VILLAGE OF ROAMING SHORES

ROAMING SHORES WWTP HEADWORKS DESIGN

FEBRUARY 2024

OHIO 811 DESIGN SERIAL NUMBER & UTILITY LIST:

XX - STATE ROUTE 534

OHIO UTILITY PROTECTION SERVICE:
106 WEST RYEN, ROOM 427
YOUNGSTOWN, 44051
(800) 362-2764

CLEVELAND ELECTRIC ILLUMINATING CO:
2210 SOUTH RIDGE ROAD
ASHTABULA, OHIO 44004

THE EAST OHIO GAS COMPANY:
1010 WEST 30TH STREET
ASHTABULA, OHIO 44004
(440) 992-5100

ALL-TEL:
360 HIGHLAND ROAD
MACEDONIA, OHIO 44067
(800) 782-6206

SPRINT:
PO BOX 3555
MANSFIELD, OHIO 44907
(800) 786-6272

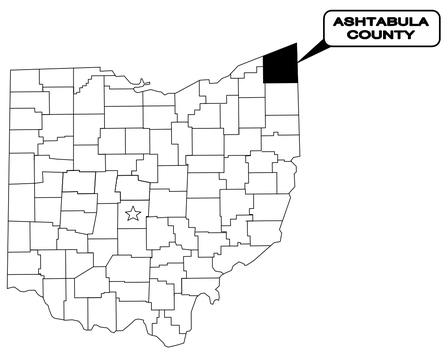
OHIO811.org Before You Dig

ENVIRONMENTAL SERVICES:
36 W. WALNUT STREET
JEFFERSON, OHIO 44047
(440) 576-3722 PHONE
(440) 576-3781 FAX

TCI:
2904 STATE ROAD
ASHTABULA, OHIO 44004
(440) 998-2148

1. UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.

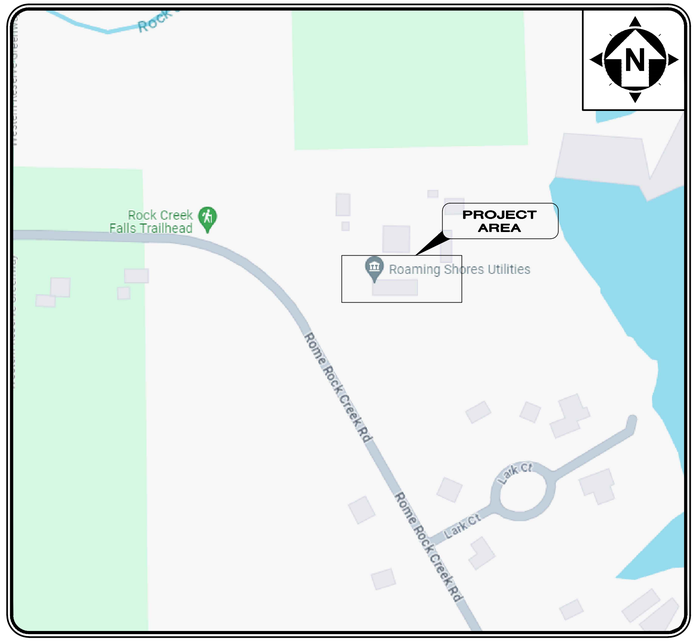
2. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



OHIO Utilities Protection SERVICE
Call Before You Dig
1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

NOTE:

THE SURVEY SHOWN ON THESE PLANS WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR ANY OTHER PURPOSE.



LOCATION MAP
NOT TO SCALE

your trusted advisor
consultants
engineers
architects
planners

VILLAGE APPROVALS:

VILLAGE ADMINISTRATOR — LUKAS DARLING — DATE 3-14-24

CHIEF OF PUBLIC WORKS — DUANE HELMS — DATE 3-14-24

ENGINEER/ARCHITECT:

CT CONSULTANTS, INC.
8150 STERLING COURT
MENTOR, OH 44060

(440) 951-9000 PHONE
(440) 951-7487 FAX

GEORGIA CONWAY — P.E. No. E-85401 — DATE 3-15-24

ENGINEER'S PROJECT No. 241188

STATE OF OHIO
GEORGIA CONWAY
E-85401
REGISTERED PROFESSIONAL ENGINEER

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NO	REVISION	DATE

ISSUED FOR:	BID SET
ISSUE DATE:	4-30-24
SCALE:	AS NOTED
DESIGNED BY:	TML
DRAWN BY:	JBB
CHECKED BY:	GBC

ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY — ROAMING SHORES, OHIO
GENERAL - 00 SERIES
COVER SHEET

PROJECT NO.	
241188	
DISCIPLINE	
CIVIL	
SHEET NAME	
00G-01	
SHEET	OF
1	14

GENERAL SYMBOLOGY NOTES:

1. THIS IS A STANDARD SHEET SHOWING COMMONLY USED SYMBOLOGY.
2. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE NEW IMPROVEMENTS SO AS TO HIGHLIGHT SPECIFIC TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
4. SYMBOLOGY OR DIAGRAMMATICAL LEGENDS MAY BE SHOWN ON INDIVIDUAL SHEETS FOR SCHEDULES, DIAGRAMS, DETAILS, SCHEMATICS OR EQUIPMENT.

DRAWING CODED NOTE TYPES:

1. CT CONTRACTUAL NOTES ARE DEPICTED WITH A HEXAGON, SQUARE, CIRCLE OR TRIANGLE. ALL OTHER EXISTING WRITTEN CALLOUTS SHOWN ON THE REUSED SCANNED PLANS FROM PREVIOUS CONTRACT DRAWINGS, (BACKGROUND IMAGES), SECTIONS & DETAILS ARE FOR EXISTING CONDITIONS AND REFERENCE ONLY, MANY OF THOSE NOTES FROM THE SCANNED DRAWINGS PERTAIN TO PREVIOUS WORK DONE. THESE BACKGROUND IMAGES ARE SHOWN IN GRAY.

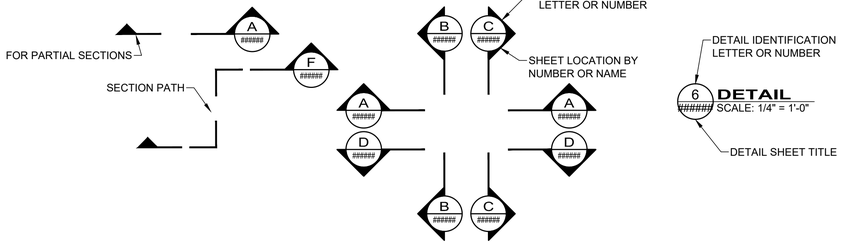
CODED NOTES:

(#) (#) DESCRIPTION

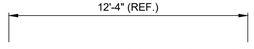
PLAN REVISIONS:

(A) REVISION DESCRIPTION

SECTION CUT CONVENTIONS:

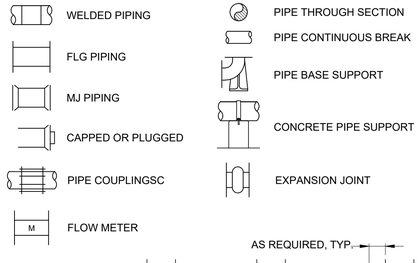


REFERENCE DIMENSION:

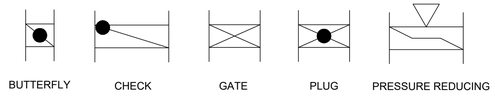


REFERENCE DIMENSIONS ARE GIVEN AS INFORMATION OF EXPECTED DESIGN. THEY ARE CALCULATED DIMENSIONS THAT MAY VARY AND ARE INTENDED TO BE FIELD VERIFIED.

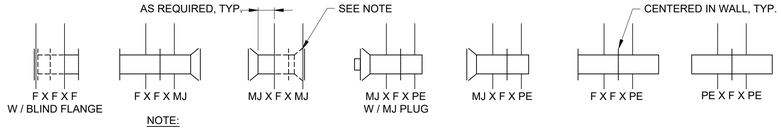
MISC PIPE SYMBOLOGY



VALVE SYMBOLS



WALL CASTINGS



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 (SEE DRAWINGS) ARE TO BE DRILLED AND TAPPED FOR STUDS.

VALVE OPERATOR ID:

CH = CHAIN
EM = ELECTRIC MOTOR
ES = EXTENSION STEM
FB = FLOOR BOX
FS = FLOOR STAND
GE = GEAR
HC = HYDRAULIC CYLINDER
HW = HANDWHEEL
LE = LEVER
LW = "L" WRENCH
ON = OPERATING NUT
PC = PNEUMATIC CYLINDER
PD = PNEUMATIC DIAPHRAGM
TW = "T" WRENCH
VB = VALVE BOX

PIPE END JOINT ID:

BE = BELL
CM = COMPRESSION
FL = FLANGED
GR = GROOVED
LU = LUG
MJ = MECHANICAL JOINT
NPT = NATIONAL PIPE THREAD
RJ = RESTRAINED JOINT
PE = PLAIN END
S = SOLDERED
SJ = SLIP JOINT (PUSH ON)
SW = SOLVENT WELDED
TH = THREADED
W = WELDED

PIPE MATERIAL ID:

BR = BRASS
BS = BLACK STEEL
BZ = BRONZE
CI = GRAY CAST IRON
CU = COPPER
CS = CAST IRON
CT = CARBON STEEL TUBING
DIP = DUCTILE IRON PIPE
DR = DIAMETER RATIO
FRP = FIBERGLASS REINFORCED PLASTIC
GS = GALVANIZED STEEL
HDPE = HIGH-DENSITY POLYETHYLENE PIPE
PVC = POLYVINYL CHLORIDE PIPE
SS = STAINLESS STEEL
STL = STEEL PIPE
SDR = STANDARD DIAMETER RATIO
SCH = SCHEDULE

GATE ABBREVIATIONS:

BG - BULKHEAD GATE
SG - SLIDE GATE
SP - STOP PLATE
SL - STOP LOG
ALUM - ALUMINUM
SS - STAINLESS STEEL
CI - CAST IRON
POLY - POLYMER
B/C - BOTTOM OF CHANNEL
T/C - TOP OF CHANNEL
A - HEIGHT
B - WIDTH

VALVE ID:

AC = AIR CHECK VALVE
AN = ANGLE VALVE
AR = AIR RELEASE VALVE
AV = AIR & VACUUM VALVE
BA = BALL VALVE
B'FLY = BUTTERFLY VALVE
BK = BACKPRESSURE VALVE
BP = BACKFLOW PREVENTER
CV = CHECK VALVE
CO = C0NE VALVE
GV = GATE VALVE
GL = GLOBE VALVE
KG = KNIFE GATE VALVE
KN = KNIFE VALVE
MV = MUD VALVE
PD = PLUG DRAIN VALVE
PF = PRESSURE RELIEF
PG = PRESSURE REGULATOR
PI = PINCH VALVE
PV = PLUG VALVE
PRV = PRESSURE REDUCING VALVE
PT = PRESSURE TEMPERATURE RELIEF
RF = RATE-OF-FLOW CONTROLLER
SV = SOLENOID VALVE
SU = SURGE VALVE
TE = TELESCOPING VALVE
TM = TEMPERATURE CONTROL VALVE

EQUIPMENT ID:

AC = AIR COMPRESSOR
AER = AERATOR
B = BLOWER
BFP = BELT FILTER PRESS
CLS = CLASSIFIER
C = COMMUNITOR
CMP = COMPACTOR
CFD = CHEMICAL FEEDER
CNV = CONVERYOR
CNT = CENTRIGUGE
CC = CALIBRATION CYLINDER
CFD = CHEMICAL FEEDER
CP = CONTROL PANEL
CR = CRANE
D = DECANTER
DR = DRIVE
DFL = DISC FILTER
F = FAN
FL = FILTER
FM = FLOW METER
GBT = GRAVITY BELT THICKENER
GR = GRINDER
GEN = GENERATOR
HB = HOSE BIB
M = MOTOR
MX = MIXER
P = PUMP
PS = PUMP STATION
SMP = SAMPLER
SCR = SCREEN

OTHER:

ADD'L = ADDITIONAL
AGG = AGGREGATE
ALUM. = ALUMINUM
BTWN = BETWEEN
C/L = CWNTERLINE
CLR = CLEAR
CONC = CONCRETE
CONT = CONTINUOUS
DWL = DOWEL(S)
EF = EACH FACE
EL. = ELEVATION
EMBED = EMBEDMENT
EW = EACH WAY
FF = FINISH FLOOR
FND = FOUNDATION
HORIZ = HORIZONTAL
HP = HIGH POINT
LP = LOW POINT
MAX = MAXIMUM
MFR = MANUFACTURER
MIN = MINIMUM
REF = REFERENCE
REINF = REINFORCING
STRC = STRUCTURE
T/ = TOP OF
TYP = TYPICAL
UNO = UNLESS NOTED OTHERWISE
VERT = VERTICAL

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STATE OF OHIO
GEORGIA CONWAY
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ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY ROAMING SHORES, OHIO
GENERAL - 00 SERIES
LEGENDS SYMBOLS & SHEET INDEX

