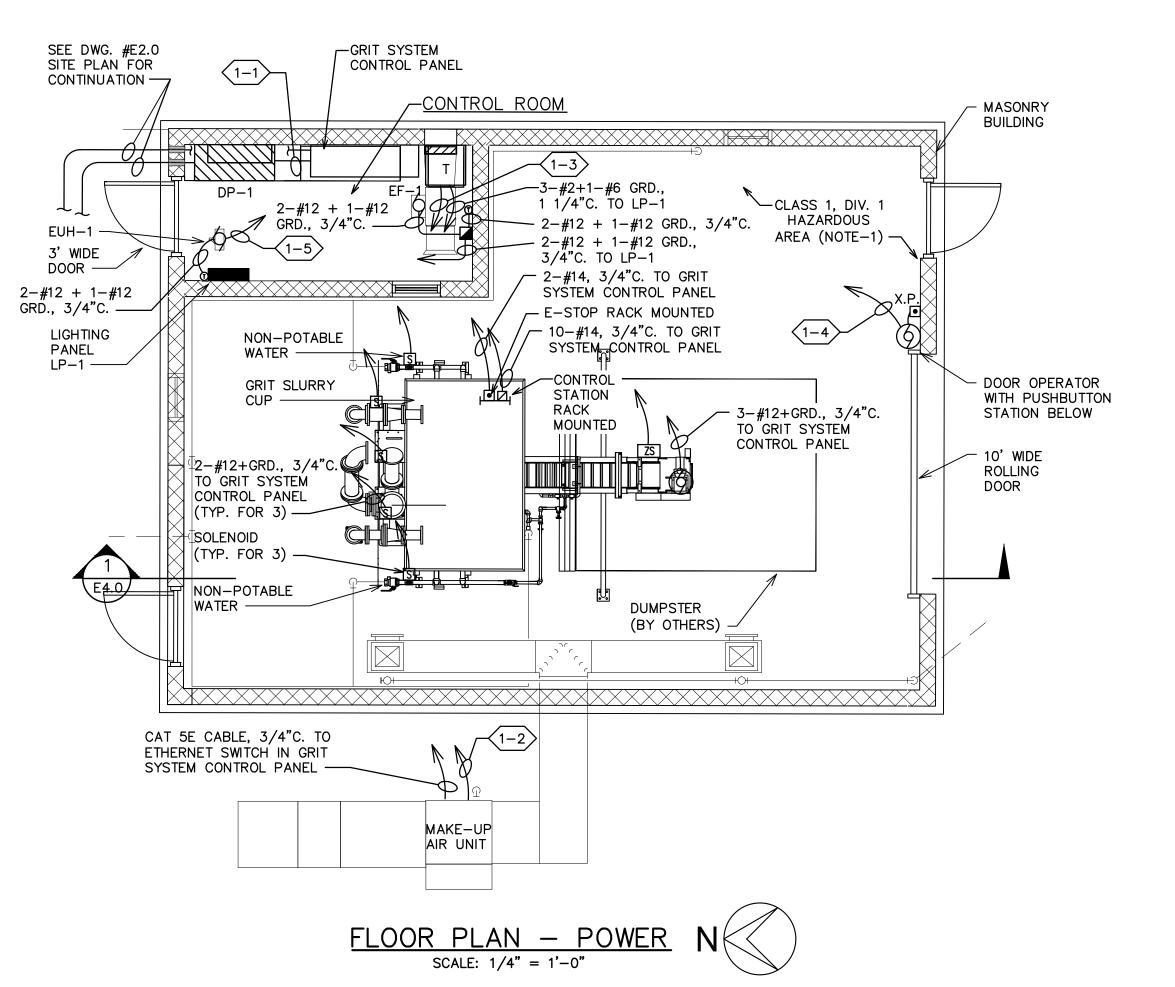
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E4.0

HUBBELL, ROTH & CLARK, INC 555 HULET DRIVE BLOOMFIELD HILLS, MICH. PHONE: (248) 454-6300 FAX (1st. Floor): (248) 454-6312 FAX (2nd. Floor): (248) 338-2592

555 South Saginaw Street, Suite 201

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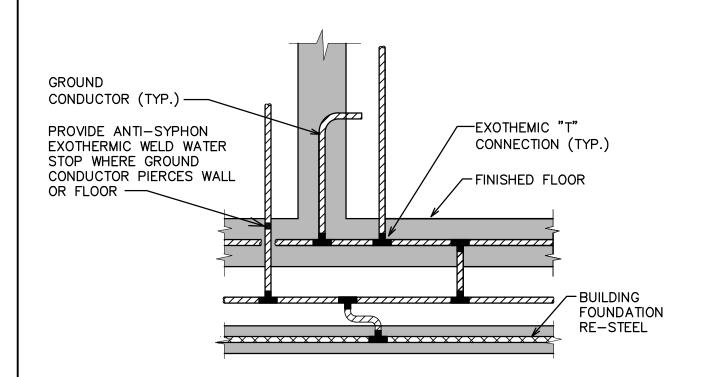
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C STRUCTURE

