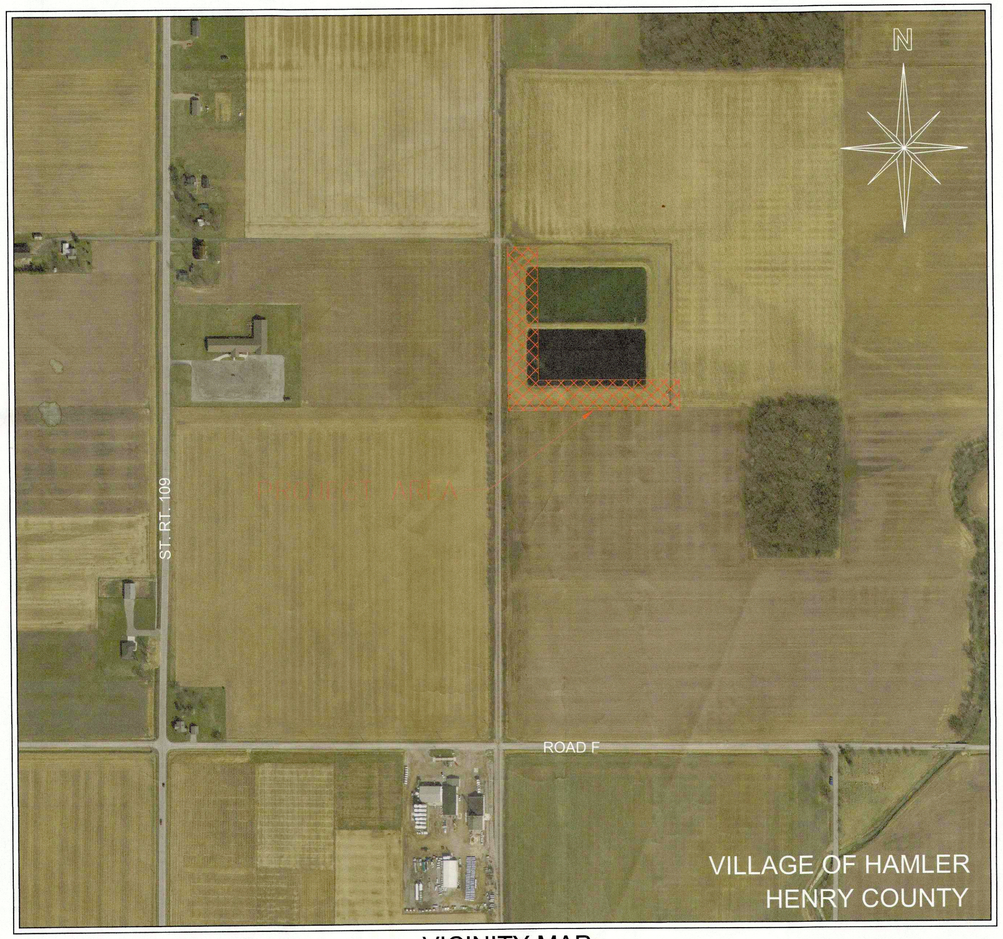
HAMLER SANITARY LAGOON IMPROVEMENTS

VILLAGE OF HAMLER
HENRY COUNTY, OHIO

Bockrath & Associates
Engineering and Surveying, LLC
115 South Fair Avenue, Suite A, Ottawa, OH 45875
Phone: 419.523.5789

PLAN INDEX



VICINITY MAP
N 41° 14' 37" W 84° 01' 52"

3-1-2021
DATE

Kenneth H. Griffin
VILLAGE OF HAMLER

3-1-21
DATE

GREGORY A. BOCKRATH P.E., P.S.
BOCKRATH & ASSOCIATES
ENGINEERING and SURVEYING, LLC

STATE OF OHIO · GREGORY A. BOCKRATH · E-68042 · REGISTERED PROFESSIONAL ENGINEER

STATE OF OHIO · GREGORY A BOCKRATH · 8306 · REGISTERED PROFESSIONAL SURVEYOR

OFFICE SET

KEN GRIFFIN
CELL # 419-591-9124

* AS BUILT DRAWINGS 5/25/22

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HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER, HENRY COUNTY, OHIO

TITLE SHEET

REVISED		
REVIEWED BY:	GAB	1.18.21
DESIGNED BY:	KMB	1.18.21
JOB NUMBER:	19-005	

SHEET – 1
OF 6 SHEETS

GENERAL

IN GENERAL, ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION MATERIALS SPECIFICATIONS AND/OR THE OHIO ENVIRONMENTAL PROTECTION AGENCY. PARAGRAPH, ITEM AND SECTION NUMBERS SHOWN HEREIN AND ON THE DRAWINGS SHALL REFER TO SAID ODOT SPECIFICATIONS. ALL NOTES AND REQUIREMENTS CONTAINED HEREIN WHICH DO NOT REFER TO A PARTICULAR STATE SPECIFICATION SHALL BE CONSIDERED SUPPLEMENTARY TO SAID STATE SPECIFICATIONS.

REGULATIONS

ALL WORK MUST COMPLY WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS IN ALL RESPECTS INCLUDING COMPLIANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT.

BEGINNING CONSTRUCTION STAKING

LOCATION AND GRADE STAKES SHALL BE SET BY THE ENGINEER. THE CONTRACTOR WILL NOTIFY THE ENGINEER 48 HOURS PRIOR TO BEGINNING ACTUAL CONSTRUCTION AND WHEN REQUESTING ADDITIONAL STAKING.

PRIVATE PROPERTY

THE CONTRACTOR MUST AT ALL TIMES CONDUCT HIS OPERATIONS WITHIN THE PUBLIC RIGHT-OF-WAY, UTILITY EASEMENTS OR WORK AGREEMENTS AS SHOWN ON THE PLANS.

MAINTAINING TRAFFIC

AT THE TIME OF CONSTRUCTION ALL PUBLIC THOROUGHFARES SHALL BE MAINTAINED AS TWO-WAY TRAFFIC, AT NO TIME SHALL TRAFFIC BE DETOURED. ALL WORK DESCRIBED ABOVE, INCLUDING ALL BARRICADES, LIGHTS, SIGNS, FLAGMEN, OR OTHER LABOR OR MATERIALS REQUIRED TO MAINTAIN SAFETY OR CONTROL TRAFFIC ACCORDING TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES IS INCLUDED FOR PAYMENT UNDER OTHER ITEM OF WORK.

MAINTAINING PUBLIC SAFETY

THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND MAINTAINING ALL LIGHTS, SIGNS AND BARRICADES NECESSARY TO MAINTAIN PUBLIC SAFETY.

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

LISTED BELOW ARE ALL THE UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS WITH THEIR RESPECTIVE OWNERS:

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON U.S.G.S DATUM. (NAVD 88) UTILIZING O.D.O.T. V.R.S.

WORK LIMITS

THE WORK LIMITS FOR THIS PROJECT SHALL BE THE AREAS OWNED BY VILLAGE OF HAMLER. ALL AREAS WITHIN THE EXISTING RIGHT-OF-WAY WHERE WORK IS TO BE PERFORMED UNLESS OTHERWISE NOTED.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS) A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEERS FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE. CONSTRICT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS.

SAFETY REQUIREMENTS

THE CONTRACTOR AND SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR 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 THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTOR TO INITIATE AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.

PERMITS

THE OWNER WILL OBTAIN ALL NECESSARY PERMITS NECESSARY FOR THIS PROJECT.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

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 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 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.

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.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE (TO INCLUDE BUT NOT LIMITED TO ALL LABOR, MATERIALS AND EQUIPMENT) FOR THE PERTINENT BID ITEM.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE VILLAGE, REPRESENTATIVES OF THE OWNER AND CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDITIONS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE ENGINEER.

THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES (AND SUBSEQUENT UTILITY CROSSINGS) PRIOR TO THE CONSTRUCTION AND/OR PLACEMENT OF ANY STORM SEWER STRUCTURES OR CONDUIT. IF A CONFLICT IS ANTICIPATED THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR THEIR PROJECT REPRESENTATIVE IMMEDIATELY. UPON DISCOVERY AND ANALYSIS, THE ENGINEER MAY ADJUST THE FLOW LINE OR MODIFY THE DEPTH OF THE STRUCTURE, OR CONDUIT, TO MITIGATE THE DISCOVERED CONFLICT.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE ENGINEER.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AND NO ADDITIONAL COST TO THE PROJECT.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE (TO INCLUDE BUT NOT LIMITED TO LABOR, MATERIALS AND EQUIPMENT) SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 OR 604 ITEMS. NO ADDITIONAL COMPENSATION WILL BE AWARDED FOR ANY ADJUSTMENTS TO THE STORM SEWER CONDUIT OR STRUCTURES.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

EROSION CONTROL

THE OWNER SHALL BE RESPONSIBLE FOR THE DEVELOPMENT, AND APPROVAL OF THE EROSION CONTROL PLAN AND PERTINENT PERMITS APPLYING TO SAID PLAN. ALL COSTS ASSOCIATED WITH THE DEVELOPMENT, CREATION, SUBMISSION (OF PLANS AND PERMITS), AND FEES SHALL BE ASSUMED BY THE OWNER.

