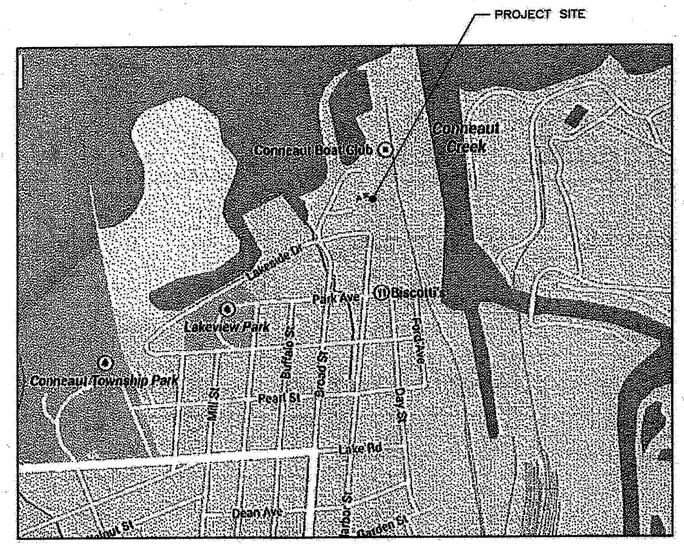
BID SET

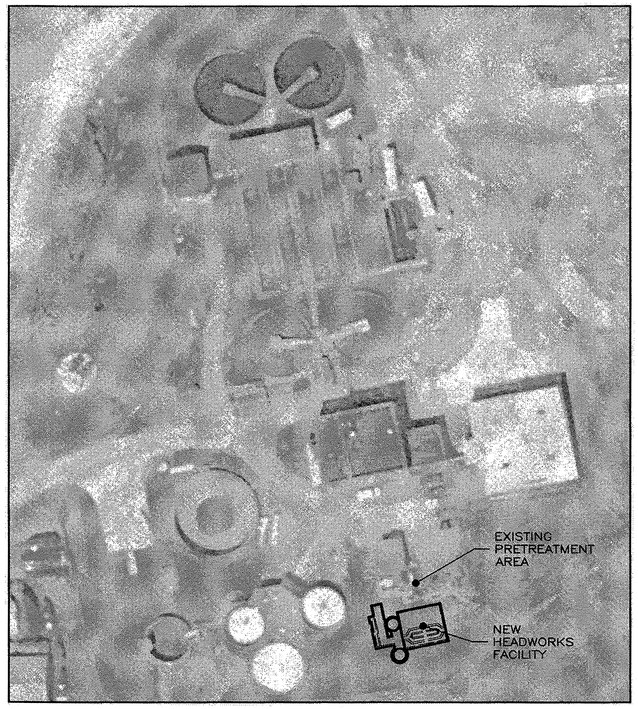
CITY OF CONNEAUT, OHIO

WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

CONTRACT NUMBER 2015-1
AUGUST 2016



VICINITY MAP
N.T.S.



LOCATION MAP
SCALE: 1" = 70'

CONNEAUT CITY COUNCIL:

NIC CHURCH..... .....COUNCIL PRESIDENT
DOUG HEDRICK..... .....1ST WARD COUNCIL PERSON
PHIL GARCIA..... .....2ND WARD COUNCIL PERSON
DEBORAH NEWCOMB..... .....3RD WARD COUNCIL PERSON
THOMAS KOZESKY..... .....4TH WARD COUNCIL PERSON
JOHN ROACH..... .....COUNCIL–AT–LARGE
JON ARCARO..... .....COUNCIL–AT–LARGE
PAMELA S. O'CONNELL..... .....CLERK OF COUNCIL

ACCEPTED BY:

CITY OF CONNEAUT, OH

JAMES HOCKADAY
CITY MANAGER — 8-1-16 DATE

BRIAN BIDWELL
WWTP SUPERINTENDENT — 8-10-16 DATE

SHAWN R. AIKEN, PE
CITY ENGINEER — 8-1-16 DATE

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20 Federal Plaza West - Suite 303 - Youngstown, Ohio 44503
Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

PLANS PREPARED BY

STATE OF OHIO · MICHAEL A KRAVTSOV · E-68618 · REGISTERED PROFESSIONAL ENGINEER

MICHAEL A. KRAVTSOV, P.E.
REGISTERED ENGINEER No. E68618
STATE OF OHIO
8/1/2016 DATE

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ABBREVIATIONS:

A/C	AIR CONDITIONING UNIT
ABDN	ABANDON
ADF	AVERAGE DAY FLOW
ADS	ADVANCED DRAINAGE SYSTEMS PIPING
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE (ING)
ALUM.	ALUMINUM
ANOD	ANODIZE
APPROX	APPROXIMATE (LY)
ARCH	ARCHITECT (URAL) (URE)
AS	ACTIVATED SLUDGE
ASPH	ASPHALT
ASSOC	ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS
AUX	AUXILIARY
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
B	BOTTOM
BF	BLIND FLANGE
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BIT	BITUMINOUS
BL	BASE LINE
BLDG	BUILDING
BM	BENCHMARK
BO	BOTTOM OF
BOB	BOTTOM OF BANK
BOT	BOTTOM
BV	BALL VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCW	COUNTER CLOCKWISE
CF	CUBIC FOOT
CFM	CUBIC FOOT PER MINUTE
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIGL	CAST IRON PIPE GLASS LINE
CIP	CAST IRON PIPE
C.I.P.	CLEAN IN PLACE
CJ	CONSTRUCTION/CONTROL JOINT
CL OR ℄	CENTER LINE
CL2	CHLORINE
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CORR	CORRUGATED
CU	COPPER
CV	CHECK VALVE
CW	COLD WATER (POTABLE)
DEMO	DEMOLITION
DEPT	DEPARTMENT
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DISCH	DISCHARGE
DN	DOWN
DNSPT	DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
EA	EACH
ECC	ECCENTRIC
EC	ELECTRICAL CONTRACTOR
EF	EACH FACE
EFF	EFFLUENT
EL	ELEVATION
ELEC	ELECTRIC (AL)
EMERG	EMERGENCY
ENGR	ENGINEER
ENT	ENTERING
EQ	EQUAL (LY)
ESMT	EASEMENT
EST	ESTIMATE (D)
ETC	ETCETERA
EW	EACH WAY
EX	EXISTING
EXP	EXPANSION
F	FAHRENHEIT
FB	FLOOR BOX
FD	FLOOR DRAIN
FIG	FIGURE
FIN	FINISH (ED)
FL	FLOOR
FLEX	FLEXIBLE
FLG	FLANGE (D)
FM	FORCE MAIN
FPM	FEET PER MINUTE
FPT	FEMALE PIPE THREAD
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET/FOOT
FTG	FOOTING/FITTING
FURN	FURNISHED
GA	GAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS
GLDP	GLASS LINED DUCTILE IRON PIPE
GOV	GLOBE VALVE
GPD	GALLONS PER DAY
GPM	GALLONS PER MINUTE
GND	GROUND
GV	GATE VALVE
HB	HOSE BIBB
HDPE	HIGH DENSITY POLYETHYLENE
HOR	HORIZONTAL
H	HEIGHT
HW	HOT WATER
HYD	HYDRANT
HZ	HERTZ
IB	INLET BASIN
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INF	INFLUENT
INT	INTERIOR
INV	INVERT
IP	IRON PIPE BOUNDARY
JB	JUNCTION BOX
JT	JOINT
KSI	KIPS (1000 LBS.) PER SQUARE INCH
L	LENGTH OR STRUCTURAL ANGLE DESIGNATION
LAV	LAVATORY
LB	POUND
LBS	POUNDS
LF	LINEAL FEET
LG	LONG
LH	LEFT HAND
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNDG	LANDING
LOC	LOCATION/LOCATED
LONG	LONGITUDINAL
LR	LONG RADIUS
LSM	LOW STRENGTH MORTAR
LT	LIGHT
LWA	LOW WATER ALARM
LWL	LOW WATER LEVEL
MATL	MATERIAL
MAX	MAXIUM
MBR	MEMBRANE BIO-REACTOR
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MCJ	MASONRY CONTROL JOINT
MFD	MANUFACTURED
MFR	MANUFACTURER
MG/L	MILLIGRAMS PER LITER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MO	MOTOR OPERATED
M.O.	MASONRY OPENING
MON	MONUMENT
MPH	MILES PER HOUR
NaHSO3	SODIUM BISULFITE
NaOCl	SODIUM HYPOCHLORITE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NO	NORMALLY OPEN
NOM	NOMINAL
NPT	AMERICAN NATIONAL TAPER PIPE THREAD
NTS	NOT TO SCALE
N/F	NOW / AND OR FORMALLY
OC	ON CENTER
OD	OUTSIDE DIAMETER
OE	OVERHEAD ELECTRIC
OF	OUTSIDE FACE
OH	OVER HEAD
PH	PHASE
PI	POINT OF INTERSECTION
POT	POTABLE
PP	POWER POLE
RPZ	PRESSURE ZONE BACKFLOW PREVENTER
WP	WORKING POINT
WV	WATER VALVE

SG-X
SLIDE GATE — NUMBER

MATERIAL SYMBOLOGY

- NEW CONCRETE: ARCHITECTURAL, PROCESS & STRUCTURAL, PLANS AND SECTIONS ONLY
- REINFORCING STEEL IN NEW CONCRETE STRUCTURES, PLANS & SECTIONS
- CONCRETE TOPPING OR FILLET
- CONCRETE BLOCK NEW
- BRICK MASONRY
- TILE–STRUCTURAL GLAZED
- WOOD
- SAND
- *EXISTING CONCRETE, ARCHITECTURAL, PROCESS OR STRUCTURAL SECTIONS ONLY*
- STEEL
- ALUMINUM
- INSULATION
- *EXISTING EQUIPMENT, PIPING OR STRUCTURE TO BE REMOVED OR ABANDONED*
- *EXISTING CONCRETE OR MASONRY*
- STONE OR COMPACTED AGGREGATE
- ACOUSTICAL CONCRETE BLOCK
- NEW AGGREGATE
- *EXISTING AGGREGATE*
- NEW CONC.
- *EXISTING CONC.*
- NEW ASPHALT CONCRETE
- *EXISTING ASPHALT CONCRETE*

SITE PLAN SYMBOLOGY

- DEMOLITION
- B/L — BASELINE
- CENTERLINE
- PROPERTY LINE
- RIGHT–OF–WAY LINE
- CORPORATION LINE
- NEW WATER LINE
- W — *EXISTING WATER LINE*
- NEW GAS LINE
- GAS — GAS — *EXISTING GAS LINE*
- NEW OVERHEAD ELECTRIC
- O/E — O/E — *EXISTING OVERHEAD ELECTRIC*
- NEW UNDERGROUND ELECTRIC
- U/E — U/E — *EXISTING UNDERGROUND ELECTRIC*
- NEW OVERHEAD TELEPHONE
- O/T — O/T — *EXISTING OVERHEAD TELEPHONE*
- NEW UNDERGROUND TELEPHONE
- U/T — U/T — *EXISTING UNDERGROUND TELEPHONE*
- NEW OVERHEAD TELEPHONE–ELECTRIC
- O/E/T — O/E/T — *EXISTING OVERHEAD TELEPHONE–ELECTRIC*
- NEW STORM LINE
- STM — *EXISTING STORM LINE*
- NEW LARGE PIPE
- *EXISTING LARGE PIPE*
- NEW SMALL DIA. PIPE
- *EXISTING SMALL DIA. PIPE*
- NEW FENCE
- X — X — *EXISTING FENCE*
- 900 — NEW FINISHED GRADE CONTOURS–INDEX
- 901 — NEW FINISHED GRADE CONTOURS–INTERMEDIATE
- *900 — EXISTING GRADE CONTOURS–INDEX*
- *901 — EXISTING GRADE CONTOURS–INTERMEDIATE*
- RAILROAD
- WATERWAY

- NEW STRUCTURES
- *EXISTING STRUCTURES*
- FINISHED GRADE
- *EXISTING GRADE*
- NO. / DEPTH — TEST BORING
- *SANITARY MANHOLE*
- *CATCH BASIN*
- *CURB INLET*
- *STORM MANHOLE*
- *FIRE HYDRANT*
- W — *WATER METER*
- *WATER VALVE*
- G — *GAS METER*
- *GAS VALVE*
- *DECIDUOUS TREE*
- *EVERGREEN TREE*
- *SHRUB*
- *STUMP*
- *SIGN*
- *IRON PIN FOUND*
- *IRON PIN SET*
- *IRON PIPE FOUND*
- *SURVEYOR'S NAIL SET*
- *SURVEYOR'S NAIL FOUND*
- *GUY WIRE*
- *LIGHT POLE*
- *UTILITY POLE*
- *FLAG POLE*
- *YARD LIGHT*
- *WATER WELL*
- *WATER SPIGOT*

PIPE FITTING SYMBOLOGY

	4" & LARGER	3" & SMALLER
WELDED OR P.V.C.		
FLANGED		
BELL & SPIGOT (PUSH–ON)		
MECHANICAL		
FLEXIBLE (DRESSER)		
EXPANSION		
M.J. X FLG. W/TIE RODS		

	4" & LARGER	3" & SMALLER
BALL VALVE		
BUTTERFLY VALVE		
GATE VALVE		
PLUG VALVE		
CHECK VALVE	FLOW	FLOW
WAFER VALVE		
PRESSURE REDUCING VALVE		
PRESSURE RELIEF VALVE		

MAJOR SECTION CUT CONVENTION

X / G–01 — SECTION IDENTIFICATION LETTER OR NUMBER; SHEET ON WHICH SECTION APPEARS

SECTION & DETAIL CONVENTION

DETAIL SCALE: 3/8"=1'–0"

1 / G–01 — DETAIL IDENTIFICATION LETTER OR NUMBER; DETAIL SHEET LOCATION NUMBER

SECTION SCALE: 3/8"=1'–0"

A / G–01 — SECTION IDENTIFICATION LETTER OR NUMBER; SECTION SHEET LOCATION NUMBER

INDEX EXPLANATION

DISCIPLINE INFORMATION

IDENTIFIER:	DISCIPLINE:
G	GENERAL
D	DEMOLITION
C	CIVIL
A	ARCHITECTURAL
S	STRUCTURAL
P	PROCESS
PL	PLUMBING
M	MECHANICAL (HVAC)
E	ELECTRICAL
I	INSTRUMENTATION

SHEET LIST TABLE

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No.	REVISION DATA	DATE	BY

PERMIT _ PROGRESS X BID _ CONSTRUCTION _ RECORD

PROJECT No. 14784
DATE: 08–09–2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

SHEET INDEX, LEGEND, SYMBOLS, ABBREVIATION

DRAWING DISCIPLINE: GENERAL

SHEET	OF
G–01	44

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GENERAL NOTES

1. THE CURRENT REGULATIONS AND CONSTRUCTION STANDARDS OF THE OWNER TOGETHER WITH THE MOST CURRENT CONSTRUCTION SPECIFICATIONS OF ODOT INCLUDING STANDARD DRAWINGS AND ALL SUPPLEMENTALS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS THAT ARE A PART OF THESE PLANS UNLESS OTHERWISE NOTED.
2. ANY MODIFICATIONS TO THE SPECIFICATIONS OR CHANGES TO THE WORK AS SHOWN ON THESE DRAWINGS MUST HAVE PRIOR WRITTEN APPROVAL BY THE ENGINEER.
3. THE CONTRACTOR OR ANY SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO A SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. NEITHER DESIGN ENGINEER NOR THE OWNER SHALL BE RESPONSIBLE FOR THE MEANS, METHODS, PROCEDURES, TECHNIQUES, OR SEQUENCES OF CONSTRUCTION NOT SPECIFIED HEREIN, NOR FOR SAFETY ON THE JOB SITE, NOR SHALL THE DESIGN ENGINEER OR OWNER BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL PREPARE A SOIL EROSION CONTROL PLAN FOR APPROVAL BY THE OWNER AND EPA BEFORE BEGINNING CONSTRUCTION, AS REQUIRED
6. THE CONTRACTOR SHALL PROVIDE THE OWNER ACCESS TO ALL AREAS OF THE WASTEWATER TREATMENT PLANT SITE DURING NON-WORKING HOURS. NO SEPARATE PAYMENT WILL BE MADE.
7. THE CONTRACTOR SHALL REFERENCE ALL IRON PINS AND MONUMENTS BEFORE EXCAVATING AT OR NEAR SAID IRON PINS OR MONUMENTS. IF ANY PINS OR MONUMENTS ARE DISTURBED, DESTROYED OR DAMAGED BY THE CONTRACTOR, THEY SHALL BE ACCURATELY REPLACED BY A REGISTERED SURVEYOR AT THE COMPLETION OF THE PROJECT OR AT THE DIRECTION OF THE ENGINEER AT NO EXPENSE TO THE PROPERTY OWNER.
8. PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE VARIOUS ITEMS OF THIS CONTRACT. NO SEPARATE PAYMENT WILL BE MADE.
9. THE TRACKING OR SPILLAGE OF MUD, DIRT, OR DEBRIS UPON PUBLIC STREETS IS PROHIBITED AND ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR.
10. NO NON-RUBBER TIRE VEHICLE SHALL BE MOVED ON PUBLIC STREETS. EXCEPTIONS MAY BE GRANTED BY THE OWNER WHERE SHORT DISTANCES AND SPECIAL CIRCUMSTANCES ARE INVOLVED. GRANTING OF EXCEPTIONS MUST BE IN WRITING AND ANY RESULTING DAMAGE MUST BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.
11. THE CONTRACTOR SHALL REPAIR ANY AND ALL EXISTING WORK DAMAGED DURING OR DUE TO THE EXECUTION OF THIS CONTRACT AT HIS EXPENSE. ALL SAID WORK TO BE PREPARED OR REPLACED TO THE SATISFACTION OF THE OWNER AND THE ENGINEER.
12. IN THE EVENT THAT IT BECOMES NECESSARY FOR THE OWNER TO PERFORM WORK OF AN IMMEDIATE NATURE REQUIRED OF THE CONTRACTOR BY THIS CONTRACT BECAUSE OF FAILURE OR REFUSAL OF THE CONTRACTOR TO PERFORM SUCH WORK, THE CONTRACTOR SHALL REIMBURSE THE OWNER AT THE RATE 2.5 TIMES THE ACTUAL COST OF LABOR, MATERIAL, AND EQUIPMENT NECESSARY. THE OWNER SHALL BE REQUIRED TO NOTIFY OR ATTEMPT TO NOTIFY THE DESIGNATED REPRESENTATIVE OF THE CONTRACTOR OF THE NECESSITY TO PERFORM SUCH WORK. IN THE EVENT OF EMERGENCY NO NOTIFICATION IS REQUIRED. IF THE CONTRACTOR REFUSES OR FAILS WITHIN A REASONABLE TIME TO PERFORM OR CAUSE THE PERFORMANCE OF SUCH WORK, THE OWNER SHALL BE REIMBURSED BY THE CONTRACTOR IN THE AMOUNT PROVIDED HEREIN. REASONABLE TIME FOR THIS CONTRACT IS 1 HOUR FROM TIME OF NOTIFICATION BY THE OWNER.
13. ALL THE SIGNS, FENCES, SHRUBS, DRAINAGE STRUCTURES OR OTHER PHYSICAL FEATURE THAT ARE TO REMAIN INTACT WHICH ARE DISTURBED OR DAMAGED DURING WORK UNDER THE CONTRACT SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR, UNLESS OTHERWISE PROVIDED IN THE CONTRACT, THE COST OF ALL SUCH WORK SHALL BE INCLUDED IN THE PRICE OF THE VARIOUS ITEMS OF THIS CONTRACT. NO SEPARATE PAYMENT WILL BE MADE.
15. THE CONTRACTOR SHALL LEAVE THE AREA, DISTURBED BY CONSTRUCTION, IN THE SAME OR BETTER CONDITION AS PRIOR TO COMMENCEMENT OF THIS WORK.
16. THE CONTRACTOR SHALL NOT REQUEST PAYMENT FOR LOST TIME (DOWNTIME) WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER.
17. ALL TRENCHES SHALL BE BACKFILLED OR SECURELY PLATED DURING NON-WORKING HOURS.
18. ALL THE FIELD AND MATERIAL TESTING SHALL BE PERFORMED BY A QUALIFIED TESTING LABORATORY TO BE CONTRACTED BY THE CONTRACTOR. FIELD TESTING SHALL BE PERFORMED AT THE DIRECTION OF THE OWNER'S RESIDENT SITE REPRESENTATIVE.
19. ALL GRANULAR BACKFILL AND/OR CONTROL DENSITY FILL SHALL BE INCLUDED FOR PAYMENT WITH THE PRICE OF THE VARIOUS ITEMS OF THIS CONTRACT. NO SEPARATE PAYMENT WILL BE MADE.
20. NO WORK TO BE COMMENCED WITHOUT AN EXECUTED NOTICE TO PROCEED.
21. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY.
22. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS OF THE EXISTING STRUCTURES, PIPING AND EQUIPMENT PRIOR TO CONSTRUCTION AND SUBMIT ANY NECESSARY MODIFICATIONS TO THE ENGINEER FOR APPROVAL.

IF A CONFLICT EXISTS BETWEEN THE SPECIFICATION AND THE DRAWING, THE MORE STRINGENT SHALL APPLY.

ARCHAEOLOGICAL/HISTORICAL RESOURCES

1. CONTRACTORS AND SUBCONTRACTORS ARE REQUIRED UNDER OHIO REVISED CODE SECTION 149.53 TO NOTIFY THE OHIO HISTORICAL SOCIETY AND THE OHIO HISTORIC SITE PRESERVATION BOARD OF ARCHAEOLOGICAL DISCOVERIES LOCATED IN THE PROJECT AREA, AND TO COOPERATE WITH THOSE ENTITIES IN ARCHAEOLOGICAL AND HISTORIC SURVEYS AND SALVAGE EFFORTS IF SUCH DISCOVERIES ARE UNCOVERED WITHIN THE PROJECT AREA.

CONTACT: OHIO HISTORIC PRESERVATION OFFICE
PHONE: 1-614-298-2000

UTILITIES

1. EXISTING UTILITIES SHOWN ON THE PLANS ARE FROM THE BEST AVAILABLE RECORDS AND FIELD INVESTIGATION. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL EXISTING UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL CLARENCE WITH PROPOSED UTILITIES. IN CASE OF CONFLICT, ADJUSTMENTS IN ELEVATION AND LOCATION OF PROPOSED UTILITIES SHALL BE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CALL THE OHIO UTILITY PROTECTION SERVICE (1-800-362-2764) THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST TWO (2) WORKING DAYS PRIOR TO WORK IN THE VICINITY OR THEIR FACILITIES.
2. THE FOLLOWING UTILITIES AND OWNERS ARE KNOWN TO BE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:
3. WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT. IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN.
4. CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.
5. IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.
6. ALL DRAIN TILE AND STORM SEWERS DAMAGED, DISTURBED OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH FERNCO COUPLINGS OR ENGINEER APPROVED EQUAL MAINTAINING THE SAME GRADIENT AS EXISTING. REPLACED DRAIN TILE SHALL BE LAID ON COMPACTED GRANULAR BEDDING AND BACKFILLED PER THE STANDARD DETAILS SHOWN FOR THE SURFACE TYPE. THE COST OF SAID WORK TO BE INCLUDED IN THE UNIT PRICE FOR THE VARIOUS RELATED ITEMS.
7. THE FLOW IN ALL SEWERS AND DRAINS ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND WHENEVER SUCH SEWERS OR DRAINS ARE DISTURBED OR DESTROYED DURING THE CONSTRUCTION, THEY SHALL BE RESTORED BY THE CONTRACTOR AT HIS OWN EXPENSE TO A CONDITION SATISFACTORY TO THE ENGINEER.
8. AT ALL UTILITY CROSSINGS THE BACKFILL SHALL CONSIST OF CONTROLLED DENSITY MORTAR BACKFILL IN ACCORDANCE WITH ODOT, ITEM 613 OR SPECIAL ITEM OF THE SPECIFICATIONS BETWEEN THE DEEPER AND SHALLOWER PIPE. ALL CONTROLLED DENSITY MORTAR BACKFILL USED DURING THIS CONTRACT WILL BE INCLUDED FOR PAYMENT WITH PRICE OF THE CONTRACT. NO SEPARATE PAYMENT WILL BE MADE.
9. ANY DAMAGE TO UTILITIES DURING THIS WORK BY THE CONTRACTOR SHALL BE REPAIRED BY THE APPROPRIATE UTILITY OWNER AT THE CONTRACTOR'S EXPENSE.
10. ALL WATER LINES SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY FROM SANITARY SEWERS AND STORM DRAINS.

UTILITY CONTACTS

UTILITY	UTILITY INFORMATION NAME AND ADDRESS	TELEPHONE
GENERAL	OHIO PROTECTION SERVICES 106 WEST RYEN, ROOM 427 YOUNGSTOWN, OHIO 44051	800-362-2764
TELEPHONE / CABLE	LEVEL 3 COMMUNICATIONS 2901 EAST 31-ST STREET ERIE, PA 16510 ATTN: JOHN RYAN	814-873-0043
TELEPHONE / CABLE	GREATWAVE COMMUNICATIONS CONNEAUT TELEPHONE COMPANY 224 STATE STREET CONNEAUT, OH	44030 440-593-7100
NATURAL GAS	DOMINION EAST OHIO	877-542-2630
ELECTRIC	FIRST ENERGY - THE ILLUMINATING COMPANY 2210 SOUTH RIDGE WEST ROAD ASHTABULA, OH 44004 ATTN: GARY WEIR	440-994-8267
WATER	CITY OF CONNEAUT WATER DEPARTMENT CITY HALL 294 MAIN STREET CONNEAUT, OH 44030 ATTN: RICHARD NEUBAUER	440-593-7420
STREETS AND STORM SEWERS	CITY OF CONNEAUT PUBLIC SERVICES DEPARTMENT CITY HALL 285 16-TH STREET CONNEAUT, OH 44030 ATTN: JOSEPH DIBELL, DIRECTOR	440-593-7430
WASTEWATER TREATMENT	CONNEAUT WWTP 1206 BROAD STREET EXTENSION CONNEAUT, OH 44030 ATTN: BRIAN BIDWELL, SUPERINTENDENT	440-593-7434

RESTORATION

1. GRASS AREAS SHALL BE CAREFULLY GRADED TO REMOVE ALL STONES PRIOR TO PLACING TOPSOIL. THE ENGINEER/RESIDENT REPRESENTATIVE SHALL APPROVE ALL FINAL GRADING PRIOR TO ANY SEED AND MULCHING OPERATIONS. SEEDING AND MULCHING SHALL BE COMPLETED BY A HYDRO-SEEDING PROCESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GERMINATION OF THE SEED THROUGHOUT THE PROJECT AREA. PAYMENT TO BE MADE UNDER THEIR SPECIFIC ITEMS.
2. WHERE NECESSARY TO DISTURB PAVEMENT, DRIVES, OR SIDEWALKS, THE PAVEMENT SHALL BE SAW CUT TO A DEPTH OF AT LEAST 2 INCHES AND IN NEAT STRAIGHT LINES. IF DURING CONSTRUCTION, THE PAVEMENT IS DAMAGED BEYOND THE ORIGINAL SAW CUT, THE PAVEMENT SHALL BE RE-CUT IN NEAT LINES.

MAINTENANCE OF TRAFFIC

1. AT LEAST ONE LANE OF TRAFFIC MUST BE MAINTAINED ALONG THE TRAVEL ROUTE TO THE CONSTRUCTION SITE.
2. ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
3. NO TRENCH WILL BE LEFT OPEN AT THE END OF A WORK DAY, WHERE PRACTICAL; ANY OPEN TRENCH WILL BE PROPERLY IDENTIFIED AND BARRICADED FOR SAFETY PURPOSES.
4. ANY CONSTRUCTION EQUIPMENT OR EXCAVATIONS NEAR ROADS MUST BE MARKED WITH LIGHTS, REFLECTORS, OIL LANTERNS, OR SMUDGE POTS.
5. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, WARNING SIGNS, DANGER SIGNALS, FLAG PERSON(S), WATCHERS, AND ALL OTHER APPROPRIATE PRECAUTIONS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR SAFETY.
6. PRIOR TO CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE, OR BOULEVARD, THE CONTRACTOR MUST HAVE CONSENT FROM LOCAL OFFICIALS AND THE ENGINEER.
7. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE OHIO MANUAL OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION AND MAINTENANCE OPERATIONS, COPIES OF WHICH ARE AVAILABLE FROM THE OHIO DEPARTMENT OF TRANSPORTATION, OFFICE OF TRAFFIC ENGINEERING, 1980 W. BROAD STREET, COLUMBUS, OHIO 43223.
8. STEADY BURNING TYPE "C" LIGHTS SHALL BE REQUIRED ON ALL BARRICADES, DRUMS, AND SIMILAR TRAFFIC CONTROL DEVICES IN USE AT NIGHT. CONES ARE NOT APPROVED FOR USE AT NIGHT.
9. ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR OWNER.

AIR POLLUTION / NOISE CONTROL

1. CONSTRUCTION SHALL BE LIMITED TO DAYTIME HOURS.
2. CONSTRUCTION EQUIPMENT SHALL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS, AS REQUIRED BY SAFETY STANDARDS.
3. ALL CONSTRUCTION VEHICLES SHALL BE EQUIPPED WITH PROPER EMISSIONS CONTROL EQUIPMENT.
4. PERIODICALLY CHECK EQUIPMENT AND MACHINERY FOR PROPER TUNING TO MINIMIZE EXHAUST EMISSION AND NOISE.
5. UNPAVED AREAS WILL BE WET DOWN (AS NECESSARY) DURING CONSTRUCTION TO MINIMIZE DUST GENERATION.

DEWATERING

1. ALL DEWATERING FLOWS SHALL BE SETTLED IN SILTATION BASIN OR DIRECTED THROUGH FILTERING DEVICES BEFORE DISCHARGE TO STABILIZED SITES, SUCH AS STREAMS OR STORM SEWERS, NOT ONTO EXPOSED SOILS, STREAM BANKS OR ANY OTHER SITE WHERE THE FLOW COULD CAUSE EROSION.
2. SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM SEWER SYSTEM. WHEN CONSTRUCTION OCCURS NEAR STORM SEWER INLETS, EROSION CONTROL MEASURES SUCH AS INLET FILTERS AND HAY BALES SHALL BE USED TO PREVENT SILT FROM ENTERING THE STORM SEWERS.
3. ALL WATER SHALL BE CONVEYED FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

PROHIBITED CONSTRUCTION ACTIVITIES

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAIN, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER.
2. LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS.
3. INDISCRIMINATE, ARBITRARY OR CAPRICIOUS OPERATION OF EQUIPMENT IN STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS OR OUTSIDE THE EASEMENT LIMITS.
4. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS OR STORM SEWERS; ALL SUCH WATER SHALL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE.
5. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE OR OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS OR INTO ANY NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
6. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM.
7. DISPOSING OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDOR, ANY WETLANDS, ANY SURFACE WATERS OR AT UNSPECIFIED LOCATIONS.
8. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
14. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, DRILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC, OR PUBLIC PLACES OF HUMAN OCCUPATION.
15. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES.
16. RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE PROPERTY OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER.
17. OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OF 8:00 AM AND 5:00 PM OR OUTSIDE THE HOURS ALLOWED FOR CONSTRUCTION BY LOCAL ORDINANCES OR REGULATIONS
18. CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER, AND CLOSING CLEAR ACCESS

    - BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES

    - BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE

    - BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.

19. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA.

TEMPORARY FACILITIES

1. CONTRACTOR IS TO PROVIDE TEMPORARY SANITATION FACILITIES (PORTABLE TOILET).
2. CONTRACTOR IS TO PROVIDE TEMPORARY OFFICE FACILITY PER SPECIFICATION.
3. SHORING IS REQUIRED ON ALL EXTENT OF THE NEW CONSTRUCTION TO PROTECT EXISTING STRUCTURE DURING CONSTRUCTION. DRIVEN OR VIBRATED SHEET PILING WILL NOT BE ACCEPTED.

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REVISION DATA | No. | DATE | BY

. PERMIT . PROGRESS X BID . CONSTRUCTION . RECORD

PROJECT No. 14784
DATE: 08-09-2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT
PLANT HEADWORKS
FACILITY

GENERAL NOTES

DRAWING DISCIPLINE
GENERAL

SHEET	OF
G-02	44

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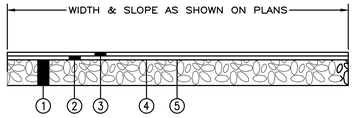


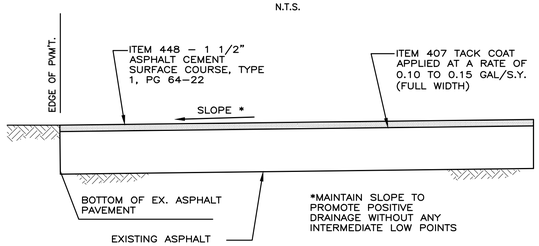
1. ITEM 304 10" AGGREGATE BASE
2. ITEM 448 2½" ASPHALT CONCRETE (TYPE 2–MEDIUM)
3. ITEM 448 1½" ASPHALT CONCRETE (TYPE 1–SURFACE)

*PER CURRENT ODOT CMS

4. ITEM 407 TACK COAT 0.15 GAL/S.Y.
5. ITEM 408 PRIME COAT 0.4 GAL/S.Y.

TYPICAL NEW PAVEMENT SECTIONS

N.T.S.



ASPHALT RESURFACING

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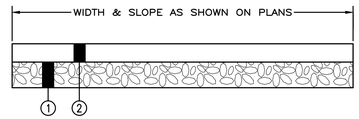
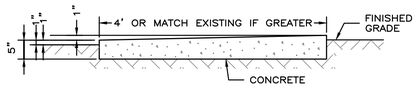


1. ITEM 304 8" AGGREGATE BASE
2. ITEM 452 8" NON–REINFORCED CONCRETE

TYPICAL NEW CONCRETE PAVEMENT SECTIONS

N.T.S.



CONCRETE SIDEWALK

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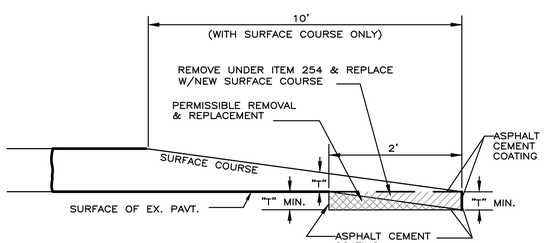

BUTT JOINT

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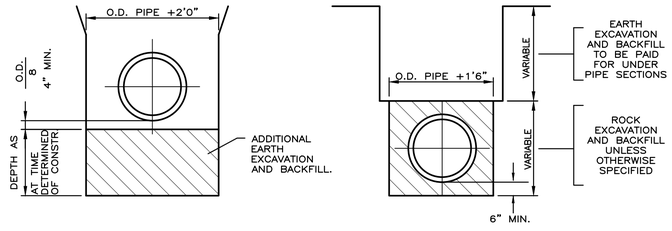

EARTH EXCAVATION ROCK EXCAVATION

EXCAVATION MEASUREMENT LIMITS

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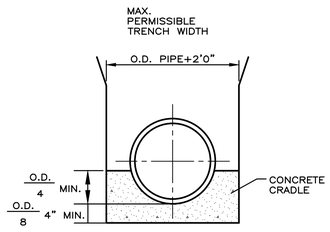

TYPICAL CONCRETE CRADLE

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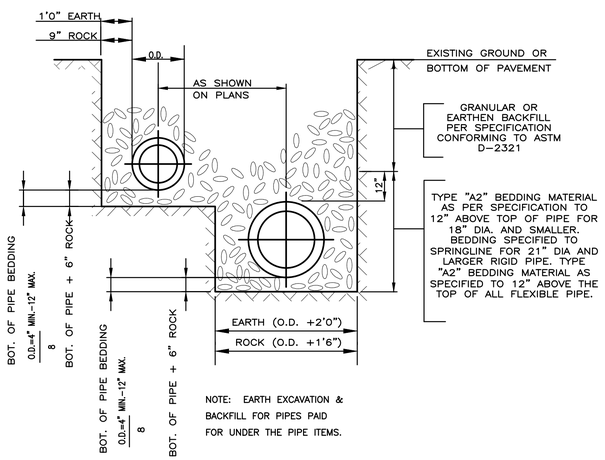
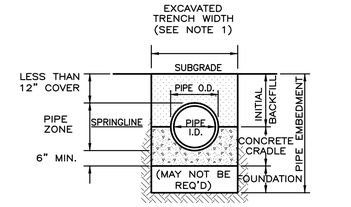


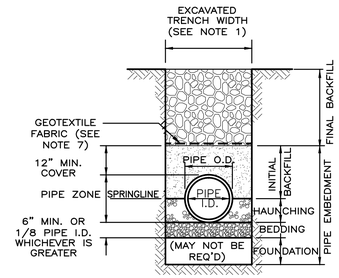
BEDDING AND TRENCH DETAIL FOR TWO OR MORE PIPES

N.T.S.



CLASS 'A' PIPE EMBEDMENT

N.T.S.



CLASS 'B' PIPE EMBEDMENT

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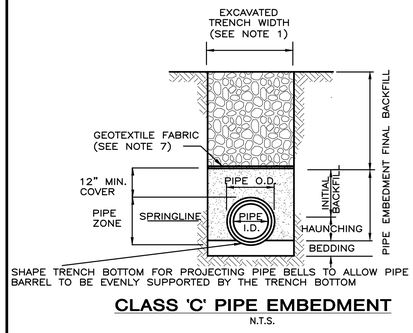

CLASS 'C' PIPE EMBEDMENT

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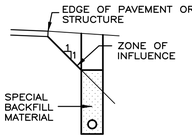

PARALLEL ZONE OF INFLUENCE

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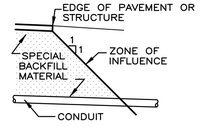


TRANSVERSE ZONE OF INFLUENCE

N.T.S.

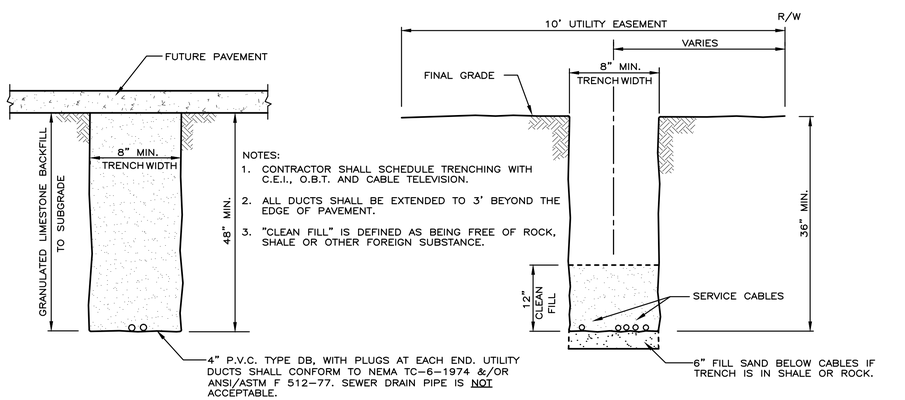
NOTES:

1. MAXIMUM EXCAVATED TRENCH WIDTH: THE MAXIMUM EXCAVATED TRENCH WIDTH FROM THE BOTTOM OF THE TRENCH TO 12" OVER THE TOP OF THE PIPE (WITHIN PIPE EMBEDMENT) SHALL BE O.D. + 24" FOR ALL PIPES UP TO AND INCLUDING 24" I.D. + 30" FOR PIPE FROM 24" I.D. TO 54" I.D. AND O.D. + 48" FOR PIPES SIZES 60" I.D. AND OVER.
2. FOUNDATION: WHERE AN UNSTABLE TRENCH BOTTOM CONDITION IS ENCOUNTERED, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH MATERIAL AS DIRECTED BY THE ENGINEER.
3. PIPE EMBEDMENT:
   CLASS A: CLASS A PIPE EMBEDMENT SHALL BE USED FOR ALL PIPING UNDER PAVEMENT OR STRUCTURES WITH LESS THAN 12 INCHES OF PIPE COVER TO THE SUBGRADE. THE CONCRETE CRADLE SHALL BE IN ACCORDANCE WITH ODOT ITEM 499, CLASS "C". THE INITIAL BACKFILL SHALL BE AASHTO NO. 57 OR NO. 67 GRANULAR PIPE EMBEDMENT.

   CLASS B: CLASS B PIPE EMBEDMENT SHALL BE USED FOR ALL PIPING UNLESS OTHERWISE NOTED ON THE PLANS OR AUTHORIZED BY THE ENGINEER. THE BEDDING AND HAUNCHING SHALL BE AASHTO NO. 57 OR NO. 67 GRANULAR PIPE EMBEDMENT. IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE AASHTO NO. 57 OR NO. 67 STONE GRANULAR PIPE EMBEDMENT. IN ALL AREAS OUTSIDE OF PAVEMENT, STRUCTURES OR THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE SUITABLE ON–SITE MATERIAL APPROVED BY THE ENGINEER FOR ONLY REINFORCED CONCRETE PIPE AND DUCTILE IRON PIPE. THE INITIAL BACKFILL FOR ALL OTHER PIPES SHALL BE AASHTO NO. 57 OR NO. 67 GRANULAR PIPE EMBEDMENT.

   CLASS C: CLASS C PIPE EMBEDMENT SHALL ONLY BE USED FOR DUCTILE IRON WATER MAIN, DUCTILE IRON FORCE MAINS OR AS AUTHORIZED BY THE ENGINEER. THE PIPE EMBEDMENT SHALL BE AASHTO NO. 57 OR NO. 67 GRANULAR PIPE EMBEDMENT IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE. THE PIPE EMBEDMENT SHALL BE SUITABLE ON–SITE MATERIAL APPROVED BY THE ENGINEER IN ALL AREAS OUTSIDE OF PAVEMENT, STRUCTURES OR THE ZONE OF INFLUENCE. WHERE ROCK OR SHALE IS ENCOUNTERED, A MINIMUM 6–INCHES OF AASHTO NO. 57 OR NO. 67 GRANULAR PIPE BEDDING OR SAND BEDDING SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
4. FINAL BACKFILL: IN ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE THE FINAL BACKFILL SHALL BE SPECIAL BACKFILL MATERIAL. IN ALL AREAS OUTSIDE OF PAVEMENT, STRUCTURES OR THE ZONE OF INFLUENCE, THE FINAL BACKFILL SHALL BE SUITABLE ON–SITE MATERIAL APPROVED BY THE ENGINEER.
5. SPECIFICATIONS: ALL TRENCHING, PIPE EMBEDMENT AND BACKFILL MATERIALS SHALL BE IN ACCORDANCE WITH DIVISION 2 OF THE SPECIFICATIONS.
6. CLAY TRENCH DAMS: CLAY TRENCH DAMS SHALL BE REQUIRED AS SHOWN ON PLANS OR WHEN AND WHERE NECESSARY AS DIRECTED BY THE ENGINEER.
7. GEOTEXTILE FABRIC: INSTALL A GEOTEXTILE FABRIC IN ACCORDANCE WITH ODOT 712.09, TYPE A, AFTER ALL INITIAL BACKFILL CONSISTING OF AASHTO NO. 57 OR NO. 67 GRANULAR PIPE EMBEDMENT.
8. DETECTOR TAPE: IF REQUIRED IN THE SPECIFICATIONS, INSTALL DETECTABLE WARNING TAPE ABOVE UTILITIES, 12" BELOW FINISHED GRADE, EXCEPT 6 INCHES BELOW SUBGRADE UNDER PAVEMENT AND SLABS.

TRENCHING, EMBEDMENT AND BACKFILL DETAIL



TRENCH DETAILS FOR UTILITIES

N.T.S.

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Phone: 330.746.1200 - Fax: 330.746.1400 - www.ctconsultants.com

No.	REVISION DATA	DATE	BY

PERMIT _ PROGRESS X BID _ CONSTRUCTION _ RECORD

PROJECT No. 14784
DATE: 08–09–2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

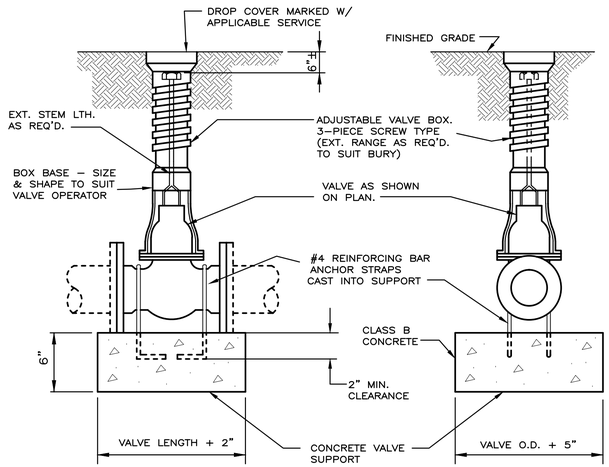
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

CIVIL AND SITE STANDARD DETAILS

DRAWING DISCIPLINE
GENERAL

SHEET	OF
G-03	44

H:\2014\14784\DWG\03 CIVIL AND SITE STANDARD DETAILS.DWG – 8/12/2016 6:58:39 AM – ELBERT



TYPICAL VALVE AND VALVE BOX SETTING

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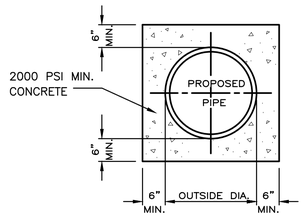

TYPICAL PIPE ENCASEMENT

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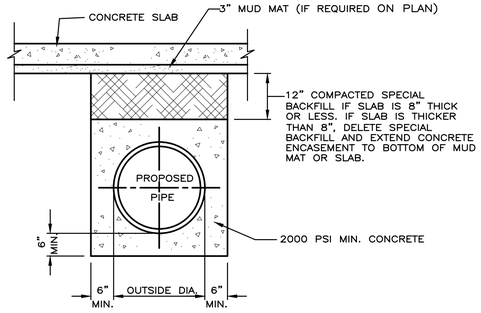
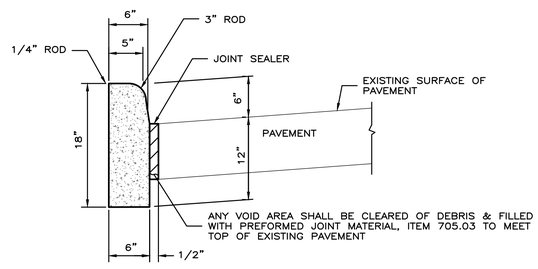


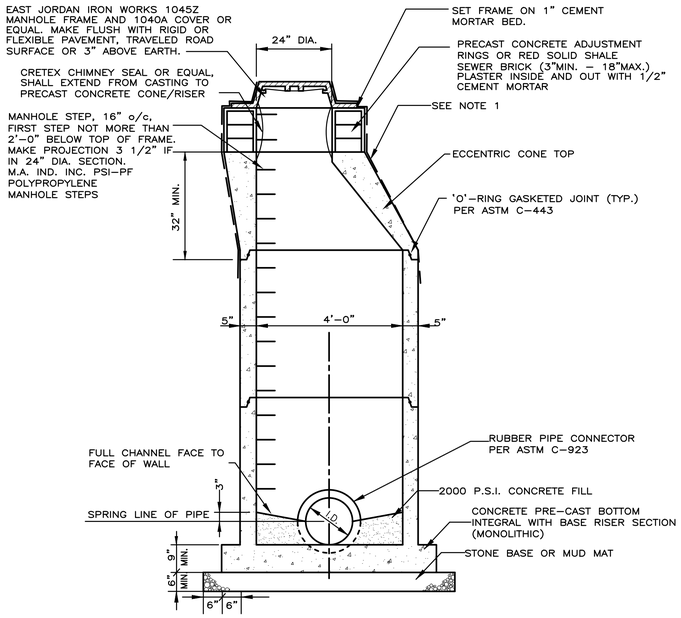
TYPICAL PIPE ENCASEMENT UNDER STRUCTURES

N.T.S.



ODOT CURB TYPE 6 DETAIL

N.T.S.



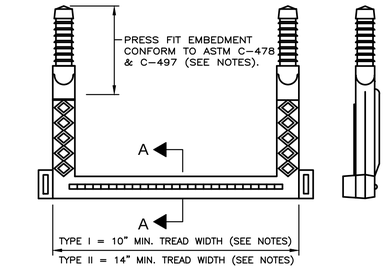
THOROSEAL INSIDE OF SANITARY MANHOLES ONLY, FULL DEPTH. (ANY COLOR BUT GRAY). ALL JOINTS TO BE WATER PLUGGED.

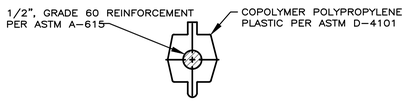
ALL PRECAST CONCRETE SHALL BE REINFORCED IN ACCORDANCE WITH THE LATEST REVISIONS OF A.S.T.M. DESIGNATION C-478; ALL PRECAST CONCRETE SECTIONS SHALL BE MANUFACTURED AND FURNISHED AS SOLID SECTION WITHOUT LIFT HOLES OF ANY KIND.

DOGHOUSE TYPE MANHOLES ARE NOT PERMITTED.

NOTE 1: MANHOLE ENCAPSULATION MATERIAL MANUFACTURED BY CANUSA, DIVISION OF SHOW RESOURCES INC., THE WOODLANDS, TX OR EQUAL, IS AN ACCEPTABLE ALTERNATE TO THE CHIMNEY SEAL

STANDARD TYPE "A" ECCENTRIC MANHOLE





SECTION A - A

NOTES:

1.) USE TYPE I STEP FOR MANHOLES OR CIRCULAR STRUCTURES OF 5'-0" DIA. OR LESS - USE 16" C/C SPACING.

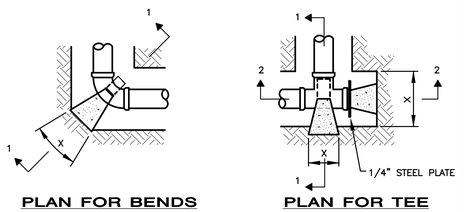
2.) USE TYPE II STEP FOR FLAT WALL STRUCTURES SUCH AS VAULTS, WELLS, ETC. OR CIRCULAR STRUCTURES OVER 5'-0" DIA. - USE 12" C/C SPACING.

3.) MOUNTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH MFR'S RECOMMENDATIONS.

TYPICAL MANHOLE STEP DETAIL

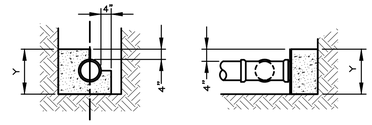
(N.T.S.)

SIZING SCHEDULE	BEARING FACE (X Y) IN SQ. FT. / CONCRETE VOLUME IN CU. YD.					
PIPE SIZE	22 1/2° BEND SOIL BEARING CAPACITY			45° BEND SOIL BEARING CAPACITY		
	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.
4	1.40 / 0.14	0.46 / 0.09	0.26 / 0.06	2.70 / 0.12	0.90 / 0.06	0.54 / 0.06
6	2.80 / 1.15	0.93 / 0.10	0.56 / 0.07	5.50 / 0.15	1.83 / 0.10	1.10 / 0.07
8	4.80 / 0.20	1.60 / 0.13	0.96 / 0.09	9.60 / 0.23	3.20 / 0.15	1.92 / 0.09
10	7.90 / 0.53	2.63 / 0.34	1.96 / 0.22	15.70 / 0.34	5.23 / 0.20	3.14 / 0.13
12	11.30 / 0.62	3.76 / 0.40	2.26 / 0.26	22.30 / 0.75	7.43 / 0.49	4.46 / 0.32
14	15.30 / 0.74	5.10 / 0.48	3.06 / 0.31	30.20 / 0.98	10.06 / 0.64	6.04 / 0.42
16	19.80 / 1.17	6.60 / 0.76	3.96 / 0.49	39.10 / 1.21	13.03 / 0.79	7.82 / 0.51
	90° BEND SOIL BEARING CAPACITY			TEE OR DEAD END SOIL BEARING CAPACITY		
	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.	1000 P.S.F.	3000 P.S.F.	5000 P.S.F.
4	4.90 / 0.14	1.63 / 0.09	0.96 / 0.06	3.50 / 0.12	1.16 / 0.06	0.70 / 0.06
6	10.20 / 0.22	3.40 / 0.14	2.04 / 0.09	7.20 / 0.17	2.40 / 0.11	1.44 / 0.07
8	17.70 / 0.35	5.54 / 0.23	3.54 / 0.15	12.50 / 0.25	4.16 / 0.16	2.50 / 0.14
10	28.90 / 0.54	9.60 / 0.35	5.76 / 0.23	20.40 / 0.38	6.80 / 0.25	4.06 / 0.16
12	41.10 / 1.31	13.70 / 0.85	8.22 / 0.55	29.10 / 0.97	9.70 / 0.63	5.82 / 0.42
14	55.80 / 1.70	18.60 / 1.11	11.16 / 0.72	39.50 / 1.22	13.16 / 0.79	7.90 / 0.51
16	72.20 / 2.14	24.06 / 1.39	14.44 / 0.90	51.10 / 1.54	17.03 / 1.00	10.22 / 0.65



PLAN FOR BENDS

PLAN FOR TEE AND DEAD END

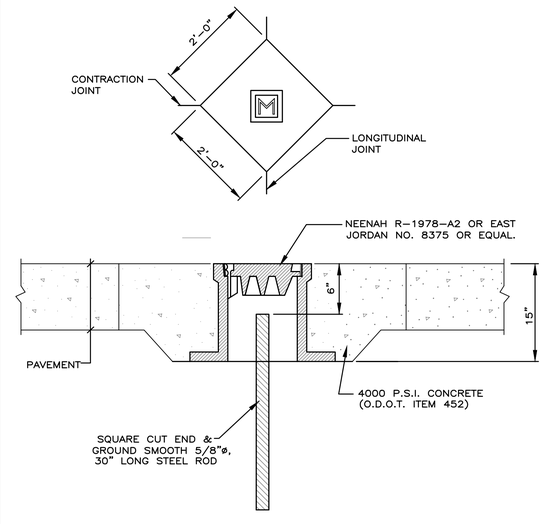


SECTION 1 - 1 SECTION 2 - 2

ALL CONCRETE BLOCKING MUST HAVE ITS ENTIRE FACE (X & Y) BEARING SURFACE AGAINST UNDISTURBED SOIL AND ALL VERTICAL NON-BEARING SURFACES SHALL BE FORMED SO AS TO KEEP CONCRETE FROM JOINTS. BLOCKING DESIGN BASED ON COMBINED WORKING PRESSURE PLUS WATER HAMMER OF 240 PSI AND FOR BEARING CAPACITY FOR SAND - 1000 PSF, SAND AND GRAVEL - 3000 PSF, SHALE - 5000 PSF.