GRIT REHAB

#5696-01

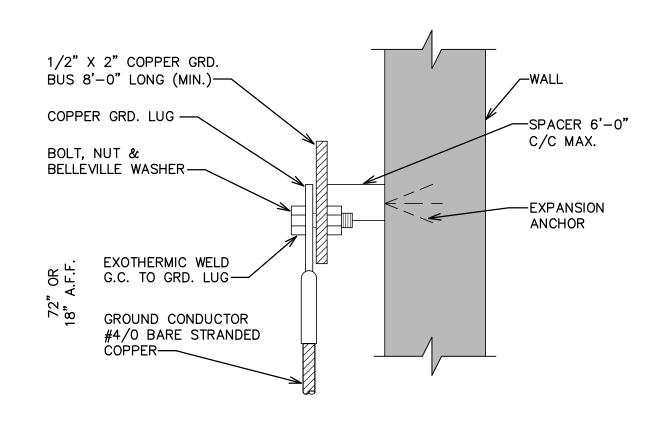
CITY OF CINFLUENT SUBATTERY A G



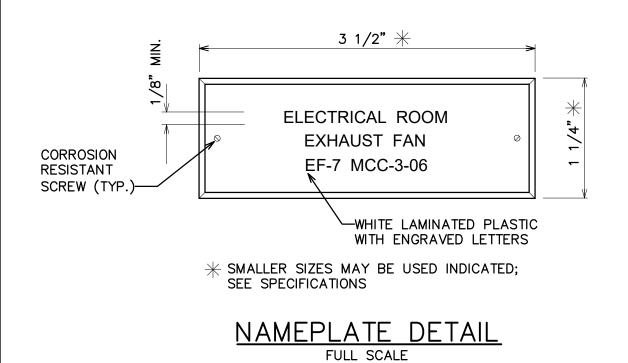
# GROUND CONDUCTOR DETAIL

#### NOTES:

- A. ALL FLOOR OR WALL MOUNTED EQUIPMENT SUCH AS CONTROL PANELS, DISC. SWITCHES, LIGHTING PANELS, POWER DISTRIBUTION PANELS, AND LIGHTING TRANSFORMERS (INCLUDING PACKAGE EQUIPMENT FURNISHED AND INSTALLED BY OTHERS) SHALL HAVE A GROUND CONDUCTOR TIE BETWEEN THE EQUIPMENT AND THE GROUND MAT
- B. MINIMUM GROUND CONDUCTOR SIZES: #4/0-GROUND LOOP IN OR BELOW FLOOR SLAB AND ALL MAJOR RISERS #2-480 VOLT EQUIPMENT #6-120 VOLT EQUIPMENT



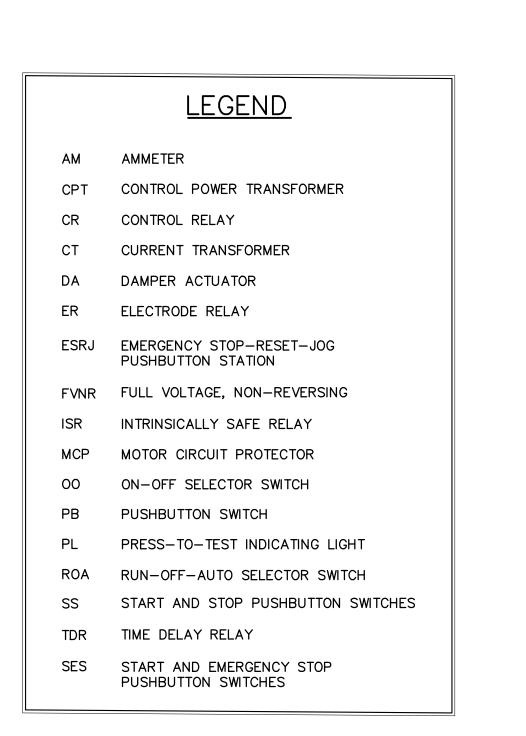
# GROUND BUS DETAIL N.T.S.

