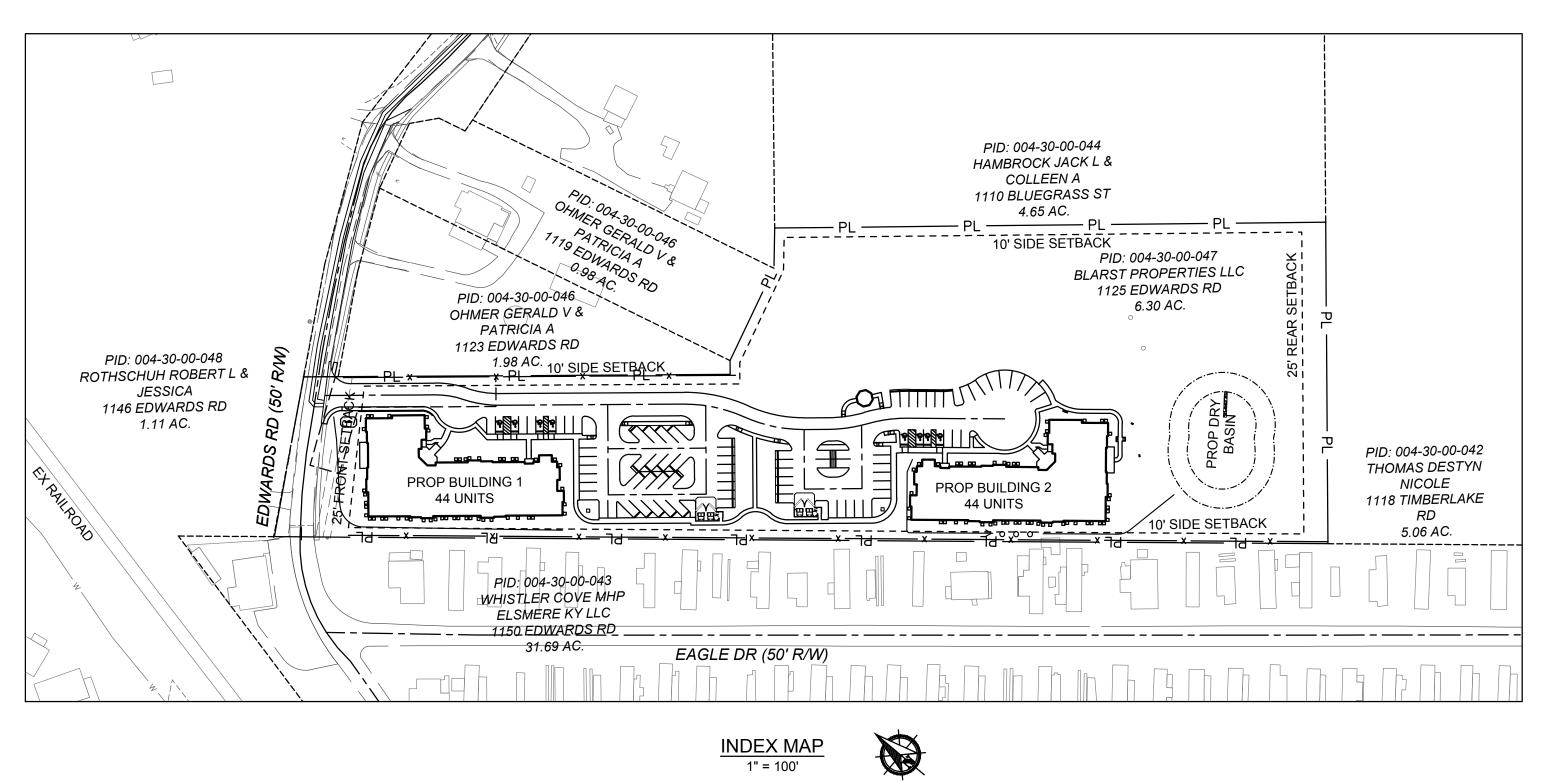
SHEET INDEX
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C606 - WATERLINE PLAN & PROFILE C607 - C611 - WATERLINE NOTES

SITE DATA	
ZONING:	
PROPERTY OWNER:	BLARST PROPERTIES LLC
PARCEL ID:	004-30-00-047.00
PROPOSED USE:	SENIOR LIVING FACILITY
SITE ACREAGE:	6.30 AC
EXISTING ZONING:	R-CPS (RESIDENTIAL COMPACT SUBDIVISION)
FEMA FLOODPLAIN:	ZONE X PER FEMA FIRM PANEL 21117C0015F DATED 5/16/2013
SITE LAYOUT DATA:	
STANDARD PARKING STALL:	9'X18'
ADA PARKING STALL:	8'X18'
MINIMUM DRIVE AISLE WIDTH:	12'
BUILDING DATA:	
BUILDING 1 AREA:	14,179 SQFT
BUILDING 2 AREA:	14,179 SQFT
BUILDING HEIGHT:	3 STORY
TOTAL UNITS	88 UNITS
PARKING DATA:	
PROPOSED PARKING:	88 SPACES
PROPOSED ADA PARKING	8 SPACES
REQUIRED PARKING:	1 SPACE PER UNIT * 88 UNITS = 88 SPACES

SITE CONSTRUCTION PLAN FOR SANCTUARY ON EDWARDS 1125 EDWARDS ROAD CITY OF ELSMERE, KENTON COUNTY, KENTUCKY



BASIS OF BEARING

BEARINGS SHOWN HEREON ARE BASED ON KENTUCKY STATE PLANE COORDINATE SYSTEM (NORTH ZONE) AND THE NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT), AS ESTABLISHED UTILIZING A GPS SURVEY AND AN NGS OPUS SOLUTION.

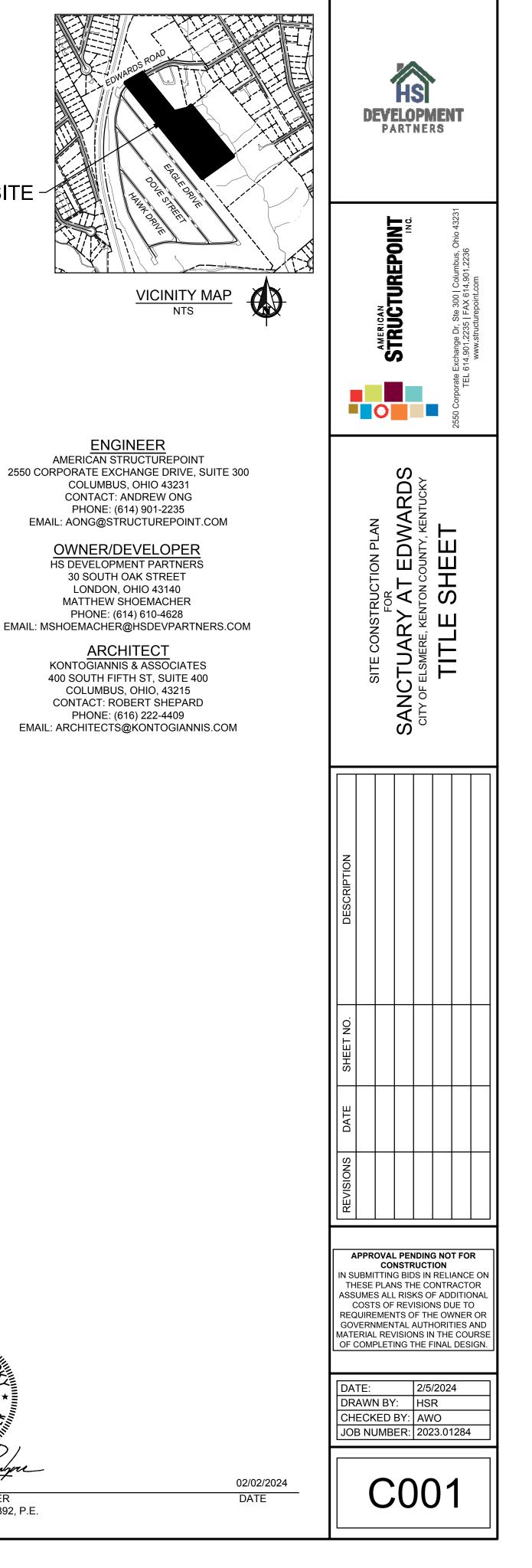
HORIZONTAL CONTROL

COORDINATES ARE BASED ON KENTUCKY STATE PLANE COORDINATE SYSTEM, NORTH ZONE, NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT), AS ESTABLISHED UTILIZING A GPS SURVEY AND AN NGS OPUS SOLUTION. A PROJECT ADJUSTMENT FACTOR OF 1.00003061 WAS APPLIED ABOUT C.P. 5000 TO OBTAIN GROUND COORDINATES.

C.P.	DESCRIPTION	NORTHING (GROUND)	EASTING (GROUND)	ELEVATION
5000	5/8" IRON PIN SET W/ "ASI CONTROL POINT" CAP LOCATED ON THE SOUTH SIDE OF EDWARDS RD, EAST OF THE DRIVEWAY FOR ADDRESS #1125, 59.9 FEET NORTHEAST OF A FENCE CORNER, 13.1 FEET SOUTH OF THE SIDEWALK, 51.6 FEET SOUTH OF AN 18" TREE LOCATED ON THE NORTH SIDE OF EDWARDS RD	546962.476	1539357.766	865.84
5001	MAG NAIL SET IN SIDEWALK LOCATED ON THE SOUTH SIDE OF EDWARDS RD, 62.7 FEET NORTHEAST OF THE EDGE OF DRIVE FOR ADDRESS #1125, 3.25 FEET NORTH OF THE SOUTH EDGE OF SIDEWALK, 33.7 FEET SOUTH OF AN 18" TREE LOCATED ON THE NORTH SIDE OF EDWARDS RD	546982.504	1539361.747	862.77
5002	MAG SPIKE SET IN PAVEMENT LOCATED ON THE NORTH SIDE OF EDWARDS RD IN FRONT OF ADDRESS #1150, 26.9 FEET SOUTHEAST OF THE SOUTHEAST CORNER OF THE BUILDING, 4.92 FEET SOUTHWEST OF A WATER VALVE, 11.35 FEET SOUTHWEST OF A FIRE HYDRANT	546889.042	1539153.734	872.12
5003	MAG NAIL SET IN SIDEWALK LOCATED ON THE SOUTH SIDE OF EDWARDS RD, EAST OF THE DRIVE FOR ADDRESS #1123, 3.75 FEET NORTH OF THE SOUTH EDGE OF SIDEWALK, 10.6 FEET NORTHEAST OF A WATER METER, 44.1 FEET EAST OF A FIRE HYDRANT	547065.776	1539561.715	844.67
MAG NAIL SET IN SOUTH SIDE OF EDWARDS LOCATED EAST OF ADDRESS # 1109, 9.9 FE 5004 NORTHWEST OF A GASE VALVE, 24.14 FEET N OF A POWER/LIGHT POLE, 26.9 FEET SOUTH OF A CURB INLET		547073.157	1539938.403	831.95

	VERTICAL CONTROL								
THE NORT	ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, AS DERIVED FROM GNSS OBSERVATIONS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT) AND GEOID 18, AND AN NGS OPUS SOLUTION FOR CONTROL POINT 5000. THE ELEVATIONS FOR ALL OTHER CONTROL POINTS AND BENCHMARKS LISTED HEREON WERE ESTABLISHED UTILIZING A DIFFERENTIAL LEVEL CIRCUIT ORIGINATING FROM CONTROL POINT 5000								
B.M.	DESCRIPTION	NORTHING (GROUND)	EASTING (GROUND)	ELEVATION					
CP 5000	5/8" IRON PIN SET W/ "ASI CONTROL POINT" CAP LOCATED ON THE SOUTH SIDE OF EDWARDS RD, EAST OF THE DRIVEWAY FOR ADDRESS #1125, 59.9 FEET NORTHEAST OF A FENCE CORNER, 13.1 FEET SOUTH OF THE SIDEWALK, 51.6 FEET SOUTH OF AN 18" TREE LOCATED ON THE NORTH SIDE OF EDWARDS RD	546962.476	1539357.766	865.84					
TBM 500	CUT "X" ON THE SOUTH BOLT OF A FIRE HYDRANT LOCATED ON THE NORTH SIDE OF EDWARDS RD, EAST OF THE PARKING LOT FOR VINEYARDS MANAGEMENT GROUP, ADDRESS #1150	N/A	N/A	874.96					
TBM 501	CUT "X" ON EAST BOLT OF A FIRE HYDRANT LOCATED ON THE SOUTH SIDE OF EDWARDS RD, +/- 12 FEET WEST OF MAILBOX #1123	N/A	N/A	849.94					
TBM 502	MAG SPIKE IN NORTH SIDE OF POWER POLE #106-394E/K19004RE LOCATED ON THE SOUTH SIDE OF EDWARDS RD BETWEEN ADDRESS #1107 & ADDRESS #1109	N/A	N/A	836.05					





JOSHUA MATTHEW RODGERS 33392 CFNS /0 M 161 synce

SITE

REGISTERED ENGINEER JOSH RODGERS, E-33392, P.E.

GENERAL NOTES

- 1. THE CONTRACTOR SHALL VISIT THE SITE AND REVIEW ALL CONSTRUCTION DOCUMENTS AND FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO BIDDING. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR WORK THAT COULD HAVE BEEN IDENTIFIED BY A SITE VISIT OR CONSTRUCTION DOCUMENT REVIEW.
- SPECIFICATIONS PERFORM ALL WORK IN ACCORDANCE WITH CITY AND KENTUCKY TRANSPORTATION CABINET (KYTC) MATERIAL SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS. IN CASE OF DISCREPANCY BETWEEN CITY AND KYTC REQUIREMENTS AND PROJECT SPECIFICATIONS, CITY STANDARDS SHALL GOVERN. WHEREVER THE WORDS "STATE," "DEPARTMENT," OR "DEPUTY DIRECTOR" OCCUR, IT IS TO MEAN THE OWNER. WHEREVER THE WORD "ENGINEER" OCCURS, IT IS TO MEAN AMERICAN STRUCTUREPOINT, INC.

THIS PROJECT IS TO BE BID AND ADMINISTERED AS A LUMP SUM PROJECT. ALL REFERENCES TO UNIT PRICES AND METHODS OF MEASUREMENT FOR THE PURPOSE OF PAYMENT SHALL BE DISREGARDED,

- 3. IT IS THE CONTRACTORS RESPONSIBILITY TO ASCERTAIN THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION AND MARK ALL EXISTING UTILITIES 48 HOURS BEFORE CONSTRUCTION STARTS. CONTACT KUPS UTILITY LOCATING SERVICE TO FIELD LOCATED EXISTING UTILITIES. CONTACT UTILITY OWNER IF DAMAGE OCCURS DUE TO CONSTRUCTION.
- 4. PROTECT ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE NOT SCHEDULED FOR REMOVAL.
- BENCHMARKS THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCHMARKS, SURVEY MONUMENTS, PROPERTY CORNERS, REFERENCE POINTS, AND STAKES, ANY BENCHMARK. PROPERTY CORNER, OR SURVEY MARKER DAMAGED OR DISTURBED BY THE CONTRACTOR SHALL BE RESET BY A KENTUCKY REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- 5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL EXERCISE PRECAUTION ALWAYS FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL ALSO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES PER 29 CFR 1910.146.
- PERMITS & LICENSES THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS AND LICENSES NEEDED FOR THE CONSTRUCTION OF THIS PROJECT.
- EXISTING SEWERS & STRUCTURES THE CONTRACTOR SHALL REPLACE, TO THE SATISFACTION OF THE ENGINEER, ALL EXISTING MANHOLES, CATCH BASINS, DRAINS, SEWERS, AND APPURTENANCES REMOVED OR DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL REMOVE DEBRIS, SILT, ETC. FROM THE EXISTING MANHOLES AND CATCH BASINS WHICH HAVE BEEN AFFECTED BY CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL MAINTAIN SERVICE IN EXISTING SEWERS DURING CONSTRUCTION.
- 8. SAW-CUT ALL EXISTING PAVEMENTS, WALKWAYS, CURBS, ETC. SHALL BE SAW-CUT BEFORE REMOVAL. IF DURING CONSTRUCTION, THE PAVEMENT, WALKWAY, CURB, ETC. IS DAMAGED BEYOND THE ORIGINAL SAW-CUT, THE DAMAGED AREA SHALL BE RE-CUT TO NEAT LINES, AS DIRECTED BY THE ENGINEER. SAW-CUT SHALL BE PERFORMED ALONG EXISTING JOINTS WHERE POSSIBLE. WHENEVER PORTIONS OF EXISTING PAVEMENT OR CURB ARE TO BE REMOVED ALLOWING PORTIONS OF THE PAVEMENT TO REMAIN, THE CONTRACTOR SHALL SAW-CUT THE ASPHALT OR CONCRETE PRIOR TO REMOVAL.
- NON-RUBBER TIRED VEHICLES NO NON-RUBBER TIRED VEHICLES SHALL BE MOVED ON EXISTING PAVEMENT TO REMAIN. EXCEPTIONS MAY BE GRANTED BY THE OWNER WHERE SHORT DISTANCES AND SPECIAL CIRCUMSTANCES ARE INVOLVED. GRANTING OF EXCEPTIONS MUST BE IN WRITING AND ANY RESULTING DAMAGE MUST BE REPAIRED TO THE SATISFACTION OF THE OWNER.
- 10. CLEAN-UP IT IS THE INTENT OF THE OWNER TO KEEP INCONVENIENCE TO THE SURROUNDING PROPERTIES TO AN ABSOLUTE MINIMUM. ALL WORK PRESCRIBED AND DESCRIBED IN THESE PLANS AND SPECIFICATIONS IS SITUATED IN IMPROVEMENT AREAS. ALL WORK IS TO CONTINUE ON A UNIFORM BASIS AND ON SCHEDULE, PARTICULARLY THE RESTORATION AND CLEANUP OF DISTURBED AREAS AFTER CONSTRUCTION. ALL DEBRIS, RUBBLE, UNSUITABLE MATERIALS, AND ITEMS NOT SALVAGED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF PROPERTY ACCORDING TO LOCAL CODES. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO THEIR ORIGINAL CONDITION AND ELEVATION. ANY DIRT, SEDIMENT OR MUD DEPOSITED ON CITY STREETS ON OR OFF THE PROJECT SITE SHALL IMMEDIATELY BE CLEANED BY THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO PERFORM WEEKLY STREET CLEANING THROUGHOUT THE DURATION OF THE PROJECT. THIS MAY INCLUDE REMOVAL BY SWEEPING, POWER CLEANING, OR MANUAL METHODS. THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. DRAINAGE DITCHES OR WATERCOURSES THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO THE GRADES AND CROSS-SECTIONS THAT EXISTED BEFORE CONSTRUCTION.
- 11. ADDITIONAL COMPENSATION THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, SERVICES, AND RELATED ACCESSORIES FOR A COMPLETE PROJECT AS SHOWN AND DESCRIBED IN THE PLANS AND SPECIFICATIONS. SUBMISSIONS OF A BID SHALL BE CONSIDERED EVIDENCE THAT THE BIDDER IS SATISFIED WITH THE PLANS AND CONDITIONS AS SHOWN. NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR COMPLIANCE WITH THE PLANS, SPECIFICATIONS, OR SPECIAL PROVISIONS.
- 12. SANITARY FACILITIES THE CONTRACTOR SHALL FURNISH AND MAINTAIN SANITARY CONVENIENCE FACILITIES FOR THE WORKERS AND INSPECTORS FOR THE DURATION OF THE WORK.
- 13. DOUG MALONE (SD1) SHALL BE CONTACTED AT 859-578-6749 AT LEAST 72 HOURS PRIOR TO INSTALLATION OF THE PUBLIC SANITARY SEWER.
- 14. STORAGE OF EQUIPMENT AND MATERIALS ALL MATERIALS, INCLUDING PIPE, SHALL BE STORED IN AREAS TO MINIMIZE INCONVENIENCE AND LOSS OF USE TO UNIVERSITY PROPERTY. STORAGE EQUIPMENT, DURING NON-WORKING HOURS, SHALL ALSO COMPLY WITH THIS REQUIREMENT. COMPLIANCE WITH THIS REQUIREMENT ALONG WITH ADDITIONAL PROVISIONS OF THE CONTRACT SPECIFICATIONS SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THIS LEGAL RESPONSIBILITIES OR LIABILITIES FOR THE SAFETY OF THE PUBLIC. THE CONTRACTOR SHALL RECEIVE OWNER APPROVAL OF STORAGE AREAS PRIOR TO CONSTRUCTION.
- 15. CONSTRUCTION PRACTICES BEST CONSTRUCTION PRACTICES ARE TO BE IMPLEMENTED TO MINIMIZE WATER QUALITY IMPACTS. A SPILL CONTAINMENT KIT IS TO BE MAINTAINED ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. SPILLS OF FUELS, OILS, CHEMICALS, OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY. IF THE SPILL IS A REPORTABLE AMOUNT (25 GALLONS OR MORE) THE LOCAL FIRE DEPARTMENT IS TO BE CONTACTED. PROVIDE SECONDARY CONTAINMENT OF ANY TEMPORARY FUEL STORAGE TANK AND/OR EQUIPMENT THAT HAS POTENTIAL FOR CAUSING A SPILL.
- 16. TESTING REFER TO PROJECT MANUAL FOR TESTING AND INSPECTION REQUIREMENTS.
- 17. UTILITY PROTECTION THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLAN ARE OBTAINED FROM A TOPOGRAPHIC SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES SHOWN. THE CONTRACTOR SHALL EXPOSE UTILITIES AND STRUCTURES PRIOR TO THE CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION. ANY DEVIATIONS FROM THE PLANS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY, SUCH THAT, ANY MODIFICATIONS TO THE PROPOSED DESIGN CAN BE MADE. POTHOLES AND/OR EXCAVATIONS SHALL BE USED WHERE

NECESSARY AND AS APPROVED BY THE OWNER. ITEMS SHALL BE EXPOSED SUFFICIENTLY IN ADVANCE TO MAINTAIN THE PROJECT SCHEDULE.

THE CONTRACTOR SHALL CALL, TOLL FREE, THE KENTUCKY UTILITIES PROTECTION SERVICE 72 HOURS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO WORK IN THE VICINITY OF THEIR UNDERGROUND LINES.

MECHANICAL DIGGING EQUIPMENT SHALL NOT BE USED FOR EXPOSING ANY UNDERGROUND UTILITY. ONLY HAND TOOLS MAY BE USED TO UNCOVER THE UTILITY AND THE UTILITY COMPANY SHALL BE NOTIFIED AND HAVE A REPRESENTATIVE PRESENT WHEN THE UTILITY IS EXPOSED.

LOCATE EXISTING UNDERGROUND UTILITIES IN THE AREAS OF THE WORK. IF UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF PROTECTING DURING EXCAVATION OPERATIONS. SHOULD UNCHARTED OR INCORRECTLY CHARTED PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONSULT THE ENGINEER IMMEDIATELY FOR DIRECTIONS.

CONTRACTOR SHALL SUPPORT ALL EXISTING UTILITIES TRAVERSING THROUGH THE EXCAVATION. DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED AND USED OUTSIDE OF THE PROJECT AREA, EXCEPT WHEN PERMITTED IN WRITING BY THE AFFECTED PARTY AND THEN ONLY AFTER ACCEPTABLE TEMPORARY UTILITY SERVICES HAVE BEEN PROVIDED.

COOPERATE WITH THE OWNER AND THE PUBLIC UTILITY COMPANIES IN KEEPING THEIR RESPECTIVE SERVICES AND FACILITIES IN OPERATION. REPAIR DAMAGED UTILITIES TO THE SATISFACTION OF THE UTILITY OWNER.

- 18. CONTRACTOR SHALL INSTALL A CONSTRUCTION FENCE, AS NECESSARY, TO KEEP ALL PEDESTRIANS SAFELY AWAY FROM WORK. FENCE SHALL BE 6' HIGH CHAIN LINK FENCE WITH GROUND MOUNTED POSTS OR TEMPORARY POSTS SECURELY ANCHORED.
- 19. CONTRACTOR LAYDOWN ARES CONTRACTOR STAGING, LAYDOWN, AND TRAILER AREAS WILL BE PROVIDED AT THE PROJECT SITE. COORDINATE EXACT LOCATION WITH THE OWNER. PROTECTION OF LAYDOWN AREAS AND STAGING AREAS ARE AS DEEMED NECESSARY BY THE CONTRACTOR. PROVIDE ORANGE CONSTRUCTION FENCE AROUND ALL LAYDOWN AREAS. ALL LAYDOWN AREAS AND STAGING AREAS SHALL BE RESTORED TO ORIGINAL CONDITION PRIOR TO ACCEPTANCE BY THE OWNER.
- 20. ALL EXCAVATION, CONSTRUCTION, AND BACKFILL TO BE CONSTRUCTED UNDER THIS CONTRACT SHALL BE CONSTRUCTED UNDER DRY CONDITIONS. THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATIONS IN A DE-WATERED, WORKABLE CONDITION, AND PROPER DE-WATERING MEASURES SHALL BE TAKEN AS DICTATED BY FIELD CONDITIONS. THE DISCHARGE OF SEDIMENT LADEN WATERS INTO ANY PUBLIC WATERCOURSE IS STRICTLY PROHIBITED. ALL SEDIMENTS MUST BE REMOVED PRIOR TO DISCHARGE.
- 21. HAZARDOUS MATERIALS THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ENGINEER AND THE OWNER'S REPRESENTATIVE, ANY MATERIAL ENCOUNTERED DURING EXECUTION OF THE WORK THAT THE CONTRACTOR SUSPECTS IS HAZARDOUS.
- 22. REPLACEMENT OF DRAIN TILE AND STORM SEWER ALL DRAIN TILE AND STORM SEWERS DAMAGED, DISTURBED, OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH THE SAVE QUALITY PIPE OR BETTER, MAINTAINING THE SAME GRADIENT AS THE EXISTING. THE DRAIN TILE AND/OR STORM SEWER SHALL BE CONNECTED TO THE CURB SUB-DRAIN, STORM SEWER SYSTEM, OR PROVIDED WITH AN OUTLET INTO THE ROADWAY DITCH AS APPLICABLE. REPLACEMENT DRAIN TILE/STORM SEWER SHALL BE LAID ON COMPACTED BEDDING EQUAL IN DENSITY TO SURROUNDING STRATUM. REPLACEMENT WORK SHALL BE DONE AT THE TIME OF THE BACKFILL OPERATION.
- 23. SUBGRADE REFER TO PROJECT GEOTECHNICAL REPORT REGARDING SUBGRADE RECOMMENDATIONS FOR THE PROJECT SITE.
- 24. OPEN TRENCH EXCAVATION SLOUGHING AND CAVING OF EXCAVATIONS SHOULD BE ANTICIPATED WHERE SATURATED WEAK SOILS ARE ENCOUNTERED OR WHERE GRANULAR SEAMS AND LAYERS ARE PRESENT. ALL EXCAVATIONS MUST BE PERFORMED WITHOUT ENDANGERING THE CONSTRUCTION WORKERS. THEREFORE, IN ACCORDANCE WITH THE OSHA TRENCH/EXCAVATION REGULATIONS (OSHA 29 CFR PART 1926), FOR ANY EXCAVATIONS EXCEEDING A DEPTH OF 5 FEET IN WHICH WORKERS WILL BE ENTERING THE EXCAVATION/TRENCH, THE EXCAVATION SIDES MUST BE BRACED OR SLOPED TO THE REQUIRED MAXIMUM INCLINATION OR FLATTER (BASED ON THE SOIL TYPE AND STRENGTH).

ANY EXCAVATION INSTALLED USING AN OPEN TRENCH CONSTRUCTION METHOD COULD POTENTIALLY CAUSE DAMAGE TO EXISTING UNDERGROUND UTILITIES, STRUCTURES, OR PAVEMENT CURRENTLY LOCATED IN THE VICINITY OF THE PROPOSED UTILITY ALIGNMENT AND POSITIONED AT HIGHER ELEVATIONS THAN THE PLANNED EXCAVATION DEPTH. THIS WOULD APPLY TO EITHER THE TYPICAL OPEN CUT TRENCH THAT HAS NEAR VERTICAL SIDES OR A TRENCH BOX. THEREFORE, THE LATERAL DISTANCE, DEPTH OF THE EXISTING UTILITY, AND THE PLANNED EXCAVATION DEPTH MUST BE KNOWN TO DETERMINE WHETHER ADJACENT UNDERGROUND UTILITIES COULD BE AFFECTED BY THE EXCAVATION. THE RISK OF LATERAL MOVEMENT WITHIN THE INFLUENCE ZONE INCREASES WITH BOTH THE LENGTH OF THE EXCAVATION AND THE TIME THE TRENCH REMAINS OPEN.

WHERE BRACED EXCAVATIONS ARE REQUIRED, TRENCH EXCAVATIONS SHALL BE DIRECTLY BRACED AT THE TIME OF THE EXCAVATION. THE BRACING MUST BE DESIGNED AS A RIGID SYSTEM WITHOUT DEFLECTION ALONG ITS ENTIRETY, CONSTRUCTED "TIGHT' AGAINST THE RETAINED SOIL. THE BRACING SYSTEM CANNOT BE INSTALLED AFTER THE EXCAVATION IS MADE.

- 22. TRENCH BACKFILL COMPACTED GRANULAR MATERIAL IS REQUIRED IN ALL TRENCHES UNDER PAVEMENT AREAS (DRIVEWAYS, STREETS, SIDEWALKS, ETC.) OR WHERE THE FRONT FACE OF TRENCHES PARALLELING THE PAVEMENT, ARE WITHIN 36" OF THE FACE OF CURB OR EDGE OF PAVEMENT. UNLESS SHOWN OTHERWISE ON THE PLANS, THE MATERIAL WILL EXTEND LATERALLY 36" BEYOND THE FACE OF CURB OR EDGE OF PAVEMENT FRO TRENCHES WHICH CROSS THE PAVEMENT. AT ALL POINTS OF CROSSING WATER MAINS OR OTHER SEWERS, THE BACKFILL SHALL BE OF GRANULAR MATERIAL BETWEEN THE DEEPER AND SHALLOWER PIPES.
- 23. PLAN CHANGES GRADES AND ELEVATIONS SHOWN ON THE PLANS SHALL NOT BE REVISED UNDER ANY CIRCUMSTANCES WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE ENGINEER. INVERT ELEVATIONS SHALL NOT DEVIATE FROM PLAN ELEVATION BY MORE THAN 0.05 FOOT. FAILING TO MEET THE ABOVE REQUIREMENTS ARE CAUSE FOR REJECTION OF THE AFFECTED SECTION OF SEWER.

DEMOLITION NOTES:

- 1. CONFIRM EXISTING CONDITIONS PRIOR TO BEGINNING WORK.
- 2. ALL CLEARING AND, GRUBING, AND RELATED ACTIVITIES SHALL CONFORM TO KYTC ITEM 202. DISPOSE OF TREES OFF SITE.
- 3. ALL TREES, SAPLINGS, CROPS, GRASS, OR MONUMENTS LOCATED WITHIN THE WORK AREA WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS ARE TO BE PRESERVED, UNLESS NOTED TO BE REMOVED OR UNLESS APPROVAL TO REMOVE IS GIVEN IN WRITING BY THE ENGINEER. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY CLAIM FROM DAMAGE TO TREES, SAPLINGS, CROPS, OR GRASSES WHICH MAY OCCUR AS THE RESULT OF THE CONSTRUCTION OPERATIONS, DAMAGE TO SIGNS, FENCES, LAWN AREAS, HEDGES, FLOWERS, SHRUBBERY, ETC. AS A RESULT OF THE CONSTRUCTION SHALL BE RESTORED IN LIKE KIND AND CHARACTER TO THE SATISFACTION OF THE ENGINEER.
- REMOVE ALL ON-GRADE SITE FEATURES WITHIN THE AREA OF WORK INCLUDING: SIDEWALKS. CURBS, CONCRETE FOUNDATIONS, AND CONCRETE AND ASPHALT PAVEMENT.

- 5. SAW-CUT, FULL DEPTH, EXISTING ASPHALT PAVEMENT AND CONCRETE CURB WHERE NEW WORK ABUTS EXISTING CONSTRUCTION. USE CARE TO SAW-CUT NEAT STRAIGHT LINES. WHEN SAW-CUTTING EXISTING CONCRETE, CUT ALONG EXISTING JOINT LINES WHEREVER POSSIBLE.
- 6. CONTRACTOR SHALL USE CAUTION TO PROTECT EXISTING SITE FEATURES TO REMAIN. REPLACE ANY DAMAGE AT NO COST TO THE OWNER.
- 7. LEGALLY DISPOSE OF ALL CONSTRUCTION DEBRIS OFF-SITE IN ACCORDANCE WITH LOCAL CODES. NO ON-SITE BURNING.
- 8. USE ALL MEANS NECESSARY TO CONTROL DUST ON-SITE AND PREVENT TRACKING SOIL OFF-SITE.
- 9. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR EXISTING BUILDING AND/OR STRUCTURES DEMOLITION AND PROTECTION.

