STORM WATER DRAIN #249
CHERYL'S HOLLOW ADDITION
PROJECT NO. 468-83938
O.C.A. NO. 751389

GENERAL NOTES

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	687-2470

The Contractor must notify the following in case of an emergency:

Cox Communications	262-0661
Kansas Gas Service	383-8600
Westar	383-8600
Peoples Natural Gas Company	1-800-303-0357
Southwestern Bell Telephone Company	1-800-286-8313
City of Wichita Water Department	262-6000
City of Wichita Sewer Maintenance	262-6000

Underground utility service lines and overhead utility pole lines are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. Location information has been obtained from the various utility companies and is either from company record drawings or company-provided field locations. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

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.

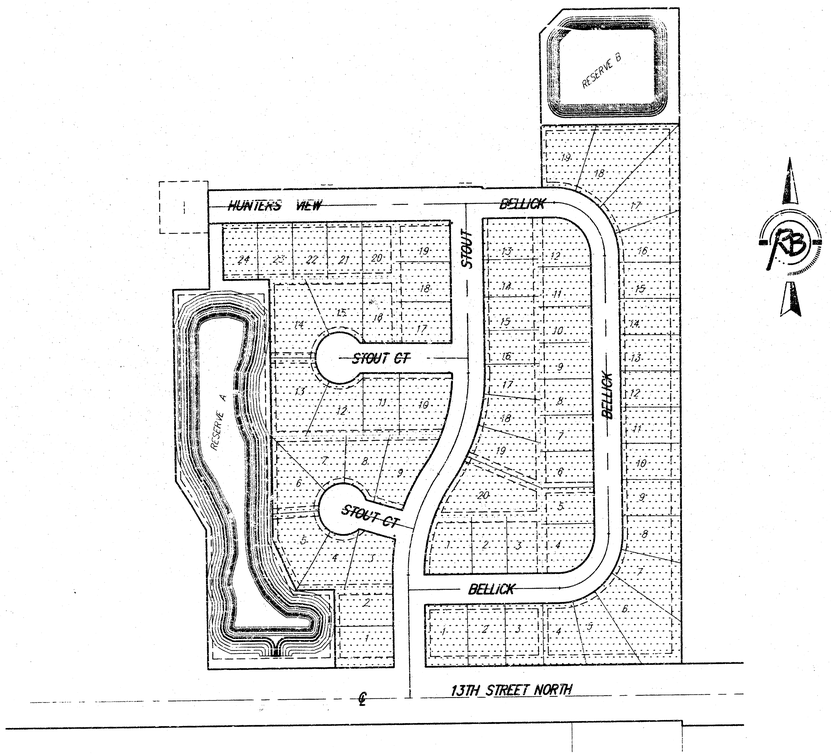
All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps permitting regulations. Any material buried or stockpiled beyond approved of Engineers construction limits would require additional archeological investigations unless buried in a previously approved borrow location.

The Engineer shall take field ties to all quarter section corners. The Contractor shall set a City survey monument in the required location where such quarter section corners fall within the limits of pavement construction. Survey monuments will be furnished by the City. The Engineer will accurately located and install the iron at the quarter section corner. This work will not be paid for directly, but shall be considered subsidiary to the other pay items of work in the contract.

The Contractor shall notify pipeline companies at least 24 hours in advance of any work being performed across and/or adjacent to pipelines.

The Contractor shall give all property owners and/or tenants of developed property directly abutting the construction of this project a minimum of ten (10) days advance notice prior to start of construction.

The Contractor shall seed, fertilize and mulch or sod all disturbed areas upon completion of construction.

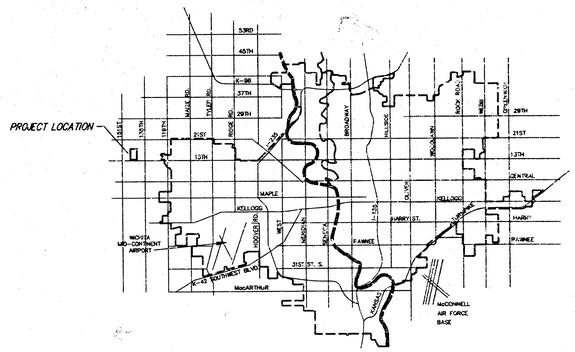


BENCH MARKS

BENCHMARK #1 — C.O.W. DISC 0.5 MILES SOUTH OF 13TH STREET NORTH CL OF 135TH STREET WEST
ELEV. 1347.11

BENCHMARK #2 — C.O.W. DISC 13TH STREET AND 135TH STREET WEST E. SIDE CONC BASE HLP 30' S & 35' W OF CL
ELEV. 1355.65

INDEX



VICINITY MAP

PROJECT SUMMARY

Site Earthwork:
Cut: 62,907 cu. yds.
Fill: 35,898 cu. yds.
Excess: 27,000 cu. yds.

IMPROVEMENT DISTRICT

KENNETH W. LEE LICENSED 15373 4-6-05 KANSAS PROFESSIONAL ENGINEER

REVISED
"AS-BUILT"
KWL
10/25/2005

CITY OF WICHITA, KANSAS
JAMES ARMOUR, P.E. - ACTING CITY ENGINEER

Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main
Wichita, Kansas 67203
www.rbkansas.com
(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com

RB Project 2666E

MATCH LINE

PRICE

KENWICK LANE

RESERVE A

STOUT CT

STOUT CT

RESERVE A

BELLICK

BELLICK

13TH STREET NORTH

SCALE 1" = 50'
IRON = ●

REVISED
"AS-BUILT"
KWL
10-25-2005

CHERYL'S HOLLOW ADDITION, DETENTION POND
SITE GRADING PLAN
WICHITA, KANSAS

Ruggles & Bohm, P.A.
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Wichita, Kansas 67203
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(316) 264-4621 fax
E-mail: info@rbkansas.com

DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DATE	Apr. 5, 2005
REF. JOB#	2005E
SHEET	2 OF 12
DRAWING FILE	pond [Site Grade]
PROJECT NUMBER	468-83938

PLACE EXCESS EXCAVATED MATERIAL HERE. FILL TO BE PLACED CLEAR OF ALL EASEMENTS AND R/W, MAX 7' HEIGHT.

KENTUCKY LANE

THOROUGH BRED CT.

