



DUCKETT CREEK SANITARY DISTRICT CONSTRUCTION NOTES

- 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.
- 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.
- All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match pre-construction conditions.
- 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-180 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 proof-rolling and compaction.
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All sanitary sewer flowlines and tops built without elevations furnished by the engineer will be the responsibility of the sewer contractor.
- Easements shall be provided for all sanitary sewers, storm sewers and all utilities on the record plat.
- All construction and materials shall conform to the current construction standards of the Duckett Creek Sanitary District.
- The Duckett Creek Sanitary District shall be notified at least 48 hours prior to construction for coordination of inspection.
- 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.
- All sanitary sewer manholes shall be waterproofed on the exterior in accordance with Missouri Dept. of Natural Resources specification 10 CSR-8.120(7)(E).
- All PVC sanitary sewer pipe shall conform to the requirements of ASTM D-3034 Standard Specification for PSM Polyvinyl Chloride Sewer Pipe, SDR-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 same size "clean" or "minus" stone from springline of pipe to 6 inches above the top of pipe.
- All sanitary and storm sewer trench backfills shall be water jetted. Granular backfill will be used under pavement areas.
- All pipes shall have positive drainage through manholes. No flat invert structures are allowed.
- All creek crossings shall be grouted rip-rap as directed by District inspectors. (All grout shall be high slump ready-mix concrete).
- Brick shall not be used on sanitary sewer manholes.
- Existing sanitary sewer service shall not be interrupted.
- Maintain access to existing residential driveways and streets.
- Pre-manufactured adapters shall be used at all PVC to DIP connections. Rubber boot / Mission-type couplings will not be allowed.
- Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- Type "N" Lock-Type Cover and Locking Device (Lock-Lag) shall be used where lock-type covers are required.

