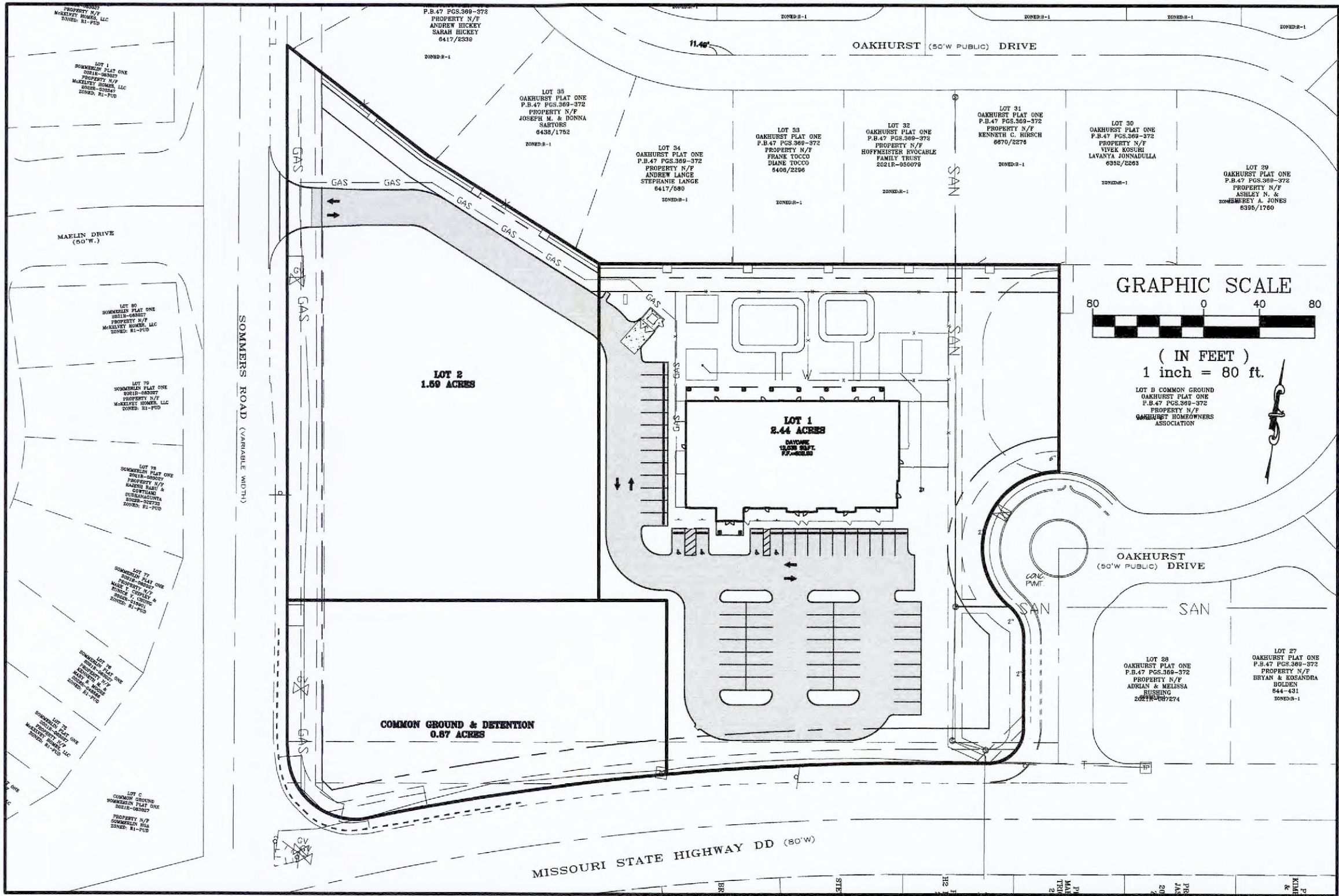




Plan View

Benchmarks

Project

REFERENCE BENCHMARK VERTICAL DATUM NAVD88 - A149 - NGS JCD 0542 - ELEVATION 630.08 US&GS BRASS VERTICAL MARK DISK STAMPED "A 149 1935" SET IN A DRILL HOLE IN THE NORTHWEST ABUTMENT OF THE NORFOLK AND WESTERN RAILROAD BRIDGE OVER BUSINESS HIGHWAY 61. DISK IS LOCATED ON THE NORTHWEST ABUTMENT 1.0 FOOT SOUTHEAST OF THE NORTHWEST END OF THE FLAT PART OF THE WING WALL; 0.75 FOOT SOUTHWEST OF THE NORTHEAST EDGE OF THE WING WALL; 6.9 FEET NORTH OF THE NORTH RAIL AND ABOUT 4.9 FEET LOWER THAN THE TRACKS.

Site

SITE BENCHMARK-"O" IN OPEN ELEV=596.08'

THE SITE BENCHMARK IS "O" IN OPEN ON A FIRE HYDRANT LOCATED ALONG THE SOUTH PROPERTY LINE OF OUTLOT A OF "OAKHURST PLAT ONE", EAST OF THE INTERSECTION OF MISSOURI STATE HIGHWAY DD AND THE SOMMERS ROAD.

GRADING QUANTITIES:

5,119 C.Y. CUT (INCLUDES SUBGRADES)
5,119 C.Y. FILL (INCLUDES 8% SHRINKAGE)
0 C.Y. BALANCE

THE ABOVE GRADING QUANTITY IS APPROXIMATE ONLY, NOT FOR BIDDING PURPOSES. CONTRACTOR SHALL VERIFY QUANTITIES PRIOR TO CONSTRUCTION.

VEGETATION ESTABLISHMENT For Urban Development Sites APPENDIX A

SEEDING RATES:

PERMANENT:
Tall Fescue - 150 lbs./ac.
Smooth Brome - 100 lbs./ac.
Combined - Fescue @ 75 lbs./ac. AND Brome @ 50 lbs./ac.

TEMPORARY:
Wheat or Rye - 150 lbs./ac. (3.5 lbs. per 1,000 s.f.)
Oats - 120 lbs./ac. (2.75 lbs. per 1,000 s.f.)

SEEDING PERIODS:
Fescue or Brome - March 1 to June 1
Wheat or Rye - August 1 to October 1
Oats - March 15 to November 1
March 15 to September 15

MULCH RATES:
100 lbs. per 1000 sq. ft. (4,356 lbs. per ac.)

FERTILIZER RATES:
Nitrogen 30 lbs./ac.
Phosphate 30 lbs./ac.
Potassium 30 lbs./ac.
Lime 600 lbs./ac. ENM*

* ENM = effective neutralizing material as per State evaluation of quarried rock.

AS-BUILT PUBLIC UTILITY FINAL MEASUREMENTS

SURVEYOR'S CERTIFICATION

THE FOLLOWING UTILITIES HAVE BEEN LOCATED AND MEASURED AND THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS:

- STORM SEWERS, STORM SEWER LENGTHS, STORM SEWER PIPE SIZES, STORM SEWER FLOWLINES AND DEPTHS OF STORM SEWER STRUCTURES.
- SANITARY SEWERS, SANITARY SEWER LENGTHS, SANITARY SEWER PIPE SIZES, SANITARY SEWER FLOWLINES AND DEPTHS OF SANITARY SEWER STRUCTURES.
- WATER VALVES
- FIRE HYDRANTS
- ELECTRIC TRANSFORMERS AND LIGHTS
- TOPOGRAPHY AND CROSS SECTIONS OF BIORETENTION BASIN WITHIN COMMON GROUND A UTILITY AND DETENTION EASEMENT.

ALL PUBLIC UTILITIES SHOWN HEREON AS BEING AS-BUILT ARE LOCATED WITHIN DESIGNATED EXISTING OR PROPOSED EASEMENTS.

THE SURVEYOR DOES NOT CERTIFY TO ANY OTHER ASPECT OF THESE PLANS.

ANDY D. BECK
MISSOURI PROFESSIONAL
LAND SURVEYOR #2015017835

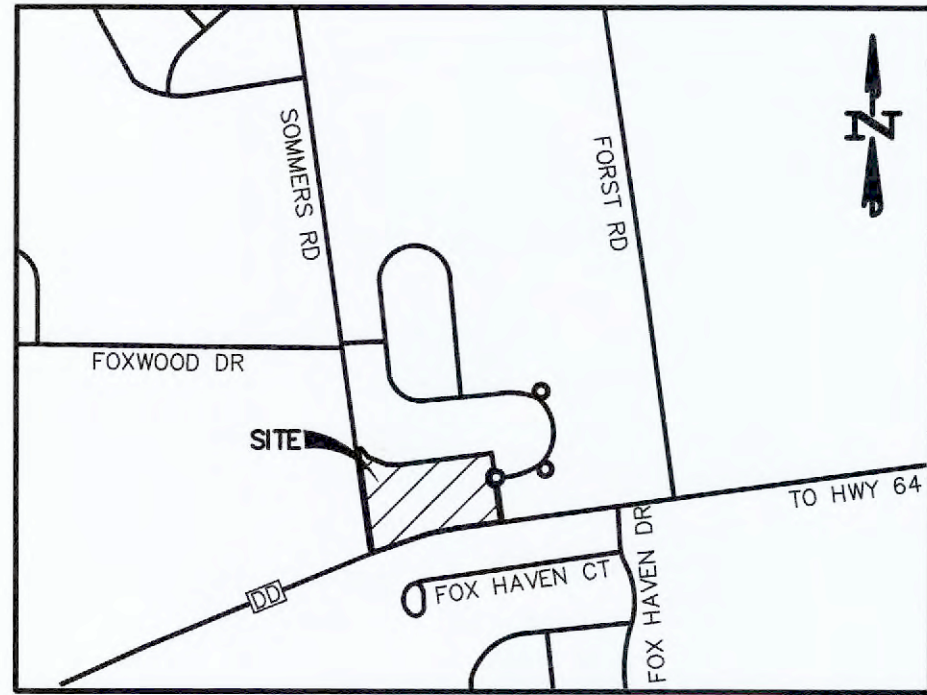


AS-BUILT PLANS FOR CHILDREN'S LIGHTHOUSE EARLY LEARNING CENTER

A TRACT OF LAND BEING PART OF
OUTLOT A OF "OAKHURST PLAT ONE",
PLAT BOOK 47 PAGES 369-372,
WITHIN U.S. 1778, TOWNSHIP 46 NORTH, RANGE 2 EAST
TOWNSHIP 46 NORTH, RANGE 2 EAST
CITY OF O'FALLON, ST. CHARLES COUNTY, MISSOURI

Conditions of Approval From Planning and Zoning

1. PROVIDE A PHOTOMETRIC PLAN.
2. EXTEND THE PROPOSED BUFFER FENCE TO THE EASTERN PROPERTY LINE.
3. PROVIDE HVAC SCREENING DETAILS
4. PROVIDE A CONTRIBUTION FOR A SIDEWALK ALONG SOMMERS ROAD
5. PROVIDE A CONCRETE ADA ACCESSIBLE PEDESTRIAN WALKWAY FROM THE BUILDING TO THE WALKWAY ALONG OAKHURST DRIVE.
6. PROVIDE APPROVAL FROM ST. CHARLES COUNTY FOR THE CONNECTION TO SOMMERS ROAD.
7. ADD A SIDEWALK CONNECTION FROM THE TRAIL TO THE BUILDING.
8. THE BUFFERYARD FENCE AND LANDSCAPING SHOWN ON LOT 2 SHALL BE INSTALLED IN CONJUNCTION WITH THE DEVELOPMENT OF LOT 1.



Locator Map
NOT TO SCALE

LEGEND

	SANITARY SEWER MANHOLE		UTILITY BOX
	FLARED END SECTION		FOUND MONUMENT
	CURB/AREA INLET		SET MONUMENT
	GRATED INLET		GRAVEL
	ELECTRIC BOX		ASPHALT
	TELEPHONE CABLE PEDESTAL		CONCRETE
	TELEPHONE BOX		BURIED ELECTRIC
	ELECTRIC METER		OVERHEAD UTILITIES
	GAS METER		BURIED GAS
	WATER METER		BURIED WATER
	MAILBOX		BURIED FIBER OPTIC
	POWER POLE		BURIED TELEPHONE
	GUY WIRE		SANITARY SEWER
	TREE		FENCE LINE
	BENCHMARK		BORE HOLE

PUBLIC WATER SUPPLY DISTRICT NO. 2

1. ALL WATER SERVICE LINES, FIRE LINES, AND PRIVATE WATER MAINS MUST BE INSTALLED PER PWSO NO. 2 SPECIFICATIONS.
2. PWSO NO. 2 REQUIRES ONE (1) WEEK NOTICE PRIOR TO THE START OF CONSTRUCTION.
3. ALL METER PITS/VAULTS ARE TO BE INSTALLED IN GREEN SPACE PER PWSO NO. 2 SPECIFICATIONS.
4. ALL PRIVATE FIRE HYDRANTS MUST BE PAINTED RED PER PWSO NO. 2 SPECIFICATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL MDDOT AND CITY PERMITS REQUIRED TO WORK ALONG THE ROADWAYS.
6. ALL OFFSITE RESTORATION MUST BE REPAIRED WITH SOD UNLESS OTHERWISE REQUESTED FROM THE PROPERTY OWNERS.
7. THE PROPOSED PRIVATE WATER SYSTEM WILL REQUIRE TESTING PER PWSO NO. 2 SPECIFICATIONS BEFORE IT IS ALLOWED INTO SERVICE.

SEE SHEET 18 FOR PWSO No. 2 WATER DETAILS

DUCKETT CREEK SANITARY DISTRICT CONSTRUCTION NOTES

1. Underground utilities have been plotted from available information and therefore location shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor and shall be located prior to any grading or construction of improvements.
2. Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary and storm sewers, including house laterals.
3. All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match preconstruction conditions.
4. All fill including places under proposed storm and sanitary sewer lines and paved areas including trench backfills within and off the road right-of-way shall be compacted to 90 percent of maximum density as determined by the "Modified AASHTO T-190 Compaction Test (ASTM D1557)". All tests shall be verified by a Soils Engineer concurrent with grading and backfilling operations. The compacted fill shall be free of rutting and shall be non-yielding and non-pumping during proofrolling and compaction.
5. The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system. The contractor will be required to install a brick bulkhead on the downstream side of the first new manhole constructed when connecting into existing sewers.
6. All sanitary sewer flowlines and tops built without elevations furnished by the engineer will be the responsibility of the sewer contractor.
7. It is the responsibility of the contractor to adjust all sanitary sewer manholes (that are affected by the development) to finish grade.
8. Easements shall be provided for all sanitary sewers, storm sewers and all utilities on the record plat.
9. All sanitary sewer construction and materials shall conform to the current construction standards of the Duckett Creek Sanitary District.
10. The Duckett Creek Sanitary District shall be notified at least 48 hours prior to construction for coordination of inspection.
11. All sanitary sewer building connections shall be designed so that the minimum vertical distance from the low point of the basement to the flowline of a sanitary sewer at the corresponding building connection shall not be less than the diameter of the pipe plus the vertical distance of 2 1/2 feet.
12. All sanitary sewer manholes shall be watertight in accordance with Missouri Dept. of Natural Resources specification 10 CSR 20-812(6)(F) 1.
13. All PVC sanitary sewer pipe shall conform to the requirements of ASTM D-3034 Standard Specification for PSM Polyvinyl Chloride Sewer Pipe, SDI-35 or equal, with "clean" 1/2 inch to 1 inch granular stone bedding uniformly graded. This bedding shall extend from 4 inches below the pipe to springline of pipe. Immediate backfill over pipe shall consist of some size "clean" or "minus" stone from springline of pipe to 6 inches above the top of pipe. Final backfill material shall be of suitable material removed from excavation except as other material is specified. Debris, frozen material, large rocks or stones, or other unsuitable materials shall not be used within 2 feet from top of pipe.
14. All sanitary and storm sewer trench backfills shall be water jetted. Granular backfill will be used under pavement areas.
15. All pipes shall have positive drainage through manholes. Flat invert structures not allowed.
16. Epoxy Coating shall be used on all sanitary sewer manholes that receive pressurized mains.
17. All creek crossings shall be lined with rip-rap as directed by District inspectors.
18. Brick shall not be used on sanitary sewer manholes.
19. Existing sanitary sewer service shall not be interrupted.
20. Maintain access to existing residential driveways and streets.
21. Pre-manufactured adapters shall be used at all PVC to DIP connections. Rubber boot 1 Mission-type couplings will not be allowed.
22. Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
23. "Type N" Lock-Type Cover and Locking Device (Lock-Lug) shall be used where lock-type covers are required.
24. All sanitary sewer system work shall be conducted under the inspection of a representative of the District. All work may not require inspection but the District's representative may designate specific areas that must be inspected before the work is backfilled. All testing must be witnessed by the District's Inspector and the Contractor shall furnish all testing equipment as approved by the District. Testing shall include:
 - A mandrel test of all gravity sewers using a mandrel with a diameter that has a diameter 95% of the inside pipe diameter. If the mandrel test fails on any section of pipe, that section of pipe shall be uncovered and replaced. No expansion devices will be allowed to be used to "force" the pipe that is deformed back into round. Any string lines used in mandrel testing shall be removed after testing is completed. Deflection testing cannot be conducted prior to 30 days after final backfill.
 - An air pressure test of all gravity sewers to a pressure of 5 PSI with no observed drop in pressure during a test period of 5 minutes.
 - A vacuum test of all manholes for a period of 1 minute and the vacuum shall be 10" of mercury and may not drop below 9" of mercury at the end of the 1 minute test.

DEVELOPMENT NOTES

1. AREA OF TRACT: 4.97 ACRES
PROPOSED LOT 1 - 2.44 ACRES
PROPOSED LOT 2 - 1.63 ACRES
PROPOSED COMMON GROUND - 0.90 ACRES
2. ZONING: C-2 GENERAL BUSINESS DISTRICT
3. SETBACKS FOR C-2 ZONING GENERAL BUSINESS DISTRICT:
MINIMUM FRONT YARD: 25 FEET
MINIMUM SIDE YARD: 0 FEET (IF ABUTS RESIDENTIAL/OFFICE ZONING THEN SAME AS RESIDENTIAL/OFFICE SIDE SETBACK - 6 FEET)
MINIMUM REAR YARD: 0 FEET (IF ABUTS RESIDENTIAL/OFFICE THEN 10 FEET)
MAXIMUM BUILDING HEIGHT: 50 FEET
4. WE HAVE DETERMINED THE HORIZONTAL LOCATION OF THIS TRACT OF LAND IN ST. CHARLES COUNTY, MO. BY SCALING THE PROPERTY IN REFERENCE TO THE "FLOOD INSURANCE RATE MAP (FIRM), ST. CHARLES COUNTY, MISSOURI AND INCORPORATED AREAS", PANEL 410 OF 525, MAP NUMBER 29183500410 E (CITY OF O'FALLON COMMUNITY PANEL NUMBER 290316 0410 E) WITH AN EFFECTIVE DATE OF AUGUST 2, 1996, BY EXPRESS REFERENCE TO THIS MAP AND ITS LEGEND. THIS TRACT IS INDICATED TO BE WITHIN THE FOLLOWING ZONE(S): ZONE X, ZONE X IS DEFINED AS AN AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
5. CURRENT LAND OWNER: HIGHWAY DD INVESTMENT GROUP LLC
1480 WOODSTONE DRIVE, SUITE 215
ST. CHARLES, MO 63304
6. PARKING REQUIRED:
DAYCARE AND PRE-SCHOOLS
ONE (1) SPACE PER SIX (6) PUPILS, PLUS ONE (1) SPACE PER EMPLOYEE, BASED UPON THE MAXIMUM NUMBER OF PUPILS FOR WHICH THE FACILITY IS LICENSED BY THE STATE OF MISSOURI:
198 PUPILS / 6 = 33 SPACES REQUIRED
30 EMPLOYEES = 30 SPACES REQUIRED
TOTAL PARKING REQUIRED = 63 SPACES
TOTAL PARKING PROVIDED = 64 SPACES INCLUDING 4 ADA
BICYCLE PARKING SPACES @ 1 PER 15 VEHICLE PARKING SPACES
64/15=4.26~5 BICYCLE PARKING SPACES REQUIRED AND PROVIDED
7. ALL PAVING TO BE IN ACCORDANCE WITH THE CITY OF O'FALLON STANDARDS AND SPECIFICATIONS.
8. SIDEWALKS, CURB RAMPS, RAMP AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAG) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, AND SPECIFICATIONS AND SIGNAGE.
9. A PHOTOMETRIC PLAN WILL BE SUBMITTED WITH THE CONSTRUCTION PLANS. LIGHTING VALUES WILL BE REVIEWED ON SITE PRIOR TO THE FINAL OCCUPANCY INSPECTION. CORRECTIONS WILL NEED TO BE MADE IF NOT IN COMPLIANCE WITH CITY STANDARDS. ALL LIGHTING TO BE DOWNCAST.
10. ALL PROPOSED UTILITIES AND/OR UTILITY RELOCATIONS SHALL BE LOCATED UNDERGROUND.
11. LANDSCAPING REQUIREMENTS: SEE LANDSCAPE PLAN BY LANDSCAPE ARCHITECT FOR CALCULATIONS AND PLAN.
12. THE MAXIMUM SLOPE SHALL BE 3:1.
13. ALL HVAC AND MECHANICAL UNITS ON SITE SHALL BE PROPERLY SCREENED AS REQUIRED BY CITY CODE 400.278. ROOFTOP UNITS SHALL BE SCREENED BY A PARAPET WALL THAT EXTENDS AROUND THE ENTIRE PERIMETER OF THE BUILDING; THE PARAPET SHALL HAVE A MINIMUM HEIGHT THAT IS AT LEAST AS TALL AS THE TALLEST UNIT MOUNTED ON THE ROOF; GROUND MOUNTED HVAC AND MECHANICAL UNITS SHALL BE SCREENED BY FENCING, VEGETATION, OR SOME OTHER MEANS (APPROVED BY THE PLANNING AND ZONING COMMISSION) THAT HAS A MINIMUM HEIGHT THAT IS AT LEAST AS TALL AS THE TALLEST UNIT BEING SCREENED.
14. ANY PROPOSED SIGNAGE SHALL BE REVIEWED UNDER A SEPARATE PERMIT PROCESS.

Utility Contacts

Sanitary Sewer
DUCKETT CREEK SEWER DISTRICT
3550 Highway K
O'Fallon, MO. 63368
636-441-1244

Water
PUBLIC WATER SUPPLY DISTRICT No. 2
100 Water Drive
O'Fallon, MO. 63368
636-561-3737

Fire Department
Wentzville Fire Protection District
209 W. Pearce Blvd.
O'Fallon, MO. 63365
636-327-6239

Electric
CURVE RIVER ELECTRIC COOPERATIVE
8757 Highway N
Lake Saint Louis, MO. 63367
636-685-4700

Gas
Spiral
Trade Center Drive
St. Peters, MO. 63376
314-978-2663

Telephone
Centurylink
1151 Century Tel. Dr.
Wentzville, MO. 63365
636-332-7261

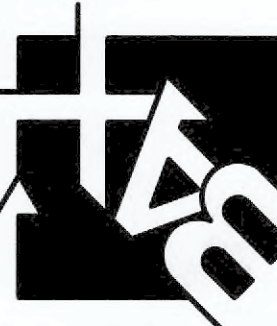
Charter Communications
941 Charter Commons
Town & Country, MO 63017
1-888-436-2427

PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
636-928-5652
FAX 928-1718



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

Copyright 2023
Box Engineering Company, Inc.
Authority No. 000655
All Rights Reserved

REVISIONS

3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:

JAFFER LLC, ASHLEY FANGMANN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

COVER SHEET

P+Z No. # 23-004744

Approval Date: July 6, 2023

City No. #

Page No.

1 of 22



CALL BEFORE
YOU DIG!
1-800-DIG-RITE

*FIBER OPTICS ARE PRESENT

GENERAL NOTES

1. Driveway locations shall not interfere with the sidewalk handicap ramps, or curb inlet sumps
2. Sidewalks, curb ramps, ramps and accessible parking spaces shall be constructed in accordance with the current approved "American with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer.
- 2.1. Truncated domes for curb ramps located in public right of way shall meet PROWAG requirements and shall be constructed using red pre-cast truncated domes per pavement details.
3. Any proposed pavilions or playground areas will need a separate permit from the Building Division.
4. The Contractor is responsible to call Missouri One Call and The City of O'Fallon for the location of utilities. Contact the City of O'Fallon (636) 379-3814 for the location of City maintained cable for street lights and traffic signals, all other utilities call Missouri One Call 1-800-DIG-RITE. 1-800-344-7483
5. All proposed utilities and/or utility relocations shall be located underground.
6. All proposed fencing requires a separate permit through the Building Safety Division.
7. All construction operations and work zone traffic control within the right of way will follow MoDOT or M.U.T.C.D. standards whichever is more stringent.
8. (INTENTIONALLY OMITTED)
9. All subdivision identification or directional sign(s) must have the locations and sizes approved and permitted separately through the Planning and Development Division.
10. If Materials such as trees, organic debris, rubble, foundations, and other deleterious material shall be removed from the site and disposed of in compliance with all applicable laws and regulations. If the material listed previously are reused, a letter from a soil Engineer must clarify amount, location, depth, etc. and be approved with the construction plans. Landfill tickets for such disposal shall be maintained on file by the developer. Burning on site shall be allowed only by permit from the local fire district. If a burn pit is proposed the location and mitigation shall be shown on the grading plan and documented by the soils engineer.
11. Twenty-four (24) hours prior to starting any of the work covered by the above plans and after approval thereof, the developer shall make arrangements with the Construction Inspection Office to provide for inspection of the work, sufficient in the opinion of the City Engineer, to assure compliance with the plans and specifications as approved.
12. The City Engineer or their duly authorized representative shall make all necessary inspections of City infrastructure, escrow items or infrastructure located on the approved plans.
13. All installations and construction shall conform to the approved engineering drawings. However, if the developer chooses to make minor modifications in design and/or specifications during construction, he/she shall make such changes at his/her own risk, without any assurance that the City Engineer will approve the completed installation or construction. It shall be the responsibility of the developer to notify the City Engineer of any changes from the approved drawings. The developer may be required to correct the installed improvements so as to conform to the approved engineering drawings. The developer may request a letter from the Construction Inspection Division regarding any field changes approved by the City inspectors.
14. City approval of the construction site plans does not mean that any building can be constructed on the lots without meeting the building setbacks as required by the zoning code.

Grading Notes

1. Developer must supply City Construction Inspectors with an Engineer's soil reports prior to and during site grading. The soil report will be required to contain the following information on soil test curves (Proctor reports) for projects within the City:
 - 1.1. Maximum dry density
 - 1.2. Optimum moisture content
 - 1.3. Maximum and minimum allowable moisture content
 - 1.4. Curve must be plotted to show density from a minimum of 90% Compaction and above as determined by the "Modified AASHTO T-180 Compaction Test" (A.S.T.M.-D-1157) or from a minimum of 95% as determined by the "Standard Proctor Test ASSHTO T-99, Method C" (A.S.T.M.-D-698). Proctor type must be designated on document.
 - 1.5. Curve must have at least 5 density points with moisture content and sample locations listed on document
 - 1.6. Specific gravity
 - 1.7. Natural moisture content
 - 1.8. Liquid limit
 - 1.9. Plastic limitBe advised that if this information is not provided to the City's Construction Inspector the City will not allow grading or construction activities to proceed on any project site.
2. All fill placed in areas other than proposed storm sewers, sanitary sewers, proposed roads, and paved areas shall be compacted from the bottom of the fill up in 8" lifts and compacted to 90% maximum density as determined by Modified AASHTO T-180 compaction test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99. Ensure the moisture content of the soil in fill areas corresponds to the compactive effort as defined by the Standard or Modified Proctor Test. Optimum moisture content shall be determined using the same test that was used for compaction. Soil compaction curves shall be submitted to the City of O'Fallon prior to the placement of fill.
3. The surface of the fill shall be finished so it will not impound water. If at the end of a days work it would appear that there may be rain prior to the next working day, the surface shall be finished smooth. If the surface has been finished smooth for any reason, it shall be scarified before proceeding with the placement of succeeding lifts. Fill shall not be placed on frozen ground, nor shall filling operations continue when the temperature is such as to permit the layer under placement to freeze.
4. All sediment and detention basins are to be constructed during the initial phase of the grading operation or in accordance with the approved SWPPP.
5. When grading operations are complete or suspended for more than 14 days, permanent grass must be established at sufficient density to provide erosion control on site. Between permanent grass seeding periods, temporary cover shall be provided according to Missouri Department of Natural Resources Protecting Water Quality - a field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas.All finished grades (areas not to be disturbed by improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at a rate of 100 pounds per 1000 square feet when seeded.
6. No slopes shall exceed 3 (horizontal): 1 (vertical) unless otherwise approved by the soils report and specifically located on the plans and approved by the City Engineer.
7. All low places whether on site or off shall be graded to provide drainage with temporary ditches.
8. Any existing wells and/or springs which may exist on the property must be sealed in a manner acceptable to the City of O'Fallon Construction Inspection Department and following Missouri Department of Natural Resources standards and specifications.
9. (INTENTIONALLY OMITTED)
10. All trench back fills under paved areas shall be granular back fill, and compacted mechanically. All other trench back fills may be earth material (free of large clods, or stones) and compacted using either mechanical tamping or water jetting. Granular material and earth material associated with new construction outside of pavements may be jetted, taking care to avoid damage to newly laid sewers. The jetting shall be performed with a probe route on not greater than 7.5 foot centers with the jetting probe centered over and parallel with the direction of the pipe. Trench widths greater than 10 feet will require multiple probes every 7.5 foot centers.
- 10.1. Depth, Trench back fills less than 8 feet deep shall be probed to a depth extending half the depth of the trench back fill, but not less than 3 feet. Trench back fill greater than 8 feet in depth shall be probed to half the depth of the trench back fill but not greater than 8 feet.
- 10.2. Equipment. The jetting probe shall be a metal pipe with an interior diameter of 1.5 to 2 inches.
- 10.3. Method. Jetting shall be performed from the lowest surface topographic point and proceed toward the highest point, and from the bottom of the trench back fill toward the surface. The flooding of each jetting probe shall be started slowly allowing slow saturation of the soil. Water is not allowed to flow away from the trench without first saturating the trench.
- 10.4. Surface Bridging. The contractor shall identify the locations of the surface bridging (the tendency for the upper surface to crust and arch over the trench rather than collapse and consolidate during the jetting process). The contractor shall break down the bridged areas using an appropriate method such as wheels or bucket of a backhoe. When surface crust is collapsed, the void shall be back filled with the same material used as trench back fill and re-jetted. Compaction of the materials within the sunken/jetted area shall be compacted such that no further surface subsidence occurs.
11. Site grading.
 - 11.1. Within City right-of-way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed every two hundred fifty (250) feet along the centerline for each lift.
 - 11.2. Outside of City right-of-way. Material is to be placed in eight (8) inch to twelve (12) inch loose lifts and compacted per the approved compaction requirements. One (1) compaction test will be performed at two (2) foot vertical intervals and approximately every one thousand (1,000) cubic yards.
12. Access to the site from any other location other than the proposed construction entrance is strictly prohibited!



CALL BEFORE
YOU DIG!
1-800-DIG-RITE

*FIBER OPTICS ARE PRESENT

Erosion Control Notes

1. The Permittee shall assume complete responsibility for controlling all siltation and erosion of the project area. The Permittee shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with the clearing operations and be maintained throughout the project until acceptance of the work by City of O'Fallon and as needed by MoDOT. The Permittee's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The City of O'Fallon and as required by MoDOT may at their option direct the Permittee in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement shall be removed immediately. Any depositing of silts or mud in new or existing storm sewers and/or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the City of O'Fallon and as required by MoDOT."
2. All erosion control systems are to be inspected and corrected weekly, especially within 48 hours of any rain storm resulting in one-quarter inch of rain or more. Any silt or debris leaving the site and affecting public right of way or storm water drainage facilities shall be cleaned up within 24 hours after the end of the storm.
3. Erosion control devices (silt fence, sediment basin, etc.) shall be in accordance with Missouri Department of Natural Resources Protecting Water Quality - a field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas.
4. This development is required to provide long term post construction BMP's such as; low impact design, source control and treatment controls that protects water quality and controls run off to maximum extent practical in compliance with Phase II Illicit Storm Water Discharge Guidelines. (Ord. 5082, section 405.245)
5. Graded areas shall be seeded and mulched (strawed) within 14 days of stopping land disturbance activities. Unless it can be shown to the City Engineer that weather conditions are not favorable, vegetative growth is to be established within 6 weeks of stopping grading work on the project. The vegetative growth established shall be sufficient to prevent erosion and the standard shall be as required by EPA and DNR. (70% coverage per square foot) Ord. 6496, Section 405.095

Storm Sewer Notes

1. All Storm Sewer installation is to be in accordance with M.S.D. standards and specifications except as modified by the City of O'Fallon ordinances.
2. Brick shall not be used in the construction of storm sewer structures. Pre cast concrete structures are to be used unless otherwise approved by the City of O'Fallon.
3. A 5/8" trash bar shall be installed horizontally in the center of the opening(s) in all curb inlets and area inlets.
4. (INTENTIONALLY OMITTED)
5. Encase with concrete both sanitary and storm sewer at crossing when storm sewer is within 18 inches above sanitary sewer. Add concrete cradle to only RCP storm sewer and encase flexible storm sewer when it is more than 18 inches above sanitary line. Show on profile sheet.
6. The storm sewers should run diagonally through the side yards to minimize any additional utility easements required.
7. All concrete pipes will be installed with O-ring rubber type gaskets.
8. Connections at all storm structures are to be made with A-lock joint or equal.
9. Pre cast concrete inlet covers are not to be used.
10. The swale in the detention basins shall have a minimum 2% longitudinal slope and be lined with a permanent erosion control blanket that will allow infiltration of storm water.
11. All structures and flared end sections must be concrete. H.D.P.E. pipe will not be allowed for detention basin outflows, final pipe run to detention basins, creek discharge or other approved means.
12. (INTENTIONALLY OMITTED)
13. Rip rap shown at flared end sections will be evaluated in the field by the Engineer, Contractor, and City Inspectors after installation for effectiveness and field modified, if necessary to reduce erosion on and off site.
14. Add 1" minus rock back fill to all storm sewer that lie within the 1:1 shear plane of the road.
15. (INTENTIONALLY OMITTED)

Manufacturer	Size	Adhesive	Style	Message (Part #)	Website
ACP International	3 7/8"	Epoxy	Crystal Cap	No Dumping Drains to Waterway (SD-W-CC)	www.acpinternational.com
DAS Manufacturing, Inc.	4"	Epoxy	Standard	No Dumping Drains to Stream (#SDS)	www.dasmanufacturing.com

Retaining Walls: Terraced and Vertical

1. A permit is required for all retaining walls that are 48 inches or taller in height, measured from the top of the footing to the top of the wall or for walls that support a surcharge load or that alters the channelized drainage of any lot or drainage area.
2. Retaining walls will not be allowed in public right-of-way without written approval from the City Engineer.
3. Any retaining wall more than thirty (30) inches tall which supports a walking surface that is within two (2) feet of the wall will require a guard on the retaining wall.
4. Retaining walls that alter the channelled drainage of any lot or drainage area shall not be constructed without prior approval and permitting from the City of O'Fallon Engineering Department regardless of the height of the wall.
5. See section 405.275 of the City code for additional design requirements.

