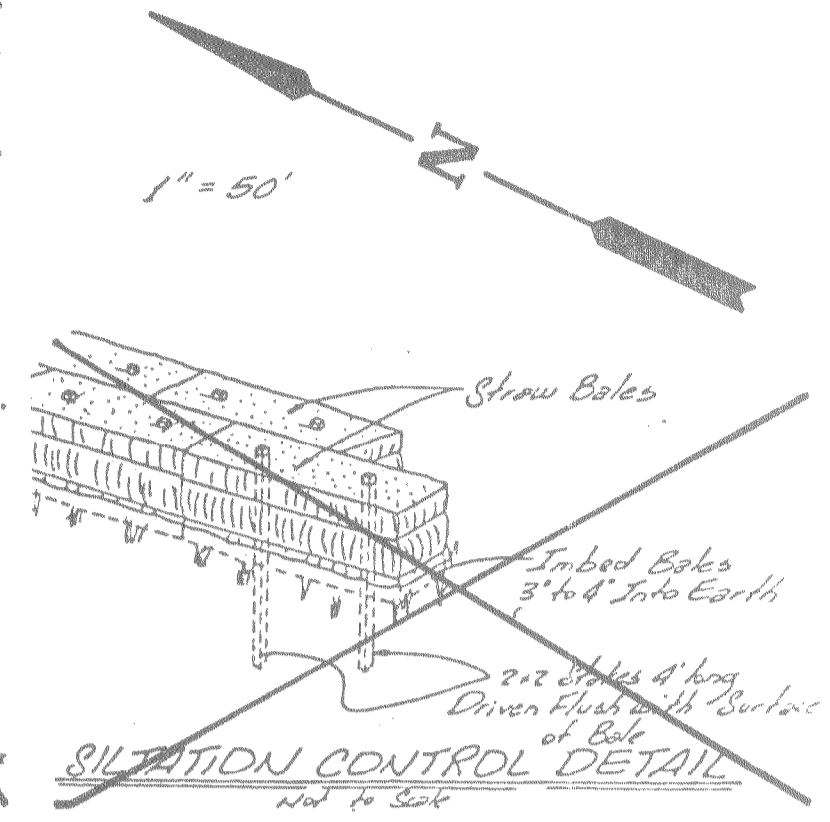


NOTE: TEMPORARY RELIEF SWALES TO BE GRADED PRIOR TO CONSTRUCTION OF STORM SEWERS.

BID YARDAGE
81,006 CU. YD.
 (INCLUDES 15% SHRINKAGE)