PROJECT NO. 241188
DISCIPLINE: CIVIL
SHEET NAME: 00G-02
SHEET 2 OF 14

GENERAL:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE PLANS AND TECHNICAL SPECIFICATIONS, VISIT THE PROJECT SITE AND NOTIFY IN WRITING THE PROJECT ENGINEER OF ANY DISCREPANCIES IN THE PLANS OR SPECIFICATIONS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND SUBMIT ANY NECESSARY MODIFICATIONS TO THE ENGINEER FOR APPROVAL.
3. ANY REVISIONS TO THE ACCEPTED CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CURRENT SET OF "AS BUILT" DRAWINGS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT AND SHALL NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
6. NO WORK MAY COMMENCE WITHOUT AN EXECUTED NOTICE TO PROCEED.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH OSHA AND ENGINEER SAFETY REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL VISITORS, EMPLOYEES AND WORKERS ON THE CONSTRUCTION SITE.
8. ANY DAMAGE TO UTILITIES DURING THIS WORK BY THE CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR SHALL CONSTRUCT THIS PROJECT IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL BUILDING CODES.
10. ALL SEDIMENT AND EROSION CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
11. ANY DISTURBED AREAS NOT SCHEDULED FOR CONSTRUCTION ACTIVITIES WITHIN THIRTY DAYS OF DISTURBANCE SHALL BE TEMPORARILY STABILIZED AND SEEDED.
12. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM OR SURFACE WATERS. POLLUTANTS OF CONCERN INCLUDE, BUT ARE NOT LIMITED TO, FUELS, LUBRICANTS, SOLVENTS, CONCRETE AND CONSTRUCTION MATERIALS.
13. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SECURITY OF ALL STORED MATERIALS ON OWNER'S SITE.
14. THE CONTRACTOR SHALL COORDINATE WITH OWNER THE STORAGE OF STORED MATERIALS AND REMOVED EXISTING EQUIPMENT TO BE RETAINED.
15. ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
16. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN PEDESTRIAN, LOCAL ROADWAY AND DRIVEWAY ACCESS AT ALL TIMES. CLOSING OFF OF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD MAY NOT OCCUR WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER.
17. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE "UNIFORM MANUAL OF TRAFFIC CONTROL".
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL AS DIRECTED BY THE LOCAL MUNICIPALITY. ALL SIGNS AND MATERIAL USED SHALL CONFORM TO THE SPECIFICATIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
19. ACCESS TO ALL DRIVEWAYS WILL BE MAINTAINED AT ALL TIMES EXCEPT THE TIME WHEN UTILITY INSTALLATION AND PAVEMENT REPLACEMENT WILL NOT PERMIT.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING A SITE FOR DISPOSAL OF ALL EXCAVATED MATERIAL THAT IS UNSUITABLE FOR USE AS BACKFILL AND ALL OTHER EXCESS EXCAVATED MATERIALS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE LOCATION OF THE DISPOSAL SITE AND WRITTEN PERMISSION FOR USE OF THE SITE FROM THE PROPERTY OWNER.
21. THE CONTRACTOR MUST COORDINATE HIS WORK WITH THE UTILITIES DIRECTOR. THE CONTRACTOR MUST MAINTAIN ADEQUATE ACCESS FOR ALL MAINTENANCE VEHICLES AS WELL AS LOCAL RESIDENTS THAT UTILIZE THE SURROUNDING WALKWAYS. THE SITE AT WHICH THE WORK IS TO BE PERFORMED WILL BE MAINTAINED DURING THE PERFORMANCE OF THIS CONTRACT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BE AWARE OF AND AVOID INTERFERENCE TO FACILITY OPERATION.
22. THE CONTRACTOR SHALL FURNISH ALL TEMPORARY FACILITIES AS REQUIRED TO MAINTAIN SANITARY FLOWS DURING THE COURSE OF THE WORK.
23. THE INFORMATION PROVIDED WITHIN THESE PLANS IS SPECIFIC TO THE ANTICIPATED WORK AREAS AND IS NOT INCLUSIVE OF ALL TOPOGRAPHIC AND UTILITY FEATURES OUTSIDE OF THE AREA.
24. CONTRACTOR SHALL CLEAR ALL DEBRIS, DIRT, VEHICLES, AND EQUIPMENT FROM WALKWAY AND TRAFFIC ROUTES AT THE CONCLUSION OF WORK EACH DAY.
25. OSHA PROHIBITS CRANE AND BACKHOE OPERATIONS WITHIN 10 FEET OF ENERGIZED PRIMARY CONDUCTORS. TEMPORARY RELOCATION OF ELECTRICAL UTILITIES, INCLUDING RESTRAINT OF POLES, RELOCATION OF POLES, AND RUBBER COVERING OF ENERGIZED CONDUCTOS MAY BE REQUIRED. THE COORDINATION AND COST OF THESE SERVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY RESTRAIN POLES IF THE METHOD OF SUPPORT HAS BEEN SUBMITTED AND APPROVED BY THE UTILITY COMPANY.
26. ALL EXCESS EXCAVATION SHALL BE DISPOSED OF IN A LOCATION TO BE SELECTED BY THE CONTRACTOR. ALL DUMP SITES FOR THE DISPOSAL OF EXCESS MATERIAL SHALL HAVE WRITTEN PERMISSION FROM THE OWNER AND SHALL BE APPROVED IN ADVANCE BY THE VILLAGE ENGINEER. THE CONTRACTOR(S) SHALL PROVIDE TO THE ENGINEER AND OEPA-DEFA THE LOCATION(S) FOR EXCESS SOIL PLACEMENT PRIOR TO DISPOSAL. THE CONTRACTOR(S) SHALL ENSURE THAT THE SOIL IS NOT PLACED IN ANY WATER BODY, FLOODPLAIN, WETLAND, DRAINAGE COURSE OR ENVIRONMENTALLY SENSITIVE AREA EVEN WITH THE PERMISSION OF THE PROPERTY OWNER. THE CONTRACTOR MUST OBTAIN A PERMIT FROM THE OWNER IF THE MATERIAL IS TO BE DISPOSED OF WITHIN THE VILLAGE LIMITS.
27. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY, WHEN ORDERED BY THE ENGINEER, WATER OR CALCIUM CHLORIDE FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE ORIGINATING FROM CONSTRUCTION ACTIVITIES. CALCIUM CHLORIDE SHALL NOT BE UTILIZED ON OR BE ALLOWED TO TRACK ONTO PAVED SURFACES. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL. THE COST OF DUST CONTROL SHALL BE INCLUDED IN THE BID PRICES FOR ALL ITEMS OF THE PROPOSAL.

PROTECTION AGAINST VANDALISM:

1. THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ULTIMATE DISPOSAL. THE DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE AT AN APPROVED LANDFILL. THE DISPOSAL OF ALL "CLEAN" WASTE MATERIAL SHALL BE AT AN APPROVED LANDFILL. THE DISPOSAL OF ALL "CLEAN" WASTE MATERIAL SHALL BE AT APPROVED LANDFILLS AND/OR SITES APPROVED BY THE OWNER AND ENGINEER. THE DISPOSAL OF SEDIMENTS AND WASTEWATER SLUDGE SHALL BE AT AN APPROVED LANDFILL. THE CONTRACTOR SHALL OBTAIN ALL APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE, AND FEDERAL AGENCIES AND/OR PRIVATE LANDOWNERS. THE CONTRACTOR SHALL FURNISH THE ENGINEER A COPY OF ALL APPROVALS OR WRITTEN PERMISSION PRIOR TO DISPOSING OF ANY WASTE AT SAID SITE.

NOISE CONTROL PRACTICES:

1. CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS AS REQUIRED BY SAFETY STANDARDS AND LOCAL NOISE ORDINANCE.
2. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYTIME HOURS UNLESS OTHERWISE DIRECTED BY THE OWNER.

SUBSURFACE CONDITIONS:

1. THE GEOTECHNICAL REPORT FOR PROPOSED EQ BASIN IS AVAILABLE FOR REVIEW AT CTCONSULTANTS.COM UNDER BIDDING.
2. THE OWNER AND ENGINEER DO NOT GUARANTEE THE SUITABILITY OR SUGGEST THAT THE EXISTING EXCAVATED MATERIAL IN ITS PRESENT STATE WILL CONSIST OF THE PROPER MOISTURE CONTENT TO ACHIEVE THE REQUIRED COMPACTION WITHOUT DRYING OR ADDING WATER TO THE MATERIAL. UPON REQUEST THE OWNER WILL PROVIDE ACCESS TO THE SITE FOR THE CONTRACTOR TO CONDUCT SUCH INVESTIGATIONS AND TESTS DEEMED NECESSARY TO MAKE HIS/HER DETERMINATION.

PRESERVATION OF PROPERTY CORNERS AND SURVEY MARKERS:

1. THE CONTRACTOR WILL CAREFULLY PRESERVE BENCH MARKS, PROPERTY CORNERS, REFERENCE POINTS, AND STAKES AND IN CASE OF DISTURBANCE, HE SHALL ENGAGE A REGISTERED SURVEYOR TO REPLACE THEM AT HIS EXPENSE AND SHALL BE RESPONSIBLE FOR ANY MISTAKES THAT MAY BE CAUSED BY THEIR LOSS OR DISTURBANCE.

STATIONING AND LOCATIONS:

1. ALL LOCATIONS AND ITEMS CALLED OUT BY STATION ARE SUBJECT TO ADJUSTMENT IN THE FIELD AS APPROVED BY THE ENGINEER.

PROTECTION AGAINST VANDALISM:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SUFFICIENT SITE SECURITY MEASURES AND / OR PERSONNEL TO PROTECT ALL NEW CONCRETE WORK FROM VANDALISM UNTIL THE CONCRETE IS SUFFICIENTLY CURED AT NO ADDITIONAL COST.

RESTORATION:

1. THE CONTRACTOR SHALL CLEAN UP ALL DEBRIS AND MATERIALS RESULTING FROM HIS/HER OPERATION AND RESTORE ALL SURFACES, STRUCTURES, DITCHES AND PROPERTY TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE ENGINEER. RESTORATION SHALL INCLUDE SEEDING AND MULCHING DISTURBED AREAS, RESTORATION OF EXISTING DRIVES, AND FINAL CLEAN UP.
2. ALL EXISTING STORM AND SANITARY SEWER FACILITIES, INCLUDING TILE, DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR RECONNECTED TO THE EXISTING OR PROPOSED SYSTEM AS DIRECTED BY THE ENGINEER AT NO COST TO THE OWNER.

EXISTING UTILITIES:

1. EXISTING UTILITIES SHOWN ARE FROM BEST AVAILABLE RECORDS AND FIELD INVESTIGATIONS AND ARE NOT NECESSARILY COMPLETE OR EXACT. THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE BY PRE-EXCAVATING ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED AND EXISTING UTILITIES. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH THE UTILITY OWNER.
2. WHERE EXISTING POWER OR TELEPHONE POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME WORK IS GOING ON ADJACENT TO THE POLE. THE COST FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NOT THAT OF THE VILLAGE.
3. THE CONTRACTOR SHALL BE REQUIRED, AT HIS EXPENSE, TO DO EVERYTHING NECESSARY TO PROTECT, SUPPORT AND SUSTAIN ALL SANITARY SEWERS, STORM DRAINS, WATER, PROCESS OR GAS PIPES, SERVICE PIPES, ELECTRIC LIGHTS, POWER AND TELEPHONE POLES, CONDUIT AND OTHER FIXTURES LAID ACROSS OR ALONG THE SITE OF THE WORK. THE ENGINEER AS WELL AS THE COMPANY OR CORPORATION OWNING SAID PIPES, POLES OR CONDUITS MUST BE NOTIFIED OF THE SAME BY THE CONTRACTOR, BEFORE ANY SUCH FIXTURES ARE REMOVED OR DISTURBED. IN CASE ANY OF THE SAID SEWER, DRAIN, GAS, PROCESS OR WATER PIPES, SERVICE PIPES, ELECTRIC LIGHT, POWER AND TELEPHONE POLES, CONDUITS OR OTHER FIXTURES ARE DAMAGED THEY SHALL BE REPAIRED BY THE AUTHORITIES HAVING CONTROL OF THE SAME AND THE EXPENSE OF SAID REPAIRS SHALL BE DEDUCTED FROM THE MONIES WHICH ARE DUE OR TO BECOME DUE THE CONTRACTOR UNDER THIS CONTRACT.
4. EXISTING UTILITY (GAS, ELECTRICAL, CABLE TELEVISION, TELEPHONE, WATER LINE, STORM OR SANITARY SEWER, WATER LINE OR STORM OR SANITARY SEWER APPURTENANCE, ETC.) IN OR OUTSIDE THE CONSTRUCTION LIMITS DAMAGED DURING THE CONSTRUCTION OF THE PROPOSED PROJECT, WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE. INDIVIDUAL SANITARY, STORM, GAS, WATER, ELECTRIC AND TELEPHONE AND CABLE SERVICE CONNECTIONS ARE NOT SHOWN. THE CONTRACTOR SHALL LOCATE AND PROTECT SERVICE CONNECTIONS THROUGHOUT THE COURSE OF THE WORK. IN THE EVENT SERVICE CONNECTIONS ARE BROKEN OR DISTURBED, THE CONTRACTOR SHALL REPAIR OR REPLACE THE SERVICE CONNECTION TO THE SATISFACTION OF THE OWNER AT NO ADDITION COST TO THE OWNER
5. SHOULD IT BECOME NECESSARY TO CHANGE THE POSITION OR TEMPORARILY REMOVE ANY STORM DRAIN, SANITARY SEWER, ELECTRIC CONDUITS, WATER PIPES, GAS PIPES, PROCESS OR OTHER PIPES OR WIRES IN ORDER TO PERMIT THE CONTRACTOR TO USE A PARTICULAR METHOD OF CONSTRUCTION OR IN ORDER TO CLEAR THE STRUCTURES BEING BUILT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE LOCATION AND CIRCUMSTANCES IMMEDIATELY
6. NO SURFACE, GROUND OR TRENCH WATER SHALL BE ALLOWED TO FLOW INTO EXISTING SANITARY SEWERS.

STATE OF OHIO
GEORGIA CONWAY
E-85401
REGISTERED PROFESSIONAL ENGINEER

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engineers architects planners

NO	REVISION	DATE

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ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY ROAMING SHORES, OHIO
GENERAL - 00 SERIES
GENERAL NOTES 1

PROJECT NO.	241188
DISCIPLINE	CIVIL
SHEET NAME	00G-03
SHEET	3
OF	14

1. PROHIBITED CONSTRUCTION ACTIVITIES

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, 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 ANY 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 WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE;
5. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS, OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO;
6. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM;
7. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA;
8. DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS;
9. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT;
10. DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, RILLING, 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;
11. 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;
12. 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;
13. OPERATIONS ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OR 8:00 AM AND 5:00 P.M. OR OUTSIDE THE HOURS ALLOWED FOR CONSTRUCTION BY LOCAL ORDINANCES OR REGULATIONS; AND
14. 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; OR

