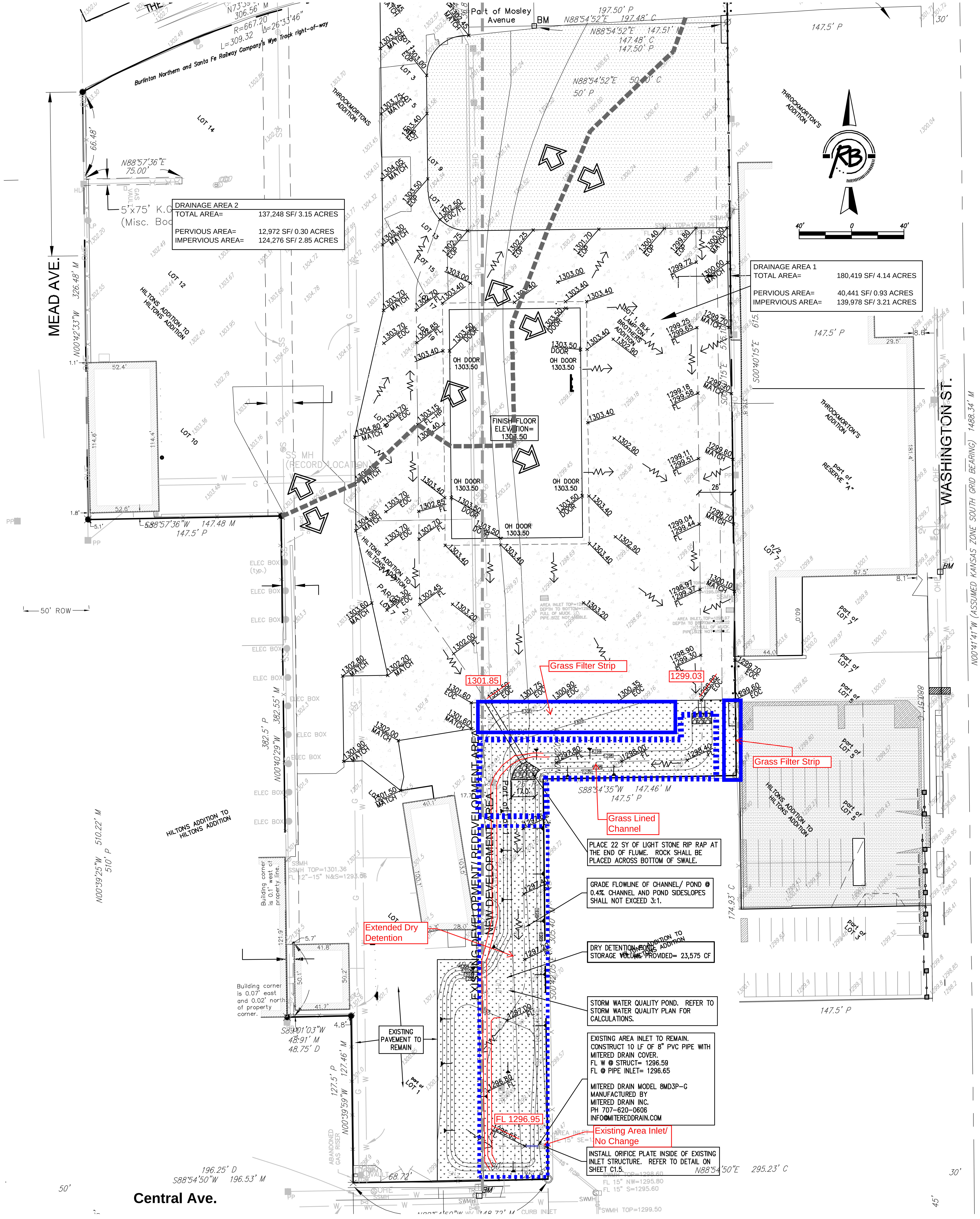
# STORMWATER PLAN to Serve
# LAMPTON BROTHERS 2ND ADDN.
# PROJECT NUMBER 71 PPD (607861)
## City of Wichita



DRAINAGE AREA 2

| | |
|---|---|
| TOTAL AREA= | 137,248 SF/ 3.15 ACRES |
| PERVIOUS AREA= | 12,972 SF/ 0.30 ACRES |
| IMPERVIOUS AREA= | 124,276 SF/ 2.85 ACRES |

DRAINAGE AREA 1

| | |
|---|---|
| TOTAL AREA= | 180,419 SF/ 4.14 ACRES |
| PERVIOUS AREA= | 40,441 SF/ 0.93 ACRES |
| IMPERVIOUS AREA= | 139,978 SF/ 3.21 ACRES |

PLACE 22 SY OF LIGHT STONE RIP RAP AT THE END OF FLUME. ROCK SHALL BE PLACED ACROSS BOTTOM OF SWALE.

GRADE FLOWLINE OF CHANNEL/ POND @ 0.4%. CHANNEL AND POND SIDESLOPES SHALL NOT EXCEED 3:1.

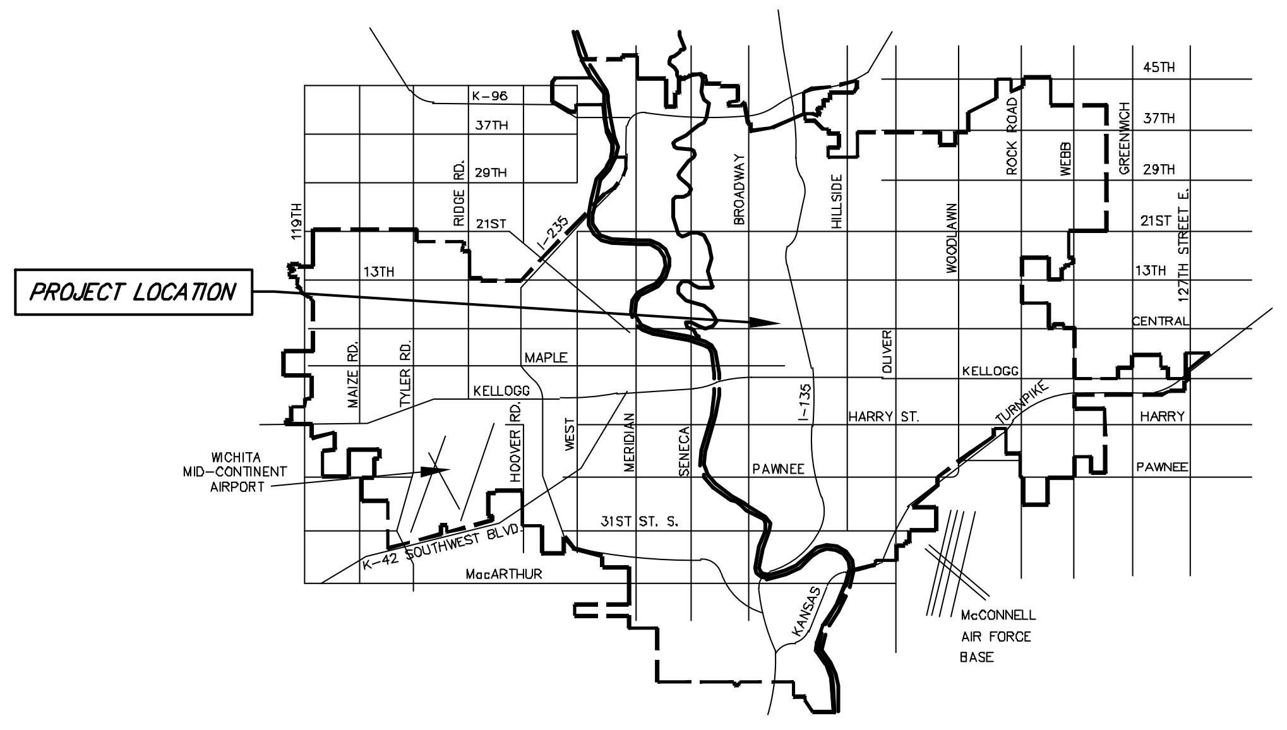
DRY DETENTION POND STORAGE VOLUME PROVIDED= 23,575 CF

STORM WATER QUALITY POND. REFER TO STORM WATER QUALITY PLAN FOR CALCULATIONS.

EXISTING AREA INLET TO REMAIN. CONSTRUCT 10 LF OF 8" PVC PIPE WITH MITERED DRAIN COVER.
FL W @ STRUCT= 1296.59
FL @ PIPE INLET= 1296.65

MITERED DRAIN MODEL 8MD3P-G
MANUFACTURED BY
MITERED DRAIN INC.
PH 707-620-0606
INFO@MITEREDDRAIN.COM

INSTALL ORIFICE PLATE INSIDE OF EXISTING INLET STRUCTURE. REFER TO DETAIL ON SHEET C1.5.



