

STORM WATER DRAIN NO. 179
EQUESTRIAN ESTATES ADDITION- PHASE 2
TO
THE CITY OF WICHITA, KANSAS
JAMES L. ARMOUR, P.E. - CITY ENGINEER

PROJECT NO. 468-83319
OCA NO. 751410

GENERAL NOTES:

- Utility service lines, poles, valve boxes, meters, and etc. are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
- Contractor will be required to provide a minimum advance notice of twenty-four (24) hours to utility companies prior to starting any excavation as follows:

Kansas One-Call	1-800-344-7233
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The Contractor must notify the following in case of an emergency:

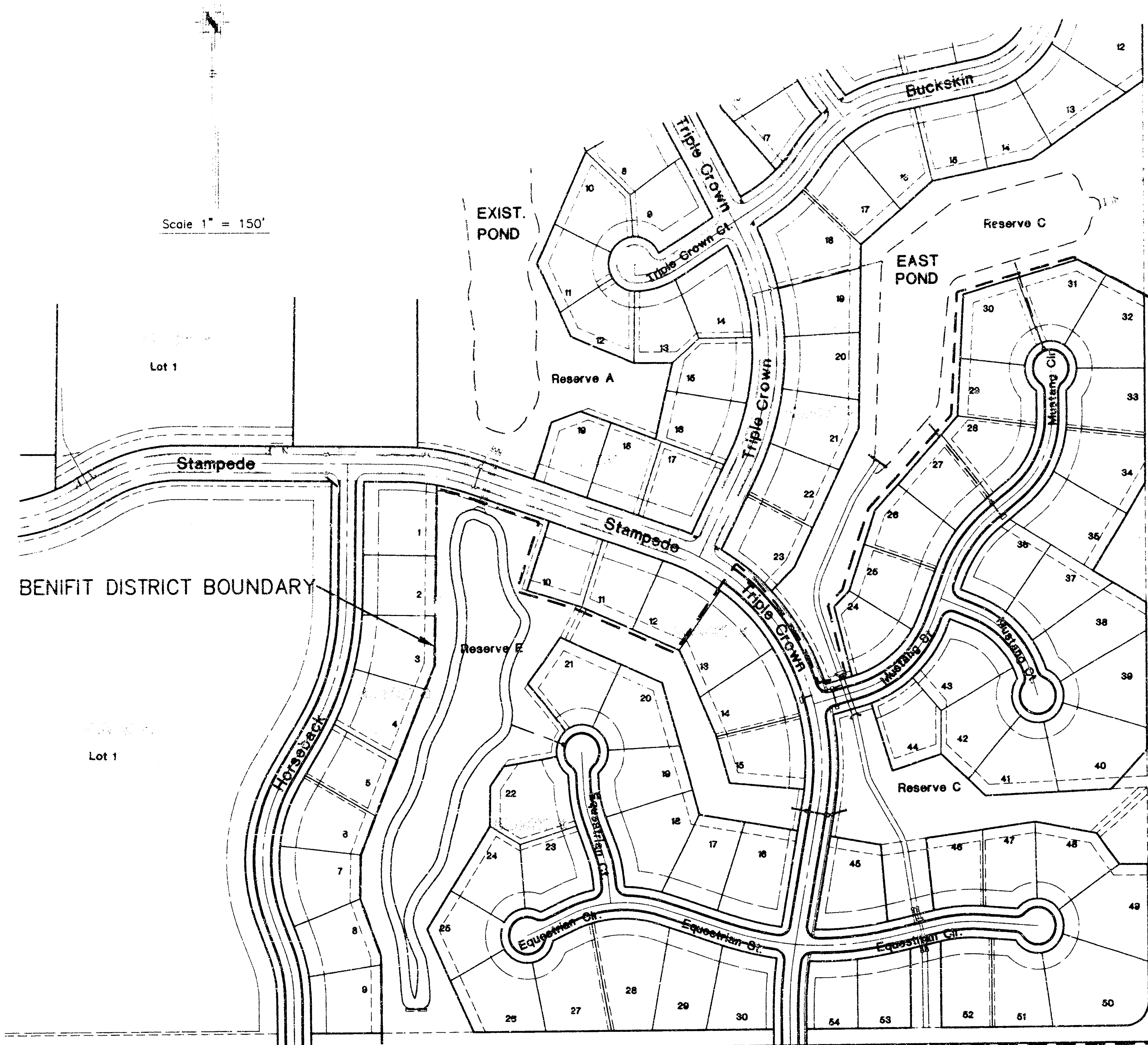
Cox Communications	262-4270 or 263-2061
Kansas Gas	263-7511
Westar Energy	264-1141
Aquila Networks	942-8350 or 263-8161
Southwestern Bell Tel. Co.	1-800-571-2611
City of Wichita Water Department	268-4908
- Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.
All subside excavation shall be wasted on low lying lots within the addition before any material is disposed of off site.
All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.
- Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage.
- The Contractor shall be responsible for preserving property irons. The Contractor will be required to reestablish any property irons which are damaged or destroyed by his construction operations. Such irons shall be reestablished by a licensed land surveyor in accordance with state laws.
- Trees are to be removed as needed. The cost is subsidiary to site clearing costs.
- All lawn/turf areas disturbed by construction shall be restored with the same sod as existing. Restoration of disturbed areas shall include, but not be limited to, top soil preparation and sodding. All sodding work shall be in accordance with City Standard Specifications and the City Administrative Regulation No. A778, which governs cleanup and restoration or replacement following construction. The "Recapitulation of Quantities" will show the estimated Square Yards of disturbed lawn/turf area to be sodded, with a bid item for the same. When the weather/season prevents the installation of sod, the Contractor shall be responsible for installing Erosion Control Blanket (Curlex I, or approved equal) at the back of curb (8' wide minimum). All costs for erosion mat installation shall be subsidiary to "Site Restoration".
- The Contractor shall reseed all non-lawn/turf areas disturbed by construction with a mixture of Ryegrass (applied at a rate of 200 lbs per acre) and Fescue, Bermuda, or Buffalo grass, depending on the soil conditions (applied per Standard Specifications). Pure Nitrogen fertilizer shall also be applied at a rate of 1.5 lbs per thousand square feet. The seed shall be watered with deep soaking every two (2) weeks during dry periods until a mature stand of grass is obtained. The "Recapitulation of Quantities" will show the estimated Square Yards of disturbed non-lawn/turf area to be seeded, with a bid item for the same. The permanent seeding may be omitted only if sodding is required in accordance with previous General Note. The Contractor shall be responsible for installing Erosion Control Blanket (Curlex I, or approved equal) at the back of curb, to and including the limits of all seeded areas. All costs for this work shall be subsidiary to the seeding bid item.
- Contractor shall maintain all existing BMPs on project site during construction. Contractor shall repair or replace any existing BMP's that are damaged (Cost is subsidiary to site restoration). If BMPs were damaged prior to contractor beginning work on project, notify construction inspector or engineer.
- Contractor shall remove and stockpile organic material (topsoil) to surface (to a minimum of twelve (12) inches) all fills, embankments and any other areas on the site of the work where the original topsoil will be covered or damaged. Topsoil shall be free from trash, debris and surface vegetation more than six (6) inches in height. After all work has been completed in each area, topsoil shall be placed and graded. (Cost shall be subsidiary to Excavation)

EARTHWORK SUMMARY

Pond Excavation	39,520 C.Y.
Pond Fill	1,477 C.Y.
Waste **	38,043 C.Y.

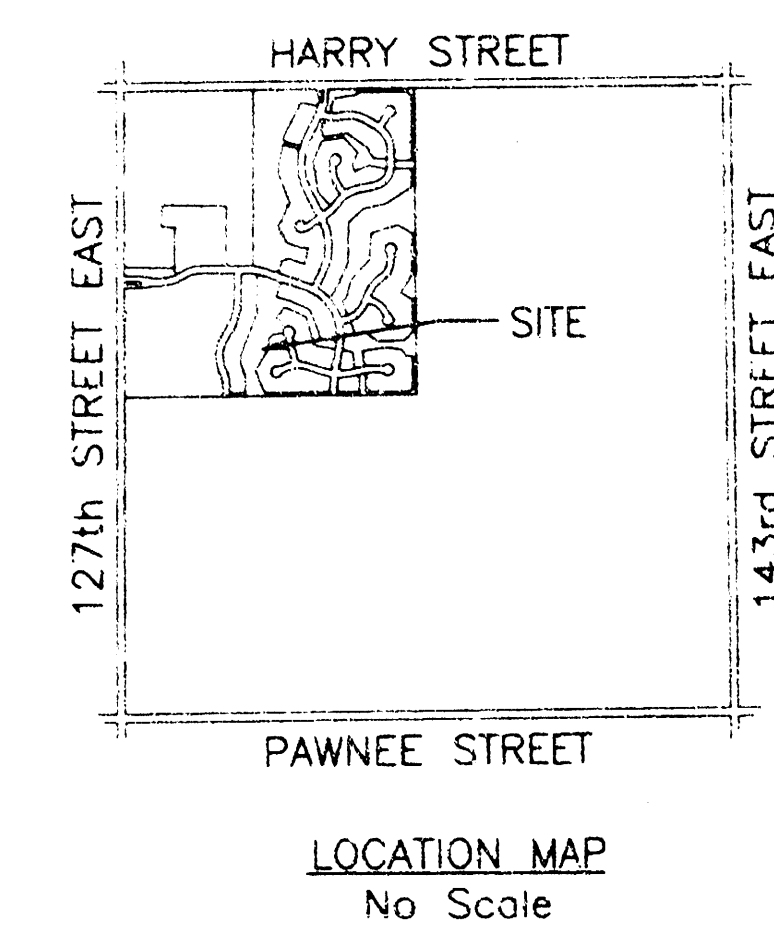
(See Earthwork Summary Sheet for Site Balance)

** See Street Plans for Waste Placement on Site



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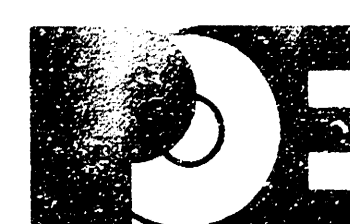


BENCH MARKS

(U.S.G.S. Datum)

- Railroad spike in power pole, approximately 25' south and 30' east of W 1/4 Corner, Section 35-27-2E. Elev. 1,349.65
- Square on south hub guard of RG8C just west of NW Corner of Section 35-27-2E. Elev. 1,311.90

JANUARY 2008



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James M. Ubert
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LICENSED
4698
1-15-06
KANSAS
PROFESSIONAL ENGINEER

N 7743.208
E 16806.773

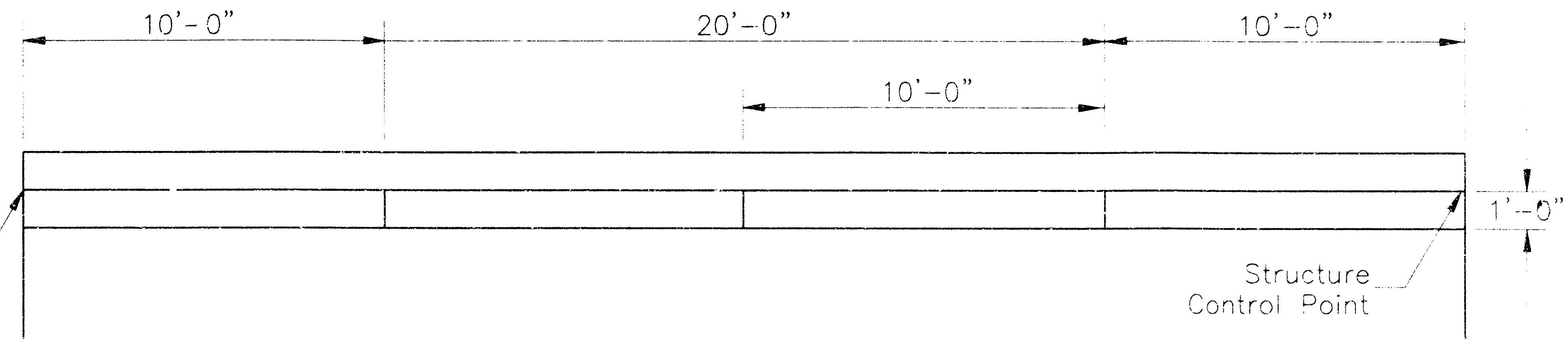
N 7743.452
E 16846.772

26 SY Rip-Rap
Heavy Stone (40'x 6')

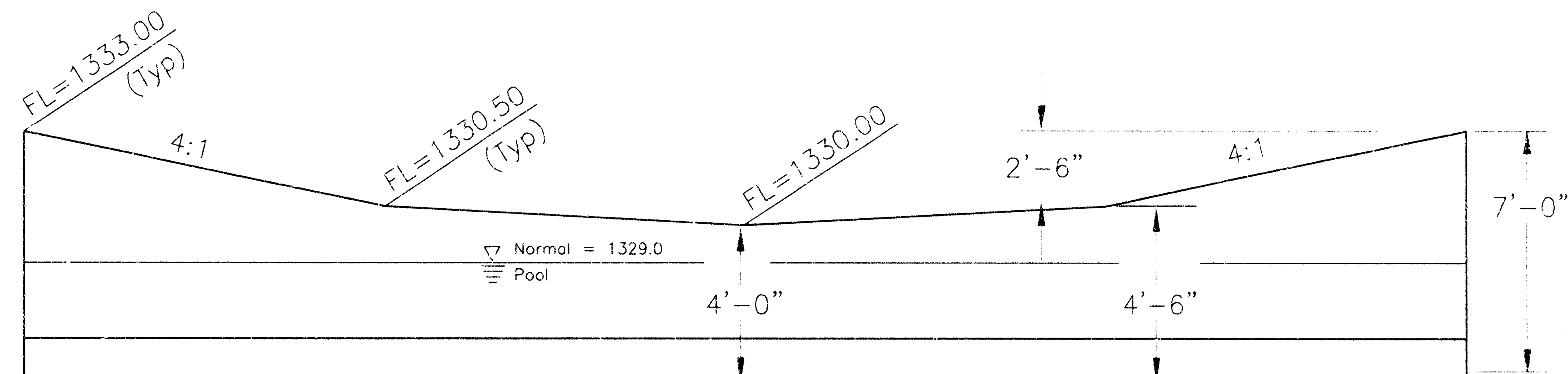
POND

Structure
Control Point

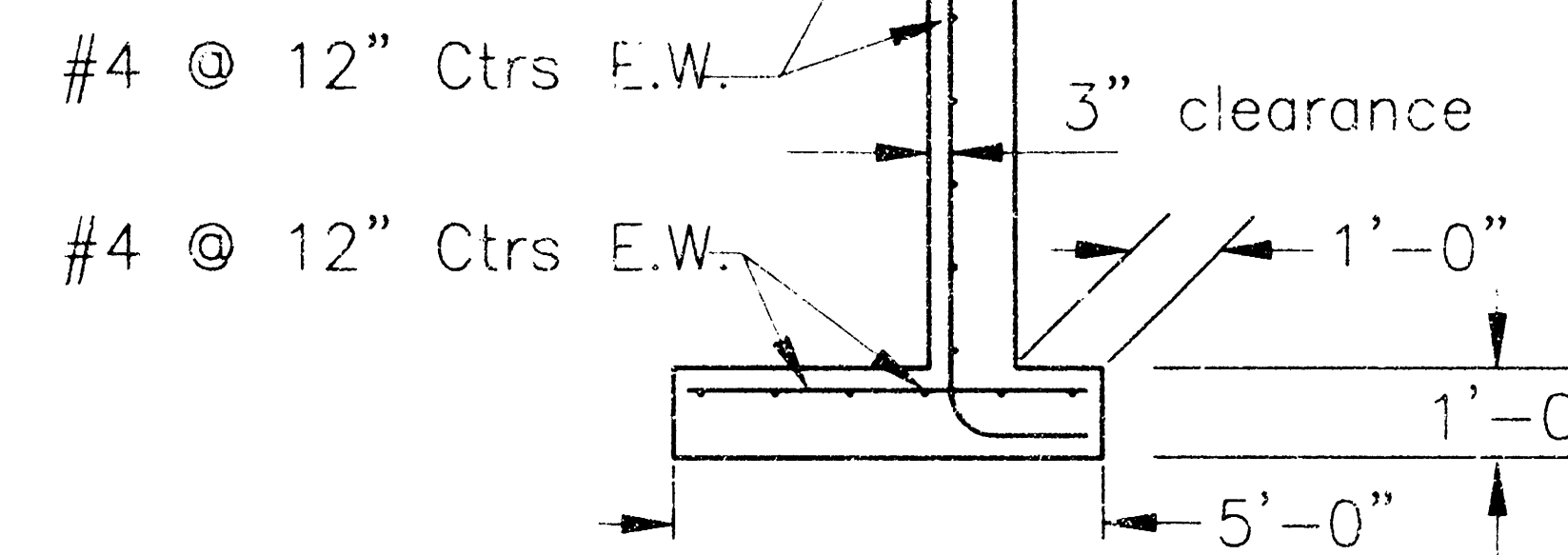
Structure
Control Point



PLAN



ELEVATION



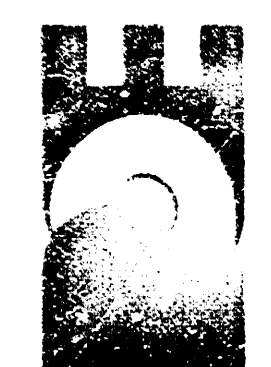
SIDE

Reinforced Concrete Toe Wall

Scale: 1"=2.5'

EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 178
REINFORCED CONCRETE INLET STRUCTURE
CITY OF WICHITA, KANSAS
JAMES L. ARBORE, P.E. - CITY ENGINEER
C.O. No. Project # 468 3250 OCA # 75410

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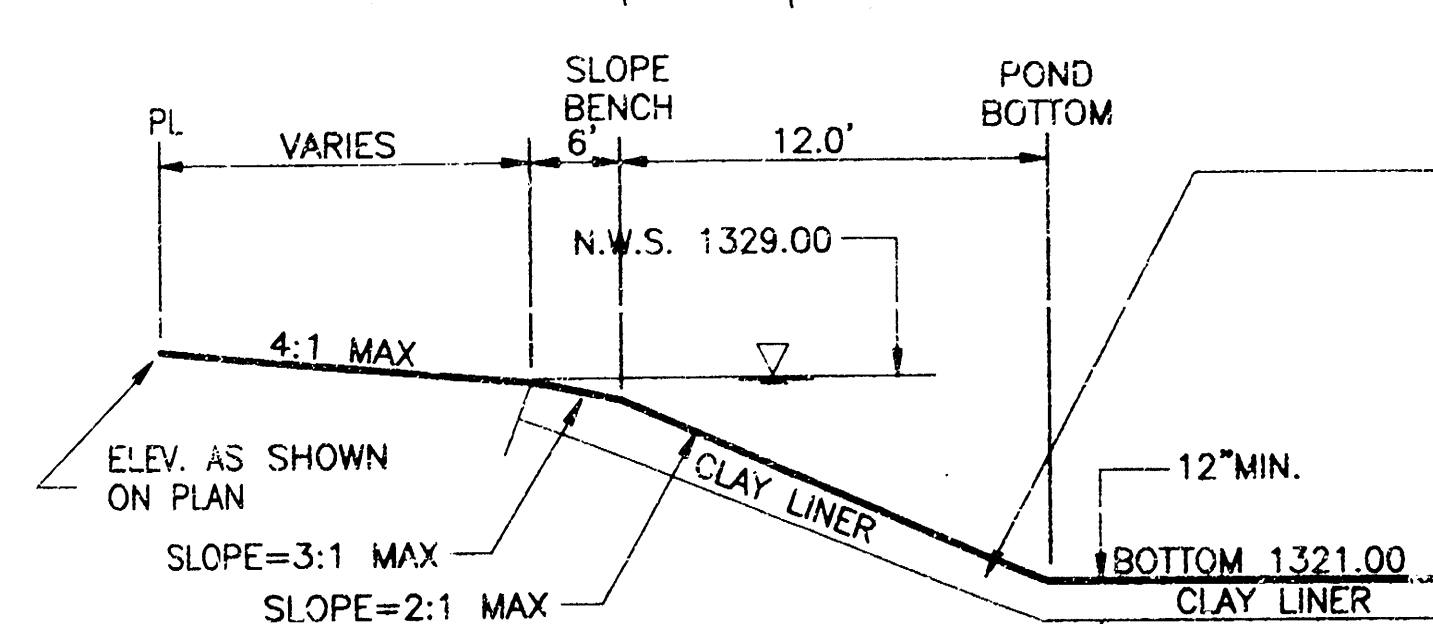
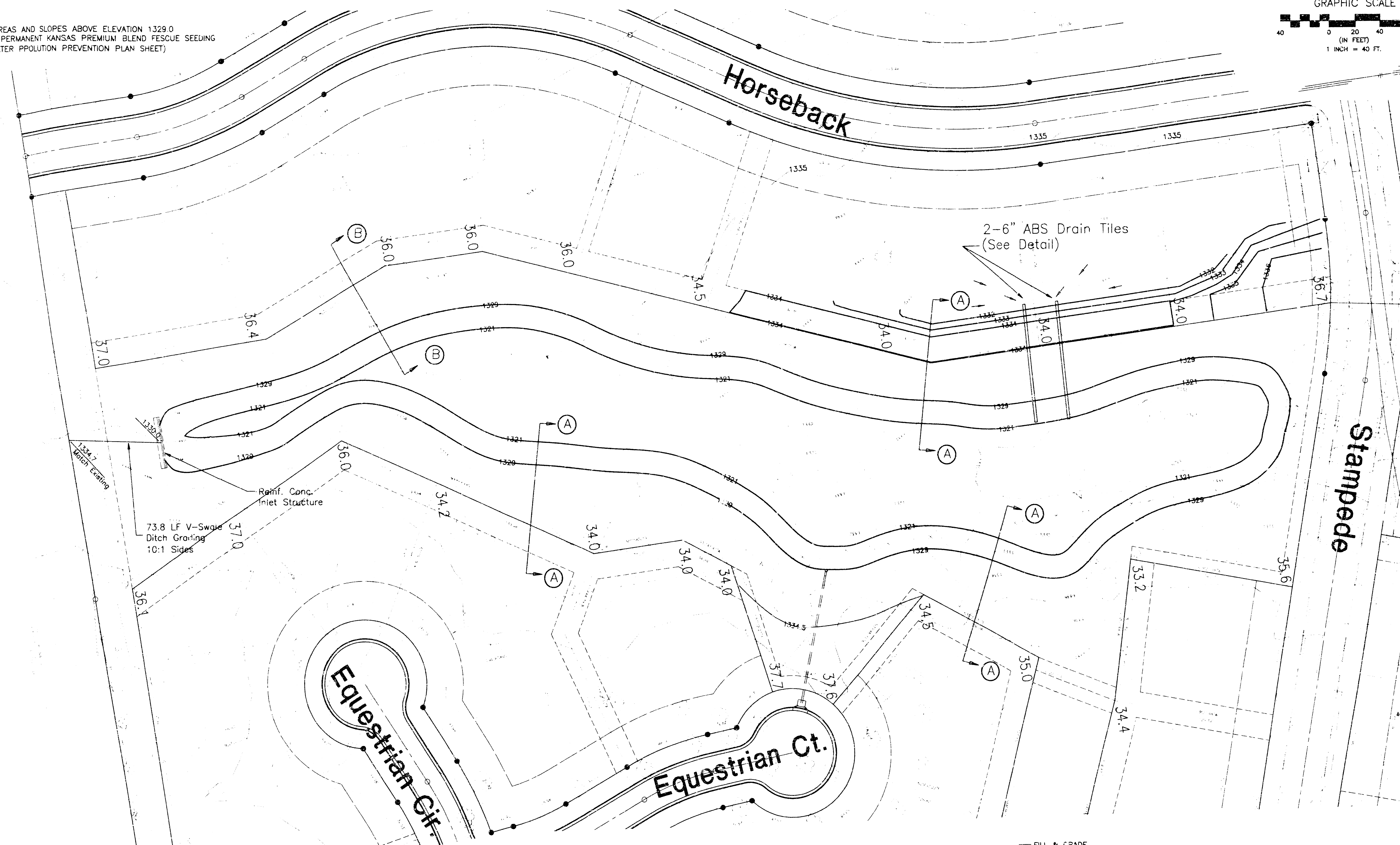
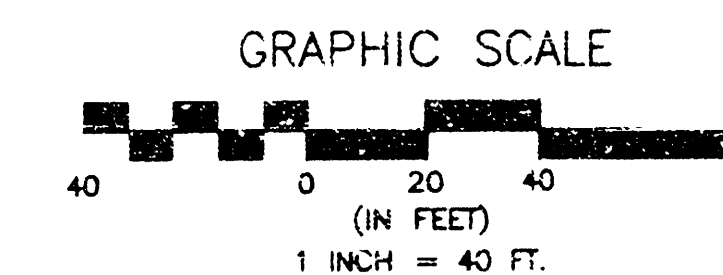


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Designed By: JMU/JPD
Drawn By: JMU/JPD
For Job No.: 1694J
Date: January 2006

Sheet
2 of 11

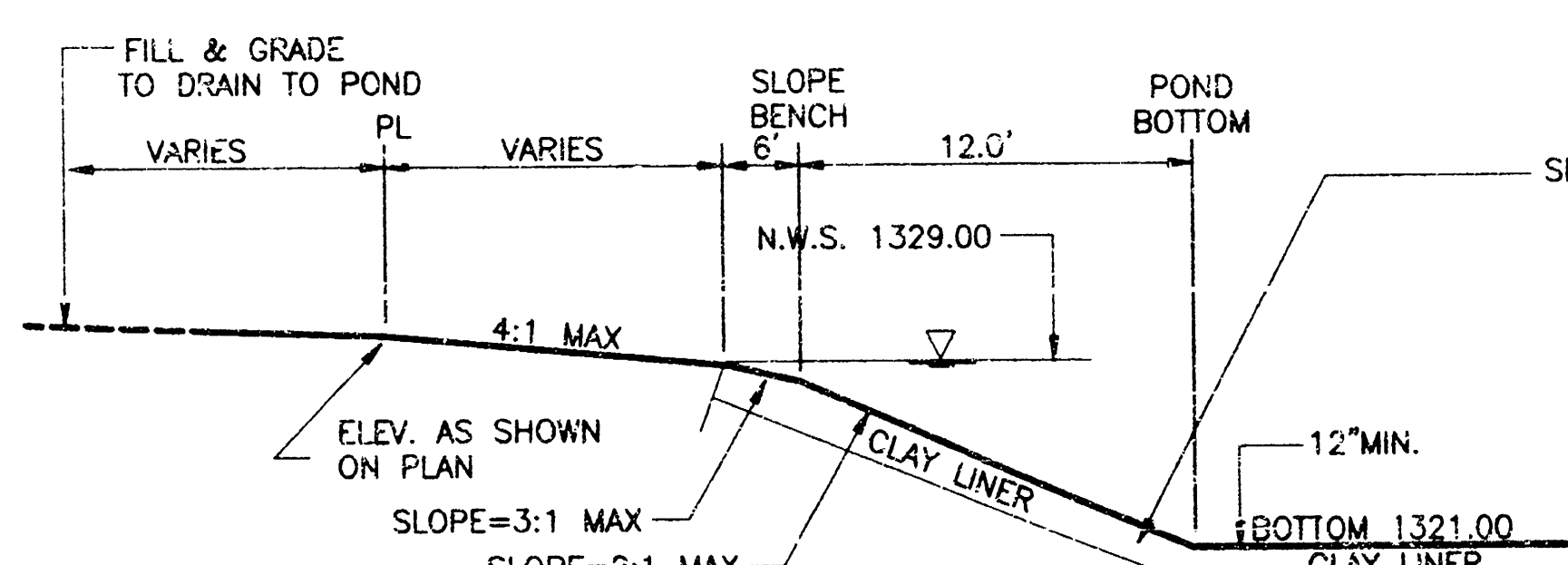
NOTE:
ALL RESERVE AREAS AND SLOPES ABOVE ELEVATION 1329.0
SHALL RECEIVE PERMANENT KANSAS PREMIUM BLEND FESCUE SEEDING
(SEE STORM WATER POLLUTION PREVENTION PLAN SHEET)



SECTION 'A' - 'A'

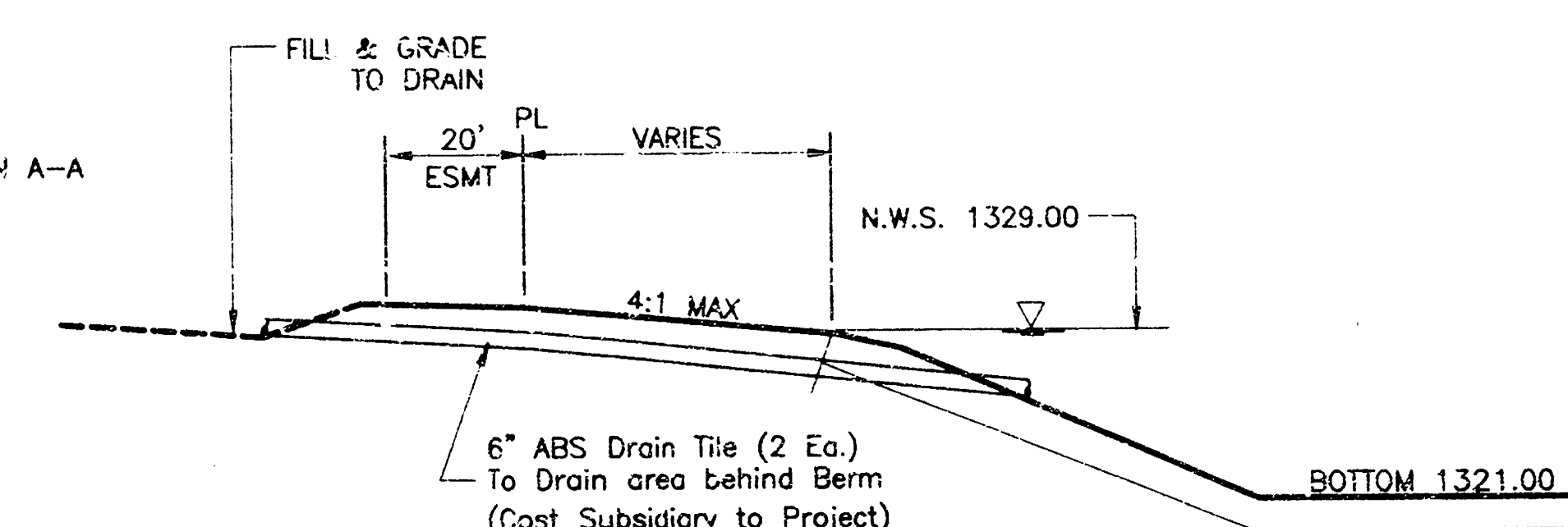
CONSTRUCT 12" MINIMUM THICKNESS CLAY LINER, COMPACT TO ABOVE OPTIMUM MOISTURE CONTENT A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698, STANDARD PROCTOR PROCEDURE. CLAY LINER TO BE CONSTRUCTED WITH SOILS HAVING A PLASTICITY INDEX OF 25 (MIN.) IF SUITABLE MATERIAL IS NOT ON SITE, CONTRACTOR SHALL USE MOST SUITABLE MATERIAL AVAILABLE. PROCTOR AND COMPACTION TESTING SHALL BE BY INDEPENDENT LABORATORY FURNISHED AND PAID FOR BY CONTRACTOR. CONTRACTOR SHALL PROVIDE TESTING REPORTS TO ENGINEER.