EROSION CONTROL ITEMS SHALL BE INSTALLED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE ENGINEER OR CONTROLLING AGENCY RESERVES THE RIGHT TO CHECK BEARING OF STREET SUBGRADE AND TEST DENSITY OF TRENCH BACKFILL FOR STORM, SANITARY AND WATERLINE SYSTEMS. THE CONTRACTOR IS TO NOTIFY THE ENGINEER 72 HOURS PRIOR TO COMMENCEMENT OF WORK.

MISCELLANEOUS WORK

ALL ITEMS OF WORK CALLED FOR ON THE PLANS FOR WHICH NO SPECIFIC METHOD OF PAYMENT IS PROVIDED SHALL BE PERFORMED BY THE CONTRACTOR AND THE COST OF THE SAME SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS RELATED ITEMS.

CLEARING AND GRUBBING

THE PAVEMENT SUBGRADE SHALL BE FREE OF SOD, VEGETATIVE OR ORGANIC MATTER, SOFT CLAY, AND OTHER OBJECTIONABLE MATERIAL FOR A DEPTH OF AT LEAST TWO (2) FEET BELOW FINISHED SURFACE.

DEFLECTION TESTING

PVC PIPE MUST BE TESTED FOR DEFLECTION AFTER TRENCH SETLINE HAS OCCURRED, 3 MONTHS MINIMUM AFTER BACKFILLING.

DEFLECTION TESTS CAN BE RUN BY USE OF ELECTRONIC EQUIPMENT APPROVED BY THE ENGINEER. IF SUCH EQUIPMENT IS NOT AVAILABLE, THE DEFLECTION TEST CAN RUN USING RIGID BALLS OR MANDRELS HAVING DIAMETERS EQUAL TO 95% OF THE INSIDE DIAMETER OF THE UNDEFORMED PIPES.

MANDRELS MUST HAVE AN ODD NUMBER OF FINS. NO MANDREL WILL HAVE LESS THAN NINE FINS. MECHANICAL PULLING DEVICES ARE NOT ALLOWED FOR EITHER MANDREL OR RIGID BALLS.

THE ENGINEER MAY REQUIRE ADDITIONAL TESTING FOR DEFLECTION BEFORE EXPIRATION OF THE ONE YEAR MAINTENANCE BOND. THIS TEST IS IN ADDITION TO THAT CONDUCTED PRIOR TO CONDITIONAL ACCEPTANCE. CONDUIT DEFLECTION TESTS MUST BE CONDUCTED PRIOR TO CONDITIONAL ACCEPTANCE. CONDUIT DEFLECTED MORE THAN 5 PERCENT MUST BE CORRECTED TO THE SATISFACTION OF THE ENGINEER, AT THE EXPENSE OF THE CONTRACTOR.

PAYMENT FOR DEFLECTION TESTING IS INCLUDED IN THE PAYMENT FOR THE PIPE.

SANITARY SEWER FITTINGS

ALL COST OF THE WYES, TEES, BENDS AND PLUGS REQUIRED IN THE MAIN LINES SANITARY SEWER OR IN THE HOUSE SEWER LATERALS SHALL BE INCLUDED IN THE BID FOR EACH PERTINENT SANITARY SEWER FITTING. ALL SEWER CONNECTIONS SHALL BE MADE WITH MANUFACTURED FITTINGS.

SANITARY SEWER NOTES

SANITARY SEWER PIPE

THE FOLLOWING MATERIALS WILL BE PERMITTED FOR SANITARY SEWER PIPE:

GRAVITY PIPE: PVC CONFORMING TO ASTM D-3034, SDR-35 WITH JOINTS CONFORMING TO ASTM-3212.

FORCE MAIN PIPE: DIP CONFORMING TO AWWA C151 WITH JOINTS CONFORMING TO AWWA-C111.

SANITARY SEWER CONNECTIONS

ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

MANHOLES

FOUNDATIONS SHALL BE PRECISE OR POURED IN PLACE CONCRETE. MANHOLE SECTIONS SHALL HAVE AN INTERNAL DIAMETER OF FORTY-EIGHT (48) INCHES, WALL THICKNESS FIVE (5) INCHES AND LAYING LENGTH IN MULTIPLES OF SIXTEEN (16) INCHES MEETING ASTM C-478 SPECIFICATION. JOINTS SHALL BE OF TONGUE AND GROOVE TYPE TO PERMIT LAYING UP WITH AN O RING GASKET, MEETING ASTM C-443 SPECIFICATION. MANHOLE STEPS ON SIXTEEN (16) INCH CENTER TO CENTER SPACING SHALL BE CAST INTO THE SECTION IN SUCH A MANNER AS TO PROVIDE A CONTINUOUS VERTICAL LADDER THE FULL DEPTH OF THE MANHOLE. THE TOP OR DOME SECTION SHALL BE A STRAIGHT SIDE TYPE, COVERING FROM THE FORTY-EIGHT (48) INCH MANHOLE A DIAMETER TO A TWENTY-FOUR (24) INCH OPENING. A CONCRETE INVERT SHALL BE PROVIDED IN THE BOTTOM OF EACH MANHOLE HAVING A THICKNESS AT THE SEWER LINE EQUAL TO THE RADIUS OF THE SEWER PIPE AND SLOPING SLIGHTLY UPWARD TOWARD THE MANHOLE WALLS. MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1782, OR EQUAL WITH SANITARY SEWER CAST INTO THE COVER. FLEXIBLE RUBBER BOOTS SHALL BE CAST IN THE WALLS AT THE FACTORY AND BE USED TO CONNECT PIPES TO MANHOLES. SANITARY MANHOLE TESTING SHALL CONFORM TO ASTM C-1244 IN THE PRESENCE OF A VILLAGE REPRESENTATIVE. THE PROCEDURE FOR MANHOLE TESTING IS SUMMARIZED AS FOLLOWS:

A. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED AND BRACED.
B. ONCE A VACUUM OF 10-INCHES OF MERCURY IS DRAWN INTO THE MANHOLE THE VACUUM EQUIPMENT SHALL BE SHUT OFF.
C. THE TIME OF FOR THE VACUUM TO DROP FROM 10-INCHES OF MERCURY TO 9-INCHES OF MERCURY SHALL BE MEASURED AND COMPARED
A. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED AND BRACED.
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A. ALL PIPES ENTERING THE MANHOLE SHALL BE PLUGGED AND BRACED.
B. ONCE A VACUUM OF 10-INCHES OF MERCURY IS DRAWN INTO THE

PIPE EMBEDMENT

PIPE EMBEDMENT SHALL INCLUDE THE MATERIAL PLACED BENEATH (4 INCH MINIMUM), AROUND AND SIX (6) INCHES ABOVE THE BARREL OF THE NEW PIPE. THE MATERIAL SHALL CONSIST OF NO. 57 STONE, THE COST OF WHICH SHALL BE INCLUDED IN THE PRICE OF THE PIPE. IF A TRENCHING MACHINE IS USED FOR EXCAVATION AND A ROUNDED TRENCH BOTTOM OF UNDISTURBED EARTH IS PROVIDED WITH THE ADEQUATE GRADE, THE STONE BEDDING MAY BE OMITTED.

GRANULAR BACKFILL

GRANULAR BACKFILL MATERIAL WILL CONFORM TO O.D.O.T. ITEM 411, GRANULAR OR BACKFILL WILL BE USED WHEREVER THE PIPE OR MANHOLE IS LOCATED UNDER OR WITHIN FIVE (5) FEET OF PAVEMENT, DRIVES, BACK OF CURBING OR PARKING AREAS. THE MATERIALS SHALL BE COMPACTED IN SIX (6) INCH LAYERS. THE COST OF ALL GRANULAR BACKFILL WILL BE PER BID ITEM GRANULAR BACKFILL.

LEAKAGE TESTING

THE CONTRACTOR WILL TEST ALL NEW SANITARY SEWER LINES AFTER BACKFILLING AND SETTLING OF THE TRENCHES HAS OCCURRED. TESTING SHALL BE UNDER THE SUPERVISION OF THE ENGINEER.

THE OWNER MAY CHOOSE THE EXACT METHOD, TIME AND LOCATION OF EACH INDIVIDUAL TEST, BUT THE ENTIRE SYSTEM WILL BE TESTED PRIOR TO ACCEPTANCE.

THE CONTRACTOR WILL FURNISH ALL EQUIPMENT AND LABOR REQUIRED FOR THE TEST. THE CONTRACTOR MAY CONDUCT HIS OWN TESTING PRIOR TO BACKFILLING, IF HE DESIRES, BUT THE RESULTS ARE ONLY FOR HIS INFORMATION AND WILL NOT BE ACCEPTED BY THE ENGINEER.