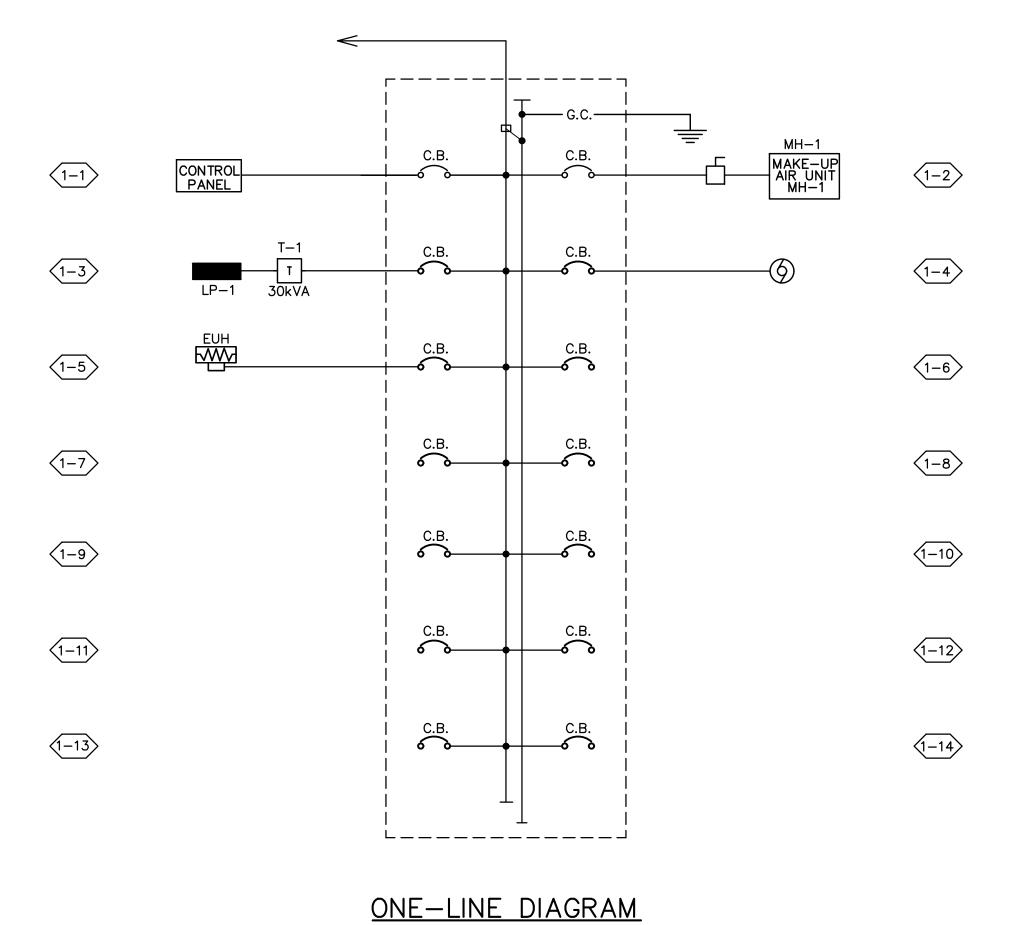


|              | DDIVD         |                                      | 10  | OAD (WATT | 'S) |
|--------------|---------------|--------------------------------------|-----|-----------|-----|
| CIRC.<br>NO. | BRKR.<br>SIZE | ITEM SERVED                          | øχ  | ØΥ        | ø   |
| 1            | 20A,1P        | RECEPTACLES - CONTROL ROOM           | 300 |           |     |
| 3            | 20A,1P        | EXHAUST FAN                          |     | 100       |     |
| 5            | 20A,1P        | RECEPTACLES - EXTERIOR               |     |           | 3   |
| 7            | 20A,1P        | SPARE                                |     |           |     |
| 9            |               | SPACE                                |     |           |     |
| 11           |               | SPACE                                |     |           |     |
| 13           |               | SPACE                                |     |           |     |
| 15           |               | SPACE                                |     |           |     |
| 17           |               | SPACE                                |     |           |     |
| 19           |               | SPACE                                |     |           |     |
| 2            | 20A,1P        | LIGHTS - CONTROL ROOM                | 62  |           |     |
| 4            | 20A,1P        | LIGHTS - GRIT ROOM, EMERGENCY & EXIT |     | 676       |     |
| 6            | 20A,1P        | OUTDOOR LIGHTS                       |     |           | 10  |
| 8            | 20A,1P        | SPARE                                |     |           |     |
| 10           | 20A,1P        | SPARE                                |     |           |     |
| 12           | 20A,1P        | SPARE                                |     |           |     |
| 14           |               | SPACE                                |     |           |     |
| 16           |               | SPACE                                |     |           |     |
| 18           |               | SPACE                                |     |           |     |
| 20           |               | SPACE                                |     |           |     |

|             | DIS                       |        |                |       |                     |      | P-1" SCHEDULE EAKER AND GROUND BUS |                   |
|-------------|---------------------------|--------|----------------|-------|---------------------|------|------------------------------------|-------------------|
|             | NAMEPLATE ENGRAVING **    | 400 %. | CONN.          |       | OVERCURI<br>PROTECT | RENT |                                    | DEMARKS           |
| POS.<br>No. | DESCRIPTION               | DESIG. |                |       | BRKR TRIP           |      | WIRE AND CONDUIT                   | REMARKS           |
| (1-1)       | GRIT SYSTEM CONTROL PANEL | GSCP   | 1/2 HP<br>3kVA | 21A   | 30A                 | 3    | 3-#10 + GRD., 3/4"C.               | PACKAGE EQUIPMENT |
| 1-2         | MAKE-UP AIR UNIT          | MH-1   | 1.5HP          | 2.5A  | 50A                 | 3    | 3-#8 + GRD., 3/4"C.                | PACKAGE EQUIPMENT |
| 1-3         | LIGHTING TRANSFORMER      | T-1    | 30kVA          | 36A   | 50A                 | 3    | 3-#8 + GRD., 3/4"C.                | PACKAGE EQUIPMENT |
| 1-4         | ROLLING DOOR OPERATOR     | D-1    | 1/2HP          | 1.1A  | 20A                 | 3    | 3-#12 + GRD., 3/4"C.               |                   |
| 1-5         | ELECTRICAL UNIT HEATER    | EUH-1  | 3KW            | 6.25A | 20A                 | 3    | 3-#12 + GRD., 3/4"C.               |                   |
| 1-6         | SPARE                     |        |                | -     | 30A                 | 3    |                                    |                   |
| (1-7)       | SPARE                     |        |                | -     | 20A                 | 3    |                                    |                   |
| 1-8         |                           |        |                | -     |                     |      |                                    |                   |
| 1-9         |                           |        |                |       |                     |      |                                    |                   |
| 1-10        |                           |        |                |       |                     |      |                                    |                   |
| (1-11)      | ·                         |        |                |       |                     |      |                                    |                   |
| (1-12)      |                           |        |                |       |                     |      |                                    |                   |
| 1-13        |                           |        |                |       |                     |      |                                    |                   |
| (1-14)      |                           |        |                |       |                     |      |                                    |                   |
|             | TOTAL CONNECTED           | LOAD   |                |       |                     |      |                                    |                   |

