STORM WATER DRAIN #229
FAWN GROVE AT SUNSET LAKES ADDITION
PROJECT NO. 468-83798
OCA # 751367

GENERAL NOTES

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

Kansas One-Call	687-2470

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

Cox Communications	262-0661
Kansas Gas Service	383-8600
Inesiar	383-8600
Aquila Net	1-800-303-0357
SBC	1-800-286-8313
City of Wichita Water Department	262-8000
City of Wichita Sewer Maintenance	262-6000

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

Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the Contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved.

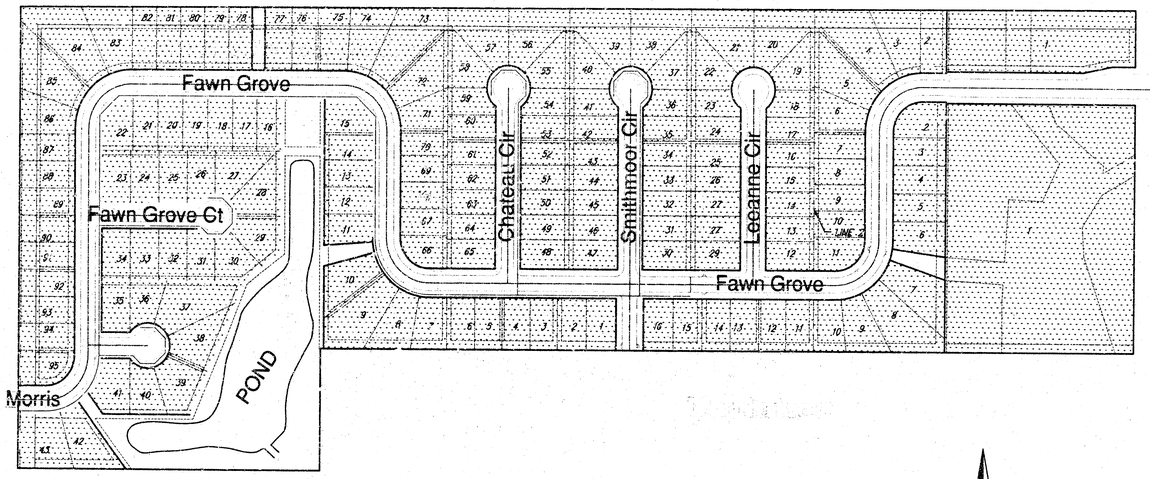
All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps permitting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

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

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

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

The Contractor shall seed, fertilize and mulch all disturbed areas per City specifications upon completion of construction.



IMPROVEMENT DISTRICT

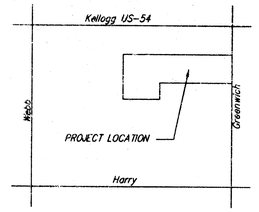
Scale: 1" = 150'

BENCH MARK

BENCH MARK: COW BENCHMARK AT GREENWICH AND LINCOLN, NORTHWEST CORNER OF DOUBLE 4'X6' RCBC, ON HUBGUARD. IN FRONT OF 930 S. GREENWICH. ELEV.=1334.02 (NGVD)

INDEX OF SHEETS

1.	TITLE SHEET
2-3.	SITE GRADING - CONTOURS
4-5.	SITE GRADING - GRADE TICKS
6.	BERM DETAILS
7.	POND PLAN
8.	RCBC PLAN-PROFILE
9-10.	RCBC DETAILS
11-12.	HANDRAIL DETAILS
13-15.	SOIL EROSION BMP DETAILS
16.	FINAL PLAT