THRUST BLOCKING DETAIL

N.T.S.



MONUMENT ASSEMBLY DETAIL

N.T.S.

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PERMIT _ PROGRESS X BID _ CONSTRUCTION _ RECORD

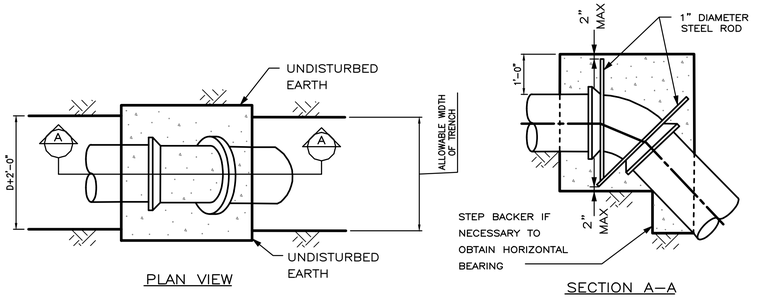
PROJECT No. 14784
DATE: 08-09-2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

CIVIL AND SITE STANDARD DETAILS

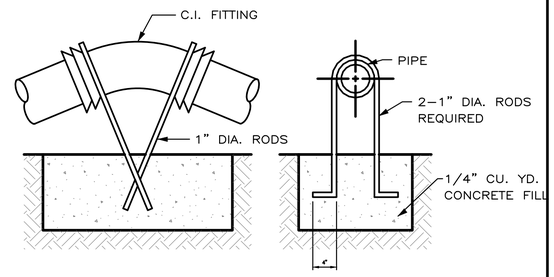
DRAWING DISCIPLINE
GENERAL

SHEET	OF
G-04	44

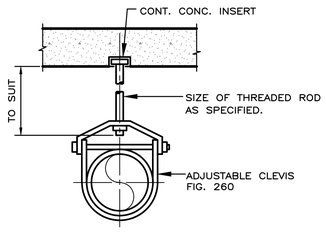


NOTE: 1. BACKER TO BE CENTERED HORIZONTALLY ON BEND.
2. STEEL WILL BE USED AS REQUIRED BY THE ENGINEER.

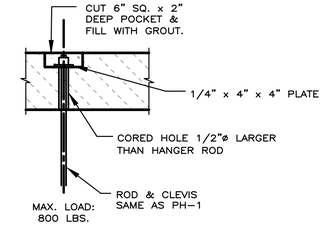
ANCHOR DETAIL
N.T.S.



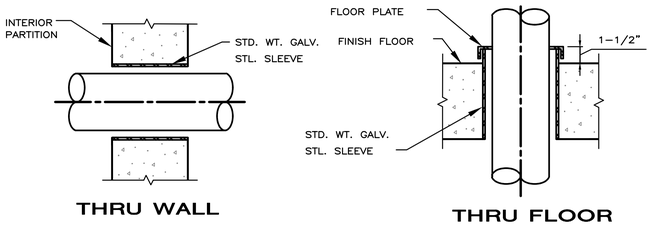
VERTICAL BEND ANCHOR DETAIL
N.T.S.



PIPE HANGER PH-1

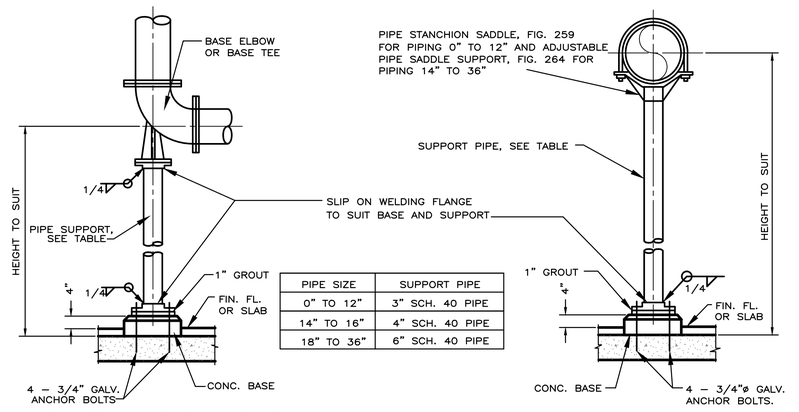


PIPE HANGER PH-2



NOTE: SLEEVE TO BE TWO PIPE SIZES LARGER FOR PIPES UP TO 2" AND ONE PIPE SIZE LARGER FOR PIPES 2–1/2" AND LARGER.

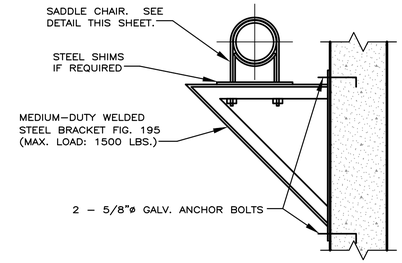
TYPICAL PIPE SLEEVE DETAIL
N.T.S.



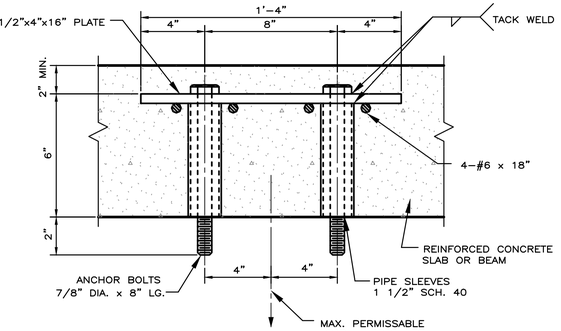
PIPE SIZE	SUPPORT PIPE
0" TO 12"	3" SCH. 40 PIPE
14" TO 16"	4" SCH. 40 PIPE
18" TO 36"	6" SCH. 40 PIPE

PIPE SUPPORT PS-2

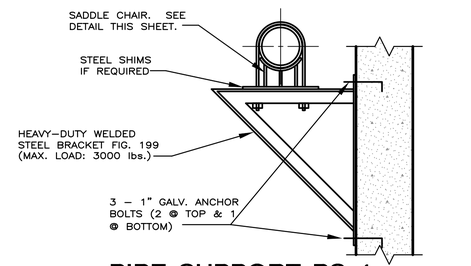
PIPE SUPPORT PS-1



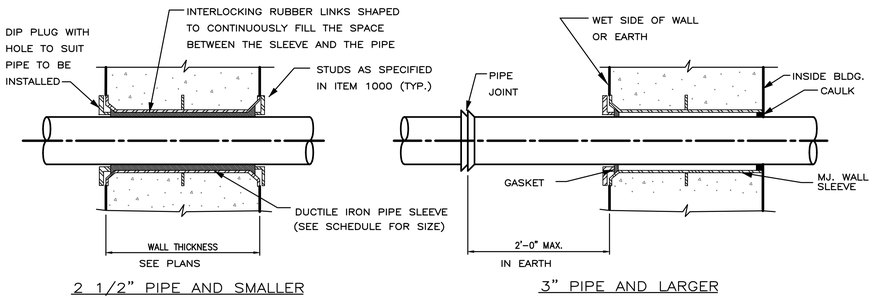
PIPE SUPPORT PS-3



HEAVY-DUTY CEILING ANCHOR
N.T.S.

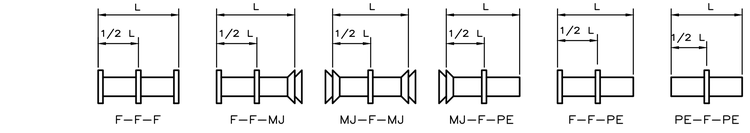


PIPE SUPPORT PS-4



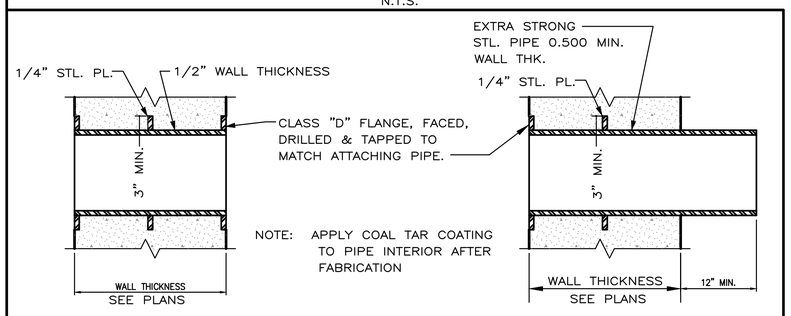
SLEEVE SCHEDULE						
PIPE SIZE	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
SLEEVE SIZE	2"	2"	2 1/2"	3"	3"	4"

TYPICAL WATERPROOF SLEEVE DETAIL
N.T.S.

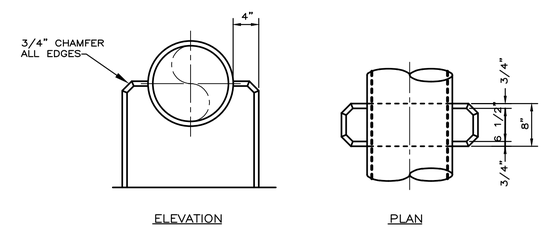


NOTE: WALL CASTINGS REQUIRING BELL ENDS IN LIEU OF MJ SHALL BE NOTED AS "B", ALL FLANGED (F) AND MECHANICAL JOINT (MJ) FLUSH WITH WALL ARE TO BE DRILLED, AND TAPPED FOR STUDS.

CAST IRON WALL CASTING ABBREVIATIONS



TYPICAL FABRICATED STEEL WALL PIECES OVER 24" DIA.
N.T.S.



PIPE SUPPORT

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PROJECT No. 14784
DATE: 08–09–2016
DESIGN: MIS
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

PROCESS STANDARD DETAILS

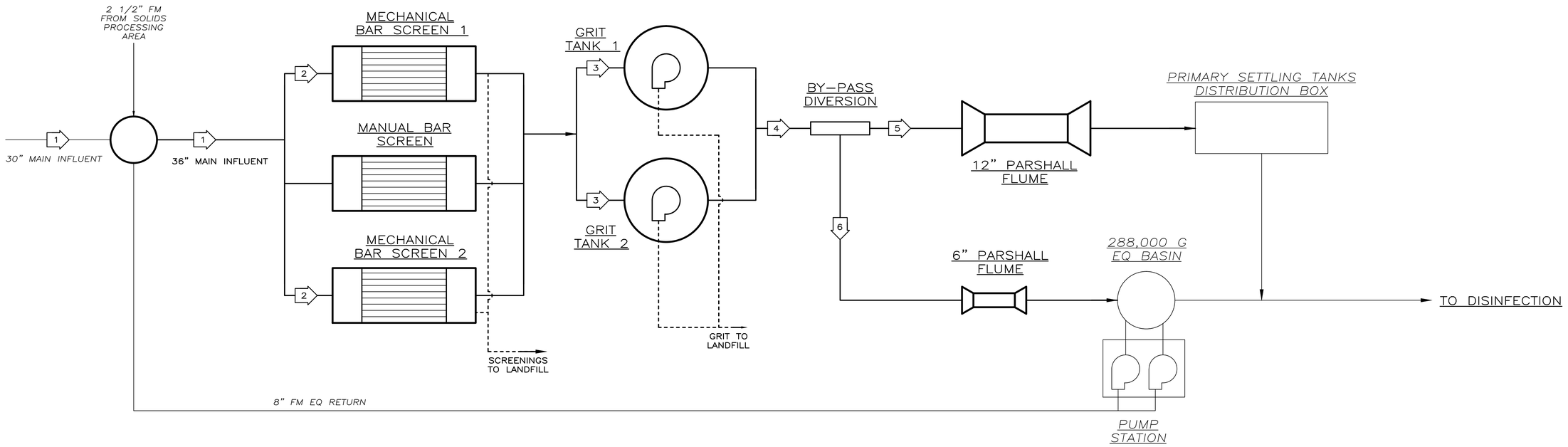
DRAWING DISCIPLINE: GENERAL

SHEET	OF
G-05	44

TREATMENT PLANT PROCESS

OPERATIONAL DESCRIPTION	FLOW NO. 1 — 36" MAIN INFLUENT MGD	2 — MECHANICAL BAR SCREEN 1/2 MGD	GRIT TANK 1/2 MGD	3 — GRIT EFFLUENT MGD	4 — 12" PARSHALL FLUME MGD	5 — BY-PASS MGD	6	7
MINIMUM DAILY DESIGN FLOW	1.50	1.50	0.75	1.50	1.50	0.00		
AVERAGE DAY FLOW	3.00	3.00	3.00	3.00	3.00	0.00		
AVERAGE DAILY DESIGN FLOW	3.80	3.80	1.90	3.80	3.80	0.00		
MAXIMUM DAILY DESIGN FLOW	7.33	7.33	3.67	7.33	7.33	0.00		
PEAK MAXIMUM DAILY FLOW	9.00	9.00	7.00	9.00	7.33	1.67		

PROPOSED FLOW DIAGRAM



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PROJECT No. 14784
DATE: 08-09-2016
DESIGN: JDZ
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CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

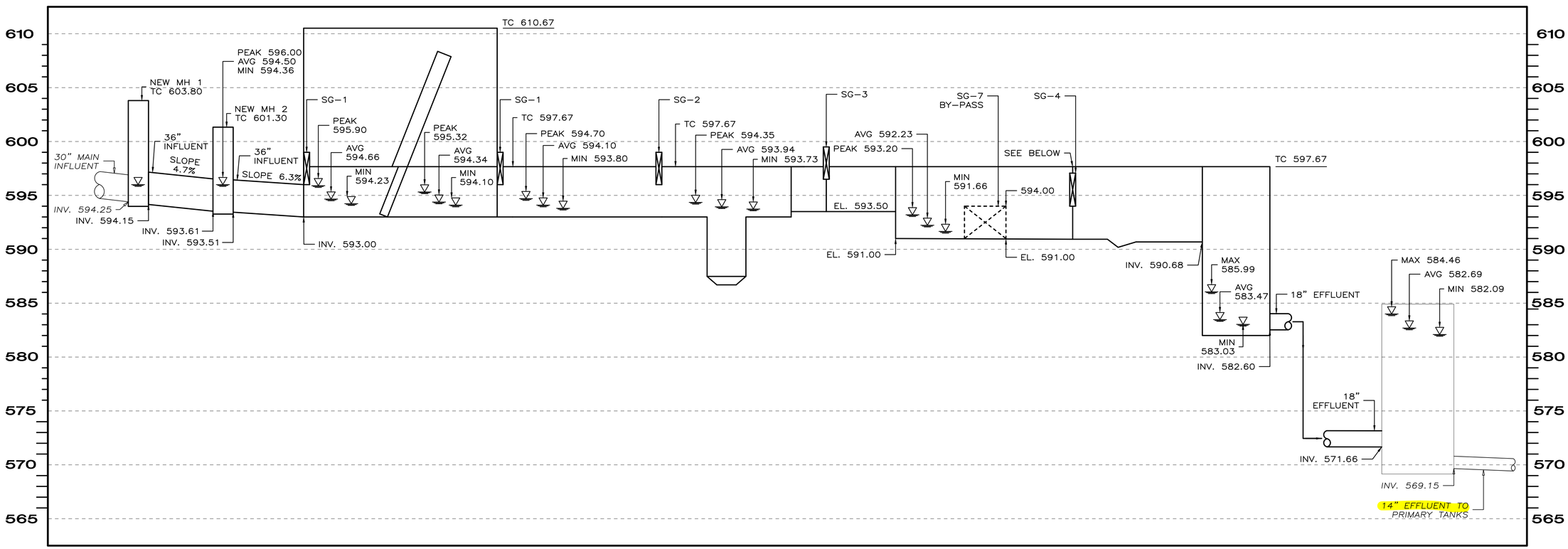
BLOCK FLOW DIAGRAM

DRAWING DISCIPLINE
GENERAL

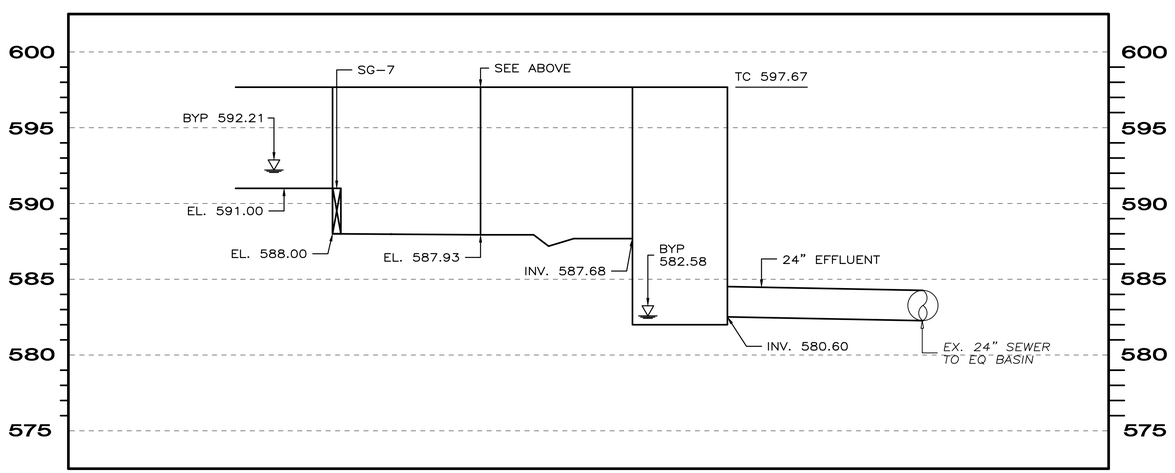
SHEET G-06 OF 44

H:\2014\14784\DWG\G-08 HYDRAULIC PROFILE.DWG - 8/12/2016 6:58:52 AM - ELBERT

PROCESS HYDRAULIC PROFILE



BYPASS PARSHALL FLUME



ABBREVIATIONS:

PEAK – PEAK FLOW ELEVATION
MAX – MAXIMUM FLOW ELEVATION
AVG – AVERAGE FLOW ELEVATION
MIN – MINIMUM FLOW ELEVATION
BYP – BYPASS FLOW ELEVATION

*BYPASS CHANNEL ONLY IN USE WHEN FLOWS ARE GREATER THAN PEAK FLOW. ELEVATIONS IN BY-PASS CHANNEL DETERMINED WHEN Q = 1.67 MGD.

*WATER SURFACE ELEVATIONS UPSTREAM OF GRIT TANKS DETERMINED WITH TWO GRIT TANKS ONLINE.

100 YEAR FLOOD ELEVATION 576.10
25 YEAR FLOOD ELEVATION 575.37

ADF = 3 MGD
AHF = 9 MGD

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PROJECT No. 14784
DATE: 08-09-2016
DESIGN: JDZ
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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

HYDRAULIC FLOW DIAGRAM

DRAWING DISCIPLINE
GENERAL

SHEET	OF
G-07	44

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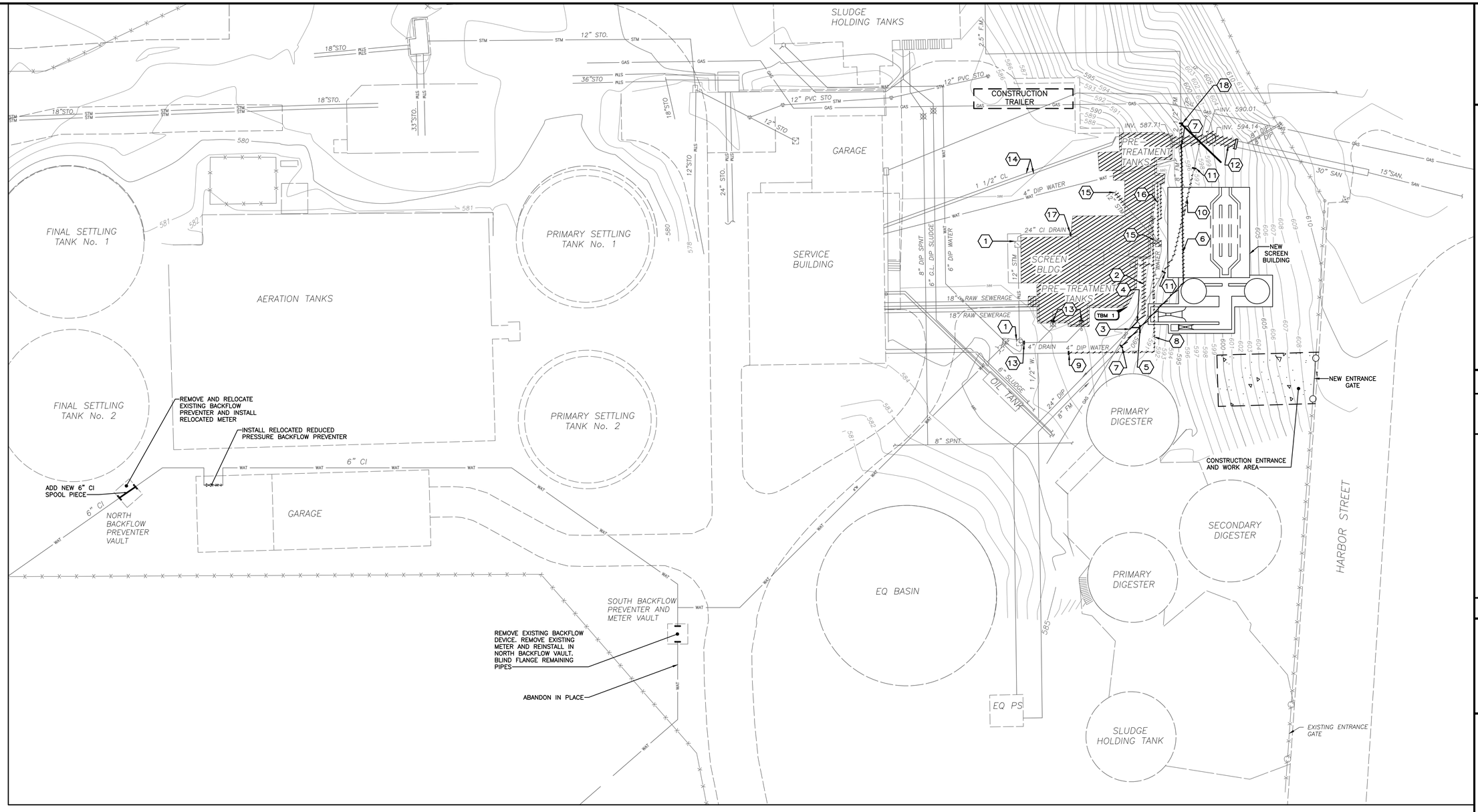

DEMOLITION CODED NOTES:

1. STORM DRAINS AND CATCH BASINS TO REMAIN.
2. REMOVE 24" DIP EXISTING PRETREATMENT TANK OVERFLOW EFFLUENT LINE.
3. INSTALL 24" DIP WYE AT THE END OF 24" DIP PRETREATMENT TANK OVERFLOW LINE.
4. INSTALL 24" DIP MECHANICAL CAP.
5. INSTALL A TEMPORARY 24" CAP UNTIL LATER CONNECTION.
6. REMOVE 8" DIP EXISTING FORCE MAIN. TEMPORARILY TAKE PUMP STATION PUMPS OUT OF SERVICE PRIOR TO THE FORCE MAIN DEMOLITION WORK.
7. INSTALL 8" DIP TEMPORARY CAP UNTIL LATER CONNECTION.
8. REMOVE EXISTING 4" DIP AND 1" DIP WATER LINE.
9. TEMPORARY PLUG OR CAP THE END OF THE 4" DIP WATER LINE UNTIL LATER CONNECTION.
10. REMOVE EXISTING GAS LINE. TEMPORARY TAKE THE GAS LINE OUT OF SERVICE PRIOR TO DEMOLITION WORK.
11. TEMPORARY PLUG OR CAP THE END OF THE GAS LINE UNTIL LATER CONNECTION.
12. REMOVE 30" VCP SANITARY LINE. PLUG AT NEW MANHOLE AFTER THE NEW HEADWORKS BUILDING IS PLACED INTO SERVICE.
13. PLUG 4" DIP EXISTING PROCESS DRAINS WITH NON-SHRINK NON-METALLIC GROUT AND CAP.
14. PLUG AND ABANDON IN PLACE 1 1/2" EXISTING CHLORINE LINES.
15. REMOVE CATCH BASIN AND ABANDON IN PLACE EXISTING 12" STORM LINE.
16. REMOVE 8" CAST IRON DRAIN PIPE.
17. PLUG AND ABANDON IN PLACE EXISTING 24" CI DRAIN.
18. INSTALL 2-1/2" TEMPORARY CAP UNTIL LATER CONNECTION.

DEMOLITION GENERAL NOTES:

1. DEMOLITION WORK SHALL BE PERFORMED WITHOUT INTERRUPTION TO THE PLANT OPERATION.
2. SEQUENCE OF THE SITE DEMOLITION WORK IS PROVIDED IN THE SECTION 01010 FOR DEMOLITION SEQUENCE.
3. LOCATION OF EXISTING PIPING AND EQUIPMENT WAS OBTAINED FROM PREVIOUS CONTRACT DRAWINGS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO ANY WORK.
4. BACKFILL AND COMPACT EXCAVATED AREAS OF STRUCTURES AND YARD PIPING REMOVAL WITH GENERAL BACKFILL AS PER CONTRACT SPECIFICATION, DIVISION 2.
5. ANY DEWATERING NECESSARY TO COMPLETE BACKFILL OF EXCAVATION FROM THE DEMOLITION OF THE STRUCTURES SHALL BE INCLUDED IN THE BASE BID.
6. DETAILED DEMOLITION IS SHOWN ON SHEETS D-01, D-02, D-03.

BENCHMARK INFORMATION:

TBM 1 SOUTHWEST CORNER OF DETRITUS TANK EL. 588.91 U.S.G.S. DATUM.

NEW BENCHMARKS SHALL BE REESTABLISHED PRIOR TO DEMOLITION OF THE EXISTING STRUCTURES BY THE REGISTERED SURVEYOR AND APPROVED BY THE OWNER AND THE ENGINEER.

0 20 40
SCALE: 1" = 20'

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PROJECT No. 14784
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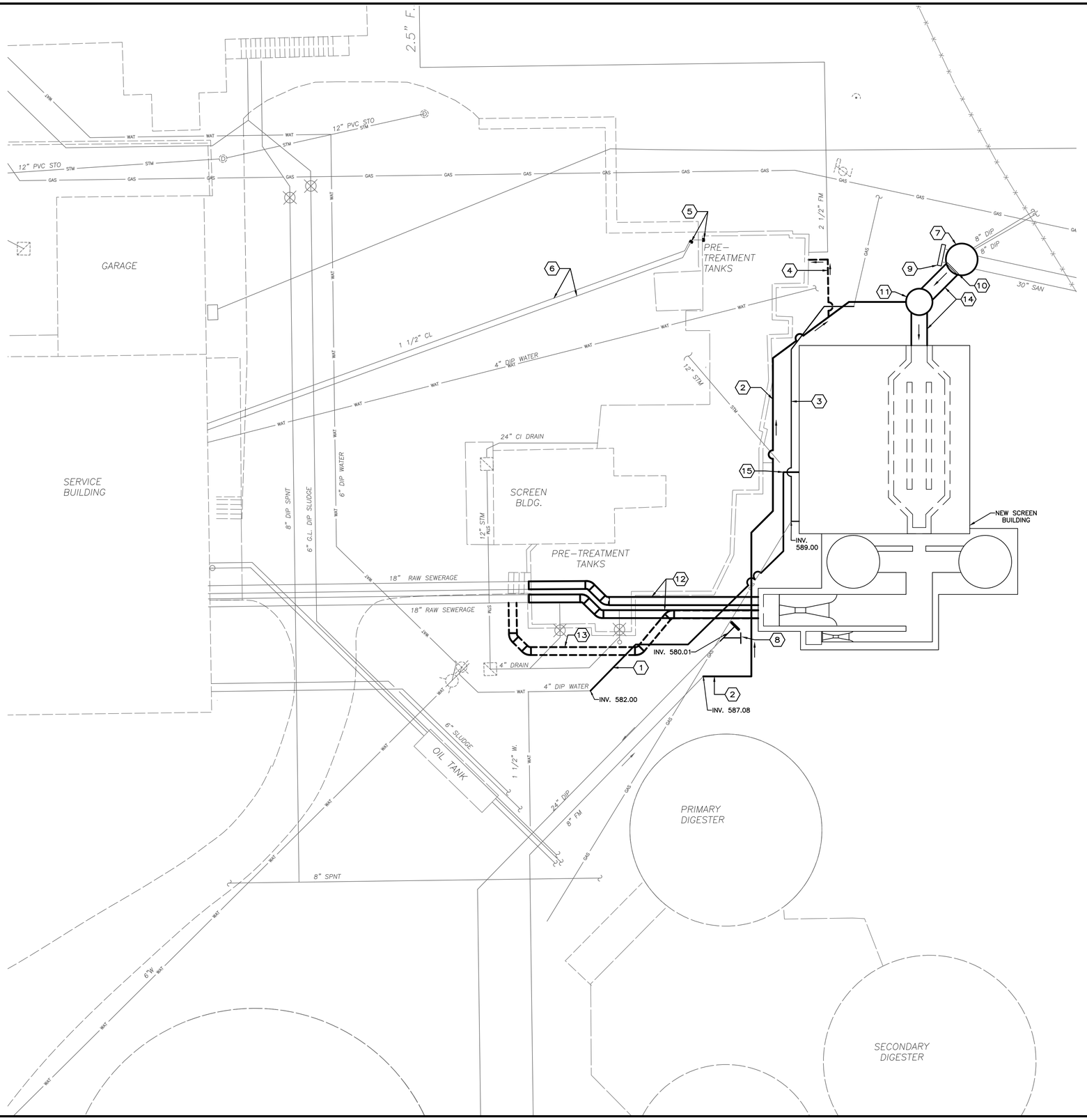
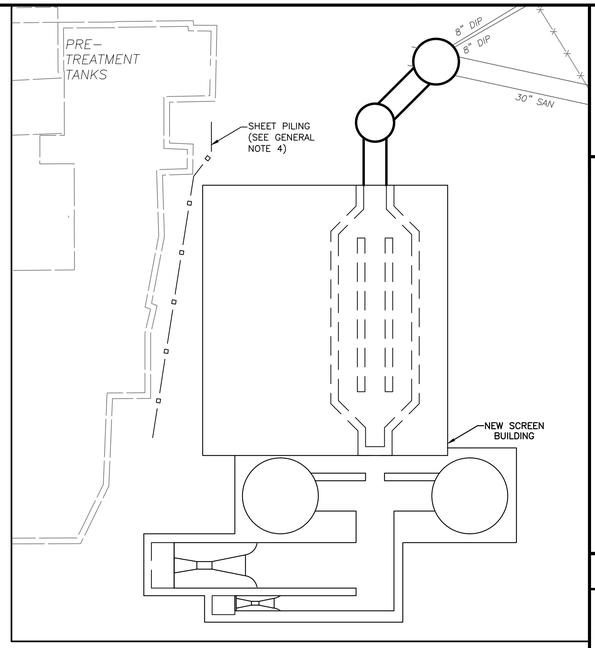
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

DEMOLITION SITE PLAN

DRAWING DISCIPLINE
CIVIL

SHEET	OF
C-01	44





EXISTING AND NEW STRUCTURES PLAN VIEW

(X) RELOCATION PIPING SCHEDULE:

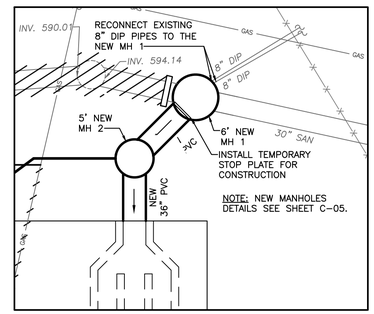
1. 4" DIP RELOCATED WATER LINE.
2. 8" DIP RELOCATED FORCEMAIN.
3. RELOCATED GAS LINE.
4. TEMPORARY 8" FORCEMAIN TO PRETREATMENT TANKS.
5. CAP EXISTING 1 1/2" CHLORINE LINES.
6. ABANDON IN PLACE EXISTING 1 1/2" CHLORINE LINES.
7. 6' INFLUENT MANHOLE.
8. CONNECT TO EXISTING 24" DIP GRIT OVERFLOW EFFLUENT LINE (SEE SHEET C-05).
9. PLUG EXISTING 30" SEWER WITH NON-SHRINK, NON-METALLIC GROUT AND INSTALL MECHANICAL CAP AFTER INSTALLATION OF NEW 36" PIPING.
10. TEMPORARY STOP PLATE.
11. 5' NEW INFLUENT MANHOLE.
12. 18" DIP GRIT MAIN EFFLUENT LINE.
13. 18" TEMPORARY EFFLUENT LINE.
14. 36" DIP INFLUENCE LINE.
15. 4"x2" DIP REDUCING ELBOW.

GENERAL NOTES:

1. SEQUENCE OF CONSTRUCTION IS PROVIDED IN SPECIFICATION SECTION 01010.
2. LOCATION OF THE EXISTING PIPING WAS OBTAINED FROM PREVIOUS CONTRACT DRAWINGS. CONTRACTOR TO FIELD VERIFY LOCATIONS PRIOR TO ANY WORK.

BENCHMARK INFORMATION:

TBM 1 SOUTHWEST CORNER OF DETRITUS TANK EL. 588.91 U.S.G.S. DATUM (SEE SHEET C-01).



NEW MANHOLES DETAIL

0 10 20
SCALE: 1" = 10'

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PROJECT No. 14784
DATE: 08-09-2016
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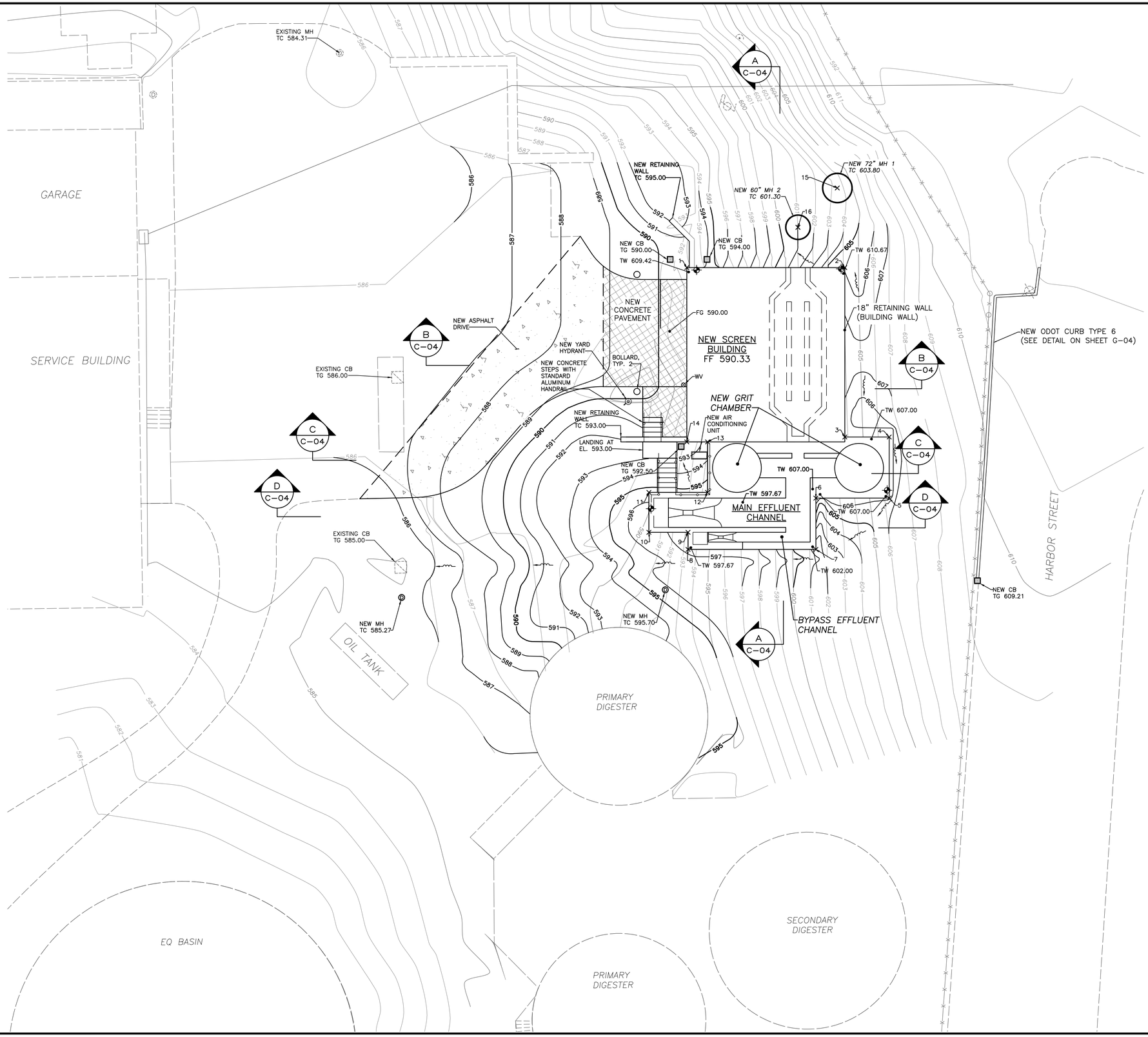
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

YARD PIPING RELOCATION PLAN

DRAWING DISCIPLINE
CIVIL

SHEET	OF
C-02	44



0 10 20
SCALE: 1" = 10'

DESIGNATIONS:

SOIL BORING, REFER TO SOIL BORING REPORT BY ACA ENGINEERING.

NEW STRUCTURE COORDINATES (OHIO NORTH STATE PLANE)

POINT	EAST	NORTH
1	2498364.6428	844206.8861
2	2498371.3114	844175.2480
3	2498337.3900	844168.0981
4	2498339.2634	844159.2101
5	2498327.0322	844156.6320
6	2498323.9385	844171.3095
7	2498313.6642	844169.1440
8	2498308.2675	844194.7481
9	2498311.6922	844195.4699
10	2498310.0406	844203.3061
11	2498318.0317	844204.9904
12	2498320.5083	844193.2403
13	2498330.6195	844195.3714
14	2498329.7430	844199.5301
15	2498386.9367	844180.1108
16	2498377.4022	844186.3257

NOTE:

BENCHMARK LOCATION AND INFORMATION SHOWN ON SHEET C-01.

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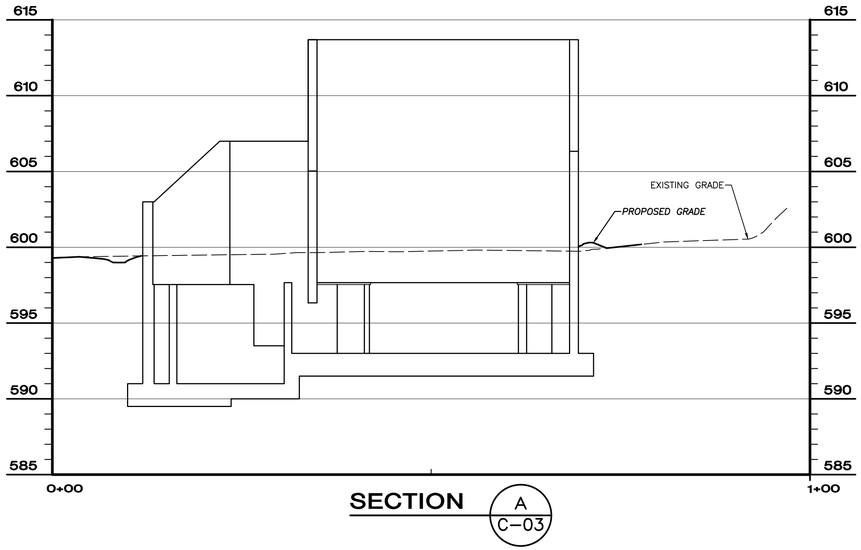
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

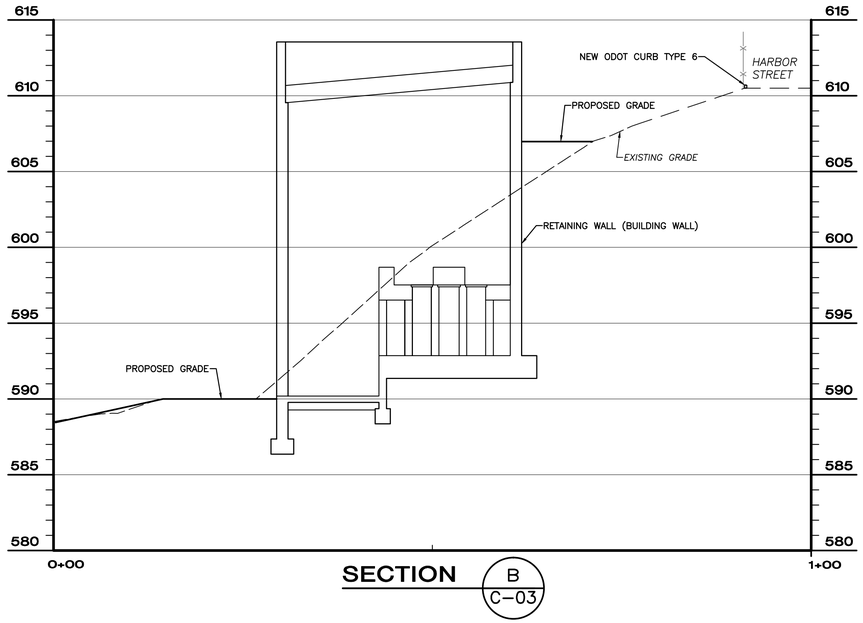
NEW YARD GRADING PLAN

DRAWING DISCIPLINE
CIVIL

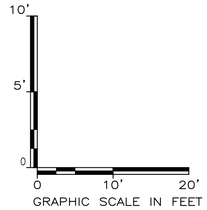
SHEET	OF
C-03	44

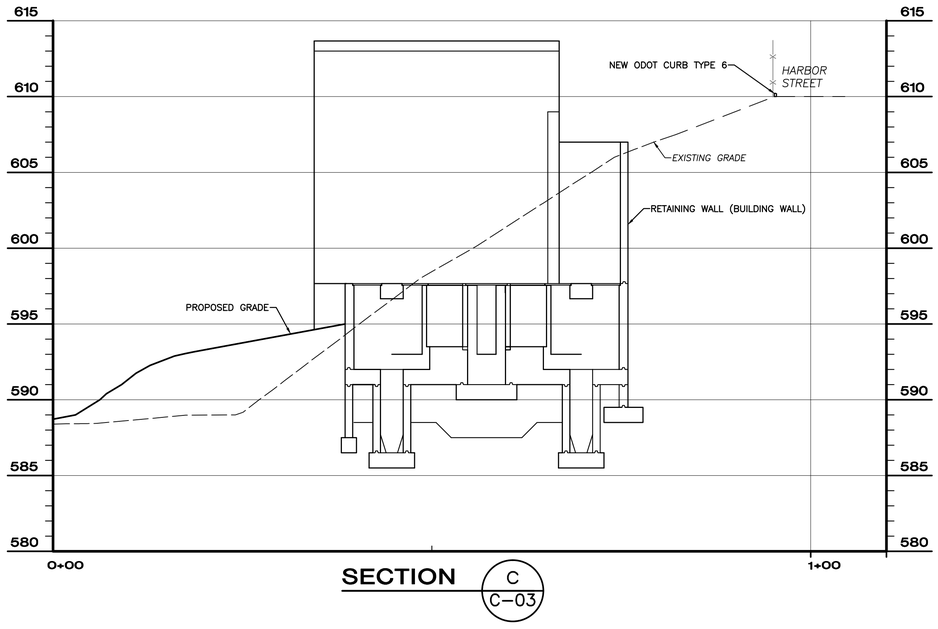


SECTION A
C–03

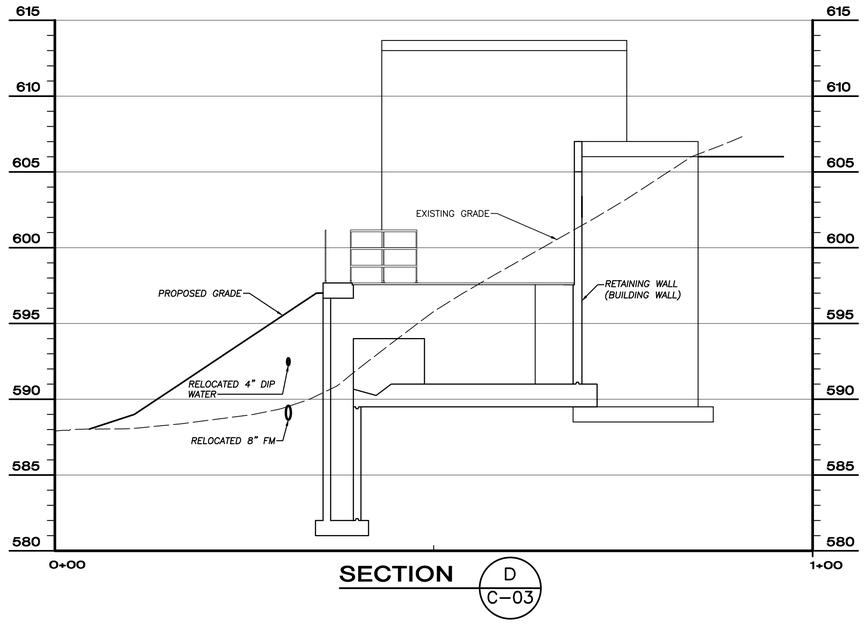


SECTION B
C–03





SECTION C
C–03



SECTION D
C–03

GENERAL NOTE:

1. MINIMUM 18" VERTICAL SEPARATIONS SHALL BE PROVIDED BETWEEN WATER AND SANITARY SEWER LINES.

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No.	REVISION DATA	DATE	BY

PERMIT _ PROGRESS X BID _ CONSTRUCTION _ RECORD

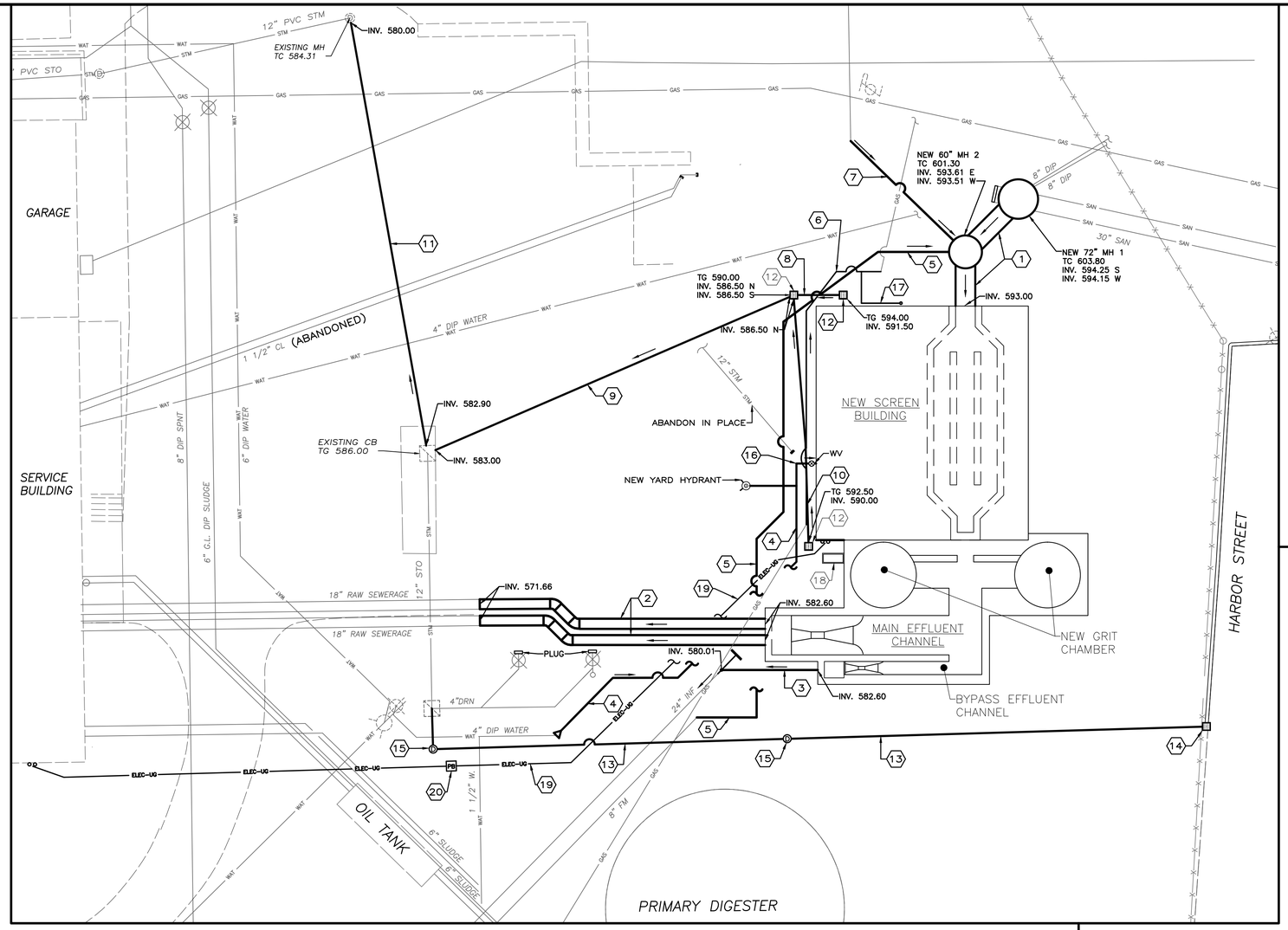
PROJECT No. 14784
DATE: 08–09–2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

NEW GRADING - SECTIONS

DRAWING DISCIPLINE
CIVIL

SHEET	OF
C-04	44

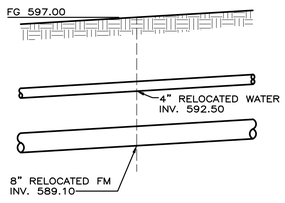


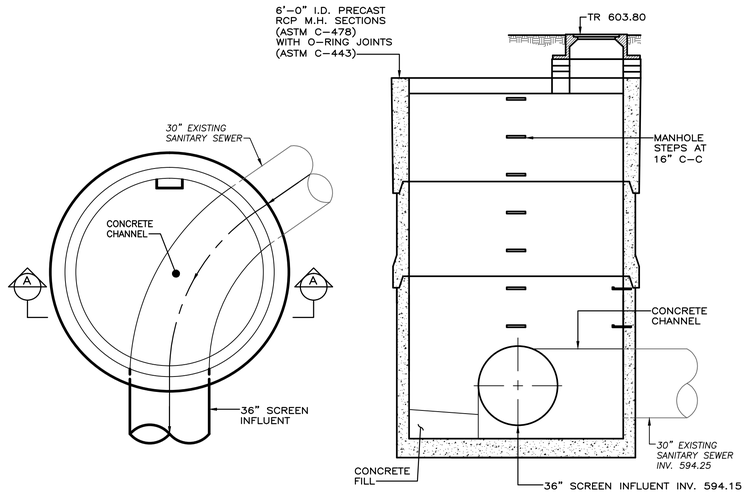
CODED NOTES:

1. 36" DIP SCREEN BUILDING INFLUENT LINE.
2. 18" DIP GRIT MAIN EFFLUENT LINE.
3. 24" DIP GRIT OVERFLOW EFFLUENT LINE.
4. 4" DIP RELOCATED WATER LINE.
5. 8" DIP RELOCATED FORCEMAIN.
6. RELOCATED GAS LINE.
7. 2-1/2" DIP FORCEMAIN.
8. 12" PVC SDR 35 STORM PIPE #1.
9. 12" PVC SDR 35 STORM PIPE #2.
10. 12" PVC SDR 35 PIPE #3.
11. 12" PVC SDR 35 PIPE #4.
12. ODOT TYPE 2-2A CATCH BASIN.
13. NEW 12" RCP STORM LINE. SEE PROFILE ON SHEET C-06.
14. NEW ODOT TYPE 6 CATCH BASING CB-2-3.
15. NEW ODOT No. 3 MANHOLE.
16. 4"x2" DIP REDUCING ELBOW.
17. 2" GAS LINE (SEE SHEET M-1).
18. NEW AIR CONDITIONING UNIT (SEE MECHANICAL SHEETS).
19. UNDERGROUND DUCTBANK (SEE SHEET E-02).
20. IN GROUND PULL BOX (SEE SHEET E-02).