THOROUGH

RESERVE B

HUNTERS - VIEW

BELLICK

STOUT

STOUT CT

PRICE LANE

MATCH LINE

SCALE 1" = 50'
IRON = ●

REVISED
"AS-BUILT"
KWL
10-25-2005

CHERYL'S HOLLOW ADDITION, DETENTION POND
SITE GRADING PLAN
WICHITA, KANSAS

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(316) 264-4621 fax
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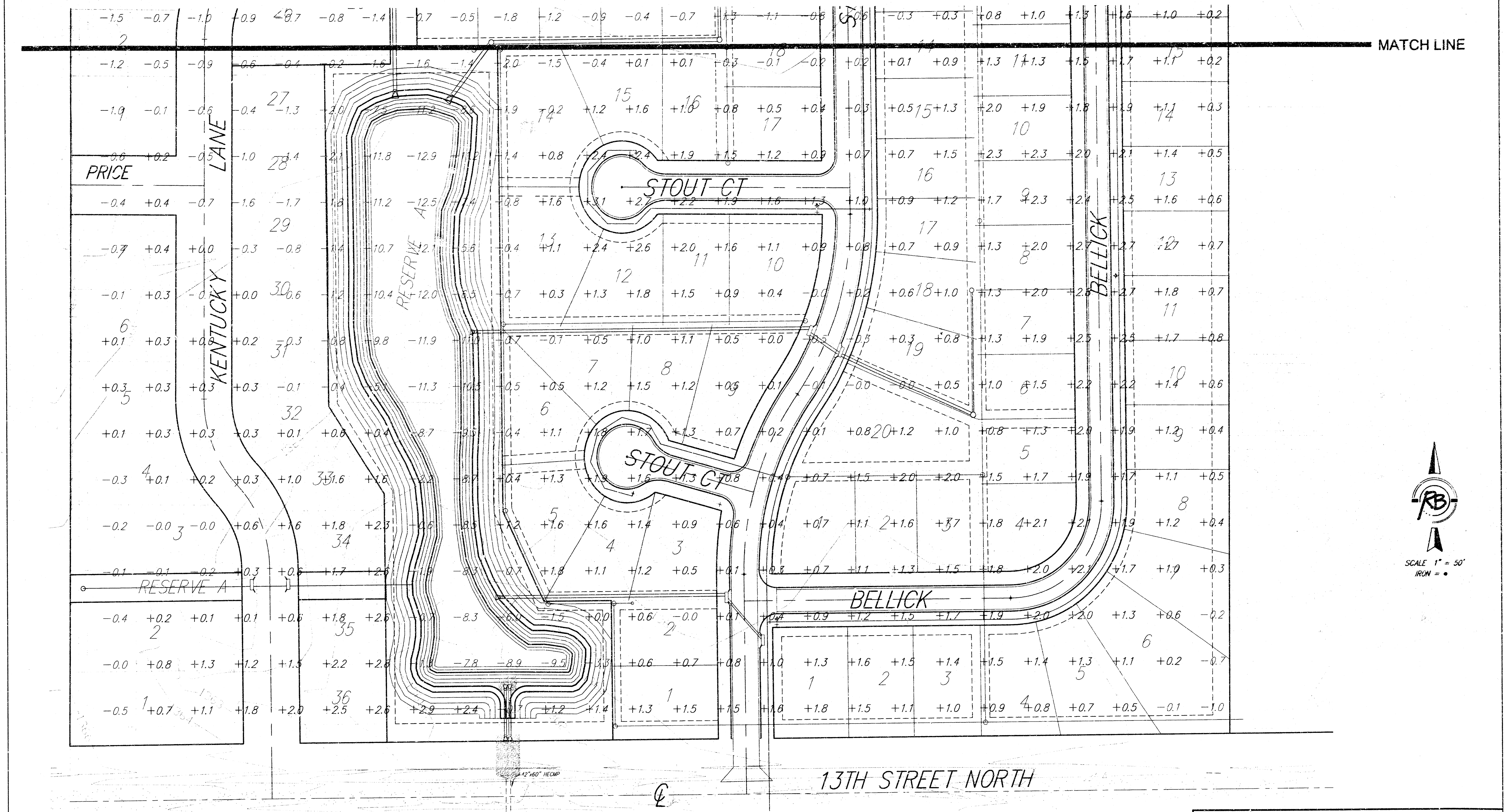
DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DATE	Apr. 5, 2005
DRAWING FILE	pond [Site Grade]
PROJECT NUMBER	468-83938
FB JOB	2005
SHEET	3 of 12