EARTHWORK & GRADING NOTES:

- 1. NO CONSTRUCTION WORK WILL BE PERMITTED WITHOUT APPROVED PLANS AND INSPECTION.
- 2. ALL PAVEMENT ELEVATIONS REFER TO FINISHED PAVEMENT ELEVATION AT FACE OF CURB UNLESS OTHERWISE NOTED. ALL DIMENSIONS AND COORDINATES ARE TO FACE OF CURB OR FACE OF BUILDING, UNLESS OTHERWISE NOTED.
- 3. THE CONTRACTOR SHALL LIMIT THE DISTURBED AREA AS MUCH AS POSSIBLE.
- 4. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. EROSION CONTROL SHALL BE INSTALLED TO PREVENT SEDIMENT FROM RUNNING OFF ONTO ADJACENT PROPERTIES. ANY DAMAGE TO ADJACENT PROPERTIES MUST BE CORRECTED AND RESTORED, AT NO COST TO THE OWNER, AS SOON AS PERMISSION IS GRANTED FROM THE ADJACENT PROPERTY OWNER(S).
- 5. SOIL EROSION AND SEDIMENTATION BMP MEASURES, SHALL BE INSTALLED PRIOR TO START OF ANY CONSTRUCTION AND SHALL BE MAINTAINED AT ALL TIMES UNTIL CONSTRUCTION HAS BEEN COMPLETED; INCLUDING ALL GRASS BEING WELL ESTABLISHED AND/OR PERMANENT EROSION AND SEDIMENTATION BMP MEASURES IN PLACE. ALL BMP MEASURES SHALL BE TO THE SATISFACTION OF THE LOCAL AUTHORITY AND KENTUCKY DEP.
- 6. USE ALL MEANS NECESSARY TO CONTROL DUST ON THE SITE AND PREVENT TRACKING SOIL OFF-SITE. CONTRACTOR SHALL, AT THE END OF EACH WORKING DAY, CLEAN ALL DIRT AND SEDIMENT TRACKED ONTO THE STREETS.
- 7. REMOVE SEDIMENT FROM DETENTION AREAS, OUTLET STRUCTURES, AND ALL UNDERDRAINS ONCE FINAL SEED HAS BEEN ESTABLISHED.
- 8. CONTRACTOR SHALL STRIP AND STOCKPILE EXISTING TOPSOIL THROUGHOUT THE SITE PRIOR TO EXCAVATION. UPON COMPLETION OF FINAL GRADING, PROVIDE 6" OF TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING LAYDOWN AREAS AND TRAILER LOCATIONS, IF LOCATED OUTSIDE THE GRADING/SEEDING LIMITS.
- 9. EXCAVATION AND EMBANKMENT SHALL COMPLY WITH KYTC ITEM 206 AND LOCAL AUTHORITY REQUIREMENTS.
- 10. THE CONTRACTOR'S BID SHALL BE COMPREHENSIVE AND INCLUDE ALL LABOR AND EQUIPMENT TO COMPLETE ALL EXCAVATION, FILL AND GRADING IN ACCORDANCE WITH THE APPROVED ENGINEERING PLANS AND SPECIFICATIONS.
- 11. EXCAVATION AND EMBANKMENT QUANTITIES DO NOT INCLUDE ANY PROVISION FOR UNDERCUTTING, FOOTINGS, OR UNSUITABLE MATERIAL.
- 12. ALL FIELD TILE BROKEN OR ENCOUNTERED DURING EXCAVATION SHALL BE REPLACED OR REPAIRED AND CONNECTED TO THE PUBLIC STORM SEWER SYSTEM AS DIRECTED BY THE CITY ENGINEER. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 13. THE INTENT IS TO STRIP AND SALVAGE TOPSOIL FOR POTENTIAL RE-SPREADING ON THE SITE. IF APPROVED BY THE LANDSCAPE ARCHITECT AND/OR SPECIFICATIONS. TOPSOIL - AFTER COMPACTION - SHALL BE RE-SPREAD PRIOR TO SEEDING AND MULCHING. EXCESS TOPSOIL MAY BE REMOVED FROM THE SITE PROVIDING THERE IS ADEQUATE TOPSOIL REMAINING TO PROPERLY FINISH THE SITE AS NOTED ABOVE. THE CONTRACTOR SHALL REFER TO THE LANDSCAPE DRAWINGS AND SPECIFICATIONS FOR ANY SPECIAL TOPSOIL OR PLANTING REQUIREMENTS.
- 14. AFTER THE TOPSOIL IS REMOVED, PROOFROLL THE PAVEMENT AND BUILDING AREA SUBGRADES TO BE FILLED. SOFT AREAS SHOULD BE UNDERCUT AND STABILIZED PRIOR TO FILLING OPERATIONS. RELATIVE DEPTH OF UNDERCUT WILL BE DETERMINED WHEN SOFT AREAS ARE DISCOVERED. THE LOCAL AUTHORITY SHALL DETERMINE THE DEPTH AND EXTENT OF THE UNDERCUT.
- 15. TOPSOIL MIX AND DEPTHS SHALL BE PER LANDSCAPE DRAWINGS.
- 16. THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS AND GEOTECHNICAL REPORT.
- 17. BACKFILL WITHIN A 1:1 INFLUENCE LINE OF EXISTING STRUCTURES (HOUSES, GARAGES, ETC.) OR PUBLIC INFRASTRUCTURE (PAVEMENT, CURBS, SIDEWALKS, BIKE PATHS, ETC.) SHALL BE COMPACTED GRANULAR BACKFILL ACCORDING TO ITEM 805 OF THE STANDARD SPECIFICATIONS OR FLOWABLE CDF, TYPE II ACCORDING TO ITEM 601. ITEM 804 OF THE STANDARD SPECIFICATIONS SHALL BE USED ELSEWHERE.
- 18. ALL WET OR OTHERWISE UNSUITABLE SOILS MUST BE STABILIZED PRIOR TO PAVEMENT CONSTRUCTION. THIS MAY BE ACCOMPLISHED BY DRYING, REMOVAL & REPLACEMENT, DRYING & RE-COMPACTION, OR SOIL TREATMENT (LIME/CEMENT). MEANS AND METHODS SHALL BE DETERMINED BY OWNER'S TESTING AGENCY.
- 19. EXPOSE UTILITIES PRIOR TO BEGINNING WORK ON THAT UTILITY TO DETERMINE EFFECTS ON THE PROPOSED ALIGNMENT AND PROFILE. REPORT ELEVATION AND LOCATION TO THE ENGINEER IN ORDER THAT ANY CORRECTIONS TO THE ELEVATION AND LOCATION CAN BE MADE.
- 20. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- 21. ALL CONCRETE ADJACENT TO BUILDING SHALL BE SLOPED AWAY FROM BUILDING AT 2.0% UNLESS OTHERWISE NOTED.
- 22. PROVIDE POSITIVE DRAINAGE FROM BUILDINGS AT ALL TIMES.
- 23. HANDICAP PARKING AREAS SHALL NOT HAVE SLOPES IN ANY DIRECTION THAT EXCEED 2%.
- 24. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTION TO THE SANITARY SEWER ARE PROHIBITED.
- 25. ALL INLETS SHALL BE CHANNELIZED.
- 26. PROVIDE 10' UNDERDRAINS IN FOUR DIRECTIONS AT ALL CATCH BASINS IN PAVEMENT AREAS. UNDERDRAINS SHALL BE PLACED AT EACH STRUCTURE FACE EXTENDING IN A PERPENDICULAR DIRECTION.
- 27. OUTLET CURB UNDERDRAINS TO ADJACENT EXISTING UNDERDRAINS OR STORM SEWER SYSTEM.

EARTHWORK NOTES (STANDARD):

28. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RINGS & COVERS.

29. ALL EXISTING VALVES, MANHOLES, AND OTHER APPURTENANCES TO REMAIN LOCATED WITHIN THE WORK LIMITS SHALL BE ADJUSTED TO FINISHED GRADE.

30. MAXIMUM FINISH SLOPES SHALL BE 3:1, UNLESS OTHERWISE NOTED. FOR SLOPES GREATER THAN 3:1 PROVIDE EROSION CONTROL MATTING PER DETAILS PROVIDED.

31. ALL DOWNSPOUT LEADER STORM SEWER CONNECTION SHALL BE 6" WITH A MINIMUM SLOPE OF 1.20% OR AS OTHERWISE NOTED.

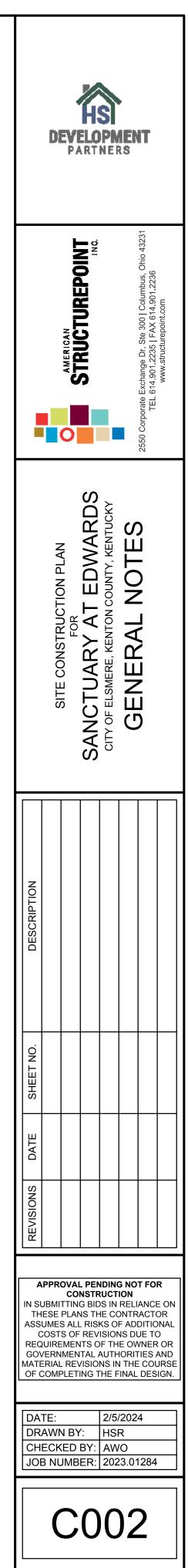
32. NO LANDSCAPED SLOPES ARE TO EXCEED 3:1 (3 FEET HORIZONTAL TO 1 FOOT VERTICAL) UNLESS NOTED OTHERWISE.

EXCAVATE AND REMOVE UNSUITABLE MATERIAL AS DEFINED IN THE GEOTECHNICAL ENGINEERING REPORT, OF WHICH SHALL BE CONSIDERED A PART OF THESE CONTRACT DOCUMENTS:

A. STRIP AND STOCKPILE EXISTING TOPSOIL WITHIN GRADING/SEEDING LIMITS. FINAL STOCKPILE LOCATION TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE OWNER. SEED STOCKPILES IN ACCORDANCE WITH SPECIFICATIONS ON EROSION CONTROL PLAN, SEE SHEET C201. REFER TO GEOTECHNICAL REPORT FOR EXISTING TOPSOIL DEPTHS.

B. SUBSEQUENT TO TOPSOIL REMOVAL, BENEATH PAVEMENT AREAS AND PROPOSED BUILDING PAD. PROOF-ROLL EXPOSED SUBGRADE WITH A FULLY-LOADED. TANDEM-AXLE DUMP TRUCK (OR EQUIVALENT) TO IDENTIFY POTENTIAL UNSUITABLE AND UNSTABLE SUBGRADE AREAS. IN LOCATIONS WHERE PROOF-ROLLING HAS FAILED, SOILS SHALL BE DISKED, DRIED AND RECOMPACTED, OR UNDERCUT AND REPLACED WITH COMPACTED ENGINEERED FILL, OR OTHERWISE IMPROVED AS DETERMINED BY THE TESTING AGENCY. IN AREAS WHERE OVER EXCAVATION HAS BEEN CHOSEN TO IMPROVE SUBGRADE, STOCKPILE OVER EXCAVATED SOILS FOR REUSE AS ENGINEERED FILL OR AS GENERAL SITE FILL IN LANDSCAPING AREAS.

C. ESTABLISHING THE GRADES SHOWN ON THIS PLAN WILL REQUIRE IMPORT OF MATERIAL. CONTRACTOR SHALL CONFIRM QUANTITIES.



<u>UTILITY</u>

- 1. OBTAIN ALL PERMITS AND PAY ALL FEES NECESSARY TO COMPLETE THE WORK AS SHOWN.
- 2. ALL EXCAVATIONS, CONSTRUCTION, AND BACKFILL OF PIPES SHALL BE CONSTRUCTED UNDER DRY CONDITIONS. THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATIONS IN A DE-WATERED, WORKABLE CONDITION, AND SHALL BE RESPONSIBLE FOR INSTALLING, OPERATING, AND MAINTAINING SUCH DE-WATERING SYSTEMS AS ARE REQUIRED.
- 3. SUPPORT AND PROTECT ALL UTILITIES EXPOSED DURING EXCAVATION AND TRENCHING.
- 4. THE CONTRACTOR SHALL GIVE NOTICE OF INTENT TO CONSTRUCT TO KENTUCKY UTILITIES PROTECTION SERVICE AND TO OWNERS OF UNDERGROUND UTILITIES THAT ARE NOT MEMBERS OF A REGISTERED UNDERGROUND PROTECTION SERVICE. NOTICE SHALL BE GIVEN AT LEAST 2 WORKING DAYS BEFORE START OF CONSTRUCTION.
- 5. THE IDENTITY AND LOCATIONS OF EXISTING UNDERGROUND UTILITIES IN THE CONSTRUCTION AREA HAVE BEEN SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS AS ACCURATELY AS PROVIDED BY THE OWNER OF THE UNDERGROUND UTILITY. THE CITY ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR DEPTHS OF UNDERGROUND FACILITIES SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS. IF DAMAGE IS CAUSED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF THE SAME AND FOR ANY RESULTING CONTINGENT DAMAGE.
- WHERE PLANS PROVIDE FOR A PROPOSED UTILITY TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING UNDERGROUND SEWER OR UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED UTILITY. THESE LOCATIONS ARE NOTED ON THE PLANS AS "EXPOSE."

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.

- COORDINATE SERVICE CONNECTION LOCATIONS AT THE BUILDING WITH THE PLUMBING CONTRACTOR PRIOR TO CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UNCOORDINATED WORK.
- 8. CONTRACTORS SHALL COORDINATE ALL WORK WITH GAS, ELECTRIC, TELEVISION, AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION.
- ALL AREAS DISTURBED BY UTILITY CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL SAW-CUT EXISTING PAVEMENT AT LIMITS OF REMOVAL. PAVEMENT AND CURB REPLACEMENT SHALL CONFORM TO LOCAL AUTHORITY CONSTRUCTION STANDARDS.
- 10. ALL SIGNS, POLES, BENCHES, FLOWER BEDS, BRICK PAVERS AND ANY OTHER SITE FEATURE REQUIRING REMOVAL DUE TO CONSTRUCTION ACTIVITIES SHALL BE STORED ON-SITE AND RE-INSTALLED BY THE CONTRACTOR UPON COMPLETION OF CONSTRUCTION ACTIVITIES.
- 11. ALL UTILITIES SHALL BE INSPECTED AND APPROVED PRIOR TO BACKFILLING.
- 12. AT ALL POINTS OF CROSSING WATER MAINS OR OTHER SEWERS, THE BACKFILL SHALL BE GRANULAR MATERIAL BETWEEN THE DEEPER AND SHALLOWER PIPES.
- 13. CONTRACTOR SHALL COORDINATE CONNECTION TO EXISTING SANITARY SEWER WITH THE LOCAL AUTHORITY.
- 14. CONTRACTOR SHALL COORDINATE CONNECTION TO EXISTING WATER MAIN WITH THE LOCAL AUTHORITY.
- 15. MAINTAIN MINIMUM 48" COVER OVER ALL WATER LINES
- 16. MAINTAIN MINIMUM 30" COVER OVER ALL GAS LINES
- MAINTAIN MINIMUM 18" VERTICAL CLEARANCE FROM THE OUTSIDE OF ANY WATERLINE PIPE TO THE OUTSIDE OF ANY STORM OR SANITARY SEWER.
- 18. PROVIDE THRUST BLOCKS OR RESTRAINED MECHANICAL JOINT PIPE AT EACH VALVE, TEE, FITTING, OR CHANGE IN DIRECTION OF WATERLINE, UNLESS OTHERWISE NOTED.
- 19. REFER TO THE LOCAL AUTHORITY STANDARD DRAWINGS FOR TYPICAL FIRE HYDRANT INSTALLATION DETAILS.
- 20. CONNECTION TO EXISTING WATER MAINS SHALL NOT BE PERFORMED UNTIL THE NEW LINES HAVE BEEN SANITIZED AND ALL TESTS HAVE BEEN COMPLETED AS SPECIFIED BY THE LOCAL AUTHORITY.
- 21. ANY REQUIRED WATERLINE SHUT-DOWNS SHALL BE COORDINATED WITH THE LOCAL AUTHORITY.
- 22. PROVIDE THRUST BLOCKS OR RESTRAINED MECHANICAL JOINT PIPE AT EACH VALVE, TEE, FITTING, OR CHANGE IN DIRECTION OF WATERLINE, UNLESS OTHERWISE NOTED.
- 23. GAS TAP, SERVICE LINE, CURB BOX, AND METER SETTING BY UTILITY PROVIDER. SITE CONTRACTOR TO PROVIDE AND INSTALL GAS SERVICE LINE FROM METER SETTING TO A POINT 5'-0" OUTSIDE OF BUILDING. PLUMBING CONTRACTOR TO INSTALL SERVICE LINE FROM 5'-0" OUTSIDE OF BUILDING FACE TO GAS SERVICE FOR BUILDING. CONTRACTOR TO COORDINATE WITH UTILITY PROVIDER.

SANITARY SEWERS

- CONNECTIONS TO THE SANITARY SEWER WILL BE PERMITTED UPON RECEIVING A PERMIT TO INSTALL (PTI), AND UPON RECEIVING A SATISFACTORY LETTER FROM THE DESIGN ENGINEER STATING THAT THE PROJECT HAS BEEN CONSTRUCTED AS PER THE PLANS, AND ALL OF THE CONDITIONS OF THE PTI HAVE BEEN MET. THE DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL REQUIRED KENTUCKY DEP APPROVALS AND PAYING REVIEW FEES.
- SANITARY SEWAGE COLLECTION SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RULES, REGULATIONS, STANDARDS AND SPECIFICATIONS OF THE CITY OF ELSMERE, KENTUCKY SD1, KENTUCKY DEP, KENTUCKY DEPARTMENT OF HEALTH AND THE CURRENT EDITION OF THE GREAT LAKES-UPPER MISSISSIPPI RIVER BOARD (TEN STATES) - RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES.
- 3. THE MINIMUM REQUIREMENTS FOR SANITARY SEWER PIPE WITH DIAMETERS 15 INCHES AND SMALLER SHALL BE REINFORCED CONCRETE PIPE ASTM C76 CLASS 3, OR PVC SEWER PIPE ASTM D3034, SDR 35. PIPE FOR 6-INCH DIAMETER HOUSE SERVICE LINES SHALL BE PVC PIPE ASTM D3034, SDR 35. PVC PIPE SHALL NOT BE USED AT DEPTHS GREATER THAN 28 FEET. PIPE MATERIALS AND RELATED STRUCTURES SHALL BE SHOP TESTED IN ACCORDANCE WITH KENTUCKY SD1 REQUIREMENTS. PIPE JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D3212.
- THE MINIMUM REQUIREMENTS FOR SANITARY SEWER PIPES WITH DIAMETERS GREATER THAN 15 INCHES SHALL BE REINFORCED CONCRETE PIPE ASTM C76 WITH CLASS DESIGNATION SPECIFIED IN THE APPROVED CONSTRUCTION DRAWINGS.
- 5. ALL IN-LINE WYE AND TEE CONNECTIONS IN CONCRETE SEWERS, 18-INCH DIAMETER AND

LARGER, SHALL BE EITHER KOR-N-TEE OR KOR-N-SEAL CONNECTIONS CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS.

- 6. GRANULAR BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL ACCORDING TO ITEM 805 OF THE STANDARD SPECIFICATIONS OR CONTROLLED DENSITY BACKFILL ACCORDING TO ITEM 601. TYPE II OF THE STANDARD SPECIFICATIONS AS DIRECTED BY THE CITY ENGINEER.
- 7. ALL MANHOLE LIDS SHALL BE PROVIDED WITH CONTINUOUS SELF-SEALING GASKETS. THE APPROVED CONSTRUCTION DRAWINGS SHALL SHOW WHERE BOLT-DOWN LIDS ARE REQUIRED. SANITARY SEWER MANHOLES SHALL BE PRECAST CONCRETE OR AS APPROVED BY THE CITY ENGINEER.
- 8. ALL PVC SEWER PIPES SHALL BE DEFLECTION TESTED NO LESS THAN 60 DAYS AFTER COMPLETION OF BACKFILLING OPERATIONS. ALL OTHER REQUIREMENTS SHALL BE ACCORDING TO ITEM 810 OF THE STANDARD SPECIFICATIONS.
- 9. TEMPORARY BULKHEADS SHALL BE PLACED IN PIPES AT LOCATIONS SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS AND SHALL REMAIN IN PLACE UNTIL THE SEWERS HAVE BEEN APPROVED FOR USE BY THE CITY ENGINEER. THE COST FOR FURNISHING, INSTALLING, MAINTAINING, AND REMOVING BULKHEADS SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR THE VARIOUS SANITARY SEWER ITEMS.
- 10. ALL SANITARY SEWERS INCLUDING SANITARY SEWER SERVICE LINES SHALL BE SUBJECTED TO AND PASS INFILTRATION OR EXFILTRATION TESTS AND MUST BE APPROVED FOR USE BY THE CITY ENGINEER BEFORE ANY SERVICE CONNECTIONS ARE TAPPED INTO SEWERS.
- 11. FOR SANITARY SEWER INFILTRATION, LEAKAGE THROUGH JOINTS SHALL NOT EXCEED 100 GALLONS PER INCH OF TRIBUTARY SEWER DIAMETER PER 24 HOURS PER MILE OF LENGTH OR THE COMPUTED EQUIVALENT. ALL SANITARY SEWERS SHALL BE TESTED.
- 12. AT THE DETERMINATION OF THE CITY ENGINEER. THE CONTRACTOR MAY BE REQUIRED TO PERFORM A TV INSPECTION OF THE SANITARY SEWER SYSTEM PRIOR TO FINAL ACCEPTANCE BY THE CITY. THIS WORK SHALL BE COMPLETED BY THE CONTRACTOR AT HIS EXPENSE.
- 13. VISIBLE LEAKS OR OTHER DEFECTS OBSERVED OR DISCOVERED DURING TV INSPECTION SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.
- 14. ROOF DRAINS, FOUNDATION DRAINS, FIELD TILE OR OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE STRICTLY PROHIBITED.
- 15. ALL WATER LINES SHALL BE LOCATED AT LEAST 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY, FROM SANITARY SEWERS AND STORM SEWERS, TO THE GREATEST EXTENT PRACTICABLE. WHERE SANITARY SEWERS CROSS WATER MAINS OR OTHER SEWERS OR OTHER UTILITIES, TRENCH BACKFILL SHALL BE PLACED BETWEEN THE PIPES CROSSING AND SHALL BE COMPACTED GRANULAR MATERIAL ACCORDING TO ITEM 805 OF THE STANDARD SPECIFICATIONS. IN THE EVENT THAT A WATER LINE MUST CROSS WITHIN 18 INCHES OF A SANITARY SEWER, THE SANITARY SEWER SHALL BE CONCRETE ENCASED OR CONSIST OF DUCTILE IRON PIPE MATERIAL.
- 16. SERVICE RISERS SHALL BE INSTALLED WHERE THE DEPTH FROM WYES TO PROPOSED GROUND ELEVATION EXCEEDS 10 FEET. TOPS OF RISERS SHALL BE NO LESS THAN 9 FEET BELOW PROPOSED GROUND ELEVATION IF BASEMENT SERVICE IS INTENDED.
- 17. WHERE SERVICE RISERS ARE NOT INSTALLED, A MINIMUM 5-FOOT LENGTH OF SANITARY SEWER SERVICE PIPE OF THE SAME SIZE AS THE WYE OPENING SHALL BE INSTALLED.
- 18. THE CONTRACTOR SHALL FURNISH AND PLACE, AS DIRECTED, APPROVED WYE POLES MADE OF 2 INCHES X 2 INCHES LUMBER AT ALL WYE LOCATIONS, ENDS OF EXTENDED SERVICES, OR AT THE END OF EACH RISER WHERE RISERS ARE REQUIRED. WYE POLES SHALL BE VISIBLE BEFORE ACCEPTANCE BY THE CITY. THE COST OF THESE POLES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE VARIOUS SEWER ITEMS.
- 19. EXISTING SANITARY SEWER FLOWS SHALL BE MAINTAINED AT ALL TIMES. COSTS FOR PUMPING AND BYPASSING SHALL BE INCLUDED IN THE CONTRACTOR'S UNIT PRICE BID FOR THE RELATED ITEMS.
- 20. THE CONTRACTOR SHALL FURNISH ALL MATERIAL, EQUIPMENT, AND LABOR TO MAKE CONNECTIONS TO EXISTING MANHOLES. THE SEWER PIPE TO MANHOLE CONNECTIONS FOR ALL SANITARY SEWERS SHALL BE FLEXIBLE AND WATERTIGHT. ALL HOLES SHALL BE NEATLY CORED. THE SEWER PIPE BARREL AT THE SPRINGLINE SHALL NOT EXTEND MORE THAN 1 INCH BEYOND THE INSIDE FACE OF THE MANHOLE. TO MAINTAIN FLEXIBILITY IN THE CONNECTION, A 1-INCH SPACE SHALL BE LEFT BETWEEN THE END OF THE PIPE INSIDE THE MANHOLE AND THE CONCRETE CHANNEL; THIS SPACE SHALL BE FILLED WITH A WATERPROOF FLEXIBLE JOINT FILLER. ANY METAL THAT IS USED SHALL BE TYPE 300 SERIES STAINLESS STEEL. THE CONNECTION MAY BE ANY OF THE FOLLOWING TYPES:
 - A. RUBBER SLEEVE WITH STAINLESS STEEL BANDING.

 - CORPORATION. 3) OR EQUAL AS APPROVED BY THE CITY ENGINEER.

 - RUBBER GASKET COMPRESSION. 1) PRESS WEDGE II AS MANUFACTURED BY PRESS-SEAL GASKET CORPORATION. 2) DURA SEAL III AS MANUFACTURED BY DURA TECH, INC. 3) LINK-SEAL AS MANUFACTURED BY THUNDERLINE CORPORATION. 4) OR EQUAL AS APPROVED BY THE CITY ENGINEER.

STORM SEWER

- 1. ALL STORM WATER DETENTION AND RETENTION AREAS AND MAJOR FLOOD ROUTING SWALES SHALL BE CONSTRUCTED TO FINISH GRADE AND HYDRO-SEEDED AND HYDRO-MULCHED ACCORDING TO ITEMS 204 AND 213 OF THE STANDARD SPECIFICATIONS.
- 2. WHERE PRIVATE STORM SEWERS CONNECT TO PUBLIC STORM SEWERS, THE LAST RUN OF PRIVATE STORM SEWER CONNECTING TO THE PUBLIC STORM SEWER SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM DESIGNATION C76, WALL B, CLASS IV FOR PIPE DIAMETERS 12 INCHES TO 15 INCHES, CLASS III FOR 18 INCHES TO 24 INCH PIPES, AND 27 INCHES AND LARGER PIPE SHALL BE CLASS II, UNLESS OTHERWISE SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS. INSPECTION IS REQUIRED BY KENTUCKY SD1.
- 3. GRANULAR BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL ACCORDING TO ITEM 805 OF THE STANDARD SPECIFICATIONS OR CONTROLLED DENSITY BACKFILL ACCORDING TO ITEM 601, TYPE II OF THE STANDARD SPECIFICATIONS AS DIRECTED BY THE CITY ENGINEER.
- 4. ALL STORM SEWERS SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO ASTM DESIGNATION C76, WALL B, CLASS IV FOR PIPE DIAMETERS 12 INCHES TO 15 INCHES, CLASS III FOR 18 INCHES TO 24 INCH PIPES, AND 27 INCHES AND LARGER PIPE SHALL BE CLASS II, UNLESS OTHERWISE SHOWN ON THE APPROVED CONSTRUCTION DRAWINGS.
- 5. HEADWALLS AND ENDWALLS SHALL BE REQUIRED AT ALL STORM SEWER INLETS OR OUTLETS TO AND FROM STORMWATER MANAGEMENT FACILITIES. NATURAL STONE AND/OR BRICK APPROVED BY THE CITY ENGINEER SHALL BE PROVIDED ON ALL VISIBLE HEADWALLS AND/OR ENDWALLS SURFACES.
- ALL CURB INLET AND CATCH BASIN GRATES SHALL INCLUDE ENGRAVED LETTERING: "DUMP NO WASTE; DRAINS TO RIVER."
- 7. STORM SEWER OUTLETS GREATER THAN 18 INCHES IN DIAMETER ACCESSIBLE FROM STORMWATER MANAGEMENT FACILITIES OR WATERCOURSES SHALL BE PROVIDED WITH SAFETY

1) KOR-N-SEAL AS MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC. 2) LOCK JOINT FLEXIBLE MANHOLE SLEEVE AS MANUFACTURED BY INTERPACE

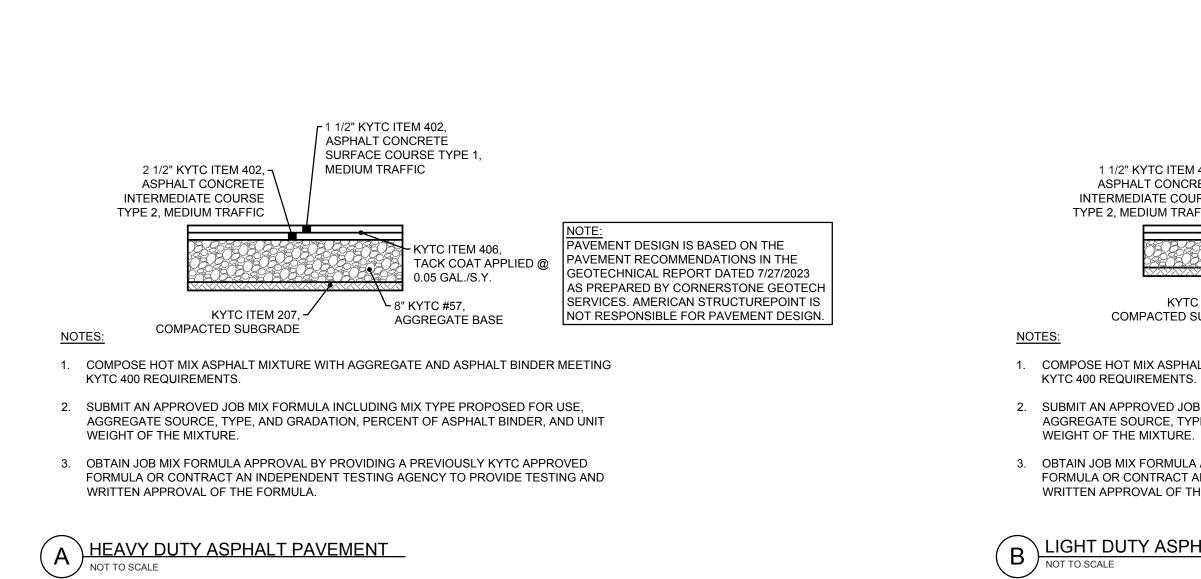
6. STORM INLETS OR CATCH BASINS SHALL BE CHANNELIZED AND HAVE BICYCLE SAFE GRATES.

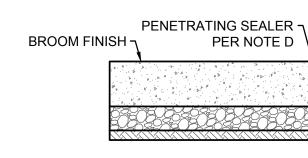
GRATES, AS APPROVED BY THE CITY ENGINEER.

RETENTION/DETENTION BASINS

- ANTI-SEEP COLLARS ARE REQUIRED FOR ALL RETENTION/DETENTION POND OUTLETS. A MINIMUM OF TWO COLLARS ARE REQUIRED. COLLARS MUST BE CONSTRUCTED (EXCAVATED) A MINIMUM OF 3.0' INTO UNDISTURBED SOIL ON ALL THREE SIDES. CLASS C CONCRETE SHALL BE USED FOR REPLACEMENT OF THE EXCAVATED MATERIAL. THE COLLARS MUST BE A MINIMUM OF 8 INCHES THICK.
- 2. A CLAY CORE OF SUFFICIENT THICKNESS IS REQUIRED FOR ALL DETENTION AND RETENTION PONDS IN CUT AREAS. THE COUNTY ENGINEER SHALL FIELD APPROVE THE CORE THICKNESS OR THE CONDITION OF THE EXISTING SOILS AS A SUBSTITUTE FOR A CLAY CORE (E.G., EXISTING CLAY MATERIAL).
- 3. TREES AND LANDSCAPING SHALL NOT BE PERMITTED ON EMBANKMENT SURFACES.

DEVELOPMENT PARTNERS								
			2550 Corporate Exchange Dr, Ste 300 Columbus, Ohio 43231 TEL 614.901.2235 FAX 614.901.2236	www.structurepoint.com				
	SITE CONSTRUCTION PLAN BOR SANCTUARY AT EDWARDS CITY OF ELSMERE, KENTON COUNTY, KENTUCKY GENERAL NOTES							
DESCRIPTION								
SHEET NO.								
REVISIONS DATE								
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1 1/2" KYTC ITEM 402, ASPHALT CONCRETE SURFACE COURSE TYPE 1, 1 1/2" KYTC ITEM 402, ¬ MEDIUM TRAFFIC ASPHALT CONCRETE KYTC ITEM 406, INTERMEDIATE COURSE TACK COAT APPLIED @ TYPE 2, MEDIUM TRAFFIC 0.05 GAL./S.Y. PAVEMENT DESIGN IS BASED ON THE PAVEMENT RECOMMENDATIONS IN THE GEOTECHNICAL REPORT DATED 7/27/2023 AS PREPARED BY CORNERSTONE GEOTECH SERVICES. KYTC ITEM 207, -- 8" KYTC #57, AMERICAN STRUCTUREPOINT IS NOT COMPACTED SUBGRADE AGGREGATE BASE RESPONSIBLE FOR PAVEMENT DESIGN.

1. COMPOSE HOT MIX ASPHALT MIXTURE WITH AGGREGATE AND ASPHALT BINDER MEETING

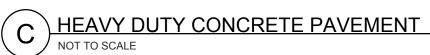
2. SUBMIT AN APPROVED JOB MIX FORMULA INCLUDING MIX TYPE PROPOSED FOR USE, AGGREGATE SOURCE, TYPE, AND GRADATION, PERCENT OF ASPHALT BINDER, AND UNIT WEIGHT OF THE MIXTURE.

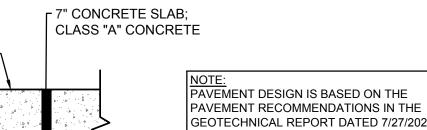
3. OBTAIN JOB MIX FORMULA APPROVAL BY PROVIDING A PREVIOUSLY KYTC APPROVED FORMULA OR CONTRACT AN INDEPENDENT TESTING AGENCY TO PROVIDE TESTING AND WRITTEN APPROVAL OF THE FORMULA.