Water Notes

1. Fire hydrants shall be a maximum of 600' apart. Local fire district approval is required.
2. Coordinate with the water company on the location of water meters. For meters in the City's district, meters shall be in the right-of-way, otherwise an access easement from the right-of-way shall be provided.
3. All water main must have a minimum of 42" of cover. (City water mains)
4. Provide water valves to isolate the system.
5. All water mains shall be class 200 SDR 21 or equal with locator/tracer wires
6. If the excavations are made in the improved portion of the right-of-way, twelve inches of granular backfill will be placed over exposed facilities and controlled low strength material (CLSM) aka flowable fill will fill the hole with eight inches of the finished surface for concrete pavement. There will be a plastic membrane placed between the rock base and the CLSM to prevent the material from bleeding into the rock base. The remaining eight inches will be restored by placing a 28 day, 4,000 psd concrete mix.
7. DISINFECTING: Disinfecting shall be accomplished by placing sufficient hypo chlorite granule (HTH) in each section of pipe to achieve a chlorine residual in the pipeline, upon initial filling, of 50 mg/L (PPM). HT tablets will not be allowed. Following completion of the pipeline, it shall be slowly filled with water and a sample will be taken immediately and the chlorine residual must be 50 mg/L or greater. The solution shall be allowed to stand for 24 hours and a sample shall then be taken. The chlorine residual after 24 hours shall be 30 mg/L or greater. If the piping shows insufficient chlorine residuals in either test, the piping shall be re-chlorinated by the injection of hypo chlorite solution until satisfactory results are achieved. All disinfecting shall be done by the contractor. Only the testing to determine the chlorine residual will be done by the City.
8. PRESSURE TESTING: Immediately following disinfection, the piping shall be pumped to a pressure (at the HIGHEST point in the project) of 150 psi or higher where the working pressure is higher than 150 PSI as determined by the City. In such cases, the pressure shall be as specified by the City and two pressure tests shall be conducted. The first test shall be with the fire hydrant auxiliary valve open and be to 50 PSI. The second test shall be with the fire hydrant auxiliary valve closed and be to the higher pressure as directed by the City. All pumping equipment and pressure gauges shall be provided by the contractor. After achieving the test pressure, the piping shall be left closed for a period of two (2) hours. At the end of this time the pressure drop shall not exceed 2 psi. In addition, if the pressure appears, in judgment of the City's representative, to be continuing to drop, the test shall be continued for another two (2) hours and if any further drops occur, the test shall be considered a failure. If the pressure test fails, the contractor will be required to find and correct the source of the leakage. If this requires draining of the pipeline when the leakage is corrected, the pipeline must be re-disinfected and the pressure tested again until satisfactory result are achieved. Any MDNR required dechlorination will be performed by the contractor.
9. All tops for valves, meters, and manholes are to be constructed to within 1 inch (0.08') of finish grade. Grading around structure tops on slopes need to be accounted for.
10. BACTERIOLOGICAL TESTING: After satisfactory disinfection and pressure testing, a sample shall be taken by the contractor in the presence of a City representative and submitted to a laboratory approved by the Missouri Department of Natural Resources and the City for bacteriological analysis. After 24 hours, a second sample shall be taken in a like manner and submitted for analysis. The two samples taken on consecutive days ,a minimum of 24 hours apart, must be found to be "safe" by the testing laboratory, and copies of the test results must be supplied to the City. If the samples are not found to be "safe" further flushing and/or disinfection as directed by the City shall be conducted by the contractor until "safe" samples on two consecutive test days are achieved. Following successful bacteriological testing and a determination by the City that the samples are "safe", the mains may be placed into service.

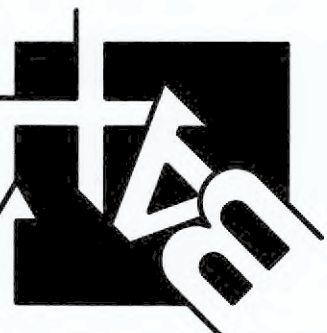
Roadway Notes

1. All paving (public and private) to be in accordance with St. Louis County Standards and Specifications except as modified by the City of O'Fallon ordinances.
2. If the intersecting road does not have a curb, then the curb on the new entrance shall begin 10' from the edge of the existing road.
3. Provide 6" of concrete over 5" of aggregate base rock or asphalt equivalent for minor residential streets per City Code 405.370.
- 3.1. Rock to meet the all the requirements of MoDOT type 5 rock with a tighter restriction on the fines being that no more than ten percent (10%) fines shall pass a no. 200 sieve. (City Code 405.210.B.1) The gradation of this rock needs to be submitted to the City for approval. Any deliveries made without the proper delivery ticket, including signature, will not be accepted. The delivery ticket must list the project name or jobsite location. A separate certification sheet may be provided attached to the delivery ticket with a signature of the company's quality control manager. The quality control certification must be current and dated within 4 weeks of the delivery. (City Code 405.210.A.2.k)
4. Multi-use trail (when required) Shall have a minimum of 3" Type "C" Asphalt over 4" aggregate base per City requirements.
5. Type C (BP-1) Compaction requirements shall be 98% minimum density according to St. Louis Co. Standard Specifications.
6. Provide pavement striping at any point where the multi-use trail crosses existing or proposed pavement
7. All street stub-outs over 250' in length will require a temporary turnaround.
8. All sub grade in cut or fill will need to conform to the City of O'Fallon Compaction requirements
9. Material Testing And Frequency. Materials for construction shall be tested and inspected per the appropriate ASTM code or at the City Engineer's discretion. The developer's engineer shall perform quality control guidelines, in accordance with St. Louis County requirements 501.3.1.
10. Approval Of Sub grade And Base (Sub base). The City Engineer or representative shall approve the sub grade before any base is placed thereon and shall approve the base before concrete or surface course is placed. The sub grade and base shall be so constructed that it will be uniform in density throughout.
11. In all fill areas in the roadways, soil tests shall be submitted and approved by the City Engineer for each foot of fill and at least one (1) test and an average of one (1) test within every two hundred fifty (250) feet.
12. No traffic will be allowed on new concrete pavement until it has cured for seven (7) days and it reaches three thousand five hundred (3,500) psi within 28 days.
- 12.1. Concrete pavements shall not be approved unless it reaches a strength of four thousand (4,000) psi. Cylinders/compressive strength. One (1) set of four (5) cylinders within the first fifty (50) cubic yards and one (1) set per one hundred (100) cubic yards thereafter. One (1) cylinder must be tested at seven (7) days, three (3) at twenty-eight (28) days, and one (1) held in reserve.
13. Prior to placement of aggregate base material on sub grade and prior to placement of pavement on base material, the sub grade and base must be proof-rolled with a fully loaded (ten (10) ton load) tandem truck or equivalent tire vehicle with one (1) pass down each driving lane no faster than three (3) miles per hour. If soft spots are detected, or pumping, rutting or heaving occurs greater than one (1) inch at the sub grade, the roadbed shall be considered unsatisfactory and the soil in these areas shall be remediated to the depth indicated by the contractor's testing firm and approved by a representative of the City Engineer.
14. Sub grade and base beneath pavements shall be compacted to St. Louis County Highway Department specifications. The moisture range shall be determined by the Standard or Modified Proctor Density Method AASHTO T-99 and within -2/+4 percentage points of the optimum moisture content.
15. The entire width and length will conform to line, grade and cross section shown on the plans or as established by the engineer. If any settling or washing occurs, or where hauling results in ruts or other objectionable irregularities, the contractor shall improve the sub grade or base to the satisfaction of the City before the pavement is placed. Additional rolling or methods to verify compaction shall be at the discretion of the City Engineer. Tolerance allowed on all lines, grades and cross sections shall be plus or minus four-hundredths (+0.04) feet.
16. Utility Work Prior To Base Construction. No base course work may proceed on any street until all utility excavations (storm and sanitary sewers, water, gas, electric, etc.) have been properly back filled with granular material, crushed stone or gravel mechanically tamped in ten (10) inch lifts. Utilities installed after sub grade preparation shall be bored.
17. Equipment calibration. The developer's contractors and subcontractors must have their equipment calibrated by the following minimum standards.
 - 17.1. Air meter---weekly.
 - 17.2. Cylinder compression---annually by independent calibration service.
 - 17.3. Batch scales---monthly.
 - 17.4. Nuclear testing devices---every six (6) months.
 - 17.5. Proctor equipment---every six (6) months.
 - 17.6. Slump cone---monthly.
18. All permanent traffic control will be per M.U.T.C.D. or MoDot standards. S1-1 from the M.U.T.C.D. manual will be used at all crosswalk locations accompanied with ether w16-9p or w16-7p signs.
19. All traffic signals, street signs, sign post, backs and bracket arms shall be painted black using Carboline Rust Bond Penetrating Sealer SG and Carboline 133 HB paint (or equivalent as approved by City of O'Fallon and MoDOT)
20. If the excavations are made in the improved portion of the right-of-way, twelve inches of granular backfill will be placed over exposed facilities and controlled low strength material (CLSM) aka flowable fill will fill the hole with eight inches of the finished surface for concrete pavement. There will be a plastic membrane placed between the rock base and the CLSM to prevent the material from bleeding into the rock base. The remaining eight inches will be restored by placing a 28 day, 4,000 psi concrete mix.

PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING



221 Point West Blvd.
St. Charles, MO 63001
636-929-5552
FAX 636-929-1718

REFERENCE DRAWINGS
ONLY, ENGINEERS
SEAL DOES NOT
APPLY TO THESE
DETAILS

REVISIONS

3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:

JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

O'FALLON NOTES

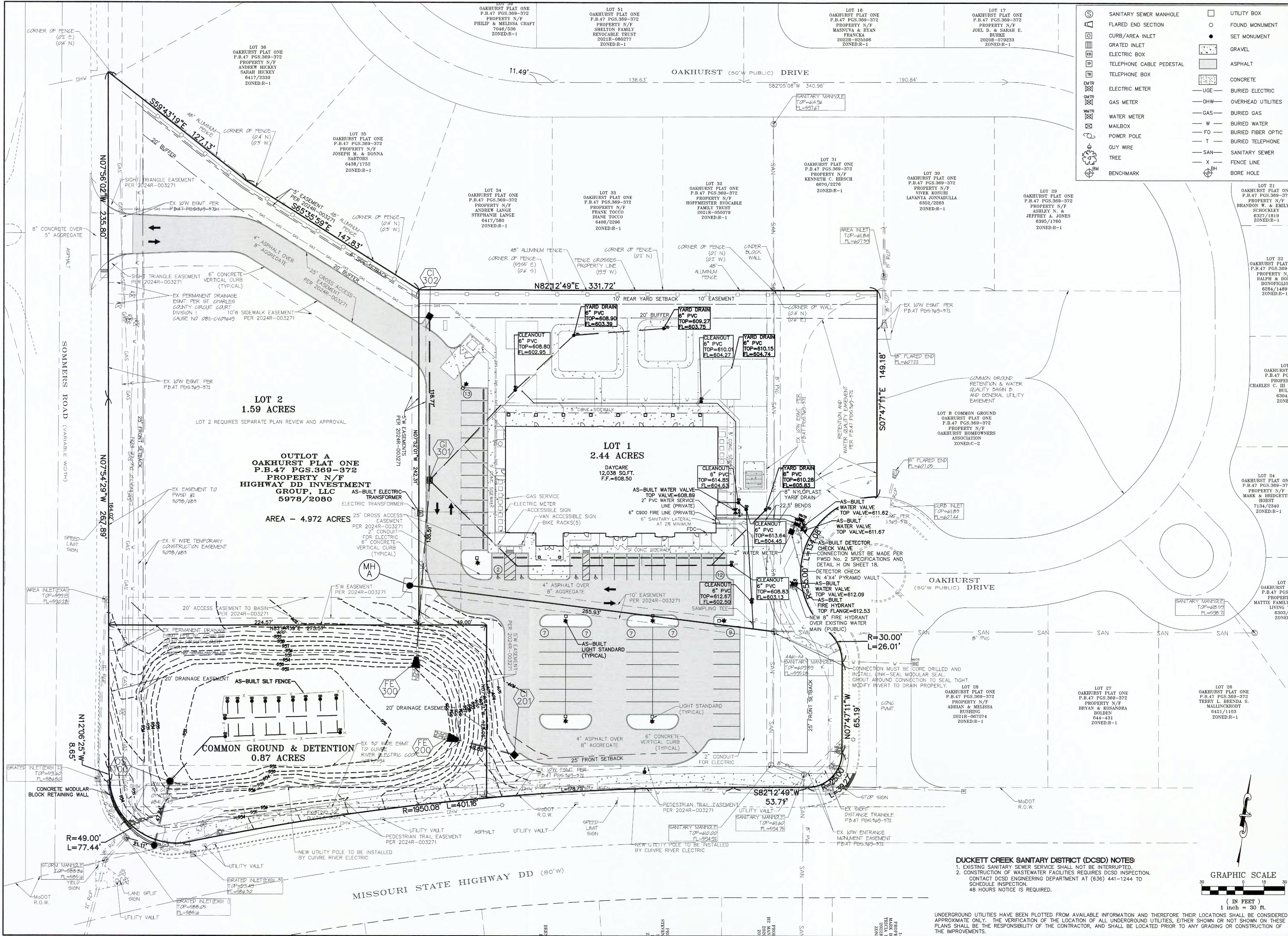
P+Z No. # 23-004744

Approval Date: July 6, 2023

City No. #

Page No.

2 of 22



PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
FAX 636-928-1718

DISCLAIMER OF RESPONSIBILITY
I hereby certify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

REVISIONS

3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

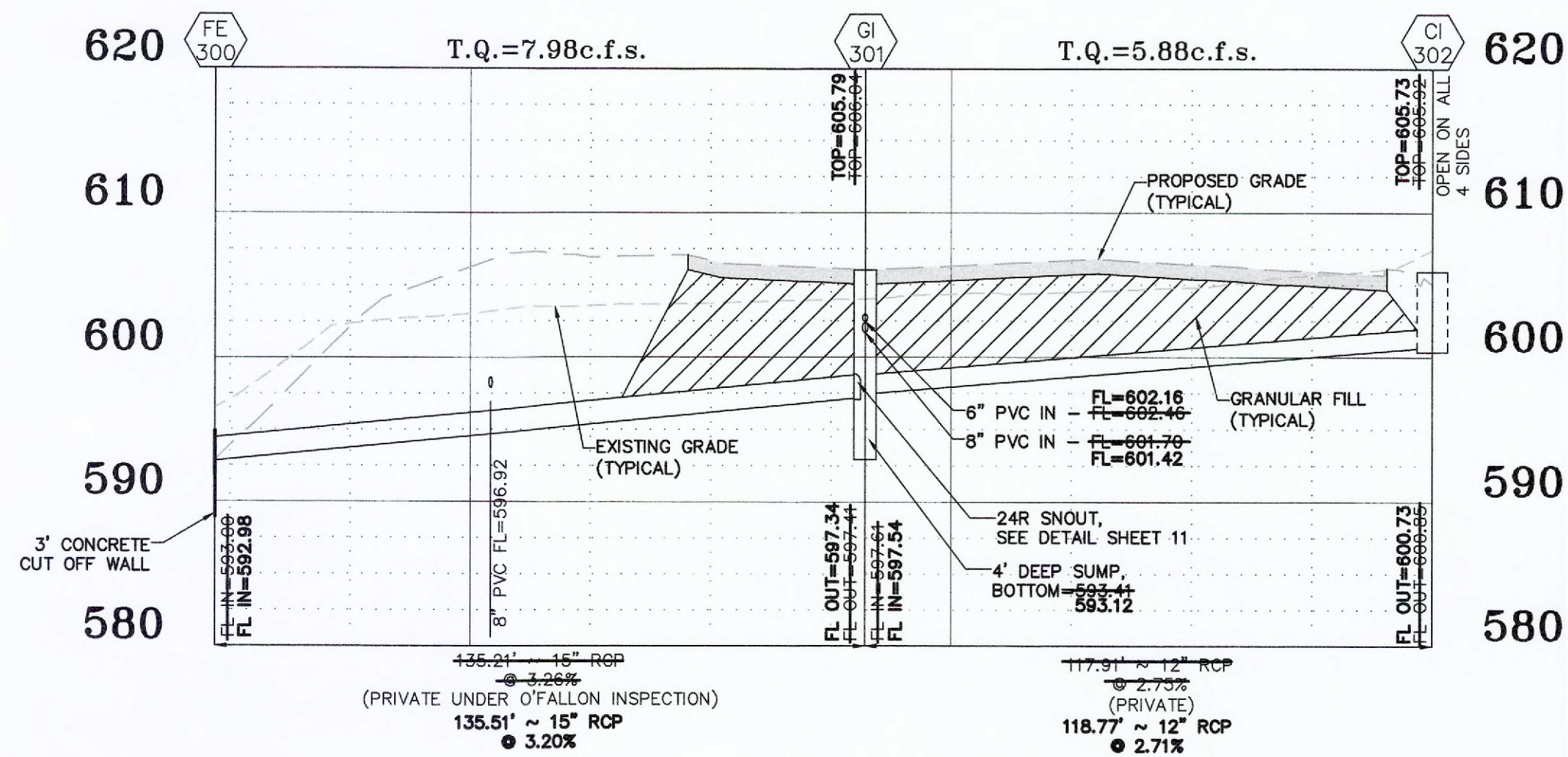
Developer / Owner:
JAFFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

FLAT PLAN

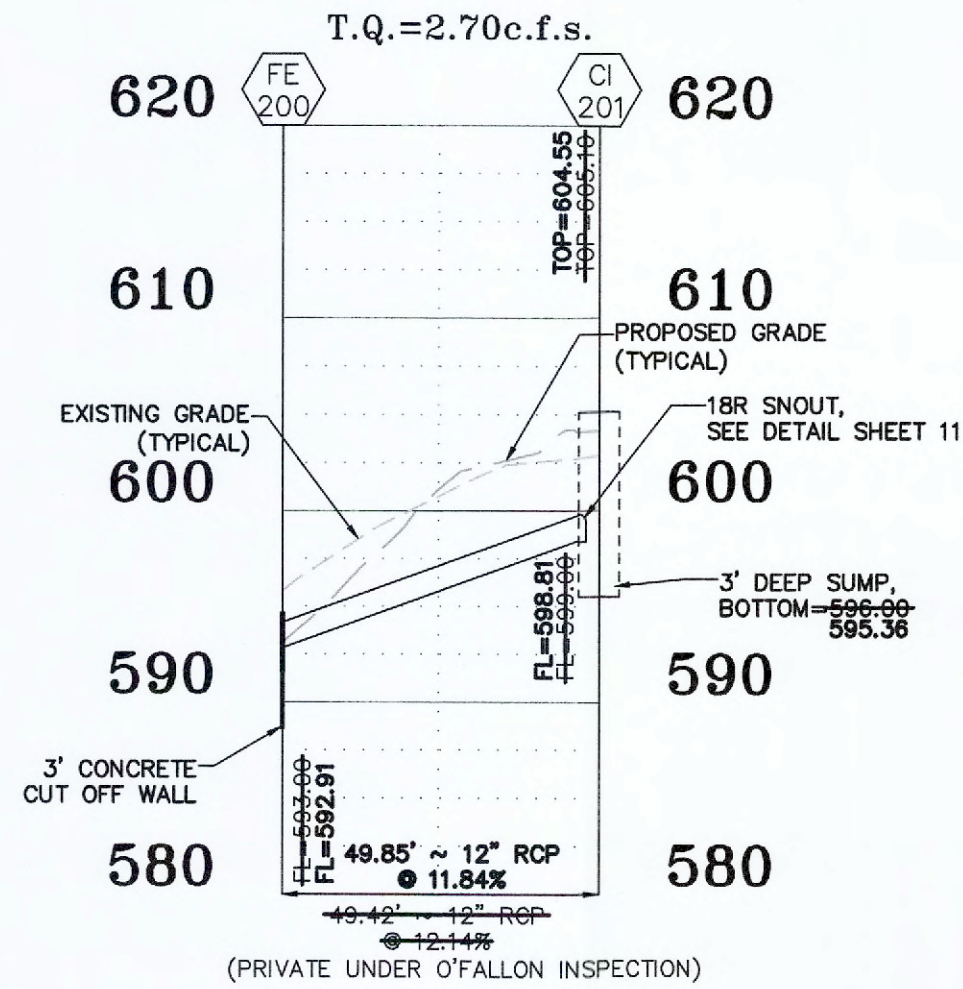
P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

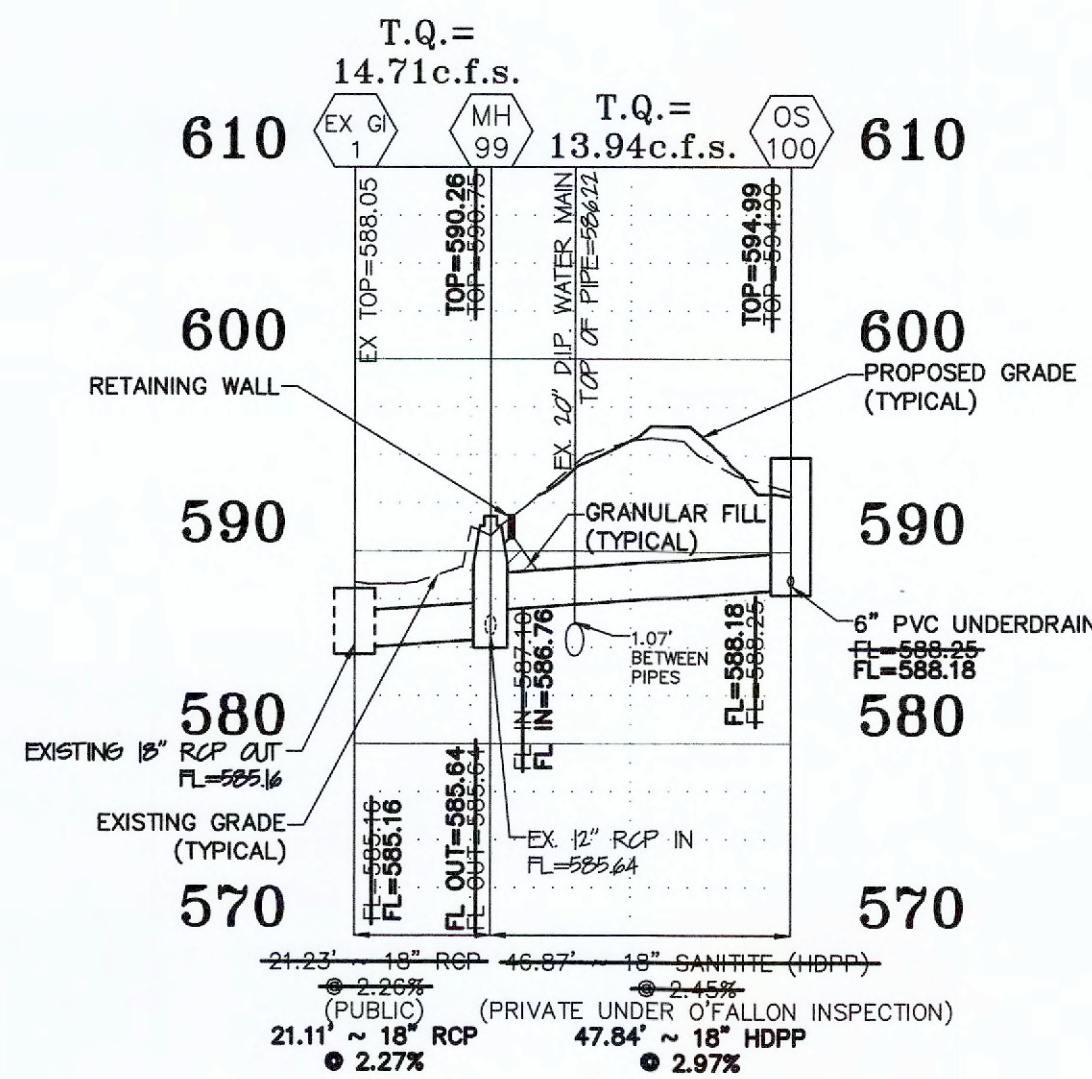
Page No.
4 of 22



STORM PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

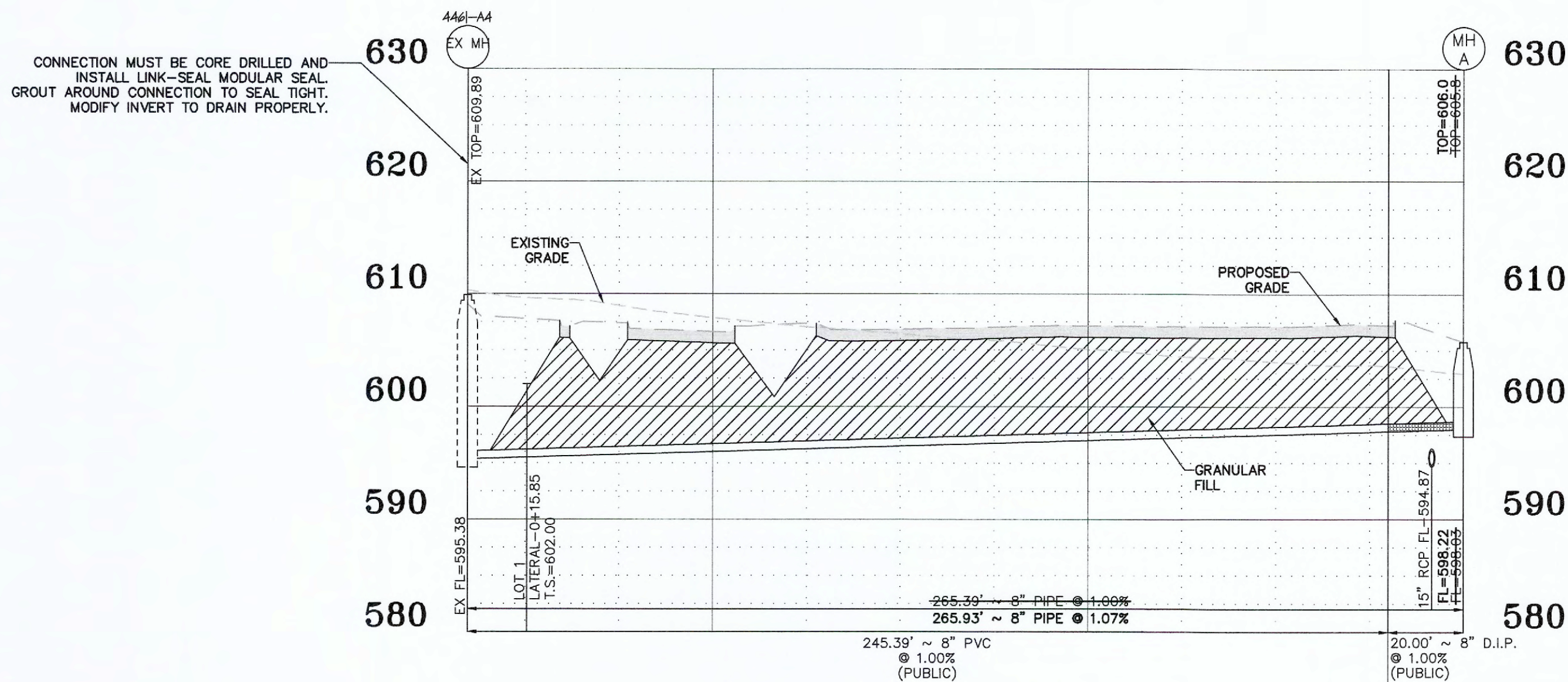


STORM PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'



STORM PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

DUCKETT CREEK SANITARY DISTRICT (DCSD) NOTES:
1. EXISTING SANITARY SEWER SERVICE SHALL NOT BE INTERRUPTED.
2. CONSTRUCTION OF WASTEWATER FACILITIES REQUIRES DCSD INSPECTION.
CONTACT DCSD ENGINEERING DEPARTMENT AT (636) 441-1244 TO SCHEDULE INSPECTION.
48 HOURS NOTICE IS REQUIRED.



SANITARY PROFILE
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING



221 Point West Blvd.
St. Charles, MO 63301
636-898-5552
FAX 636-1718

DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.



Copyright 2023
Bax Engineering Company, Inc.
Authority No. 000655
All Rights Reserved

REVISIONS

3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:

JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

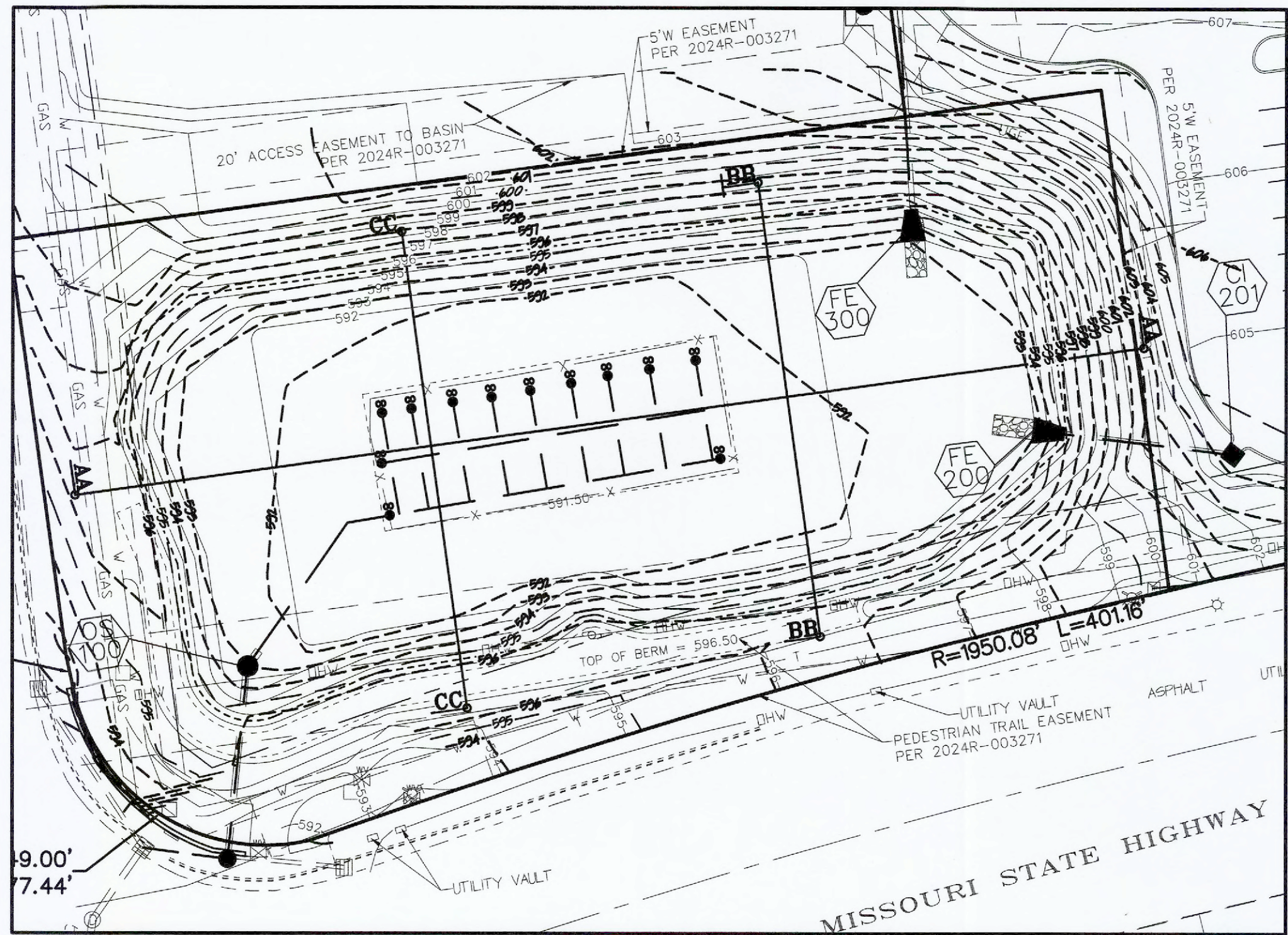
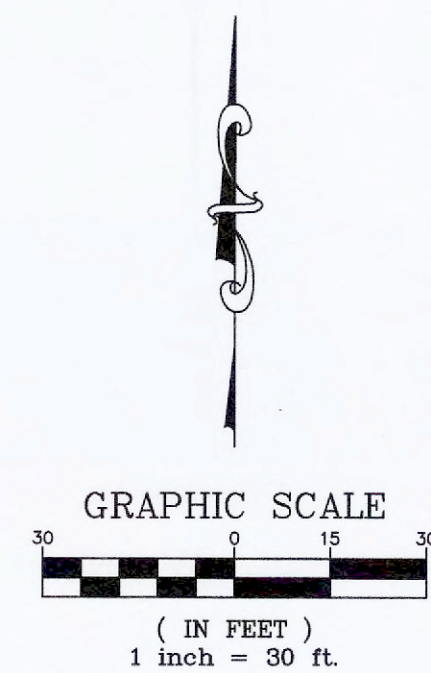
P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

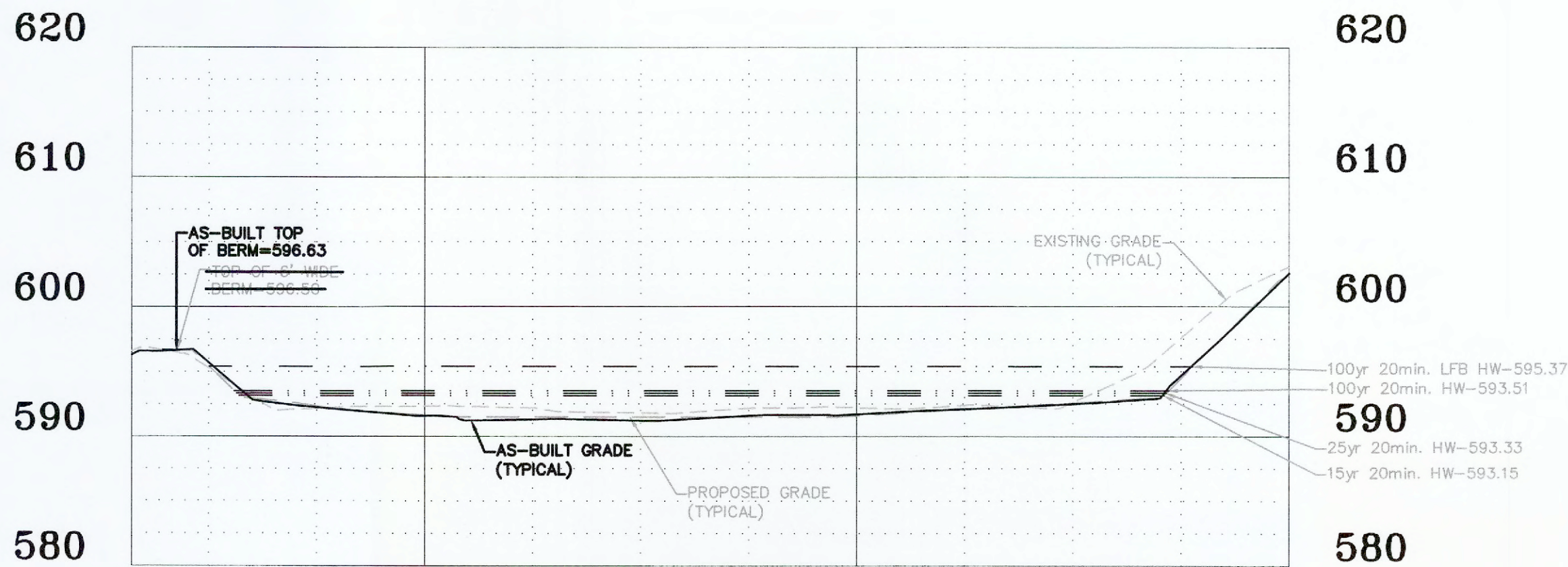
Page No.