CHERYL'S HOLLOW ADDITION, DETENTION POND

SITE GRADING PLAN

WICHITA, KANSAS

Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main
Wichita, Kansas 67203
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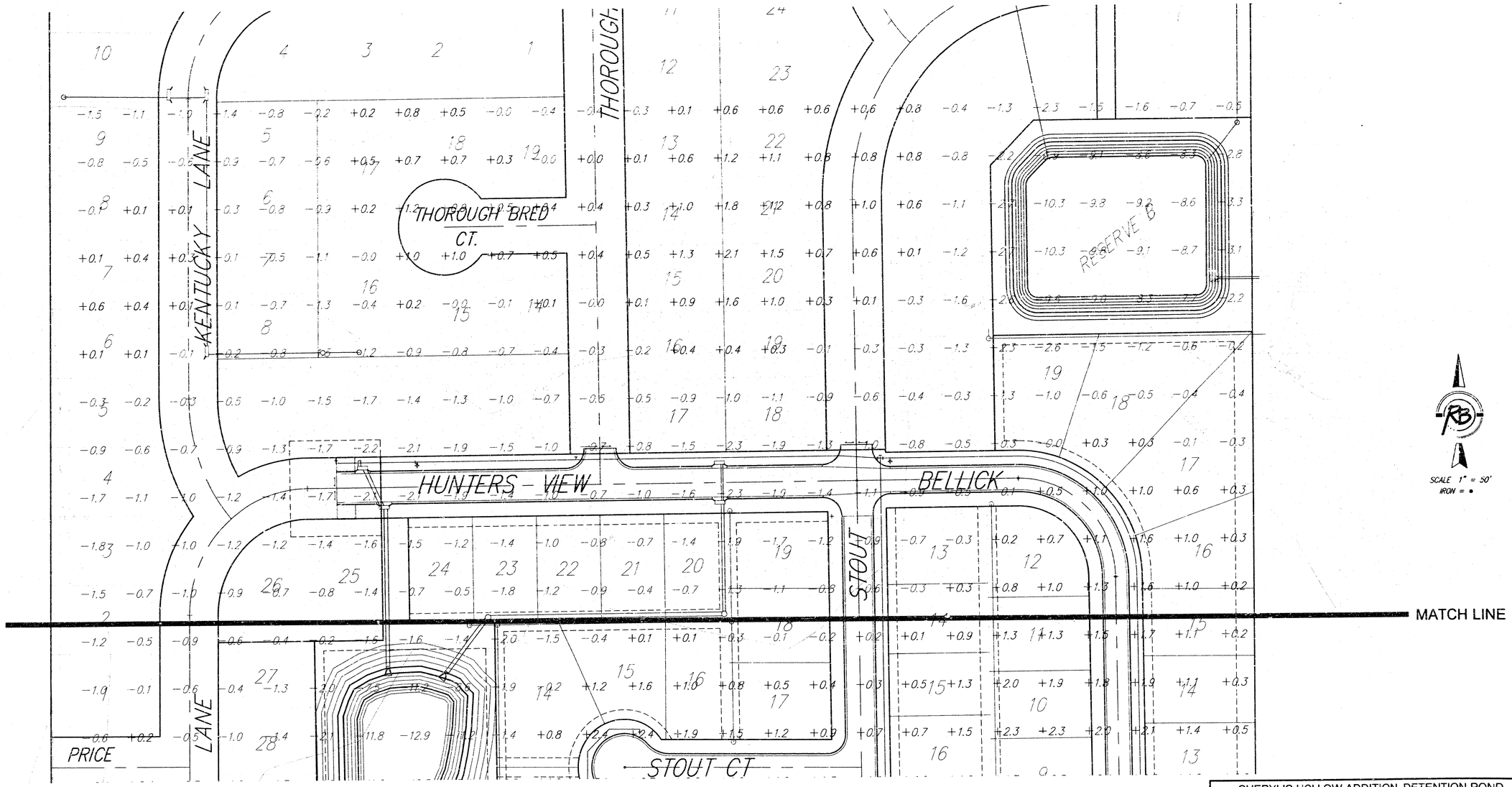
(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com

DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DATE	Apr. 5, 2005
DRAWING FILE	pond (Site Grade)
PROJECT NUMBER	468-83938
SHEET	4 OF 12



CHERYL'S HOLLOW ADDITION, DETENTION POND
SITE GRADING PLAN
WICHITA, KANSAS

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924 North Main
Wichita, Kansas 67203
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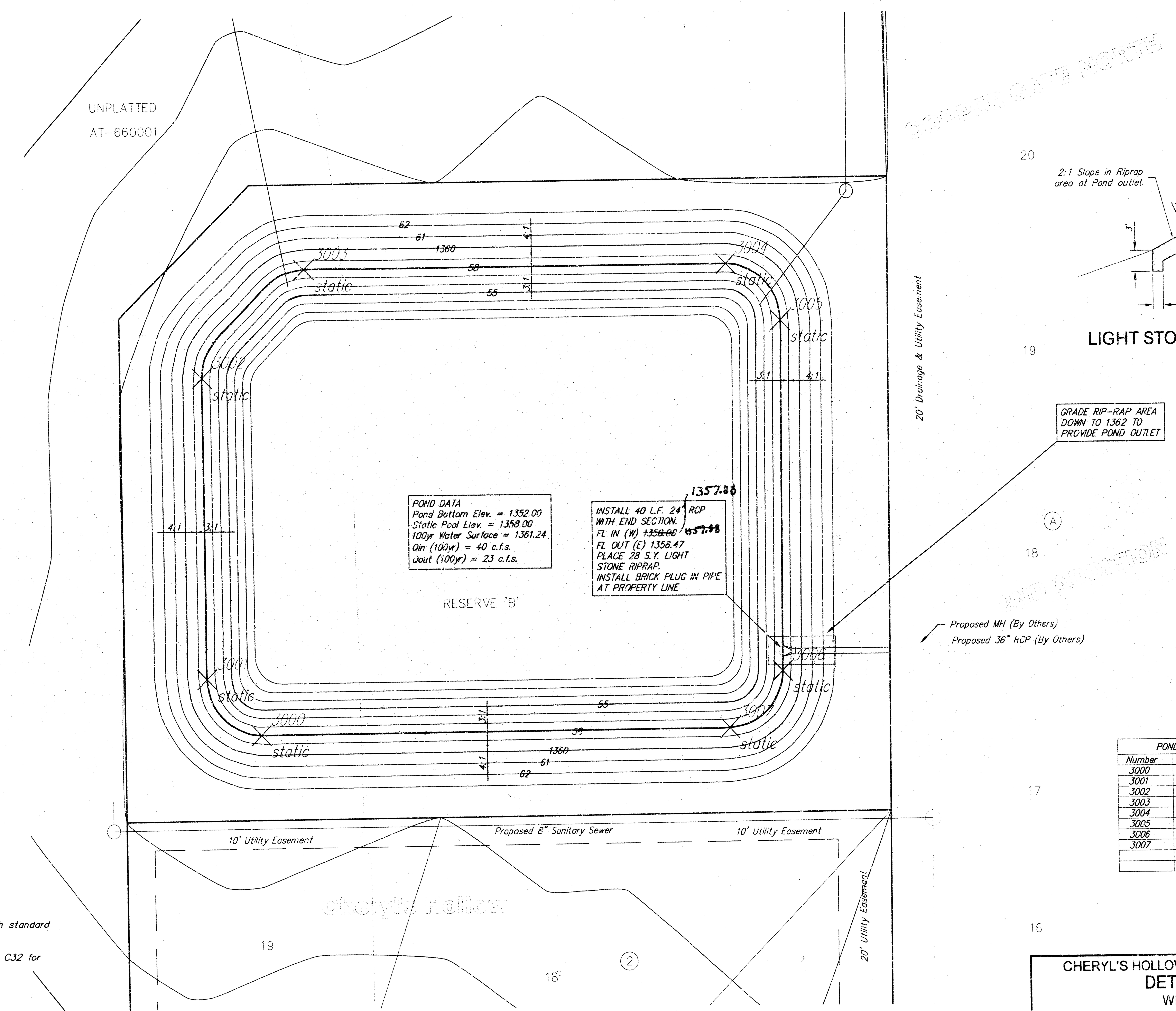
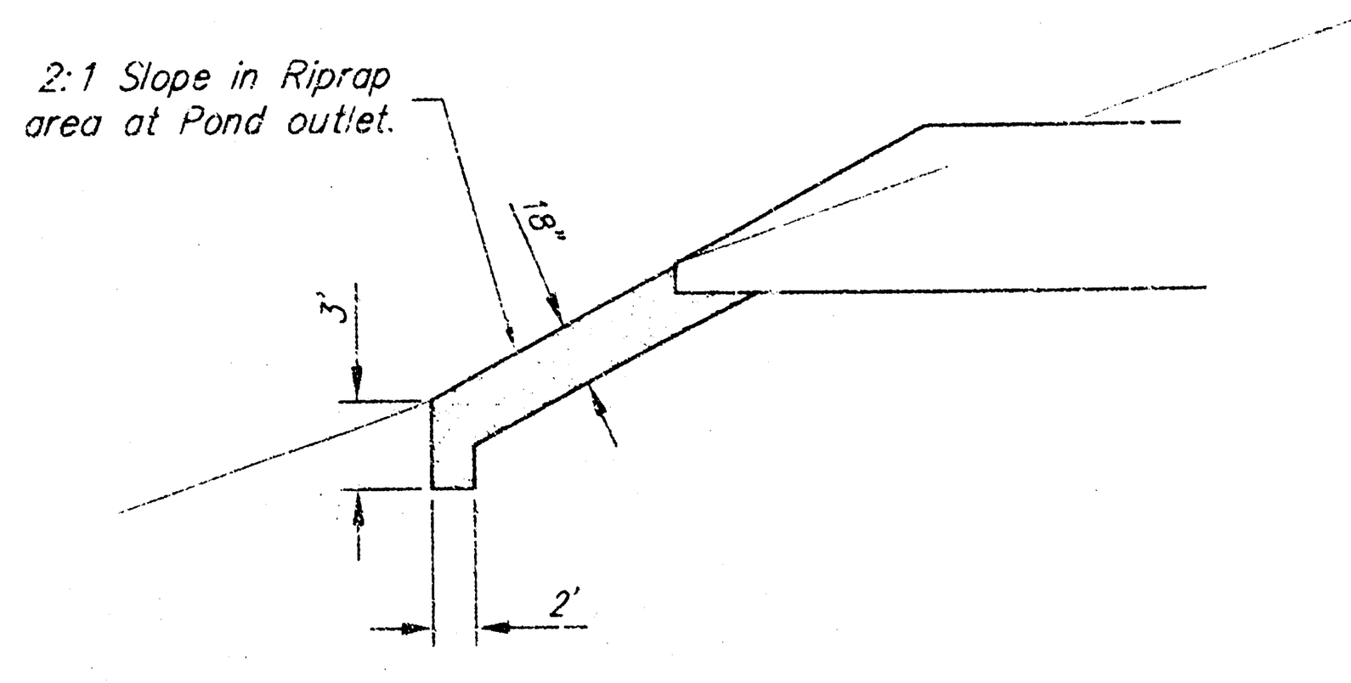
(316) 264-4621 fax
E-mail: info@rbkansas.com

DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DATE	Apr. 5, 2005
DRAWING FILE	pond {Site Grade}
PROJECT NUMBER	468-83938
FB PGS	3866E
SHEET	5 OF 12

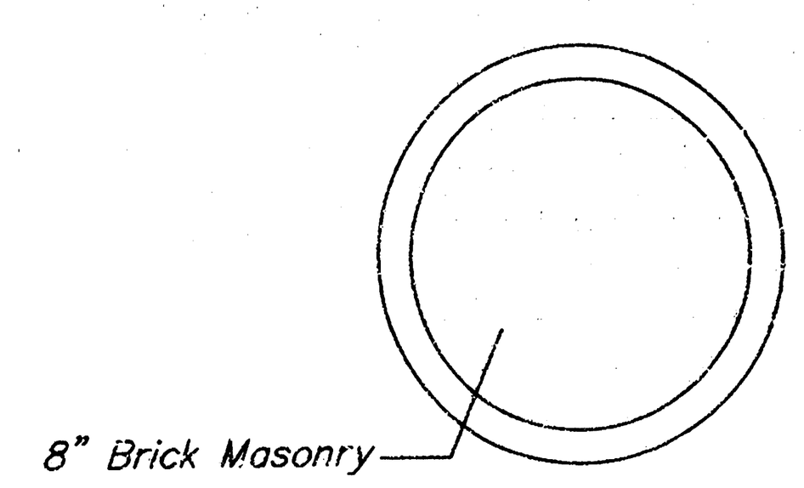
RESERVE AREA TO BE PLANTED WITH BUFFALO GRASS PER CITY SPECIFICATIONS.



Scale : 1" = 20'



LIGHT STONE RIP-RAP DETAIL



PIPE PLUG DETAIL

1. Mortar used in plug construction shall be in accordance with standard specifications.
2. All brick used in stock construction shall meet Grade ASTM C32 for MM and MS.
3. Pipe plugs shall be Subsidiary to the project.

POND COORDINATE POINTS		
Number	Northing	Easting
3000	21141.0047	21092.1000
3001	21160.8612	21071.9575
3002	21267.0309	21071.1982
3003	21305.0011	21109.4959
3004	21305.7142	21265.9144
3005	21285.6452	21286.0055
3006	21162.1765	21285.5781
3007	21142.2463	21265.7213

NOTE: THE POND BOTTOM AND SIDES ARE TO BE SCARIFIED A MINIMUM OF 8 INCHES, MOISTURE CONDITIONED AND RECOMPACTED TO A MINIMUM OF 95 PERCENT OF STANDARD PROCTOR DENSITY (ASTM D-698) FROM MINUS 3 TO PLUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. ADDITIONALLY, ALL GYPSUM/CALICHE SEAMS, SANDY CLAY AND CLAY SHALE ENCOUNTERED SHOULD BE OVER-EXCAVATED A MINIMUM OF 1 FOOT AND REPLACED WITH CLAY.

CHERYL'S HOLLOW ADDITION, DETENTION POND
DETENTION POND
WICHITA, KANSAS

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E-mail: info@rbkansas.com

DESIGN KWL
DRAWN RA
REVIEW
UTILITY
DATE Apr. 28, 2005
RB JOB 2666E
DRAWING FILE pond {Pond Plan}
PROJECT NUMBER 463-83938

PLACE 180 S.Y. CURLEX BLANKET AS INDICATED.

