TIMBERLAND WWTF MCCRACKEN COUNTY, KENTUCKY

PERMIT ISSUE: _____, 2020 CONSTRUCTION ISSUE: _____, 2020 RECORD ISSUE: _____, 2020





VICINITY MAP

DRAWING LIST

EXISTING CONDITIONS / DEMOLITION PLAN

SITE / UTILITY PLAN DETAILS

HYDRAULIC PROFILE

PROCESS FLOW DIAGRAM PROCESS NOTES, ABBREVIATIONS AND LEGEND

CONTACT TANK NO. 2 AND OVERFLOW

STRUCTURE PLANS, SECTIONS AND DETAILS

CONTACT TANK NO. 1 CLARIFIER PLAN AND

BLOWER PLAN, SECTIONS AND DETAILS

PROCESS SECTIONS

PROCESS DETAILS AND ELECTRICAL RISER DIAGRAM

BAR IS ONE INCH ON OFFICIAL DRAWINGS. O ________1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

COVER SHEET

ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE337



SEAL DATE:	2/15/2021
DRAWN BY:	BJK
PROJ NUMBER:	542-19
DATE:	2/12/2021
DRAWING NO:	

- 1. All water and sewer main construction shall be consistent with the local municipality requirements as well as all testing and disinfection requirements of Kentucky DEP.
- 2. The contractor shall obtain, erect, maintain and remove all signs, barricades, flagmen and other control devices as may be necessary for the purpose of regulating, warning or guiding traffic. Placement and maintenance of all traffic control devices shall be in accordance with the latest revision of the Manual on Uniform Traffic Control Devices.
- 3. Location of utilities shown on plans are approximate only, and are not necessarily complete. Contractor shall make his own investigations as to location of all existing underground structures, cables, utilities and pipe lines.
- 4. If existing utility lines of any nature are encountered which conflict in location with new construction, the contractor shall notify the engineer and owner so that the conflict may be resolved.
- 5. 5. The contractor shall notify One Call at least 48 hours prior to construction so that each utility company can stake out any underground improvements that they may have which might interfere with the proposed construction.
- 6. The contractor shall be required to make arrangements for the proper bracing, shoring and other required protection of all roadways, structures, poles, cables and pipe lines, before construction begins. He shall be responsible for any damage to the streets or roadways and associated structures and shall make repairs as necessary to the satisfaction of the engineer and owner at his own
- 7. The contractor shall be responsible for the protection of all private and public utilities even though they may not be shown on the plans. Any utility that is damaged during construction shall be repaired or replaced to the satisfaction of the engineer and owner by the contractor at his own expense.
- 8. The contractor shall examine the plans and specifications, visit the site of the work and inform himself/herself fully with the work involved, general and local conditions, all federal, state and local laws, ordinances, rules and regulations and all other pertinent items which may affect the cost and time of completion of this project before submitting a proposal.
- 9. All work and materials shall be in accordance with code requirements.
- 10. Prior to submitting his bid, the contractor shall call the attention of the engineer to any material or equipment he deems inadequate and to any item of work omitted on the plans.
- 11. Structures for valve vaults for water mains shall be in accordance with the improvement plans and the applicable municipality construction requirements. Where granular trench backfill is required around these structures, the cost shall be considered as incidental and shall be included in the contract unit price for the structure.
- 12. Frame and cover or grates for water main structures shall be as indicated within these improvement plans.
- 13. All final adjustments of casting will be accomplished by the use of precast concrete adjusting rings set in butyl rope joint sealant, mortar joints will not be allowed. Total height of adjusting rings used shall not exceed twelve (12") inches. cost for adjustment is considered incidental.
- 14. The contractor shall be responsible to place on grade and coordinate with other contractors all underground structure frames such as catch basins, inlets, manholes, hydrants, buffalo boxes, valves, etc. No additional compensation shall be paid and said adjustments shall be considered incidental to other items of construction.
- 15. The contractor shall restore any area disturbed to a condition equal to or better than its original use. This shall include finish grading, establishment of a vegetative cover (seeding or sod), general cleanup and pavement replacement.
- 16. All trenches caused by the construction of all utilities and the excavation around catch basins, manholes, inlets and other appurtenances which occur within the limits of existing or proposed pavements, sidewalks and curb and gutters or where the edge of the trench shall be within two (2') feet horizontally of said improvements shall be backfilled with compacted granular trench backfill or with approved suitable select material and properly compacted to 100% of maximum density as determined by the standard proctor dry density (ASTM d 698) compáction test. When granular material is required, the cost shall be considered 35. All materials and methods of construction to meet the specifications submitted incidental and shall be included in the contractors bid.
- 17. The depth of backfill shall be measured from the top of the pipe embedment to 36. Construction should not commence until all permits have been received from all the finished subgrade or as noted on the plans.
- 18. The contractor shall be responsible for providing safe and healthful working

conditions throughout the construction of the proposed improvements.

- 19. The engineer will be given forty—eight (48) hours notice for any staking that is to be done. The cost of stakeout is the responsibility of the contractor.
- 20. The contractor shall inform the engineer and owner before work commences on each category of construction, i.e. water main, grading, pavement and drainage improvement. A twenty—four (24) hour notice shall be given for any item that requires final testing and inspection such as water mains or sanitary sewers.
- 21. The engineer will furnish the contractor with lines and grades necessary to the proper prosecution and control of the work. The contractor shall call the attention of the engineer to any errors or discrepancies which may be suspected in lines and grades which are established by the engineer, and shall not proceed with the work until any lines and grades which are believed to be in error have been verified or corrected by the engineer or his representative.
- 22. All survey monuments damaged or removed during construction of this project shall be replaced by the surveyor and said cost of replacement shall be paid by the contractor.
- 23. The contractor will have in his possession on the job site a copy of the plans and specifications during construction.
- 24. If approval for any items is required, the contractor shall contact the engineer for approval prior to ordering.
- 25. Any drain and/or field tile encountered by the contractor during the installation of the improvements shall be returned to original condition. This work to be considered incidental to the contract.
- 26. All road signs, street signs and traffic signs which need to be relocated or moved due to construction shall be taken down and stored by the contractor at his own expense, except those which are necessary for proper traffic control which shall be temporarily reset until completion of construction operations. After completion of the work, the contractor shall reset, at his expense, all said signs.
- 27. The contractor shall dispose of all excess excavation, unsuitable and unusable materials offsite and at an approved location in a manner that public or private property will not be damaged or endangered. This work is considered as incidental to the cost of the project. Contractor to follow any local, state, and
- federal guidelines for disposing of material off site. 28. No trench excavations will be permitted to remain open over any weekend, night,
- 29. Band—seal style couplings shall be used when joining sewer pipes of dissimilar

or any time site is left unattended.

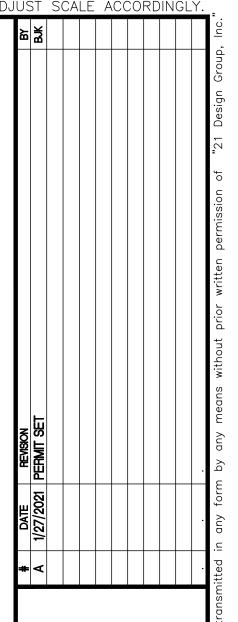
- 30. As-built drawings shall be prepared by the contractor and submitted to the engineer as soon as the site improvements are completed. Any change in length, 50. See MEP/Arch. plans for site lighting and electrical design/layout. location or alignment shall be shown in red. As-builts will be performed by a licensed surveyor. It will include the tops and flowlines of all storm and sanitary structures.
- 31. The contractor is responsible for coordinating any required inspections with the engineer and city or state agency.
- 32. Special attention is drawn to the fact that the standard specifications requires the 53. All unsurfaced areas shall receive a minimum of 6" of topsoil. Contractor shall contractor to have a competent superintendent on the project site at all times, irrespective of the amount of work sublet. The superintendent shall be capable of reading and understanding the plans and municipality construction specifications, shall have full authority to execute orders to expedite the project, shall be responsible for scheduling and have control of all work as the agent of the contractor. Failure to comply with this provision will result in a suspension of work as provided in the contract documents.
- 33. The engineer and owner are not responsible for the construction means, methods, techniques, sequences or procedures, time of performance, programs or for any safety precautions used by the contractor. The contractor is solely responsible for execution of his work in accordance with the contract documents and specifications.
- 34. The utilities shown hereon were plotted from available information and do not necessarily reflect the actual existence, non—existence, size, type, or location of these or other utilities. The contractor shall be responsible for verifying the actual location of all utilities. All utilities shall be located in the field prior to any construction of improvements. These provisions shall in no way absolve any party from complying with the underground facility safety and damage prevention
- for the construction permit.

governing agencies.

- 37. No land disturbance activities can be completed until all land disturbance permitting has been acquired. It is the responsibility of the contractor to verify permits are in place prior to activities. Contractor will be responsible for any fines that are incurred due activities completed prior to having necessary permitting in place.
- 38. All fill material shall be made of selected earth materials, free from broken masonry, rock, frozen earth, rubbish, organic material and debris.
- 39. Grading contractor shall keep existing roadways clean of mud and debris at all times.If the city or owner has to clean the roads it will be at the expense of the D. All CPP or HDPP shall be installed using embedment material meeting North contractor.
- 40. All graded areas shall be protected from erosion by erosion control devices and/or seeding and mulching as required by all local and state agencies and
- 41. No grade shall exceed a 3:1 slope except where noted.
- 42. Interim stormwater drainage control in the form of siltation control measures are
- 43. Adequate temporary off-street parking shall be provided for construction employees. Parking on non-surfaced areas shall be prohibited in order to eliminate the condition whereby mud from construction and employee vehicles is tracked onto the pavement causing hazardous roadway and driving conditions.
- 44. The contractor shall, at all times, contain mud and other spoils on the site. No vehicle, trailer or construction equipment is to deposit mud or any other material on public streets. Project will be stopped if streets are not cleaned immediately.
- 45. Public roadways shall be kept open to traffic during all phases of construction of improvements. No driving lanes shall be closed without prior written permission from the governing agency.
- 46. The contractor shall furnish, maintain, and remove traffic control devices for the purpose of regulating, warning, and directing traffic during construction in the public roadways. All flagmen, barricades, warning signs, etc. shall conform to the manual for uniform traffic control devices.
- 47. No investigation has been performed by the engineer regarding hazardous waste, underground conditions or utilities affecting the tract of land shown herein.
- 48. This plan is not a survey in any sort and shall not constitute a boundary survey.
- 49. Onsite utilities have been shown based on documents obtained from public
- 51. Contractor shall comply with all OSHA requirements for safety and construction.
- 52. All utility trenches in paved areas shall be compacted to the requirements of the specific paving specification. Only granular material shall be used in utility trenches under paved areas.
- seed, fertilize, mulch, and maintain all disturbed areas until stabilization is provided meeting the technical specifications and/or direction of the Engineer.
- 54. The contractor is responsible for maintenance of sediment control bmps throughout the entire project.
- 55. All sewer laterals shall have a 2% minimum slope.
- 56. All storm sewer covers shall have the words "Storm Drain" cast in the top in letters three inches high. All sanitary sewer covers shall have "Sanitary Sewer" meeting same specification.
- 57. All frames, grates and covers shall be ductile iron, conforming to ASTM A48, Class 30 and shall be designed for heavy duty traffic.
- 58. Manhole steps shall be constructed of polypropylene conforming to ASTM D 4101 and shall meet current state and federal safety standards. Steps shall be Neenah R-1981-N or approved equal.
- 59. Pre—cast manholes shall be at least 48" diameter and conform with ASTM C478 and to design dimensions. All lift hole shall be thoroughly wetted and completed filled with mortar and smoothed. Structures shall be free of fractures or cracks.

All joints between pre-cast elements on manholes shall be made with an approved bitumastic material or an approved rubber gasket. Contractor shall submit shop drawings to engineer for approval prior to ordering.

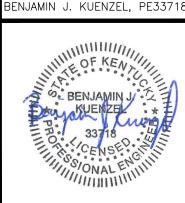
- 60. All storm sewer 12" to 30" in diameter shall be Corrugated Polyethylene Pipe (CPP) or High Density Polypropolene (HDPP)
- A. CPP pipe and fittings shall conform to ASTM F405 and F667 and shall have a circular cross—section and have a smooth wall interior.
- B. End sections shall be polyethlyene flared type with toe plates. C. Joints shall be provided with neoprene or manufacturer"s standard gaskets and meet ASTM F2881. Pipes up to shall be water tight according to D3212.
- Spigots shall have gaskets meeting the requirements of ASTM F477.
- Carolina Department of Transportation requirements. E. Installation to conform to ASTM D2321 and pipe manufacturer's recommendations
- for backfill, bedding, installation, and minimum cover requirements. F. Clean joints thoroughly, and coat bell, spigot and gasket with recommended lubricant before jointing.
- 61. Dual wall and triple wall polypropylene pipe (HDPP) shall confirm to the requirements of AASHTO M330 "Standard Specification for Polypropylene Pipe, ASTM F2736 (Dual wall) for sizes 12" to 30" and ASTM F2764 (Triple wall) for sizes 30" to 60". All polypropylene pipe shall be installed according with ASTM F2321 "Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.".