8 of 22

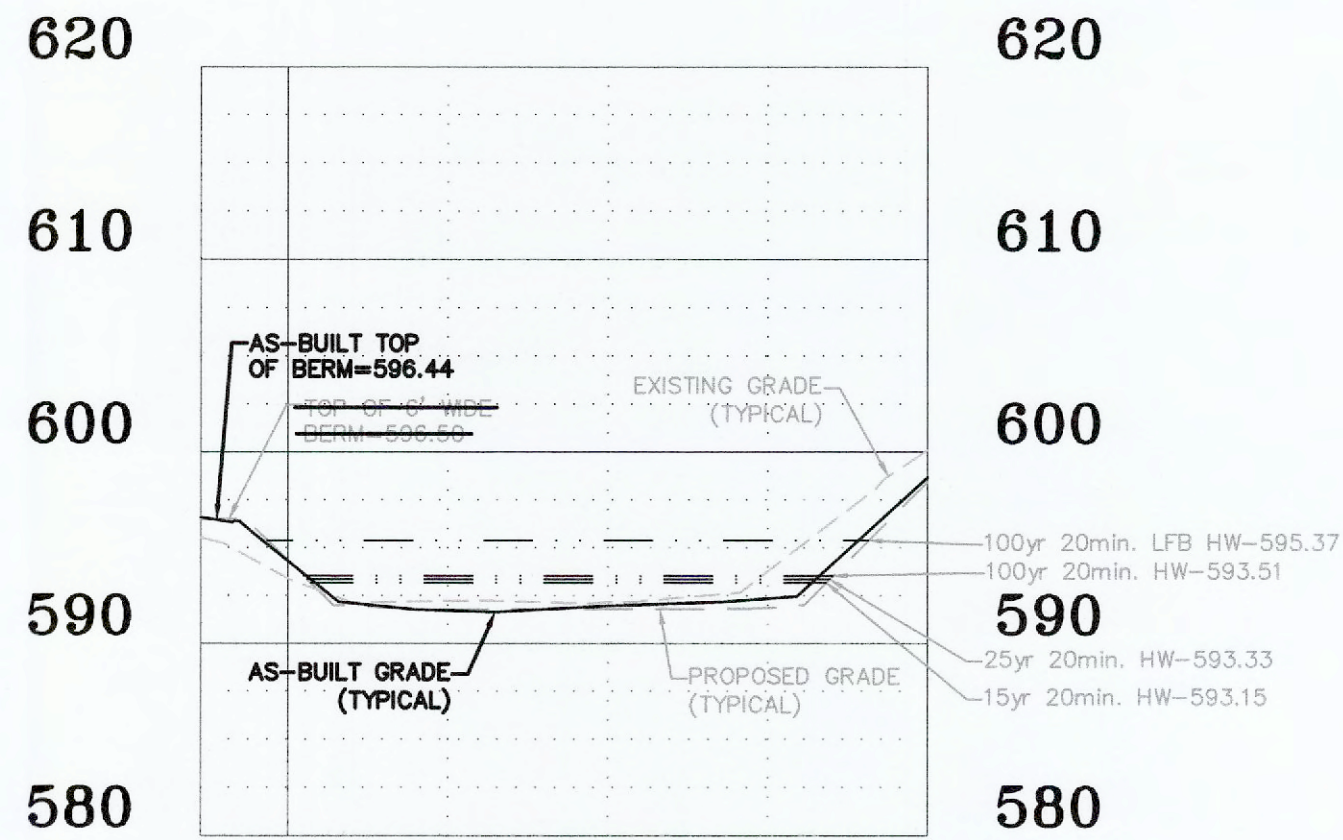
STORM AND SANITARY PROFILES



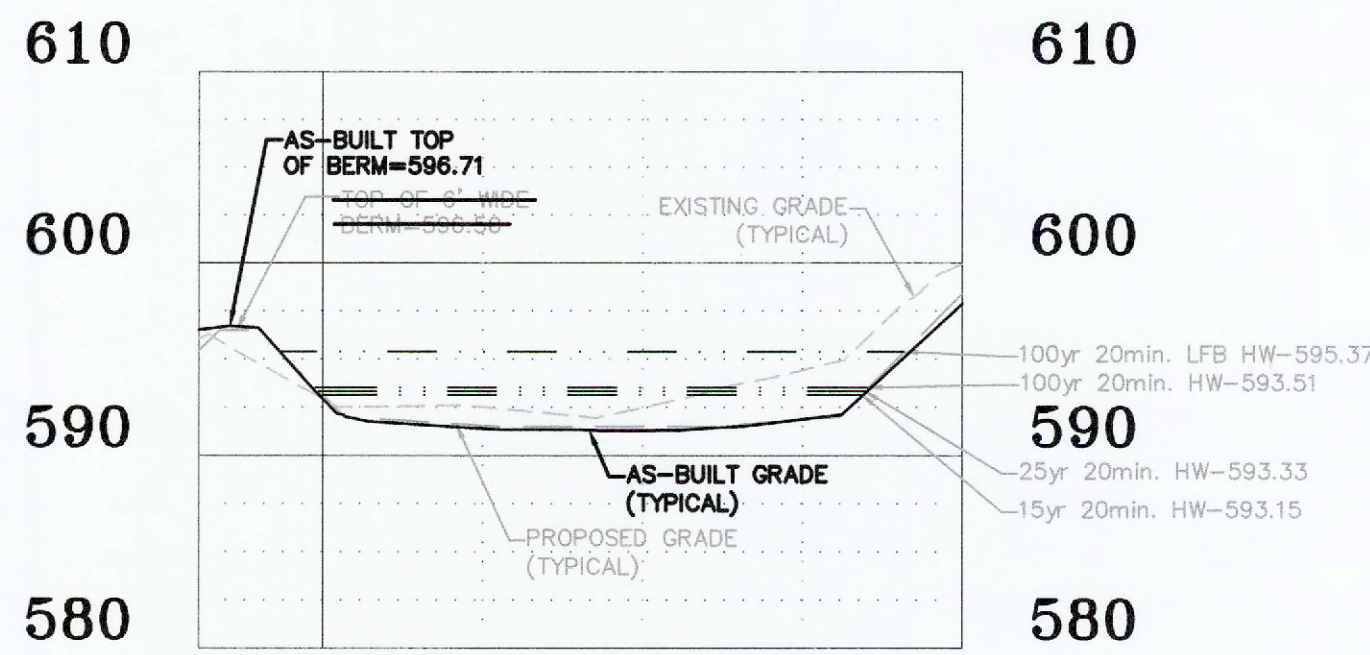
DETENTION BASIN SECTIONS
HORIZONTAL SCALE: 1"=30'



DETENTION BASIN SECTION A-A
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'



DETENTION BASIN SECTION B-B
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'



DETENTION BASIN SECTION C-C
HORIZONTAL SCALE: 1"=30'
VERTICAL SCALE: 1"=10'

PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-828-5562
FAX 636-828-1718



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be
authentic and true, and I hereby disclaim any responsibility for all other
drawings, specifications, estimates, reports or other
documents or instruments relating to or intended to
be used for any part or parts of the architectural or
engineering project or survey.



Copyright 2023
Box Engineering Company, Inc.
Authority No. 000655
All Rights Reserved

REVISIONS

DATE	CITY COMMENTS
3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:

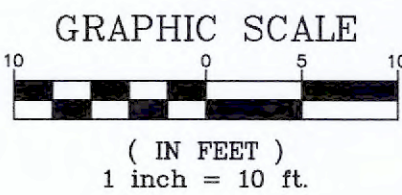
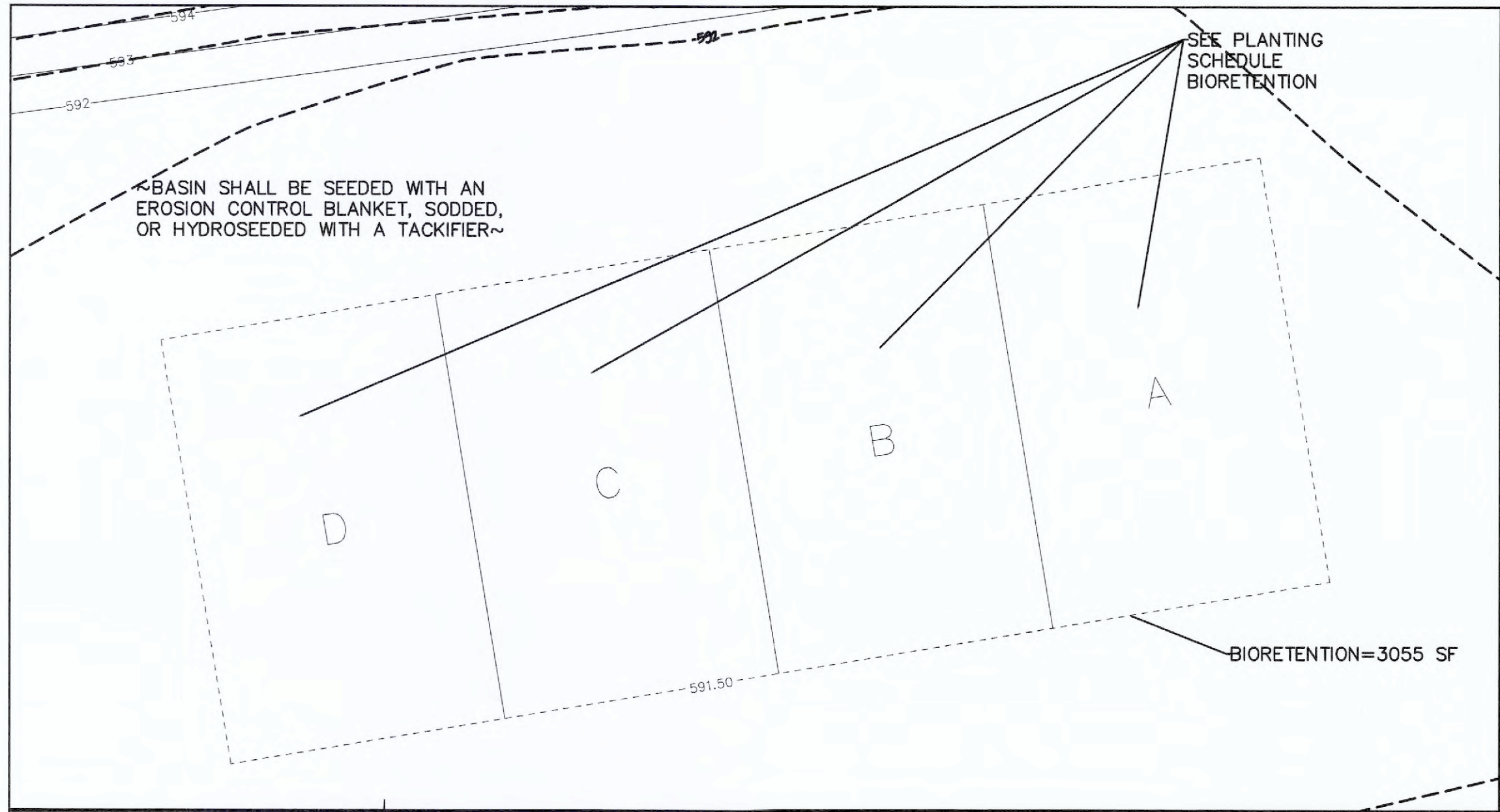
JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

DETENTION BASIN CROSS SECTIONS

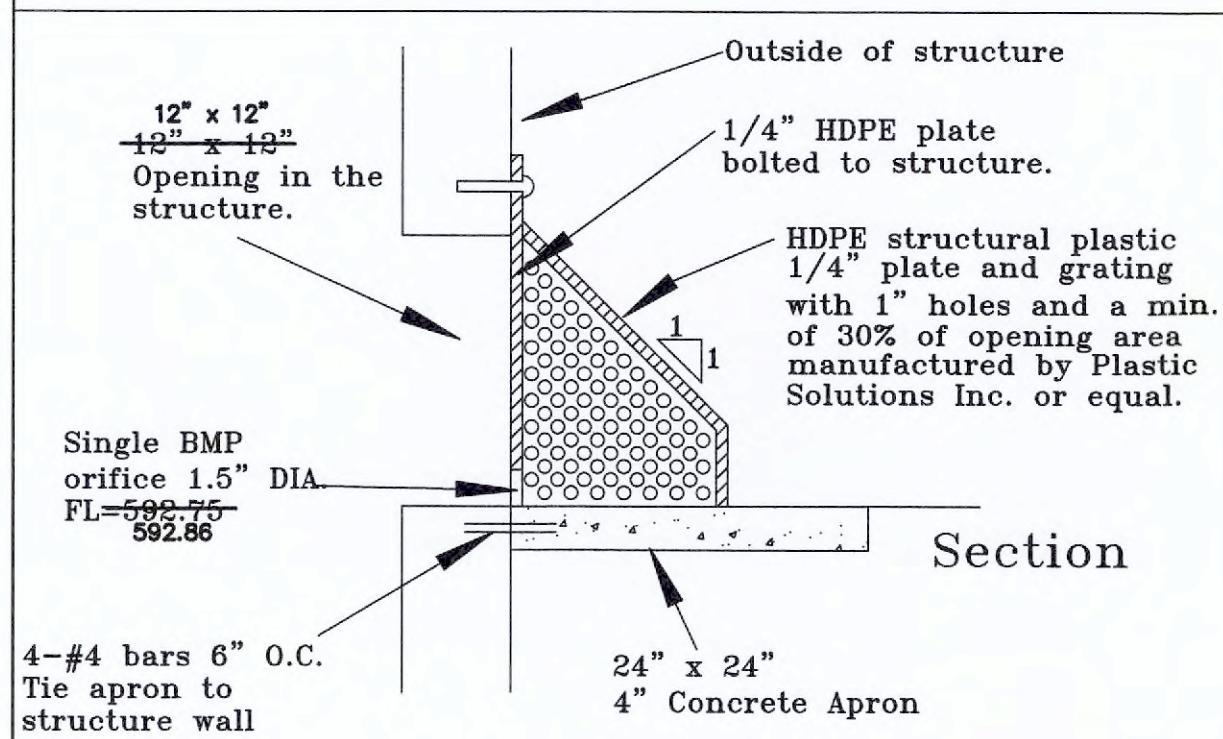
P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

Page No.



BIORETENTION PLANTING PLAN



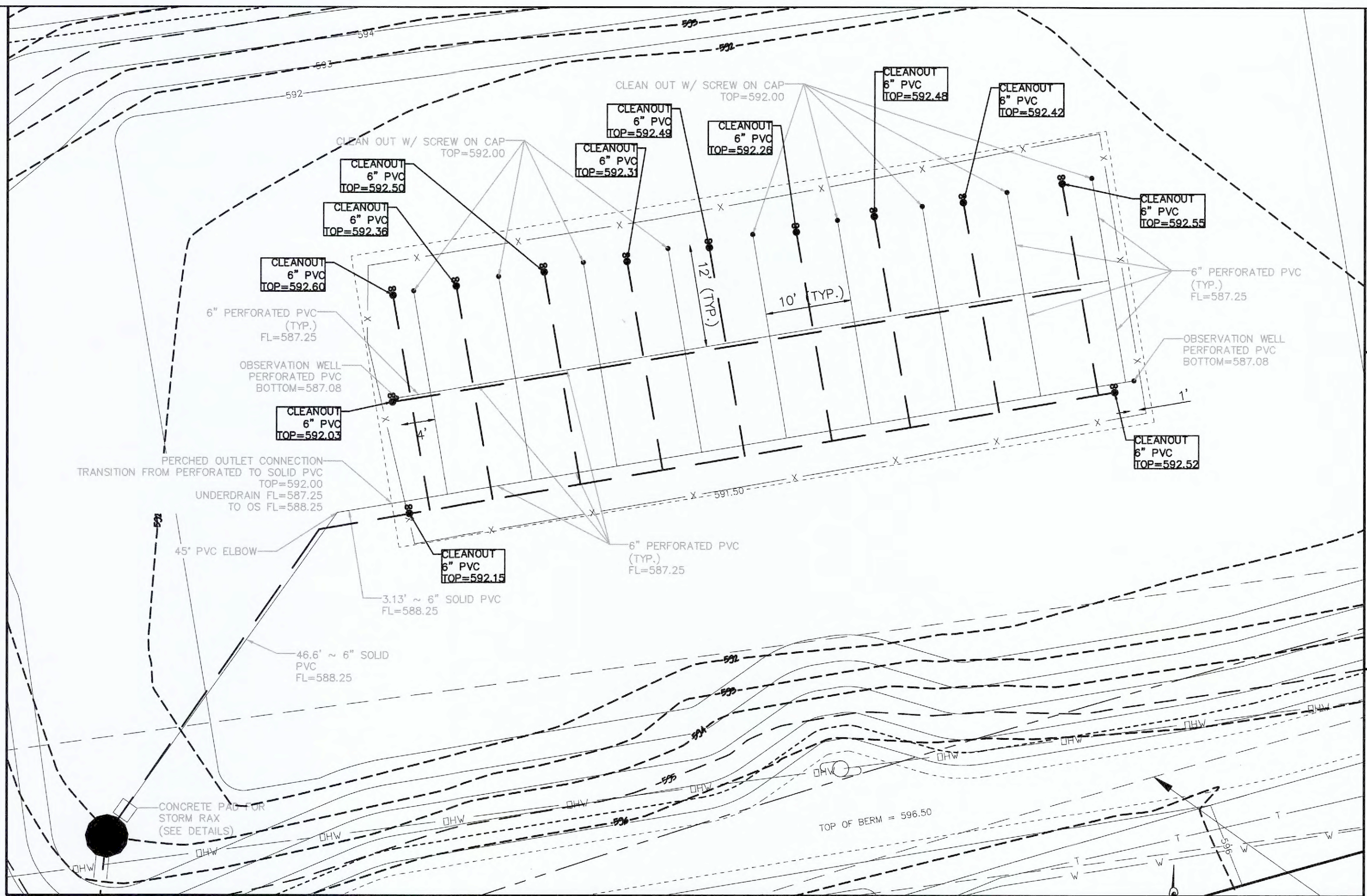
***BIORETENTION AREA CAN NOT BE STARTED UNTIL THE UPSTREAM AREA IS SUBSTANTIALLY VEGETATED.**

UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

Planting Soil Specifications:

PARAMETER	VALUE
pH Range	5.2 to 8.0
Organic Matter	1.5 to 5.0%
Magnesium	35 lbs. per acre minimum
Phosphorus (P ₂ O ₅)	75 lbs. per acre minimum
Potassium (K ₂ O)	85 lbs. per acre minimum
Soluble Salts	≤ 500 PPM

Sandy Loam or Loamy Sand (should contain a minimum of 60 percent sand, by volume). The clay content for these soils should be less than 10 percent by volume. The soils shall be free of stones, stumps, roots, or other woody material over 1 inch in diameter. Brush or seeds from noxious weeds should not be present in the soil. Placement of the planting soil should be in lifts of 12 to 18 inches and be loosely compacted. (Rubber-Wheeled Heavy Equipment and mechanical tamping devices are not recommended for compaction).

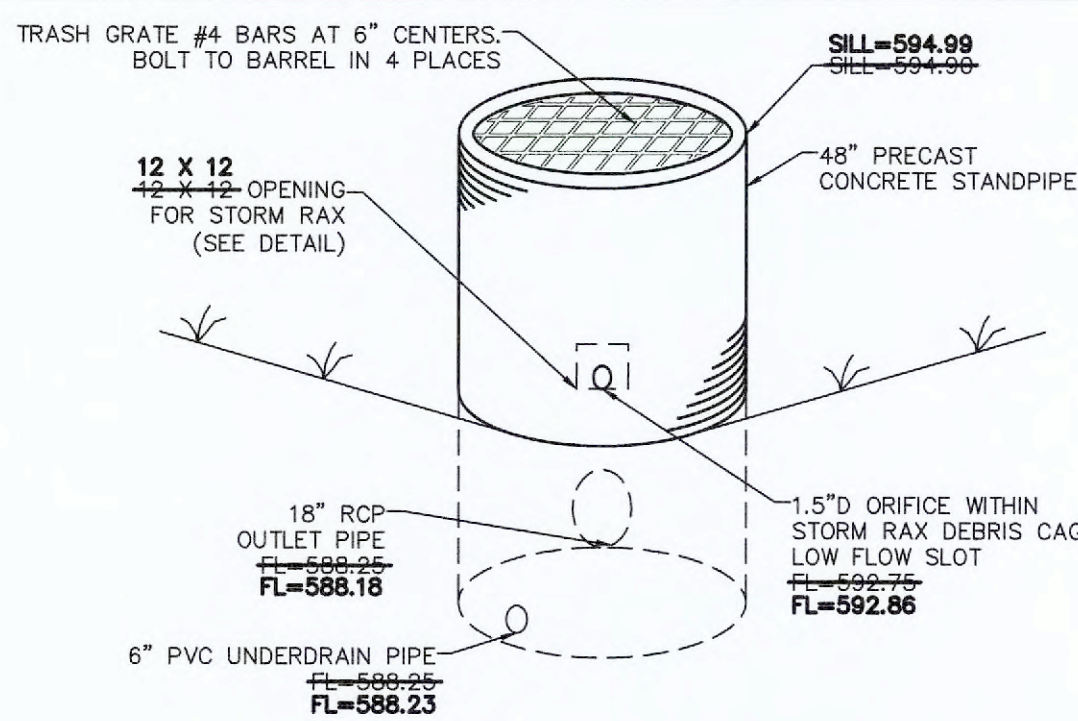


SAND SPECIFICATIONS:

Washed ASTM C33 Fine Aggregate Concrete Sand is utilized for stormwater management applications. In addition to the ASTM C-33 specification, sand must meet ALL of the following conditions:

- Sand must meet gradation requirements for ASTM C-33 Fine Aggregate Concrete Sand. AASHTO M-6 gradation is also applicable. (Known as Natural washed concrete sand)
- Sand must be silicabased...no limestone based products may be used. If the material is white or gray in color it is probably not acceptable.
- Sand must be clean. Natural, unwashed sand deposits may not be used. Likewise, sand that has been contaminated by improper storage or installation practices will be rejected.
- Manufactured sand or stone dust is not acceptable under any circumstances.

Sand Gradations per ASTM C-33	Percent Passing
Sieve Specifications	100
9.5-mm (3/8-in.)	100
4.75-mm (No. 4)	95 to 100
2.36-mm (No. 8)	80 to 100
1.18-mm (No. 16)	50 to 85
600-um (No. 30)	25 to 60
300-um (No. 60)	5 to 30
150-um (No. 100)	0 to 10



BASIN OVERFLOW STRUCTURE 100 DETAIL
NOT TO SCALE

CURRENT CONDITIONS	
2 YR 20 MINUTE HIGHWATER	= 592.80
15 YR 20 MINUTE HIGHWATER	= 593.15
25 YR 20 MINUTE HIGHWATER	= 593.33
100 YR 20 MINUTE HIGHWATER	= 593.51
100 YR 20 MINUTE (LFB) HIGHWATER	= 595.37

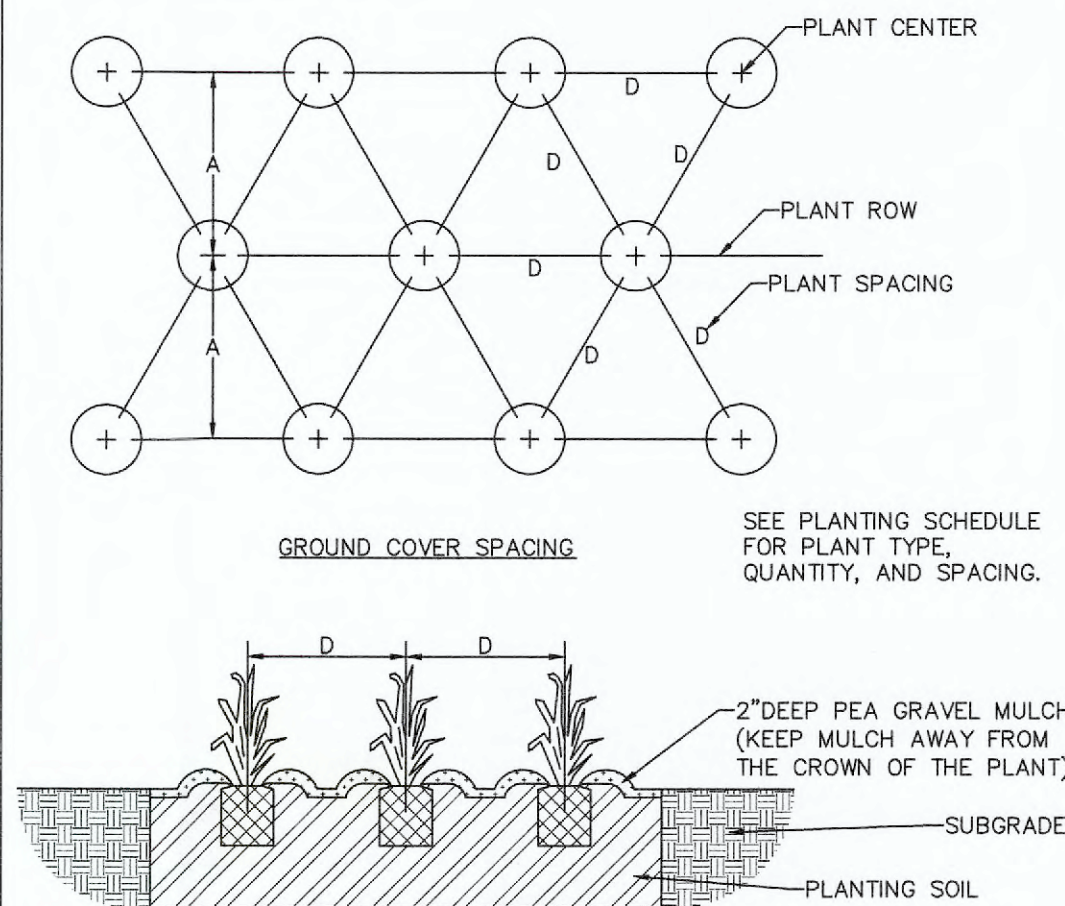
FUTURE CONDITIONS	
2 YR 20 MINUTE HIGHWATER	= 592.90
15 YR 20 MINUTE HIGHWATER	= 593.29
25 YR 20 MINUTE HIGHWATER	= 593.49
100 YR 20 MINUTE HIGHWATER	= 593.68
100 YR 20 MINUTE (LFB) HIGHWATER	= 595.41

ITEM	LATIN NAME	COMMON NAME	TOTAL NUMBER	SPACING
A	Carex grayi	Bur sedge	35	60"
B	Carex vulpinoidea	Fox sedge	35	60"
C	Ratibida pinnata	Yellow/Grey coneflower	35	60"
D	Carex praegracilis	Tallway sedge	35	60"

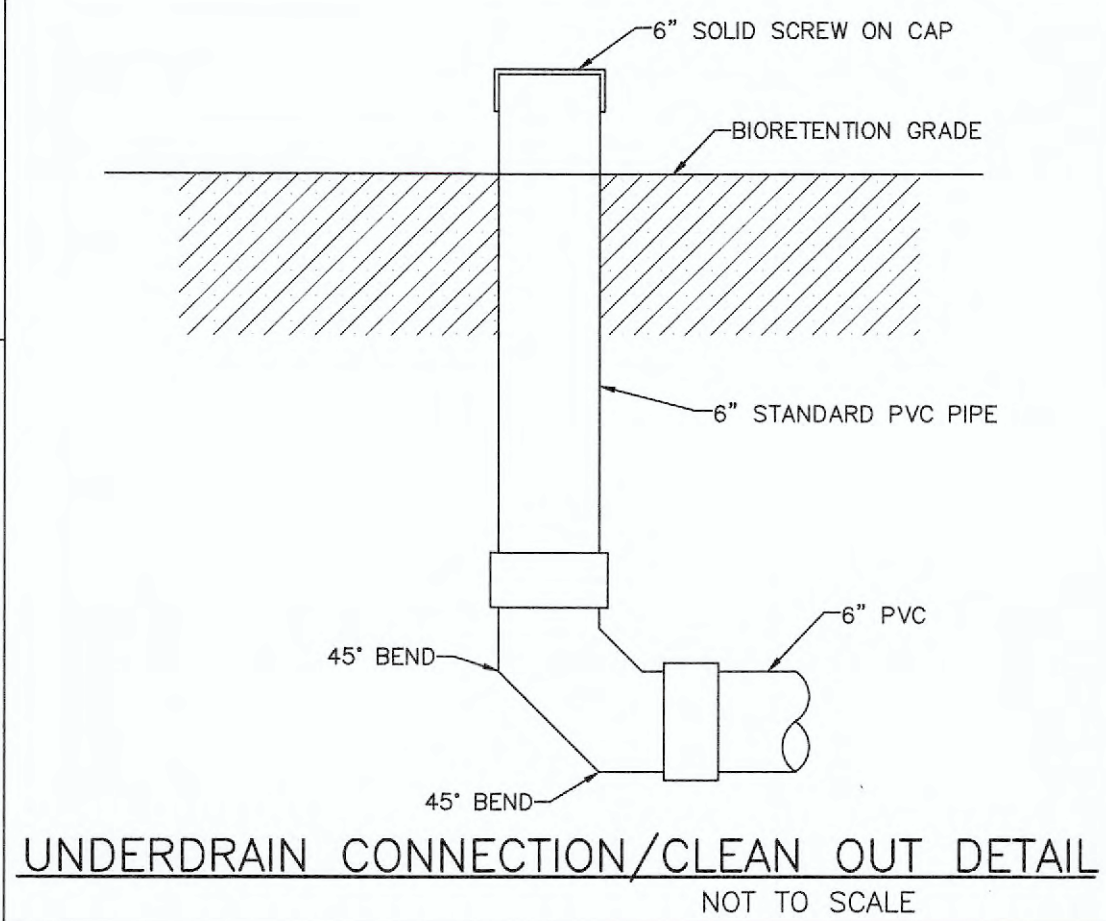
NOTE: PROPOSED PLUG SIZE SHOULD BE 4.5" X 5" (QUART) OR LARGER.

PLANTING SCHEDULE BIORETENTION BASIN

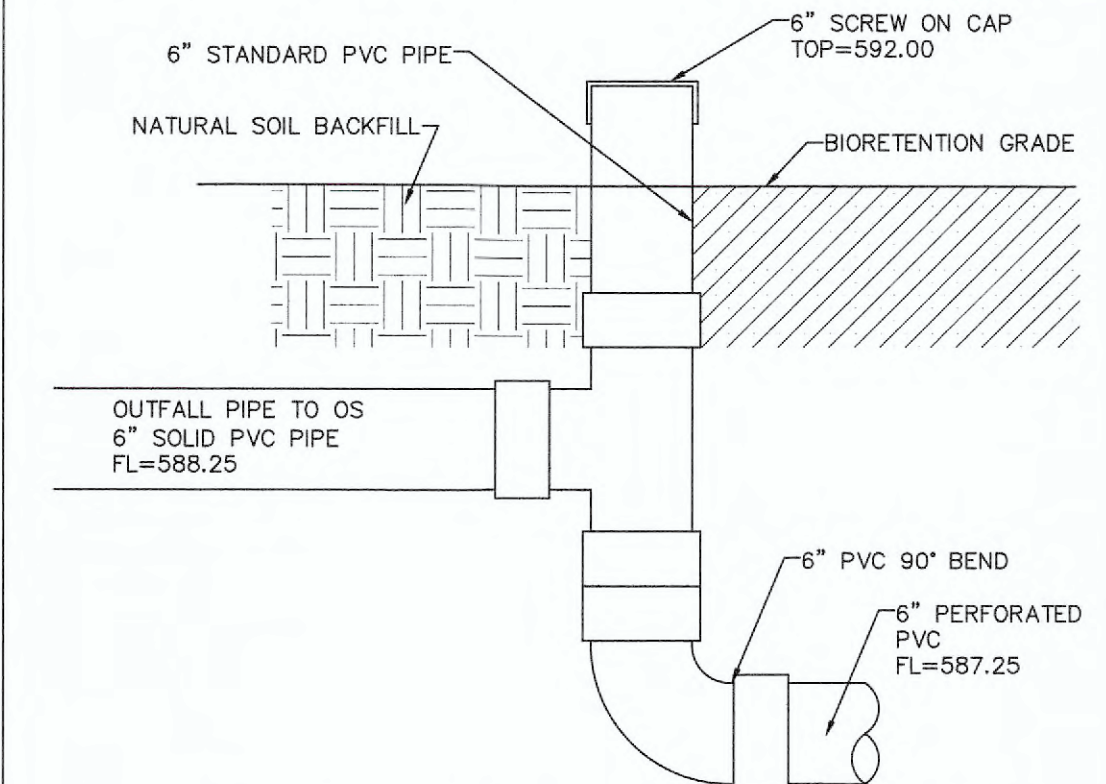
PLANT SPACING 'D'	ROW SPACING 'A'	NUMBER OF PLANTS/SQFT
60"	52.0"	0.045
30"	26.0"	0.160
24"	20.8"	0.25
18"	15.6"	0.45
15"	13.0"	0.64
12"	10.4"	1.00
10"	8.66"	1.44
8"	6.93"	2.25



PLANT SPACING GUIDE
NOT TO SCALE

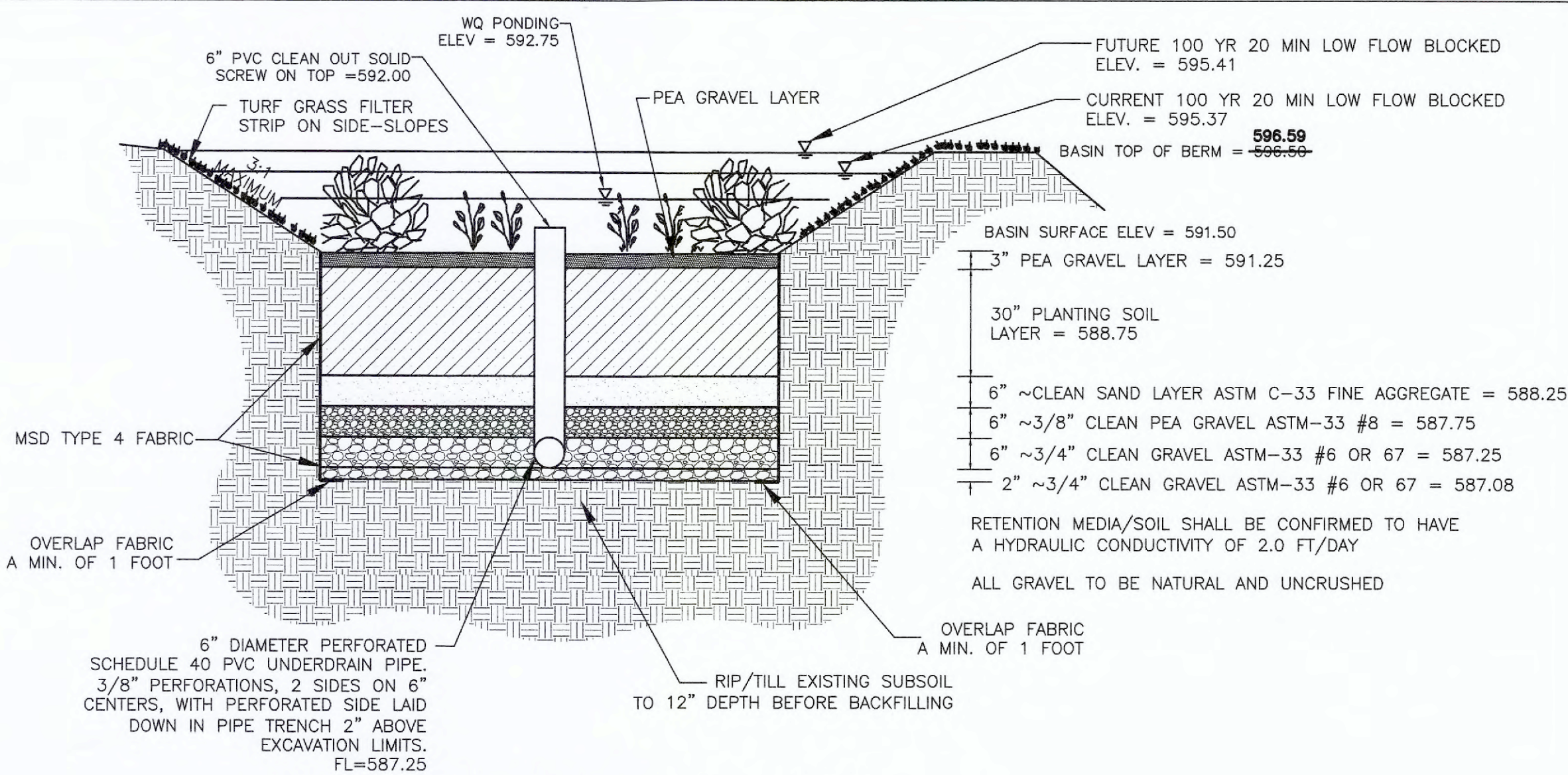


UNDERDRAIN CONNECTION/CLEAN OUT DETAIL
NOT TO SCALE



PERCHED OUTLET CONNECTION DETAIL
NOT TO SCALE

STORM RAX BMP DEBRIS CAGE OS 2A DRY/BIRETENTION DETENTION BASIN A1
N.T.S.

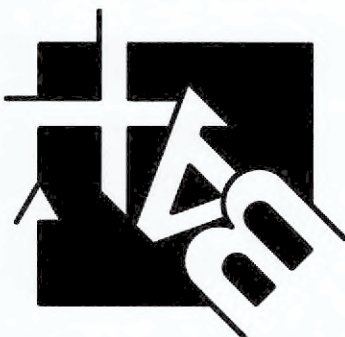


BIORETENTION BASIN CROSS-SECTION
NOT TO SCALE

PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
OFALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
FAX 928-1718



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other Drawings, Specifications, Estimates, Reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.