DIRT QUANTITIES SHOWN ON PLANS DO NOT REFLECT 12" CLAY LINER AT POND BOTTOM. THE PLACEMENT OF THESE ITEMS WILL BE SUBSIDIARY TO THE EXCAVATION BID ITEM.



SECTION 'B' - 'B'

DIRT QUANTITIES SHOWN ON PLANS DO NOT REFLECT 12" CLAY LINER AT POND BOTTOM. THE PLACEMENT OF THESE ITEMS WILL BE SUBSIDIARY TO THE EXCAVATION BID ITEM.



DRAIN TILE DETAIL

EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
POND GRADING PLAN
CITY OF WICHITA, KANSAS
JAMES L. ARNOOLD, P.E. - CITY ENGINEER
C.O.W. Project # 468-63319 C.C.A. # 75-410

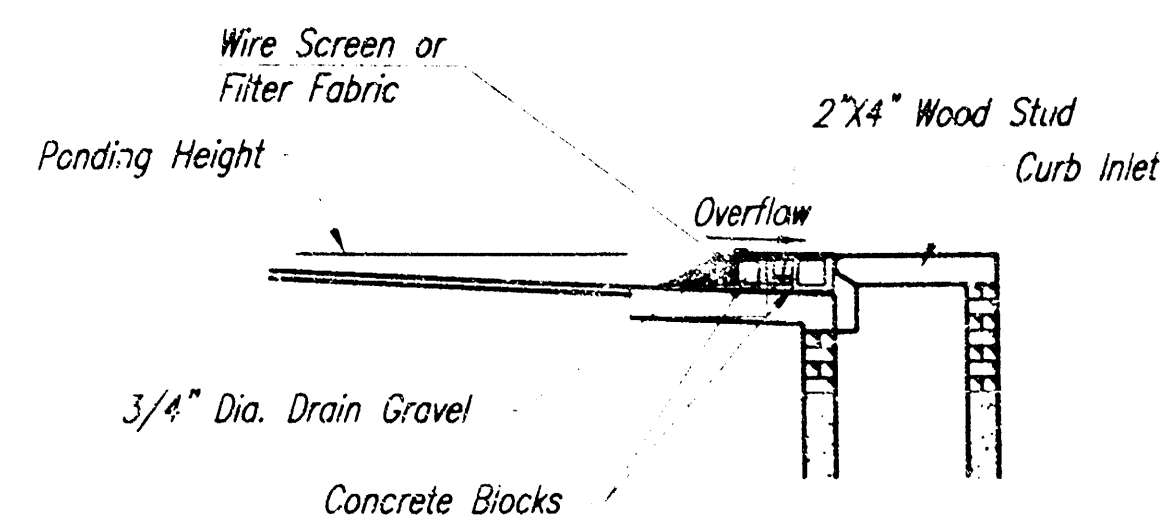
POE & ASSOCIATES, INC.
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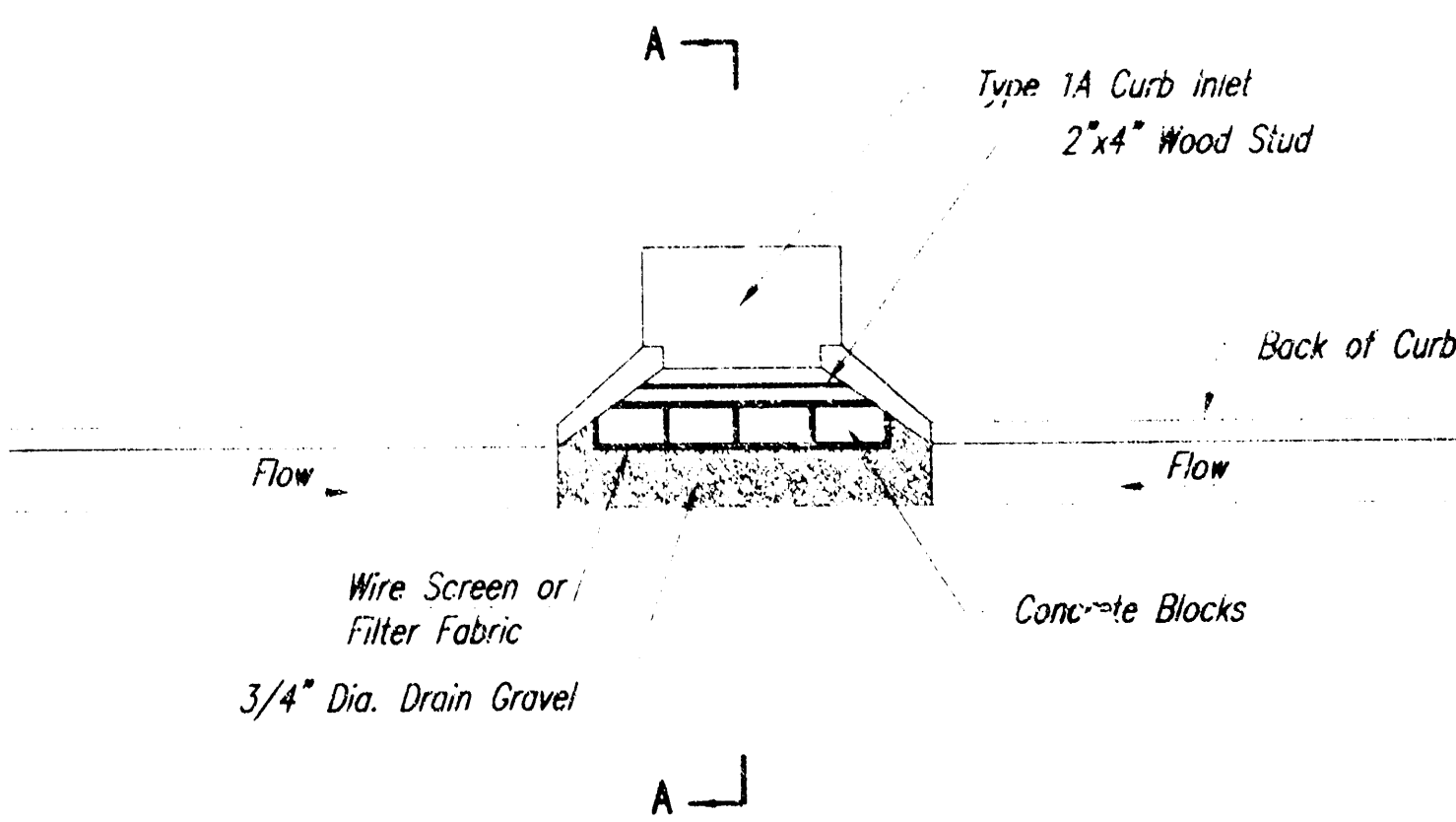
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Designed By: JMU/JPD
Drawn By: JMU/JPD
Pica Job No.: 1694J
Date: January, 2006

Sheet
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SECTION A-A



CURB INLET GRAVEL FILTERS
(INLET PROTECTION-RESIDENTIAL STREETS ONLY)

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

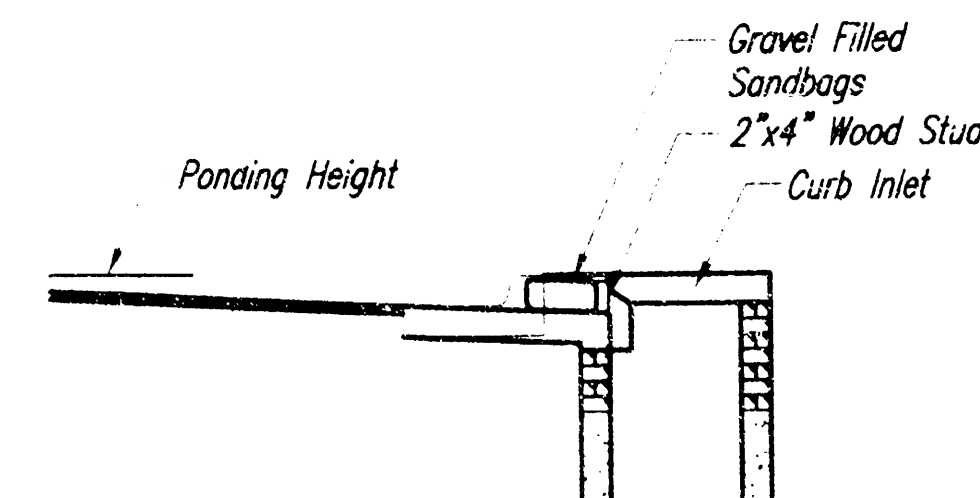
Instructions for Installing:

- STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
- STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
- STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
- STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2x4" board to prevent collapsing.

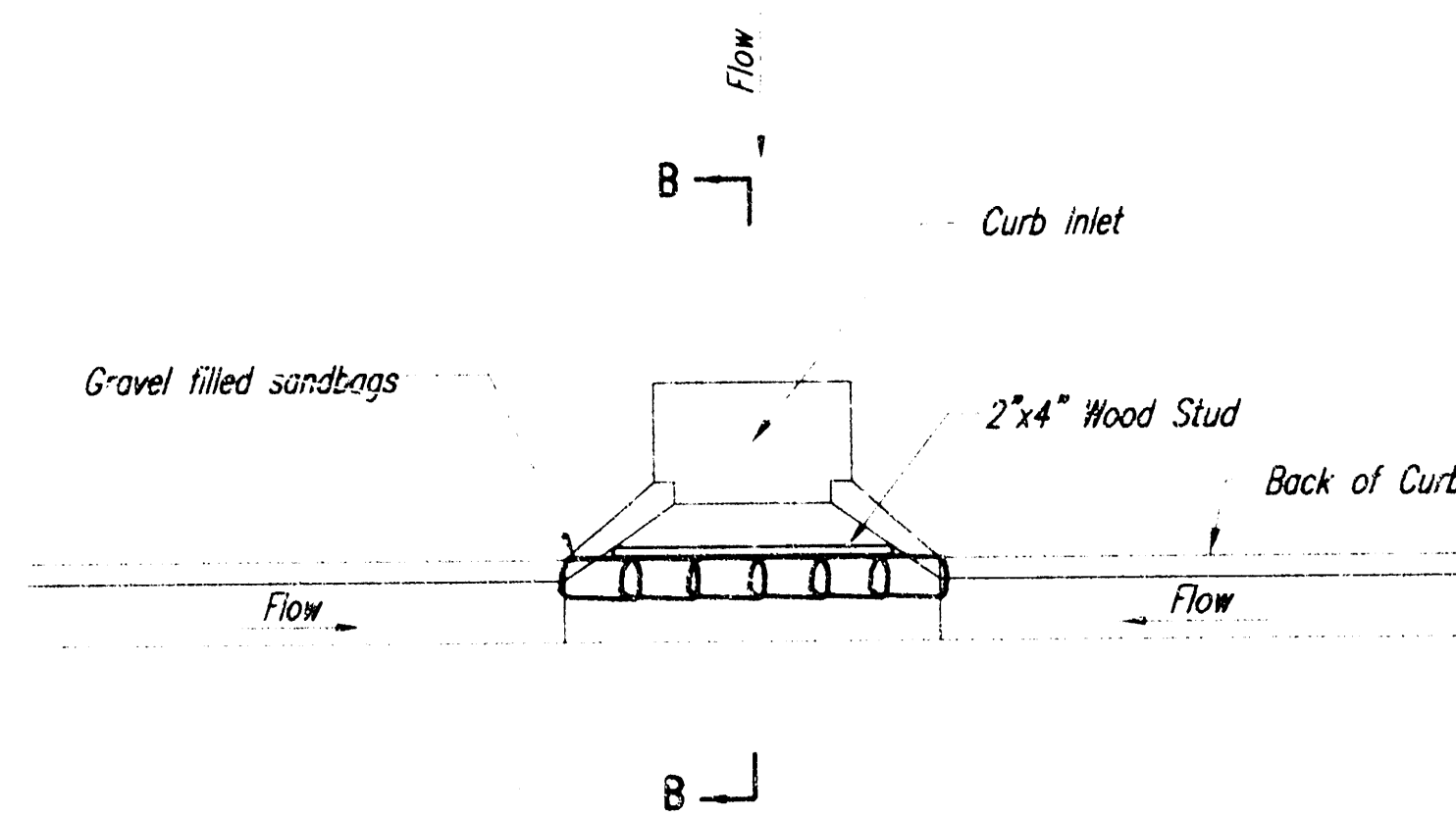
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

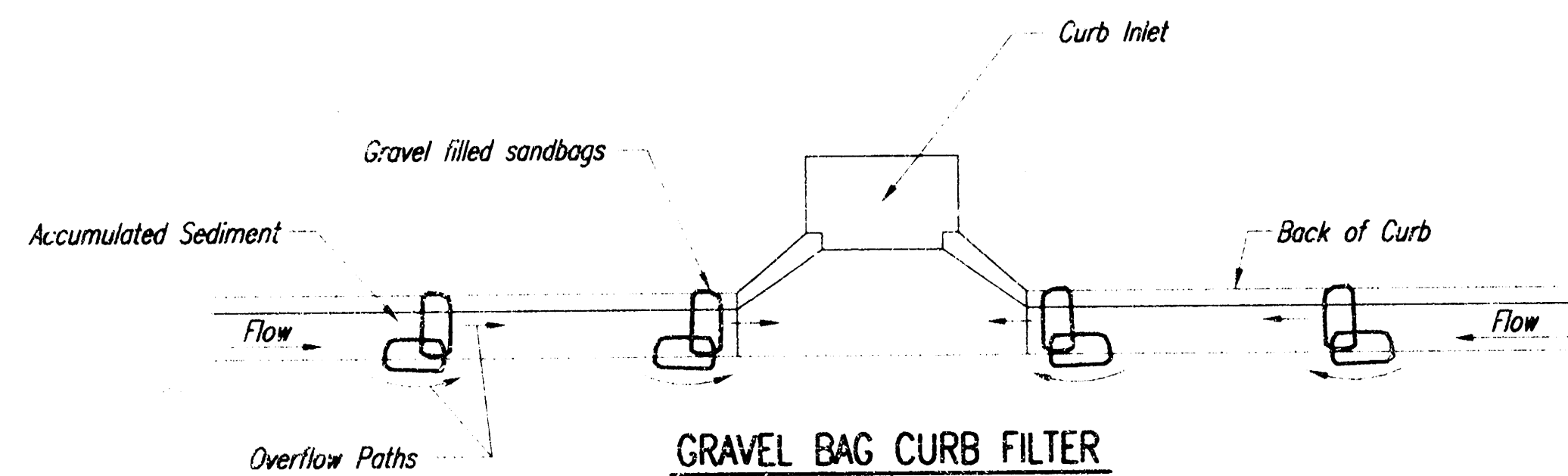


SECTION B-B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

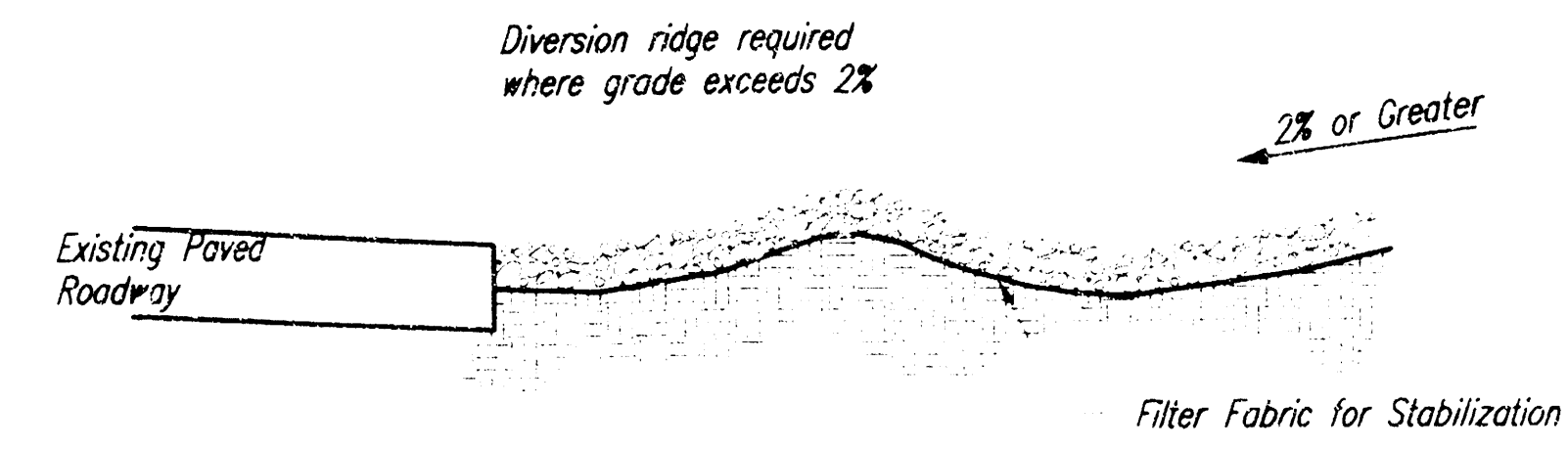
Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