NOTES

GENERAL

NGINEERING CERTIFICATE OF UTHORITY NO. 4804 ENGINEERING LICENSE:

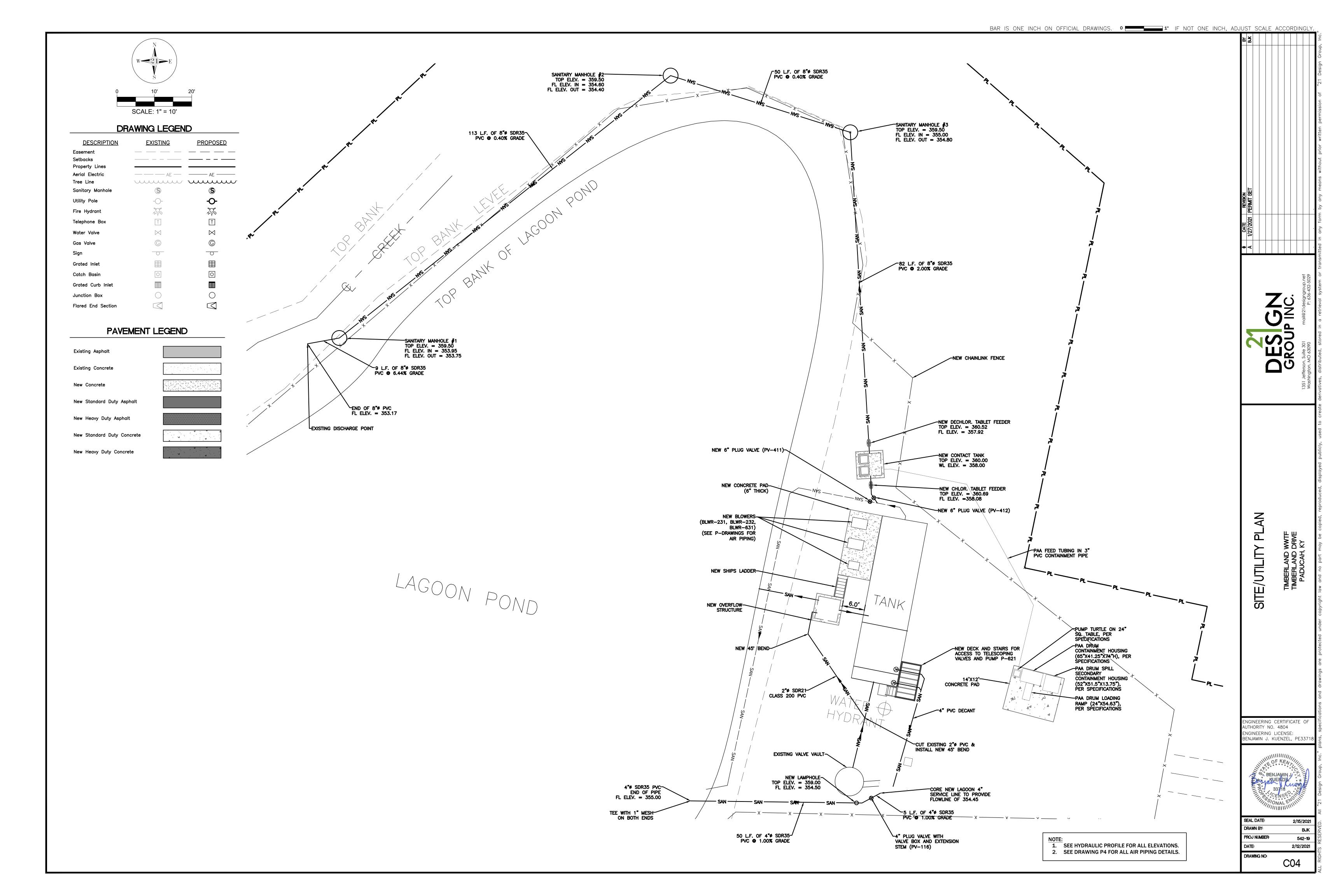


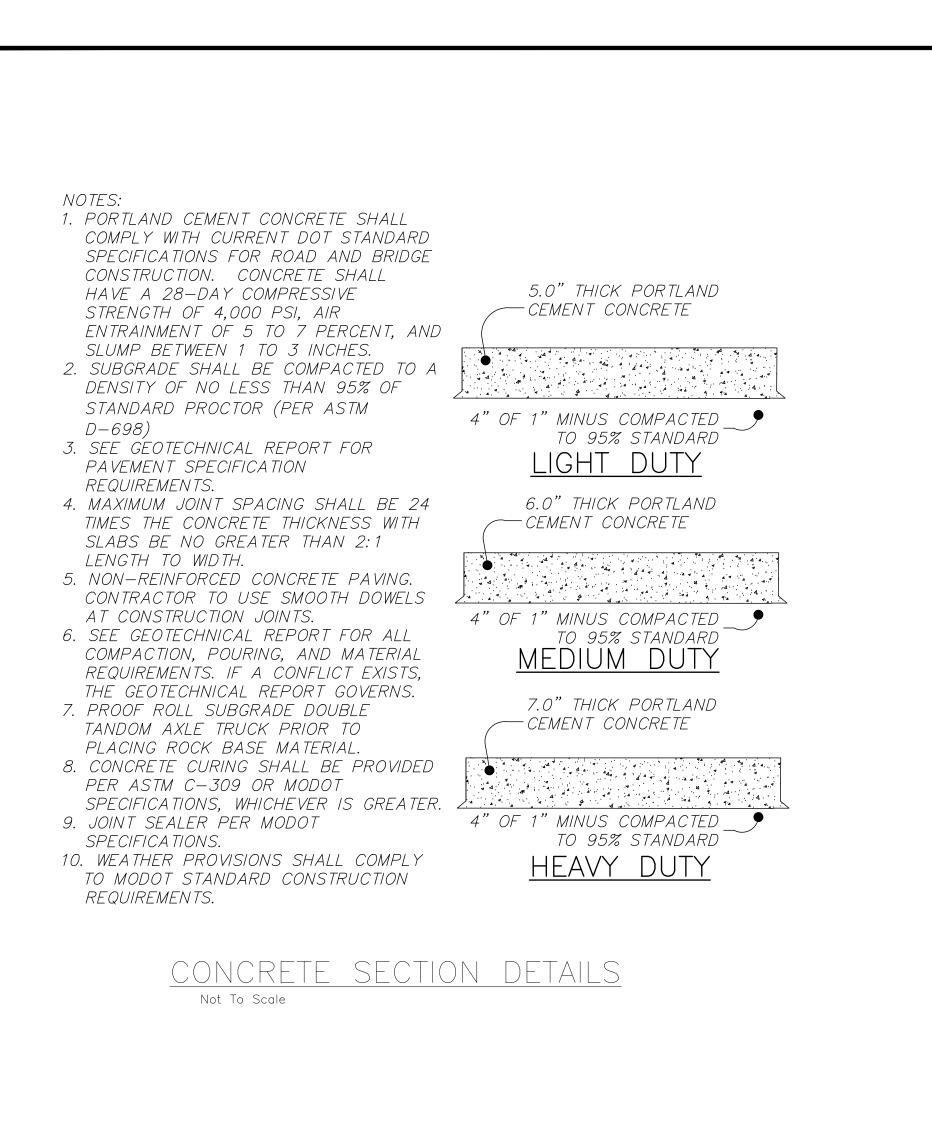
SEAL DATE: 2/15/202 DRAWN BY: BJK PROJ NUMBER 542-19 2/12/2021

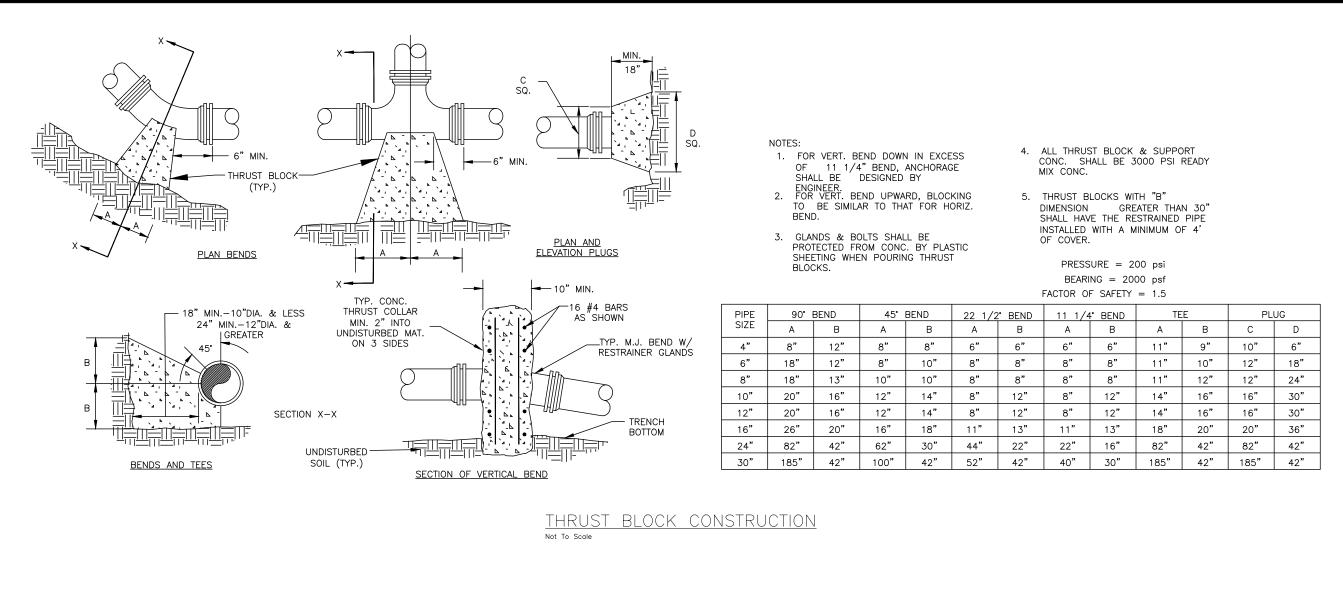
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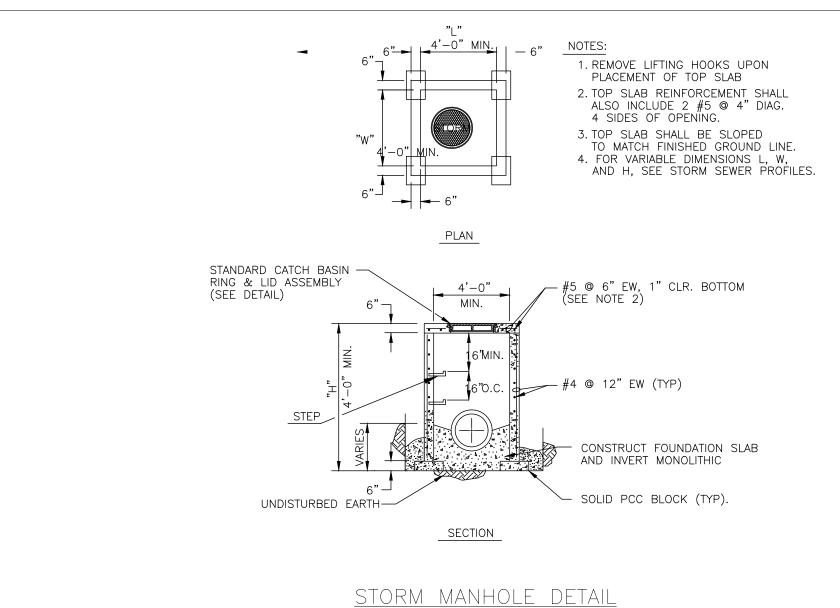
C02