Copyright 2023
Box Engineering Company, Inc.
Authority No. 000855
All Rights Reserved

REVISIONS

DATE	CITY COMMENTS
3/6/25	
7/1/25	

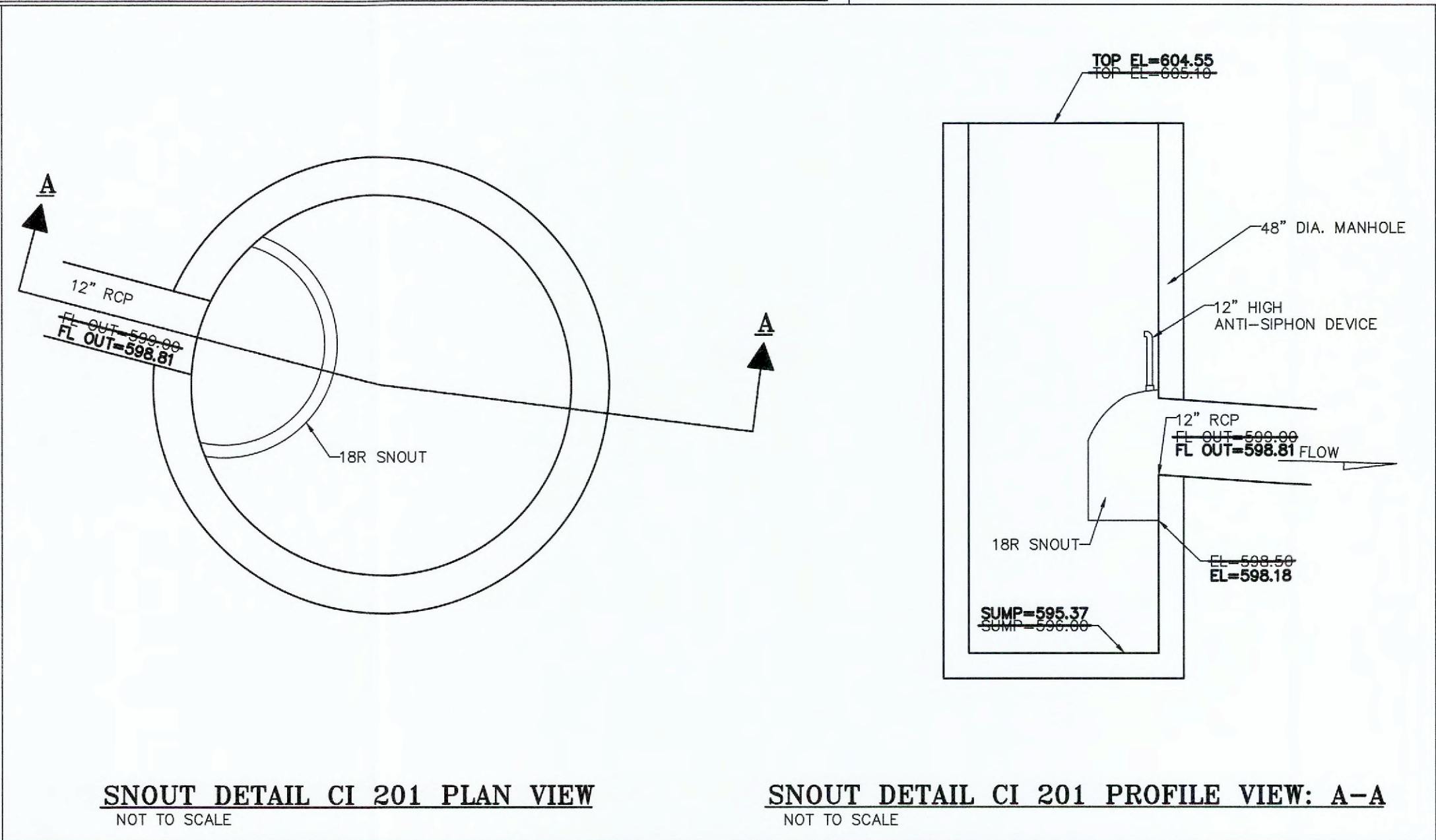
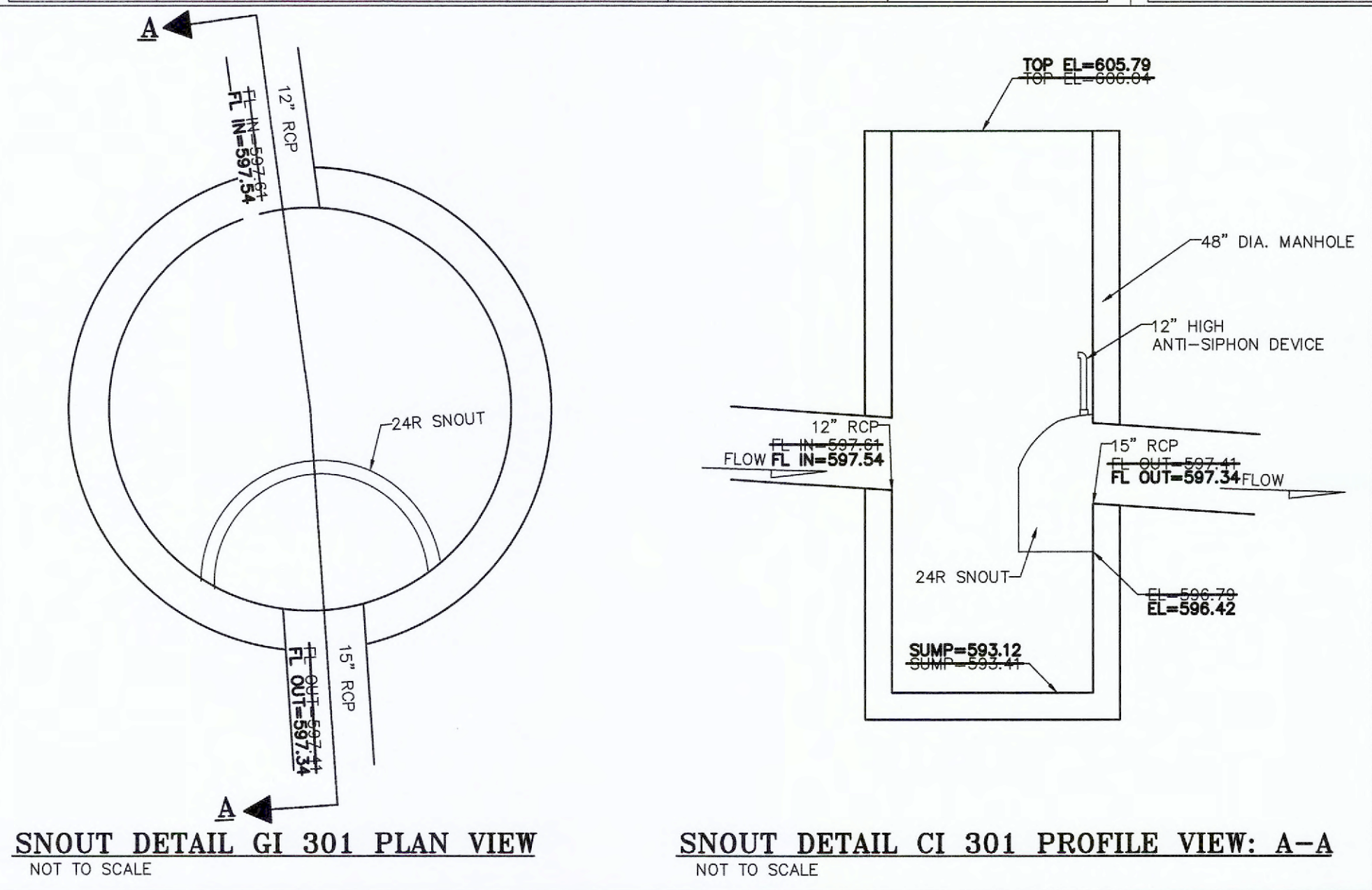
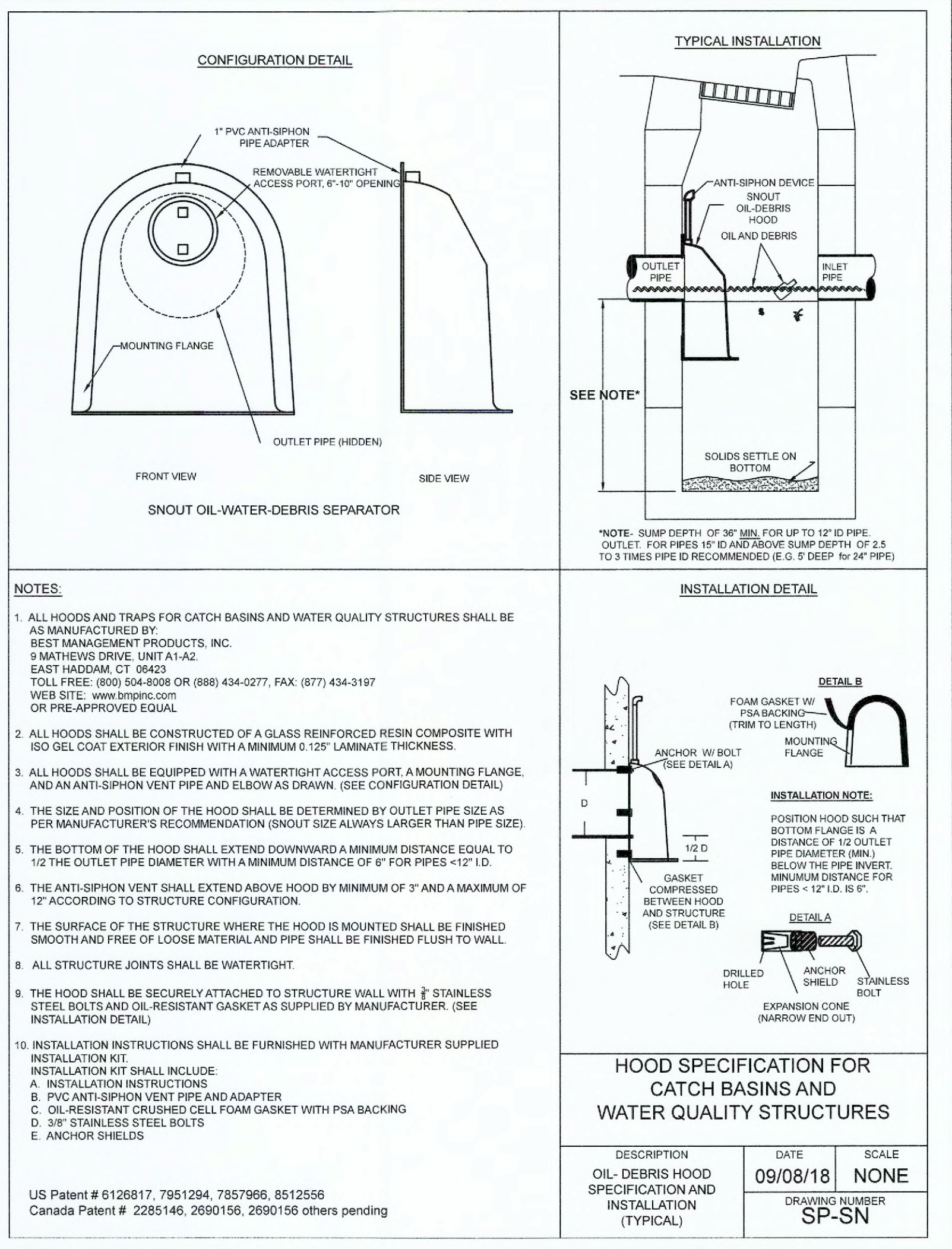
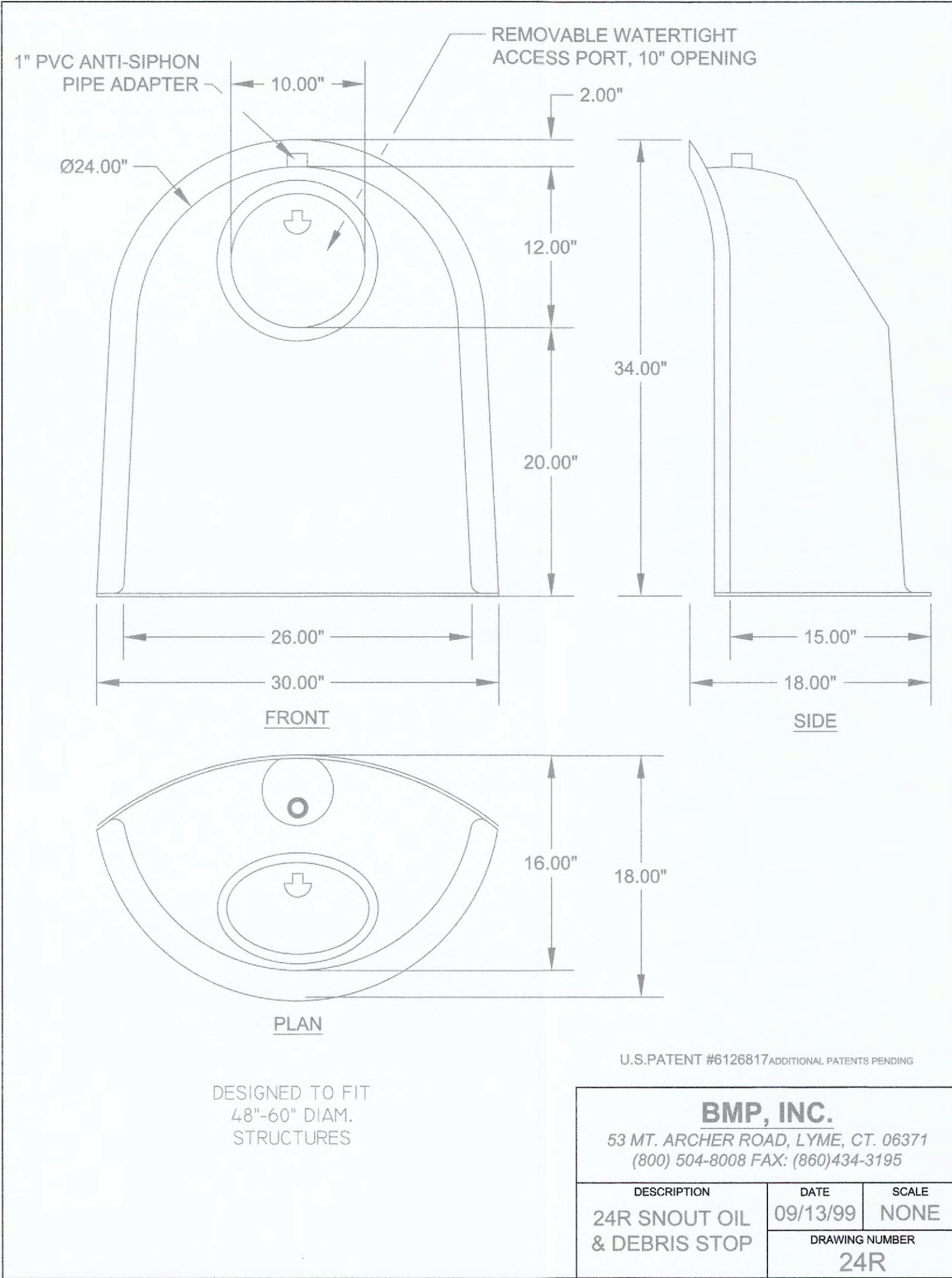
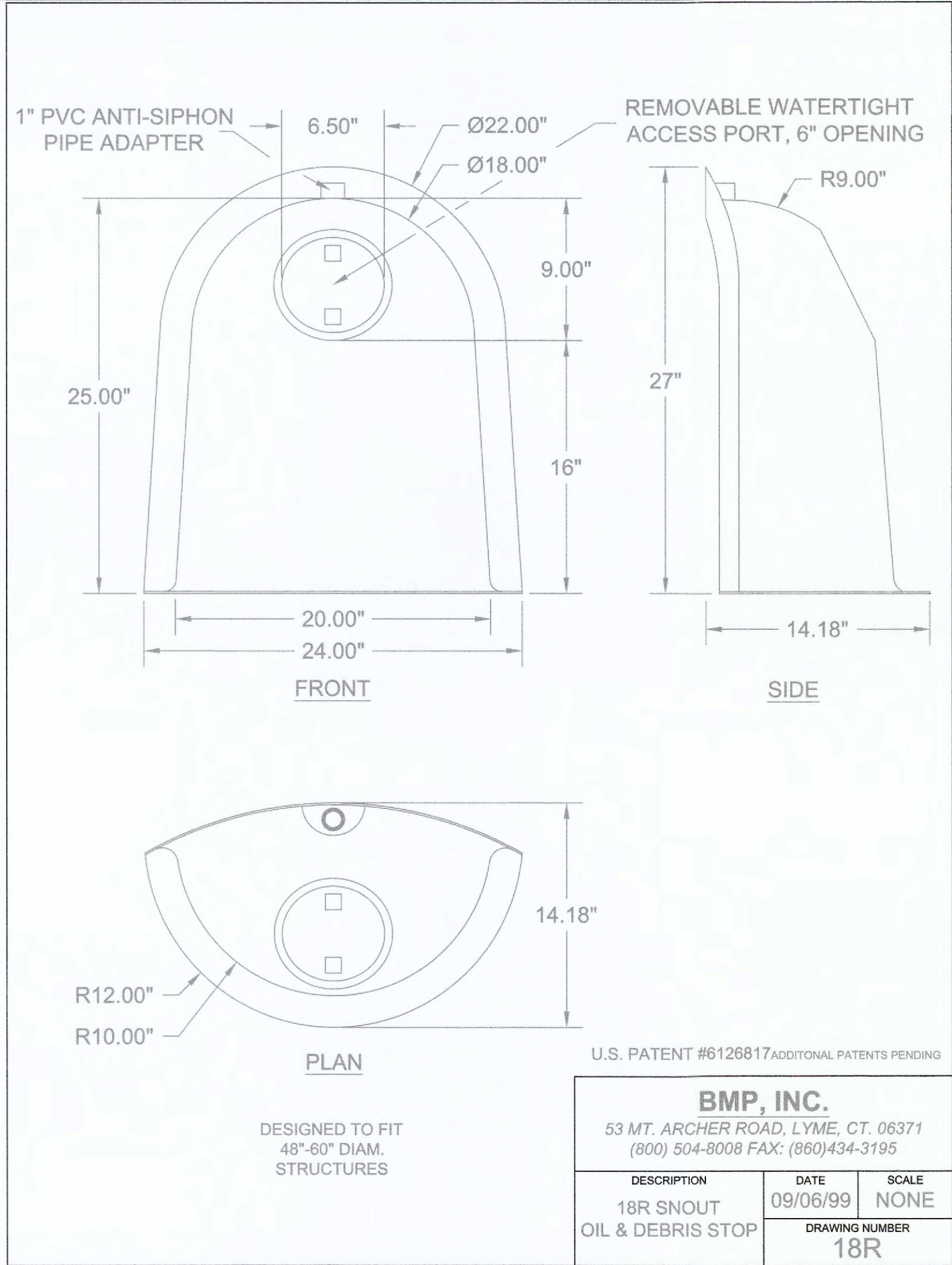
Developer / Owner:

JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

Page No.



PROJECT TITLE:
AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING PLANNING SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5652
FAX 636-928-1718

DISCLAIMER OF RESPONSIBILITY
I hereby certify that the documents intended to be authenticated by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.

STATE OF MISSOURI
ASHLEY FANGMAN
REGISTERED PROFESSIONAL LAND SURVEYOR
PLS-2015017839
7-1-25

Copyright © 2023
Box Engineering Company, Inc.
Authority No. 000655
All Rights Reserved

REVISIONS		
3/6/25	QTY	COMMENTS
7/1/25	QTY	COMMENTS

Developer / Owner:
JAFFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

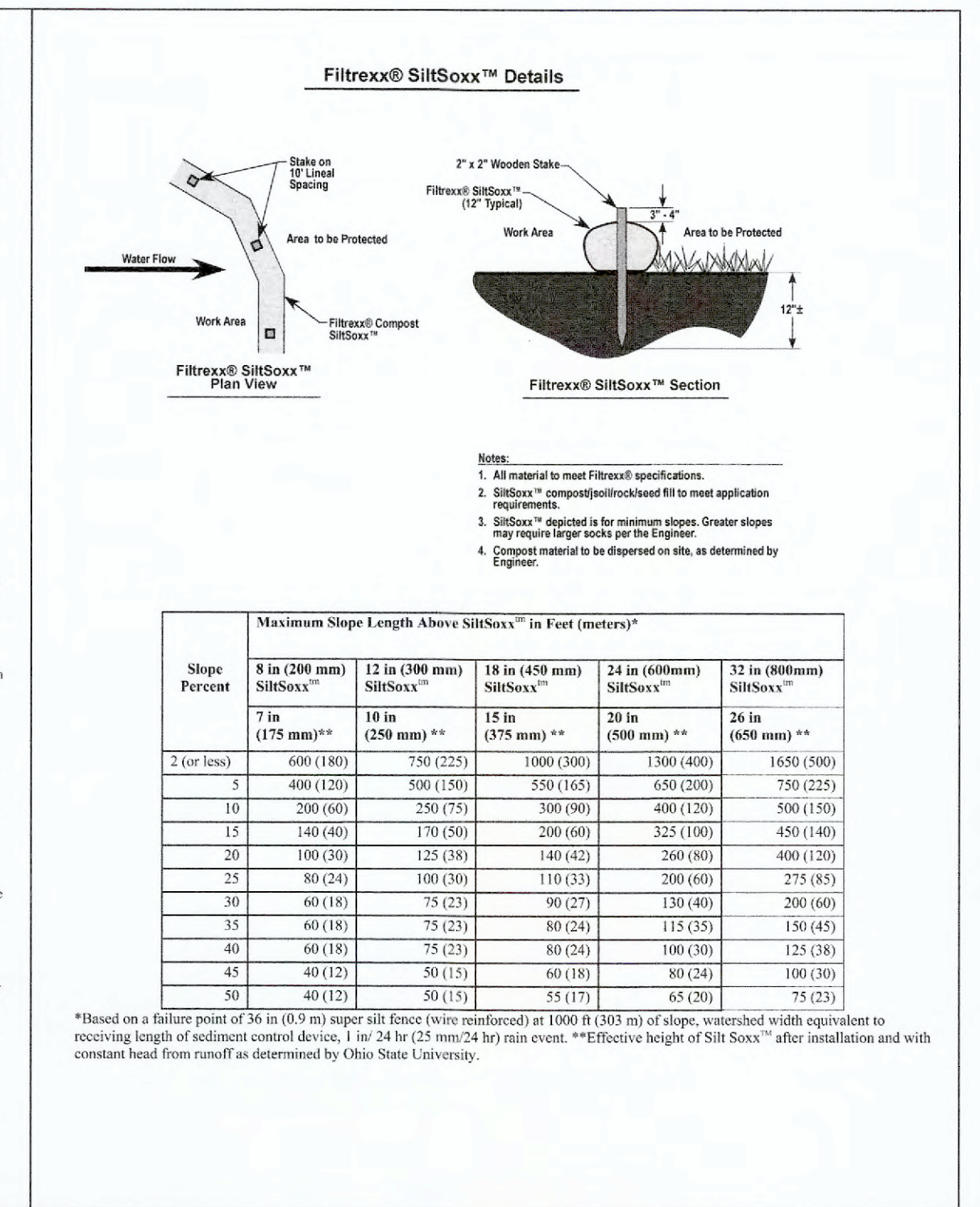
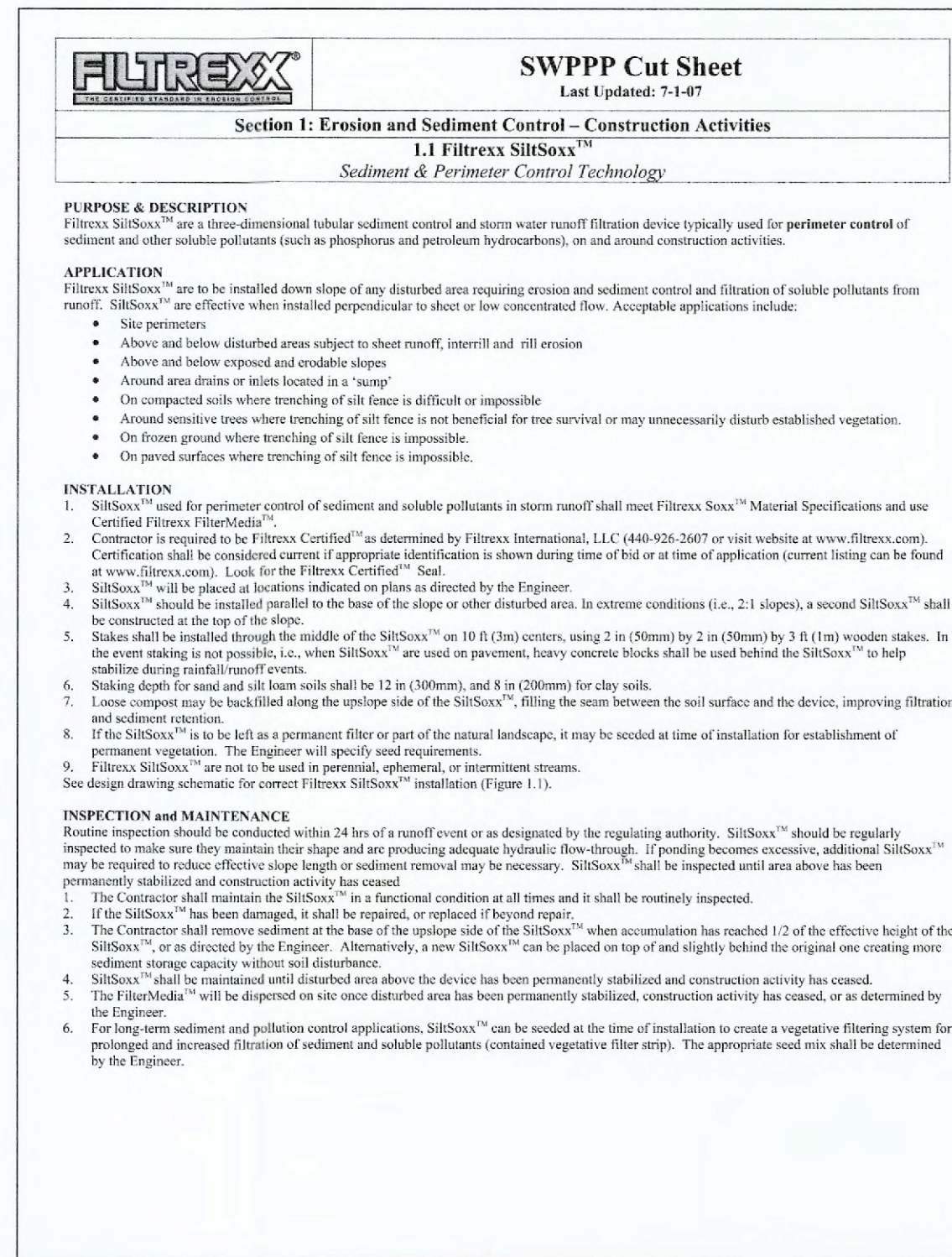
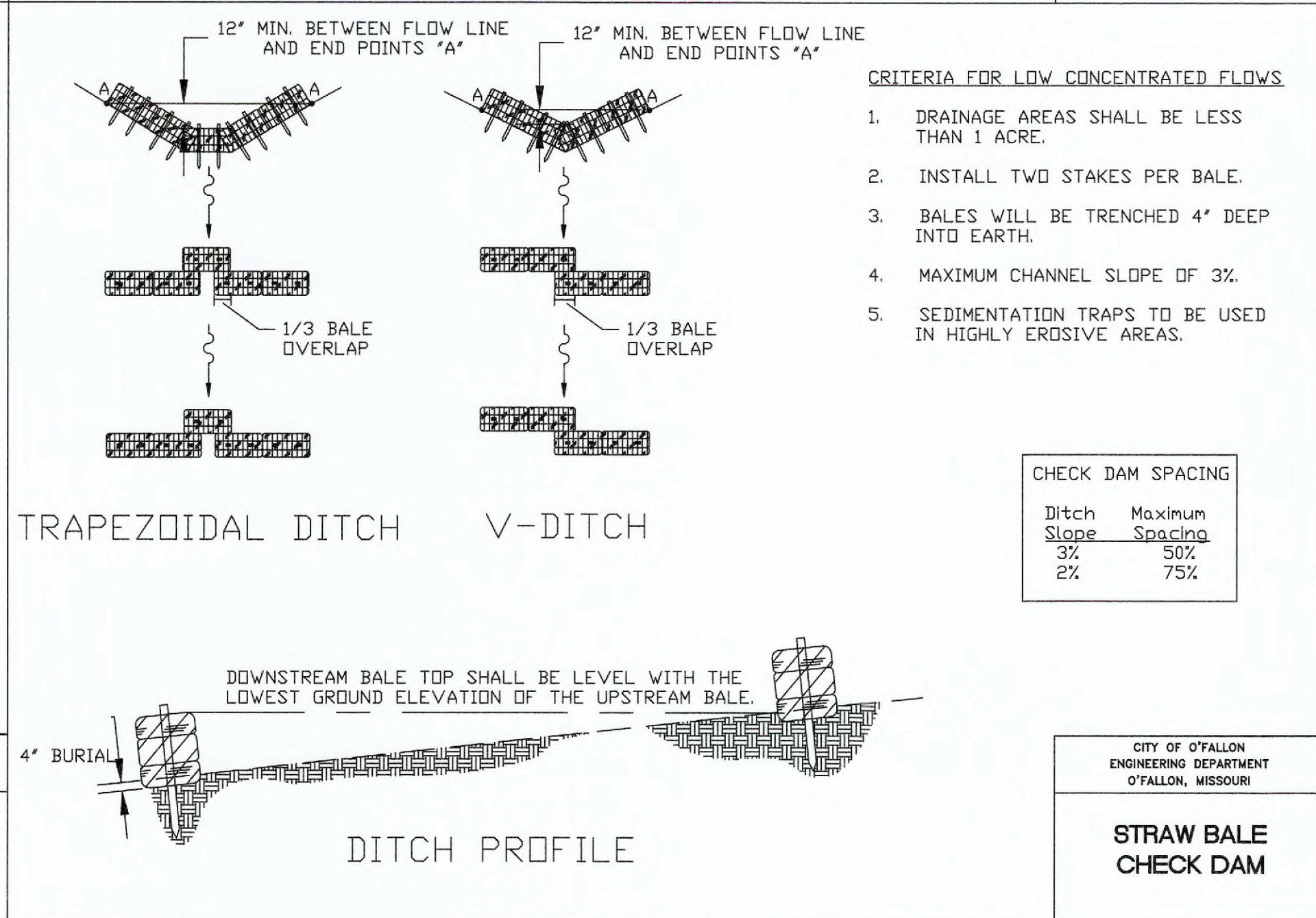
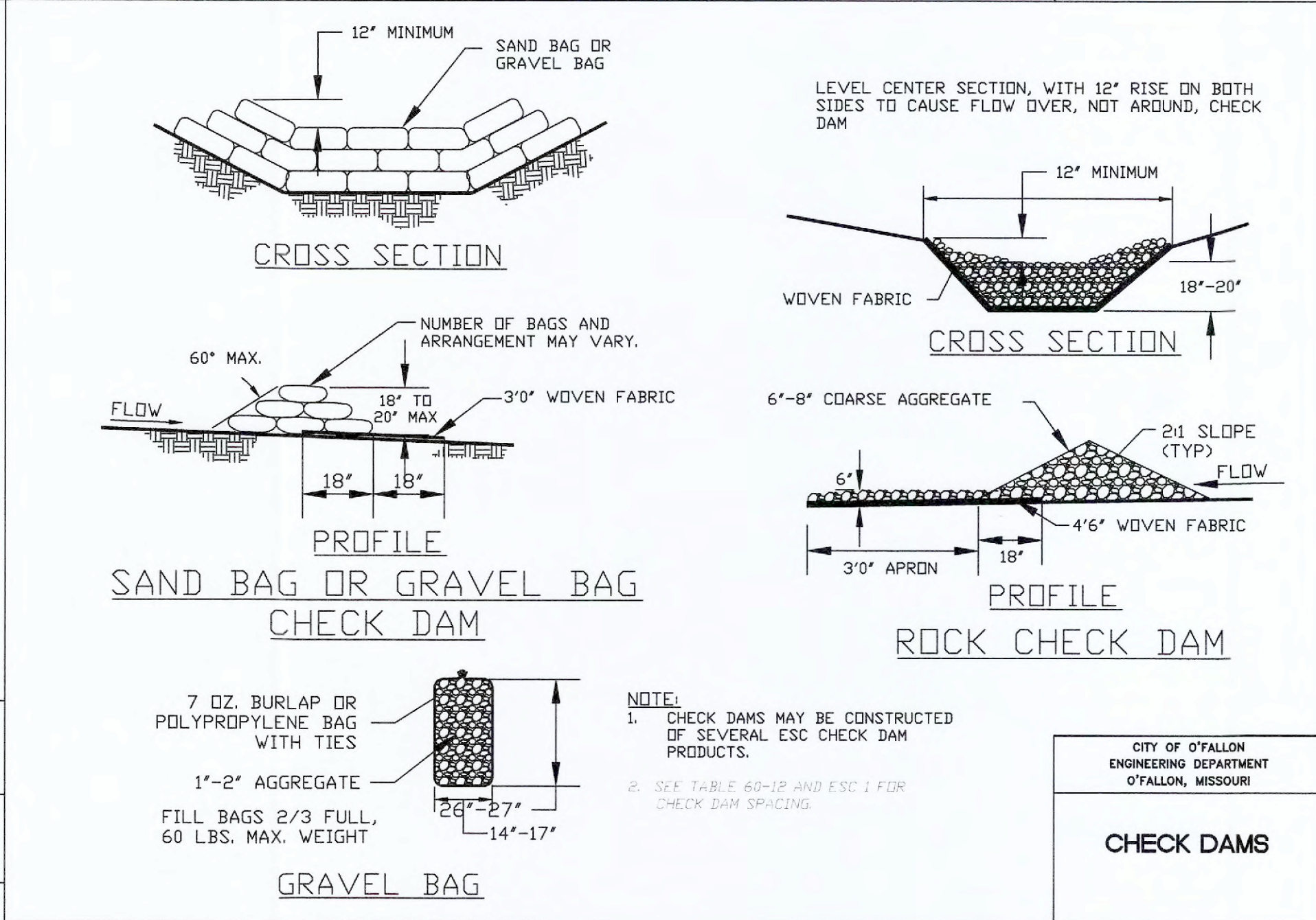
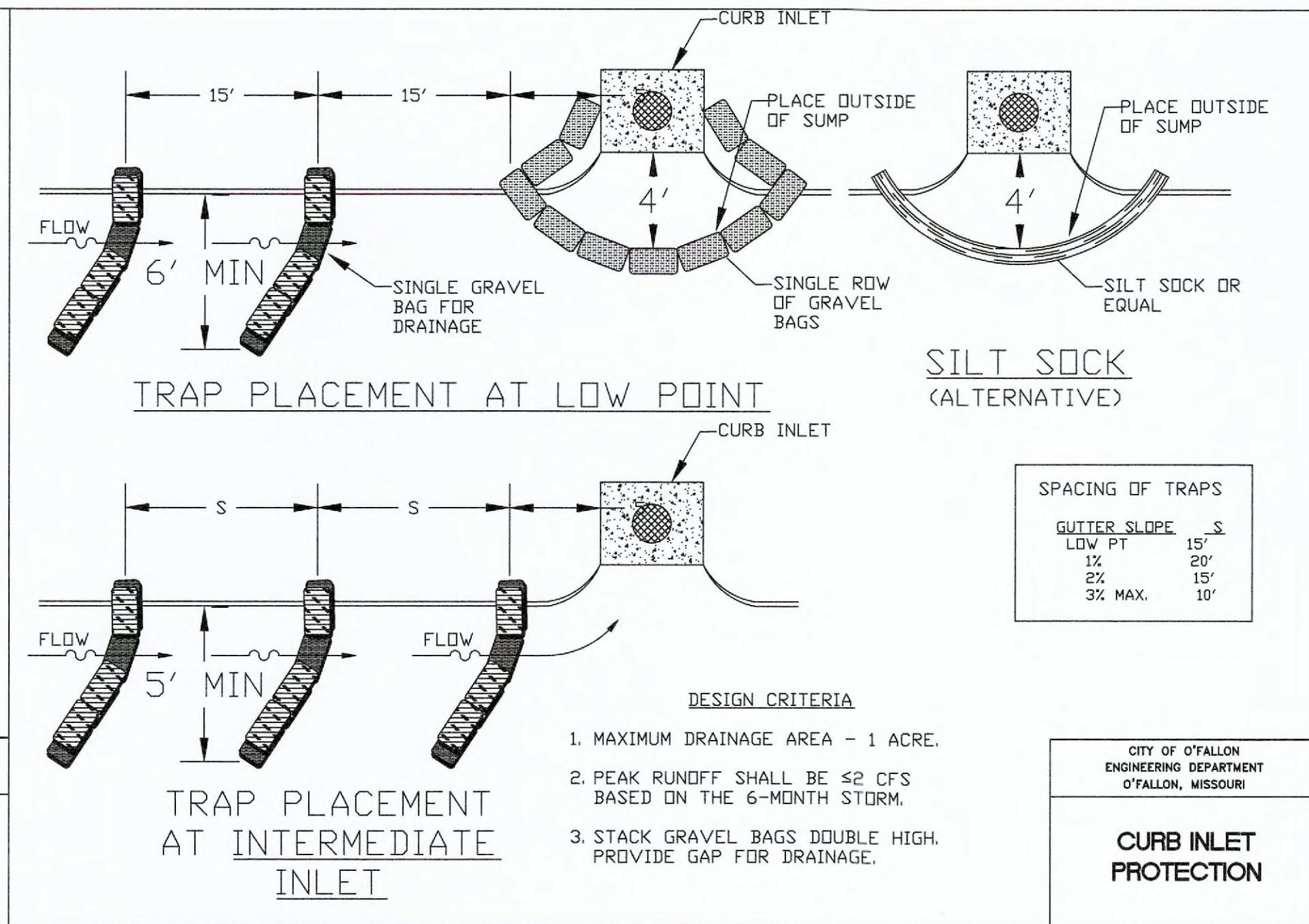
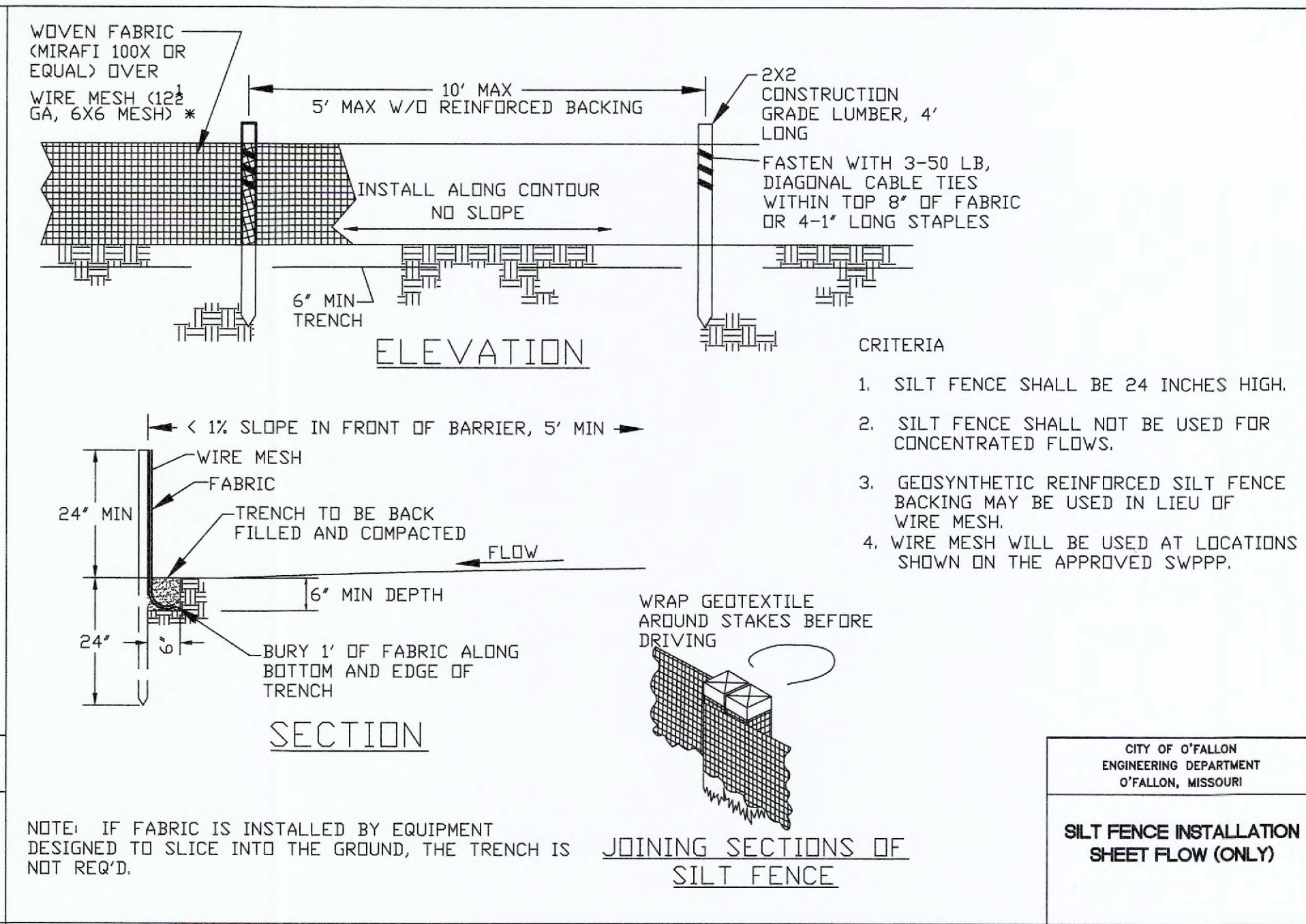
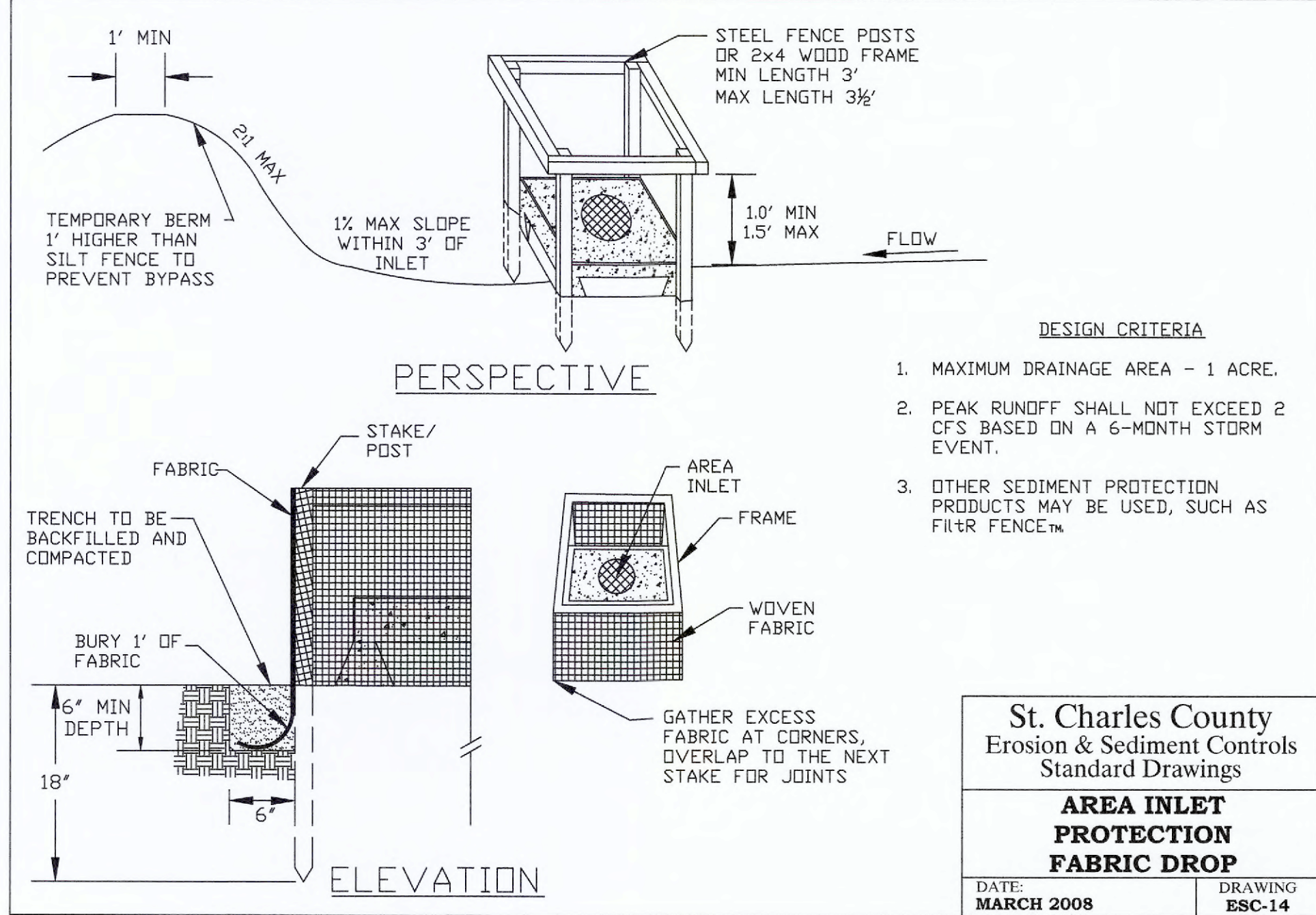
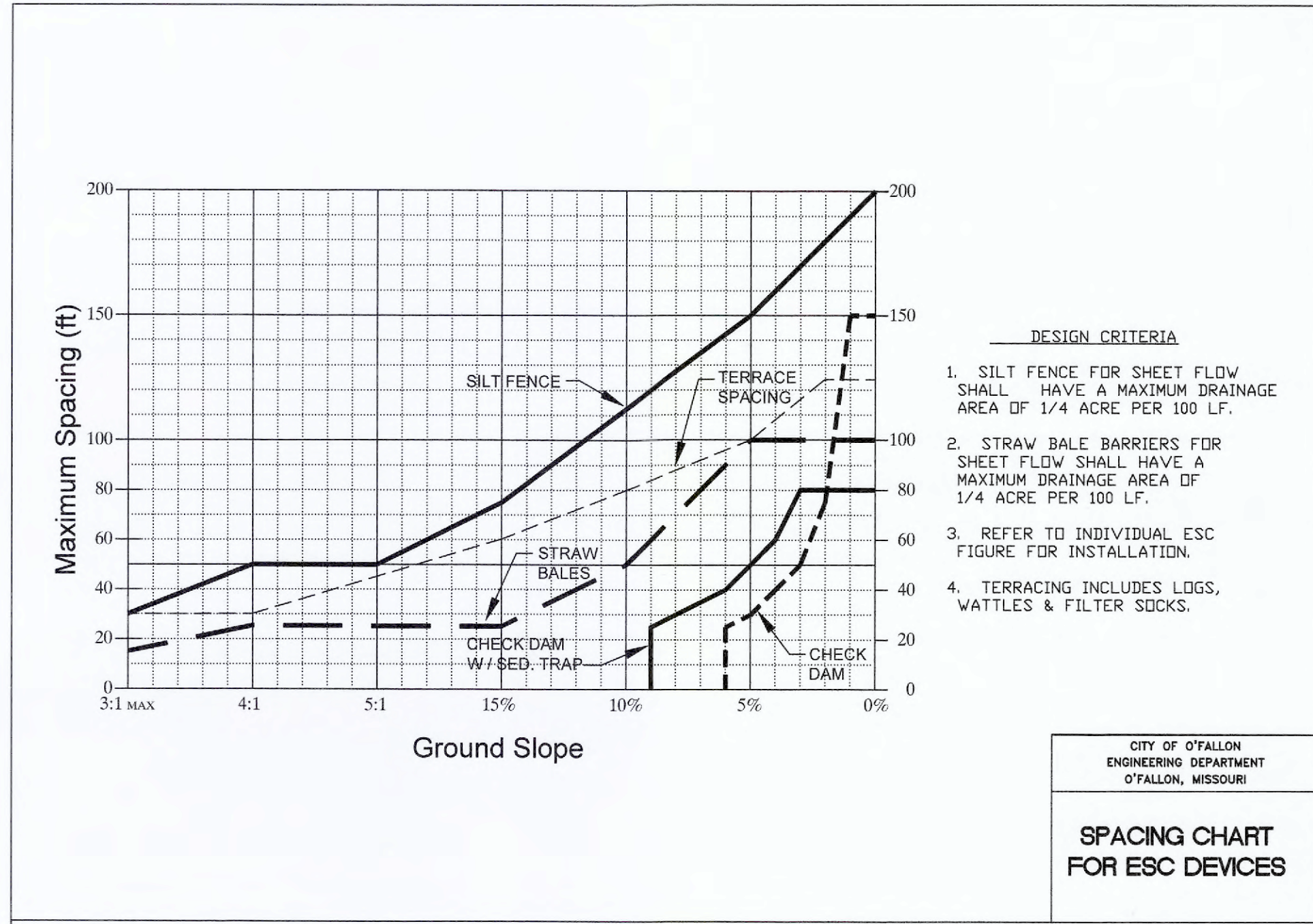
DETENTION AND WATER QUALITY DETAILS