\* SEE NAMEPLATE DETAIL ON THIS DWG.. NAMEPLATES FOR SPARES SHALL BE BLANK.





DISTRIBUTION PANEL "DP-1"

ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

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555 South Saginaw Street, Suite 201

HUBBELL, ROTH & CLARK, INC

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Flint, MI 48502

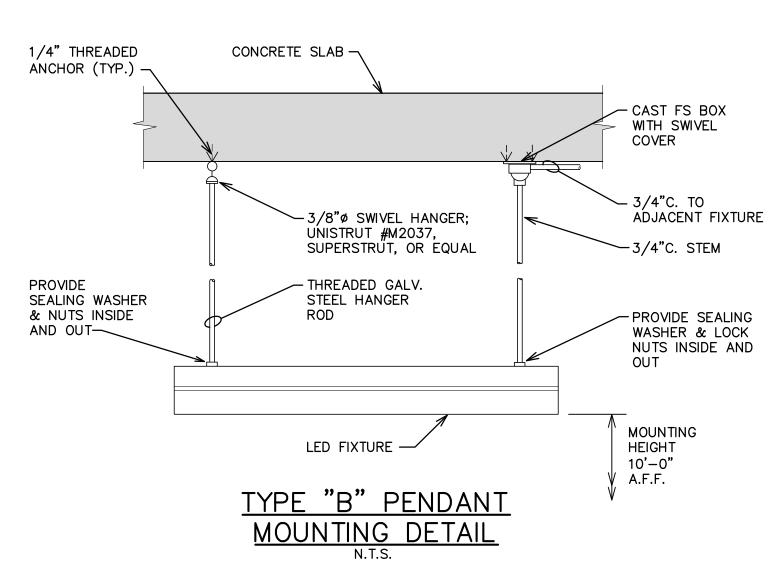
555 HULET DRIVE Bloomfield Hills, Mich.

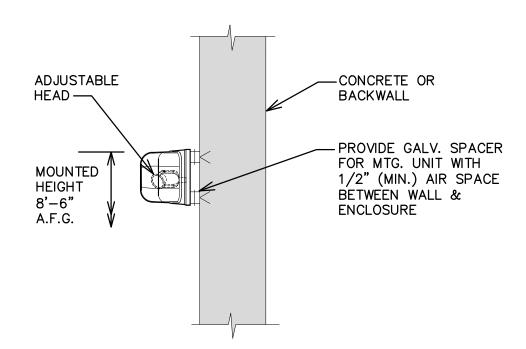
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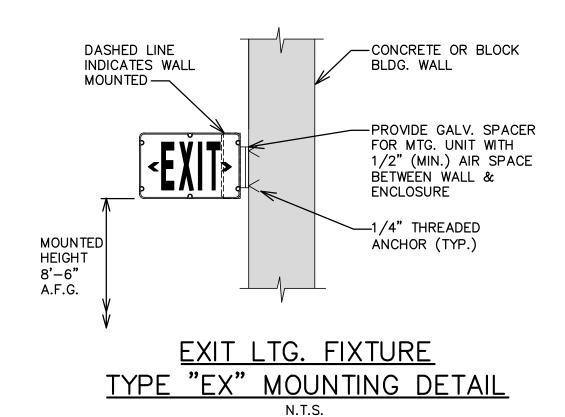
CITY OF FLINT
PC INFLUENT STRUCTURE 8
BATTERY A GRIT REHAB
SRF #5696-01