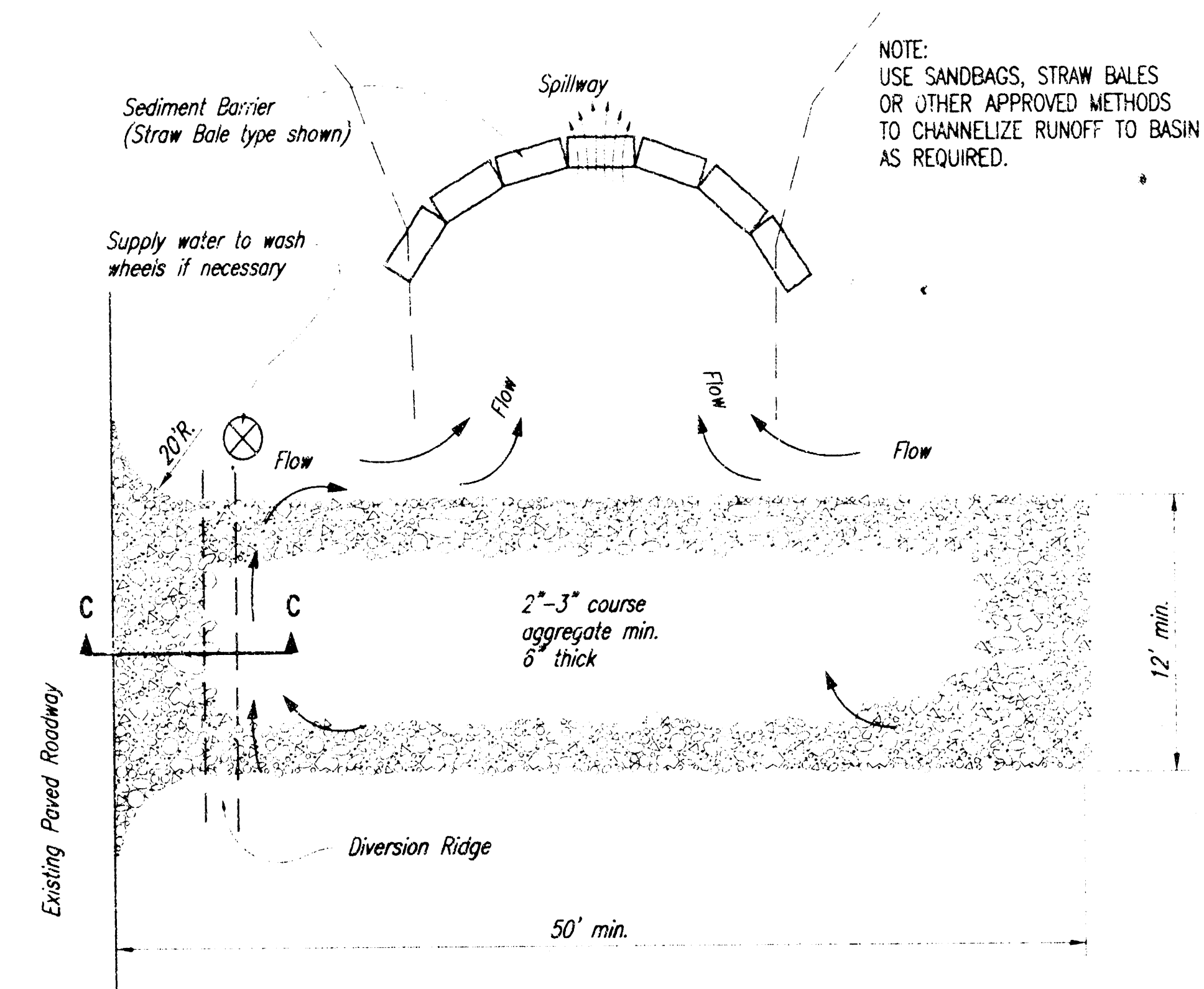
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.



SECTION C-C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
4. DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.



SOIL EROSION BMPs	
CURB INLET PROTECTION AND CONSTRUCTION ENTRANCE	
SCOTT LINDEBAK, P.E. STORM WATER ENGINEER	
PROJECT NUMBER 468-83319	OCN NO. 751410
DATE SEPT. 2003	SHEET 4 OF 11

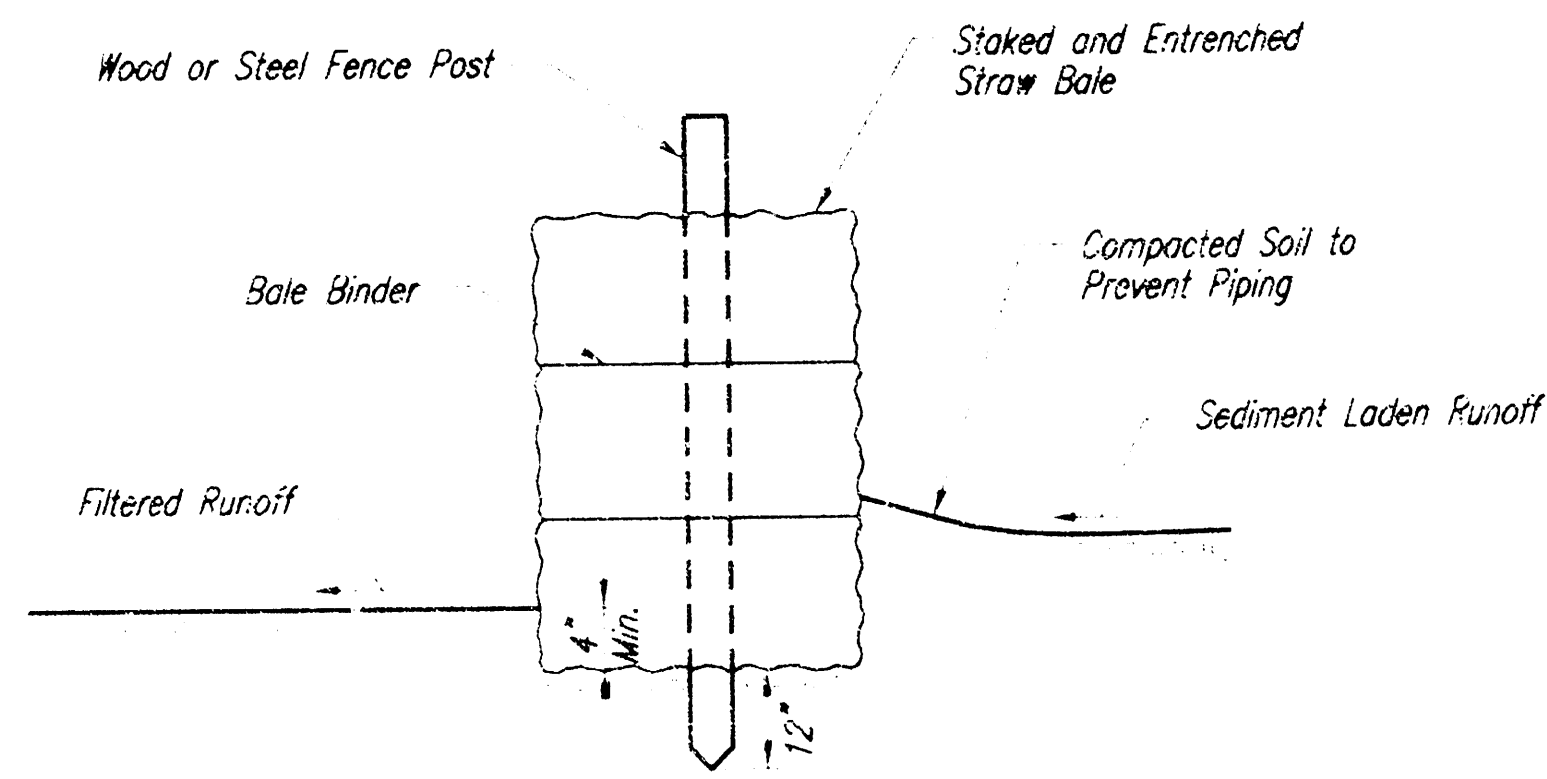
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Poe Job No.: 1694J
Date: January 2006

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EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
SOIL EROSION BMPs
CITY OF WICHITA, KANSAS
JAMES L. POE, P.E., CITY ENGINEER
C.O.# Project # 468-83319 O.C.A. # 751410

Revised:	
By:	
Date:	
Approved:	
By:	
Date:	



STRAW BALE BARRIERS

Material Specification:

Bale slope barriers may be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture. The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Twine should be used to bind bales. The use of wire binding is prohibited because it does not biodegrade readily.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment. When practicable, bale slope barriers should be placed along contours to avoid a concentration of flow. Bale slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use. Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground. Once all the bales have been installed and anchored, place the excavated soil against the upslope side of the check and compact it. The compacted soil should be no more than 3" to 4" deep.

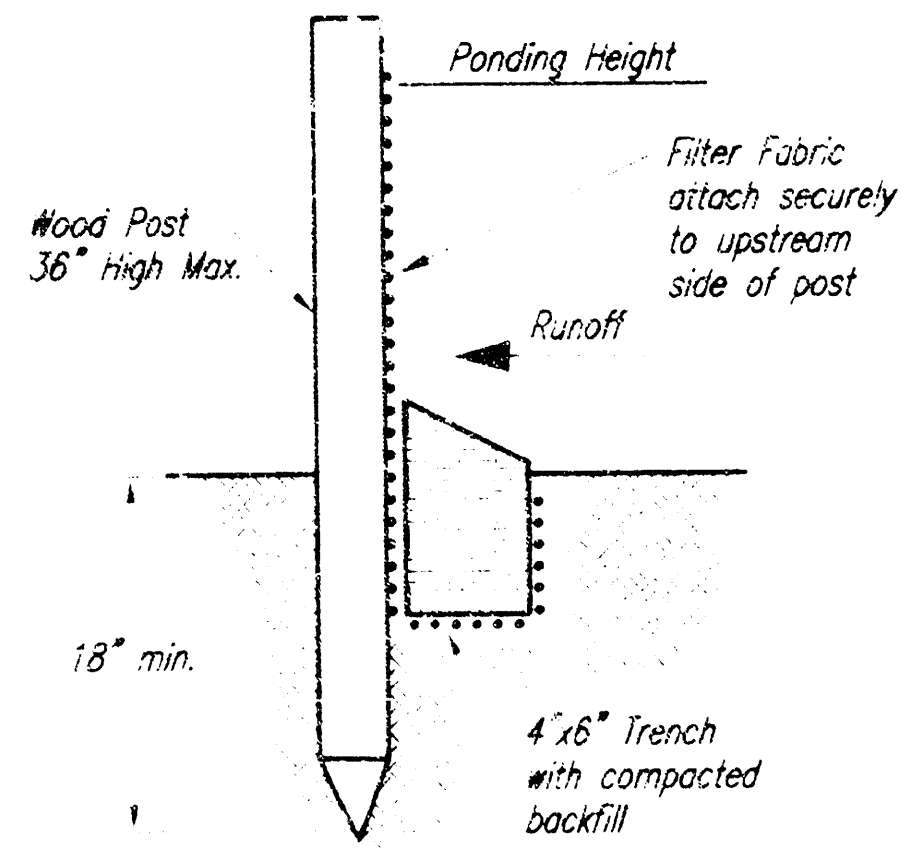
List of common placement/installation mistakes to avoid:

When practical, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the barrier fails. Do not place bale slope barriers in areas with shallow soils underlain by rock. If the barrier is not anchored sufficiently, it will wash out. Bale slope barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

Bale slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

- Are there any points along the slope barrier where water is concentrating?
- Does water flow under the slope barrier?
- Does water flow through spaces between abutting bales?
- Are any bales dislodged?
- Are bales decomposing due to age and/or water damage?
- Does sediment need to be removed from behind the slope barrier?



SILT FENCE BARRIERS

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification. The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long. Silt fence fabric should be attached to the wooden posts with staples, wire, zip ties, or nails.

Placement:

A slope barrier should be used at the toe of a slope when a ditch does not exist. The slope barrier should be placed on nearly level ground 5' to 10' away from the toe of a slope. The barrier is placed away from the toe of the slope to provide adequate storage for settling out sediment. When practicable, silt fence slope barriers should be placed along contours to avoid a concentration of flow. Silt fence slope barriers can also be placed along right-of-way fence lines to keep sediment from crossing onto adjacent property. When placed in this manner, the slope barrier will not likely follow contours.

Proper installation method:

Excavate a trench the length of the planned slope barrier that is 6" deep by 4" wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the trench for later use. Roll out a continuous length of silt fence fabric on the downslope side of the trench. Place the edge of the fabric in the trench starting at the top upslope edge. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt-fence fabric should remain exposed. Lay the exposed silt fence upslope of the trench to clear an area for driving in the posts. Just downslope of the trench, drive posts into the ground to a depth of at least 18". Place posts no more than 4' apart. Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

List of common placement/installation mistakes to avoid:

When practicable, do not place silt fence slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. When the flow concentrates, it overtops the barrier and the silt fence slope barrier quickly deteriorates. Do not place silt-fence posts on the upslope side of the silt fence fabric. In this configuration, the force of the water is not restricted by the posts, but only by the staples (wire, zip ties, nails, etc.). The silt fence will rip and fail. Do not place silt fence slope barriers in areas with shallow soils underlain by rock. If the barrier is not sufficiently anchored, it will wash out. Silt fence slope barriers must be dug into the ground-silt fence at ground level does not work because water will flow underneath.