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

15. SOIL AND FILL SHALL NOT BE STOCKPILED IN THE FLOODPLAIN.

2. MITIGATIVE MEASURES

EROSION/SEDIMENT CONTROL

1. SITE CLEARING AND GRUBBING SHALL NOT COMMENCE UNTIL SUCH TIME THAT THE CONTRACTOR IS PREPARED TO START CONSTRUCTION. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED FOR CONSTRUCTION OF ACTUAL FACILITIES; PROTECT THE REST TO PRESERVE THEIR AESTHETIC, HABITAT, AND EROSION CONTROL VALUES.
2. IMMEDIATELY FOLLOWING SITE AND ACCESS CLEARING, TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED. THEY WILL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION DURING CONSTRUCTION UNTIL FINAL SEEDING AND SITE RESTORATION OCCURS.
3. AT THE WWTP CONSTRUCTION SITE, INSTALL SEDIMENT BASINS AND DIVERSION DIKES BEFORE DISTURBING THE LAND THAT DRAINS INTO THEM.
4. DIVERSION CHANNELS WILL BE CONSTRUCTED AROUND THE WWTP CONSTRUCTION SITE TO COLLECT RUNOFF AND PREVENT SILT AND OTHER ERODIBLE MATERIALS FROM ENTERING LOCAL DRAINAGE COURSES. DIVERSION CHANNELS WILL FLOW TO TEMPORARY SEDIMENT BASINS, AND ARE TO BE STABILIZED THROUGH SEEDING, RIP-RAPPING, OR LINING THEM WITH PLASTIC.
5. EXISTING TOPSOIL WILL BE STOCKPILED AND REPLACED UPON FINAL GRADING OF THE WWTP CONSTRUCTION SITE.
6. EXTENSIVE AREAS OF STOCKPILED TOPSOIL AT THE WWTP CONSTRUCTION SITE ARE TO BE PROTECTED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING OR COVERING SUCH AS WITH ANCHORED STRAW MULCH. SILT BARRIERS WILL BE INSTALLED DOWN GRADIENT OF THESE AREAS ON CONTOUR AND WITH THEIR ENDS UP SLOPE OF THE CONTOUR TO PREVENT SILT LADEN RUNOFF FROM ENTERING WATERWAYS OR STORM SEWERS. WITHIN 15 DAYS OF COMPLETION OF CONSTRUCTION, ANY REMAINING SOIL MUST EITHER BE REMOVED OR PERMANENTLY STABILIZED.
7. SILT FENCES SHOULD BE TRENCHED SIX TO TWELVE INCHES DEEP, THE FABRIC LAID IN THE TRENCH, AND THE SOIL PROPERLY BACKFILLED INTO THE TRENCH TO PREVENT UNDERCUTTING.
8. WHERE TRENCH EXCAVATION OCCURS PARALLEL TO ANY WATERWAY, A VEGETATED BARRIER SHOULD BE MAINTAINED BETWEEN THE STREAM AND THE CONSTRUCTION SITE. ALL TRENCH SPOILS WILL BE STOCKPILED ON THE SIDE OF THE TRENCH AWAY FROM THE WATERWAY, AND A LINE OF SILT BARRIERS WILL BE ESTABLISHED ALONG THE EDGE OF CONSTRUCTION ON THE CONTOUR BETWEEN THE TRENCH AND THE WATERWAY.
9. NO MORE THAN 200 FEET OF TRENCH SHALL BE OPEN AT ANY GIVEN TIME. TRENCH OPENING AND LAYING OF PIPE SHOULD OCCUR SO AS TO MINIMIZE THE AMOUNT OF DISTURBED AREA. ALL TRENCHES ARE TO BE BACKFILLED AND COMPACTED IMMEDIATELY AFTER PIPE INSTALLATION. IMMEDIATELY FOLLOWING THE BACKFILLING OF THE TRENCH, THE GROUND SURFACE WILL BE ROUGH GRADED TO THE EXISTING CONTOURS TO ALLOW FOR PROPER DRAINAGE, AND WILL BE SEEDED AND/OR MULCHED IN STAGES TO PREVENT EROSION.
10. ANY DISTURBED AREA THAT WILL NOT BE ACTIVELY UNDER CONSTRUCTION FOR A PERIOD OF 15 DAYS OR MORE WILL BE TEMPORARILY STABILIZED IMMEDIATELY BY SEEDING AND MULCHING OR BY ANCHORED STRAW MULCH.
11. AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH DISTURBED AREA IN STAGES WITH PERENNIAL VEGETATION INSTALLED ACCORDING TO OHIO EPA (OR EQUIVALENT) STANDARDS AND SPECIFICATIONS. AFTER FINAL SOIL SETTLING OVER THE SANITARY SEWER, OUTFALL SEWER, AND FORCE MAIN ALIGNMENTS, THE CONTRACTOR SHALL BRING THE TRENCH BACK TO GRADE IF NECESSARY, PLACE TOPSOIL, AND FINE GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THAT SECTION OF PIPE. FINAL GRADING WILL BE CONSISTENT WITH PRE-CONSTRUCTION TOPOGRAPHY FOR DRAINAGE AND AESTHETIC REASONS.
12. BORING PITS (FOR JACK AND BORE LOCATIONS) SHALL BE SURROUNDED WITH SILT BARRIERS TO PREVENT EROSION OF THE EXCAVATED PIT MATERIAL. STORM SEWER INLETS WILL BE SURROUNDED WITH SILT BARRIERS TO PREVENT SILTATION.
13. SLOPES EXCEEDING 15 PERCENT OR THAT TEND TO BE UNSTABLE REQUIRE SPECIAL TREATMENT SUCH AS WATER DIVERSION BERMS, SODDING, OR THE USE OF JUTE OR EXCELSIOR BLANKETS.
14. WHEN BORROW MATERIAL IS OBTAINED FROM OTHER THAN COMMERCIALLY OPERATED SOURCES, EROSION OF THE BORROW SITE WILL BE SO CONTROLLED BOTH DURING AND AFTER COMPLETION OF THE WORK THAT EROSION WILL BE MINIMIZED AND SEDIMENT WILL NOT ENTER STREAMS OR OTHER BODIES OF WATER. WASTE OR DISPOSAL AREAS AND CONSTRUCTION ROADS SHALL BE LOCATED AND CONSTRUCTED IN A MANNER THAT WILL KEEP SEDIMENT FROM ENTERING STREAMS. TEMPORARY EROSION CONTROL BARRIERS AND LIMITED SITE CLEARING WILL BE USED AS NEEDED.
15. IF WORK IS SUSPENDED FOR ANY REASON, THE CONTRACTOR SHALL MAINTAIN THE SOIL EROSION AND SEDIMENTATION CONTROLS IN GOOD OPERATING CONDITION DURING THE SUSPENSION OF THE WORK. ALSO, WHEN SEASONAL CONDITIONS PERMIT AND THE SUSPENSION OF WORK IS EXPECTED TO EXCEED A PERIOD OF ONE MONTH, THE CONTRACTOR SHALL SEED, FERTILIZE, AND MULCH ALL DISTURBED AREAS LEFT EXPOSED WHEN THE WORK IS STOPPED.
16. INSTALL THE ABOVE EROSION AND SEDIMENT CONTROL MEASURES, AS APPROPRIATE, REFERRING TO OHIO EPA, STORM WATER TECHNICAL ASSISTANCE, RAINWATER AND LAND DEVELOPMENT MANUAL STANDARDS AND SPECIFICATIONS (FORMERLY ODNR) OR EQUIVALENT FOR PARTICULAR TECHNIQUES. THESE MEASURES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
    LINK:
    HTTP://EPA.OHIO.GOV/PORTALS/35/STORM/TECHNICALASSISTANCE/RLD11-6-14All.pdf

2. MITIGATIVE MEASURES - CONTINUED

TRAFFIC CONTROL

17. AT LEAST ONE LANE OF TRAFFIC MUST BE MAINTAINED ALONG THE TRAVEL ROUTE TO THE CONSTRUCTION SITE.
18. ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
19. 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.
20. ANY CONSTRUCTION EQUIPMENT OR EXCAVATIONS NEAR ROADS MUST BE MARKED WITH LIGHTS, REFLECTORS, OIL LANTERNS, OR SMUDGE POTS.
21. 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.
22. 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.

AIR POLLUTION / NOISE CONTROL

23. CONSTRUCTION ACTIVITIES WILL BE LIMITED TO DAYTIME HOURS.
24. CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS, AS REQUIRED BY SAFETY STANDARDS.
25. ALL CONSTRUCTION VEHICLES SHOULD BE EQUIPPED WITH PROPER EMISSIONS CONTROL EQUIPMENT.
26. PERIODICALLY CHECK EQUIPMENT AND MACHINERY FOR PROPER TUNING TO MINIMIZE EXHAUST EMISSIONS AND NOISE.
27. UNPAVED AREAS WILL BE WET DOWN (AS NECESSARY) DURING CONSTRUCTION TO MINIMIZE DUST GENERATION.

DEWATERING

28. ALL DEWATERING FLOWS ARE TO BE SETTLED IN SILTATION BASINS 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.
29. 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.
30. CONVEY WATER FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

ARCHAEOLOGICAL / HISTORICAL RESOURCES

31. 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: STATE HISTORIC PRESERVATION OFFICE
    PHONE: 1-614-298-2000

STATE OF OHIO
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ASHTABULA COUNTY

ROAMING SHORES WWTP HEADWORKS DESIGN

ASHTABULA COUNTY ROAMING SHORES, OHIO

GENERAL - 00 SERIES

GENERAL NOTES 2

PROJECT NO.
241188

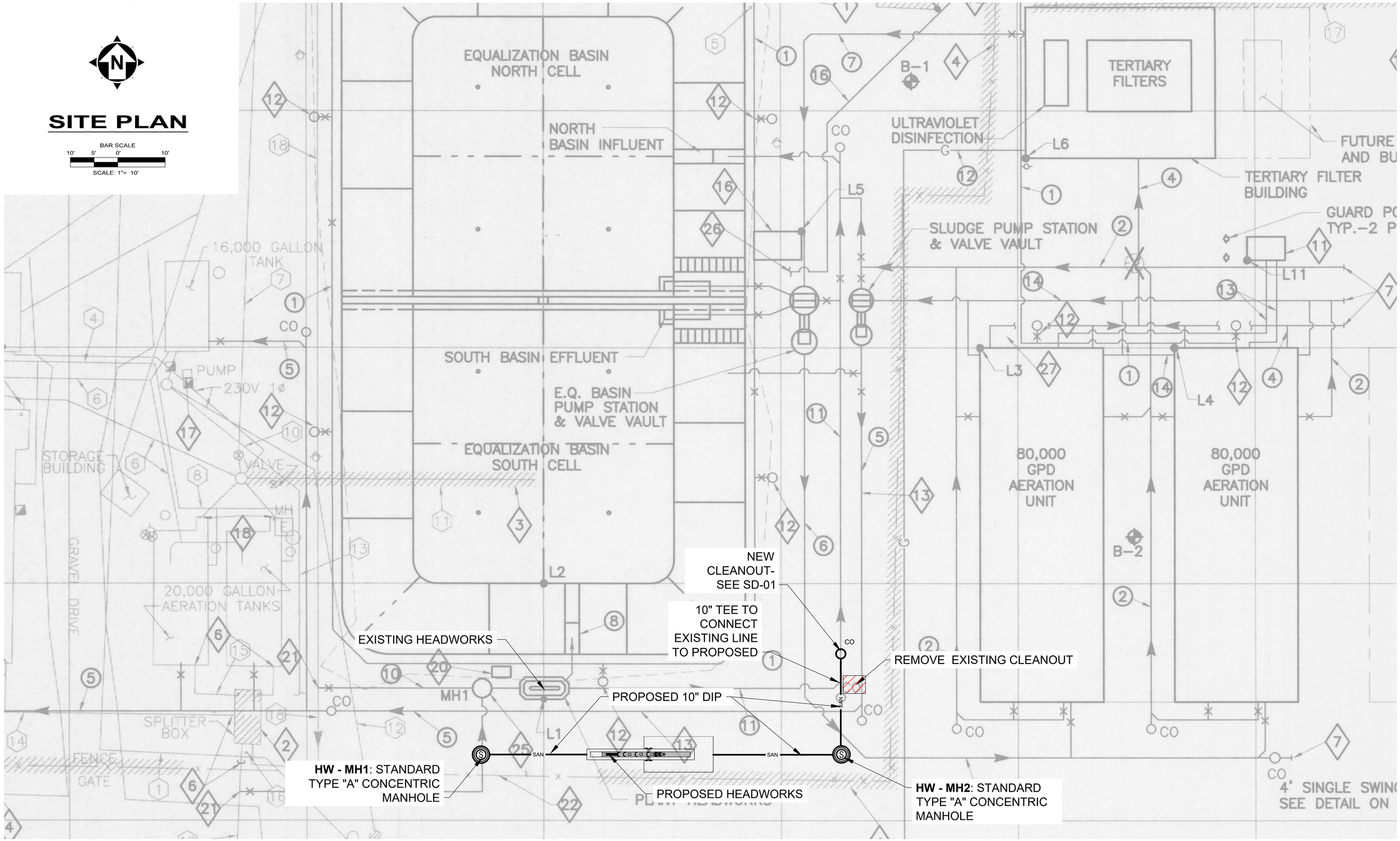
DISCIPLINE
CIVIL

SHEET NAME
00G-04

SHEET 4 OF 14

SITE PLAN

BAR SCALE
10' 5' 0' 10'
SCALE: 1"= 10'



MANHOLE SCHEDULE

MANHOLE ID	LOCATION/DESCRIPTION	MANHOLE RIM EL.	PIPE INVERT EL. IN	PIPE INVERT EL. OUT
HW – MH 1	NEW HEADWORKS INFLUENT	854.25	852.00	852.00
HW – MH 2	NEW HEADWORKS EFFLUENT	854.25	851.80	851.80

STATE OF OHIO
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SITE PLAN

PROJECT NO.	
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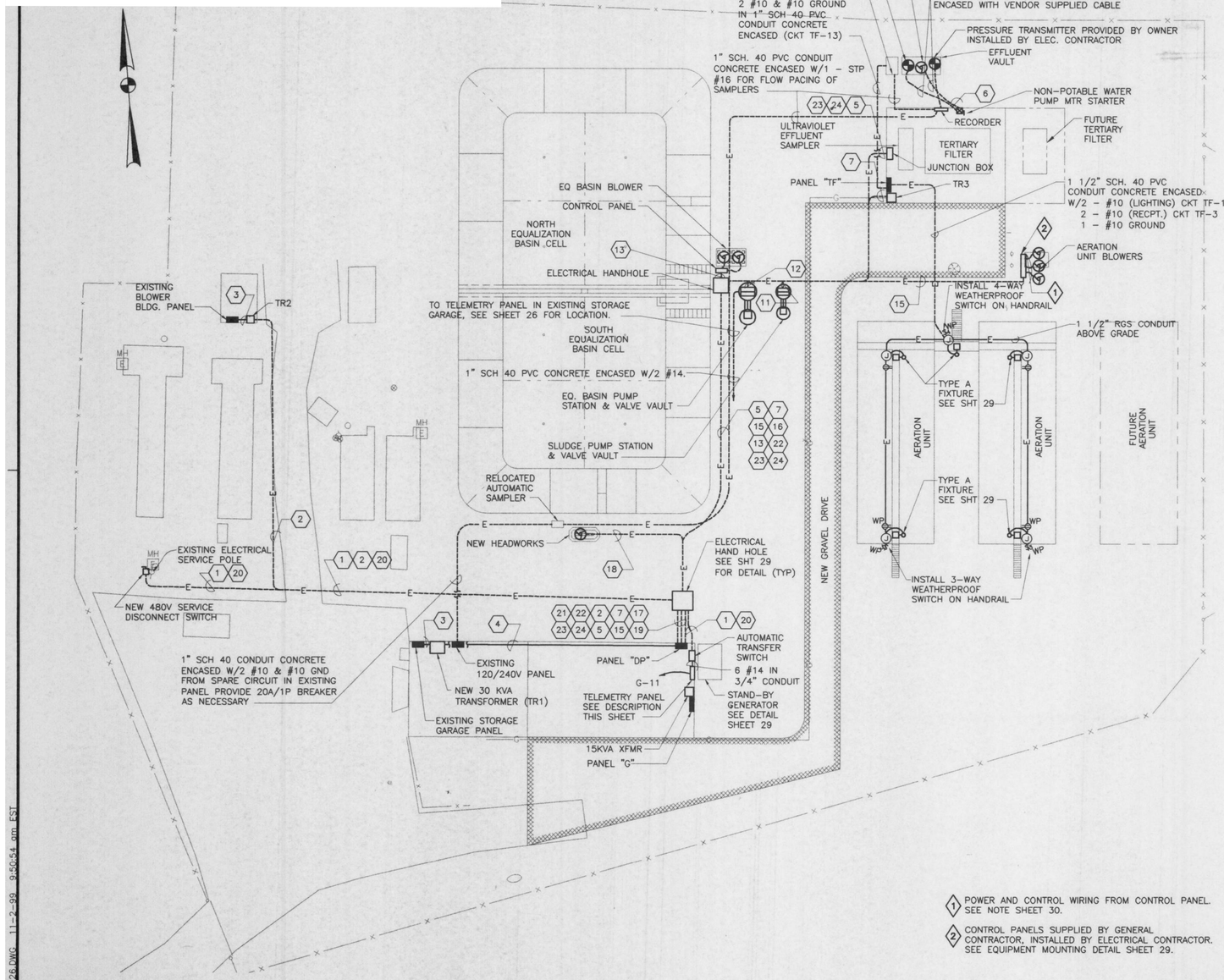
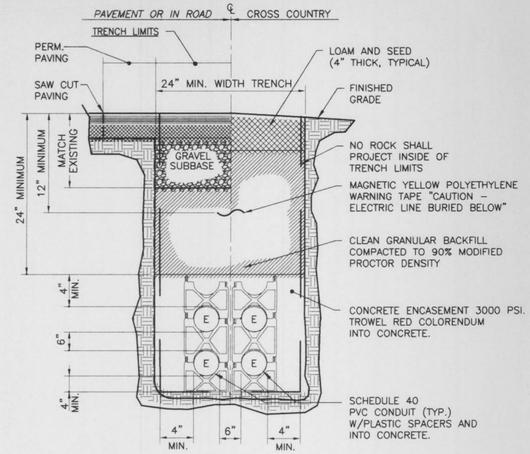
SHEET NAME	
00G-05	
SHEET	OF
5	14

ELECTRICAL SITE PLAN

BAR SCALE
20' 10' 0' 20'
SCALE: 1"= 20'





TYPICAL TRENCH SECTION

SCALE: NONE

TELEMETRY SYSTEM

DESCRIPTION OF WORK:

A. THE ELECTRICAL CONTRACTOR SHALL ACQUIRE THE SERVICES OF AMERICAN ALERT CORP, 4640 NORTH RIDGE EAST, GENEVA, OHIO 44041, (440) 466-7233 TO SUPPLY, INSTALL, LOOP TEST, PLACE IN SUCCESSFUL OPERATION, AND FURNISH ALL FIELD SERVICES THROUGHOUT THE WARRANTY PERIOD FOR THE TELEMETRY SYSTEM. THE SYSTEM SHALL BE COMPRISED OF RADIO COMMUNICATIONS EQUIPMENT SIMILAR AND COMPATIBLE WITH THE SYSTEM PRESENTLY BEING USED BY THE VILLAGE OF ROAMING SHORES.