PLACE 250 S.Y. CURLEX BLANKET AS INDICATED.

PLACE 650 S.Y. CURLEX BLANKET AS INDICATED.

13th Street North

INSTALL 32 L.F. 12" STEEL CASING PIPE .25" MIN WALL THICKNESS 35,000 PSI SMYS FL 1354.40

INSTALL ? - 30" RCP x 60 L.F. WITH END SECTIONS. FL IN (N) 1359.00 FL OUT (S) 1358.40 PLACE 33 S.Y. LIGHT STONE RIPRAP AT NORTH END, 150 S.Y. SOUTH END.

110' R/W

POND DATA
Pond Bottom Elev. = 1353.00
Static Pool Elev. = 1359.00
100yr Water Surface = 1363.10
Qin (100yr) = 178 c.f.s.
Qout (100yr) = 84 c.f.s.

Future SMS

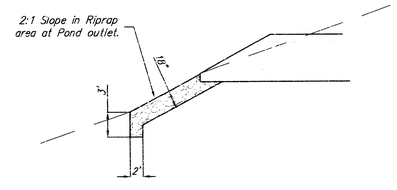
UNPLATTED
AT-660001

PLACE 350 S.Y. CURLEX BLANKET AS INDICATED.

RESERVE AREA TO BE PLANTED WITH BUFFALO GRASS PER CITY SPECIFICATIONS.

Scale : 1" = 40'

POND COORDINATE POINTS		
Number	Northing	Easting
3008	20123.2840	20477.9648
3009	20122.8485	20415.9590
3010	20151.5959	20396.3055
3011	20195.4937	20401.3661
3012	20233.3045	20392.1591
3013	20287.8360	20405.1262
3014	20348.0346	20396.9549
3015	20415.1463	20366.2959
3016	20475.8177	20331.1177
3017	20560.9386	20326.8724
3018	20652.3968	20326.2125
3019	20718.4968	20325.2188
3020	20759.0242	20364.4474
3021	20764.2213	20412.2349
3022	20739.1991	20462.8969
3023	20669.0053	20454.1212
3024	20635.7297	20442.0429
3025	20558.3292	20442.6710
3026	20500.7553	20462.4933
3027	20387.2904	20462.2532
3028	20295.2059	20463.2219
3029	20216.5251	20492.0297
3030	20183.3158	20528.8530
3031	20163.1004	20598.6997
3032	20124.4729	20577.3805
3033	20123.1392	20539.5036



LIGHT STONE RIP-RAP DETAIL

NOTE: THE POND BOTTOM AND SIDES ARE TO BE SCARIFIED A MINIMUM OF 8 INCHES, MOISTURE CONDITIONED AND RECOMPACTED TO A MINIMUM OF 95 PERCENT OF STANDARD PROCTOR DENSITY (ASTM D-698) FROM MINUS 3 TO PLUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. ADDITIONALLY, ALL GYPSUM/CALICHE SEAMS, SANDY CLAY AND CLAY SHALE ENCOUNTERED SHOULD BE OVER-EXCAVATED A MINIMUM OF 1 FOOT AND REPLACED WITH CLAY.

CURLEX BLANKET INDICATED ON THIS SHEET IS INCIDENTAL TO BID ITEM FOR EROSION CONTROL.

CHERYL'S HOLLOW ADDITION, DETENTION POND
DETENTION POND
WICHITA, KANSAS

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(316) 264-8008
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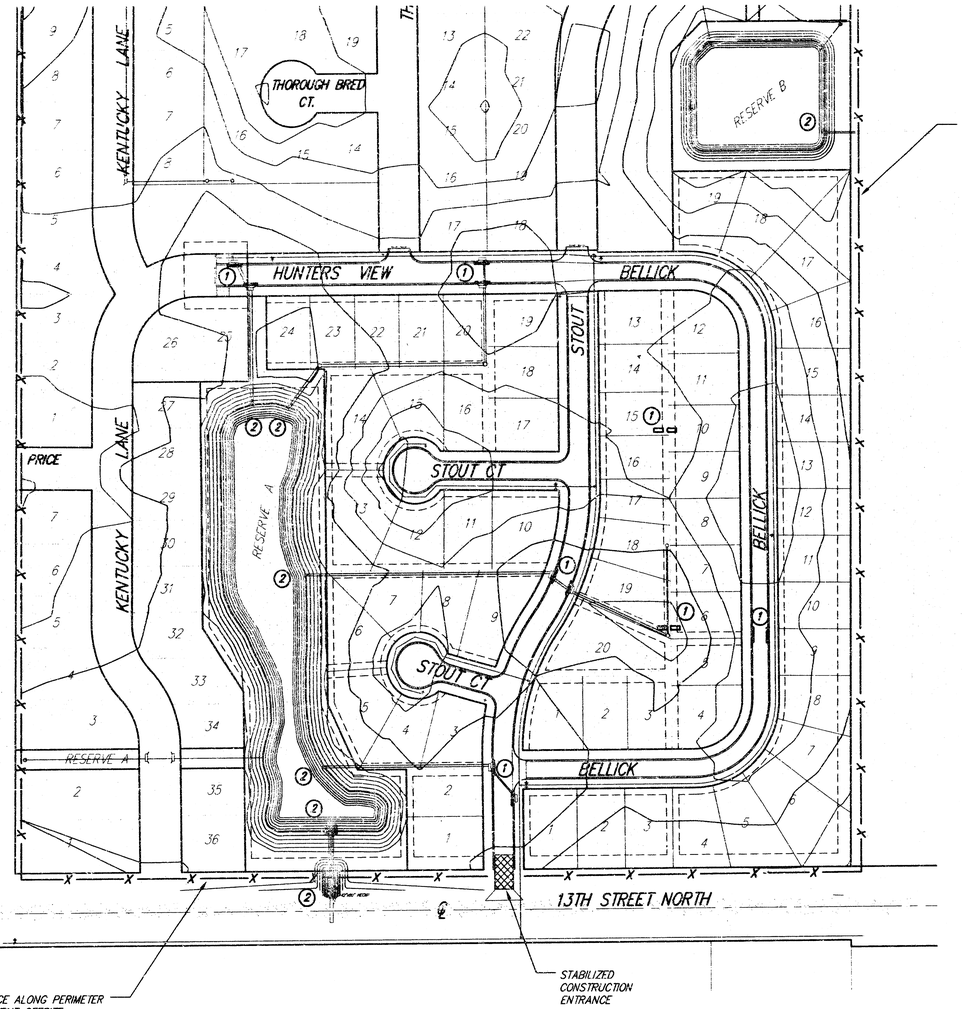
E-mail: info@rbkansas.com

DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DRAWING FILE	pond [Pond Plan]
PROJECT NUMBER	468-83938
DATE	Apr. 5, 2005
RE ION	28866
SHEET	7 OF 12



SCALE 1" = 100'
IRON = ●

LEGEND

—x— Silt Fence

Hay Bale Ditch Check

(1) Inlet Barrier Protection

(2) Protected by Rip Rap

NOTE: SILT FENCE MAY BE USED INSTEAD OF HAYBALE DITCH CHECKS.