VICINITY MAP

CHRISTOPHER ALONZO BOHM LICENSED 11631 KANSAS PROFESSIONAL ENGINEER

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

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

PROPERTY CORNER IRON
STATION 10+23.19 FLUME A =
STATION 0+00 FLUME B

STA 0+37.0 TO STA 6+65.8
CONSTRUCT BERMS
SEE DETAIL SHEET 6

STA 5+51.39 FLUME B
CONSTRUCT 50 LF
CONCRETE FLUME SOUTH

508.85 LF CONCRETE FLUME @ -0.39%

722.59 LF CONCRETE FLUME @ 0.39%

NORTH LINE FAWN GROVE @ SUNSET LAKES

0+42.54 FLUME B

5+51.39 FLUME B

12+73.98 FLUME B

9+78.63 FLUME A

8+27.24 FLUME A

4+41.38 FLUME A

2+03.63 FLUME A

151.39 LF CONCRETE FLUME @ -0.40%

385.86 LF CONCRETE FLUME @ 0.59%

237.75 LF CONCRETE FLUME @ -0.50%

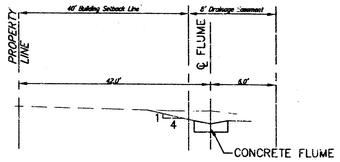
STA 2+03.63, FLUME A
42' RT, BEGIN CONSTRUCTION

PROPERTY CORNER IRON = STATION 0+00 FLUME A

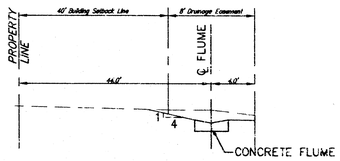
CONSTRUCT DETENTION POND
SEE DETAILS, SHEET 7

FOR EASEMENT GRADING
ALONG SOUTH LINE, SEE
DETAIL C-C THIS SHEET

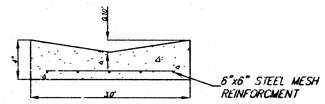
CONSTRUCT OUTLET WEIR
SEE DETAILS, SHEET 7



SECTION A-A
FLUME A

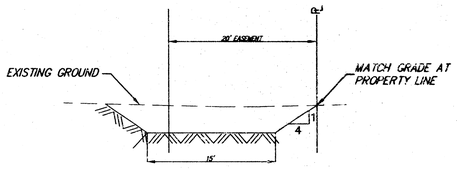


SECTION B-B
FLUME B



Concrete Flume

Note: Construction Joints spaced @ 50'
(construction joints may be sawn joints)
Expansion Joints Spaced at 150'



Grading Detail for Section C-C

Scale: 1" = 60'

CONSTRUCTION LIMITS

SITE EARTHWORK TOTALS	
FILL	42150 YDS
CUT	44000 YDS
TOTAL	1850 YDS CUT

TOTALS INCLUDE POND

Fawn Grove Addition
Site Grading Plan
WICHITA, KANSAS

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

DESIGN CMB
DRAWN EJG
REVIEW
UTILITY

DRAWING FILE: Site Grading [Site Grading Cont (2)]
PROJECT NUMBER: 468-83798
DATE: Mar. 16, 2004

SHEET 2 OF 16

CONCRETE FLUME SEE SHEET 6

OVERHEAD ELECTRIC LINES

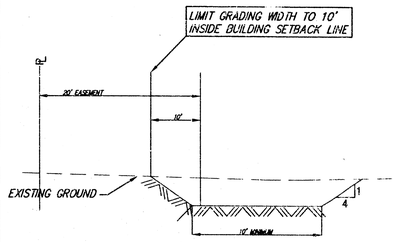
8' Drainage Easement

FOR EASEMENT GRADING ALONG SOUTH LINE, SEE DETAIL D-D THIS SHEET

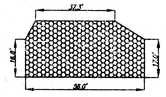
PLACE CURLEX BLANKET 50'X80'