B. RADIOS, ACCESSORIES AND START-UP SERVICES AS SPECIFIED HEREIN HAVE BEEN GUARANTEED AT A PRICE OF $975.00. THIS PRICE SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE PROJECT. INCLUDED IN THIS PRICE IS ALL NECESSARY EQUIPMENT AND THE LABOR COSTS ASSOCIATED WITH INSTALLING AND TESTING OF THE TELEMETRY EQUIPMENT TO PERFORM AS SPECIFIED.

C. THE FOLLOWING ALARM STATUS SHALL BE TRANSMITTED FROM THE WASTEWATER TREATMENT PLANT:
1. EQUALIZATION BASIN PUMP STATION HIGH LEVEL ALARM
2. NORMAL POWER FAILURE
3. GRINDER STATION FAILURE
4. GENERATOR RUN
5. GENERATOR FAILURE
6. PROVISION FOR 3 ADDITIONAL ALARM POINTS (MIN.)

THE ELECTRICAL CONTRACTOR SHALL SUPPLY CONNECTION POINTS FOR THESE SIGNALS ON A CLEARLY MARKED TERMINAL STRIP WITHIN THE TELEMETRY ENCLOSURE.

CONTACT CLOSURES UPON ALARM CONDITION ARE PREFERABLE, BUT OTHERS CAN BE ACCEPTED WITH AMERICAN ALERT'S PRIOR APPROVAL. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO ENSURE THESE CONNECTIONS ARE FREE OF ALL TRANSIENT VOLTAGES AND FLUCTUATIONS.

D. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A HINGED DOOR ENCLOSURE TO HOUSE THE TELEMETRY EQUIPMENT. THE ENCLOSURE SHALL BE NEMA 12 RATED AND SHALL BE NO SMALLER THAN 24" HIGH BY 18" WIDE BY 8" DEEP. THE ENCLOSURE SHALL BE CONSTRUCTED OF NOT LESS THAN 14 GAUGE COLD ROLLED STEEL AND SHALL BE LOCKABLE BY A PADLOCK OR OTHER MEANS.

THE CABINET SHALL HAVE AN INTERNAL REMOVABLE METAL CHASSIS PLATE FOR THE ATTACHING OF THE TELEMETRY EQUIPMENT.

THE ENCLOSURE SHALL BE PROVIDED WITH AN ELECTRICAL RESISTANCE HEATER TO PROTECT THE EQUIPMENT FROM FREEZING TEMPERATURES. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE HEATER WHICH SHALL MAINTAIN TEMPERATURES IN THE RANGE OF 40 TO 80 DEGREES F.

E. POWER REQUIREMENTS
THE ELECTRIC CONTRACTOR SHALL SUPPLY INCOMING 120 VAC SINGLE PHASE POWER FOR THE TELEMETRY EQUIPMENT. A SEPARATE CIRCUIT SHOULD BE SUPPLIED FOR THE TELEMETRY EQUIPMENT WITH AN APPROPRIATE SIZED CIRCUIT BREAKER. (MAXIMUM POWER REQUIREMENTS OF PROVIDED TELEMETRY EQUIPMENT 2 AMPS).

A DUPLEX RECEPTACLE SHALL BE MOUNTED WITHIN THE TELEMETRY ENCLOSURE PROVIDING POWER FOR THE SUPPLIED TELEMETRY EQUIPMENT.

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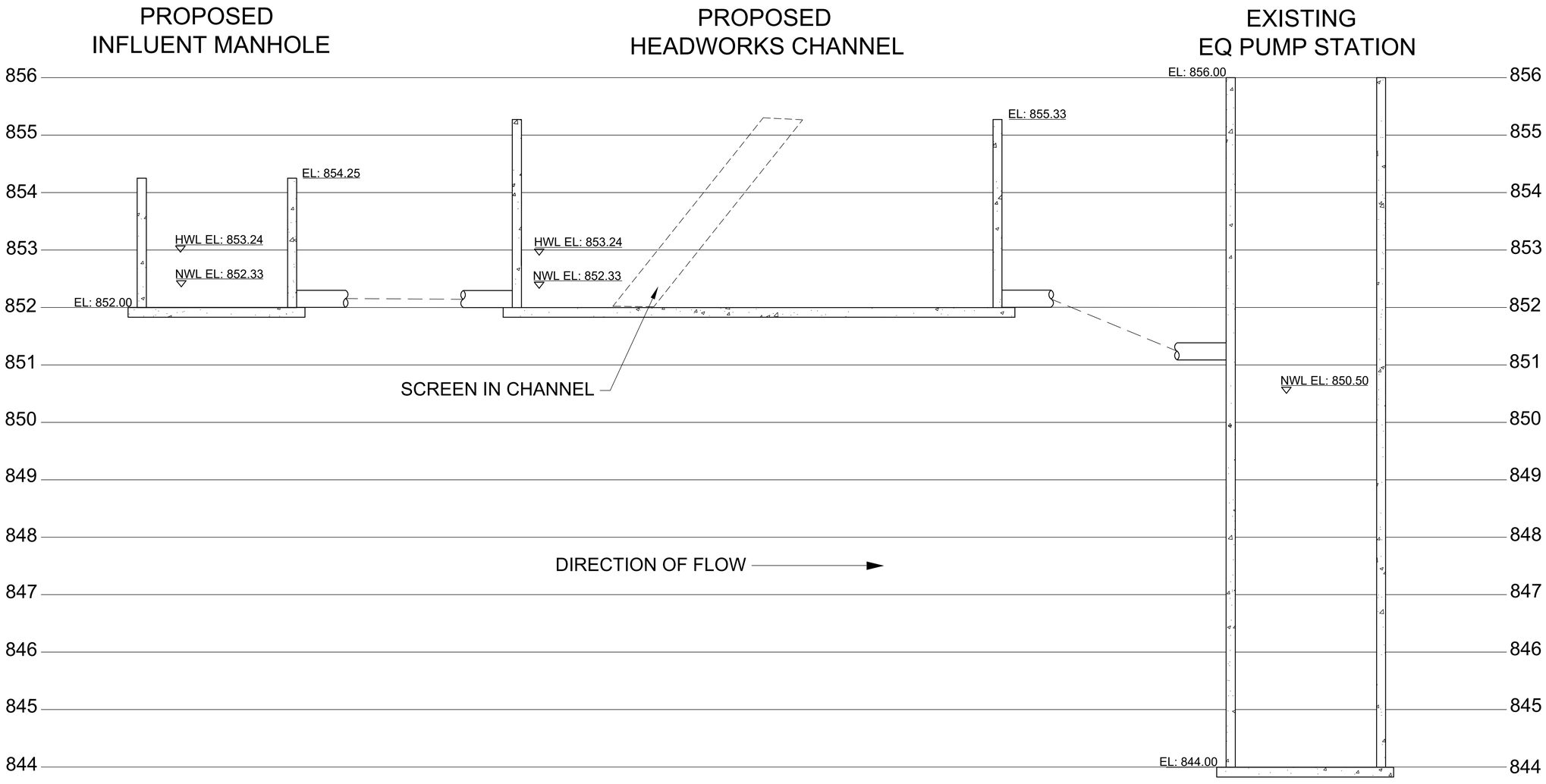
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY ROAMING SHORES, OHIO
GENERAL - 00 SERIES
ELECTRICAL SITE PLAN

PROJECT NO.
241188
DISCIPLINE
CIVIL
SHEET NAME
00G-06
SHEET 6 OF 14

H:\2024\241188\DWG\SHEETS\G_241188_ELECTRICAL_PLAN.DWG - ELECTRICAL PLAN - 4/30/2024 3:41:21 PM - JARED BORDNER BOSLEY



NOTE:

1. NORMAL WATER (NWL) BASE ON AVERAGE PLANT FLOW OF 0.16 MGD
2. HIGH WATER LEVEL (HWL) BASED ON MAX FLOW OF 0.59 MGD

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GENERAL - 00 SERIES

HYDRAULIC PROFILE

PROJECT NO.
241188

DISCIPLINE
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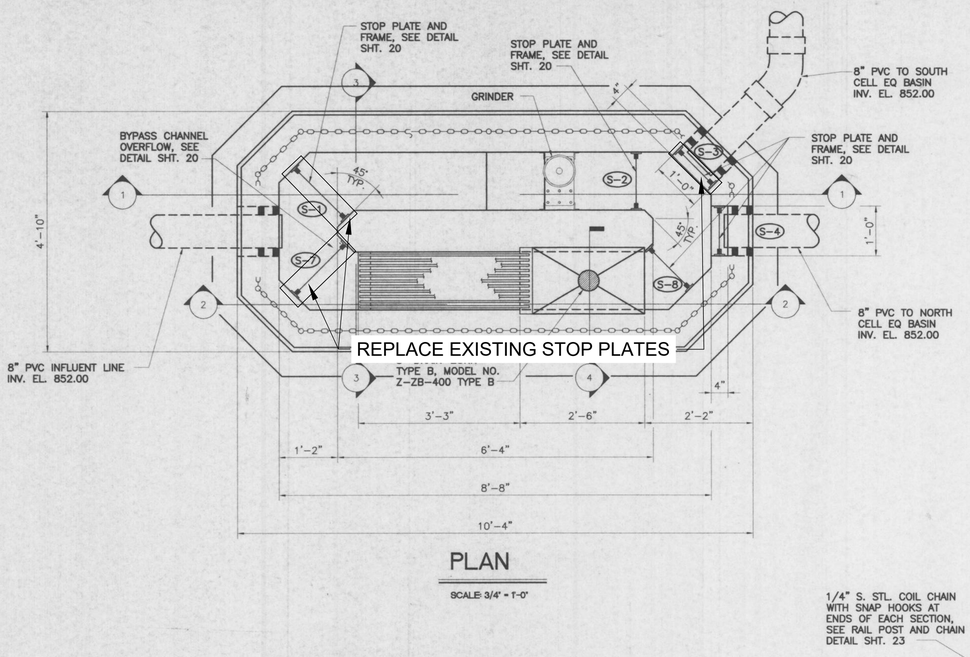
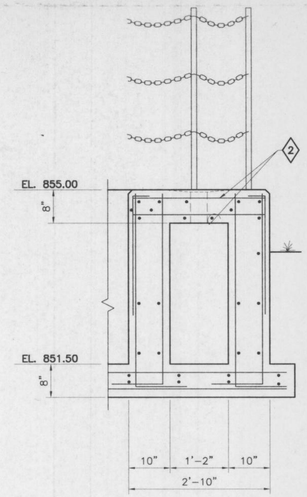
SHEET NAME
00G-07

SHEET 7 OF 14



PLAN

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



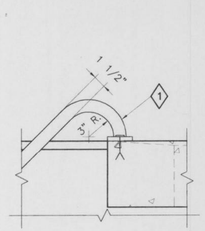
4 SECTION

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

1. CONTRACTOR SHALL INSTALL BAR RACK, 1/2" x 1-1/2" A36 CARBON STEEL BARS WITH 1-1/4" DISTANCE CENTER TO CENTER. BAR RACK SHALL BE WELDED TO A 3" WIDE x 1/2" THICK STEEL PLATE WITH 1/2" DIAMETER S.S. EXPANSION ANCHOR BOLTS, 3 REQUIRED AT THE TOP AND BOTTOM. INSTALLATION.

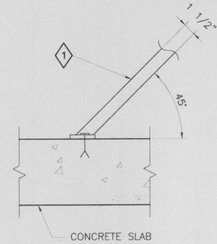
2. ALL CONCRETE REINFORCEMENT SHALL BE #5 BARS AT 12" O.C. (EACH WAY-EACH FACE)

3. CONTRACTOR SHALL EXCAVATE TO THE LIMITS REQUIRED FOR CONSTRUCTION OF THE STRUCTURE OR AS SHOWN ON THE PLANS, THEN PROOF-ROLL FOR BEARING CAPACITY (MINIMUM 2,500 PSF) AND TEST FOR SWELL POTENTIAL AND STABILITY OF THE SOIL. THE CONTRACTOR SHALL EMPLOY A SOIL TESTING FACILITY TO DETERMINE THE SWELL POTENTIAL AND SOIL BEARING CAPACITY FOR EACH EXCAVATION. IF THE SOIL AT THE EXCAVATION LIMIT DOES NOT HAVE THE REQUIRED BEARING CAPACITY OR EXCEEDS THE MAXIMUM SWELL POTENTIAL LIMITS, THE CONTRACTOR SHALL UNDERCUT THE EXCAVATION AT THE DIRECTION OF THE ENGINEER AND INSTALL COMPACTED FOUNDATION TO ACHIEVE THE REQUIRED BEARING CAPACITY. PAYMENT FOR ADDITIONAL EXCAVATION AND FOR FURNISHING AND INSTALLING ADDITIONAL COMPACTED FOUNDATION MATERIAL WILL BE PAID UNDER ITEM NO. 2 IN THE BID SCHEDULE.



DETAIL 1

SCALE: NO SCALE

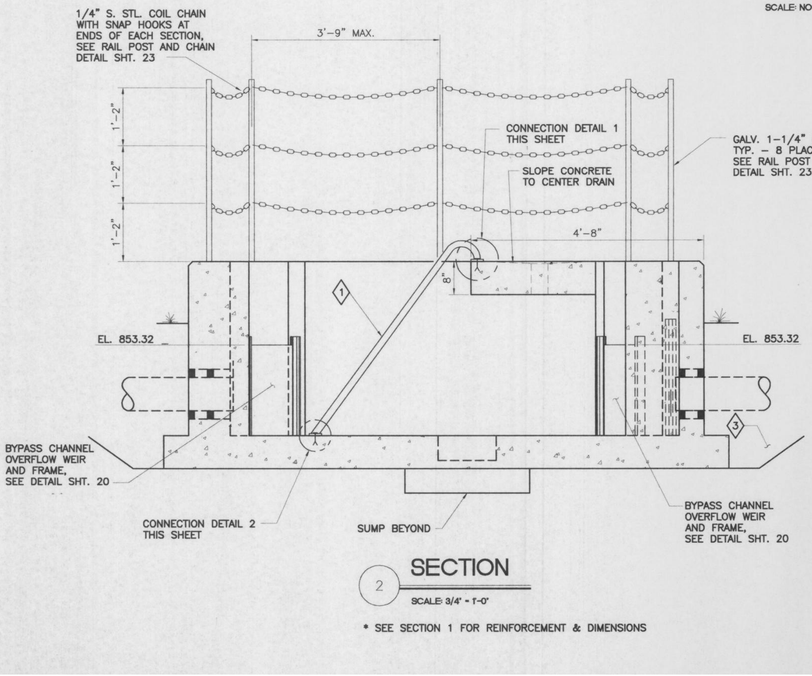


DETAIL 2

SCALE: NO SCALE

1 SECTION

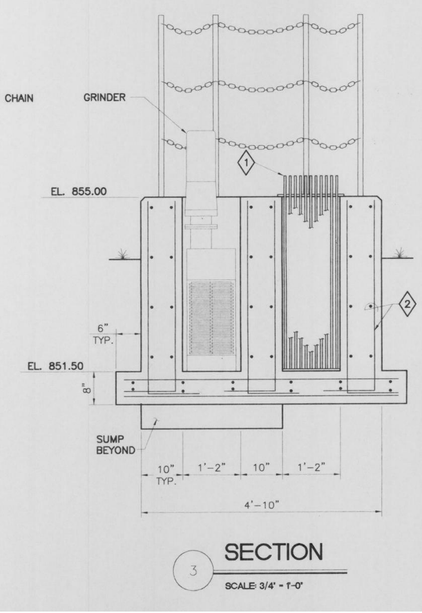
SCALE: 3/4" = 1'-0"



