STORM WATER DRAIN #200

to serve

SHADOW WOODS ADDITION - PHASE I & II

CITY OF WICHITA, KANSAS

Neil D. Cable, P.E. City Engineer

Project Number

468-83597

O.C.A. Number

751333

GENERAL NOTES:

1. Contractor will be required to provide notice to utility companies a minimum of twenty-four (24) hours prior to any excavation, as follows:

   Kansas One-Call 587-2470

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

Cox Communications	262-4270
Kansas Gas Service	1-888-482-4950
Westar Energy	383-8650
Aquila Energy	1-800-303-0357
Southwestern Bell	268-2245
City of Wichita Water Dept.	268-4563
City of Wichita Sewer Maint.	268-4024
City of Wichita Storm Sewer Maint.	268-4090
City of Wichita Traffic Maint.	268-4034
Conoco Pipeline Co.	1-800-231-2551
Williams Pipeline Co.	529-6600
Phillips Pipeline Co.	1-800-766-8230

2. 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. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

3. 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.

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

5. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish 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.

6. All areas disturbed during construction within Reserve "E", Maple Street R/W, and 135th St. W. R/W shall be seeded, mulched, and fertilized as follows (Permanent Seeding):

   Seed: Kansas Premium Fescue Blend: 8 lbs./1000 sq. ft.
   Mulch: Prairie Hay: 2 tons/acre
   Fertilizer: 12-24-12: 850 lbs./acre

   All other areas disturbed during construction outside of subdivision street R/W shall be seeded and mulched as follows (Temporary Seeding):

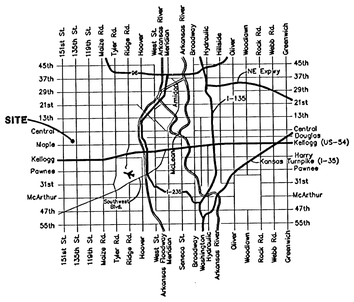
   Seed: Rye Grass: 5 lbs./1000 Sq. Ft.
   Mulch: Prairie Hay: 2 tons/acre

   All costs associated with seeding, mulching, and fertilizing shall be included in bid item "Project Seeding." All seeding operations shall conform to City of Wichita Standard Specifications.

7. All existing and proposed erosion control measures including silt fencing, erosion control mat, straw bales, inlet barriers, and const. entrance shall be maintained throughout construction by the contractor and until project is accepted by the City of Wichita. The on-site engineer shall complete weekly reports on the status of erosion control measures. The contractor shall be required to comply with maintenance and/or replacement of erosion control measures as determined by the on-site engineer until project is accepted by City of Wichita. Maintenance and/or replacement of erosion control measures to be paid by L.S. bid item "Erosion Control BMP's."

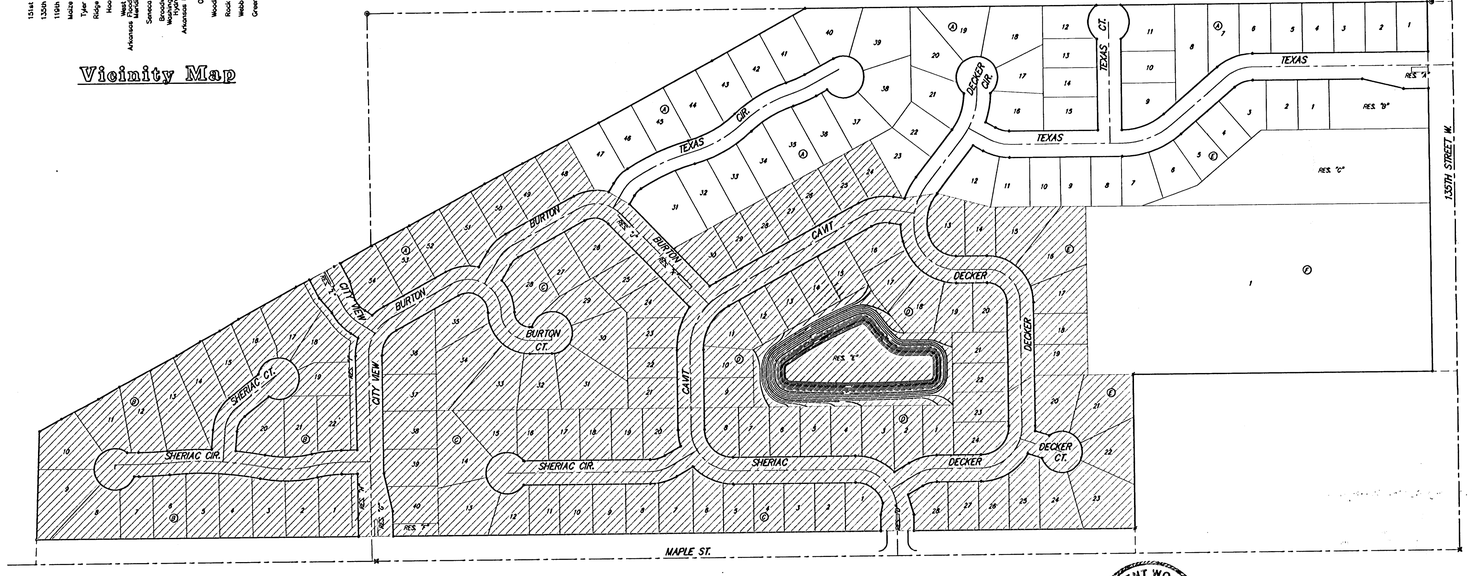
8. All excess excavation shall remain on-site and be stockpiled at a location determined by the engineer.

9. 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 an site location. Locations, 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. 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.



Vicinity Map

Scale: 1" = 150'



Benefit District & Area to be Graded

Benchmarks

RR Spike in N. Face of PP in N. R/W of Maple N. of Nineiron.
Elev. = 177.01 (City Datum)

"□" Cut center of north Headwall of RCBC in N. R/W of Maple 570' East of centerline of City View.
Elev. = 187.91 (City Datum)

Sheet Index

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Mass Grading Plan	2-3
Pond Plan	4
Pond Cross Sections	5-6
Erosion Control Plan	7-8
Soil Erosion BMP Details	9-12
Copy of Plat	13

Booked C-759 5-27-04 106

BRENT WOOTEN EXPIRATION 3/31/05 KANSAS PROFESSIONAL ENGINEER

As Built - Per Plan 8/03 KK

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

As Built - SW Drain #200 - Shadow Woods Addn Ph I & II
468-83597

NOTES:

1. Any excess excavation shall be stored as indicated by Engineer, out of easements and R/W. Area will be staked by Engineer. Additional area will be staked out if needed.

2. All of Reserve "E" above the static water surface shall be seeded and mulched as follows: (Permanent Seeding)
   SEED -- Kansas Premium Fescue Blend; 8#/1000 Sq. Ft.
   FERTILIZER -- 12-24-12 Ratio at 350 Lbs./Ac.
   MULCH -- 2 Tons Prairie Hay / Acre

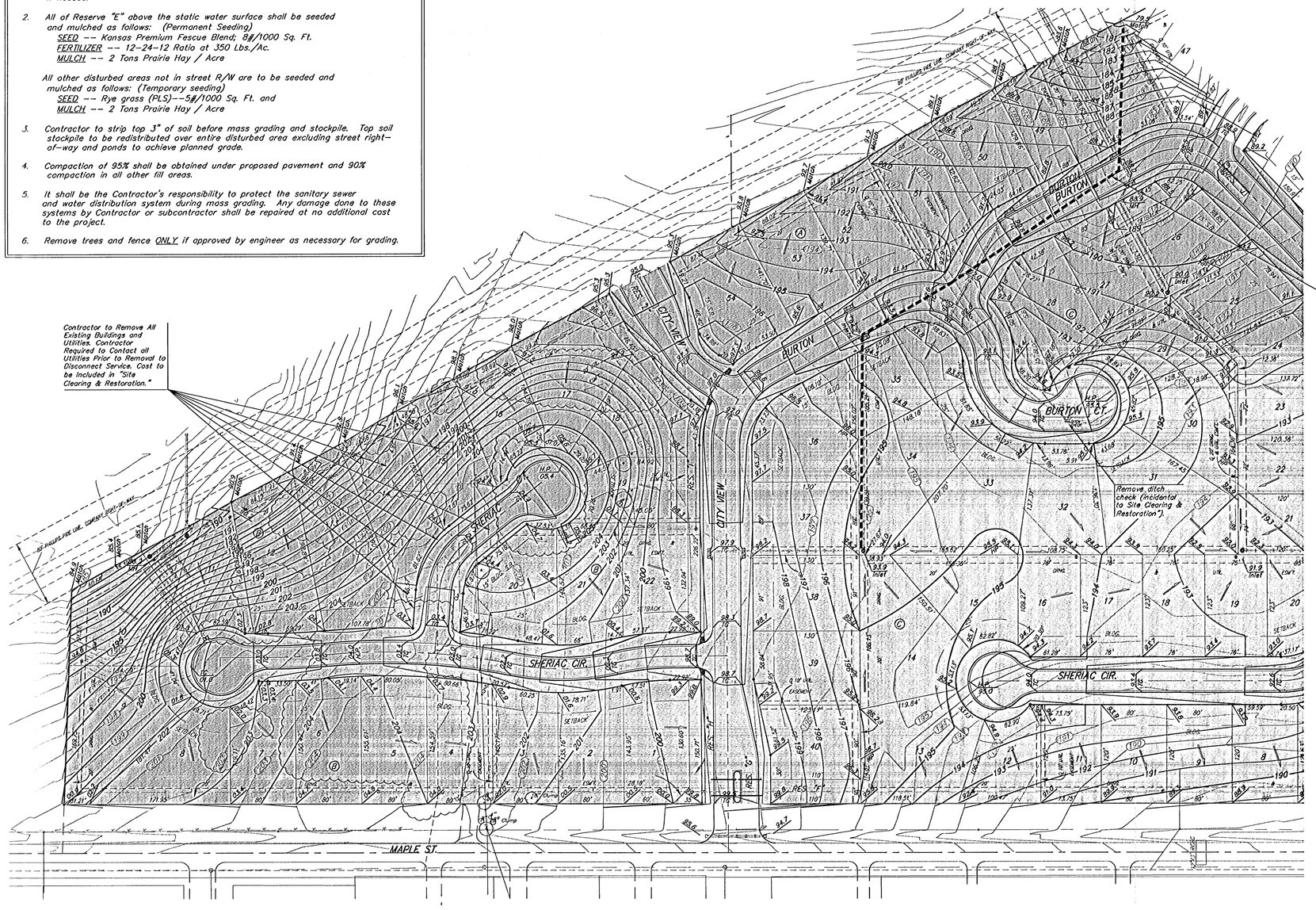
   All other disturbed areas not in street R/W are to be seeded and mulched as follows: (Temporary seeding)
   SEED -- Rye grass (PLS)--5#/1000 Sq. Ft. and
   MULCH -- 2 Tons Prairie Hay / Acre