Inspection and Maintenance:

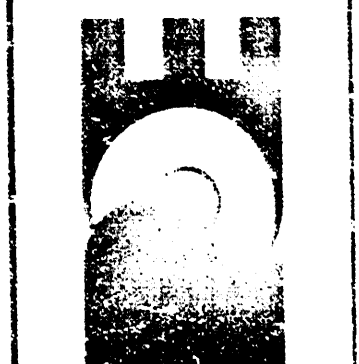
Silt fence slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

- Are there any points along the slope barrier where water is concentrating?
- Does water flow under the slope barrier?
- Do the silt fences sag excessively?
- Has the silt fence torn or become detached from the posts?
- Does sediment need to be removed from behind the slope barrier?

	SOIL EROSION BMP	
	BARRIER DETAILS	
	SCOTT LINDEBAK, P.E. STORM WATER ENGINEER	
	PROJECT NUMBER 468-83319	CCA NO. 751410
DATE SEPT. 2003	SHEET 5 OF 11	

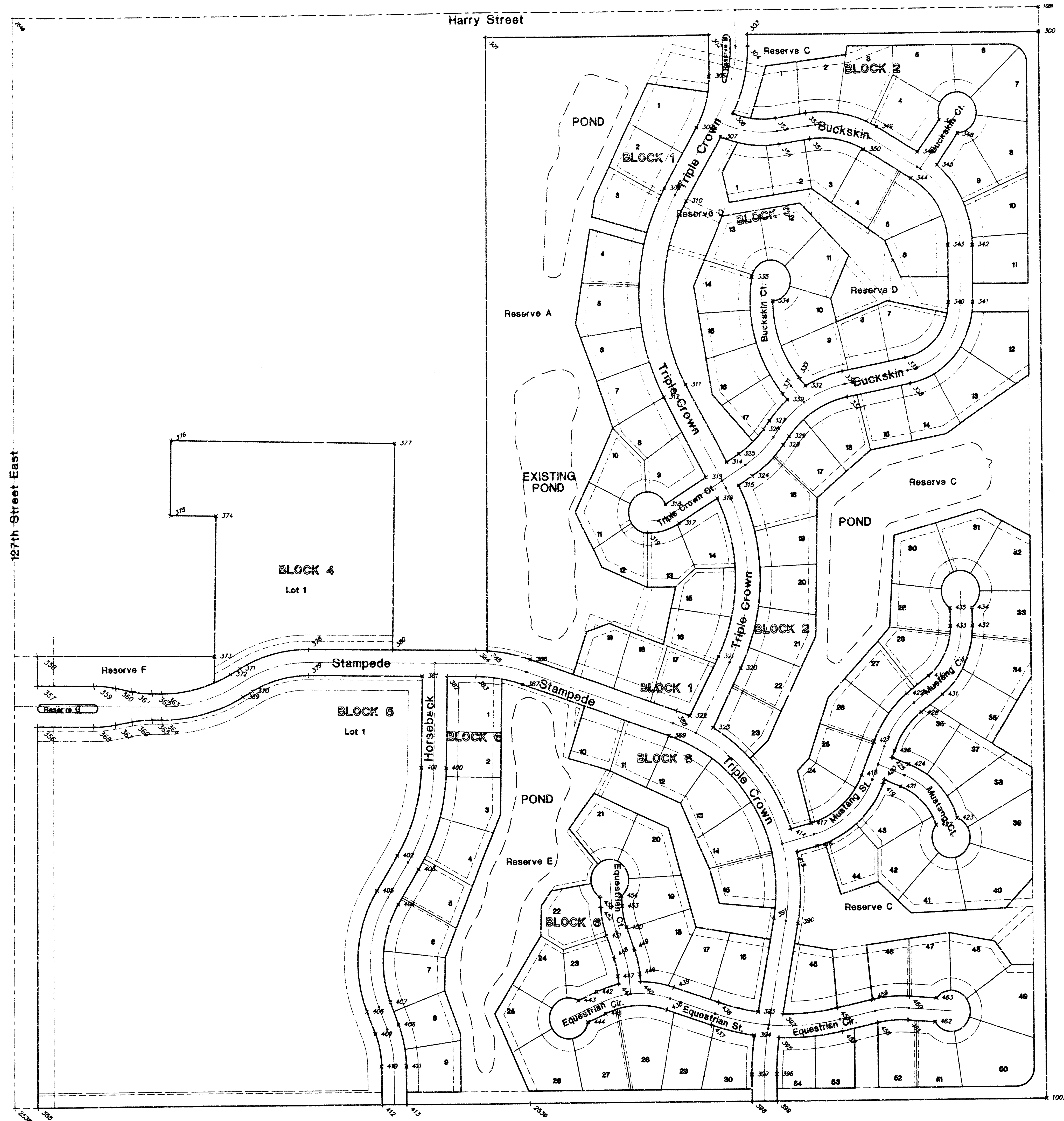
EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
SOIL EROSION BMP
CITY OF WICHITA, KANSAS
JANUARY 2006
COW Project # 468-83319 CCA # 751410

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FINAL
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Drawn By: JMU/JPD
Poe Job No.: 1634J
Date: January 2006

Sheet
5 of 11



COORDINATE POINTS LIST		
POINT #	NORTHING	EASTING
2538	7,662.418	15,615.896
2539	7,670.464	15,635.352
2567	7,678.243	15,621.644
2568	7,636.235	15,629.974
2569	7,637.973	15,628.839
2570	7,678.222	15,629.919
2571	7,666.306	15,642.505
2572	7,670.226	17,474.928
2573	7,670.912	17,514.902
2574	7,642.402	17,519.119
2575	7,618.595	17,415.820
2576	7,678.463	17,475.619
2577	7,622.056	17,444.188
2578	7,645.015	17,363.858
2579	7,697.509	17,320.981
2580	7,666.298	17,356.805
2581	7,618.822	17,352.720
2582	7,686.546	17,396.334
2583	7,692.842	17,407.115
2584	7,629.357	17,434.128
2585	7,673.358	17,484.358
2586	7,641.511	17,428.787
2587	7,681.445	17,334.456
2588	7,627.508	17,298.760
2589	7,657.980	17,252.197
2590	7,627.559	17,466.613
2591	7,656.394	17,419.316
2592	7,611.926	17,357.483
2593	7,692.915	17,414.583
2594	7,695.879	17,519.774
2595	7,649.867	17,485.404
2596	7,609.385	17,549.226
2597	7,630.253	17,564.663
2598	7,671.335	17,600.896
2599	7,692.212	17,616.123
2600	7,681.346	17,612.163
2601	7,696.735	17,599.272
2602	7,614.952	17,659.672
2603	7,633.979	17,643.733
2604	7,621.827	17,575.575
2605	7,680.051	17,522.509
2606	7,650.242	17,553.331
2607	7,687.502	17,765.966
2608	7,619.916	17,926.925
2609	7,682.856	17,914.290
2610	7,617.583	18,089.046
2611	7,657.042	18,089.792
2612	7,657.155	18,025.293
2613	7,619.848	17,932.072
2614	7,691.713	17,997.855
2615	7,683.778	17,949.505
2616	7,662.544	18,004.420
2617	7,629.372	18,051.998
2618	7,645.740	17,843.361
2619	7,690.468	17,811.096
2620	7,616.382	17,674.381
2621	7,679.627	17,664.579
2622	7,667.313	17,585.122
2623	7,604.068	17,594.923
2624	7,662.783	15,679.998
2625	7,691.642	15,680.488
2626	7,691.642	15,680.971
2627	7,653.622	15,681.319
2628	7,690.428	15,821.275
2629	7,684.759	15,878.060
2630	7,676.254	15,922.197
2631	7,671.108	15,973.745
2632	7,670.900	15,987.851
2633	7,606.902	15,997.298
2634	7,607.111	15,973.191
2635	7,602.857	15,921.562
2636	7,595.117	15,877.284
2637	7,590.432	15,820.410
2638	7,576.117	16,231.984
2639	7,571.614	16,200.108
2640	7,571.453	16,175.452
2641	7,571.363	16,135.329
2642	7,571.387	16,141.175
2643	7,571.006	16,022.723
2644	7,598.997	16,025.844
2645	7,579.083	16,601.068
2646	7,578.032	16,377.513
2647	7,574.034	16,376.903

COORDINATE POINTS LIST		
POINT #	NORTHING	EASTING
2648	7,775.981	16,592.484
2649	7,771.281	16,587.715
2650	7,710.650	16,731.714
2651	7,699.934	16,806.764
2652	7,773.931	16,807.274
2653	7,772.784	16,835.333
2654	7,790.814	16,945.443
2655	7,892.109	16,925.174
2656	7,824.234	17,324.542
2657	7,863.533	17,304.273
2658	7,866.172	17,630.667
2659	7,811.722	17,567.714
2660	7,885.954	17,550.333
2661	7,891.015	17,525.134
2662	7,833.848	17,515.131
2663	7,828.235	17,580.005
2664	7,734.068	17,573.473
2665	7,738.797	17,559.413
2666	7,673.823	17,529.728
2667	7,674.99	17,573.707
2668	7,487.174	17,727.821
2669	7,488.258	16,563.935
2670	7,674.489	15,521.148
2671	7,540.874	16,655.639
2672	7,555.174	16,602.712
2673	7,888.750	15,948.251
2674	7,694.483	15,521.185
2675	7,917.821	15,580.863
2676	7,862.880	16,402.082
2677	7,839.762	15,542.383
2678	7,780.935	16,557.363
2679	7,761.226	16,621.302
2680	7,684.148	16,557.724
2681	7,668.537	16,621.723
2682	7,635.820	17,614.017
2683	7,679.810	17,629.078
2684	7,693.821	17,681.185
2685	7,649.832	17,666.124
2686	7,665.466	17,794.701
2687	7,644.570	17,846.806
2688	7,654.474	17,852.631
2689	7,637.966	17,895.373
2690	7,644.419	17,884.367
2691	7,660.964	18,039.976
2692	7,492.071	17,916.289
2693	7,508.579	17,873.527
2694	7,525.363	17,880.009
2695	7,546.259	17,825.904
2696	7,619.137	17,949.146
2697	7,664.643	17,913.186
2698	7,707.503	17,967.423
2699	7,661.997	18,003.383
2700	7,828.981	18,082.780
2701	7,828.147	18,024.786
2702	7,673.093	18,082.146
2703	7,872.280	18,024.152
2704	7,914.650	17,423.896
2705	7,859.579	17,405.696
2706	7,896.552	17,293.818
2707	7,951.622	17,312.017
2708	7,965.708	17,226.234
2709	7,960.043	17,168.511
2710	7,940.810	17,109.251
2711	7,925.171	17,063.736
2712	7,867.348	17,087.629
2713	7,887.987	17,133.204
2714	7,984.347	17,224.405
2715	7,978.683	17,166.582
2716	8,023.332	17,156.302
2717	8,043.711	17,210.605
2718	8,097.761	17,190.321
2719	8,077.363	17,136.019
2720	8,146.491	17,121.468
2721	8,149.732	17,179.377
2722	8,174.412	17,177.991
2723	8,171.161	17,120.082
2724	7,900.236	17,730.585
2725	7,843.701	17,743.549
2726	7,863.772	17,831.145
2727	7,920.307	17,818.191
2728	7,927.807	17,914.748
2729	7,889.950	17,910.680
2730	7,865.180	17,978.529
2731	7,923.037	17,982.597

Scale 1" = 160'

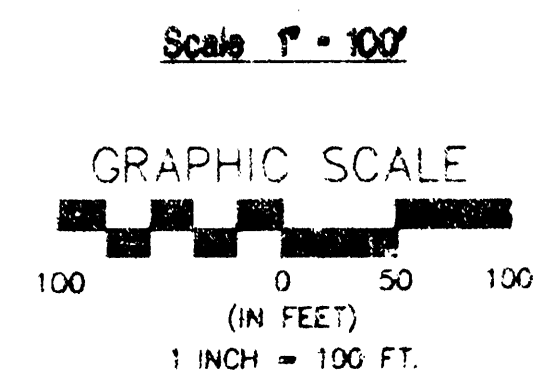
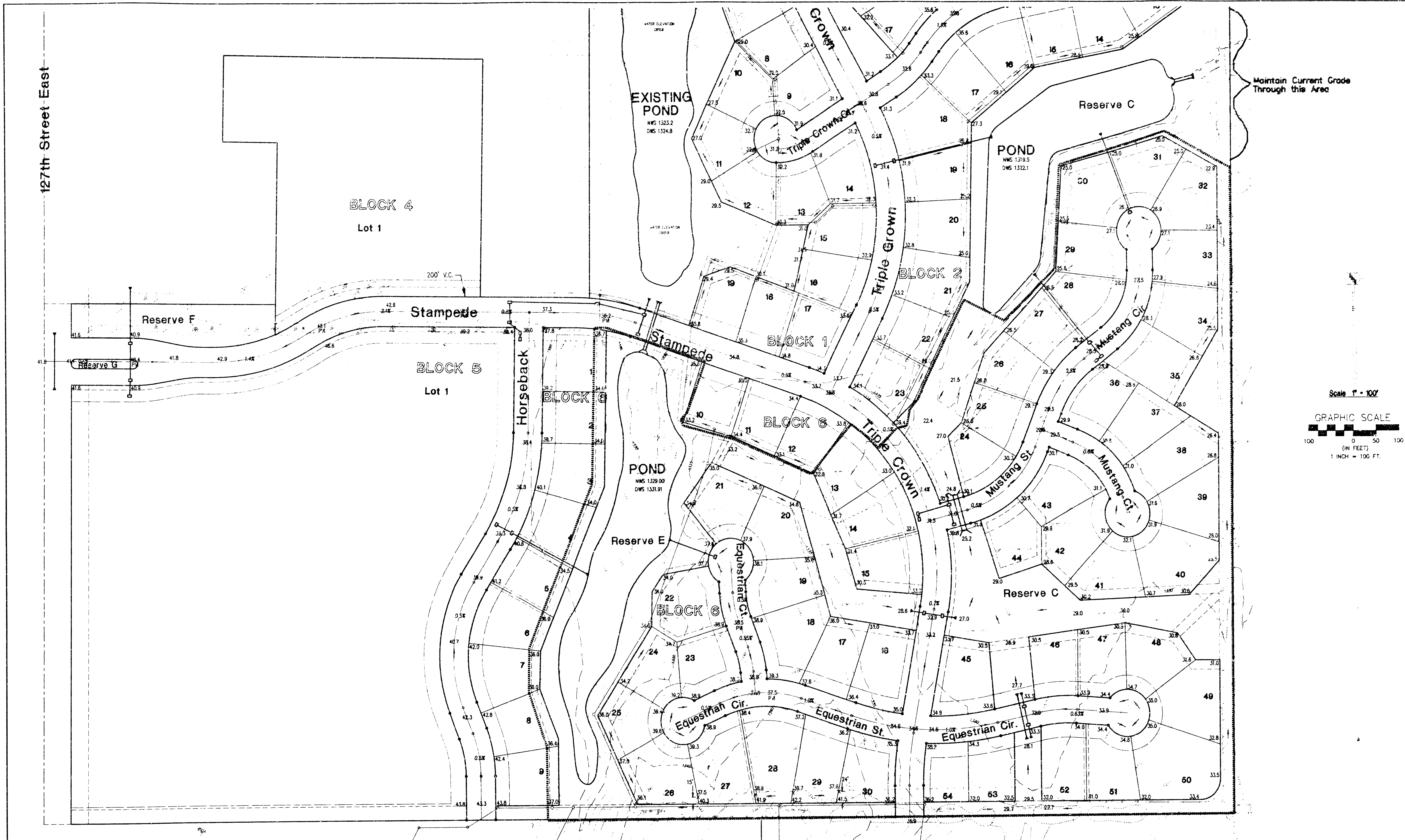
FINAL

Designed By: JML/JPD
Drawn By: JML/JPD
Poe Job No.: 16941
Date: January 2006

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200, Overland Park, KS 66212-4242
Phone (913) 414-1114 Fax (913) 414-4444

EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
COORDINATE POINTS LIST
CITY OF WICHITA, KANSAS
JAMES L. ARNOCK, P.E. - City Engineer
C.O.W. Project # 466-83379 O.C.A. # 759412

6 of 11



LEGEND

20.9 = Proposed Elevation at Lot Corner

X 28.8 = Proposed Finished Elevation at 'X'

—> = Direction of Flow

NOTES

1. Contractor shall grade all right-of-way areas according to elevations shown. (Cost subsidiary to Site Clearing/Restoration.)