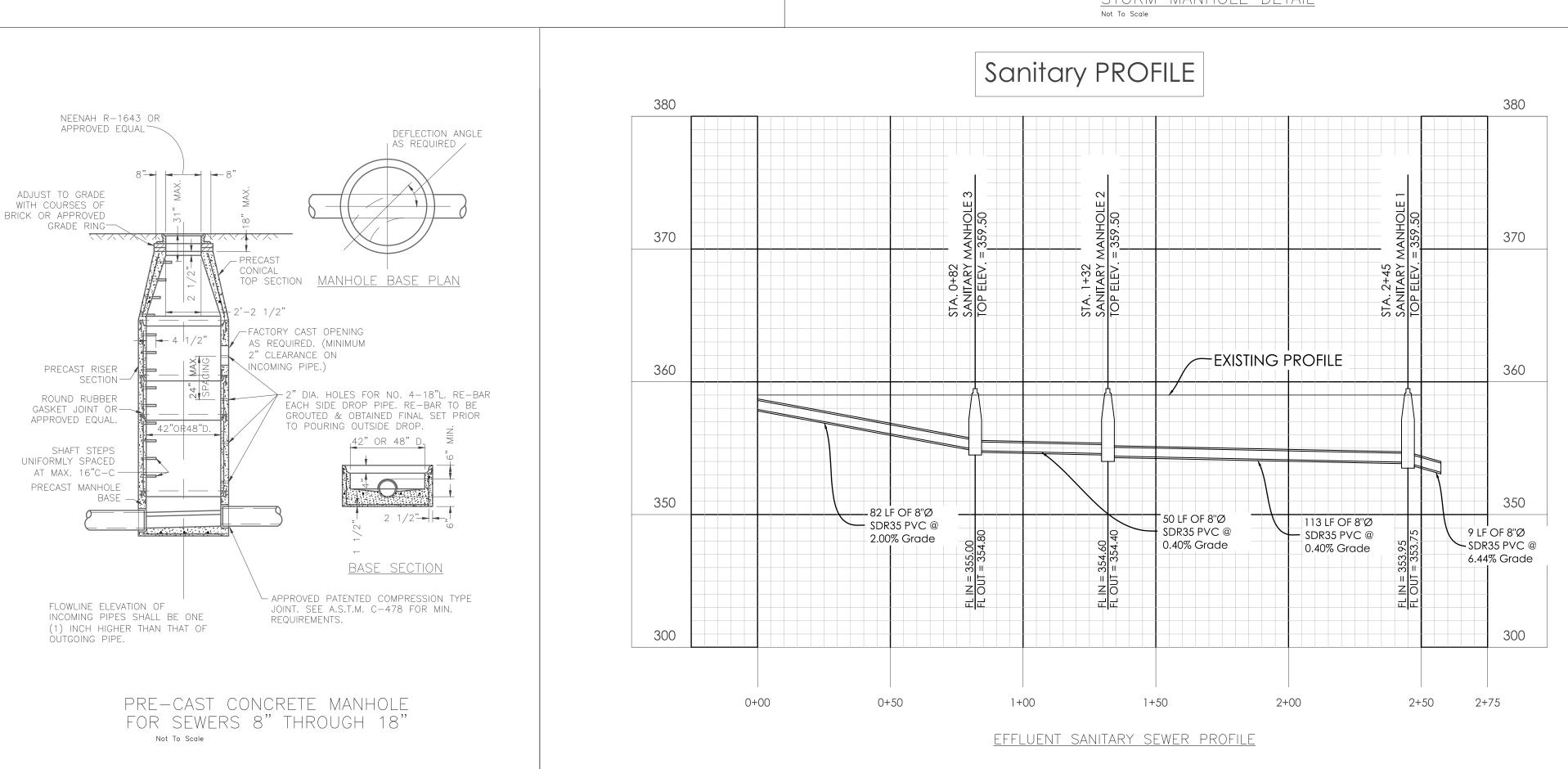
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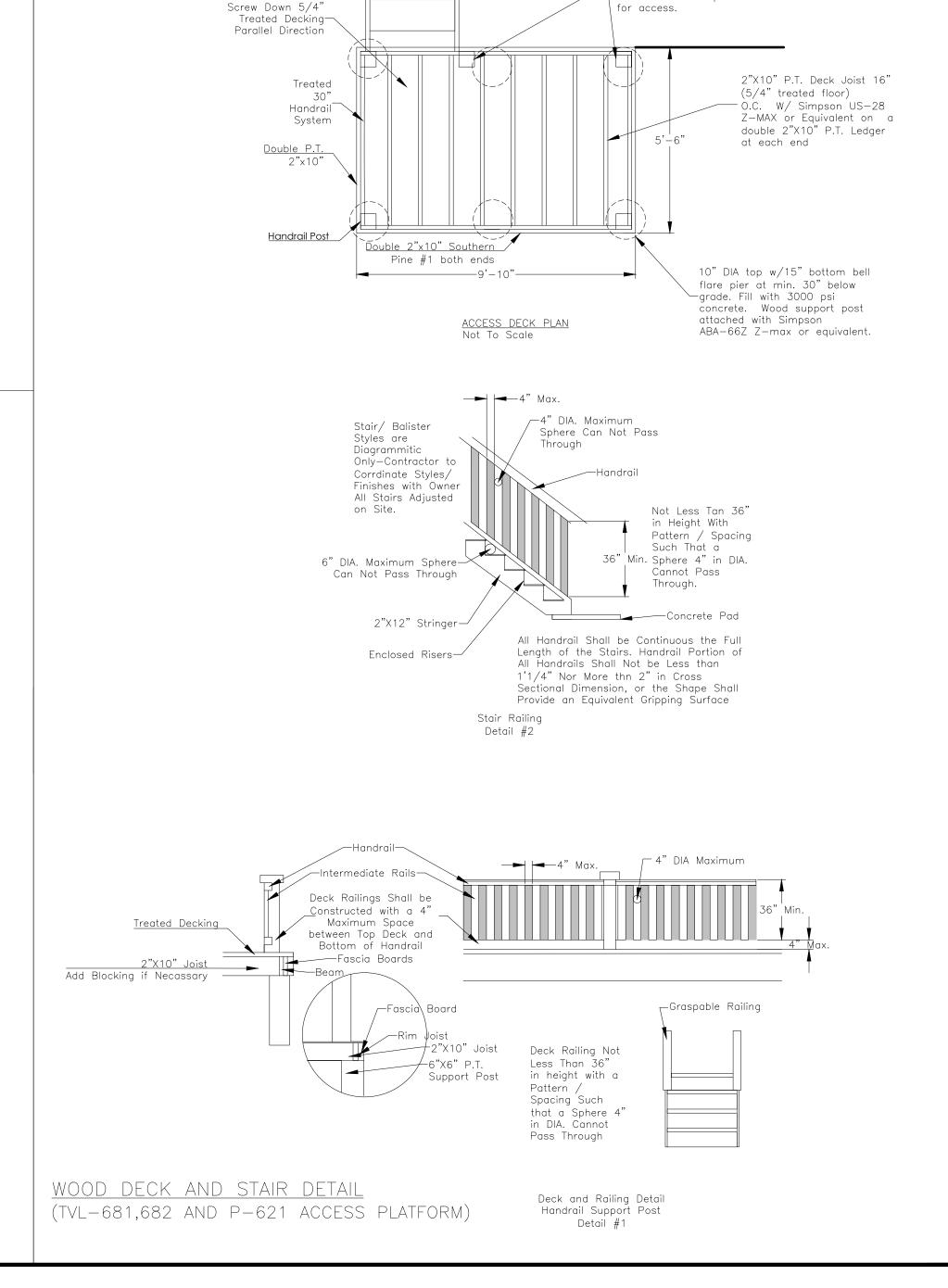


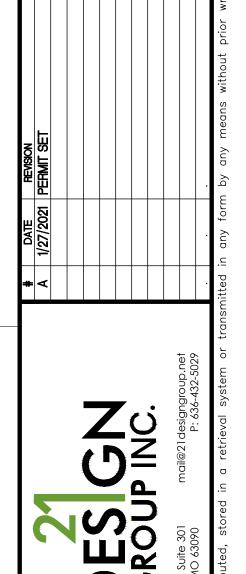












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UTILITY | MIN DEPTH

SEE UTILITY CO.

GAS SEE UTILITY COMPANY

42"

24"

UTILITY 0' TO 3' 3' TO 16' 16' TO 30' > 30'

WATER DUCTILE CLASS 200 DUCTILE N/A

ELECTRIC PVC PVC N/A N/A

STORM CONCRETE HDPE CONCRETE CONCRETE

SANITARY DUCTILE CLASS 200 DUCTILE N/A

INITIAL BACKFILL

6" MINIMUM BEDDING

UTILITY PIPE -

— COMPACTED BACK FILL —

STANDARD BEDDING FOR 3' TO 14' DEPTHS

. EMBEDMENT MATERIAL MUST BE 1" MINUS GRANULAR BACKFILL.

6. CONTRACTOR IS RESPONSIBLE FOR TRENCH SETTLEMENT.

~4"X4" P.T.

Support Post

EXISTING TANK

Provide 36"x36" concrete

landing (Typical)

- UTILITY PIPE TOP OF PIPE

4" BEDDING MINIMUM

EMBEDMENT MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR GAS

4. TRENCH EXCAVATION SHALL CONFORM TO ALL OSHA CONSTRUCTION REQUIREMENTS.

7. IN AREAS OF ROCK CUT, TRENCHES SHALL BE BACKFILLED WITH WELL GRADED GRANULAR MATERIAL TO 6" ABOVE THE TOP OF PIPE.

9. HAUNCING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE ALL VOIDS.

8. ALL UTILITY INSTALLATION SHALL CONFORM TO THE PIPE MANUFACTURER.

PIPE Ø WIDTH

TRENCH WIDTH REQUIREMENTS

PIPE ≤ 12" O.D. OF PIPE + 12" TO 18"

UTILITY TRENCHING & BEDDING DETAIL

Not To Scale

-Dock chain located

between handrail posts

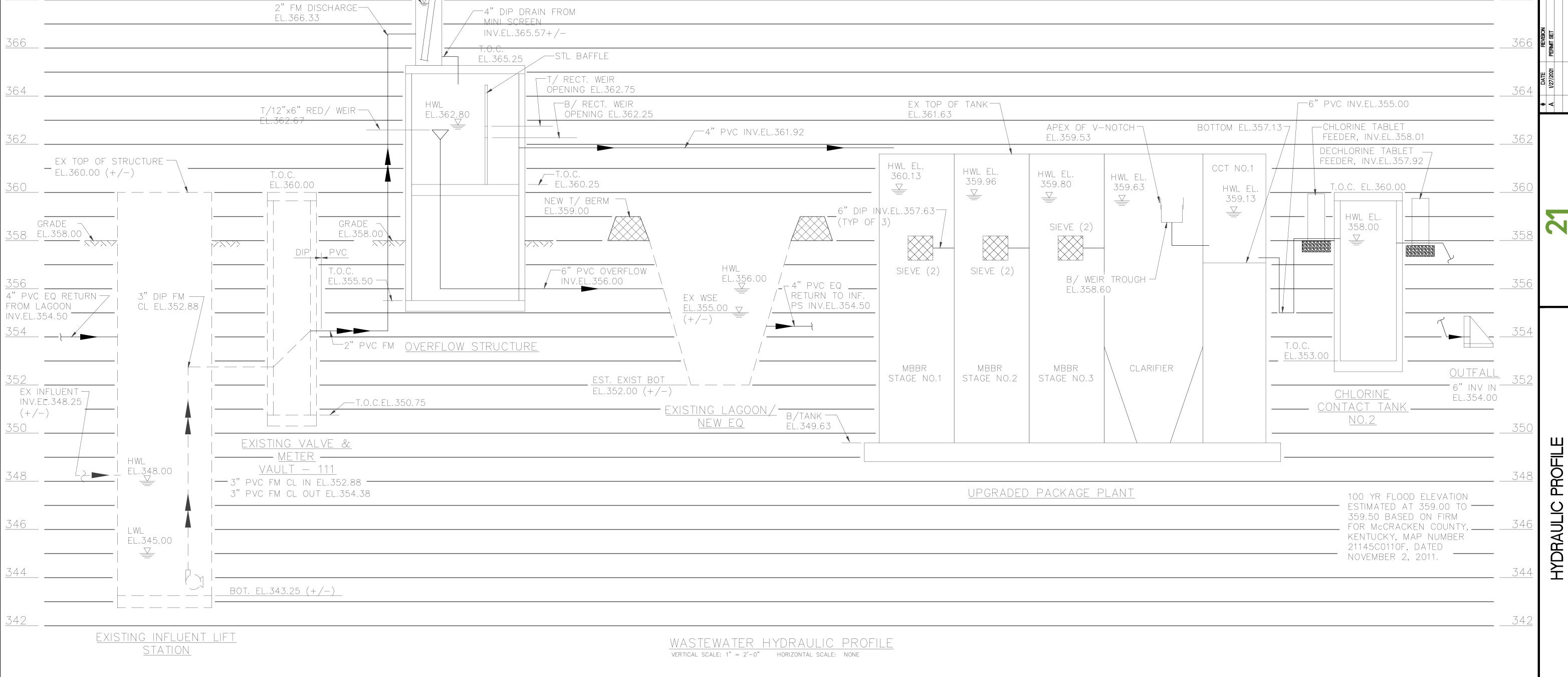
PIPE > 12" O.D. OF PIPE + 18"

SHEEL DETAIL

NGINEERING CERTIFICATE OF UTHORITY NO. 4804 ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE33