3. Contractor to strip top 3" of soil before mass grading and stockpile. Top soil stockpile to be redistributed over entire disturbed area excluding street right-of-way and ponds to achieve planned grade.

4. Compaction of 95% shall be obtained under proposed pavement and 90% compaction in all other fill areas.

5. It shall be the Contractor's responsibility to protect the sanitary sewer and water distribution system during mass grading. Any damage done to these systems by Contractor or subcontractor shall be repaired at no additional cost to the project.

6. Remove trees and fence ONLY if approved by engineer as necessary for grading.



Scale: 1"=60'

Area to be graded

190 Existing Grade

190 Proposed Grade

Proposed "V" Ditch

EARTH WORK TOTALS		
	C.Y. Excavation	C.Y. Fill
Mass Grading	37,685	46,723
Pond	38,582	221
Total	76,267	46,944

Earthwork quantities do not include correction factors and are for reference only. All cost associated with mass grading shall be included in the bid item "Mass Grading".

As Built - Per plan. 6/03 JKK

SHADOW WOODS ADDITION - PHASE I & II

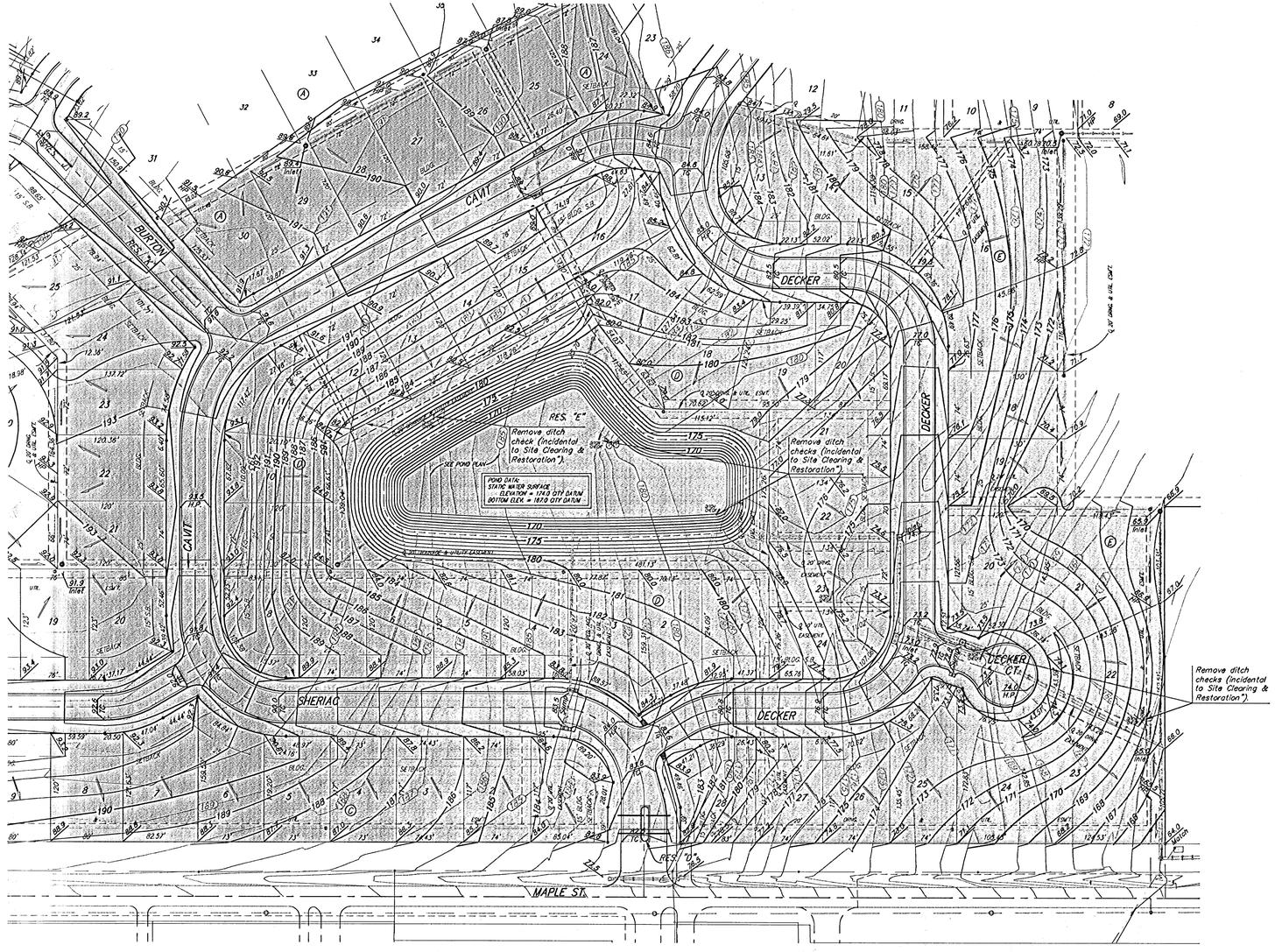
MASS GRADING PLAN

WICHITA, KANSAS

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER					SHEET
					2 OF 13
DESIGN: NBW	DRAWN: MS	APPROVED	DATE: 5/14/03	SCALE: Noted	

Shadow Woods/Mass 05-01-E500

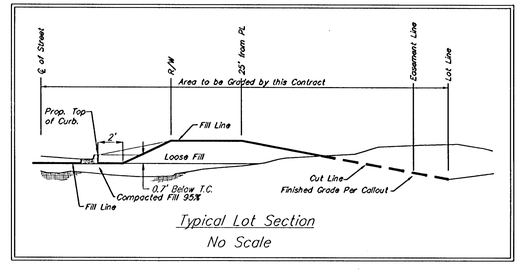


Scale: 1"=60'

Area to be graded

190 Existing Grade

190 Proposed Grade



Typical Lot Section

No Scale

As-Built...Per Plan. 8/03 JAK ....

SHADOW WOODS ADDITION - PHASE I & II

MASS GRADING PLAN

WICHITA, KANSAS

BAUGHMAN COMPANY P.A.

ENGINEERING, SURVEYING, & PLANNING

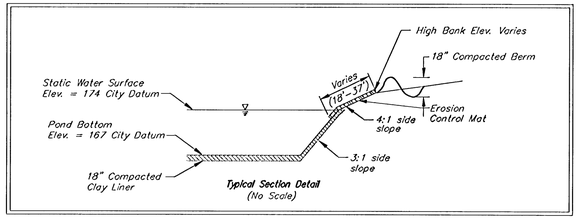
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER				SHEET
				3 of 13
DESIGN	DRAWN	APPROVED	DATE	SCALE
NBW	TMS		5/14/03	Noted

ShadowWoods/Acad/03-01-F200

BENCHMARKS:
RR Spike in N. Face of PP in N. R/W of Maple N. of Nineiron.
Elev. = 177.01 (City Datum)

"□" Cut center of north Headwall of RCBC in N. R/W of Maple 570' East of centerline of City View.
Elev. = 187.91 (City Datum)



Typical Section Detail
(No Scale)

EARTH WORK TOTALS

	C.Y. Excavation	C.Y. Fill
Mass Grading	37,685	46,723
Pond	38,582	221
Total	76,267	46,944

Earthwork quantities do not include correction factors and are for reference only. All cost associated with mass grading shall be included in the bid item "Mass Grading".

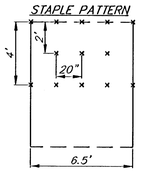
STAPLE PATTERN "D"

3-1/2 staples per sq. yd. using 6-inch, 11 ga. wire "U" staples. 8-inch staples and longer may be used for loose soils. 9 ga. staples or heavier may be necessary in hard or rocky soils.