2. Contractor shall waste earthwork evenly across low lying lots. (Cost subsidiary to Site Clearing/Restoration.)

Limits of Grading

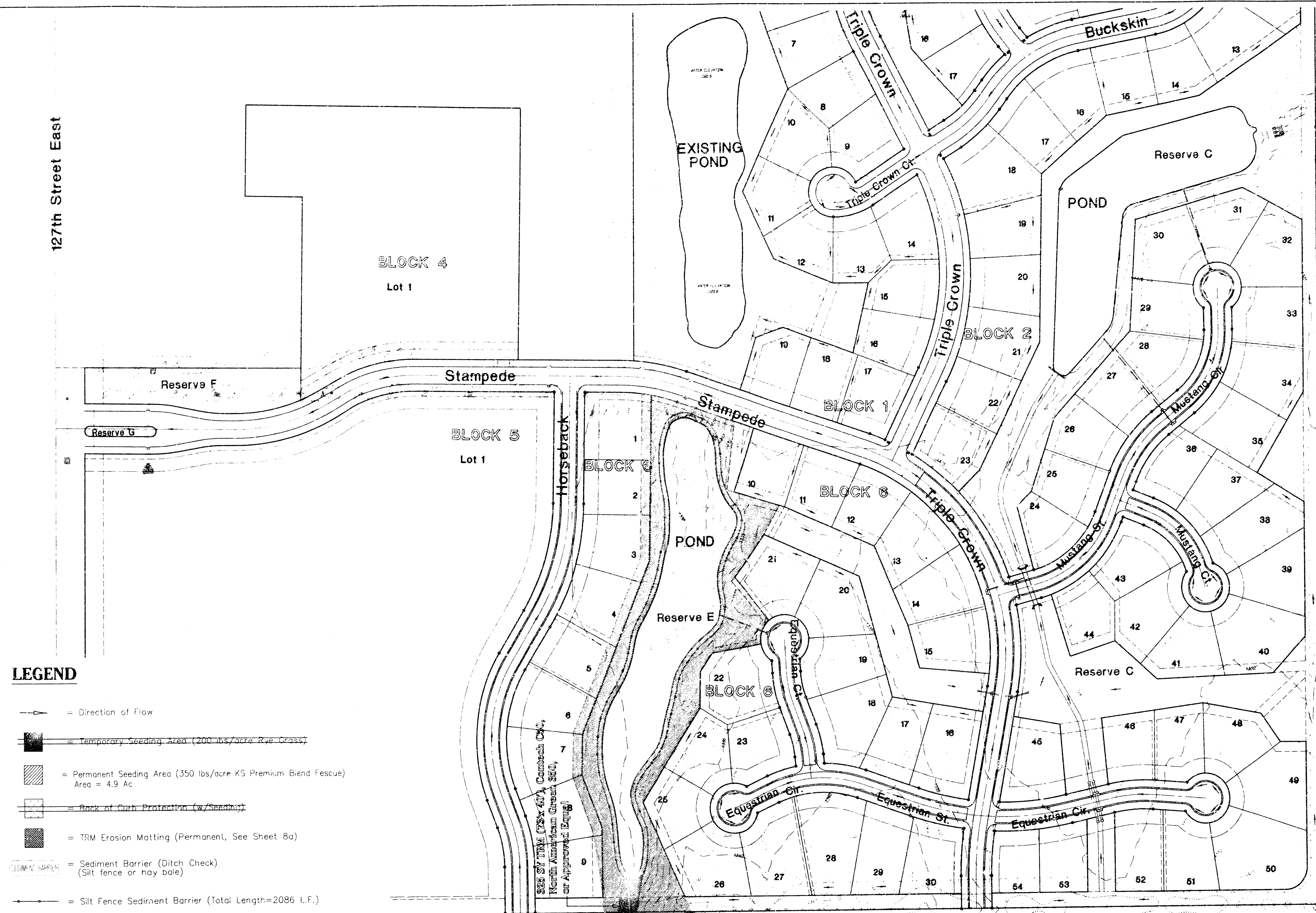
FINAL

Designed By: JMU/JPD
Drawn By: JMU/JPD
Pec. Job No.: 1694J
Date: January 2005

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
3941 E. Central Ave., Suite 200, Overland Park, KS 66211
Phone: 913-665-4111 • FAX: 913-665-4444

EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
LOT GRADING PLAN
CITY OF WICHITA, KANSAS
JAMES L. ARNOLD, P.E. - CITY ENGINEER
C.O.W. Project # 668 63319 O.C.A. # 25410

127th Street East



Scale 1" = 100'

LEGEND

- Direction of Flow
- Temporary Seeding Area (200 lbs/acre Rye Grass)
- Permanent Seeding Area (350 lbs/acre KS Premium Blend Fescue)
Area = 4.9 Ac
- Back of Curb Protection (w/Seeding)
- TRM Erosion Matting (Permanent, See Sheet 8a)
- Sediment Barrier (Ditch Check)
(Silt fence or hay bale)
- Silt Fence Sediment Barrier (Total Length=2086 L.F.)

Storm Water Pollution Prevention Plan - Phase 2 EQUESTRIAN ESTATES

An Addition to Wichita - Sedgwick County, Kansas

EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
STORM WATER POLLUTION PREVENTION PLAN
CITY OF WICHITA, KANSAS
JAMES L. KANICK, P.E. - CITY ENGINEER
COWI Project # 062-8237 OCA # 75470

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
1942 E. Central Ave., Suite 200
Wichita, KS 67206-1442
Phone: 316.667.4114 FAX: 316.667.4444

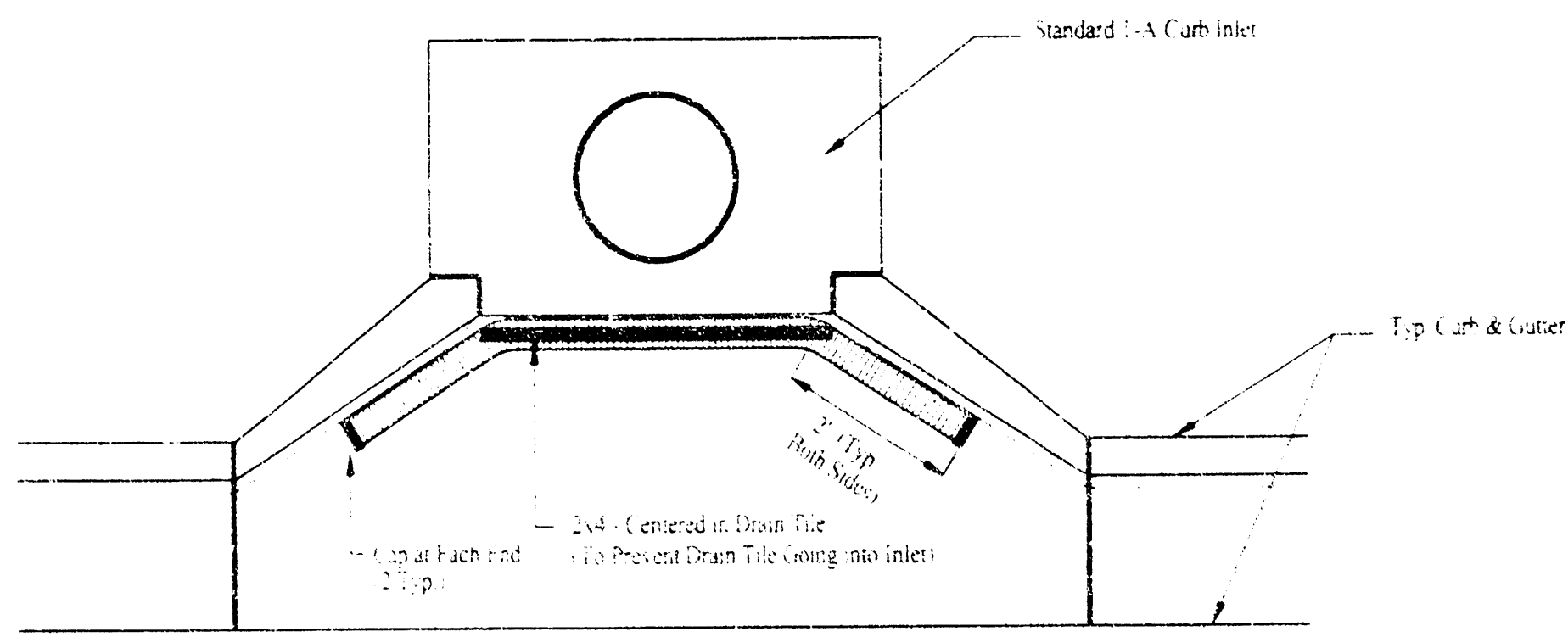


FINAL

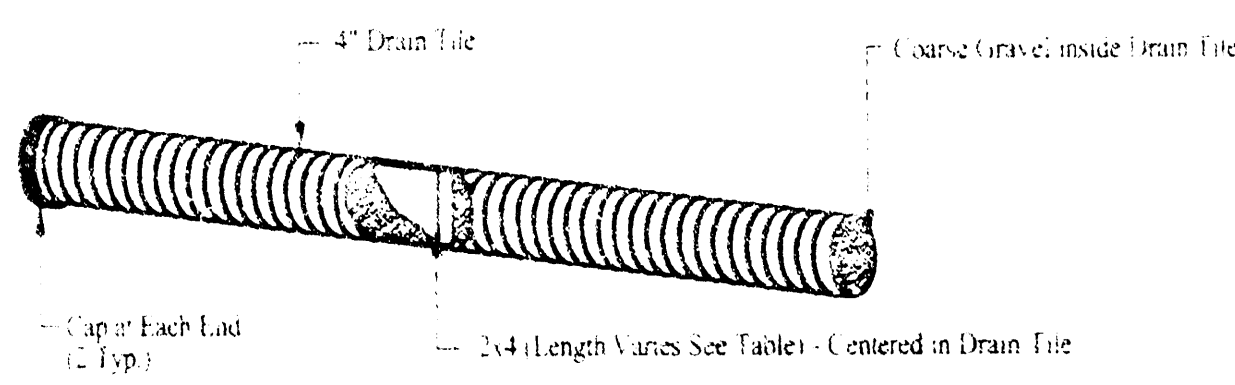
Designed By: JMU/JPD
Drawn By: JMU/JPD
Poe Job No.: 1694J
Date: January 7, 2006

Sheet
8 of 11

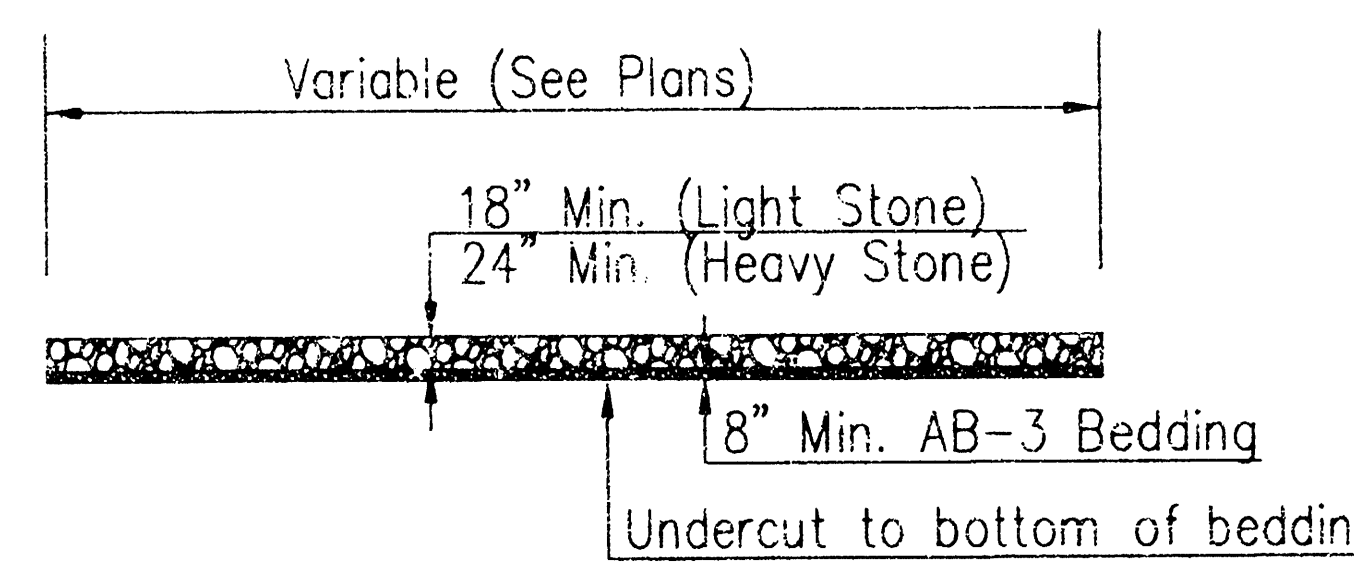
EROSION CONTROL
ADDITIONAL DETAILS



24" LENGTH	INLET TYPE	INLET OPENING
8" x 6"	1-A	6" x 6"
10" x 6"	1-A	10" x 10"
15" x 6"	1-A	15" x 15"