CHERYL'S HOLLOW ADDITION, DETENTION POND
EROSION CONTROL PLAN
WICHITA, KANSAS

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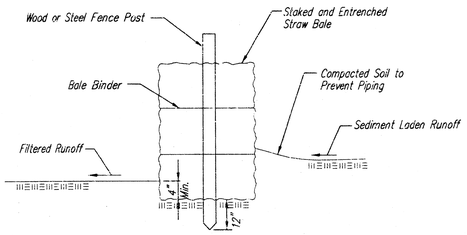
(316) 264-4621 fax
E-mail: info@rbkansas.com

DESIGN	KWL
DRAWN	RA
REVIEW	
UTILITY	
DRAWING FILE	pond [Erosion Control]
PROJECT NUMBER	468--83938
DATE	Apr. 5, 2005
SHEET	8 OF 12



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.

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:

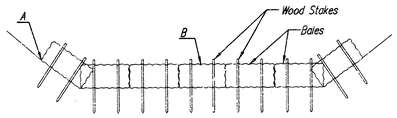
When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the 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?

NOTE: Point A must be higher than Point B so that water flows over the bales and not around them.



STRAW BALE DITCH CHECKS

Material Specification:

Bale ditch checks 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.
Optional: The downstream scour apron should be constructed of a double-netted straw erosion-control blanket at least 6' wide.
Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

Placement:

Bale ditch checks should be placed perpendicular to the flowline of the ditch.
The ditch check should extend far enough so that the ground level at the ends of the check is higher than the top of the lowest center bale. This prevents water from flowing around the check.
Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Bales should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.
The following table provides check spacing for a given ditch grade:

Ditch Check Spacing

Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is 4" deep and a bale's width wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench-it will be used later.
Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch.
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 upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

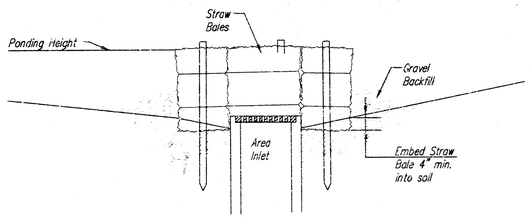
List of common placement/installation mistakes to avoid:

Do not place a bale ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place bale ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch-check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the check is higher than the top of the lowest center bale.
Do not place bale ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.
Bale ditch checks must be dug into the ground. Bales at ground level do not work because they allow water to flow under the check.

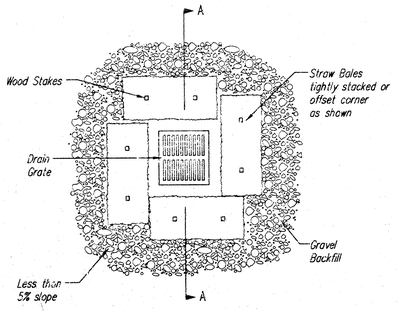
Inspection and Maintenance:

Bale ditch checks 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:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does water flow through spaces between abutting bales?
Are any bales and/or scour aprons (optional) dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the ditch check?



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Bale area inlet barriers should 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.

Placement:

Bale area inlet barriers should be placed directly around the perimeter of a drop inlet.
When a bale area inlet barrier is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper Installation Method:

Excavate a trench around the perimeter of the area inlet that is at least 4" deep by a bale's width wide.
Place the bales in the trench, making sure that they are butted tightly. Some bales may need to be shortened to fit into the trench around the area inlet. Two stakes should be driven through each bale, 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 receiving side of the barrier and compact it. The compacted soil should be no more than 3" to 4" deep.
Note: When a bale area inlet barrier is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

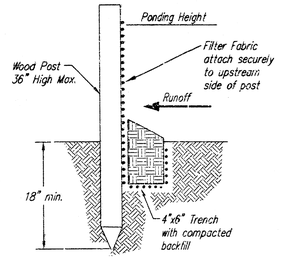
List of common placement installation mistakes to avoid:

Bales should be placed directly against the perimeter of the area inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil causing scour.
Bale area inlet 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 area inlet barriers should be inspected every 7 days and within 24 hours of a rainfall 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the area inlet 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 area inlet barrier?



SILT FENCE BARRIERS

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?

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
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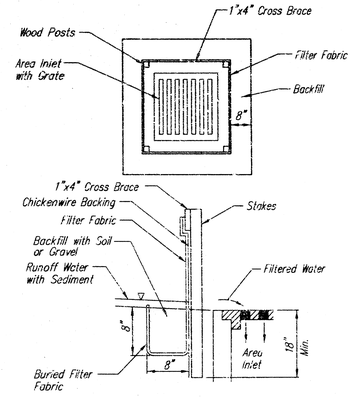
DATE: MAY 2001	SHEET 9 OF 12



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The wire or polymeric mesh backing used to help support the 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.
The material used to frame the tops of the posts should be 1" by 4" boards.
Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

Place a silt fence drop inlet barrier in a location where it is unlikely to be overtopped.
Water should flow through silt fence, not over it. Silt fence barriers for area inlets often fail when repeatedly overtopped.
When used as a barrierfor area inlets, silt fence fabric and posts must be supported at the top by a wooden frame.
When a silt fence barrier for area inlets is located near an inlet that has steep approach slopes, the storage capacity behind the barrier is drastically reduced. Timely removal of sediment must occur for a barrier to operate properly in this location.