Contractor shall follow manufacturers installation instructions regarding overlap dimensions. The overlap shall have a minimum dimension of three inches (3").

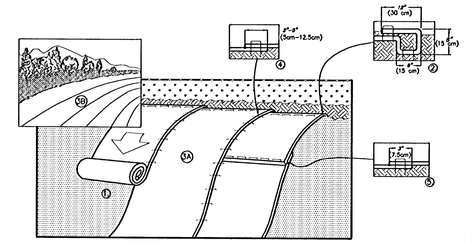
Erosion control mat.

STAPLE PATTERN



SLOPE INSTALLATION

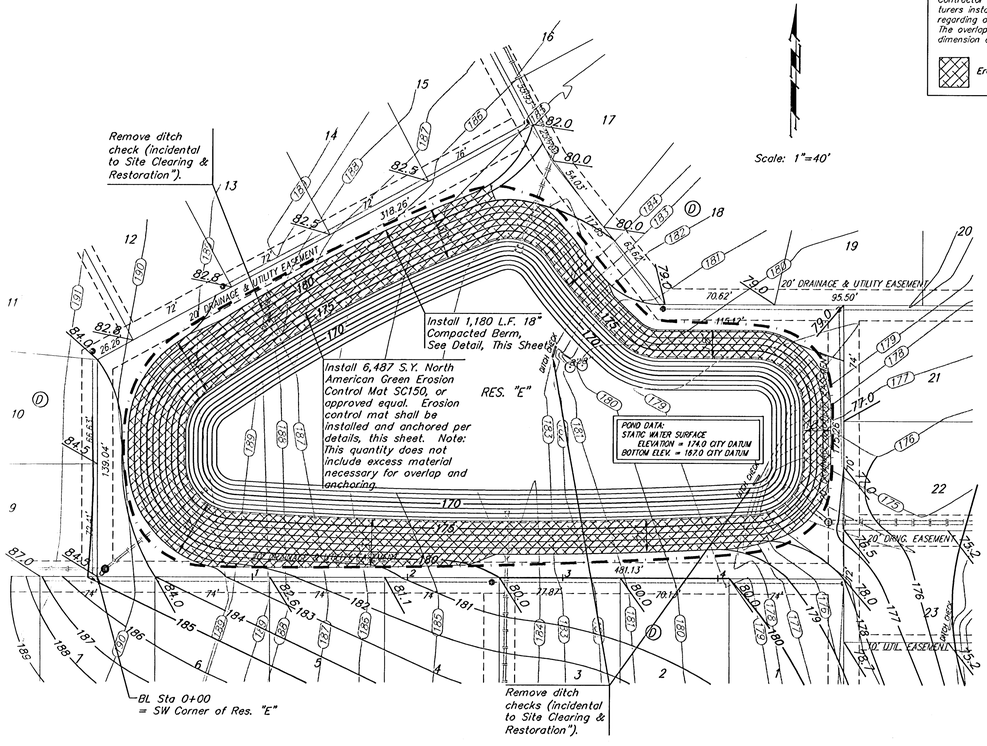
NORTH AMERICAN GREEN



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 SLOPE 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 THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. 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. WHEN USING OPTIONAL DOT SYSTEM*, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

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

14649 HIGHWAY 41 NORTH, EVANSVILLE, INDIANA 47725
USA 1-800-772-2040 CANADA 1-800-448-2040
www.nagreen.com



NOTES:

1. Pond bottom and sideslopes below static pool elevation shall be over-excavated 18" and an 18' clay liner shall be compacted to 95% std. density. The plasticity index (P.I.) shall be at least 30. The compaction and P.I. shall be verified during construction. P.I. determination and compaction testing shall be arranged by the contractor at the request of the inspector. Cost shall be incidental to "Site Clearing & Restoration".
2. Any excess excavation shall be stored as indicated by Engineer, out of easements and R/W. Area will be staked by Engineer. Additional area will be staked out if needed.
3. All of Reserve "E" above the static water surface shall be seeded and mulched as follows: (Permanent Seeding)
   SEED --- Kansas Premium Fescue Blend; 8#/1000 Sq. Ft.
   FERTILIZER --- 12-24-12 Ratio at 350 Lbs./Ac.
   MULCH -- 2 Tons Prairie Hay / Acre

   All other disturbed areas not in street R/W are to be seeded and mulched as follows: (Temporary seeding)
   SEED -- Rye grass (PLS)--5#/1000 Sq. Ft.
   MULCH -- 2 Tons Prairie Hay / Acre
4. Install Erosion Control Mat from 1' below the water surface to 18' up the bank.
5. Contractor to strip top 3" of soil before mass grading and stockpile. Top soil stockpile to be redistributed over entire disturbed area excluding street right-of-way and ponds to achieve planned grade.
6. Compaction of 95% shall be obtained under proposed pavement and 90% compaction in all other fill areas.
7. Contractor shall fill pond with water to static level. All costs and permitting associated with filling the pond shall be incidental to bid item, "Site Clearing & Restoration."

(190) Existing Grade
190 Proposed Grade
18" Compacted Cut-Off Berm

As Built- Per Plan 8/03 KK

SHADOW WOODS ADDITION - PHASE I & II
POND PLAN
WICHITA, KANSAS

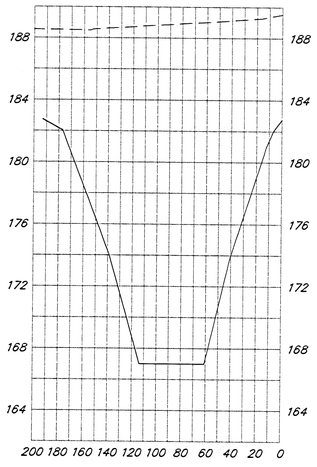
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PROJECT NUMBER	SHEET
488-83597	4 OF 13

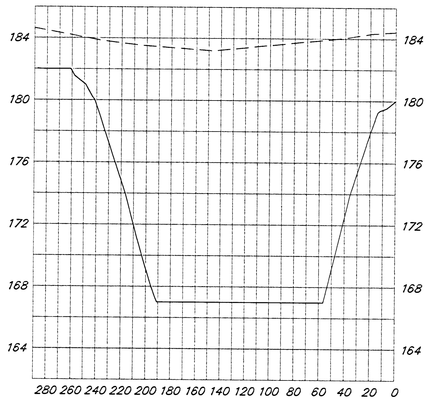
DESIGN	DRAWN	APPROVED	DATE	SCALE
NBW	TMS		5/14/03	Noted

ShadowWoods/Pond 03-01-1500

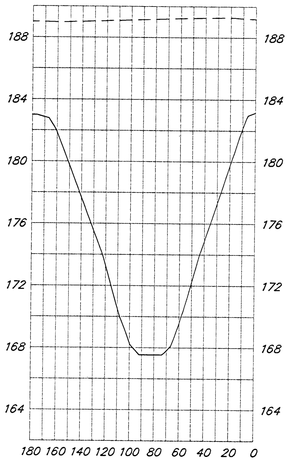
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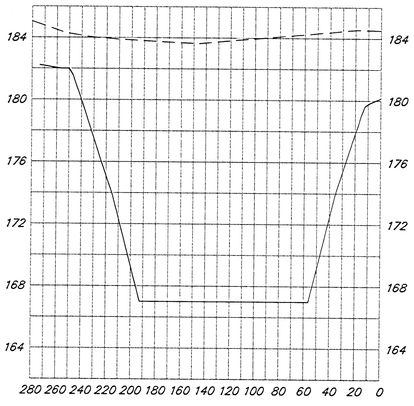
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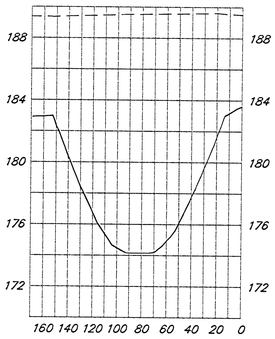
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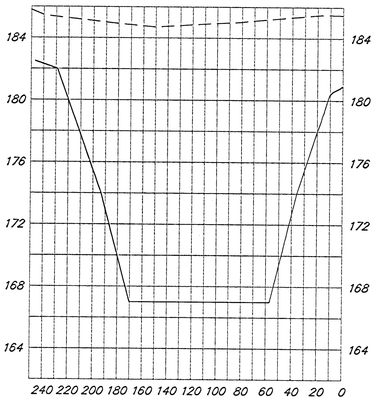
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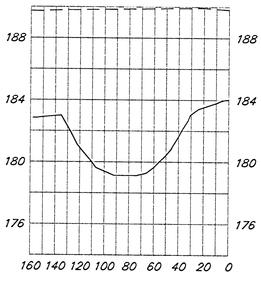
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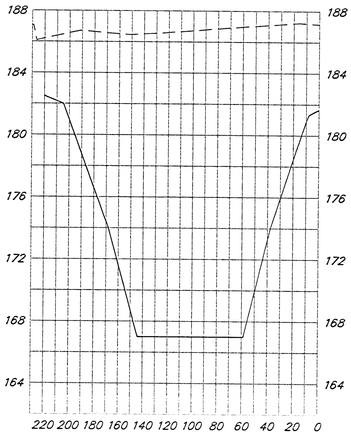
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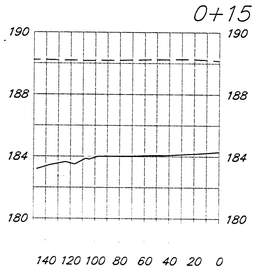
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1+50



0+15



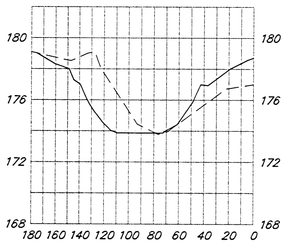
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ENGINEERING & SURVEYING
316/262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER

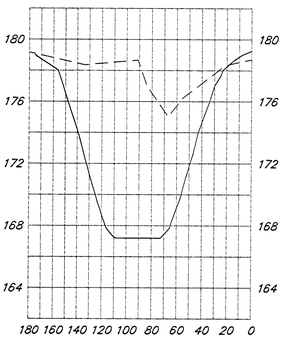
REV.