GENERAL SEWER NOTES

- All sewer construction and materials to be in accordance with the Metropolitan St. Louis Sewer District Standard Construction Specifications for Sewer and Drainage Facilities, 2000 as adopted, in part or whole, by the City of O'Fallon, Missouri for storm sewers.
- Underground facilities, structures and utilities have been plotted from available surveys, records and information, and, therefore, do not necessarily reflect the actual existence, non-existence, size, type, depth, number or location of these facilities, structures and utilities. The contractor shall be responsible for verifying the actual location of all underground facilities, structures and utilities, either shown or not shown on these plans. The underground facilities, structures and utilities shall be located in the field prior to any grading, excavation or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMo.
- Contractor to notify Engineer as soon as possible if conditions on ground differ from those shown on plans.
- Sewers shall be constructed starting at the most downstream end and proceeding upstream. Contractor shall verify the flowline elevation of the downstream structure prior to beginning construction and notify Engineer of any and all discrepancies.
- The sewer contractor shall coordinate his work with that of the grading contractor so that the overall site work can be completed in the shortest possible time. The sewer contractor shall conduct and phase his work such that drainage and siltation control is maintained at all times.
- Public and private storm sewer pipe 12" and larger shall be reinforced concrete or ductile iron pipe unless otherwise noted on profiles. Private storm sewer smaller than 12" shall be polyvinyl chloride with solid or double wall corrugations with smooth interior equal to "U" Itra-Rib manufactured by Lipsonor ETL or "A-2000" as manufactured by Contech; or ductile iron pipe; or "Sure-Lok F477" as manufactured by Hancor. Other pipe and piping systems will be considered on a case-by-case basis and subject to approval by the Engineer. Sanitary sewer and service laterals are to be polyvinyl chloride, ductile iron pipe; or approved equals acceptable to the Duckett Creek Sanitary District. Sanitary service laterals shall be laid on a minimum slope of 2%. Storm drains shall be laid on a minimum slope of 1%. Storm or sanitary pipe which cross under proposed or future buildings shall be ductile iron or concrete encased.
- Joints for concrete pipe shall be rubber gaskets meeting ASTM C-443 with a min sealing surface of no less than 3 inches.
- Sewer structures shall be constructed within 0.10 feet of design elevations for both top and flowline. The top elevation shall be checked by the sewer contractor and adjusted prior to paving operations. Construction exceeding this tolerance is subject to rejection and reconstruction.
- Top of curb inlets shall be set flush with top of curb where 6" vertical curbs are installed. Top elevations on grate inlets are to the center of the grate. Sewer weys shall be 8" x 8" x 6" unless otherwise noted. Sewer service lateral tailstake elevations to be at a point located five feet outside of the building wall.
- All sewers shall be bedded and backfilled to one foot over top of pipe with "N" minus or clean crusher-run limestone compacted in 8" lifts to 90% of maximum dry density, as determined by the modified AASHTO Compaction Test T 180 (Current A.S.T.M. Specification D-1557), and verified by a Geotechnical Engineer prior to backfilling pipe. Compaction by jetting will only be permitted in landscaped areas.
- Sewer Contractor shall keep as accurate record of as-built conditions to record any variance from the plans and to indicate the actual "constructed" conditions with particular reference to work which will be subsequently concealed. The Sewer Contractor shall document the location of service weys, cleanout locations, and service lateral lengths and provide engineer with a copy of this information for incorporating in the sewer as-built drawings. Final payment will be withheld until this information is provided.
- The Geotechnical Engineer will verify that all compressible material has been removed prior to fill placement and that all fill, under sanitary and storm sewer lines constructed above original grade, has been compacted to a minimum of 90% of AASHTO Modified Proctor test.
- Adjustment of Manhole and Inlet Structures to grade:
 - Structures may be raised using courses of brick or approved grade ring(s), provided the total adjustment of the structure does not exceed 12-inches (including existing rings or courses of brick). Structures which will exceed the maximum of 12 inches, the transition section of the structure shall be removed and the bottom section raised using the same material as the existing structure.
 - Structures may be lowered by removing the transition section and lowering the existing bottom section by saw-cutting the existing cast-in-place concrete, removing the required courses of brick, or removing the precast riser section as appropriate.
- Maintenance of storm sewers designated as "public" shall be the responsibility of the City of O'Fallon. Maintenance of sanitary sewers designated as "public" shall be the responsibility of the Duckett Creek Sanitary District.
- All storm sewer inlets adjacent to paved areas shall be constructed with subgrade drains. Inlets surrounded by pavement shall be constructed with four subgrade drains. Inlets along curb shall be constructed with three subgrade drains. Immediately prior to paving, ten (10') foot long sections of slotted pipe shall be installed in these drains, extending out underneath the pavement in a radial fashion, along the bottom of the aggregate base course. Pipes shall be wrapped in geotextile filter fabric and backfilled with 3" clean stone.

SCALE: 1" = 50' HORIZ, 1" = 5' VERT.

NO.	DATE	BY	DESCRIPTION
3	08/07/02	KRF	Duckett Creek Comments
2	08/05/02	RKF	City of O'Fallon Comments
1	08/18/02	RKF	Duckett Creek Sanitary District Comments

**SANITARY SEWER PROFILES
DELMAR GARDENS**

Highway N and Twin Chimney Boulevard, O'Fallon, Missouri 63368
 Prepared for:
DELMAR GARDENS ENTERPRISES, INC.
 101 South Hanley Road
 St. Louis, Missouri 63105
 (314) 862-0045



the clayton engineering company, inc.
 ENGINEERS • SURVEYORS • PLANNERS
 84 HARBLE DRIVE, SUITE 100
 ST. CHARLES, MISSOURI 63304
 (636) 498-6400 FAX: (636) 498-6402
 clayton-engineering.com

Designed: RKF
 Drawn: RKF
 Checked: MCH
 Date: 05/21/02
 Project Number: 00228.1
 Sheet Number: C-9 of 16