VICINITY MAP

### Legend

| | |
|---|---|
| Existing Water | —— W —— W —— W —— |
| Existing Sanitary Sewer | —— SS —— SS —— |
| Existing AT&T | —— T —— T —— |
| Existing Westar (Overhead) | —— OHE —— OHE —— |
| Existing Westar (Underground) | —— UGE —— UGE —— |
| Existing Storm Water Sewer | ═══════ |
| Ex. Kansas Gas/ Black Hills Service | —— G —— G —— |
| Concrete Paving | ▨ |
| Concrete Paving to Remain | ▨ |
| Construction Limits | – – – – – – |

## SITE CALCULATIONS

TOTAL SITE AREA: 317,667 SF/ 7.29 ACRES

PRE-CONSTRUCTION:

| | | |
|---|---|---|
| EXISTING IMPERVIOUS AREA: | 178,435 SF/ 4.10 ACRES | 56.2% OF SITE |
| EXISTING PERVIOUS AREA: | 139,232 SF/ 3.19 ACRES | 43.8% OF SITE |

AREA DISTURBED BY CONSTRUCTION: 162,587 SF/ 3.73 ACRES

POST-CONSTRUCTION:

| | | |
|---|---|---|
| PROPOSED IMPERVIOUS AREA: | 250,606 SF/ 5.75 ACRES | 78.8% OF SITE |
| PROPOSED PERVIOUS AREA: | 67,061 SF/ 1.54 ACRES | 21.2% OF SITE |

BASIS OF TREATMENT

**TREAT 30% OF EXISTING AREA FOR REDEVELOPMENT PLUS 100% OF NEW DEVELOPMENT

| | |
|---|---|
| EXISTING DEVELOPMENT | 185,588 SF/ 4.26 AC |
| EXISTING DEVELOPMENT X 30% | 55,676 SF/ 1.28 AC |
| + NEW DEVELOPMENT | 132,079 SF/ 3.03 AC |
| TOTAL TREATMENT AREA | 187,755 SF/ 4.31 AC |

## TREATMENT TRAINS & SITE TREATMENT TOTAL

AREA= 4.31 ACRES/ 187,755 SF

1. GRASS CHANNEL TSS= 50%
2. DRY DETENTION TSS= 60%

$$TSStrain= 50 + 60 - \frac{(50 \times 60)}{100} = 80\%$$

## Stage Storage Discharge

| Stage | Area (ac.) |
|---|---|
| 1296.65 | 0 |
| 1297 | 0.11 |
| 1298 | 0.30 |
| 1299 | 0.37 |

100-yr Water Surface Elevation is 1298.9

## BENCHMARKS:

BENCH MARK: CHISELED "+"CUT IN CONCRETE ON THE NORTH LINE OF LOT 1, BLOCK 1, LAMPTON BROTHERS ADDITION
ELEVATION = 1301.80 (NAVD88)

BENCH MARK: CHISELED SQUARE ON THE TOP OF CURB ON THE NORTH SIDE OF THE DRIVE ENTRANCE, 18' EAST OF THE SOUTHEAST CORNER OF BUILDING #601, 503' NORTH OF THE CENTERLINE OF CENTRAL AND 20' WEST OF THE CENTERLINE OF WASHINGTON, ELEVATION = 1299.20 (NAVD88)

BENCH MARK: CHISELED SQUARE ON TOP AND IN THE CENTER OF CURB INLET, 33' NORTH OF THE CENTERLINE OF CENTRAL AND 378' WEST OF THE CENTERLINE OF WASHINGTON, ACROSS FROM BUILDING #827 E. CENTRAL, ELEVATION = 1299.02 (NAVD88)

## LEGAL DESCRIPTION

Lot 1, Block 1 of Lampton Brothers 2nd Addition to the City of Wichita, Sedgwick County, Kansas.

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

Engineering Julianne Kallman 1-23-12

Storm Water Mgmt Jim Hardesty 1-23-12

NOTE TO CONTRACTORS

*Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said Inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such Inspection, nor shall any work be commenced without written authorization by the City Engineer.*

Water Quality Plan

BRENT D. THOMAS
1.23.2012

Water Quality Calculations

ALEX M. LANE
10300
1-23-12

As-Built Plans
Lampton Brothers 2nd Addition
Storm Water Quality Facilities

Engineer of Record:
Ruggles & Bohm, P.A.
Alex Lane, PE & Brent Thomas, RLA, ASLA

Surveyor:
Ruggles & Bohm, P.A.
924 N. Main
Wichita, KS 67203

Inspected By:
Ruggles & Bohm, P.A.
Brent Thomas, RLA, ASLA

Construction Complete:
October 1, 2012

Contractor:
Snodgrass & Sons Construction
2700 George Washington Blvd.
Wichita, KS 67206

DWG FILE: ENGINEERING BASE
PROJECT NO. 3876E
JANUARY 17, 2012

**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

# LAMPTON BROTHERS TANK FILL FACILITY

601 N. Washington
Wichita, Kansas 67214

MJC
Architecture
450 N. 159th St. E. - Wichita KS 67230
cell (316)218.3103 - (316)733.1413 tel & fx
mjcarchitect@thx2u.com

PRINTS ISSUED
10-20-11 BID SET
11-25-11 REVISION 1

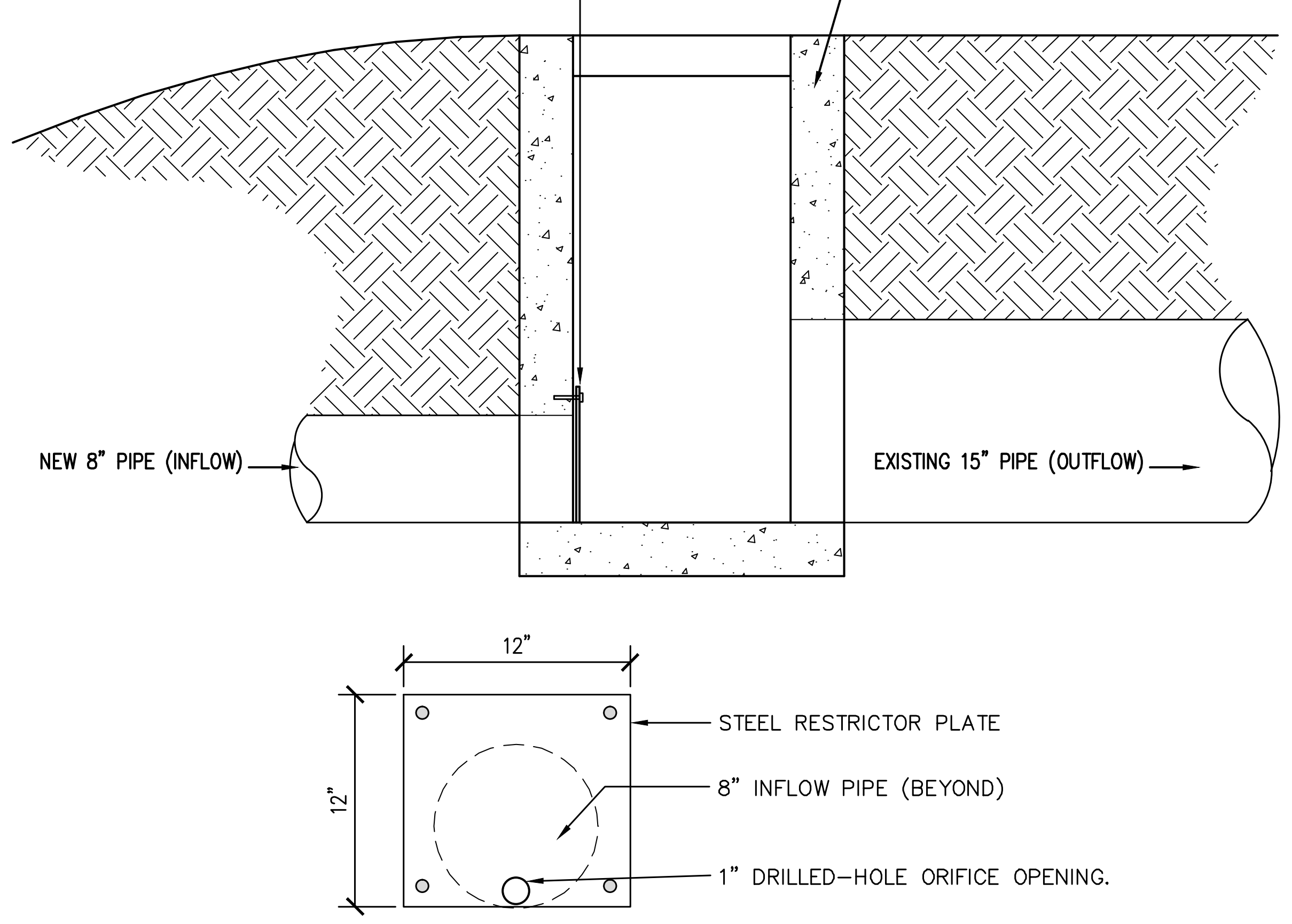
MJC No. 09004
drawn: BDT
checked: BDT

SITE WATER QUALITY PLAN

C1.4

669
10.21.2011

INSTALL 1/4" STEEL RESTRICTOR PLATE (APPROX DIMENSION 8" X 8") OVER OUTFLOW OPENING, SEE LIST AT RIGHT FOR ORAFICE OPENING SIZE. ATTACH PLATE TO BASIN USING 1/4" X 2" GALVANIZED BOLTS.