IF TEST REQUIREMENTS ARE NOT MET, OR IF THERE IS ANY VISIBLE LEAKAGE IN MANHOLES REGARDLESS OF TEST RESULTS, THE CONTRACTOR WILL MAKE THE NECESSARY REPAIRS AND RETEST THE LINE WITHOUT COST TO THE OWNER.

ALL TESTING OF SEWER LINES WILL BE DONE USING A LOW PRESSURE AIR TEST, UNLESS OTHERWISE ORDERED BY THE ENGINEER.

LOW PRESSURE AIR TEST SHALL CONFORM TO ASTM F-1417 FOR PLASTIC PIPE

PRESSURE GAUGES WILL HAVE MINIMUM GRADUATIONS OF 0.1 PSI AND AN ACCURACY OF +/- 0.04 PSI. ADJUSTMENTS FOR GROUNDWATER PRESSURE WILL BE MADE BY ADDING 0.433 PSI FOR EACH FOOT OF GROUNDWATER ABOVE THE PIPE INVERT AND WILL BE CONFIRMED BY THE ENGINEER.

THE LINE WILL THEN BE PRESSURIZED TO ABOUT 4.0 PSI PLUS ANY ADJUSTMENT FOR GROUND WATER AND HELD FOR TWO MINUTES. THE AIR SUPPLY WILL THEN BE SHUT OFF AND THE TIME BETWEEN THE PRESSURE DROPPING FROM 3.5 TO 2.5 PSI G (OR EQUIVALENT FOR GROUND WATER PRESENCE) WILL BE MEASURED.

THE PERMISSIBLE TIME ALLOCATION FOR THE 1.0 PSI G PRESSURE DROP WILL BE CALCULATED OF THE BASIS OF THE DIAMETER AND LENGTH OF MAIN SEWER TESTED. NO ADJUSTMENT SHALL BE MADE FOR SERVICE CONNECTIONS INCLUDED IN THE TEST.

THE AIR TEST FOR THE TEST SECTION SHALL BE CONSIDERED ACCEPTABLE IF THE TIME ELAPSED FOR THE 1.0 PSI G PRESSURE DROP IS AT LEAST THE TIME, IN MINUTES, INDICATED IN THE FOLLOWING TABLE:

Minimum Holding Time in Minutes:Seconds for 1.0 psi Pressure Drop								
Pipe Diameter	Length of Mainline Tested							
	100'	150'	200'	250'	300'	350'	400'	450'
Minimum Holding Time in Minutes:Seconds for 1.0 psi Pressure Drop								
Pipe Diameter	Length of Mainline Tested							
	100'	150'	200'	250'	300'	350'	400'	450'
Minimum Holding Time in Minutes:Seconds for 1.0 psi Pressure Drop								
Pipe Diameter	Length of Mainline Tested							
	100'	150'	200'	250'	300'	350'	400'	450'
Minimum Holding Time in Minutes:Seconds for 1.0 psi Pressure Drop								

TIME FOR INTERMEDIATE LENGTHS IS TO BE INTERPOLATED

SAFETY PRECAUTIONS MUST BE OBSERVED BY THE CONTRACTOR DURING AIR TESTING, RECOGNIZING THE DANGER FROM PLUGS BLOWING OUT. NO ONE WILL BE ALLOWED IN THE MANHOLES DURING THE TESTING. IF AN INFILTRATION TEST IS ORDERED, THE MINIMUM ALLOWABLE HEAD IS FOUR FEET. IF THIS HEAD CANNOT BE MET WITH EXISTING GROUNDWATER, THE TRENCH WILL BE BULKHEADED AND FLOODED BY THE CONTRACTOR. THE V-NOTCH WEIR OR OTHER MEASURING DEVICE MUST BE APPROVED BY THE ENGINEER.

ALL PIPE MUST MEET THE INFILTRATION REQUIREMENT OF 100 GALLONS PER INCH DIAMETER PER MILE, REGARDLESS OF THE METHOD OF TESTING USED. THE ENGINEER MAY ORDER INFILTRATION TESTS OF SECTIONS OF PIPE ALREADY TESTED BY OTHER METHODS IF HE DEEMS IT NECESSARY. NO VISIBLE LEAKAGE WILL BE PERMITTED, REGARDLESS OF TESTING.

PAYMENT FOR TESTING IS INCLUDED WITH PAYMENT FOR THE PIPE INSTALLATION.

Bockrath & Associates
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115 South Fair Avenue, Suite A, Ottawa, OH 45875
Phone: 419.523.5789

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED

HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER, HENRY COUNTY, OHIO

NOTES

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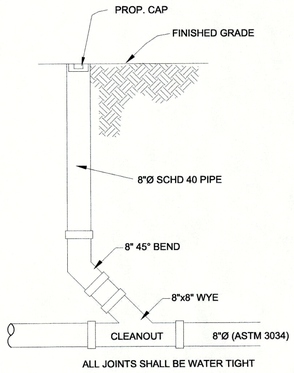
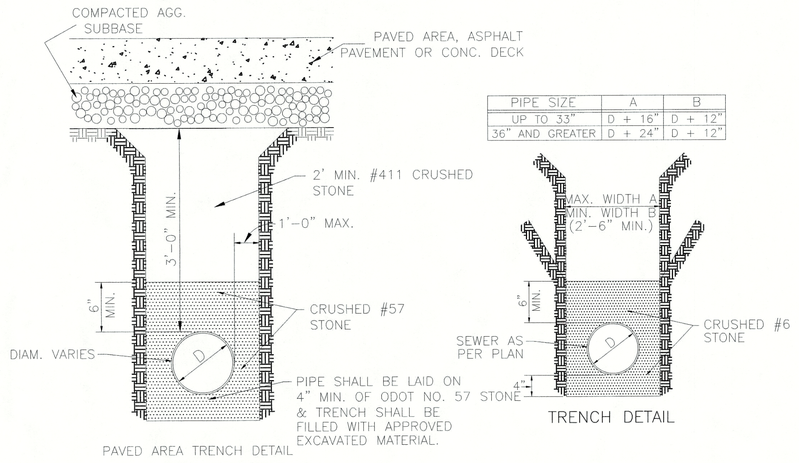
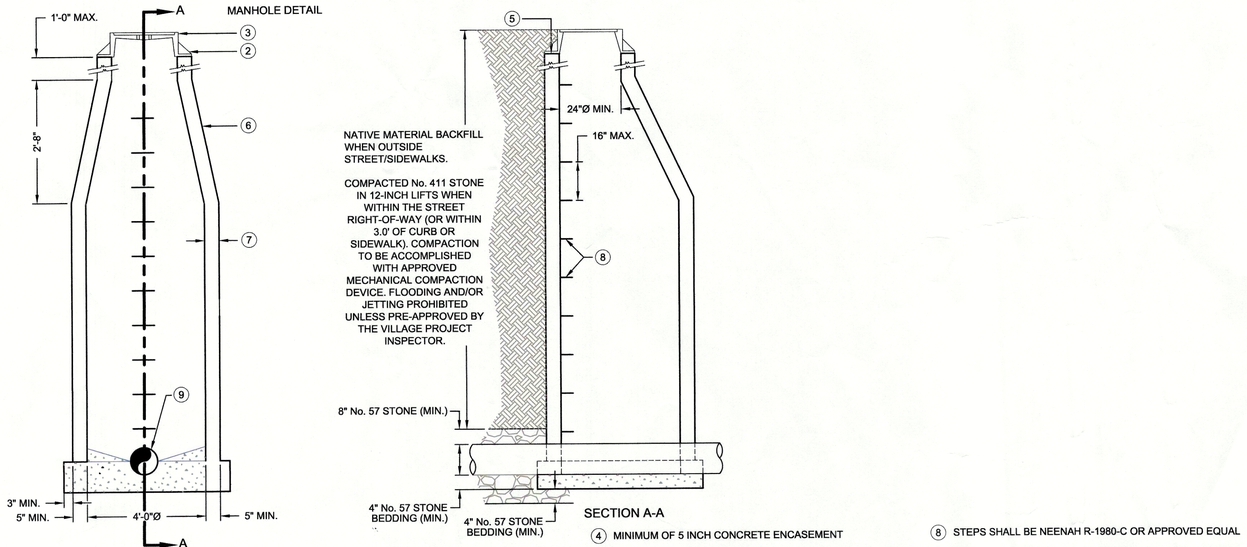


SAMPLING STATION DETAIL



TRENCH DETAIL



(2) PRECAST ADJUSTING RINGS TO SET FRAME COVER AT FINISH GRADE. ADJUST 1'-0" MAXIMUM

(3) STANDARD MANHOLE CASTINGS: CAST IRON FRAME WITH SOLID LID- NEENAH R-1668 OR APPROVED EQUAL

(4) MINIMUM OF 5 INCH CONCRETE ENCASEMENT

(5) CONSEAL SC-102 SEALANT OR EQUIVALENT

(6) HEIGHT = 2'-8" FOR 4'-0" DIAMETER MANHOLE

(7) PRECAST MANHOLE SECTIONS SHALL BE A.S.T.M. C-478 WITH O-RING JOINTS CONFORMING TO A.S.T.M. C-443

(8) STEPS SHALL BE NEENAH R-1980-C OR APPROVED EQUAL

(9) RUBBER WATER TIGHT BOOT TO BE CAST INTO MANHOLE BY MANUFACTURER

NOTES:

1) A FLEXIBLE, SECURELY SEALED CHIMNEY SEAL IS REQUIRED WHEN ADJUSTING RINGS ARE USED. THE CHIMNEY SEAL SHALL HAVE STAINLESS STEEL EXPANSION BANDS AND BE APPROVED BY THE VILLAGE OF LEIPSIC.