B LIGHT DUTY ASPHALT PAVEMENT

NOTES:

- 1. PROVIDE PROPORTIONING REQUIREMENTS FOR PORTLAND CEMENT CONCRETE MIX DESIGNS, MIXING, AND CONTROLS PER KYTC ITEM 601.
- 2. DISSIPATING CURING COMPOUND: COMPLY WITH ASTM C309, TYPE 1, CLASS A OR B (CLEAR), EXCEPT MOISTURE LOSS NOT TO EXCEED 0.40 KG/SQ M. IN 72 HOURS. COMPOUND SHALL COMPLY WITH EPA'S VOC REQUIREMENTS. APPLY AT THE MANUFACTURER'S WRITTEN RECOMMENDED APPLICATION RATE. COMPLETELY REMOVE CURING COMPOUND PRIOR TO THE APPLICATION OF PENETRATIONS SEALER.
- 3. PENETRATING SEALER: ACCEPTABLE PRODUCTS INCLUDE, BUT ARE NOT LIMITED TO: A. L&M CONSTRUCTION CHEMICALS - AQUAPEL PLUS
 - B. PROSOCO SALTGUARD WB C. PROTECTOSIL - CHEM-TRETE 40 VOC
 - D. LYMTAL INTERNATIONAL ISO-FLEX 618-50 WB
- E. BASF MASTER PROTECT H 400 F. TEX-COTE - RAINSTOPPER RS1500

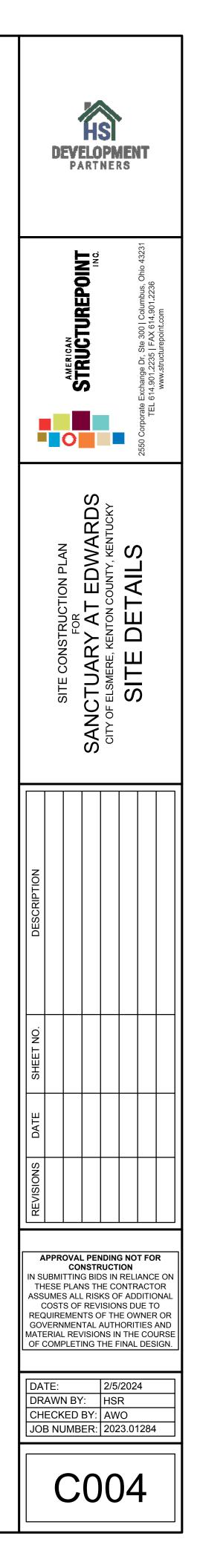


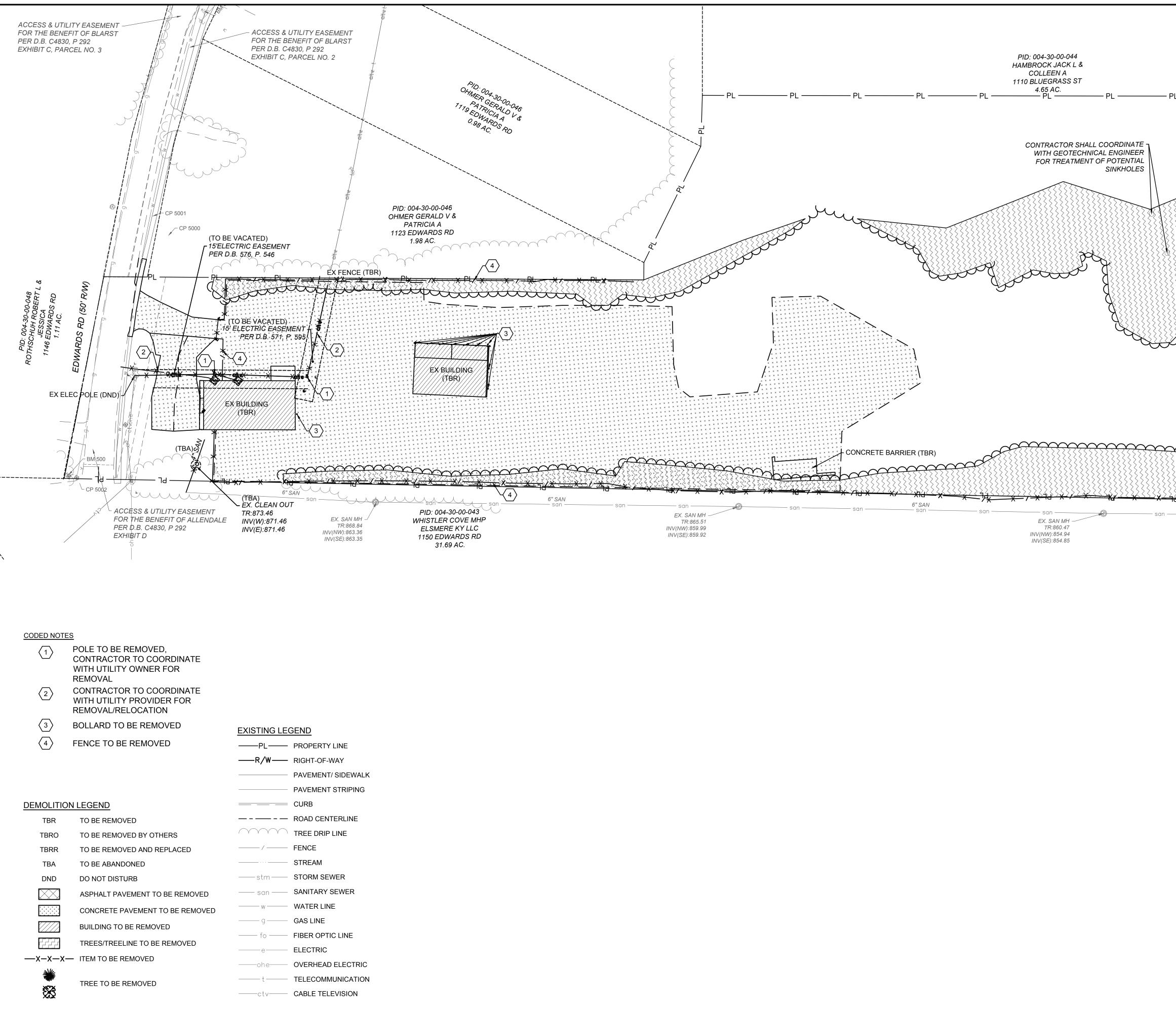


4" COMPACTED

GEOTECHNICAL REPORT DATED 7/27/2023 AS PREPARED BY CORNERSTONE GEOTECH SERVICES. AMERICAN STRUCTUREPOINT IS NOT RESPONSIBLE FOR PAVEMENT DESIGN.

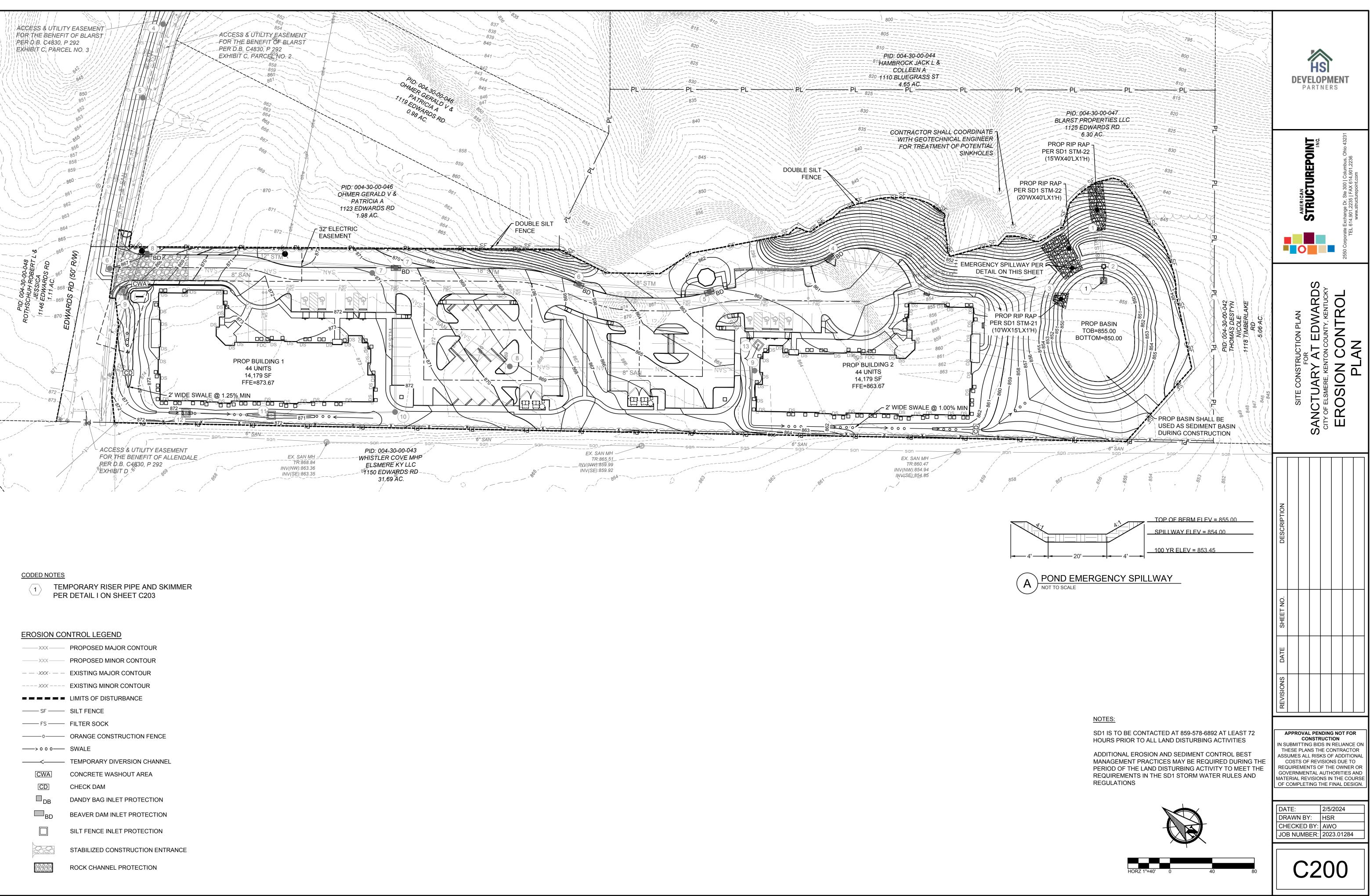
COMPACTED SUBGRADE J AGGREGATE BASE PER PER KYTC ITEM 207 KYTC #57





PLOT SCALE: 1:1 EDIT DATE: 10/18/23 - 1:04 PM EDITED BY: JFRANK DRAWING FILE: 0:\2023\01284\D. DRAWINGS\CIVIL\CONSTRUCTION DOCUMENTS\CDS\2023.0128-

– PL ––––– PL –––––– PL –––––– PID: 004-30-00-047 BLARST PROPERTIES LLC	EVELOPMENT PARTNERS
1125 EDWARDS RD 6.30 AC.	2550 Corporate Exchange Dr, Ste 300 Columbus, Ohio 43231 TEL 614.901.2235 FAX 614.901.2236 www.structurepoint.com
E-ZAN	SITE CONSTRUCTION PLAN SITE CONSTRUCTION PLAN FOR SANCTUARY AT EDWARDS OTY OF ELSMERE, KENTON Y KENTUCKY CITY OF ELSMERE, KENTON COUNTY, KENTUCKY DEMOLITION PLAN
n	DESCRIPTION
	REVISIONS DATE SHEET NO.
	APPROVAL PENDING NOT FOR CONSTRUCTIONIN SUBMITTING BIDS IN RELIANCE ON THESE PLANS THE CONTRACTOR ASSUMES ALL RISKS OF ADDITIONAL COSTS OF REVISIONS DUE TO REQUIREMENTS OF THE OWNER OR GOVERNMENTAL AUTHORITIES AND MATERIAL REVISIONS IN THE COURSE OF COMPLETING THE FINAL DESIGN.DATE:2/5/2024DATE:2/5/2024DRAWN BY:HSRCHECKED BY:AWOJOB NUMBER:2023.01284
HORZ 1"=40' 0 40 80	C100



SITE NARRATIVE			ERC	DSION CONTROL NOTES:
PLAN DESIGNER AMERICAN STRUCTUREPOINT, IN 2550 CORPORATE EXCHANGE DR COLUMBUS, OHIO 43231 CONTACT: ANDREW ONG PHONE: (614) 901-2235 EMAIL: AONG@STRUCTUREPOINT	., STE 300	OWNER HS DEVELOPMENT PARTNERS 30 SOUTH OAK STREET LONDON, OHIO 43140 CONTACT: MATTHEW SHOEMACHER PHONE: (614) 610-4628 EMAIL: MSHOEMACHER@HSDEVPARTNERS.COM	1.	ALL EROSION CONTROL F OPERATIONS. ALL APPLIC COMPLETION OF THE INS TO ANY GRADING OPERAT CONSTRUCTION, ALL ERC AT THE END OF EACH WO
EXISTING SITE CONDITIONS:	THE SITE CU	JRRENTLY CONSISTS OF A COMMERCIAL BUSINESS, PAVED PARKING, REAS, WOODED AREAS AND GRASSED FIELDS.	2.	ANY EROSION CONTROL F AGENCIES; BEFORE, DUR AT THEIR REQUEST.
PROJECT DESCRIPTION:	ACTIVITIES ASSOCIATE	INCLUDE THE CONSTRUCTION OF A 88 UNIT SENIOR HOUSING FACILITY, D UTILITIES, DRIVES, SIDEWALK AND PAVEMENT IMPROVEMENTS. TELY 4.23 ACRES OF THE SITE WILL BE DISTURBED.	3.	FLOWS FROM DIVERSION ROUTED TO SEDIMENTAT PREVENT TRANSPORT OF
RECEIVING STREAM:	THE SITE O	JTLETS TO BULLOCKPEN CREEK.		PREVENT EROSION AND S CONVEYORS.
DISTURBED AREA: SITE BMPS:		TIONS OF ALL SITE BMPS, INCLUDING DUMPSTERS, VEHICLE FUELING NCRETE TRUCK WASH, MATERIAL STORAGE, AND TOPSOIL STOCKPILES	4.	SITE ACCESS ROADS SHA DIVERSION CHANNELS, OI SITE VIA THE ACCESS ROA WITH CRUSHED ROCK WH
	FROM THE L KENTUCKY	ETERMINED BY CONTRACTOR. IF FINAL LOCATION OF BMPS DIFFER OCATIONS SHOWN, CONTRACTOR SHALL MODIFY SWPPP AND INFORM ENERGY AND ENVIRONMENT CABINET OF NEW LOCATIONS OF BMPS.	5.	SOILS TRACKED FROM TH CLEANED DAILY FROM PA REQUESTED BY GOVERNI
ADJACENT AREAS:	NORTH: WEST:	RESIDENTIAL AREA RESIDENTIAL AREA RESIDENTIAL AREA RESIDENTIAL AREA	6.	CONSTRUCTION. DUST CONTROL MEASURE REQUIRE AND/OR AS DIRE
GRADING REQUIREMENTS:	PROTECTIO	AREAS WILL BE PROTECTED BY SILT FENCE, SILT FENCE INLET N, DANDY BAG INLET PROTECTION, AND BEAVER DAM INLET PROTECTION ON THE PLAN. AREAS WILL BE STABILIZED WHEN GRADED TO PREVENT N THE SITE.	7.	ALL EROSION CONTROL M DURATION OF SITE CONS EVENTS DAMAGE OR INTE SHALL BE RESTORED TO S OR AS SOON AS FIELD CO
EROSION & SEDIMENT CONTROL MEASURES:	CONTROL, I	TION OF MEASURES WILL BE USED TO PROVIDE EROSION & SEDIMENT NCLUDING SILT FENCE AND SEEDING. LET PROTECTION AT ALL NEW AND EXISTING DRAINAGE STRUCTURES.	8.	ALL AREAS DISTURBED DI POSSIBLE. ANY AREAS WI THAT HAVE BEEN DISTUR CONSTRUCTION OPERATI
	REQUIREME CABINET. AI NOT COVER KENTUCKY	TE BORROW OR SPOIL AREAS SHALL BE SUBJECT TO THE ENTS SET FORTH BY THE KENTUCKY ENERGY AND ENVIRONMENT LL EROSION AND SEDIMENT CONTROL MEASURES FOR OFF-SITE AREAS ED BY A SEPARATE NOI OR SWPPP SHALL BE COORDINATED WITH THE ENERGY AND ENVIRONMENT CABINET. H OR EXCAVATION GROUNDWATER CONTAINING SEDIMENT MUST BE	9.	SEEDED AND MULCHED A RUNOFF SHALL BE PREVE PROVIDING THEY ARE NO CATCH BASINS ARE NECE FENCE OR SEDIMENT PRO AROUND ALL CATCH BASI
	EFFECTIVEL	ANS NECESSARY TO CONTROL DUST ON THE SITE AND PREVENT	10.	RESTORED. EROSION CONTROL FACIL PERIMETER OF ALL LAKES
PERMANENT STABILIZATION:	THE SITE W AREAS.	ILL BE STABILIZED BY THE USE OF SEEDING OR SODDING IN LAWN		THE AREA TO BE GRADED WETLAND IS RESTORED.
MAINTENANCE:		ON CONTROL DEVICES ARE TO BE INSPECTED BY THE CONSTRUCTION NDENT WEEKLY AND AFTER SIGNIFICANT RAINFALLS. ANY DAMAGED	11.	TO MINIMIZE EROSION, AL TEMPORARY EROSION CO
	NECESSAR		12.	ACCUMULATION OF ALL S PONDS, WETLANDS SHALL GRADING ACTIVITIES, AT I
GENERAL CONSTRUCTION SEQUENCE:	FROM THE E THE PROJECT 1. ESTABL	OTED OTHERWISE, ALL EROSION AND SEDIMENT CONTROL MEASURES BEGINNING OF EARTH DISTURBING ACTIVITIES TO FINAL COMPLETION OF CT ARE THE RESPONSIBILITY OF THE CONTRACTOR) ISH CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT RUCTION AREA.		EROSION CONTROL ITEMS HAS RECEIVED FINAL STA ST CONSTRUCTION STORM
	 CONST CONTR STRUC BE IMPL FIRST G CLEAR 	RUCT TEMPORARY SEDIMENT CONTROLS AND PERIMETER EROSION OL MEASURES, INCLUDING SEDIMENT BASINS, TEMPORARY OUTLET TURE, CONSTRUCTION ENTRANCE, AND SILT FENCE. MEASURES SHALL EMENTED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS OF GRUBBING. AND GRUB	THE TO AN	E DETENTION BASIN WILL A TREAT WATER QUALITY VC ADDITIONAL 20% OF VOLUI ALITY VOLUME WILL DRAIN RUCTURE.
	FENCE 5. PERFOI HEREIN		1.	GENERAL MAINTENANCE: OR AFTER RAINFALL EVEN OF ALL INSPECTIONS AND
	 COMPL COMPL AREAS. 		2.	BASIN MAINTENANCE: EXC WITH LOCAL STANDARDS SEDIMENT SHALL BE REM
	TEMPO STRUC CLEANE	INAL SEED HAS BEEN ESTABLISHED, CONTRACTOR TO REMOVE RARY EROSION CONTROL MEASURES AND CLEAN ALL SEDIMENT FROM TURES AND PAVEMENT. SEDIMENT/WATER QUALITY BASIN SHALL BE ED OF ALL ACCUMULATED SEDIMENT AND RESTORED TO THE ORIGINAL I CONTOURS SHOWN ON THESE PLANS.		ONCE SITE HAS BEEN STA FOREBAY AND MIRCOPOC FREQUENT AND SHALL OC ACCUMULATION HAS EXC
	10. PRIOR CONST AREAS, PATHS, CONDIT	TO FINISHING WORK, ALL AREAS OF THE SITE DISTURBED BY RUCTION ACTIVITY (INCLUDING, BUT NOT LIMITED TO MATERIAL STORAGE TRAILER AREAS, FUELING AREAS, TRUCK WASH AREAS, EQUIPMENT HAUL ROADS, ETC.) SHALL BE RESTORED TO THEIR ORIGINAL TONS, OR IF IN AREAS OF PROPOSED IMPROVEMENTS, TO THEIR		OUTLET STRUCTURE MAIN OUTLET STRUCTURE WITH WHEN SEDIMENT ACCUM WATER PERSISTS FOR MO
	FROM T BE GRA TOPSO	SED CONDITIONS. ALL STONE, TRASH, AND DEBRIS SHALL BE REMOVED THE SOIL. THE UPPER 12" OF SOIL SHALL BE SCARIFIED, AND AREA SHALL DED TO SUBGRADE WITH SUITABLE MATERIALS. FURNISH 6" MINIMUM OF IL AND SEED ALL AREAS.	THE ONI	ST CONSTRUCTION STORM TWO VEGETATED SWALE A MINIMUM AMOUNT OF NTINUED FUNCTIONING OF
SCHEDULE:	SEDIMENTA	ACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE OWNER. TION AND EROSION CONTROL FEATURES SHALL BE PLACED IN CE WITH THIS SCHEDULE.	1.	GENERAL MAINTENANCE: RILLS OR GULLIES AND FO GULLIES OCCUR, THEY M
JURISDICTION:		ON AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD ONS AT THE DISCRETION OF THE CITY OF ELSMERE OR KY SD1.	SED	PROVIDE REPAIR AND STA
KYEEC NOI: RUNOFF COEFFICIENTS:	PRE-DEVEL POST-DEVE	, PENDING APPROVAL OPED: $C = 84$ LOPED: $C = 85$	<u>MAI</u> ALL	NTENANCE & INSPECTION CONTROL MEASURES SHA JRS FOLLOWING ANY STOP
		OPED IMPERVIOUS AREA: 1.94 ACRES LOPED IMPERVIOUS AREA: 2.01 ACRES	CON EFF STF REF	S THE CONTRACTOR'S RES NTROL FEATURES ON THIS FICIENCY OF A CONTROL FE RUCTURE OR FEATURE BEO PLACE AT NO ADDITIONAL O JRS OF REPORT.
				IPORARY SEEDING AND PE RE SPOTS, WASHOUTS, ANI
			WR NAN AC1	AINTENANCE INSPECTION ITTEN LOG MUST BE KEPT. ME OF THE INSPECTOR, WE FIONS TAKEN, AND BE SIGN RMIT. ANY CONTROL MEASI

ROL FACILITIES SHALL BE INSTALLED PRIOR TO ANY SITE GRADING PPLICABLE GOVERNING AGENCIES MUST BE NOTIFIED UPON E INSTALLATION OF THE REQUIRED EROSION FACILITIES AND PRIOR PERATION BEING COMMENCED. IF DAMAGED OR REMOVED DURING _ EROSION CONTROL FACILITIES SHALL BE RESTORED AND IN PLACE CH WORK DAY.

ROL FACILITIES DEEMED NECESSARY BY THE GOVERNING DURING OR AFTER THE GRADING ACTIVITIES, SHALL BE INSTALLED

SION CHANNELS OR PIPES (TEMPORARY OR PERMANENT) SHALL BE ENTATION BASINS OR APPROPRIATE ENERGY DISSIPATERS TO ORT OF SEDIMENT TO OUTFLOW TO LATERAL CONVEYORS AND TO AND SEDIMENTATION WHEN RUNOFF FLOWS INTO THESE

IS SHALL BE GRADED OR OTHERWISE PROTECTED WITH SILT FENCES. ELS, OR DIKES AND PIPES TO PREVENT SEDIMENT FROM EXITING THE SS ROADS. SITE-ACCESS ROADS/DRIVEWAYS SHALL BE SURFACED CK WHERE THEY ADJOIN EXISTING PAVED ROADWAYS.

OM THE SITE BY MOTOR VEHICLES OR EQUIPMENT SHALL BE DM PAVED ROADWAY SURFACES, OR MORE FREQUENTLY IF VERNING AGENCIES, THROUGHOUT THE DURATION OF

ASURES SHALL BE PERFORMED PERIODICALLY WHEN CONDITIONS S DIRECTED BY THE GOVERNING AGENCIES.

ROL MEASURES SHALL BE USED AND MAINTAINED FOR THE CONSTRUCTION. IF CONSTRUCTION OPERATIONS OR NATURAL R INTERFERE WITH THESE EROSION CONTROL MEASURES. THEY ED TO SERVE THEIR INTENDED FUNCTION AT THE END OF EACH DAY LD CONDITIONS ALLOW ACCESS.

BED DURING CONSTRUCTION SHALL BE RESTORED AS SOON AS AS WHICH HAVE BEEN FINISHED GRADED SHALL BE SODDED. AREAS ISTURBED AND FOR WHICH GRADING OR SITE BUILDING ERATIONS ARE NOT ACTIVELY UNDERWAY SHALL BE TEMPORARILY IED AS REQUIRED BY GOVERNING AGENCIES.

PREVENTED FROM ENTERING ALL STORM SEWER CATCH BASINS RE NOT NEEDED DURING CONSTRUCTION. WHERE STORM SEWER NECESSARY FOR SITE DRAINAGE DURING CONSTRUCTION, A SILT NT PROTECTION DEVICES SHALL BE INSTALLED AND MAINTAINED BASINS UNTIL THE TRIBUTARY AREA TO THE CATCH BASIN IS

FACILITIES SHALL BE INSTALLED AND MAINTAINED AROUND THE LAKES, PONDS, AND WETLANDS, IF ANY WITHIN OR ADJACENT TO ADED UNTIL THE AREA TRIBUTARY TO THE LAKE, POND, OR

ON, ALL 3:1 SLOPES OR GREATER SHALL BE COVERED WITH A ON CONTROL BLANKET OR STAKED SOD.

ALL SEDIMENT OCCURRING IN STORM SEWERS, DITCHES, LAKES, SHALL BE REMOVED PRIOR TO, DURING AND AFTER COMPLETION OF S, AT NO ADDITIONAL COST TO OWNER.

ITEMS AND DEVICES SHALL BE REMOVED ONLY AFTER THE AREA AL STABILIZATION.

VILL ACT AS A STORM WATER QUALITY BASIN. THE BASIN WAS SIZED ITY VOLUME IN ADDITION TO PROVIDING STORM WATER DETENTION. OLUME WAS PROVIDED FOR SEDIMENT LOADING. THE WATER DRAIN THROUGH A SMALL DIAMETER ORIFICE ON THE OUTLET

ANCE: INSPECT BASIN AND OUTLET STRUCTURE ONCE PER MONTH EVENTS OF 0.5 INCHES OR GREATER. MAINTAIN DOCUMENTATION S AND MAINTENANCE.

CE: EXCAVATE AND DISPOSE SEDIMENT OFF-SITE IN ACCORDANCE ARDS WHEN BASIN HAS ACCUMULATED 3 INCHES OF SEDIMENT. REMOVED FROM THE FOREBAY AND MICROPOOL OF THE BASIN. EN STABILIZED, CLEAN OUT ALL SEDIMENT CONTAINED IN THE COPOOL, ALL SEDIMENT REMOVAL THEREAFTER SHALL BE LESS ALL OCCUR WHEN BASIN FUNCTIONALITY HAS DECREASED OR S EXCEEDED 3 INCHES.

E MAINTENANCE: REMOVE FLUSHED DEBRIS AND SEDIMENT FROM E WITH VACUUM TRUCK MINIMUM OF ONCE EVERY SIX MONTHS OR CCUMULATES TO WITHIN 6 INCHES OF OUTLET, OF IF STANDING OR MORE THAN 72 HOURS.

STORM WATER QUALITY MANAGEMENT - VEGETATED SWALE NOTES:

WALES WILL ACT AS A STORM WATER QUALITY TREATMENT DEVICE. JNT OF MAINTENANCE SHOULD BE NECESSARY TO ENSURE NG OF VEGETATED SWALES.

ANCE: INSPECT VEGETATED SWALES ANNUALLY FOR FORMATION OF AND FOR ANY DAMAGED SECTION OF VEGETATION. IF RILLS OR HEY MUST BE REPAIRED AND STABILIZED WITH SEED OR SOD. ND STABILIZATION TO DAMAGED AREAS OF VEGETATION.

N CONTROL NOTES:

TION PROCEDURES: S SHALL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 STORM EVENT OF 0.5INCHES OR GREATER.

S RESPONSIBILITY TO MAINTAIN THE SEDIMENTATION AND EROSION THIS PROJECT. ANY SEDIMENT OR DEBRIS WHICH REDUCES THE ROL FEATURE SHALL BE REMOVED IMMEDIATELY. SHOULD A RE BECOME DAMAGED. THE CONTRACTOR SHALL REPAIR OR NAL COST TO THE OWNER AND IT SHALL BE INITIATED WITHIN 24

AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR TS, AND HEALTHY GROWTH.

TION REPORT SHALL BE MADE AFTER EACH INSPECTION. AND A KEPT. THIS LOG SHALL INDICATE THE DATE OF THE INSPECTION, OR. WEATHER CONDITIONS. OBSERVATIONS. ANY CORRECTIVE E SIGNED IN ACCORDANCE WITH THE CONDITIONS OF THE NPDES PERMIT. ANY CONTROL MEASURE MUST BE REPAIRED/REPLACED WITHIN THREE DAYS OF INSPECTION.

FORM WATER QUALITY MANAGEMENT - DETENTION BASIN NOTES:

PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES SHALL BE TRAINED IN ALL INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER. A WRITTEN DOCUMENT CONTAINING THE SIGNATURES OF ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED IN THE IMPLEMENTATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE MAINTAINED AS PROOF ACKNOWLEDGING THAT THEY REVIEWED AND UNDERSTAND THE CONDITIONS AND RESPONSIBILITIES OF THE PLAN. THE DOCUMENT SHALL BE CREATED BY THE CONTRACTOR SIGNED PRIOR TO THE START OF CONSTRUCTION.

DISPOSAL OF SOLID/SANITARY/TOXIC WASTE SOLID, SANITARY, AND TOXIC WASTE MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS

IT IS PROHIBITED TO BURN, BURY, OR POUR OUT ONTO THE GROUND OR INTO A STORM SEWER WATER CONVEYANCE ANY SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREEZE, CEMENT CURING COMPOUNDS, AND OTHER SUCH SOLID AND HAZARDOUS WASTES.

ANY RINSE WATERS OF SUCH MATERIAL ARE ALSO PROHIBITED FROM BEING PLACED WHERE THEY MAY ENTER DRAINAGEWAYS.

WASH OUT OF CEMENT TRUCKS SHOULD OCCUR IN A DIKED, DESIGNATED AREA, AWAY FROM ANY CONVEYANCE CHANNEL.

COORDINATE WASH OUT AREA WITH CONSTRUCTION MANAGER.

CONTRACTORS RESPONSIBILITIES: THIS PLAN MUST BE POSTED ON-SITE. A COPY OF THE SWPPP PLAN AND THE APPROVED EPA STORMWATER PERMIT (WITH THE SITE-SPECIFIC NOI NUMBER) SHALL BE KEPT ON-SITE AT ALL TIMES.

DETAILS HAVE BEEN PROVIDED ON THE PLANS IN AN EFFORT TO HELP THE CONTRACTOR PROVIDE EROSION AND SEDIMENTATION CONTROL. THE DETAILS SHOWN ON THE PLAN SHALL BE CONSIDERED A MINIMUM. ADDITIONAL OR ALTERNATE DETAILS MAY BE FOUND IN THE ODNR MANUAL "RAINWATER AND LAND DEVELOPMENT". THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING NECESSARY AND ADEQUATE MEASURES FOR PROPER CONTROL OF EROSION AND SEDIMENT RUNOFF FROM THE SITE ALONG WITH PROPER MAINTENANCE AND INSPECTION IN COMPLIANCE WITH THE NPDES GENERAL PERMIT FOR STORM DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE OWNER. THE SCHEDULE SHOULD INCLUDE A SEQUENCE OF THE PLACEMENT OF THE SEDIMENTATION AND EROSION CONTROL MEASURES THAT PROVIDES FOR CONTINUAL PROTECTION OF THE SITE THROUGHOUT EARTH MOVING ACTIVITIES.

PRIOR TO CONSTRUCTION OPERATIONS IN A PARTICULAR AREA, ALL SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE IN PLACE. FIELD ADJUSTMENTS WITH RESPECT TO LOCATIONS AND DIMENSIONS MAY BE MADE BY THE ENGINEER AND/OR THE KENTUCKY ENERGY AND ENVIRONMENT CABINET.

THE CONTRACTOR SHALL PLACE INLET PROTECTION FOR THE SEDIMENTATION CONTROL IMMEDIATELY AFTER CONSTRUCTION OF THE CATCH BASINS OR INLETS WHICH ARE NOT TRIBUTARY TO A SEDIMENT BASIN OR DAM.

IT MAY BECOME NECESSARY TO REMOVE PORTIONS OF SEDIMENTATION CONTROLS DURING CONSTRUCTION TO FACILITATE THE GRADING OPERATIONS IN CERTAIN AREAS. HOWEVER, THE CONTROLS SHALL BE REPLACED UPON GRADING OR DURING ANY INCLEMENT WEATHER.

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT OFFSITE TRACKING OF SEDIMENTS BY VEHICLES AND EQUIPMENT IS MINIMIZED. ALL SUCH OFFSITE SEDIMENT SHALL BE CLEANED UP DAILY.

THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT NO SOLID OR LIQUID WASTE IS DISCHARGED INTO STORM WATER RUNOFF. UNTREATED SEDIMENT-LADEN RUNOFF SHALL NOT FLOW OFFSITE WITHOUT BEING DIRECTED THROUGH A CONTROL PRACTICE.

CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE INTO OR ALONG SIDE RIVERS, STREAMS, CREEKS, NATURAL OR MAN-MADE CHANNELS OR SWALES LEADING THERETO, CONCRETE WASH WATER AND SURPLUS CONCRETE SHALL BE CONFINED TO APPROVED AREAS. AFTER SOLIDIFYING THESE WASTED MATERIALS SHALL BE REMOVED FROM THE SITE.

POST FLOOD EVENT SITE MAINTENANCE:

FOLLOWING A FLOOD EVENT. INSPECT ALL MECHANICAL EQUIPMENT THAT ARE LOCATED ON THE SITE FOR ANY DAMAGES. WALLS AND WALL PENETRATIONS SHALL ALSO BE CHECKED FOR CRACKS AND LEAKS AND REPAIRED AS NECESSARY. ALL DEBRIS THAT MAY HAVE ACCUMULATED ALONG THE SITE SHALL BE GATHERED AND DISPOSED OF ACCORDING TO CITY STANDARDS. CHECK AND ENSURE THAT ALL DRAINAGE STRUCTURES ARE IN STANDARD OPERATION AND REPAIR ANY DAMAGES OR CLOGS THAT MAY HAVE OCCURRED DURING FLOODING.