## 1 DRY DETENTION FLOW RESTRICTOR

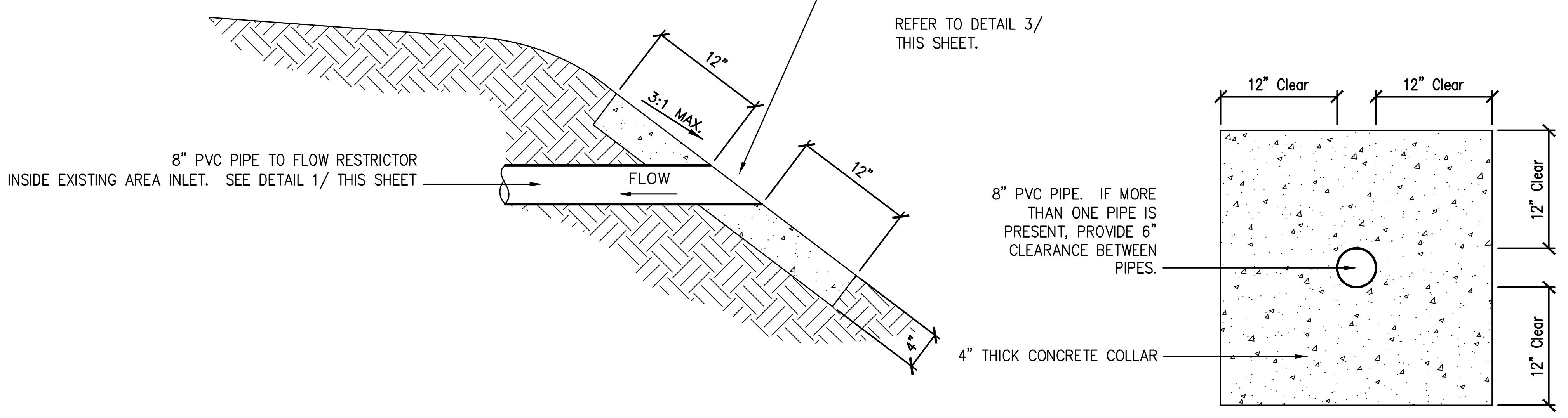
NOT TO SCALE

CUT PIPE TO BE FLUSH WITH SLOPE OF BANK AND CONCRETE COLLAR. INSTALL MITERED DRAIN SLOPED GRATE ON END OF PIPE. GRATE WILL SCREEN LARGER DEBRIS FROM ENTERING PIPE.

REFER TO DETAIL 3/ THIS SHEET.

8" PVC PIPE TO FLOW RESTRICTOR INSIDE EXISTING AREA INLET. SEE DETAIL 1/ THIS SHEET

8" PVC PIPE. IF MORE THAN ONE PIPE IS PRESENT, PROVIDE 6" CLEARANCE BETWEEN PIPES.

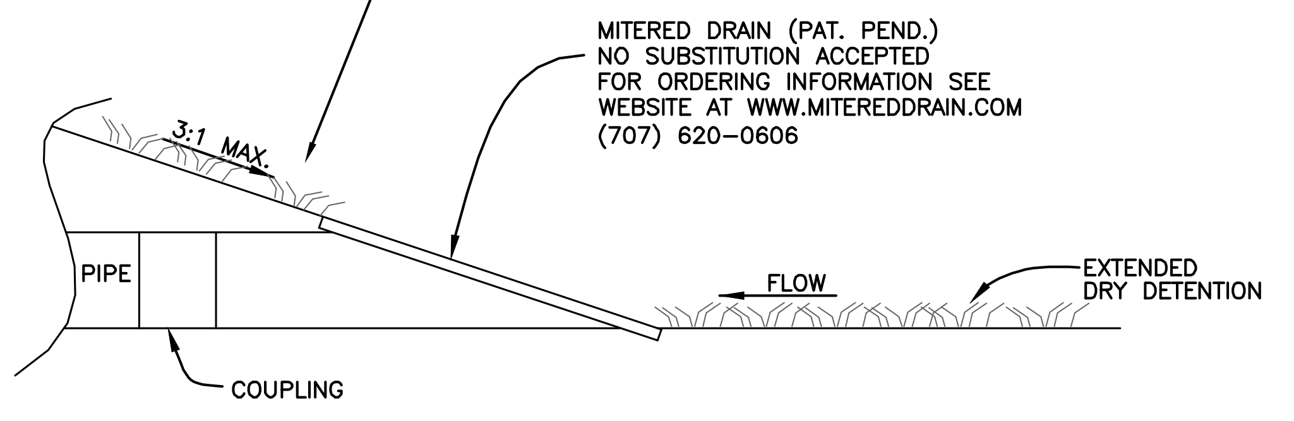


## 2 CONCRETE PIPE COLLAR

NOT TO SCALE

REFER TO DETAIL 2 FOR CONCRETE COLLAR AROUND MITERED DRAIN SLOPED GRATE.

MITERED DRAIN (PAT. PEND.)
NO SUBSTITUTION ACCEPTED
FOR ORDERING INFORMATION SEE WEBSITE AT WWW.MITEREDDRAIN.COM
(707) 620-0606