E5.0

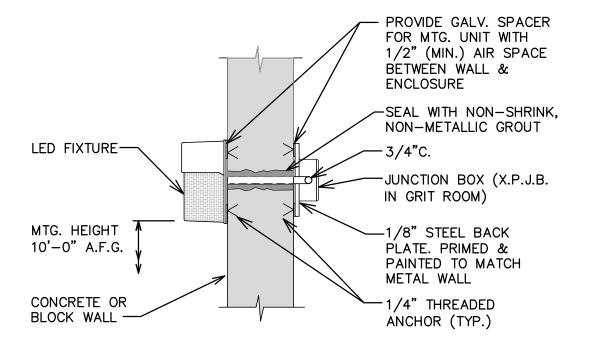




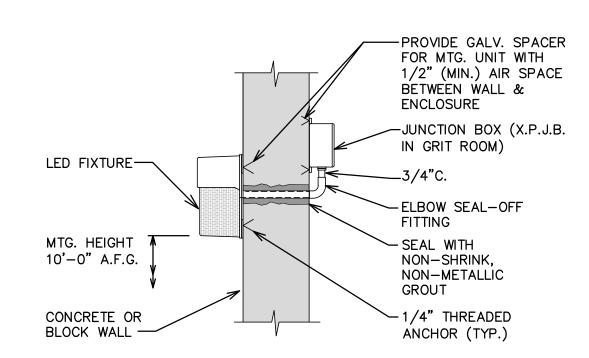
# EMERGENCY LIGHTING FIXTURE TYPE "EM" MOUNTING DETAIL N.T.S. (TYPE "EMXP" SIMILAR)



(TYPE "EXP" SIMILAR)



# TYPE "OA" NON-HAZARDOUS MOUNTING DETAIL N.T.S.



TYPE "OA" HAZARDOUS AREA

MOUNTING DETAIL

N.T.S.

(TYPE "OB" SIMILAR EXCEPT 15'-0"

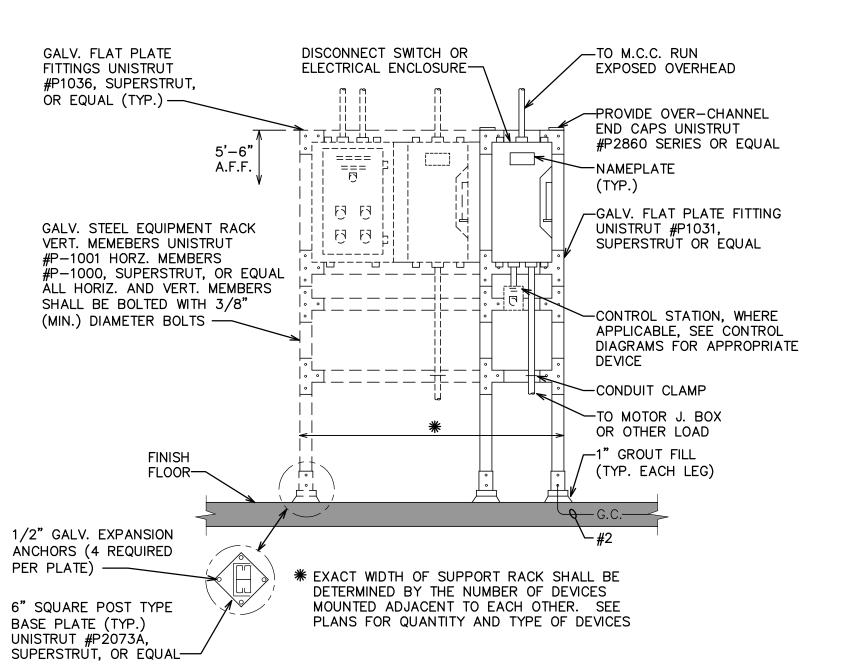
MOUNTING HEIGHT)