SHEET 5/13

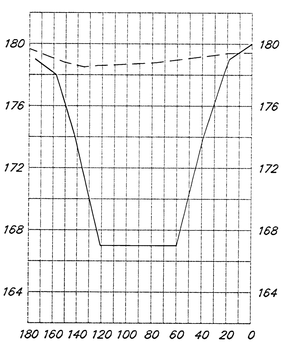
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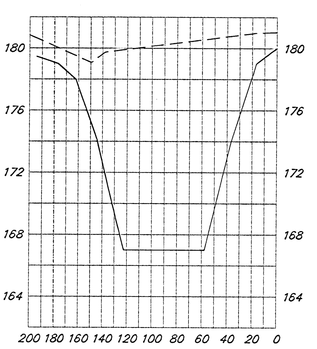
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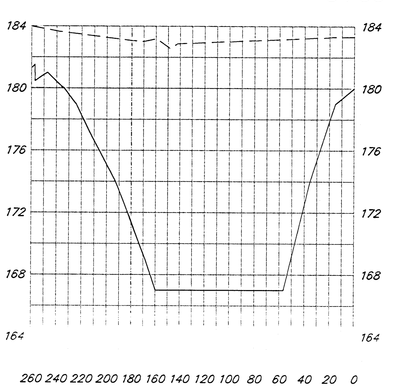
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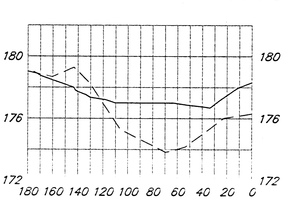
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3+00



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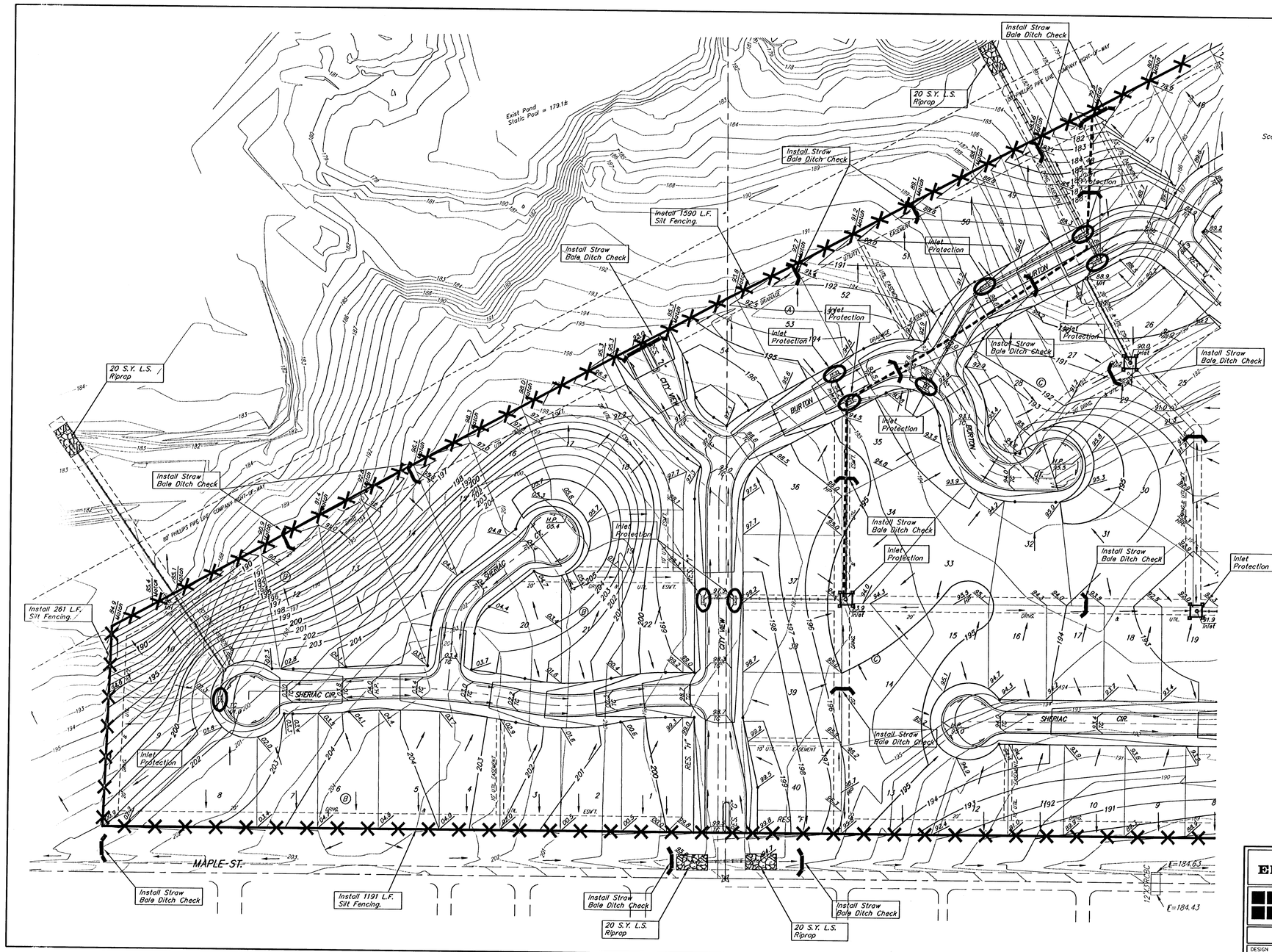


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PROJECT NUMBER

REV.

SHEET 6/13



EROSION CONTROL PLAN LEGEND

- LIGHT STONE RIP-RAP
- DROP INLET PROTECTION
- CURB INLET PROTECTION
- STRAW BALE BARRIERS
- SILT FENCING
- EARTH DIKES

NO SCALE

EROSION CONTROL MEASURE	UNITS	QUANTITY
SILT FENCE	L.F.	5,477
RIPRAP	S.Y.	0
DROP INLET BARRIER	EA.	0
CURB INLET BARRIER	EA.	0
STRAW BALE DITCH CHECK	EA.	26
EARTHEN DIKES	L.F.	1,180
CURLEX	S.Y.	0
POND #1 BLANKET	S.Y.	6,487
POND #2 BLANKET	S.Y.	0
Construction Entrance	EA.	1

QUANTITIES ARE FOR INFORMATION ONLY!