STABILIZATION PROCEDURES

CONTRACTOR SHALL BE RESPONSIBLE TO KEEP A RECORD OF DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN EARTH DISTURBANCE HAS TEMPORARILY OR PERMANENTLY CEASED ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES. HAVE BEEN INITIATED. THE LIMITS OF SEEDING AND MULCHING ARE AS SHOWN WITHIN THE PLAN AS INDICATED BY THE LIMITS OF DISTURBANCE. ALL AREAS NOT DESIGNATED TO BE SEEDED SHALL REMAIN UNDER NATURAL GROUND COVER. THOSE AREAS DISTURBED OUTSIDE THE SEEDING LIMITS SHALL BE SEEDED AND MULCHED AT THE CONTRACTOR'S EXPENSE.

TEMPORARY STABILIZATION

TOPSOIL STOCKPILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY CEASES FOR AT LEAST 21 DAYS WILL BE STABILIZED WITH TEMPORARY SEED AND MULCH NO LATER THAN 7 DAYS FROM THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. DISTURBED AREAS WITHIN 50 FEET OF A STREAM. FIRST ORDER OR LARGER, SHALL BE STABILIZED WITHIN 2 DAYS OF INACTIVITY. TEMPORARY STABILIZATION MUST BE APPLIED TO ANY AREA OF THE SITE WHICH WILL REMAIN IDLE OVER THE WINTER. THE TEMPORARY SEED SHALL BE RYE (GRASS) APPLIED AT A RATE OF 25 LBS PER 1000 SY. PRIOR TO SEEDING, 900 LBS OF GROUND AGRICULTURAL LIMESTONE AND 200 LBS OF 10-20-20 FERTILIZER SHALL BE APPLIED TO EVERY 1000 SY STABILIZED. IMMEDIATELY AFTER ANY GIVEN AREA IS SEEDED. STRAW OR HAY SHALL BE EVENLY PLACED OVER ALL SEEDED AREAS. TWO TONS PER ACRE FOR STRAW, OR 3 TONS PER ACRE FOR HAY SHALL BE PLACED WHEN SEEDING IS PREFORMED BETWEEN THE DATES OF MARCH 15 AND OCTOBER 15. THREE TONS PER ACRE STRAW, OR 4.5 TONS PER ACRE FOR HAY, SHALL BE PLACED WHEN SEEDING IS PREFORMED BETWEEN THE DATES OF OCTOBER 15 AND MARCH 15 OF THE SUCCEEDING YEAR. IF DORMANT SEEDING IS BEING USED FOR STABILIZATION, SEED SHALL BE PLANTED AFTER NOVEMBER 20. AREAS TO BE PAVED SHALL BE TEMPORARILY STABILIZED BY APPLYING STONE BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED.

IN ADDITION TO TEMPORARY SEEDING, THE CONTRACTOR SHALL PLACE A FILTER FABRIC BARRIER AROUND THE BASE OF ALL SOIL STOCKPILES.

PERMANENT STABILIZATION

DISTURBED PORTIONS OF THE SITE WHEN CONSTRUCTION HAS COMPLETED. OR PORTIONS THAT WILL REMAIN DORMANT FOR LONGER THAN ONE YEAR. SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER FINAL GRADE HAS BEEN ESTABLISHED. THE PERMANENT SEED MIX SHALL CONSIST OF 260 LBS/ACRE OF TURF TYPE TALL FESCUE. PRIOR TO SEEDING. APPLY COMMERCIAL FERTILIZER AT THE RATE OF 1 LB ACTUAL NITROGEN PER 1000 SF. FERTILIZER TO HAVE 20-22-14 ANALYSIS. AFTER SEEDING, EACH

IF SEASONAL CONDITIONS PROHIBIT THE ESTABLISHMENT OF VEGETATIVE COVER, OTHER METHODS OF STABILIZATION. SUCH AS MULCHING WITH A TACKIFIER OR MATTING, MUST BE EMPLOYED AND MAINTAINED UNTIL A MORE PERMANENT METHOD CAN BE IMPLEMENTED.

SEEDING MARCH 1 TC AUGUST 15

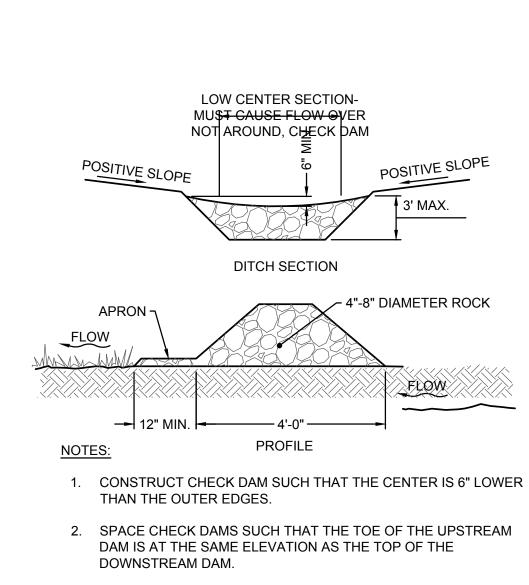
AUGUST 16 NOVEMBER

NOVEMBER SPRING SEE NOTE: OTHE

AREA SHALL BE MULCHED USING TURFIBER (OR EQUIVALENT) AT A RATE OF 2000 LBS PER ACRE WITH 50 LBS OF TURFIBER ADDED PER 100 GALLONS OF MACHINE CAPACITY. KEEP HYDROMULCH FROM NON-TARGET AREAS INCLUDING PAVEMENT, PLANT MATERIALS, CURBING, AND STRUCTURES. IF THESE SURFACES ARE HIT DURING HYDROMULCHING OPERATIONS, WASH THE SURFACE IMMEDIATELY.

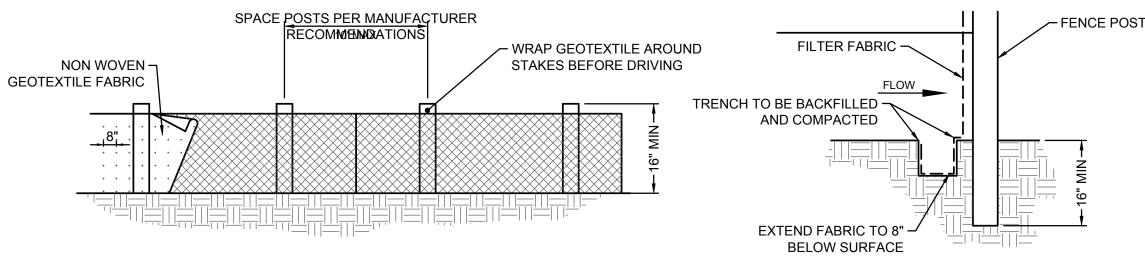
	TEMPORARY SEEDING						
DATES	SPECIES	LB/1,000 SF	PER ACRE				
0	OATS	3	4 BUSHEL				
)	TALL FESCUE	1	40 LB				
	ANNUAL RYEGRASS	1	40 LB				
	PERENNIAL RYEGRASS	1	40 LB				
	TALL FESCUE	1	40 LB				
	ANNUAL RYGRASS	1	40 LB				
6 TO	RY	3	2 BUSHEL				
२ 1	TALL FESCUE	1	40 LB				
	ANNUAL RYEGRASS	1	40 LB				
	WHEAT	3	2 BUSHEL				
	TALL FESCUE	1	40 LB				
	ANNUAL RYGRASS	1	40 LB				
	PERENNIAL RYEGRASS	1	40 LB				
	TALL FESCUE	1	40 LB				
	ANNUAL RYGRASS	1	40 LB				
R 1 TO EDING	USE MULCH ONLY, SODDIN	NG PRACTICES OF	R DORMANT SEEDING.				
ER APPR	OVED SEED SPECIES MAY I	BE SUBSTITUTED					

EVELOPMENT PARTNERS									
2550 Corporate Exchange Dr, Ste 300 Columbus, Ohio 43231 TEL 614.901.2235 FAX 614.901.2236 www.structurepoint.com									
SITE CONSTRUCTION PLAN SITE CONSTRUCTION PLAN FOR SANCTUARY AT EDWARDS CITY OF ELSMERE, KENTON COUNTY, KENTUCKY CITY OF ELSMERE, KENTON COUNTY, KENTUCKY BROSION CONTROL NOTES									
DESCRIPTION									
SHEET NO.									
REVISIONS DATE									
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3. SIDE SLOPES SHALL BE A MINIMUM OF 2:1





FENCE.

MINIMUM TENSILE STRENGTH

MAXIMUM ELONGATION AT 60 LBS

MINIMUM PUNCTURE STRENGTH

MINIMUM TEAR STRENGTH

APPARENT OPENING SIZE

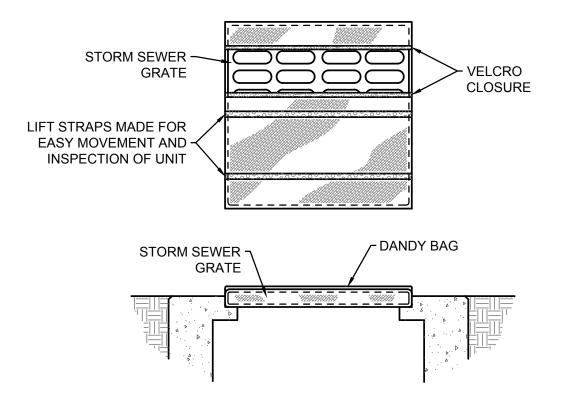
MINIMUM PERMITIVITY

UV EXPOSURE STRENGTH RETENTION

NOTES:

- FENCE POST SHALL BE A MINIMUM LENGTH OF 32 INCHES LONG PLUS BURIAL DEPTH, COMPOSED OF NOMINAL DIMENSIONED 2x2 INCH HARDWOOD OF SOUND QUALITY. ALTERNATELY POST MATERIAL SHALL BE STEEL OR SYNTHETIC AND SHALL BE OF SUFFICIENT STRENGTH TO RESIST DAMAGE DURING INSTALLATION, TO SUPPORT APPLIED LOADS, AND SO THE GEOTEXTILE CAN BE ADEQUATELY SECURED TO POST
- 2. FABRIC SHALL BE A NEEDLE PUNCHED NON-WOVEN GEOTEXTILE FABRIC CONSISTING OF STRONG, ROT RESISTANT, MATERIALS RESISTANT TO DETERIORATION FROM ULTRAVIOLET AND HEAT EXPOSURE.
- 3. MINIMUM 8" FABRIC BURY REQUIRED.
- 4. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
- 5. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.





INSTALLATION:

- 1. STAND GRATE ON END. PLACE DANDY BAG OVER GRATE.
- 2. FLIP GRATE OVER SO THAT OPEN END IS UP. PULL UP SLACK. TUCK FLAP IN. BE SURE END OF GRATE IS COMPLETELY COVERED BY FLAP OR DANDY BAG WILL NOT FIT PROPERLY.
- 3. HOLDING HANDLES, CAREFULLY PLACE DANDY BAG WITH THE GRATE INSERTED INTO CATCH BASIN FRAME SO THAT RED DOT ON THE TOP OF THE DANDY BAG IS VISIBLE.

MAINTENANCE:

AFTER EACH STORM EVENT AND SILT HAS DRIED, REMOVE ACCUMULATED DEBRIS FROM THE SURFACE OF DANDY BAG WITH BROOM.

<u>) DANDY BAG INLET PROTECTION</u> D NOT TO SCALE

NOTE:

PROVIDE FOR INLETS LOCATED IN PAVEMENT

DANDY BAG WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT THAT MEETS OR EXCEEDS THE FOLLOWING SPEFICICATIONS					
GRAB TENSILE STRENGTH	ASTM D 4632				
GRAB TENSILE ELONGATION	ASTM D 4632				
PUNCTURE STRENGTH	ASTM D 4833				
MULLEN BURST STRENGTH	ASTM D 3786				
TRAPEZOID TEAR STRENGTH	ASTM D 4533				
UV RESISTANCE	ASTM D 4355				
APPARENT OPENING SIZE	ASTM D 4751				
FLOW RATE	ASTM D 4491				
PERMITIVITY	ASTM D 4491				



NOTE:



6. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.

7. SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE

DEPOSIT REACHES APPROXIMATELY HALF THE HEIGHT OF THE SILT

MINIMUM CRITERIA FOR SILT FENCE FABRIC (ODOT, 2002)

120 lbs (535 N) ASTM D 4632

50%

50 lbs (220 N)

40 lbs (180 N)

≦ 0.84 mm

1x10⁻² sec.

70%

ASTM D 4632

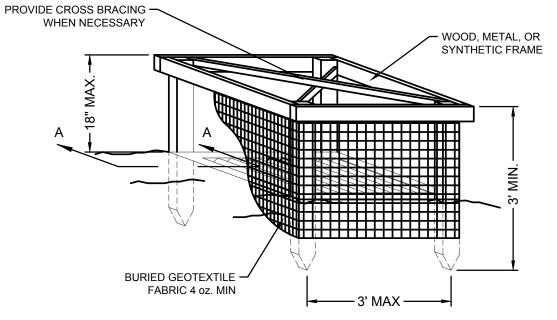
ASTM D 4833

ASTM D 4533

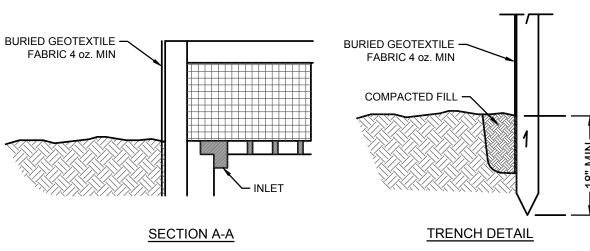
ASTM D 4751

ASTM D 4491

ASTM D 4355



FRAME DETAIL



PROVIDE FOR INLETS NOT LOCATED IN PAVEMENT

1. INLET PROTECTION SHALL BE CONSTRUCTION EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE INLET BECOMES FUNCTIONAL.

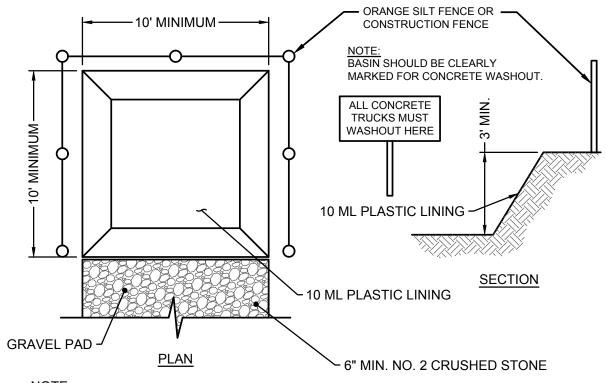
2. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH OF AT LEAST 18 INCHES.

BY 4-INCH CONSTRUCTION GRADE LUMBER. THE 2-INCH BY 4-INCH POSTS SHALL BE DRIVEN ONE (1) FT. INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP THE OVERLAP JOIN SHOWN. The TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WILL POSE A SAFETY HAZARD TO TRAFFIC.

4. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.

SILT FENCE INLET PROTECTION

- 5. GEOTEXTILE MATERIAL SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
- 6. BACKFILL SHALL BE PLACED AROUND THE INLET IN 3. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-INCH COMPACTED 6-INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
- PORTION OF 2-INCH BY 4-INCH FRAME ASSEMBLED USING 7. A COMPACTED EARTH DIKE OR CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IS NOT IN A DEPRESSION. THE TOP OF THE DIKE SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.



NOTE:

- 1. CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. 2. IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE,
- CONSTRUCTION ENTRANCE. 3. CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE
- AREAS. 4. PLASTIC LINIG SHALL BE DOUBLE-LINED, CONTINUOUS 10-ML POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A
- SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS. 5. CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
- 6. CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
- PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
- 8. CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

CONCRETE WASHOUT AREA NOT TO SCALE

NOTES:

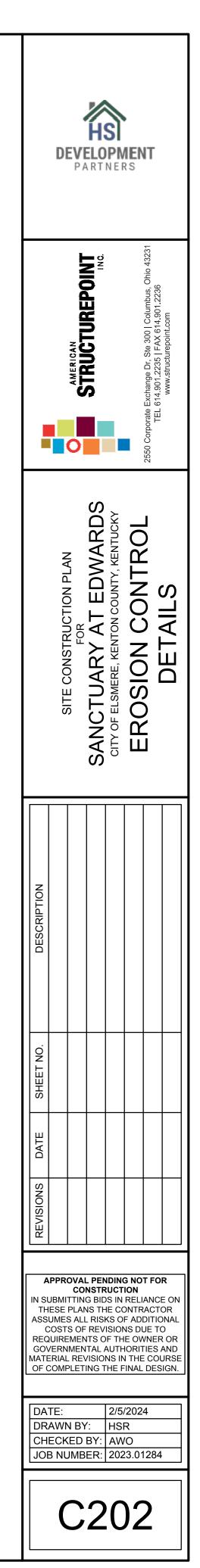
- 1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
- 2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH AS SHOWN IN DETAIL 2. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- 3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURES RECOMMENDATION.
- 4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH MINIMUM 6" OVERLAP. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.

EROSION CONTROL BLANKET NOT TO SCALE

CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A

WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT

MANUFACTURER NUMBER NORTH AMERICAN GREEN S75 NORTH AMERICAN GREEN SC250 NORTH AMERICAN GREEN C125 BN OR APPROVED EQUAL



5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

PLACE STAPLES/STAKES PER MANUFACTURER'S RECOMMENDATION FOR THE APPROPRIATE SLOPE BEING APPLIED.

SODT EROSION CONTROL BLANKET THE FOLLOWING BLANKET MANUFACTURER AND NUMBER OR APPROVED EQUAL MAY BE USED FOR 4:1 TO 3:1 SLOPES.

SPILL PREVENTION

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING:

- 1. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
- 2. ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
- 3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
- . SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER
- . MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:

- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE. 2. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN
- IMPORTANT PRODUCT INFORMATION.
- 3. IF SURPLUS PRODUCT MUST BE DISPOSED OF. MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

- 1. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- 2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER, OR OTHER ABSORBENT MATERIAL AND DISPOSED OF WITH TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. SPILLS OF 25 OR MORE GALLONS OF PETROLEUM WASTE MUST BE REPORTED TO KENTUCKY EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE SPILL. ALL SPILLS, WHICH RESULT IN CONTACT WITH WATERS OF THE STATE, MUST BE REPORTED TO THE KENTUCKY EPA'S HOTLINE.
- SOILS CONTAMINATED BY PETROLEUM OR OTHER CHEMICAL SPILLS MUST BE TREATED/DISPOSED AT AN KENTUCKY ENERGY AND ENVIRONMENT CABINET APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT. STORAGE OR DISPOSAL FACILITY (TSDF).
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

PRODUCT SPECIFIC PRACTICES

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FUEL STORAGE TANKS SHALL BE LOCATED AWAY FROM SURFACE WATERS AND STORM SEWER SYSTEM INLETS. FUEL TANKS SHALL BE STORED IN A DIKED AREA CAPABLE OF HOLDING 150% OF THE TANK CAPACITY.

FERTILIZERS

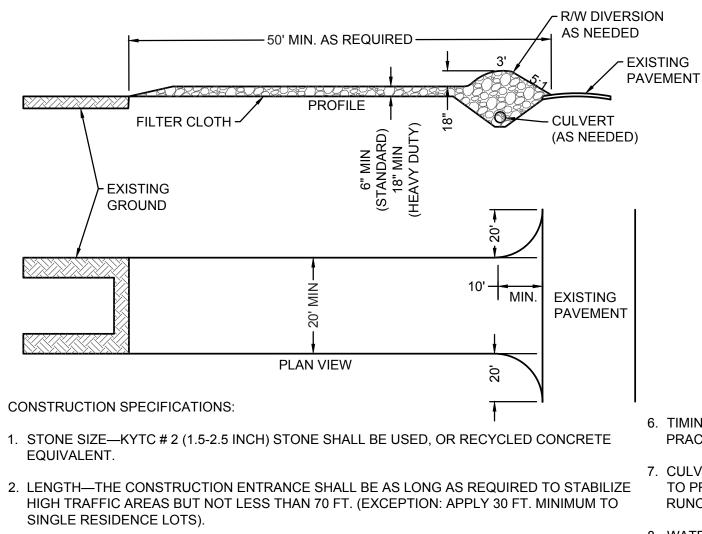
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE WASH WATER/WASH OUTS

CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED ON THE LOT AWAY FROM ANY WATER CONVEYANCES.



CONSTRUCTION SPECIFICATIONS:

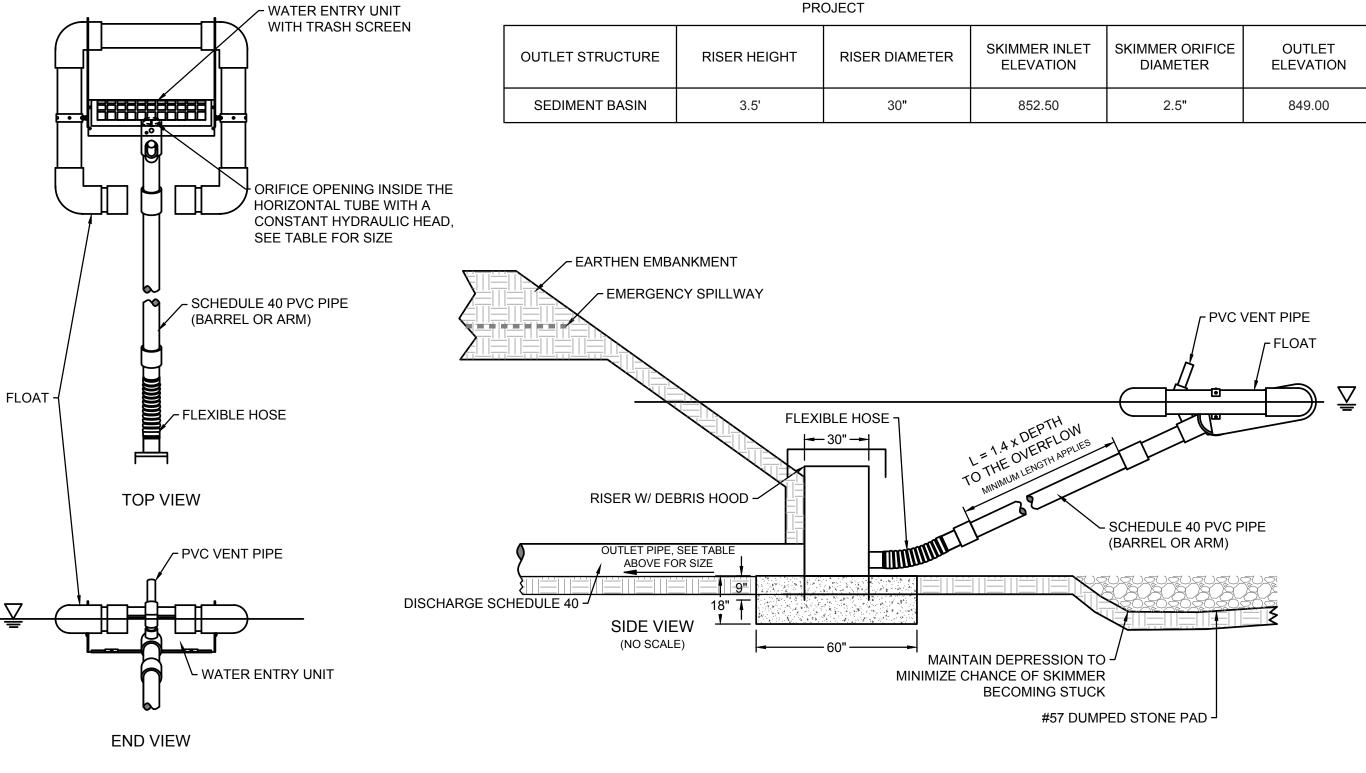
- 3. THICKNESS -THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
- 4. WIDTH -THE ENTRANCE SHALL BE AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS
- 5. GEOTEXTILE -A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE				
MINIMUM TENSILE STRENGTH 200 lbs				
MINIMUM PUNCTURE STRENGTH	80 psi			
MINIMUM TEAR STRENGTH	50 lbs			
MINIMUM BURST STRENGTH	320 psi			
MINIMUM ELONGATION	20%			
EQUIVALENT OPENING SIZE	EOS<0.6 mm			
PERMITIVITY	1x10 ⁻³ cm/sec			

CONSTRUCTION ENTRANCE G NOT TO SCALE

FAIRCLOTH SKIMMER GENERAL NOTES

- . PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE. 2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT
- OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
- 3. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS. 4. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
- 5. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE
- 6. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER. 7. EIGHT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.





6. TIMING-THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.

- 7. CULVERT -A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
- 8. WATER BAR -A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- 9. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR PREVENT FLOWING SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.
- 10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS. WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- 11. REMOVAL—THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

TEMPORARY RISER NOTES

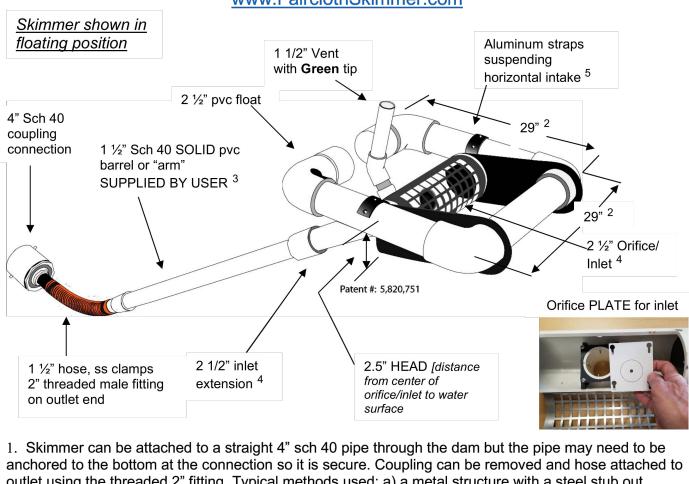
THE RISER SHALL HAVE A BASE ATTACHED WITH A WATERTIGHT CONNECTION AND SHALL HAVE SUFFICIENT WEIGHT TO PREVENT FLOTATION OF THE RISER. TWO

APPROVED BASES FOR RISERS 24" OR LESS IN HEIGHT ARE: A. A CONCRETE BASE 18" THICK WITH THE RISER EMBEDDED 9" IN THE BASE B. A ¹/₄" MINIMUM THICKNESS STEEL PLATE ATTACHED TO THE RISER BY A CONTINUOUS WELD AROUND THE CIRCUMFERENCE OF THE RISER TO FORM A WATERTIGHT CONNECTION. THE PLATE SHALL HAVE 2' OF STONE GRAVEL, OR COMPACTED EARTH PLACED ON IT TO PREVENT FLOTATION. IN EITHER CASE, EACH SIDE OF THE SQUARE BASE SHALL BE TWICE THE

RISER DIAMETER. REMOVE ENTIRE TEMPORARY SEDIMENT BASIN STRUCTURE AT COMPLETION OF

OUTLET STRUCTURE	RISER HEIGHT	RISER DIAMETER	SKIMMER INLET ELEVATION	SKIMMER ORIFICE DIAMETER	OUTLET ELEVATION	OUTLET DIAMETER
SEDIMENT BASIN	3.5'	30"	852.50	2.5"	849.00	18"

2.5" Faircloth Skimmer® Surface Drain Cut Sheet J. W. Faircloth & Son, Inc. www.FairclothSkimmer.com



outlet using the threaded 2" fitting. Typical methods used: a) a metal structure with a steel stub out welded on the side at the bottom with a 2" threaded coupling or reducer(s); b) a concrete structure with a hole or orifice at the bottom - use a steel plate with a hole cut in it and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant; or c) grout a 4" pvc pipe in a hole in the concrete to connect the skimmer.

2. Dimensions are approximate, not intended as plans for construction. 3. Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 6' so the inlet can be pulled to the side for maintenance. If more than 8' long weight may have to be added to inlet to counter the increased buoyancy.

4. Orifice/inlet tapers down from 2 $\frac{1}{2}$ " maximum inlet to a 1 $\frac{1}{2}$ " barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The orifice/inlet can be reduced using the plate and cutter provided to control the outflow rate - see #6.

5. Horizontal intake is 5" pipe between the straps with aluminum screen door for access to the 21/2" inlet and orifice inside.

2-5inchCut 5-1-19

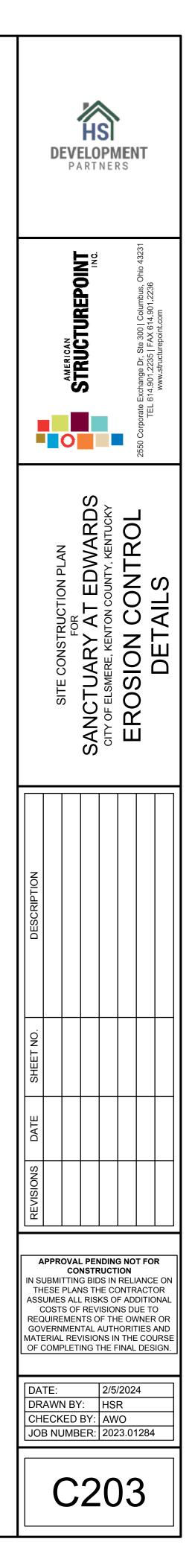
BASIN VOLUME IN CU DAYS TO DRAIN

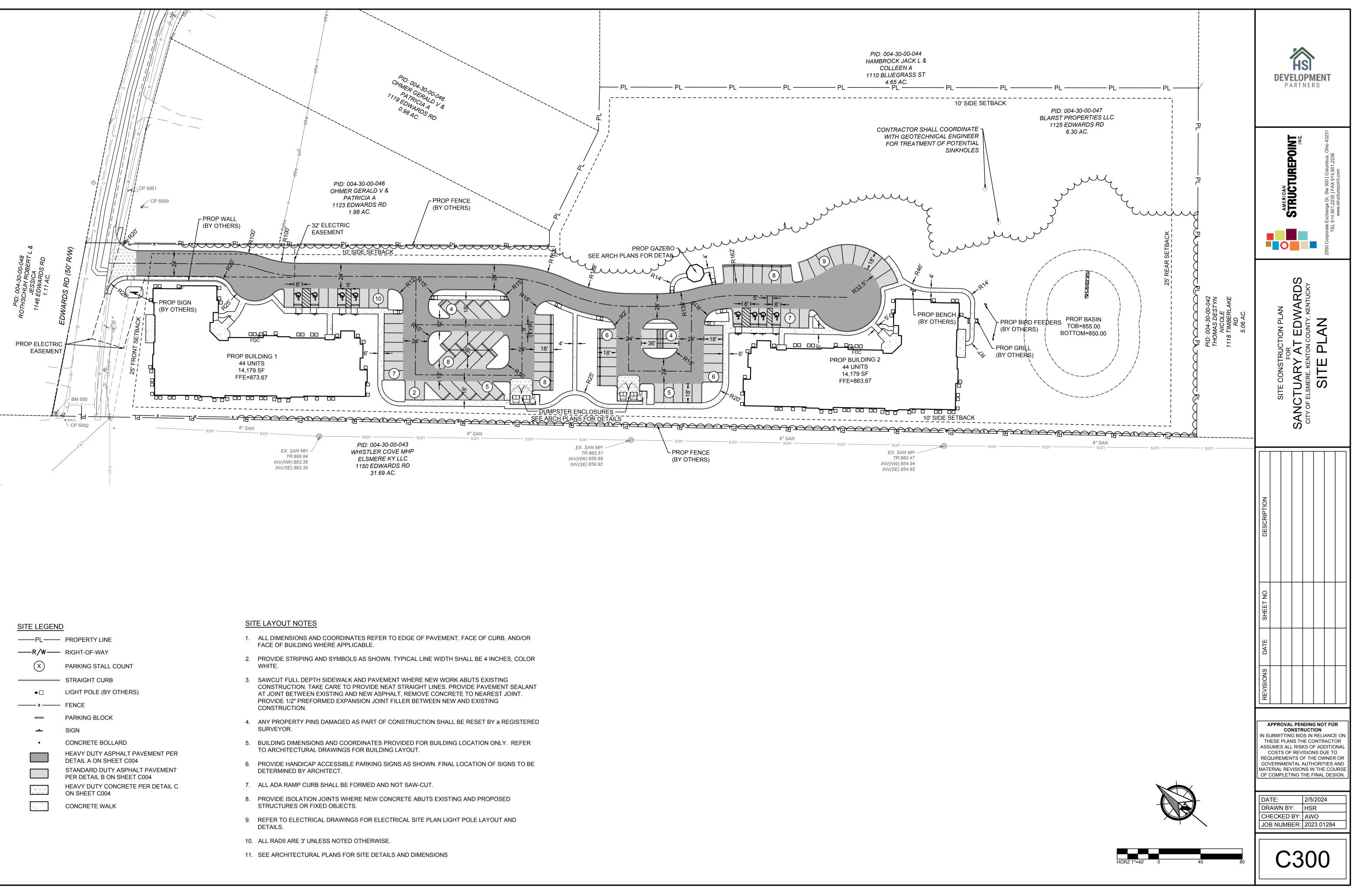
6. **Capacity**: 6,234 cubic feet per day maximum with 2¹/₂" inlet and 2.5 head. Inlet can be reduced by installing a smaller orifice using the plate and cutter provided to adjust flow rate for the particular drawdown time required. Please use the sizing template at www.fairclothskimmer.com

7. Ships assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plate and attaches to outlet pipe or structure. Includes float, flexible hose, rope, and orifice plate and cutter. Does NOT include 1 1/2" Sch 40 SOLID pvc barrel or "arm" SUPPLIED BY USER.