2) PRECAST ADJUSTING RINGS SHALL BE A MINIMUM OF 4-INCHES AND A MAXIMUM OF 12-INCHES.

3) ALL MANHOLES SHALL BE VACUUM TESTED AS PER A.S.T.M. 1244-93 OR AS DIRECTED BY THE VILLAGE OF LEIPSIC.

4) MANHOLE SHALL HAVE A PRE-FORMED INLET & OUTLET WITH CHANNELED FLOW LINE. INLET & OUTLET SHALL BE GASKETED FOR LEAK PROOF QUALITY.

5) JOINTS MUST BE KEPT TO A MINIMUM AND SEALED WITH FLEX-SEAL UTILITY SEALANT.

6) ALL OUTSIDE JOINTS SHALL BE WRAPPED WITH TWO - PLY, CROSS-LINKED, CROSS LAMINATED POLYOLEFIN CON WRAP BARRIER BY CONCRETE SEALANTS OR EQUAL, A MINIMUM OF 6" EACH SIDE OF JOINT. THIS SHALL BE INCLUDED IN THE PRICE OF THE MANHOLE.

MANHOLE DETAIL (PRE-CAST CONCRETE MANHOLE CONSTRUCTION)

Bockrath & Associates
Engineering and Surveying, LLC
115 South Fair Avenue, Suite A, Ottawa, OH 45875
Phone: 419.523.5789

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VILLAGE OF HAMLER, HENRY COUNTY, OHIO

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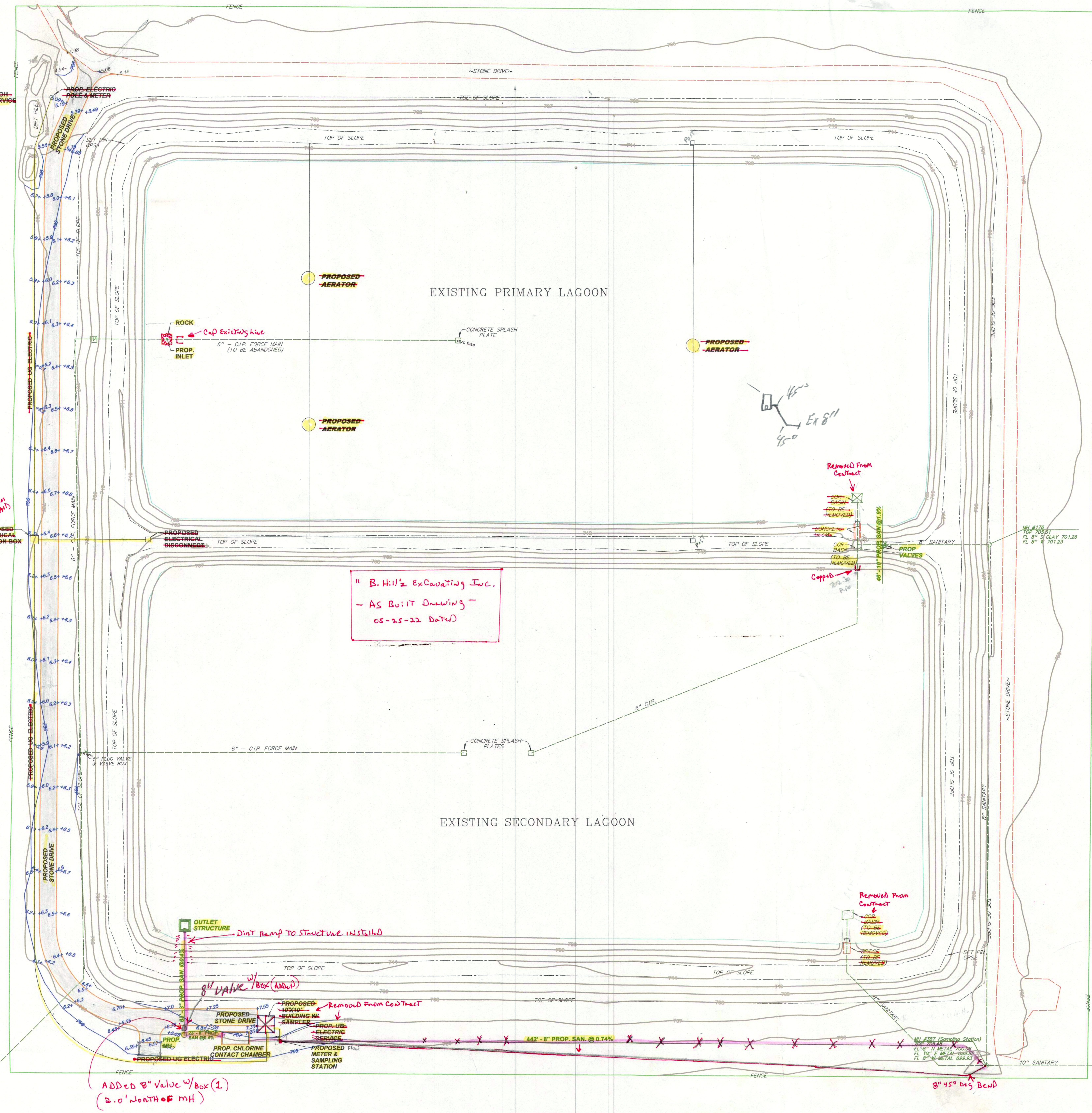
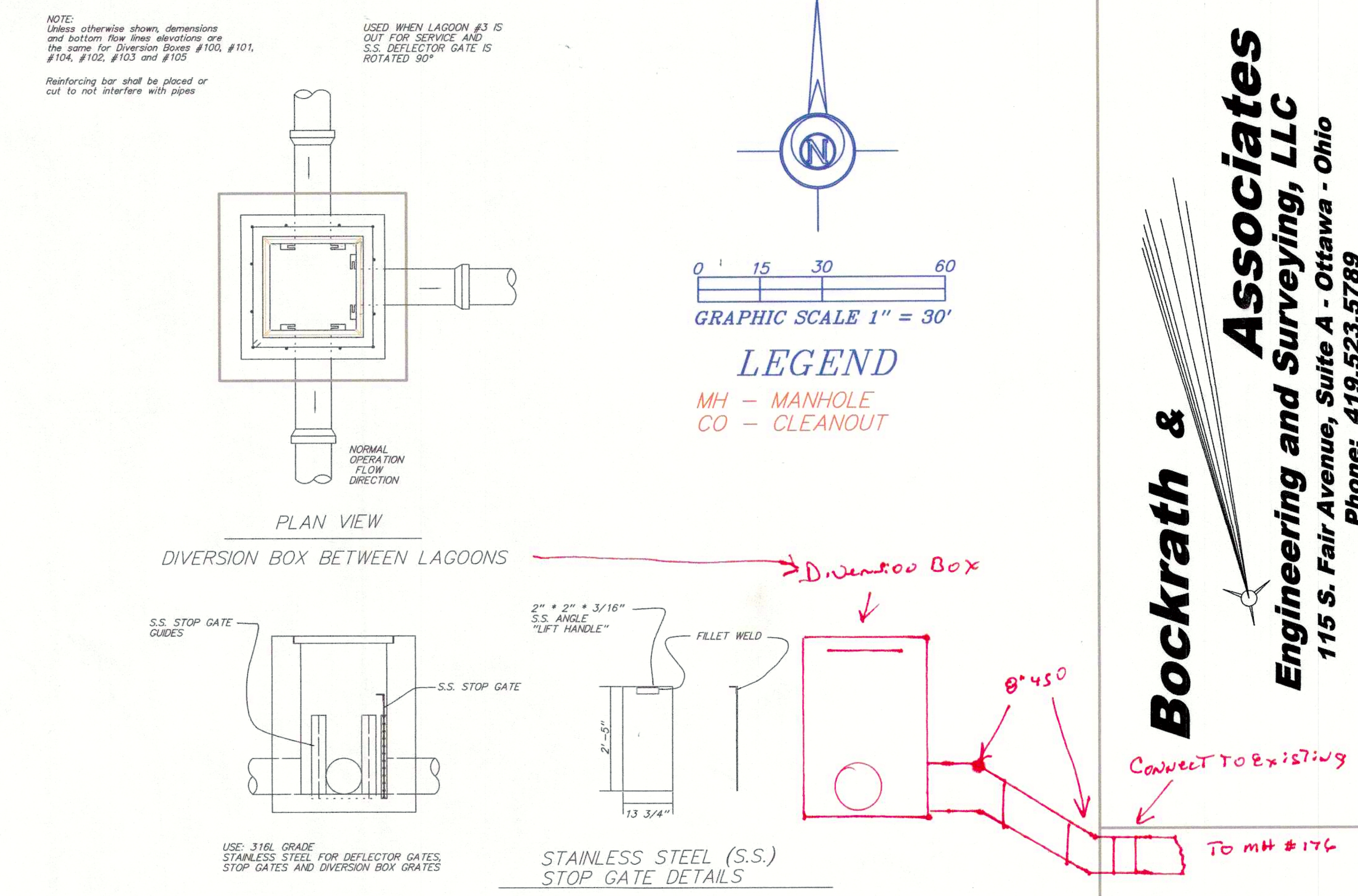
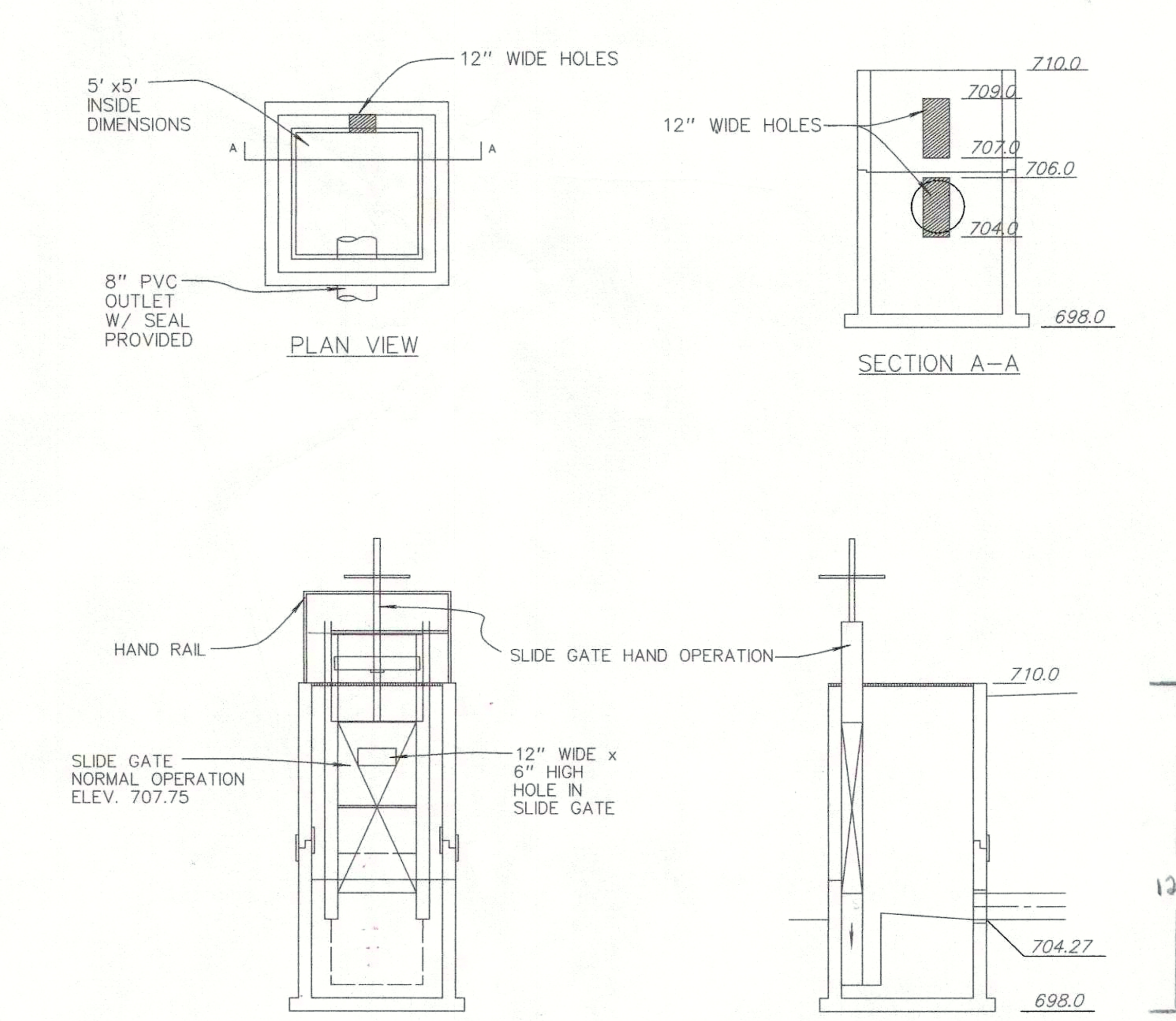