SHADOW WOODS ADDITION

EROSION CONTROL PLAN

WICHITA, KANSAS

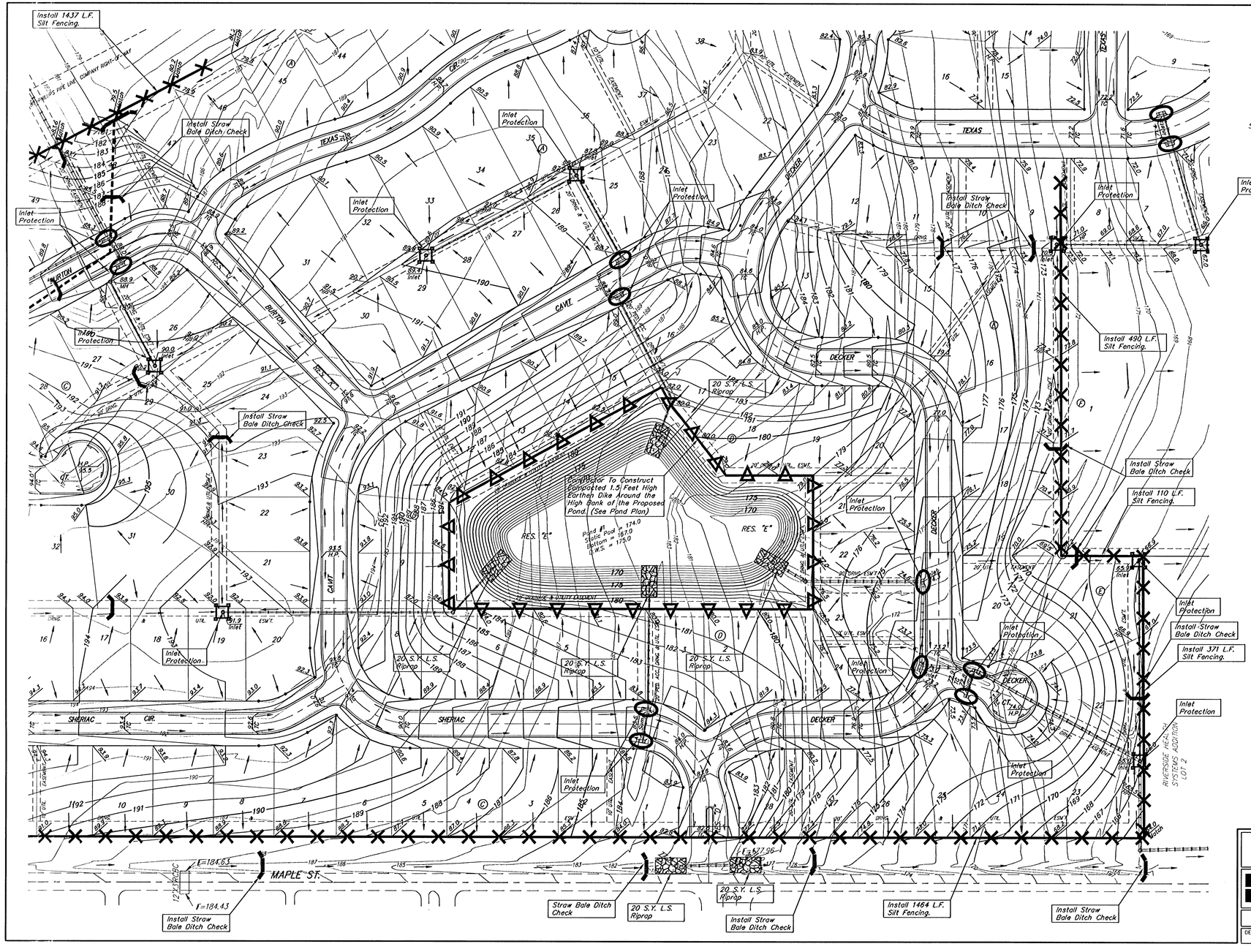
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PROJECT NUMBER 488-83597

SHEET 7 OF 13

DESIGN	DRAWN	APPROVED	DATE	SCALE
	SCL		5/14/03	NOTE

GRADE.DWG



BENCHMARKS:
RR Spike in N. Face of PP in N. R/W of Maple N. of Nineiron. Elev. = 177.01 (City Datum)

"□" Cut center of north Headwall of RCBC in N. R/W of Maple 570' East of centerline of City View. Elev. = 187.91 (City Datum)

Scale: 1" = 60'

EROSION CONTROL PLAN
LEGEND

- LIGHT STONE RIP-RAP
- DROP INLET PROTECTION
- CURB INLET PROTECTION
- STRAW BALE BARRIERS
- SILT FENCING
- EARTH DIKES

NO SCALE

EROSION CONTROL MEASURE	UNITS	QUANTITY
SILT FENCE	L.F.	5,477
RIPRAP	S.Y.	0
DROP INLET BARRIER	EA.	0
CURB INLET BARRIER	EA.	0
STRAW BALE DITCH CHECK	EA.	26
EARTHEN DIKES	L.F.	1,180
CURLEX	S.Y.	0
POND #1 BLANKET	S.Y.	6,487
POND #2 BLANKET	S.Y.	0
Construction Entrance	EA.	1

QUANTITIES ARE FOR INFORMATION ONLY!

SHADOW WOODS ADDITION
EROSION CONTROL PLAN
WICHITA, KANSAS

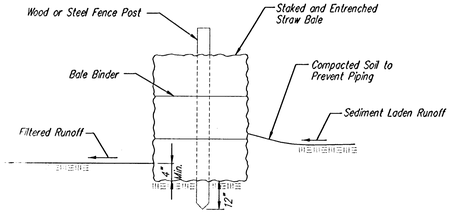
BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211

PROJECT NUMBER 488-83697

SHEET 8 OF 13

DESIGN	DRAWN	APPROVED	DATE	SCALE
	SCL		5/14/03	NOTE

GRADE.DWG



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:

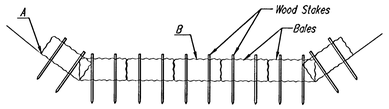
When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the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

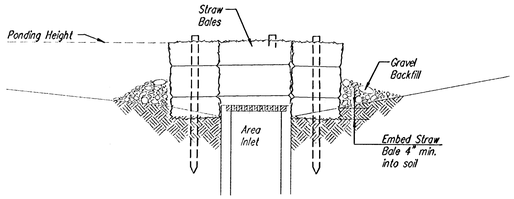
List of common placement/installation mistakes to avoid:

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.

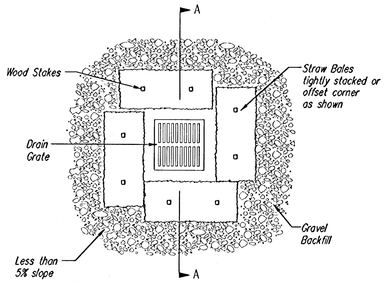
Inspection and Maintenance:

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.

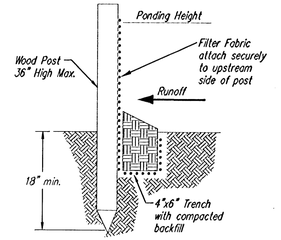
List of common placement installation mistakes to avoid:

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, ilalts, 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?

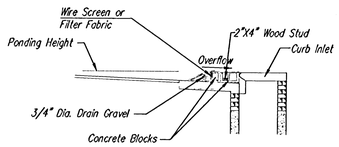
CITY OF WICHITA

SOIL EROSION BMP DETAILS

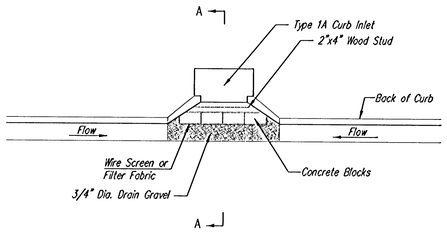
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83597	751333

DATE: MAY 2003



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.

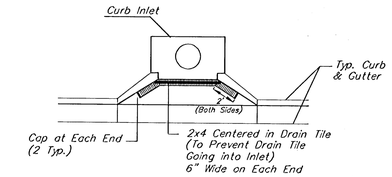
Instructions for Installing:

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.

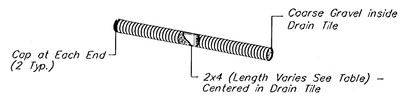
Maintenance:

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.



Note: Place 4" perforated PVC pipe filled w/ 1/2"-1" Dia. gravel. Place pipe in front of Curb Inlet as Shown.

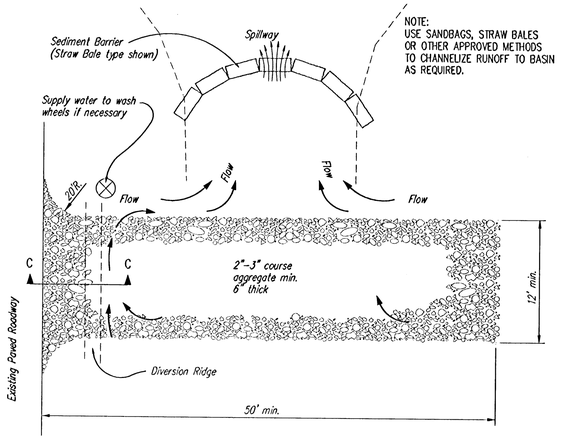
2x4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



CURB INLET PROTECTION
4" Perforated Pipe w/ Gravel



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 STABLIZED 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.

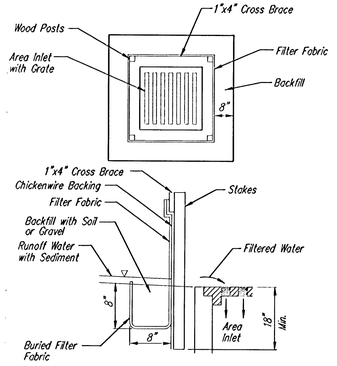
CITY OF WICHITA

SOIL EROSION BMP DETAILS

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

PROJECT NUMBER	OCA NO.
468-83597	751333

DATE: MAY 2003



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 overtopped 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:

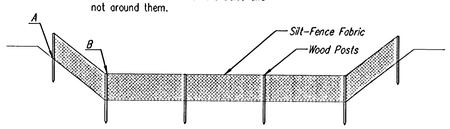
Water should flow through a silt fence barrier for area inlet-not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier 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:

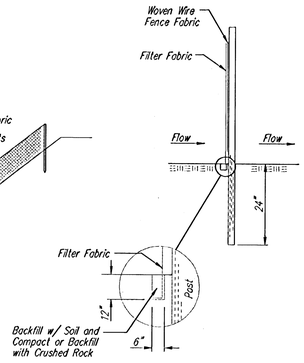
Does water flow under the silt fence?
Does the silt fence sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the area inlet barrier?

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



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 Check Ditch grade (%)	Spacing 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' opart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

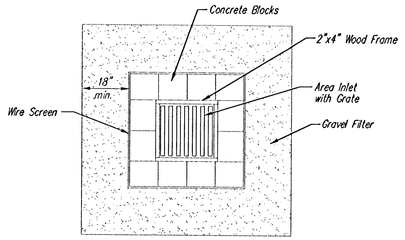
List of common placement/installation mistakes to avoid:

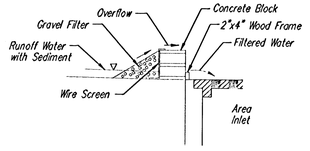
Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration, 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.