SEAL DATE: 2/15/202 BJK 542-19 2/12/2021 DRAWING NO: C05



TOP OF MINI SCREEN CAN EL.368.08+/-

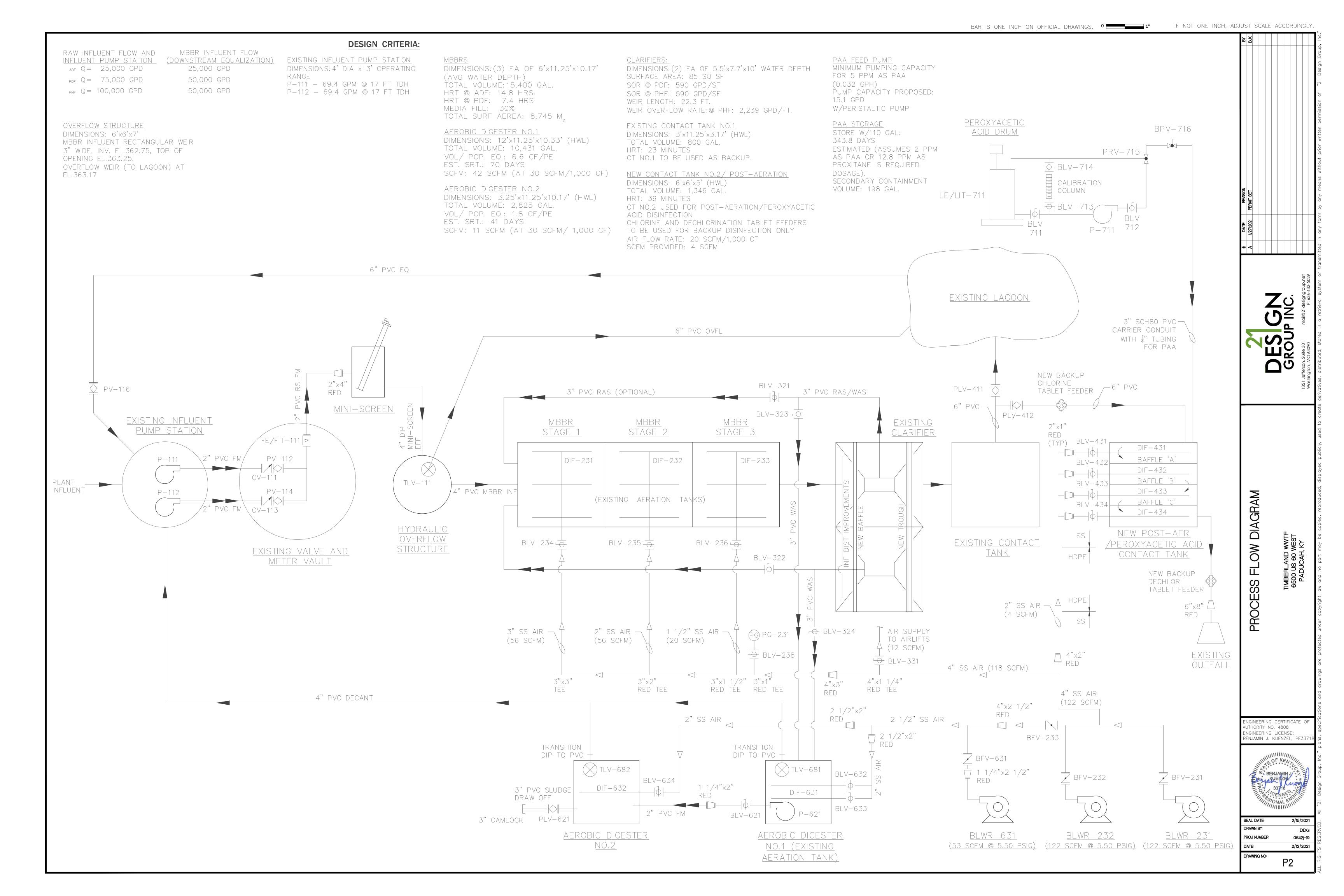
HWL. EL.3__.__

—4" DIP DRAIN FROM

ENGINEERING CERTIFICATE C AUTHORITY NO. 4808

ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE337

SEAL DATE: 0542j-19 12/23/2020 DRAWING NO: P1



- ALL SOIL SUPPORTED FOOTINGS SHALL BE FOUNDED UPON UNDISTURBED NATURAL SUBGRADE WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 3,000 PSF AS FIELD VERIFIED AND APPROVED BY THE CONTRACTOR'S SOIL TESTING LABORATORY. FINAL, EXACT ELEVATIONS AND SOIL BEARING CAPACITIES SHALL E FIELD DETERMINED AND VERIFIED BY THE CONTRACTOR'S SOIL TESTING LABORATORY AND REVIEWED BY THE ENGINEER DURING CONSTRUCTION.
- SHOULD UNACCEPTABLE SOIL BE FOUND AT THE BEARING ELEVATION, THE SOIL SHOULD BE REMOVED TO A LEVEL OF ACCEPTABLE MATERIAL. THE OVER EXCAVATION WIDTH SHALL EXTEND LATERALLY AT LEAST 12" BEYOND THE FOUNDATION EDGE FOR EACH 12" OF OVER EXCAVATION DEPTH. THE OVER EXCAVATION SHALL BE BACKFILLED WITH COMPACTED GRANULAR FILL AND TESTED BY THE CONTRACTOR'S TESTING AGENCY.
- SOIL SUBGRADE FOR ALL FOOTINGS AND SLABS SHALL BE INSPECTED AND APPROVED BY THE CONTRACTOR'S SOIL TESTING LABORATORY PRIOR TO PLACING FOUNDATION CONCRETE OR CONCRETE MUD SUBS.
- ALL FOOTING SUBGRADES AS REQUIRED AND ALL SLAB SUBGRADES INCLUDING PIT SLABS SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT BASED ON LABORATORY DESIGNED ASTM D1557. ALL BACKFILL AROUND AND ABOVE ALL FOUNDATION ELEMENTS, FOOTINGS, CAPS, MATS AND PITS SHALL BE COMPACTED TO 90 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT BASED ON LABORATORY DESIGNATION ASTM D1557.
- ALL ORGANIC AND/OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM SUBGRADE AND BACKFILL AREAS AND BACKFILLED WITH ACCEPTABLE GRANULAR FILL, COMPACTED TO 95 PERCENT O MAXIMUM DENSITY. FILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12 INCHES IN LOOSE THICKNESS.
- DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL GROUND FLOOR AND LOWER LEVEL SLABS AVE BEEN PLACED AND THE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH.
- NO MUD SLABS, FOOTINGS OR SLABS SHALL BE PLACED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER, FROST OR ICE. SHOULD WATER OR FROST ENTER A FOOTING EXCAVATION AFTER SUBGRADE APPROVAL THE SUBGRADE SHALL BE RE-INSPECTED BY THE CONTRACTOR'S SOIL TESTING LABORATORY AFTER REMOVAL OF WATER OR FROST.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY FROST OR ICE FROM PENETRATING ANY FOOTING OR SLAB SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE AND UNTIL SUCH SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.
- O. THE CONCRETE FOR EACH ISOLATED FOOTING SHALL BE PLACED IN ONE (1) CONTINUOUS PLACEMENT.
- ALL SLAB AND FOOTING MUD SLABS SHALL BE THOROUGHLY CLEANED
- IMMEDIATELY PIOR TO THE FOUNDATION CONCRETE PLACEMENT. . ALL SLABS-ON-GRADE SHALL BE PLACED OVER A MINIMUM OF 6 INCH
- COMPACTED GRANULAR FILL MATERIAL OVER COMPACTED SOIL SUBGRADE. 13. THE ANTICIPATED GROUND WATER ELEVATION IS APPROXIMATELY 896.50. THE CONTRACTOR IS RESPONSIBLE FOR ALL DEWATERING. THE VERY LOOSE TO LOOSE GRANULAR SOILS SHOULD BE DENSIFIED AFTER DEWATERING, AS PER THE DIRECTIVE OF THE SOILS TESTING AGENCY.

CONCRETE NOTES:

- ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, ACI 301, AND ACI 350. THESE DOCUMENTS SHALL BE AVAILABLE IN THE FIELD
- EXCEPT WHERE OTHERWISE INDICATED, CONCRETE TYPES AND MINIMUM 28-DAY COMPRESSIVE STRENGTHS SHALL BE 4000 PSI. CEMENT SHALL CONFORM TO ASTM C150 TYPE 1. USE ONLY ONE BRAND
- OF CEMENT PER ALL EXPOSED TO VIEW CONCRETE. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE. ALL CONCRETE SHALL BE AIR ENTRAINED (4 - 6%) WITH A WATER CEMENT
- RATIO OF 0.4 (MAX) AND MAY CONTAIN A SUPER PLAST AGENT. REINFORCING BARS SHALL CONFORM TO ASTM A515, GRADE 60.
- ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, 4. MINIMUM CONCRETE REQUIREMENTS: SUPPORTED AND SPACED IN FORMS AND SECURED IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE 'MANUAL OF STANDARD PRACTICE FROM DETAILING REINFORCED CONCRETE STRUCTURES', ACI 315. BAR SUPPORTS IN CONTACT WITH EXPOSED SURFACES SHALL BE PLASTIC TIPPED.
- CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, SPACING AND PLACEMENT SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- THE CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS SHOWING THE LOCATIONS OF ALL CONSTRUCTION JOINTS, REVEALS, CURBS, SLAB DEPRESSIONS, SLEEVES, OPENINGS, ETC. ALONG WITH THE CONCRETE POUR SEQUENCE SCHEDULES. THE MAXIMUM DISTANCE BETWEEN JOINTS SHALL BE 40 FT.
- 9. ALL REINFORCING SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, LATEST EDITION, BUT IN NO CASE SHALL BE LESS THAN 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE. ALL WELDED WIRE FABRIC SHALL BE LAPPED TWO (2) FULL MESH PANELS AND TIED SECURELY. WHERE REQUIRED, DOWELS SHALL MATCH SIZE AND NUMBER OF MAIN REINFORCING, UNLESS NOTED OTHERWISE. THE LOCATION OF SPLICES FOR HORIZ. BARS SHALL BE STAGGERED BY A MIN. OF 3 FT. WITHIN THE SECTION. SPLICES SHALL NOT LINE UP WITHING ANY 4 ADJACENT ROWS.
- O. CONCRETE TESTING WILL BE PERFORMED BY THE CONTRACTOR'S TESTING LABORATORY IN ACCORDANCE WITH ACI 301 EXCEPT AS FOLLOWS: FOR COMPRESSIVE STRENGTH TEST, TAKE ONE SET OF THREE (3) SPECIMENS FOR FOR EACH 50 CUBIC YARDS OR FRACTION THEREOF OF EACH CONCRETE CLASS PLACED IN ANY ONE DAY. TEST ONE (1) SPECIMEN AT 7 DAYS, ONE (1) SPECIMIN AT 28 DAYS, AND KEEP ONE (1) IN RESERVE.
- 1. PROVIDE SHEAR KEY AND WATERSTOP AT ALL CONSTRUCTION & CONTRACTION JOINTS.
- 12. PROVIDE CONTROL/CONSTRUCTION JOINTS IN SLABS ON GRADE NO FURTHER THAN 15 FEET APART
- 13. FOLLOW ACI GUIDELINES FOR BOTH HOT & COLD WEATHER CONCRETING.

MISCELLANEOUS NOTES:

- 1. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- REFER TO ARCHITECTURAL, MECHANICAL, PROCESSING OR MANUFACT. DRAWINGS FOR LOCATIONS AND DIMENSIONS OF OPENINGS. PROVIDE REINFORCING AROUND OPENINGS PER TYPICAL DETAILS.
- 3. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED. BACKFILLING SHALL NOT BE ALLOWED UNTIL WALLS REACH DESIGN STRENGTH.
- 4. BACKFILL SHALL NOT BE PLACED AGAINST WALLS UNTIL FLOOR SLABS ARE 3. ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL INSTALLED AND HAVE REACHED 75% STRENGTH (MIN.).
- 5. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR SHALL FURNISH ALL TEMPORARY BRACING AND/OR SUPPORTS REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
- 6. DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS.
- 7. THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR SUCH DEVIATION BY THE ENGINEERS APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, ETC. UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ENGINEER OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
- 8. ALL THINGS WHICH, IN THE OPINION OF THE CONTRACTOR, APPEAR TO BE DEFICIENCIES, OMISSIONS, CONTRADICTIONS AND AMBIGUITIES IN THE PLANS AND SPECIFICATIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. PLANS AND/OR SPECIFICATIONS WILL BE CORRECTED, OR A WRITTEN INTERPRETATION OF THE ALLEGED DEFICIENCY, OMISSION, CONTRADICTION OR AMBIGUITY WILL BE MADE BY THE ENGINEER BEFORE THE AFFECTED WORK PROCEEDS.
- 9. THESE DRAWINGS AND GENERAL NOTES ARE TO BE USED IN CONJUNCTION WITH WRITTEN SPECIFICATIONS PROVIDED. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.
- 10. REMOVE ALL LOOSE AND UNSTABLE MATERIAL BELOW STRUCTURES. ALL AREAS TO BE REVIEWED BY OWNERS TESTING AGENCY PRIOR TO COMMENCEMENT OF WORK. PROVIDE A MINIMUM OF 12" COMPACTED GRANULAR FILL BELOW ALL STRUCTURES.
- 11. PROVIDE GUARDRAILS AT ALL PITS, WALKWAYS AND SLAB EDGES SEE C & P DRAWINGS FOR FURTHER INFORMATION.
- 12. PROVIDE HYDROPHILIC RUBBER WATERSTOP AT ALL NEW TO EXISTING CONDITIONS.
- 13. ALL FILL SHALL BE PLACED IN APPROPRIATE LIFTS AND COMPACTED PER GEOTECHNICAL REPORT IN ORDER TO OBTAIN A BEARING CAPACITY OF 300 PSF. ALL FILL SHALL BE TESTED BY THE CONTRACTOR'S TESTING AGENCY.

PRECAST NOTES:

- THE PRECAST MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL PRECAST CONCRETE ELEMENTS AND CONNECTIONS. THIS DESIGN SHALL MEET THE LOAD AND MATERIAL CRITERIA PRESENTED IN THE PLANS AND SPECIFICATIONS. DETAILS SHOWN ARE SCHEMATIC ONLY. FINAL DESIGN OF ELEMENTS AND CONNECTIONS SHALL BE MADE BY THE PRECAST MANUFACTURER. IN ADDITION, THE DESIGN SHALL BE PERFORMED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF KENTUCKY. SIGNED & SEALED DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
- 2. THE PRECAST ERECTOR SHALL BE RESPONSIBLE TO ADEQUATELY BRACE THE STRUCTURE DURING CONSTRUCTION.
- 3. THE PRECAST ERECTOR SHALL BE RESPONSIBLE FOR THE PROPER HANDLING OF PRECAST ELEMENTS SO THAT THESE MEMBERS ARE NOT DAMAGED DUE TO HANDLING, BRACING, ALIGNING OR OTHER FORCES.

MIN 28 DAY COMPRESSIVE STRENGTH:	5,000 PSI
ENTRAINED AIR:	6 ± 1%
W/C (MAX)	0.40

- 5. PRECAST SUPPLIER SHALL PROVIDE ADDITIONAL REINFORCING AROUND EMBEDDED CONNECTION ITEMS TO SUPPORT ANY VERTICAL OR HORIZONTAL LOADINGS WHICH MAY DEVELOP INCLUDING THOSE FROM ERECTION.
- 6. PRECAST SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY ELECTRICAL, HEATING AND PLUMBING SUBCONTRACTORS TO COORDINATE LOCATION OF SUPPORT INSERTS, BLOCKOUTS, CONDUITS, ETC.
- 7. ALL INSERTS IN PRECAST ELEMENTS SHALL BE PROVIDED BY PRECAST
- 8. PRECAST BEAMS SUPPORTING MASONRY SHALL HAVE A DEFLECTION LIMITATION OF L/600 AND 0.3 INCHES FOR LIVE LOAD PLUS SUPERIMPOSED DEADLOAD.
- 9. PROVIDE 1 LAYER WIRE MESH IN CONCRETE TOPPING.
- 10. PRECAST CONCRETE CEILINGS SHALL BE AIR TIGHT AT LOCATIONS

STRUCTURAL STEEL NOTES:

- 1. ALL STRUCTURAL STEEL PLATES, SHAPES AND BARS SHALL CONFORM TO ASTM A572 GR 50, UNLESS NOTED OTHERWISE. COLD FORMED TUBING SHALL CONFORM TO ASTM A500 GRADE B. PIPES SHALL CONFORM TO ASTM A53 TYPE E OR S. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 OR ASTM A36.
- 2. ALL BOLTS (OTHER THAN ANCHOR BOLTS), NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325. BOLTS USED IN LATERAL LOAD RESISTING CONNECTIONS SHALL BE SLIP CRITICAL TYPE, DESIGNED FOR INDICATED FORCES WITHOUT STRESS INCREASES.
- CONFORM TO AWS D1.1 'STRUCTURAL WELDING CODE', LATEST EDITION. ALL WELDING ELECTRODES SHALL BE E70XX. 4. ALL CONNECTIONS SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. THE CONNECTIONS SHALL BE DESIGNED BY, OR UNDER THE SUPERVISION OF, A LICENSED STRUCTURAL ENGINEER IN THE STATE OF KENTUCKY. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED. ADVISE THE ENGINEER IMMEDIATELY IF THE INFORMATION ON THE DRAWINGS IS NOT SUFFICIENT FOR COMPLETE DESIGN OF CONNECTIONS.
- 5. THE FABRICATOR / ERECTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW. ENGINEERED AND CHECKED DRAWINGS SHOWING SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL. WITH EACH SUBMITTAL OF SHOP DRAWINGS. THE FABRICATOR'S ENGINEER SHALL CERTIFY THAT THE CONNECTIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AISC SPECIFICATIONS AND THE CONTRACT DOCUMENTS. CERTIFIED MILL TEST REPORTS SHALL ALSO BE SUBMITTED.
- 6. MINIMUM SHEAR CAPACITIES: CONNECTIONS SHALL BE DESIGNED FOR THE BEAM REACTIONS INDICATED. IN CASES WHERE REACTIONS ARE NOT INDICATED, PROVIDE AT LEAST ONE HALF OF THE UNIFORM LOAD CARRYING CAPACITY OF THE BEAM WITH THE ASSUMPTION OF FULLY BRACED COMPRESSION FLANGE.
- 7. THE DEPTH OF A SIMPLE SHEAR CONNECTION SHALL NOT BE LESS THAN ONE HALF OF THE NOMINAL DEPTH OF THE BEAM. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2). 8. ALL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP.
- PROVIDE CAMBER, OR SHORING AS INDICATED ON THE DRAWINGS. 9. AFTER FABRICATION, ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS. STRUCTURAL
- STEEL SHALL BE HOT DIPPED GALVANIZED PER ASTM SPECIFICATIONS. 10. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR

L = 1.1

DESIGN LOADS:

APPROVAL OF THE ENGINEER..