FENCE
~STONE DRIVE~
TOE OF SLOPE
TOP OF SLOPE
PROPOSED OH ELECTRIC SERVICE
PROP. ELECTRIC POLE & METER
PROPOSED STONE DRIVE
PROPOSED UG ELECTRIC
EXISTING PRIMARY LAGOON
PROPOSED AERATOR
ROCK
PROP. INLET
Cap Existing Line
6" - C.I.P. FORCE MAIN (TO BE ABANDONED)
CONCRETE SPLASH PLATE
Ex 8"
45°
Removed From Contract (All)
PROPOSED ELECTRICAL JUNCTION BOX
PROPOSED ELECTRICAL DISCONNECT
Removed From Contract
COR. BASIN (TO BE REMOVED)
CONCRETE SEAL
Capped
PROP VALVES
8" SANITARY
MH #176 TOP 705.21 FL 8" S CLAY 701.26 FL 8" E 701.23
"B. Hill's Excavating Inc.
- As Built Drawing -
05-25-22 Dated
8" C.I.P.
6" - C.I.P. FORCE MAIN
CONCRETE SPLASH PLATES
6" PLUG VALVE & VALVE BOX
EXISTING SECONDARY LAGOON
~STONE DRIVE~
OUTLET STRUCTURE
Dirt Ramp To Structure Installed
8" Valve w/Box (Added)
PROPOSED STONE DRIVE
PROPOSED 10'X10' BUILDING W/ SAMPLER
Removed From Contract
PROP. UG ELECTRIC SERVICE
442' - 8" PROP. SAN. @ 0.74%
PROP. MH
PROP. CHLORINE CONTACT CHAMBER
PROPOSED METER & SAMPLING STATION
PROPOSED UG ELECTRIC
MH #387 (Sampling Station)
10" SANITARY
8" 45° Deg Bend
ADDED 8" Value w/Box (1) (2.0' North of MH)
6" - C.I.P. FORCE MAIN



NOTE:
Unless otherwise shown, demensions and bottom flow lines elevations are the same for Diversion Boxes #100, #101, #104, #102, #103 and #105
Reinforcing bar shall be placed or cut to not interfere with pipes
USED WHEN LAGOON #3 IS OUT FOR SERVICE AND S.S. DEFLECTOR GATE IS ROTATED 90°
NORMAL OPERATION FLOW DIRECTION
PLAN VIEW
DIVERSION BOX BETWEEN LAGOONS
Diversion Box
8" 45°
Connect To Existing 8"
To MH #176
S.S. STOP GATE GUIDES
S.S. STOP GATE
FILLET WELD
13 3/4"
USE 316L GRADE STAINLESS STEEL FOR DEFLECTOR GATES, STOP GATES AND DIVERSION BOX GRATES
STAINLESS STEEL (S.S.) STOP GATE DETAILS
0 15 30 60
GRAPHIC SCALE 1" = 30'
LEGEND
MH - MANHOLE
CO - CLEANOUT



5' x5' INSIDE DIMENSIONS
12" WIDE HOLES
8" PVC OUTLET W/ SEAL PROVIDED
PLAN VIEW
710.0
709.0
707.0
706.0
704.0
698.0
SECTION A-A
HAND RAIL
SLIDE GATE HAND OPERATION
SLIDE GATE NORMAL OPERATION ELEV. 707.75
12" WIDE x 6" HIGH HOLE IN SLIDE GATE
710.0
12'0
704.27
698.0

OUTLET STRUCTURE DETAILS

NOTE: SURVEY BEARINGS BASED ON OHIO NORTH ZONE STATE PLANE COORDINATES OBTAINED FROM THE OHIO DOT VRS NETWORK

THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE EXAMINATION. BEYOND THE DEED DOCUMENTS CITED ON THE SURVEY DRAWING THERE MAY BE RECORDED OR UN-RECORDED EASEMENTS AND/OR ENCUMBERANCES BENEFITING OR ENCUMBERING THE SURVEYED PROPERTY WHICH ARE NOT SHOWN ON THIS DRAWING.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. IT IS THE RESPONSIBILITY OF THE "CONTRACTOR" TO VERIFY AND LOCATE ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK.