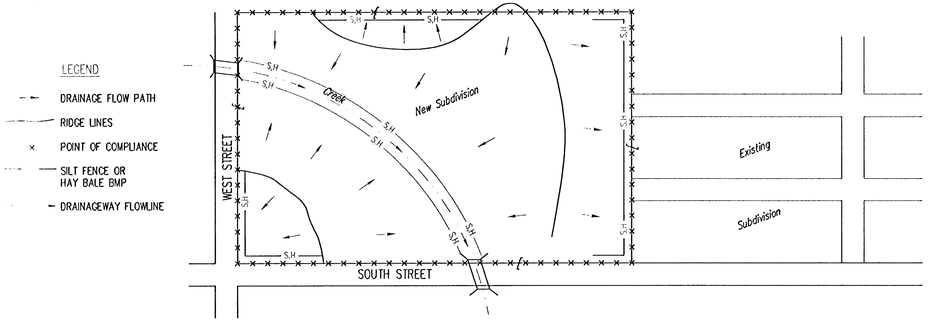
CITY OF WICHITA

SOIL EROSION BMP DETAILS

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

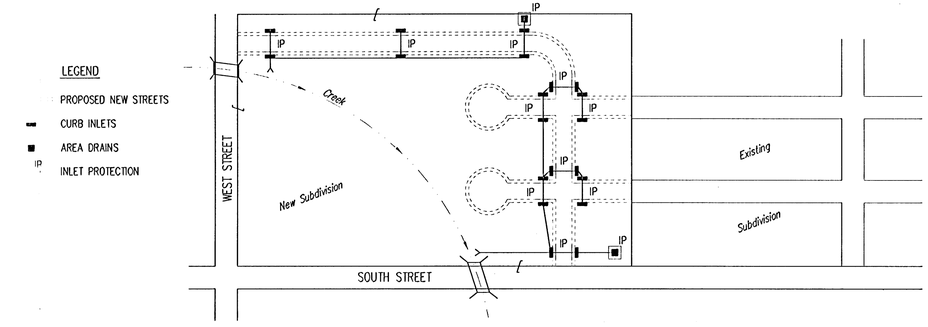
PROJECT NUMBER 468-83597
OCA NO. 751333
DATE MAY 2003

PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



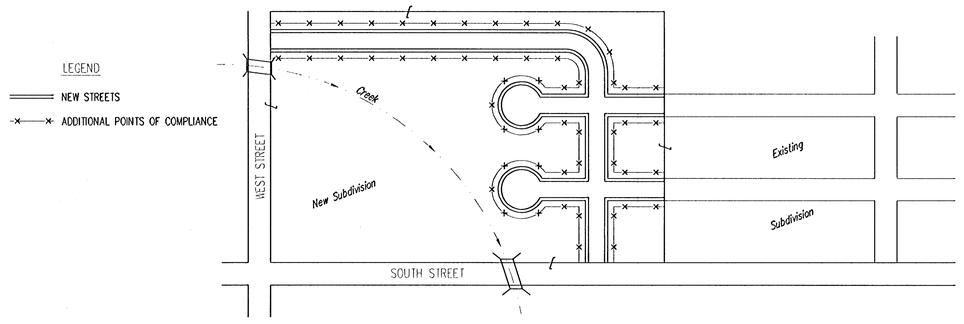
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2. HAYBALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE BMP'S WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
3. SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR GUTTERLINES ON THE ADJACENT BOUNDRY STREETS, APPROPRIATE BMP'S WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
4. ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED AT THE END OF EACH WORK DAY.
5. CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL BMP'S AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDRY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE BMP'S AT THEIR WORK LOCATIONS, AS NEEDED.
6. UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
7. THE SUBDIVISION DEVELOPER (OWNER) SHALL INSTALL AND MAINTAIN THE ON-SITE BMP'S.

PHASE 2 – INSTALLATION OF STORM SEWER

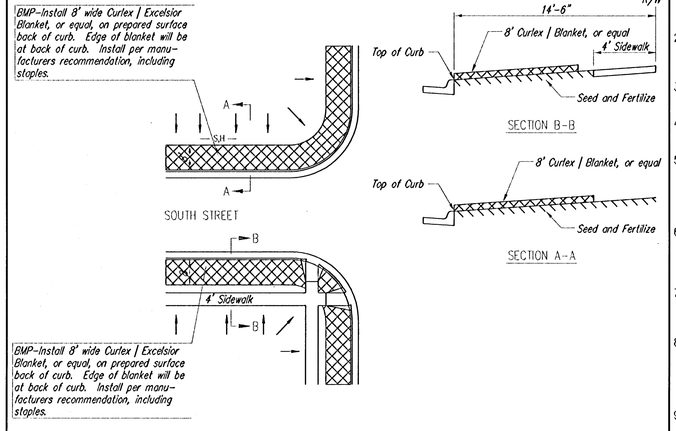


1. DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL BMP'S REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
2. AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
3. AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAYBALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
4. CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION BMP'S MUST BE INSTALLED. SEE PHASE 3 – STREET CONSTRUCTION.
5. THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE BMP'S. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION.
6. THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE BMP'S ONCE INSTALLED.
7. ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

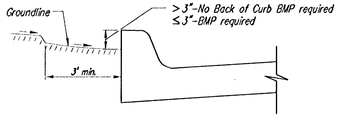
PHASE 3 – STREET CONSTRUCTION



1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.
   B. NON-SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
3. BMP'S WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), BMP'S WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
4. SEE DETAIL THIS SHEET ON BACK OF CURB PROTECTION.
5. THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLIMENTED WITH HAYBALE OR SILT FENCE BMP'S AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
6. THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB BMP'S.
7. THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB BMP'S IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.



BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL

GENERAL NOTES:

1. THE INTENT OF ALL BEST MANAGEMENT PRACTICES (B.M.P.'S) IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, OR ANY OTHER DRAINAGE FEATURE.
2. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF BMP'S WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
3. BMP'S SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON THE BMP DETAIL SHEETS.
4. PERSONS DESTROYING BMP'S SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT BMP'S.
5. THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 5 ACRES OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL BMP'S ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLAN.
6. FOR SUBDIVISIONS SMALLER THAN 5 ACRES, SOIL EROSION BMP'S ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
7. FAILURE TO USE AND MAINTAIN BMP'S IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
8. THE APPLICATION OF BMP'S SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT BMP OTHER THAN THAT SHOWN. BMP'S, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
9. A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

CITY OF WICHITA

SOIL EROSION BMPS SUBDIVISION DEVELOPMENT PROCESS

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

PROJECT NUMBER	OCA NO.
468-83597	751333
DATE: MAY 2003	SHEET 12 OF 13

SHADOW WOODS ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS

State of Kansas) SS
Sedgwick County)