SECTION

## 3 MITERED DRAIN SLOPED GRATE

NOT TO SCALE

# LAMPTON BROTHERS
# TANK FILL FACILITY

601 N. Washington
Wichita, Kansas 67214

MJC Architecture

450 N. 159th St. E. - Wichita KS 67230
cell (316)218.3103 - (316)733.1413 tel & fx
mjcarchitect@thx2u.com

PRINTS ISSUED
10-20-11 BID SET

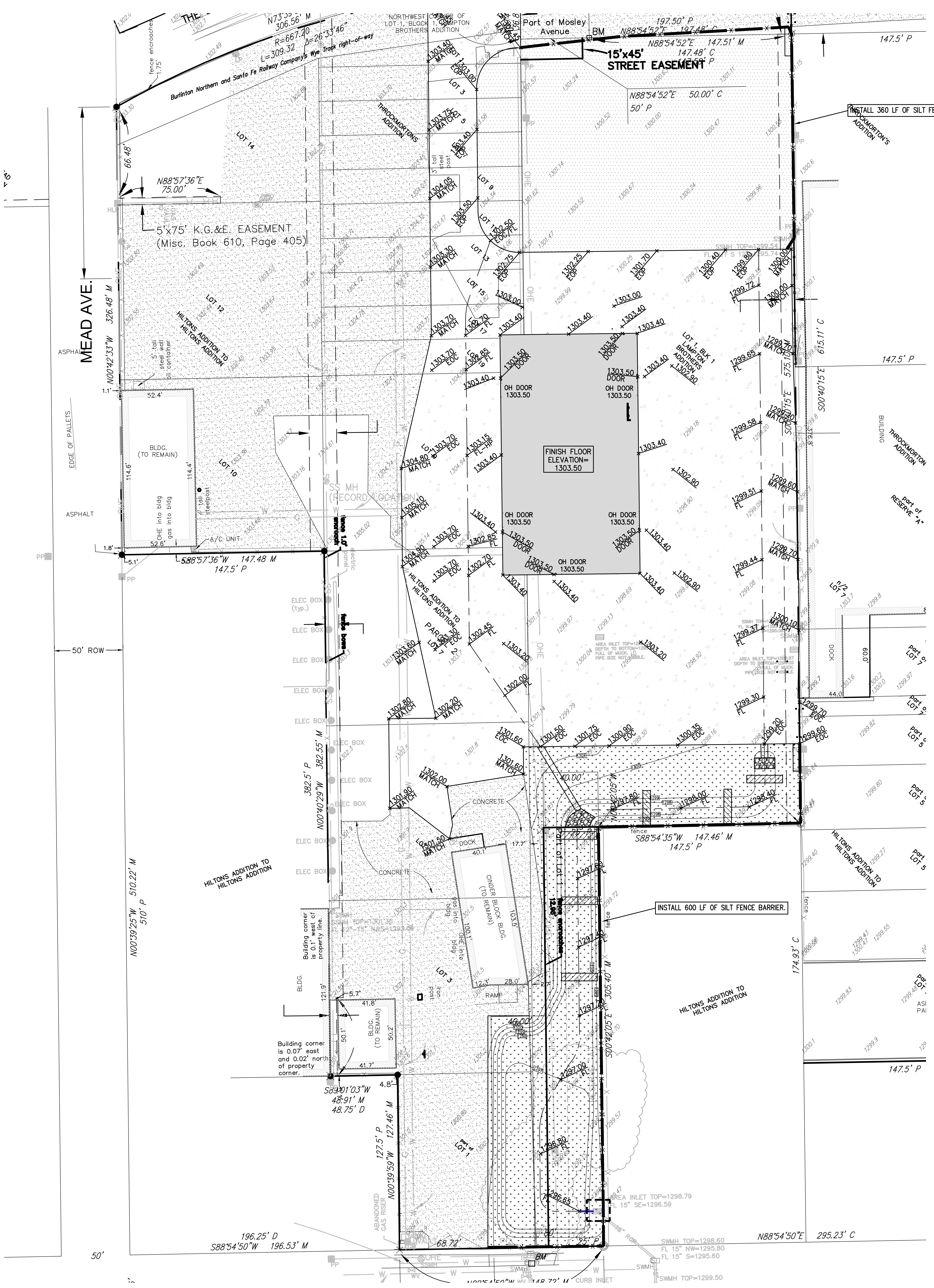
| | | |
|---|---|---|
| MJC No. | drawn: | BDT |
| 09004 | checked: | BDT |

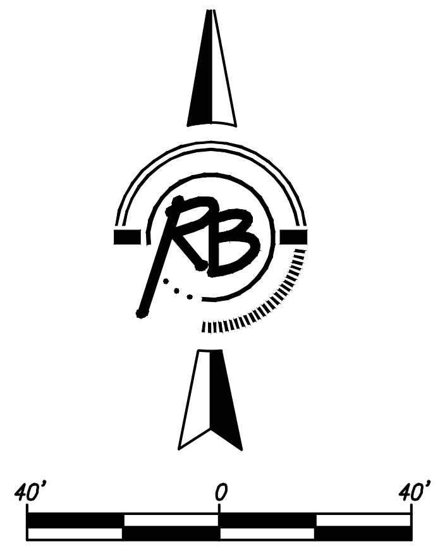
WATER QUALITY DETAILS

DWG FILE: ENGINEERING BASE
PROJECT NO. 3876E
OCTOBER 17, 2011

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

C1.5





## SOD NOTES

1. AREA DISTURBED DURING CONSTRUCTION, SHALL BE SODDED WITHIN 7 DAYS OF FINAL GRADING.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE LANDSCAPE SPECIFICATIONS.
3. LANDSCAPE CONTRACTOR SHALL MAINTAIN AND WATER LANDSCAPE THROUGHOUT A 45-DAY ESTABLISHMENT PERIOD, INCLUDING BUT NOT LIMITED TO MOWING, WEEDING, AND TEMPORARY WATERING.
   a. ALL AREAS DISTURBED BY CONSTRUCTION ARE TO BE SODDED AND FERTILIZED AS FOLLOWS:
   b. <u>SOD–</u>
      b.a. BERMUDA SOD
   c. <u>FERTILIZER–</u>
   i. IF PLANTED IN SPRING, FERTILIZE WITH FERTI–LOME SOUTH–WEST GREEN MAKER (18–4–6), OR OTHER STARTER FERTILIZER.
   ii. IF PLANTED IN LATE SUMMER TO FALL, FERTILIZE WITH FERTI–LOME WINTERIZER, OR OTHER APPROVED WINTERIZER FERTILIZER.
      ii.a. 4#/ 1000 SF OR APPROVED EQUAL.
2. SOD ROLLS SHALL BE USED WHENEVER POSSIBLE.
3. ANY ADDITIONAL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES OUTSIDE OF THE DEFINED LIMITS ON THE PLAN SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS PRIOR TO CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, THE USE OF ADDITIONAL SOD.
4. STRIPS OF SOD SHALL BE HAND PLACED TIGHTLY AGAINST PREVIOUSLY PLACED SOD STRIPS SUCH THAT THE ENTIRE AREA DESIGNATED TO BE SODDED WILL BE COMPLETELY COVERED. SOD SHALL BE PLACED TO MATCH ELEVATIONS OF EXISTING GRASS SOD, CURBS, DRIVEWAYS AND SIDEWALKS. WHERE SQAURES OF SOD ARE USED, JOINTS IN SUCCESSIVE ROWS OF SOD SHALL BE STAGGERED IN A RUNNING BOND PATTER SUCH THAT THE ENDS OF THE STRIPS BEING PLACED WILL LINE UP WITH THE CENTERLINE OF STRIPS PLACED IN ADJACENT ROWS. ENDS AND EDGES OF SOD SHALL BE TOP DRESSED WITH SOIL TO PREVENT DRYING AS NEEDED.

## SEED NOTES

1. FESCUE SEED SHALL BE LOCALLY AVAILABLE MIX OF THE PREVIOUS YEAR'S TOP 5 VARIETIES. SEED AT 8 LBS/ 1000 SF FOR NEW LAWN AREAS AND DISTURBED AREAS. APPLY PURE NITROGEN FERTILIZER AT A RATE OF 2 LBS/ 1000 SF.
2. FESCUE SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED. LANDSCAPE CONTRACTOR SHALL PROVIDE LANDSCAPE ARCHITECT WITH DEALER'S GUARANTEED STATEMENT OF COMPOSITION OF MIXTURE AND PERCENTAGE OF PURITY AND GERMINATION OF SEED USED.
3. LANDSCAPE CONTRACTOR TO DRILL FESCUE SEED WITH A DRILL SPECIFICALLY SUITED FOR SEEDING GRASSES. PLANT SEED NO DEEPER THAN ½" BELOW SURFACE.
4. PROTECT SEEDED AREAS FROM EROSION BY SPREADING WEED–FREE STRAW MULCH TO FORM A CONTINUOUS BLANKET 1–1/2" LOOSE DEPTH AND CRIMP IN TO SOIL BY SUITABLE METHODS.
5. PROTECT SWALES AND AREAS OF CONCENTRATED STORM WATER RUNOFF FLOWS WITH BERMUDAGRASS SOD, AS INDICATED ON THIS PLAN.
6. SEED FESCUE DURING THE SEED DATES LISTED BELOW. IF SEEDING CANNOT OCCUR DURING THESE DATES, THEN TEMPORARY SEEDING OF ANNUAL RYE SHALL BE PLACED IN THOSE AREAS AT A RATE OF 2 LBS/ 1000 SF UNTIL THE FOLLOWING SEASON. IF SEEDING OCCURS DURING SUMMER MONTHS AFTER MAY 15TH AND PRIOR TO SEPTEMBER 15TH, ADDITIONAL WATERING MAY BE NECESSARY FOR ESTABLISHMENT. PERMANENT SEEDING SHALL BE PAID AS SQUARE YARDS "PERMANENT SEEDING". TEMPORARY SEEDING SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF PROJECT SEEDING. COSTS OF DELAYED PERMANENT SEEDING SHALL BE CONSIDERED SUBSIDIARY TO THE PROJECT SEEDING.

| | |
|---|---|
| OPTIMUM SEED DATES: | APRIL 1– APRIL 20 |
| ACCEPTABLE SEED DATES: | SEPTEMBER 1– OCTOBER 15 |

7. SEEDING PROCESS: BEGINNING AS EARLY IN MARCH AS POSSIBLE, TILL ENTIRE AREA TO BE SEEDED TO DESTROY EXISTING VEGETATION AND LEAVE A FIRM, FRIABLE SEEDBED. TILL AREA TO BE SEEDED IN THREE SUCCESSIVE SHALLOW TILLINGS, APPROXIMATELY TWO WEEKS APART TO REMOVE ALL DEAD PLANT MATERIAL AND NEW GROWTH WEEDS. DO NOT TILL DURING WET WEATHER WHEN RUTTING MAY BE A PROBLEM.