2 SECTION

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

* SEE SECTION 1 FOR REINFORCEMENT & DIMENSIONS



3 SECTION

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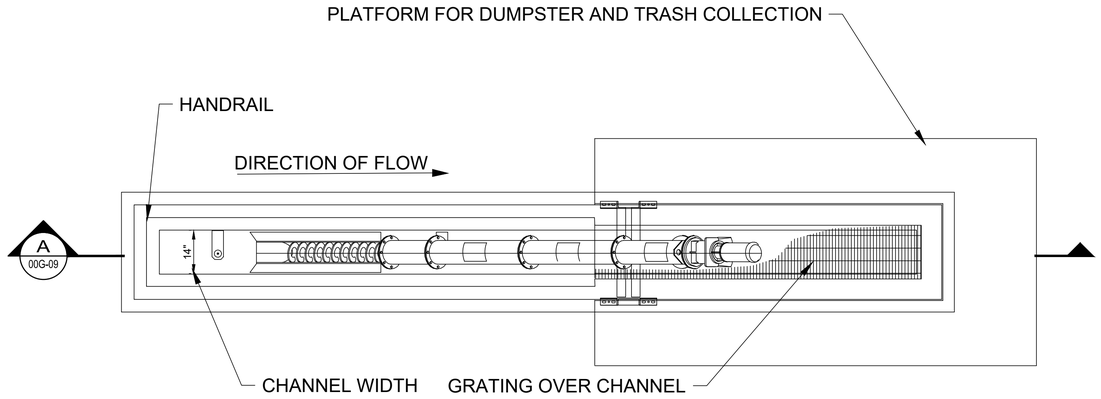
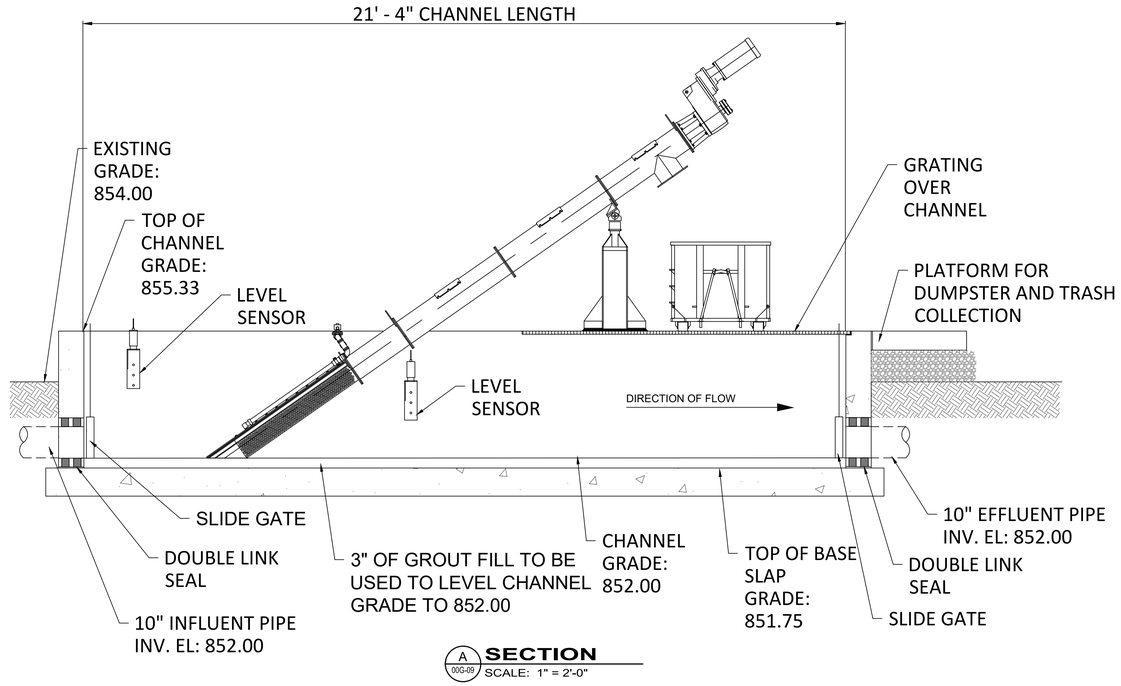
SHEET NAME
00G-08

SHEET 8 OF 14



PROPOSED HEADWORKS CHANNEL TOP PLAN VIEW

BAR SCALE
2' 1' 0' 2'
SCALE: 1"= 2'



A 00G-09 **SECTION**
SCALE: 1" = 2'-0"

GATE SCHEDULE

TYPE	CONTROL	ACTUATOR	OPEN ACTION	FRAME MOUNTING	OPENING NORMAL WIDTH	OPENING NORMAL HEIGHT (IN)	REMARKS
STOP PLATE	ISOLATION	N/A	N/A	CHANNEL	CHANNEL WIDTH	42	EXISTING HEADWORKS – S–1
STOP PLATE	ISOLATION	N/A	N/A	CHANNEL	CHANNEL WIDTH	42	EXISTING HEADWORKS – S–7
STOP PLATE	ISOLATION	N/A	N/A	CHANNEL	CHANNEL WIDTH	42	EXISTING HEADWORKS – S–3
SLIDE GATE	ISOLATION	HANDWHEEL	UPWARD/OPENING OPEN	CHANNEL	CHANNEL WIDTH	INFLUENT PIPE DIAMETER	HEADWORKS – INFLUENT
SLIDE GATE	ISOLATION	HANDWHEEL	UPWARD/OPENING OPEN	CHANNEL	CHANNEL WIDTH	EFFLUENT PIPE DIAMETER	HEADWORKS – EFFLUENT

STATE OF OHIO
GEORGIA CONWAY
E-85401
REGISTERED PROFESSIONAL ENGINEER

your trusted advisor consultants engineers architects planners

NO	REVISION	DATE

ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
BID SET	4-30-24	AS NOTED	TML	JBB	GBC

ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY ROAMING SHORES, OHIO
GENERAL - 00 SERIES
PROPOSED HEADWORKS

PROJECT NO.
241188
DISCIPLINE
CIVIL/PROCESS
SHEET NAME
00G-09
SHEET 9 OF 14

GENERAL:

1. THE GENERAL NOTES AND TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY. THE WORK SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS, CONSTRUCTION SPECIFICATIONS AND THE LATEST EDITION OF THE APPLICABLE LOCAL AND STATE BUILDING CODES.
   a. ALL WORK SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF THE OHIO BUILDING CODE (LATEST EDITION) OR THESE DOCUMENTS - WHICHEVER IS MORE STRINGENT.
2. IF MATERIALS, QUANTITIES, STRENGTHS OR SIZES INDICATED BY THE DRAWINGS ARE NOT IN AGREEMENT WITH THESE NOTES, THE CONTRACTOR SHALL CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION.
3. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON THE PLANS, BUT APPLY UNLESS NOTED OTHERWISE.
4. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION TO THE ENGINEER/ARCHITECT. SHOP DRAWINGS PREPARED BY THE CONTRACTORS, SUPPLIERS, ETC., WILL BE REVIEWED BY THE ENGINEER/ARCHITECT ONLY FOR CONFORMANCE WITH DESIGN CONCEPT. NO WORK AFFECTED BY THE SHOP DRAWINGS SHALL BE STARTED WITHOUT SUCH REVIEW.
5. THE GENERAL CONTRACTOR SHALL COORDINATE ALL REVISIONS, CORRECTIONS, AND COMMENTS INDICATED ON THE SHOP DRAWINGS BY THE ARCHITECT/ENGINEER.
6. ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE VERIFIED BY THE CONTRACTOR AND SHALL CONFORM TO THOSE SHOWN ON THE PROCESS DRAWINGS. DIMENSIONS AND ELEVATIONS MARKED "REF" ARE FOR REFERENCE ONLY AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO USING THEM FOR ANY CONSTRUCTION.
7. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES.
8. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
9. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. THE STRUCTURE IS DESIGNED FOR A COMPLETED CONDITION ONLY AND THEREFORE MAY REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL IS NOT INDICATED ON THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED, AS CONDITIONS PERMIT AND REMAIN THE PROPERTY OF THE CONTRACTOR. PROVIDE TEMPORARY SHORING FOR EXISTING CONSTRUCTION UNTIL NEW CONSTRUCTION IS IN PLACE AND PROPERLY ANCHORED IN FINAL FORM.
10. SHORING LOADS FOR EXISTING STRUCTURE ARE SHOWN IN THE DOCUMENTS. SHORING SHALL BE DESIGNED AND CERTIFIED BY AN ENGINEER LICENSED IN THE STATE OF OHIO.
11. ALL MATERIALS AND EQUIPMENT FURNISHED WILL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
13. COORDINATE WITH CIVIL, MECHANICAL, PROCESS, AND ELECTRICAL DRAWINGS FOR PIPE SLEEVES, INSERTS, HANGERS, TRENCHES, PITS, SIZE AND LOCATION OF MACHINE OR EQUIPMENT SUPPORTS, BASE AND ANCHOR BOLTS, RAILING, ETC. THE CONTRACTOR SHALL PROVIDE THESE OPENINGS IN ACCORDANCE WITH THE OTHER CONTRACT DRAWINGS. REINFORCEMENT AROUND OPENINGS FOR NEW WALLS AND SLABS SHALL BE PER THE STANDARD DETAILS. UNLESS OTHERWISE SHOWN, SEE STANDARD DETAILS FOR CONSTRUCTION OF OPENINGS IN EXISTING WALLS AND SLABS.
14. COORDINATE WITH SITE, ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND CIVIL DRAWINGS FOR RETAINING WALLS, PADS, PAVEMENT AND OTHER SITE STRUCTURES.
15. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE OWNER TO AVOID SYSTEM/OPERATION INTERRUPTIONS.
16. MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHALL BE STORED AT OWNER'S DESIGNATED LOCATIONS.
17. THE CONTRACTOR SHALL AT ALL TIMES KEEP THE WORK AREA AND SURROUNDING PREMISES FREE OF WASTE, SURPLUS MATERIALS, RUBBISH, AND DEBRIS RESULTING FROM THE WORK.
18. ALL CONTRACTORS SHALL CONFORM TO THE SAFETY REQUIREMENTS OF THE OWNER, AIA DOCUMENTS A201, OSHA SAFETY AND HEALTH STANDARDS, OWNERS SAFETY REGULATIONS, AND ANY OTHER LOCAL AUTHORITY IN CONNECTION WITH THE PROJECT. ALL EXCAVATIONS SHALL BE PROPERLY SHORED IN ACCORDANCE WITH OSHA STANDARDS AND REQUIREMENTS. ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.
19. NO SUBSTITUTIONS OF MATERIAL WILL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.

GOVERNING CODES AND STANDARDS:

THE FOLLOWING CODES AND STANDARDS SHALL BE UTILIZED BY THE CONTRACTOR TO ESTABLISH MINIMUM LEVELS OF QUALITY AND CONSTRUCTION TECHNIQUES.

GENERAL

1. OHIO BUILDING CODE (OBC) AND THE INTERNATIONAL BUILDING CODE, (IBC) 2015 EDITION, LOCALLY AMENDED. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR CONTRACT PROVISIONS ARE MORE RESTRICTIVE.
2. INTERNATIONAL BUILDING CODE, IBC 2018 ED, LOCALLY AMENDED. THE ABOVE SHALL GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR CONTRACT PROVISIONS ARE MORE RESTRICTIVE.
3. INTERNATIONAL EXISTING BUILDING CODE, IEBC 2018 ED.
4. AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES ", ASCE 7-16.

CONCRETE

1. AMERICAN CONCRETE INSTITUTE, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", ACI 318-14.
2. AMERICAN CONCRETE INSTITUTE, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES", ACI 350-06.
3. AMERICAN CONCRETE INSTITUTE, "TIGHTNESS TESTING OF ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES ", ACI 350.1-10.
4. AMERICAN CONCRETE INSTITUTE, "SEISMIC DESIGN OF LIQUID-CONTAINING CONCRETE STRUCTURES", ACI 350.3-06.
5. AMERICAN CONCRETE INSTITUTE, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
6. AMERICAN CONCRETE INSTITUTE, "RECOMMENDED PRACTICE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION", ACI 302.
7. AMERICAN CONCRETE INSTITUTE, "GUIDE FOR SPECIFYING, PROPORTIONING, MIXING, PLACING, AND FINISHING STEEL FIBER REINFORCED CONCRETE", ACI-544
8. AMERICAN CONCRETE INSTITUTE, "GUIDE TO FORMWORK FOR CONCRETE", ACI 347
9. AMERICAN CONCRETE INSTITUTE, "HOT WEATHER CONCRETING", ACI-305R
10. AMERICAN CONCRETE INSTITUTE, "COLD WEATHER CONCRETING", ACI-306R
11. AMERICAN CONCRETE INSTITUTE, "GUIDE TO MASS CONCRETE", ACI 207
12. AMERICAN CONCRETE INSTITUTE, "SELECTING PROPORTIONS FOR NORMAL, HEAVY WEIGHT AND MASS CONCRETE", ACI 211.1
13. PORTLAND CEMENT ASSOCIATION, "DESIGN AND CONTROL OF CONCRETE MIXTURES""
14. AMERICAN CONCRETE INSTITUTE, " ACI DETAILING MANUAL", ACI SP-66.
15. CONCRETE REINFORCING STEEL INSTITUTE, "MANUAL OF STANDARD PRACTICE", MSP-2

STRUCTURAL METALS

1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS.", 15TH ED.
2. AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE", AWS D 1.1, 2020 ED.
3. AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE - ALUMINUM", AWS D1.2, 2014 ED.
4. AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE - SEISMIC SUPPLEMENT", AWS D1.8, 2016 ED.
5. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "AISC STEEL DESIGN GUIDE 27, STRUCTURAL STAINLESS STEEL"
6. THE ALUMINUM ASSOCIATION, "ALUMINUM DESIGN MANUAL, 2015 ED", ADM1.
7. NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS, "METAL BAR GRATING MANUAL", NAAMM MGB 531-17.
8. NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS, "HEAVY DUTY METAL BAR GRATING MANUAL", NAAMM MGB 532-19.

DESIGN LOADS:

UNLESS INDICATED OTHERWISE IN THE STRUCTURE - SPECIFIC LOAD CRITERIA, DESIGN LIVE LOADS ARE:

		UNIFORM (PSF)	CONCENTRATED (LBS)
1.	LIVE LOADS:		
	a. SLAB-ON-GRADE, EQUIPMENT	125	2,000
	b. GRATING = SAME LOADINGS AS ADJACENT FLOOR AREAS		
2.	EARTHQUAKE DESIGN DATA:		
	a. OCCUPANCY RISK CATEGORY		III
	b. SEISMIC IMPORTANCE FACTOR, I_e		1.25
	c. MAPPED SPECTRAL RESPONSE ACCELERATIONS		
			S_s = 0.150
			S_1 = 0.048
	d. SITE CLASS		D
	e. DESIGN SPECTRAL RESPONSE ACCELERATIONS		
			S_{ds} = 0.16
			S_{d1} = 0.076
	f. SEISMIC DESIGN CATEGORY		B

SUBMITTALS

1. SHOP DRAWINGS AND SUBMITTALS
   a. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.
   b. ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR.
   c. REVIEW OF SHOP DRAWINGS WILL BE FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS, IF APPLICABLE, AND CONSTRUCTION DOCUMENT DETAILS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY TO COMPLY WITH THE CONSTRUCTION DOCUMENTS.
2. SUBMITTALS
   a. THE STRUCTURAL QUALITY ASSURANCE PLAN AND SPECIFICATIONS IDENTIFY THE REQUIRED SUBMITTALS. PRIOR TO (OR WITH) THE FIRST SUBMITTAL, CONTRACTOR SHALL SUBMIT A LIST OF ALL REQUIRED SUBMITTALS FOR ENGINEER'S REVIEW.