Bockrath & Associates
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SITE PLAN
HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER
HENRY COUNTY, OHIO

SCALE 1" = 30'

JOB #19-005

DRAWN BY KMB 2/2/21

SHEET - 4 OF 7 SHEETS

Bockrath & Associates
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Phone: 419.523.5789

SEWERAGE APPROVED
OHIO ENVIRONMENTAL PROTECTION AGENCY
AS EVIDENCED BY COPY OF
LETTER OF APPROVAL
HERETO ATTACHED

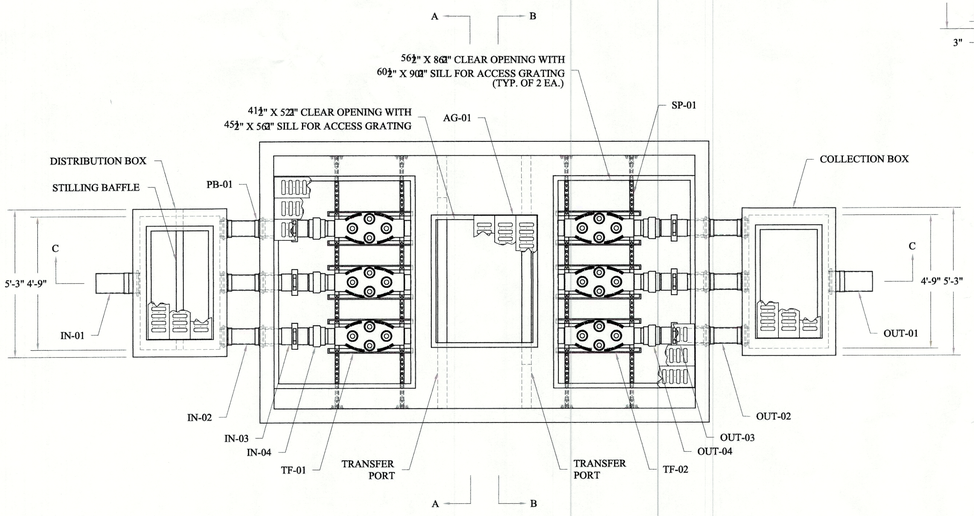
HYDRAULIC PROFILE
HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER
HENRY COUNTY, OHIO

JOB #19-005

DRAWN BY KMB 2/2/21

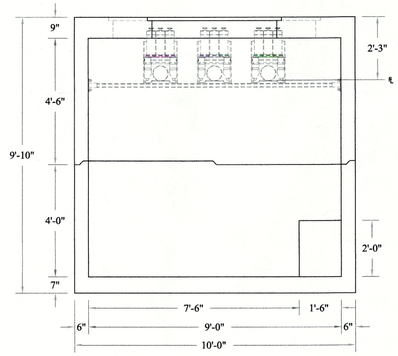
SHEET - 5
OF 7 SHEETS

BUILD SHEET		
ITEM	QUANTITY	DESCRIPTION
PB-01	1	PRESS-SEAL 06" CAST-A-SEAL BOOT
PB-02	1	PRESS-SEAL 08" CAST-A-SEAL BOOT
IN-01	1	08" SDR-35 INLET (BY OTHERS)
IN-02	LOT	06" SCH 40 PVC PIPE STUBBED 1'-0" OUTSIDE OF VAULT FOR CONNECTION TO BY OTHERS
IN-03	3	06" VALTERRA PVC KNIFE VALVE
IN-04	3	06" SCH 40 PVC UNION
OUT-01	1	08" SDR-35 OUTLET (BY OTHERS)
OUT-02	LOT	06" SCH 40 PVC PIPE STUBBED 1'-0" OUTSIDE OF VAULT FOR CONNECTION TO BY OTHERS
OUT-03	3	06" VALTERRA PVC KNIFE VALVE
OUT-04	3	06" SCH 40 PVC UNION
TF-01	3	NORWECO XT-4000 CHLORINE TABLE FEEDER WITH MOUNTING BRACKETS
TF-02	3	NORWECO XT-4000 DE-CHLOR TABLE FEEDER WITH MOUNTING BRACKETS
SP-01	4	1⅝" X 1⅝" TYPE 304 STAINLESS STEEL STRUT, MOUNTING HARDWARE AND BRACKETS FOR BRACING
AG-01	31	9" WIDE X 60" LONG GALVANIZED ACCESS GRATING
CI-01	1	CONSEAL CS-50 PRIMER APPLIED IN BETWEEN JOINTS AND 8" ABOVE AND BELOW EXTERIOR JOINT
CI-01	10	CONSEAL CS-102 BUTYL RESIN SEALANT
CI-01	2	CONSEAL CS-212 JOINT WRAP

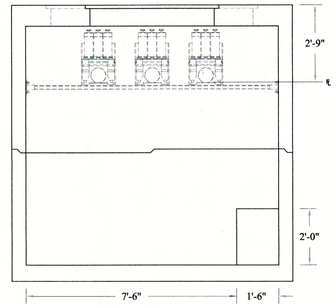


PLAN VIEW

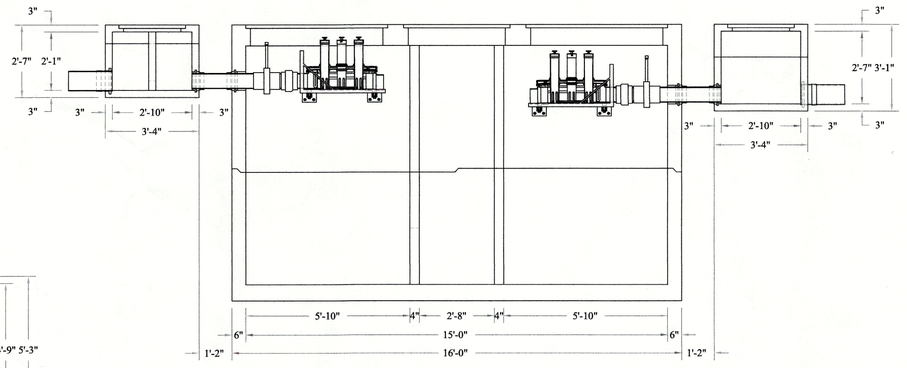
6,560 GALLON CONTACT CHAMBER DETAILS				
DESCRIPTION	UOM	QUANTITY	WEIGHT (LBS)	
9'-0" X 15'-0" X 4'-6" I.D. BASE WITH TRANSFER PORT WALLS	EA	1	25,230	
9'-0" X 15'-0" X 4'-6" I.D. BASE WITH TRANSFER PORT WALLS, BOOTS AND PAN OPENINGS	EA	1	32,600	
2'-10" X 4'-9" X 2'-1" I.D. DISTRIBUTION BOX WITH BOOTS AND STILLING BAFFLE	EA	1	2,630	
2'-10" X 4'-9" X 2'-7" I.D. COLLECTION BOX WITH BOOTS	EA	1	2,560	
TOTAL STRUCTURE				63,020



SECTION VIEW A-A



SECTION VIEW B-B



SECTION VIEW C-C

GENERAL NOTES:

1. FALL THROUGH CHLORINE CONTACT CHAMBER FROM INLET INVERT TO OUTLET INVERT IS SIX INCHES.
2. THE CHLORINE CONTACT CHAMBER SHALL BE CONSTRUCTED OF REINFORCED, 5,000 PSI @ 28 DAY COMPRESSION STRENGTH PRECAST CONCRETE.
3. PRECAST CONCRETE REINFORCING SHALL CONFORM TO ACI STANDARD 318-83.
4. INDIVIDUAL PRECAST CONCRETE SECTIONS TO BE SEALED WITH CONSEAL CS-102.
5. TANK PAD OF 34" GRAVEL TO BE INSTALLED AS PER JOBSITE REQUIREMENTS. IF A CONCRETE PAD IS USED, A THREE INCH SAND PAD MUST BE PLACED BETWEEN CONCRETE PAD AND TANK BOTTOM.
6. GRADE AROUND THE CHLORINE CONTACT CHAMBER SHALL BE MAINTAINED TO PREVENT SURFACE WATER FROM DRAINING INTO EXCAVATION DURING CONSTRUCTION OR ACCUMULATING AT GRADE AFTER COMPLETION.
7. FINISHED GRADE SHALL BE MAINTAINED AT LEAST FOUR INCHES BELOW TOP OF CHLORINE CONTACT CHAMBER.
8. GRANULAR BACKFILL SHALL BE USED WHEN BACKFILLING AROUND THE CHLORINE CONTACT CHAMBER.
9. CHLORINATION SYSTEM SHALL BE EQUIPPED WITH A NORWECO "XT" STYLE DRY TABLE CHLORINATION AND DECHLORINATION UNIT.