GENERAL NOTES:

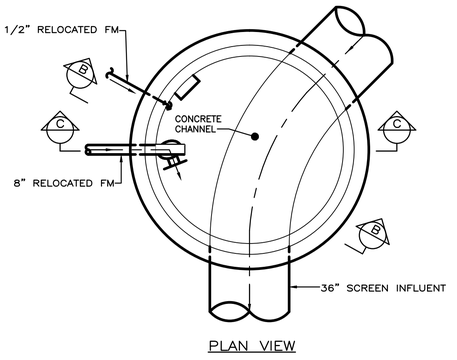
1. RELOCATED 4" DIP WATER LINE AND RELOCATED 8" PVC SDR 21 FORCE MAIN SHALL HAVE MINIMUM 18" VERTICAL SEPARATION (SEE DETAIL BELOW).

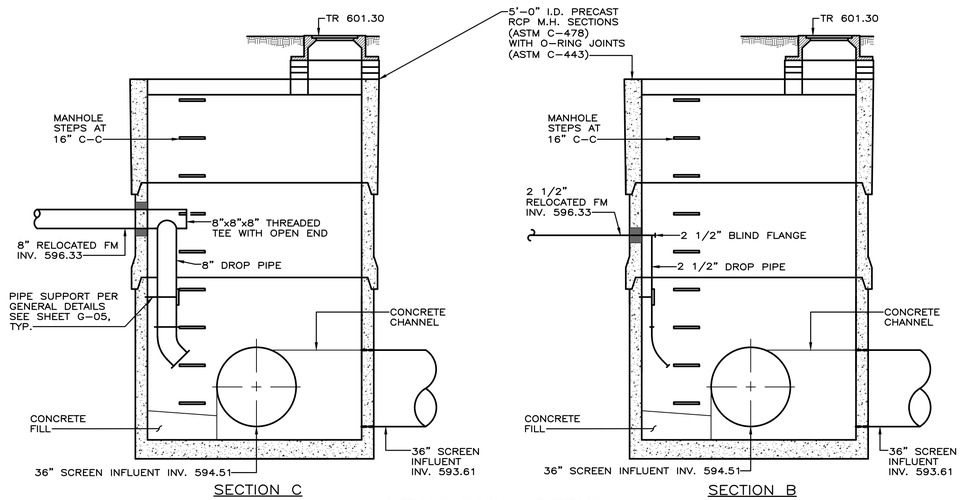




NEW 60" MH 1 DETAIL

N.T.S.





NEW 60" MH 2 DETAIL

N.T.S.

0 10 20
SCALE: 1" = 10'

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PROJECT No. 14784
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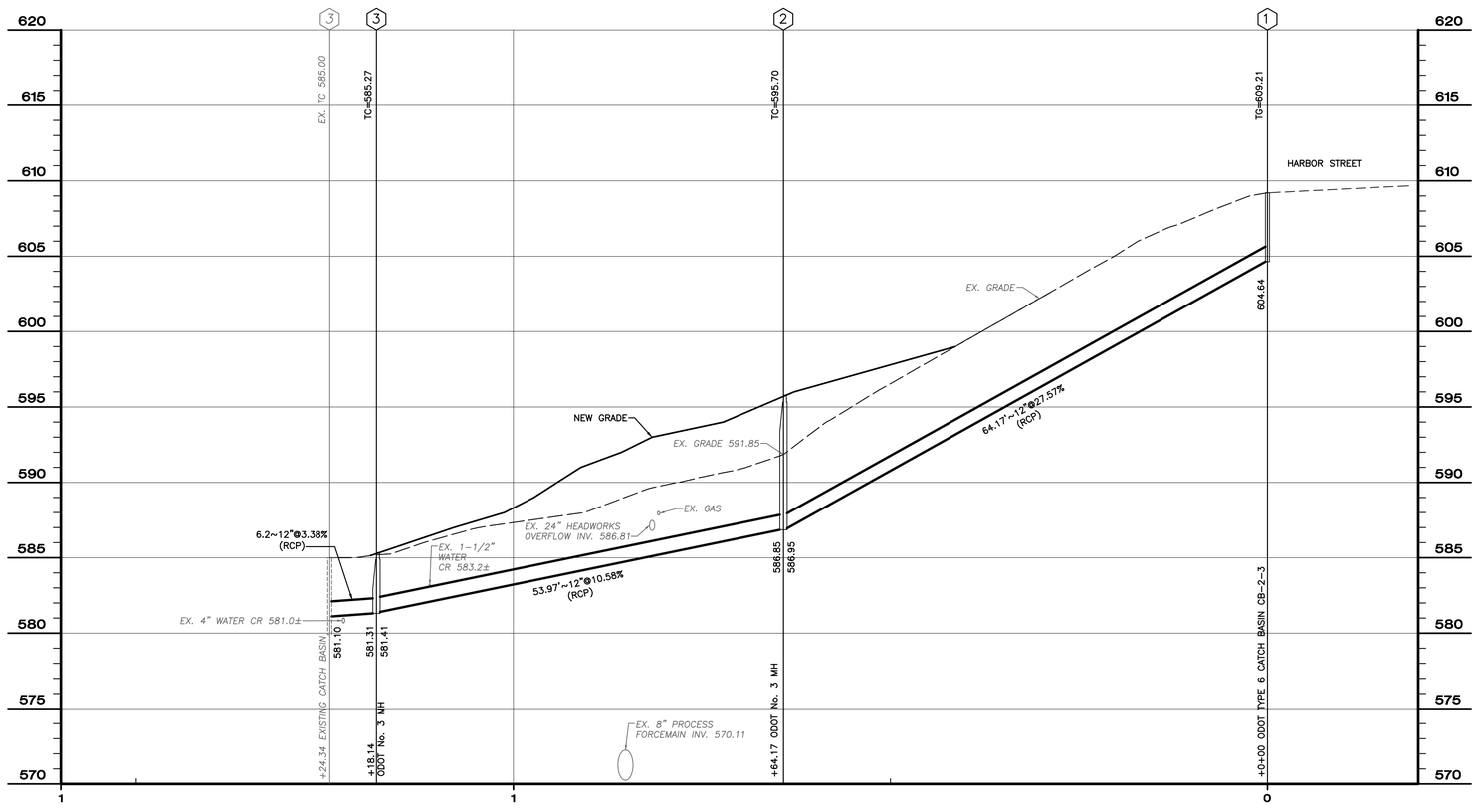
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

NEW YARD PIPING PLAN

DRAWING DISCIPLINE
CIVIL

SHEET	OF
C-05	44



10'
5'
0
0 10' 20'
GRAPHIC SCALE IN FEET

GENERAL NOTES:

1. 12" RCP STORM SEWER SHALL BE CONSTRUCTED ALONG WITH CONSTRUCTION ENTRANCE PRIOR TO BEGINNING OF THE NEW HEADWORKS BUILDING CONSTRUCTION.
2. THE TOP OF THE MANHOLES 2 AND 3 SHALL BE ADJUSTED TO THE NEW GRADES AT THE END OF CONSTRUCTION AND DEMOLITION WORK.
3. CONTRACTOR TO FIELD VERIFY LOCATIONS AND ELEVATIONS OF THE EXISTING PIPING.

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PROJECT No. 14784
DATE: 08-09-2016
DESIGN: MIS
DRAWN: RE
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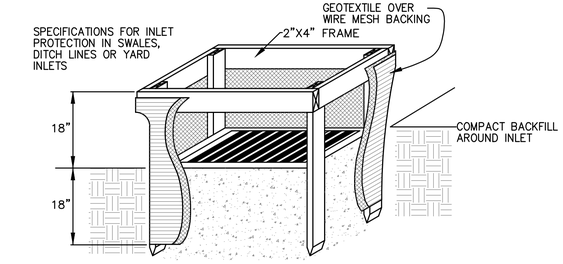
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT
PLANT HEADWORKS
FACILITY

NEW 12-INCH RCP STORM
LINE PROFILE

DRAWING DISCIPLINE
CIVIL

SHEET	OF
C-06	44



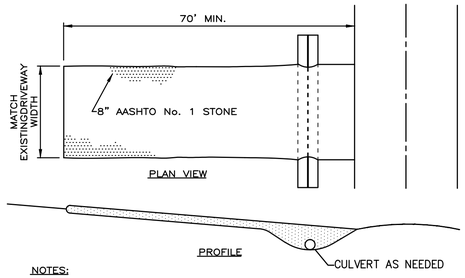
N.T.S.

SPECIFICATIONS FOR INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS

1. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 18 INCHES.
3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2–BY–4–INCH CONSTRUCTION–GRADE LUMBER. THE 2–BY–4–INCH POSTS SHALL BE DRIVEN 18 INCHES INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2–BY–4–INCH FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
5. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20–40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
6. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6 INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
7. A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION AND IF RUNOFF BYPASSING THE INLET WILL NOT FLOW TO A SETTLING POND. THE TOP OF EARTH DIKES SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.

INLET PROTECTION

N.T.S.

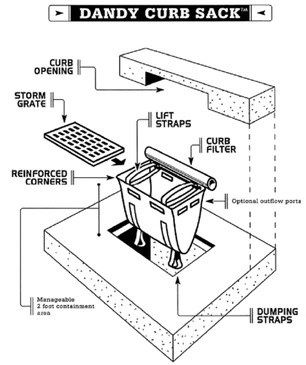


NOTES:

1. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF–SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
2. MAINTENANCE – TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OF TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
3. BEDDING – A GEOTEXTILE FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL HAVE A GRAB TENSILE STRENGTH OF AT LEAST 200 LBS. AND A MULLEN BURST STRENGTH OF AT LEAST 190 LBS.

ROCK CONSTRUCTION ENTRANCE

N.T.S.



SILT SACK

N.T.S.

SILT FENCE SPECIFICATIONS

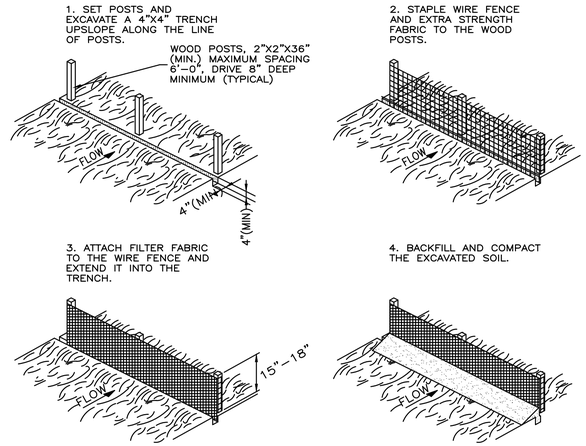
1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES AND DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
4. WHERE AVAILABLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FT. (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN A TRENCH A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE MACHINE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
8. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE SO THAT 8 INCHES OF THE CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 4 INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.
9. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.
10. MAINTENANCE – SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
   1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED,
   2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR
   3) OTHER PRACTICES SHALL BE INSTALLED.

CRITERIA FOR SILT FENCE MATERIALS

1. FENCE POSTS– THE LENGTH SHALL BE A MINIMUM OF 36" LONG. WOOD POSTS SHALL BE 2"X2" HARDWOOD OF SOUND QUALITY. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 6 FEET.

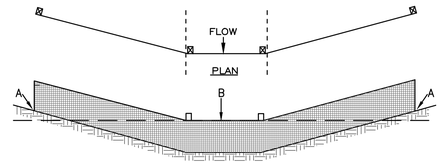
2. SILT FENCE SHALL BE ODOT TYPE C GEOTEXTILE FABRIC OR AS DESCRIBED BY THE CHART BELOW:

FABRIC PROPERTIES	
MAXIMUM TENSILE STRENGTH	.120 lbs.
MAXIMUM ELONGATION AT 60 lbs.	50%
MAXIMUM PUNCTURE STRENGTH	.50 lbs.
MINIMUM TEAR STRENGTH	.40 lbs.
MINIMUM BURST STRENGTH	.200 psi.
APPARENT OPENING SIZE	≤ 0.84 mm
MINIMUM PERMITTIVITY	$.1 \times 10^{-1}$ sec.
ULTRAVIOLET EXPOSURE STRENGTH RETENTION	70%



TYPICAL DRAINAGE BARRIER SEDIMENT FENCE DETAIL

NO SCALE



(SF)

PROPER PLACEMENT OF A FILTER BARRIER IN A DRAINAGE WAY

NO SCALE

MAINTENANCE NOTES

ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED BY THE OWNER'S REPRESENTATIVE WEEKLY AND WITHIN 24 HOURS AFTER EACH RAINFALL TO ASSURE THAT THE MEASURES ARE FUNCTIONING ADEQUATELY. SEDIMENT THAT IS COLLECTED WILL BE DISTRIBUTED ON THE PROTECTED PORTION OF THE SITE AND STABILIZED. ALL STOCKPILES OF EARTH AND TOPSOIL WILL BE PROTECTED WITH TEMPORARY SEEDING OR OTHER MEANS TO PREVENT EROSION.

CONSTRUCTION ROAD STABILIZATION / CONSTRUCTION ENTRANCES (CRS)
BOTH TEMPORARY AND PERMANENT ROADS AND PARKING AREAS MAY REQUIRE PERIODIC TOP DRESSING WITH NEW GRAVEL. SEEDED AREAS ADJACENT TO THE ROADS AND PARKING AREAS SHOULD BE CHECKED PERIODICALLY TO ENSURE THAT A VIGOROUS STAND OF VEGETATION IS MAINTAINED. ROADSIDE DITCHES AND OTHER DRAINAGE STRUCTURES SHOULD BE CHECKED REGULARLY TO ENSURE THAT THEY DO NOT BECOME CLOGGED WITH SILT OR OTHER DEBRIS.

SILT FENCE (SF)
SILT FENCE AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NEEDED, THE FABRIC SHALL BE REPLACED PROMPTLY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE–HALF OF THE HEIGHT OF THE BARRIER.

ANY SEDIMENT DEPOSITS REMAINING IN–PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

DIVERSION (D)
BARE AND VEGETATED DIVERSION CHANNELS SHOULD BE INSPECTED REGULARLY TO CHECK FOR POINTS OF SCOUR OR BANK FAILURE; RUBBISH OR CHANNEL OBSTRUCTION; RODENT HOLES, BREACHING OR SETTLING OF THE RIDGE; EXCESSIVE WEAR FROM PEDESTRIAN OR CONSTRUCTION TRAFFIC. REPAIR DAMAGE AND REMOVE DEPOSITS OR SEDIMENT FROM THE DIVERSION CHANNEL AND VEGETATIVE FILTER STRIP. RESEEDING AND FERTILIZING SHOULD BE DONE AS NEEDED.

GENERAL LAND CONSERVATION NOTES

PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO THE DISTURBED AREAS ACCORDING TO TABLE 1 AND/OR TABLE 2 AFTER FINAL/ROUGH GRADE IS REACHED ON ANY PORTION OF THE SITE.

ALL STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN GRADING FOR ALL SITES.

ALL STORM SEWER, SANITARY SEWER, WATER MAIN AND SERVICE TRENCHES SHALL BE MULCHED AND SEEDED WITHIN 14 DAYS AFTER BACKFILL, IF INSTALLATION IS THROUGH STABILIZED AREAS.

ALL TEMPORARY DIVERSIONS, SEDIMENT BASIN EMBANKMENTS AND EARTH STOCKPILES SHALL BE SEEDED AND MULCHED FOR TEMPORARY VEGETATIVE COVER WITHIN 7 DAYS AFTER GRADING. STRAW, HAY MULCH OR EQUIVALENT IS REQUIRED.

ALL STORM SEWER INLETS SHALL BE PROTECTED BY SEDIMENT TRAPS (INLET PROTECTION) WHICH WILL BE MAINTAINED AND MODIFIED AS REQUIRED AS CONSTRUCTION PROGRESSES. SEDIMENT TRAPS ARE TO BE REMOVED AFTER SEEDING AND MULCHING IS ESTABLISHED.

ANY DISTURBED AREA NOT STABILIZED WITH SEEDING, SODDING, PAVING OR BUILT ON BY NOVEMBER 1ST, OR AREAS DISTURBED AFTER THAT DATE, SHALL BE MULCHED IMMEDIATELY WITH HAY OR STRAW AT THE RATE OF 2 TONS PER ACRE AND OVER–SEEDED BY APRIL 15TH.

AT THE COMPLETION OF CONSTRUCTION, ALL TEMPORARY SEDIMENT CONTROLS SHALL BE REMOVED AND ALL DENUDED AREAS SHALL BE STABILIZED.

ADDITIONAL EROSION AND SEDIMENTATION CONTROL MANAGEMENT PRACTICES MAY BE REQUIRED DUE TO UNFORESEEN CONDITIONS. THESE ADDITIONAL ITEMS SHALL BE INSTALLED AS DIRECTED BY THE VILLAGE OF POLK ENGINEER AND OR ASHLAND SOIL AND WATER CONSERVATION DISTRICT.

TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A STREAM AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TABLE 2: TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A STREAM AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 21 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 21 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A STREAM	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S)
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED

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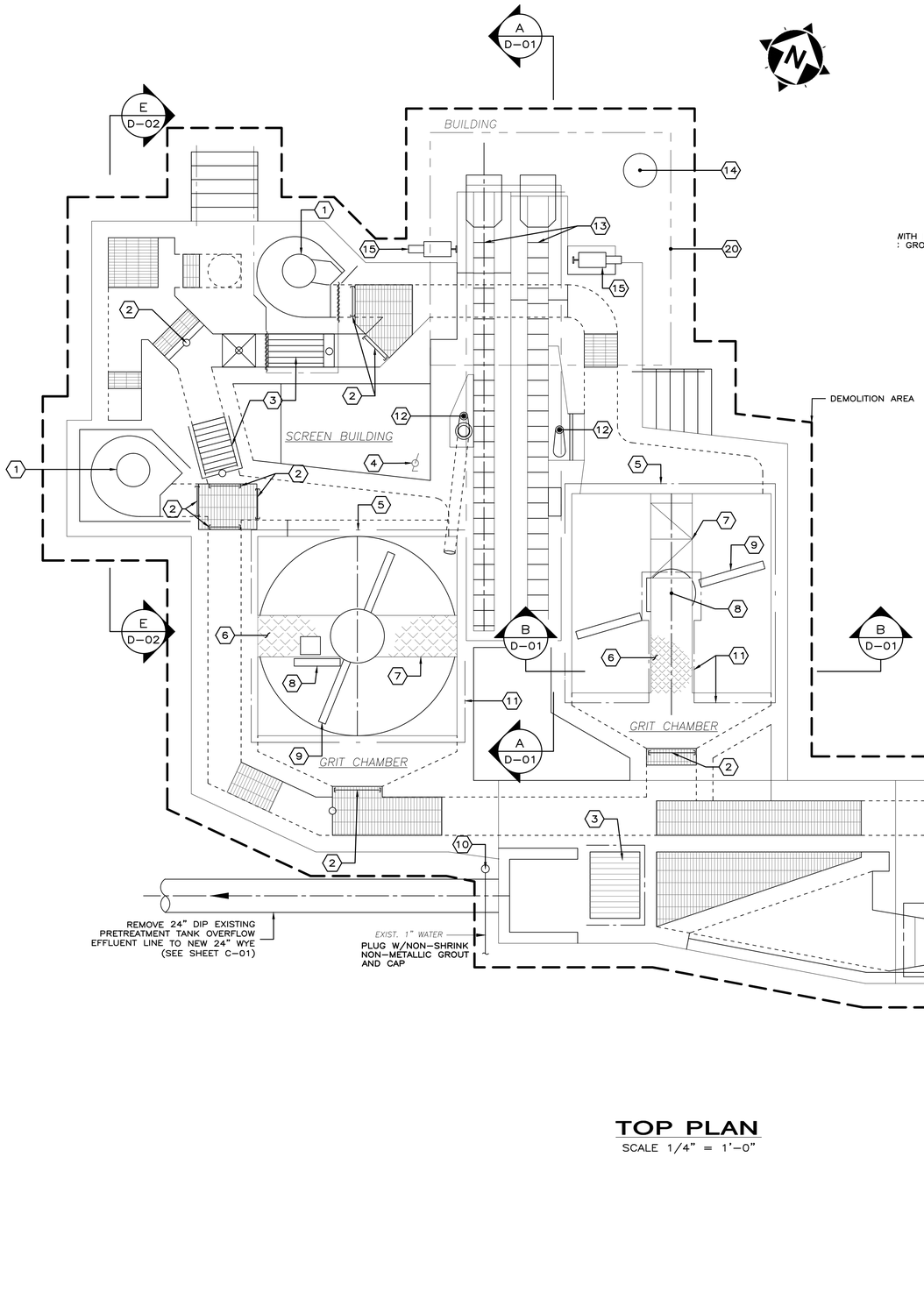
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

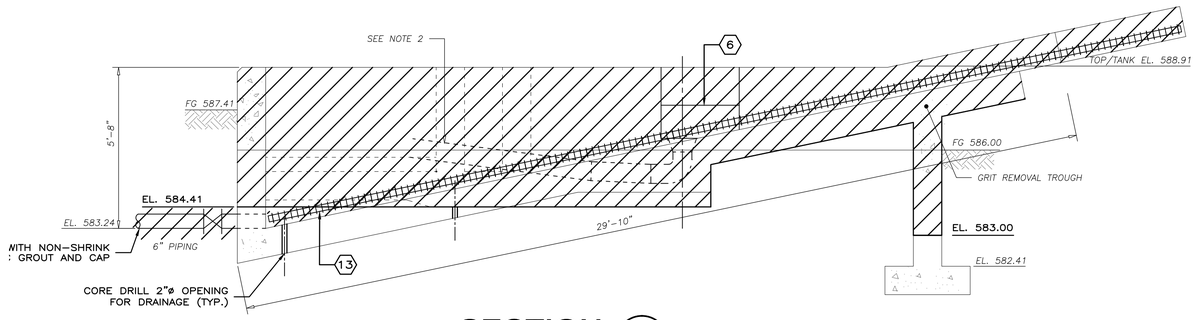
EROSION AND SEDIMENTATION CONTROL PLAN

DRAWING DISCIPLINE
CIVIL

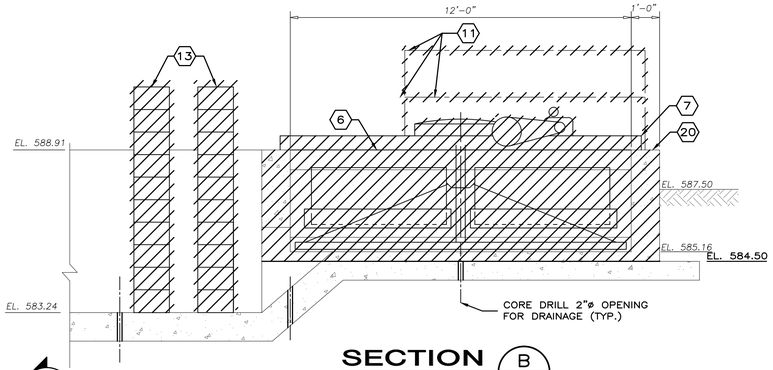
SHEET C-07 OF 44



TOP PLAN
SCALE 1/4" = 1'-0"



SECTION A D-02
SCALE: 3/8"=1'-0"



SECTION B D-01
SCALE: 3/8"=1'-0"

GENERAL NOTES:

1. PRETREATMENT TANKS 1 AND 2 AND SCREEN BUILDING BUILDING SHALL BE REMOVED, INCLUDING CONCRETE TANK WALLS TO AT LEAST THREE FEET BELOW EXISTING GRADE, EQUIPMENT AND ALL PIPING.
2. ALL EQUIPMENT SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING POWER AND CONTROL WIRE AND CONDUIT, LOCAL CONTROL STATIONS AND REMOTE CONTROL PANELS.

(X) DEMOLITION CODED NOTES:

1. REMOVE COMMINUTOR.
2. REMOVE STOP PLATES.
3. REMOVE BAR SCREEN.
4. REMOVE LIGHT POLE.
5. REMOVE WEIR.
6. REMOVE DECK PLATE.
7. REMOVE BRIDGE.
8. REMOVE DRIVE MECHANISM.
9. REMOVE COLLECTOR.
10. REMOVE POST HYDRANT.
11. REMOVE HANDRAILING.
12. REMOVE ORGANIC PUMPS AND PIPING.
13. REMOVE GRIT RAKES.
14. REMOVE SUMP PUMPS.
15. REMOVE GRIT RAKE DRIVE AND MOTOR.
16. REMOVE OVERFLOW WEIR.
17. REMOVE GRATING WITHIN DEMOLITION AREA.
18. REMOVE SLUICE GATE AND OPERATOR.
19. REMOVE LEVEL INSTRUMENTATION, CABLE, AND CONDUIT.
20. REMOVE GRIT WASHER BUILDING (WOOD WITH ASPHALT SHINGLE ROOF).
21. INSTALL 8" TEMPORARY BLIND FLANGE AT THE END OF THE FORCE MAIN UNTIL LATER CONNECTION (SEE SHEET C-01).
22. REMOVE 8" EXISTING FORCE MAIN (SEE SHEET C-01).

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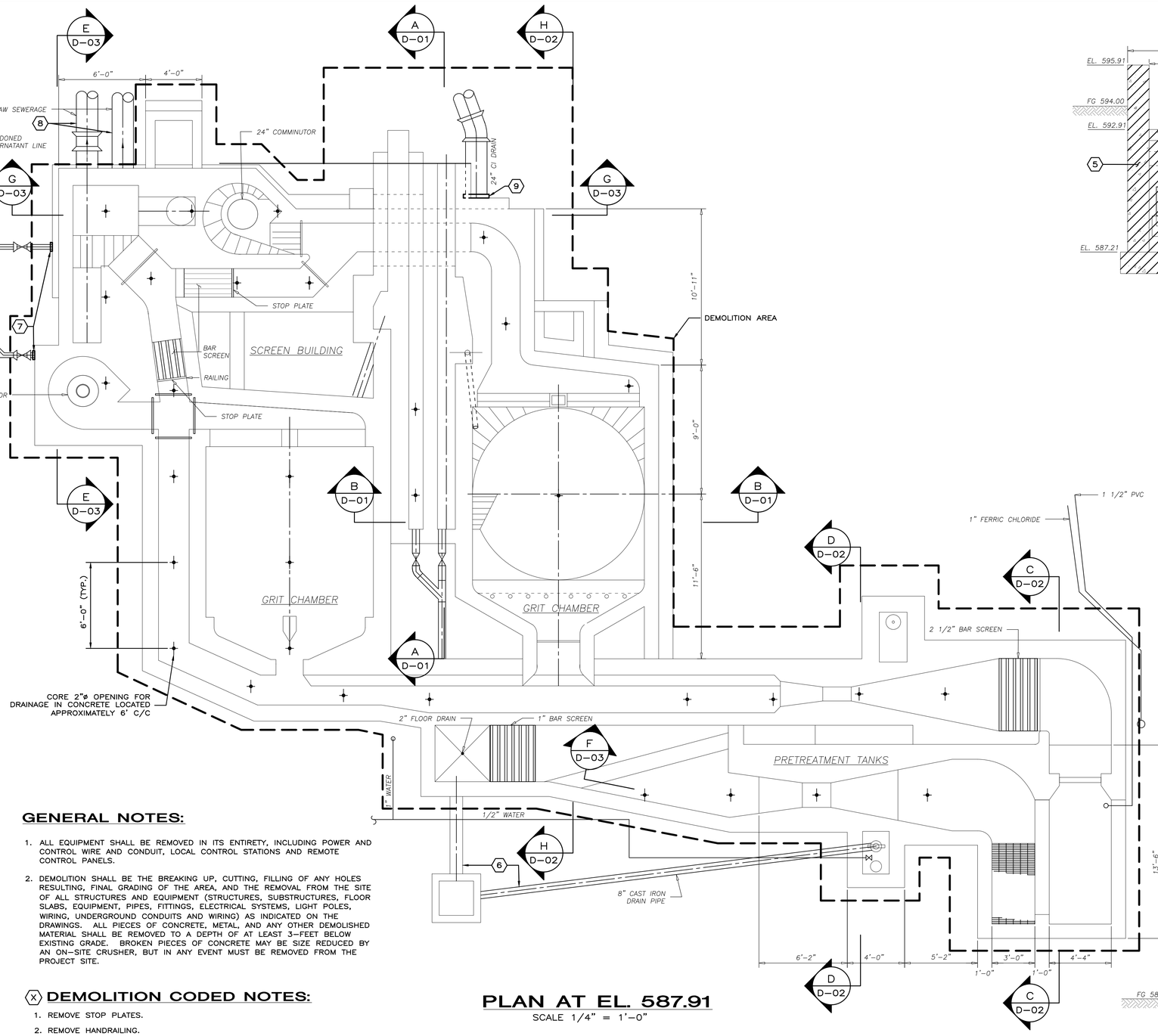
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

DEMOLITION PLAN

DRAWING DISCIPLINE
DEMOLITION

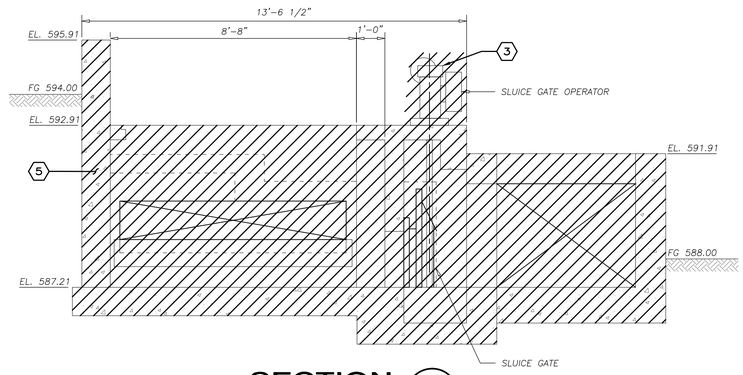
SHEET	OF
D-01	44

H:\2014\14784\DWG\D-01 DEMOLITION PLAN.DWG — 8/12/2016 6:59:37 AM — ELBERT



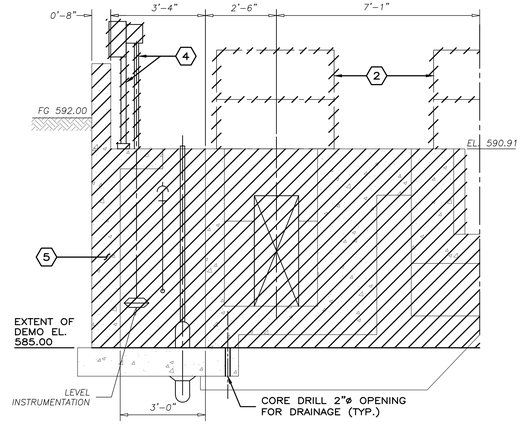
PLAN AT EL. 587.91

SCALE 1/4" = 1'-0"



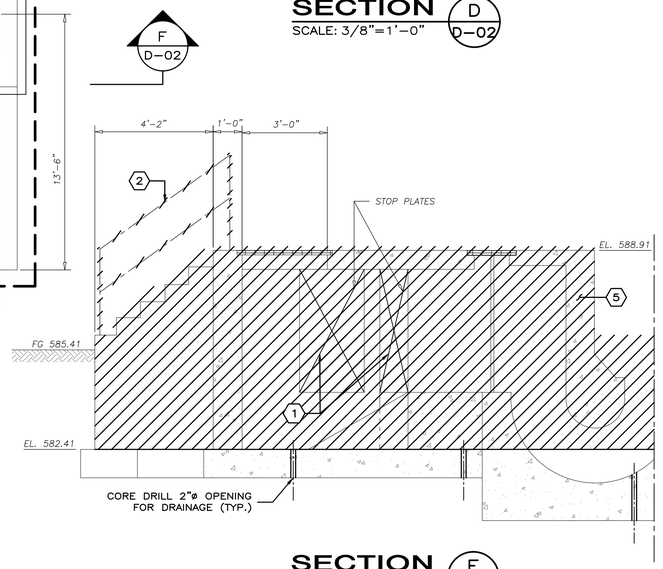
SECTION C D-02

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



SECTION D D-02

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



SECTION E D-02

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

GENERAL NOTES:

1. ALL EQUIPMENT SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING POWER AND CONTROL WIRE AND CONDUIT, LOCAL CONTROL STATIONS AND REMOTE CONTROL PANELS.
2. DEMOLITION SHALL BE THE BREAKING UP, CUTTING, FILLING OF ANY HOLES RESULTING, FINAL GRADING OF THE AREA, AND THE REMOVAL FROM THE SITE OF ALL STRUCTURES AND EQUIPMENT (STRUCTURES, SUBSTRUCTURES, FLOOR SLABS, EQUIPMENT, PIPES, FITTINGS, ELECTRICAL SYSTEMS, LIGHT POLES, WIRING, UNDERGROUND CONDUITS AND WIRING) AS INDICATED ON THE DRAWINGS. ALL PIECES OF CONCRETE, METAL, AND ANY OTHER DEMOLISHED MATERIAL SHALL BE REMOVED TO A DEPTH OF AT LEAST 3-FEET BELOW EXISTING GRADE. BROKEN PIECES OF CONCRETE MAY BE SIZE REDUCED BY AN ON-SITE CRUSHER, BUT IN ANY EVENT MUST BE REMOVED FROM THE PROJECT SITE.

(X) DEMOLITION CODED NOTES:

1. REMOVE STOP PLATES.
2. REMOVE HANDRAILING.
3. REMOVE SLUICE GATE AND OPERATOR.
4. REMOVE LEVEL INSTRUMENTATION, CABLE, AND CONDUIT.
5. REMOVE STRUCTURE TO THE EXTENT SHOWN.
6. REMOVE 8" CAST IRON DRAIN.
7. PLUG 4" EXISTING PROCESS DRAIN.
8. CAP EXISTING 18" RAW SEWERAGE PIPES TEMPORARILY FOR CONNECTION WITH NEW 18" PIPING.
9. PLUG EXISTING 24" CI DRAIN WITH NON-SHRINK NON-METALLIC GROUT AND CAP.

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No.	REVISION DATA	DATE	BY
	PERMIT _ PROGRESS X BID _ CONSTRUCTION _ RECORD		

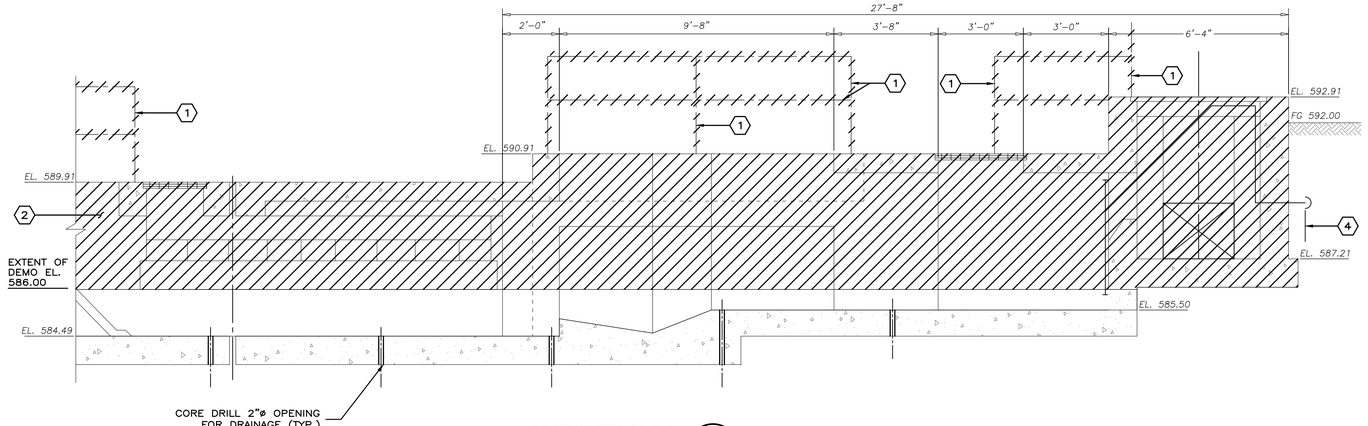
PROJECT No. 14784
DATE: 08-09-2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

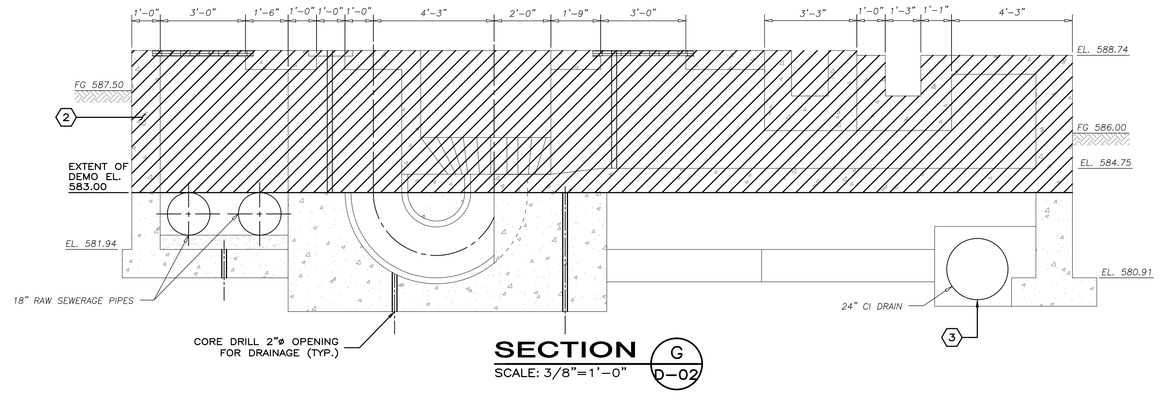
DEMOLITION DETAILS

DRAWING DISCIPLINE: DEMOLITION

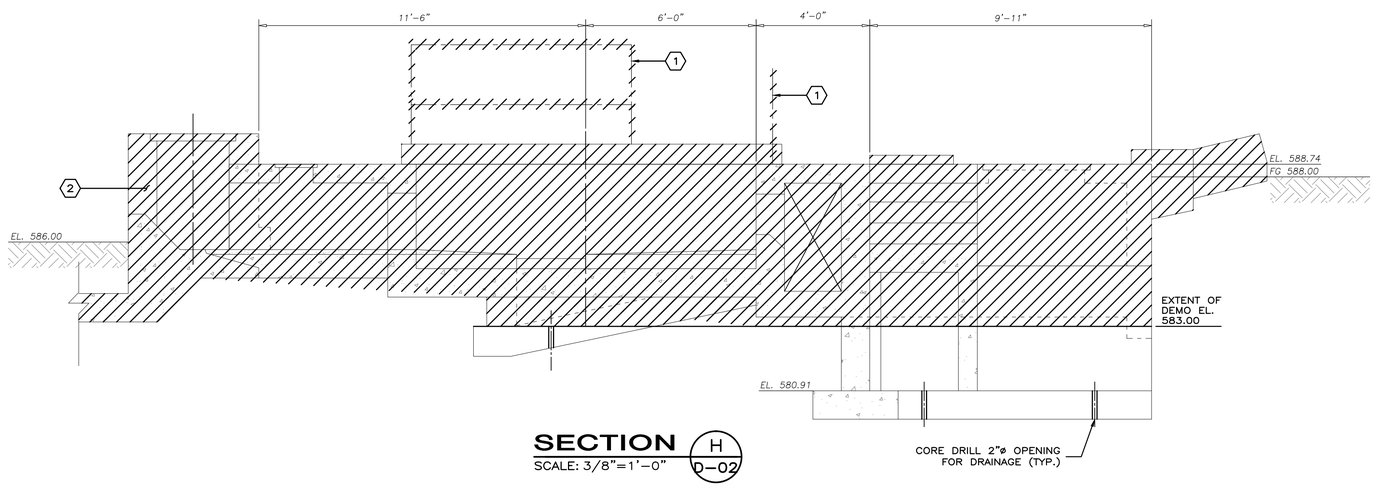
SHEET	OF
D-02	44



SECTION F
SCALE: 3/8"=1'-0" D-02



SECTION G
SCALE: 3/8"=1'-0" D-02



SECTION H
SCALE: 3/8"=1'-0" D-02

GENERAL NOTES:

1. ALL EQUIPMENT SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING POWER AND CONTROL WIRE AND CONDUIT, LOCAL CONTROL STATIONS AND REMOTE CONTROL PANELS.

(X) CODED NOTES:

1. REMOVE HANDRAILING.
2. REMOVE STRUCTURE TO THE EXTENT SHOWN.
3. PLUG EXISTING 24" CI DRAIN WITH NON-SHRINK NON-METALLIC GROUT AND CAP.
4. PLUG EXISTING PIPING WITH NON-SHRINK NON-METALLIC GROUT AND ABANDON IN PLACE.

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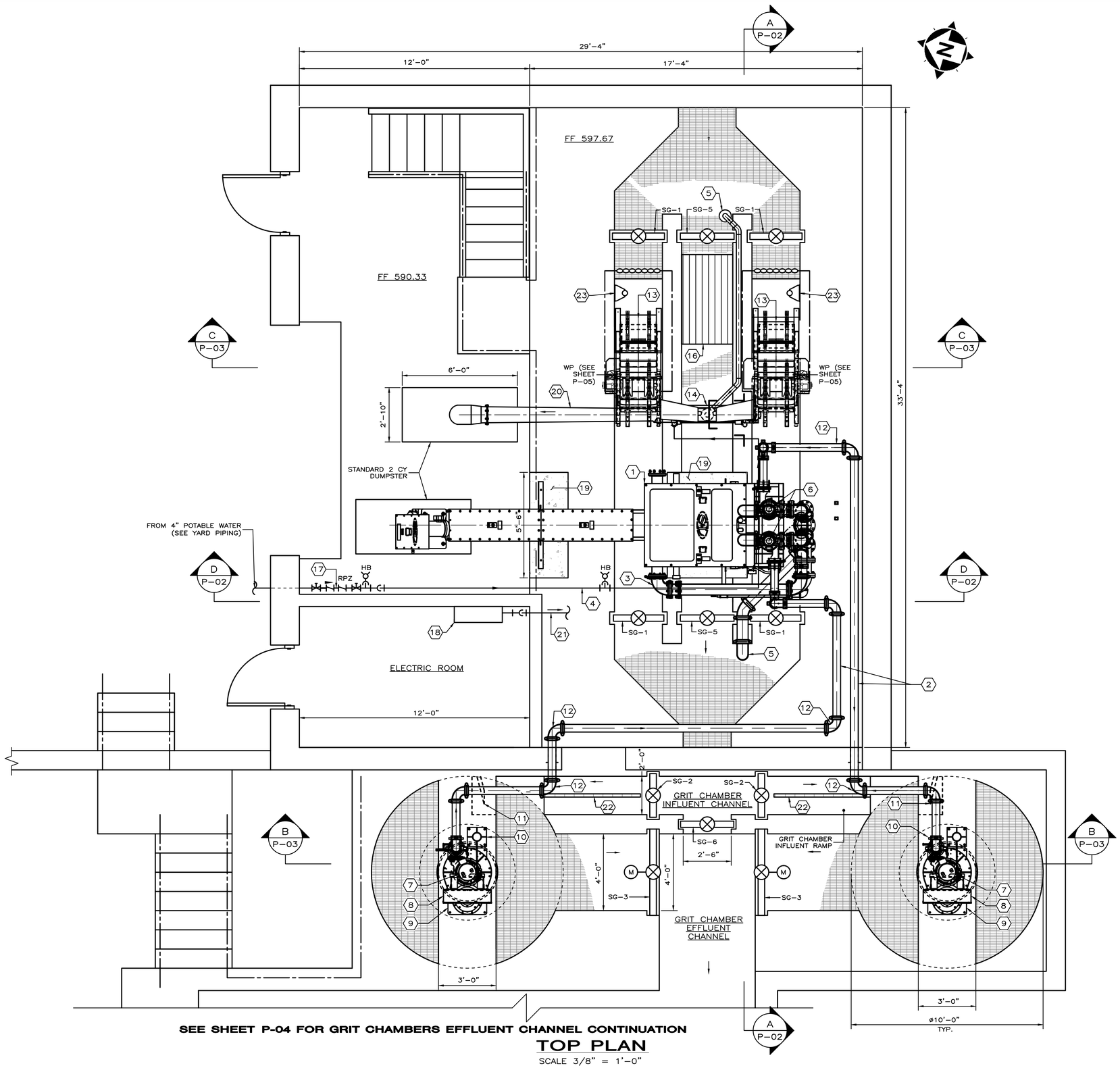
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

DEMOLITION DETAILS

DRAWING DISCIPLINE
DEMOLITION

SHEET	OF
D-03	44



SEE SHEET P-04 FOR GRIT CHAMBERS EFFLUENT CHANNEL CONTINUATION

TOP PLAN

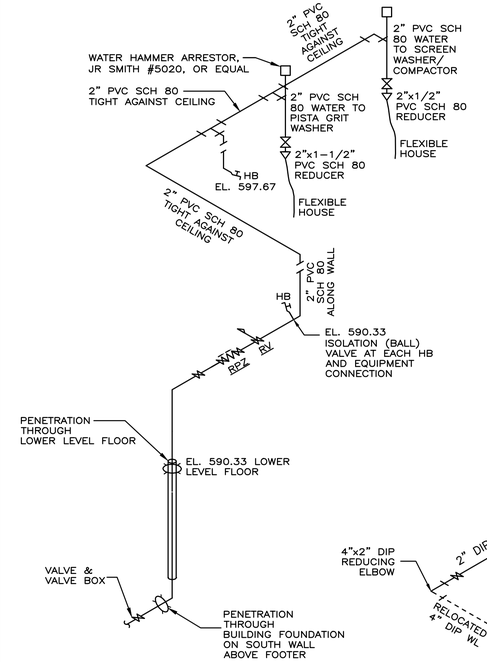
SCALE 3/8" = 1'-0"

CODED NOTES:

1. GRIT WASHER/CLASSIFIER SYSTEM, DRY WEIGHT 3000 LB, WET WEIGHT 8500 LB.
2. 4" DIP GRIT WASHER/ CLASSIFIER INFLUENT.
3. 6" DIP GRIT WASHER/ CLASSIFIER OVERFLOW PIPING.
4. 2" PVC SCH 80 WASH WATER SUPPLY TO THE PROCESS EQUIPMENT AND HOSE BIBBS.
5. 8" PVC SCH 80 GRIT WASHER/ CLASSIFIER SYSTEM DRAIN (SEE SHEET P-02).
6. 6" DIP AIR VENT PIPING.
7. GRIT REMOVAL SYSTEM EQUIPMENT, TOTAL WEIGHT 3000 LB.
8. GRIT PUMP VACUUM PRIMING SYSTEM ENCLOSURE.
9. GRIT PUMP GEAR BOX AND DRIVE ASSEMBLY.
10. PORTABLE CRANE SOCKET FOR GRIT PUMP LIFTING.
11. STEEL BAFFLE.
12. 4" DIP LONG RADIUS ELBOW.
13. MECHANICAL BAR SCREEN, DRY WEIGHT 3600 LB.
14. WASHER / COMPACTOR FOR MECHANICAL BAR SCREENS, DRY WEIGHT 950 LB.
15. 3" PVC SCH 80 WASHER / COMPACTOR DRAIN.
16. MANUAL BAR SCREEN WITH 1 3/4" BAR SPACING MOUNTED AT 45° FROM HORIZONTAL.
17. CONTRACTOR TO INSTALL REDUCED PRESSURE ZONE BACKFLOW PREVENTER, WATTS LF909, OR APPROVED EQUAL.
18. NEMA 4 AIR INFUSION COMPRESSOR PANEL FOR GRIT WASHER/ CLASSIFIER AIR SUPPLY.
19. CONCRETE SUPPORT FOR WASHER/ CLASSIFIER.
20. SCREENINGS CONVEYOR TO THE DUMPSTER.
21. 1/2" 304 SS COMPRESSED AIR PIPE TO THE GRIT WASHER/ CLASSIFIER.
22. FLOW STRAIGHTENING VANE.
23. PORTABLE CRANE SOCKET (BY CONTRACTOR).

GENERAL NOTE:

1. WEIR GATE SCHEDULE SEE SHEET P-06.
2. WATER CONSUMPTIONS:
   - SCREEN COMPACTOR: INTERMITTENT 3-5 GPM @ 40-60 PSIG.
   - GRIT WASHER; INTERMITTENT 30 GPM @ 50 PSIG.



HB HOSE BIB: CHICAGO #998-RCF OR APPROVED EQUAL
RV REGULATING VALVE: WATTS #25AUB-23 OR APPROVED EQUAL. SET OUTLET FOR 60 PSI.
RPZ REDUCED PRESSURE BACKFLOW PREVENTER: WATTS SERIES LF909-QT OR APPROVED EQUAL.

WATERLINE CONNECTIONS

N.T.S.