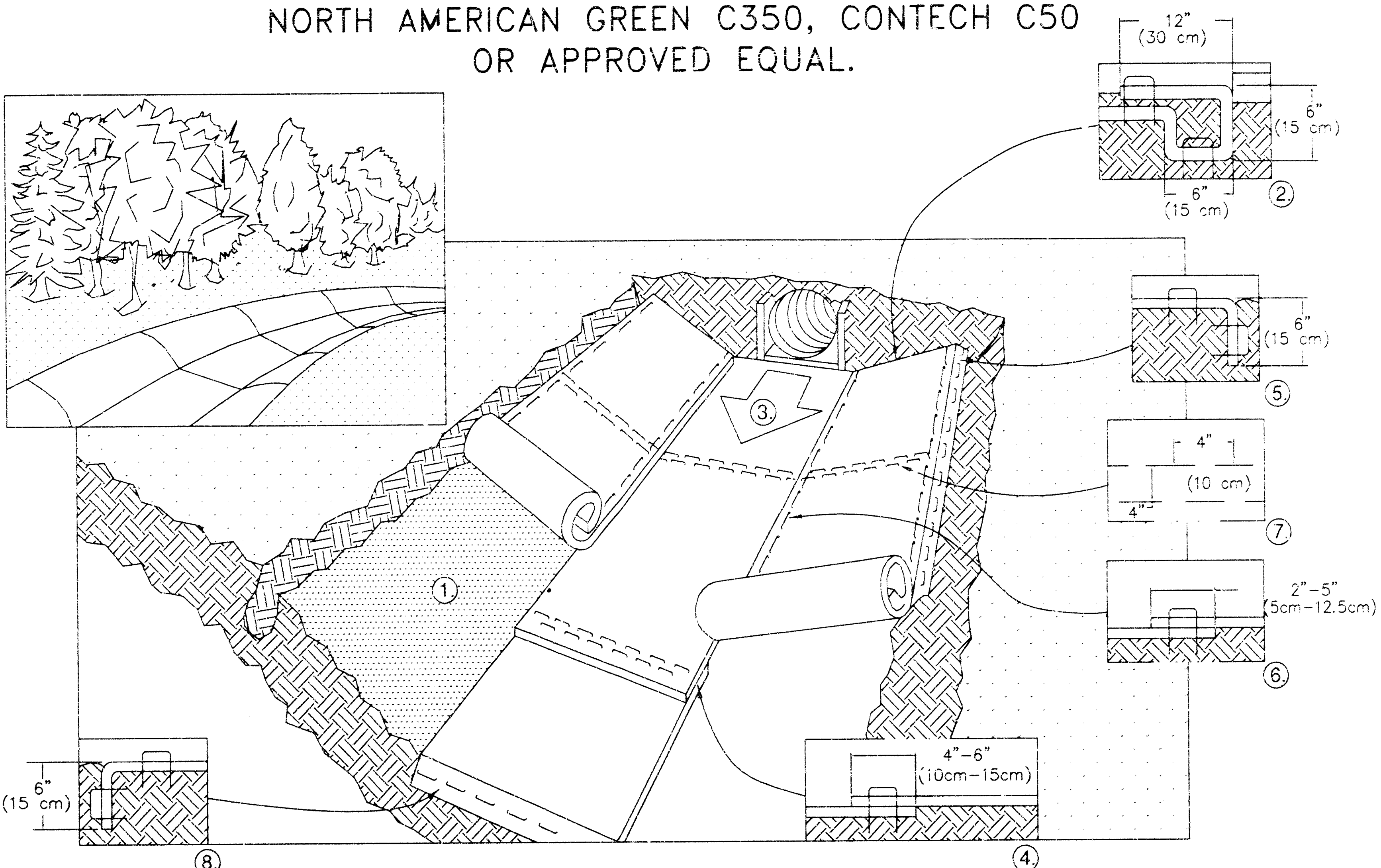
Curb Inlet Sediment Barrier Detail
(No Scale)



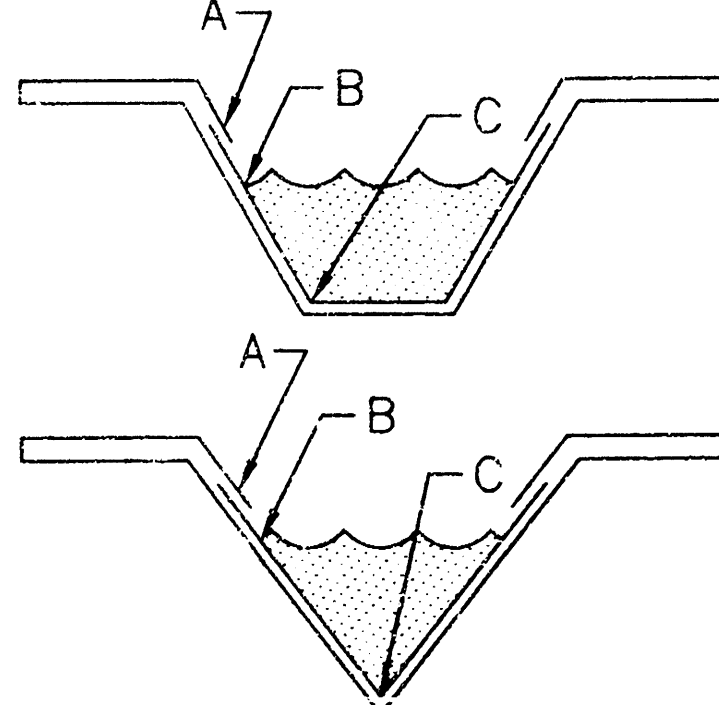
Light Stone Rip Rap shall be used
(Bedding shall be subsidiary to rip rap cost)

RIP RAP DETAIL
(No Scale)

EROSION CONTROL
(PERMANENT) TURF REINFORCEMENT MAT (TRM)
CHANNEL INSTALLATION
NORTH AMERICAN GREEN C350, CONTECH C50
OR APPROVED EQUAL.



1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. PLACE CONSECUTIVE BLANKETS END OVER END (SHINGLE STYLE) WITH A 4"-6" (10cm-15cm) OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ADJACENT BLANKETS MUST BE OVERLAPPED APPROXIMATELY 2"-5" (5cm-12.5cm) (DEPENDING ON BLANKET TYPE) AND STAPLED. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE BLANKET BEING OVERLAPPED.
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT (9m-12m) INTERVALS. USE A DOUBLE ROW OF STAPLES STAGGERED 4" (10cm) APART AND 4" (10cm) ON CENTER OVER ENTIRE WIDTH OF THE CHANNEL.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.



- CRITICAL POINTS
- A. OVERLAPS AND SEAMS
 - B. PROJECTED WATER LINE
 - C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

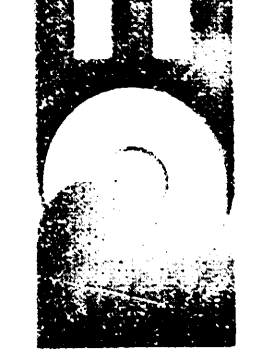
NOTE:
* HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

** IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 cm) MAY BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.

*** USE NORTH AMERICAN GREEN SC150, LANDLOK CS2, CONTECH SCFB2, OR APPROVED EQUAL.

EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
SOIL EROSION MAT'S
CITY OF WICHITA, KANSAS
JANUARY 1, 2006
C&E Project # 440-2432 U.S.A. # 12/4/06

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
2001 E. Central Ave. Ste. 200 • Wichita, KS 67208-4247
Phone: 316.947.4111 • FAX: 316.947.4441



Designed By: JMU/JFD
Drawn By: JMU/JFD
Poe Job No.: 1694J
Date: January 2006

EARTHWORK SUMMARY			
STREET	CUT CU. YDS.	LOOSE FILL CU. YDS.	COMPACTED FILL CU. YDS.
** TRIPLE CROWN	130	1075	4422
** MUSTANG ST./CIR.	515	757	1433
** MUSTANG CT.	13	712	181
** EQUESTRIAN CIR.	0	731	2850
** EQUESTRIAN ST./CIR.	2317	217	283
** EQUESTRIAN CT.	206	323	192
15% SHRINKAGE STREETS TOTAL	3181	3724	9361
		559	1404
	3181	4283	10765
SITE			
** RESERVE C	1581	3855	0
** RESERVE E	3312	195	0
RESERVE E	39520	1368	0
** BLOCK 2	917	25401	0
** BLOCK 6	10106	7230	0
8% SHRINKAGE SITE TOTAL	55436	38049	0
		3044	0
	55436	41093	0
PROJECT TOTALS	58617	45378 *	10765 *

* LOOSE FILL AND COMPACTED FILL SHALL NOT EXCEED EXCAVATION
(2,476 CY WILL BE WASTED ON SITE - SEE LOT GRADING PLAN)

** FROM COMPANION STREET PROJECT

DESIGNED BY: JMU/JPD
DRAWN BY: JMU/JPD
PLOT JOB NO.: 16947
DATE: January 2009

Sheet
9 of 11

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5104 J Central Exp. 200 • Wichita, KS 67208-4112
Phone: 316.267.4114 • FAX: 316.267.4444



EQUESTRIAN ESTATES ADDITION - PHASE 2
STORM WATER DRAIN NO. 179
EARTHWORK SUMMARY
CITY OF WICHITA, KANSAS
JAMES L. POE, P.E. City Engineer
CCW Project # 460-8222 U.S.A. # 15411

CL 127th Street East

N20°16'37"E
1554.07'

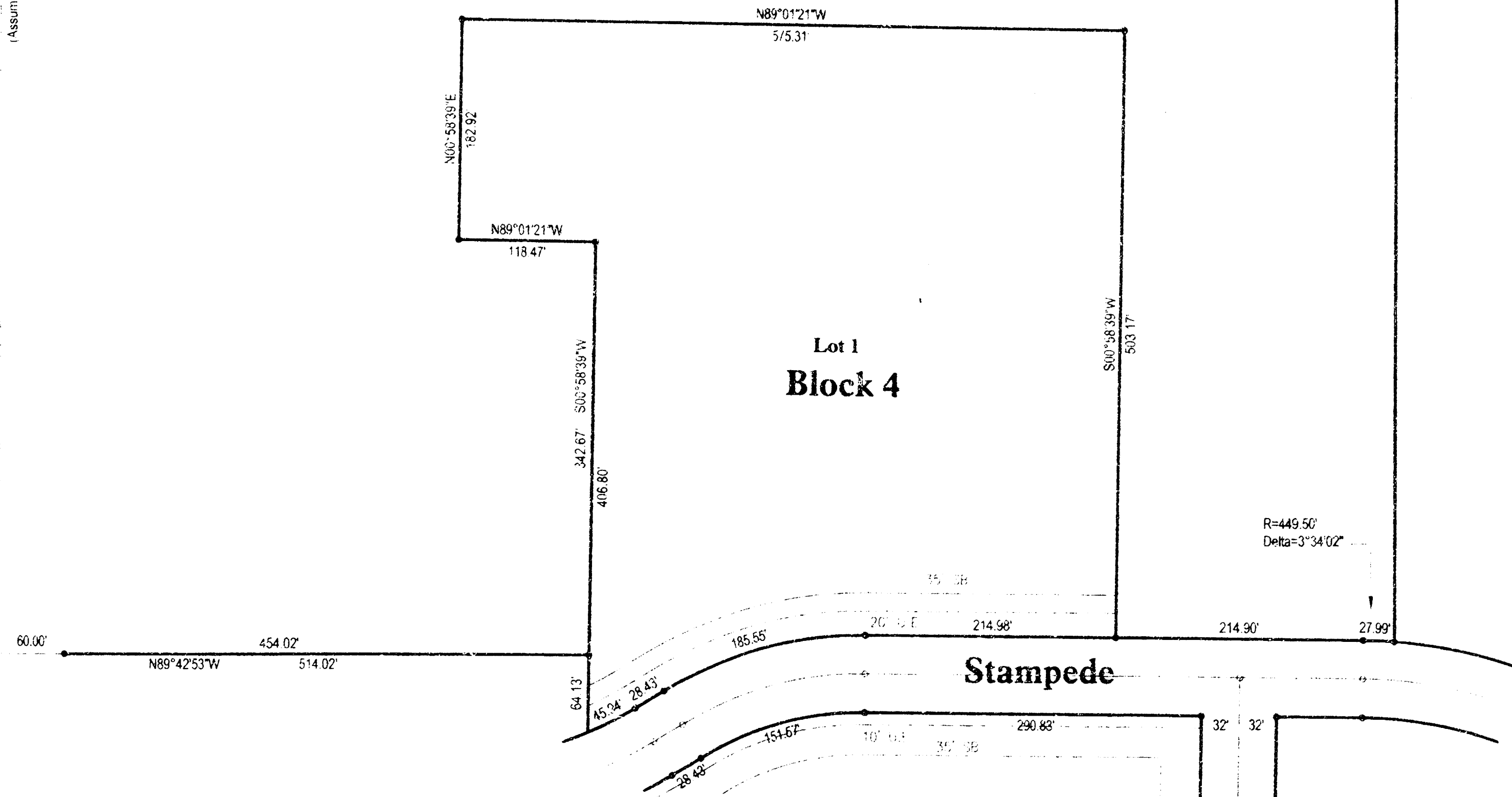
Basis of Bearings:
(Assumed Direction)

CURVE TABLE						
CURVE	LENGTH	RADIUS	TANGENT	CHORD	BEARING	DELTA
C1	275.30	50.00	73.42	23.69	S33°49'30"W	240°02'28"
C2	86.72	150.00	24.51	8.52	N14°24'30"E	131°37'44"
C3	125.47	250.00	34.22	12.03	N14°26'55"E	29°42'00"
C4	164.68	375.00	44.23	16.25	N14°26'55"E	29°42'00"
C5	232.29	500.00	59.50	22.36	N53°06'58"W	289°39'56"
C6	39.51	27.00	10.32	4.95	N48°18'49"E	17°22'00"
C7	98.46	121.00	25.36	12.48	N74°04'30"E	130°07'00"
C8	31.36	275.00	8.46	3.45	S45°51'37"W	9°45'41"
C9	277.90	200.00	145.27	269.21	S15°09'00"E	49°35'04"
C10	220.44	20.00	53.35	19.78	N42°20'47"W	258°12'23"
C11	456.36	480.00	272.73	478.19	S00°31'27"W	57°37'40"
C12	184.51	250.00	85.46	161.96	S15°57'08"E	37°42'00"
C13	232.35	170.00	138.93	215.15	N39°21'27"E	78°30'40"
C14	113.91	275.00	57.11	113.33	S66°55'09"W	43°22'23"
C15	220.39	220.00	20.44	212.23	N08°35'51"W	17°23'50"
C16	153.71	140.00	85.19	156.46	N79°15'07"W	59°25'41"
C17	9.33	220.00	4.68	9.33	N58°30'59"W	32°25'44"
C18	29.18	45.00	15.10	28.67	N71°49'23"W	37°09'04"
C19	41.73	45.00	22.34	40.30	N26°38'47"W	53°12'14"

LINE TABLE		
LINE	LENGTH	BEARING
L1	245.83	N28°13'58"W
L2	46.26	S57°13'05"W
L3	19.48	N28°13'58"W
L4	71.54	S57°13'05"W
L5	80.41	N48°11'22"E
L6	29.96	N66°28'40"E
L7	208.65	N09°16'40"E
L8	139.46	S00°06'04"W
L9	164.19	S10°30'50"W
L10	53.25	N38°57'08"W
L11	166.71	S34°53'02"W
L12	140.06	S59°43'32"E
L13	86.51	N07°23'35"W
L14	23.65	N09°16'40"E