NCI
Norwalk Concrete Industries
80 Commerce Drive
Norwalk, Ohio 44857
www.nciprecast.com
Toll Free 800.733.3624
Phone 419.668.8167
Fax 419.663.0627

6,560 GALLON CHLORINE CONTACT CHAMBER WITH DRY TABLET CHLORINATOR AND DECHLORINATOR

REVISIONS:	DWG:	DATE:	SHT. -
	T-0242-21	02-09-21	OF -
			JDH

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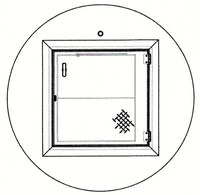
Phone: 419.523.5709

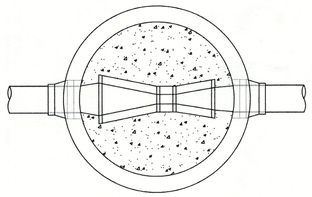
HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER, HENRY COUNTY, OHIO

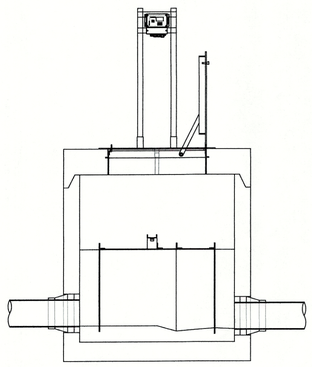
CHLORINE CONTACT BASIN DETAILS

REVISED

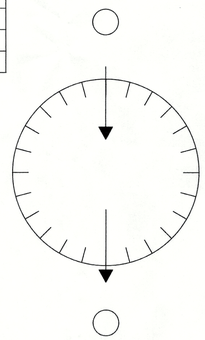
REVIEWED BY: GAB 1.18.21
DESIGNED BY: KMB 1.18.21
JOB NUMBER: 19-005

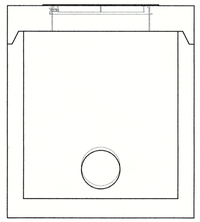






BUILD SHEET		
ITEM	QUANTITY	DESCRIPTION
IN-01	1	08" PVC INLET (BY OTHERS)
OUT-01	1	08" PVC OUTLET (BY OTHERS)
PB-01	2	PRESS-SEAL 12-08 DIRECT DRIVE BOOT
CP-01	1	01" SCH 40 PVC CONDUIT COUPLING AND STUB (CAST-IN)
CP-02	1	STAINLESS STEEL STRUT CONTROLLER STAND
CP-02	1	NIVELCO MULTICONT CONTROLLER/RECORDER (PED 215 1)
PF-01	1	KENCO PLASTICS PF-3, 3" PARSHALL FLUME (CAST-IN)
	0	12 GPM TO 834 GPM
PF-02	1	NIVELCO EASYTREK ULTRASONIC SENSOR (SPA 5AN-4)
AH-01	1	USF FABRICATION APS3030 ACCESS HATCH
	2	CONSEAL CS-102 JOINT SEALANT SEALANT (ROLLS)





PIPE #	ELEVATION	PIPE TYPE	HOLE TYPE	ANGLE	UP TO CENTER	ITEM	HOLE HEIGHT	HOLE WIDTH	OVER INSIDE
1	703.27	8" PVC	MHBODD1208	90	9	BASE	12	12	37.75
2	703.35	8" PVC	MHBODD1208	270	10	BASE	12	12	113

DESCRIPTION	UOM	QUANTITY	WEIGHT (LBS)
48"Ø X 12" FLAT TOP WITH HATCH CAST-IN	EA	1	1,670
48"Ø X 48" BASE WITH FLUME AND CHANNEL CAST-IN AND BOOTS	EA	1	4,340
TOTAL STRUCTURE			6,010

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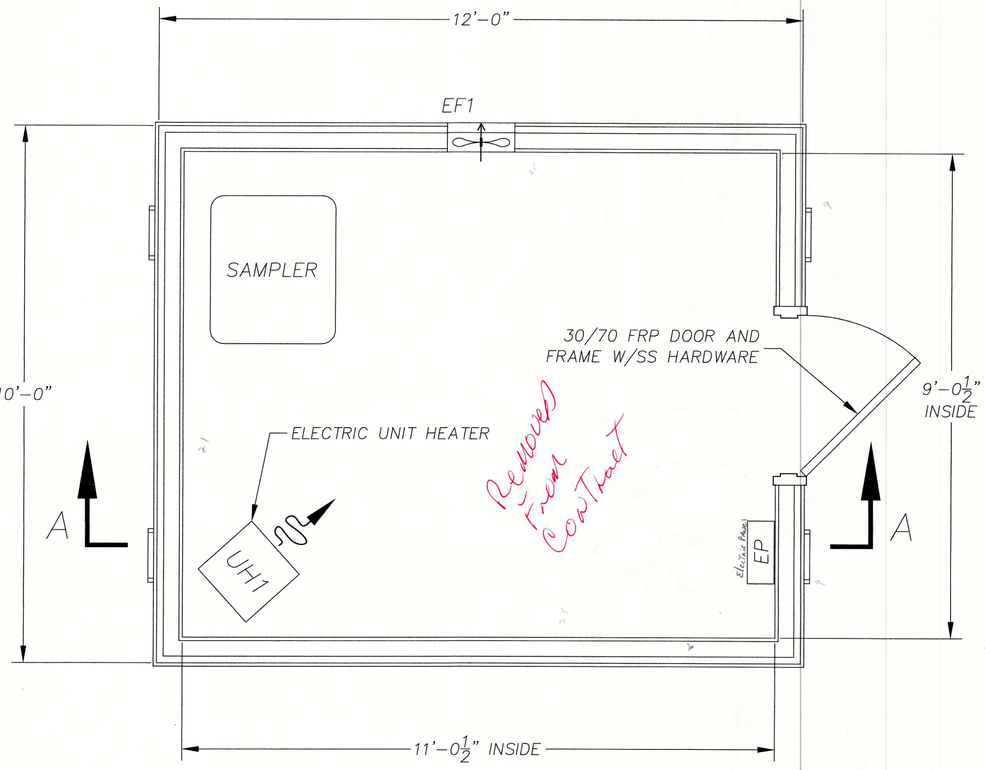
HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER, HENRY COUNTY, OHIO