We, Baughman Company, P.A., Surveyors in aforesaid county and state do hereby certify that we have surveyed and platted "SHADOW WOODS ADDITION", Wichita, Sedgwick County, Kansas and that the accompanying plat is a true and correct exhibit of the property surveyed, described as that part of the SE¼ of Sec. 23, Twp. 27-S, R-2-W of the 6th P.M., Sedgwick County, Kansas described as follows: Beginning at the NW corner of Riverside Health Systems Addition, Wichita, Sedgwick County, Kansas; thence westerly along the extended north line of said Riverside Health Systems Addition, 108.45 feet; thence northerly parallel with the east line of said SE¼, 403.25 feet; thence easterly with a deflection angle to the right of 90°07'06", 135.98 feet; thence northeasterly with a deflection angle to the left of 19°34'09", 143.34 feet; thence northeasterly with a deflection angle to the left of 20°51'47", 203.52 feet; thence easterly with a deflection angle to the right of 40°26'03", 465.29 feet to a point on the east line of said SE¼; thence northerly along the east line of said SE¼, 304.00 feet, more or less, to the SE corner of the N½ of said SE¼, said SE corner also being the intersection of the east line of said SE¼ and the extended south line of Messner Estate, Wichita, Sedgwick County, Kansas; thence westerly along the south line of the N½ of said SE¼ and along the south line of said Messner Estate, 1583.90 feet to the intersection with the southeast line of Amendment of Right of Way Agreement (District Court Case No. 82C2067); thence southwesterly with a deflection angle to the left of 28°28'30" along the southeast line of said Agreement, 257.33 feet; thence southwesterly with a deflection angle to the right of 00°41'55" along the southeast line of said Agreement, 311.52 feet; thence southwesterly with a deflection angle to the right of 00°21'28" along the southeast line of said Agreement, 208.09 feet; thence southwesterly with a deflection angle to the left of 00°11'24" along the southeast line of said Agreement, 103.87 feet; thence southwesterly with a deflection angle to the left of 00°45'07" along the southeast line of said Agreement, 208.58 feet; thence southwesterly with a deflection angle to the right of 01°27'43" along the southeast line of said Agreement, 103.24 feet; thence southwesterly with a deflection angle to the left of 01°49'16" along the southeast line of said Agreement, 1.37 feet to a point on the west line of said SE¼; thence southerly along the west line of said SE¼, 757.47 feet to the SW corner of said SE¼; thence easterly along the south line of said SE¼, 1834.59 feet, more or less, to the intersection with the extended west line of said Riverside Health Systems Addition; thence northerly along said extended west line, 431.02 feet to the point of beginning, TOGETHER with that part of the E½ of the SW¼ of said Sec. 23 lying south of and adjacent to the southeast line of Amendment of Right of Way Agreement (District Court Case No. 82C2067), more particularly described as follows: Beginning at the SE corner of said SW¼; thence northerly along the east line of said E½, 757.47 feet to the intersection with the southeast line of said Agreement; thence southwesterly with a deflection angle to the left of 118°23'51" along the southeast line of said Agreement, 102.29 feet; thence southwesterly with a deflection angle to the right of 01°34'26" along the southeast line of said Agreement, 103.84 feet; thence southwesterly with a deflection angle to the left of 00°55'55" along the southeast line of said Agreement, 158.90 feet; thence southwesterly with a deflection angle to the left of 02°41'18" along the southeast line of said Agreement, 52.94 feet; thence southwesterly with a deflection angle to the right of 02°59'50" along the southeast line of said Agreement, 53.50 feet; thence southwesterly with a deflection angle to the left of 02°25'29" along the southeast line of said Agreement, 86.56 feet; thence southwesterly with a deflection angle to the right of 02°22'24" along the southeast line of said Agreement, 157.26 feet; thence southwesterly with a deflection angle to the left of 01°37'50" along the southeast line of said Agreement, 58.97 feet; thence southwesterly with a deflection angle to the right of 01°53'14" along the southeast line of said Agreement, 101.55 feet; thence southwesterly with a deflection angle to the left of 00°58'26" along the southeast line of said Agreement, 60.88 feet; thence southerly with a deflection angle to the left of 59°18'40", 321.29 feet to a point on the south line of said E1/2, said point being 486.05 feet east of the SW corner of said E1/2; thence easterly along the south line of said E¼, 822.75 feet to the point of beginning, TOGETHER with that part of the SE¼ of Sec. 23, Twp. 27-S, R-2-W of the 6th P.M., Sedgwick County, Kansas described as follows: Beginning at the NE corner of Lot 1, Riverside Health System Addition, Wichita, Sedgwick County, Kansas; thence westerly along the north line of said Riverside Health System Addition, and as extended westerly, 831.69 feet; thence northerly parallel with the east line of said SE¼, 403.25 feet; thence easterly with a deflection angle to the right of 90°07'06", 135.98 feet; thence northeasterly with a deflection angle to the left of 19°34'09", 143.34 feet; thence northeasterly with a deflection angle to the left of 20°51'47", 203.52 feet; thence easterly with a deflection angle to the right of 40°26'03", 465.29 feet to a point on the east line of said SE¼; thence southerly along the east line of said SE¼, 584.58 feet to the intersection with the north line of said Riverside Health System Addition, as extended easterly; thence westerly along said extended north line, 60.00 feet to the point of beginning, all being subject to road rights-of-way of record.

Existing public easements and dedications being vacated by virtue of K.S.A. 12-512(b).

Baughman Company, P.A.

Michael A. Conray, Surveyor
Michael A. Conray
18-971 - 21-2003
REGISTERED LAND SURVEYOR
KANSAS

Know all men by these presents that we, the undersigned, have caused the land in the surveyors certificate to be platted into Lots, Blocks, Streets, and Reserves to be known as "SHADOW WOODS ADDITION", Wichita, Sedgwick County, Kansas. The utility easements are hereby granted as indicated for the construction and maintenance of all public utilities. The drainage and utility easements are hereby granted as indicated for drainage purposes and for the construction and maintenance of all public utilities. The drainage easements are hereby granted as indicated for drainage purposes. The pedestrian access and drainage easement is hereby granted as indicated for pedestrian access purposes to or from Reserve "E", and for drainage purposes, and no fences or other obstructions shall be constructed or placed on or within this easement. The pedestrian access, drainage, and utility easement is hereby granted as indicated for pedestrian access purposes to or from Reserve "E" for drainage purposes, and for the construction and maintenance of all public utilities, and no fences or other obstructions shall be constructed or placed on or within this easement. The streets are hereby dedicated to and for the use of the public. Reserves "A", "D", "G", "J", "K", and "L" are hereby reserved for open space, landscaping, utilities, drainage purposes, and streets. Reserve "B" is hereby reserved for open space, landscaping, lakes, drainage purposes, berms, entry monuments, and utilities as confined to easements. Reserve "C" is hereby reserved for open space, landscaping, lakes, drainage purposes, berms, and utilities as confined to easements. Reserve "E" is hereby reserved for open space, landscaping, lakes, drainage purposes, berms, sidewalks, gazebos, recreational areas, and utilities as confined to easements. Reserves "F" and "H" are hereby reserved for open space, landscaping, screening walls, entry monuments, utilities, and drainage purposes. Reserve "I" is hereby reserved for open space, landscaping, utilities, screening walls, berms, and drainage purposes. Reserves "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", and "L" shall be owned and maintained by the homeowners association for the addition. Access controls shall be as depicted on the face of the plat and are hereby granted to the City of Wichita, Kansas. The permitted opening locations shall be as determined by the City Engineer of the City of Wichita, Kansas. The Minimum Building Pad Elevations for the lowest opening to the structures shall be as indicated on the face of the plat.

Maple Group, L.L.C.
Jay W. Russell, Member

New Life Covenant Church, Inc.
Joe A. Winger, President
Robert J. Schmidt, Vice-President

State of Kansas) SS
Sedgwick County)

The foregoing instrument acknowledged before me, this 21st day of January, 2003, by Jay W. Russell, Member of Maple Group, L.L.C., on behalf of the company.

SUSAN K. MONETTE, Notary Public - State of Kansas, My Appt. Expires 11-9-03
Susan K. Monette, Notary Public
My App't. Exp. 11-9-03

State of Kansas) SS
Sedgwick County)

The foregoing instrument acknowledged before me, this 21st day of January, 2003, by Joe A. Winger, President of New Life Covenant Church, Inc., on behalf of the corporation.

SUSAN K. MONETTE, Notary Public - State of Kansas, My Appt. Expires 11-9-03
Susan K. Monette, Notary Public
My App't. Exp. 11-9-03

State of Kansas) SS
Sedgwick County)

The foregoing instrument acknowledged before me, this 21st day of January, 2003, by Robert J. Schmidt, Vice-President of New Life Covenant Church, Inc., on behalf of the corporation.

SUSAN K. MONETTE, Notary Public - State of Kansas, My Appt. Expires 11-9-03
Susan K. Monette, Notary Public
My App't. Exp. 11-9-03

⊙ = #4 REBAR W/ "BAUGHMAN" CAP (SET)
⊗ = #4 REBAR W/ "BAUGHMAN" CAP (FOUND)
⊕ = #4 REBAR W/ "1149" CAP (FOUND)
△ = STONE (FOUND)
■ = 3/4" IRON IN SHRUBLE (FOUND)

(M) = MEASURED
(P) = PLATTED
(D) = DESCRIBED
(C-P) = CALCULATED PER PLATTED INFO.
(C-D) = CALCULATED PER DESCRIBED INFO.

NOTE:
A master grading plan for drainage has been developed for this subdivision and is on file with the City of Wichita, Kansas. All drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of this drainage system shall be allowed.

NOTE:
A drainage plan has been developed for this subdivision and is on file with the City of Wichita, Kansas. Drainage intent shall remain as depicted or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of this drainage plan shall be allowed.

0 100 200

MINIMUM BUILDING PAD ELEVATIONS FOR LOWEST OPENING TO THE STRUCTURES		
LOT	BLOCK	ELEVATION CITY DATUM
1-24	D	1772
1-7	E	1805

BENCHMARK:
135th St. W. & Maple – City of Wichita Benchmark Disc on headwall at NE corner of intersection.
34.00' SW to Section Cor. Iron.
Elev. = 1502.23 City Datum
(1337.69 NGVD29)

We the undersigned holders of a mortgage on the above described property, do hereby consent to this plat of "SHADOW WOODS ADDITION", Wichita, Sedgwick County, Kansas.

Kanza Bank
Max Whittle, VP (Title)

State of Kansas) SS
Sedgwick County)

The foregoing instrument acknowledged before me, this 21st day of January, 2003, by Max Whittle, Vice-president (Title) of Kanza Bank, on behalf of the bank.

SUSAN K. MONETTE, Notary Public - State of Kansas, My Appt. Expires 11-9-03
Susan K. Monette, Notary Public
My App't. Exp. 11-9-03

We the undersigned holders of a mortgage on the above described property, do hereby consent to this plat of "SHADOW WOODS ADDITION", Wichita, Sedgwick County, Kansas.

Prairie State Bank-West Wichita
Lori J. Nanell, V.P. (Title)

State of Kansas) SS
Sedgwick County)

The foregoing instrument acknowledged before me, this 21st day of January, 2003, by Lori J. Nanell, Vice president (Title) of Prairie State Bank-West Wichita, on behalf of the bank.