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PROJECT No. 14784
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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

NEW HEADWORKS BUILDING
UPPER PLAN

DRAWING DISCIPLINE
PROCESS

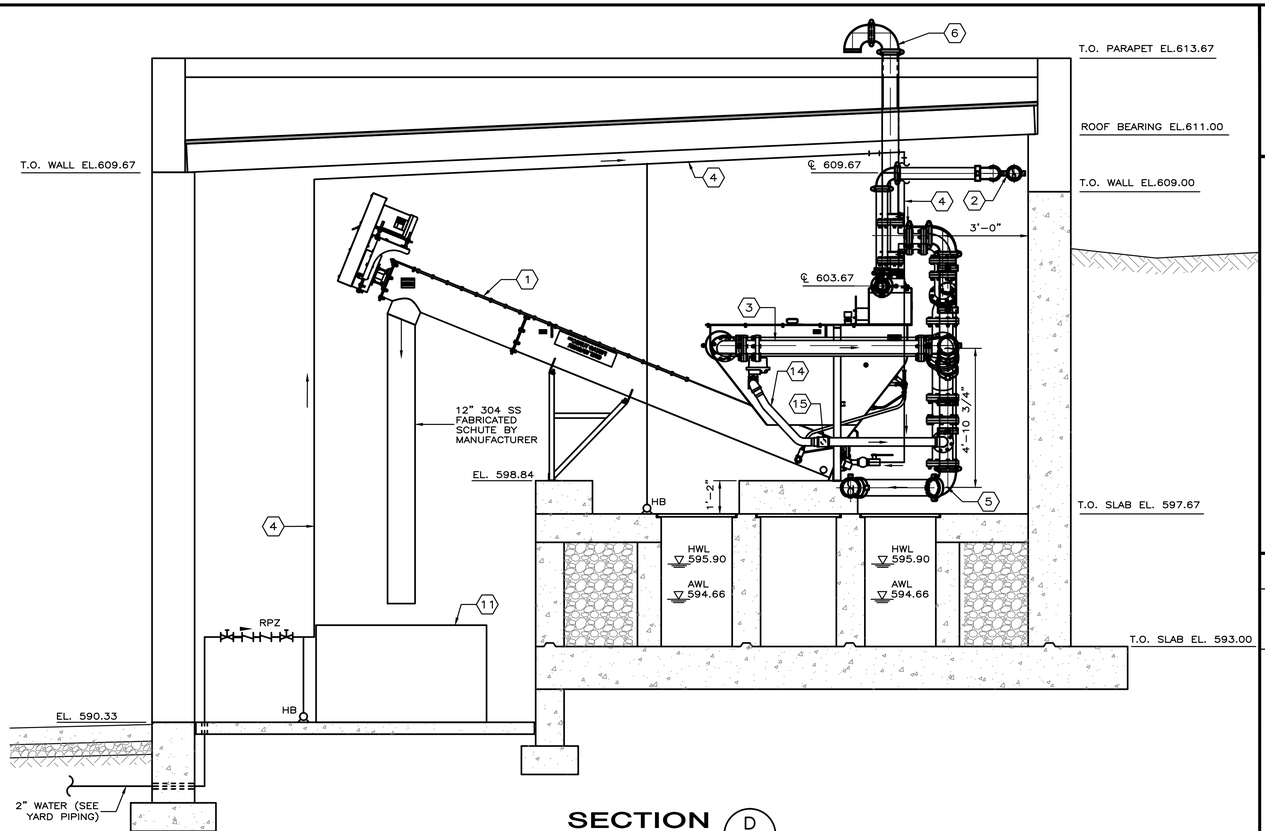
SHEET	OF
P-01	44

⟨X⟩ CODED NOTES:

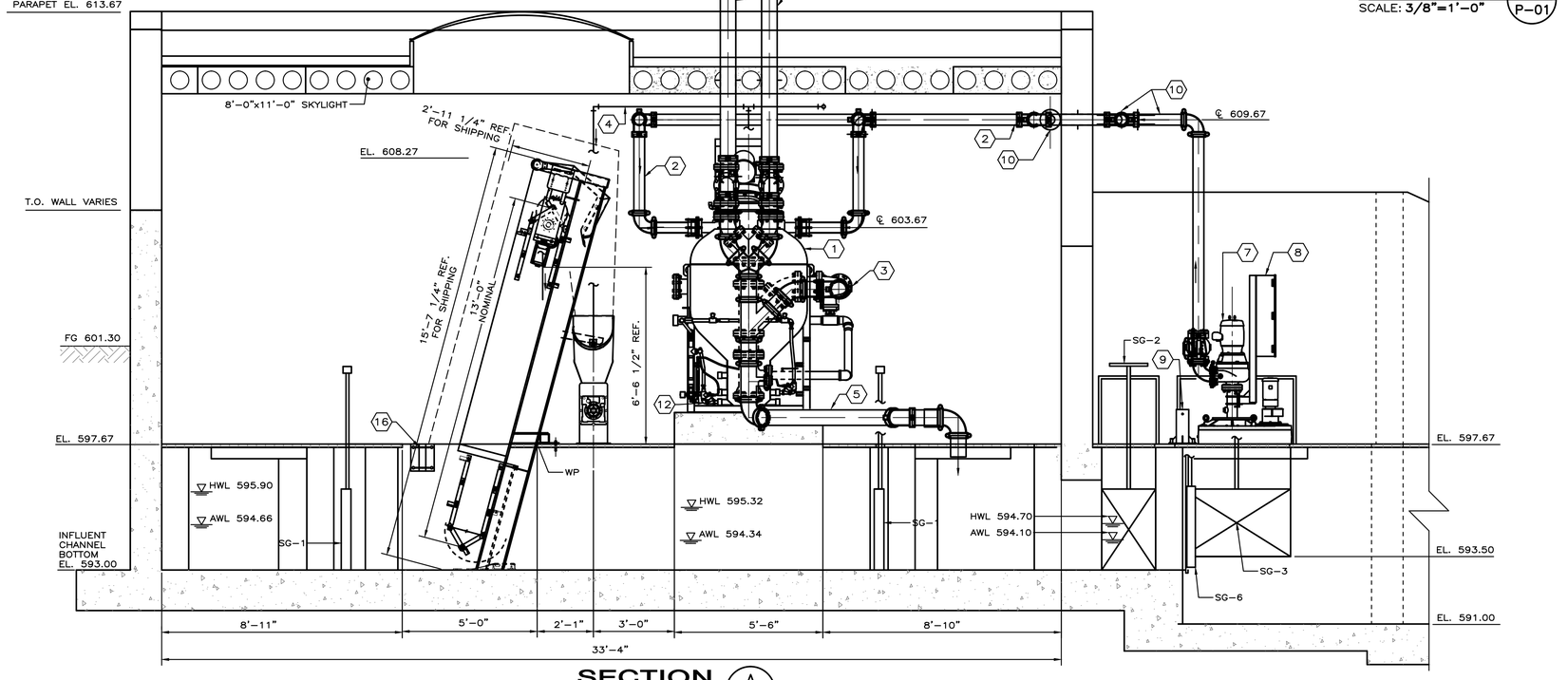
1. GRIT WASHER/CLASSIFIER SYSTEM.
2. 4" DIP GRIT WASHER INFLUENT (GRIT PUMP DISCHARGE).
3. 6" DIP GRIT OVERFLOW PIPING (BY CONTRACTOR).
4. 2" PVC SCH 80 WASH WATER SUPPLY.
5. 6" DIP GRIT WASHER DRAIN.
6. 6" PVC SCH 80 AIR VENT PIPING.
7. GRIT REMOVAL SYSTEM EQUIPMENT, TOTAL WEIGHT 3000 LB.
8. VACUUM PRIMING SYSTEM ENCLOSURE FOR GRIT PUMP SYSTEM.
9. PORTABLE CRANE SOCKET FOR GRIT PUMP LIFTING.
10. 4" DIP LONG RADIUS ELBOW.
11. 2 CY CONTAINER.
12. 1/4" NPT AIR INLET CONNECTION TO GRIT WASHER/ CLASSIFIER.
13. NEMA 4 AIR INFUSION COMPRESSOR PANEL FOR GRIT WASHER/ CLASSIFIER AIR SUPPLY.
14. 3" DIP GRIT WASHER DRAIN.
15. 2" DIP COMPLETE WASHER/ CLASSIFIER DRAIN PIPE.
16. PORTABLE CRANE SOCKET (BY CONTRACTOR).

GENERAL NOTE:

1. GATE SCHEDULE SEE SHEET P–06.
2. PIPE DETAILS PER GENERAL DETAIL SHEET G–05, TYP.



SECTION D
SCALE: 3/8"=1'–0"
P–01



SECTION A
SCALE: 3/8"=1'–0"
P–01

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PROJECT No. 14784
DATE: 08–09–2016
DESIGN: JDZ
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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

NEW HEADWORKS BUILDING SECTIONS A AND D

DRAWING DISCIPLINE
PROCESS

SHEET	OF
P–02	44

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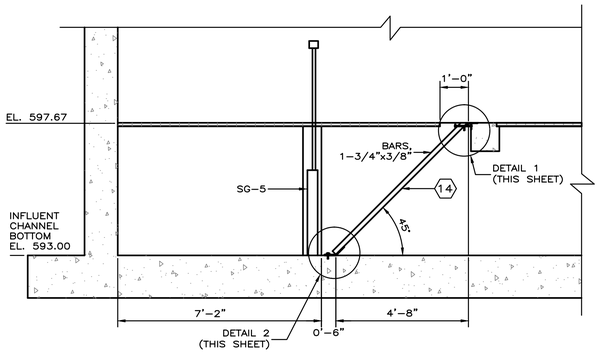
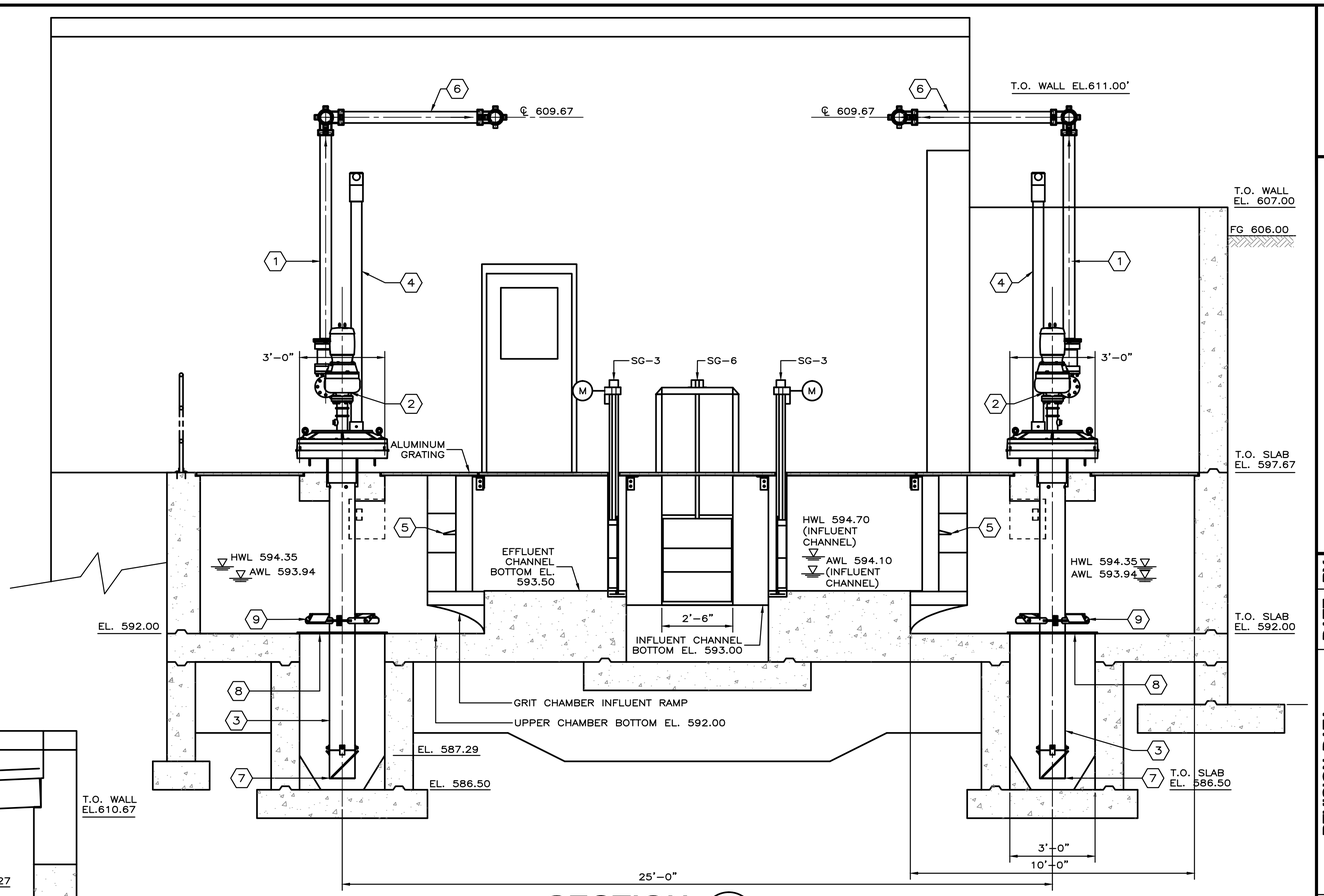


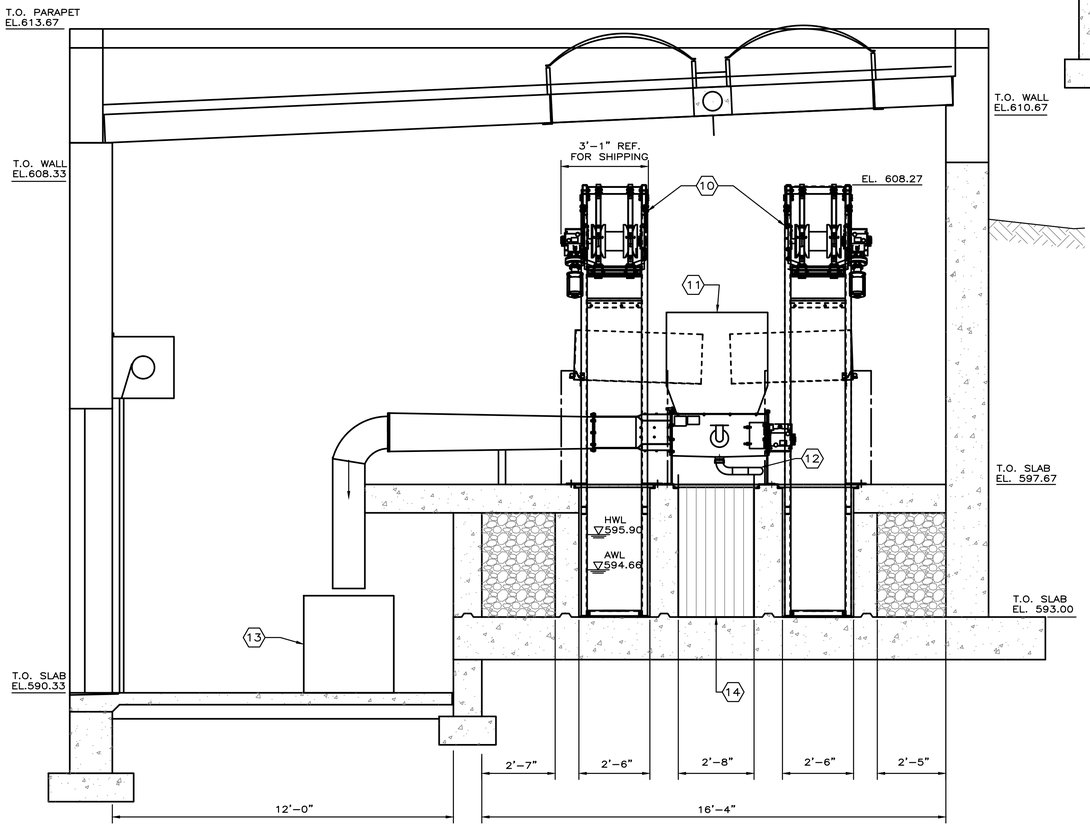
MANUAL BAR SCREEN SECTION

SCALE 3/8" = 1'-0"



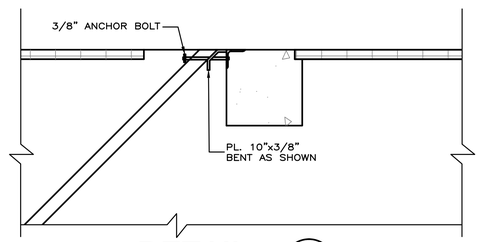
SECTION B

SCALE: 3/8"=1'-0" P-01



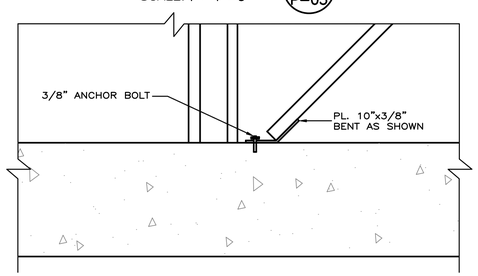
SECTION C

SCALE: 3/8"=1'-0" P-01



DETAIL 1

SCALE: 1"=1'-0" P-03



DETAIL 2

SCALE: 1"=1'-0" P-03

CODED NOTES:

(X)

1. 4" DIP GRIT WASHER INFLUENT (GRIT PUMP DISCHARGE).
2. GRIT PUMP PROVIDED WITH INSULATED JACKET AND HEAT TRACE.
3. GRIT UNIT DRIVE TUBE.
4. GRIT GRIT PUMP LIFTER.
5. 304 SS BAFFLE (BY MANUFACTURER).
6. 4" DIP LONG RADIUS ELBOW.
7. GRIT FLUIDIZER.
8. TWO PIECE STEEL FLOOR PLATE.
9. PROPELLER BLADES.
10. MECHANICAL BAR SCREEN WITH 1/4" CLEAR SPACING OPENING. EACH SCREEN IS RATED FOR 9 MGD AT PEAK HOURLY FLOW.
11. HOPPER TO WASHER/COMPACTOR.
12. 3" PVC SDR 35 WASHER/COMPACTOR DRAIN.
13. 2 C.Y. CONTAINER.
14. MANUAL BAR SCREEN WITH 1 3/4" BAR SPACING MOUNTED AT 45° FROM HORIZONTAL.

GENERAL NOTE:

1. GATE SCHEDULE SEE SHEET P-06.

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PROJECT No. 14784
DATE: 08-09-2016
DESIGN: JDZ
DRAWN: RE
CHECKED: MAK

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

NEW HEADWORKS BUILDING SECTIONS B AND C

DRAWING DISCIPLINE
PROCESS

SHEET	OF
P-03	44

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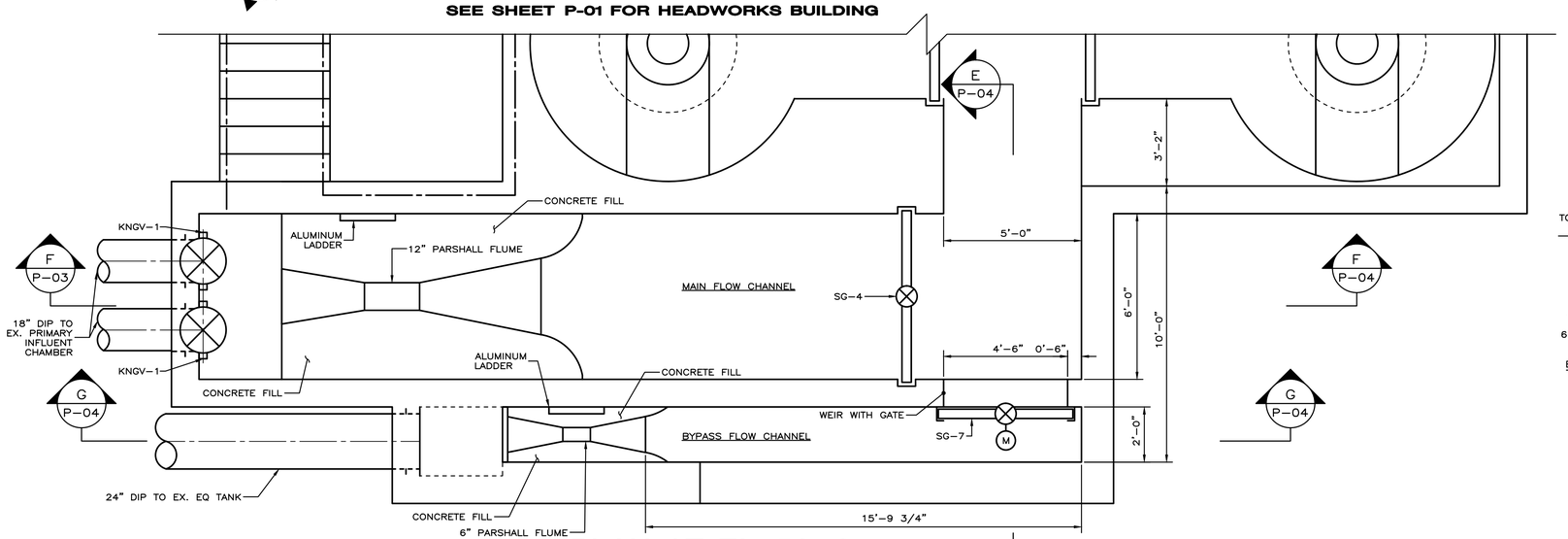
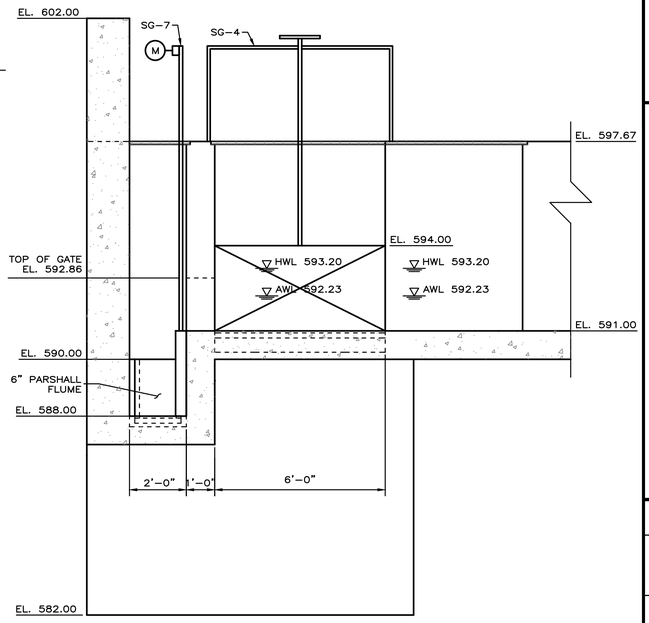
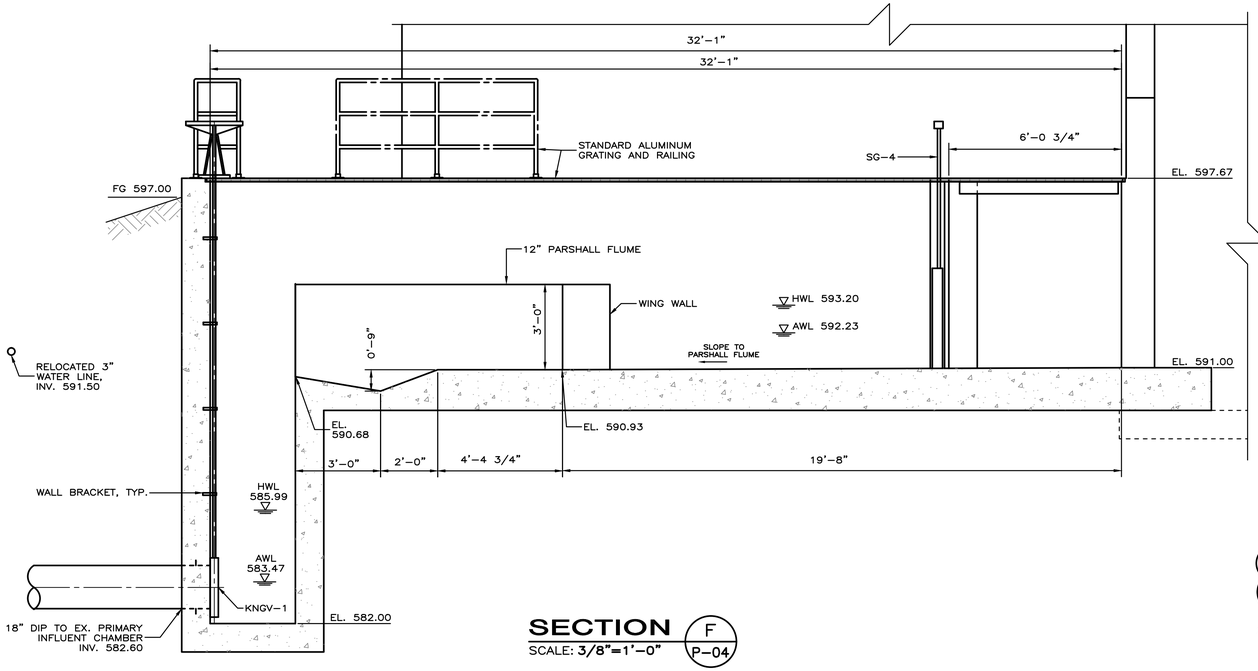
SEE SHEET P-01 FOR HEADWORKS BUILDING



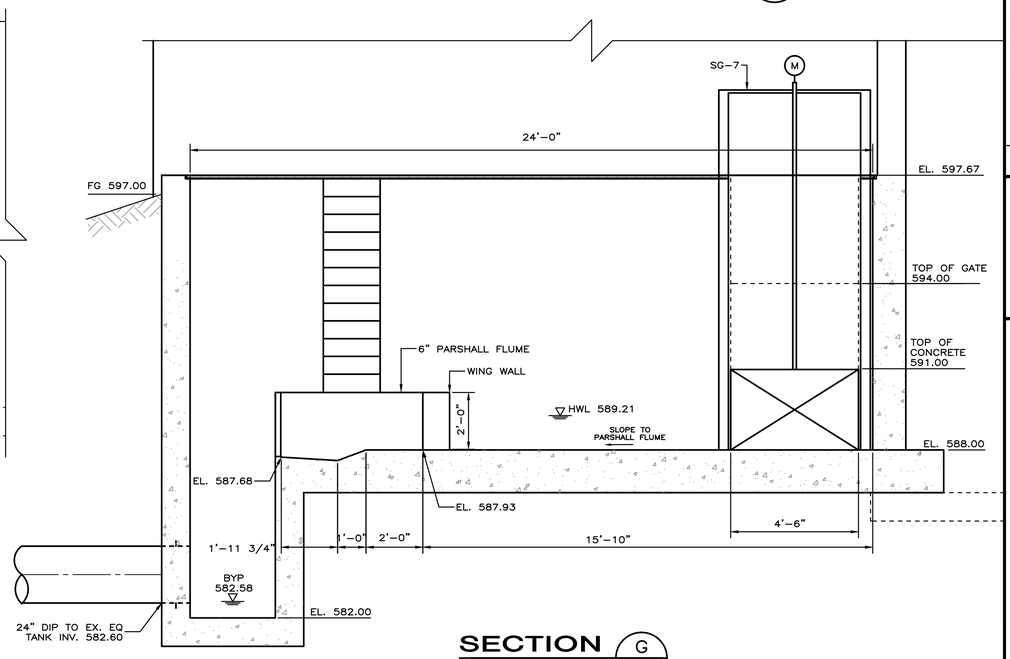
PLAN AT EL. 597.67
SCALE 3/8" = 1'-0"



SECTION E P-04
SCALE: 3/8"=1'-0"



SECTION F P-04
SCALE: 3/8"=1'-0"



SECTION G P-04
SCALE: 3/8"=1'-0"

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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

GRIT CHAMBERS EFFLUENT CHANNEL PLAN AND SECTIONS

DRAWING DISCIPLINE
PROCESS

SHEET	OF
P-04	44

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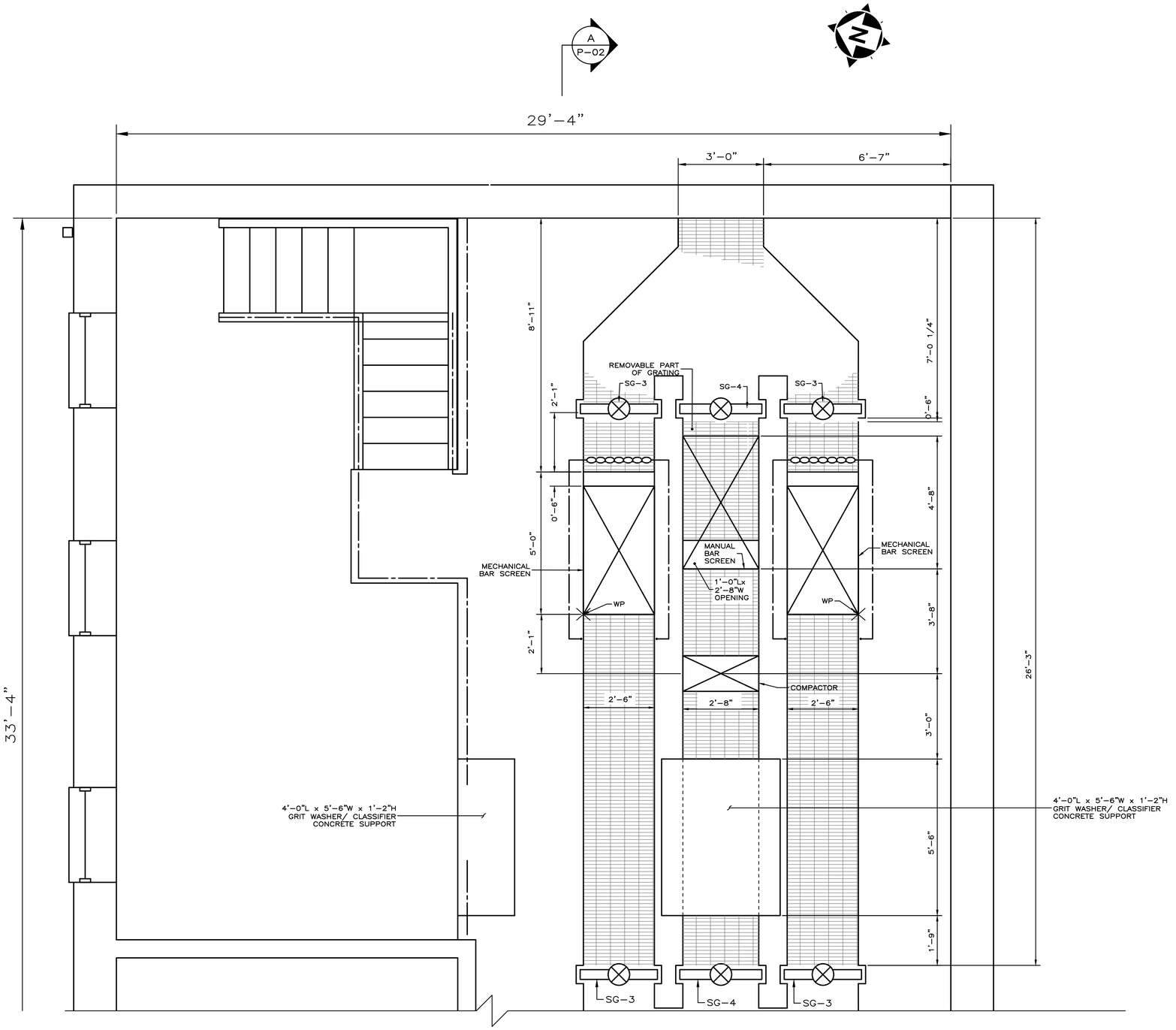

TOP PLAN

SCALE 1/2" = 1'-0"

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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

PROCESS EQUIPMENT SUPPORTS LAYOUT

DRAWING DISCIPLINE
PROCESS

SHEET	OF
P-05	44

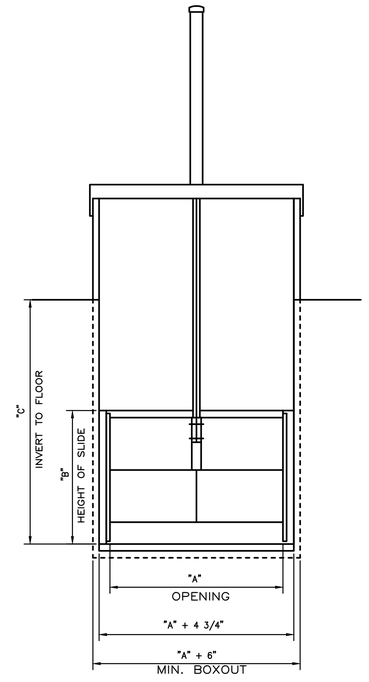
SLIDE GATE SCHEDULE

GATE NO.	LOCATION	SHEET NO.	NO. REQ'D	SIZE WIDTH X HEIGHT	OPERATING HEAD IN FEET OF WATER		GATE MATERIAL	TYPE OF FRAME	STEM LENGTH (FEET)	MIN. STEM DIA.	OPERATOR TYPE	GATE TYPE		GATE POSITION*
					MAX	MIN						MOUNTING TYPE	DIRECTION OF OPEN	
SG-1	SCREEN INFLUENT / EFFLUENT CHANNELS	P-01 P-02	4	30"x36"	2.9	1.1	304 SS	304 SS	6.67	1-1/2"	WHEEL OPERATOR	EMBEDDED	UPWARD OPEN	NO
SG-2	GRIT INFLUENT CHANNELS	P-01 P-02	2	24"x36"	2.32	0.80	304 SS	304 SS	6.67	1-1/2"	WHEEL OPERATOR	EMBEDDED	UPWARD OPEN	NO
SG-3	GRIT EFFLUENT CHANNELS	P-01 P-02 P-03	2	48"x30"	0.85	0.25	304 SS	304 SS	6.92	1-1/2"	MOTOR OPERATOR	EMBEDDED	UPWARD OPEN	NO
SG-4	PRE-TREATMENT MAIN EFFLUENT CHANNEL	P-04	1	72"x36"	2.2	0.66	304 SS	304 SS	8.67	1-1/2"	WHEEL OPERATOR	EMBEDDED	UPWARD OPEN	NO
SG-5	MANUAL BAR SCREEN CHANNEL	P-01 P-03	2	32"x36"	2.9	1.1	304 SS	304 SS	6.67	1-1/2"	WHEEL OPERATOR	EMBEDDED	UPWARD OPEN	NC
SG-6	GRIT BY-PASS CHANNEL	P-01 P-03	1	30"x36"	2.32	0.8	304 SS	304 SS	6.67	1-1/2"	WHEEL OPERATOR	EMBEDDED	UPWARD OPEN	NO
SG-7	PRE-TREATMENT BY-PASS EFFLUENT CHANNEL	P-04	1	54"x36"	2.2	0.66	304 SS	304 SS	11.67	1-1/2"	MOTOR OPERATOR	EMBEDDED	DOWNWARD OPEN	NC

*NO – NORMALLY OPEN
NC – NORMALLY CLOSED

KNIFE GATE VALVES

DESIGNATION	SIZE	NO. REQUIRED	OPERATOR				TYPE ENDS	INSTALLED CONDITIONS			ACCESSORIES						STEM TYPE		NORMALLY OPENED (NO)/ /NORMALLY CLOSED (NC)	LOCATION
			LEVER & NUT	MOTOR	NUT	HANDWHEEL		NON-SUBMERGED	SUBMERGED	BURIED	EXTENSION STEM	CHAIN	FLOOR STAND	FLOOR BOX	STEM GUIDES	ADJ. VALVE BOX	NON-RISING STEM	RISING STEM		
KNGV-01	18"	2				X	FF		X		X		X		X			X	NO	EFFLUENT MAIN CHANNEL SHEET P-04



SELF-CONTAINED SLIDE GATE

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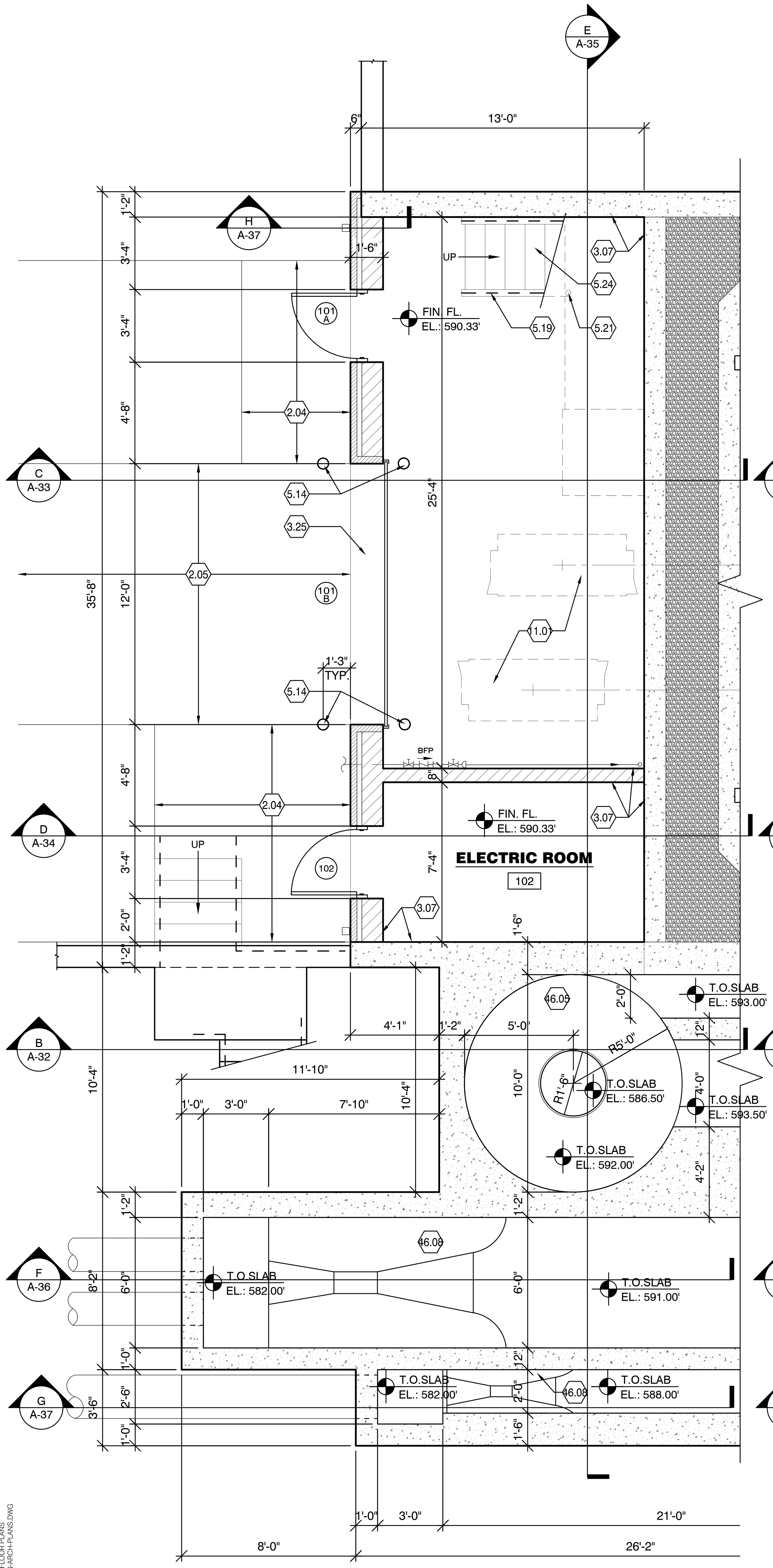
CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT
PLANT HEADWORKS
FACILITY

VALVE AND GATE SCHEDULE

DRAWING DISCIPLINE
GENERAL

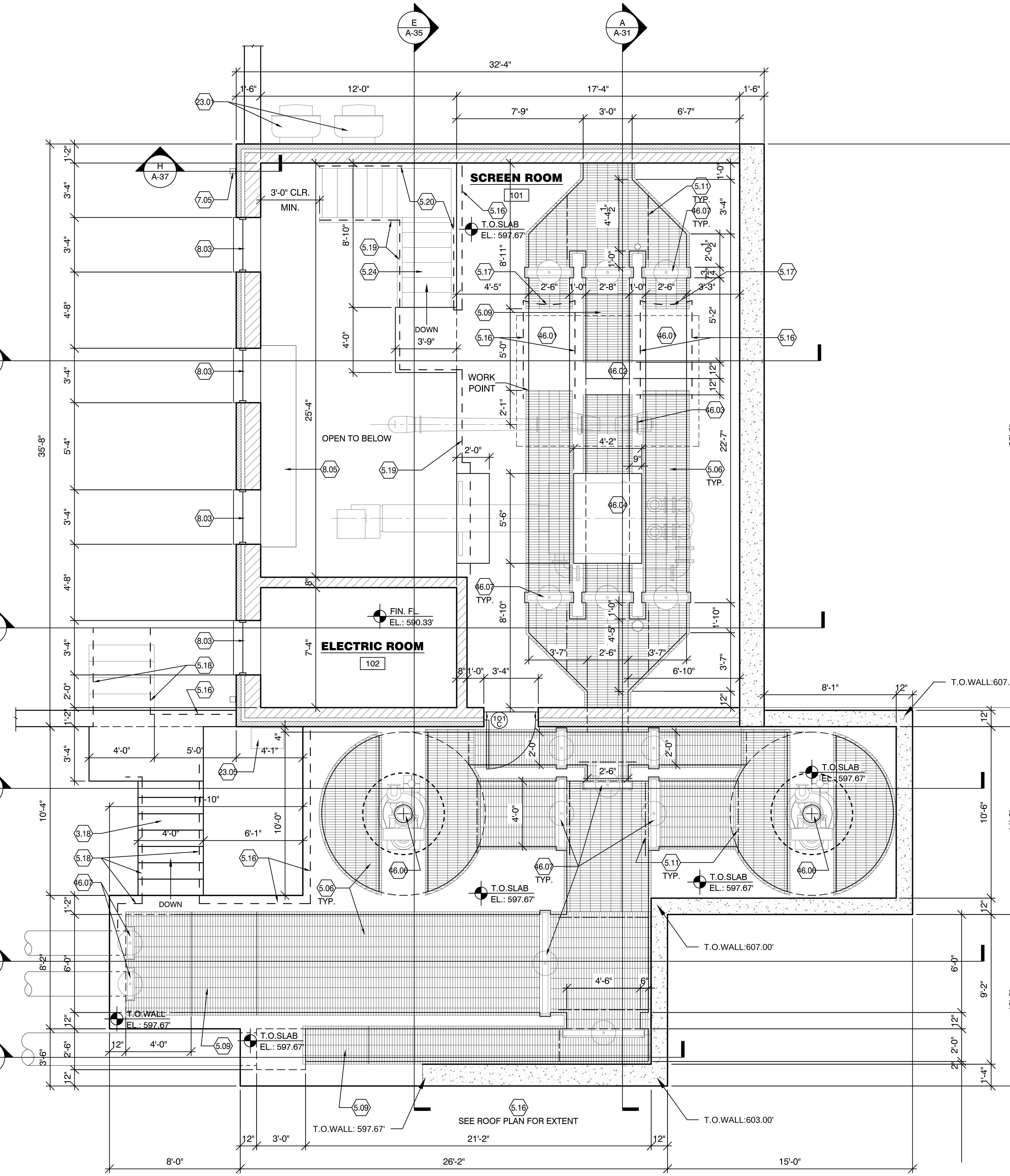
SHEET	OF
P-06	44



LOWER LEVEL PLAN

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

NORTH



UPPER LEVEL PLAN

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

NORTH

KEYNOTES

11.01	2 CUBIC YARD ROLLING DUMPSTER - BY OWNER.
2.04	MIN. 5" CONCRETE PAVING - SEE CIVIL DRAWINGS.
2.05	MIN. 7" DRIVEWAY PAVING - SEE CIVIL DRAWINGS.
23.01	EXHAUST FAN - SEE MECHANICAL DRAWINGS.
23.05	HVAC EQUIPMENT - SEE MECHANICAL DRAWINGS.
3.07	1/2" EXPANSION JOINT MATERIAL
3.18	CONCRETE STAIRS. PROVIDE #5 @ 12" EW. STEP BEARING (BOTTOM OF CONCRETE). MIN CONCRETE THICKNESS 8".
3.25	AT OVERHEAD DOOR ONLY, RECESS SLAB 1/2" UNDER OVERHEAD DOOR AND SLOPE 1/4" PER FOOT DOWN OUTWARD. SEE SECTION.
46.01	MECHANICAL SCREEN - SEE PROCESS DRAWINGS.
46.02	MANUAL BAR SCREEN - SEE PROCESS DRAWINGS.
46.03	COMPACTOR - SEE PROCESS DRAWINGS.
46.04	WASHER & CONCENTRATORS - SEE PROCESS DRAWINGS.
46.05	GRIT CHAMBER - SEE PROCESS DRAWINGS.
46.06	GRIT PUMP - SEE PROCESS DRAWINGS.
46.07	SLIDE GATE - SEE PROCESS DRAWINGS.
46.08	PARSHAL FLUME - SEE PROCESS DRAWINGS.
5.06	1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.
5.09	REMOVABLE SECTION, MIN. 4'-0" WIDE.
5.11	L5" x 5" x 5/16" STAINLESS STEEL GRATING SUPPORT. SECURE ENDS WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS WITH 3" EMBEDDMENT INTO CONCRETE WALL. WHERE ANGLE IS NOT PARALLEL TO SUPPORTING WALL, USE L3" x 3" X 1/4" X 5" LONG STAINLESS STEEL CLIP ANGLE WITH 3/16" FILLET WELDS ALL AROUND OR (2) 3/8" DIA STAINLESS STEEL BOLTS TO CONNECT CLIP ANGLE TO SUPPORT ANGLE. TOP OF SUPPORT ANGLE SHALL MATCH GRATING BEARING ELEVATION OF EMBEDDED SHELF ANGLES.
5.14	6" DIA. CONCRETE FILLED STEEL PIPE BOLLARD. EXTEND 42" ABOVE GRADE, FOOTING MIN. 42" BELOW GRADE.
5.16	42" HIGH ALUMINUM RAILING WITH THREE RAILS.
5.17	42" HIGH ALUMINUM RAILING POSTS WITH THREE REMOVABLE CHAINS TO ACCESS EQUIPMENT.
5.18	36" HIGH ALUMINUM RAILING WITH TWO RAILS. TOP RAIL IS HANDRAIL.
5.19	42" HIGH GALVANIZED STEEL RAILING WITH THREE RAILS AND HANDRAIL AT 36".
5.20	GALVANIZED STEEL HANDRAIL AT 36".
5.21	GALVANIZED STEEL LANDING/STAIR SUPPORT COLUMN
5.24	GALVANIZED STEEL STAIR SYSTEM.
7.05	PREFINISHED METAL DOWNSPOUT W/ SPLASH BLOCK.
8.03	ALUMINUM WINDOW W/ INSULATED GLASS, SEE SPECIFICATIONS.
8.05	OVERHEAD COILING DOOR.

GENERAL NOTES

1. VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ARCHITECT OR ENGINEER OF ANY DISCREPANCIES.
2. EXTERIOR DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF FOUNDATION WALL OR MASONRY OPENINGS. TYPICAL UNLESS NOTED OTHERWISE.
3. PROVIDE BLOCKING OR METAL STRAPS IN WALLS AS REQUIRED FOR ATTACHMENT OF SURFACE MOUNTED ITEMS .
4. PROVIDE SEALANT AT JOINTS BETWEEN ALL DISSIMILAR MATERIALS.
5. PROVIDE SEALANT AT ALL PENETRATIONS THROUGH ELECTRICAL ROOM INTO SCREEN ROOM.
6. PAINT ALL EXPOSED, UNFINISHED INTERIOR AND EXTERIOR STEEL (DOORS, FRAMES, LINTELS, BOLLARDS, RAILINGS, ETC.).
7. COORDINATE WORK BETWEEN TRADES AND OTHER DISCIPLINES. ADDITIONAL ITEMS OF WORK MAY APPEAR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.
8. PROVIDE INSULATION IN BLOCK CORES WHICH ARE NOT GROUTED SOLID.

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REVISIONS

NO.	DESCRIPTION	DATE	BY

PERMIT / PROGRESS / BID / CONSTRUCTION / RECORD

PROJECT NO. 14784

DATE 08-01-2016

DESIGNED BY: JUD

DRAWN BY: NJUD

CHECKED BY:

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

FLOOR PLANS

DRAWING DISCIPLINE: ARCHITECTURAL

SHEET A-11 OF 44

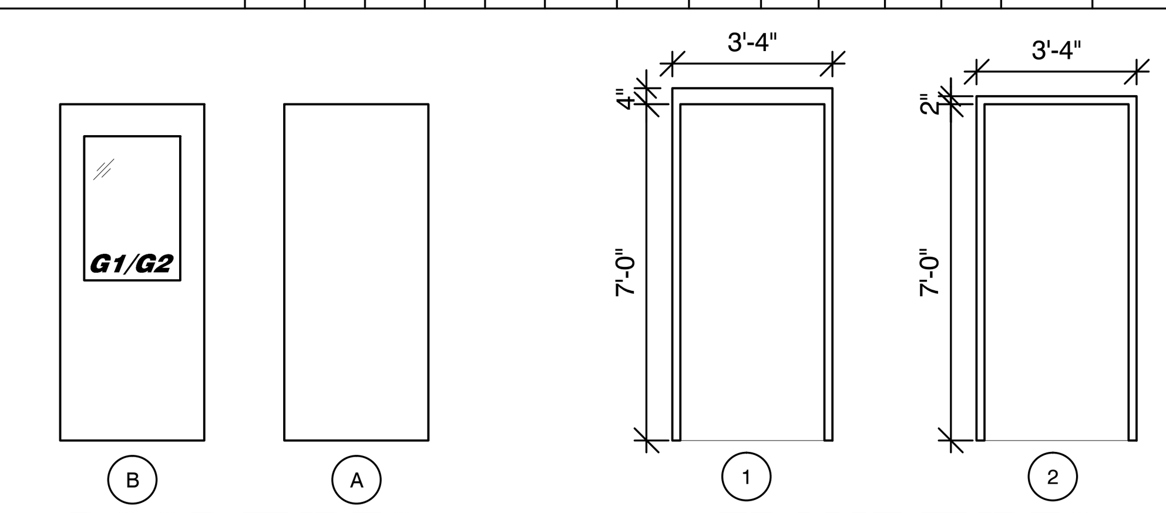
DOOR SCHEDULE

ABBREVIATIONS:
EXT. EXTERIOR
HM HOLLOW METAL
PT PRIME AND FINISH PAINT

GENERAL NOTES:

REMARKS:

	OPENING		FRAME							DOOR				HARDWARE		REMARKS
							DETAILS									
DOOR NUMBER	SIZE W x H x T	RATING (MINUTES)	FRAME TYPE	MATERIAL	FINISH	THROAT DEPTH (IN.)	HEAD	JAMB	SILL	TYPE	MATERIAL	GLAZING	FINISH	HARDWARE SET	KEYSIDE ROOM #	
101A	3'-0" x 7'-0" x 1-3/4"	-	1	HM	PT	6.75				B	HM	G3	PT	1	EXT.	-
101B	12'-0" x 10'-0" x 1-3/4"	-														SEE SPECIFICATIONS
101C	3'-0" x 7'-0" x 1-3/4"	-	1	HM	PT	6.75				B	HM	G3	PT	1	EXT.	-
102	3'-0" x 7'-0" x 1-3/4"	-	1	HM	PT	6.75				B	HM	G3	PT	1	EXT.	-



DOOR TYPES **FRAME TYPES**

CODE INFORMATION

APPLICABLE CODES:
BUILDING CODE: 2011 OBC W/ UPDATES THROUGH JULY 2014
ACCESSIBILITY: 2009 ICC/ANSI A117.1
MECHANICAL: 2011 OMC
PLUMBING: 2011 OPC
ELECTRIC: 2014 NFPA 70 (NEC)

USE GROUP:
F-2 (PROCESSING OF NON-COMBUSTIBLE MATERIALS) WASTE WATER TREATMENT PLANT

HEIGHT & AREA:
BUILDING HEIGHT: ONE STORY, 23'
BUILDING AREA: 1153 SF

CONSTRUCTION TYPE:
VB

FROST DEPTH:
42" BELOW GRADE

FIRE SUPPRESSION:
NOT SPRINKLERED
INSTALL PORTABLE FIRE EXTINGUISHER IN ACCORDANCE WITH NFPA 10.

PROVIDE COMBUSTIBLE GAS DETECTION SYSTEM WITH VISUAL & AUDIBLE ALARMS OR DUAL LIGHT WARNING SYSTEM AT PERSONNEL ENTRANCE TO SCREEN BUILDING IN ACCORDANCE WITH NFPA 72.

REQUIRED RATINGS:
PRIMARY STRUCTURAL FRAME 0 HR
EXTERIOR BEARING WALLS 0 HR
INTERIOR NON BEARING WALLS 0 HR
ROOF CONSTRUCTION 0 HR

SEPARATION BETWEEN SCREEN PROCESS & ELECTRIC ROOM SHALL BE CONSTRUCTED AS SMOKE PARTITION.

INTERIOR WALL & CEILING FINISHES SHALL BE CLASS C OR BETTER.

MEANS OF EGRESS:
GROSS INTERIOR FLOOR AREA: 979 SF
OCCUPANT LOAD (F-2): 300 SF/PERSON
TOTAL OCCUPANCY: 4 PERSONS
NUMBER OF EXITS: REQ'D: 1 PROV'D: 1
EXIT ACCESS TRAVEL DISTANCE REQ'D: 75' PROV'D: 53'
MIN. DOOR WIDTH REQ'D: 32" CLR. PROV'D: 34" CLR.
MIN. STAIR WIDTH REQ'D" 36" PROV'D: 36"
EXIT DOORS SHALL BE OPERABLE IN ONE MOTION, WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE OR EFFORT.

DOOR HARDWARE SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.

STAIRS IN THIS PROJECT WILL HAVE LANDINGS AND TREADS OF GALVANIZED STEEL GRATING WHICH DOES NOT ALLOW A 1/2" DIAMETER SPHERE TO PASS THROUGH.

MINIMUM TREAD DEPTH: 11"; MAXIMUM RISER HEIGHT: 7"
RISERS SHALL NOT ALLOW A 4" DIAMETER SPHERE TO PASS THROUGH.
HANDRAIL HEIGHT: 34" - 38" ABOVE LINE OF NOSINGS
GUARDRAIL HEIGHT: 42" WHERE DIFFERENCE IN LEVEL IS 30" OR GREATER
GUARDRAILS SHALL NOT ALLOW A 22" DIAMETER SPHERE TO PASS THROUGH.

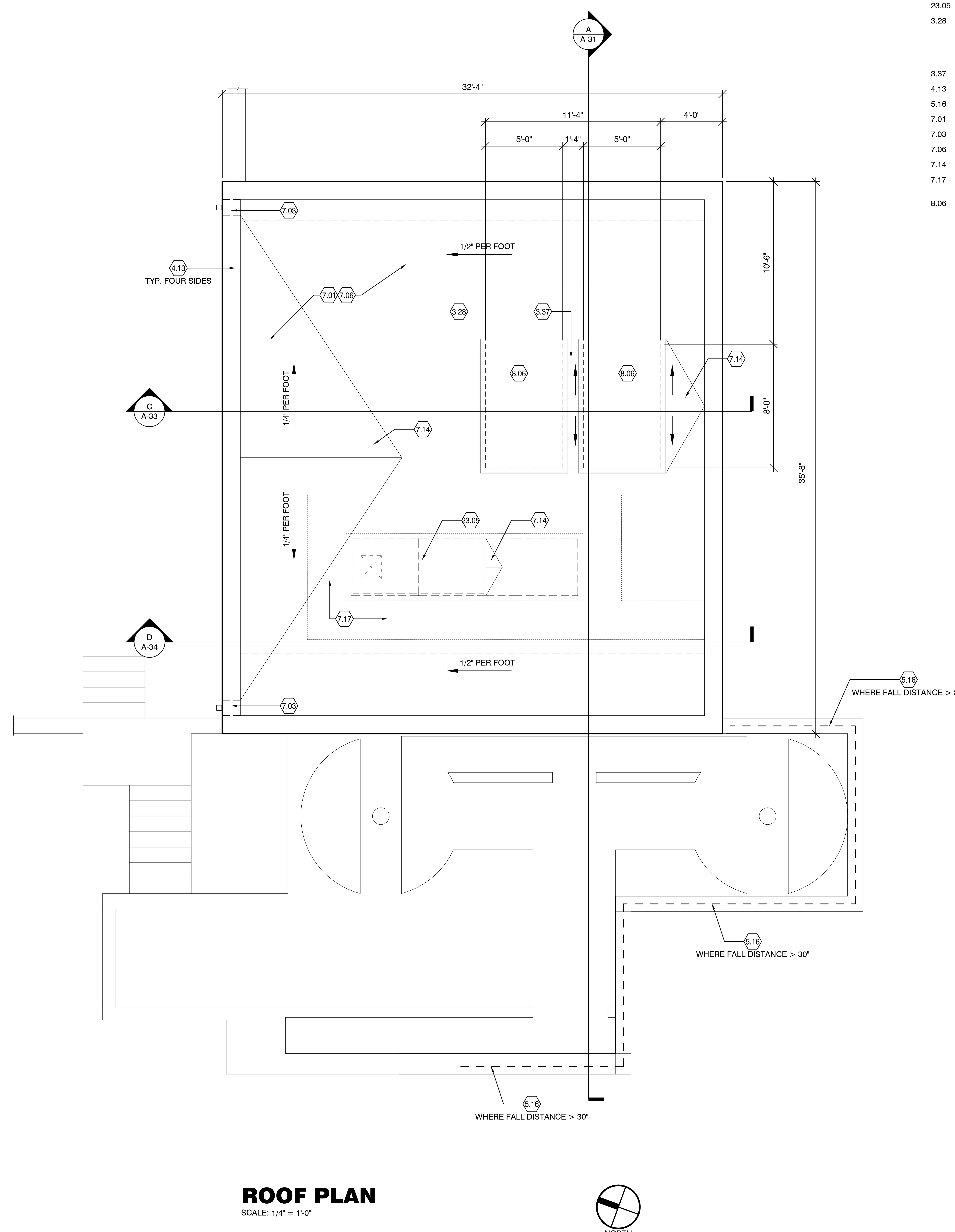
MEANS OF EGRESS AND EXIT SIGN ILLUMINATION SHALL BE PROVIDED BY THE BUILDING LIGHTING SYSTEM FOR NORMAL USE WITH BACK-UP POWER PROVIDED TO ASSURE CONTINUED ILLUMINATION FOR 90 MINUTES AFTER LOSS OF PRIMARY POWER. REFER TO ELECTRICAL DRAWINGS FOR LOCATION OF LIGHT FIXTURES AND EXIT SIGNS AND METHOD OF BACK-UP POWER. MEANS OF EGRESS LIGHTING SHALL PROVIDE MIN. 1 FC ILLUMINATION AT THE FLOOR IN THE PATH OF TRAVEL.