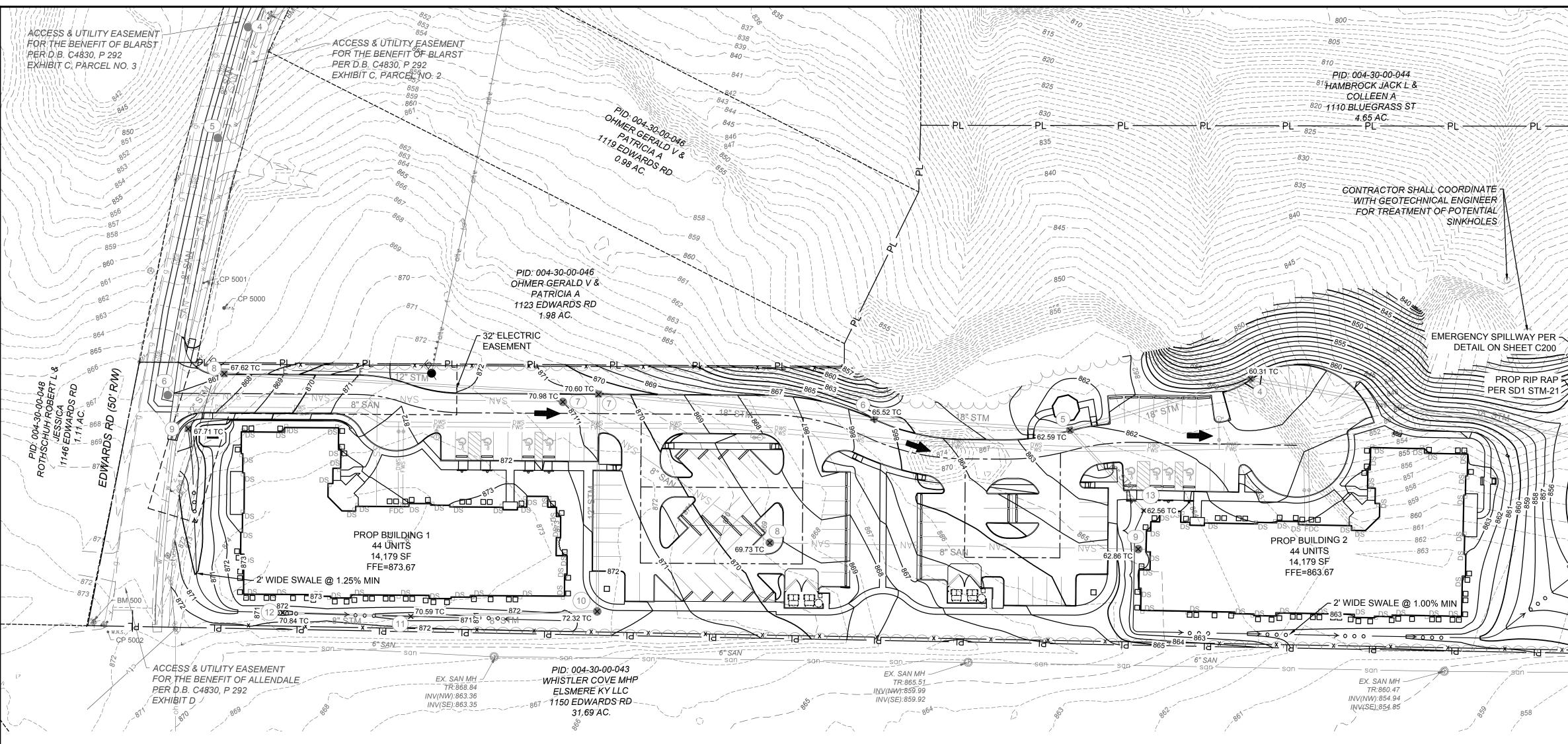
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SKIMMER SIZE							
JBIC FEET		2.5					
	3		ORIFICE RADIUS	1.25 INCHES			
			ORIFICE DIAMETER	2.5 INCHES			



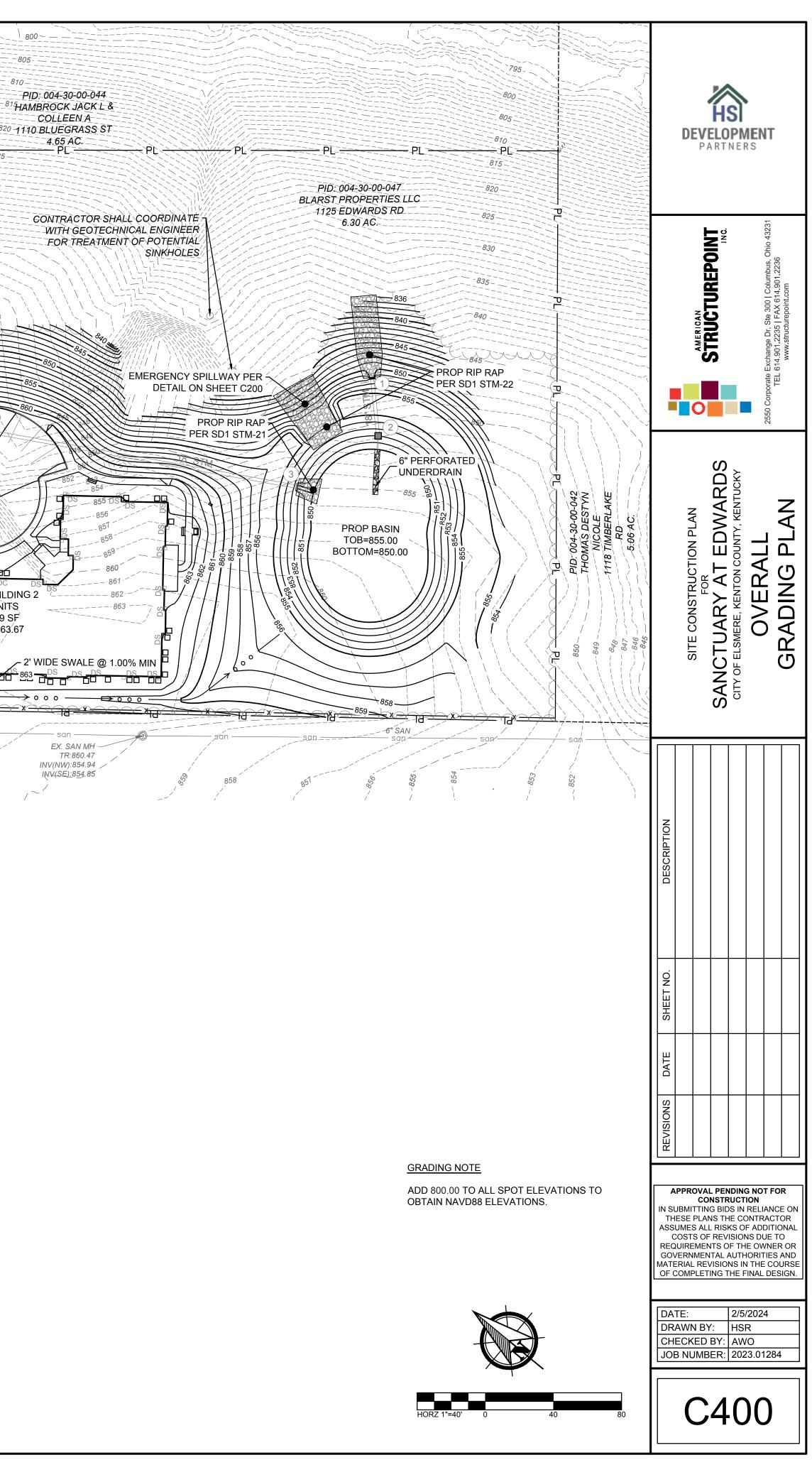


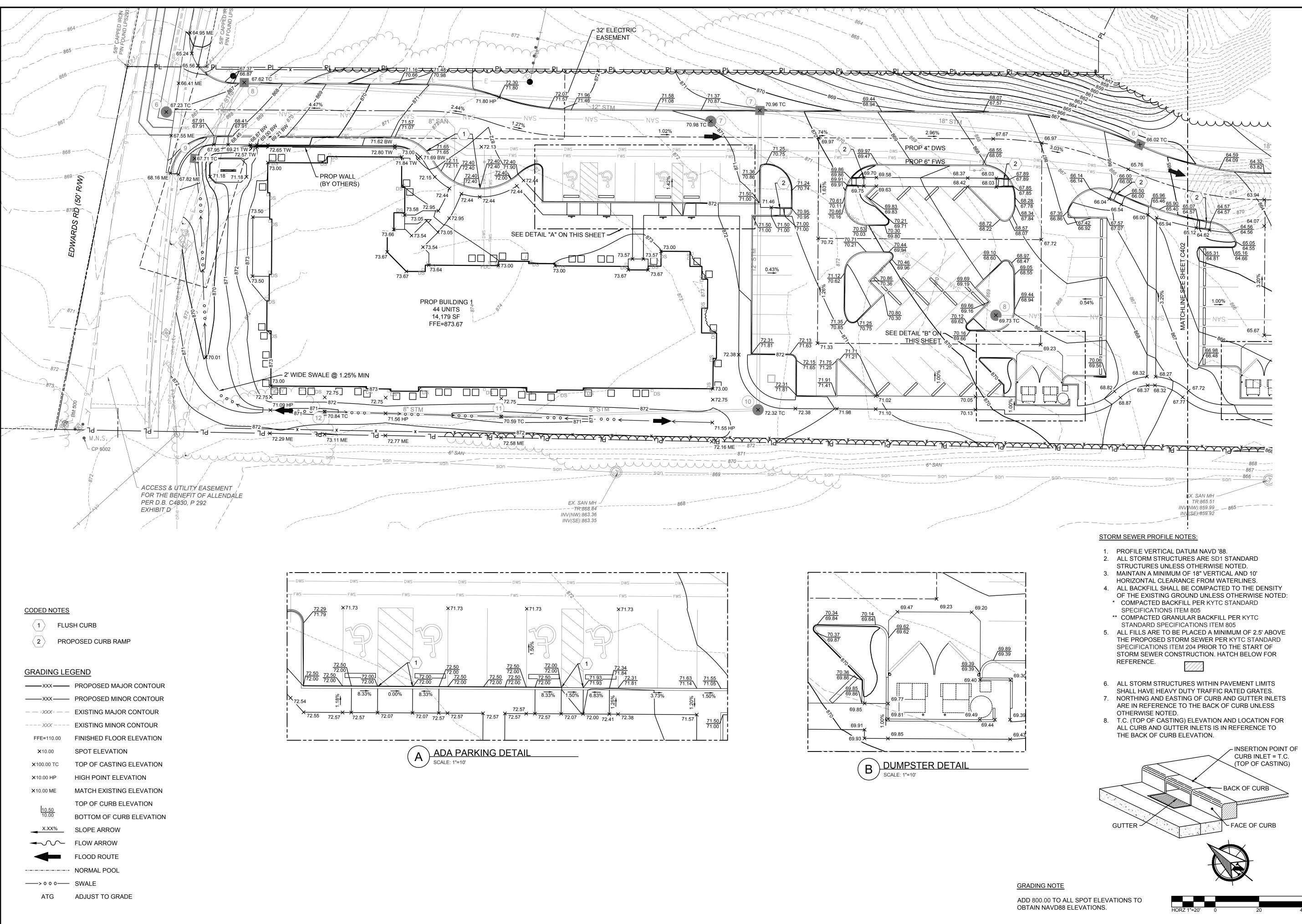
	-
PL	PROPERTY LINE
—R/W—	RIGHT-OF-WAY
\mathbf{X}	PARKING STALL COUNT
	STRAIGHT CURB
•-	LIGHT POLE (BY OTHERS)
x	FENCE
	PARKING BLOCK
ھ	SIGN
•	CONCRETE BOLLARD
	HEAVY DUTY ASPHALT PAVEMENT PER DETAIL A ON SHEET C004
	STANDARD DUTY ASPHALT PAVEMENT PER DETAIL B ON SHEET C004
$7 \lor \nabla \lor \nabla$	HEAVY DUTY CONCRETE PER DETAIL C ON SHEET C004
	CONCRETE WALK



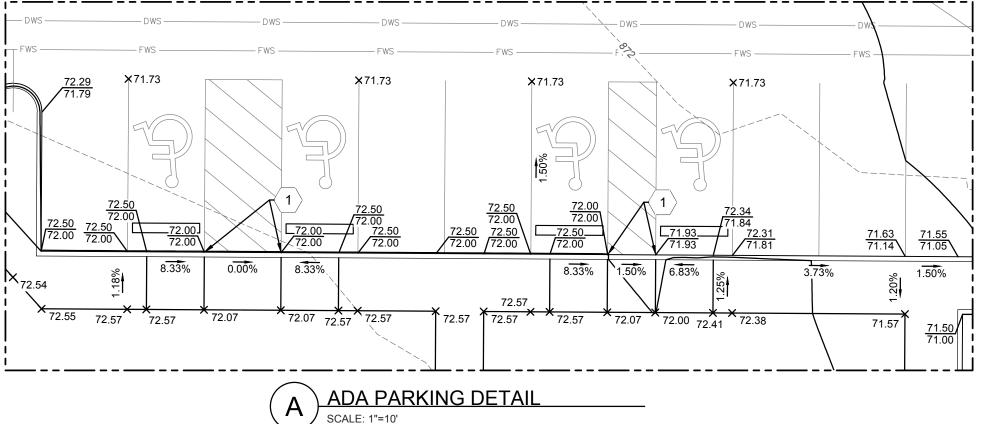
GRADING LEGEND

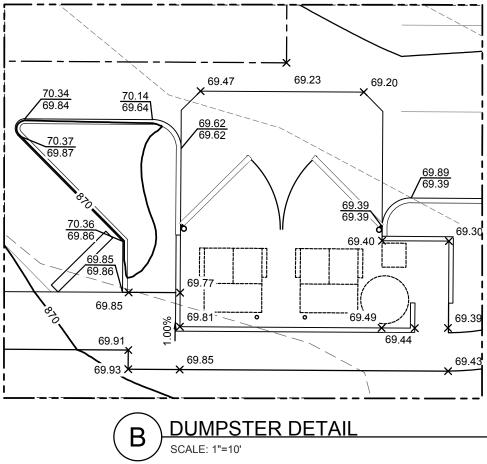
	-			
xxx	PROPOSED MAJOR CONTOUR			
XXX	PROPOSED MINOR CONTOUR			
	EXISTING MAJOR CONTOUR			
XXX	EXISTING MINOR CONTOUR			
FFE=110.00	FINISHED FLOOR ELEVATION			
×10.00	SPOT ELEVATION			
×100.00 TC	TOP OF CASTING ELEVATION			
X10.00 HP	HIGH POINT ELEVATION			
×10.00 ME	MATCH EXISTING ELEVATION			
10.50	TOP OF CURB ELEVATION			
10.00	BOTTOM OF CURB ELEVATION			
X.XX%	SLOPE ARROW			
	FLOW ARROW			
	FLOOD ROUTE			
	NORMAL POOL			
> 0 0 0	SWALE			
ATG	ADJUST TO GRADE			

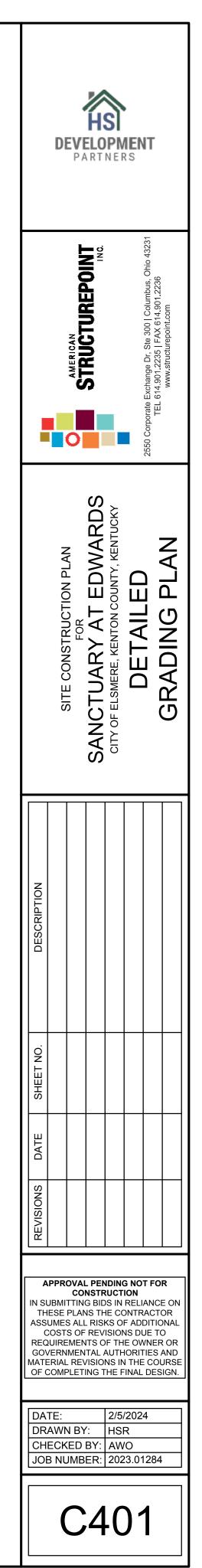


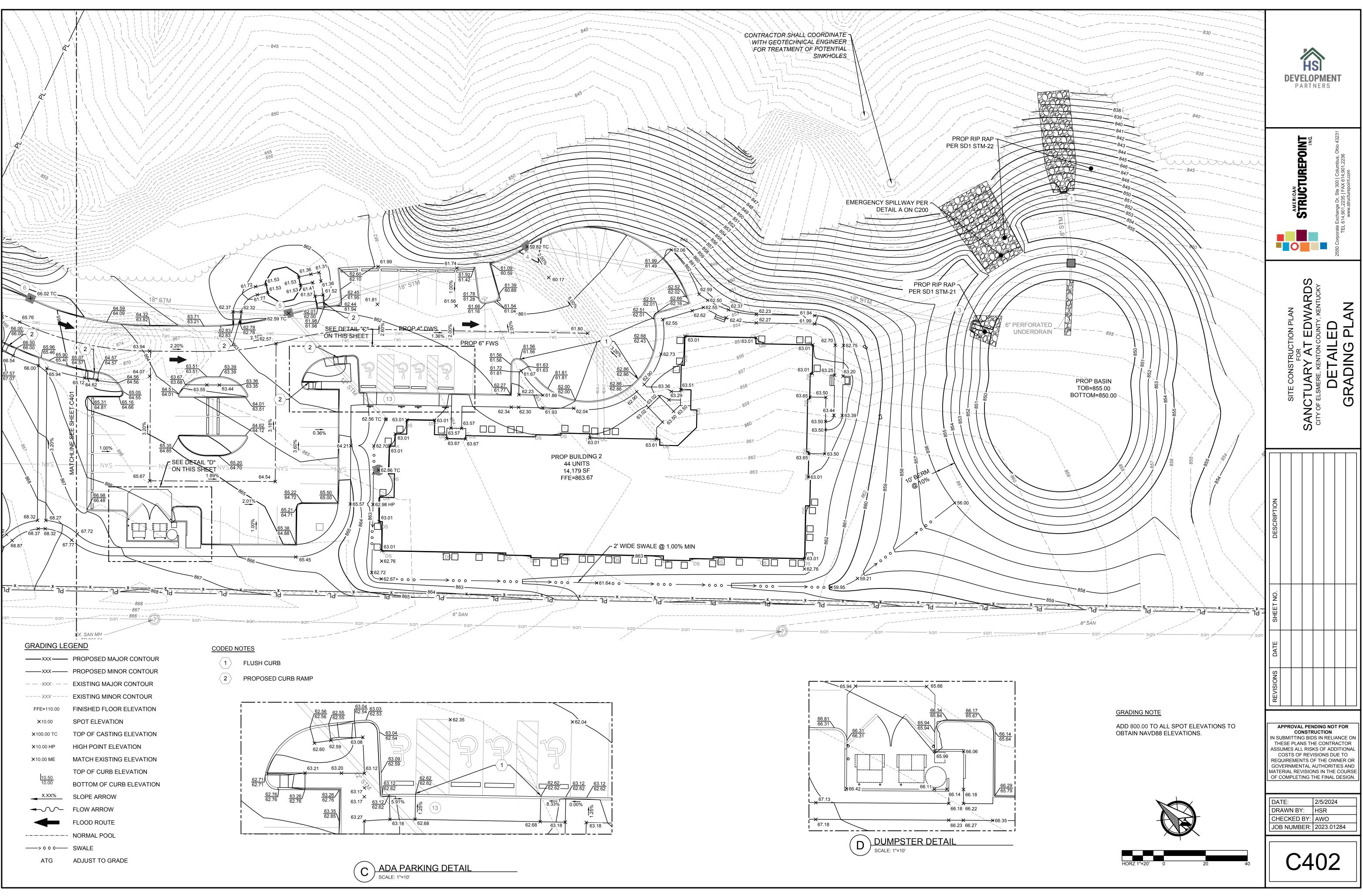


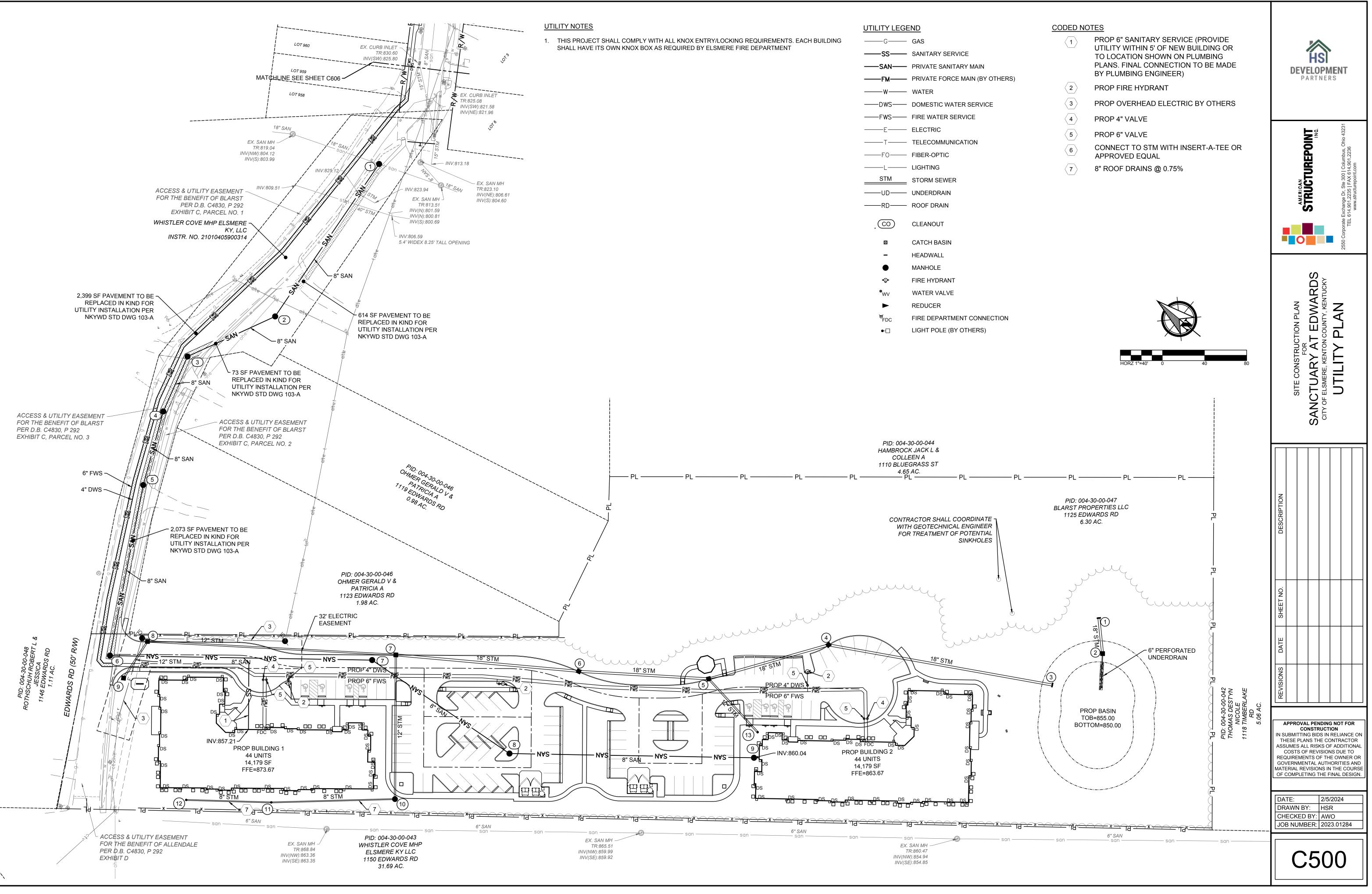
XXX	PROPOSED MAJOR CONTOUR
XXX	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
XXX	EXISTING MINOR CONTOUR
FFE=110.00	FINISHED FLOOR ELEVATION
×10.00	SPOT ELEVATION
×100.00 TC	TOP OF CASTING ELEVATION
×10.00 HP	HIGH POINT ELEVATION
×10.00 ME	MATCH EXISTING ELEVATION
10.50	TOP OF CURB ELEVATION
10.00	BOTTOM OF CURB ELEVATION
X.XX%	SLOPE ARROW
	FLOW ARROW
	FLOOD ROUTE
	NORMAL POOL
> 0 0 0	SWALE
ATG	ADJUST TO GRADE



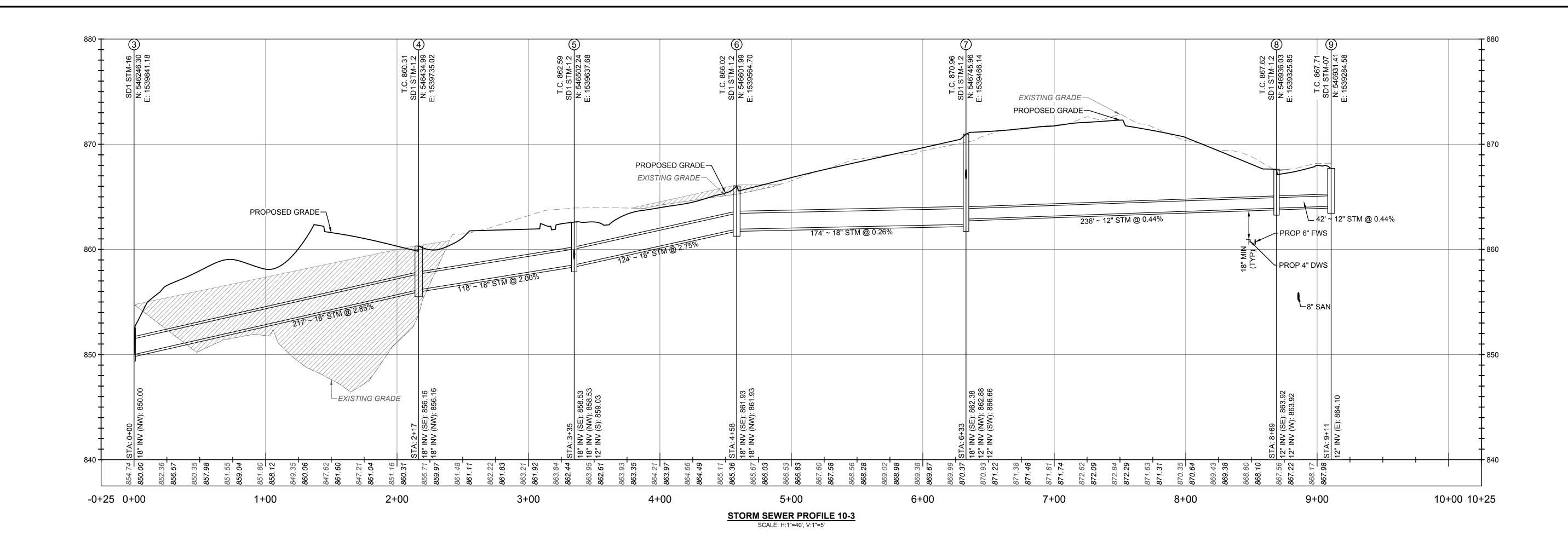


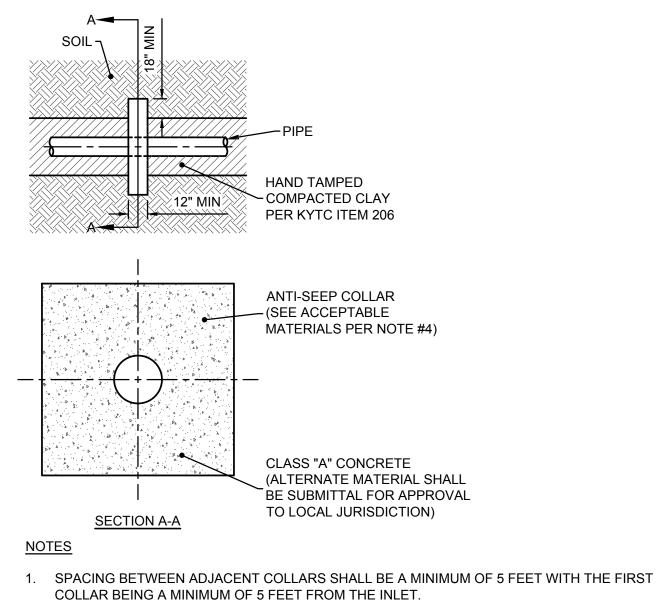






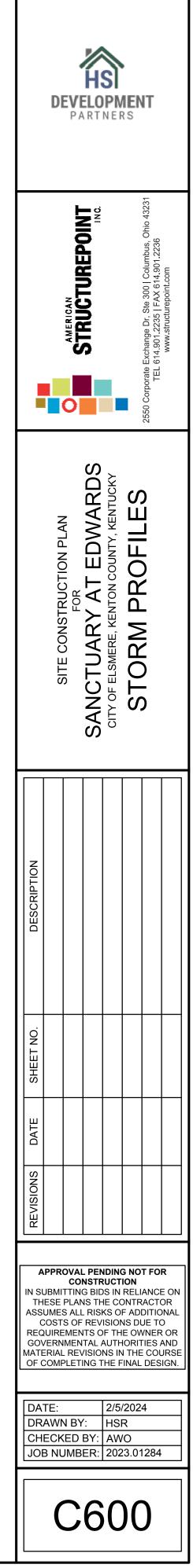
——-G-——-	GAS
—SS	SANITARY SERVICE
——SAN——	PRIVATE SANITARY MAIN
——FM——	PRIVATE FORCE MAIN (BY OTHERS
W	WATER
——DWS——	DOMESTIC WATER SERVICE
—FWS—	FIRE WATER SERVICE
——E——	ELECTRIC
T	TELECOMMUNICATION
—FO	FIBER-OPTIC
L	LIGHTING
STM	STORM SEWER
UD	UNDERDRAIN
——RD——	ROOF DRAIN
.00	CLEANOUT
	CATCH BASIN
-	HEADWALL
igodot	MANHOLE
Ŷ	FIRE HYDRANT
∞ WV	WATER VALVE
	REDUCER
ଞ FDC	FIRE DEPARTMENT CONNECTION



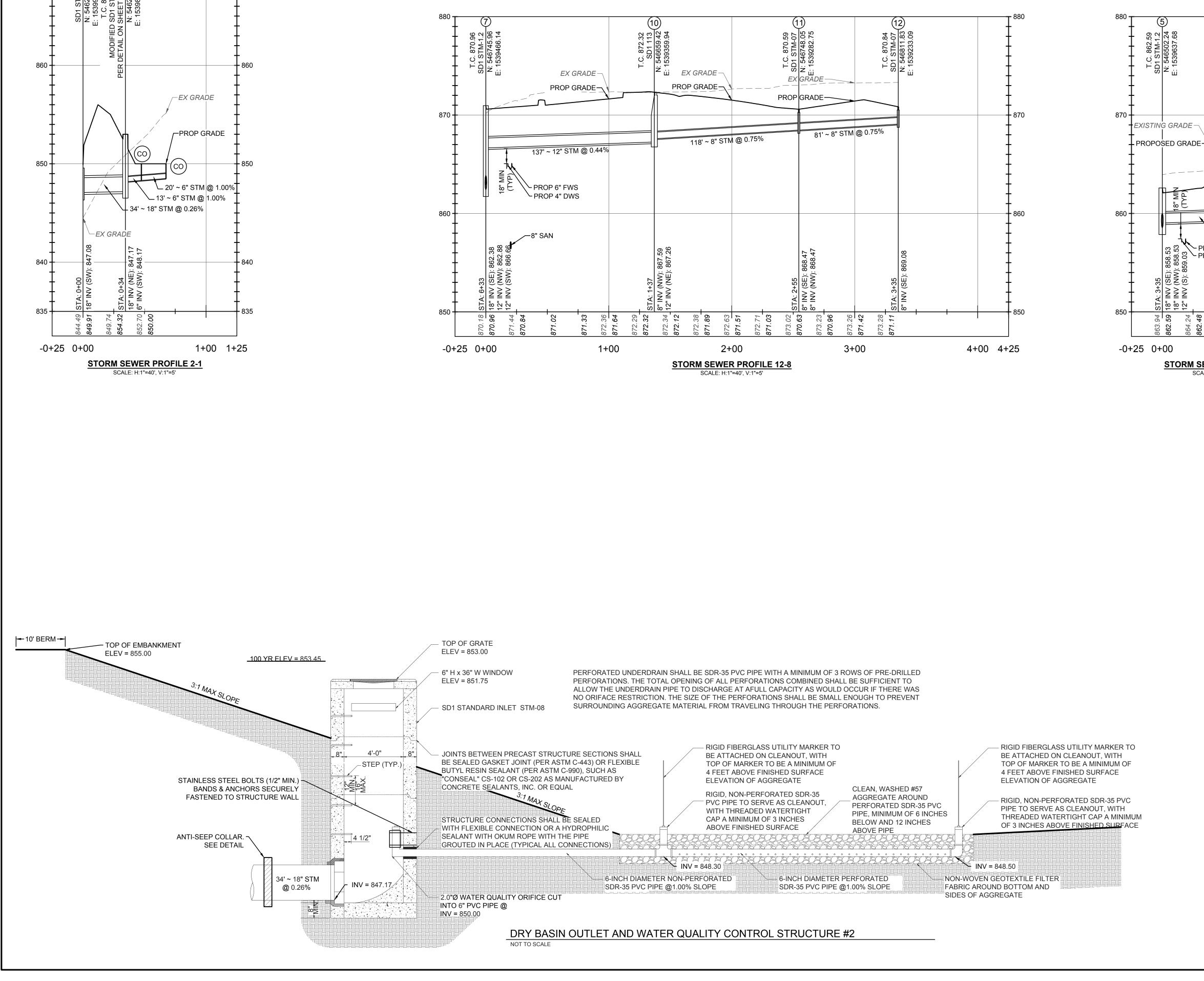


- 2. FURNISH A MINIMUM OF 2 COLLARS PER OUTLET CONDUIT.
- 3. ALL ANTI-SEEP COLLARS AND THEIR CONNECTIONS SHALL BE WATERTIGHT.
- 4. ANTI-SEEP COLLAR SHALL BE CONSTRUCTED OF CONCRETE OR SAME MATERIAL OF THE CONDUIT. THE FOLLOWING ARE ACCEPTABLE MATERIALS:
 - A. CLASS "A" CONCRETE
 - B. STEEL C. CORRUGATED METAL
 - D. PLASTIC