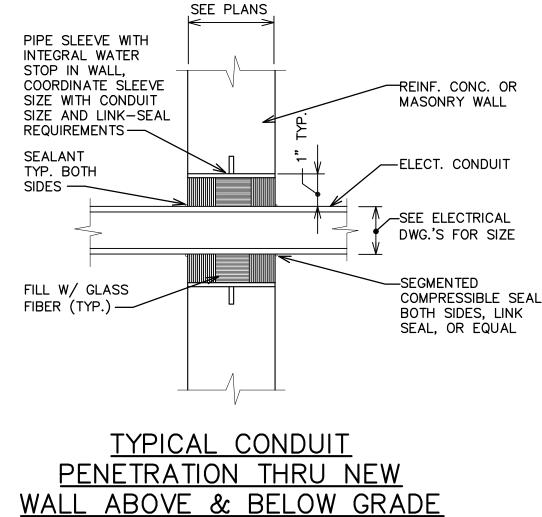
|        |                          |                      | LIGHTING FIXTURE SCHEDULE  |   |
|--------|--------------------------|----------------------|--|---|
| TYPE   | LAMP                     | OPERATING<br>VOLTAGE | DESCRIPTION  | MFR. CAT. NO.   |
| "A"    | 90 WATT<br>LED<br>4,500K | 120V.                | INDUSTRIAL HGH BAY LED FIXTURE, CAST ALUMINUM, PENDANT MOUNTED RATED FOR HAZARDOUS AREA, CLASS 1, DIVISION 1 AND APPROVED BY INDEPENDENT TESTING AGENCY FOR THAT AREA  | DIALIGHT-SAFESIGHT SERIES HEC:<br>HEC-7MC2AD  |
| "B"    | 62 WATT<br>LED<br>5000K  | 120V.                | FIBERGLASS NEMA TYPE 4X LED LUMINAIRE, PENDANT MOUNTED, FROSTED ACRYLIC LENS, WET LOCATION LISTED, 700mA MAX. DRIVER OPERATING AT 25 DEG. C. WITH SURGE SUPRRESSION, MINIMUM 60,000 HOURS L80,120 VOLTS, NO ACTIVE COOLING, MINIMUM 5 YEAR WARRANTY ON ALL PARTS.  | COLUMBIA LIGHTING:<br>LXEM-40VL-RFA-EU OR<br>APPROVED EQUAL   |
| "OA"   | 32 WATT<br>LED<br>5000K  | 120V.                | WALL MOUNTED OUTDOOR LED FIXTURE, DIE CAST ALUMINUM, CONSTANT VOLTAGE DRIVER, REMOVABLE HINGED DOOR FRAME WITH CAPTIVE FASTENERS. TYPE IV DISTRIBUTION, BRONZE POLYESTER POWDER COAT FINISH, UL LISTED FOR WET LOCATIONS, PHOTO CONTROL, IP66 RATED, WITH SURGE SUPPRESSION  | HUBBELL: PGM3-180L-5K-035-U-DB-PC OR APPROVED EQUAL   |
| "OB"   | 72 WATT<br>LED<br>5000K  | 120V.                | SAME AS TYPE "OA" EXCEPT FOR HIGHER WATTAGE  | HUBBELL: PGM3-180L-5K-U-DB-PC OR APPROVED EQUAL   |
| "EM"   | (2)<br>5W, D.C.,<br>LED  | 120V.                | EMERGENCY LIGHTING UNIT WITH TWO (2) HEADS (12 VDC) WITH BATTERY AND CHARGER, VAPORTIGHT, CORROSION RESISTANT HOUSING; PREMIUM GUAGE, PURE LEAD, MAINTENANCE FREE NICKEL CADMIUM BATTERIES WITH 15 YEAR EXPECTED LIFE; THERMALLY PROTECTED FOR 90 M. OPERATION MIN., NON-AUDIBLE ADVANCED DIAGNOSTICS, DAMP LOCATION RATED   | EMERGI-LITE; PREMIER SERIES,<br>12PR40NC2LI-D-DL<br>DUAL-LITE, EXIDE, LITHONIA,<br>CHLORIDE OR APPROVED EQUAL |
| "EX"   | LED                      | 120V.                | LED EXIT SIGN LISTED TO UL924 AND SHALL BE OF MOLDED POLYVINYL CHLORIDE WITH MOUNTING FOR CEILING OR WALL AS INDICATED ON DRAWINGS. THE SIGN SHALL HAVE DUAL CIRCUITS FOR 120V./277V., CHARGER THAT IS FULL AUTOMATIC, SOLID STATE, TEMPTER COMPENSATED AND SHORT CIRCUIT PROTECTED ALONG WITH NICKEL—CADMIUM BATTERY. THE UNIT SHALL HAVE A SELF—TESTING/ SELF—DIAGNOSTICS AND SHALL HAVE A SINGLE "SERVICE REQUIRED" LED LIGHT VISIBLE TO THE USER | EMERGI-LITE SURVIVE-ALL SERIES SVX: WW-SVXN-1/2-R-D-4X, CHLORIDE OR DUAL-LITE                                 |
| "EXP"  | LED                      | 120V.                | LED EXIT SIGN SUITABLE FOR USE IN CLASS 1, DIVISION 1, HAZARDOUS AREA WITH ALUMINUM BODY, ACRYLIC EDGE LIT SIGN, BATTERY BACKED WITH SELF DIAGNOSTICS  | AZZ:<br>XPEX-1-R-DT-WP-EM-SD OR<br>APPROVED EQUAL   |
| "EMXP" | LED                      | 120V.                | EMERGENCY LIGHTING UNIT WITH TWO (2) LED ADJUSTABLE HEADS SUITABLE FOR USE IN CLASS 1, DIVISION 1, HAZARDOUS AREA, WITH ALUMINUM BODY, STAINLESS STEEL HARDWIRE, SUITABLE FOR WET LOCATIONS  | AZZ:<br>XPEL-U-2-O-M OR APPROVED<br>EQUAL   |

### FIXTURE SCHEDULE NOTES:

\* ALL LED FIXTURES MUST HAVE SURGE SUPPRESION

\*\* IF CATALOG NUMBER DOES NOT MEET THE FOLLOWING CRITERIA, THE CONTRACTOR OR MFR. SHALL REVISE CATALOG NUMBER AS REQUIRED.





EQUIPMENT SUPPORT RACK DETAIL

REV# DATE DATE





HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915
555 HULET DRIVE
BLOOMFIELD HILLS, MICH.