DWG FILE: ENGINEERING BASE
PROJECT NO. 3876E
OCTOBER 17, 2011

| | |
|---|---|
| Existing Water | W |
| Existing Sanitary Sewer | SS |
| Existing AT&T | T |
| Existing Westar (Overhead) | OHE |
| Existing Westar (Underground) | UGE |
| Existing Storm Water Sewer | ═ |
| Ex. Kansas Gas/ Black Hills Service | G |
| Concrete Paving | ▨ |
| Concrete Paving to Remain | ▨ |
| Construction Limits | ━ ━ ━ |

## BENCHMARKS:

BENCH MARK: CHISELED "+"CUT IN CONCRETE ON THE NORTH LINE OF LOT 1, BLOCK 1, LAMPTON BROTHERS ADDITION
ELEVATION = 1301.80 (NAVD88)

BENCH MARK: CHISELED SQUARE ON THE TOP OF CURB ON THE NORTH SIDE OF THE DRIVE ENTRANCE, 18' EAST OF THE SOUTHEAST CORNER OF BUILDING #601, 503' NORTH OF THE CENTERLINE OF CENTRAL AND 20' WEST OF THE CENTERLINE OF WASHINGTON, ELEVATION = 1299.20 (NAVD88)

BENCH MARK: CHISELED SQUARE ON TOP AND IN THE CENTER OF CURB INLET, 33' NORTH OF THE CENTERLINE OF CENTRAL AND 378' WEST OF THE CENTERLINE OF WASHINGTON, ACROSS FROM BUILDING #827 E. CENTRAL, ELEVATION = 1299.02 (NAVD88)

## LEGAL DESCRIPTION

Lot 1, Block 1 of Lampton Brothers 2nd Addition to the City of Wichita, Sedgwick County, Kansas.

## SITE CALCULATIONS

| | | |
|---|---|---|
| <u>SITE AREA:</u> | <u>317,667 SF/ 7.29 ACRES</u> | |
| EXISTING IMPERVIOUS AREA: | 178,435 SF/ 4.10 ACRES | 56.2% OF SITE |
| EXISTING PERVIOUS AREA: | 139,232 SF/ 3.19 ACRES | 43.8% OF SITE |
| PROPOSED IMPERVIOUS AREA: | 250,606 SF/ 5.75 ACRES | 78.8% OF SITE |
| PROPOSED PERVIOUS AREA: | 67,061 SF/ 1.54 ACRES | 21.2% OF SITE |

PARKING PROVIDED: 8 SPACES
Including 1 Universal Accessible Spaces Required

## EROSION CONTROL LEGEND

| | |
|---|---|
| ⤳ | DIRECTION OF FLOW |
| ▨ | CONSTRUCTION ENTRANCE<br>Contractor should use existing paving and drive approaches for entrances as much as practicable. Should it become necessary to use another location for entry, contractor shall construct a stabilized construction entrance. |
| ━ x ━ | LINEAR SILT BARRIER<br>Silt fence is to be kept in place until permanent stabilization (sodding and/ or paved surfaces) is in place. |
| ▨ | HAY BALE BARRIER<br>Barriers are to be kept in place until permanent stabilization (sodding and/ or paved surfaces) is in place. |
| ⬚ | AREA/ DROP INLET PROTECTION |
| ▨ | BERMUDAGRASS SOD<br>Refer to Sod Notes on this sheet. |
| ▨ | FESCUE/ RYEGRASS MIX<br>Refer to Seed Notes on this sheet. |

## NOTES

1. THIS PROJECT WILL DISTURB MORE THAN ONE (1) ACRE, SO A NOTICE OF INTENT (NOI) AND STORM WATER POLLUTION PLAN ARE REQUIRED. A COPY OF THE APPROVED NOI AND STORM WATER QUALITY PERMIT AND SUPPORTING DOCUMENTS SHALL BE KEPT ON–SITE AT ALL TIMES. ADDITIONAL COPIES MAY BE OBTAINED FROM RUGGLES & BOHM, IF NECESSARY.
2. NOTICE OF INTENT (NOI) IS ON FILE WITH THE CITY OF WICHITA AND KDHE.
3. CONTRACTOR SHALL FOLLOW GUIDELINES SET FORTH IN <u>STORM WATER POLLUTION PREVENTION PLAN</u> (SWPPP) IN REGARDS TO SITE MAINTENANCE OF EROSION CONTROL MEASURES. CONTRACTOR SHALL INSPECT AND MAINTAIN ALL EROSION CONTROL MEASURES WITHIN 24 HOURS OF RAINFALL. USE REPORTING FORMS FOUND IN THE SWPPP; MAINTAIN RECORDS OF THOSE INSPECTIONS AND CORRECTIVE ACTIONS TAKEN.
4. CONTRACTOR SHALL PRACTICE GOOD HOUSEKEEPING AND KEEP PAVEMENT AND GUTTERS FREE OF SEDIMENT, MUD, OR OTHER MATERIALS TRACKED OFF–SITE BY EQUIPMENT.

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

BRENT D. THOMAS
869
Brent D.
12.13.2011

# LAMPTON BROTHERS
# TANK FILL FACILITY

601 N. Washington
Wichita, Kansas 67214

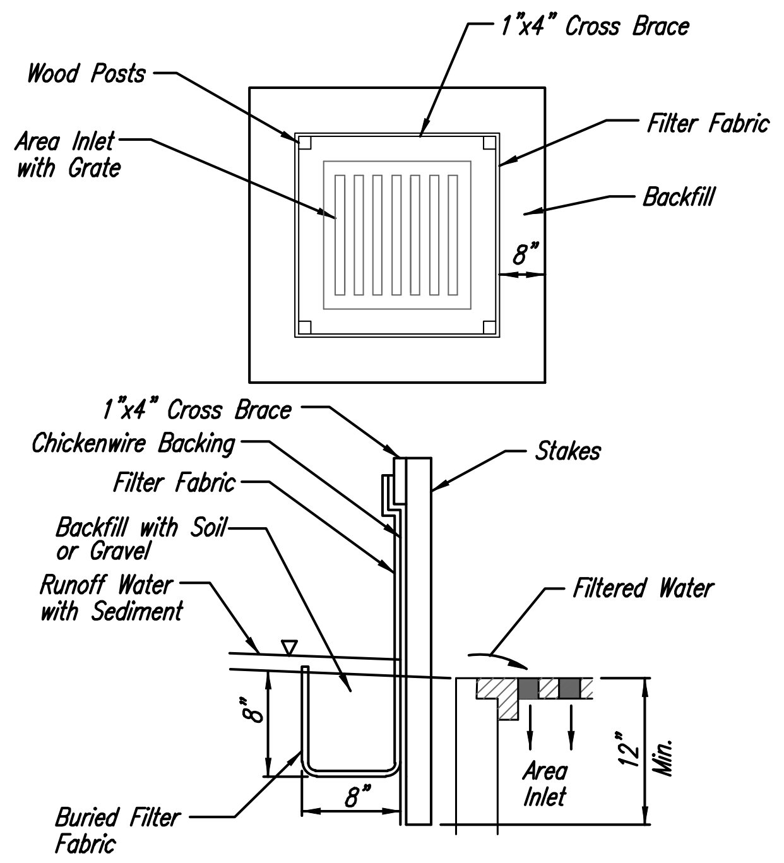
Architecture
450 N. 159th St. E. - Wichita KS 67230
cell (316)218.3103 - (316)733.1413 tel & fx
mjcarchitect@thx2u.com

PRINTS ISSUED
10-20-11 BID SET
11-25-11 REVISION 1

| | | |
|---|---|---|
| MJC No.<br>09004 | drawn: | BDT |
| | checked: | BDT |

EROSION CONTROL PLAN

C1.6



## 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 2" 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 6" deep by 4" wide.
Drive posts to a depth of at least 24" 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 2" 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:

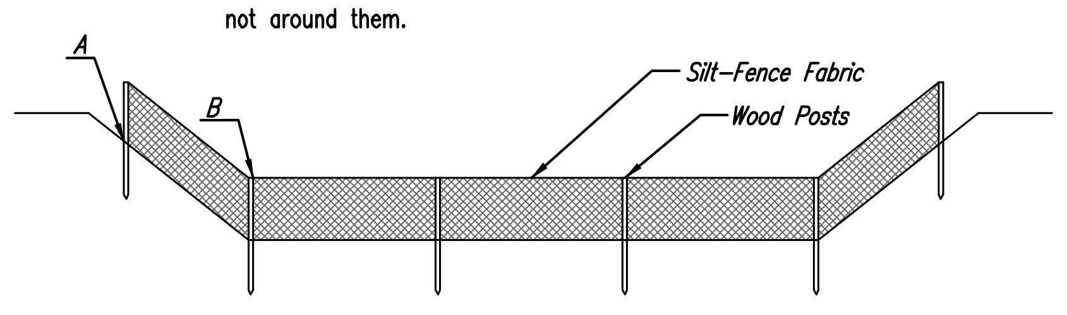
Water should flow through a silt fence barrier for area inlet–not over it. Place a silt fence barrier for area inlet in a location where it is unlikely to be overtopped. Silt fence barrier for area inlets often fail when repeatedly overtopped.
Do not place posts on the outside of the silt fence barrier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

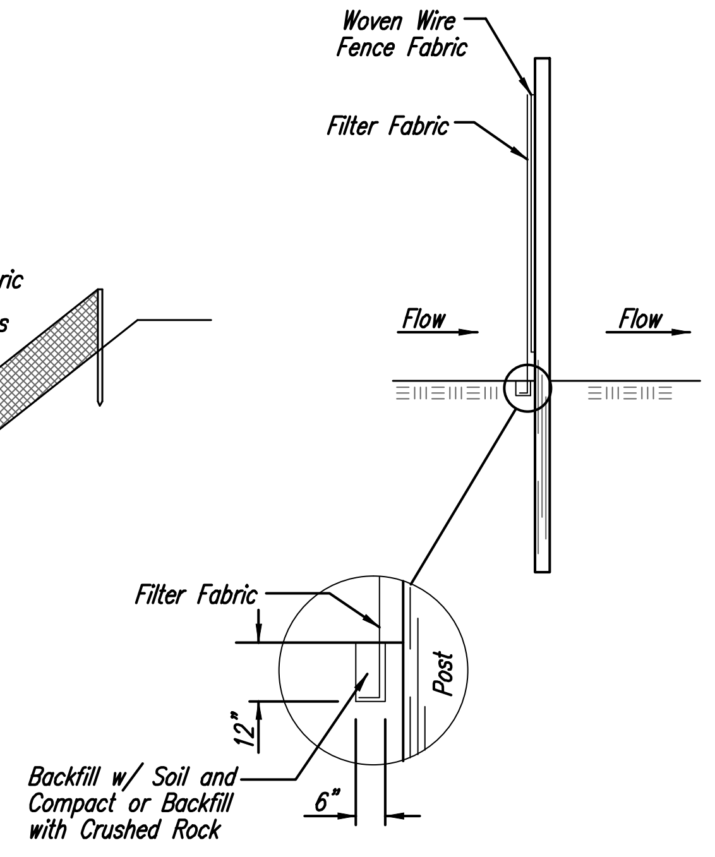
NOTE: Point A must be higher than Point B so that water flows over the bales and not around them.



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) |
|---|---|
| 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 6" deep by 4" 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 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 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.

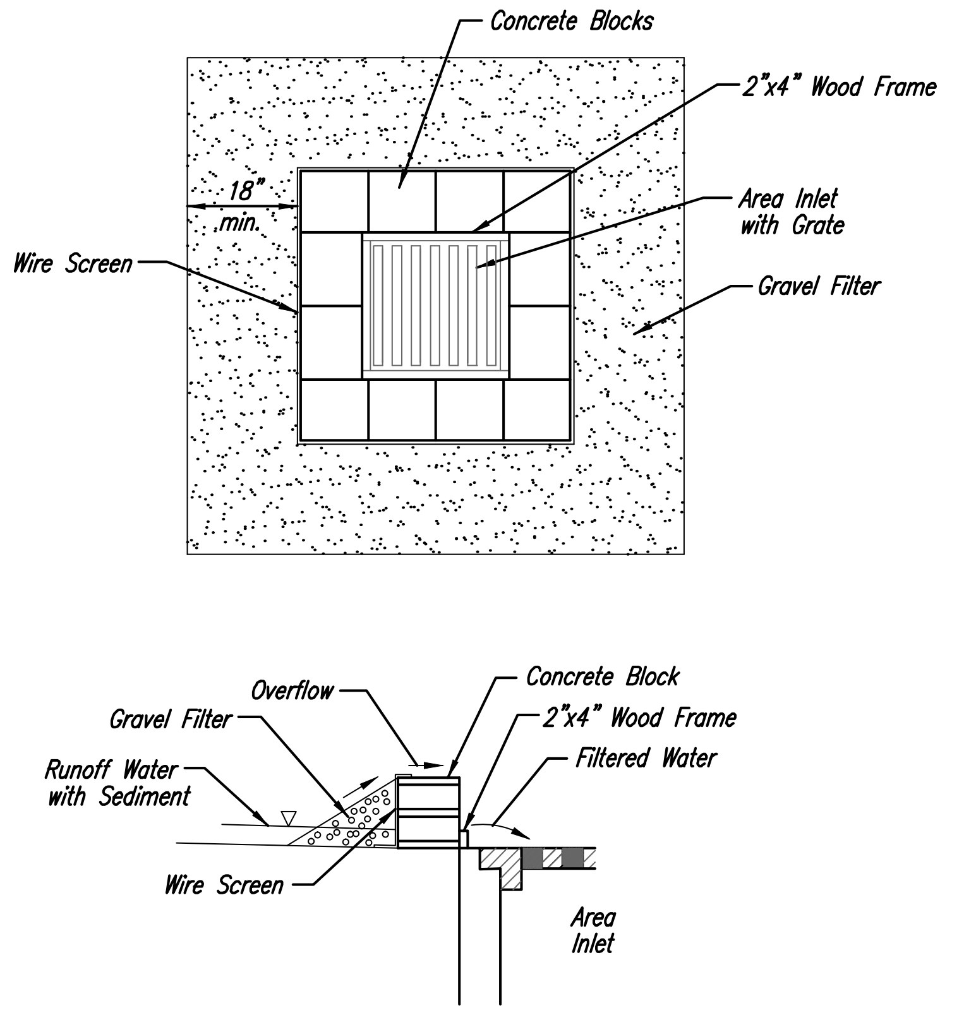
List of common placement/installation mistakes to avoid:

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.
STORM WATER ENGINEER

| PROJECT NUMBER | OCA NO. |
|---|---|
| | |

DATE

SHEET OF

DSNR: DEP OPER: DEP SCALE: 1=1.00
Q:\STANDARD\Standards Wichita\SEBMP_PEC_DTLS 03–28–2001 09:56:07 am

DWG FILE: ENGINEERING BASE
PROJECT NO. 3876E
OCTOBER 17, 2011

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

669
10.21.2011

# LAMPTON BROTHERS
# TANK FILL FACILITY

601 N. Washington
Wichita, Kansas 67214

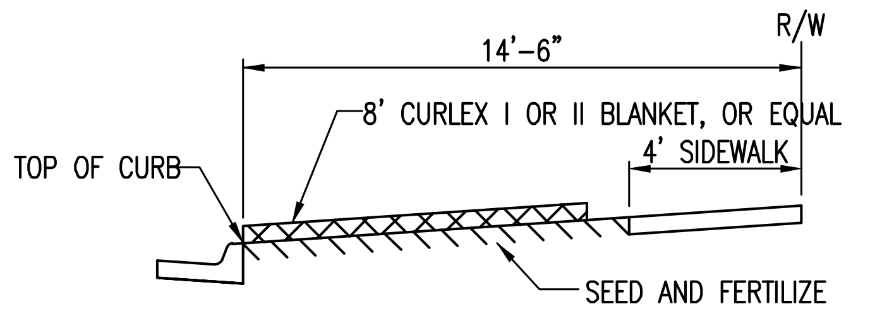
MJC Architecture
450 N. 159th St. E. - Wichita KS 67230
cell (316)218.3103 - (316)733.1413 tel & fx
mjcarchitect@thx2u.com