P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

Page No.
11 of 22

Box Project # 03-B478E Issue Date: 9/21/2023



PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368



REFERENCE DRAWINGS
ONLY, ENGINEERS
SEAL DOES NOT
APPLY TO THESE
DETAILS

REVISIONS	
3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:

JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

EROSION CONTROL DETAILS

P+Z No. # 23-004744

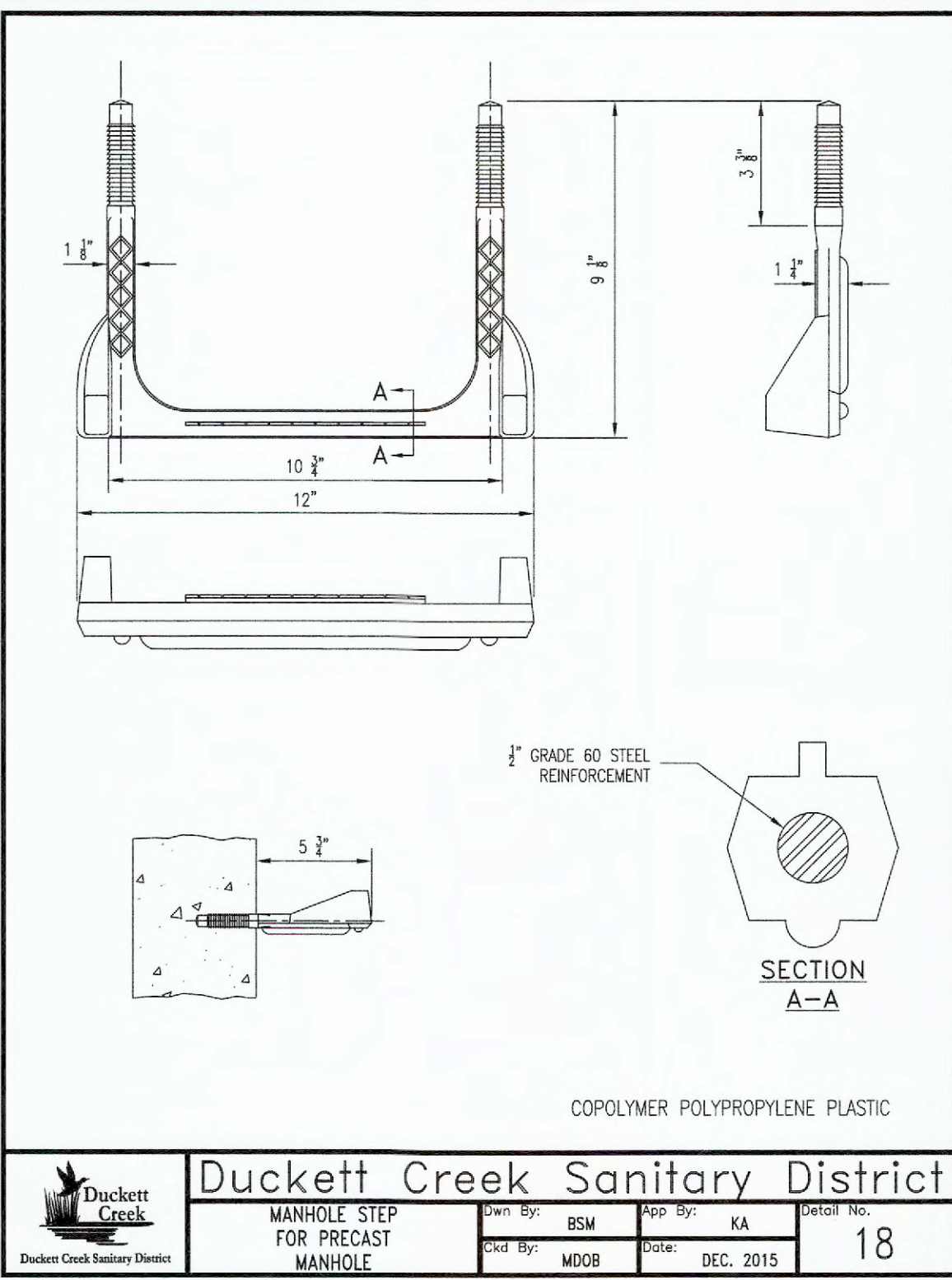
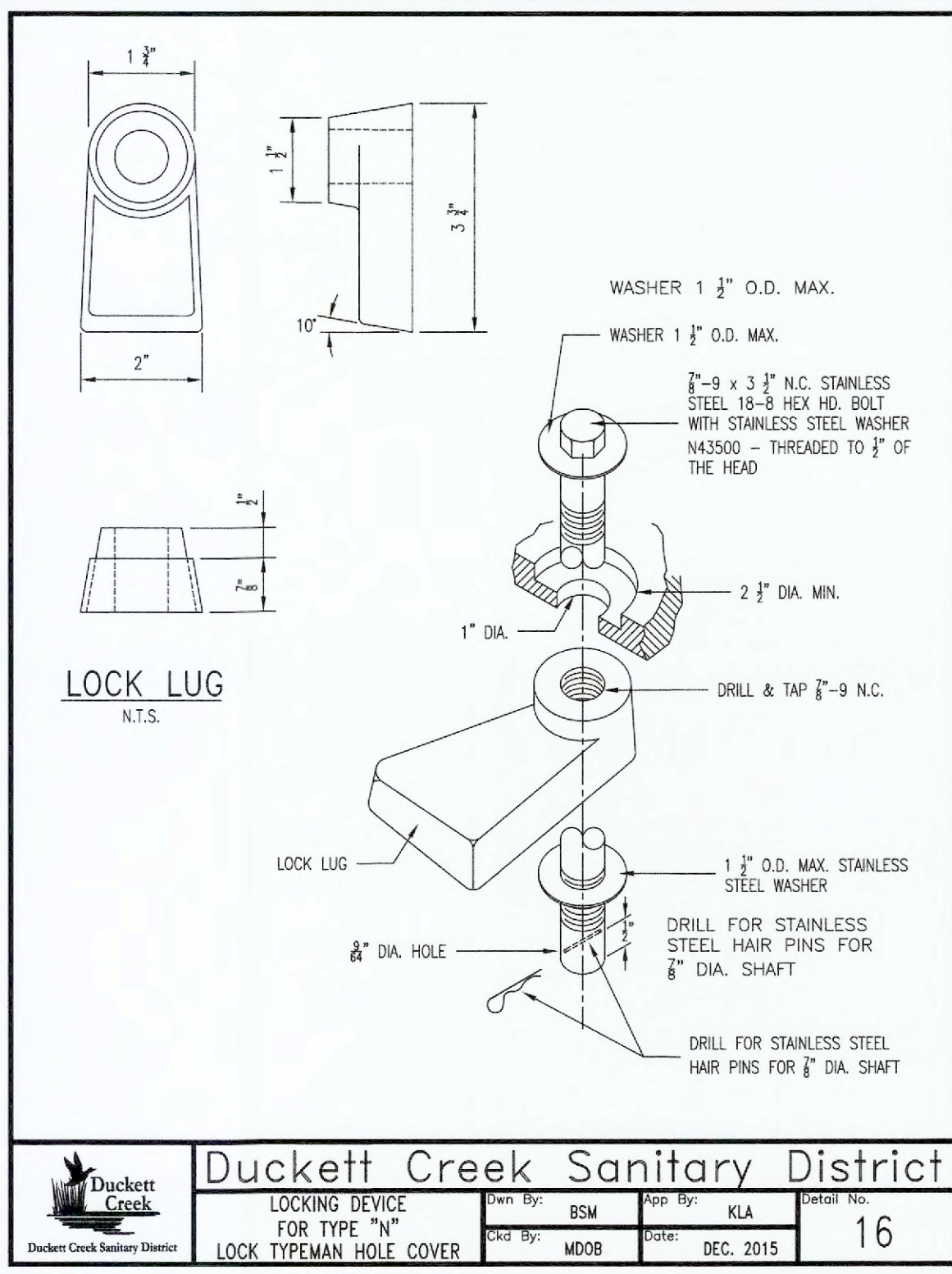
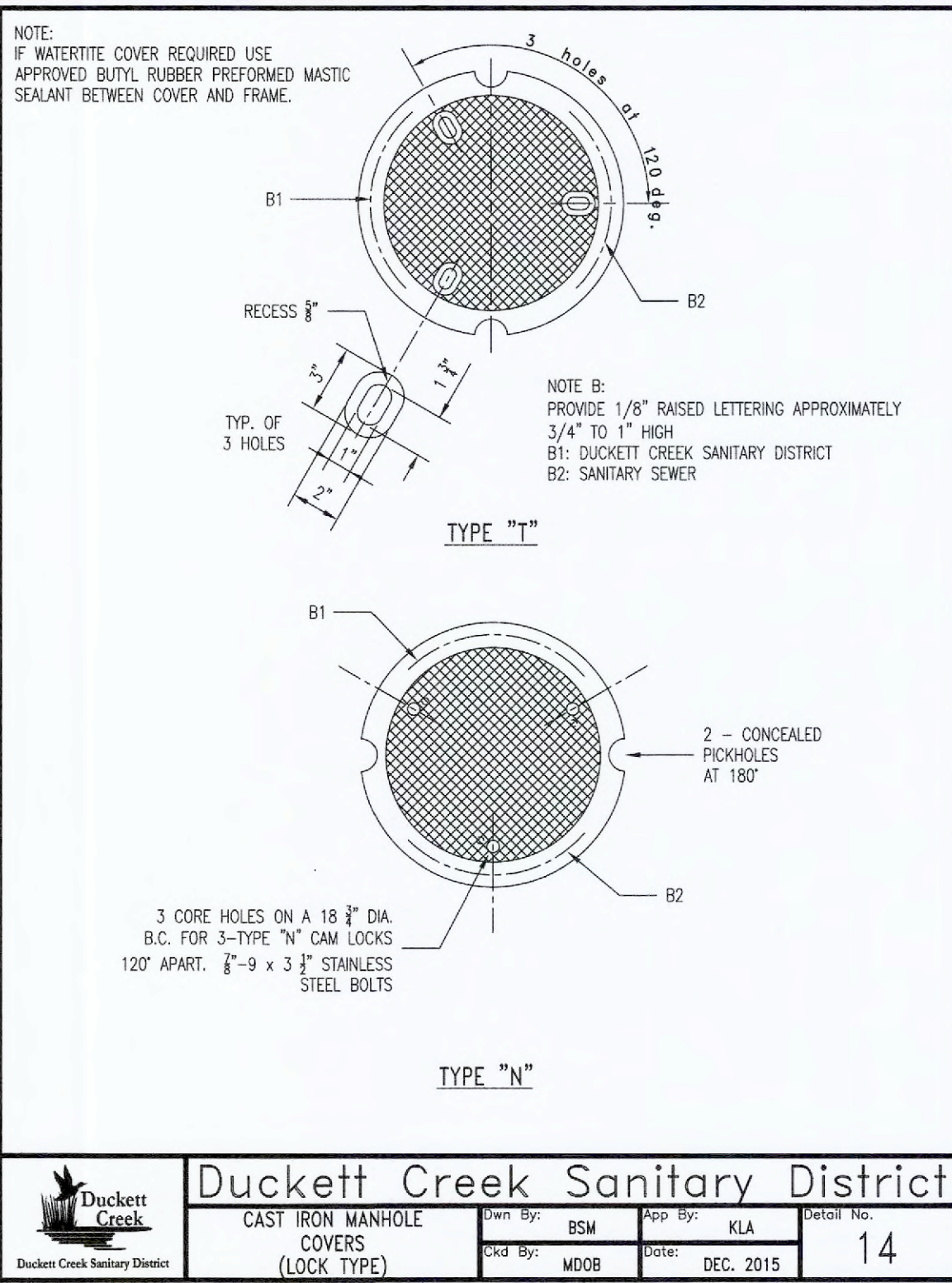
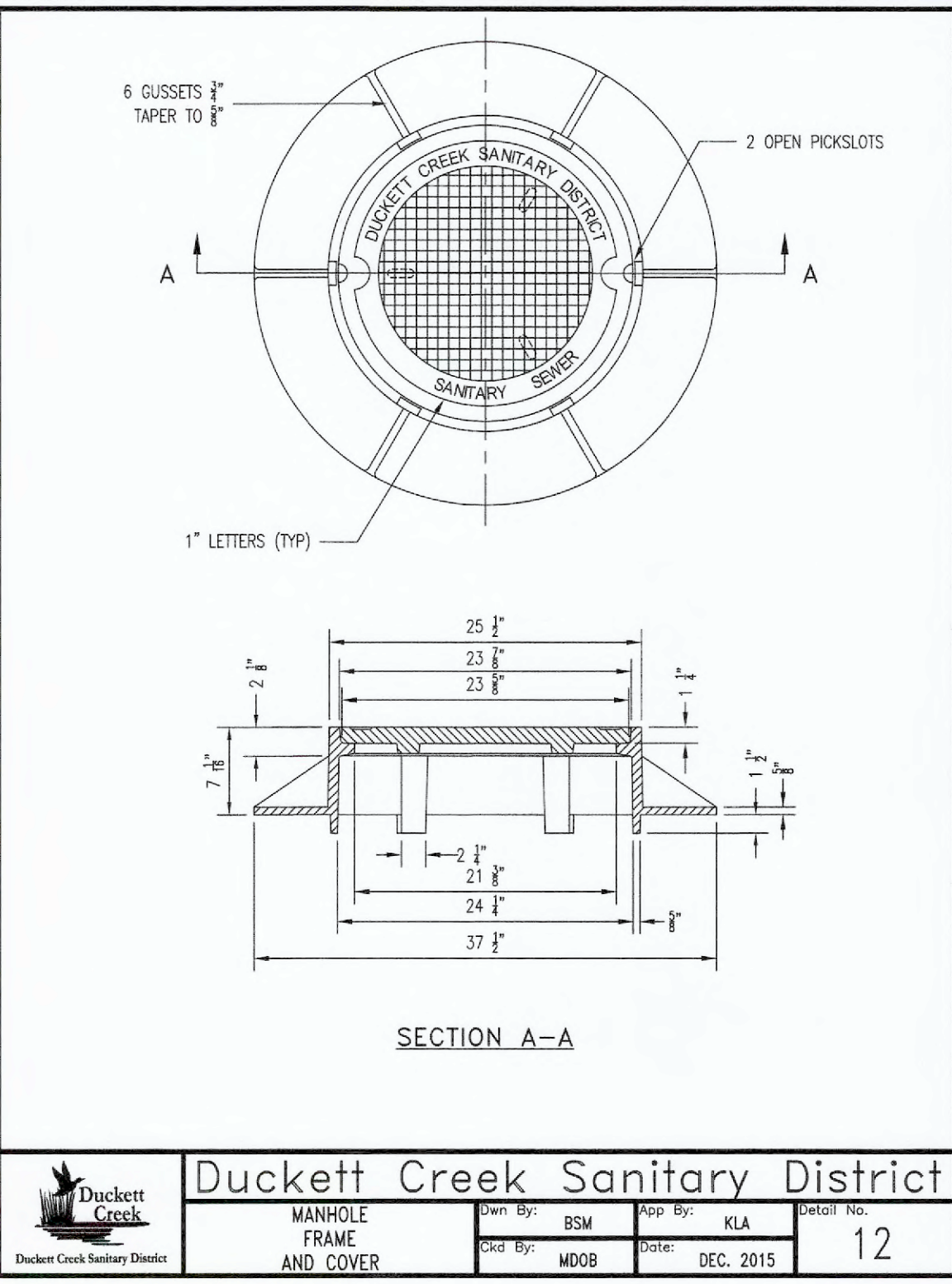
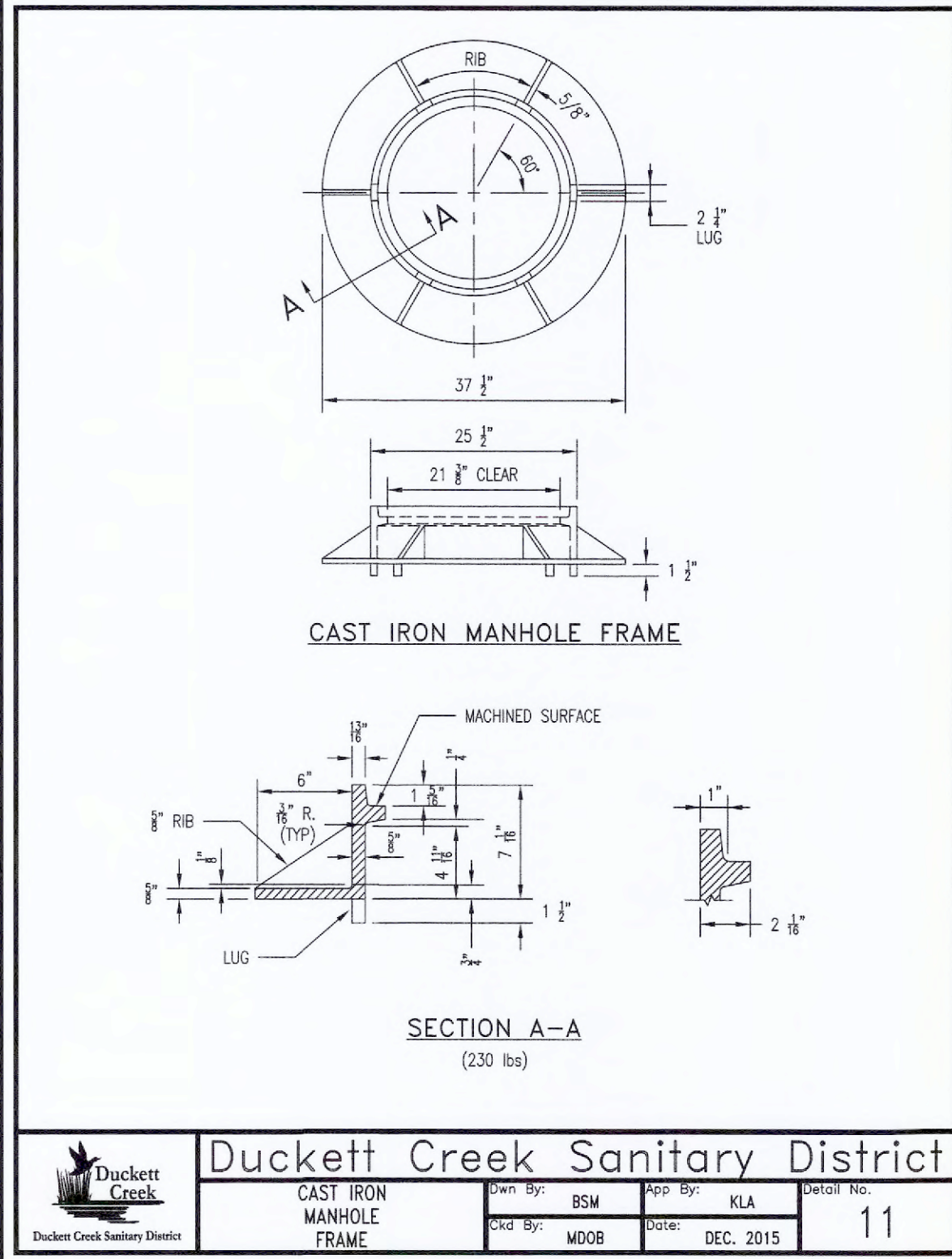
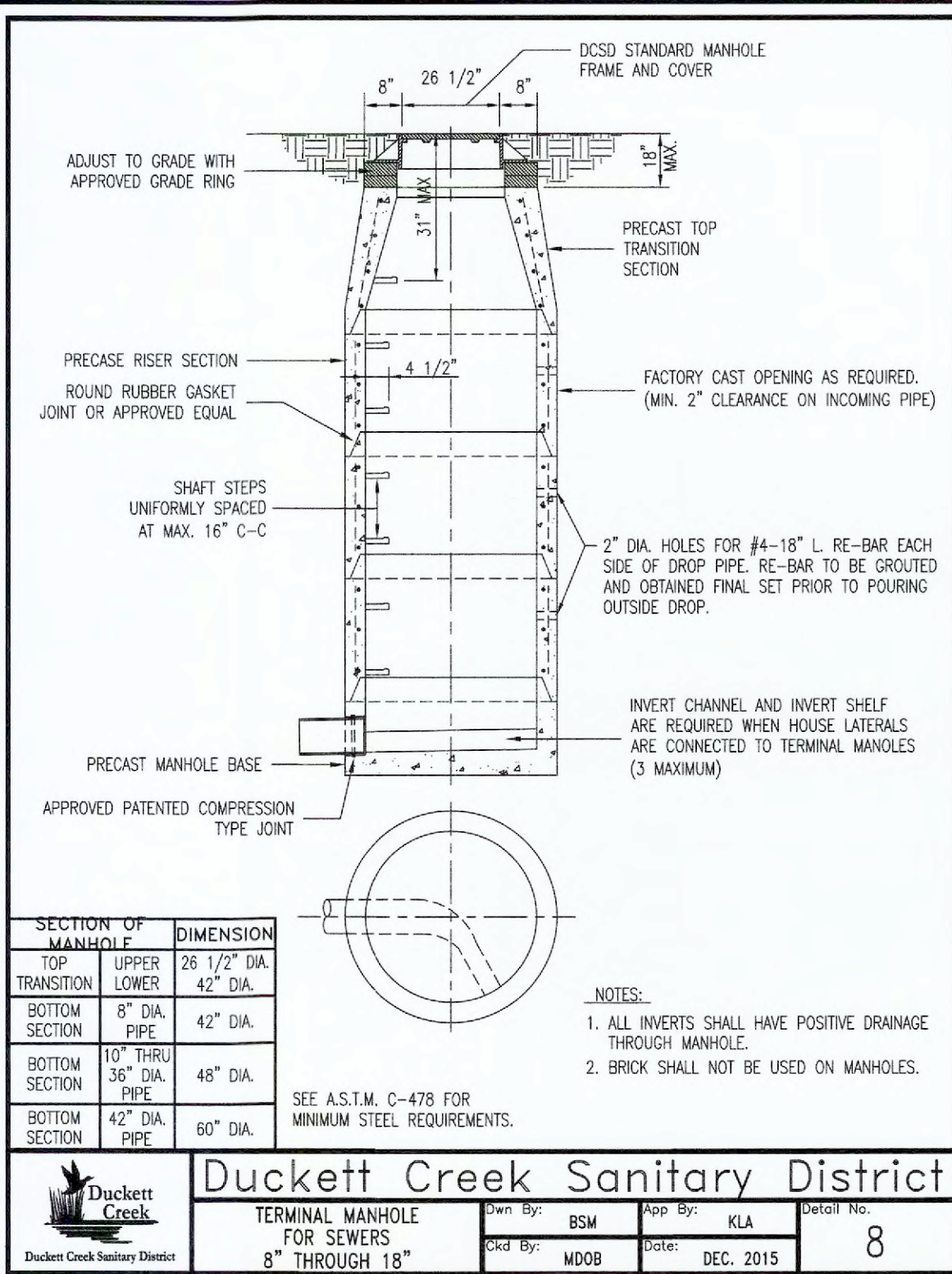
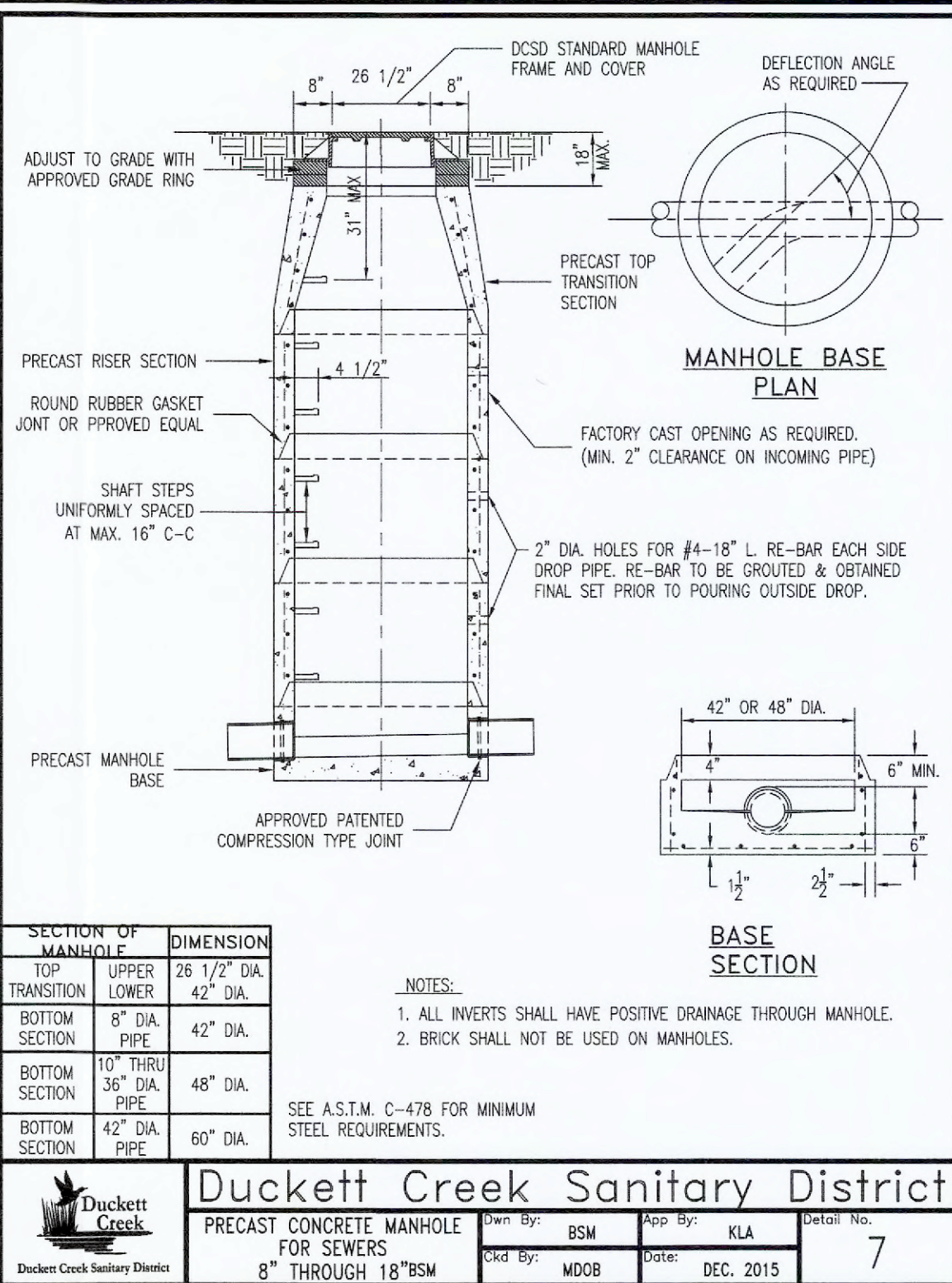
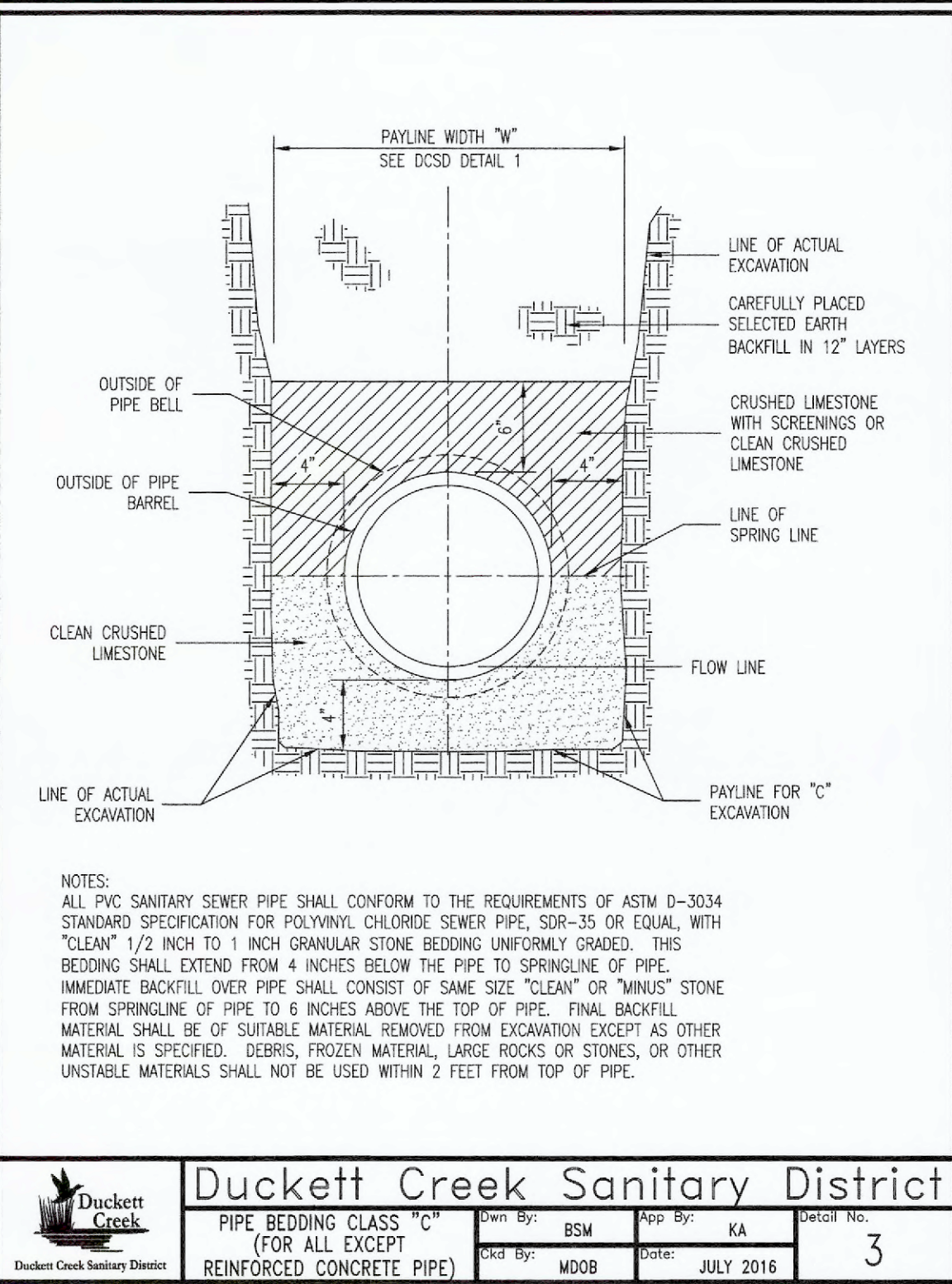
Approval Date: July 6, 2023