PLUMBING FIXTURES
NOT PROVIDED IN THIS BUILDING, PROVIDED ELSEWHERE ON THIS SITE.

ADDITIONAL ELECTRICAL REQUIREMENTS:
SCREEN ROOM SHALL BE CLASSIFIED AS CLASS 1, GROUP D, DIVISION 1.
ELECTRIC ROOM SHALL BE UNCLASSIFIED.

IF ELECTRIC ROOM CONTAINS 800 AMPS OR MORE OF EQUIPMENT AND OVERCURRENT, SWITCHING OR CONROL DEVICES, DOOR SHALL BE OUTSWINGING AND EQUIPPED WITH PANIC HARDWARE.

REFER TO ELECTRIC DRAWINGS FOR ADDITIONAL REQUIREMENTS.



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

KEYNOTES

23.05	HVAC EQUIPMENT - SEE MECHANICAL DRAWINGS.
3.28	12" THICK PRECAST ROOF PLANKS, 48" WIDE TYP. CONTINUOUS PLANKS ADJACENT TO SKYLIGHT SHALL SUPPORT GALVANIZED FABRICATED STIRRUPS TO SUPPORT THE PLANKS WHICH ARE INTERRUPTED BY SKYLIGHT. EDGE PLANKS CAN BE DIFFERENT WIDTHS.
3.37	12" THICK X 16" WIDE PRECAST CONCRETE BEAM.
4.13	CUT STONE OR CAST STONE COPING.
5.16	42" HIGH ALUMINUM RAILING WITH THREE RAILS.
7.01	MEMBRANE ROOFING
7.03	SCUPPER.
7.06	RIGID INSULATION, MIN. 4"
7.14	CRICKET
7.17	WALKWAY PADS/PATHWAY FOR ACCESS TO ROOFTOP EQUIPMENT.
8.06	SKYLIGHT.

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PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: JJUD
DRAWN BY: NJUD
CHECKED BY:

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WWTP HEADWORKS FACILITY

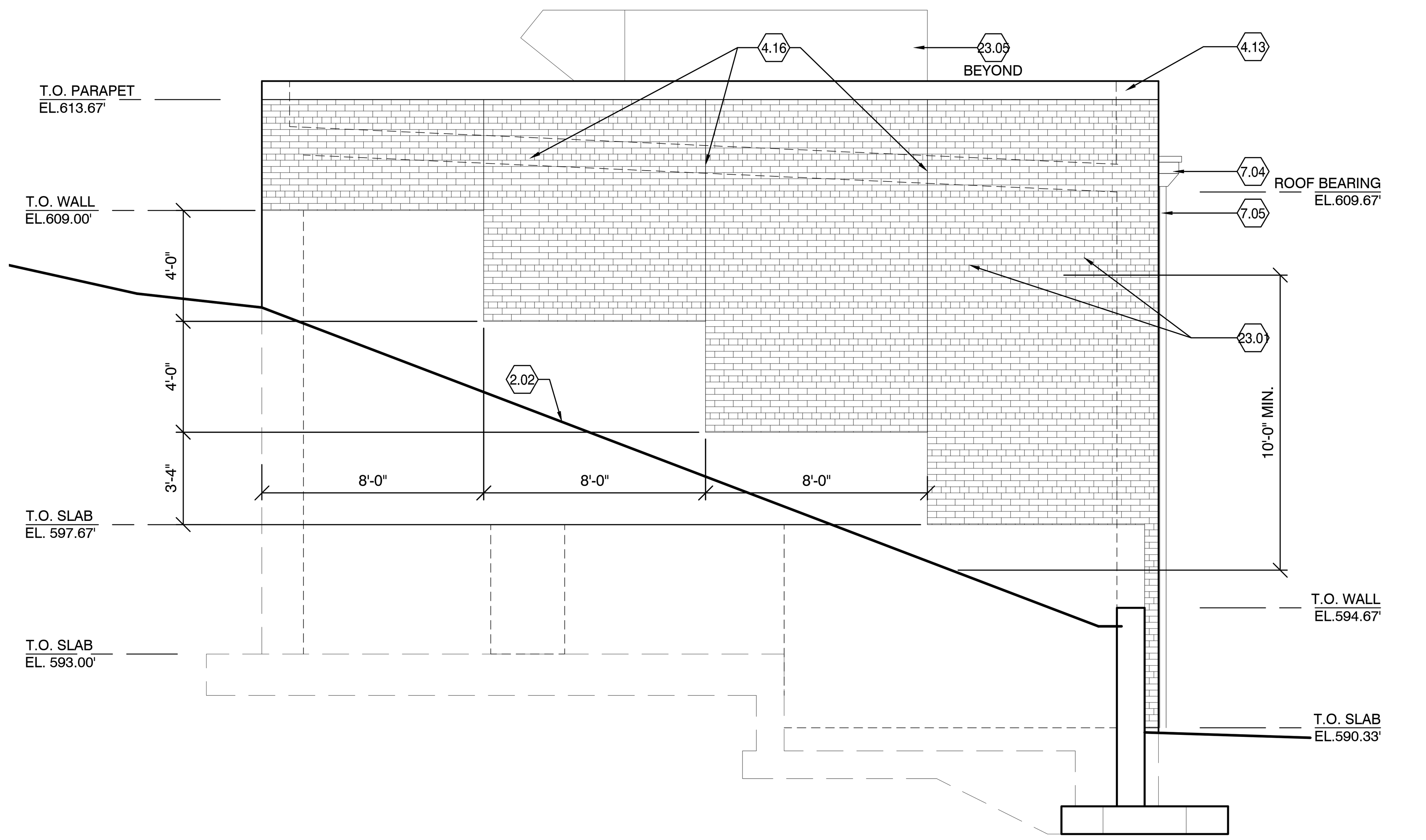
ROOF PLAN

DRAWING DISCIPLINE: ARCHITECTURAL

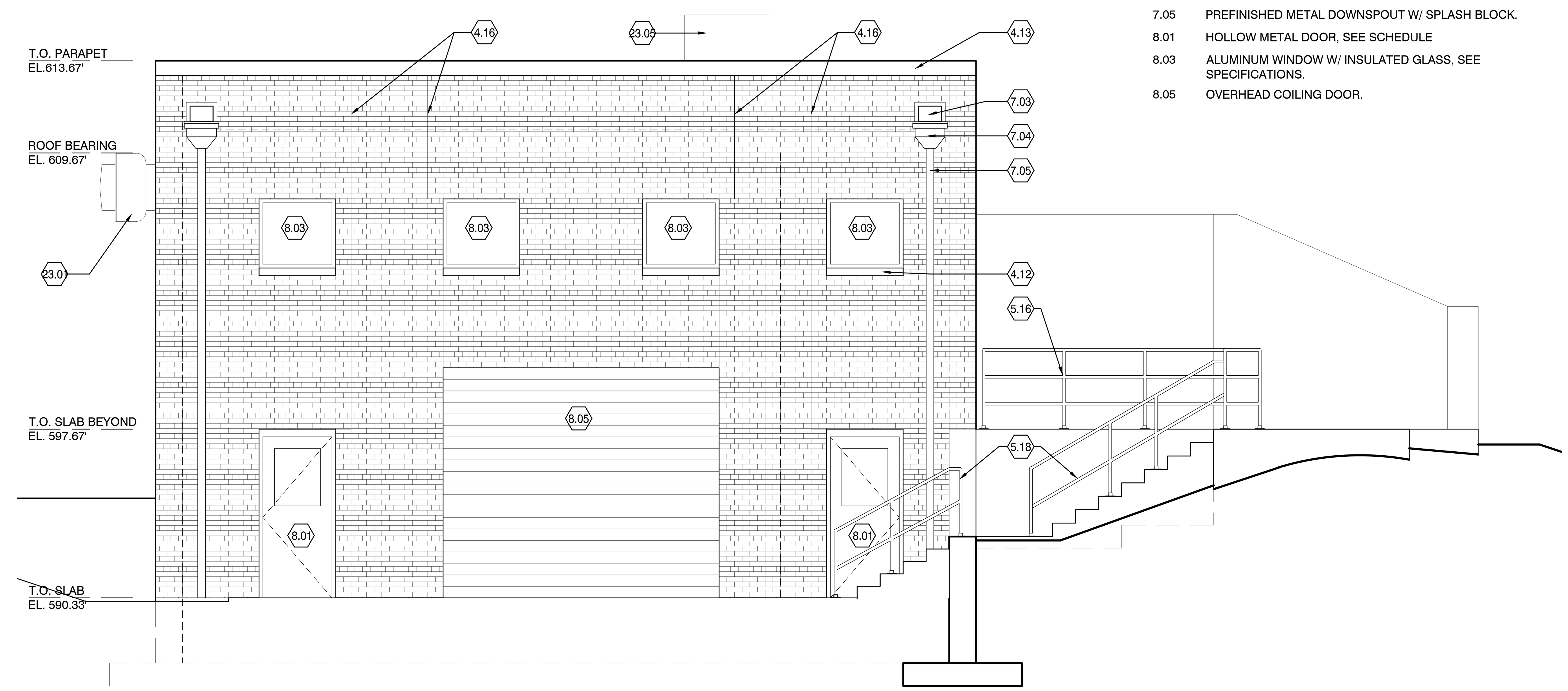
SHEET	OF
A-12	44

KEYNOTES

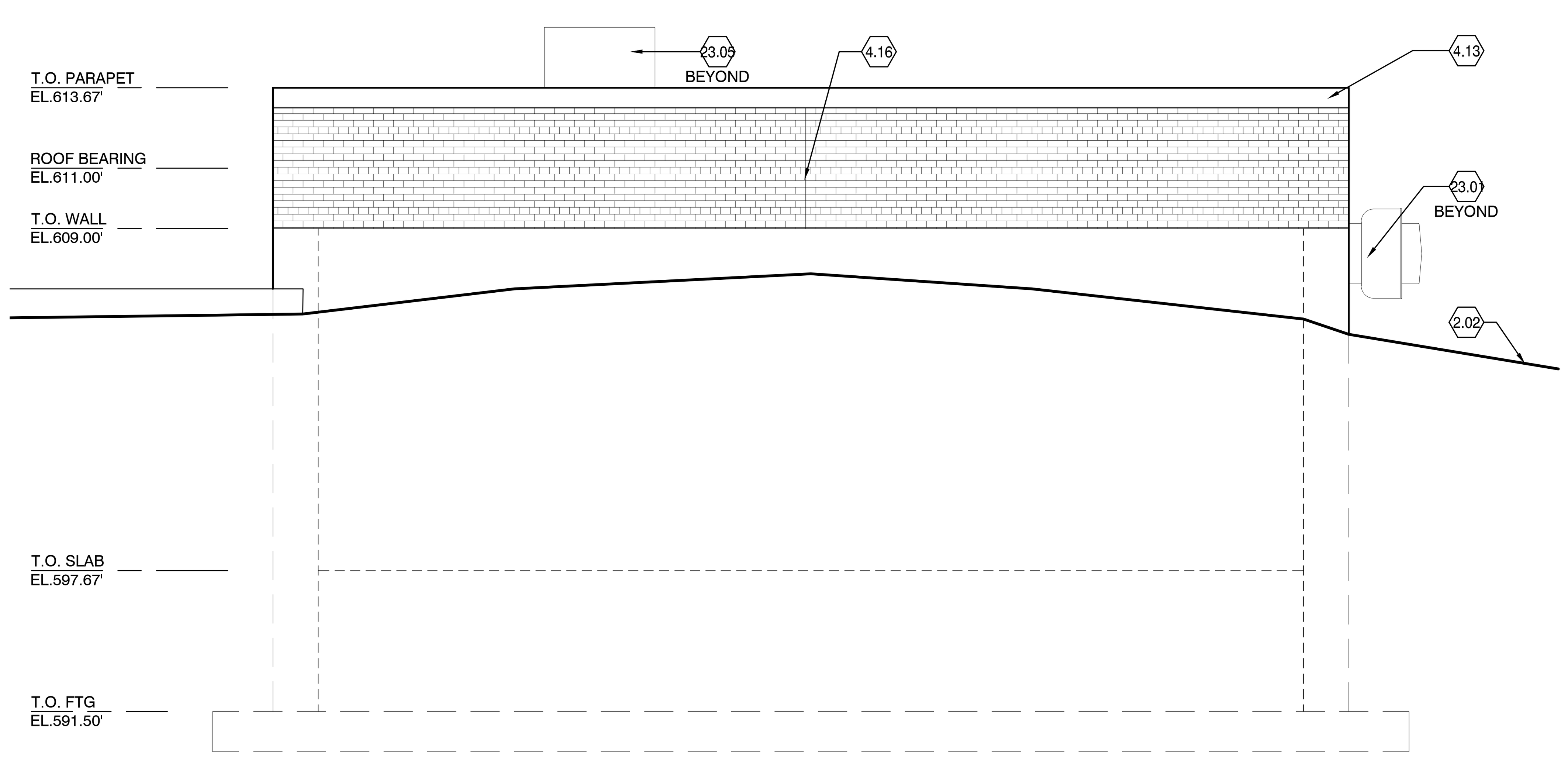
2.02	FINISH GRADE - SEE CIVIL DRAWINGS.
23.01	EXHAUST FAN - SEE MECHANICAL DRAWINGS.
23.05	HVAC EQUIPMENT - SEE MECHANICAL DRAWINGS.
4.12	CUT STONE OR CAST STONE SILL.
4.13	CUT STONE OR CAST STONE COPING.
4.16	CONTROL JOINT/EXPANSION JOINT
5.16	42" HIGH ALUMINUM RAILING WITH THREE RAILS.
5.18	36" HIGH ALUMINUM RAILING WITH TWO RAILS. TOP RAIL IS HANDRAIL.
7.03	SCUPPER.
7.04	CONDUCTOR HEAD.
7.05	PREFINISHED METAL DOWNSPOUT W/ SPLASH BLOCK.
8.01	HOLLOW METAL DOOR, SEE SCHEDULE
8.03	ALUMINUM WINDOW W/ INSULATED GLASS, SEE SPECIFICATIONS.
8.05	OVERHEAD COILING DOOR.



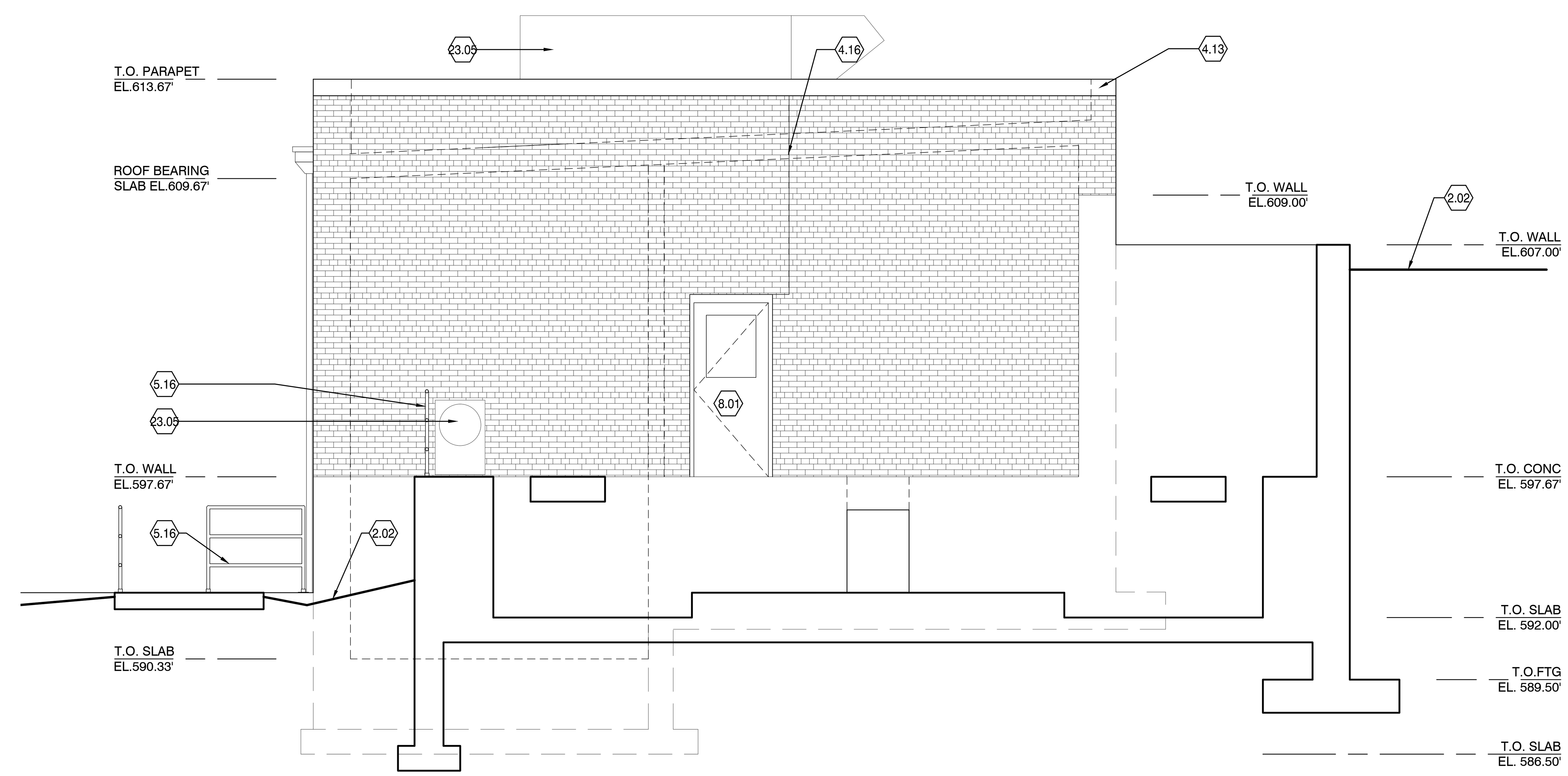
1 A-21 **EAST ELEVATION**
SCALE: 1/4" = 1'-0"



2 A-21 **NORTH ELEVATION**
SCALE: 1/4" = 1'-0"



1 A-21 **SOUTH ELEVATION**
SCALE: 1/4" = 1'-0"



1 A-21 **WEST ELEVATION**
SCALE: 1/4" = 1'-0"

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PROJECT NO. 14784
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CHECKED BY:

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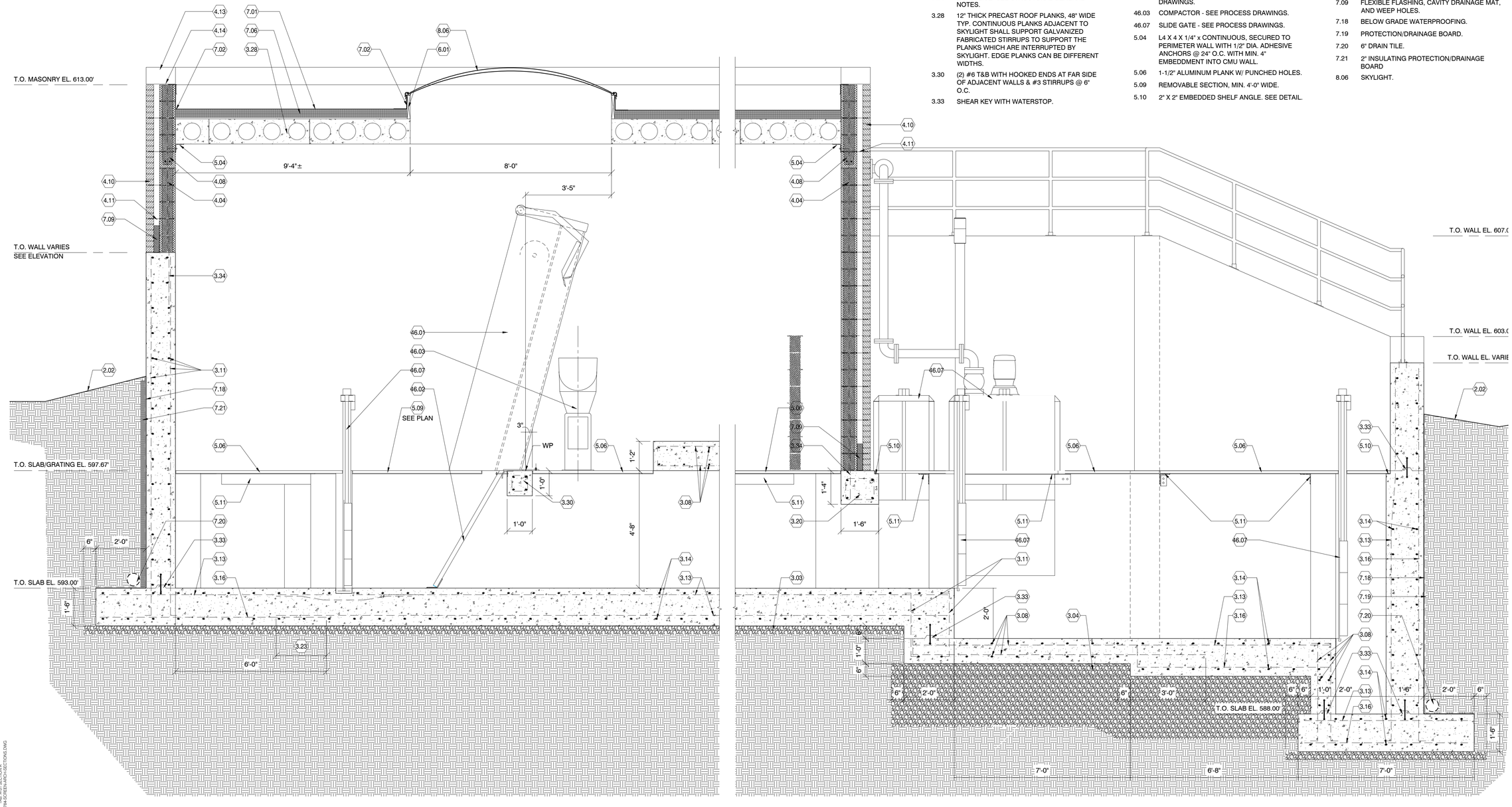
ELEVATIONS

DRAWING DISCIPLINE: ARCHITECTURAL

SHEET A-21 OF 44

KEYNOTES

2.02	FINISH GRADE - SEE CIVIL DRAWINGS.
3.03	MIN. 4" GRANULAR BASE
3.04	MIN. 30" COMPACTED GRAVEL WITH NO FINES (#57 OR SIMILAR)
3.08	#5 @ 12" O.C., EACH WAY, EACH FACE
3.11	#6 @ 12" O.C., EACH WAY, EACH FACE
3.13	#6 @ 12" O.C.
3.14	#6 @ 12" O.C., EACH FACE
3.16	#7 @ 12" O.C.
3.20	IN ADDITION TO WALL REINFORCING WHICH IS REQUIRED TO CONTINUE AROUND AN OPENING, PROVIDE (2) #6 T&B 7'-0" LONG, CENTERED ON CHANNEL OPENING WITH #3 TIES @ 6" O.C.
3.23	LAP SPLICE, SEE STRUCTURAL GENERAL NOTES.
3.28	12" THICK PRECAST ROOF PLANKS, 48" WIDE TYP. CONTINUOUS PLANKS ADJACENT TO SKYLIGHT SHALL SUPPORT GALVANIZED FABRICATED STIRRUPS TO SUPPORT THE PLANKS WHICH ARE INTERRUPTED BY SKYLIGHT. EDGE PLANKS CAN BE DIFFERENT WIDTHS.
3.30	(2) #6 T&B WITH HOOKED ENDS AT FAR SIDE OF ADJACENT WALLS & #3 STIRRUPS @ 6" O.C.
3.33	SHEAR KEY WITH WATERSTOP.
3.34	#4 @ 32" O.C. IN CORES GROUTED SOLID.
4.04	8" CMU WITH #5 VERTICAL @ 32" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.
4.08	VARYING HEIGHT BOND BEAM WITH (2) #5 CONTINUOUS. GROUT CORES ABOVE BOND BEAM TO MIN. 6" ABOVE ANCHORS FOR SLOPED STEEL ANGLE.
4.10	BRICK VENEER - MATCH EXISTING ON NEARBY BUILDINGS
4.11	HORIZONTAL JOINT REINFORCING.
4.13	CUT STONE OR CAST STONE COPING.
4.14	1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. W/ 4" EMBED.
46.01	MECHANICAL SCREEN - SEE PROCESS DRAWINGS.
46.02	MANUAL BAR SCREEN - SEE PROCESS DRAWINGS.
46.03	COMPACTOR - SEE PROCESS DRAWINGS.
46.07	SLIDE GATE - SEE PROCESS DRAWINGS.
5.04	L4 X 4 X 1/4" x CONTINUOUS, SECURED TO PERIMETER WALL WITH 1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. WITH MIN. 4" EMBEDDMENT INTO CMU WALL.
5.06	1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.
5.09	REMOVABLE SECTION, MIN. 4'-0" WIDE.
5.10	2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.
5.11	L5" x 5" x 5/16" STAINLESS STEEL GRATING SUPPORT. SECURE ENDS WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS WITH 3" EMBEDDMENT INTO CONCRETE WALL. WHERE ANGLE IS NOT PARALLEL TO SUPPORTING WALL, USE L3" x 3" X 1/4" X 5" LONG STAINLESS STEEL CLIP ANGLE WITH 3/16" FILLET WELDS ALL AROUND OR (2) 3/8" DIA STAINLESS STEEL BOLTS TO CONNECT CLIP ANGLE TO SUPPORT ANGLE. TOP OF SUPPORT ANGLE SHALL MATCH GRATING BEARING ELEVATION OF EMBEDDED SHELF ANGLES.
6.01	PRESSURE TREATED 2X12 CURB
7.01	MEMBRANE ROOFING
7.02	FLASHING.
7.06	RIGID INSULATION, MIN. 4"
7.09	FLEXIBLE FLASHING, CAVITY DRAINAGE MAT, AND WEEP HOLES.
7.18	BELOW GRADE WATERPROOFING.
7.19	PROTECTION/DRAINAGE BOARD.
7.20	6" DRAIN TILE.
7.21	2" INSULATING PROTECTION/DRAINAGE BOARD
8.06	SKYLIGHT.



A A-31 **SECTION**
SCALE: 1/2" = 1'-0"

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PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: JUD
DRAWN BY: NJUD
CHECKED BY:

CITY OF CONNEAUT, OHIO
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SECTION A

DRAWING DISCIPLINE
ARCHITECTURE

SHEET	OF
A-31	44

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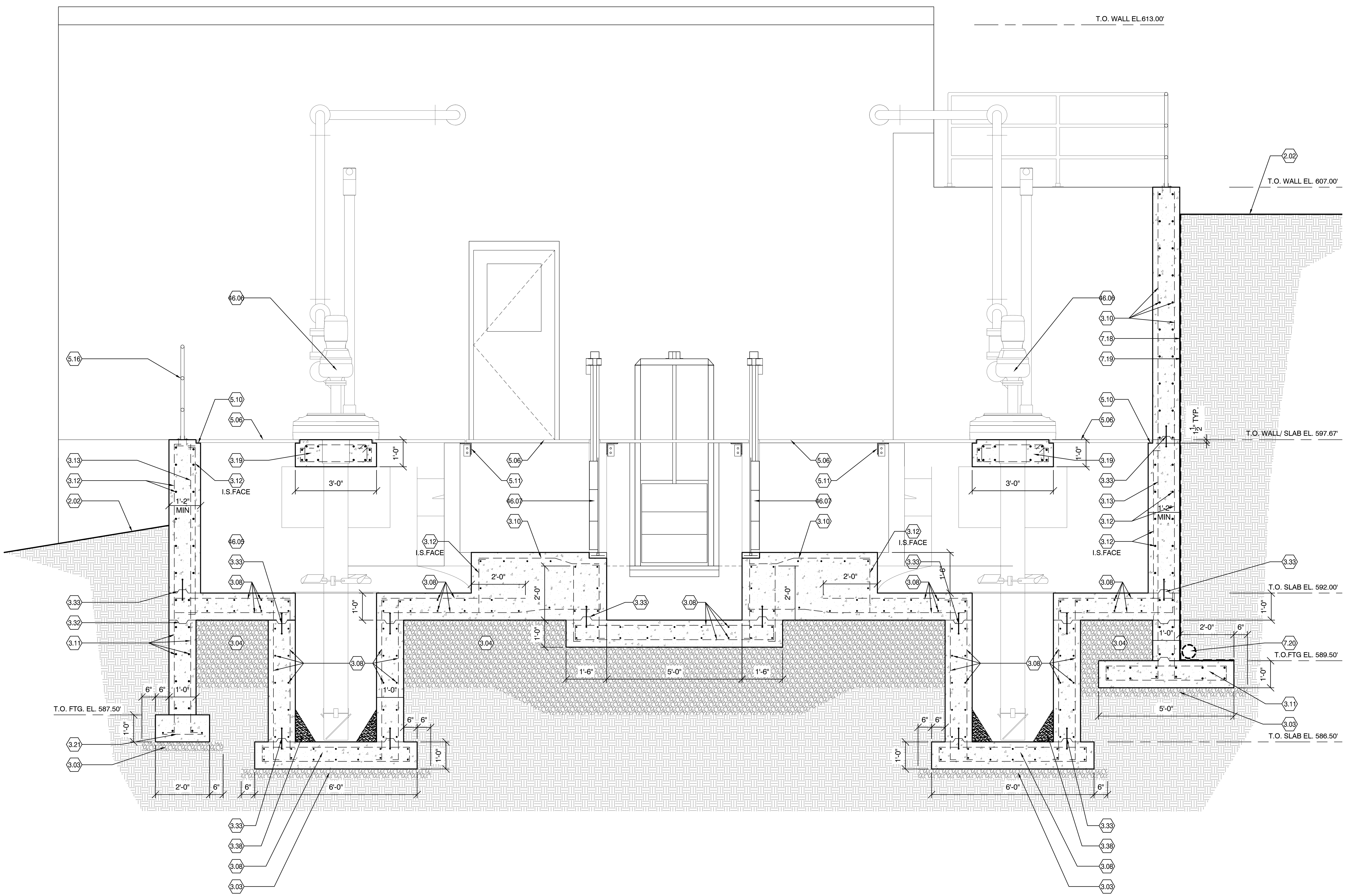
KEYNOTES

2.02	FINISH GRADE - SEE CIVIL DRAWINGS.
3.03	MIN. 4" GRANULAR BASE
3.04	MIN. 30" COMPACTED GRAVEL WITH NO FINES (#57 OR SIMILAR)
3.08	#5 @ 12" O.C., EACH WAY, EACH FACE
3.10	#5 @ 12" O.C.
3.11	#6 @ 12" O.C., EACH WAY, EACH FACE
3.12	#6 @ 12" O.C., EACH WAY
3.13	#6 @ 12" O.C.
3.19	(12) # 6 LONGITUDINAL BARS AND #3 TIES @ 6" O.C.
3.21	(4) #5 CONTINUOUS AND #5 @ 12" O.C. LATERAL
3.32	SHEAR KEY.
3.33	SHEAR KEY WITH WATERSTOP.
3.38	GROUT - SEE PROCESS DRAWINGS.
46.05	GRIT CHAMBER - SEE PROCESS DRAWINGS.
46.06	GRIT PUMP - SEE PROCESS DRAWINGS.
46.07	SLIDE GATE - SEE PROCESS DRAWINGS.
5.06	1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.
5.10	2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.
5.11	L5" x 5" x 5/16" STAINLESS STEEL GRATING SUPPORT. SECURE ENDS WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS WITH 3" EMBEDDMENT INTO CONCRETE WALL. WHERE ANGLE IS NOT PARALLEL TO SUPPORTING WALL, USE L3" x 3" X 1/4" X 5" LONG STAINLESS STEEL CLIP ANGLE WITH 3/16" FILLET WELDS ALL AROUND OR (2) 3/8" DIA STAINLESS STEEL BOLTS TO CONNECT CLIP ANGLE TO SUPPORT ANGLE. TOP OF SUPPORT ANGLE SHALL MATCH GRATING BEARING ELEVATION OF EMBEDDED SHELF ANGLES.
5.16	42" HIGH ALUMINUM RAILING WITH THREE RAILS.
7.18	BELOW GRADE WATERPROOFING.
7.19	PROTECTION/DRAINAGE BOARD.
7.20	6" DRAIN TILE.



B / A-32 **SECTION**
SCALE: 1/2" = 1'-0"

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PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: JJUD
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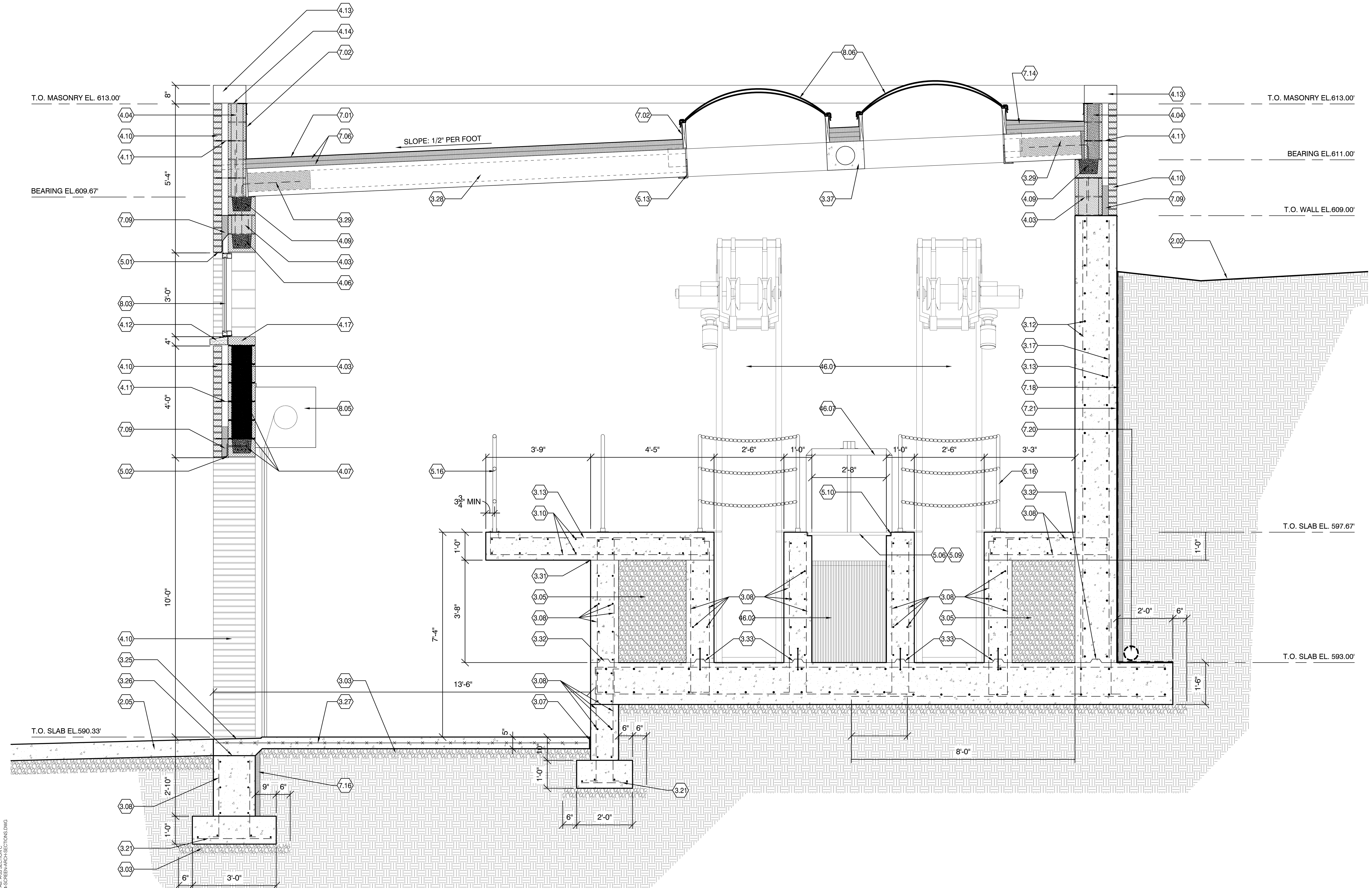
SECTION B

DRAWING DISCIPLINE
ARCHITECTURE

SHEET	OF
A-32	44



SECTION

C / A-33

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

KEYNOTES

2.02	FINISH GRADE - SEE CIVIL DRAWINGS.
2.05	MIN. 7" DRIVEWAY PAVING - SEE CIVIL DRAWINGS.
3.03	MIN. 4" GRANULAR BASE
3.05	FILL VOID BETWEEN WALLS WITH #57 STONE, LOW STRENGTH MORTAR, OR DRY SAND.
3.07	1/2" EXPANSION JOINT MATERIAL
3.08	#5 @ 12" O.C., EACH WAY, EACH FACE
3.10	#5 @ 12" O.C.
3.12	#6 @ 12" O.C., EACH WAY
3.13	#6 @ 12" O.C.
3.17	#8 @ 6" O.C.
3.21	(4) #5 CONTINUOUS AND #5 @ 12" O.C. LATERAL
3.25	AT OVERHEAD DOOR ONLY, RECESS SLAB 1/2" UNDER OVERHEAD DOOR AND SLOPE 1/4" PER FOOT DOWN OUTWARD. SEE SECTION.
3.26	HOLD FOUNDATION WALL DOWN 8" AND EXTEND SLAB OVER.
3.27	6X6 - W2.9 X W2.9 WELDED WIRE REINFORCING
3.28	12" THICK PRECAST ROOF PLANKS, 48" WIDE TYP. CONTINUOUS PLANKS ADJACENT TO SKYLIGHT SHALL SUPPORT GALVANIZED FABRICATED STIRRUPS TO SUPPORT THE PLANKS WHICH ARE INTERRUPTED BY SKYLIGHT. EDGE PLANKS CAN BE DIFFERENT WIDTHS.
3.29	#4 BENT BAR WITH 24" LEGS. TOP LEG IN GROUTED PRECAST PLANK CORE, VERTICAL LEG IN GROUTED CMU. PROVIDE TWO SUCH BARS PER PLANK.
3.31	VERTICAL CONSTRUCTION JOINT HERE IS NOT PERMITTED.
3.32	SHEAR KEY.
3.33	SHEAR KEY WITH WATERSTOP.
3.37	12" THICK X 16" WIDE PRECAST CONCRETE BEAM.
4.03	12" CMU WITH (2) #5 VERTICAL @ 48" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.
4.04	8" CMU WITH #5 VERTICAL @ 32" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.
4.06	SINGLE COURSE BOND BEAM WITH (2) #5 OVER SWING DOORS AND WINDOWS UP TO 5'-0" WIDE. EXTEND BARS MIN. 14" EACH SIDE OF OPENING.
4.07	TRIPLE COURSE BOND BEAM WITH (3) # 5 T&B OVER OVERHEAD DOOR OPENING. EXTEND BARS MIN. 22" EACH SIDE OF OPENING.
4.09	SINGLE COURSE BOND BEAM WITH (2) #5 CONTINUOUS.
4.10	BRICK VENEER - MATCH EXISTING ON NEARBY BUILDINGS
4.11	HORIZONTAL JOINT REINFORCING.
4.12	CUT STONE OR CAST STONE SILL.
4.13	CUT STONE OR CAST STONE COPING.
4.14	1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. W/ 4" EMBED.
4.17	SOLID CMU OR UPSIDE DOWN BOND BEAM UNITS.
46.01	MECHANICAL SCREEN - SEE PROCESS DRAWINGS.
46.02	MANUAL BAR SCREEN - SEE PROCESS DRAWINGS.
46.07	SLIDE GATE - SEE PROCESS DRAWINGS.
5.01	L5" x 3-1/2" x 5/16" GALVANIZED LOOSE LAID LINTEL FOR OPENINGS UP TO 4'-0" WIDE). MIN. 8" BEARING ON EACH SIDE.
5.02	L6" x 6" x 3/8" GALVANIZED SHELF ANGLE WITH HORIZONTAL 1/2" DIA. HEADED STUDS X 8" LONG @ 16" O.C. (SEE DETAIL). GALVANIZE AFTER FABRICATION. VERTICAL LEG SHALL BE TIGHT AGAINST FACE OF CMU. ENDS OF SHELF ANGLE SHALL BE WITHIN 1/2" OF SIDES OF MASONRY OPENING.
5.06	1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.
5.09	REMOVABLE SECTION, MIN. 4'-0" WIDE.
5.10	2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.
5.13	GALVANIZED FABRICATED STIRRUPS - BY PRECAST PLANK MANUFACTURER.
5.16	42" HIGH ALUMINUM RAILING WITH THREE RAILS.
7.01	MEMBRANE ROOFING
7.02	FLASHING.
7.06	RIGID INSULATION, MIN. 4"
7.09	FLEXIBLE FLASHING, CAVITY DRAINAGE MAT, AND WEEP HOLES.
7.14	CRICKET
7.16	2" RIGID INSULATION
7.18	BELOW GRADE WATERPROOFING.
7.20	6" DRAIN TILE.
7.21	2" INSULATING PROTECTION/DRAINAGE BOARD
8.03	ALUMINUM WINDOW W/ INSULATED GLASS, SEE SPECIFICATIONS.
8.05	OVERHEAD COILING DOOR.
8.06	SKYLIGHT.

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REVISIONS

NO.	DESCRIPTION	DATE	BY

☐ PERMIT ☐ PROGRESS ☒ BID ☐ CONSTRUCTION ☐ RECORD

PROJECT NO. 14784

DATE 08-01-2016

DESIGNED BY: JJUD

DRAWN BY: NJUD

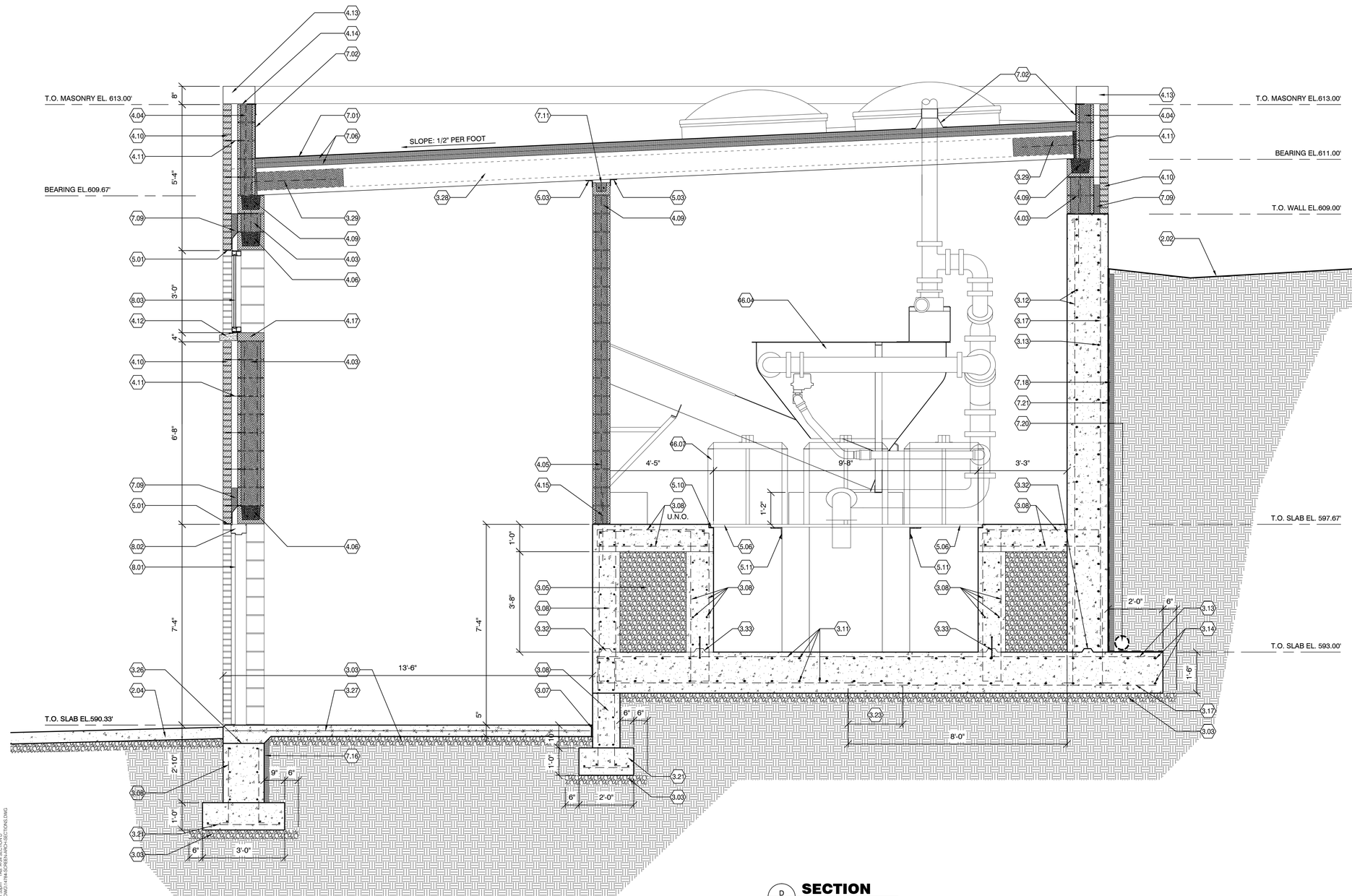
CHECKED BY:

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

SECTION C

DRAWING DISCIPLINE: ARCHITECTURE

SHEET	OF
A-33	44



D / A-34 **SECTION**

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

KEYNOTES

2.02 FINISH GRADE - SEE CIVIL DRAWINGS.

2.04 MIN. 5" CONCRETE PAVING - SEE CIVIL DRAWINGS.

3.03 MIN. 4" GRANULAR BASE

3.05 FILL VOID BETWEEN WALLS WITH #57 STONE, LOW STRENGTH MORTAR, OR DRY SAND.

3.07 1/2" EXPANSION JOINT MATERIAL

3.08 #5 @ 12" O.C., EACH WAY, EACH FACE

3.11 #6 @ 12" O.C., EACH WAY, EACH FACE

3.12 #6 @ 12" O.C., EACH WAY

3.13 #6 @ 12" O.C.

3.14 #6 @ 12" O.C., EACH FACE

3.17 #8 @ 6" O.C.

3.21 (4) #5 CONTINUOUS AND #5 @ 12" O.C. LATERAL

3.23 LAP SPLICE, SEE STRUCTURAL GENERAL NOTES.

3.26 HOLD FOUNDATION WALL DOWN 8" AND EXTEND SLAB OVER.

3.27 6X6 - W2.9 X W2.9 WELDED WIRE REINFORCING

3.28 12" THICK PRECAST ROOF PLANKS, 48" WIDE TYP. CONTINUOUS PLANKS ADJACENT TO SKYLIGHT SHALL SUPPORT GALVANIZED FABRICATED STIRRUPS TO SUPPORT THE PLANKS WHICH ARE INTERRUPTED BY SKYLIGHT. EDGE PLANKS CAN BE DIFFERENT WIDTHS.

3.29 #4 BENT BAR WITH 24" LEGS. TOP LEG IN GROUTED PRECAST PLANK CORE, VERTICAL LEG IN GROUTED CMU. PROVIDE TWO SUCH BARS PER PLANK.

3.32 SHEAR KEY.

3.33 SHEAR KEY WITH WATERSTOP.

4.03 12" CMU WITH (2) #5 VERTICAL @ 48" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.

4.04 8" CMU WITH #5 VERTICAL @ 32" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.

4.05 8" CMU WITH #5 VERTICAL @ 48" O.C. (NON-LOADBEARING). BRACE TOP OF WALL WITH ANGLES ANCHORED TO PRECAST PLANKS. SEE ALSO STRUCTURAL GENERAL NOTES.

4.06 SINGLE COURSE BOND BEAM WITH (2) #5 OVER SWING DOORS AND WINDOWS UP TO 5'-0" WIDE. EXTEND BARS MIN. 14" EACH SIDE OF OPENING.

4.09 SINGLE COURSE BOND BEAM WITH (2) #5 CONTINUOUS.

4.10 BRICK VENEER - MATCH EXISTING ON NEARBY BUILDINGS

4.11 HORIZONTAL JOINT REINFORCING.

4.12 CUT STONE OR CAST STONE SILL.

4.13 CUT STONE OR CAST STONE COPING.

4.14 1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. W/ 4" EMBED.

4.15 DOWEL. MATCH VERTICAL REINFORCING IN CMU, SIZE A SPACING.

4.17 SOLID CMU OR UPSIDE DOWN BOND BEAM UNITS.

46.04 WASHER & CONCENTRATORS - SEE PROCESS DRAWINGS.

46.07 SLIDE GATE - SEE PROCESS DRAWINGS.

5.01 L5" x 3-1/2" x 5/16" GALVANIZED LOOSE LAID LINTEL FOR OPENINGS UP TO 4'-0" WIDE). MIN. 8" BEARING ON EACH SIDE.

5.03 L3" x 3" x 1/4" X 12" LONG GALVANIZED ANGLES, BOTH SIDES OF NON-LOADBEARING CMU WALLS. SPACED 6'-0" O.C. MAX. ANCHOR TO PRECAST ROOF PLANKS WITH (2) 3/8" DIAMETER ADHESIVE ANCHORS EACH ANGLE. VERTICAL LEGS SHALL BE TIGHT AGAINST FACE OF CMU. DO NOT ANCHOR TO CMU. LOCATE AND AVOID DRILLING INTO PRESTRESS STRANDS.

5.06 1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.

5.10 2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.

5.11 L5" x 5" x 5/16" STAINLESS STEEL GRATING SUPPORT. SECURE ENDS WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS WITH 3" EMBEDDMENT INTO CONCRETE WALL. WHERE ANGLE IS NOT PARALLEL TO SUPPORTING WALL, USE L3" x 3" X 1/4" X 5" LONG STAINLESS STEEL CLIP ANGLE WITH 3/16" FILLET WELDS ALL AROUND OR (2) 3/8" DIA STAINLESS STEEL BOLTS TO CONNECT CLIP ANGLE TO SUPPORT ANGLE. TOP OF SUPPORT ANGLE SHALL MATCH GRATING BEARING ELEVATION OF EMBEDDED SHELF ANGLES.

7.01 MEMBRANE ROOFING

7.02 FLASHING.

7.06 RIGID INSULATION, MIN. 4"

7.09 FLEXIBLE FLASHING, CAVITY DRAINAGE MAT, AND WEEP HOLES.

7.11 MINERAL WOOL FIRESAFING, FILL GAP BETWEEN TOP OF CMU AND UNDERSIDE OF PLANKS, FULL WIDTH OF WALL.

7.16 2" RIGID INSULATION

7.18 BELOW GRADE WATERPROOFING.

7.20 6" DRAIN TILE.