-
150 PSF 100 PSF 30 PSF
$P_g = 25 P$ $P_f = 18 PS$
$C_{e} = 1.0$
$C_{t} = 1.0$

WIND DESIGN DATA -

BASIC WIND SPEED (3-SECOND GUST) = 90 MPHASCE 7-05 $I_e = 1.15$

EXPOSURE B COMPONENTS & CLADDING = 25 PSF

EARTH QUAKE DESIGN DATA

OCCUPANCY CATEGORY = \parallel $I_e = 1.25$ $S_S = 0.178 g$ $S_1 = 0.083 g$ SITE CLASSIFICATION = D $S_{DS} = 0.204 \text{ g}$ $S_{D1} = 0.133 g$

SEISMIC DESIGN CATEGORY = C

BBRE	VIATIONS:				
A ABBREV ABDN AC ADF AE AFF AGG AIT AL ALUM ALT APPROX AR ARV ASPH AVG	ARCHITECTURAL ABBREVIATION ABANDONED TO BE ABANDONED, CAP OPEN END AVERAGE DAILY FLOW ANALYZER ELEMENT ABOVE FINISH FLOOR AGGREGATE ANALYZER INDICATING TRANSMITTER ALUMINUM, AIR LIFT ALUMINUM SULFATE ALTERNATE APPROXIMATE(LY) AIR RELEASE AIR RELEASE VALVE ASPHALT AVERAGE BOTTOM OF BALL CHECK VALVE BLIND FLANGE BELT FILTER PRESS BUTTERFLY VALVE BITUMINOUS BUILDING BALL VALVE BLOWER BENCHMARK BYPASS	GAL GALV GBT GEN GLDIP GND GPM GPD GRD GRNDR GRTG GV H HB HDG HDPE	GALLON GALVANIZED GRAVITY BELT THICKENER GENERATOR GLASS LINED DUCTILE IRON PIPE GROUND GALLONS PER MINUTE GALLONS PER DAY GRADE GRINDER GRATING GATE VALVE HIGH HOSE BIBB HOT DIP GALVANIZED HIGH DENSITY POLYETHYLENE	ROW RAS RCP	RIGHT-OF-WAY RETURN ACTIVATED SLUDGE REINFORCED CONCRETE PIPE ROOF DRAIN REDUCER; REDUCING REFERENCE REQUIRED REVISION
B/BCVBFPBFVBLWRBLWRBMBPVBW	BOTTOM OF BALL CHECK VALVE BLIND FLANGE BELT FILTER PRESS BUTTERFLY VALVE BITUMINOUS BUILDING BALL VALVE BLOWER BENCHMARK BYPASS BACK PRESSURE VALVE BACKWASH	IN INF	HIGH HOSE BIBB HOT DIP GALVANIZED HIGH DENSITY POLYETHYLENE HEADER HEIGHT HANDHOLE HORIZONTAL HIGH POINT; HORSE POWER HOUR HYDRAULIC RETENTION TIME HEATING, VENTILATION & AIR CONDITIONING HOT WATER; HANDWHEEL HIGH WATER LEVEL INSIDE DIAMETER INCH INFLUENT	RWGV	RESILIENT WEDGE GATE VALVE SOUTH; STAIRS; STRUCTURAL SANITARY SCUM; SCREW CONVEYOR STANDARD CUBIC FEET/ MINUTE
CB CC CEB CF	CATCH BASIN; CURB BOX CENTER TO CENTER CONCRETE EQUIPMENT BASE CUBIC FEET; COMPRESSION FITTING CHLORINE CHLORINE (GAS) CHLORINE (LIQUID) CHLORINE (SOLUTION) CHLORINE VENT CAST IRON CAST IRON SOIL PIPE CENTER LINE CLEAR CORRUGATED METAL PIPE CONCRETE MASONRY UNIT CLEANOUT CONCRETE, CONCENTRIC COUPLING CHLORINATED POLYVINYLCHLORIDE PIPE CORRUGATED STEEL PIPE CONTACT TANK (PAA) CLOSE TO WALL COPPER; CUBIC CUPPER PIPE CHECK VALVE (SWING TYPE) CHAINWHEEL; CLOCKWISE CUBIC YARDS DOOR DEMOLITION DETAIL	INSTR INSUL INV IP JT LAB LAT LAV LBS LCP LD LE LF LG LIT LM LP LR LSH LSL LT LWL M	INSIDE DIAMETER INCH INFLUENT INSTRUMENT(ATION) INSULATION INVERT IRON PIPE JOINT LABORATORY LADDER LATERAL LAVATORY POUND POUNDS LOCAL CONTROL PANEL LEVEL TRANSDUCER LEVEL ELEMENT LINEAR FEET LONG LEVEL INDICATING TRANSMITTER LEVEL TRANSMITTER LOW POINT LONG RADIUS LUMP SUM, LEVEL SWITCH LEVEL SWITCH HIGH LEVEL SWITCH LOW LIGHT LOW WATER LEVEL MOTOR; MECHANICAL; METER MATERIAL MAXIMUM MOVING BED BIOLOGICAL REACTOR	SHT SJ SL SLG SMH SN SOR SPEC SPL SQ SR SS SSK ST STA STD STL SW SWP SY	SCHEDULE SCREEN SECTION SQUARE FEET SLUDGE FEED PUMP SLUICE GATE SHEET SOLDERED JOINT; SWEATED JOINT SLUDGE SLIDE GATE STATIC MIXER SANITARY MANHOLE SUPERNATANT SURFACE OVERFLOW RATE SPACE(D); SAMPLE PORT SPECIFICATION, SPECIFIED SAMPLE; SAMPLE LINE SQUARE SLUDGE RETURN STAINLESS STEEL SERVICE SINK STORM STATION STANDARD STEEL SOLVENT WELDED SIDEWALK SCREENINGS WASHING PRESS SQUARE YARDS TANK; TELEPHONE TOP OF
DI DIA DIF DIP DISCH DN DO DP DR DS DV DWG	DUCTILE IRON DIAMETER DIFFUSER DUCTILE IRON PIPE DISCHARGE DOWN DISSOLVED OXYGEN DEEP DRAIN DIGESTED SLUDGE DIAPHRAGM VALVE DRAWING ELECTRIC(AL); EAST	MCC MECH MFM MFR MFT MGD MH MIN MISC MJ MLSS MON MTD MV	MATERIAL MAXIMUM MOVING BED BIOLOGICAL REACTOR MANUAL BAR SCREEN MOTOR CONTROL CENTER MECHANICAL MAGNETIC FLOW METER MANUFACTURER MAGNETIC FLOW TRANSMITTER MILLION GALLONS PER DAY MANHOLE MINIMUM MISCELLANEOUS MECHANICAL JOINT MIXED LIQUOR SUSPENDED SOLIDS MONUMENT MOUNTED MUD VALVE	TBLV T&B TD TE TEL TEMP TIT TF TP THD THK TLV TOC TWAS TYP	TELEPHONE TEMPERATURE; TEMPORARY TEMPERATURE INDICATING TRANSMITTER TERTIARY FILTER TRANSFER PUMP
EA ECC EFF EJ EL ENG EOP EQ EQPM ES ESMT EXH EX EXP FBW FCE FCO	EACH ECCENTRIC EFFLUENT EXPANSION JOINT ELEVATION ENGINEER ELECTRIC OPERATOR EDGE OF PAVEMENT EQUAL(LY) EQUIPMENT EXTENDED STEM EASEMENT EXHAUST EXHAUST EXISTING EXPANSION FILTER BACKWASH FINAL CLARIFIER EFFLUENT FLOOR DRAMM	N NACL NAOH NC NO NPT NPW NRS NTS NWL OC OD OE OPNG ORP OU OVF	NORTH SODIUM CHLORIDE SODIUM HYDROXIDE NORMALLY CLOSED NORMALLY OPEN; NUMBER NATIONAL PIPE THREAD (TAPER) NON-POTABLE WATER NON-RISING STEM NOT TO SCALE NORMAL WATER LEVEL ON CENTER OUTSIDE DIAMETER; OXIDATION DITCH OVERHEAD ELECTRIC OPENING OXYGEN REDUCTION POTENTIAL OVERHEAD UTILITY OVERFLOW	UH ULS ULT UN UNO UV V VAC VAR VB VCP VERT VFD VIF VLV VOL VSD	UNIT HEATER ULTRASONIC LEVEL SENSOR ULTRASONIC LEVEL TRANSDUCER UNION UNLESS NOTED OTHERWISE ULTRAVIOLET VALVE VACUUM VARIOUS; VARIABLE VALVE BOX VITRIFIED CLAY PIPE VERTICAL VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VALVE VOLUME VARIABLE SPEED DRIVE

PEROXYACETIC ACID

PORTLAND CEMENT CONCRETE

PRESSURE CONCRETE CYLINDER PIPE

PROGRAMMABLE LOGIC CONTROLLER

POINT OF CURVE

PUMP DISCHARGE

PEAK DAILY FLOW

POLYMER FEED UNIT

PEAK HOURLY FLOW

PRESSURE INDICATOR

PLATE; PROPERTY LINE

PRESSURE RELIEF VALVE

PRESSURE GAUGE

PROCESS FLOW DIAGRAM

PLAIN END

PERFORATED

PHOSPHATE

POLYMER

PROCESS

PROPOSED

POWER POLE

PUMP STATION

PAA

PDF

PERF

PFD

PFU

POLY

PR

PROP

PRV

PS

VTR

W/

W/O

WAS

WM

WTP

WWTP

XFER

VENT THROUGH ROOF

WINDOW; WIDE; WEST

WASTE ACTIVATED SLUDGE

WATER TREATMENT PLANT

WASTEWATER TREATMENT PLANT

VENT

WITH

WITHOUT

WATER CLOSET

WATER HEATER

WELDED JOINT

WATER LEVEL

WASTEWATER

YARD HYDRANT

YARD VALVE

TRANSFER

YARD

WATER MAIN

WEIGHT

PROCESS AND SHEET LEGEND:

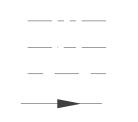


SECTION

X = SHEET WHERE SECTION IS REFERENCEDY = SHEET WHERE SECTION IS SHOWN 1 = SECTION NUMBER

DETAIL

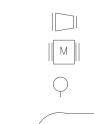
X = SHEET WHERE DETAIL IS REFERENCED Y = SHEET WHERE DETAIL IS SHOWN Z = DETAIL LETTER



PROCESS LINE AIR LINE WATER LINE POLYMER LINE BUILDING OR AREA LIMITS

DIRECTIONAL FLOW ARROW

FLANGED GATE VALVE FLANGED PLUG VALVE FLANGED BUTTERFLY VALVE FLANGED GLOBE VALVE FLANGED CHECK VALVE FLANGED KNIFE GATE VALVE BALL VALVE



FIRE DEPARTMENT CONNECTION

FLOW INDICATING TRANSMITTER

FORCEMAIN; FLOW METER

FINE NATIONAL PIPE THREAD

FLOW SWITCH/FLOAT SWITCH

NATURAL GAS; GATE; GENERAL

FLANGE(D); FLUSHING CONNECTION

FIBERGLASS REINFORCED PLASTIC

FLOW DIVERSION STRUCTURE

FLARED END SECTION

FLOOR DRAIN

FLOW FLEMEN

FINISHED FLOOR

FIRE PROTECTION

FIRE HYDRANT

FINISH(FD)