SUSAN K. MONETTE, Notary Public - State of Kansas, My Appt. Expires 11-9-03
Susan K. Monette, Notary Public
My App't. Exp. 11-9-03

This plat of "SHADOW WOODS ADDITION", Wichita, Sedgwick County, Kansas has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this 21st day of September, 2003.
Wichita-Sedgwick County Metropolitan Area Planning Commission
Bernard A. Hentzen, Chair
Dale Miller, Secretary

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this 11th day of February, 2003.

At the direction of the City Council
Chris Cherches, City Manager
Patsy E. Ellis, Deputy for Pat Graves, City Clerk

Reviewed in accordance with K.S.A. 58-2005 on this 11th day of February, 2003.
LS-1246
Terrence L. Robello, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

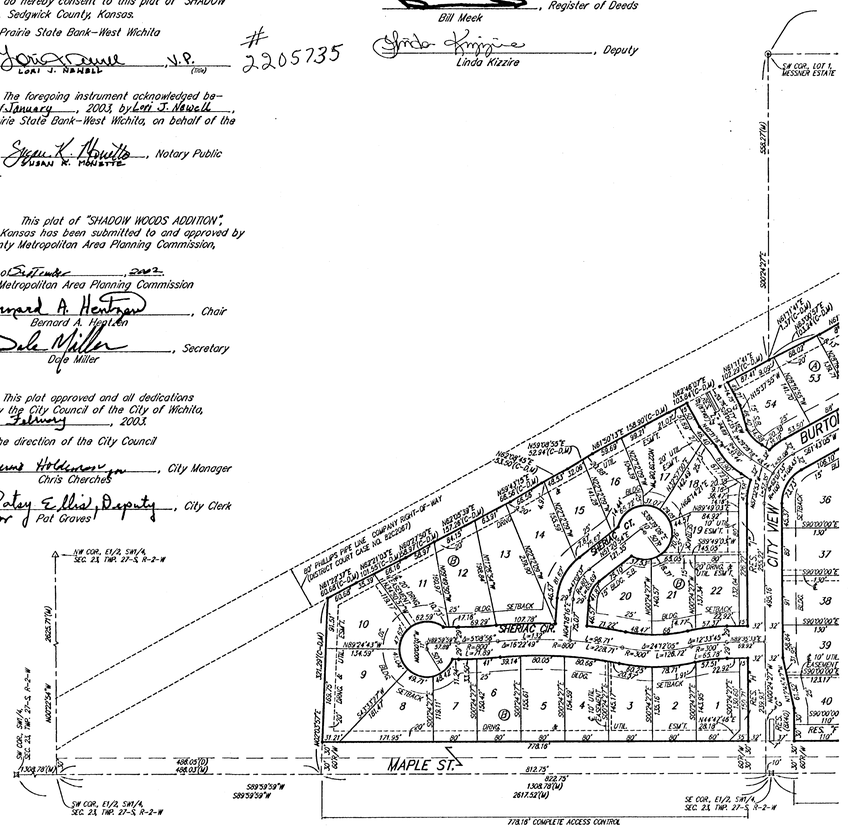
Entered on transfer record this 8th day of May, 2003.
Don Brace, County Clerk

State of Kansas) SS
Sedgwick County)

This is to certify that this plat has been filed for record in the office of the Register of Deeds, this 9th day of May, 2003 at 1:30 o'clock P.M. and is duly recorded.

Bill Meek, Register of Deeds
Linda Kizzire, Deputy

2205735



PAGE 1 OF 2

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211
P:\PLAT\SHADOW WOODS ADDITION\DWG\SHADOWDEF.DWG MSD

SHADOW WOODS ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS

Maple Group, L.L.C.,

Jay W. Russell, Member

(See Page 1 for Owners Acknowledgment)

MINIMUM BUILDING PAD ELEVATIONS FOR LOWEST OPENING TO THE STRUCTURES		
LOT	BLOCK	ELEVATION CITY DATUM
1-24	D	177.2
1-7	E	169.5

BENCHMARK:
135th St. W. & Maple –
City of Wichita Benchmark Disc
on headwall at NE corner
of intersection.
34.00' SW to Section Cor. Iron.
Elev. = 150.29 City Datum
(1331.69 NGVD29)

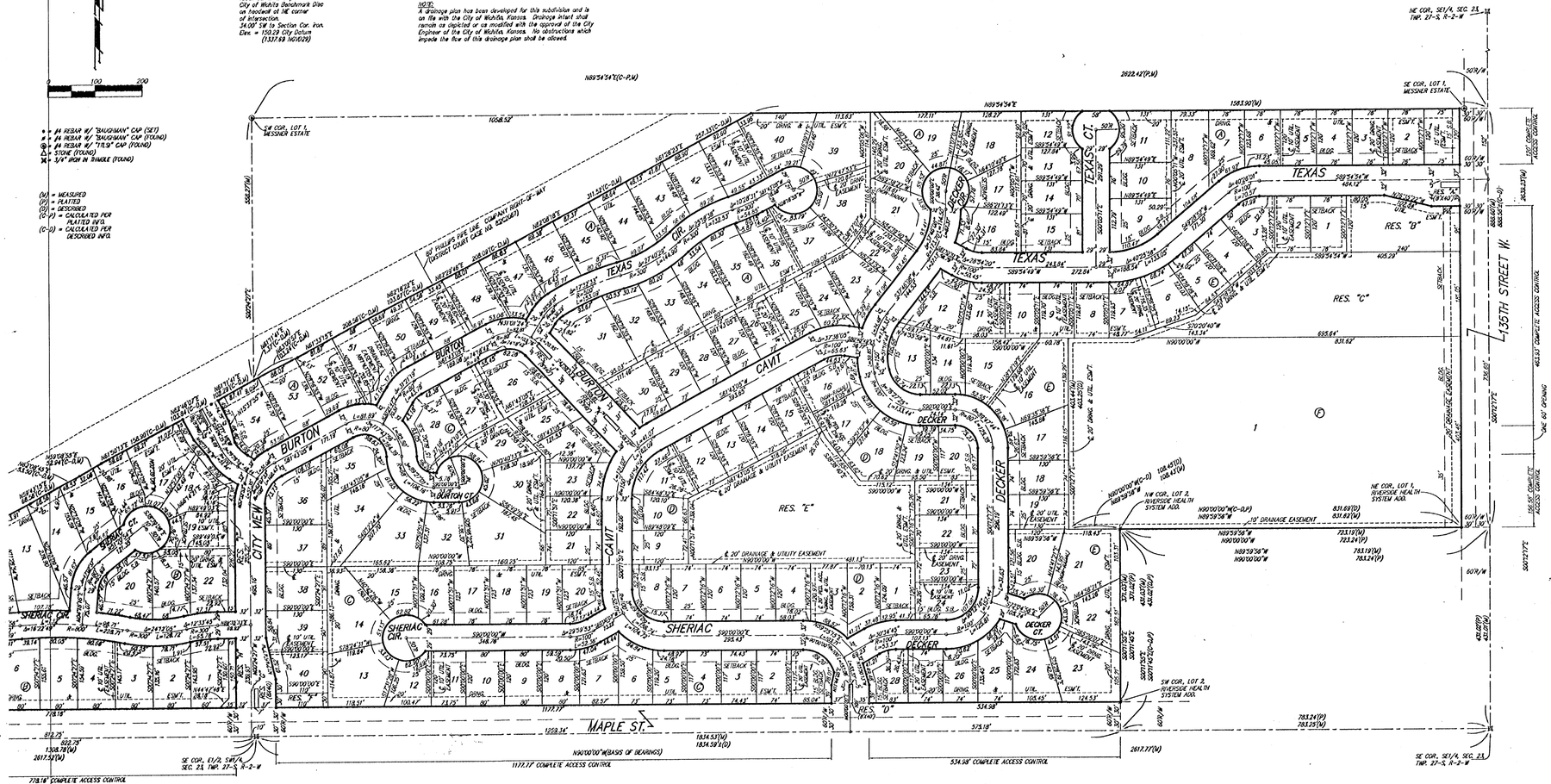
NOTE:
A master grading plan for drainage has been developed for this subdivision and is on file with the City of Wichita, Kansas. All drainage easements, rights-of-way or reserves shall remain at established grades or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of this drainage system shall be allowed.

NOTE:
A drainage plan has been developed for this subdivision and is on file with the City of Wichita, Kansas. Drainage Intent shall remain as depicted or as modified with the approval of the City Engineer of the City of Wichita, Kansas. No obstructions which impede the flow of this drainage plan shall be allowed.

0 100 200

• = #4 REBAR W/ "BAUGHMAN" CAP (SET)
▲ = #4 REBAR W/ "BAUGHMAN" CAP (FOUND)
⊕ = #4 REBAR W/ "775" CAP (FOUND)
△ = STONE (FOUND)
✕ = 3/4" IRON IN TRIANGLE (FOUND)

(M) = MEASURED
(P) = PLATTED
(D) = DESCRIBED
(C-P) = CALCULATED PER PLATTED INFO.
(C-D) = CALCULATED PER DESCRIBED INFO.



PAGE 2 OF 2

BAUGHMAN COMPANY P.A.
ENGINEERING, SURVEYING, & PLANNING
316-262-7829 • 315 ELLIS • WICHITA, KANSAS 67211
P:\PLAT\SHADOW WOODS ADDITION\IMG\SHADOWWOODS2.DWG WOC

14-02-04-20

13B/13