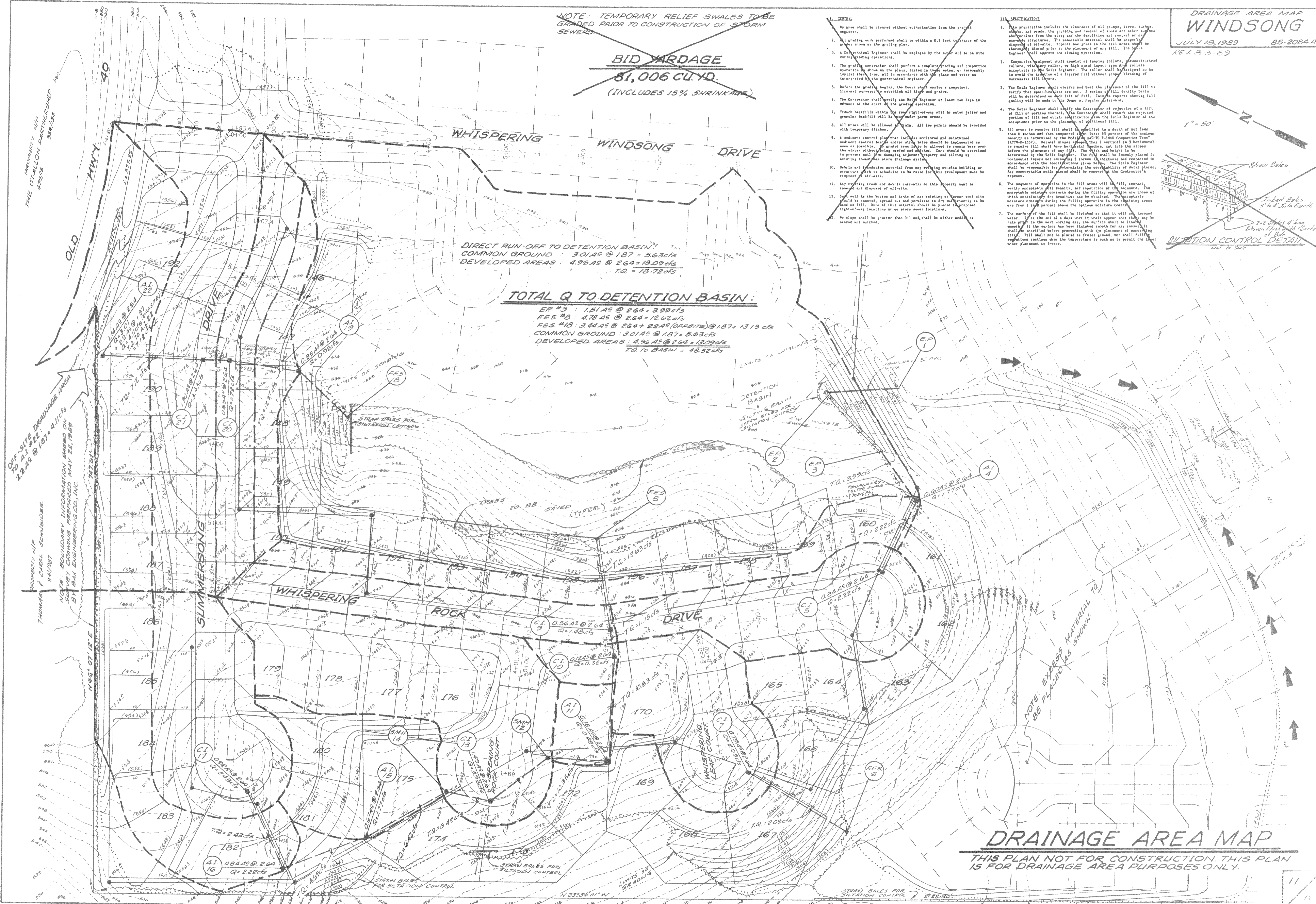
- GENERAL**
- The area shall be cleared without authorization from the project engineer.
 - All grading work performed shall be within a 0.3 foot tolerance of the grades shown on the grading plan.
 - A Geotechnical Engineer shall be employed by the owner and be on site during grading operations.
 - The grading contractor shall perform a complete grading and compaction operation as shown on the plans, stated in these notes, or as mutually agreed upon by the geotechnical engineer.
 - Before the grading begins, the Owner shall employ a competent, licensed surveyor to establish all lines and grades.
 - The Contractor shall notify the Soils Engineer at least two days in advance of the start of the grading operation.
 - Trench backfills within the row right-of-way will be water jacked and granular backfill will be used under paved areas.
 - All areas will be allowed to settle. All low points should be provided with temporary ditches.
 - A sediment control plan that includes siltation and maintained sediment control basins and/or straw bales shall be implemented as soon as possible. No graded areas shall be allowed to remain bare over the winter without being mulched and matted. Care should be exercised to prevent soil from being washed off property and silted up existing drainage storm drainage system.
 - Dirt and rock material from any existing concrete building or structure which is scheduled to be razed for this development must be disposed off-site.
 - Any existing trash and debris currently on this property must be removed and disposed off-site.
 - Soil fill to the bottom and banks of any existing or former pond site should be removed, graded out and permitted to dry sufficiently to be used as fill. How of this material should be placed in proposed right-of-way locations as per storm sewer location.
 - No slope shall be greater than 3:1 and shall be either matted or seeded and mulched.

- III. SPECIFICATIONS**
- The 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 sanitation and removal of any man-made structures. The suitable material shall be properly disposed off-site. Topsoil and grass in the fill areas shall be thoroughly dewatered prior to the placement of any fill. The Soils Engineer shall approve the dewatering operation.
 - Compaction equipment shall consist of tamping rollers, pneumatic-tired rollers, vibratory roller, or high speed impact type drum rollers acceptable to the Soils Engineer. The roller shall be calibrated so as to avoid the creation of a layered fill without proper blending of successive fill layers.
 - 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.
 - The Soils Engineer shall notify the Contractor of rejection 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 the acceptance prior to the placement of additional fill.
 - All areas to receive fill shall be compacted 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 Proctor Test (ASTM-D-1557). Natural slopes existing shall be vertical to 3 horizontal to receive fill shall have horizontal benches, cut into the slope 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 used. Any unacceptable soils placed shall be removed by the Contractor's expense.
 - The sequence of operation in the fill areas will be fill, compact, verify acceptable soil density, and repetition of the sequence. The acceptable moisture content during the filling operation are those at which moisture is dry enough to be obtained. The acceptable moisture content during the filling operation in the retaining areas are from 2 to 6 percent above the optimum moisture content.
 - The surface of the fill shall be finished so that it will not lappond water. If at the end of a day 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 freeze ground, nor shall filling operations continue when the temperature is such as to permit the water under placement to freeze.



DIRECT RUN-OFF TO DETENTION BASIN:
 COMMON GROUND : 3.01 AS @ 1.87 = 5.63 cfs
 DEVELOPED AREAS : 4.96 AS @ 2.64 = 13.09 cfs
 TQ = 18.72 cfs

TOTAL Q TO DETENTION BASIN:
 EP #3 : 1.51 AS @ 2.64 = 3.99 cfs
 FES #8 : 4.78 AS @ 2.64 = 12.62 cfs
 FES #18 : 3.44 AS @ 2.64 + 22 AS (OFFSITE) @ 1.87 = 13.19 cfs
 COMMON GROUND : 3.01 AS @ 1.87 = 5.63 cfs
 DEVELOPED AREAS : 4.96 AS @ 2.64 = 13.09 cfs
 TQ TO BASIN = 48.52 cfs



DRAINAGE AREA MAP
 THIS PLAN NOT FOR CONSTRUCTION. THIS PLAN IS FOR DRAINAGE AREA PURPOSES ONLY.