City No. #

Page No.

14 of 22

ROUND PIPE				HORIZONTAL ELLIPTICAL PIPE			
INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT.	INSIDE DIAMETER OF PIPE (INCHES)	"W" PAYLINE WIDTH OF TRENCH (INCHES)	"W" PAYLINE WIDTH OF TRENCH (FEET)	PAY-VOLUMES CU. FT. PER FT.
4	30	2.50	3.28				
6	30	2.50	3.59				
8	30	2.50	3.87				
10	30	2.50	4.09				
12	30	2.50	4.25				
15	36	3.00	5.55				
18	36	3.00	5.77				
21	39	3.25	6.61				
24	42	3.50	7.39				
27	45	3.75	8.18				
30	49	4.08	9.30				
33	53	4.42	10.53				
36	56	4.67	11.43				
39	DISCONTINUED						
42	63	5.25	13.38	14 x 23	41	3.42	5.94
48	70	5.83	15.67	19 x 30	49	4.08	7.68
54	77	6.42	18.15	22 x 34	53	4.42	8.61
60	84	7.00	20.73	24 x 38	58	4.83	9.70
66	91	7.58	23.45	27 x 42	62	5.17	10.71
72	98	8.17	26.37	29 x 45	66	5.50	11.72
78	105	8.75	29.39	32 x 49	71	5.92	13.14
84	112	9.33	32.57	34 x 53	75	6.25	14.05
90	119	9.92	35.90	38 x 60	83	6.92	16.18
96	126	10.50	39.37	43 x 68	92	7.67	18.81
102	133	11.08	42.99	48 x 76	101	8.42	21.59
108	140	11.67	46.75	53 x 83	109	9.08	24.35
114	147	12.25	50.66	58 x 91	118	9.83	27.45
120	154	12.83	54.72	63 x 98	126	10.50	30.50
126	161	13.42	58.92	68 x 106	135	11.25	33.91
132	168	14.00	63.27	72 x 113	143	11.92	36.99
144	182	15.17	72.40	77 x 121	152	12.67	40.69
				82 x 128	160	13.33	44.45
				87 x 136	168	14.00	47.79
				92 x 143	176	14.67	51.70
				97 x 151	185	15.42	56.01
				106 x 166	202	16.83	64.48
				116 x 180	218	18.17	73.59



PROJECT TITLE:
AS-BUILT PLANS FOR:
CHILDREN'S LIGHHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
OFALLON, MISSOURI 63368



REFERENCE DRAWINGS ONLY, ENGINEERS SEAL DOES NOT APPLY TO THESE DETAILS



REVISIONS	
3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:
JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangman@gmail.com

DUCKETT CREEK SANITARY DISTRICT DETAILS

P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

Page No.

SDR-35 x C900
BELL x SPIGOT ADAPTERS

HARCO STYLE

SIZE	CATALOG NO.	A	L	STYLE
4"	335-O40	3.2	10.0	FABRICATED
6"	335-O60	2.9	3.5	HARCO
8"	335-O80	4.0	12.5	FABRICATED

FABRICATED STYLE

SIZE	CATALOG NO.	A	L	STYLE
4"	335-O40	3.2	10.0	FABRICATED
6"	335-O60	2.9	3.5	HARCO
8"	335-O80	4.0	12.5	FABRICATED

Duckett Creek Sanitary District

SDR-35 x C900
BELL AND SPIGOT
SPECIAL 4", 6" & 8" ADAPTORS

OWN BY: BSM
APP BY: KA
DATE: DEC. 2015
DETAIL NO. 19B

SDR-35 x C900
BELL x BELL ADAPTERS

SIZE CATALOG NO. OD ID L CTN CTN

SIZE	CATALOG NO.	OD	ID	L	CTN	CTN
4x4	337-O40	4.80	4.215	4.86	4.25	10.0
6x6	337-O60	6.90	6.275	6.96	6.32	11.13
8x8	337-O80	9.05	8.400	9.13	8.45	12.50

Duckett Creek Sanitary District

SDR-35 x C900
BELL AND BELL
4", 6" & 8" ADAPTORS

OWN BY: BSM
APP BY: KA
DATE: DEC. 2015
DETAIL NO. 19C

METAL FRAME AND COVER TYPE CLEANOUT

ADJUSTABLE HEAD TYPE CLEANOUT

Duckett Creek Sanitary District

TYPICAL
SEWER LATERAL
CLEANOUT DETAIL

OWN BY: BSM
APP BY: KLA
DATE: DEC. 2015
DETAIL NO. 25

Duckett Creek Sanitary District

TYPICAL SANITARY
SEWER LATERAL PROFILE

OWN BY: BSM
APP BY: KLA
DATE: DEC. 2015
DETAIL NO. 26

Duckett Creek Sanitary District

SANITARY SEWER
LATERAL RISER DETAIL

OWN BY: BSM
APP BY: KA
DATE: DEC. 2015
DETAIL NO. 27

SCREENING WALL (@ CONDENSER UNITS)

DETAIL PROVIDED BY CITY OF O'FALLON

6
A1.01

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

Duckett Creek Sanitary District

SAMPLING TEE

OWN BY: MSM
APP BY: LRK
DATE: APRIL 2022
DETAIL NO. 31

Installation Techniques - Link-Seal® Modular Seals

Online Installation Video
Visit www.linkseal.com

Always Wear Safety Equipment When Using Link-Seal® Modular Seals!

Link-Seal® Modular Seal - Don't

Link-Seal® Modular Seal - Do's

1. Make sure pipe is centered.
2. Install the bell with the pressure plates evenly spaced.
3. Install the seal number of links indicated in sizing charts.
4. Check to make sure pipe is supported properly during backfill operations. Note: Link-Seal modular seals are not intended to support the weight of the pipe.
5. Make sure seal assembly and pipe surfaces are free from dirt.
6. For tight fits, use non-purifying liquid detergent to assist installation.
7. If the seal doesn't appear to be correct using the techniques provided, call PSI at 715-747-6943 or 800-423-2410.

1. Don't treat the bell with the pressure plates aimed in irregular directions. (flagged)
2. Don't use high speed power tools (SDI rpm or more).
3. Do not use power tools on Link-Seal modular seal 316 stainless steel bolts. (flagged)
4. Don't use grease in installing Link-Seal modular seals.
5. Don't install Link-Seal® modular seals where wind-borne or other irregular surfaces exist without consultation of the sealing requirements.
6. Don't remove each bolt completely before moving on to the next.
7. Don't use Link-Seal® modular seals where wind-borne or other irregular surfaces exist without consultation of the sealing requirements.
8. Don't use Link-Seal® modular seals where wind-borne or other irregular surfaces exist without consultation of the sealing requirements.

PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
DRAWING
SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
636-928-5662
FAX 928-1718

REFERENCE DRAWINGS
ONLY, ENGINEERS
SEAL DOES NOT
APPLY TO THESE
DETAILS

REVISIONS

DATE	CITY COMMENTS
3/6/25	
7/1/25	

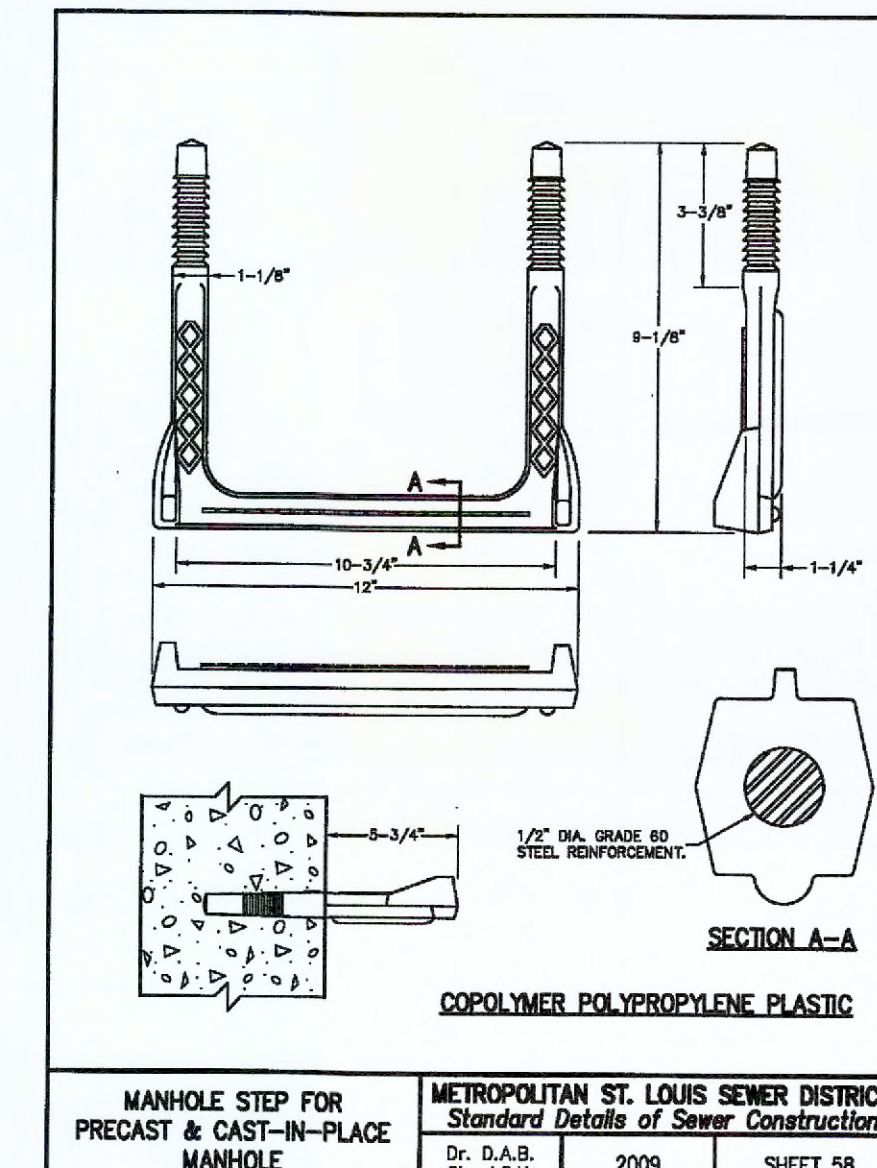
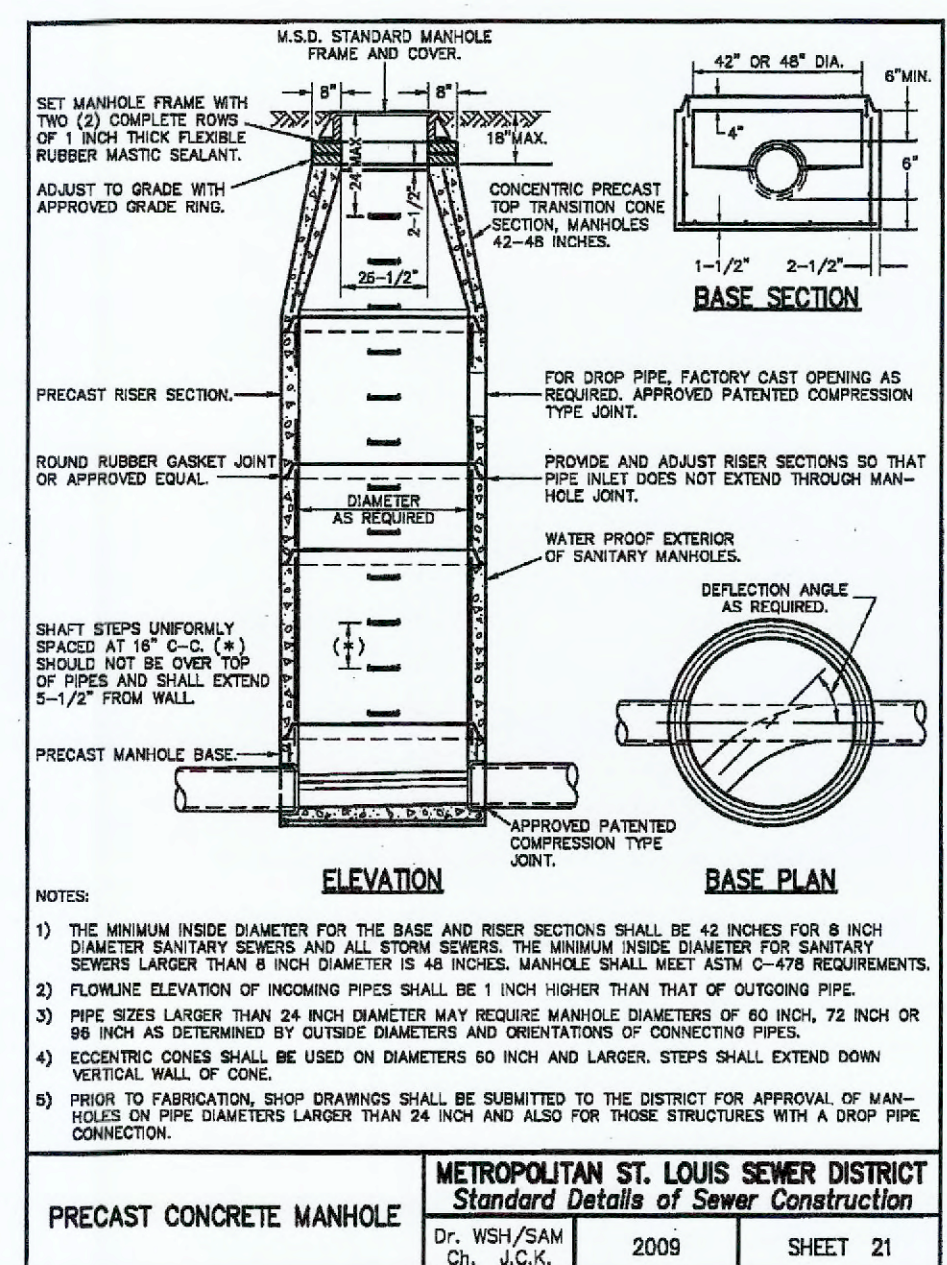
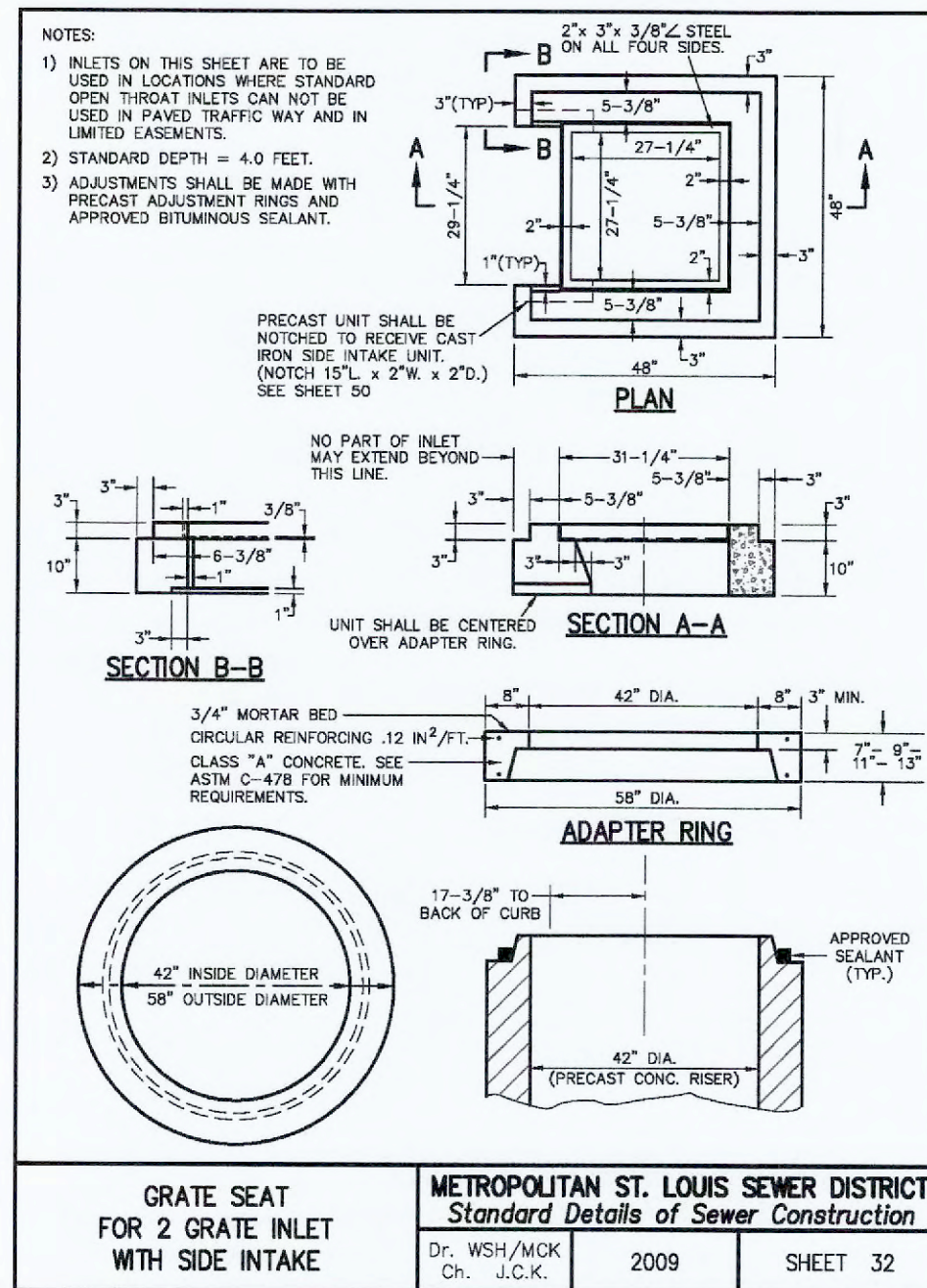
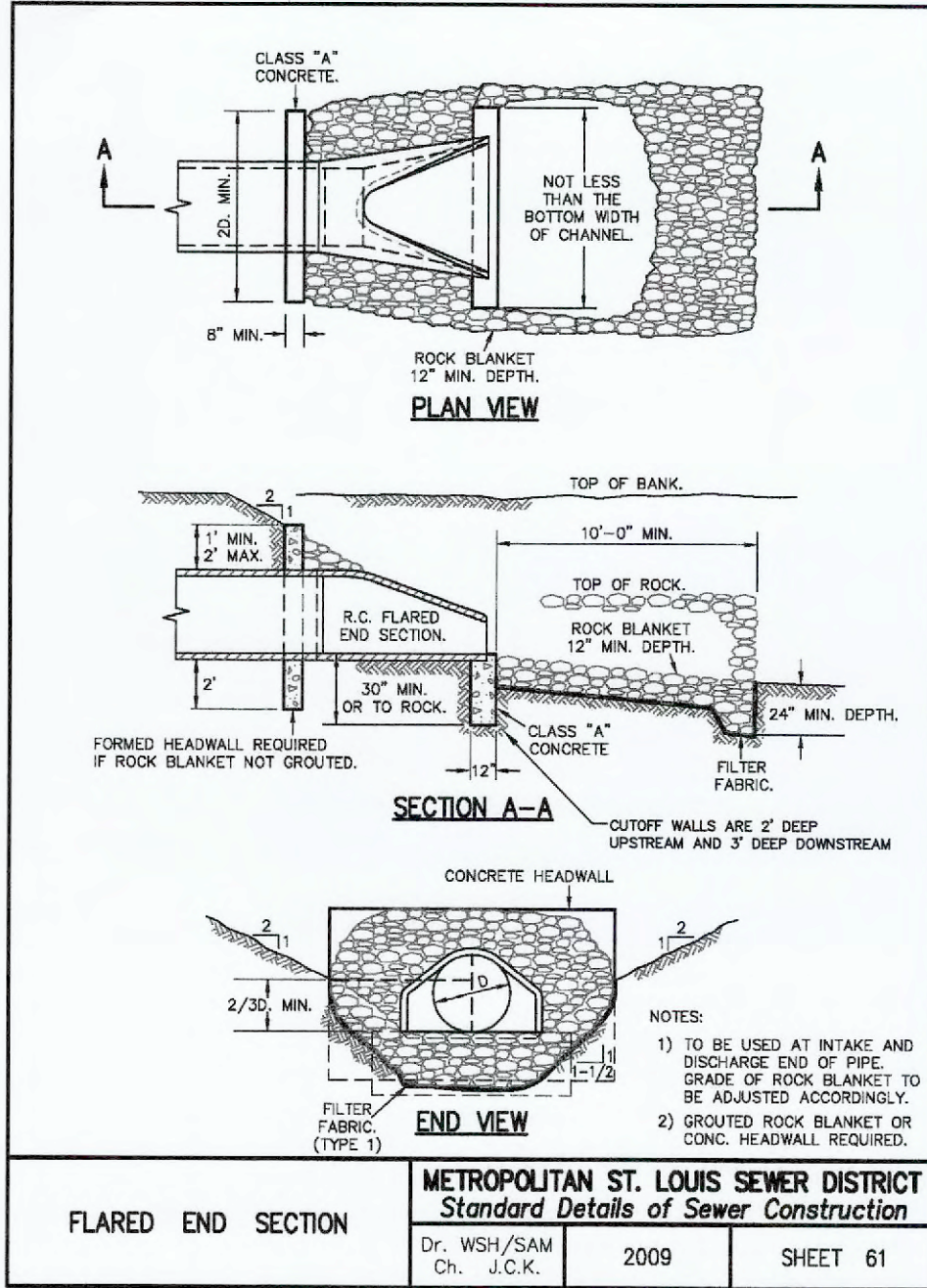
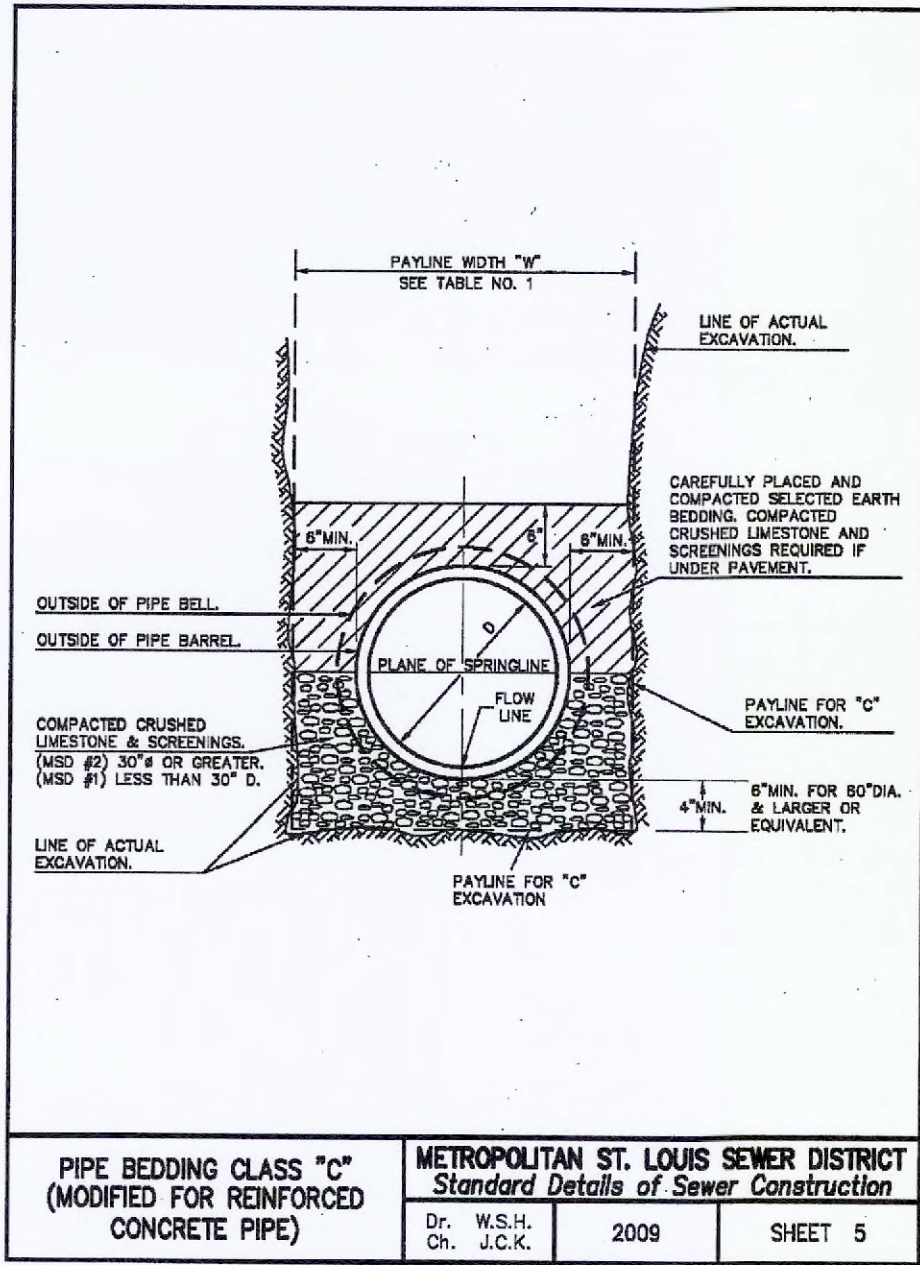
Developer / Owner:

JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

DUCKETT CREEK SANITARY DISTRICT
DETAILS

P+Z No. # 23-004744
Approval Date: July 6, 2023
City No. #
Page No.