FLOW METER MANHOLE

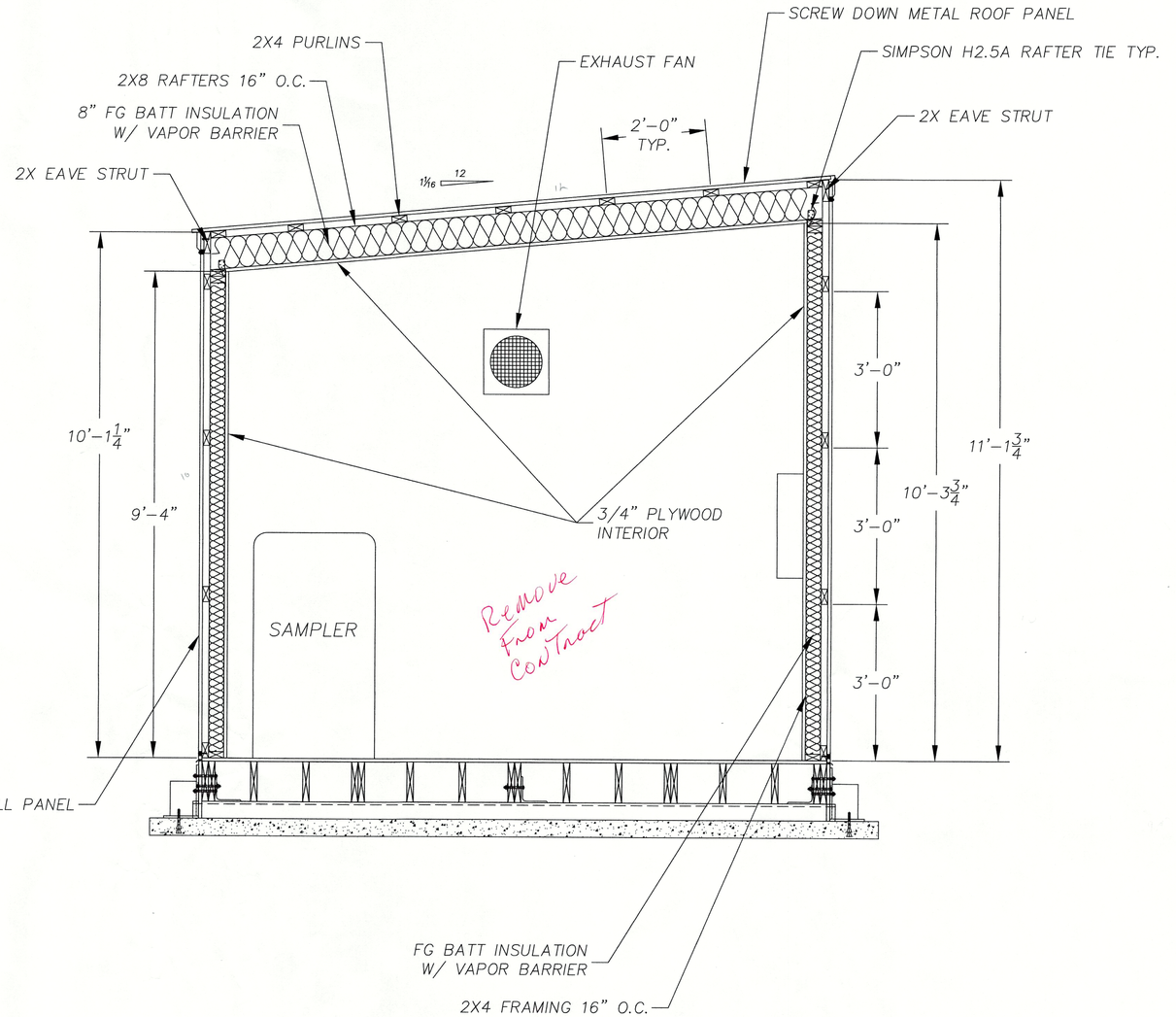
REVISED

REVIEWED BY: GAB 1.18.21
DESIGNED BY: KMB 1.18.21
JOB NUMBER: 19-005



FLOOR PLAN

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

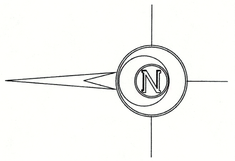


SECTION A-A

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

NOTES:

1. ALL FRAMING LUMBER AND PLYWOOD SHALL BE AC2 GROUND CONTACT TREATED.
2. ALL SCREWS AND NAILS TO BE STAINLESS STEEL.



REV	DATE	DESCRIPTION	BY

Bockrath & Associates
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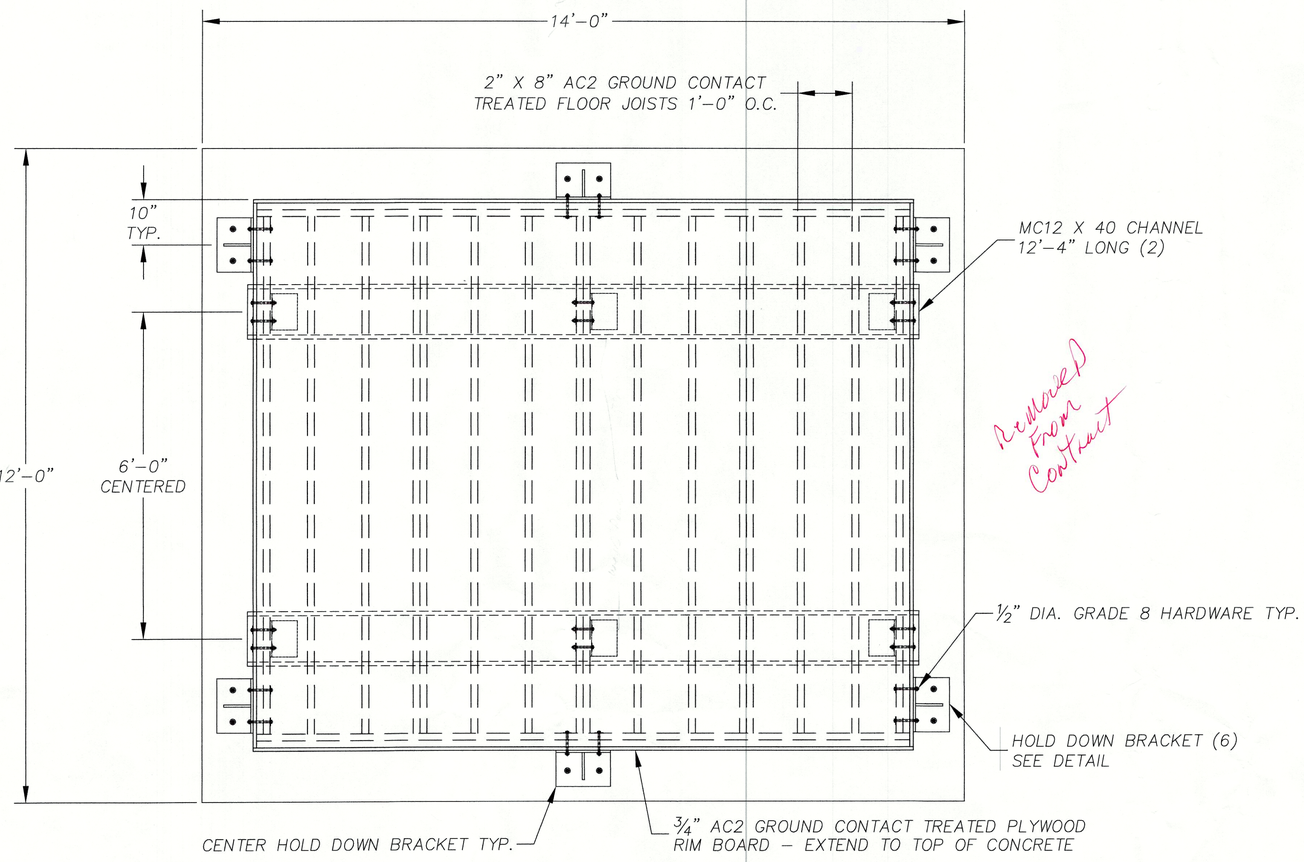
175 S. Fair Avenue, Suite A · Ottawa · Ohio
Phone: 419.523.5789

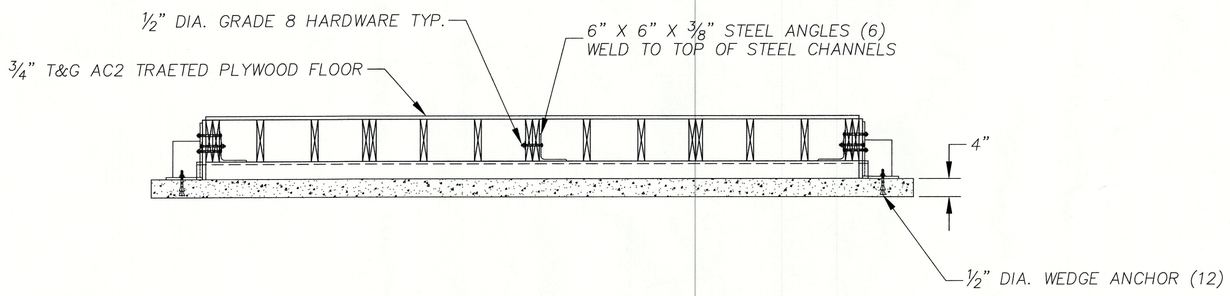
UTILITY SHED
HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER, HENRY COUNTY, OHIO

JOB #19-005
DESIGNED BY: ech
DATE: 6/28/21

A1.0

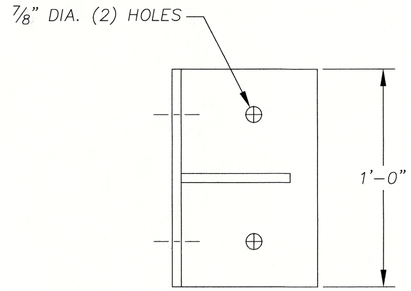


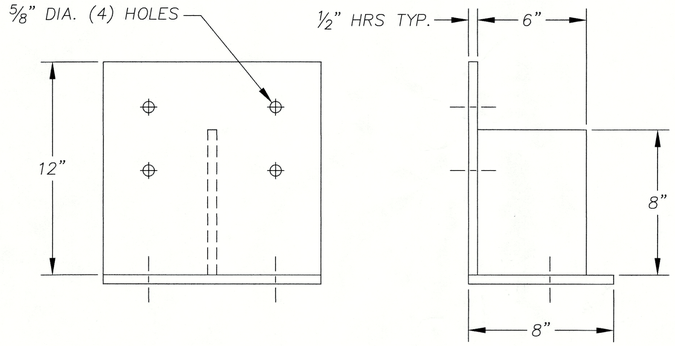
Removed From Contract



SUB FLOOR FRAMING

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





HOLD DOWN BRACKET

(6) REQ'D.

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

5719

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Phone: 419.523.5789

UTILITY SHED
HAMLER SANITARY LAGOON IMPROVEMENTS
VILLAGE OF HAMLER, HENRY COUNTY, OHIO

REV	DATE	DESCRIPTION	BY

JOB #19-005
DESIGNED BY: ech
DATE: 6/28/21

A1.1