FOUNDATIONS:

1. FOUNDATION DESIGN IS BASED ON ALLOWABLE BEARING CAPACITY OF 1500 PSF. THE CONTRACTOR SHALL EMPLOY A GEOTECHNICAL ENGINEER VERIFY ALL BEARING STRATA BEFORE FOUNDATIONS ARE PLACED.
2. CONTRACTOR SHALL EMPLOY GEOTECHNICAL ENGINEER TO VERIFY THE IN-SITU SOILS PROPERTIES, BEARING CAPACITY, BACKFILL MATERAL, AND IDENTIFY BACKFILL TECHNEQUIES. CONTRACTOR SHALL EMPLOY A SOILS TESTING LABORATORY APPROVED BY THE ENGINEER TO PERFORM TESTING SERVICES AS REQUIRED BY THE SPECIFICATIONS AND TO INSPECT ALL BEARING SURFACES OF SLABS AND FOUNDATIONS.
3. UNCONDITIONED EQUIPMENT SLABS SHALL BEAR ON FREE DRAINING GRANULAR FILL THAT EXTEND BELOW THE FROST DEPTH AS IDENFIED BY THE GEOTECHNICAL ENGINEER OR, AT LEAST, 36". BASE SLABS SHALL BEAR ON FIRM AND STABLE NATURAL SOILS OR COMPACTED FILL AT PER THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS. EXTERIOR FOOTINGS SHALL BEAR AT FROST DEPTH, 18-INCH MINIMUM BELOW GRADE, OR DOWN TO ACCEPTABLE SOILS, WHICHEVER IS DEEPER.
4. REMOVE ALL EXISTING PAVEMENT, STRUCTURES, FOUNDATIONS, UNSUITABLE FILLS, ORGANIC SOILS AND/OR OTHER DELETERIOUS MATERIALS DURING SITE PREPARATION AND/OR ENCOUNTERED WITHIN OR BELOW THE AREA TO BE OCCUPIED BY SLABS ON GRADE, EQUIPMENT PADS, AND FOUNDATIONS. THESE MATERIALS SHALL NOT BE USED FOR FILL WITHIN OR ADJACENT TO THE BUILDING. AFTER EXCAVATING THE EXPOSED NATURAL SOIL SHALL BE THOROUGHLY COMPACTED PRIOR TO PLACEMENT OF FILL OR AS DIRECTED BY THE GEOTECHNICAL REPORT.
5. BACKFILL SHALL BE CLEAN, CRUSHED STONE (#57 STONE) OR SELECT ENGINEERED FILL APPROVED BY THE GEOTECHNICAL ENGINEER. ALL BACKFILL SHALL BE PLACED IN MAXIMUM 8" LIFTS AND COMPACT AS PER THE GEOTECHNICAL.
6. EXCAVATIONS FOR FOUNDATIONS SHOULD BE OBSERVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL AND CONCRETE. UNDERCUT UNSUITABLE SOILS AND BACKFILL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
7. CONTRACTOR SHALL KEEP ALL FREE-STANDING WATER OUT OF EXCAVATIONS. CONTRACTOR SHALL PROVIDE DEWATERING MEASURES AS NECESSARY PRIOR TO PLACING CONCRETE. WATER SHOULD BE REMOVED FROM THE FOUNDATION BOTTOMS BEFORE CONCRETE OR REINFORCING STEEL IS PLACE.
8. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROVIDE TEMPORARY SHORING, BRACING, UNDERPINNING, AND OTHER MEASURES NECESSARY TO ENSURE STABILITY AND SAFETY DURING ERECTION AND CONSTRUCTION AND TO PREVENT MOVEMENT OF SOIL THAT COULD DAMAGE EXISTING STRUCTURES, PAVEMENT, UTILITIES, ETC.
9. AFTER EXCAVATING FOR SLABS ON GRADE AND FOUNDATIONS, THE EXPOSED NATURAL SOIL SHALL BE THOROUGHLY COMPACTED PRIOR TO PLACING THE GRANULAR MATERIAL.
10. UNLESS NOTED OTHERWISE ON THE CIVIL/SITE DRAWINGS, PROVIDE A MINIMUM 2% GRADE WITHIN 10-FEET OF THE PERIMETER OF THE FOUNDATION SYSTEM TO ALLOW SURFACE WATER TO DRAIN AWAY.
11. DO NOT PLACE FILL OR CONCRETE ON FROZEN GROUND.

REINFORCEMENT

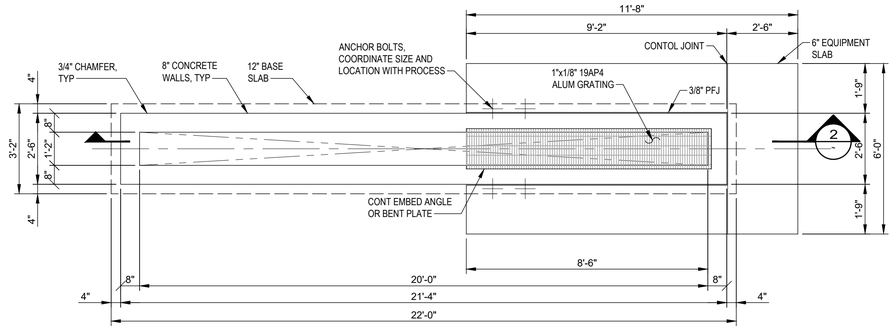
1. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI-315, LATEST EDITION) AND MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (CRSI, LATEST EDITION). REINFORCING STEEL SHALL NOT BE HEATED OR WELDED AND MUST BE DRY AND FREE OF CONTAMINANTS SUCH AS RUST, DIRT, GREASE, AND PROTECTIVE COATINGS.
2. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. ALL REINFORCING USED IN SEISMIC DESIGN CATEGORY (SDC) D AND HIGHER OR REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706 GRADE 60.
3. REINFORCING STEEL SHALL NOT BE HEATED OR WELDED AND MUST BE DRY AND FREE OF CONTAMINANTS SUCH AS RUST, DIRT, GREASE, AND PROTECTIVE COATINGS.
4. WHERE GRADE BEAMS OR STRIP FOOTINGS INTERSECT COLUMN FOUNDATIONS, EXTEND GRADE BEAM OR STRIP FOOTING REINFORCEMENT CONTINUOUSLY THROUGH THE COLUMN FOUNDATION.
5. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A185, A1064 PROVIDED IN FLAT SHEETS OR ROLLS. FABRIC SHALL LAP TWO FULL MESHES AND BE SECURELY FASTENED AT EACH SIDE AND END.
6. PROVIDE DOWELS FROM FOUNDATIONS TO MATCH COLUMN, PIER AND WALL VERTICAL REINFORCING. WHERE SHOWN, PROVIDE DOWELS OUT OF WALLS TO MATCH SLAB REINFORCING.
7. PROVIDE ADEQUATE BOLSTERS, HI-CHAIRS, SUPPORT BARS, ETC., TO MAINTAIN SPECIFIED CLEARANCES FOR THE ENTIRE LENGTH OF ALL REINFORCING BARS. SUPPORTS THAT BEAR DIRECTLY ON EXPOSED SURFACES SHALL BE A CRSI CLASS 1.
8. ALL DEVELOPMENT AND SPLICE LENGTHS SHALL BE PER ACI 318 WITH CLEAR SPACING GREATER OR EQUAL TO 3 BAR DIAMETER. PROVIDE CLASS "B" TENSION LAP SPLICE OR FULL MECHANICAL SPLICE (ACI 318, SECT. 25.4.2) FOR ALL STEEL IN WALLS, COLUMNS, AND SLABS. SEE LAP SCHEDULE FOR LAP LENGTHS, UNO.
9. LAP SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS AS DETERMINED BY THE ENGINEER. LAP SPLICES FOR CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS, WITH DOUBLE MAT OF REINFORCING, SHALL BE LOCATED IN THE MIDDLE 1/3 OF THE SPAN FOR TOP BARS AND CENTERED OVER THE SUPPORT FOR THE BOTTOM BARS. LAP SPLICE IN BEAMS, CONTINUOUS SLABS AND WALLS SHALL BE STAGGERED. CENTERLINE OF STAGGERS SHALL BE A MINIMUM OF A SPLICE LENGTH APART.
10. A TOP BAR IS A HORIZONTAL BAR WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST DIRECTLY BELOW THE BAR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS. FOR EPOXY-COATED REINFORCEMENT, MULTIPLY THE TABULATED VALUES BY 1.5 FOR 'REGULAR BARS' AND 1.3 FOR 'TOP BARS'.
11. SUBMIT REINFORCING SHOP DRAWINGS FOR REVIEW. AT A MINIMUM, THESE DRAWINGS SHALL SHOW THE GENERAL PLACEMENT OF REINFORCING, CONSTRUCTION JOINTS, CONTROL JOINTS, EXPANSION JOINTS, CONCRETE MEMBER DIMENSIONS, DOWELS, BAR LENGTHS, SPLICE LENGTH, AND REINFORCING BEND TABLES.
12. IN ADDITION TO NORMAL ACCESSORIES USED TO HOLD REINFORCING STEEL FIRMLY IN POSITION, EXTRA ACCESSORY BARS SHALL BE USED AS FOLLOWS:
    a. IN SLABS, #5 RAISER BARS AT 36" ON CENTER MAXIMUM TO SUPPORT TOP REINFORCING STEEL.
    b. IN WALLS WITH TWO CURTAINS, #3 U OR Z-SHAPE SPACERS AT 6'-0 " ON CENTER EACH WAY.
14. TACK WELDING OR WELDING OF REBAR SHALL NOT BE PERMITTED UNLESS OTHERWISE CALLED FOR OR APPROVED BY THE ENGINEER.
15. ALL HOOKS SHALL BE ACI STANDARD HOOKS UNLESS DIMENSIONED OTHERWISE. BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, SECT. 25.3. IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS REQUIRED TO PROVIDE SPECIFIED DEVELOPMENT LENGTH DUE TO AN ADJACENT STRUCTURE, EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.
16. LAP SPLICE WELDED WIRE FABRIC ONE SPACE PLUS 2 INCHES AT EDGES AND ENDS AND PROVIDE ADDITIONAL REINFORCING WHERE SHOWN ON DRAWINGS. PLACE MESH 2 INCHES FROM TOP OF SLAB FOR SLABS ON GROUND AND 1 INCH FROM TOP OF SUPPORTED SLABS UNLESS NOTED OTHERWISE.

CAST-IN-PLACE CONCRETE AND REINFORCEMENT:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318 AND ACI 350.
2. CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTHS:
   CAST-IN-PLACE CONCRETE: 4,000 PSI
   FILL CONCRETE: 1,500 PSI
3. USE 6% ±1.5%, ENTRAINED AIR PER ASTM C260 FOR ALL CONCRETE EXPOSED TO WEATHER.
4. ADMIXTURES SHALL CONTAIN NO MORE THAN 0.05% CHLORIDE IONS BY WEIGHT OF CEMENT WHEN TESTED IN ACCORDANCE WITH AASHTO T260.
5. CONCRETE SHALL BE PROPORTIONED, BATCHED, MIXED, PLACED, CONSOLIDATED, AND CURED IN ACCORDANCE WITH ACI 301,304,308,309 AND 318. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED IN ACCORDANCE WITH ACI 304 AND ACI 309.
6. CONCRETE SHALL BE STANDARD NORMAL WEIGHT CAST-IN-PLACE CONCRETE. PORTLAND CEMENT SHALL BE ASTM C150, TYPE II OR TYPE V, LOW ALKALI, CONTAINING LESS THAN 0.60 PERCENT ALKALIS. PORTLAND-POZZOLAN CEMENT SHALL BE ASTM C595, TYPE IP(MS), INTERGROUND, LOW ALKALI. CONCRETE MIX SHALL BE AIR ENTRAINED WITH A MAXIMUM WATER/CEMENT RATIO OF 0.40 , CONTAIN A HIGH RANGE WATER-REDUCING AND FLY ASH ADMIXTURE (). FINE AND COARSE AGGREGATES SHALL CONFORM TO ASTM C33.
7. FLY ASH SHALL BE TYPE F MEETING THE REQUIREMENTS OF ASTM C618. FLY ASH POZZOLAN SHALL CONTAIN LESS THAN 1 PERCENT BY WEIGHT CARBON AND LESS THAN 3 PERCENT BY WEIGHT SULFUR TRIOXIDE. 20 TO 25 PERCENT POZZOLAN, BY WEIGHT OF CEMENTITIOUS MATERIALS
8. CONCRETE MIX SHALL CONTAIN XYPEX ADMIX BIO-SAN C500 CEMENTITIOUS CRYSTALLINE CONCRETE WATERPROOFING AND ANTIMICROBIAL ADMIXTURE AS MANUFACTURED BY THE XYPEX CHEMICAL CORPORATION (SUBSTITUTIONS NOT PERMITTED). XYPEX ADMIX SHALL BE ADDED TO THE CONCRETE MIX AT THE TIME OF BATCHING AT A RATE OF 1% BY WEIGHT OF TOTAL CEMENTITIOUS CONTENT AND BE MIXED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION AND REQUIREMENTS. MAXIMUM SLUMP SHALL BE 3" PRIOR TO ADDITION OF THE PLASTICIZER AND 8" FOLLOWING ADDITION OF THE PLASTICIZER.
5. MIX DESIGN(S) SHALL BE SUBMITTED TO THE ENGINEER "FOR REVIEW" AT LEAST 15 DAYS PRIOR TO START OF WORK. DO NOT BEGIN CONCRETE PRODUCTION UNTIL MIXES HAVE BEEN REVIEWED BY ENGINEER. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS. WHEN ACCEPTABLE RECORD OF TEST RESULTS ARE NOT AVAILABLE FROM THE CONCRETE PRODUCTION FACILITY, CONCRETE PROPORTIONS SHALL BE ESTABLISHED BASED UPON TRIAL MIXTURES. AT LEAST THREE (3) DIFFERENT WATER-CEMENT RATIOS ENCOMPASSING THE REQUIRED AVERAGE STRENGTH OF 5,100PSI SHALL BE MADE. AT LEAST THREE (3) TEST CYLINDERS FOR EACH TEST AGE SHALL BE MADE.
6. CONTRACTOR SHALL KEEP A COPY OF "FIELD REFERENCE MANUAL: STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE ACI 301 WITH SELECTED ACI REFERENCES", (ACI PUBLICATION SP-15) AT THE PROJECT FIELD OFFICE.
7. ALL REINFORCING DETAILS SHALL CONFORM TO THE ACI DETAILING MANUAL, SP-66, UNLESS DETAILED OTHERWISE ON THE STRUCTURAL DRAWINGS.
8. SUBMIT FOR APPROVAL CONCRETE MIX DESIGN AND CERTIFICATION OF CONCRETE MATERIALS CONFORMING TO THE FOLLOWING EXPOSURE CATEGORIES:

	EXTERIOR ENVIORMENTAL STRUCTURES	EXTERIOR SLABS
CATEGORY	AIR ENTRAINED CLASS:	AIR ENTRAINED CLASS:
FREEZE AND THAWING	F3	F3
SULFATE	S3	S1
IN CONTACT WITH WATER	W1	W1
CORROSION PROTECTION	C2	C2