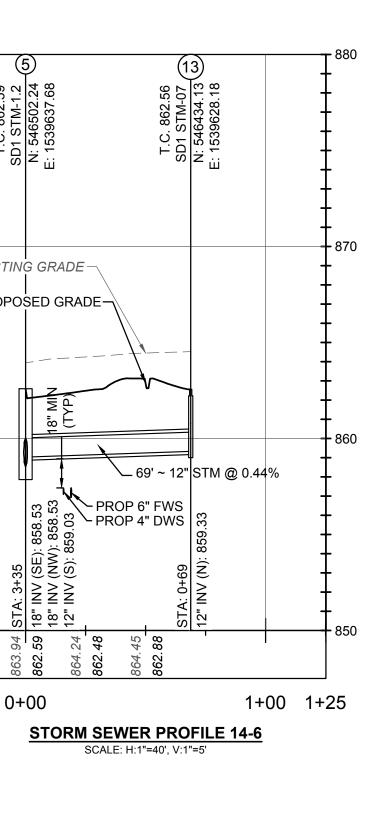
ANTI-SEEP COLLAR



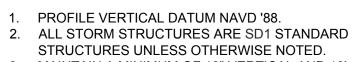




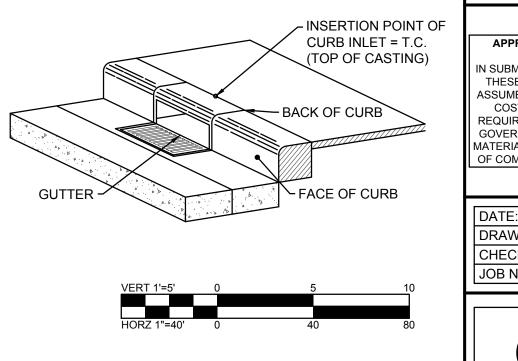
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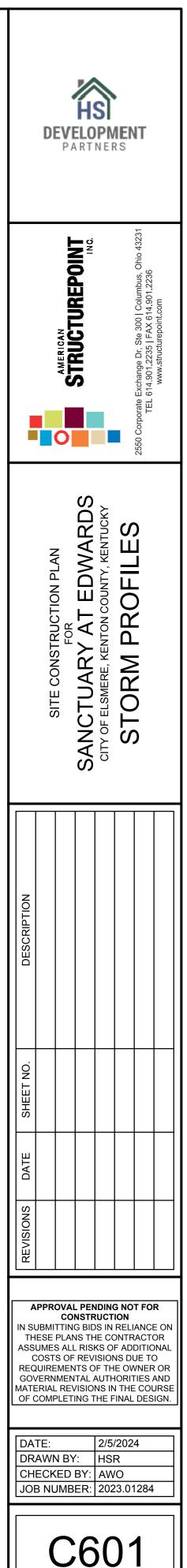


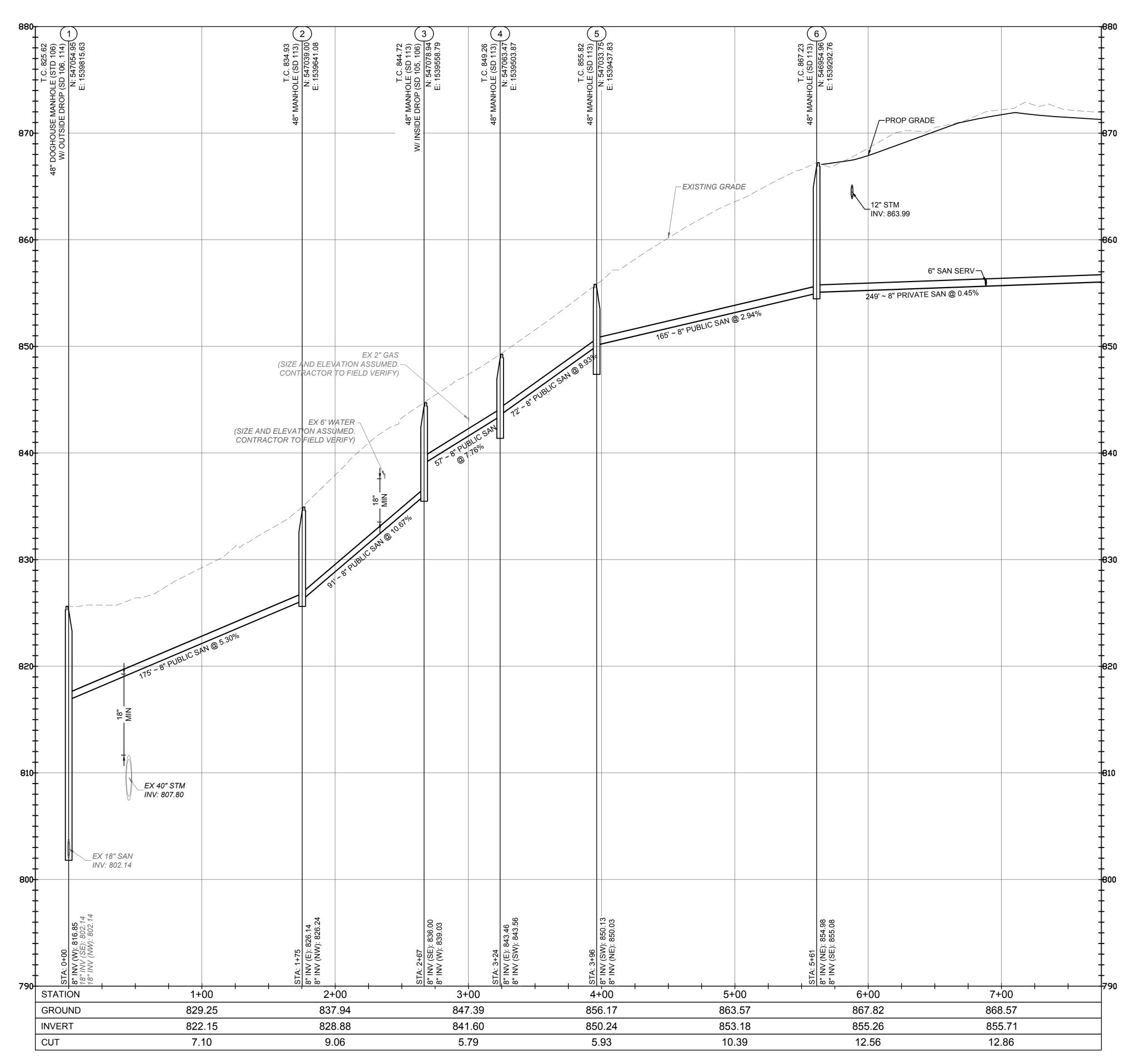
STORM SEWER PROFILE NOTES:



- 3. MAINTAIN A MINIMUM OF 18" VERTICAL AND 10'
- HORIZONTAL CLEARANCE FROM WATERLINES 4. ALL BACKFILL SHALL BE COMPACTED TO THE DENSITY OF THE EXISTING GROUND UNLESS OTHERWISE NOTED: * COMPACTED BACKFILL PER KYTC STANDARD
- **SPECIFICATIONS ITEM 805** ** COMPACTED GRANULAR BACKFILL PER KYTC STANDARD SPECIFICATIONS ITEM 805
- ALL FILLS ARE TO BE PLACED A MINIMUM OF 2.5' ABOVE THE PROPOSED STORM SEWER PER KYTC STANDARD SPECIFICATIONS ITEM 204 PRIOR TO THE START OF STORM SEWER CONSTRUCTION. HATCH BELOW FOR REFERENCE.
- 6. ALL STORM STRUCTURES WITHIN PAVEMENT LIMITS
- SHALL HAVE HEAVY DUTY TRAFFIC RATED GRATES. 7. NORTHING AND EASTING OF CURB AND GUTTER INLETS ARE IN REFERENCE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
- 8. T.C. (TOP OF CASTING) ELEVATION AND LOCATION FOR ALL CURB AND GUTTER INLETS IS IN REFERENCE TO THE BACK OF CURB ELEVATION.
- 9. ALL PIPE CONNECTIONS TO PROPOSED OUTLET CONTROL STRUCTURE SHALL BE SEALED WITH A WATERTIGHT CONNECTION.





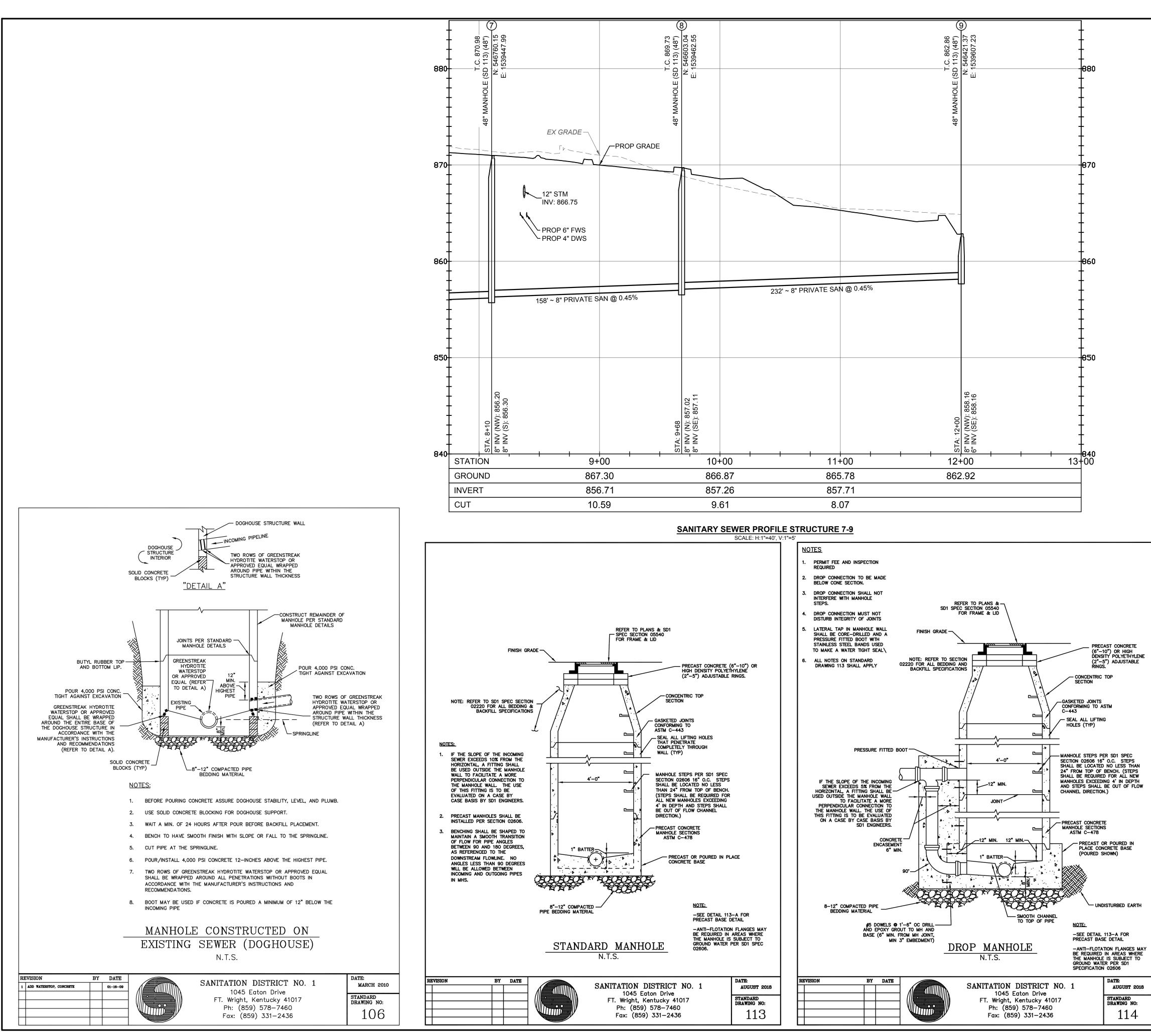


SCALE: H:1"=40', V:1"=5'

	DEVEL PAR	HS DEVELOPMENT PARTNERS						
		INC. 2550 Corporate Exchange Dr, Ste 300 Columbus, Ohio 43231 TEL 614.901.2235 FAX 614.901.2236 www.structurepoint.com						
	SITE CONSTRUCTION PLAN FOR CANCTLIARY AT EDWADDO	SITE CONSTRUCTION PLAN SITE CONSTRUCTION PLAN FOR SANCTUARY AT EDWARDS CITY OF ELSMERE, KENTON COUNTY, KENTUCKY SANITARY PROFILES						
	DESCRIPTION							
	TE SHEET NO.							
	REVISIONS DATE							
	APPROVAL PENDING NOT FOR CONSTRUCTION IN SUBMITTING BIDS IN RELIANCE ON THESE PLANS THE CONTRACTOR ASSUMES ALL RISKS OF ADDITIONAL COSTS OF REVISIONS DUE TO REQUIREMENTS OF THE OWNER OR GOVERNMENTAL AUTHORITIES AND MATERIAL REVISIONS IN THE COURSE OF COMPLETING THE FINAL DESIGN.							
78-6749 PUBLIC	DATE: DRAWN BY: CHECKED BY JOB NUMBER							
80	C	502						

NOTE: DOUG MALONE (SD1) SHALL BE CONTACTED AT 859-578 AT LEAST 72 HOURS PRIOR TO INSTALLATION OF THE F SANITARY SEWER.



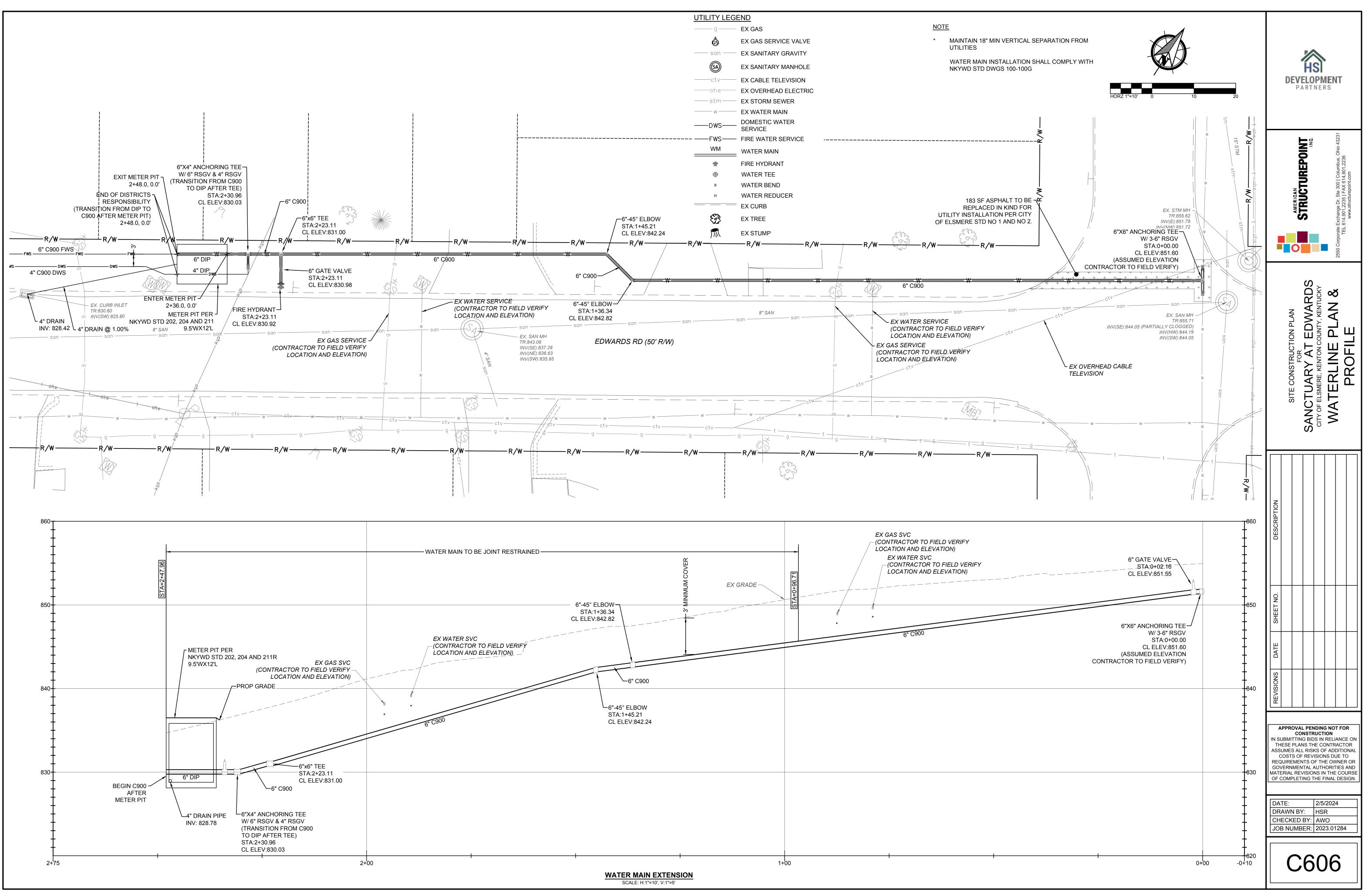


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						2550 Corporate Exchange Dr, Ste 300 Columbus, Ohio 43231 TEL 614.901.2235 FAX 614.901.2236	www.structurepoint.com	
	SITE CONSTRIICTION DI AN		SANCTUARY AT EDWARDS	CITY OF ELSMERE, KENTON COUNTY, KENTUCKY	SANITARY PROFILES			
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СН	AWN ECK 3 NL		BY: ER:	HSI AW 202		1284		

NOTE:

DOUG MALONE (SD1) SHALL BE CONTACTED AT 859-578-6749 AT LEAST 72 HOURS PRIOR TO INSTALLATION OF THE PUBLIC SANITARY SEWER.





<u> PART 1 - GENERAL</u>

- 1.01 <u>INTRODUCTION</u> Unless modified, deleted, replaced, or otherwise changed, the latest published addition of the following documents shall be the accepted standard for materials and/or procedures for the construction of water mains and appurtenances:
 - A. Northern Kentucky Water District's Standard Drawings
 - B. Natural Resources & Environmental Protection Cabinet, Division of Water C. Kentucky Public Service Commission Regulations
 - D. American Water Works Association's Standards (AWWA)
 - E. Recommended Standards for Water Works
- If a conflict exists between referenced sources, the more restrictive requirements shall prevail. The District shall provide interpretation as requested.
- 1.02 DESCRIPTION In general the following specifications are minimum requirement for water main design and installation. New design ideas and concepts are welcomed by the District, but subject to District's approval. Construction may be dictated by location, soil conditions, ground water, topography, etc. Additional provisions may be required by the District.

1.03 DESIGN GUIDELINES Plans are approved subject to the conditions of compliance with all applicable laws, rules, regulations and technical design and construction standards including, but not limited to all water quality standards set forth in 401 KAR chapter 8 and all technical design and construction standards as required by the Kentucky Division of Water. Deviation from applicable laws, rules, regulations and standards will only be considered with appropriate justification submitted to the District's Engineering Department. The proposed project may be constructed only in accordance with the approved plans. It is strongly recommended that the design engineer meet with the Water District prior to plan submittals for review of overall project. Extensions from and connections to the public water system will be approved by the District where proper pressures and flows permit, provided there is a sufficient water supply developed and available for domestic use and fire protection to take on new or additional extension or service without detriment to those already served. The District will run a hydraulic analysis for every new water main extension to ensure adequate water, as defined by the Ky. Public Service Commission, is available. The hydraulic analysis will: (a.) identify the existing and potential customer peak demand. (b.) demonstrate that the proposed water main projects can be flushed at a minimum of two and one half [2.5] feet per second [fps], while keeping system pressure above twenty [20] pounds per square inch [psi] within the pressure zone of the proposed project. (c.) demonstrate that the proposed water main project maintains thirty (30) psi under peak demand. (d.) demonstrate that the proposed water main project does not drop ground level pressure in any part of the pressure zone below 20 psi under all flow conditions. (e.) demonstrate pressures greater than or equal to (\geq) thirty (30) psi are available on the discharge side of all water meters. Any needs in excess of the available water at the site, is the responsibility of the developer to provide (e.g. additional domestic needs for processing or increased fire protection requirements).

If any phasing is to be allowed after the District has approved a set of drawings, the Developer shall provide to the District a set of the approved drawings with the proposed phasing shown in redlined notation. The drawing shall indicate any proposed additional appurtenances to the system per Standard 101. This redline shall provide dimensions of the proposed phased water main extension. Upon approval of the phasing by the District, and after construction of the system, the District's Inspector shall confirm the work was completed in accordance with the approved changes.

Water lines must be sized to meet the demands anticipated for the total development being designed. The design engineer and/or developer are responsible for properly sizing water mains to meet required demands of the development. Public water mains shall be installed in a public right of way with the exception of cross-country lines installed to eliminate dead ends and water mains installed on private property which are going to be maintained by the Water District.

a variance from these specifications is required and approved by the District.

the project's overall length is greater than ten thousand (10,000) contiguous feet. Two (2) or more

hydraulic benefits, etc.) A four-(4) foot area over the water main shall be a non-payed, strip totally

subdivision plats, the following statement may be used in lieu of the grant of easement forms:

The Water Main Easement(s) as shown on this plat are subject to the DECLARATION OF

Document Location

Miscellaneous Book 504, Page 311

Miscellaneous Book 228, Page 73

Easement Book 304, Page 466

Easement Book 129, Page 145

Easement Book 54, Page 195

MASTER WATER FACILITY EASEMENT AGREEMENT as set forth in

(County Name)

Document Location at Various Court Houses:

Court House

Alexandria

Covington

Newport

Boone County

Independence

WATER MAIN EASE

County Clerk's records at ____

unobstructed with the exceptions as outlined in <u>DESIGN GUIDELINES</u>. With appropriate justification, paving

Document Location)

County

Boone

Kenton

Kenton

Campbell

Campbell

(Court House)

may be approved within the four-(4) foot area over cross-country water mains. Outside the ten-(10) foot area

over the water main, 5' either side but within the overall easement area, other utilities may be placed in this

area. Proper documentation shall be provided for all easement areas. For areas that are on recorded

To allow for the future extension of the water system in an orderly manner, the water system shall be constructed to the developer's property limits which abut a proposed or existing public right-of-way or has a potential for future development and the termination shall be as described in the Standard Drawings and Specifications of the Water District or by connection to an existing main.

All improvement drawings shall consist of plan and profile views, street layout, lot or building layout and number, water main and appurtenance locations, and location of other utilities that may be in conflict. The Developer's Design Engineer is responsible to maintain an unobstructed area for the placement of the water main and appurtenances and allow no conflict with other utilities other than crossing of laterals. Utility laterals shall maintain a minimum of 6" outside diameter to outside diameter clearance except for storm and/or sanitary laterals which shall provide, 18" clearance below the water main.

The four-(4) foot area over the water main, (3' from curbside) shall be a non-paved, strip totally unobstructed with the exception of:

- a) removable, post type mail boxes:
- b) utility laterals (gas, electric, telephone, and cable television) maintaining a minimum of 6 inch outside diameter to outside diameter clearance; c) no more than 30' of continuous pavement used as driveways or parking pads;
- d) street and sidewalk crossings;
- e) sidewalks (may not be over main, but could encroach on this four-(4) foot area on street radius curves, and cul-de-sacs):
- The ten-(10) foot area over the water main, centered (5' either side) shall be totally unobstructed with the exception of: a) items listed above:
- b) streets, curbs, and gutters;
- c) sidewalk pavement;
- d) storm drainage appurtenances

1.04

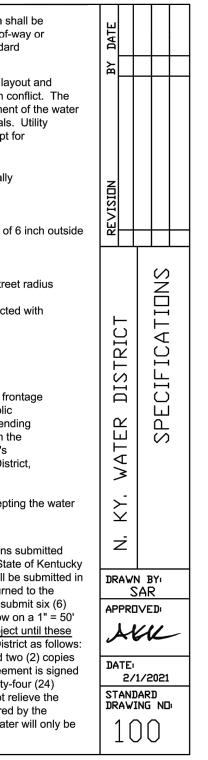
Additional requirements may be required for subdivision plans submittals that create double frontage lots (a lot other than a corner lot that has frontage on more than one public street) along public streets which currently do not have public water. The developer may be responsible for extending the water main along both sides of the double frontage lots if the property would benefit from the extension. If there is a future potential that a water main extension may be made by District's Extension Policy along the existing public street would be beneficial, as determined by the District, an agreement would need to be signed between the developer and the District.

Upon the request of the Developer, the District shall provide the Developer with a letter accepting the water main installation and the start of the one year maintenance period.

PLAN SUBMITTALS Design drawings shall include both plan and profile views of the proposed water main. All plans submitted must be dated and bear the stamp and signature of a Professional Engineer licensed in the State of Kentucky and be on a 1" = 50' scale with plan sheets no larger than 24" x 36". Improvement plans shall be submitted in duplicate for preliminary review by the District. One copy of the improvement plan will be returned to the Engineer for corrections to meet District's Standards. The Engineer will need to revise and resubmit six (6) sets of plans. Also at this time a set of plans in digital format showing curb lines, a north arrow on a 1" = 50 scale will also be submitted for the Districts GIS system. The District will not approve any project until these digital format plans have been received. Distribution of approved plans will be made by the District as follows: Three (3) copies retained by the District; one (1) copy to Planning Development Services; and two (2) copies returned to the Design Engineer when approval is granted and the District's Subdivision Agreement is signed and returned to the District by the Developer.A project approval period shall not exceed twenty-four (24) months, during which time the water main construction shall begin. Project approval does not relieve the Developer from the responsibility of obtaining any other approvals, permits, or licenses required by the Cabinet and other state, federal, and local agencies. Submittal to the Kentucky Division of Water will only be required if any of the following conditions exist :

adjoining projects shall be considered one (1) project for the purposes of this requirement. easement with back references to Deed Book and Page number, and a signed Grant of Easer the project consists of water pipes less than three inches (3") or greater than twelve inches (12") in (Restoration agreement) provided by the District prior to filling the main for sterilization. diameter. This excludes: [1.] circulating two inch (2") water main projects of less than five hundred feet (500') shall gualify if future extension from the line will not occur and if the District determines that the two 1.06 WATER MAIN SIZE Minimum public water main size shall be 8", unless it is determined by the inch (2") line will benefit the overall system hydraulics and/or drinking water guality and [2.] projects dead-end main has no potential for future development, or it is determined by the District that consisting of water pipes greater than twelve inches (12") if the project only includes the relocation and/or rehab of the water main and no changes to pipe diameter. adequate. The District may allow the last 600 feet of water main to be constructed as 6" water the project includes new construction or installation of treatment plants, storage tanks, chemical or hydrant is deemed necessary by the Authority having Jurisdiction: or a smaller diameter main pressure booster pumping stations sufficient. The water main around a cul-de-sac may be reduced to 4" ductile Iron or 2" polyethy the project is funded in part or in full by the State Revolving Fund (SRF) or Congressional Special device may be required, as determined by the District, on 4" ductile Iron and 2" polyethylene line Appropriation Project Grants (SPAP). potential for future development as determined by the District and proper fire hydrant spacing of the projects is under the jurisdiction of any regulating agency or funding agency other than the Kentucky District may consider the installation of conduits for cul-de-sac lots versus a main around the Division of Water (external agencies), which in any way conflict with any regulatory process or funding Conduits will need to be installed on the opposite lot lines of the electric service and at the prop process of these external agencies tracing wire. Additional requirements may be required for the installation of conduits subject to the project impacts any outstanding state resource water, outstanding national resource water. the District. All water mains 16" and larger shall be min. class 50 ductile Iron as determined by exceptional water, or cold water aquatic habitat as defined at by 401 KAR Chapter 10. District does not allow water mains 10", 14" & 18" in size. If DOW approval is required an additional three (3) sets of plans must be submitted to the District along with .07 DEAD ENDS OF WATER MAINS Dead ends to water mains shall be prohibited unless approve a check made out to the Kentucky State Treasurer in the amount of \$150 for projects less than ne District. Dead ends may be approved if one or more of the following conditions exists: 10,000 linear feet and \$325 for projects longer than 10,000 by the Developer. Requirements contained within the DOW approval may make it necessary for a professional engineer to certify in writing that the project has A. The distance between the dead end and the other tie-in point is greater than 600 feet. been completed in accordance the the approved plans and specifications. If this is the case, the Developer B. Physical features exist between the dead end and the other tie- in point that in the opinion of shall secure these engineering services and supply said written certification upon completion of construction. the District make it impractical to tie them together C. Slopes between the dead end and the other tie-in point is greater than 3 to 1. D. Slopes/terrain between the dead end and the other tie-in point is certified as geotechnically unstable by a gualified professional geotechnical engineer. 1.05 WATER MAINS ON PRIVATE PROPERTY Water mains installed on private property which are going to be E. It is necessary to purchase easements to run a water line through existing developed lots. maintained by the Water District, shall have a twenty-(20) foot wide easement with the water main centered in the easement area and shall have a justifiable benefit to the District (serving more than one property owner,

1.08 MULTIPLE WATER MAIN FEEDS A minimum of two supply sources shall be required for subdivisions of one hundred (100) units or more, more than one street, and/or there is potential development area that exceeds the number of customers or streets previously mentioned.



- 1.09 <u>MINIMUM WATER FLOW REQUIREMENTS</u> The water main extension at the most remote location shall be able to provide a minimum fire flow of 250 gpm for the installation of fire hydrants and the water system supporting this flow has the capability of providing this flow for a period of not less than two (2) hours plus consumption at the maximum daily rate. A minimum of 30 psi must be available on the discharge side of all meters. All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. If the water system cannot support the installation of fire hydrants, anchoring tees and valves shall be installed to allow for future fire hydrant installation when adequate water is available. If the water system extension is part of a subdivision development, the developer will be responsible for installing the anchoring tees and valves as described above and providing the District with a fire hydrant for each tee and valve installed as part of the subdivision. These fire hydrants will be installed by the District after water main improvements are made in the area which support the installation of fire hydrants.
- 1.10 HIGH PRESSURE AREAS Additional requirements may be necessary for high-pressure areas (125 psi static pressure or higher) as determined by the District.
- 1.11 <u>VALVES</u> Sufficient valves as determined by the District shall be provided on water mains so inconvenience and public health hazards are minimized during repairs, and their location shall be approved by the District. All valves shall be operated by or under the direction of District personnel only. Valves shall be installed at each end of cross-country water mains, and at separation of no greater than 1000 feet in urban residential areas; 500 feet in commercial areas; 1 mile in rural areas with few residents. Valves should be located at roadway intersections where practical.
- 1.12 FIRE HYDRANTS Fire hydrants shall be connected only to water mains adequately sized to carry fire flows and in no case to lines smaller than six (6) inches. An auxiliary valve shall be installed in all hydrant supply pipes. Fire hydrant drains shall not be connected to any sanitary sewer. combined sewer, septic tank or subsoil treatment system (hereinafter "non-storm sewer") or any storm sewer or storm drain, and shall be located at a distance greater than ten feet (10') from any non-storm sewer. Fire hydrant spacing shall be as recommended by the Planning and Development Services and the local fire department. Fire hydrants shall be located on or as close to side property lot lines as possible. Fire hydrants installed as part of a water main replacement project are to be replaced in approximately the same location as the existing one. Additional hydrants may be added when they are required for air release or flushing purposes as determined by the District.
- 1.13 PARALLEL INSTALLATION OF WATER AND SEWER LINES Water mains shall be laid a distance of greater than or equal (\geq) to ten feet (10') horizontally from any existing or proposed sanitary sewer, combined sewer, septic tank or subsoil treatment system (hereinafter "non-storm sewer"). The horizontal distance shall be measured from outside diameter of the water main to outside diameter of the non-storm sewer. In cases where the District determines it is not practical to maintain a ten foot (10') separation, water mains may be installed closer to a non-storm sewer provided that the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least eighteen inches (18") above the top of the gravity sewer. Documentation of this variance, including where the variance was required and how variance conditions were met, shall be maintained with the project records. If these conditions are unable to be met, plans and specifications shall be submitted to the Division of Water for review and approval. No deviation from the horizontal ten foot (10') separation shall be allowed if the non-storm sewer is a force main (sewer under pressure).