16 of 22



PROJECT TITLE:

AS-BUILT PLANS FOR:
CHILDREN'S LIGHTHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
DRAWING
SURVEYING

221 Point West Blvd.
St. Charles, MO 63301
636-929-5552
FAX 636-1718

Issue Date: 9/21/2023

REFERENCE DRAWINGS ONLY, ENGINEERS SEAL DOES NOT APPLY TO THESE DETAILS

REVISIONS	
3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:

JAFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

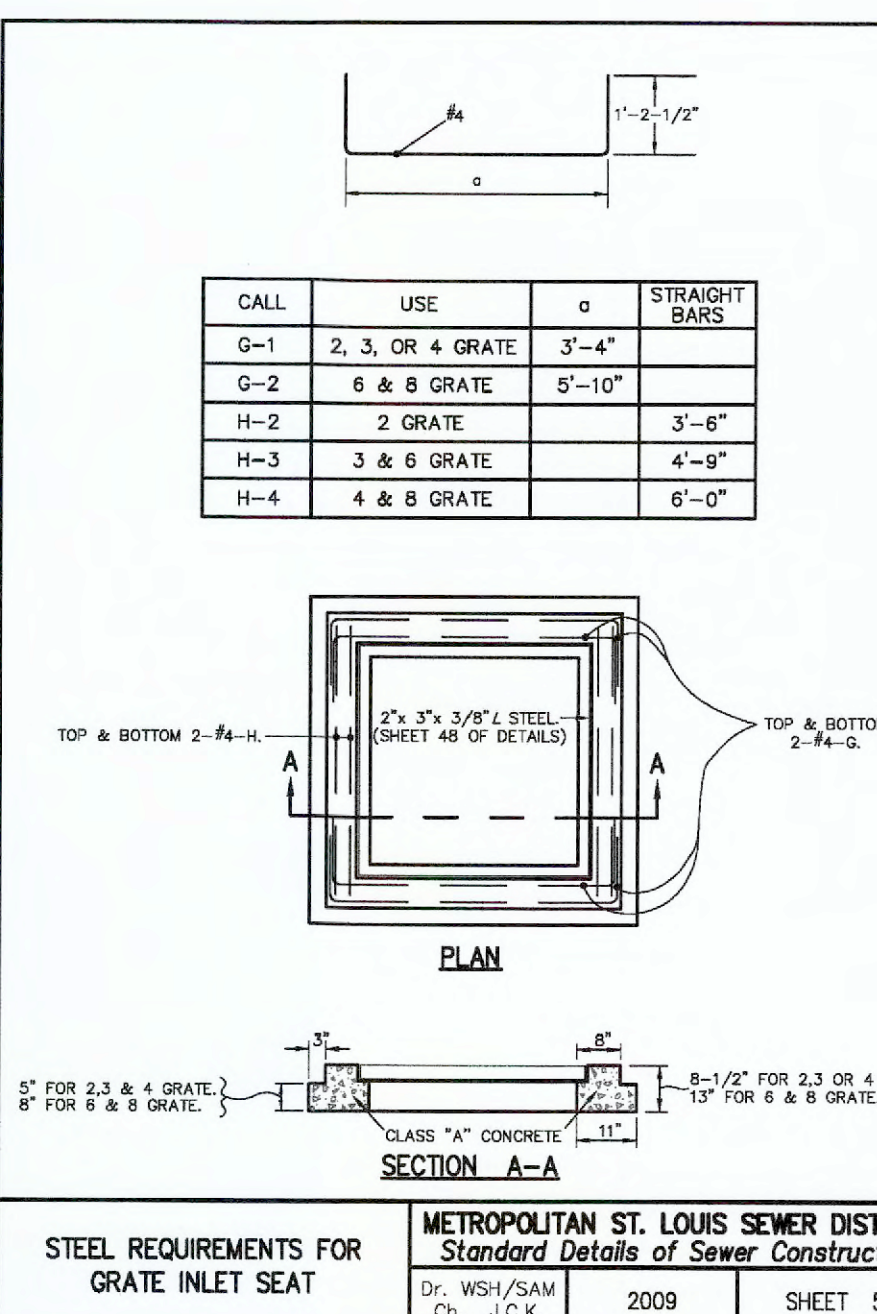
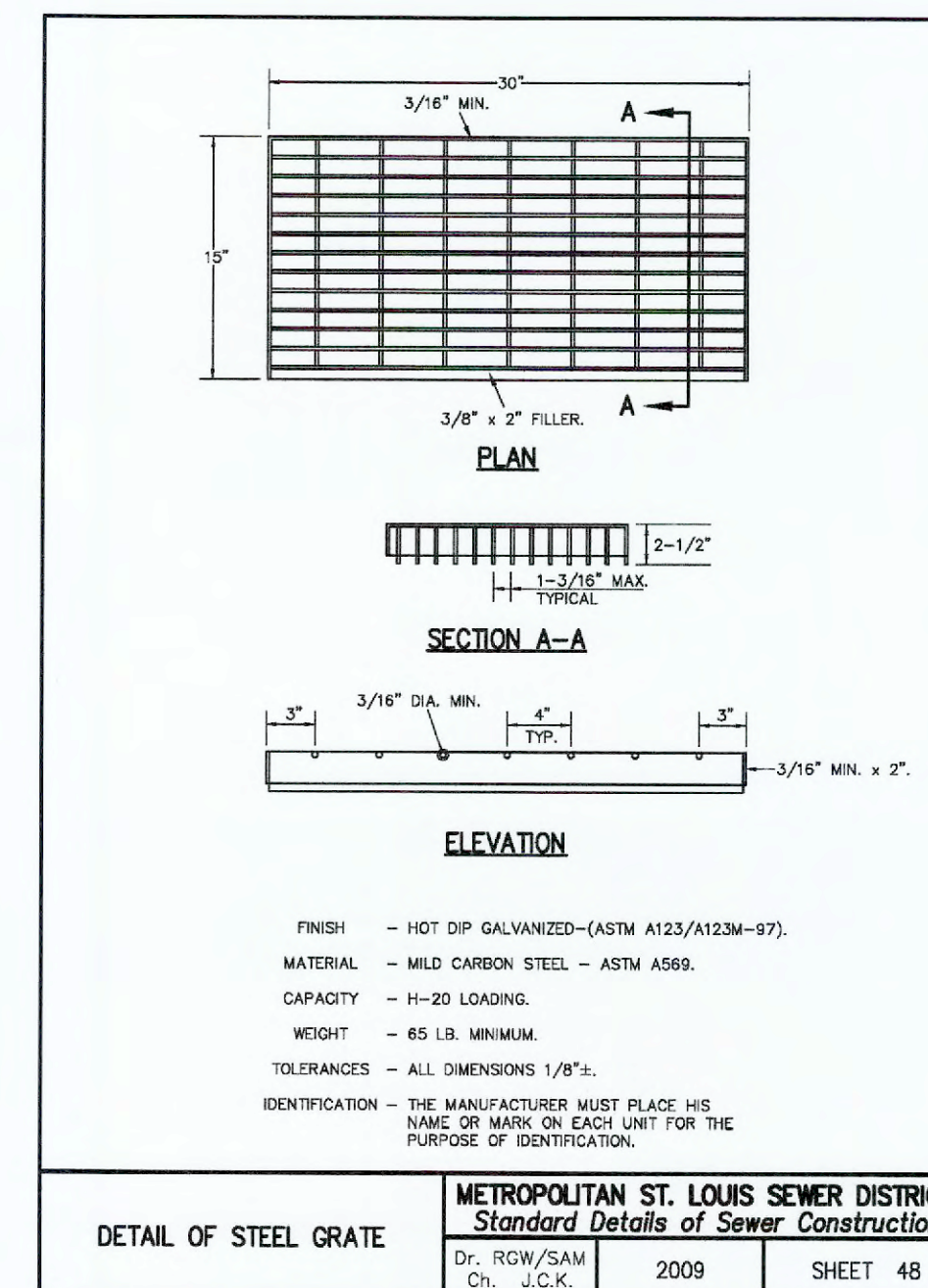
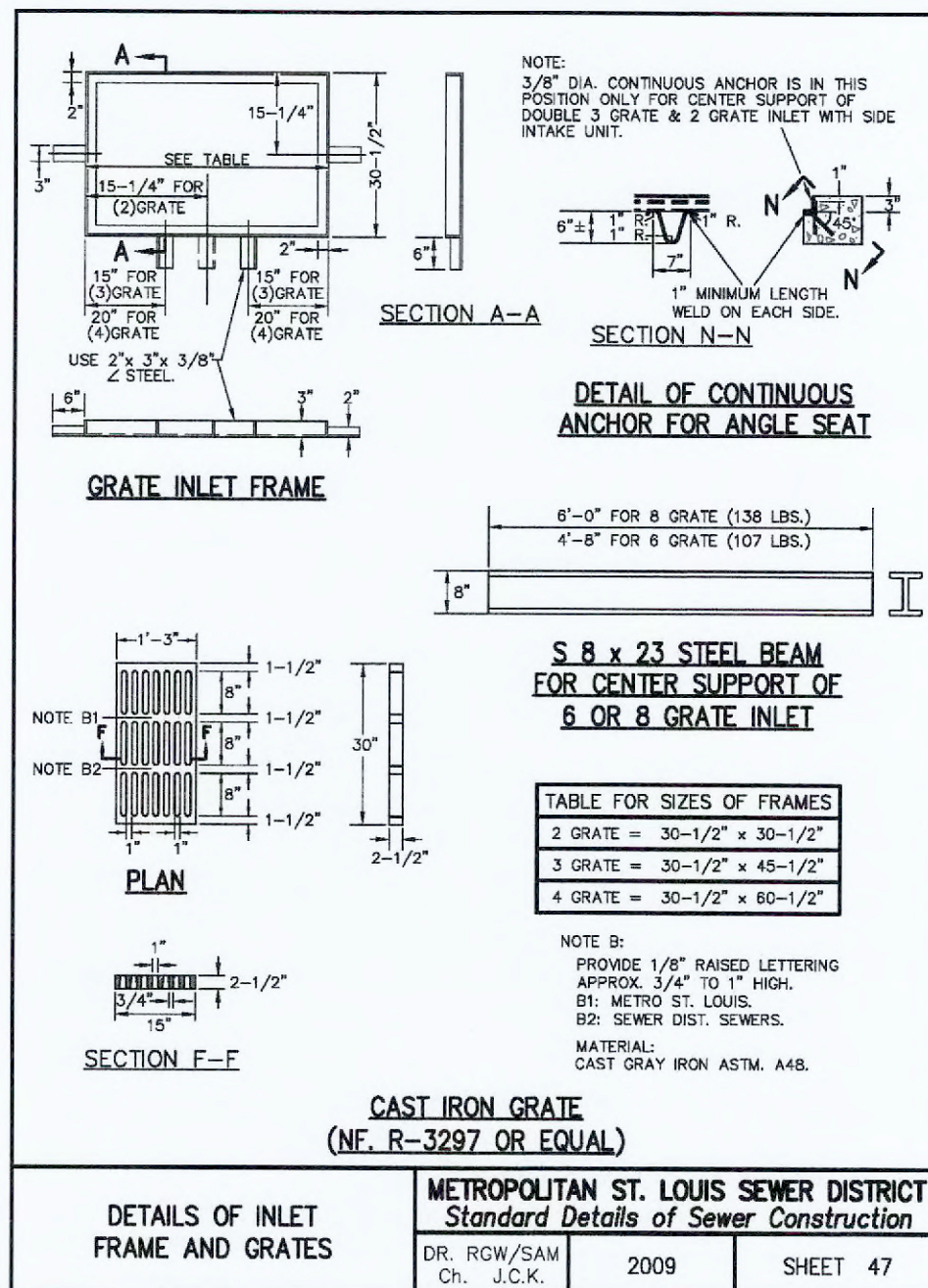
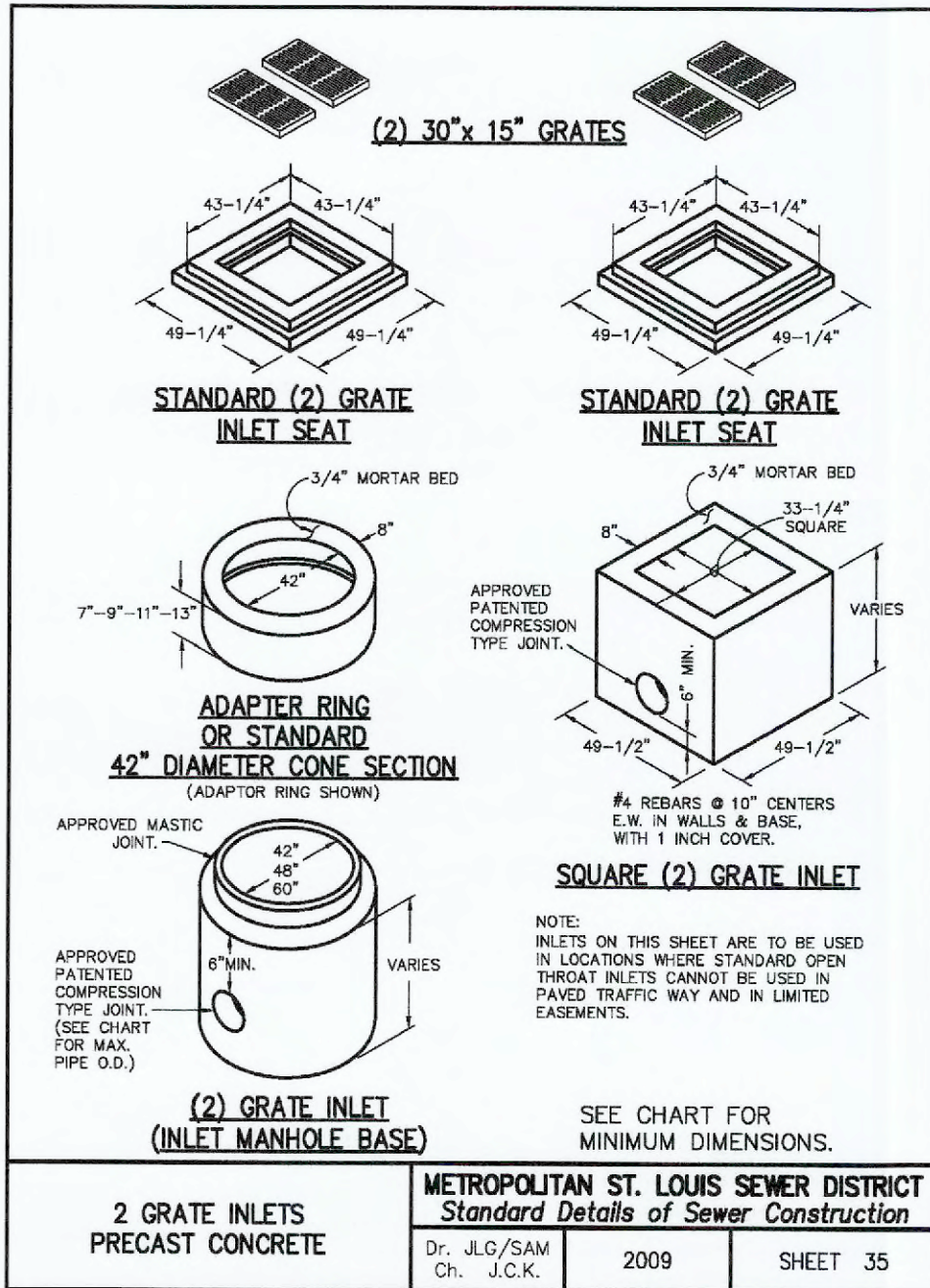
STORM SEWER DETAILS

P+Z No. # 23-004744
Approval Date: July 6, 2023

City No. #

Page No.

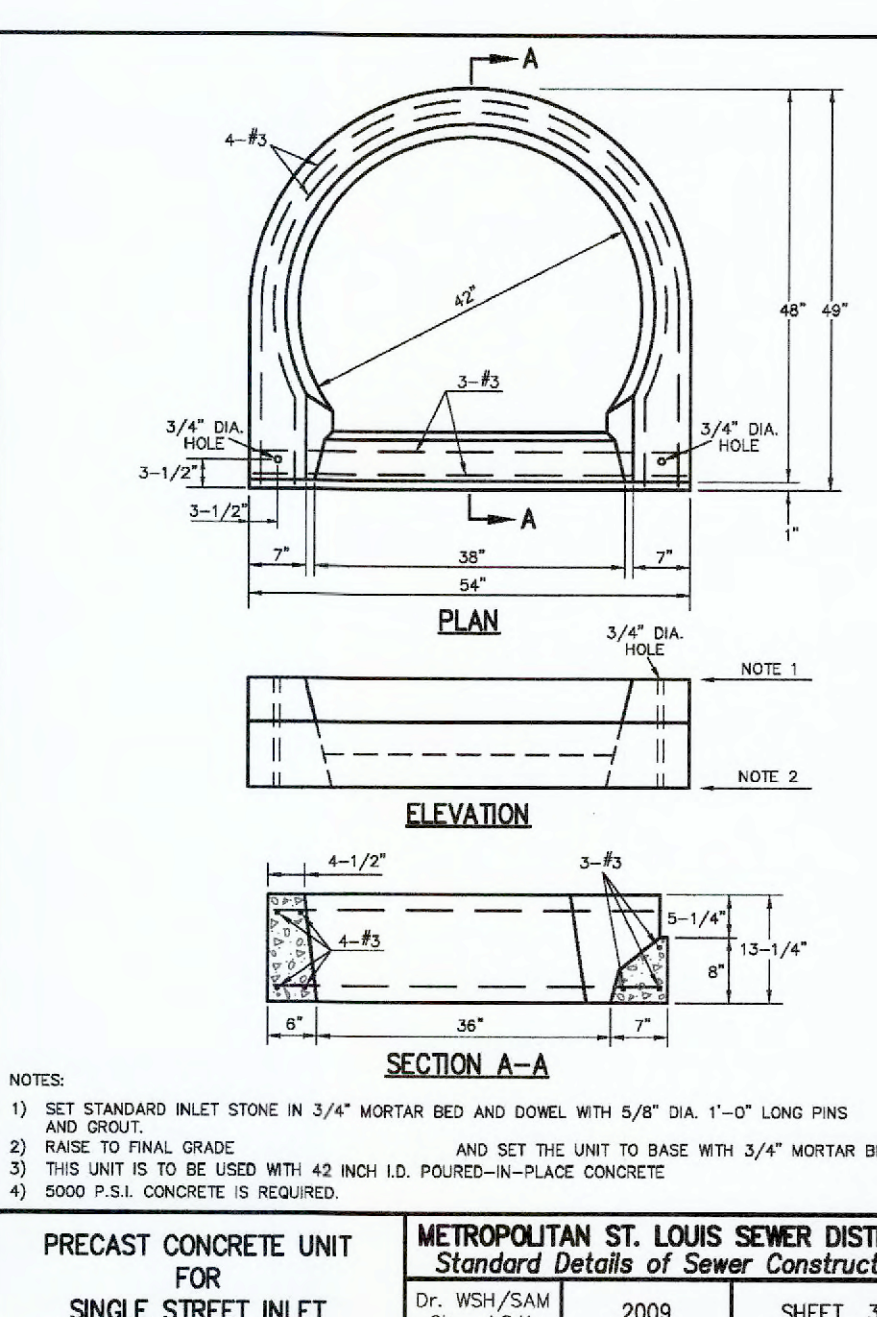
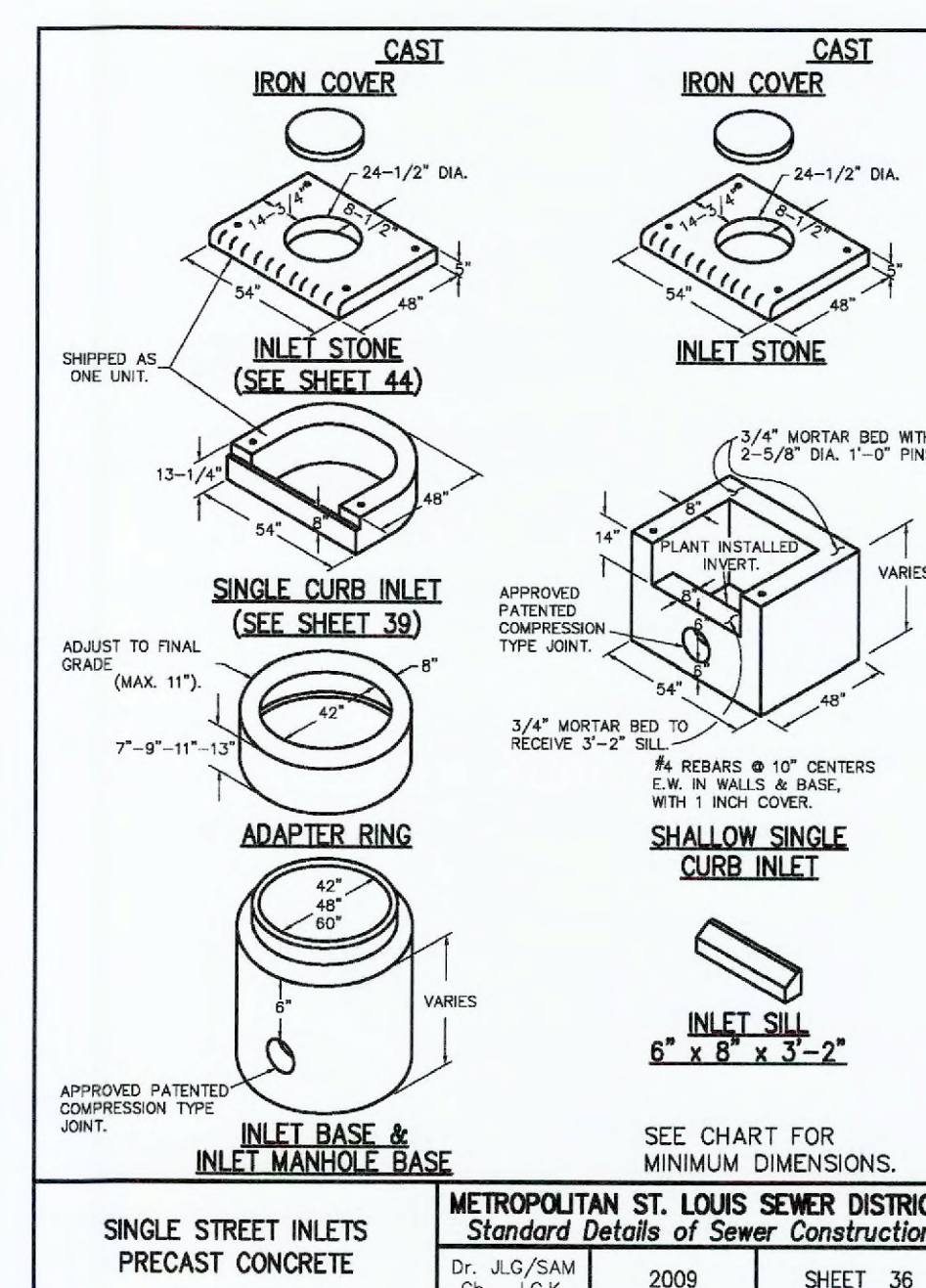
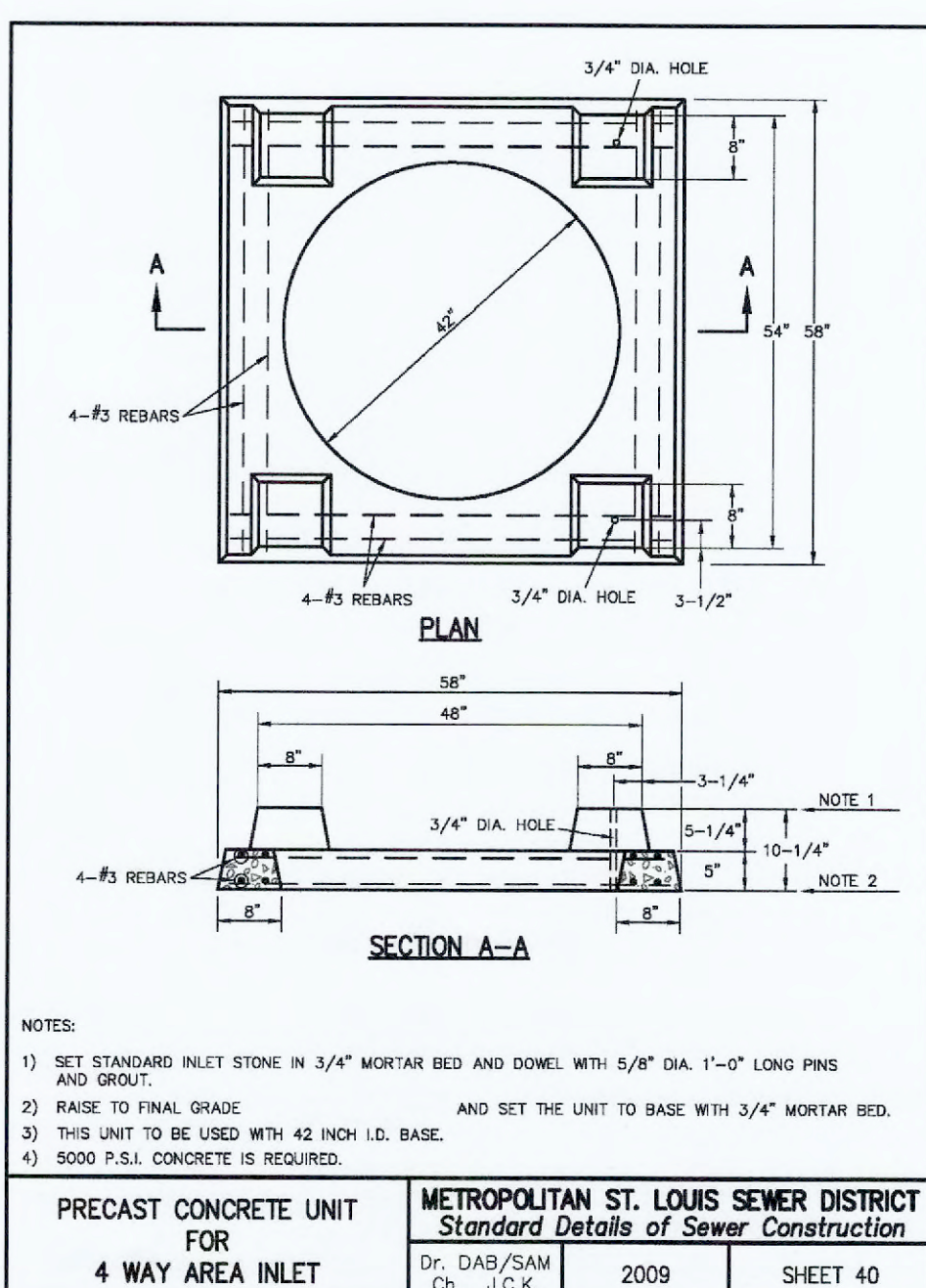
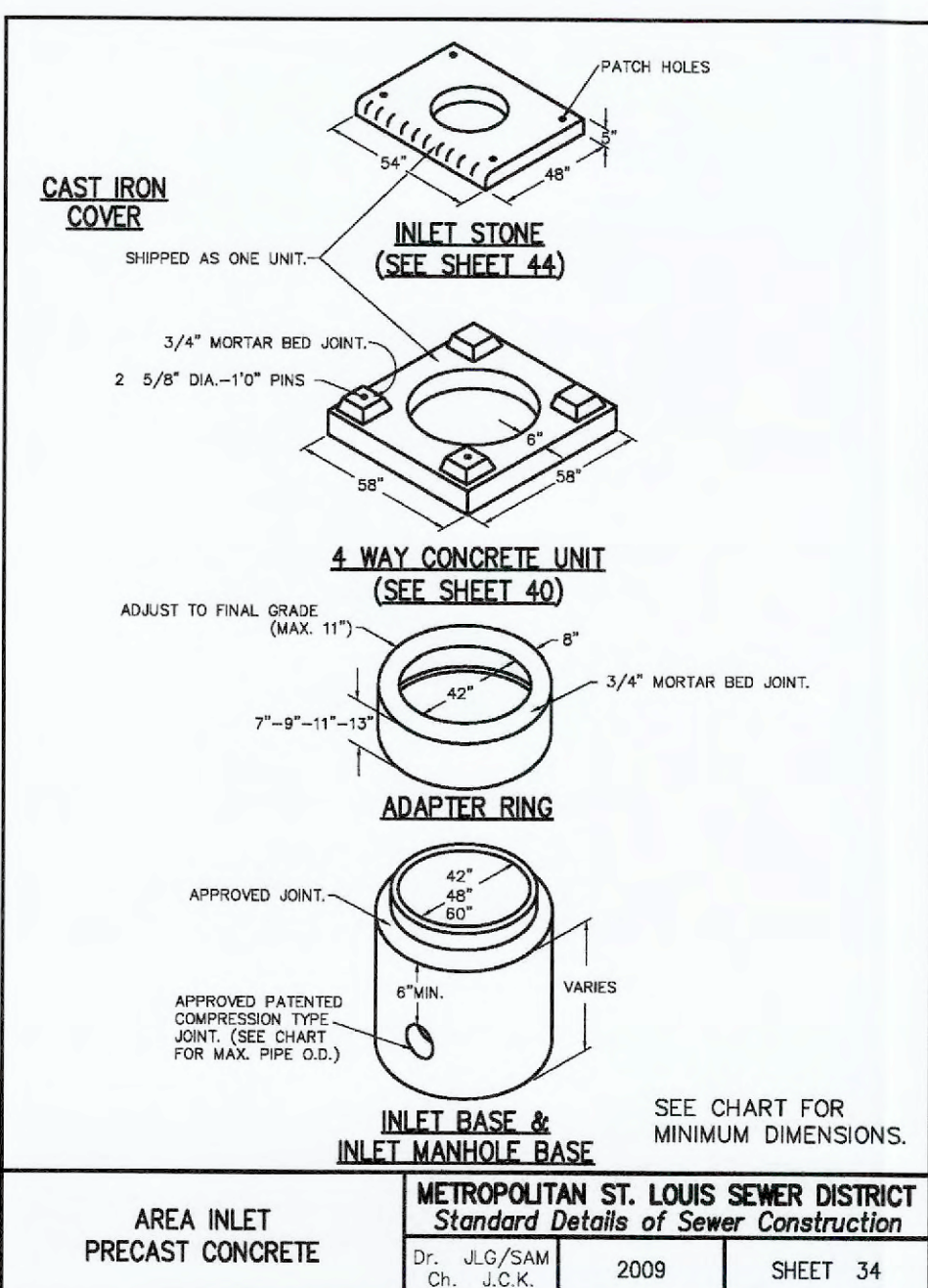
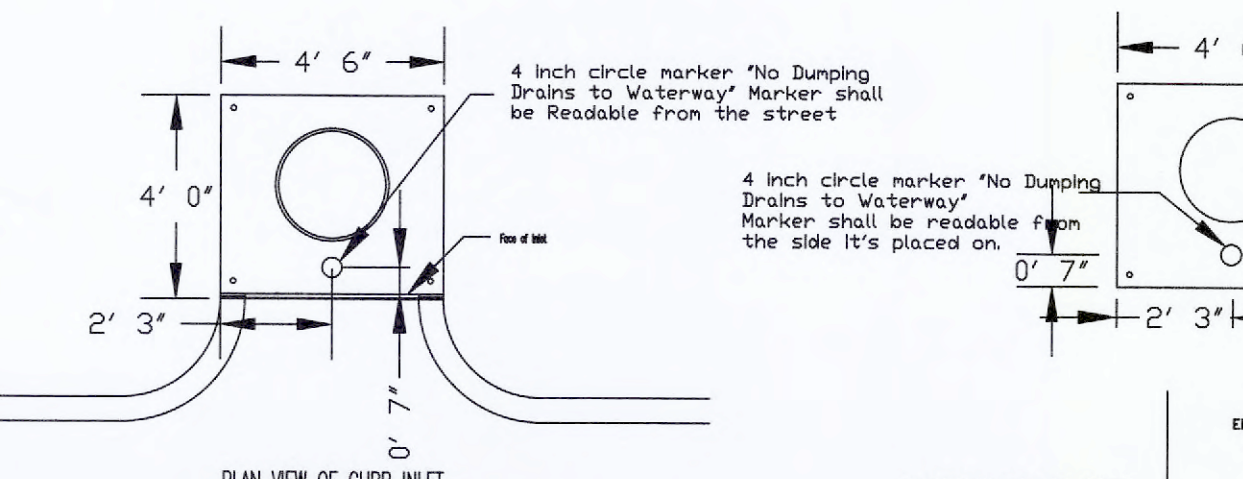
17 of 22

