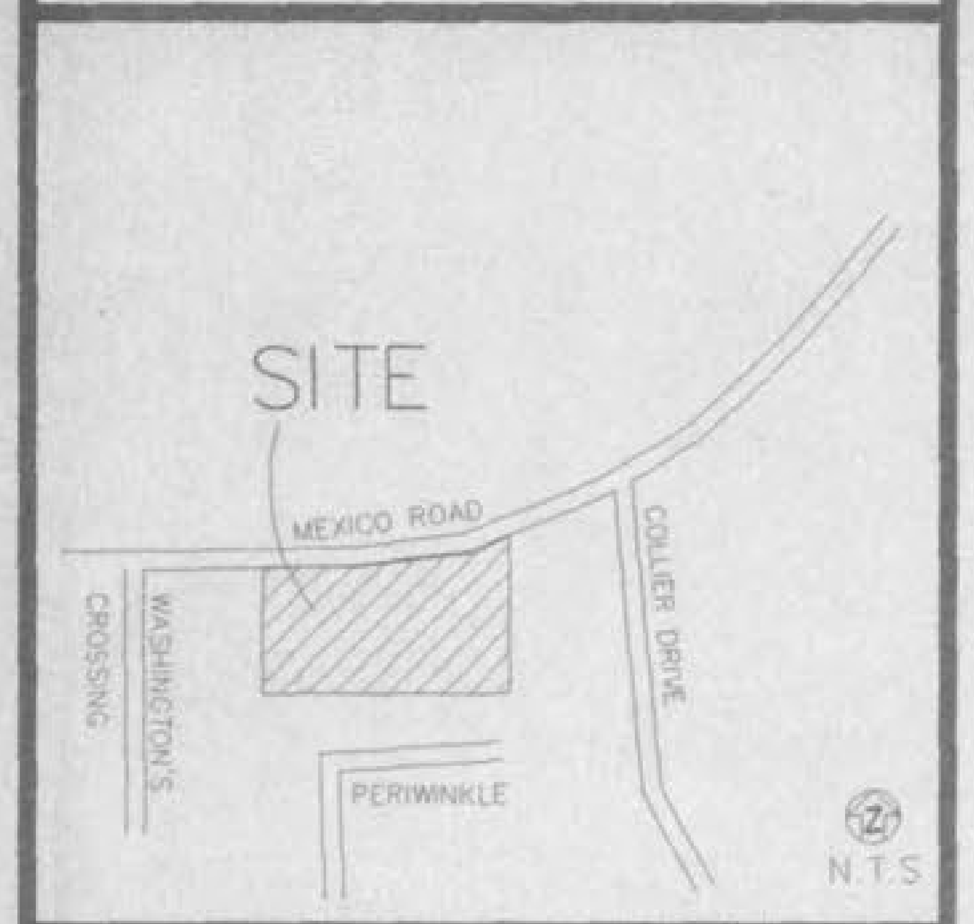
LOCATION MAP



IMPROVEMENT PLANS FOR

STONE CREEK

A TRACT OF LAND BEING PART OF THE NE 1/4 OF THE SW 1/4 OF SECTION 32, TOWNSHIP 47 NORTH, RANGE 3 EAST ST. CHARLES COUNTY, MISSOURI

GENERAL NOTES

GENERAL NOTES

1. 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 and/or construction of improvements.

2. The sediment control plan should be implemented before grading begins. No graded area is to remain bare without being seeded and mulched. When deemed necessary, positive steps should be exercised to prevent this soil from damaging adjacent properties and silting up all storm drainage systems whether on site or off site.

3. Erosion control shall not be limited to what is shown on the plans. The contractor shall take whatever means necessary to prevent siltation from entering adjacent roadways, properties, and ditches. Such control might include channeling runoff into sediment basins, channeling runoff into areas where an extra row of straw bales are used. A silt fence might be considered, if necessary.

4. No area shall be cleared without permission of the developer.

5. Owner/Developer assumes full responsibility as to the performance of the grading operation and assurance that all properties and County and State roads will be adequately protected.

6. Soil preparation and re-vegetation shall be performed according to Appendix A of the Model Sediment and Erosion Control Regulations for Urban Development.

7. Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible or during the next seeding period after grading has been completed. Refer to Appendix A of St. Charles Soil and Water Conservation District – Model Sediment and Erosion Control Regulations.

8. Site preparation includes the clearance of all stumps, trees, bushes, shrubs, and weeds; the grubbing and removal of roots and other surface obstructions from the site; and the demolition and removal of any manmade structures. The unsuitable material shall be properly disposed of off-site. Topsoil and grass in the fill areas shall be thoroughly disced prior to the placement of any fill. The Soils Engineer shall approve the discing operation.

9. Compaction equipment shall consist of tamping rollers, pneumatic-tired rollers, vibratory rollers or high speed impact type drum rollers acceptable to the Soils Engineer. The rollers shall be designed so as to avoid the creation of a layered fill without proper blending of successive fill layers.