7.21 2" INSULATING PROTECTION/DRAINAGE BOARD

8.01 HOLLOW METAL DOOR, SEE SCHEDULE

8.02 HOLLOW METAL FRAME, GROUT SOLID, SEE SCHEDULE.

8.03 ALUMINUM WINDOW W/ INSULATED GLASS, SEE SPECIFICATIONS.

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REVISIONS

NO	DESCRIPTION	DATE	BY

RECORD [-] CONSTRUCTION [-] BID [X] PROGRESS [-] PERMIT [-]

PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: NJUD
DRAWN BY: NJUD
CHECKED BY:

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

SECTION D

DRAWING DISCIPLINE
ARCHITECTURE

SHEET	OF
A-34	44

KEYNOTES

2.02 FINISH GRADE - SEE CIVIL DRAWINGS.

3.03 MIN. 4" GRANULAR BASE

3.04 MIN. 30" COMPACTED GRAVEL WITH NO FINES (#57 OR SIMILAR)

3.07 1/2" EXPANSION JOINT MATERIAL

3.08 #5 @ 12" O.C., EACH WAY, EACH FACE

3.10 #5 @ 12" O.C.

3.11 #6 @ 12" O.C., EACH WAY, EACH FACE

3.12 #6 @ 12" O.C., EACH WAY

3.13 #6 @ 12" O.C.

3.18 CONCRETE STAIRS. PROVIDE #5 @ 12" EW. STEP BEARING (BOTTOM OF CONCRETE). MIN CONCRETE THICKNESS 8".

3.19 (12) # 6 LONGITUDINAL BARS AND #3 TIES @ 6' O.C.

3.21 (4) #5 CONTINUOUS AND #5 @ 12" O.C. LATERAL

3.27 6X6 - W2.9 X W2.9 WELDED WIRE REINFORCING

3.28 12" THICK PRECAST ROOF PLANKS, 48" WIDE TYP. CONTINUOUS PLANKS ADJACENT TO SKYLIGHT SHALL SUPPORT GALVANIZED FABRICATED STIRRUPS TO SUPPORT THE PLANKS WHICH ARE INTERRUPTED BY SKYLIGHT. EDGE PLANKS CAN BE DIFFERENT WIDTHS.

3.32 SHEAR KEY.

3.33 SHEAR KEY WITH WATERSTOP.

3.38 GROUT - SEE PROCESS DRAWINGS.

4.04 8" CMU WITH #5 VERTICAL @ 32" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.

4.05 8" CMU WITH #5 VERTICAL @ 48" O.C. (NON-LOADBEARING). BRACE TOP OF WALL WITH ANGLES ANCHORED TO PRECAST PLANKS. SEE ALSO STRUCTURAL GENERAL NOTES.

4.08 VARYING HEIGHT BOND BEAM WITH (2) #5 CONTINUOUS. GROUT CORES ABOVE BOND BEAM TO MIN. 6" ABOVE ANCHORS FOR SLOPED STEEL ANGLE.

4.10 BRICK VENEER - MATCH EXISTING ON NEARBY BUILDINGS

4.11 HORIZONTAL JOINT REINFORCING.

4.13 CUT STONE OR CAST STONE COPING.

4.14 1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. W/ 4" EMBED.

4.15 DOWEL. MATCH VERTICAL REINFORCING IN CMU, SIZE A SPACING.

46.05 GRIT CHAMBER - SEE PROCESS DRAWINGS.

46.06 GRIT PUMP - SEE PROCESS DRAWINGS.

5.04 L4 X 4 X 1/4" x CONTINUOUS, SECURED TO PERIMETER WALL WITH 1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. WITH MIN. 4" EMBEDDMENT INTO CMU WALL.

5.06 1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.

5.10 2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.

5.16 42" HIGH ALUMINUM RAILING WITH THREE RAILS.

5.20 GALVANIZED STEEL HANDRAIL AT 36".

5.21 GALVANIZED STEEL LANDING/STAIR SUPPORT COLUMN

5.22 GALVANIZED STEEL STAIR STRINGERS

5.23 GALVANIZED STEEL GRATING TREADS.

7.01 MEMBRANE ROOFING

7.02 FLASHING.

7.06 RIGID INSULATION, MIN. 4"

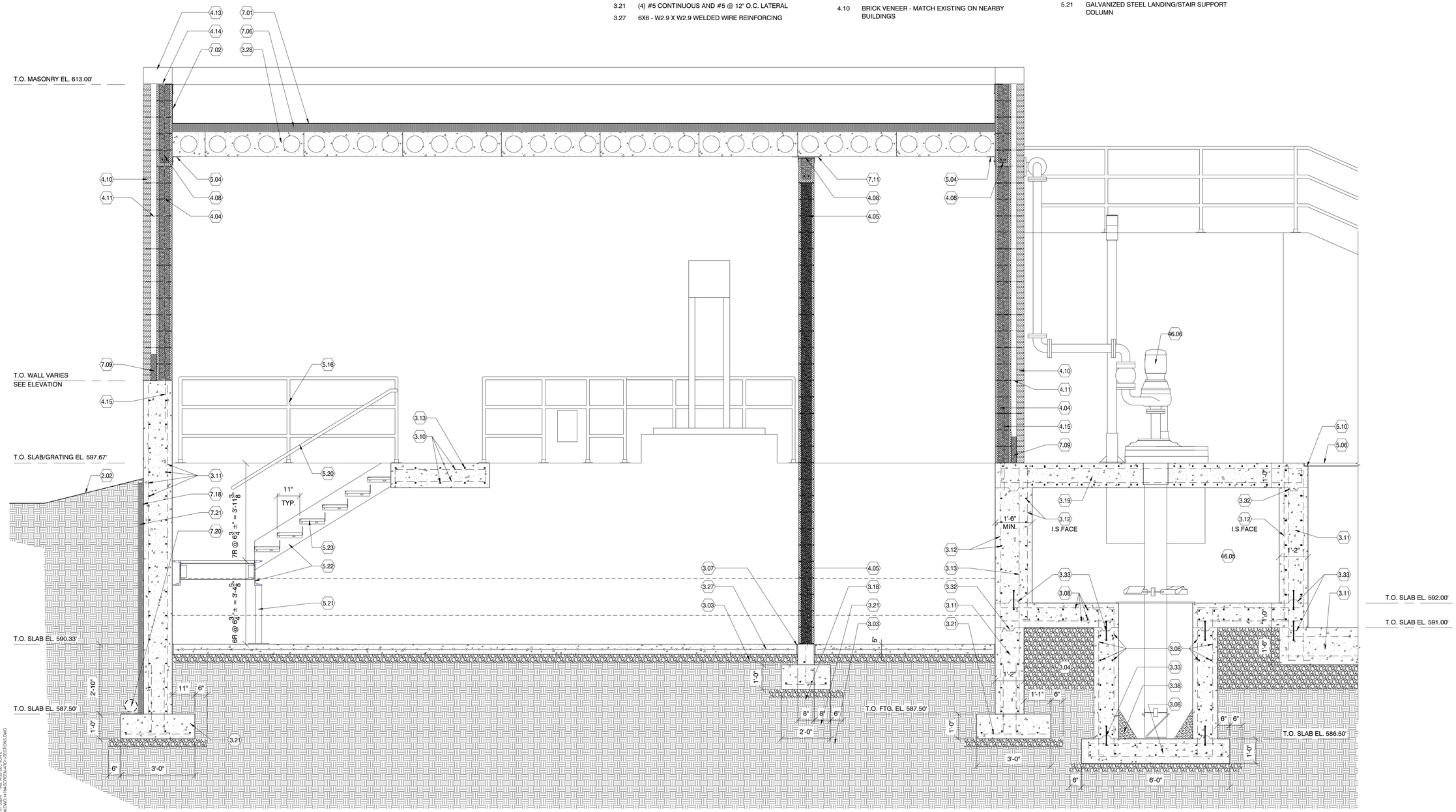
7.09 FLEXIBLE FLASHING, CAVITY DRAINAGE MAT, AND WEEP HOLES.

7.11 MINERAL WOOL FIRESAFING, FILL GAP BETWEEN TOP OF CMU AND UNDERSIDE OF PLANKS, FULL WIDTH OF WALL.

7.18 BELOW GRADE WATERPROOFING.

7.20 6" DRAIN TILE.

7.21 2" INSULATING PROTECTION/DRAINAGE BOARD



E
A-35
SECTION
SCALE: 1/2" = 1'-0"

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REVISIONS

NO	DESCRIPTION	DATE	BY

- PERMIT - PROGRESS X BID - CONSTRUCTION - RECORD

PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: NJUD
DRAWN BY: NJUD
CHECKED BY:

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

SECTION E

DRAWING DISCIPLINE
ARCHITECTURE

SHEET	OF
A-35	44

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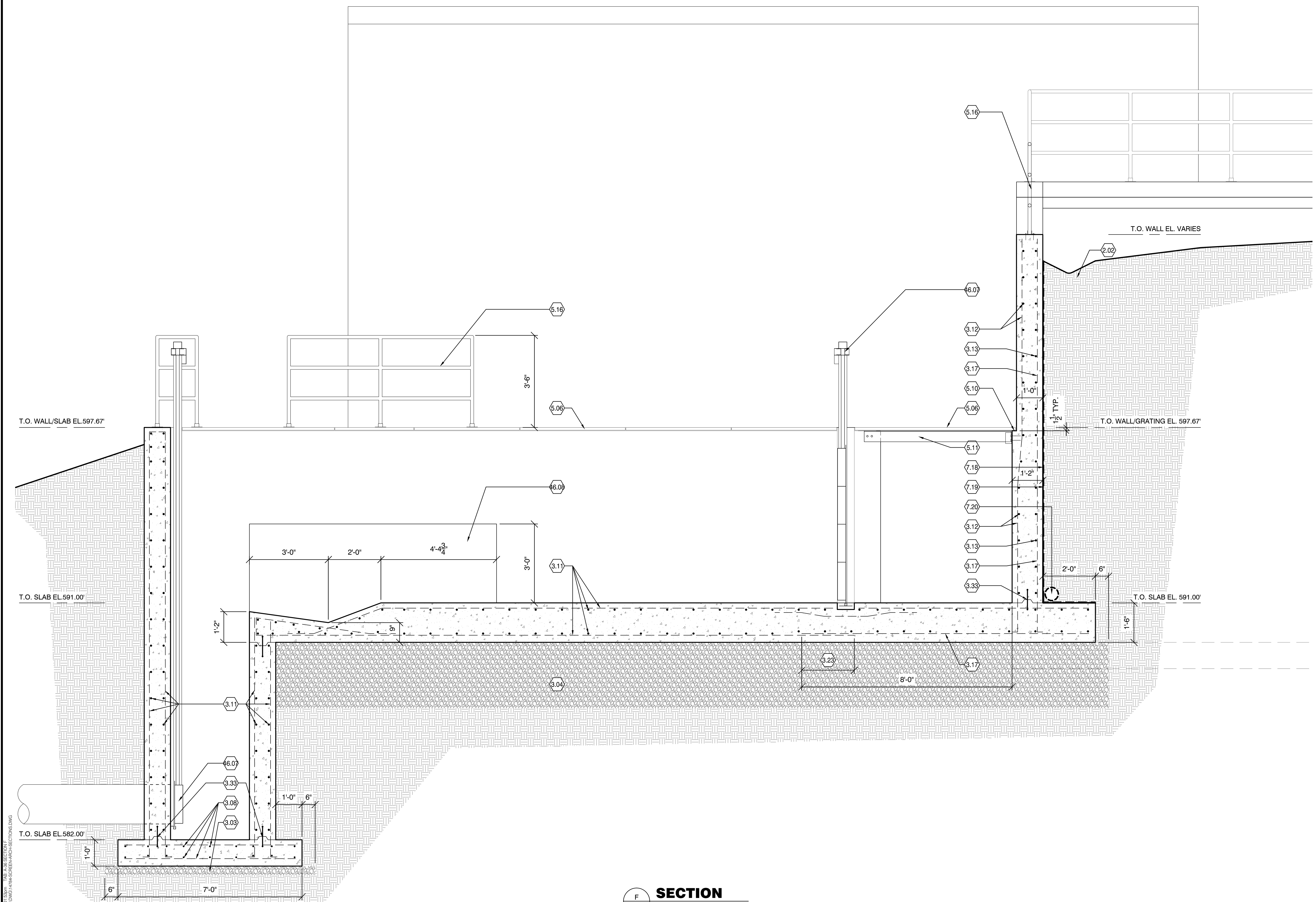
KEYNOTES

2.02	FINISH GRADE - SEE CIVIL DRAWINGS.
3.03	MIN. 4" GRANULAR BASE
3.04	MIN. 30" COMPACTED GRAVEL WITH NO FINES (#57 OR SIMILAR)
3.08	#5 @ 12" O.C., EACH WAY, EACH FACE
3.11	#6 @ 12" O.C., EACH WAY, EACH FACE
3.12	#6 @ 12" O.C., EACH WAY
3.13	#6 @ 12" O.C.
3.17	#8 @ 6" O.C.
3.23	LAP SPLICE, SEE STRUCTURAL GENERAL NOTES.
3.33	SHEAR KEY WITH WATERSTOP.
46.07	SLIDE GATE - SEE PROCESS DRAWINGS.
46.08	PARSHAL FLUME - SEE PROCESS DRAWINGS.
5.06	1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.
5.10	2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.
5.11	L5" x 5" x 5/16" STAINLESS STEEL GRATING SUPPORT. SECURE ENDS WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS WITH 3" EMBEDDMENT INTO CONCRETE WALL. WHERE ANGLE IS NOT PARALLEL TO SUPPORTING WALL, USE L3" x 3" X 1/4" X 5" LONG STAINLESS STEEL CLIP ANGLE WITH 3/16" FILLET WELDS ALL AROUND OR (2) 3/8" DIA STAINLESS STEEL BOLTS TO CONNECT CLIP ANGLE TO SUPPORT ANGLE. TOP OF SUPPORT ANGLE SHALL MATCH GRATING BEARING ELEVATION OF EMBEDDED SHELF ANGLES.
5.16	42" HIGH ALUMINUM RAILING WITH THREE RAILS.
7.18	BELOW GRADE WATERPROOFING.
7.19	PROTECTION/DRAINAGE BOARD.
7.20	6" DRAIN TILE.



SECTION
F / A-36
SCALE: 1/2" = 1'-0"

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NO.	DESCRIPTION	DATE	BY

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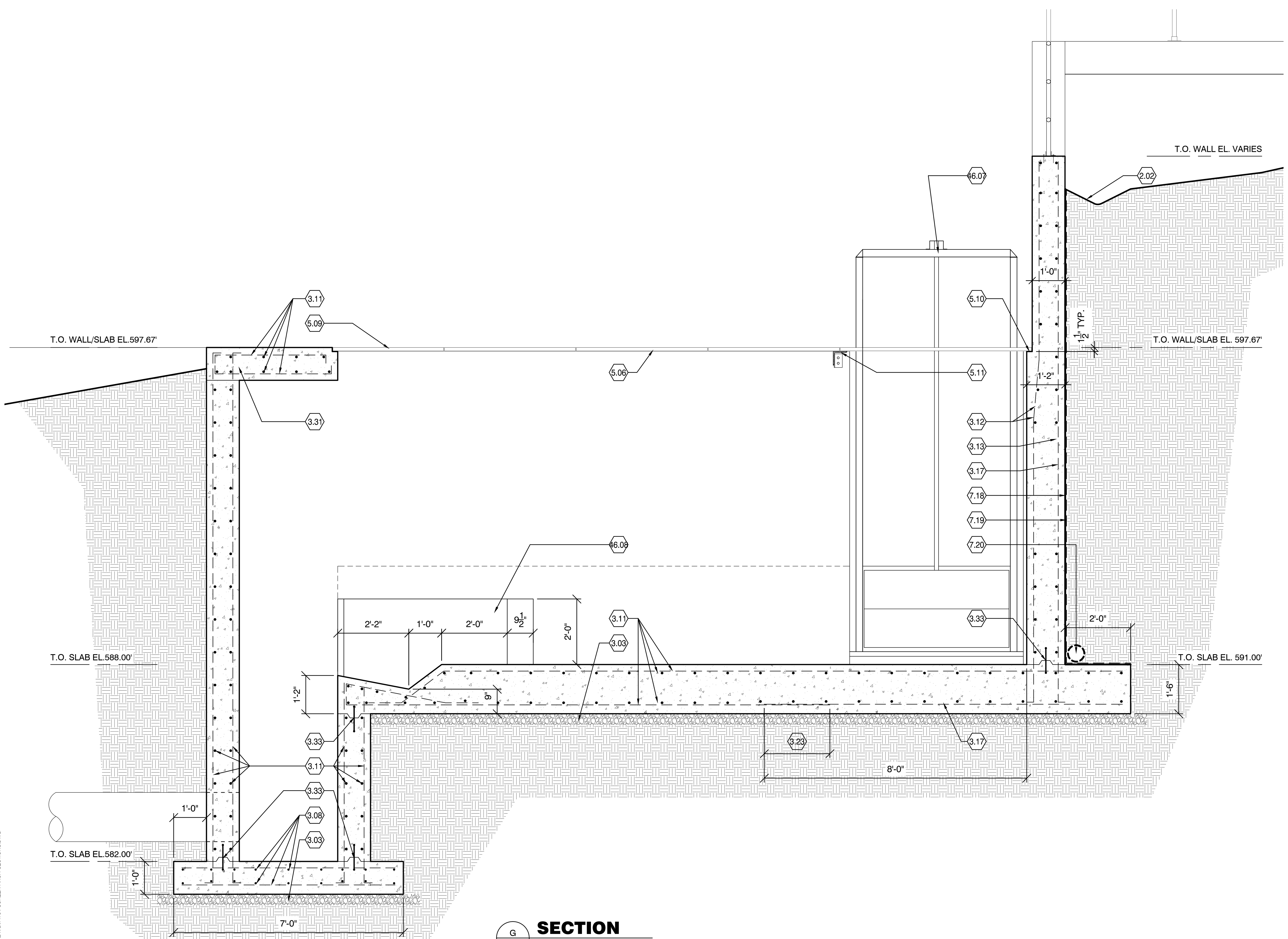
PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: JJD
DRAWN BY: NJJD
CHECKED BY:

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

SECTION F

DRAWING DISCIPLINE
ARCHITECTURE

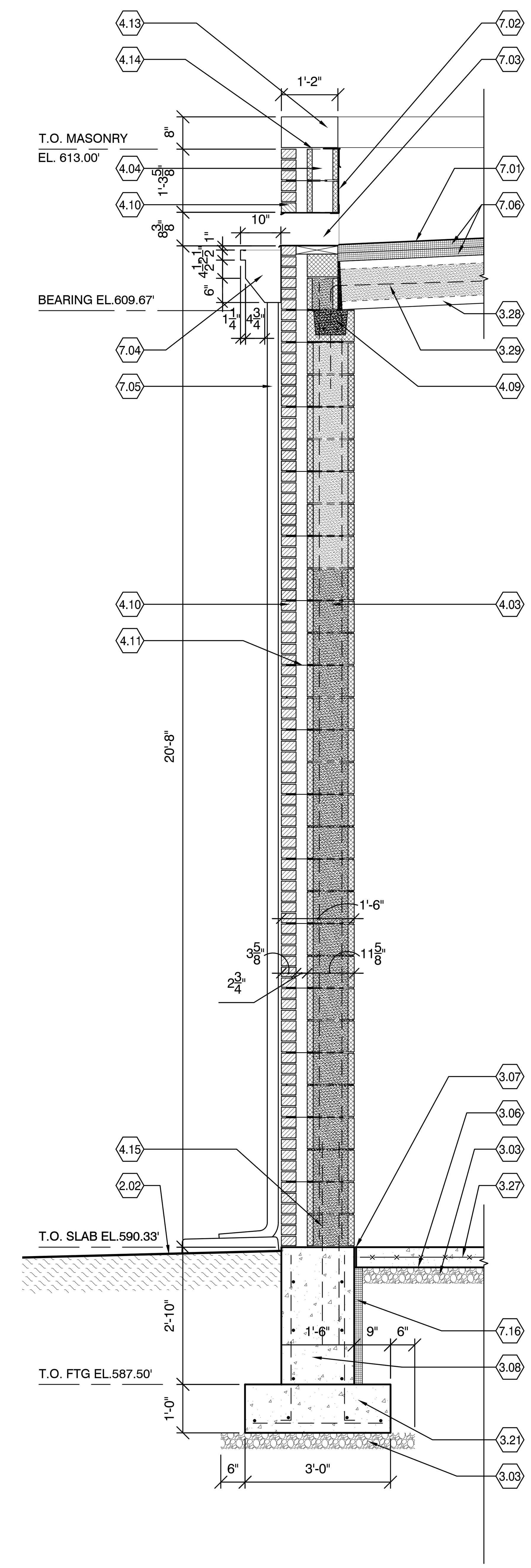
SHEET	OF
A-36	44



SECTION

G / A-37

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



SECTION

H / A-37

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

KEYNOTES

2.02	FINISH GRADE - SEE CIVIL DRAWINGS.
3.03	MIN. 4" GRANULAR BASE
3.06	10 MIL POLYETHELENE VAPOR BARRIER.
3.07	1/2" EXPANSION JOINT MATERIAL
3.08	#5 @ 12" O.C., EACH WAY, EACH FACE
3.11	#6 @ 12" O.C., EACH WAY, EACH FACE
3.12	#6 @ 12" O.C., EACH WAY
3.13	#6 @ 12" O.C.
3.17	#8 @ 6" O.C.
3.21	(4) #5 CONTINUOUS AND #5 @ 12" O.C. LATERAL
3.23	LAP SPLICE, SEE STRUCTURAL GENERAL NOTES.
3.27	6X6 - W2.9 X W2.9 WELDED WIRE REINFORCING
3.28	12" THICK PRECAST ROOF PLANKS, 48" WIDE TYP. CONTINUOUS PLANKS ADJACENT TO SKYLIGHT SHALL SUPPORT GALVANIZED FABRICATED STIRRUPS TO SUPPORT THE PLANKS WHICH ARE INTERRUPTED BY SKYLIGHT. EDGE PLANKS CAN BE DIFFERENT WIDTHS.
3.29	#4 BENT BAR WITH 24" LEGS. TOP LEG IN GROUTED PRECAST PLANK CORE, VERTICAL LEG IN GROUTED CMU. PROVIDE TWO SUCH BARS PER PLANK.
3.31	VERTICAL CONSTRUCTION JOINT HERE IS NOT PERMITTED.
3.33	SHEAR KEY WITH WATERSTOP.
4.03	12" CMU WITH (2) #5 VERTICAL @ 48" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.
4.04	8" CMU WITH #5 VERTICAL @ 32" O.C. SEE ALSO STRUCTURAL GENERAL NOTES.
4.09	SINGLE COURSE BOND BEAM WITH (2) #5 CONTINUOUS.
4.10	BRICK VENEER - MATCH EXISTING ON NEARBY BUILDINGS
4.11	HORIZONTAL JOINT REINFORCING.
4.13	CUT STONE OR CAST STONE COPING.
4.14	1/2" DIA. ADHESIVE ANCHORS @ 24" O.C. W/ 4" EMBED.
4.15	DOWEL. MATCH VERTICAL REINFORCING IN CMU, SIZE A SPACING.
46.07	SLIDE GATE - SEE PROCESS DRAWINGS.
46.08	PARSHAL FLUME - SEE PROCESS DRAWINGS.
5.06	1-1/2" ALUMINUM PLANK W/ PUNCHED HOLES.
5.09	REMOVABLE SECTION, MIN. 4'-0" WIDE.
5.10	2" X 2" EMBEDDED SHELF ANGLE. SEE DETAIL.
5.11	L5" x 5" x 5/16" STAINLESS STEEL GRATING SUPPORT. SECURE ENDS WITH (2) 3/8" DIA. STAINLESS STEEL BOLTS WITH 3" EMBEDDMENT INTO CONCRETE WALL. WHERE ANGLE IS NOT PARALLEL TO SUPPORTING WALL, USE L3" x 3" X 1/4" X 5" LONG STAINLESS STEEL CLIP ANGLE WITH 3/16" FILLET WELDS ALL AROUND OR (2) 3/8" DIA STAINLESS STEEL BOLTS TO CONNECT CLIP ANGLE TO SUPPORT ANGLE. TOP OF SUPPORT ANGLE SHALL MATCH GRATING BEARING ELEVATION OF EMBEDDED SHELF ANGLES.
7.01	MEMBRANE ROOFING
7.02	FLASHING.
7.03	SCUPPER.
7.04	CONDUCTOR HEAD.
7.05	PREFINISHED METAL DOWNSPOUT W/ SPLASH BLOCK.
7.06	RIGID INSULATION, MIN. 4"
7.16	2" RIGID INSULATION
7.18	BELOW GRADE WATERPROOFING.
7.19	PROTECTION/DRAINAGE BOARD.
7.20	6" DRAIN TILE.

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REVISIONS

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PERMIT / PROGRESS / BID / CONSTRUCTION / RECORD

PROJECT NO. 14784
DATE 08-01-2016
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DRAWN BY: NJJD
CHECKED BY:

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

SECTIONS G & H

DRAWING DISCIPLINE: ARCHITECTURE

SHEET	OF
A-37	44

STRUCTURAL GENERAL NOTES:

GENERAL

A. THESE GENERAL NOTES PRESENT AND/OR SUMMARIZE KEY PROJECT INFORMATION FOR THE READER'S CONVENIENCE. SEE ALSO INDIVIDUAL PLAN NOTES FOR FURTHER DETAILS AND REQUIREMENTS.
B. ALL REFERENCES TO REFERENCE STANDARDS HEREIN ARE TO THE MOST RECENT ISSUE IN EFFECT AS OF THE DATE OF THESE DOCUMENTS, UNLESS NOTED OTHERWISE ON THE PLANS.
C. ALL ELEVATIONS ARE REFERENCED TO FINISHED FLOOR EL. 100'-0". ALL ELEVATIONS SHOWN ON PLANS ARE REFERENCED TO THE SITE ELEVATION DATUM SHOWN ON FOUNDATION PLANS UNLESS NOTED OTHERWISE.
D. SUBMIT SHOP DRAWINGS, PROJECT DATA, AND SAMPLES FOR ITEMS ON THE PLANS.

   1. IDENTIFY PROMINENTLY ON DRAWINGS EACH AND ALL RESUBMITTALS BY NUMBER.
   2. IDENTIFY ANY CHANGES WHICH HAVE BEEN MADE OTHER THAN THOSE REQUESTED BY THE ENGINEER.
   3. SUBMITTALS FAILING TO CONFORM TO THE ABOVE WILL BE RETURNED FOR RESUBMITTAL.

E. CONTRACTOR SHALL BRACE ENTIRE STRUCTURE(S) AS REQUIRED TO MAINTAIN STABILITY UNTIL COMPLETE AND FUNCTIONING AS THE DESIGN UNIT. IN ACCORDANCE WITH THE GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THE REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

DESIGN CRITERIA

A. GOVERNING CODES, REQUIREMENTS, DESIGN STANDARDS AND SPECIFICATIONS:

DESIGN CODE: 2011 OHIO BUILDING CODE

DESIGN STANDARDS: ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

DESIGN SPECIFICATIONS: ACI 318-08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY

ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY

ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE

ACI 315 DETAILS AND DETAILING OF CONCRETE REINFORCEMENT

CRSI REINFORCING BAR DETAILING (MANUAL OF STANDARD PRACTICE)

B. STRUCTURAL DESIGN LOADS

1. DEAD LOAD:	SELF-WEIGHT
ROOF SUPERIMPOSED DEAD LOAD ON PLANKS	10 psf
2. FLOOR LIVE LOAD:	100 psf
3. ROOF LIVE LOAD:	20 psf
4. ROOF SNOW LOADS:	
GROUND SNOW LOAD, Pg	30 psf
SNOW EXPOSURE FACTOR, Ce	1.0
SNOW LOAD IMPORTANCE FACTOR, I	1.1
SNOW DRIFT @ PARAPETS/SKYLIGHT:	
DRIFT WIDTH, Wd	6'-8"
ADDITIONAL LOAD DUE TO DRIFT	29.8 psf
THERMAL FACTOR, Ct	1.2
5. WIND LOADS:	
BASIC WIND SPEED (3 SEC. GUST)	90 mph
WIND IMPORTANCE FACTOR	1.15
WIND EXPOSURE	C
6. EARTHQUAKE DESIGN DATA	
BUILDING OCCUPANCY CATEGORY:	III
SEISMIC IMPORTANCE FACTOR, I	1.25
Ss =	0.194
S1 =	0.058
SITE CLASS:	C
SEISMIC DESIGN CATEGORY:	A
BASIC SEISMIC FORCE RESISTING SYSTEMS:	
ORDINARY REINFORCED MASONRY SHEAR WALLS	
RESPONSE MODIFICATION COEFFICIENT, R	2.00
SEISMIC COEFFICIENT, Cs =	0.097

CONCRETE

ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST SPECIFICATIONS OF THE AMERICAN CONCRETE INSTITUTE AND THE CONCRETE REINFORCING STEEL INSTITUTE.

CONCRETE STRENGTHS AT 28 DAYS: 4500 PSI UNO, 4000 PSI FOR SIDEWALKS, AND STAIRS.

CONCRETE SHALL BE NORMAL WEIGHT.

SLUMP SHALL BE 4" MAX. FOR FOOTINGS & SLABS, 5" MAX. FOR WALLS. DO NOT ADD WATER AT THE JOB SITE.

WATER/CEMENT RATIO SHALL BE 0.42 MAX FOR MAT SLABS, FOOTINGS, WALLS, & SLABS, UNO.

WATER/CEMENT RATIO SHALL BE 0.45 MAX FOR FOOTINGS (NOT IN CONTACT WITH WITH WASTEWATER), SIDEWALKS & STAIRS.

CEMENT SHALL BE ASTM C150 PORTLAND CEMENT, TYPE I OR II.

USE BLANKETS AS REQUIRED FOR COLD WEATHER CONCRETING; DO NOT USE ACCELERATING ADMIXTURES.

AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS, PROVIDE BENT BARS OF EQUAL SIZE AND AT SAME SPACING AS TYPICAL REINFORCING AROUND CORNER AND/OR INTO ABUTTING WALL. BARS SHALL HAVE EMBEDMENT OF 18 DIAMETERS (12" MINIMUM) PAST INSIDE EDGE OF CORNER.

WHERE CONCRETE IS PLACED DIRECTLY ON GROUND, REINFORCING STEEL SHALL HAVE 3" OF CONCRETE COVER. AT ALL OTHER PLACES, CONCRETE COVER TO BE A MIN. OF 2" UNLESS NOTED OTHERWISE.

ALL FLOOR SLABS SHALL BE STEEL TROWEL FINISHED.

ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED, 6 % ± 1 %

CURE CONCRETE FOR 7 DAYS

REINFORCING STEEL : ASTM A615 OR A616, GRADE 60. MINIMUM LAP LENGTH - 48 DIAMETERS.

FOUNDATIONS:

FOUNDATIONS HAVE BEEN DESIGNED FOR MINIMUM ALLOWABLE SOIL BEARING PRESSURES BELOW FOOTINGS OF 1,500 PSF BASED ON "GEO-TECHNICAL ENGINEERING REPORT" BY ACA ENGINEERING, INC., DATED APRIL 12, 2016.

FILL SOIL SHALL BE COMPACTED IN ACCORDANCE WITH THE CRITERIA STATED IN THE "GEO-TECHNICAL ENGINEERING REPORT".

ALL SOIL BEARING SURFACES SHALL BE LEVEL (WITHIN 1/4" IN 12").

THE CONTRACTOR SHALL HAVE A GEOTECHNICAL ENGINEER VERIFY FILL MATERIAL AND ALL BEARING STRATA BEFORE FOOTINGS ARE POURED. REMOVE ANY SOFT OR LOOSE SOILS FROM BENEATH PROPOSED STRUCTURES.

STRUCTURAL PRECAST CONCRETE

PRECAST CONCRETE WORK SHALL CONFORM TO THE LATEST AMERICAN CONCRETE INSTITUTE AND THE PRESTRESSED CONCRETE INSTITUTE CODES AND STANDARDS LISTED IN THE PROJECT SPECIFICATIONS, EXCEPT AS MODIFIED THEREIN.

ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE IN 28 DAYS SHALL BE 5000 PSI.

MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT TIME OF FORCE TRANSFER SHALL BE 3500 PSI.

REINFORCING BARS SHALL BE A615 GRADE, 60 PSI YIELD STRENGTH, UNLESS NOTED OTHERWISE.

PRESTRESSING WIRE SHALL CONFORM TO ASTM A-421, TYPE BA, "SPECIFICATIONS FOR UNCOATED STRESS RELIEVED WIRE FOR PRESTRESSED CONCRETE". PRESTRESSING STRAND SHALL CONFORM TO ASTM A-416, GRADE 270, "SPECIFICATIONS FOR UNCOATED STRESS RELIEVED STRAND FOR PRESTRESSED CONCRETE".

PRECAST MEMBERS SHALL BE DESIGNED BY THE MANUFACTURER TO SUPPORT SUPERIMPOSED LOADS AS GIVEN IN THE NOTES PLUS THE DEAD LOAD OF PRECAST AND TOPPING IF APPLICABLE.

PRECAST MANUFACTURER SHALL DESIGN AND SPECIFY BEARING PADS SHOWN ON THE DRAWINGS.

NEOPRENE BEARING PADS SHALL HAVE A MINIMUM 70 DUROMETER HARDNESS.

THE PRECAST MANUFACTURER SHALL COORDINATE SIZE AND LOCATION OF ALL OPENINGS, HOLES, RECESSES AND ETC. IN PRECAST MEMBERS WITH ALL OTHER TRADES. SEE ARCHITECTURAL AND MECHANICAL ROOF PLANS FOR OPENINGS IN PRECAST CONCRETE ROOF PLANKS. SEE MECHANICAL DRAWINGS FOR ROOF TOP UNIT(S) WEIGHT(S).

ALL OPENINGS LARGER THAN 4" SQUARE OR ROUND SHALL BE PROVIDED BY THE PRECAST MANUFACTURER. SMALLER OPENINGS SHALL BE FIELD-CUT OR CORED BY THE TRADES REQUIRING THE OPENINGS AFTER WRITTEN APPROVAL FROM THE PRECAST MANUFACTURER. NO REINFORCING STRANDS CAN BE CUT.

THE PRECAST MANUFACTURER SHALL COORDINATE AND ADJUST AS REQUIRED THE LOCATIONS OF ALL EMBED ITEMS WITH FIELD ATTACHMENTS POINTS BASED ON CONSTRUCTION TOLERANCES, CAMBER AND CLEARANCES NEEDED FOR INSTALLATION AS SHOWN ON THE CONSTRUCTION DOCUMENTS.

TESTING AND INSPECTION

A. FOUNDATIONS AND EARTHWORK. GEOTECHNICAL ENGINEER/TESTING LABORATORY TO BE ENGAGED BY CONTRACTOR FOR QUALITY CONTROL AND VERIFICATION. ALL OPEN FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND APPROVED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO CONCRETE PLACEMENT.

B. MATERIALS AND PROCEDURES. TESTING LABORATORY TO BE ENGAGED BY CONTRACTOR FOR MATERIAL TESTING AS REQUIRED BY OBC CHAPTER 17.

C. SPECIAL INSPECTOR. A SPECIAL INSPECTOR SHALL BE ENGAGED BY THE CONTRACTOR TO INSPECT ELEMENTS AS REQUIRED BY OBC CHAPTER 17.

MASONRY

MATERIALS:
MORTAR: ASTM 270 TYPE S
CONCRETE BLOCK: TYP. UNIT PER ASTM C90 GRADE N, TYPE NORMAL WEIGHT AGGR. PER ASTM C33
CONCRETE BLOCK UNITS: COMPRESSIVE STRENGTH SHALL BE NO LESS THAN 1500 PSI

INSPECTION IS REQUIRED DURING PREPARATION AND TAKING OF ANY REQUIRED PRISM OR TEST SPECIMENS AND ON A PERIODIC BASIS DURING THE PLACING OF MASONRY UNITS. PLACEMENT OF REINFORCEMENT, INSPECTION OF GROUT SPACE IMMEDIATELY PRIOR TO CLOSING OF CLEANOUTS AND DURING GROUTING OPERATIONS

REINFORCING TO BE LOCATED IN EXACT CENTER OF BLOCKS. USE VERTICAL BAR POSITIONER FOR PLACEMENT.

ALL VERTICAL WALL REINFORCEMENT TO HAVE CONTACT SPLICES -
WIRED TOGETHER WITH MIN. 40 BAR DIAMETERS LAP OR
FULL STRENGTH WELDS OR
MECHANICALLY COUPLED

PROVIDE DUR-O-WAL (OR APPROVED EQUAL) JOINT REINF. AT 16" O.C. MEASURED VERTICALLY IN ALL MASONRY WALLS UNLESS NOTED OTHERWISE ON DWGS.

ALL MASONRY WALLS TO HAVE VERTICAL REINFORCEMENT #5 BARS @ 2'-8" O.C. (U.N.O.) CELLS WITH REINFORCING TO BE FULLY GROUTED.

VERTICAL #5 BARS SHALL ALSO BE PROVIDED AT CORNERS, WITHIN 8" OF EACH SIDE OF OPENINGS, WITHIN 8" OF EACH SIDE OF MOVEMENT JOINTS, AND WITHIN 8" OF THE ENDS OF WALLS.

SINGLE-COURSE BOND BEAMS SHALL HAVE (2) #5 CONTINUOUS, WITH CORNER BARS.

STEEL

ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

STRUCTURAL STEEL - WF - ASTM A992; PLATES - ASTM A36; TUBE - ASTM A500, GRADE B Fy = 46 KSI; PIPE - ASTM A53, GRADE B Fy= 35 KSI.

ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325-N UNLESS NOTED OTHERWISE.

SPLICING OF STRUCTURAL STEEL IS PROHIBITED EXCEPT AS DETAILED.

ENDS OF ALL COLUMNS SHALL HAVE THE BEARING SURFACE PREPARED TO COMMON PLANE BY MILLING.

WELDING ELECTRODES AWS. ASTM E-70XX.

ALL WELDING SHALL BE DONE BY A QUALIFIED WELDER IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE.

LIST OF ABBREVIATIONS:

T	= TOP
B,BOT	= BOTTOM
EW	= EACH WAY
EF	= EACH FACE
TYP	= TYPICAL
OC	= ON CENTER
VERT	= VERTICAL
CMU	= CONCRETE MASONRY UNIT
MIN	= MINIMUM
MAX	= MAXIMUM
H	= HIGH
W	= WIDE
UNO	= UNLESS NOTED OTHERWISE

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REVISIONS

NO.	DESCRIPTION	DATE	BY

- PERMIT - PROGRESS X BID - CONSTRUCTION - RECORD

PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: CP
DRAWN BY: JDP
CHECKED BY: PCP

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

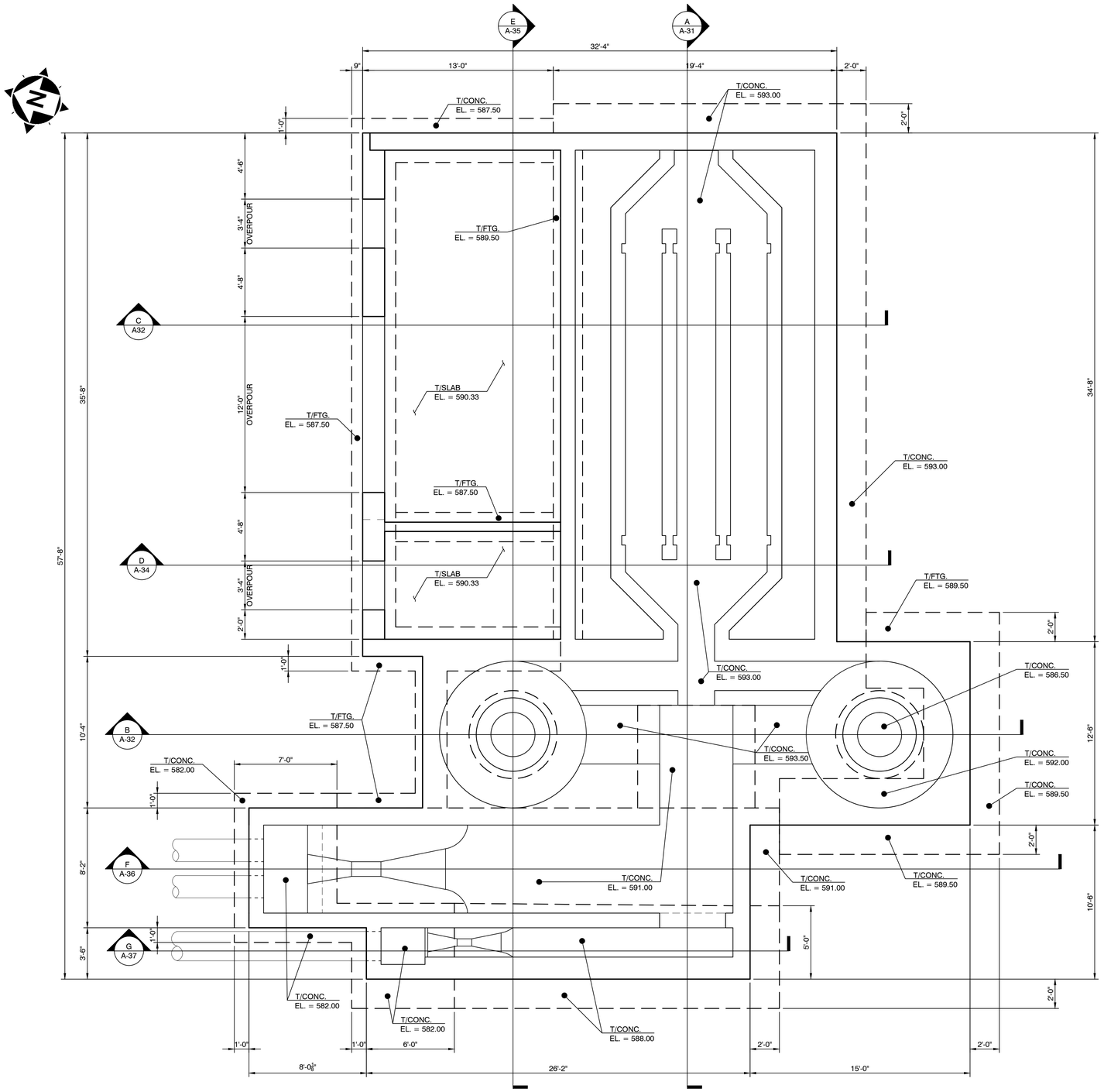
STRUCTURAL GENERAL NOTES

DRAWING DISCIPLINE
STRUCTURAL

SHEET	OF
S-01	44

GENERAL NOTES

1. SEE ALSO ARCHITECTURAL, PROCESS, AND MECHANICAL PLANS & SPECIFICATIONS.



FOUNDATION PLAN

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

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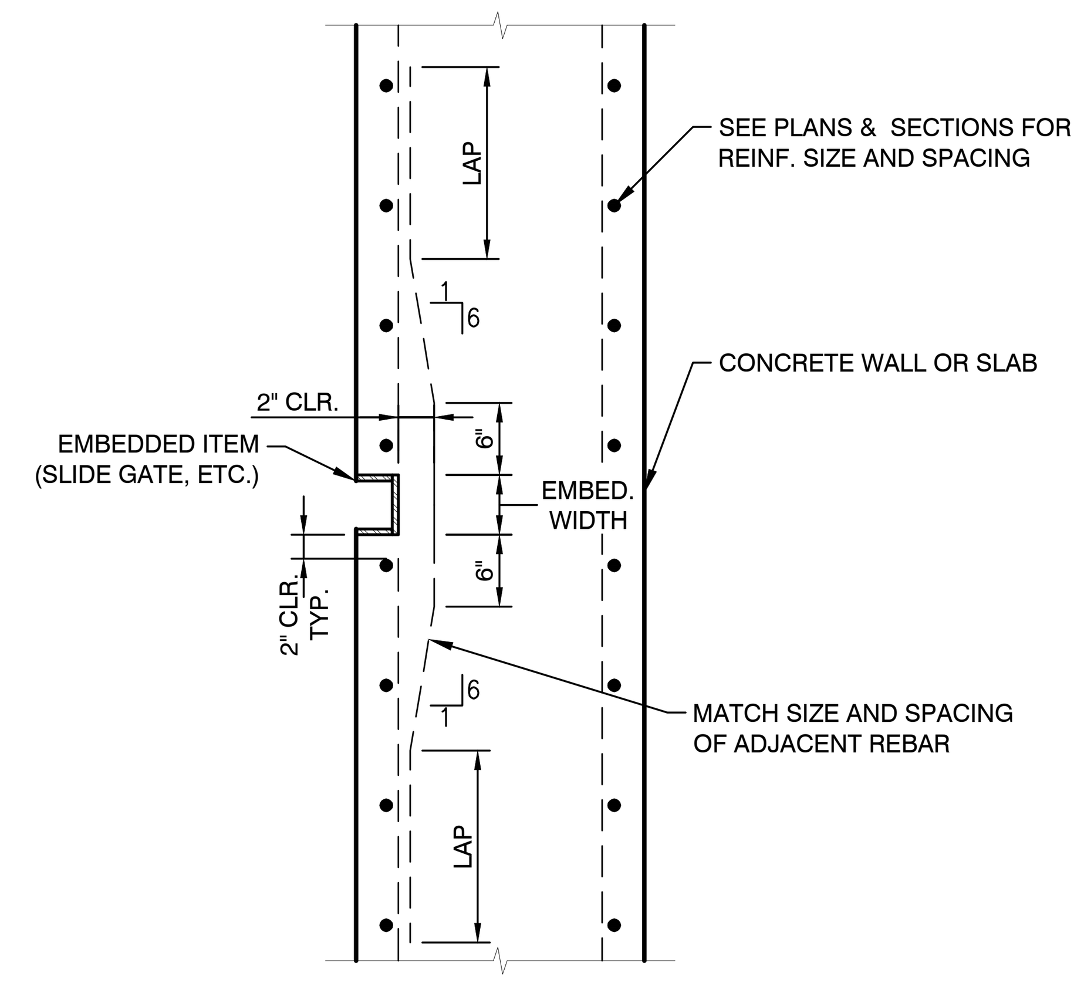
CHECKED BY: PCP

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT
PLANT HEADWORKS FACILITY

FOUNDATION PLAN

DRAWING DISCIPLINE
STRUCTURAL

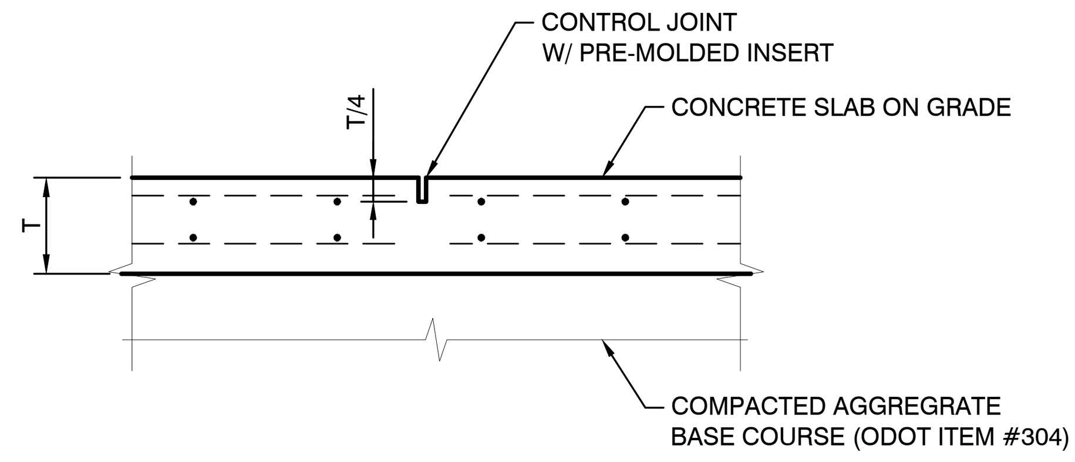
SHEET	OF
S-02	44



NOTE:
SUBMIT REINFORCING SHOP DRAWINGS AFTER SHOP DRAWINGS FOR ALL EMBEDDED FRAMES, PIPE COLLARS, ETC. HAVE BEEN SUBMITTED, REVIEWED, AND APPROVED. INCLUDE SPECIFIC DIMENSIONED LOCATIONS OF THE EMBEDDED ITEMS IN THE SHOP DRAWINGS.

TYP. EMBEDDED ITEM REINFORCING DETAIL

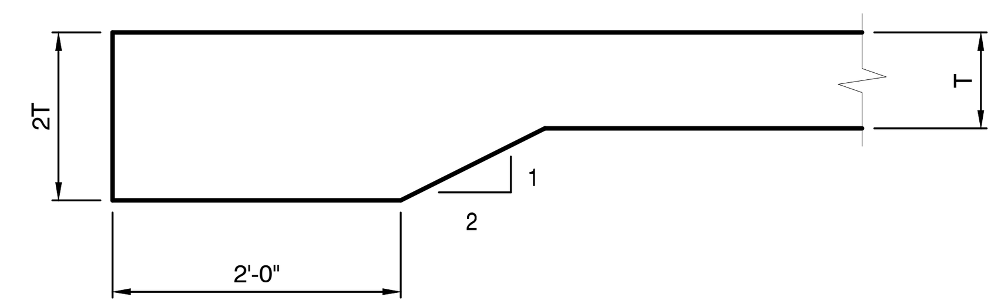
1
S-03
SCALE: 3/4" 1'-0"



NOTE: THIS DETAIL DOES NOT APPLY AT MAT SLABS

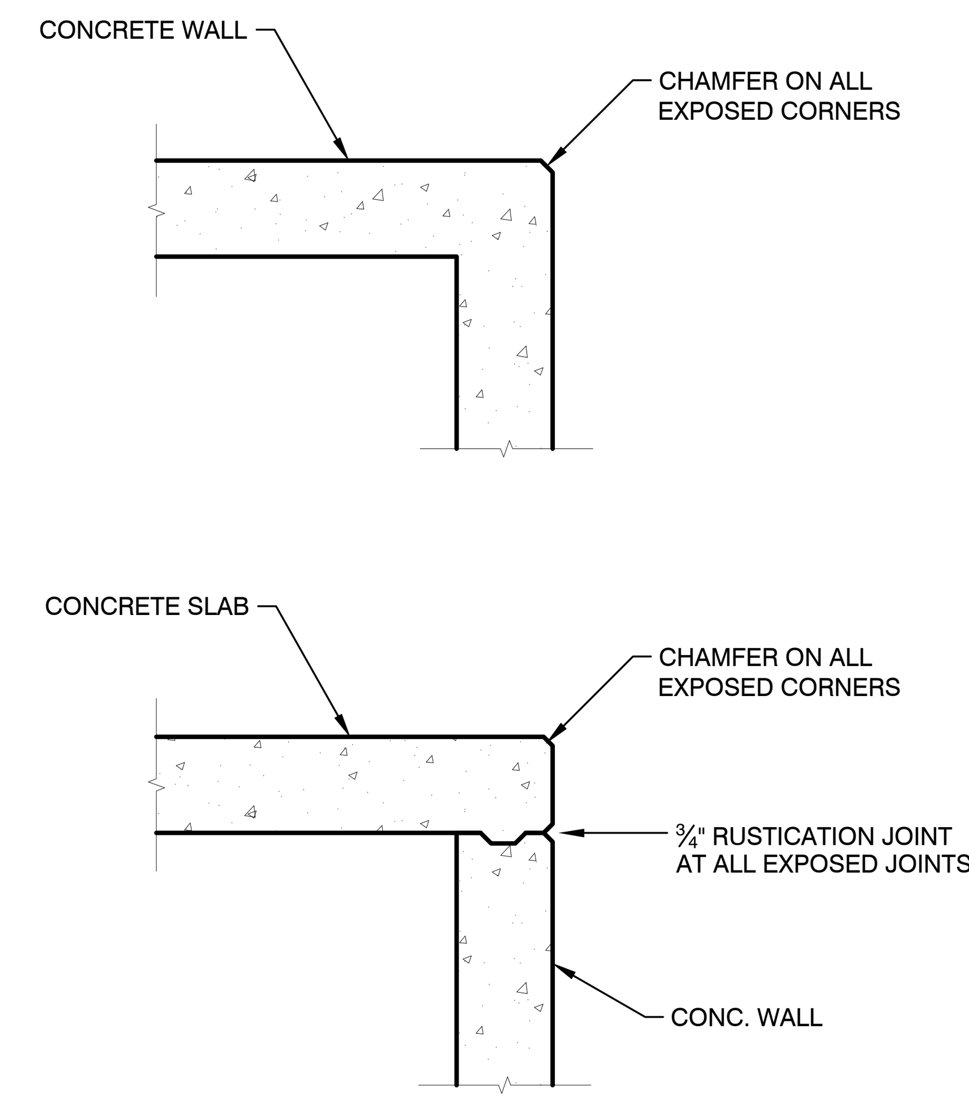
TYP. CONTROL JOINT SLAB DETAIL

SCALE: 3/4" = 1'-0"



TYPICAL OVERPOUR AT DOOR DETAIL

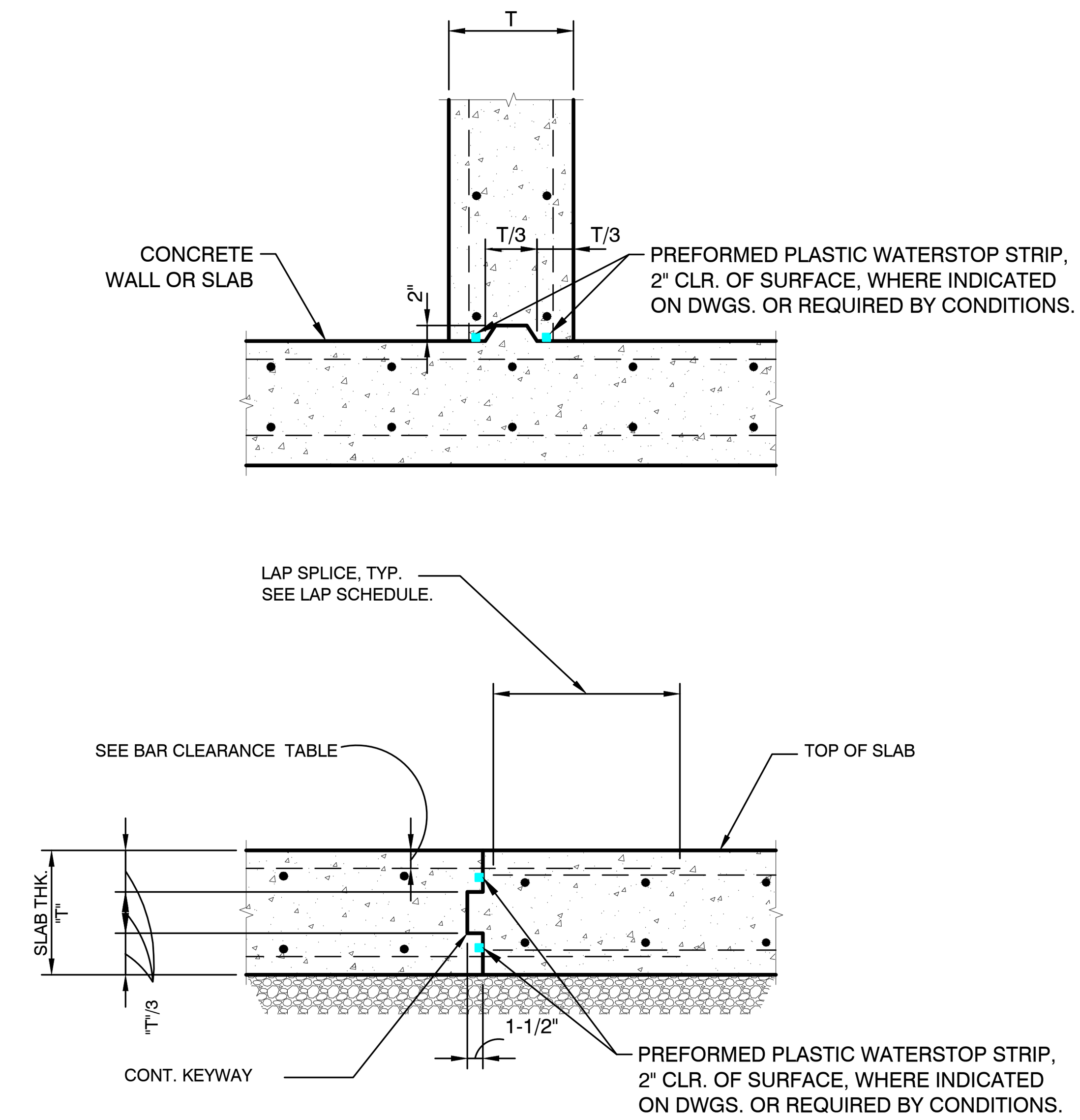
SCALE: 3/4" = 1'-0"



NOTE: REBAR NOT SHOWN FOR CLARITY.