Exception to Plat

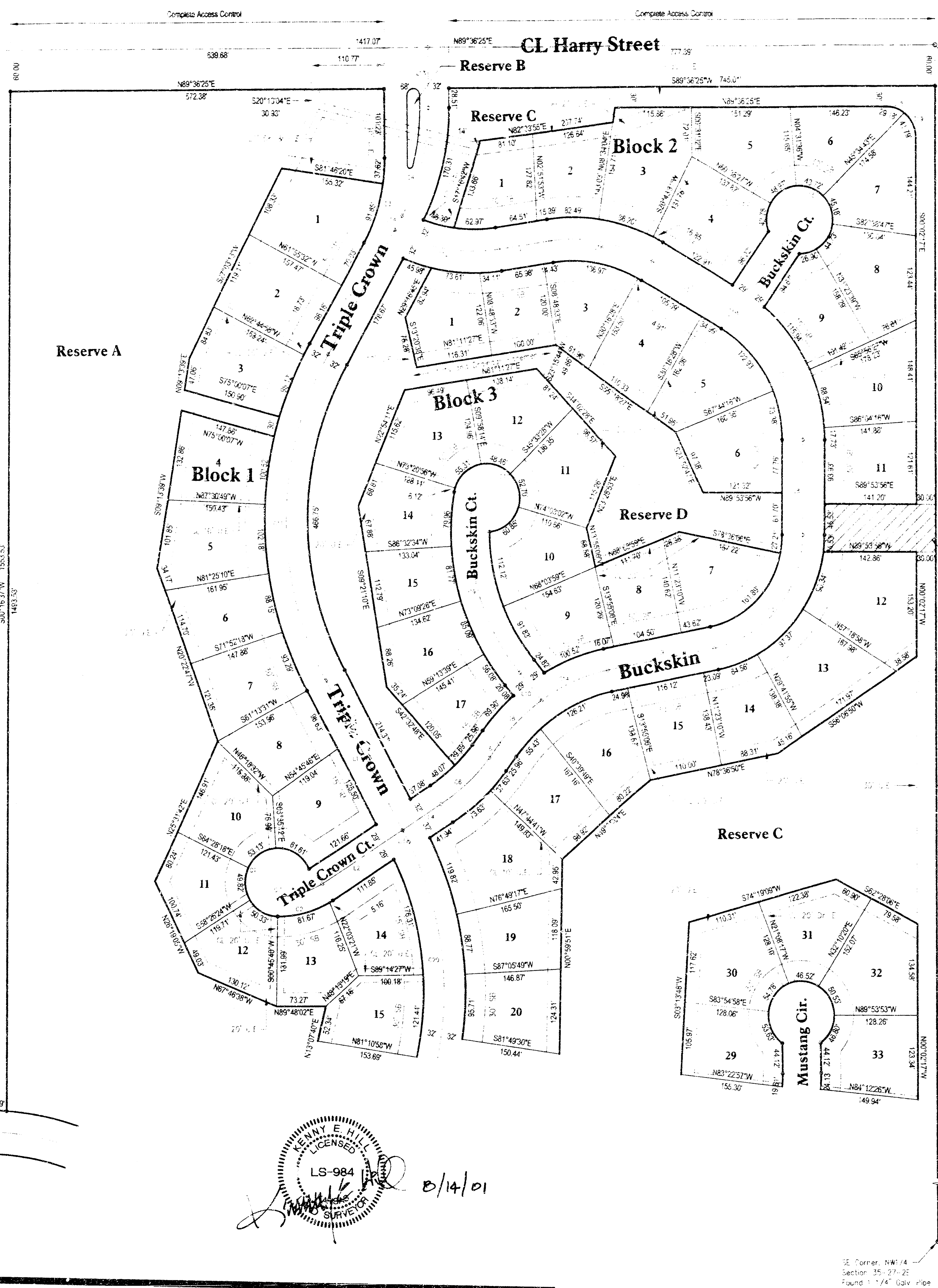
MINIMUM BUILDING ELEVATIONS		
Minimum Low Opening Elevation		
Location	NGVD Datum	City Datum
Lot 1-5, Bk 1	118.0	128.9
Lot 6-10, Bk 1	127.2	139.0
Lot 12-32, Bk 2	126.4	139.0
Lot 1-9, Bk 6	135.0	147.6
Lot 10, Bk 6	135.0	147.6
Lot 21-26, Bk 6	135.0	147.6



EQUESTRIAN ESTATES

An Addition to Wichita - Sedgwick County, Kansas

(Associated Zone Case PUD 2000-0001)



Reserve B Details



0 50 100 200
SCALE IN FEET 1" = 100'

LEGEND

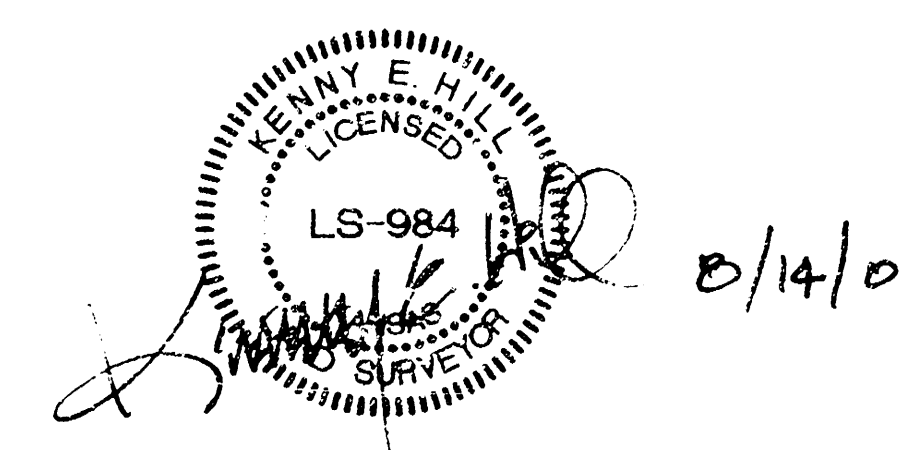
- Utility Easement
- Drainage Easement
- Iron Set
- Building Setback
- Curve Label
- Line Label
- Center Line
- Monument Found

NOTE:

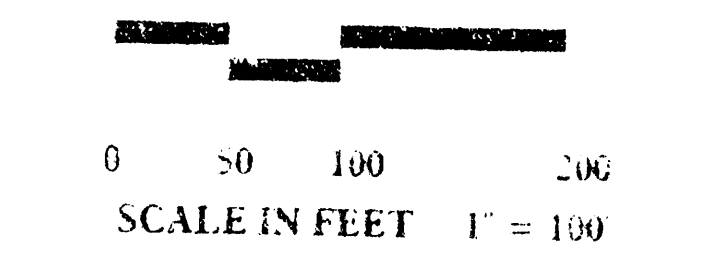
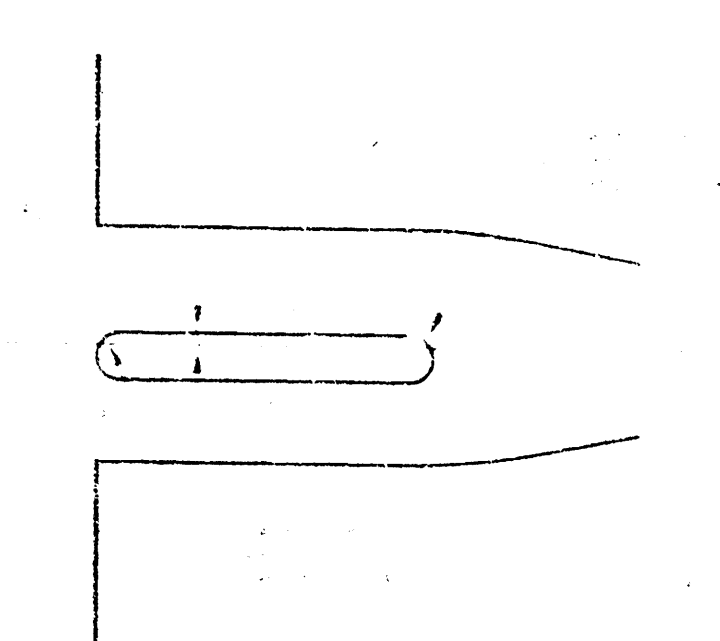
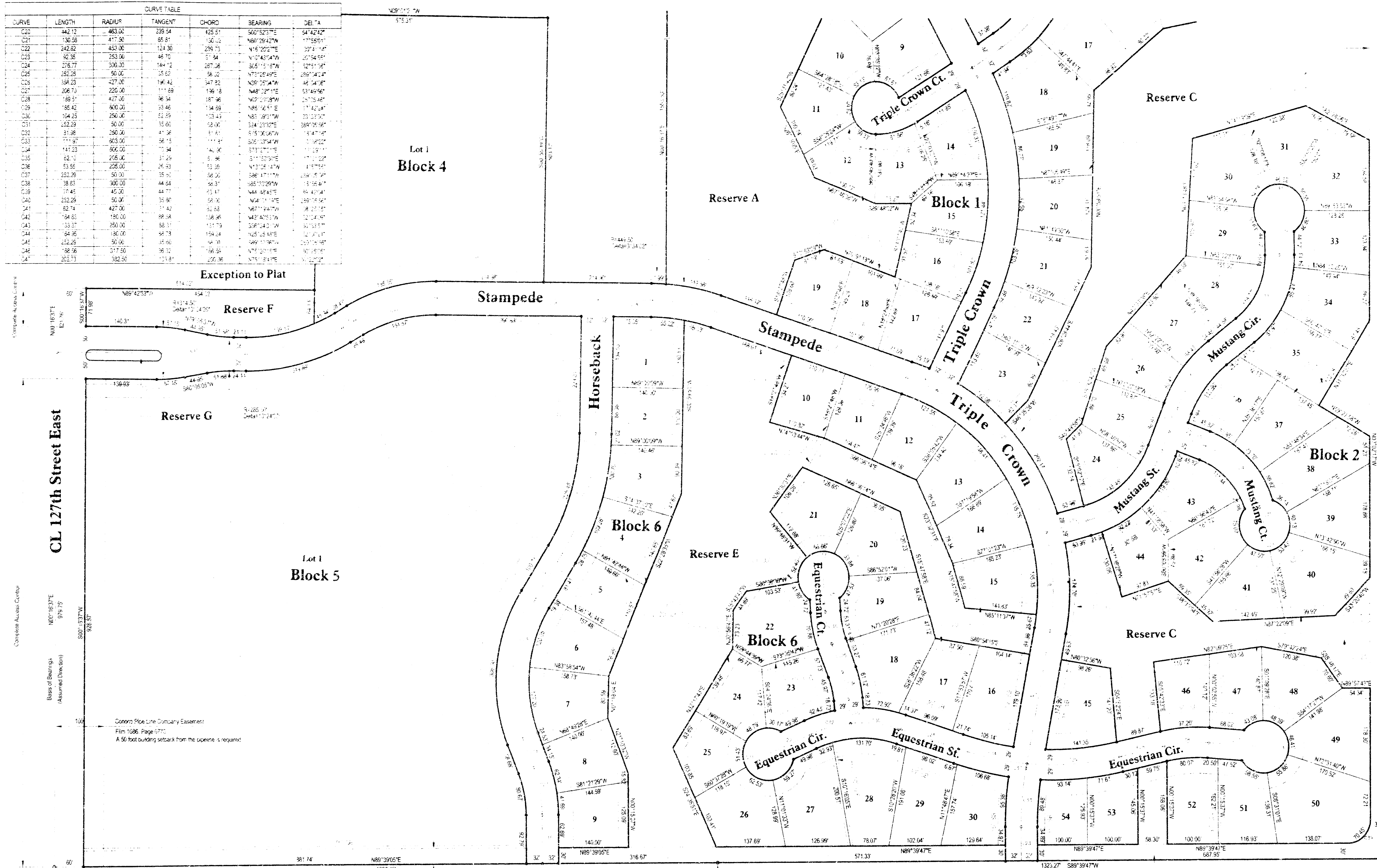
This Addition is subject to the conditions of the Planned Unit Development PUD 2000-0001.

BENCHMARKS:

- NGVD Datum
- 1. Railroad spike in power pole, approximately 20' south and 30' east of NW 1/4 Corner, Section 35-21-2E, Elevation 1349.65
- 2. Square on south side guard of RCBC just west of NW Corner of Section 35-21-2E, Elevation 1311.90



CURVE	LENGTH	RADIUS	TANGENT	CHORD	BEARING	DELTA
C21	142.12	463.00	239.54	425.51	S00°53'27"E	54°42'42"
C22	130.58	417.50	85.81	136.02	N80°25'42"W	17°55'51"
C23	242.82	453.00	124.30	254.73	N75°20'27"E	30°41'14"
C24	92.38	293.00	48.70	97.94	N70°43'14"W	20°54'49"
C25	278.77	516.00	144.72	287.38	S05°11'57"W	12°11'19"
C26	282.28	50.00	15.62	84.22	N77°05'49"E	28°54'43"
C27	168.23	427.00	196.42	347.82	N09°25'47"W	48°54'49"
C28	208.70	220.00	111.89	146.18	N48°20'11"E	53°40'49"
C29	189.51	427.00	98.54	187.96	N07°11'39"W	25°15'49"
C30	186.42	400.00	93.46	184.98	N85°54'51"E	17°42'48"
C31	104.25	250.00	51.19	103.43	N85°39'17"W	33°23'50"
C32	152.23	50.00	15.60	58.00	S04°21'05"E	38°05'56"
C33	31.38	150.00	41.36	41.41	S75°00'00"W	14°47'14"
C34	111.97	303.00	56.15	111.41	S75°00'00"W	17°02'22"
C35	147.53	300.00	70.34	144.30	S75°00'00"W	17°02'22"
C36	62.12	205.00	27.29	61.96	S75°00'00"W	17°02'22"
C37	53.55	225.00	25.33	53.39	N73°05'47"W	17°02'22"
C38	232.28	50.00	15.62	58.00	S48°11'11"W	17°02'22"
C39	38.83	300.00	44.44	44.44	N85°00'00"W	17°02'22"
C40	77.45	45.00	44.77	23.47	N44°54'45"E	45°40'44"
C41	232.28	50.00	15.62	58.00	N04°11'11"E	17°02'22"
C42	62.74	427.00	97.42	97.42	N87°11'47"W	8°22'51"
C43	158.15	180.00	89.34	158.46	N47°40'51"W	12°12'40"
C44	133.17	250.00	58.31	133.19	S08°04'31"W	8°10'51"
C45	84.35	180.00	84.78	154.24	N05°15'45"E	12°12'41"
C46	232.28	50.00	15.62	58.00	N89°11'47"W	17°02'22"
C47	186.56	177.50	98.12	186.56	N77°20'15"E	30°57'49"
C48	322.13	382.00	171.87	297.95	N75°18'19"E	50°20'27"



LEGEND

- Utility Easement
- Drainage Easement
- Fire Set
- Building Setback
- Curve Label
- Line Label
- Center Line
- Monument Feature

NOTE:

This Addition is subject to the provisions of the Plat and Case Development PUD 2000-0001.

BENCHMARKS:

NGVD Datum

- Railroad spike in lower plot, approximately 25' south and west of W 14th Corner, Section 35-27-2E, Elevation 1344.62.
- Square on south half, quarter of Public land, west of NW 1/4 corner of Section 35-27-2E, Elevation 1311.90.

LINE	LENGTH	BEARING
L14	36.98	S71°12'52"E
L15	92.74	S00°15'37"E
L16	100.71	S31°41'04"W
L17	265.26	N00°59'51"E
L18	136.80	N89°27'17"W
L19	85.04	S74°58'59"W
L20	46.22	N05°36'15"W
L21	267.03	S10°22'45"W
L22	90.71	N63°36'28"E
L23	64.91	N02°15'37"W
L24	117.83	S71°12'46"E
L25	57.72	N20°34'12"W
L26	65.45	N63°12'49"W
L27	108.75	S88°58'41"E
L28	89.87	N77°05'40"E
L29	192.27	N26°28'44"E
L30	399.67	S71°12'12"E
L31	89.13	N51°41'00"E
L32	99.62	S22°10'07"W
L33	74.82	N63°52'57"W
L34	48.89	S21°07'03"W
L35	35.99	N18°28'43"W
L36	81.85	S00°49'24"E
L37	8.74	S10°22'45"W
L38	323.08	N88°27'13"W
L39	28.43	S60°07'42"W
L40	376.85	N89°30'18"W

MINIMUM BUILDING ELEVATIONS		
Minimum Low Opening Elevation:		
Location	NGVD Datum	City Datum
Lots 1-5, Blk 1	1316.0	138.6
Lots 6-19, Blk 1	1327.3	139.9
Lots 12-32, Blk 2	1326.4	139.0
Lots 1-9, Blk 6	1335.0	147.6
Lots 10-38, Blk 6	1335.0	147.6
Lots 21-28, Blk 6	1335.0	147.6

EQUESTRIAN ESTATES

An Addition to Wichita - Sedgwick County, Kansas
(Associated Zone Case PUD 2000-0001)