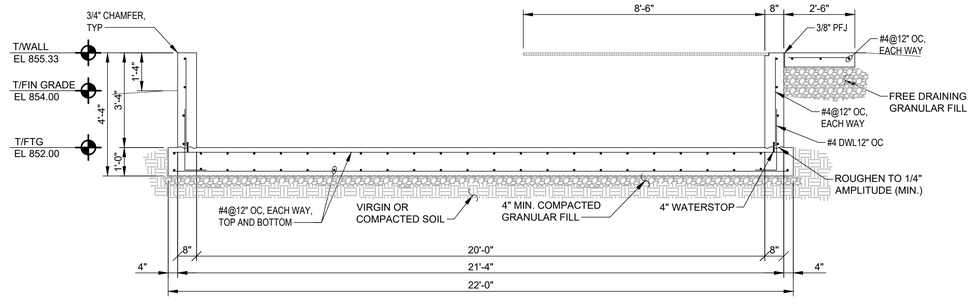
9. THE CONTRACTOR SHALL EMPLOY A TESTING LABORATORY APPROVED BY THE ENGINEER/ARCHITECT TO PERFORM THE TESTING SPECIFIED PER PARAGRAPH 1.6.4 OF ACI 301. THE TESTING LABORATORY SHALL MEET THE REQUIREMENTS OF ASTM E329. TESTING SHALL BE MADE BY AN ACI CONCRETE FIELD-TESTING TECHNICIAN GRADE 1 OR APPROVED EQUIVALENT. A TECHNICIAN GRADE 1 SHALL BE PRESENT DURING ALL CONCRETE PLACEMENT.
10. ALL SLABS SHALL BE POURED MONOLITHICALLY, EXCEPT FOR THE REQUIRED CONSTRUCTION JOINTS, CONTROL JOINTS, AND/OR EXPANSION JOINTS, UNLESS OTHERWISE NOTED.
11. PROVIDE 3/4 INCH CHAMFER ON ALL EXPOSED CORNERS OF SLABS UNLESS OTHERWISE INDICATED ON THE ARCHITECTURAL DRAWINGS. MINIMUM CLEARANCES FOR REINFORCING STEEL SHALL BE MAINTAINED. CHAMFERS SHALL EXTEND 2'-0", MINIMUM, BELOW GRADE.
12. CURE ALL CONCRETE FOR A MINIMUM 7-DAYS. APPLY CURING COMPOUND AT THE MAXIMUM COVERAGE RATE OF 300 SQUARE FEET PER GALLON. USE PRODUCT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. SEE SPECIFICATIONS.
13. CONTRACTOR SHALL PROVIDE BONDING AGENT TO ALL SURFACES BETWEEN EXISTING AND FRESH CONCRETE. BONDING AGENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. PRIOR TO APPLICATION OF BONDING AGENT, THE EXISTING CONCRETE BASE SURFACE SHALL BE THOROUGHLY CLEANED TO REMOVE ANY GREASE, OIL OR OTHER CONTAMINANTS THAT MAY PREVENT ADEQUATE BOND TO THE EXISTING CONCRETE. REMOVE WEAK OR DETERIORATED CONCRETE.
14. THE CONCRETE INTERFACE OF ALL CONSTRUCTION JOINTS SHALL BE ROUGHEN TO 1/4", MINIMUM, AMPLITUDE. PRIOR TO CASTING AGAINST THE GREEN CONCRETE, APPLY BONDING AGENT.
15. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS NOT INDICATED ON THE DRAWINGS FOR REVIEW BY THE ENGINEER/ARCHITECT. LENGTH OF WALL PLACEMENT SHALL BE LIMITED TO 30', UNLESS OTHERWISE NOTED OR WITH WRITTEN APPROVAL OF THE ENGINEER.
16. ALUMINUM OR DISSIMILAR METALS IN CONTACT WITH CONCRETE SHALL BE COATED WITH GRAY EPOXY PRIMER. EPOXY PRIMER SHALL BE PRE-APPROVED BY THE ENGINEER.
17. FORMWORK, FOR ALL CONCRETE THAT WILL BE EXPOSED IN THE COMPLETED STRUCTURE, SHALL BE CONSTRUCTED FROM A METAL OR SUITABLE SURFACE PLYWOOD THAT WILL PRODUCE AN ACCEPTABLY SMOOTH SURFACE. SEE SPECIFICATIONS.
18. PITCH CONCRETE SLABS TO SHED WATER. DIRECT WATER BASED ON CIVIL DRAINAGE PLANS.
19. PLACE SLAB ON GRADE OVER OPEN GRADED AGGREGATE SUB-BASE COMPACTED TO A MINIMUM OF 90% RELATIVE DENSITY. INSTALL STONE BASE AS DIRECTED BY GEOTECHNICAL REPORT.
    a. SAWED CONTROL JOINTS SHALL BE CUT AS SOON AS SLAB CAN BE WALKED ON AND COMPLETED NO LATER THAN 16 HOURS AFTER POURING.
21. CONCRETE PROTECTION (CLEAR COVER) FOR REINFORCEMENT BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:
    a. FOOTINGS AND FOUNDATION MATS CAST ON GROUND:
       3 INCHES, BOTTOM AND UNFORMED EDGES
       2 INCHES, FORMED EDGES
       2 INCHES, EXPOSED TO EARTH, WATER OR WEATHER
       2 INCHES, BOTTOM, ON CONCRETE MUDMAT
    b. CONCRETE IN CONTACT WITH SEWAGE OR WATER:
       SLABS AND WALLS: 2 INCHES
22. ANCHOR BOLTS SHALL BE ASTM F1554-55 UNLESS OTHERWISE NOTED. EMBEDMENT, EDGE DISTANCES AND ALLOWABLE LOADS SHALL CONFORM TO IBC TABLE 1912.2 OR AS NOTED ON THE DRAWINGS. PROVIDE ANCHORAGE AS REQUIRED BY MECHANICAL AND ELECTRICAL INSTALLATIONS.
23. CONCRETE EMBEDS AND PENETRATIONS - PIPES AND CONDUITS EMBEDDED IN OR PASSING THROUGH STRUCTURAL ELEMENTS SHALL CONFORM TO ACI 318-6.3.
24. ISOLATE CONCRETE WITH PREFORMED JOINT FILLER (PJF) WHERE SHOWN. PJF SHALL BE 3/8" THICK RESIN OR BITUMEN IMPREGNATED GLASS FIBER OR FIBER BOARD, UNLESS OTHERWISE NOTED.
25. IN CASES WHERE REINFORCING BARS CANNOT BE EXTENDED AS FAR AS REQUIRED DUE TO THE LIMITING EXTENTS OF THE ADJACENT CONCRETE STRUCTURE, THE REINFORCING SHALL BE EXTENDED AS FAR AS POSSIBLE AND END IN A STANDARD HOOK.
26. MONOLITHIC SLABS WITH TOPS THAT ARE SLOPED SHALL HAVE BOTTOMS SLOPED THE SAME AMOUNT, MAINTAINING A UNIFORM SLAB THICKNESS, UNLESS OTHERWISE NOTED.
27. THE FORMS SHALL NOT BE REMOVED UNTIL THE CONCRETE IS STRONG ENOUGH TO CARRY THE STRESSES FROM THE DEAD LOAD OF THE STRUCTURE, WIND LOAD, AND SUPERIMP



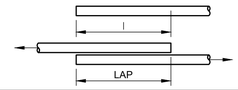
1 **SCREENING CHANNEL AND EQUPMENT PAD**
00S-10 SCALE: NTS

NOTES:
1. SLOPE GRADE TO EQUIPMENT SLAB
2. CONCRETE FINISHES:

TOP OF WALL	TROWEL FINISHED
WALLS	SMOOTH FORM FINISH
BASE SLAB	FLOAT OR TROWEL FINISH
EQUIPMENT SLAB	TROWEL FINISH
WALKING SURFACES	NON-SLIP BROOM FINISH



2 **SECTION**
00S-10 SCALE: NTS



LAP TABLE (f'_c = 4,000 PSI)

BAR SIZE	LAP CLASS	UNCOATED BARS			
		TOP BARS		OTHER BARS	
		CASE 1	CASE 2	CASE 1	CASE 2
#3	A	19	28	15	22
	B	24	36	19	28
#4	A	25	37	19	29
	B	32	48	25	37
#5	A	31	47	24	36
	B	40	60	31	47
#6	A	37	56	29	43
	B	48	72	37	56
#7	A	54	81	42	63
	B	70	106	54	81
#8	A	62	93	48	71
	B	80	121	62	93
#9	A	70	105	54	81
	B	91	136	70	105
#10	A	79	118	61	91
	B	102	153	79	118
#11	A	87	131	67	101
	B	113	170	87	131
#14	N/A	105	157	81	121
#18	N/A	139	209	107	161

NOTES:
1. TABULATED VALUES ARE BASED ON A MINIMUM YIELD STRENGTH OF 60,000 PSI. LENGTHS ARE IN INCHES.
2. CASES 1 AND 2, WHICH DEPEND ON THE TYPE OF STRUCTURAL MEMBER, CONCRETE COVER, AND OC SPACING OF THE BARS ARE DEFINED AS:
   BEAMS AND COLUMNS
   - CASE 1: CONCRETE COVER AT LEAST 1.0d_b AND OC SPACING AT LEAST 2.0 d_b
   - CASE 2: CONCRETE COVER LESS THAN 1.0d_b OR OC SPACING LESS THAN 2.0 d_b

   OTHER BARS
   - CASE 1: CONCRETE COVER AT LEAST 1.0d_b AND OC SPACING AT LEAST 3.0 d_b
   - CASE 2: CONCRETE COVER LESS THAN 1.0d_b OR OC SPACING LESS THAN 3.0 d_b
3. TENSION LAP SPLICES OF #14 OR #18 BARS ARE NOT PERMITTED. THE TABLE VALUES FOR THOSE BAR SIZES ARE TENSION DEVELOP LENGTHS.
4. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

STATE OF OHIO
BART STROBEL
E-90274
REGISTERED
PROFESSIONAL ENGINEER
4/17/24

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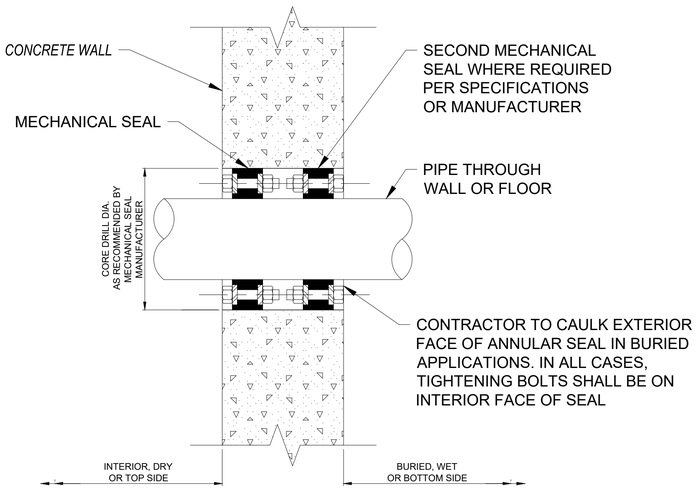
NO	REVISION	DATE

ISSUED FOR: REVIEW SET
ISSUE DATE: 3-15-24
SCALE: AS NOTED
DESIGNED BY: BAS
DRAWN BY: BAS
CHECKED BY: GBC

ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY ROAMING SHORES, OHIO
GENERAL - 00 SERIES
GRIT CHANNEL

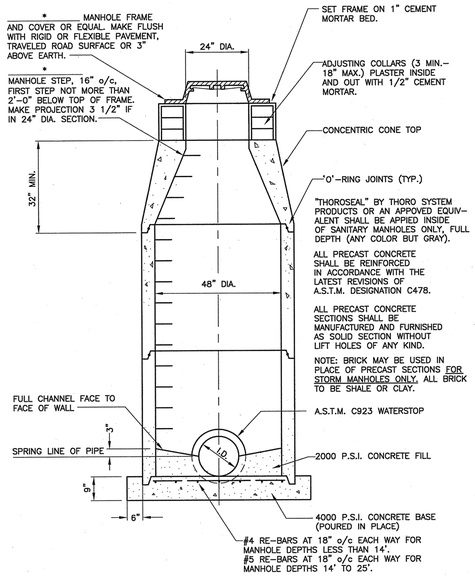
PROJECT NO. 241188
DISCIPLINE: STRUCTURAL
SHEET NAME: 00S-02
SHEET 11 OF 14



ANNULAR SEAL FOR PROCESS PIPING (LINK SEAL)

NOT TO SCALE

* DENOTES DESIGNER SPECIFICATION REQUIRED.

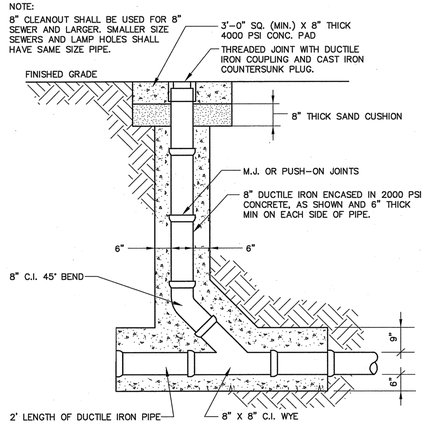


STANDARD TYPE "A" CONCENTRIC MANHOLE

(24" I.D. OR LESS)

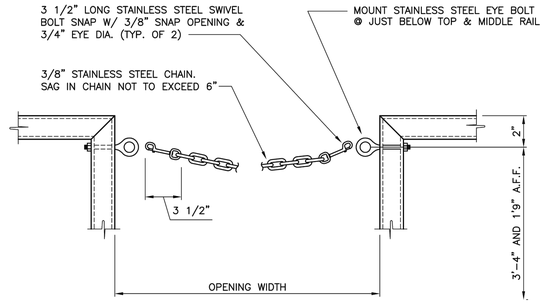
09/02 SD-3-1

NOTE:
8" CLEANOUT SHALL BE USED FOR 8" SEWER AND LARGER. SMALLER SIZE SEWERS AND LAMP HOLES SHALL HAVE SAME SIZE PIPE.



CLEANOUT-TYPE `B`

09/02 SD-2-10



SAFETY CHAIN

8/12 (N.T.S.) SD-7-41

STATE OF OHIO
GEORGIA CONWAY
E-85401
REGISTERED PROFESSIONAL ENGINEER

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NO	REVISION	DATE

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ISSUE DATE:	4-30-24
SCALE:	AS NOTED
DESIGNED BY:	TML
DRAWN BY:	JBB
CHECKED BY:	GBC

ASHTABULA COUNTY

ROAMING SHORES WWTP HEADWORKS DESIGN

ASHTABULA COUNTY ROAMING SHORES, OHIO

STANDARD DETAILS - SD SERIES

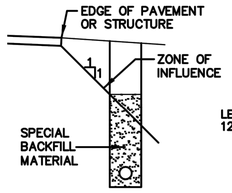
STANDARD DETAILS 1

PROJECT NO.
241188

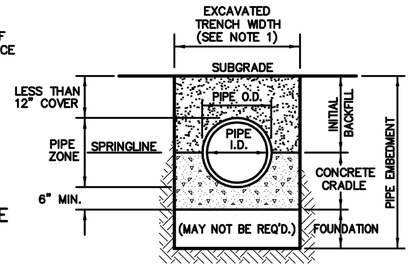
DISCIPLINE
CIVIL

SHEET NAME
SD-01

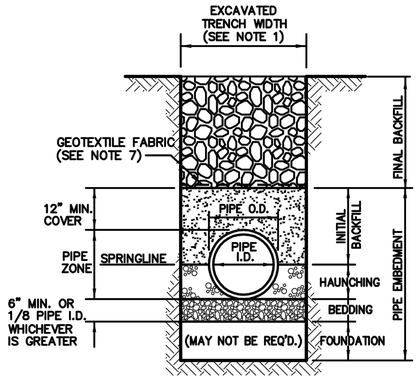
SHEET 12 OF 14



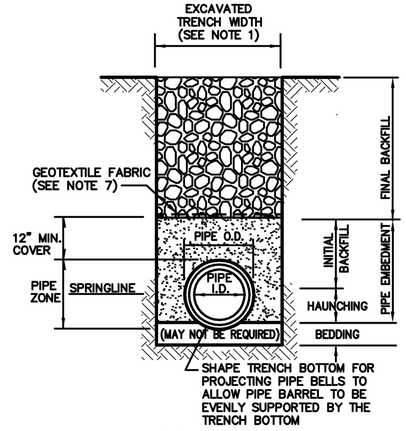
PARALLEL
ZONE OF INFLUENCE



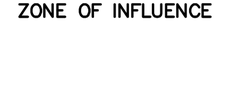
CLASS 'A' PIPE EMBEDMENT



CLASS 'B' PIPE EMBEDMENT



CLASS 'C' PIPE EMBEDMENT



TRANSVERSE
ZONE OF INFLUENCE

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 SPECIFICATION 02300CT – EARTHWORK.