- 1.14 CROSSING OF WATER AND SEWER LINES
 - When water mains and sewers cross: 1. Water mains shall be laid such that there shall be a verti eighteen inches (18") between the water main and sew
 - from the outside diameter of the water main to the outside 2. One (1) full length of the water pipe shall be located so
 - far from the sewer as practical as determined by the Util 3. Where necessary, special structural support for the water
 - pipe shall pass through or come in contact with any part of
- 1.15 PARALLEL INSTALLATION WITH OTHER UNDERGROUND Water mains should maintain a minimum lateral separation of utilities whenever possible, with the exception of sewers as state specifications.
- 1.16 WATER CROSSINGS Surface water crossings, both over and which should be discussed with the District before improvement crossings, the pipe shall be adequately supported, protected from repair or replacement. The pipe shall be of special construction watertight joints. Valves shall be provided at both ends of water isolated for test or repair. Where the water main is constructed u be protected with concrete encasement. This encasement shall the channel measured from top of bank to top of bank. The enca No. 110. Valves shall be installed on each side of the water cross when crossing water courses greater than 15 feet in width (bank installed on each side of the valve closest to the supply source to determine leakage and obtain water samples. The Developer will requirements of 401 KAR 4:050 and KRS 151.250 for sub-fluvial crossings, a floodplain construction permit will not be required pr requirements of 401 KAR 4:050 Section 2 are met:
 - 1. No material may be placed in the stream or in the flood p
 - pads, coffer dams, access roads, etc. during construction Crossing trenches shall be backfilled as closely as possil
 - 3. All excess material resulting from construction displacem disposed of outside the flood plain. 4. For erodible channels, there shall be at least thirty inches
 - conduit points in the crossing. 5. For nonerodible channels, pipes or conduits in the crossi
 - least six inches (12") of concrete with all pipe or conduit inches (12") below the original contour of the channel. 6. The weight of a pipe and its contents must exceed that o
 - during normal operating conditions, or the applicant shall information to show that the pipe and joints have sufficien
- 1.17 <u>SAFETY</u> The "Manual of Accident Prevention In Construction" Contractors of America, O.S.H.A Regulations and other state and

For other areas, the Design Engineer shall prepare an easement document suitable for recording with the Contry Clerk. Documents shall consist of a sketch (8 1/2' by 14'), a legal description of the twenty (20) for easement with back references to Deed Book and Page number, and a signed Grant of Easement Form (Restoration agreement) provided by the District priva to the main for stelling transmitter of the twenty (20) for easement much back references to Deed Book and Page number, and a signed Grant of Easement Form (Restoration agreement) provided by the District priva to be constructed as 6' water mains is a fare hydrant is beint or all soluted by the District priva to be constructed as 6' water mains is a fare hydrant is been of the description of a durater the two tests constraints and the cur-de-sac. Conduits with eader and a cul-de-sace and the cur-de-sace and at the proper depth. Although the cul-de-sace conducts with eader the sing the clerk carvice and at the proper depth. Although the cul-de-sace conducts with end to be installation of conduits for cul-de-sace lost versus a main around the cul-de-sace. Conduits with eader the sing to the District and the cur-de-sace. Conduits with eader the sing to the last conduct to the care conduct subject to the approval of the District. All water mains 10', 14' 8 10' in size. DEADE OF WATER MAINS Dead ends to water mains shall be prohibiled unless approved by the District and water mains 10', 14'' 8 10' in size. DEADE OF WATER MAINS. Dead ends to water reains shall be prohibiled as geotechnically unstable by a qualified professional geotechnical engineer. E. Alt necessary to purchase easements to run a water line provid is the water main served by the Diversion and conducts of a signed frame of each line that is less than 0' in diameter system. A for district and water mains served of or the signed at more of each line that is less than 0' in diameter system containing valves, bow-offs, or arrivelation of a divalues there approved by			
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The District. Dead ends may be approved if one or more of the following conditions exists: Image: Constraint of the District Dead end and the other tie-in point is greater than 600 feet. A. The distance between the dead end and the other tie-in point is greater than 600 feet. Image: Constraint of the District make it impractical to the them together. C. Slopes/terrain between the dead end and the other tie-in point is greater than 3 to 1. Image: Constraint of the District reserves the right to require certain dead ends to be connected even though they meet the above conditions. No services shall be permitted to be tapped on cross-country water mains. For lines that dead end, a fire hydrant or blow-off shall be placed at the end of each line 6° in diameter. Each blow-off, fire hydrant, or flush hydrant shall be sized so that water velocity in the water main served by the blow-off or air relief valves shall not be connected to any sanitary sewer, combined sewer, septic tank or subsoil treatment system (hereinafter "non-storm sewer or storm drain, and shall be located at a distance greater than efet (10) from any non-storm sewer or storm drain, and shall be located to any non-storm sewer or storm drain. Such chambers, pits, or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any non-storm sewer or storm drain. Such chambers, pits, or manholes shall be drained to absorption pits underground or to the surface of the ground where they are not subject to flooding by surface water. Image: Date: Da	dead-end main has no potential for future development, or it is determined by the District that a smaller main is adequate. The District may allow the last 600 feet of water main to be constructed as 6" water main, if a fire hydrant is deemed necessary by the Authority having Jurisdiction; or a smaller diameter main if a blow-off is sufficient. The water main around a cul-de-sac may be reduced to 4" ductile Iron or 2" polyethylene, A flushing device may be required, as determined by the District, on 4" ductile Iron and 2" polyethylene lines, if there is no potential for future development as determined by the District and proper fire hydrant spacing can be met. The District may consider the installation of conduits for cul-de-sac lots versus a main around the cul-de-sac. Conduits will need to be installed on the opposite lot lines of the electric service and at the proper depth with a tracing wire. Additional requirements may be required for the installation of conduits subject to the approval of the District. All water mains 16" and larger shall be min. class 50 ductile Iron as determined by the District. The	REVISION	
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	mentioned.	100)-A

- .18 <u>MAINTENANCE PERIOD</u> The Developer shall be responsible for the maintenance of the installed water mains and appurtenances to District Standards for a period of not less than one (1) year from the date the water main is placed in service by the District. If an inspection reveals that the installation does not meet District standards, the developer will be notified in writing to correct all discrepancies and/or problems within 30 days after notification. If the problems are not corrected within the 30 day period, the District shall make the corrections at the expense of the Developer. The Developer shall then be billed by the District at a rate of time and material plus overhead or at the rate of actual cost plus overhead when completed by an available contractor hired by the District. Payment is required within 30 days of invoice date. Indebtedness to the Water District will result in no future water being provided to the Developer on all existing and future water main projects and/or phases until all indebtedness is paid in full.
- .19 <u>APPLICATION FOR SERVICE</u> Application for water service will only be accepted after the water main pacteria samples are shown to be negative following disinfection and the main is placed in-service by the District. No service installation will be scheduled until the water main is approved and turned on.
- CONDUITS FOR WATER SERVICES IN ROCKY AREAS The Developer is responsible for 1.20 notifying the District when rocky conditions are found in a development which could affect the installation of customer water service lines. In rocky areas the Developer shall install service line conduits and be responsible for maintaining markings which identify the conduit's location. When service connections in developments require rock boring as a result of a developer's failure to install crossover conduits, the water service applicant will be billed for the full cost of the installation under the District's Invoice Billing Policy, less the connection fee paid at the time of application. This will apply to service connections tapped to water mains installed by a developer and put into service after January 1, 2020. The word "rock" is defined as boulders and solid masonry larger than 1/2 cubic yard in volume, or solid ledge rock and masonry which requires for its removal, drilling and blasting, wedging, sledging, barring, or breaking up with a power operated hand tool. Photo evidence of rock encountered during service line installation is available upon request.
- ORGANIC CONTAMINATION Mains installed within 200 feet of petroleum tanks and other areas of organic contamination must be ductile iron pipe.

PART II - MATERIALS

- 2.01 WATER MAIN PIPE AND FITTINGS
- A. <u>Minimum Class 50 Ductile Iron Pipe (D.I.P)</u> A minimum of Class 50 Ductile Iron pipe shall conform to the latest edition of AWWA C151. All pipe shall be clearly marked as to class by the manufacturer "Push-on single gasket" type joints shall conform to the latest edition of AWWA C-111. Pipe shall have a standard thickness cement mortar lining in conformance with AWWA
- Under no conditions shall pipe line deflection measured between joints exceed the manufacturer's published recommended standard for that type of pipe. The maximum deflection at push-on joints and/or mechanical joints shall be 5 degrees or as recommended by Manufacturer. All D.I.P. shall be blue polyethylene wrapped.
- B. <u>Polyvinyl Chloride Pipe (P.V.C.)</u> D.R. 18, P.V.C. pipe shall conform to the latest edition of VWA C900, must be NSF approved and manufactured in accordance with ASTM standards. All pipe shall be clearly marked as to class by the manufacturer. The outside diameter shall be equivalent to D.I.P. Pipe shall have gasket bell end type joints furnished complete with gaskets meeting the latest edition of ASTM F477. Solvent weld joints are prohibited.

P.V.C. pipe shall be permitted for use in residential subdivisions as approved by the District. Pipe size shall be limited to 6", 8" & installed in high pressure areas where the static system pressure system conditions exist which increase pressures over 125 psi. a P.V.C. pipe cannot be used for cross country lines, along state his installed within 200 feet radius of oil or gasoline lines, underground storage tanks or pumping stations.

P.V.C. pipe may be tied into an existing ductile iron main in a subo over 450 linear feet of main, or when the pipe is installed around a street with no possible extension of the street as approved by the D.I.P. and P.V.C. pipe shall be made with some type of ductile iro approved transition joints shall be used between dissimilar piping

Beveled spigot ends must have a minimum bevel of 8 degrees to a degrees. The vertical face of the spigot end may not exceed 75% horizontal length of the bevel shall not exceed 1.25 inches. Field made per manufacturers recommendation and as approved by the shall be approved for the type of pipe being installed.

P.V.C. Pipe Shipping, Handling & Storage - The front end of all pi covered for protection against exhaust fumes.P.V.C. pipe shall be sunlight according to manufacturer's recommendations. Pipe will if discoloration is evident due to sunlight or other exposure. Pipe to prevent beaming the pipe.

- Molecularly Oriented Polyvinyl Chloride Pressure Pipe (P.V.C.O. P.V.C.O. pipe shall conform to the latest edition of AWWA C909 manufactured in accordance with ASTM standards. All pipe shall manufacturer. The outside diameter shall be equivalent to D.I.P. joints furnished complete with gaskets meeting the latest edition of are prohibited. P.V.C.O. pipe installation shall follow the P.V.C. C-2.01, Section C of these specifications.
- Polyethylene Pipe Class 200, S.D.R. 9, 200 psi, ASTM D-2737, edition of AWWA C901, must be NSF approved and manufacture All pipe shall be clearly marked as to class by the manufacturer. to Copper Tubing Size (CTS). The P.E. pipe shall be homogened holes, kinks, foreign inclusions or other defects. It shall be uniform physical properties. Solvent weld joints are prohibited.

P.E. pipe shall be permitted for use in residential subdivisions cul-Pipe size shall be limited to 2". P.E. pipe shall not be installed in h system pressures exceeds 125 psi or other system conditions exit as determined by the District. P.E. pipe cannot be used for cross crossings, or installed within 200 feet radius of oil or gasoline lines storage tanks or pumping stations

P.E. pipe expands and contracts when exposed to temperature c installation. Normally P.E. pipe will "snake" itself in the trench end 6" per 100' of pipe per 45 F temperature change should be added

cal distance of greater than or equal to (\geq) ver. The vertical distance shall be measured de diameter of the sewer line. that both joints of the water pipe shall be as ity. er and sewer pipes shall be required. No water of a non-strom sewer manhole. <u>UTILITIES-</u> B feet from all other underground ted elsewhere in these	REVISION BY DATE				
under water, present special issues plans are prepared. Over water m damage, freezing, and accessible for having flexible, restrained, or welded crossings so that the section can be under a blue line stream, the pipe shall extend a distance equal to the width of asement shall be per Standard Drawing ssing in areas not subject to flooding (to bank). Permanent taps shall be o allow insertion of a small meter to I be responsible for meeting the I pipe line crossings.For subfluvial pipe ursuant to KRS 151.250 if the following blain of the stream to form construction n of pipe crossings. ble to the original contour. hent in a crossing trench shall be s (36") of backfill on top of all pipe or ing shall be encased on all sides by at t points in the crossing at least six		N. NI, WHIER DIVINICI		SPEUIF ICALIUNS	
f an equal volume of water at all points	DR	_	N B' SAR		
I provide the Division with sufficient nt strength.	API		IVE		
published by the Associated General nd local safety regulations shall be followed.	ST	TE: 2, ANI		2021	

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and along city and county roads 12". P.V.C. pipe shall not be es exceeds 125 psi or other as determined by the District. ighways, water crossings, or nd storage tanks, petroleum	BY DATE					
odivision when the extension is a cul-de-sac or a dead-end e District. Transition between on fitting. Manufacturer g materials. b a maximum bevel of 15 6 of pipe wall thickness and the	REVISION					
I beveled spigot end shall be ne District. The degree of bevel nipe delivered by truck shall be						
e protected from exposure to I not be accepted for installation shall be stored in such a manner		אור				
) must be NSF approved and Il be clearly marked as to class by the Pipe shall have gasket bell end type of ASTM D3139. Solvent weld joints C-900 Standards - Part II -Materials,		N. KT. WAIEK UISIKIUI		SDECTETCATIONS		
r, P.E. pipe shall conform to the latest ed in accordance with ASTM standards. The outside diameter shall be equivalent yous throughout and free of visible cracks, rm in color, opacity, density and other		N. KY.			2 L C	
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I-de-sacs only as approved by the District. high pressure areas where the static tist which increase pressures over 125 psi. s country lines, along state highways, water es, underground storage tanks, petroleum	AP	PRE	IVE U	D	/	
changes, allowances shall be made during lough to provide sufficient slack. An extra d to compensate for thermal conditions.	DATE: 2/1/2021 STANDARD DRAWING ND:					
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DEVELOPMENT PARTNERS								
AMERICAN STRUCTUREPOINT INC.								
			SANCTUARY AT EDWARDS	CITY OF ELSMERE, KENTON COUNTY, KENTUCKY	WATERINE NOTES			
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- E. <u>Tracing Wire</u> All water mains, including out-of-service stubs intended for future extension, shall be installed with copper tracing wire (P.V.C. coated) taped to the top of the pipe every 5'. Maximum tracing wire length shall be 500' without terminating in a curb stop box. Curb stop boxes shall not be located in the pavement areas. Splices in the tracing wire shall be kept to a minimum and approved by the District. If splices are required they shall be made with copper split bolt (lisco #ik-8 or approved equal) and taped with electrical tape. Jumper wires must be run from the main tracing wire and secured to all water meter service lines.
- F. <u>Fittings</u> All fittings and accessories shall be Ductile Iron, rated for a minimum of 200 psi working pressure or as specified herein. The fittings and accessories shall be new and unused. (NOTE: Certain areas of the Northern Kentucky Water District require materials used, to be of a higher working pressure than 200 psi.) All pipe fittings shall be mechanical joint fittings. Mechanical joints shall conform to AWWA C111. Bolts and nuts shall be high strength, corrosion resistant alloy, such as "Cor-Ten" or approved equal. Ductile Iron Compact Fittings shall conform to AWWA C153 and Full Body Fittings to AWWA C110. A bituminous seal coat shall be applied to the outside of the fitting. All ductile iron fittings shall be cement lined and seal coated in accordance to AWWA C104.
- 2.02 <u>POLYETHYLENE WRAP</u> All ductile iron pipe, fittings, valves, and fire hydrant leads shall be polyethylene wrapped, installed according to the current edition of AWWA C105. Polyethylene wrap shall be blue in color. Ductile iron fittings,valves, and fire hydrant leads used in the installation of P.V.C. pipe shall be included. Polyethylene wrap shall be 8-mill thickness low-density film or 4-mil thickness high-density cross-laminated polyethylene tube per AWWA C105. The contractors shall cut the roll in tubes 2 feet longer than a standard length of pipe.

Each tube shall be slipped over the length of pipe, centering to allow a one foot overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit. and the overlay shall be secured with polyethylene tape. Pipe shall not be wrapped and stored on site for any period of time, but wrapped and immediately placed in the trench, fittings shall be wrapped prior to installing blocking or pads. (see Standard Drawing #104) Polyvinyl chloride pipe requires no wrap. Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the appliances and bringing the edges together, folding twice, and taping down.

- B. Water mains greater than or equal to (≥) 16 inches in diameter which contain metallic piping and/or fittings shall be installed with cathodic protection designed by a NACE certified corrosion specialist. This specialist shall be responsible for:
- Performing field soil analysis/survey along a proposed water main project alignment.
 Review design drawings and material specifications prepared by others and provide recommendations for consideration.
- Providing all necessary and appropriate services in connection with conducting corrosion evaluation of the proposed project, corrosion protection analysis, design installation details/schedule/specifications.
- Preparation of standard corrosion protection specification for inclusion with the District's specifications.
 Review the proposed pipe material and provide recommendations on cathodic protection/control
- Review the proposed pipe material and provide recommendations on cathodic protection/control and/or protective coatings.
 Providing a report/recommendations for the long-term cathodic protection of the proposed project which caution the formula the formula the size.
- which could include the following: the size, type, configuration, quantity, and spacing of recommended galvanic anodes, joint bonding, isolation couplings, wiring, etc.; all soil analysis/measurements, calculations, locations, corrosion monitoring & test stations; and provisions to mitigate DC interference to nearby metallic structures.

- 2.03 <u>VALVES</u> All valves shall open by turning counter-clockwise with the operation of a 2 inch square operating nut. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends except Tapping Valves.
- A. GATE VALVES Valves 12 inches and smaller shall be resilient seated gate valves, non-rising stem with rubber "O" ring packing seals, rated at 250 psi working pressure and conform to the applicable portions of AWWA Standard C509 | atest Edition High pressure gate valves shall be required when the pressure exceeds 200 psi. Valve bodies shall be ductile iron, glands shall be the same material as the valve. All external dome and packing bolts shall be stainless steel. The valves shall open by turning counter-clockwise. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. Valves shall have mechanical joint ends unless otherwise shown on the plans or directed by the District. An extension stem shall be furnished if required, to bring the operating nut within 3-1/2 feet of finished grade. Extension stems shall be securely fastened to the valve stem. The Contractor shall make all valves tight under their working pressures after they have been placed and before the main is placed in operation. Unless otherwise approved by the District, all valves 16" and larger shall be ductile iron resilient wedge gate valves with beveled gearing (lay down gate valves). Valve shall be ductile iron body, non-rising stem, open left, 2" square operating nut, epoxy coated, mechanical joint (inlet & outlet connections). O-ring type packing, resilient wedge, 250 psi working pressure, and conforming in all other ways to AWWA Standard C515 American Flow Control 2500 Resilient Wedge Gate Valve or approved equal. Valve body, external dome, and packing bolts to be assembled with stainless steel bolts grade 304 or better.
- B. <u>TAPPING SLEEVE AND VALVES</u> No tapping sleeves and valves unless approved by Northern Kentucky Water District. Tapping sleeves and valves shall be designed for a working pressure of 200 psi. The tapping sleeve together with the tapping valve shall be tested at 250 psi for visible leakage before the main is tapped. Tapping sleeve and valve used in high pressure areas shall be tested at 350 psi.
- 1. Tapping Sleeves Tapping sleeves shall be a two piece body with mechanical joint type ends, and be so designed as to assure uniform gasket pressure and permit centering of the sleeve on the pipe. Stainless steel type tapping sleeves with full gasket maybe considered, but will need to be approved by the District prior to installation.
- 2. Tapping Valves Tapping valves shall be resilient seated gate valves, rated at 200 psi (unless installed in high pressure service area) and conform to the applicable portions of AWWA Standard 509, latest edition except that the seat rings shall be oversized to permit entry of the tapping machine cutter. All external dome and packing bolts shall be stainless steel. Tapping valves shall be ductile iron body, non-rising stem with rubber "O" ring packing seals. Tapping valves shall have a flange on one end for bolting to the tapping sleeve and a mechanical joint type end connection on the slotted standard flange or other adapters for connection to the tapping machine.
- C. <u>VALVE STEM EXTENSIONS</u> A valve stem extension shall be installed by the contractor to bring the operating nut within 2 1/2 to 3 1/2 ft. of final grade. Extension stems will be supplied by the Water District if the extension is justified. The contractor shall measure the needed length and provide a minimum of 48 hours notice for receipt of stem extension.

- 2.04 <u>VALVE BOXES</u> All valves shall be provided with valve boxes. Valve boxes shall be of standard, adjustable, heavy duty cast iron extension type, two piece, 5 1/4 inch shaft, screw type, and of such length as necessary to extend from valve to finished grade, Tyler #562-S, Tyler #564-S or approved equal. Valve box cover shall be stamped "Water". Tops shall be set at final established grade. If valve boxes are not of sufficient height to bring the top of the box to final grade, a section of 6" ductile iron pipe for pavement areas and 6" PVC for non-pavement areas may be used to extend the valve box to final grade with prior approval from the District. The length of pipe shall permit the valve box to be adjusted up and down. All valves will be installed with a box-lok type valve box centering ring or approved equal.
- 2.05 <u>FIRE HYDRANTS</u> All fire hydrants shall have auxiliary valves for isolating water flow to the hydrant. All fire hydrants and auxiliary valves shall be positively locked to the water main by restrained joints, hydrant adapters, or other approved method. Hydrants shall be designed to 200 psi working pressure and shall be shop tested to 300 psi hydrostatic pressure with the main valve both open and closed. High pressure fire hydrants will be required when pressures exceed 150 psi.

The barrel shall have a breakable safety section and/or base bolts just above the ground line. Hydrants shall have a main valve opening of 5 1/4 inches, a 6 inch mechanical joint inlet to be suitable for setting in a trench 3' 6" deep minimum, and shall be the traffic style hydrant so that the main valve remains closed when the barrel is broken off. Hydrants shall have a dry top and shall be self draining, when the main valve is closed. Self draining hydrants shall drain to dry wells provided exclusively for that purpose. Hydrant drains shall not be connected to storm or sanitary sewers. Hydrants located generally in the Covington System and other areas determined by the District (flood zones) shall have all drain holes plugged prior to installation. Hydrants shall be rotatable in a minimum of eight (8) position in 360 degrees.

All hydrants shall have two (2) - two and one half (2 1/2) inch hose nozzles and one (1) steamer or pumper connection threaded to conform to Northern Ky. Water District's Standards: steamer nozzle shall be National Standard Thread and 2 1/2" outlets shall be Old Cincinnati Thread. The operating nut and the nuts of the nozzle caps shall be square in shape, measuring one (1) inch from side to side. Hydrant body shall be painted yellow for areas designed for 150 psi working pressure and red for areas in excess of 150 psi. All hydrants shall be right hand open, clockwise. The following fire hydrants are approved for installation in the District's system: Mueller, Waterous,U.S. Pipe, M & H , Kennedy and American Darling.

2.06 <u>PRESSURE REDUCING VALVES</u> Pressure reducing valves will be installed by the District in regular 2" and smaller meter settings when the static system pressure is at or above 125 psi for new and old services when deemed necessary by the District. Pressure reducing valves are only installed to protect the meter. The District will not be liable for any damage due to pressure conditions caused by or arising out of the failure or defective condition of such pressure regulator or for damage that may occur through the installation, maintenance, or use of such equipment.

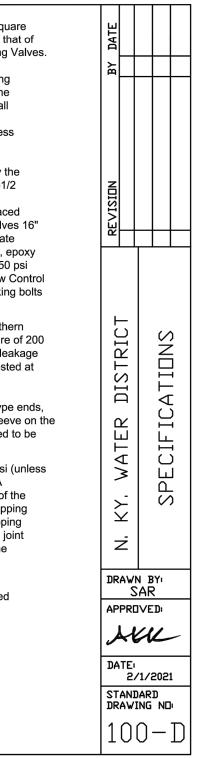
- 2.07 <u>AIR RELEASE VALVES AND/OR TAPS</u> Air release valves shall be installed in the high points of the water mains where hydrants are not installed and as required by the District and in accordance with Standard Drawing No. 106. 8" and smaller water mains, tap size and piping shall be 3/4", 12" water main-1",& 16" and larger water main-2". Temporary taps of suitable size may be required at certain points on the water main for the release of air for filling and/or flushing purposes. Temporary taps will be removed and plugged after use. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. The open end of an air relief pipe from automatic valves shall be extended a distance of greater than or equal to (≥) one foot (1') above grade and shall be provided with a screened, downward facing elbow or an equivalent standard as determined by the best professional judgment of the District. Manually operated air release valves shall include a camlock-type coupling and waste valve. The pipe from a manually operated air release valve shall be extended to the top of the pit.
- 2.08 <u>STEEL CASING PIPE</u> Casing pipe shall be steel pipe with a minimum yield strength of 35,000 psi with a minimum wall thickness as listed below:

Nominal		Nominal	
Diameter Casing	Normal Wall	Diameter Casing	Normal Wall
Pipe	Thickness	Pipe	Thickness
Under 14"	0.251"	26"	0.438"
14" & 16"	0.282"	28" & 30"	0.469"
18"	0.313"	32"	0.501"
20"	0.344"	34" & 36"	0.532"
22"	0.375"	38", 40", & 42"	0.563"
24"	0.407"	48"	0.626"

The inside diameter of the casing pipe shall be at least four (4) inches greater than the outside diameter of the carrier pipe joints. Steel casing sections shall be connected by welding, conforming to AWWA C206. All carrier pipe placed in steel casing pipe shall be minimum class 50 ductile iron pipe and conform to the latest edition of AWWA C151. Carrier pipe gaskets shall develop a wedging action between pairs of high-strength stainless steel elements spaced around the gasket (FIELD LOK, FASTGRIP or approved equal gaskets). Adequate pipe spacers shall be installed to ensure that the carrier pipe is adequately supported in the center of the casing pipe throughout it's length, particularly at the ends to offset settling and possible electrical shorting. Manufactured pipe spacers shall be installed per manufacture's installation requirements. There shall not be any metallic contact between the casing and carrier pipe. Casings shall have both ends sealed up in such a way as to prevent the entrance of foreign material. See Standard Drawing #114 for installation details.

PART III - INSTALLATION OF WATER MAINS AND APPURTENANCES

O1 <u>GENERAL</u> Water mains and appurtenances shall be installed in compliance with AWWA standards (C600 for D.I.P, C605 for P.V.C. type pipe and C901 for P.E.) and/or manufacturer recommendations. Water main pipe and fittings shall be laid on a good level foundation with no gaps or humps under the pipe or fittings. Excavation shall be done by hand at joints to prevent the pipe and fittings from being supported by the mechanical joint or slip joint bell. Transition between D.I.P. and P.V.C. type pipe shall be made with some type of ductile iron fitting. Manufacturer approved transition joints shall be used between dissimilar piping materials. Repairs to or section replacement of D.I.P. shall not be made using P.V.C. materials. Pipe shall be laid with the bell ends facing in the direction of laying.



The interior of the pipe shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations. ALL OPEN ENDS ARE TO BE CLOSED WITH CAPS OR PLUGS AT ALL TIMES WHEN PIPE LAYING OPERATIONS ARE NOT IN OPERATION AND AT THE END OF THE DAY. All caps or plugs shall be properly installed and blocked in advance of filling, flushing, and testing mains. All securing and blocking shall be inspected by the District prior to back filling of ditch.

If the existing water main material being tapped or connected to is asbestos concrete, then during the process of tapping the asbestos concrete water main, the contractor shall conform to OSHA regulations governing the handling of hazardous waste. Pieces of asbestos concrete resulting from the tap shall be doubled bagged, placed in a rigid container and disposed of in an approved landfill.

- 3.02 <u>CONTRACTORS RESPONSIBILITY</u> If the existing water main being tapped or connected to is cathodically protected, an isolation coupling shall be required. All work performed on any water mains and/or appurtenances that are owned or anticipated to be owned by the District shall be completed under the direction of the District adhering to an acceptable plan approved by the District. A minimum 24 hours notice shall be given to the District by the contractor prior to the start of water main work. One set of District approved plans shall be on the job site during construction. Water main construction will not be permitted to start until all approvals are received. There shall be no deviation from the approved plans without written approval from the District.
 - A. If the interruption of service to any customer of the District is necessary, the Contractor shall make arrangements to provide such shutdown and notify District customers at the direction of the District Inspector. All private residents shall be notified no less than 48 hours and all businesses commercial and Industrial customers shall be notified no less than 1 week prior to the interruption of service. All shutdowns shall be coordinated with the effected residents, with priority given to any special needs customers such as hospitals, schools, and customers with medical needs.
 - B. Contractor shall be responsible for relieving any water main pressure (whether air or water) before removing any cap, plug, fire hydrant, valve, etc.
- 3.03 <u>HANDLING</u> Pipe, fittings, valves, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skidding so as to avoid shock or damage. Pipe hooks that extend inside the ends of the pipe shall not be used for handling the pipe since they could damage the lining. Under no circumstances shall such materials be dropped. Pipe handled on skid ways shall not be skidded or rolled against other pipe. All bolts shall be tightened with proper wrenches and must have equal tension. The interior of all pipe, fittings and other accessories shall be kept free from dirt and foreign material at all times. When handling P.V.C., P.V.C.O. & P.E. pipe care should be taken to avoid abrasion damage, gouging of the pipe, rocks, and any stressing of the bell joints or damage of the bevel ends.
- 3.04 <u>TRENCHING, GRADE, AND COVER</u> Typically no trenching or laying of pipe or fittings shall be done until pavement (curbs) has been installed. In cases where water main installation is required under new pavement (side streets) main may be installed from trench stakes. When main installation is done prior to the pavement completion, test holes may be required by the District if valve depth, service taps or other evidence indicates that the minimum or maximum cover requirements are not met or that the main is in the wrong location. The contractor will be responsible for digging test holes at intervals required by the District to verify depth and location.

All trenching, grade, and cover work shall conform to the lines and done according to the drawings and specifications, subject to such determine to be necessary during the execution of the work. Trenc depth that will provide a minimum cover over the top of pipe of thre (4) feet from the final finished grade. Cover over four feet in depth vapproved by the District to avoid interference with other utilities. Ke requires a minimum of 42" of cover for water mains along state high

The Contractor shall establish all locations, lines, and grades in adv. In addition the Contractor will keep the Northern Kentucky Water Dis time in advance of the times and places in which the Contractor inte notice shall be one working day, 24 hours).

3.05 TRENCH EXCAVATION

A. <u>TRENCH WIDTH</u> Widths of trenches shall be held to a minimu appurtenances. The trench width shall be measured at the top of t conform to the following limits:

Minimum - outside diameter of the pipe barrel plus 8 inches, 4 inche Maximum - nominal pipe diameter plus 24 inches.

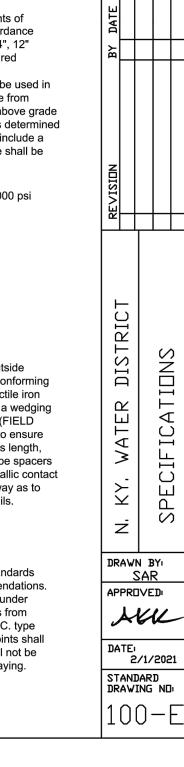
Minimum - 24" or less, nominal pipe size: outside diameter of pipe each side.

Minimum - Larger than 24", nominal pipe size: outside diameter of 9 inches each side. Maximum - nominal pipe diameter plus 24 inches.

B. BUTTERFLY VALVES

Trench width shall be over excavated 24" on the side that the oper butterfly valve when the surrounding area cannot be hand dug.

- 3.06 <u>BOTTOM PREPARATION</u> The Contractor shall use excavation eq foundation. For the entire length of the trench, a compacted 3" lay the pipe. Bell holes and depressions for joints, valves, and fittings bedding has been graded in order that the pipe rest upon the prepa length as practicable. Bell holes and depressions shall be only of s required for properly making the particular type of joint. Stones four for a depth greater than or equal to (≥) six inches (6") below the b
- 3.07 <u>UNSTABLE SUB-GRADE MATERIAL</u> When the sub-grade is foun backfill material (rock, refuse, organic material, etc.), such material s of six (6) inches below the bottom of the pipe and backfilled with sar and thoroughly compacted.
- 3.08 <u>UNSTABLE SUB-GRADE</u> If the material forming the trench bottom foundation, a further depth shall be excavated and backfilled with a thoroughly compacted or a foundation shall be constructed using p or other materials as directed and approved by the District.



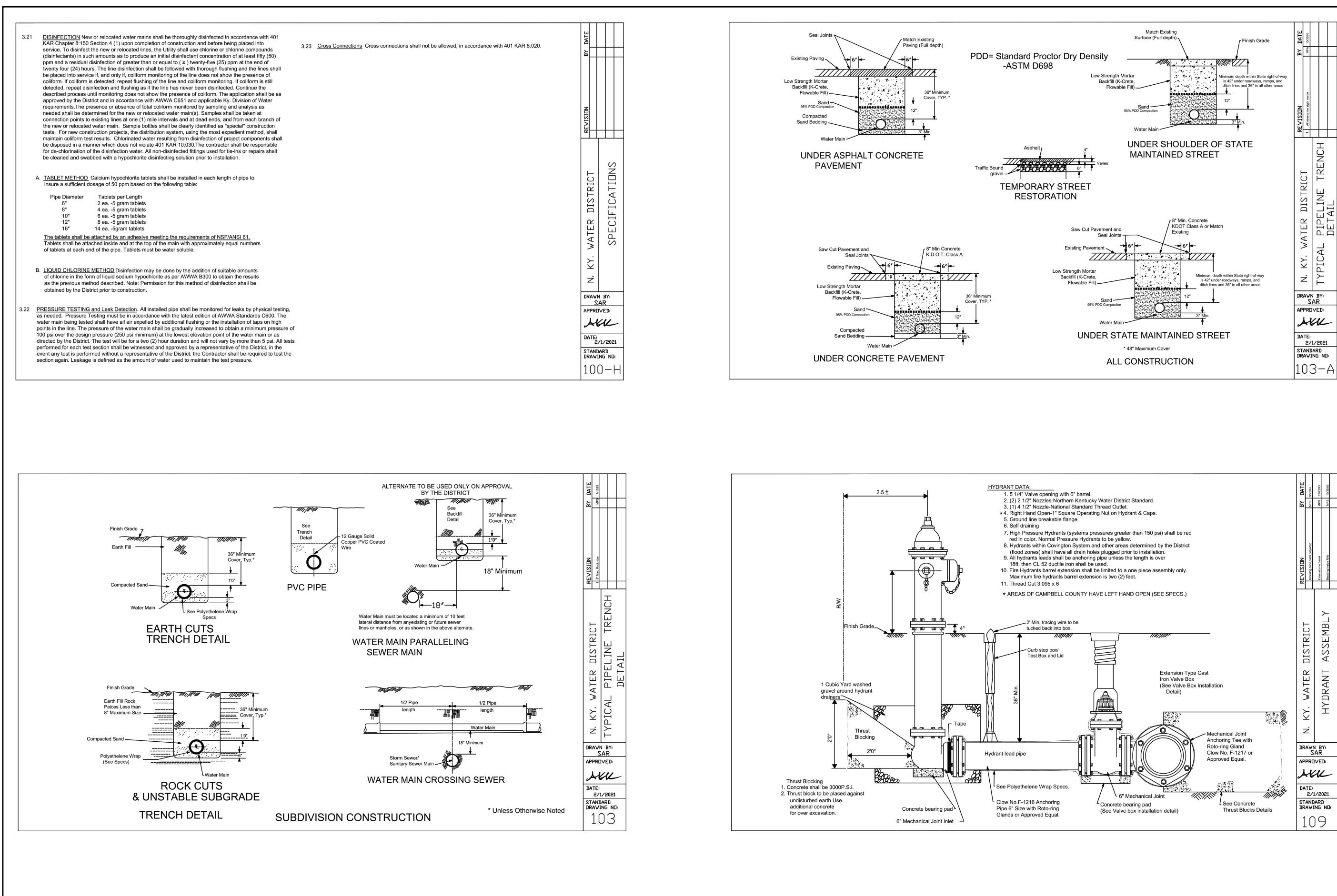
- 3.09 <u>PIPE LAYING</u> Pipe shall be laid with bell ends facing in the direction of laying. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home. All pipe shall be laid with ends abutting and true to line and grade. Deflection of pipe joints in excess of the manufacturer's recommendations shall not be permitted. Caps or plugs shall be installed to prevent the entrance of foreign material whenever pipe laying operations are not in progress.
- 3.10 <u>PIPE CUTTING</u> Cutting of pipe for installing valves, fittings, or hydrants shall be done in a neat and workmanlike manner without damage to the pipe or lining. The end shall be smooth and at right angles to the axis of the pipe. Flame cutting of metal pipe by means of an oxyacetylene torch shall not be permitted.
- 3.11 <u>PUSH-ON JOINTS</u> The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. The gasket shall then be inserted into the groove in the bell. Before starting joint assembly, a liberal coating of special lubricant, per manufacturers recommendation, shall be applied to the spigot end. (Special lubricant shall be suitable for use in potable water) With the spigot end centered in the bell, the spigot is pushed home per manufacturers recommendations. Insertion of spigot into PVC type pipe bell should be inserted until the reference mark is flush with the end of the bell. Over insertion of the pipe is not recommended per the manufacturer. Pipe joint materials which prevent permeation by petroleum products shall be used within 200 foot radius of oil or gasoline lines, underground storage tanks, petroleum storage tanks or pumping stations.
- 3.12 <u>MECHANICAL JOINTS</u> Mechanical joints for D.I.P. and P.V.C. type pipe require that the spigot be carefully located in the bell. The surfaces with which the rubber gasket comes in contact shall be thoroughly cleaned just prior to assembly. These clean surfaces shall be brushed with a special lubricant just prior to slipping the gasket over the spigot end and into the bell. (Special lubricant shall be suitable for use in potable water) The lubricant shall also be brushed on each gasket prior to installation to remove the loose dirt and lubricate the gasket as it is force into its retaining space. P.V.C. type pipe spigot ends shall be field cut smooth and at right angles to the axis of the pipe for installation in mechanical joint fitting.
- .13 <u>RESTRAINED JOINTS</u> Restrained joint-type pipe and fittings shall only be used as approval by the District. Retaining glands, field lock gaskets, or retaining flanges maybe used as temporary blocking but shall not be considered as providing a permanent restrained joint or as an alternate for permanent concrete blocking. The use of these type of restraining joints need to be approved by the District prior to installation.
- .14 <u>SETTING VALVES</u> Valves shall be set on a firm solid concrete block foundation so that no load will be transferred to the connecting pipe. Valves in water mains shall, where possible, be located on the side property lines extended, unless otherwise shown on the plans. A valve box shall be provided for every valve. The valve box shall not transmit shock or stress to the valve and shall be centered and plumb over the operating nut of the valve. The box cover shall be set flush with the surface of the finished pavement unless otherwise shown. All valves boxes with the exception of isolating valves for fire hydrants that are located in non-paved areas shall have a minimum 2' by 2' by 4" concrete pad as shown in Standard Drawing No. 105, unless a smaller pad is approved by the District.