PRINTS ISSUED
10-20-11 BID SET

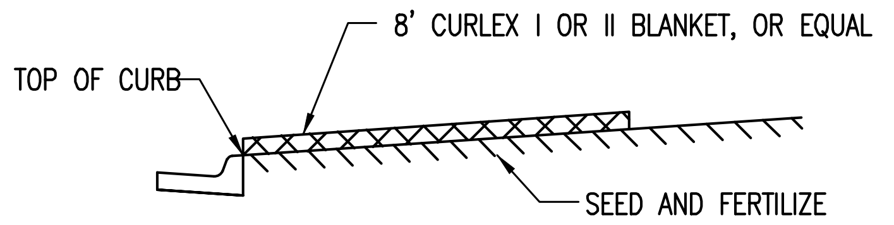
MJC No. 09004
drawn: BDT
checked: BDT

EROSION CONTROL DETAILS

C1.7

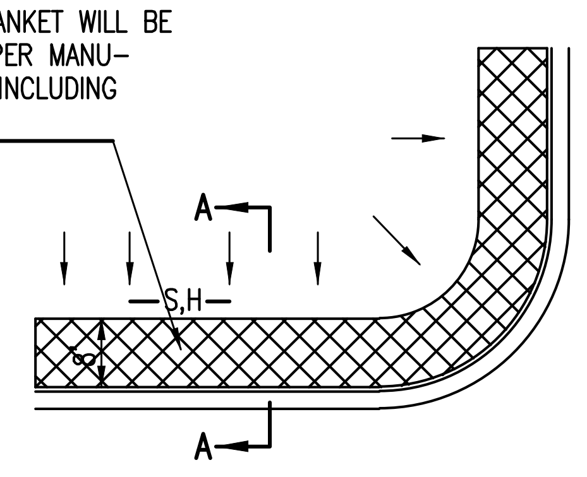


SECTION B-B

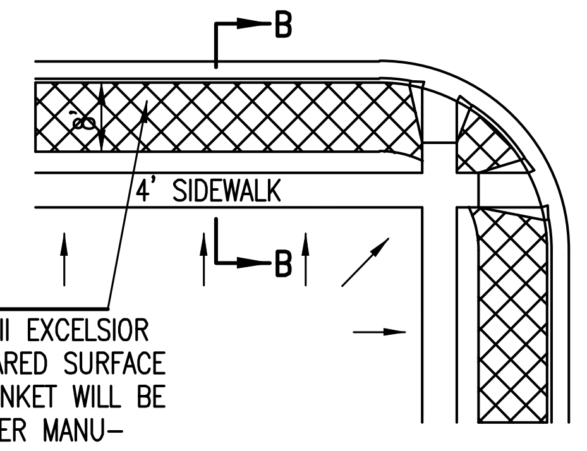


SECTION A-A

INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)



SOUTH STREET

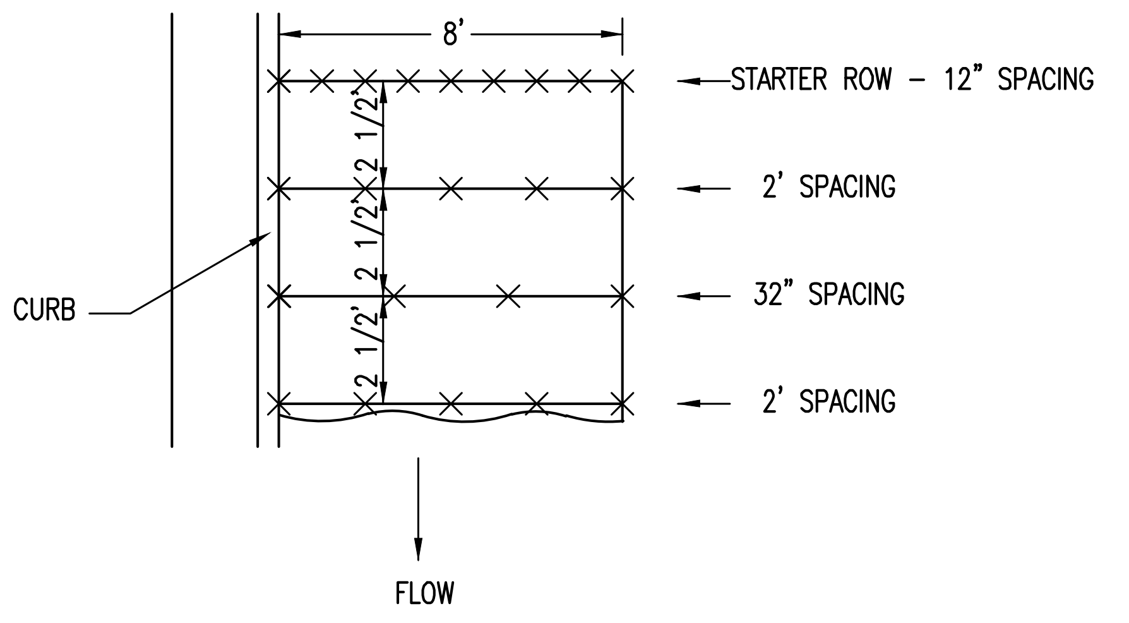


INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)

**GENERAL NOTES**

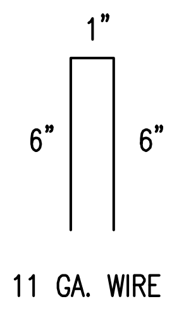
1. EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
2. EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
3. AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