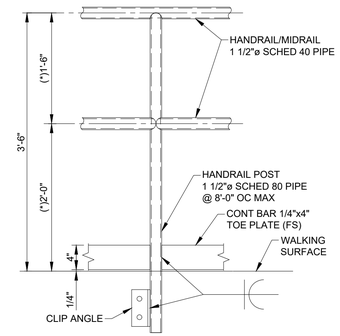
6. CLAY TRENCH DAMS: CLAY TRENCH DAMS SHALL BE REQUIRED AS SHOWN ON PLANS OR WHEN AND WHERE NECESSARY AS DIRECTED BY THE ENGINEER.

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.

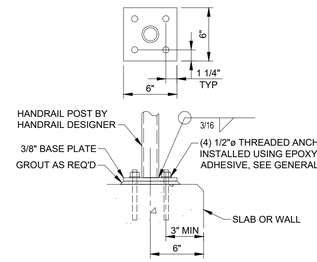
8. DETECTOR TAPE: IF REQUIRED IN THE SPECIFICATIONS, INSTALL DETECTABLE WARNING TAPE ABOVE UTILITIES, 12" BELOW FINISHED GRADE, EXCEPT 6 INCHES BELOW SUBGRADE UNDER PAVEMENT AND SLABS.

TRENCHING, EMBEDMENT AND BACKFILL DETAIL

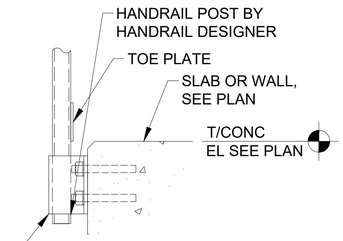
6/04 NO SCALE SD-1-1



1 TYPICAL HANDRAIL DETAIL



2 TYPICAL HANDRAIL BASE CONNECTION DETAIL



3 TYPICAL HANDRAIL CONNECTION DETAIL

STATE OF OHIO
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E-85401
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ISSUED FOR:	BID SET
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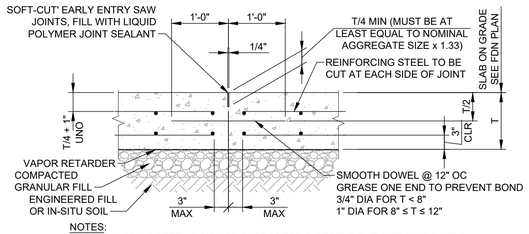
SCALE:	AS NOTED
DESIGNED BY:	TML
DRAWN BY:	JBB
CHECKED BY:	GBC

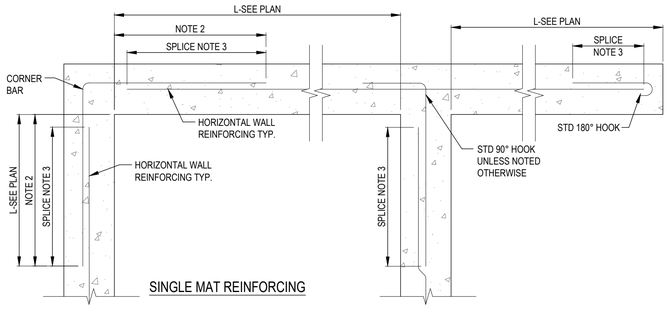
ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ASHTABULA COUNTY ROAMING SHORES, OHIO
STANDARD DETAILS - SD SERIES
STANDARD DETAILS 2

PROJECT NO.	241188
DISCIPLINE	CIVIL
SHEET NAME	SD-02
SHEET	13
OF	14



NOTES:
1. REINFORCING STEEL SHALL BE SUPPORTED INDEPENDENTLY FROM DOWELS.
2. SAW CUT JOINT INTO SLAB AS SOON AS CONCRETE IS FIRM ENOUGH THAT THE CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AND BEFORE CONCRETE DEVELOPS RANDOM CONTRACTION CRACKS.
3. AS A CONTRACTOR'S OPTION, A DOWEL BASKET ASSEMBLY WITH LOAD PLATE MAY BE USED IN LIEU OF A GREASED DOWEL.

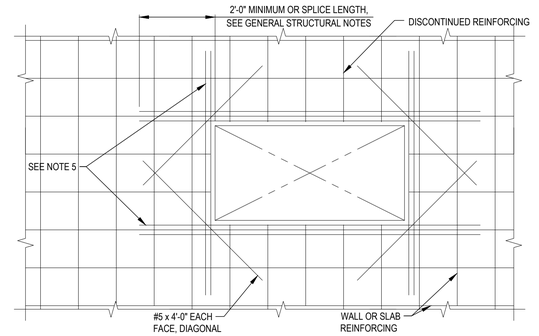
1 TYPICAL CONTROL JOINT DETAIL FOR 6" - 12" SLAB-ON-GRADE
00S-20 SCALE: NTS



SINGLE MAT REINFORCING

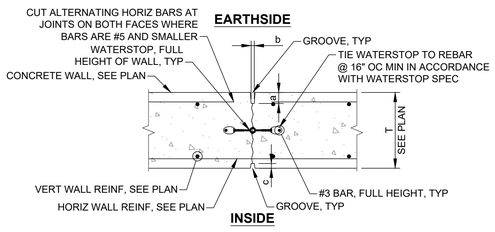
NOTES:
1. UNLESS NOTED OTHERWISE. SIZE AND SPACING OF CORNER OR INTERSECTION REINFORCING SHALL MATCH HORIZONTAL REINFORCING SHOWN IN SPECIFIC SECTIONS OR DETAILS. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.
2. UNLESS NOTED OTHERWISE. BAR SPLICE SHALL BE LOCATED OUTSIDE OF CORNER OR INTERSECTION AREA TO AVOID CONGESTION. CONTRACTORS OPTION TO PROVIDE SINGLE BENT BAR IN LIEU OF SPLICE CONFIGURATION AT ONE END ONLY.
3. SEE GENERAL STRUCTURAL NOTES FOR SPLICE LENGTH.

2 CONCRETE WALL CORNER REINFORCING
00S-20 SCALE: NTS



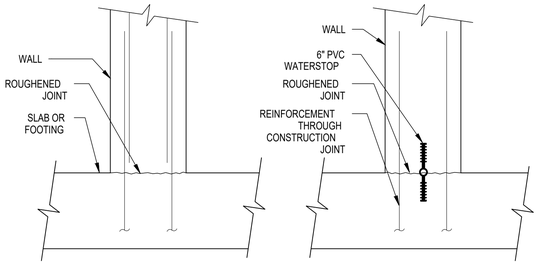
NOTES:
1. THIS DETAIL APPLIES TO UP TO 3'-0" MAXIMUM DIMENSION FOR RECTANGULAR OPENINGS AND UP TO 3'-0" DIAMETER FOR CIRCULAR OPENINGS.
2. AT OPENINGS 12" OR LESS, NO ADDITIONAL #5 DIAGONAL REINFORCING IS REQUIRED UNLESS NOTED OTHERWISE. REINFORCING SHALL BE SPREAD TO ALLOW FOR OPENING WHERE PRACTICAL, OR CUT AT THE OPENING AND ADDITIONAL REINFORCING ADDED PER NOTE 5.
3. OPENINGS ARE NOT ALL SHOWN ON STRUCTURAL DRAWINGS. PROVIDE OPENINGS IN ACCORDANCE WITH ARCHITECTURAL, MECHANICAL AND OTHER CONTRACT DRAWINGS.
4. ADDITIONAL REINFORCEMENT MAY BE OMITTED ONLY WHERE OPENING IS FRAMED BY BEAMS OR WALLS.
5. ADDITIONAL REINFORCING (4) SIDES OF OPENING EQUAL TO NUMBER AND SIZE OF DISCONTINUOUS REINFORCING. WHERE AN ODD NUMBER OF REBAR ARE DISCONTINUOUS, PROVIDE (ODD NO. +1)/2 EACH SIDE OF OPENING.

3 REINFORCING AT OPENING
00S-20 SCALE: NTS



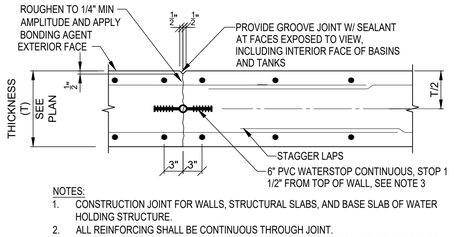
NOTES:
1. VERTICAL CONTRACTION AND CONSTRUCTION JOINTS NOT PERMITTED IN SHEAR WALLS.
2. PROVIDE CONTRACTION AND CONSTRUCTION JOINTS AT 25'-0" MAX SPACING.
3. LOCATE FIRST JOINT 15'-0" MAX FROM CORNER
4. JOINT LOCATION AND DETAILS TO BE APPROVED BY ARCHITECT AND STRUCTURAL ENGINEER.

4 TYPICAL CONSTRUCTION JOINTS FOR ENVIRONMENTAL STRUCTURE
00S-20 SCALE: NTS



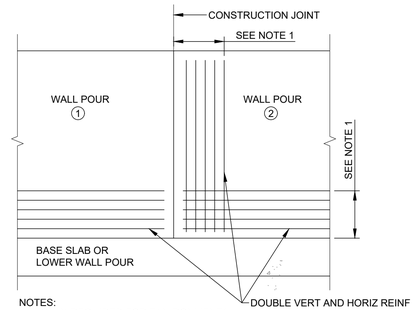
TYPICAL JOINT WITHOUT WATERSTOP JOINT WITH PVC WATERSTOP

5 HORIZONTAL WALL CONSTRUCTION JOINT
00S-20 SCALE: NTS



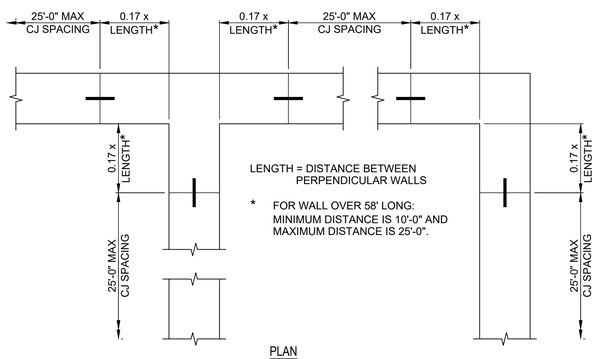
NOTES:
1. CONSTRUCTION JOINT FOR WALLS, STRUCTURAL SLABS, AND BASE SLAB OF WATER HOLDING STRUCTURE.
2. ALL REINFORCING SHALL BE CONTINUOUS THROUGH JOINT.
3. WATERSTOP REQUIRED AT LIQUID HOLDING BASINS AND TANKS, AND BELOW GRADE WALLS, UNO.
4. PROVIDE CONTROL JOINTS OR CONSTRUCTION JOINTS IN WALLS AT THE LESSER OF 25' OR 1.5x WALL HEIGHT. SEE DETAILS 3/60S-06, 11/60S-06, AND 12/60S-06
5. JOINT LOCATION AND DETAILS SHALL BE APPROVED BY ARCHITECT AND STRUCTURAL ENGINEER

6 CONTRUCTION JOINT
00S-20 SCALE: NTS



NOTES:
1. ONLY REQUIRED FOR ENVIRONMENTAL STRUCTURES
2. 3x WALL THICKNESS, U.N.O.

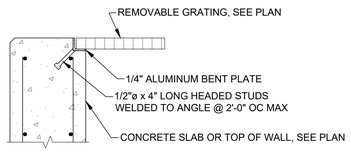
7 ADDITIONAL REINFORCEMENT
00S-20 SCALE: NTS



PLAN
WALL CONSTRUCTION JOINT SPACING

NOTES:
1. COORDINATE CONSTRUCTION JOINT LOCATIONS AND TIME BETWEEN CONCRETE POURS WITH SPECIFICATION 03 30 00.
2. LOCATE WALL CONSTRUCTION JOINTS AS SHOWN, UNLESS INDICATED OTHERWISE.

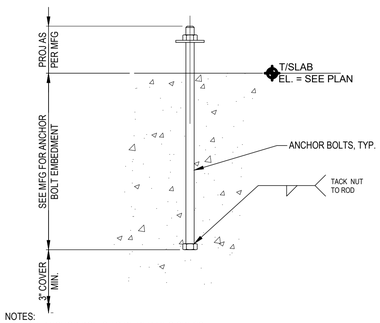
8 TYPICAL WALL CONSTRUCTION JOINT SPACING
00S-20 SCALE: NTS



EMBEDDED

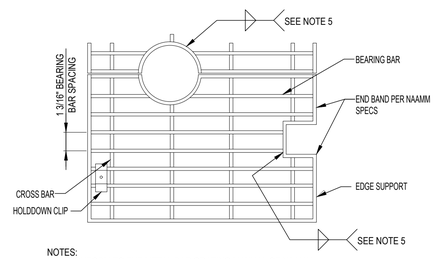
NOTE:
1. LENGTH OF ANGLE INSERTS TO BE DETERMINED BY AMOUNT OF GRATING USED.
2. SIZE OF ANGLE INSERTS DETERMINED BY DEPTH OF GRATING.

9 TYPICAL GRATING SUPPORT DETAIL
00S-20 SCALE: NTS



NOTES:
1. ALL ANCHOR BOLTS TO BE PER MFG SPECS
2. FOR ANCHOR BOLTS LEVEL EMBEDDED STRUCTURAL STEEL, REFER TO DETAILS FOR APPROXIMATE PROJECTION LENGTH AND EMBEDMENT DEPTH.
3. USE HEAD BOLTS OR TACK WELD NUT..
4. DO NOT USE 'J' BOLTS. 'J' BOLTS ARE NOT ACCEPTABLE
5. ANCHOR BOLTS SHALL BE F1554 GR. 36, UNLESS NOTED OTHERWISE.

10 ANCHOR BOLT
00S-20 SCALE: NTS



NOTES:
1. CONFORM TO THE METAL BAR GRATING MANUAL OF NAAMM.
2. USE ALUMINUM OR SST GRATING SUPPORT EMBEDS AT ALL AL GRATING.
3. AL GRATING SHALL BE SWAGE LOCKED AND SERRATED.
4. GRATING SHALL BE REMOVABLE. PROVIDE REMOVABLE GRATING WITH (4) HOLD DOWN CLIPS WITH SELF-TAPPING SCREWS APPROXIMATELY 4" FROM THE CORNERS OF EACH PIECE.
5. WELD BEARING AND CROSS BARS TO END BANDS AT AL GRATING.
6. CLEAR SPAN IS PLAN DIMENSION, FACE TO FACE OF OPENING. AL GRATING SCHEDULE AND DETAILS ARE DESIGNED FOR PEDESTRIAN LOAD ONLY. NO VEHICLE LOADS ARE ALLOWED.
7. PROVIDE 2" MINIMUM END BEARING. SEE PLANS FOR BEARING BAR SIZE AND SPANS. ALL AL SURFACES IN CONTACT WITH CONCRETE, GROUT, OR DISSIMILAR METALS SHALL HAVE CONTACT SURFACE PROTECTED.

11 ALUMINUM GRATING
00S-20 SCALE: NTS

STATE OF OHIO
BART STROBEL
E-90274
REGISTERED
PROFESSIONAL ENGINEER
your trusted advisor
consultants
engineers
architects
planners

NO	REVISION	DATE

ISSUED FOR:	REVIEW SET
ISSUE DATE:	3-15-24
SCALE:	AS NOTED
DESIGNED BY:	BAS
DRAWN BY:	BAS
CHECKED BY:	GBC

ASHTABULA COUNTY
ROAMING SHORES WWTP HEADWORKS DESIGN
ROAMING SHORES, OHIO
ASHTABULA COUNTY
STANDARD DETAILS - SD SERIES
STRUCTURAL DETAILS

PROJECT NO.	
241188	
DISCIPLINE	
STRUCTURAL	
SHEET NAME	
SD-S-01	
SHEET	OF
14	14