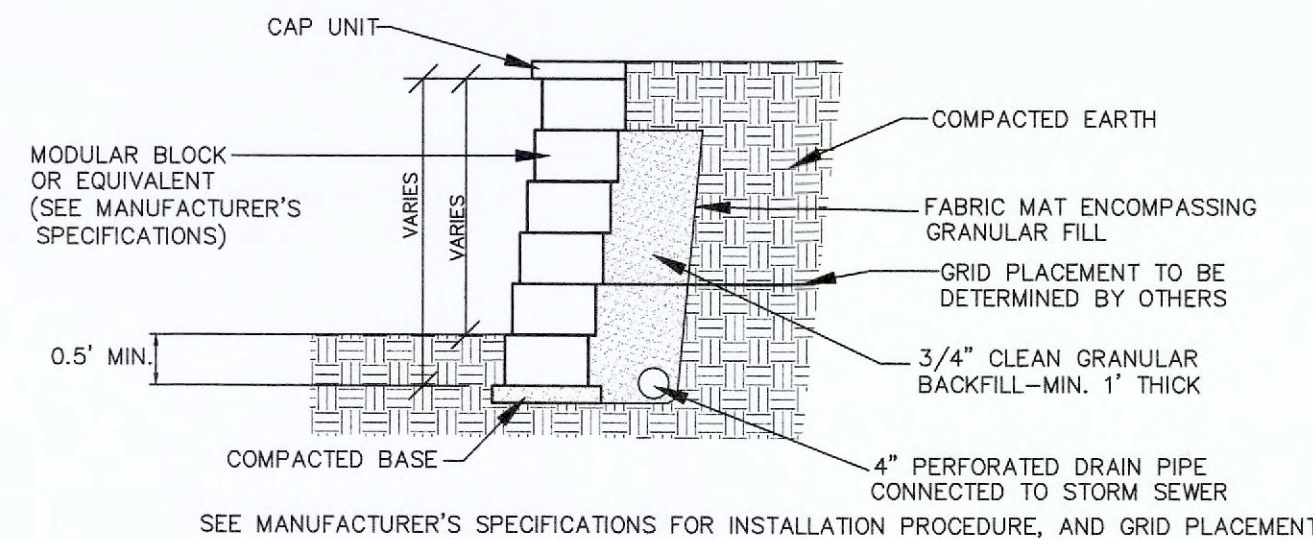
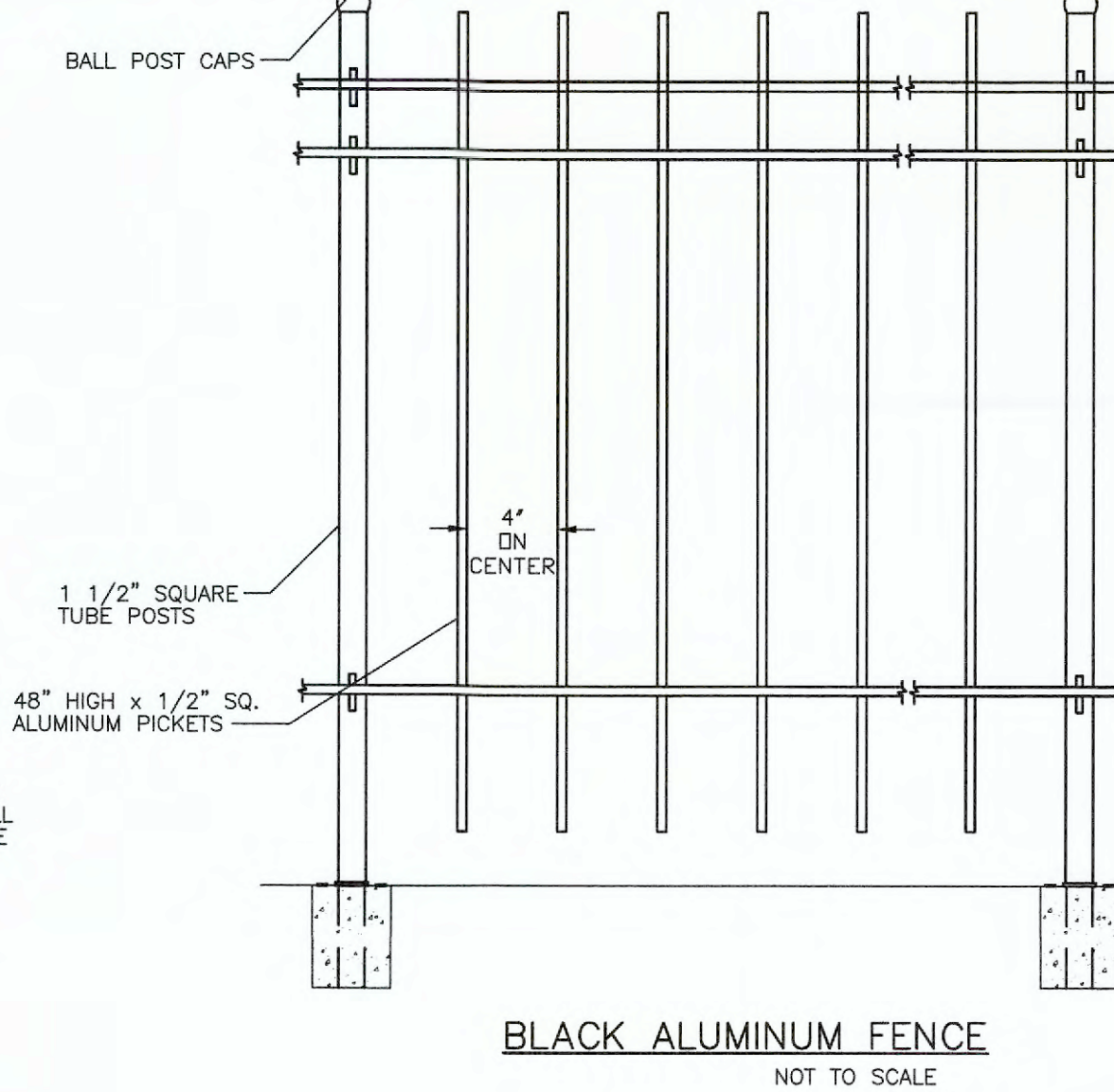
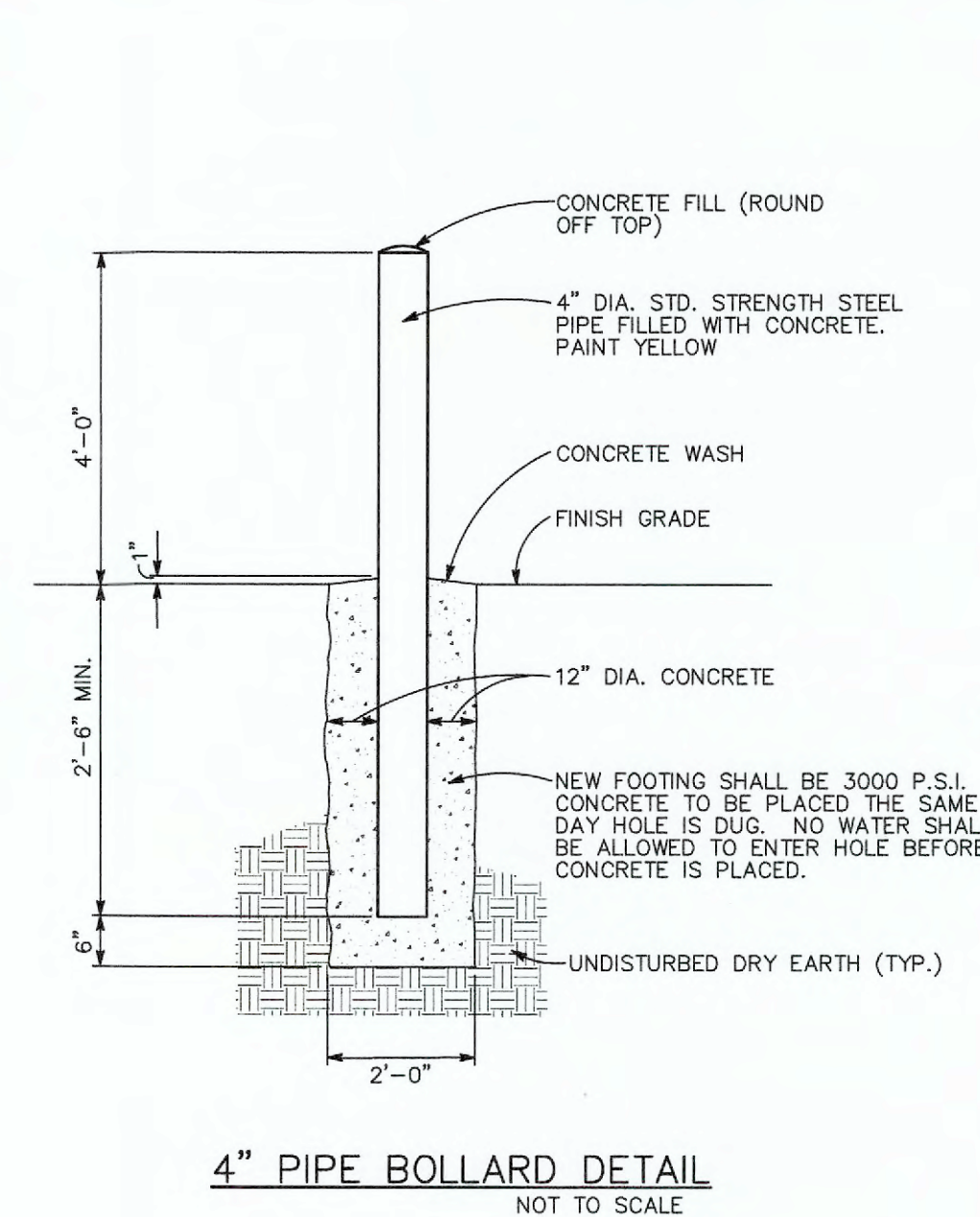
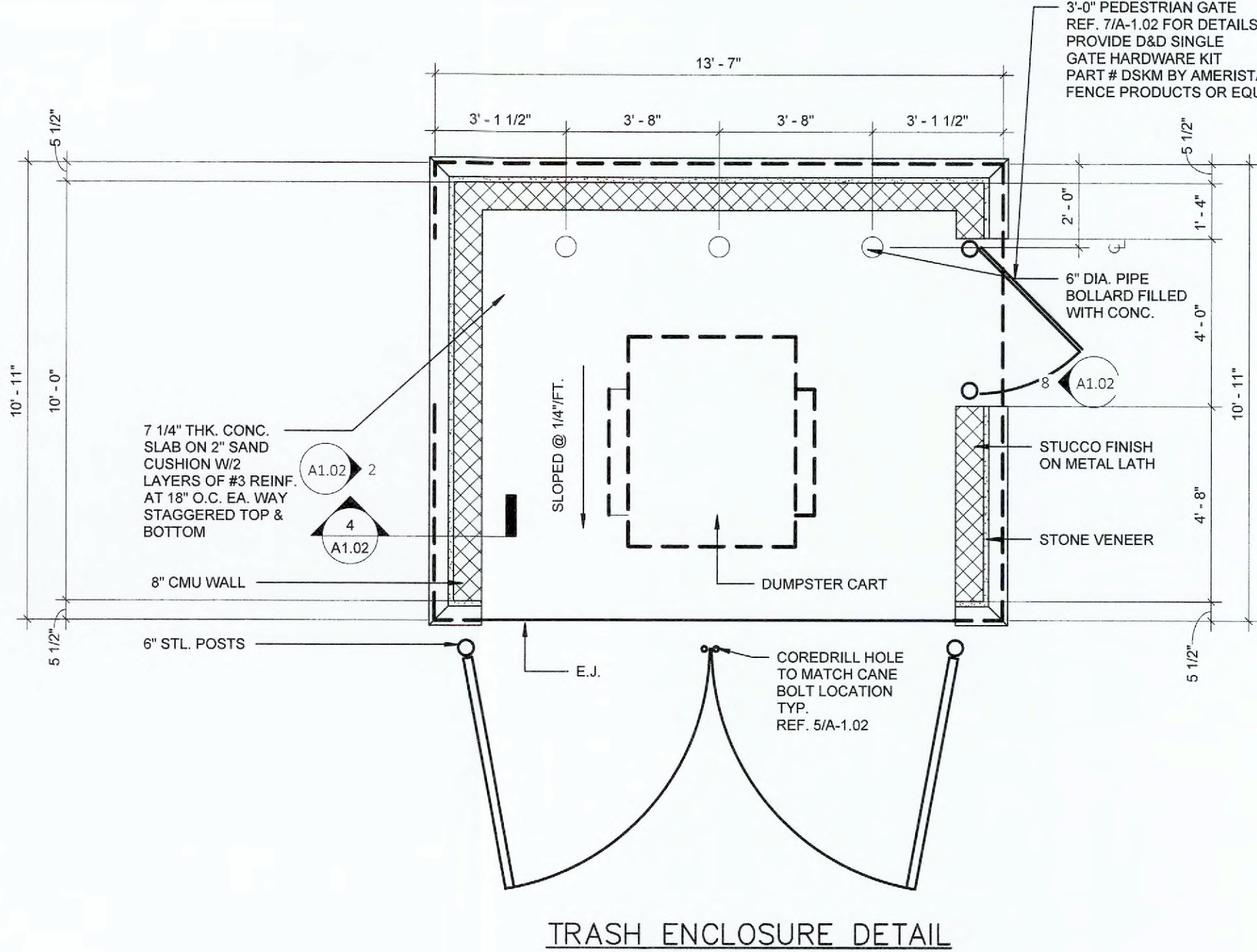
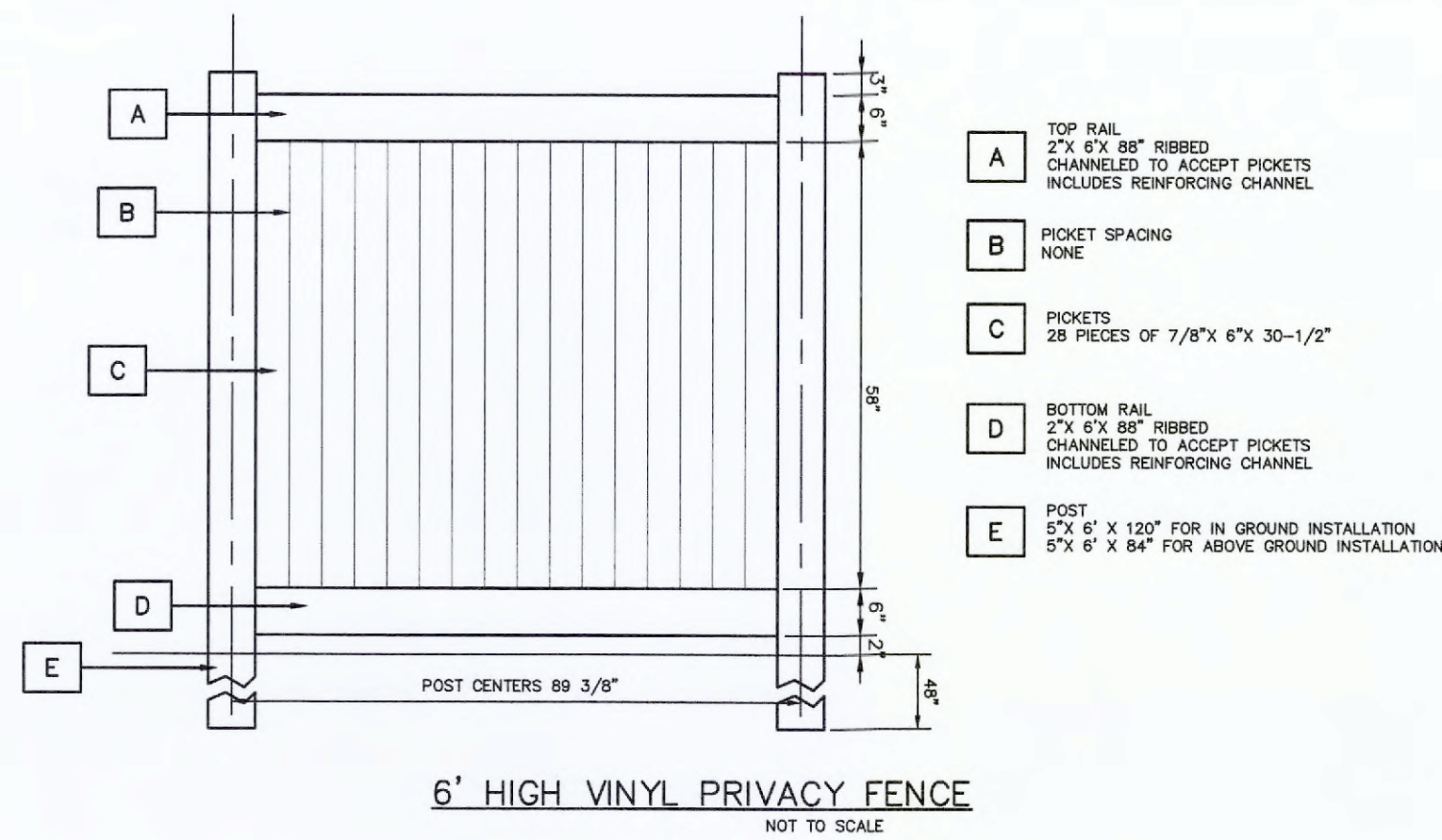


* The City of O'Fallon must be provided with a symbol/medallion for review and approval prior to installation. Contact the City if any information is needed.

Size	Style	Adhesive	Message (Part #)
3 7/8" to 4"	Crystal Cap or Standard Style	Epoxy	No Dumping Drains to Waterway

City will also allow the precast inlet stone with a similar message as an approved alternate to the marker.

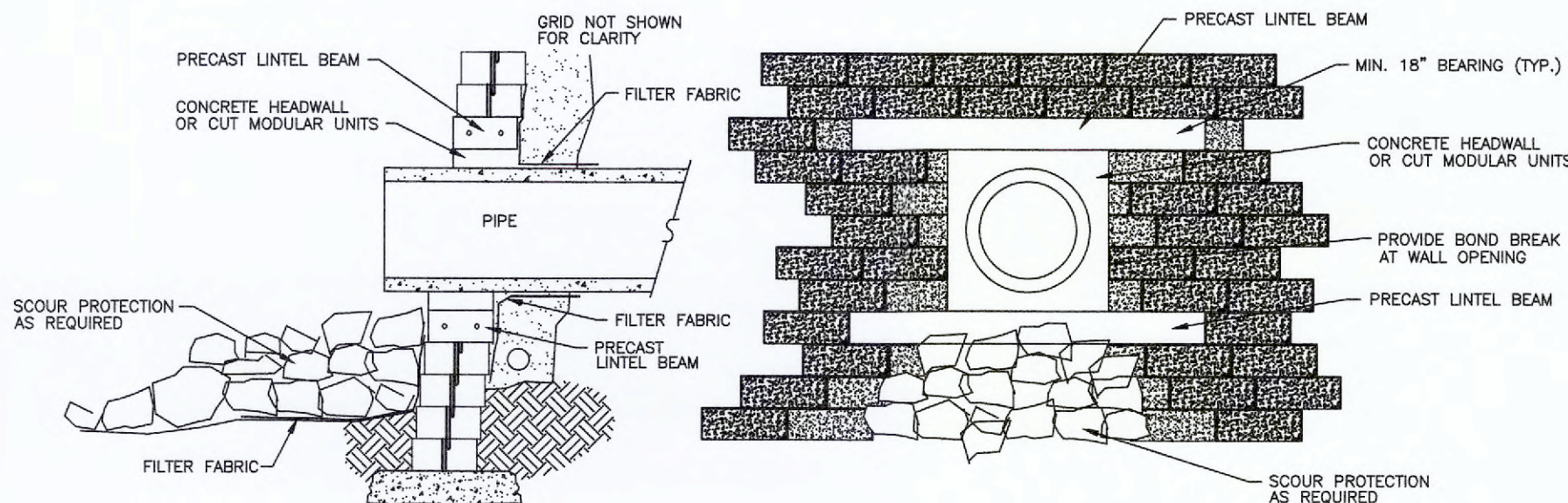




SEE MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION PROCEDURE, AND GRID PLACEMENT

LINTEL NOTES:

1. FINAL BEAM SIZE, REINFORCEMENT, AND CONFIGURATION TO BE DESIGNED BY PROJECT ENGINEER.
2. LINTEL BEAMS SHALL BE PRECAST WITH MIN. 7 DAYS CURE.
3. HEIGHT OF BEAM SHALL CORRESPOND TO HEIGHT OF MODULAR UNIT(S).
4. PLACE LINTEL ON COURSE ABOVE DRAINAGE PIPE. INSTALL DRAINAGE PIPE PRIOR TO CONSTRUCTION OF WALL ABOVE.
5. PIPE TO EXTEND BEYOND BASE COURSE OF WALL NO LESS THAN 6".
6. GEOTEXTILE FABRIC SHALL BE INSTALLED AROUND PIPE OPENING.
7. LINTEL TO EXTEND MINIMUM 18" EITHER SIDE OF OPENING.

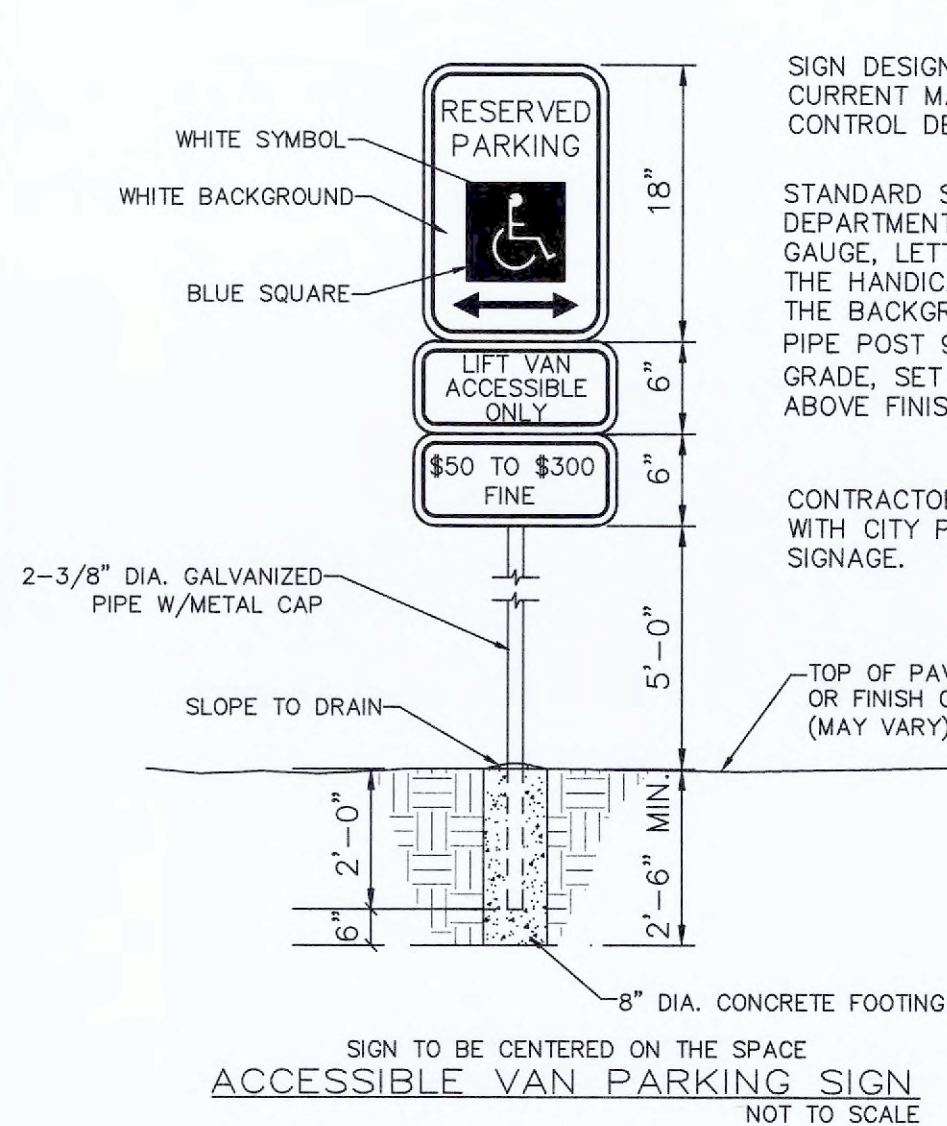


WALL W/ PIPE PENETRATION

PROFILE SCALE: NONE

PER RN #19

All traffic signals, street signs, sign post, backs and bracket arms shall be painted black using Carboline Rust Bond Penetrating Sealer SG and Carboline 133 HB paint (or equivalent as approved by City of O'Fallon and MoDOT).



SIGN DESIGNATIONS ARE FROM THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

STANDARD SIGN FACE, STANDARD HIGHWAY DEPARTMENT, OR CITY STREET DEPARTMENT GAUGE, LETTERS AND BORDERS ARE GREEN, THE HANDICAP LOGO SQUARE IS BLUE AND THE BACKGROUND IS WHITE, GALVANIZED PIPE POST 9'-6" LONG, SET 2'-0" INTO GRADE, SET BOTTOM OF "FINE" SIGN 5'-0" ABOVE FINISHED GRADE.

CONTRACTOR TO VERIFY ALL SIGNAGE WITH CITY PRIOR TO ORDERING ALL SIGNAGE.

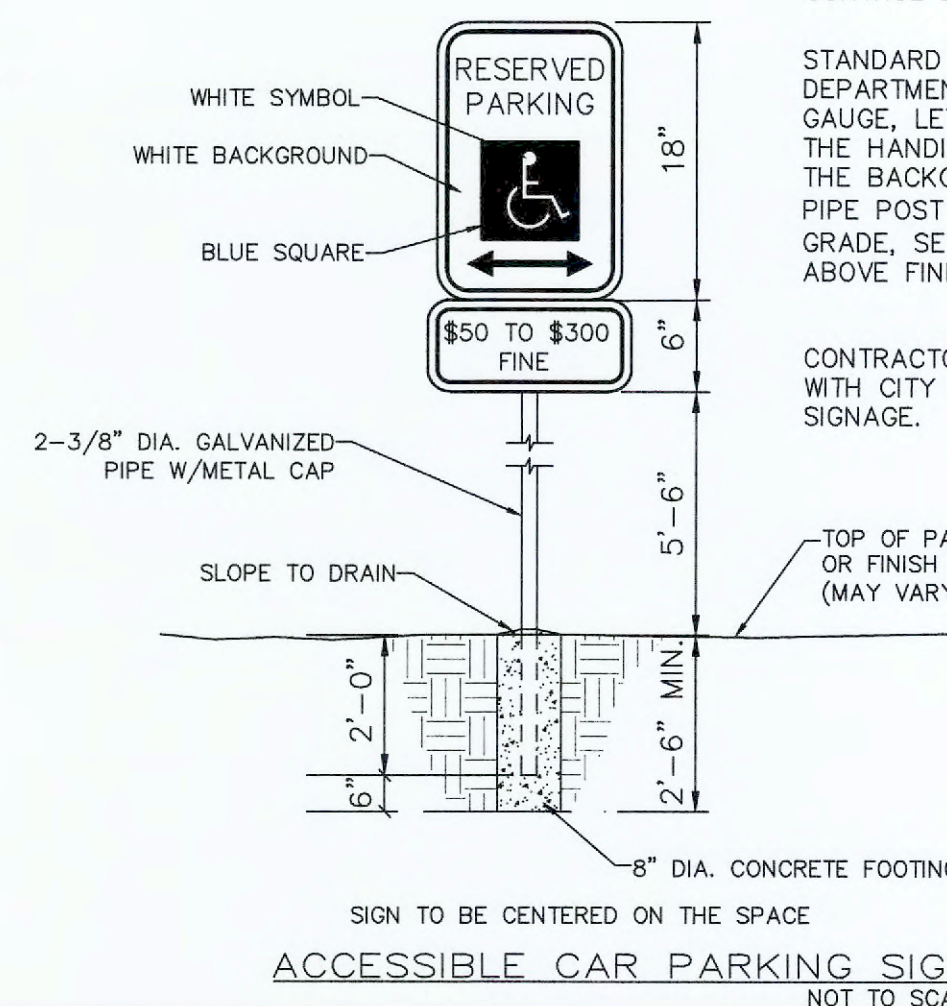


SIGN TO BE CENTERED ON THE SPACE
ACCESSIBLE VAN PARKING SIGN
NOT TO SCALE

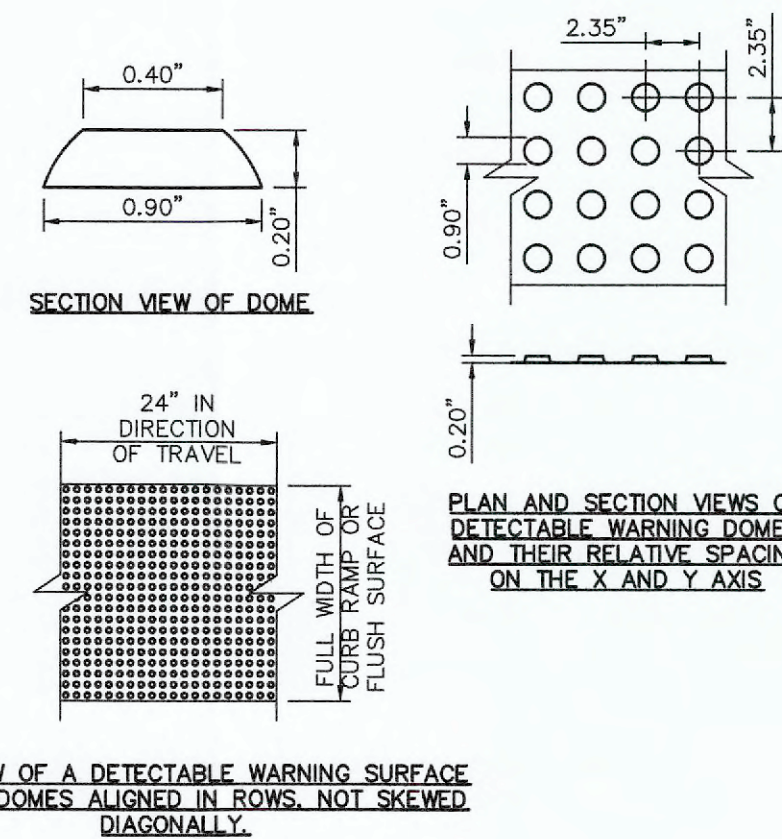
SIGN DESIGNATIONS ARE FROM THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

STANDARD SIGN FACE, STANDARD HIGHWAY DEPARTMENT, OR CITY STREET DEPARTMENT GAUGE, LETTERS AND BORDERS ARE GREEN, THE HANDICAP LOGO SQUARE IS BLUE AND THE BACKGROUND IS WHITE.

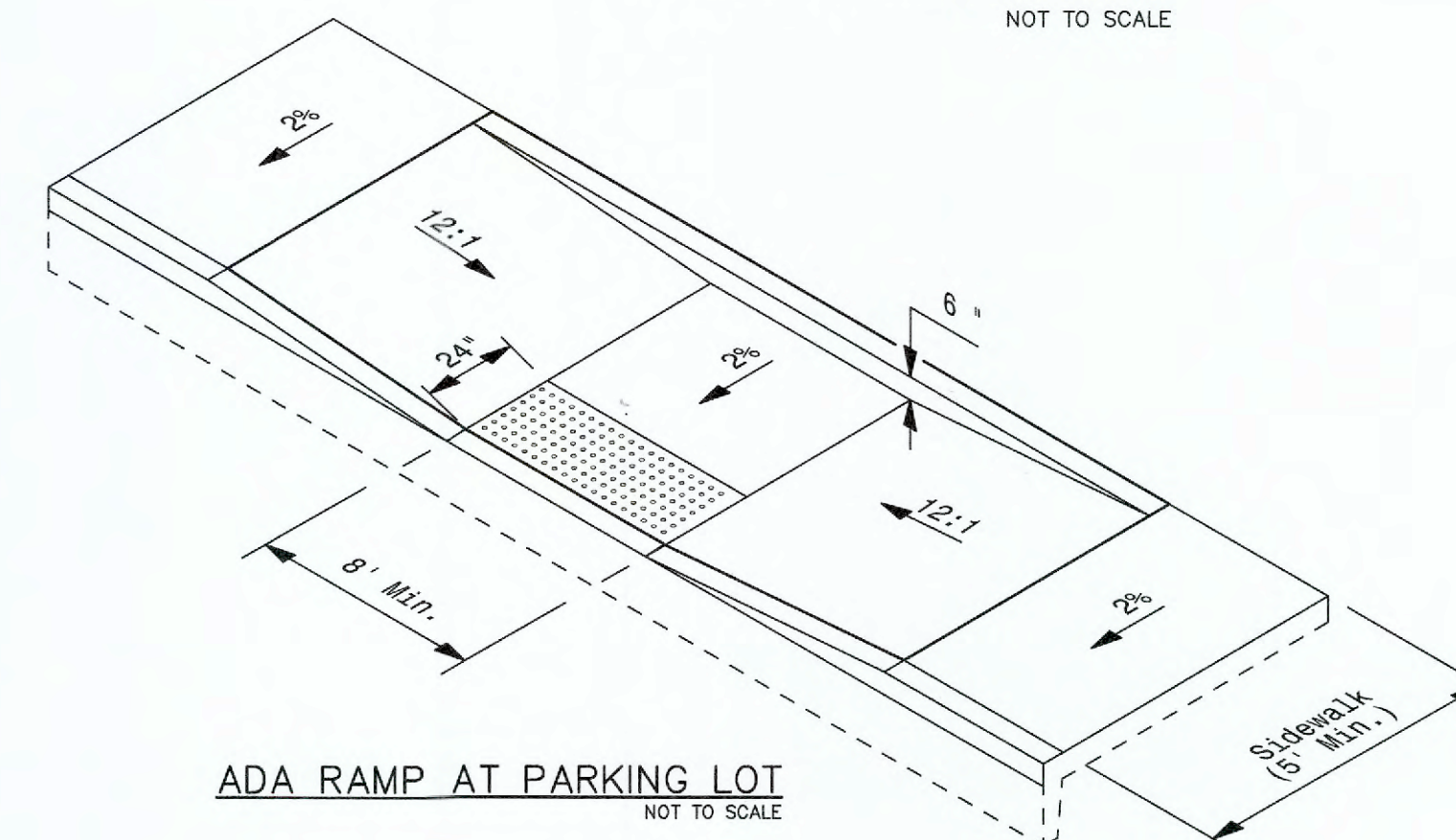
CONTRACTOR TO VERIFY ALL SIGNAGE WITH CITY PRIOR TO ORDERING ALL SIGNAGE.



SIGN TO BE CENTERED ON THE SPACE
ACCESSIBLE CAR PARKING SIGN
NOT TO SCALE



TYPICAL DETAIL OF DETECTABLE WARNING SURFACE
NOT TO SCALE



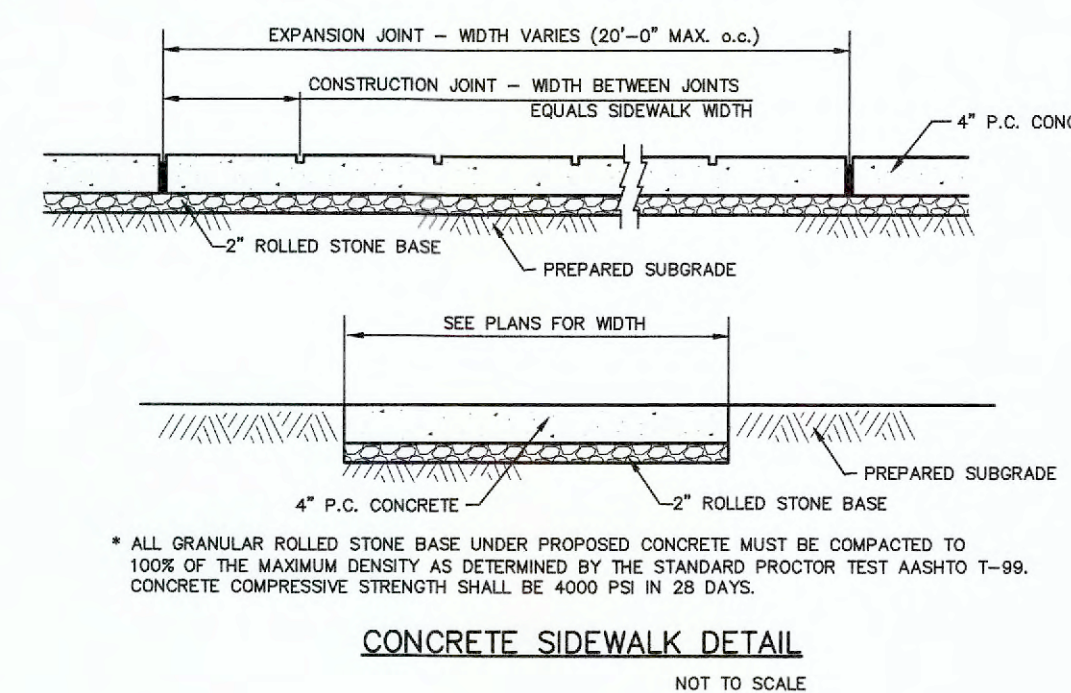
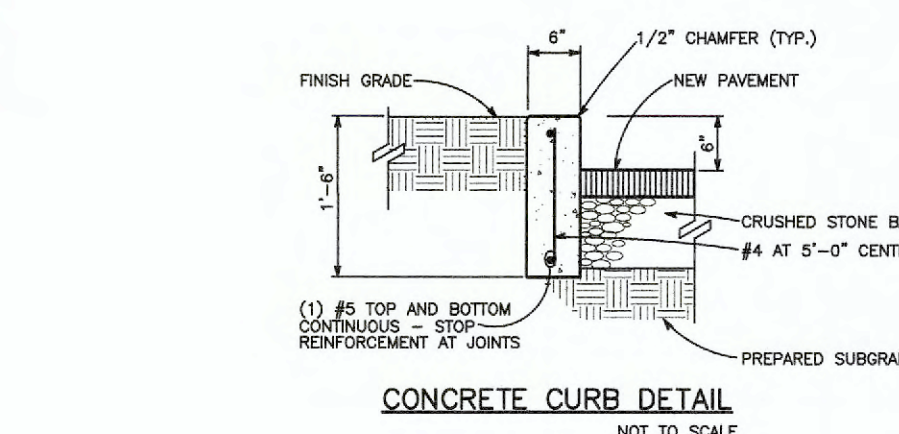
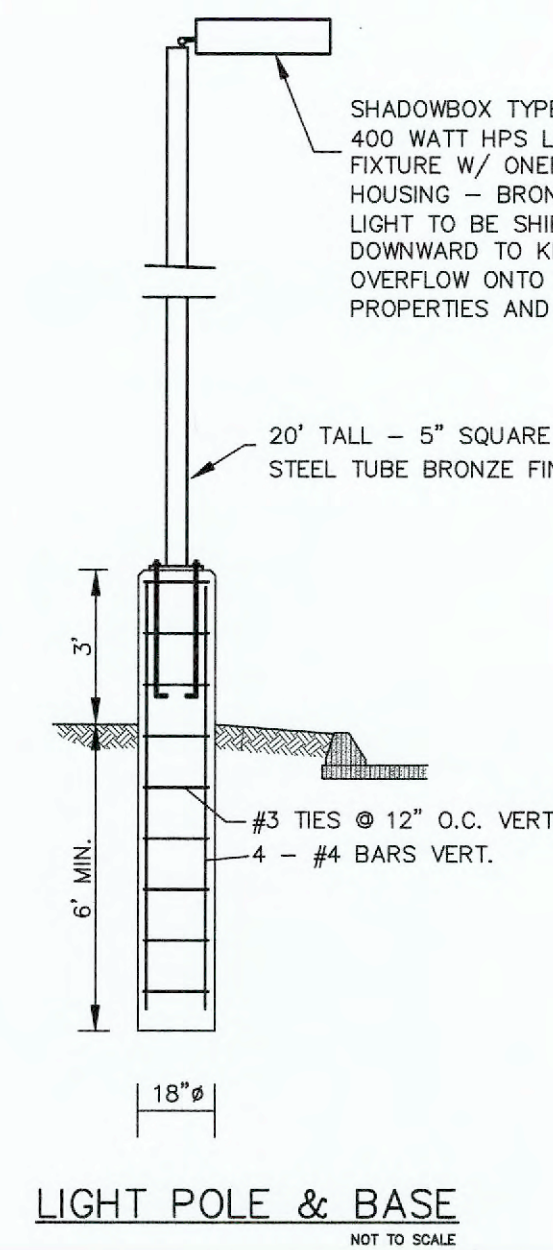
ADA RAMP AT PARKING LOT

NOT TO SCALE

SIGN DESIGNATIONS ARE FROM THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

STANDARD SIGN FACE, STANDARD HIGHWAY DEPARTMENT, OR CITY STREET DEPARTMENT GAUGE, LETTERS AND BORDERS ARE GREEN, THE HANDICAP LOGO SQUARE IS BLUE AND THE BACKGROUND IS WHITE, GALVANIZED PIPE POST 9'-6" LONG, SET 2'-0" INTO GRADE, SET BOTTOM OF "FINE" SIGN 5'-6" ABOVE FINISHED GRADE.

CONTRACTOR TO VERIFY ALL SIGNAGE WITH CITY PRIOR TO ORDERING ALL SIGNAGE.



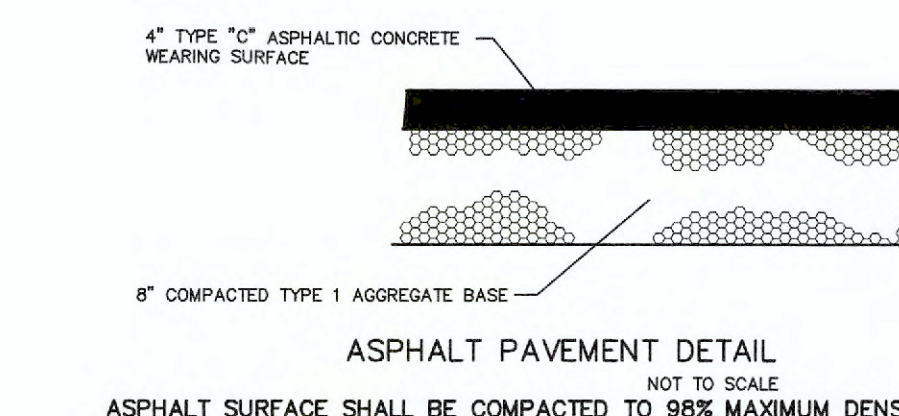
* ALL GRANULAR ROLLED STONE BASE UNDER PROPOSED CONCRETE MUST BE COMPACTED TO 100% OF THE MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AASHTO T-99. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4000 PSI IN 28 DAYS.

CONCRETE SIDEWALK DETAIL

NOT TO SCALE

CONCRETE PAVEMENT DETAIL

NOT TO SCALE
ALL NON-REINFORCED CONCRETE SHALL BE 4,000 P.S.I. AT 28 DAYS



ASPHALT SURFACE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY

PROJECT TITLE:
AS-BUILT PLANS FOR:
CHILDREN'S LIGHHOUSE
EARLY LEARNING CENTER
2570 SOMMERS ROAD
O'FALLON, MISSOURI 63368

ENGINEERING
PLANNING
SURVEYING
221 Point West Blvd.
St. Charles, MO 63301
636-928-5552
FAX 636-928-1718



DISCLAIMER OF RESPONSIBILITY
I hereby specify that the documents intended to be authorized by my seal are limited to this sheet, and I hereby disclaim any responsibility for all other drawings, specifications, estimates, reports or other documents or instruments relating to or intended to be used for any part or parts of the architectural or engineering project or survey.



Copyright 2023
Box Engineering Company, Inc.
Authority No. 000655
All Rights Reserved

REVISIONS	
3/6/25	CITY COMMENTS
7/1/25	CITY COMMENTS

Developer / Owner:
JAFFRI LLC, ASHLEY FANGMAN
4010 CORKWOOD CT.
COLUMBIA, MO 65203
417-766-8874 - ashleyfangmann@gmail.com

P+Z No. # 23-004744
Approval Date: July 6, 2023
City No. #
Page No.
19 of 22

CONSTRUCTION DETAILS