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide.
Drive posts to a depth of at least 18" around the perimeter of the area inlet.
The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them.
Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening.
Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails.
Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. 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.
Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

Note: When a silt fence barrier for area inlet is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

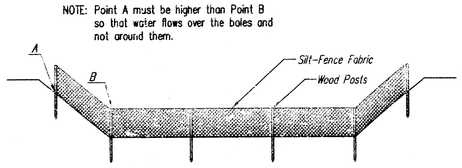
List of common placement/installation mistakes to avoid:

Water should flow through a silt fence barrier for area inlet-not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier for area inlet. In this configuration, the force of the water is not resisted by the posts, but only by the staples (wire, zip-ties, nails, etc.). The silt fence will rip and fail.
Do not install silt fence barrier for area inlets without framing the top of the posts.
The corner posts around area inlets are stressed in two directions whereas a normal silt fence is only stressed in one direction. This added stress requires more support.

Inspection and Maintenance:

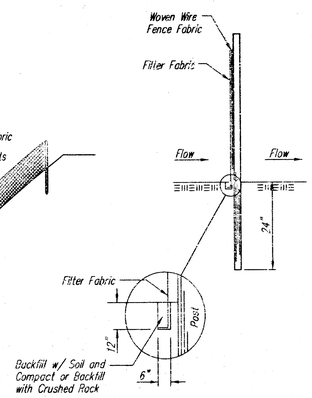
Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

Does water flow under the silt fence?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the area inlet barrier?



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

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:

Place silt fence in ditches where it is unlikely that it will be overtopped.
Water should flow through a silt fence ditch check, not over it. Silt fence ditch checks often fail when overtopped.
Silt fence ditch checks should be placed perpendicular to the flowline of the ditch.
The silt fence should extend far enough so that the ground level at the ends of the fence is higher than the top of the low point of the fence. This prevents water from flowing around the check.
Checks should not be placed in ditches where high flows are expected. Rock checks should be used instead.
Silt fence should be placed in ditches with slopes of 6% or less. For slopes steeper than 6%, rock checks should be used.

The following table provides check spacing for a given ditch grade:

Ditch grade (%)	Check Spacing (feet)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downstream side of the trench.
Place the edge of the fabric in the trench starting at the top upstream edge of the trench.
Line two sides of the trench with the fabric as shown on detail. 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 on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

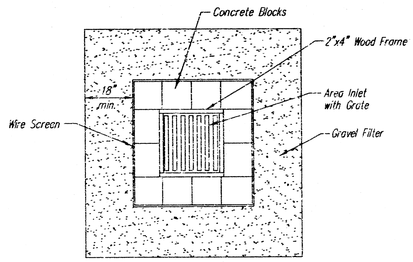
List of common placement/installation mistakes to avoid:

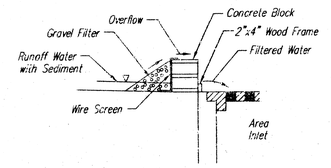
Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, 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 a silt fence ditch check directly in front of a culvert outlet. It will not stand up to the concentrated flow.
Do not place silt fence ditch checks in ditches that will likely experience high flows. They will not stand up to concentrated flow.
Follow prescribed ditch check spacing guidelines. If spacing guidelines are exceeded, erosion will occur between the ditch checks.
Do not allow water to flow around the ditch check. Make sure that the ditch check is long enough so that the ground level at the ends of the fence is higher than the low point on the top of the fence.
Do not place silt fence ditch checks in channels with shallow soils underlain by rock. If the check is not anchored sufficiently, it will wash out.

Inspection and Maintenance:

Silt fence ditch checks 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:

Does water flow around the ditch check?
Does water flow under the ditch check?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the ditch check?





CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

Gravel barriers provide little filtering of large inflow waters. However, when installed correctly and maintained, they can effectively treat low runoff flows.

Placement of gravel filters around area drains must be completed in a manner that will not cause local flooding.

Gravel filters can be used if the immediate and adjacent area to the area drain consists of soil or pavement.

Only gravel filters are to be installed on top of the pavement.

Instructions for Installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
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 method is use of gravel bags that are supported to prevent collapsing.

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

Maintenance:

All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets after every runoff event.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

CHRISTOPHER M. CARRIER, P.E.
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PROJECT NUMBER	OCA NO.
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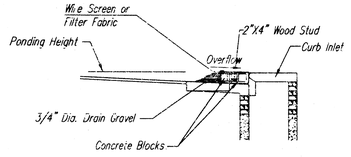
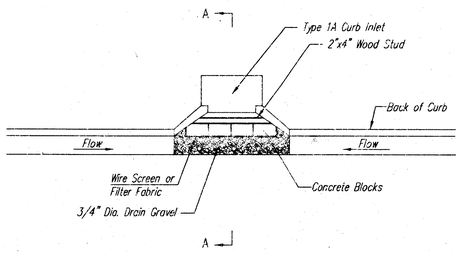


SECTION A-A



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.

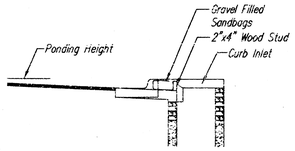
Instructions for Installing:

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 2"x4" board to prevent collapsing.

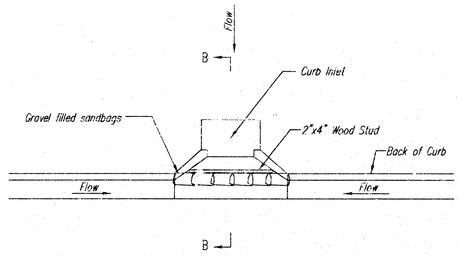
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

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.



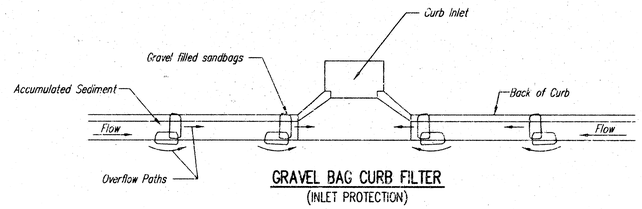
SECTION B-B



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.

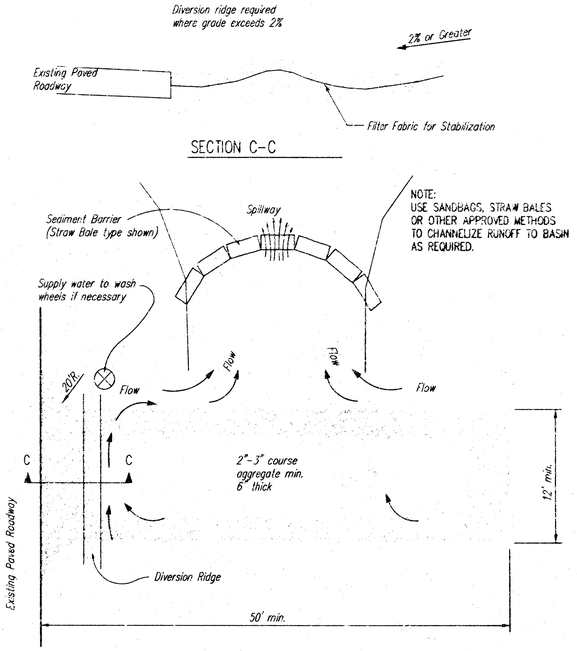
Spacing:

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.