10. The Soils Engineer shall observe and test the placement of the fill to verify that specifications are met. A series of fill density tests will be determined on each lift of fill. Interim reports showing fill quality will be made to the Owner at regular intervals.

11. The Soils Engineer shall notify the Contractor of rejections of a lift of fill or portion thereof. The Contractor shall rework the rejected portion of fill and obtain notification from the Soils Engineer of its acceptance prior to the placement of additional fill.

12. All Areas to receive fill shall be scarified to a depth of not less than 6 inches and then compacted to at least 85 percent of the maximum density as determined by the Modified AASHTO T-1800 Compaction Test (ASTM-D1557). Natural slopes steeper than 1 vertical to 5 horizontal to receive fill shall have horizontal benches cut into the slopes before the placement of any fill. The width and height to be determined by the Soils Engineer. The fill shall be loosely placed in horizontal layers not exceeding 8 inches in thickness and compacted in accordance with the specifications given below. The Soils Engineer shall be responsible for determining the acceptability of soils placed. Any unacceptable soils placed shall be removed at the Contractor's expense.

13. The sequence of operation in the fill areas will be; fill, compact, verify acceptable soil density, and repetition of the sequence. The acceptable moisture contents during the filling operation are those at which satisfactory dry densities can be obtained. The acceptable moisture contents during the filling operation in the remaining areas are from 2% to 8% above the optimum moisture content.

14. The surface of the fill shall be finished so that 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.

15. All low places whether on site or off site should be graded to allow drainage. This may be accomplished with temporary ditches. Any off site drainage easements shall be acquired before off site grading operations begins.

16. All cut and fill slopes should be a maximum of 33% slope (3:1) after grading.

17. All fill including filled 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% 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.

18. All filled places in proposed and existing St. Charles County roads (highways) shall be compacted from the bottom of the fill up to 90 percent maximum density as determined by the "Modified AASHTO T-180 Compaction Test" (ASTM D-1557). Paved areas in cuts shall meet the same compaction requirements. All tests shall be verified by a Soils Engineer concurrent with grading operations.

19. Soft soil in the bottom and banks of any existing or former pond sites or tributaries or any sediment basins or traps should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed public right-of-way locations or on any storm sewer location.

20. Any wells and/or springs which may exist on this property should be located and sealed in a manner acceptable to St. Charles County.

21. Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.

22. If straw bales or silt fences are destroyed by heavy rains, vandalism, etc., they are to be replaced immediately by contractor.

23. When grading operations are completed or suspended for more than thirty (30) days, permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the Designated Official's recommendation. Refer to Appendix A of St. Charles Soil and Water Conservation District – Model Sediment and Erosion Control Regulations. All finished grades (areas not to be disturbed by improvement) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.

24. All existing site improvements disturbed, damaged or destroyed shall be repaired or replaced to closely match preconstruction conditions.

25. All existing trash and debris on-site must be removed and disposed of off-site.

26. Debris and foundation material from any existing on-site building or structure which is scheduled to be razed for this development must be disposed of off-site.

27. The total yardage of this project is based on a 15% shrinkage factor.

28. The shrinkage factor is subject to change, due to soil conditions (types and moisture content), weather conditions, and the percentage of compaction actually achieved at the time of the year grading is performed. As a result, adjustments in final grade may be required. If adjustments need to be made, the contractor shall contact St. Charles Engineering and Surveying prior to completion of the grading.

29. Earth quantities were obtained from aerial grid mapping with contours at two foot intervals, with a tolerance of plus or minus one foot or one-half (1/2) contour intervals.

30. The vertical grading tolerance shall be plus or minus 0.2 feet for all rough grading.

31. The most stringent of the above requirements shall apply.

32. Please notify Mr. Rich Pieper or Mr. Vance Gribble of the St. Charles County Highway Department 24 hours prior to the commencement of grading and/or prior to the commencement of construction. No building permits will be issued by St. Charles County until construction plans are approved and the final plat is recorded.

33. All lots shall be seeded and mulched at the minimum rates defined in Appendix "A" of the "Model Sediment & Erosion Control Regulations" or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Building Department in cases of undue hardship because of unfavorable ground conditions.

34. Fill placed within proposed street R.O.W. shall be conmpacted to 90% M.O.D. Proctor and be 2% below to 6% above optimum masiture content.

35. 8" P.V.C. sanitary sewer pipe shall meet the follwoing standards: A.S.T.M. D-3034 SRD35, with wall thickness compression point A.S.T.M. D-3212. An appropporatie rubber seal water stop as approved by the sewer district shall be installed between P.V.C. pipe and masonry structures.

36. The contractor shall prevent all storm/surface water, mud or construction debris from entering the existing sanitary sewer system.

37. All sanitary sewer manholes shall be warerproofed on the exterior in accordance with Missouri D.N.R. Specification 10CSR –8.120 (7) (E).

38. All existing site improvements distrubed, damaged or destroyed shall be repaired or replaced to closely match preconstruction conditions.