FLOOD

FLOOR

FLEXIBLE

FOOT/FEET

FOOTING

FUTURE

FOUNDATION

FCO

FDN

FLEX

FLR

FTG

REDUCER AND SIZE MAGNETIC FLOW METER



BLOWER

PRESSURE GAUGE PUMP

BAR IS ONE INCH ON OFFICIAL DRAWINGS. O **The State of the State of the**

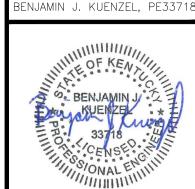
AM **ABBREVIATIONS**

NOT

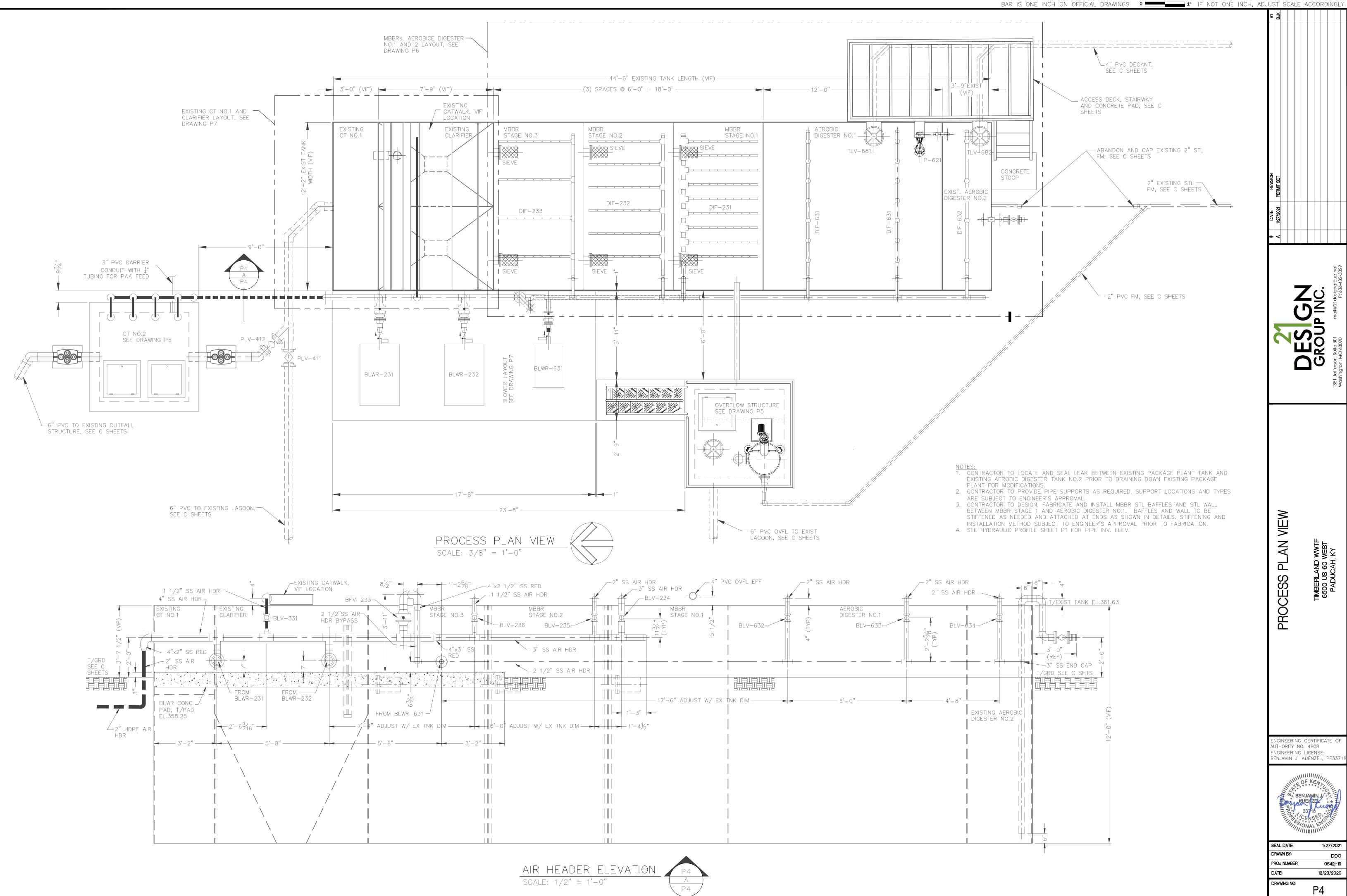
GINEERING CERTIFICATE C

AUTHORITY NO. 4808

ENGINEERING LICENSE:



SEAL DATE: 1/27/2021 DRAWN BY DDG PROJ NUMBER: 0542j-19 12/23/2020 DRAWING NO:



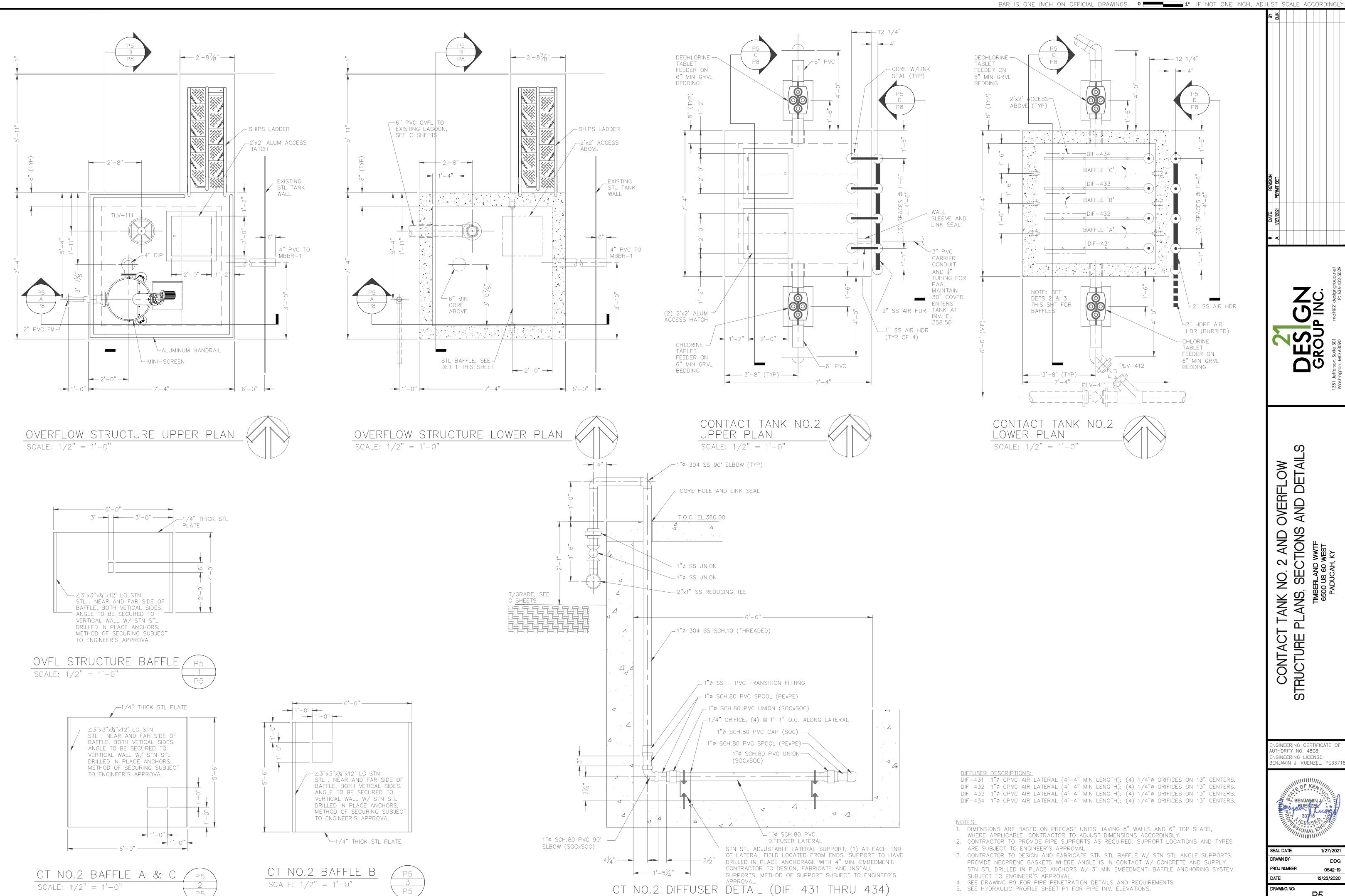
VIEW

IGINEERING CERTIFICATE O AUTHORITY NO. 4808 ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE337



SEAL DATE: 1/27/2021 DDG 0542j-19 12/23/2020 DRAWING NO:

P4



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

AUTHORITY NO. 4808 ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE337



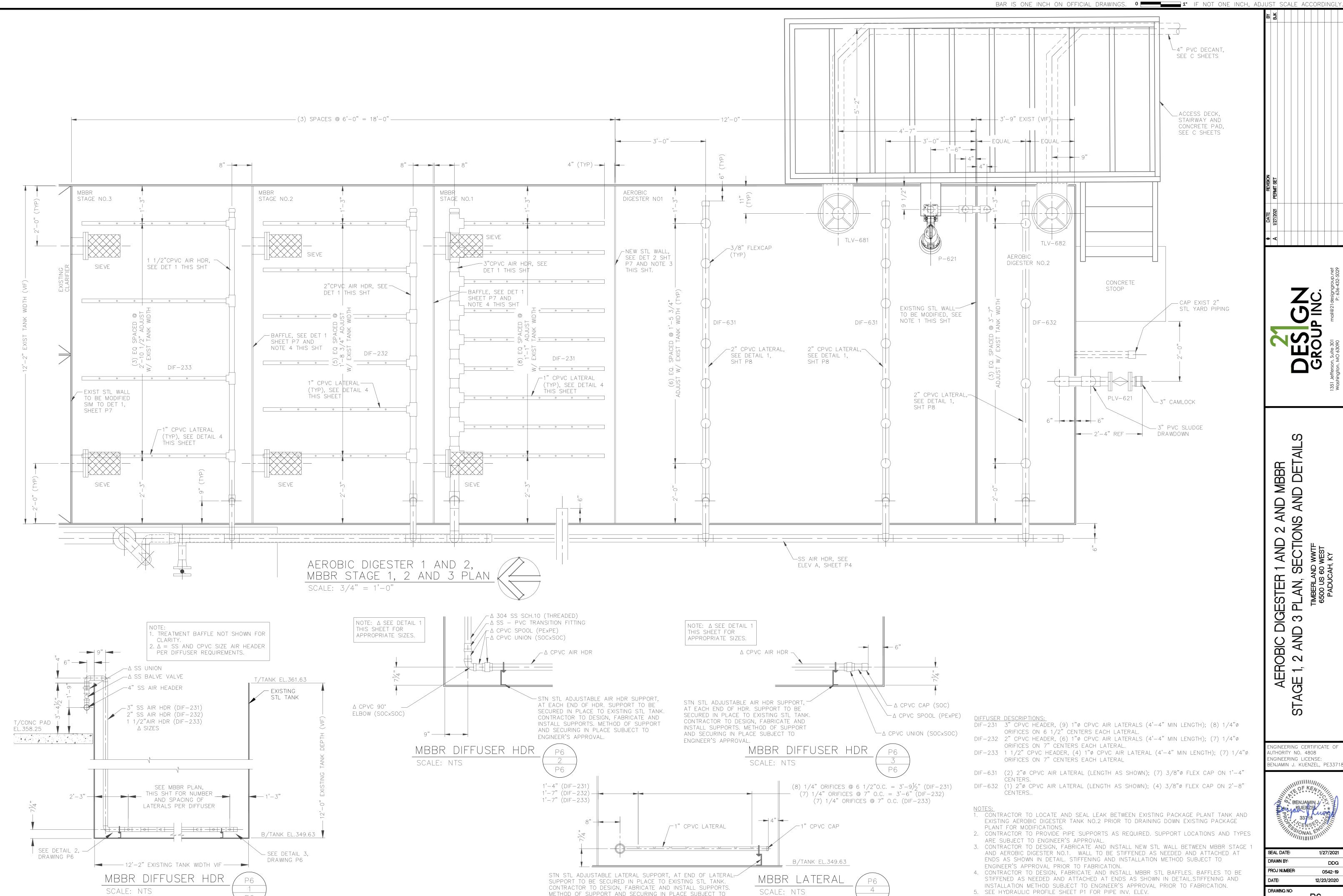
SEAL DATE: 1/27/2021 DRAWN BY: DDG PROJ NUMBER: 0542-19 12/23/2020

P5

DRAWING NO:

4. SEE DRAWING P9 FOR PIPE PENETRATION DETAILS AND REQUIREMENTS.

5. SEE HYDRAULIC PROFILE SHEET P1 FOR PIPE INV. ELEVATIONS.

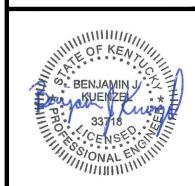


METHOD OF SUPPORT AND SECURING IN PLACE SUBJECT TO

ENGINEER'S APPROVAL.

3 1 AND 2 AND MBBI SECTIONS AND DE AEROBIC DI STAGE 1, 2 AND (

SINEERING CERTIFICATE OF UTHORITY NO. 4808 NGINEERING LICENSE: BENJAMIN J. KUENZEL, PE337

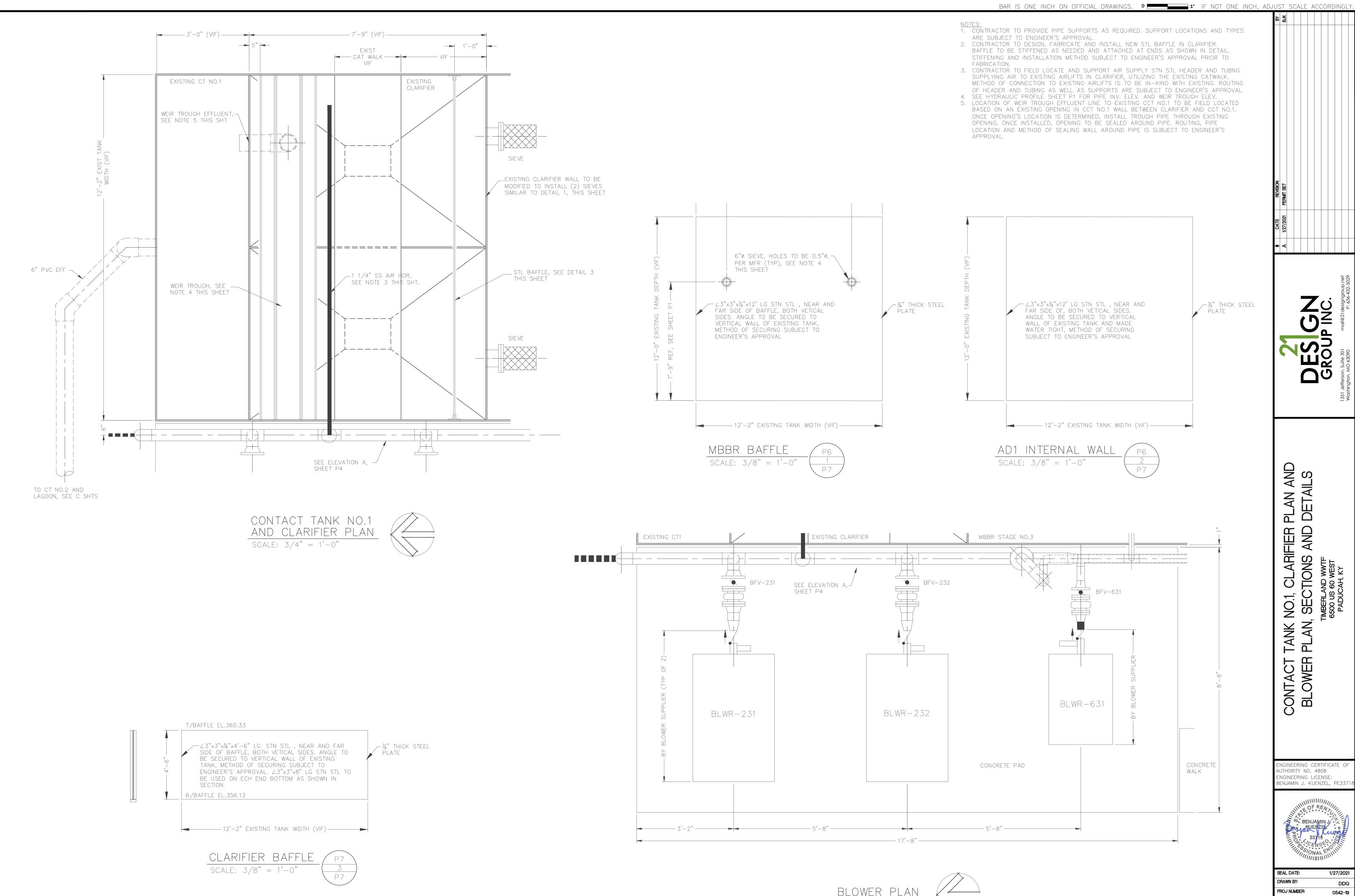


SEAL DATE: 1/27/2021 DDG PROJ NUMBER: 0542-19 12/23/2020

P6

DRAWING NO:

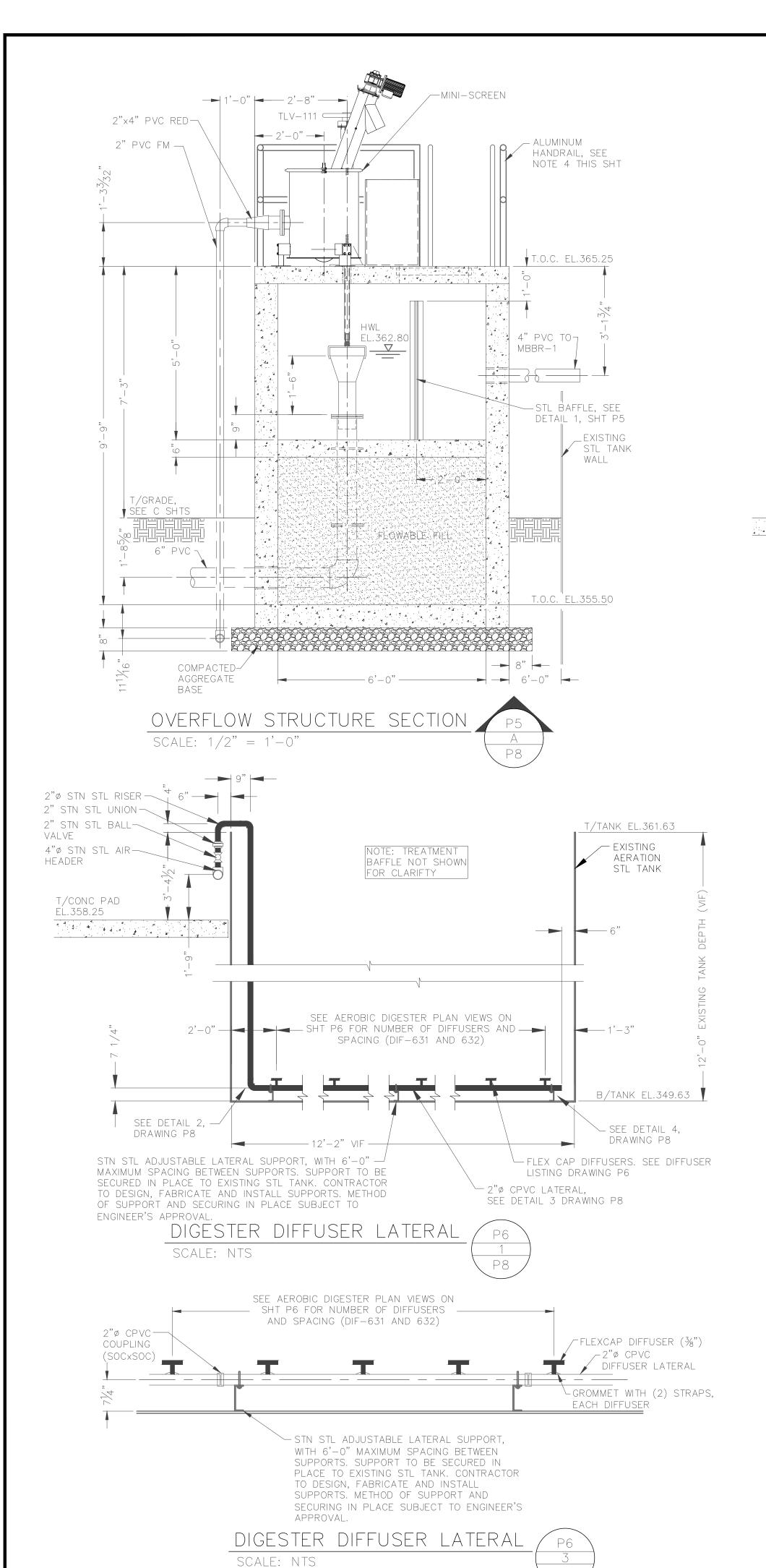
5. SEE HYDRAULIC PROFILE SHEET P1 FOR PIPE INV. ELEV.

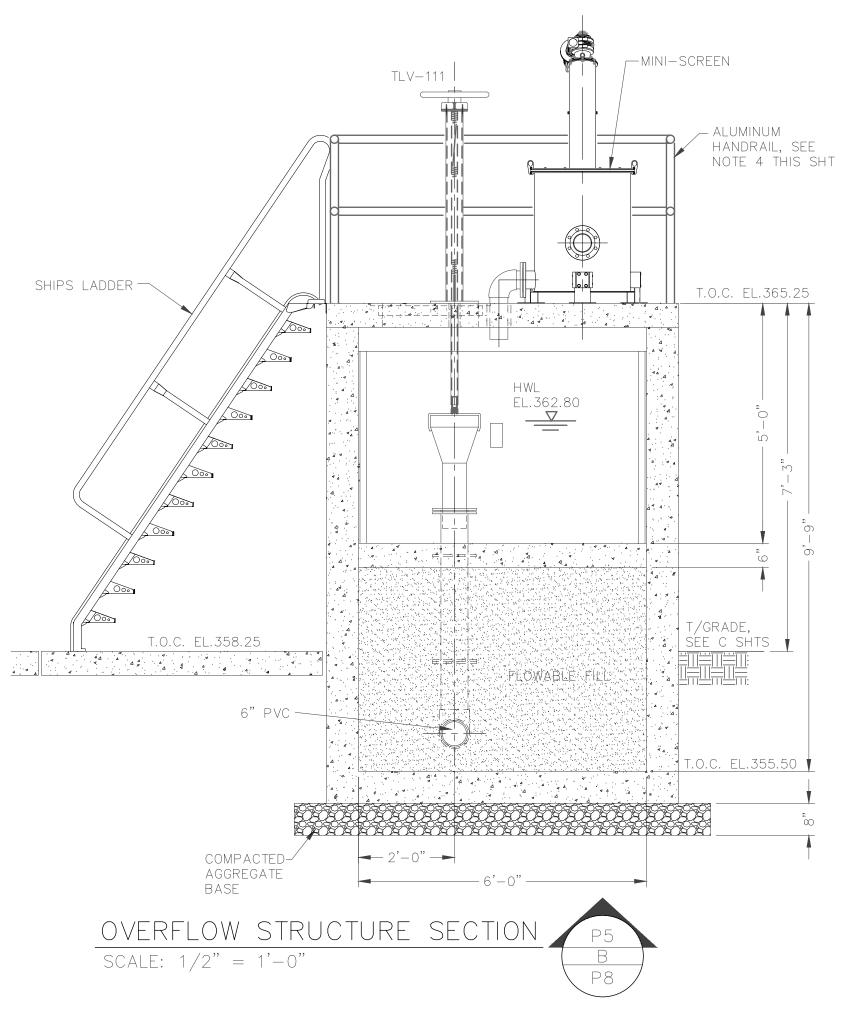


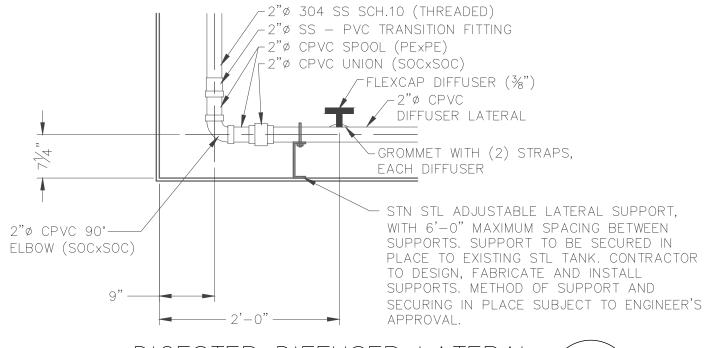
SEAL DATE: 1/27/2021 DRAWN BY: DDG 0542-19 12/23/2020

IGINEERING CERTIFICATE OF

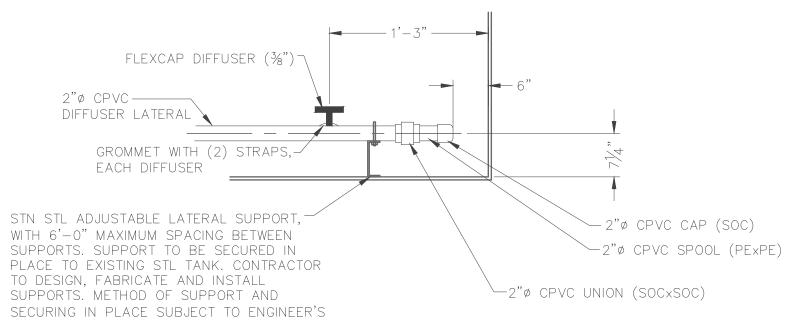
DRAWING NO: P7



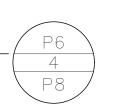


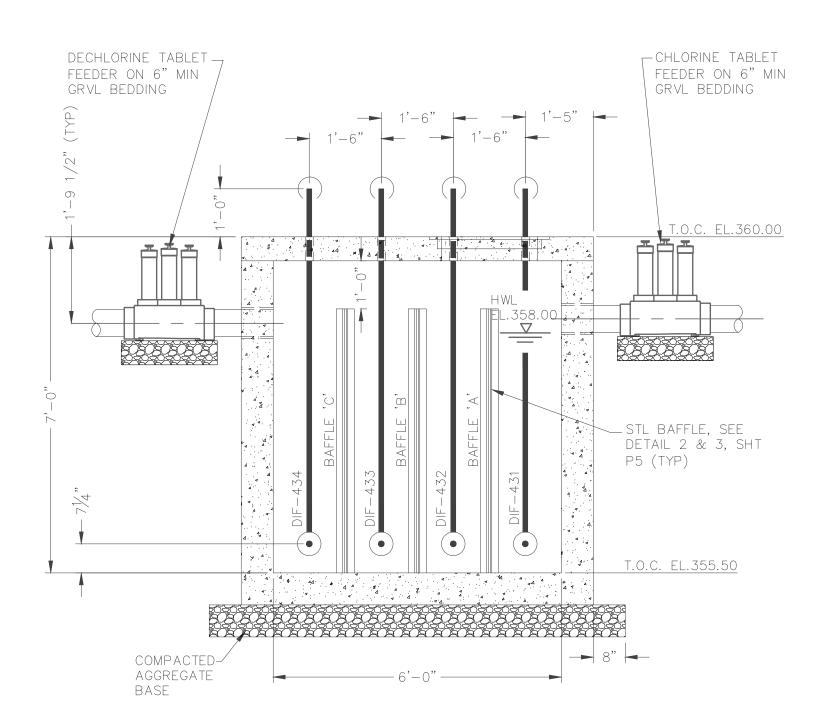


DIGESTER DIFFUSER LATERAL SCALE: NTS

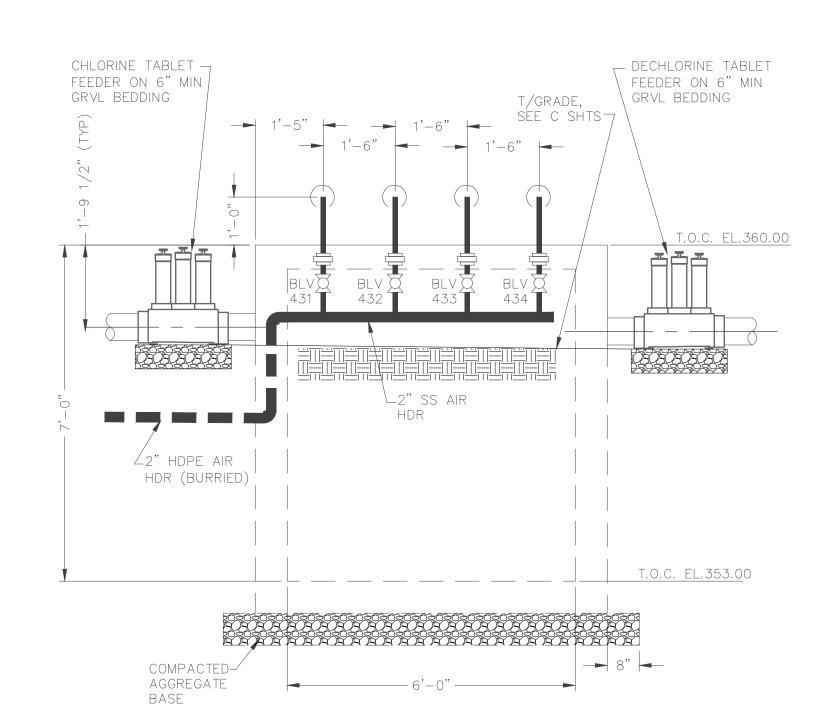


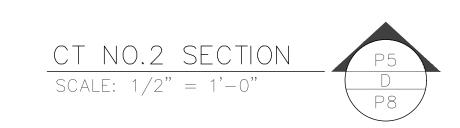
DIGESTER DIFFUSER LATERAL
SCALE: NTS











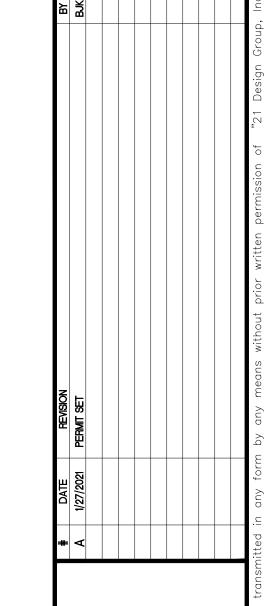
NOTES:

1. DIMENSIONS ARE BASED ON PRECAST UNITS HAVING 8" WALLS AND 6" TOP SLABS, WHERE APPLICABLE. CONTRACTOR TO ADJUST DIMENSIONS ACCORDINGLY.