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.

CITY OF WICHITA

SOIL EROSION BMP DETAILS

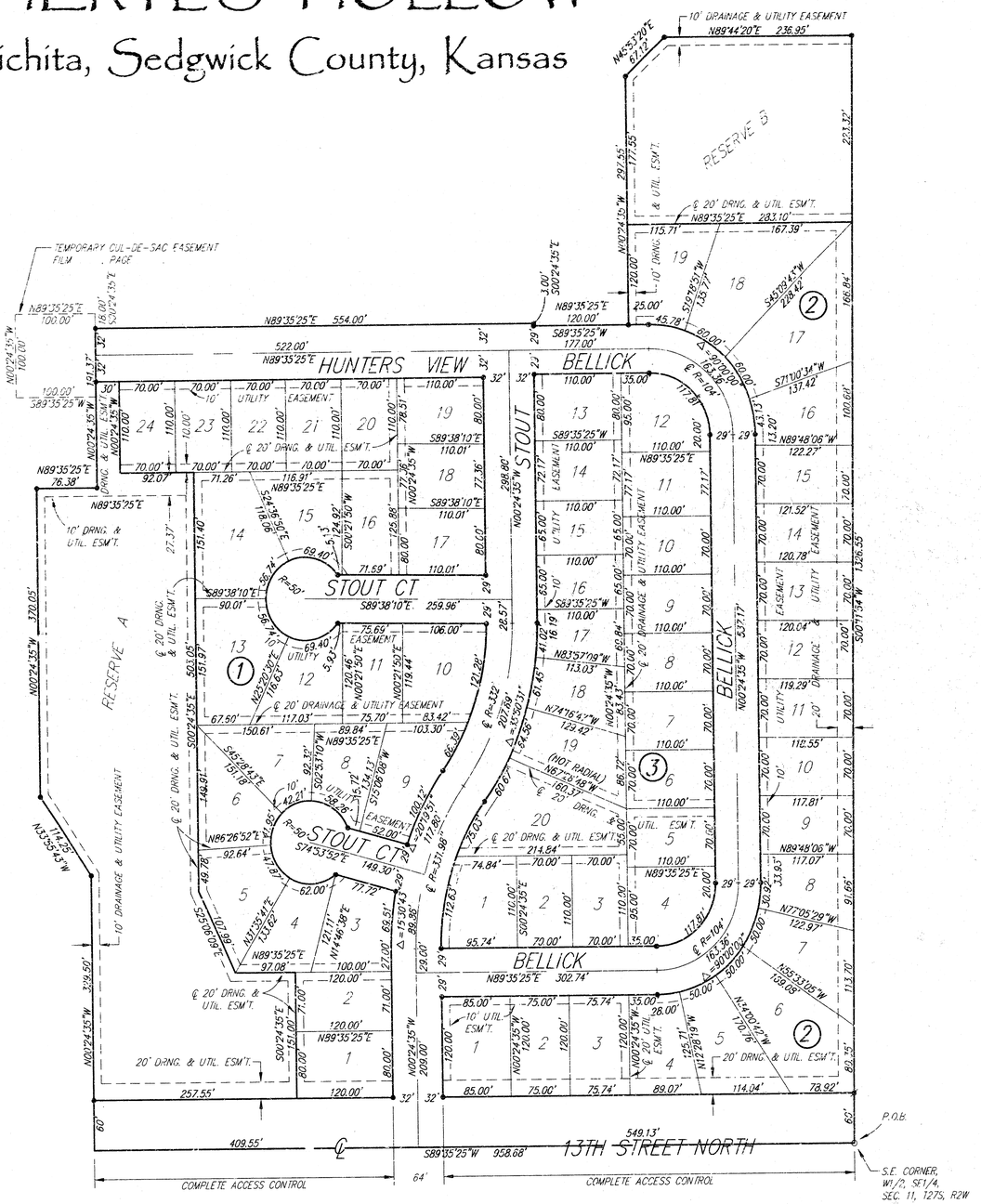
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83938	751389

DATE: MAY 2001

CHERYL'S HOLLOW

Wichita, Sedgwick County, Kansas



(A) = ASSUMED
M = MEASURED

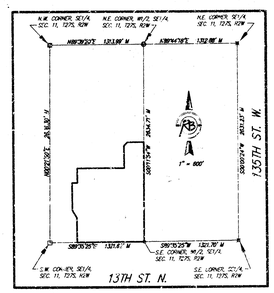
SURVEY MARKER LEGEND

□ = STONE
⊡ = NAIL IN CENTER OF STONE
○ = 1/2" IRON PIPE
◎ = 1" IRON PIPE
⊠ = 3/4" IRON PIPE W/SEDGWICK COUNTY ALUMINUM CAP (FOUND)
● = 5/8" REBAR W/R&B CAP (SET)
■ = 5/8" REBAR W/BAUGHMAN CAP (FOUND)

BENCH MARK: COW BENCHMARK AT THE SOUTHWEST CORNER OF INTERSECTION OF 135TH ST. W. AND 13TH ST. N., EAST SIDE OF CONC. BASE FOR HLP 30'± S. OF CENTER LINE AND 35'± W. OF CENTER LINE ELEV.=1355.65 (M.S.L.)

ON-SITE BENCH MARK: R.R. SPIKE ON NORTH FACE OF HIGHLINE POWER POLE 1.31 FEET WEST AND 28 FEET SOUTH OF THE S.E. CORNER, W1/2, SE1/4, SEC. 11, T27S, R2W ELEV.=1365.16 (M.S.L.)

MINIMUM BUILDING PAD ELEVATION FOR LOWEST OPENING INTO STRUCTURES		
BLOCK	LOT NO.	ELEVATION (N.G.V.D.)
1	1, 2, 3, 4, 5, 6, 7, 13, 14, 23, 24	1365
2	17, 18, 19	1364



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