39. All sanitary laterals shown on plan are to constructed of 4 inch P.V.C. pipe.

40. All PVC sanitary sewer pipe is to be SDR – 35 or equal with "clean" 1/2 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.

41. Brick shall not be used on sanitary manholes.

42. All creek crossings shall be grouted rip-rap as directed by District Inspectors (grout shall be high slump ready mix concrete).

43. All storm sewers shall be Reinforced A.S.T.M. C – 76. Class III minimum, unless otherwise shown of the plans.

44. All corrugated steel pipe shall conform to the requirements of AASHTO M-36 and shall be fully coated with bituminous material conforming to the requirements of AASHTO M-190. Corrugated steel pipe shall be helical pipe with reformed ends. Pipes shall be joined using either hugger bands with rubber o-ring gaskets or universal corrugated bands with sponge neoprene gaskets. All gasket materials shall conform to ASTM D-1056.

45. All standard curb inlets are to have front-of-inlet 2' (two feet) behind curb, within public right-of-way, unless otherwise noted.

46. Concrete Pipe Joints shall be M.S.D. Type "A" Approved Compression Joints and shall conform to the requirements of the Specification for Joints and Circular Concrete Sewer and Culvert Pipe, using flexible, watertight, rubber-type gaskets A.S.T.M. C-443. Band-Type Gaskets depending entirely on cement for adhesion and resistance to displacement during jointing shall not be used.

47. All pipes shall have positive drainage through manholes. No flat base structures are allowed.

48. All trench backfills under paved areas shall be granular backfill, and water jetted. All other trench backfills may be earth material (free of large clods or stones) and shall be water jetted.

49. All sewer taps built without elevations furnished by the Engineer will be the responsibility of the sewer contractor.

50. Gas, water, and other underground utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers including house laterals.

51. Easements shall be provided for storm sewers, sanitary sewers, and all utilities on the record plat. See record plat for location, size, and width of easements.
52. The use of High Density Polyethylene Corrugated Pipe with smooth interior wall will be permitted as an acceptable alternative to R.P.C. outside of the Public R/W. Pipe shall meet A.S.T.M. D-2321 A.A.S.H.T.O. M-294-921. Concrete Flared End Sections, Manholes and Inlet Structures shall be required.

53. Fire hydrants shall be 6 inch 3 way with auxiliary valve, Mueller "Centurion" or Clow "Eddy".

54. The contractor shall place the "steamer" outlet of the fire hydrant toward the street.

55. The contractor shall place all fire hydrants within (3') three feet of the street curb.

56. Blow –off hydrants and water meters shall not be located in sidewaks or driveways.

57. All streets within this set of improvement plans shall be Publicly maintained.

58. All streets and right-of-ways shown on these improvement plans will be dedicated to St. Charles County for public use forever.

59. Sidewalk 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, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the Project Engineer shall be notified by the contractor prior to any construction.

60. All construction and material shall conform to St. Charles County, St. Charles County Water Distric No.2, O'Fallon Fire Protection District and O'Fallon Sewer District Standards and Specifications.

61. All sanitary sewer building connections have been 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 is not less than the diameter of the pipe plus the vertical distance of 2 – 2 1/2 feet.

Stone Creek Estimated Grading and Construction Schedule

1.	6/1/97 – 6/5/97	Clearing
2.	6/5/97 – 6/10/97	Construct silt basins and outflow pipes
3.	6/10/97 – 6/15/97	Construct diversion ditches and install erosion control devises
4.	6/15/97 – 7/15/97	Grading
5.	7/15/97 – 9/15/97	Utility Construction
6.	9/15/97 – 9/29/97	Street construction
7.	9/15/97	All exposed slopes in excess of 5:1 and all exposed finish graded areas shall be seeded and mulched with temporary vegetation
8.	3/1/98	Final seeding and mulching shall be performed

Note: The large drainage way shall be built first, then grading shall take place around the drainage way. The drainage way may be filled in and eliminated as construction and completion of storm sewers allows for the storm water to be piped and discharged. Siltation fence and or straw bales and diversionary ditches shall also be used to control erosion as necessary.

PROJECT BENCHMARK:
RM 66 "+" ON FH MILLPOND AND SPRING HILL
ELEVATION= 581.74 USGS DATUM

SITE BENCHMARK:
OLD REBAR AT THE SOUTHWEST CORNER OF THE TRACT
ELEVATION= 571.28 USGS DATUM

DEVELOPER:
DONALD AND DORIS COLLIER, SR.
300 FORT ZUMWALT, SUITE 124
O'FALLON, MO 63367
1-314-978-5201

SHEET INDEX

ENGINEERS AUTHENTICATION
The responsibility for the professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in the project and specifically excludes revisions after this date unless reauthenticated.

COVER SHEET

ST. CHARLES ENGINEERING & SURVEYING
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
S|C E|S

SCALE: 1"= 50'
ORDER NO.
DATE
6/23/97