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EAY (236 Floor): (248) 4329-529

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FAX (2nd. Floor): (248) 338-2592
WEB SITE: http://www.hrc-engr.com

INFLUENT STRUCTURE
SATTERY A GRIT REHAB
SRF #5696-01
ELECTRICAL DETAILS

ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

WP

JOB NO. COF1070.01F

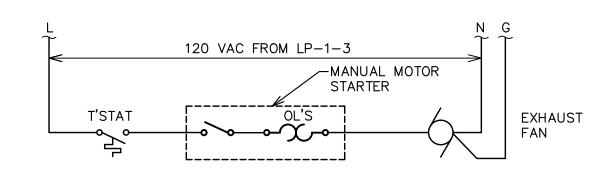
E6.0

ROJECT MANAGER: Tiffany L Harrison, PE

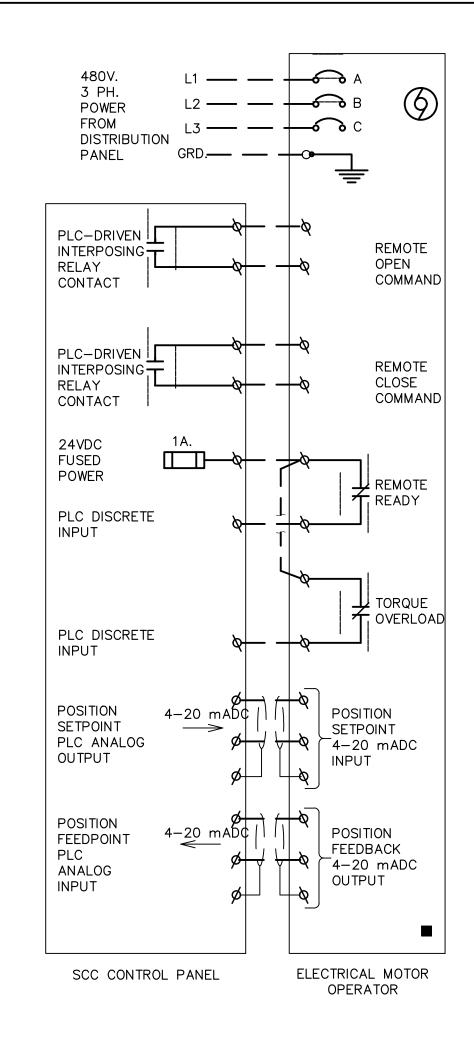
# MAGNETIC FLOWMETER WIRING DIAGRAM (TYPICAL)

ALL DEVICES LOCATED IN CONTROL PANEL UNLESS OTHERWISE INDICATED BY

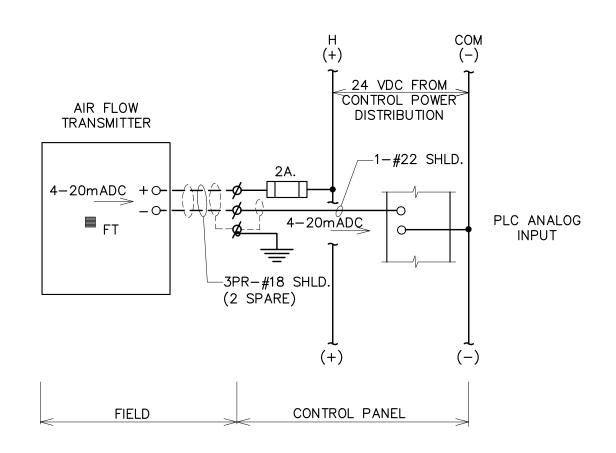
(MAGNETIC FLOWMETERS INSTALLED BELOW GRADE SHALL HAVE POTTED/SEALED HEADS, AND BE RATED SUITABLE FOR OCCASIONAL SUBMERGENCE; AS NOTED ON THE