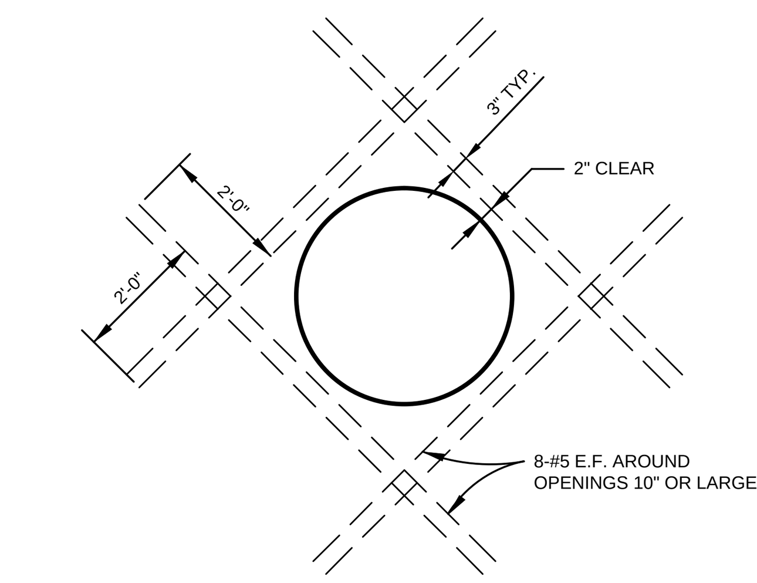
TYP. CORNER CONCRETE DETAILS

SCALE: 3/4" = 1'-0"



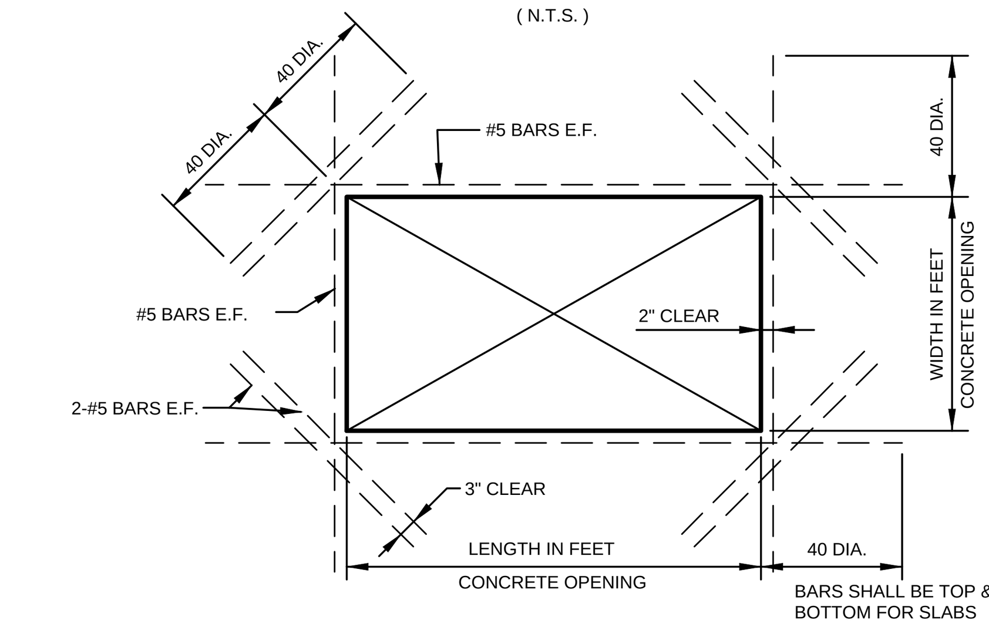
TYP. WATERSTOP JOINT DETAIL

SCALE: 3/4" = 1'-0"



TYPICAL REINFORCING AROUND ROUND OPENINGS IN REINFORCED CONCRETE SLABS AND WALLS

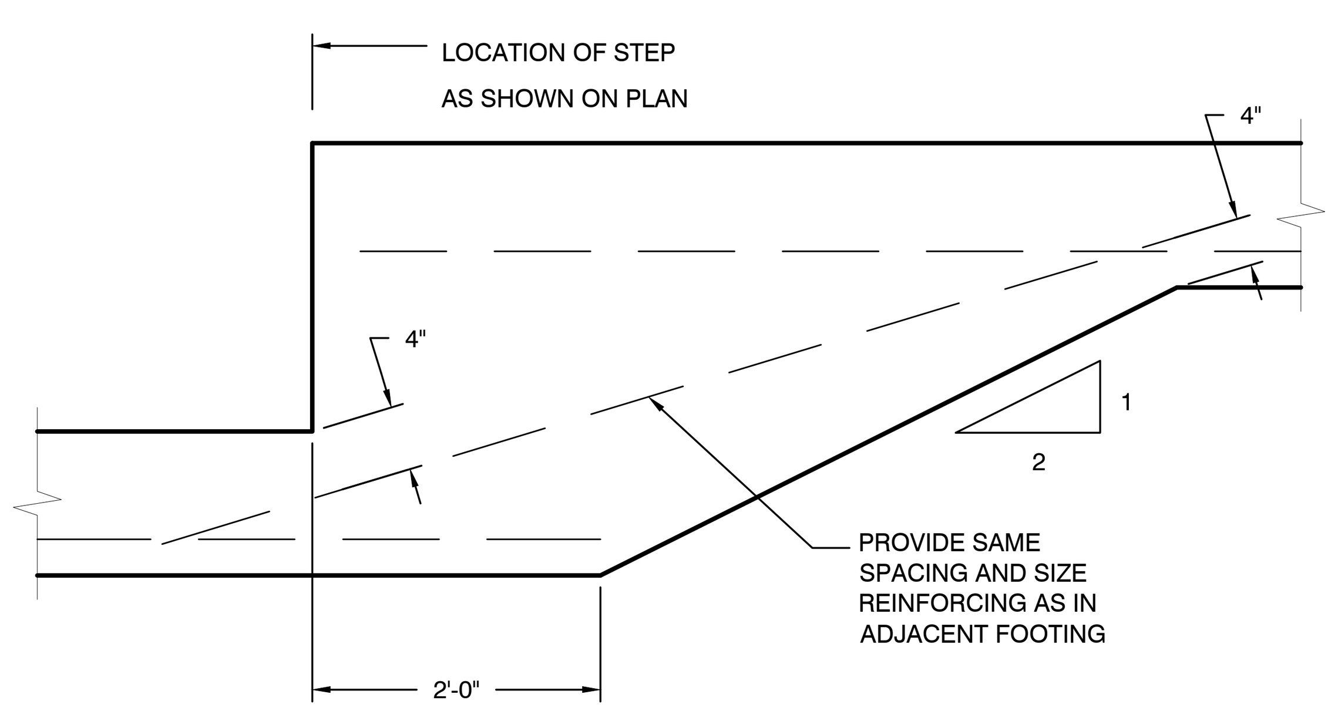
(N.T.S.)



TYPICAL REINFORCING AROUND OPENINGS IN REINFORCED CONCRETE SLABS AND WALLS

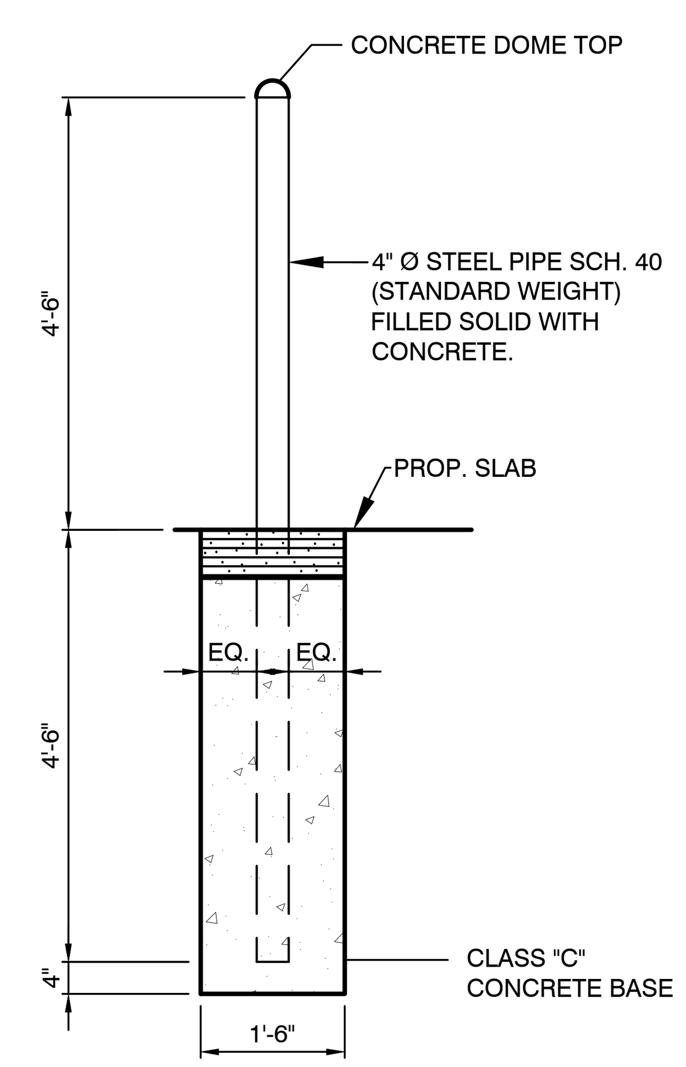
2/98 (N.T.S.) SD–7–14

MINIMUM LAP SPLICE & ANCHORAGE DIMENSION TABLE FOR CAST IN PLACE CONCRETE REINFORCING				
F'c =	4000 psi	PER ACI 318-08 & ACI 350-06		
BAR SIZE	TOP BARS		OTHER BARS	
	LAP	ANCHORAGE	LAP	ANCHORAGE
#3	15	12	12	12
#4	20	15	15	12
#5	25	19	19	15
#6	29	23	23	18
#7	47	36	36	28
#8	61	47	47	36
#9	77	59	59	46
#10	94	73	73	56
#11	114	88	88	68



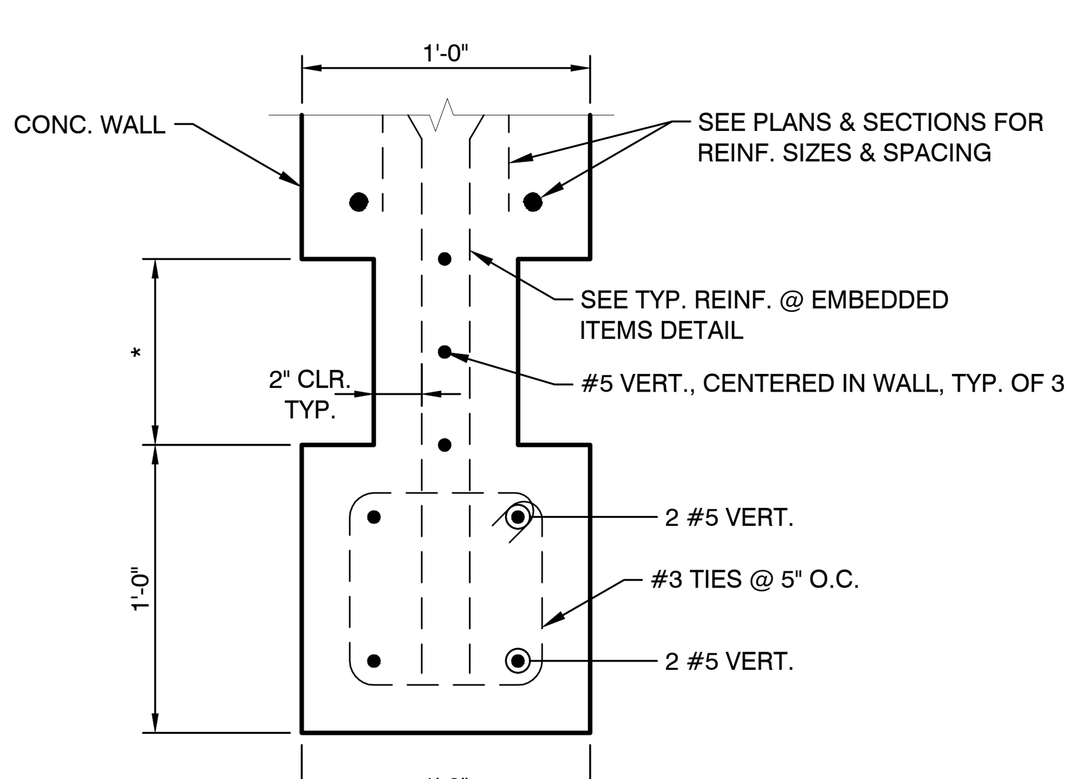
TYP. FOOTING STEP DETAIL

SCALE: 3/4" = 1'-0"



TYP. PIPE BOLLARD DETAIL

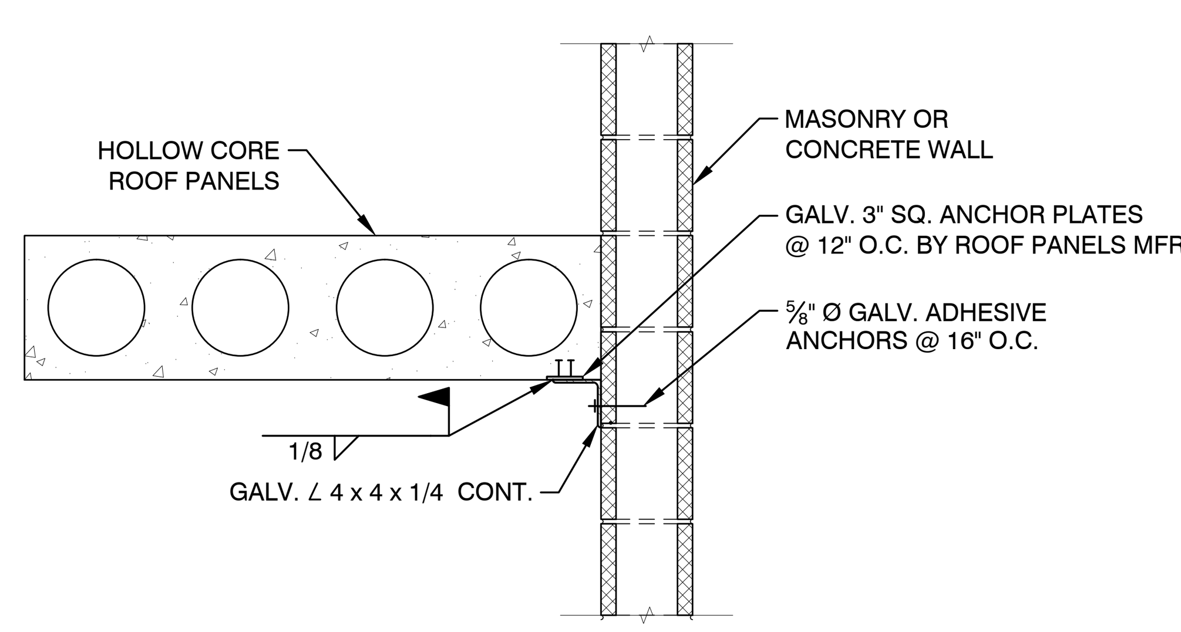
SCALE: 1/2" = 1'-0"



NOTE:
* RECESS FOR SLIDE GATE FRAME IN GROUTED POCKET; DIMENSIONS VARY BY SLIDE GATE MFR.

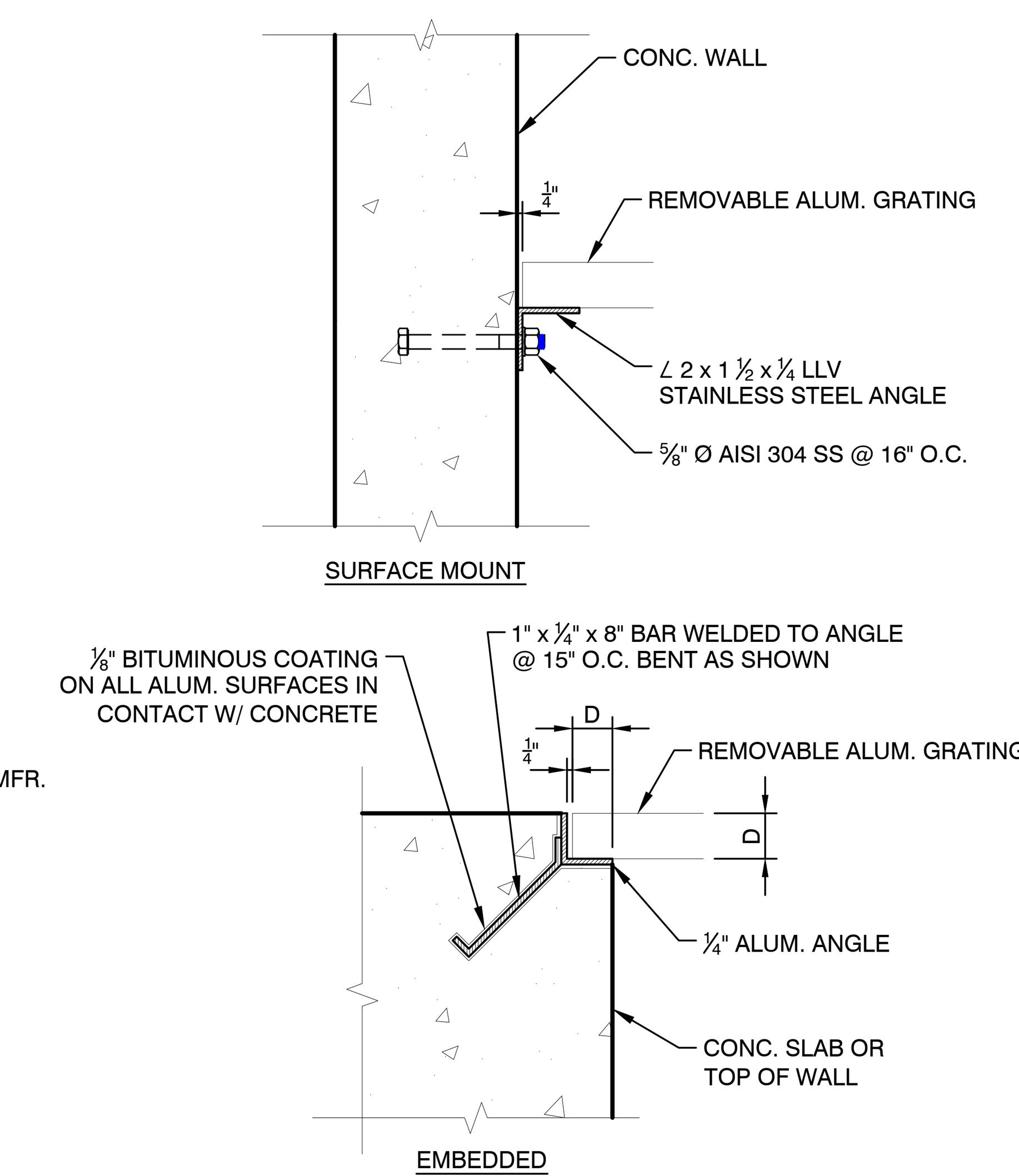
ADJACENT RECESS (12" WALL) REINFORCING DETAIL

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



TYP. ROOF ANGLE DETAIL

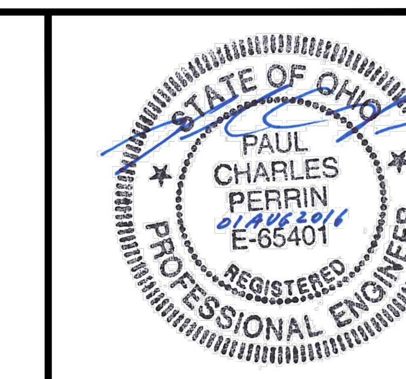
SCALE: 3/4" = 1'-0"



NOTE:
- LENGTH OF ANGLE INSERTS TO BE DETERMINED BY AMOUNT OF GRATING USED
- SIZE OF ANGLE INSERTS DETERMINED BY DEPTH OF GRATING "D"

TYP. FLOOR GRATING SUPPORT DETAILS

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



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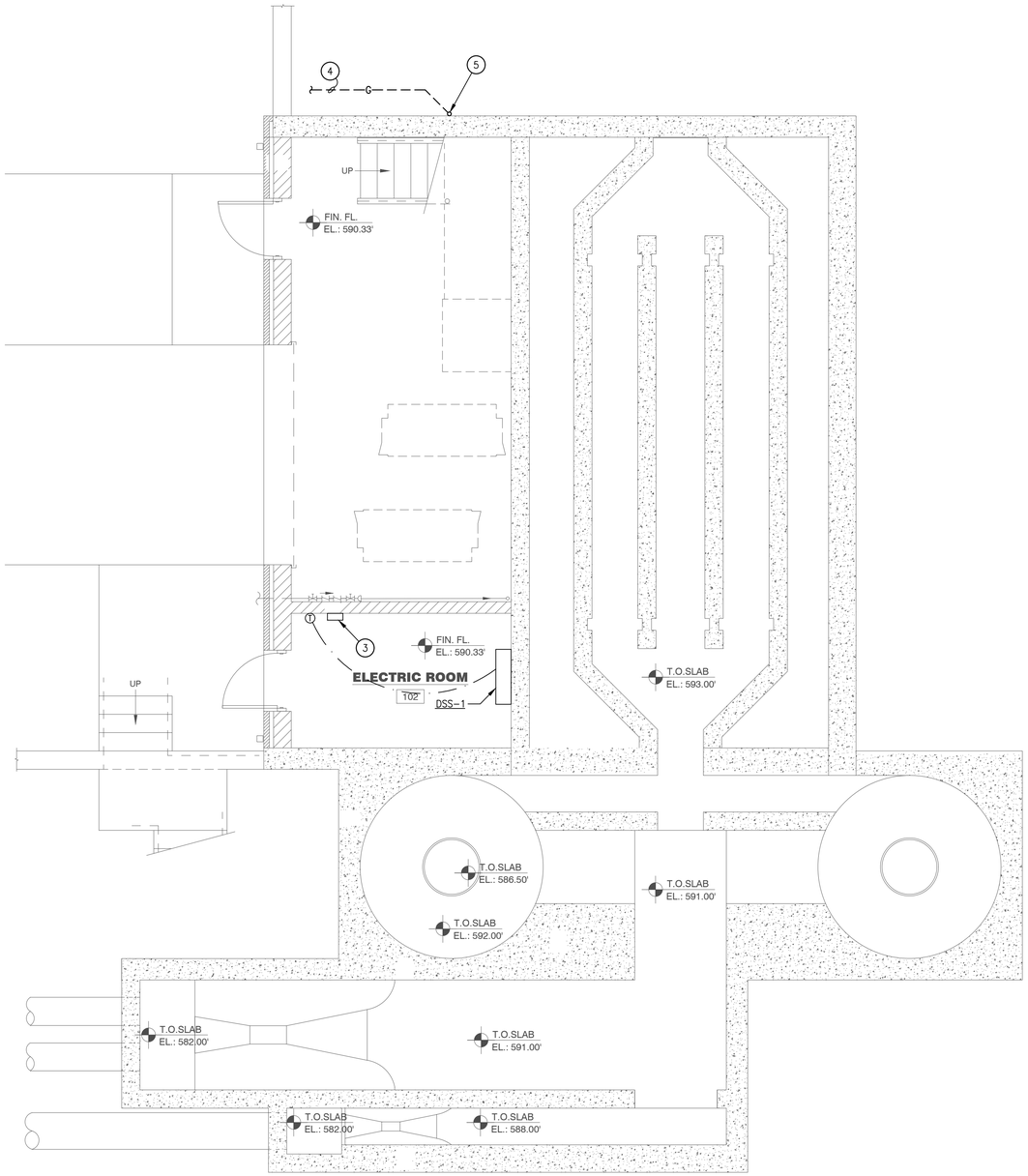
PROJECT NO. 14784
DATE 08-01-2016
DESIGNED BY: PCP
DRAWN BY: JDP
CHECKED BY: PCP

CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

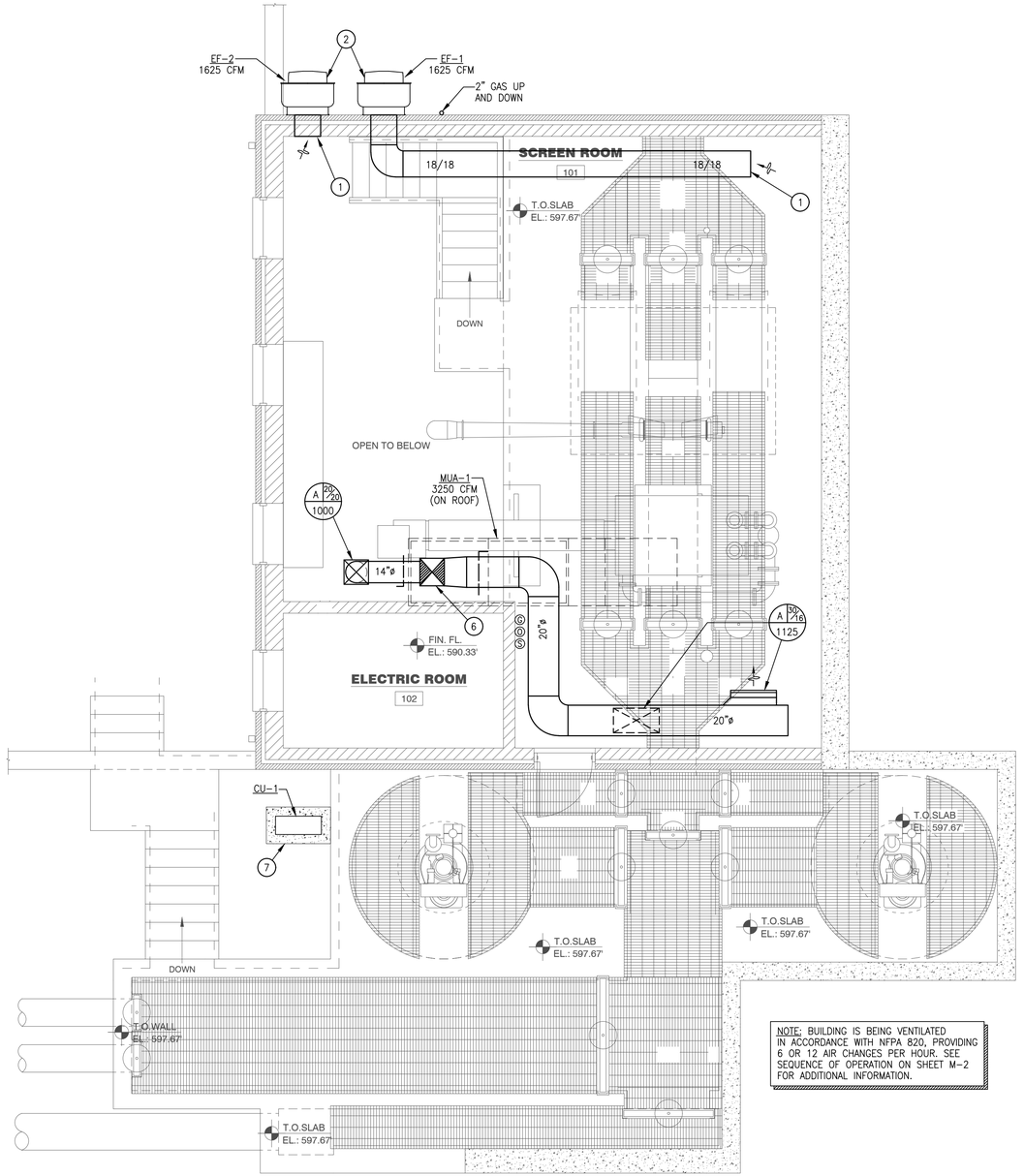
STRUCTURAL DETAILS

DRAWING DISCIPLINE
STRUCTURAL
SHEET S-03 OF 44



LOWER FLOOR MECHANICAL PLAN

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



NOTE: BUILDING IS BEING VENTILATED IN ACCORDANCE WITH NFPA 820, PROVIDING 6 OR 12 AIR CHANGES PER HOUR. SEE SEQUENCE OF OPERATION ON SHEET M-2 FOR ADDITIONAL INFORMATION.

UPPER FLOOR MECHANICAL PLAN

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

GENERAL NOTES:

1. ALL HANGERS, SUPPORTS, CLAMPS, RODS, BOLTS, ETC. TO BE STAINLESS STEEL.
2. PROVIDE CONTROL WIRING IN CONDUITS.
3. COORDINATE EXACT MASONRY AND CONCRETE OPENINGS WITH G.C.

MECHANICAL PLAN CODED NOTES:

1. PROVIDE A STAINLESS STEEL 1/2" MESH SCREEN WITH FLANGE OVER EXHAUST OPENING. SCREEN TO BE OSHA COMPLIANT.
2. EXHAUST FAN SHALL BE MOUNTED A MINIMUM OF 10'0" ABOVE FINISHED GRADE.
3. REMOTE PANEL FOR MUA-1.
4. 2" UNDERGROUND GAS. SEE SITE PLAN FOR CONTINUATION.
5. 2" GAS UP ALONG WALL WITH GAS SHUTOFF VALVE 36" ABOVE FINISHED GRADE.
6. 20/20 MAKE-UP AIR UP THROUGH ROOF TO MUA-1.
7. CU-1 SHALL BE MOUNTED ON CONCRETE CURB. PROVIDED BY G.C.

08/09/2016

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PROJECT NO. dai16099
DATE 08/09/2016
DESIGNED BY: EMF
DRAWN BY: EMF
CHECKED BY: MTD

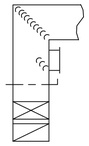
CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

LOWER & UPPER FLOOR MECHANICAL PLANS

DRAWING DISCIPLINE
MECHANICAL

SHEET M-1 OF 44

MECHANICAL LEGEND



	TURNING VANES
	AIR EXTRACTOR
	OPPOSED BLADE VOLUME DAMPER
	SUPPLY DUCT
	RETURN OR EXHAUST DUCT
CD	A/C CONDENSATE DRAIN LINE
T	THERMOSTAT
O	OCCUPANCY SENSOR
S	TEMPERATURE SENSOR
G	GAS DETECTOR
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
G	GAS
	SHUT-OFF VALVE
GC	GENERAL CONTRACTOR
PC	PLUMBING CONTRACTOR
MC	MECHANICAL CONTRACTOR
EC	ELECTRICAL CONTRACTOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE

SEQUENCE OF OPERATION

MUA-1 –MAKE-UP AIR UNIT

MUA-1 SHALL BE PROVIDED WITH A REMOTE MOUNTED CONTROL PANEL.

MAKE-UP AIR UNIT (MUA-1) AND EXHAUST FANS (EF-1 & EF-2) SHALL BE OPERATED 24 HOURS (365 DAYS) CONTINUOUSLY, VENTILATING THE SPACE AT 6 OR 12 AIR CHANGES PER HOUR PER NFPA 820.

MUA-1 SHALL A VARIABLE FREQUENCY DRIVE FOR CONTROL.

NORMAL SETTING SHALL BE 50% CAPACITY (6 AIR CHANGES PER HOUR). OCCUPANCY (MOTION) SENSOR AND GAS DETECTOR SHALL BE PROVIDED TO CHANGE THE SETTING TO 100% CAPACITY (12 AIR CHANGES PER HOUR) UPON DETECTION PER NFPA 820, SECTION 9.3.3. MUA-1 SHALL BE INTERLOCKED WITH EXHAUST FANS, ENERGIZE EF-1 WHEN MUA-1 IS PROVIDING 50% CAPACITY AND ENERGIZE BOTH EF-1 AND EF-2 WHEN UNIT IS PROVIDING 100% CAPACITY.

REMOTE CONTROL PANEL SHALL INCLUDE A SUMMER/WINTER SWITCH. IN THE WINTER POSITION, THE MAKE-UP AIR UNIT AND EXHAUST FANS SHALL BE CONTROLLED AS DESCRIBED ABOVE. IN THE SUMMER POSITION, THE HEAT SHALL BE DE-ENERGIZED, CAPACITY SHALL BE 100%, AND EXHAUST FANS SHALL BE ENERGIZED FOR CONTINUOUS OPERATION.

ROOM SENSOR SETTING SHALL BE 60°F± (ADJUSTABLE), BELOW 60°F MUA-1 SHALL ACTIVATE HEAT.

DSS-1/CU-1 – DUCTLESS SPLIT SYSTEM

DUCTLESS SPLIT SYSTEM SHALL BE CONTROLLED WITH A WALL MOUNTED PROGRAMMABLE THERMOSTAT.

THERMOSTAT SHALL HAVE HEAT-COOL-AUTO-OFF SYSTEM SETTING AND HAVE AUTO CHANGEOVER BETWEEN HEATING AND COOLING WITH INDIVIDUAL SET POINTS FOR EACH.

THERMOSTAT SHALL ACTIVATE THE HEATING SYSTEM UPON A CALL FOR HEAT OR ACTIVATE THE COOLING SYSTEM UPON A CALL FOR COOLING.

SET POINT FOR HEATING 55°F±.

SET POINT FOR COOLING 85°F±.

ALARM

MUA-1 – MAKE-UP AIR UNIT SUPPLY FAN SHALL BE MONITORED FOR STATUS. SHOULD THE SUPPLY FAN FAIL TO RUN AN ALARM SIGNAL SHALL BE INITIATED.

EF-1 & EF-2 – EXHAUST FANS SHALL BE INDIVIDUALLY MONITORED FOR AIR FLOW STATUS. SHOULD THE EXHAUST FAN FAIL TO RUN, AN ALARM SIGNAL SHALL BE INITIATED.

NOTE:
1. ROOM SENSOR TO BE EXPLOSION PROOF.
2. MAKE-UP AIR UNIT AND EXHAUST FAN SHALL INCLUDE INTEGRAL CURRENT SENSING RELAYS (BY E.C.) TO PROVE FAN MOTOR OPERATION. PROVIDE A NORMALLY-CLOSED ALARM CONTACT AND COORDINATE ALARM REQUIREMENTS WITH E.C.

PACKAGED AIR CONDITIONING UNIT (DUCTLESS SPLIT SYSTEM)

MARK	SERVICE	CFM	COND. DRAIN	COOLING CAPACITY		HEATING CAPACITY		OUTDOOR CONDENSER DATA					INDOOR UNIT DATA					MANUFACTURER	REMARKS
				TOTAL	EER	TOTAL	COP	VOLTAGE	MCA/MOCP	MODEL NO.	W x H x D	WEIGHT	VOLTAGE	MCA/MOCP	MODEL NO.	W x H x D	WEIGHT		
DSS-1/ CU-1	ELECTRIC ROOM	400	1"	9,000	13.5	8,800	3.2	208V-1ø	6.3A./15A.	S1HV9000D00	24"x36"x15"	98	208V-1ø	16.7A./20A.	WLHV09D3	38.5"x15.25"x10"	61	MITSUBISHI	1-7

NOTE: MODEL NO. ARE BASED ON EMI.

REMARKS:
1. LOW-AMBIENT OPERATION.
2. WALL-MOUNTED THERMOSTAT.
3. 3 KW ELECTRIC HEAT.
4. WIND BAFFLE KIT.
5. CRANKCASE HEATER.
6. 1 YEAR WARRANTY
7. OPERATING RANGE (COOLING): MAX=115°F, MIN=0°F
   OPERATING RANGE (HEATING): MAX=70°F, MIN=-13°F

MAKE-UP AIR UNIT SCHEDULE

MARK	LOCATION	SERVICE	CFM	MIN. O.A.	E.S.P.	SUPPLY FAN HP	RPM	MCA/MOCP VOLTAGE	HEATING CAPACITY MBH INPUT	HEATING CAPACITY MBH OUTPUT	MANUFACTURER & MODEL NO.	WEIGHT	REMARKS
MUA-1	ROOF	WWTP	3250	100%	0.5"	2	967	5.1A./15A. 480V-3ø	457.8	421.2	DGX-112-H22	1230	1-16

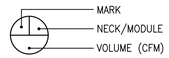
NOTE: MODEL NO. IS BASED ON GREENHECK.

REMARKS:
1.) WEATHERHOOD: ALUMINUM MESH
2.) ALUMINUM FILTER
3.) BOTTOM DISCHARGE
4.) PERMATECTOR COATING
5.) DOUBLE WALL INSULATION
6.) VARIABLE FREQUENCY DRIVE
7.) 2 SETS OF SPARE BELTS
8.) 2 SETS OF SPARE FILTERS
9.) HEAT INLET AIR SENSOR
10.) DIRTY FILTER SWITCH
11.) REMOTE INDUSTRIAL PANEL
12.) SERVICE RECEPTACLE
13.) CUSTOM SLOPED ROOF CURB
14.) 2 YEAR UNIT WARRANTY
15.) DISCONNECT SWITCH
16.) 2 YEAR UNIT WARRENTY

GRILLE & DIFFUSERS

MARK	MODEL NO.	DAMPER NUMBER	FRAME/ BORDER	PATTERN	FINISH
A	300R	OPPOSED BLADE	SURFACE MOUNT	3/4" SPACING DOUBLE DEFLECTION	WHITE

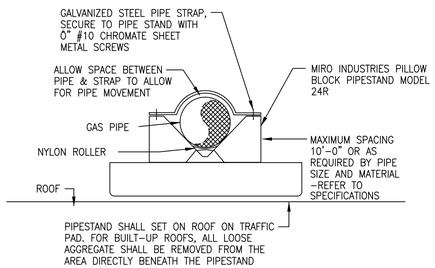
NOTE: MODEL NO. IS BASED ON TITUS.



EXHAUST FAN SCHEDULE

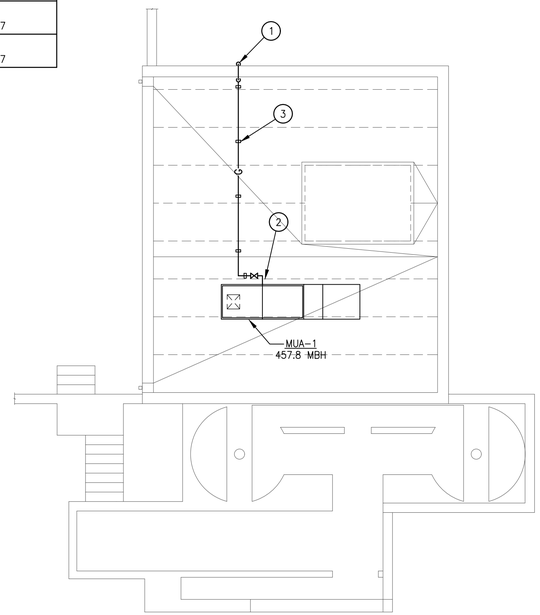
FAN NO.	LOCATION	SERVICE	CFM	S.P.	POWER	VOLTAGE	RPM	SONES	TYPE	MANUF. & MODEL NO.	REMARKS
EF-1	EXTERIOR WALL	WWTP	1625	0.25"	1/4 HP	120V-1ø	654	5.6	BELT DRIVE CENT. SW	CWB-180-4	1-7
EF-2	EXTERIOR WALL	WWTP	1625	0.25"	1/4 HP	120V-1ø	654	5.6	BELT DRIVE CENT. SW	CWB-180-4	1-7

REMARKS:
1.) DISCONNECT SWITCH
2.) BACKDRAFT DAMPER
3.) ALUMINUM HOUSING
4.) ALUMINUM BIRDSCREEN
5.) STAINLESS STEEL FASTERS & SHAFT
6.) 2 SETS OF SPARE BELTS
7.) STANDARD 1 YEAR WARRANTY



ROOFTOP PIPE SUPPORT DETAIL

NTS



ROOF MECHANICAL PLAN

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

MECHANICAL PLAN CODED NOTES:

1. 2" GAS DOWN.
2. PROVIDE 2" GAS TO MAKE-UP AIR UNIT WITH SHUTOFF, UNION, AND DIRTLEG.
3. SUPPORT GAS PIPING ON ROOF WITH MIRO #3R ROLLER BEARING PIPE STANDS. PAINT ALL GAS PIPING (TYPICAL FOR ALL GAS PIPING).

08/09/2016

STATE OF OHIO
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REVISIONS

NO	DESCRIPTION	DATE	BY

PERMIT ☐ PROGRESS ☒ BID ☐ CONSTRUCTION ☐ RECORD

PROJECT NO. dai16099
DATE 08/09/2016
DESIGNED BY: EMF
DRAWN BY: EMF
CHECKED BY: MTD

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

ROOF MECHANICAL PLAN, SCHEDULES, LEGENDS, & DETAILS

DRAWING DISCIPLINE
MECHANICAL

SHEET M-2
OF 44

MECHANICAL SPECIFICATIONS

SECTION 15010

MECHANICAL GENERAL PROVISIONS

PART 1 GENERAL

1.01 GENERAL

A. The provisions of the Instructions to Bidders, General Conditions, Supplementary Conditions, Alternates, Addenda and Division I are a part of this Specification. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. Contractors and Sub contractors shall examine same as well as other Divisions of the Specifications which affect work under this Division.

B. Mechanical, Architectural, Structural, Electrical and all other Drawings as well as the Specifications for all the Divisions are a part of the Contract Documents.

C. Drawings and Specifications are to be considered as supplementing each other. Work specified but not indicated or indicated but not specified, shall be provided as though mentioned in both Specifications and Drawings.

1.02 WORK INCLUDES

A. Mechanical General Provisions includes Plumbing, Heating, Ventilating, Air Conditioning, Fire Protection, Temperature Control, and Mechanical Systems Balancing, collectively, individually or in any combination of the several headings and the coordination and administration thereof.

B. Codes, Permits and Fees

1. Comply with rules, regulations of State, County, and City Authorities having jurisdiction over the premises, including safety requirements of OSHA. Do not construe this as relieving Contractor from complying with specifications, which exceed Code requirements, and not in conflict therewith.

2. Secure and pay for all permits and certificates of inspection required.

3. Deliver official record of approval by governing agencies to architect for transmittal to Owner.

4. Obtain all inspections required by law, ordinances, rules, regulations of authorities having jurisdiction. Furnish certificates of such inspections. Provide all equipment, power and labor necessary for inspections and tests.

1.03 SCOPE OF WORK

A. The Bidder is required to examine carefully the site of the proposed work, the proposal, drawings, specifications, and contract forms. He shall satisfy himself as to the character, quality, and quantities of work to be performed, materials to be provided, and as to the requirements of these specifications, special provisions and contract. The submission of a proposal shall be prima facie evidence that the Bidder has made such an examination.

B. The Contractor shall, at his own expense, furnish all the necessary materials, labor, superintendence, tools, appliances, and equipment, and shall execute in a workmanlike manner the work of this contract within the time and in the manner specified, and in conformity with the requirements set forth in the specifications herein contained or hereto attached and in accordance with the contract drawings of said work.

1.04 SHOP DRAWINGS

A. Prepare shop drawings for mechanical equipment with adequate details and scales as necessary to clearly show construction. Clearly identify each item on the drawings as to mark location and use.

1.05 COORDINATION AND SUPERVISION

A. Examine work of other trades, which comes in contact with or is covered by this work. Do not attach to, cover, or finish against any defective work, or install work of this Division in a manner, which will prevent other trades from properly installing their work. Consult all drawings, specifications and details of other Divisions of the work.

B. If any work is installed so that the architectural design cannot be adhered to, Contractor is liable for cost of making such changes as Architect may require.

C. Provide adequate competent supervision at all times when work is being performed. Cooperate with all other trades to avoid interferences and delays.

1.06 LOCAL CONDITIONS

A. Visit site, become familiar with conditions affecting this work. No additional payment will be made on claims that arise from lack of knowledge of existing conditions.

1.07 PRODUCT HANDLING

A. Pay all costs for transportation of materials, equipment to job site.

B. Provide all scaffolding, tackle, hoists, rigging necessary for placing mechanical materials and equipment in their proper place. Scaffolding, hoisting equipment: comply with applicable Federal, State, and Local regulations. Remove temporary work when no longer required.

C. Arrange for packaging of equipment, which must be hoisted, so that there will be no damage or distortion caused by hoisting operation. Protect all coils, bearings, fan shafts and housing from any damage during hoisting operation.

D. Store all heating, ventilating, air conditioning equipment, plumbing fixtures, etc., in dry location until building is ready to receive them. Protect all openings, bearings, motor controls, etc., from dirt and moisture.

PART 2 PRODUCTS

2.01 GUARANTEE AND WARRANTIES

A. Warrant that equipment and all work is installed in accordance with good engineering practice and that all equipment will meet requirements specified. Any equipment failing to perform or function as specified shall be replaced with complying equipment, without cost to the Owner.

B. Guarantee against defects in workmanship and materials; make good, repair or replace any defective work, material or equipment within one year from date of acceptance.

2.02 EQUIPMENT

A. Bids shall be based upon the specified product or listed alternative. Bidders may quote on substitute products by listing them on the substitution page of the bid form and by indicating the additional cost or credit. No later substitutions will be permitted. Refer to Instructions to Bidders.

B. Design drawings are based on the products specified by type model and size and thus establish minimum qualities, which substitutes must meet to qualify as acceptable. Proof of equality rests with the Bidder; provide all data necessary to demonstrate acceptability. The Architect reserves the right to reject proposed substitutes.

C. The bid price for each listed alternative or substitute shall include all costs required to incorporate the item into the project.

D. Where only one make is named, it shall be provided.

2.03 MATERIALS

A. All materials shall be new, full weight, of the best quality with the same brand or manufacturer used for each class of material or equipment.

2.04 DAMAGE AND EMERGENCY REPAIRS

A. Assume responsibility for any damage caused by leaks in the piping systems being installed under this Contract. Repair all damage without extra cost to Owner.

PART 3 EXECUTION

3.01 INSTALLATION REQUIREMENTS

A. Locations of piping, equipment, ducts, etc., on the drawings are diagrammatic; indicated positions shall be followed as closely as possible, exact locations shall be subject to building construction and interferences with other work. Difficulties preventing the installation of any part of work as indicated shall be called to the attention of the Architect. Architect will determine locations and changes. Contractor shall install the work accordingly. Architect reserves right to make minor changes in location of any part of the work up to the time of roughing in without additional cost.

B. Do all cutting and patching in construction as necessary for installation of this work. Do not cut any structural member without specific permission from the Architect. Have cutting done by skilled mechanics as carefully as possible, and with as little damage as possible. Have patching done by first class mechanics, skilled in the several trades.

C. Take all measurements and determine all elevations at the building.

3.02 RECORD DRAWINGS (ALSO SEE DIVISION I GENERAL REQUIREMENTS)

A. Each Contractor or Sub-contractor for mechanical work shall keep one complete set of the contract working drawings on the job site on which he shall record any deviations or changes from such contract drawings made during construction.

3.03 PAINTING

A. Finish painting is included under Division 9 – Finishes, except where specifically called for under this Division.

3.04 EQUIPMENT IDENTIFICATION

A. Identify each piece of equipment and ducts as to nature of service and system number corresponding to designation on the drawings, by stenciling with 1" high letters or attaching two-color engraved plastic nameplates. Apply one coat lacquer or varnish over the stencils.

3.05 PIPE IDENTIFICATION

A. Identify each pipe in Equipment Rooms and above accessible ceilings with contents of pipe in conformance with Scheme for Identification of Piping Systems, ANSI A13.1–2002.

3.06 LUBRICATION, PACKING AND SUPPLIES

A. Properly lubricate all equipment before it is started.

B. Install initial charge of refrigerant and any other supplies required to place equipment in operation.

3.07 TESTS AND ADJUSTMENTS

A. All piping shall be given the following pressure test without appreciable pressure drop. Equipment which would be damaged by the required test pressure shall be isolated from the system during test.

SERVICE	MEDIUM	(PSI)	HRS.
Gas	Air	50	24

* AWWA Procedures

B. Storm sewers per State Plumbing Code or Local Authority.

C. Test medium for refrigerant piping shall be oil pumped dry nitrogen. Twenty-four hour standing time minimum. Test the low side of the system to 150 psi and the high side to 300 psi. Tests shall conform to ANSI Standard B31.5 "Refrigeration Piping."

3.08 CLEANING UP

A. At all times, keep premises and building in neat and orderly condition. Follow explicitly any instructions of Architect in regard to storing of materials, protective measures and disposing of debris.

B. Replace all throw away filters used during construction with proper system filters at completion of work.

C. Provide chemical cleaning for piping systems with an approved detergent to remove pipe dope, slushing compounds, oil, welding slag, loose mill scale and other extraneous materials.

D. After initial period of operation, clean all strainers, traps, and dirt legs.

E. Upon completion of work, remove all tools, equipment, surplus materials, thoroughly clean all piping, fixtures and equipment removing all dirt, grease and oil.

3.09 HVAC SYSTEMS ADJUSTMENTS AND BALANCE

A. Put all heating, ventilating, exhaust and air conditioning systems and equipment into full operation and continue operation of same during each working day of testing and balancing. All testing and balancing shall be done under both cooling and heating modes of operation.

1. Balance and adjust air-handling system for design flow of supply, return and outdoor air to within 10% of design requirements.

2. Balance all diffusers, grilles, and registers to within 10% of design requirements. Submit recorded results of all testing to Architect in triplicate with room numbers, design air quantities and actual air quantities.

3. Submit tabulated results in triplicate including motor amperage, cfm, and location.

4. After or during one complete heating cooling season, make any minor adjustments that may be necessary to insure uniform temperatures throughout the space.

END OF SECTION

SECTION 15050

BASIC MATERIALS AND METHODS

PART 1 GENERAL

1.01 MATERIALS

A. Pipe and Fittings

Refrigerant – Type "L" hard copper.
A/C Condensate Drain – Type "L" hard copper.
Gas – Schedule 40 black steel, 150 lb. malleable iron fittings.
Gas (Underground Service) – Schedule 40 black steel coated pipe per ANSI B36.10 or PVC as approved by Gas Company

Fittings for gas piping shall be 150 lbs., steam working pressure malleable iron screwed fittings on sizes through 2" and factory formed welding fittings on sizes over 2"

B. Valves

1. Valves shall be of the same manufacture where possible and equivalent to those manufactured by Nibco, Jenkins, Fairbanks, Powell, Milwaukee, Keystone or Hammond and withstand minimum 125 lbs. steam working pressure.