- 2. CONTRACTOR TO PROVIDE PIPE SUPPORTS AS REQUIRED. SUPPORT LOCATIONS AND TYPES ARE SUBJECT TO ENGINEER'S APPROVAL.

 3. CONTRACTOR TO DESIGN AND FABRICATE STN STL BAFFLE W/ STN STL ANGLE SUPPORTS
- 3. CONTRACTOR TO DESIGN AND FABRICATE STN STL BAFFLE W/ STN STL ANGLE SUPPORTS. PROVIDE NEOPRENE GASKETS WHERE ANGLE IS IN CONTACT W/ CONCRETE AND SUPPLY STN STL DRILLED IN PLACE ANCHORS W/ 3" MIN EMBEDMENT. BAFFLE ANCHORING SYSTEM SUBJECT TO ENGINEER'S APPROVAL
- 4. CONTRACTOR TO PROVIDE AND INSTALL A DOUBLE SAFETY CHAIN AT HANDRAIL ATOP SHIPS LADDER ACCESS POINT COMPLETE WITH HARDWARE AND DISCONNECT CLAMPS..

5. SEE DRAWING P9 FOR PIPE PENETRATION DETAILS AND REQUIREMENTS. 6. SEE HYDRAULIC PROFILE SHEET P1 FOR PIPE INV. ELEV.



BAR IS ONE INCH ON OFFICIAL DRAWINGS. O ________1" IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

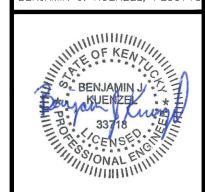
DESIGNATION Suite 301 mail@21designgroup

MBERLAND WWTF

SECTIONS

PROCESS

ENGINEERING CERTIFICATE OF AUTHORITY NO. 4808 ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE337



SEAL DATE: 1/27/2021

DRAWN BY: DDG

PROJ NUMBER: 0542-19

DATE: 12/23/2020

DRAWING NO: P8

EQUIPMENT NECESSARY FOR THE ENTIRE PROJECT INCLUDING ANY TRANSFORMER NEEDS. 4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL ALL INSTRUMENTATION

AND CONTROL PANELS NECESSARY FOR THE ENTIRE PROJECT. 5. UNISTRUT TO BE PROVIDED AS NEEDED TO INSTALL ALL ELECTRICAL AND CONTROL PANEL EQUIPMENT. 6. ALL CONDUIT SHALL BE SIZED AND PROVIDED BY CONTRACTOR. CONDUIT AND CONDUIT SIZING SHALL MEET ALL NEC CODE REQUIREMENTS FOR

ABOVE AND BELOW GRADE INSTALLATION. 7. ALL WIRE AND CONDUCTORS SHALL BE ENCLOSED IN CONDUIT. 8. ALL WIRE SHALL BE COPPER EXCEPT ALUMINUM WILL BE ALLOWED UP TO

REMOTE WIRELESS MONITORING UNIT SHALL BE M850 SERIES UNIT PROVIDED BY MISSION COMMUNICATIONS (SALES REPRESENTATIVE IS JEFF CLARKE WITH

1. DIGITAL INPUTS a. P-111 RUN; P-111 FAIL b. P-112 RUN; P-112 FAIL c. P-621 RUN; P-621 FAIL d. P-461 RUN; P-461 FAIL

EX TRANSFORMER

LE/LIT-711

☐ BLWR-232

P-112 (EXISTING)

g. BLWR-232 RUN; BLWR-232 FAIL 2. ANALOGUE INPUTS

b. LE/LIT-711 (PAA STORAGE LEVEL) c. BLWR-631 SPEED

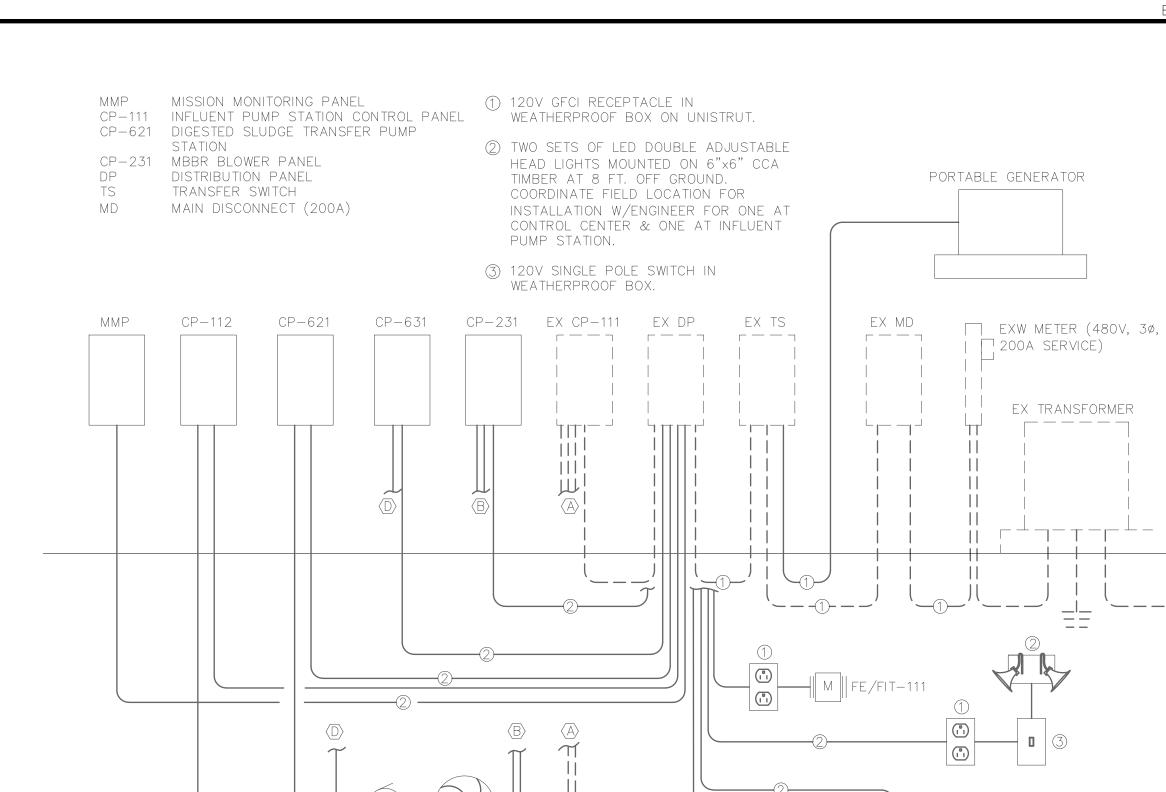
d. BLWR-231 SPEED e. BLWR-232 SPEED

THE DISTRIBUTION PANEL. REMOTE WIRELESS MONITORING AND CONTROL REQUIREMENTS: HYDRO-KINETICS; 314-647-6104). e. P-711 RUN; P-711 FAIL f. BLWR-631 RUN; BLWR-631 FAIL a. FE/FIT-111 FLOW (INFLUENT METER)

GINEERING CERTIFICATE O AUTHORITY NO. 4808 ENGINEERING LICENSE: BENJAMIN J. KUENZEL, PE33



SEAL DATE: 1/27/2021 DRAWN BY: DDG 0542j-19 12/23/2020 DRAWING NO: P9



BLWR-631

MINI-SCREEN

ELECTRICAL RISER DIAGRAM

`——— ¬(2.5 —— ¬

TYPICAL YARD CLEANOUT

6"MIN

GRADE —

PAVING MESH

6×6-M2.1×W2.1 W.W.F.

EXCAVATION

BACKFILL, PER

EXTERIOR SEWER-

JOINT SAME AS —

FOR SEWER

— SOLID CAST IRON COVER FLUSH WITH SURFACE

-4000 # CONCRETE

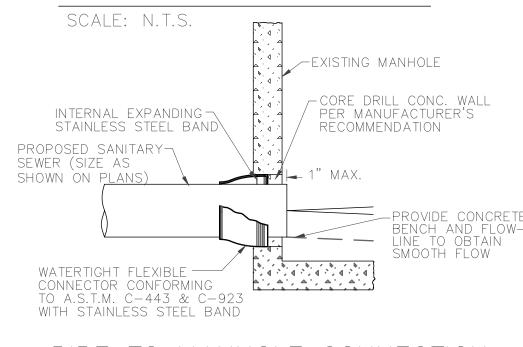
- TROWELLED SMOOTH

∠MAIN SEWER (SA OR ST)

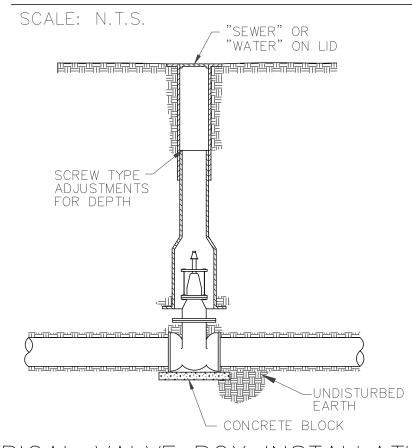
--- ANCHORS

COLLAR

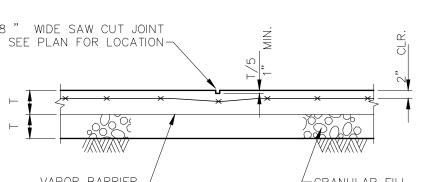
SAME SIZE AS SEWER MIN 6"



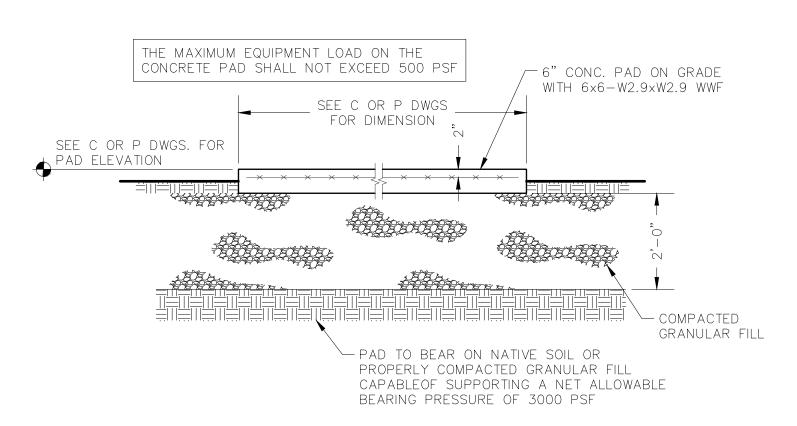
PIPE TO MANHOLE CONNECTION



TYPICAL VALVE BOX INSTALLATION



TYPICAL SLAB ON GRADE CONTROL JOINT SCALE: N.T.S.



TYPICAL EXTERIOR EQUIPMENT PAD ON GRADE SCALE: N.T.S.

P-4PIPE MATERIAL

-SEAL WITH RUBBER SEALANT

-SEAL WITH RUBBER SEALANT

6" MIN. 18" MAX.

—AS SHOWN AND AS

RECOMMENDED BY PIPE MANUFACTURER

DUCTILE IRON WALL PIPE-

ON DRAWINGS

FLANGED MECHANICAL JOINT OR PLAIN END AS SHOWN

--- CEMENT GROUT CAULKED DRY

-SEE NOTE 5

- SLEEVE SIZE AS

MANUFACTURER

REQUIRED BY SEAL

— SLEEVE SIZE AS REQUIRED BY LINK SEAL

-MODULAR WALL & CASING

SEAL: LINK SEAL OR EQUAL

MANUFACTURER

-MECHANICAL JOINT

WALL SLEEVE

	1 11 L 1417 (1 L1 (17 (L			
CONDITION	STEEL	COPPER	PVC	IRON
EARTH TO PASSAGE	N/A	P-1	P-2	P-3
LIQUID TO PASSAGE	P-2	N/A	P-2	P-4
LIQUID TO EARTH	P-2	N/A	P-2	P-4
PASSAGE TO PASSAGE	P-1	P-1	P-1	P-1
LIQUID TO LIQUID	P-2	N/A	P-2	P-4

P-2 MAY BE USED IN LIEU OF P-1 AND P-3. P-4 MAY BE USED IN LIEU OF P-3 AND IF CALLED FOR ON THE

DRAWINGS P-4 SHALL BE USED IN LIEU OF P-3.

NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, THE METHOD USED SHALL CONFORM TO THE STANDARD DETAILS AS SHOWN ON THIS DRAWING, EXCEPT WHERE SPECIAL DETAILS ARE

2. PASSAGE SHALL MEAN ANY ROOM, GALLERY, TUNNEL OR SIMILAR ENCLOSED SPACE IN WHICH PIPES RUN.

3. ALL SLEEVES SHALL BE CAST IRON UNLESS OTHERWISE NOTED.

4. FLANGES MAY BE INSTALLED FLUSH WITH WALL AND TAPPED FOR STUDS.

5. CEMENT GROUT CAULKING MAY BE ELIMINATED

FOR PASSAGE TO PASSAGE PENETRATIONS.

6. LIQUID SHALL MEAN AN ELEVATION 1'-6" ABOVE MAXIMUM WATER ELEVATION.

PIPE THROUGH WALLS DETAILS

SCALE: N.T.S.

SCALE: N.T.S.

1/8 " WIDE SAW CUT JOINT SEE PLAN FOR LOCATION— VAPOR BARRIER -←GRANULAR FILL