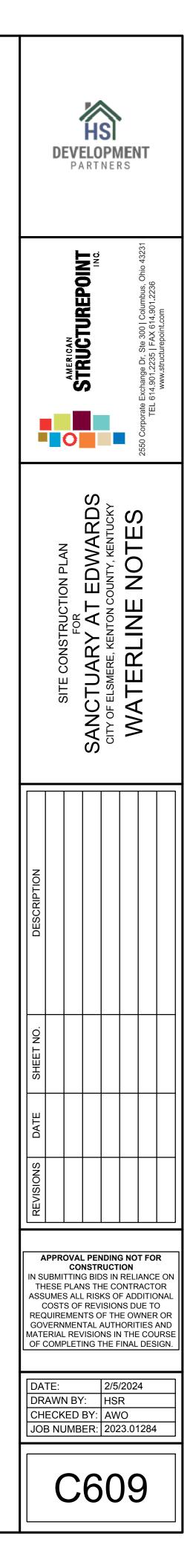
- 3.15 <u>SETTING FIRE HYDRANTS</u> Hydrants shall be located as shown or District. The location shall provide complete accessibility and minin from vehicles or injury to pedestrians. All hydrants shall stand plurr the curb. Hydrant shall be set to the established grade, with the tra grade in accordance to Standard Drawing No. 109. Each hydrant sl independent gate valve with valve box. All valves used for hydrant branch tee. Fire hydrant barrel extension shall be limited to a one p two or more extensions is prohibited. Maximum fire hydrant barrel
- 3.16 <u>CROSS-COUNTRY WATER MAINS</u> All cross-country water mains wire as described in Part II, Section 2.01 F- Tracing Wire.
- 3.17 <u>THRUST BLOCKING</u> All bends over five (5) degrees, tees, plugs, securely blocked against movement with concrete thrust blocks pla accordance with Standard Drawing No. 104 & 104-A. Thrust block prior to backfilling. Water mains shall have concrete thrust block at changes of direction to resist forces acting on the pipeline. All conc in such a manner that the bolts can be replaced without disturbing used in mains to undergo hydrostatic test shall be properly installe testing mains. All caps or plug installations shall be approved by th the main is subjected to the pressure test. The District may permit gaskets, 3/4" welded eye bolts @ a 90 degree bend & 3/4" threade approved by the District for temporary restraint only. Permanent of provided with any temporary restraint. Duc-Lucs are prohibited for
- 3.18 <u>TRENCH BACKFILL TO 12" OVER PIPE BARREL</u> All trench exca immediately after pipe is laid with the exception of thrust blocks. C used to backfill the trench from the bottom of the pipe barrel to the sand is not permitted. Backfill material shall be free from cinders, n top soil, frozen material, material with a high void content, rocks 1 direction, sharp stones and crushed rocks larger than 3/4", or othe of the District is unsuitable. No flushing of backfill shall be permitted
- 3.19 <u>REMAINING TRENCH BACKFILL IN NON-PAVEMENT AREAS</u> to the surface, excavated trench material may be used as backfill county authorities. No material shall be used for backfill that conta organic material, debris, rocks 8" or larger measured in any directi high void content. Compaction of remaining trench backfill shall be authorities.
- 3.20 <u>REMAINING TRENCH BACKFILL IN EXISTING PUBLIC ROADW</u> shall be obtained from the local City, County or Ky. State Dept. of minimum requirements for backfill beneath all existing public roady barrel to sub-grade shall be flowable fill unless City, County, or Sta The flowable fill shall comply with the latest edition of the Kentucky Department of Highways "Standard Specifications for Road and Bi trench backfill to final grade shall match the existing pavement/sur

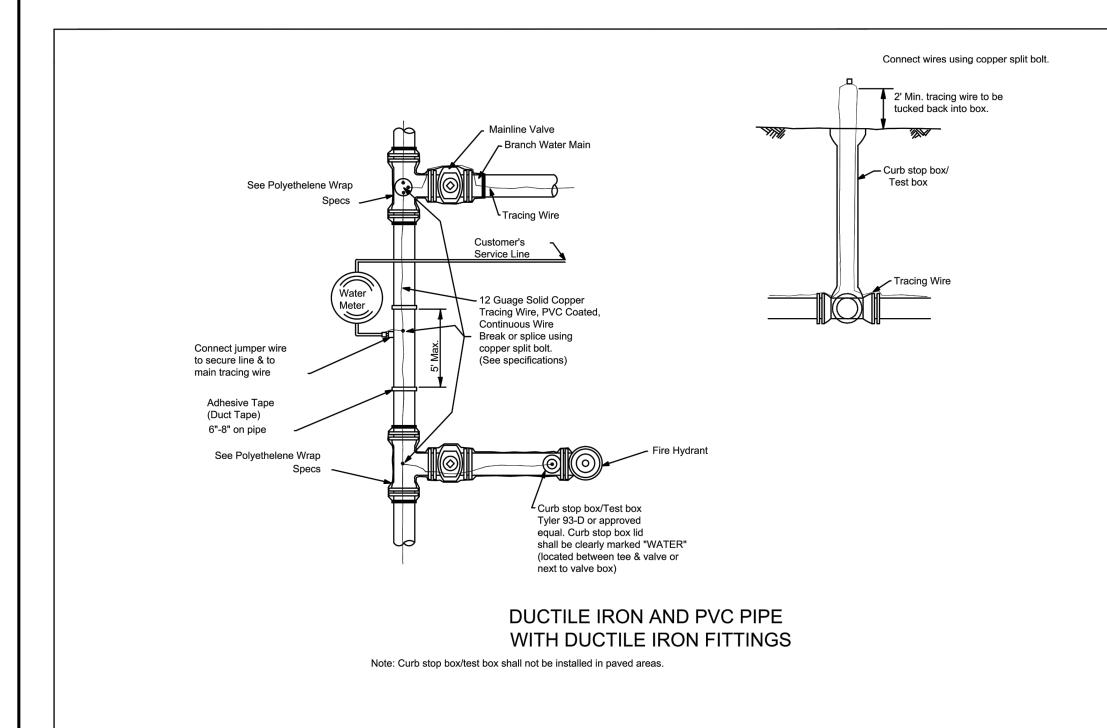
d grades established, and shall be h modifications as the District may nches for water lines shall be of a ree (3) feet and a maximum of four n will not be allowed unless Kentucky Dept. of Transportation ghways.	BY DATE			
Ivance of all work where practical. District informed a reasonable tends to work (minimum advance	Z			
num to accommodate the pipe and f the pipe barrel and shall	REVISION			
ches each side of pipe.				
e barrel plus 12 inches, @ 6 inches	Ţ			
of pipe barrel plus 18 inches, @	DISTRICT	SNDI		
erating mechanism is located on the	ΓER	CAT		
equipment that produces an even ayer of sand, shall be installed below is shall be dug after the trench pared bedding for as nearly its full such length, depth, and width as bund in the trench shall be removed bottom of the pipe.	N. КҮ. WATER	SPECIFICATIONS		
und to include non-approved al shall be removed to a minimum	DRAWN BY SAR APPROVED			
sand, backrun or granular material				
om is not suitable for a good an approved backfill material and piling, treated timbers, concrete,	DATE: 2/1/2021 STANDARD			
	4.0			
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on the plans or as directed by the imize the possibility of damage mb with the pumper nozzle facing						
affic flange within 4" above final shall be controlled by an t control shall be anchored to the piece assembly only, stacking I extension is 2 feet.	BΥ					
is shall be installed with a tracing	SIDN					
, reducers, and hydrants shall be laced against undisturbed earth in ks shall be approved by the District	REVISIDN					
at all pipe intersections and increte thrust blocks shall be poured g the blocking. All caps or plugs ed and blocked in advance of the District representative before it the use of restrained type glands, ded rods or other means as prior concrete thrust restraint shall be <u>r use.</u> cavations shall be backfilled Compacted sand material shall be a 12" over the pipe barrel Lime refuse, organic material, boulders, I 1/2" or larger measured in any her materials which in the opinion ted to achieve compaction. From 12" above the pipe barrel I material or as required by local or tains frozen earth, vegetable or tion, or earth with an exceptionally be as required by local or county		N, KY, WAIEK DIVIKIU		SPECIFICATIONS		
<u>NAYS</u> Roadway opening permits		DRAWN BY: SAR				
f Highways if applicable. The dways from 12" above the pipe	APPROVED:					
tate have additional requirements. ky Transportation Cabinet/	AKK					
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EVELOPMENT PARTNERS								
AMERICAN STRUCTUREPOINT ING.					2550 Corporate Exchange Dr, Ste 300 Columbus, Ohio 43231 TEL 614.901.2235 FAX 614.901.2236	www.structurepoint.com		
	SITE CONSTRUCTION PLAN	SANCTUARY AT EDWARDS	CITY OF ELSMERE, KENTON COUNTY, KENTUCKY	WATERINE NOTES				
DESCRIPTION								
SHEET NO.								
REVISIONS DATE								
APPROVAL PENDING NOT FOR CONSTRUCTION IN SUBMITTING BIDS IN RELIANCE ON THESE PLANS THE CONTRACTOR ASSUMES ALL RISKS OF ADDITIONAL COSTS OF REVISIONS DUE TO REQUIREMENTS OF THE OWNER OR GOVERNMENTAL AUTHORITIES AND MATERIAL REVISIONS IN THE COURSE OF COMPLETING THE FINAL DESIGN.								
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1.13 QUALITY ASSURANCE

- <u>Standards:</u> The following publications shall be hereby made a part of these specifications
 1. "Specifications for Structural Concrete for Buildings ACI 301-72 (Revised 1975) with Selected ACI and ASTM Referenced, Sp-15(73)" by the American Concrete Institute.
- Placing Reinforcing Bars, CRSI-WCRSI Recommended Practices" by the CRSI-WCRSI Committee on Bar Placing.
 "Standard Specifications for Road and Bridge Construction by the Kentucky Department"
- of Transportation, Bureau of Hwy. 4.Specifications for the Design and Construction Load-Bearing Concrete Masonry by the National Concrete Masonry Association.

1.14 <u>Or Equal</u> All materials referenced are for design purpose only. Any other materials that are "equal" can be used with prior approval from the District.

PART 2 - PRODUCTS2.01MATERIALS

Specifications)

A. <u>Concrete:</u> Ready mixed type meeting K.D.O.T "Class A", 3,500 psi at 28 days compressive strength, 4" maximum slump.

B. Reinforcing Steel: Deformed #5 bars conforming to ASTM A615, A616, or A617, grade 60.

C. <u>Curing Compound:</u> Acrylic based "non-residual" type meeting ASTM C309 Type 1 not less than 18 % to cure, harden and seal concrete.

D. <u>Lid:</u> 48" x 54" double door, aluminum lid with locking padlock bar, centered over the meters, Halliday Products Model #A4854 or approved equal. If padlock bar creates hazard, other locking mechanisms maybe considered.

E. <u>Removable Metal Ladder:</u> Removable metal ladder shall be an approved OHSA Type 1 Industrial Heavy, 250 pound aluminum ladder. Ladder must reach from the pit floor and extend into the pit opening. The bottom of the ladder shall be blocked to prevent it from kicking out but still be removable.

F. <u>Waterproofing</u>: The exterior side of the pit walls shall be waterproofed with one coat of one of the following materials applied in accordance with the Manufacturer's recommendations: Thoroseal; U.S.S. Chemical Tarmastic #102; Koppers Bitumastic Super Service Black; Damchex; Amercoat #78; or an approved equal.

Voids between pipes and chamber walls shall be grouted with a hydraulic cement such as Waterplug or an approved equal before waterproofing pit.

G. <u>Waterstop:</u> A waterstop shall be provided in the pit floor to the pit walls.

H. <u>Floor Drain:</u> Raised or beehive dome grate, 4" minimum, similar to Wade #1634; Josam #7324-N; or an approved equal.

<u>Pit Drain Line:</u> Cast iron, Schedule 40 PVC, Plastic STM #35 or ductile iron, 4" minimum.
 <u>Alternate To Pit Drain Line:</u> Electric Submersible Sump Pump, Little Giant, Big John, Stock #3P-639A Model #6-CIA or approved equal. Note: This alternative shall only be used when a

drain line is impractical as determined by the District. (See drawing #202 & Part 4 of Pit

K. <u>Packaged, Prefab Meter Vaults:</u> Packaged, prefab meter vaults are acceptable with approval from the Water District.

PART 3 - EXECUTION

3.01 <u>WORKMANSHIP</u> Earth cuts may be used for forms of base slab provided vertical sides are kept true and sharp. All embedded items, reinforcing, piping, etc. shall be secured in place prior to placing of the concrete. Concrete shall be protected from loss of moisture for a curing period of at least 7 days. All concrete shall be deposited within 1-1/2 hours following the initial mixing of water and cement. Wall finish may be a rough form finish. Top slab finish shall be wood float with tooled edges.

PART 4 - ELECTRIC SUMP PUMPS

- 4.01 <u>DESCRIPTION</u> In general the following specifications are a minimum requirements for the design and installation of Electric Submersible Sump Pumps in meter pits where a normal drain line is impractical.
- 4.02 <u>ELECTRIC WORK</u> All electric work shall be installed according to the National Electric Code and all other applicable codes. All work shall be inspected by an Electrical Inspector and certification provided to the District.
- 4.03 <u>RESPONSIBILITY</u> The property owner is responsible for providing continuous electric service for the electric sump pump at the owner's expense. The property owner shall be responsible for the maintenance and upkeep of all electrical boxes, conduit, circuit breaker box, circuit breaker, outlet and wiring outside the pit.

4.04 <u>MATERIALS</u>

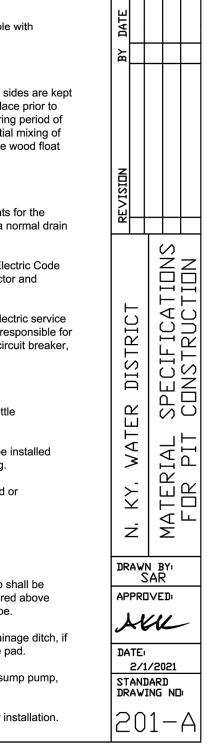
- A. <u>Electric Submersible Sump Pump</u>: Electric sump pump shall be U.L. Listed, Little Giant, Stock #3P639, Model #6-CIA.
- B. <u>Electric Junction Box:</u> Water resistant, U.L. Listed, P.V.C electrical box shall be installed on the inside of the pit on the wall closest to the sump pump nearest the ceiling.
- C. <u>Electrical Piping</u>: Electric piping shall be U.L. Listed for underground use, rigid or plastic installed at least 18" below grade.

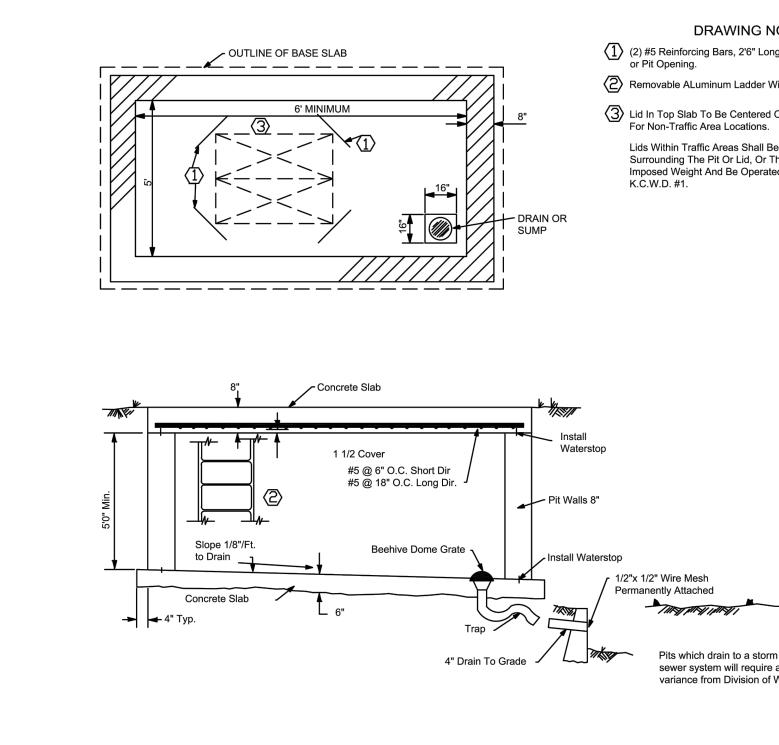
4.05 INSTALLATION

- A. <u>Sump Pump Hole:</u> A 4" deep hole shall be provided in the floor of the pit.
- B. <u>Discharge Piping:</u> Piping for the water discharge from the electric sump pump shall be plastic or copper. Minimum piping size shall be 1 1/2". A 1/8" hole shall be bored above the check valve of the discharge pipe if freezing temperatures will affect the pipe.
- C. <u>Water Discharge:</u> Water discharge shall be directed into a storm sewer or drainage ditch, if this is impractical, water discharge shall be directed on to a 16" x 16" concrete pad.
- D. <u>Electric Service Line:</u> The electric line to the pit shall be only used for the pit sump pump, no other electrical taps shall be made on this line.
- E. <u>Manufacturer Instructions:</u> Manufacturer's instructions should be followed for installation.

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	PIT CONSTRUCTION SPECIFICATIONS		
PART	ΓΙ-GENERAL		
1.01	<u>INTRODUCTION</u> Unless modified, deleted, replaced, or otherwise changed, the latest published addition of the following documents shall be the accepted standard for materials and/or procedures for the construction of meter pits: 1. Northern Kentucky Water District's Standard Drawings	1.04	EXISTING PITS Any chang piping, etc., it shall be broug the Water District.
	 Natural Resources & Environmental Protection Cabinet, Division of Water Kentucky Public Service Commission Regulations American Water Works Association Standards (AWWA) If a conflict exists between referenced sources, the more restrictive requirements shall prevail. The District shall provide interpretation as requested. 	1.05	PLANS Plans are approved rules, regulations and standa with the approved plans. Pl Engineer or Certified Fire Su be submitted for preliminary
1.02	installations:	1.06	DESCRIPTION In general the Construction may be dictated Additional provisions may be
	 A. Meter pit will not be required to be installed if the following conditions can be met: Firelines-1. An approved back flow prevention device shall be installed as the first device inside the building on the fire line before any taps or branches -and- 2. The fire department connection shall be located downstream of the approved back flow prevention device -and- 	1.07	ACCESSIBILITY OF PITS A provided. A means of acces surface at least 10' wide and
	 The domestic water service is 2" or smaller which will be installed per Standard Drawings #107, 107-A, or 108. Domestic Services 2" or smaller domestic water services shall be installed by the District per Standard Drawings #107, 107-A, or 108. 	1.08	WATER MAINS ON PRIVA property outside of normal c have proper documentation District's Standards Specific
	B. Meter pits shall be required to be installed if one or more of the following conditions exists:	1.09	HIGH PRESSURE AREAS (110 psi static pressure or h
	 Firelines The fire department connection is required by the authority having jurisdiction to be installed near the public right-of-way. An approved double check assembly shall be required to be installed per Standard Drawing #204, 206, or 207R. Domestic Services 3" or larger domestic water services shall be installed per Standard Drawings #205R, 207R, or 208. 	1.10	MAINTENANCE PERIOD T meter pit and appurtenances the date the meter pit is plac the meter pit is 100% comple
1.03	CONTRACTORS RESPONSIBILITY All work performed on any meter pit and/or appurtenances	1.11	MINIMUM REQUIREMENTS drain or sump location. Dime walls. Pit shall be drained by When a drain is not practical
	that are owned or anticipated to be owned by the District shall be completed under the direction of the District adhering to an acceptable plan approved by the District. A minimum of 24 hours notice shall be given to the District by the contractor prior to the start of work. If the interruption of service to any customer of the District is necessary, the Contractor shall make arrangements to provide such shutdown and notify District customers at the direction of the District Inspector. One set of District approved plans shall be on the job site during construction. There shall be no		Walls shall be 8" thick concre O.C. maximum, spanning in Two (2) #5 bars, two (2) feet openings. Reinforcing shall faces. Additional reinforcem
	deviation from the approved plans without written approval from the District.		Pit openings shall have lids a single person. Removable a
		1.12	METER PIT DIMENSIONS I feet; Length - 6 feet.





nanges, modifications, or alterations made to an existing pit structure, rought up to current standards. Compliance subject to the discretion of

oved subject to the conditions of compliance with all applicable laws, tandards. The proposed project may be constructed only in accordance s. Plans submitted to the District for approval shall have a Ky. Professional re Suppression Technician stamp and signature. Two sets of plans should nary review and four sets for final review.

eral the following specifications are minimum requirements as pit design. ctated by location, soil conditions, ground water, topography, etc. ay be required upon submission for approval.

<u>TS</u> Accessibility for maintenance and testing of all meter pits shall be access for maintenance vehicles shall be constructed of a hard, all weather e and designed to support the heaviest vehicle, within 15' of the pit.

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RIVATE PROPERTY Meter pits and appurtenances installed on private nal conditions which are going to be maintained by the Water District shall ation provided for all easement areas. See appropriate sections of ecifications & Drawings for the Installation of Water Mains for procedures.

<u>EAS</u> Additional requirements may be necessary for high pressure areas or higher) as determined by the District.

D The Owner shall be responsible for the maintenance of the installed inces to District Standards for a period of not less than one (1) year from placed in service by the District. Meter pits will be placed in service when ompleted to District Standards.

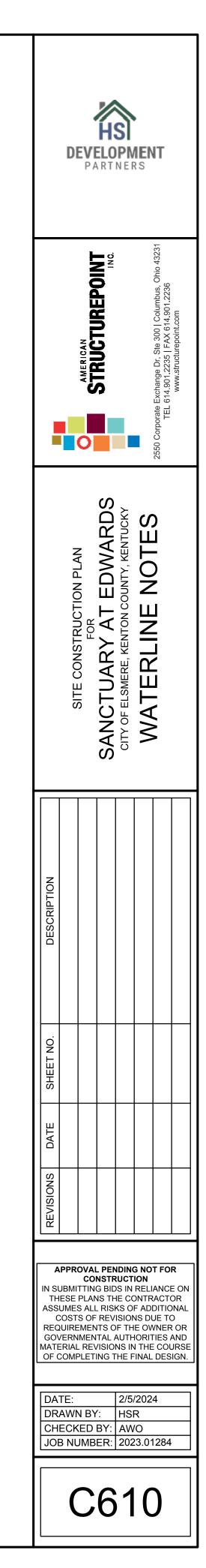
<u>ENTS</u> Floor slab shall be 6" thick concrete sloping at 1/8 inch per foot to Dimensions of slab shall be 4 inches larger all around than outside pit ed by a 4" drain or larger as required, leading to grade or a storm sewer. ctical an electric operated sump pump shall be used.

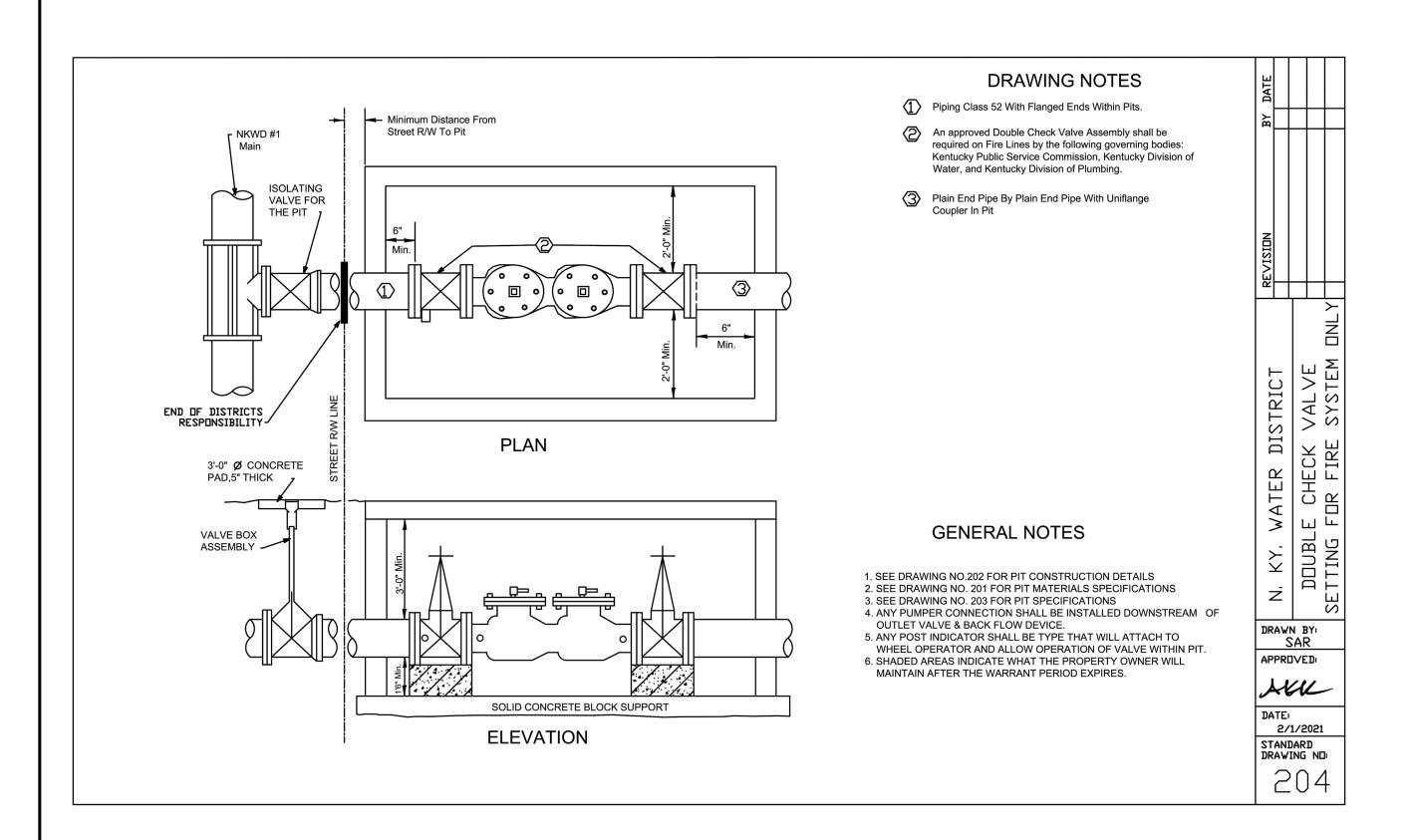
oncrete. Top slab shall be 8" thick reinforced concrete with #5 bars @6" og in short direction and #5 bars @18" O.C. maximum, in long direction. I feet long are to be placed at 45 degree to each corner of slab shall be placed 1-1/2" clear from the bottom of the slab or inside wall recement may be required.

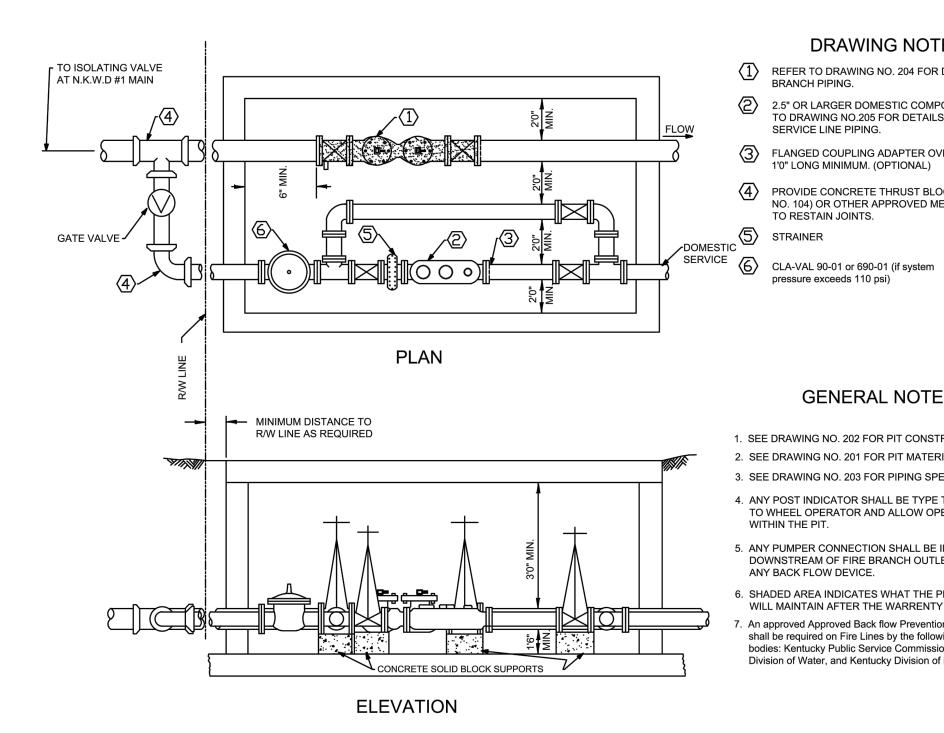
lids as indicated or as approved in traffic areas of a type operable by a ble aluminum ladders shall be furnished in all pits.

NS Minimum inside pit dimensions shall be: Height - 5 feet; Width - 5

NOTES ong @ 45 Each Corner of Lid Within Pit.	BY DATE	MPA 10/4/90		
d Over Meter(S). Lids Shown Are Be Guarded With Approved Post The Lid Shall Be Adequate To Support The ted By A Single Person As Approved By	REVISION			
	Ν. ΚΥ. ΨΑΤΕΡ ΠΙΣΤΡΙΟΙ		TYPICAL PIT DETAIL	
	DRAWN BYI SAR APPRIVEDI SAVAL			
rm e a f Water	STA DRA	2/1/ ND4 WIN		_







DRAWING NOTES

REFER TO DRAWING NO. 204 FOR DETAILS OF FIRE BRANCH PIPING.

2.5" OR LARGER DOMESTIC COMPOUND METER REFER TO DRAWING NO.205 FOR DETAILS OF DOMESTIC SERVICE LINE PIPING.

Image: Standard Coupling Adapter Over Plain End Pipe1'0" LONG MINIMUM. (OPTIONAL)

PROVIDE CONCRETE THRUST BLOCKS (SEE DRAWING NO. 104) OR OTHER APPROVED MEANS AS REQUIRED TO RESTAIN JOINTS.

pressure exceeds 110 psi)

GENERAL NOTES

1. SEE DRAWING NO. 202 FOR PIT CONSTRUCTION DETAIL. 2. SEE DRAWING NO. 201 FOR PIT MATERIALS SPECIFICATIONS. 3. SEE DRAWING NO. 203 FOR PIPING SPECIFICATIONS.

4. ANY POST INDICATOR SHALL BE TYPE THAT WILL ATTACH TO WHEEL OPERATOR AND ALLOW OPERATION OF VALVE WITHIN THE PIT.

ANY PUMPER CONNECTION SHALL BE INSTALLED DOWNSTREAM OF FIRE BRANCH OUTLET VALVE AND ANY BACK FLOW DEVICE.

6. SHADED AREA INDICATES WHAT THE PROPERTY OWNER WILL MAINTAIN AFTER THE WARRENTY PERIOD EXPIRES.

7. An approved Approved Back flow Prevention Assembly shall be required on Fire Lines by the following governing bodies: Kentucky Public Service Commission, Kentucky Division of Water, and Kentucky Division of Plumbing.