C. Sewers

1. Exterior Sewers – Storm sewers from 5' 0" outside building walls shall be standard strength hub and spigot pattern, vitreous clay tile, salt glazed, conforming to "Specification for Standard Strength Clay Sewer Pipe", ASTM Designation C 13. Sewers over 14 ft. deep or under vehicular pavement, shall be as hereinbefore specified except conforming to "Specifications for Extra Strength Clay Pipe", ASTM Designation C 700. Joints, Tyler "Ty Seal" or equal compres-sion type ASTM C 425. Reinforced concrete pipe ASTM C 76 may be used for storm sewers 10" diameter and larger.

2. Building Sewers and Drains (Underground) – Storm sewers to 5' 0" outside building walls shall be service weight cast iron, bell and spigot, soil pipe, with Tyler "Ty Seal" or equal, neoprene pipe gaskets or schedule 40 PVC sewer pipe and fittings per ASTM D2665 78 with solvent weld joints.

3. Storm Sewers (Above Ground Interior) – Storm Sewers installed above ground inside building and interior storm leader stacks and rain water conductors shall be no hub cast iron pipe and fittings or schedule 40 PVC drain waste and vent pipe and fittings with solvent weld joints per ASTM D2665 78.

D. Hangers and Supports

1. Provide all hangers, anchors, guides and supports to properly support and retain piping and ductwork; to control expansion, contraction, anchorage, drainage and prevent sway and vibration. Piping shall be so supported as not to place a strain on valves or equipment.

E. Vibration Control

1. Vibration or noise created in any part of the building by the operation of any equipment furnished and/or installed under this contract will be prohibited and this Contractor shall take all precautions by isolating the various items of equipment from the building structure.

2. Piping and ductwork shall be supported independently of the mechanical equipment and shall be isolated as follows:

a. Suspend piping by threaded rods incorporating resilient hangers precompressed molded fiberglass inserts.

b. Flexible connections shall be used between ductwork and air handling equipment, and the ductwork attached rigidly to the structure.

F. General Piping

1. Provide shutoff valves at all branch connections to main, at all fixture groupings, each piece of apparatus and in mains to sectionalize the systems.

2. Install valves with stems at or above horizontal position.

3. Plug open ends of pipe or equipment at all times during installation to keep dirt and foreign material out of system.

4. Arrange and install all pipes, valves, cleanouts, access openings and equipment so as to be accessible for service. Locate equipment to maintain clearances for tube, coil pulling, periodic servicing.

G. Joints

1. All pipe must be reamed and cleaned before assembly. Apply pipe compound to male end of threaded joints. All welded joints shall be as hereinbefore specified. All soldered connections on copper lines shall be cleaned, fluxed and soldered with 95 5 solder, except where a silver–brazing alloy is specified.

2. Make joints in refrigerant with silver brazing alloy having a melting point above 1000 degree F.

3. Construct, install and inspect all pressure piping systems in accordance with authorities having jurisdiction.

H. Expansion

1. Install all piping throughout the project with adequate allowance for expansion to prevent damage to building, equipment and piping. Provide anchors, loops or approved type expansion joints as required for complete control of movement. Make changes in directions with fittings.

I. Excavation and Backfill

1. Do all excavation and backfilling necessary for installation of work.

2. After installation and testing of piping has been completed and approved for backfill, refill all excavation inside of building and under paved areas outside of building with grits or bank run sand or the previously excavated material if this excavated material is determined by the Architect to be suitable for reuse. Backfill shall be made and tamped in six inch layers. Refill trenches outside of building and not under paved areas with selected dirt as specified under Division 2 "Site Work" to 6;" above finished grade to provide for settlement.

3. Remove, dispose of any material not used for backfill.

4. Where building service lines enter or leave building such as water, sewer, gas, etc., and are installed on filled earth, provide continuous support on a reinforced concrete beam furnished and installed under this Division. Support beam on building end with vertical support down to foundation footing and on undisturbed earth at other end.

END OF SECTION

SECTION 15250

INSULATION

PART 1 GENERAL

1.01 GENERAL

A. All insulation shall be installed over clean dry surfaces. Insulation must be dry and in good condition. Wet or damaged insulation will not be acceptable. No insulation shall be applied prior to pressure test completion of the respective piping systems.

B. All insulation shall be continuous through wall and ceiling openings, sleeves and pipe hanger locations.

C. Ductwork where indicated on plans to be lined shall not require exterior insulation.

D. AP Armaflex pipe insulation shall be applied with proper adhesive for working temperature of service, insulate all valves and fittings to match adjacent piping.

PART 2 – PRODUCTS

2.01 MATERIAL

A. All insulation material (insulation, jackets, adhesives, cements, mastics, sealers, coating and finishes) shall have composite fire and smoke hazard ratings as tested under procedure ASTM E 84, NFPA 255 and UL 723, not exceeding, as follows:

Flame Spread 25
Smoke Developed 50

B. Insulation products as manufactured by Armstrong, CertainTeed or Knauf are acceptable.

1. AP ARMAFLEX II FR: 1/2" THICK PIPE INSULATION

SERVICE

Air Conditioning Condensate Drain
Refrigerant Suction

END OF SECTION

SECTION 15400

PLUMBING

PART 1 GENERAL

1.01 INSTALLATION

A. Storm Drainage Systems

1. Location of storm piping shall be as indicated on the drawings and meet the various building conditions. Do any work necessary to conceal piping or clear piping and ductwork of other trades.

B. Gas Piping System

1. Provide new gas service from street main including all metering and regulating equipment. Underground gas service shall be buried between 18" and 24" below grade.

2. Provide insulated Dresser coupling where gas piping is connected to meters. Protect underground gas piping with Hill Hubbell wrapping or "Extru Coat" with joints protected with "Scotch" wrapping, but not less than as required by the serving utility for their piping. Provide anodic protection on underground piping conforming to utility company standards.

3. Underground service lines 3" and smaller may be plastic pipe in lieu of the schedule 40 steel pipe specified. Material and installation shall conform to strict requirements of utility company. A No. 12 copper wire shall be installed in bottom of trench to "trace" pipe.

4. Connect to all building equipment requiring gas. Install drip leg and shut off cock at each connection.

C. Gas Valves

1. Gas valves above ground shall be A.G.A. approved square head plug type with lever handle and adapted for gas service.

2. Gas valves below ground shall be standard 125 lb. (steam) brass body, brass or bronze mounted gas valve, double disc. Each valve stem shall have 2" square nut. Furnish suitable key. Each underground valve shall be provided with cast iron valve box at grade.

D. Piping Systems

1. Provide gas and storm systems as indicated on drawings with same being supplied and connected to all fixtures and equipment.

E. Cleanouts

1. Outside cleanouts: Zurn Series No. Z 1460 15. Ancon, Smith, Wade or Josam acceptable.

END OF SECTION

SECTION 15700

HEAT TRANSFER

PART 1 GENERAL

1.01 WORK INCLUDES

A. Refrigerant piping and related equipment.

1.02 REFRIGERANT PIPING SYSTEMS

A. Refrigerant piping and equipment installation shall conform to the applicable requirements of the Safety Code for Mechanical Refrigeration (ANSI B9.1).

B. Piping and specialties shall be sized to prevent excessive pressure drop, and allow compressors and evaporators to operate together with balance points at or above the specified capacities.

C. Piping and specialties shall be arranged to return oil at all loads, and prevent liquid from "slugging" the compressor or siphoning to the evaporator. Provide double suction risers and traps as required.

D. Pitch horizontal refrigerant piping 1/2" per 10 feet in direction of flow.

E. Provide separate refrigerant circuits for multiple compressor applications.

END OF SECTION

SECTION 15800

AIR DISTRIBUTION

PART 1 GENERAL

1.01 WORK INCLUDES

A. All HVAC materials, equipment and controls.

1.02 INSTALLATION

A. Provide all sheet metal work as indicated on the drawings in accordance with the latest edition of the ASHRAE guide and data book, SMACNA standards, 1995 Second Edition, and this specification, the most demanding of which shall be the minimum standard. All joints to be Seal Class "C".

PART 2 PRODUCTS

2.01 MATERIALS

A. Low Pressure Ductwork

1. All ductwork shall be constructed of galvanized steel except where noted on plans to be aluminum. Exposed ductwork in architecturally finished spaces shall be fabricated from "Paint Grip" galvanized steel or similar mill surface etch treatment.

2. Construct all ductwork following SMACNA "HVAC Duct Construction Standards," 1995 edition.

3. All ducts, except kitchen exhaust, shall be constructed to 1" W.G.

4. Seal all ducts to seal Class "C."

B. All ductwork shall be constructed of galvanized steel except where noted on drawings to be aluminum. Exposed ductwork in architecturally finished spaces shall be fabricated from "Paint Grip" galvanized steel or similar mill surface each treatment.

C. Dampers and Deflectors

1. Provide and install all manual dampers and deflectors indicated on drawings or where necessary to properly distribute and balance air. Provide damper in each supply duct leaving duct main and in each branch serving individual supply, return and exhaust outlets and where otherwise indicated.

E. Registers, Diffusers

1. In general, Titus is specified. Equals by Krueger, Carnes or Nailor Hart are acceptable.

2. All registers, diffusers to have a factory applied off white finish unless otherwise noted.

3. See drawings for schedule.

G. Instrument and Test Openings

1. Provide a pitot tube test access point at each fan discharge, and suction, and at main branches for balancing and adjusting the systems.

2. Provide openings in accessible locations and in sufficient number to achieve traverses in 6" grids.

3. Provide openings complete with gaskets and insulation extension necks for insulated sheet metal work. Openings to be equal to Ventlock No. 699.

H. Roof Curbs and Equipment Supports

1. Where curbs and supports are not specified with HVAC equipment provide prefabricated roof curbs, equipment supports, pipe curb assembly for HVAC roof penetrations and equipment mounting.

J. Flexible Duct Connections

1. Provide flexible connections with 1" slack between ducts and fans. Flexible material shall be "Vent glas" as manufactured by Iden Associates.

2. Fabric shall be 22 oz. glass fabric, double coated with Neoprene, fire retardant, waterproof, airtight and U.L. approved. Fabric shall conform to NFPA 90A.

L. Filter Gauge

1. Provide a filter gauge for measuring resistance to airflow through all pre-filters and final filters in all existing and new air handlers.

2. Gauge shall be Dywer Instruments, Inc., 2000 Series or equivalent, complete with all fittings, tubing, means of mounting gauges and two static pressure taps per instrument.

M. Filters

1. Provide two (2) complete sets of filters for each filter bank. Install one set of filters in units when construction is complete. Furnish the other set as a spare to the Owner when the project is complete. Filters shall not be shipped to the jobsite until construction is complete and the units are ready to have the first set of clean filters installed.

N. Equipment

1. See drawings for schedule of HVAC equipment, fans, and diffusers.

END OF SECTION

SECTION 15900

CONTROLS AND INSTRUMENTATION

PART 1 GENERAL

1.01 WORK INCLUDES

A. Complete temperature control system having all necessary component parts, such as transformers, relays, thermostats, damper motors, etc. System shall be installed by competent technician familiar with the control system.

PART 2 AND 3 – PRODUCTS AND EXECUTION

2.01 SERVICE AND GUARANTEE

A. After completion HVAC Contractor shall adjust all thermostats, control valves, motors, sensors, dampers and other equipment provided under his contract with trained personnel in his employ. Place controls in operating condition subject to the approval of the Engineer. Instruct operating personnel in the operation and maintenance of the control system.

B. The control system specified herein shall be guaranteed free from defects in workmanship and material under normal use and service for a period of one year after acceptance.

C. Any equipment herein described proven to be defective in workmanship or material during the guarantee period shall be adjusted, repaired or replaced at no charge to the Owner.

2.02 WIRING

A. All wiring incidental to this temperature control system shall be provided by the HVAC Contractor.

B. The term "wiring" shall be construed to include furnishing of wire, conduit, miscellaneous materials and labor as required for mounting and connecting electrical control devices and providing electrical interlocks between equipment. All wiring not indicated on electrical drawings is the responsibility of this Contractor.

2.03 SEQUENCE OF OPERATION

A. See drawing M–2 for sequence of operation.

END OF SECTION

08/09/2016

STATE OF OHIO
MICHAEL T. DENK
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NO	DESCRIPTION	DATE	BY
	REVISIONS		

PERMIT ☐ PROGRESS ☒ BID ☐ CONSTRUCTION ☐ RECORD

PROJECT NO. dai16099
DATE 08/09/2016
DESIGNED BY: EMF
DRAWN BY: EMF
CHECKED BY: MTD

CITY OF CONNEAUT, OHIO
WWTP HEADWORKS FACILITY

MECHANICAL SPECIFICATIONS

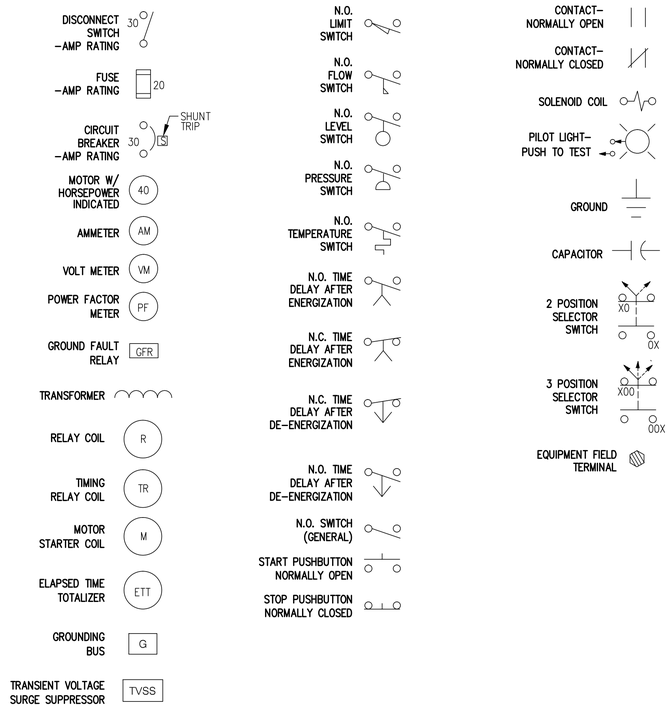
DRAWING DISCIPLINE
MECHANICAL

SHEET M-3 OF 44

ELECTRICAL SYMBOL LEGEND (PLAN SHEETS)

- CONDUIT AND WIRE RUN EXPOSED
- CONDUIT AND WIRE BELOW GRADE
- HOME RUN TO PANEL
- MOTOR
- MOTOR CONTROLLER
- FUSIBLE SAFETY SWITCH
- NON-FUSIBLE DISCONNECT SWITCH
- DUPLEX RECEPTACLE
- SPECIAL RECEPTACLE, NEMA TYPE NOTED
- SINGLE-POLE SWITTCH
- DRY-TYPE TRANSFORMER
- PUSHBUTTON STATION
- LOUVER OPERATOR
- (J) JUNCTION BOX
- (SV) SOLENOID VALVE
- (ZS) LIMIT SWITCH
- (FE) FLOW SENSOR
- (LE) LEVEL SENSOR
- (LIT) LEVEL INDICATING TRANSMITTER
- (FIT) FLOW INDICATING TRANSMITTER
- (FR) PAPERLESS CHART RECORDER / FLOW TOTALIZER
- (AE) OTHER SENSOR AS NOTED
- (AIT) OTHER INDICATING TRANSMITTER AS NOTED
- HAZARDOUS AREA LIGHT FIXTURE
- LINEAR LED LIGHT FIXTURE
- EXTERIOR WALL-PACK LIGHT FIXTURE

SINGLE LINE, ELEMENTARY, & INTERCONNECTION DIAGRAMS– SYMBOLS ONLY



GENERAL NOTES

1. ALL LIGHTING AND RECEPTACLE WIRING TO BE #12 XHHW WITH EQUIPMENT GROUND IN 3/4" C UNLESS OTHERWISE NOTED.
2. DO NOT MOUNT ANY LIGHT FIXTURE DIRECTLY OVER PIPING OR EQUIPMENT THAT WILL INTERFERE WITH NORMAL LIGHTING DISTRIBUTION.
3. SIZE JB'S AS REQUIRED PER NEC. PROVIDE BARRIER TYPE TERMINAL STRIPS, AND ALL WIRING TO BE IN CONDUIT.
4. SIZE PULL BOXES AS REQUIRED PER NEC.
5. PROVIDE SEPARATE PB'S FOR CONTROL AND POWER.
6. MOTOR OVERLOAD SETTING SHALL BE FIELD SELECTED PER MOTOR NAME PLATE CURRENT AND INSTALLED ACCORDINGLY.
7. WATERTIGHT CONNECTIONS – HEAT SHRINK INSULATION RAYCHEM, THOMAS BETTS, OR EQUAL.
8. LOCAL CONTROLS AT EQUIPMENT SHALL BE MOUNTED 60" ABOVE FINISHED FLOOR. MOUNT CONTROLS ON WALL NEAREST EQUIPMENT WHERE POSSIBLE. (MAX. DISTANCE FROM WALL TO EQUIPMENT –10 FEET).
9. ON THE ELECTRICAL SHEETS, FOR MANY OF THE LIGHTING FIXTURES, HOLOPHANE IS USED FOR DESCRIBING THE TYPE OF LIGHTING FIXTURES THAT ARE REQUIRED. IT IS THE INTENT OF THE DOCUMENTS TO ALLOW ALTERNATE MANUFACTURERS TO PROVIDE LIGHTING PRODUCTS FOR THE PROJECT, AS LONG AS PROPOSED ALTERNATES PROVIDE THE SAME GENERAL DESIGN AND ELECTRICAL AND LIGHTING CHARACTERISTICS AS THE HOLOPHANE LIGHTING INDICATED ON THE CONTRACT DRAWINGS.
10. ALL FEEDERS RUN BELOW GRADE SHALL BE RUN IN PVC CONDUIT AT MINIMUM 3'–0" BELOW FINISHED GRADE, TRANSITION TO ABOVE GRADE SHALL BE MADE USING FACTORY PVC COATED RIGID STEEL CONDUIT SWEEPS.

ELECTRICAL ABBREVIATIONS

A	AMPS
AF	AMPERE FRAME
AI	ANALOG INPUT (PLC)
AL	ALUMINUM
AM	AMMETER
AO	ANALOG OUTPUT (PLC)
AP	ALARM PANEL
AT	AMPERE TRIP
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CJB	CONTROL JUNCTION BOX
CP	CONTROL PANEL
CPT	CONTROL POWER TRANFORMER
CR	CORROSION RESISTANT
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
CU	COPPER
DB	DUCT BANK
DI	DIGITAL INPUT (PLC)
DO	DIGITAL OUTPUT (PLC)
EAG	ELECTRICALLY ACTIVATED GATE
EAV	ELECTRICALLY ACTIVATED VALVE
EF	EXHAUST FAN
ESPB	EMERGENCY STOP PUSHBUTTON (MAINTAINED)
ETT	ELAPSED TIME TOTALIZER
EWD	ELEMENTARY WIRING DIAGRAM
FDS	FUSED DISCONNECT SWITCH
FLA	FULL LOAD AMPERES
FS	FLOW SWITCH
FVC	FULL VOLTAGE CONTACTOR
FVNR–1	FULL VOLTAGE NON–REVERSING STARTER SIZE 1
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GFR	GROUND FAULT RELAY
HOA	HAND/OFF/AUTO SELECTOR SWITCH
HP	HORSEPOWER
HT	HIGH TORQUE SWITCH
HTR	HEATER
Hz	HERTZ
IAW	IN ACCORDANCE WITH
ICP	INSTRUMENTATION & CONTROL PANEL
IPP	INSTRUMENT POWER PANEL
JB	JUNCTION BOX
JBC	JUNCTION BOX–CONTROL
JBM	JUNCTION BOX–METERING
JBP	JUNCTION BOX–POWER
KCM	KILO (1000) CIRCULAR MILL
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES–REACTIVE
KW	KILOWATT
LA	LIGHTING ARRESTOR
LGT	LIGHT
LOR	LOCAL/OFF/REMOTE SELECTOR SWITCH
LP	LIGHTING PANEL
LS	LEVEL SWITCH
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDP	MAIN DISTRIBUTION PANEL
MJB	METERING JUNCTION BOX
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MFR ASSOC.
NEUT	NEUTRAL
NFDS	NON–FUSED DISCONNECT SWITCH
OCSS	OPEN/CLOSE SELECTOR SWITCH
OL	OVERLOAD
OOSS	ON/OFF SELECTOR SWITCH
OT	OVER TORQUE SWITCH
P	POLE
PB	PUSHBUTTON
PBC	PULLBOX–CONTROL
PBM	PULLBOX–METERING
PBP	PULLBOX–POWER
PC	PHOTO CONTROL
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PJB	POWER JUNCTION BOX
PP	POWER PANEL
PRI	PRIMARY
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
R	RELAY
RCP	REINFORCED CONCRETE PIPE
RL	RUN LIGHT
SCP	SURGE CONTROL PANEL
SCR	SILICON–CONTROLLED RECTIFIER
SEC	SECONDARY
SF	SUPPLY FAN
SHLD	SHIELDED
SP	SHEAR PIN SWITCH
SPK	SPEAKER
SS	SELECTOR SWITCH OR STAINLESS STEEL
SSOR	SOLID STATE OVERLOAD RELAY
SSPB	START/STOP PUSHBUTTON
SSS	SOLID STATE STARTER
STD	STANDARD
STRTR	STARTER
SV	SOLENOID VALVE
SW	SWITCH
T	TELEPHONE
TB	TERMINAL BOARD
TC	TIME CLOCK
TD	TRENCH DUCT
TEB	TELEPHONE EQUIPMENT BACKBOARD
TEMP	TEMPERATURE
TOR	THERMAL OVERLOAD RELAY
TR	TIMING RELAY
TSTAT	THERMOSTAT
TVSS	TRANSIENT VOLTAGE SUPPRESSOR
UH	UNIT HEATER
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VC	VOLUME CONTROL
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLT METER
X/P	EXPLOSION PROOF
XFMR	TRANSFORMER
ZS	LIMIT SWITCH

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PROJECT No. 14784
DATE: 08–09–2016
DESIGN: NSS
DRAWN: NSS
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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

ELECTRICAL NOTES AND LEGEND

DRAWING DISCIPLINE
ELECTRICAL

SHEET	OF
E-01	44

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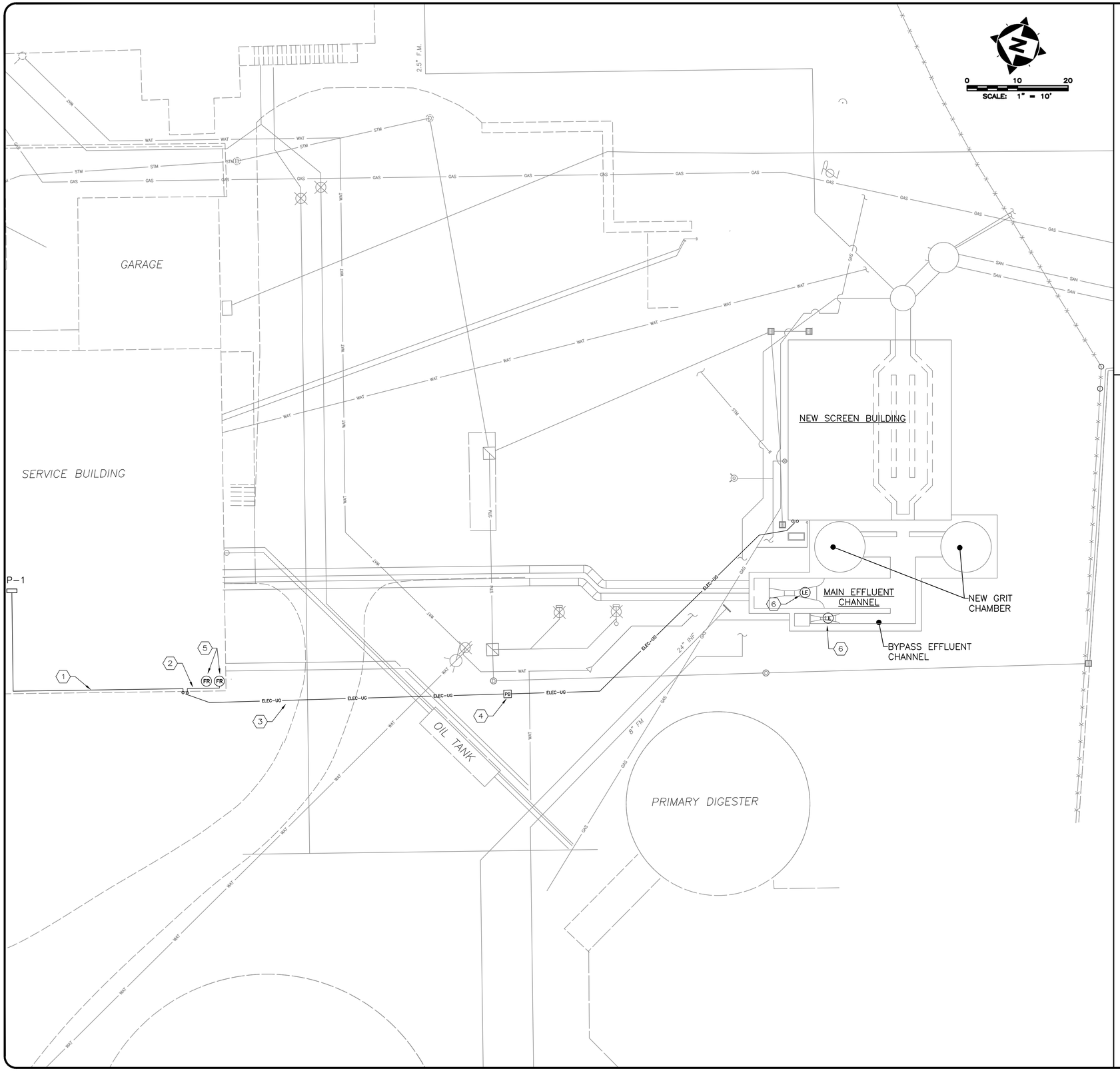
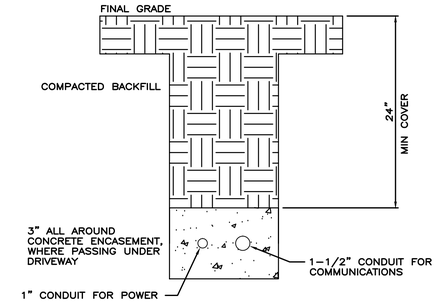


CODED NOTES:

1. NEW ELECTRIC FEEDER TO THE HEADWORKS BUILDING FROM EXISTING PANEL P-1 – (3) #3 & (1) #8 GND IN 1"C. VERIFY ROUTING THROUGH THE SERVICE BUILDING IN THE FIELD. CONDUIT SHALL EXIT THE BUILDING BELOW FIRST FLOOR LEVEL, ABOVE GRADE. SEAL BUILDING PENETRATIONS.
2. COMMUNICATIONS CABLE TO TWO NEW PAPERLESS CHART RECORDERS FROM THE NEW PLANT MAIN FLOW AND BYPASS FLOW INSTRUMENTS IN THE HEADWORKS BUILDING – (2) 3C–#18 SHIELDED IN 1–1/2"C.. VERIFY ROUTING THROUGH THE SERVICE BUILDING IN THE FIELD. CONDUIT SHALL EXIT THE BUILDING BELOW FIRST FLOOR LEVEL, ABOVE GRADE. SEAL BUILDING PENETRATIONS. PROVIDE A NEMA 12, 8"X8"X6" PULLBOX NEAR CONDUIT ENTRY INTO BUILDING FOR FUTURE USE.
3. UNDERGROUND DUCTBANK, SEE DETAIL ON THIS SHEET. SLOPE CONDUITS AWAY FROM BUILDING FOUNDATIONS.
4. IN GROUND PULL BOX. PC 121212, TIER 8 BY QUAZITE OR EQUAL. INSTALL ON 6" OF COMPACTED GRAVEL.
5. PAPERLESS CHART RECORDER SHALL BE PR20 SERIES BY FUTUREDESIGN, NANODAC BY EUROTHERM OR EQUAL. INSTALL PAPERLESS CHART RECORDER IN A GENERAL PURPOSE ENCLOSURE IN PLACE OF EXISTING BYPASS RECORDER TO BE REMOVED. REUSE EXISTING 120V CIRCUIT FOR POWER. VERIFY FINAL LOCATION WITH THE OPERATOR.
6. NEW LEVEL SENSOR FOR MEASURING FLOW. PROVIDE SS CHANNEL STRUT AND HARDWARE FOR SENSOR MOUNTING BELOW GRATING. ROUTE CONDUIT THROUGH CHANNEL WALL AND WIRE THE INSTRUMENT TO INTRINSICALLY SAFE BARRIERS AT THE NEW INDICATING TRANSMITTER INSIDE THE NEW HEADWORKS ELECTRIC ROOM.

GENERAL NOTES:

1. MAINTAIN 6" SEPARATION WHENEVER CROSSING OTHER UNDERGROUND UTILITIES WITH THE NEW DUCT BANK.
2. PROVIDE ALL TRENCHING, BACKFILL AND SURFACE REPAIR REQUIRED TO INSTALL THE NEW DUCTBANK.
3. ALL SURFACES AND LANDSCAPING AFFECTED BY THE INSTALLATION OF THE DUCTBANK SHALL BE RETURNED TO ORIGINAL CONDITION. VERIFY EXTENT OF REQUIRED WORK PRIOR TO BID.



NEW ELECTRICAL DUCTBANK DETAIL

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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT PLANT HEADWORKS FACILITY

ELECTRICAL SITE PLAN

DRAWING DISCIPLINE
ELECTRICAL

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E-02	44

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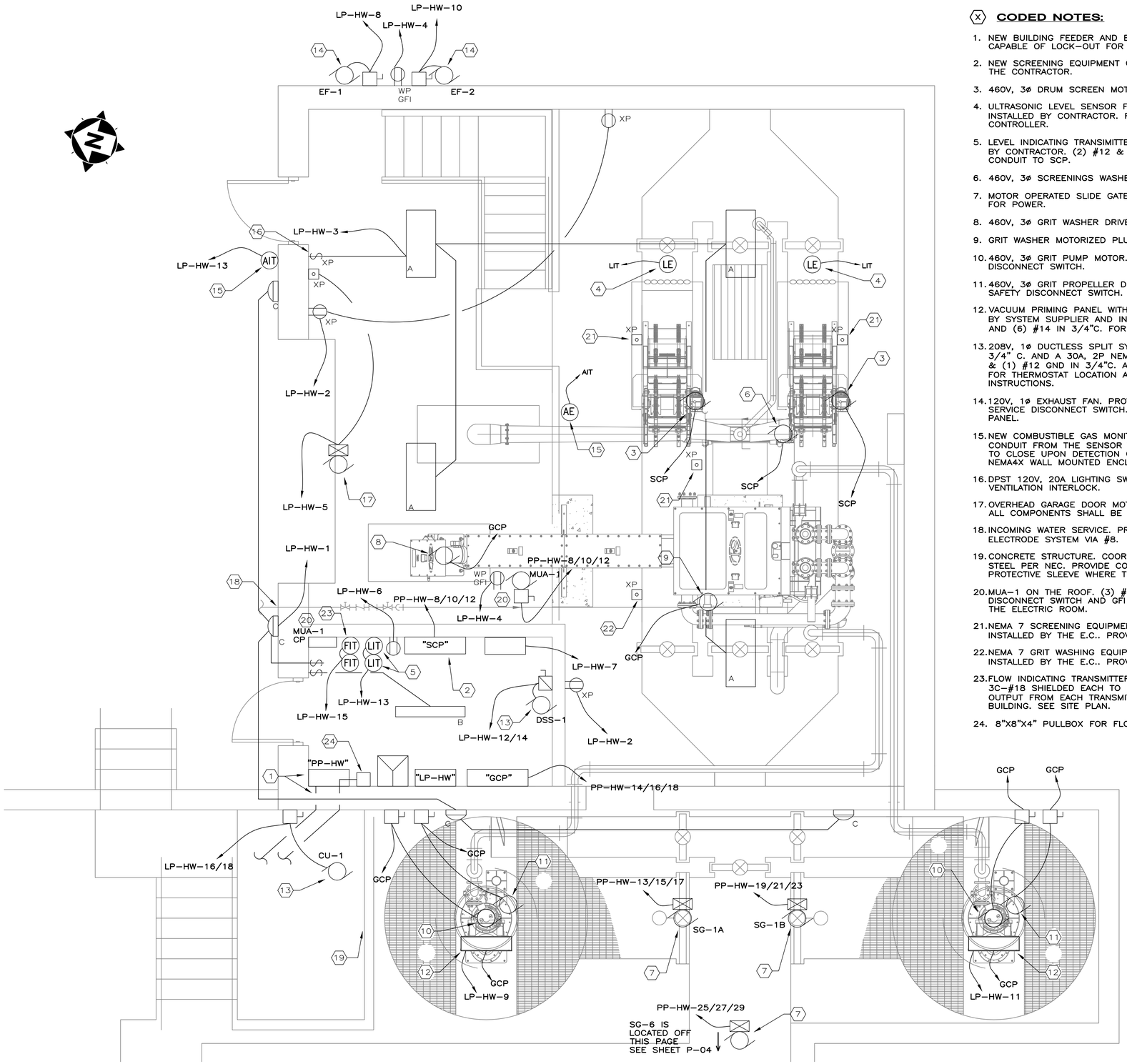

ELECTRICAL FLOOR PLAN

SCALE 3/8" = 1'-0"

CODED NOTES:

1. NEW BUILDING FEEDER AND ELECTRIC DISTRIBUTION EQUIPMENT. ALL EQUIPMENT FEEDER BREAKERS SHALL BE CAPABLE OF LOCK-OUT FOR SERVICING.
2. NEW SCREENING EQUIPMENT CONTROL PANEL SCP, FURNISHED BY THE EQUIPMENT VENDOR, INSTALLED BY THE CONTRACTOR.
3. 460V, 3ø DRUM SCREEN MOTOR. (3) #12 & (1) #12 GND IN 3/4" C.
4. ULTRASONIC LEVEL SENSOR FURNISHED WITH FACTORY CABLE AS PART OF THE SCREENING SYSTEM PACKAGE, INSTALLED BY CONTRACTOR. FACTORY CABLE TO TERMINATE AT LEVEL INDICATING TRANSMITTER / CONTROLLER.
5. LEVEL INDICATING TRANSIMITTER/ CONTROLLER FURNISHED BY SCREENING EQUIPMENT SUPPLIER, INSTALLED BY CONTRACTOR. (2) #12 & (1) #12 GND IN 3/4"C TO LP-HW AND (1) 2C-#18 SHIELDED IN SEPARATE CONDUIT TO SCP.
6. 460V, 3ø SCREENINGS WASHER/COMPACTOR MOTOR. (3) #12 & (1) #12 GND IN 3/4" C.
7. MOTOR OPERATED SLIDE GATE WITH INTEGRAL CONTROLLER. (3) #12 & (1) #12 GND IN 3/4"C TO PP-HW FOR POWER.
8. 460V, 3ø GRIT WASHER DRIVE MOTOR. (3) #12 & (1) #12 GND IN 3/4"C.
9. GRIT WASHER MOTORIZED PLUG VALVE. (2) #12 & (1) #12 GND IN 3/4"C.
10. 460V, 3ø GRIT PUMP MOTOR. (3) #12 & (1) #12 GND IN 3/4"C., NEMA 4X SS, 480V, 30A, 3P SAFETY DISCONNECT SWITCH.
11. 460V, 3ø GRIT PROPELLER DRIVE MOTOR. (3) #12 & (1) #12 GND IN 3/4"C., NEMA 4X SS, 480V, 30A, 3P SAFETY DISCONNECT SWITCH.
12. VACUUM PRIMING PANEL WITH INTEGRATED LOCAL CONTROLS FOR THE GRIT SYSTEM. PANEL TO BE PROVIDED BY SYSTEM SUPPLIER AND INSTALLED BY THE E.C. PROVIDE (2) #12 & (1) #12 GND IN 3/4"C. FOR POWER AND (6) #14 IN 3/4"C. FOR CONTROLS.
13. 208V, 1ø DUCTLESS SPLIT SYSTEM. FOR THE ROOF MOUNTED CU-1 PROVIDE (2) #12 & (1) #12 GND IN 3/4" C. AND A 30A, 2P NEMA 4X DISCONNECT SWITCH. FOR THE WALL MOUNTED DSS-1 PROVIDE (2) #12 & (1) #12 GND IN 3/4"C. AND 30A, 2P NEMA 1 SERVICE DISCONNECT SWITCH. SEE MECHANICAL SHEETS FOR THERMOSTAT LOCATION AND CONNECT T-STAT INTO SYSTEM VIA WIRE IN CONDUIT PER MANUFACTURER'S INSTRUCTIONS.
14. 120V, 1ø EXHAUST FAN. PROVIDE (2) #12 & (1) #12 GND IN 3/4" C. AND A 30A, 1P, 120V, NEMA 4X SERVICE DISCONNECT SWITCH. RUN EXHAUST FAN CIRCUITS THROUGH CONTACTORS IN THE MUA-1 CONTROL PANEL.
15. NEW COMBUSTIBLE GAS MONITOR AND COMBUSTIBLE GAS SENSOR. PROVIDE (1) 3C-#18 SHIELDED IN 3/4" CONDUIT FROM THE SENSOR TO THE MONITOR. PROVIDE MONITOR WITH (2) ISOLATED N.O. 120V CONTACTS TO CLOSE UPON DETECTION OF 10% OF COMBUSTIBLE GAS LEVEL. MONITOR SHALL BE INSTALLED IN A NEMA4X WALL MOUNTED ENCLOSURE, COMPLETE WITH RED STROBE LIGHT AND AUDIBLE ALARM.
16. DPST 120V, 20A LIGHTING SWITCH. CONNECT SECOND POLE TO THE MUA-1 CONTROL PANEL FOR VENTILATION INTERLOCK.
17. OVERHEAD GARAGE DOOR MOTOR WITH INTEGRAL MOTOR CONTROLLER AND WALL MOUNTED CONTROL STATION. ALL COMPONENTS SHALL BE LISTED FOR INSTALLATION IN NEC CLASS I DIV 2 AREA.
18. INCOMING WATER SERVICE. PROVIDE APPROVED CONNECTORS AND TIE TO THE BUILDING GROUNDING ELECTRODE SYSTEM VIA #8.
19. CONCRETE STRUCTURE. COORDINATE CONNECTION OF THE BUILDING GROUNDING ELECTRODE TO REINFORCING STEEL PER NEC. PROVIDE CONNECTION LISTED FOR THE PURPOSE, #8 CONDUCTOR AND NONMETALIC PROTECTIVE SLEEVE WHERE THE CONDUCTOR EXITS THE CONCRETE.
20. MUA-1 ON THE ROOF. (3) #12 & (1) #12 GND IN 3/4"C, PROVIDE A 30A, 3P, NEMA 4X SERVICE DISCONNECT SWITCH AND GFI SERVICE RECEPTACLE WITH IN-USE COVER. MUA-1 CP SHALL BE MOUNTED IN THE ELECTRIC ROOM.
21. NEMA 7 SCREENING EQUIPMENT LOCAL CONTROL STATION, PROVIDED BY THE EQUIPMENT SUPPLIER, INSTALLED BY THE E.C.. PROVIDE (12) #14 IN 3/4"C. FOR CONTROL. VERIFY LOCATION WITH THE OPERATOR.
22. NEMA 7 GRIT WASHING EQUIPMENT LOCAL CONTROL STATION, PROVIDED BY THE EQUIPMENT SUPPLIER, INSTALLED BY THE E.C.. PROVIDE (8) #14 IN 3/4"C. FOR CONTROL. VERIFY LOCATION WITH THE OPERATOR.
23. FLOW INDICATING TRANSMITTERS FOR PLANT INFLUENT AND BYPASS. CONNECT LEVEL SENSING ELEMENTS VIA 3C-#18 SHIELDED EACH TO INTRINSICALLY SAFE BARRIERS AT THESE TRANSMITTERS. PROVIDE 4-20MA OUTPUT FROM EACH TRANSMITTER TO PAPERLESS CHART RECORDERS/ FLOW TOTALIZERS IN THE SERVICE BUILDING. SEE SITE PLAN.
24. 8"X8"X4" PULLBOX FOR FLOW SIGNAL CABLES.

GENERAL NOTES:

1. SCREEN BUILDING IS A CLASS 1, DIVISION I, GROUP D HAZARDOUS AREA AS DEFINED BY NEC ARTICLE 500, WITH EXCEPTION OF THE ELECTRIC ROOM WHICH IS NOT CLASSIFIED.
2. ALL CONDUIT AND BOXES WITHIN THE SCREENING ROOM SHALL BE PVC COATED RGS, WITH EXCEPTION OF MOTOR CONNECTIONS, AS PERMITTED BY NEC.
3. ALL LIGHTING, ELECTRICAL EQUIPMENT AND DEVICES LOCATED IN THE CLASSIFIED AREA SHALL BE IDENTIFIED FOR USE IN SUCH AREA.
4. PROVIDE EXPLOSION PROOF CONDUIT SEALS WHERE REQUIRED BY NEC, INCLUDING FOR EACH CONDUIT LEAVING THE CLASSIFIED AREA.
5. USE SEPARATE RACEWAYS FOR INTRINSICALLY SAFE CIRCUITRY, IF UTILIZED. PROVIDE SEALING BUSHINGS AT CLASSIFIED AREA BOUNDARY.
6. SCREENING EQUIPMENT AND CONTROL PANEL ARE BEING FURNISHED PER SPECIFICATION SECTION 11307. VERIFY ALL WIRE SIZES/ CABLING REQUIREMENTS TERMINATING AT SCP WITH APPROVED SHOP DRAWINGS.
6. GRIT SYSTEM EQUIPMENT AND CONTROL PANEL ARE BEING FURNISHED PER SPECIFICATION SECTION 11321. VERIFY ALL WIRE SIZES/ CABLING REQUIREMENTS TERMINATING AT GCP WITH APPROVED SHOP DRAWINGS.
7. PROVIDE GROUNDING ELECTRODE SYSTEM PER NEC. PROVIDE APPROVED CONNECTORS AND #8 GND FROM THE WATER SERVICE, CONCRETE ENCASED ELECTRODE AND GROUND ROD TO THE PANEL PP-HW GROUNDING BAR.
8. NEC REQUIRED MOTOR AND MOTOR CONTROLLER DISCONNECTS FOR THE EQUIPMENT INSIDE THE SCREENING ROOM SHALL BE PART OF THE EQUIPMENT CONTROL PANELS AND SHALL BE LOCKABLE.

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CITY OF CONNEAUT, OHIO
WASTEWATER TREATMENT
PLANT HEADWORKS
FACILITY

ELECTRICAL FLOOR PLAN

DRAWING DISCIPLINE
ELECTRICAL

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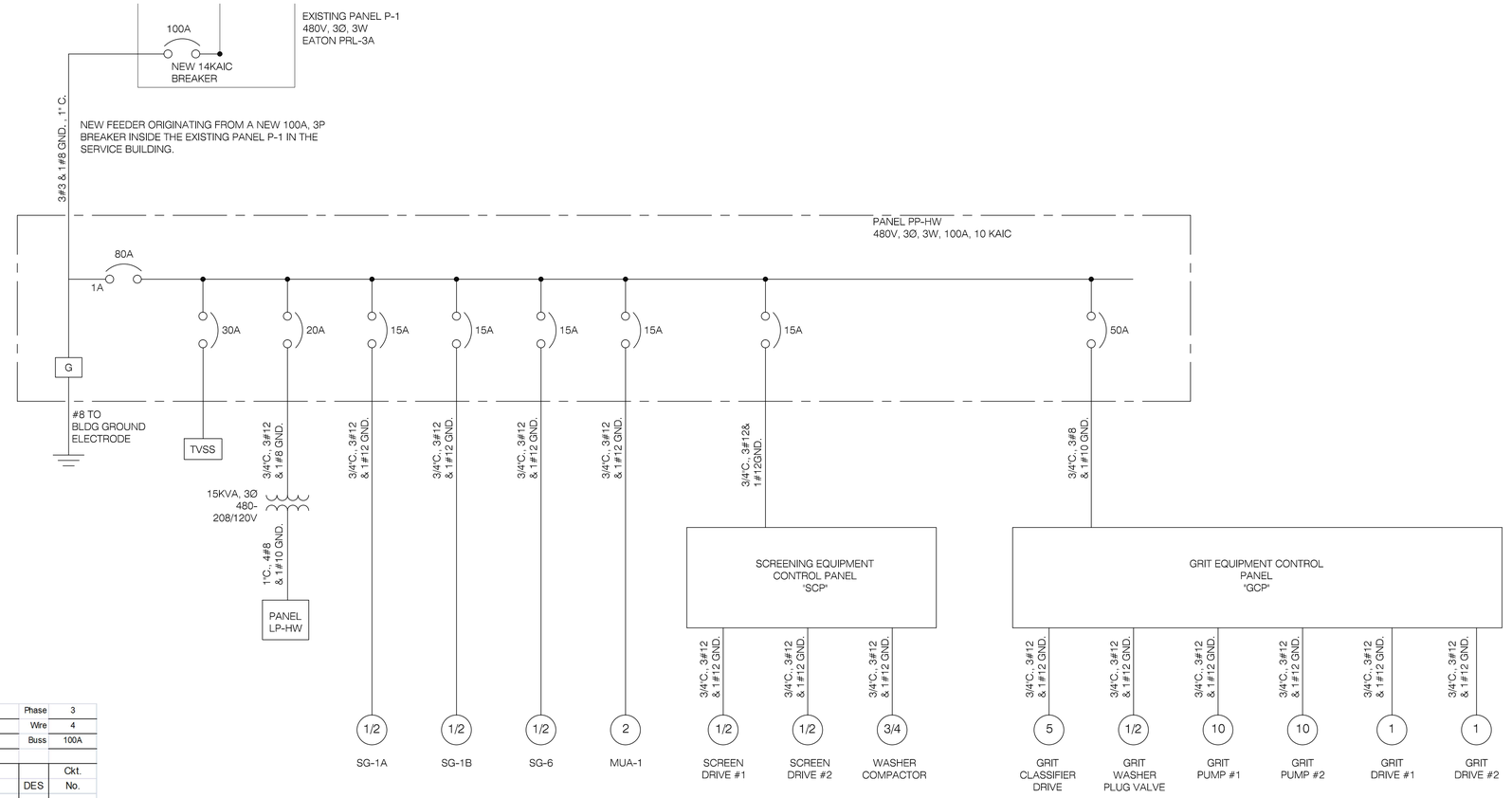
E-03	44

GENERAL NOTES

1. ALL NEW EQUIPMENT FEEDER BREAKERS SHALL BE CAPABLE OF BEING LOCKED OUT FOR EQUIPMENT MAINTENANCE PER NEC.
2. COORDINATE GROUNDING ELECTRODE SYSTEM INSTALLATION WITH THE CONCRETE CONTRACTOR AND THE PLUMBING CONTRACTOR.
3. MAIN ROOM OF THE NEW SCREEN BUILDING IS A CLASSIFIED AREA. PROVIDE EXPLOSION PROOF FITTINGS ON ALL CONDUITS ENTERING THE ELECTRICAL ROOM, UNLESS UTILIZING INTRINSICALLY SAFE CIRCUITRY.
4. SCREENING EQUIPMENT CONTROL PANEL "SCP" IS FURNISHED BY THE EQUIPMENT SUPPLIER AND INSTALLED BY THE ELECTRICAL CONTRACTOR. VERIFY ALL MOTOR AND AUXILIARY EQUIPMENT WIRING REQUIREMENTS WITH THE SUPPLIER.
4. GRIT EQUIPMENT CONTROL PANEL "GCP" IS FURNISHED BY THE EQUIPMENT SUPPLIER AND INSTALLED BY THE ELECTRICAL CONTRACTOR. VERIFY ALL MOTOR AND AUXILIARY EQUIPMENT WIRING REQUIREMENTS WITH THE SUPPLIER.



PROPOSED NEW HEADWORKS BUILDING SINGLE LINE DIAGRAM

N.T.S.

PANEL SCHEDULES

Panelboard	"LP-HW"		Voltage	208Y/120V	Phase	3
Panel Type	NQOD		OCPD	50A M.C.B.	Wire	4
NEMA Type	1		Mounting	SURFACE	Buss	100A

Ckt. No.	DES	Load Description	Brkr. Size *	Phase	Brkr. Size *	Load Description	DES	Ckt. No.
1		EXT LIGHTS	20/1	A	20/1	SCREENING RM REC		2
3		INT LIGHTS	20/1	B	20/1	OUTDOOR REC		4
5		OVERHEAD DOOR	20/1	C	20/1	EL RM REC		6
7		AIR COMPRESSOR PANEL	20/1	A	20/1	EF-1		8
9		VACUUM PRIMING PANEL #1	20/1	B	20/1	EF-2		10
11		VACUUM PRIMING PANEL #2	20/1	C	20/2	DSS-1		12
13		CGD MONITOR	20/1	A				14
15		FLOW MONITORS	20/1	B	15/2	CU-1		16
17		SPACE	20/1	C				18
19		SPACE	20/1	A	20/1	SPACE		20
21		SPACE	20/1	B	20/1	SPACE		22
23		SPACE	20/1	C	20/1	SPACE		24
25		SPACE	20/1	A	20/1	SPACE		26
27		SPACE	20/1	B	20/1	SPACE		28
29		SPACE	20/1	C	20/1	SPACE		30

Panelboard	"LP-HW"		Voltage	208Y/120V	Phase	3
Panel Type	NQOD		OCPD	100A M.C.B.	Wire	4
NEMA Type	1		Mounting	SURFACE	Buss	100A

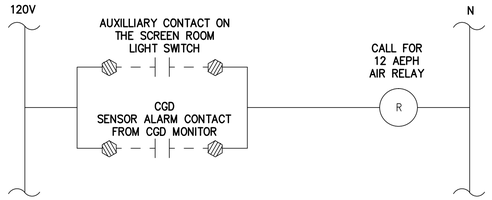
Ckt. No.	DES	Load Description	Brkr. Size *	Phase	Brkr. Size *	Load Description	DES	Ckt. No.
1		EXT LIGHTS	20/1	A	20/1	SCREENING RM REC		2
3		INT LIGHTS	20/1	B	20/1	OUTDOOR REC		4
5		OVERHEAD DOOR	20/1	C	20/1	EL RM REC		6
7		AIR COMPRESSOR PANEL	20/1	A	20/1	EF-1		8
9		VACUUM PRIMING PANEL #1	20/1	B	20/1	EF-2		10
11		VACUUM PRIMING PANEL #2	20/1	C	20/2	DSS-1		12
13		CGD MONITOR	20/1	A				14
15		FLOW MONITORS	20/1	B	15/2	CU-1		16
17		SPACE	20/1	C				18
19		SPACE	20/1	A	20/1	SPACE		20
21		SPACE	20/1	B	20/1	SPACE		22
23		SPACE	20/1	C	20/1	SPACE		24
25		SPACE	20/1	A	20/1	SPACE		26
27		SPACE	20/1	B	20/1	SPACE		28
29		SPACE	20/1	C	20/1	SPACE		30

LIGHT FIXTURE SCHEDULE

LIGHT FIXTURE SCHEDULE			
DESIGNATION	DESCRIPTION	MANUFACTURER/MODEL	NOTES
A	HEAVY DUTY, EXPLOSION PROOF, LED FIXTURE, SUITABLE FOR DAMP ENVIRONMENTS	HOLOPHANE HXPL-8L-43T-AS	4000K COLOR, 8000 LUMENS
B	GASKETED, WRAP AROUND, IMPACT RESISTANT LINEAR LED FIXTURE	HOLOPHANE EVT4-6000LM-PCL-WD-120-40K-80CRI	4000K COLOR, 6000 LUMENS
C	EXTERIOR LED WALL-PACK	HOLOPHANE W4PLED-20C-700-40K-T3M-120-BKSDP	4000K COLOR, 4000 LUMENS, VERIFY FINISH WITH

LOAD SUMMARY

LOAD SUMMARY - PANEL PP-HW		
	CONNECTED	DEMAND
LIGHTING	760 VA	950 VA
RECEPTACLES	900 VA	900 VA
MOTORS	41322.01 VA	41322.01 VA
LARGEST MOTOR X 25%		2789 VA
MISCELLANEOUS& HVAC	6430 VA	6430 VA
TOTAL	49412.01 VA	52390.61 VA
		63.0 A



INTERIOR VENTILATION INTERLOCK DIAGRAM

NOTE:
THIS IS A PARTIAL DIAGRAM ONLY, SHOWN TO CLARIFY DRYPIT VENTILATION INTERLOCK REQUIRMENTS. FINAL MUA-1 CONTROL PANEL DESIGN SHALL BE BY THE SUPPLIER AND SHALL INCORPORATE THIS INTERLOCK.

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