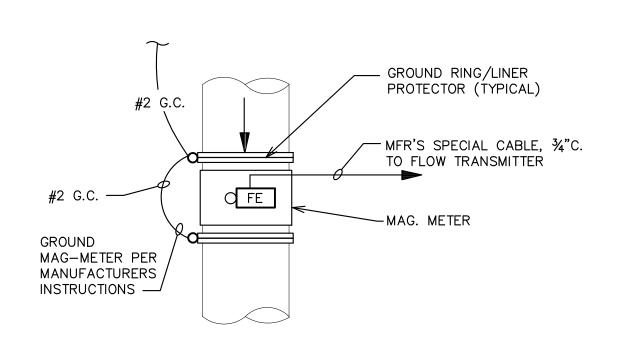
EXHAUST FAN EF-1 WIRING DIAGRAM



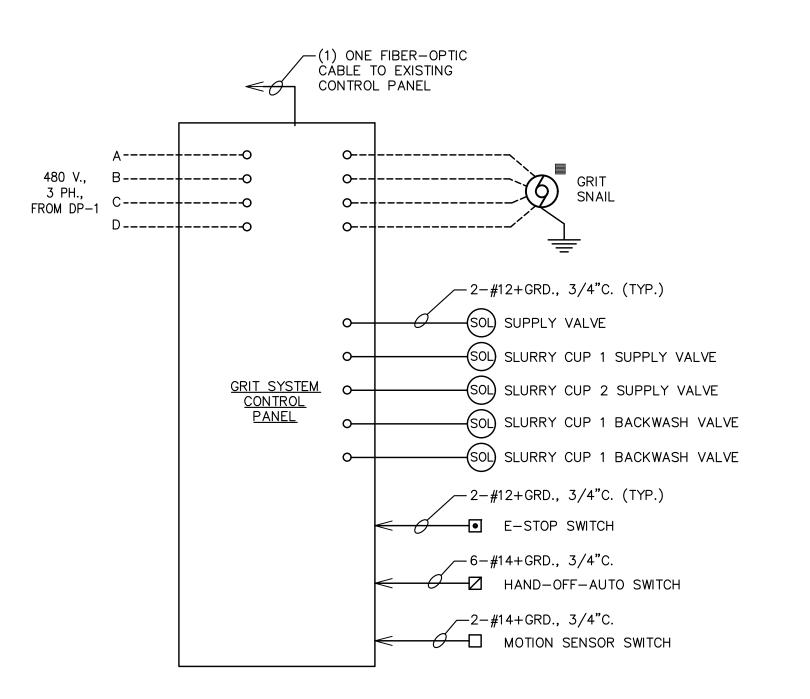
**GRIT OPERATOR CONNECTION DIAGRAM** 



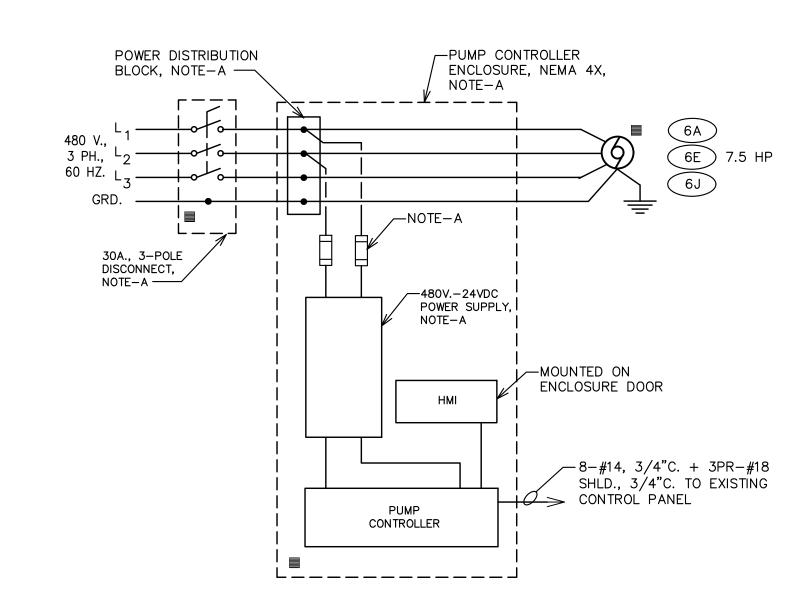
## AIR FLOW TRANSMITTER TYPICAL WIRING DIAGRAM NO SCALE



# TYPICAL MAGNETIC FLOW METER **INSTALLATION DETAIL**



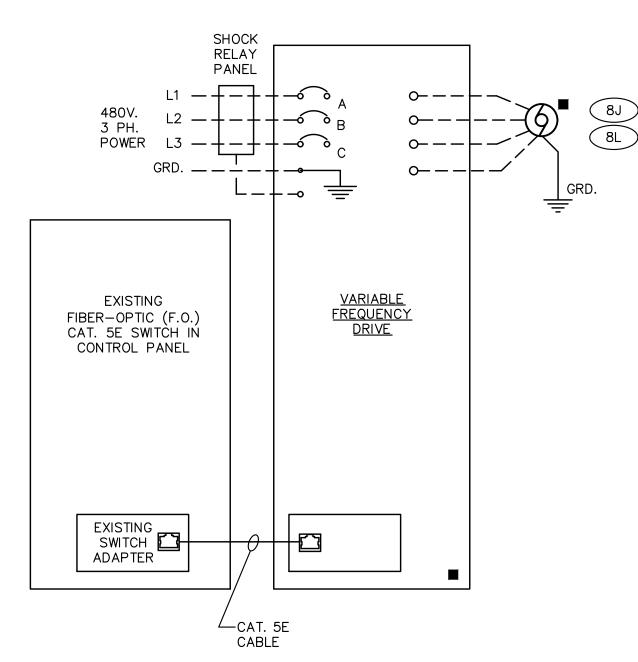
GRIT SYSTEM CONNECTION WIRING DIAGRAM NO SCALE



# GRIT PUMP NO.1 WIRING DIAGRAM

(PUMPS ARE 7.5 HP) (GRIT PUMP NO.2 AND NO.3 SIMILAR)

A. AS FURNISHED BY THE CONTRACTOR.



# GRIT SCREW NORTH VFD **CONNECTION DIAGRAM**

NO SCALE (SIMILAR FOR GRIT SCREW SOUTH)

> LEGEND: ■ = LOCATED REMOTE FROM DEVICE









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F FLINT STRUCTURE GRIT REHAB CITY OF CINFLUENT S' BATTERY A G

ISSUED FOR: DATE: BY: 50% DESIGN 10/25/19 TLH 90% DESIGN 12/06/19 TLH FINAL EGLE 04/08/20 TSW

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