## BACK OF CURB PROTECTION DETAIL



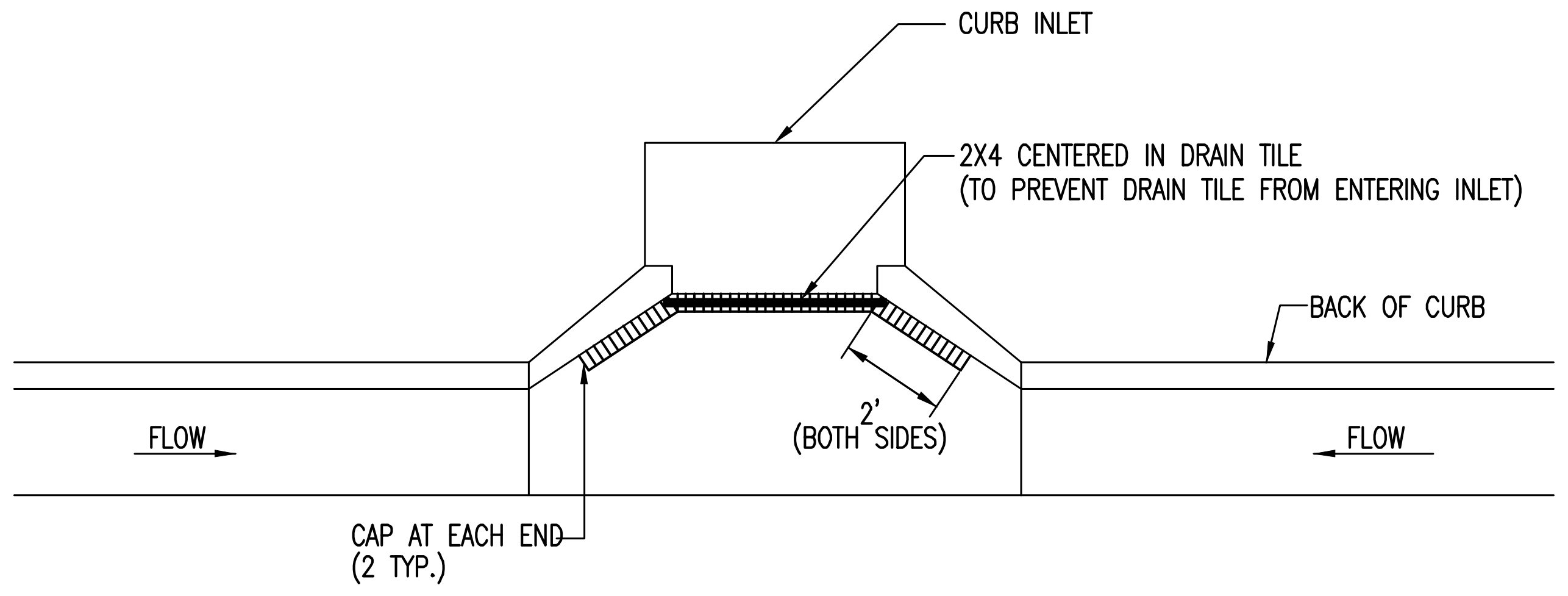
STAPLE PATTERN

NOTES: USE 6" SEAM OVERLAP



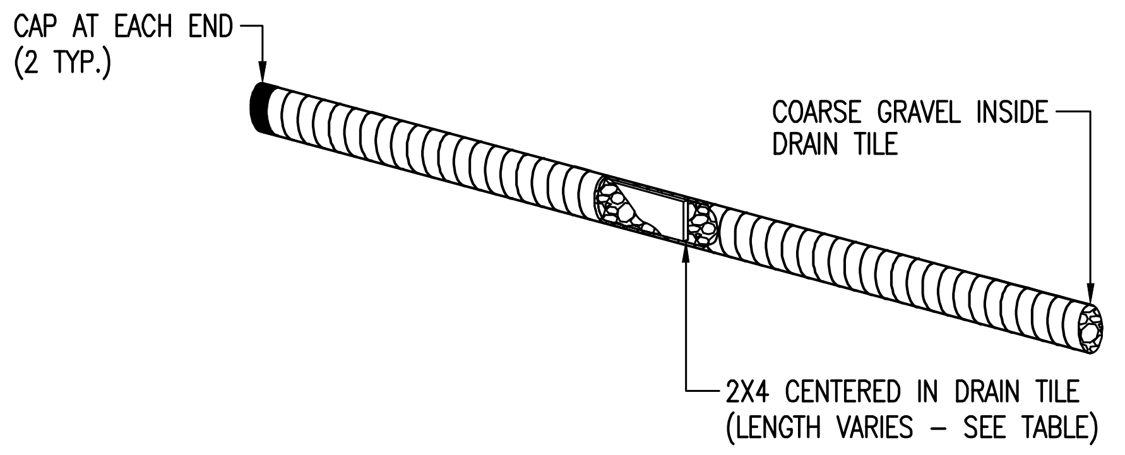
STAPLE

## DETAILS FOR CURLEX I OR II BLANKETS



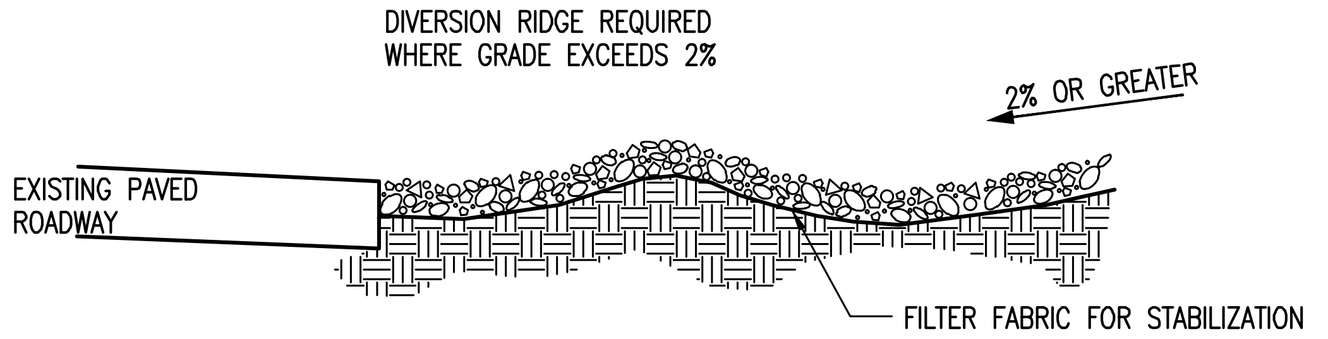
NOTE:
PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

| 2X4 LENGTH | INLET TYPE | INLET OPENING |
|---|---|---|
| 5'-6" | 1-A | 5'-0" |
| 10'-6" | 1-A | 10'-0" |
| 15'-6" | 1-A | 15'-0" |

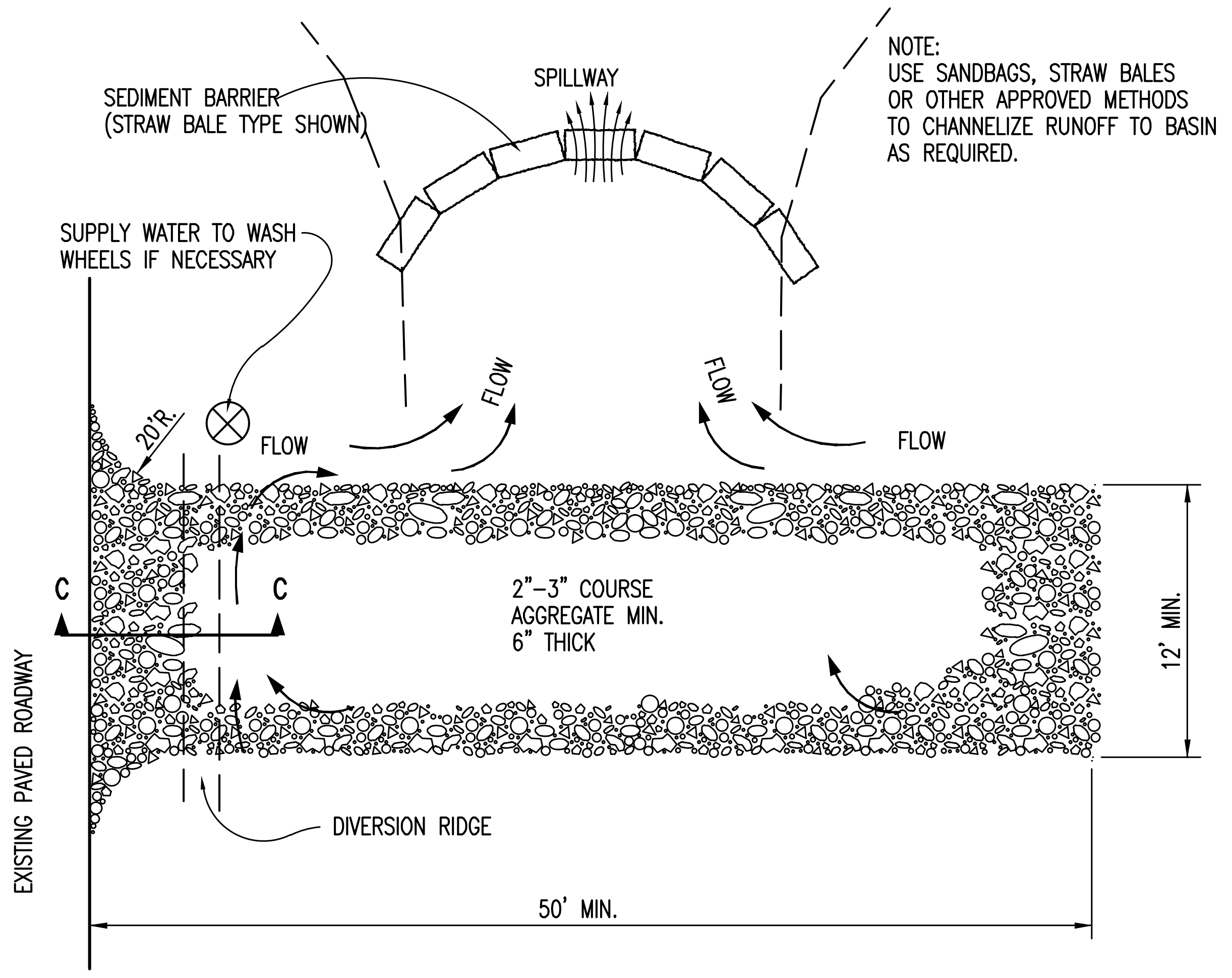


## CURB INLET PROTECTION

**4" PERFORATED PIPE W/ GRAVEL**



SECTION C-C



NOTE:
USE SANDBAGS, STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

## STABILIZED CONSTRUCTION ENTRANCE

**GENERAL 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.

C I T Y ▪ O F
WICHITA
*PUBLIC WORKS & UTILITIES*
*ENGINEERING DIVISION*

*BACK OF CURB PROTECTION,*
*CURB INLET PROTECTION AND*
*CONSTRUCTION ENTRANCE*

**CITY ENGINEER**
*JAMES L. ARMOUR, P.E., L.S.*

| **PROJECT NUMBER** | **OCA NUMBER** | **DATE** |
|---|---|---|
| | | *11/2010* |

*CITY ENGINEER'S OFFICE*
*CITY HALL - SEVENTH FLOOR*
*455 NORTH MAIN STREET*
*WICHITA, KANSAS 67202-1620*
*(316) 268-4501*

| **DESIGN** | **DRAWN** |
|---|---|
| | |

**SHEET**
*of*

*SW-501*

DWG FILE: ENGINEERING BASE
PROJECT NO. 3876E
OCTOBER 17, 2011

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

669
10.21.2011

# LAMPTON BROTHERS
# TANK FILL FACILITY

601 N. Washington
Wichita, Kansas 67214

MJC
Architecture

450 N. 159th St. E. - Wichita KS 67230
cell (316)218.3103 - (316)733.1413 tel & fx
mjcarchitect@thx2u.com

PRINTS ISSUED
10-20-11 BID SET

MJC No. 09004
drawn: BDT
checked: BDT

EROSION CONTROL DETAILS

# C1.8