3 - 10' x 5' RCBC SEE SHEET 8
PLACE 150' SQ. YDS. HEAVY STONE RIP-RAP SEE DETAIL THIS SHEET

FOR EASEMENT GRADING ALONG SOUTH LINE, SEE DETAIL C-C SHEET 2



Grading Detail for Section D-D



RIP RAP DETAIL

TREES TO REMOVED ONLY AS NECESSARY FOR CONSTRUCTION

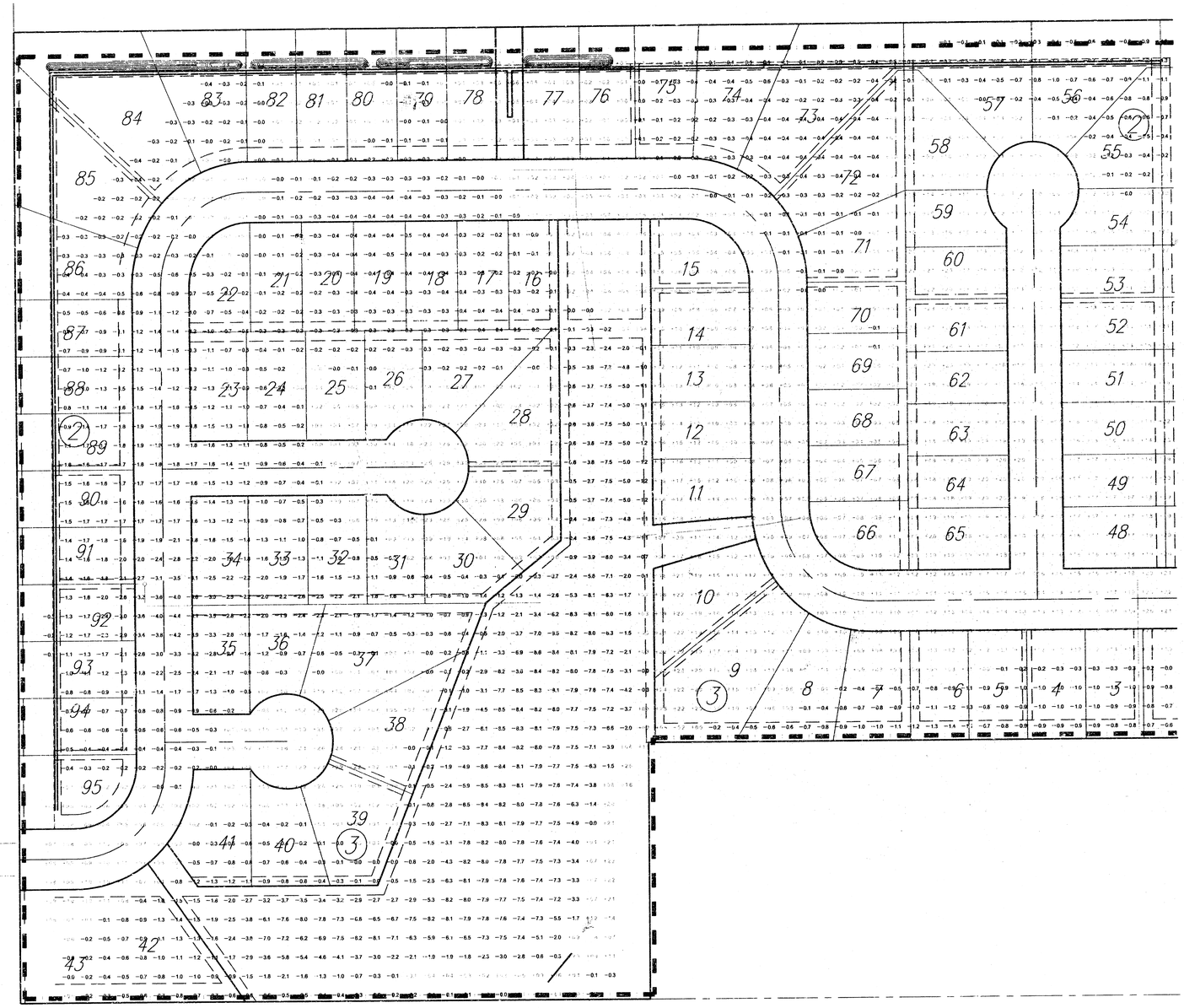
Scale: 1" = 60'

CONSTRUCTION LIMITS

Fawn Grove Addition
Site Grading Plan
WICHITA, KANSAS

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

DESIGN	CMB
DRAWN	EJG
REVIEW	
UTILITY	
DATE	Mar. 16, 2004
RB JOB	2306
SHEET	3 OF 16
DRAWING FILE	Site Grading (Site Grading Cont (2))
PROJECT NUMBER	466-83798



-X.X' = CUT

SITE EARTHWORK TOTALS	
FILL	42150 YDS
CUT	44000 YDS
TOTAL	1850 YDS CUT

TOTALS INCLUDE POND

Scale: 1" = 60'

CONSTRUCTION LIMITS

Fawn Grove Addition
Site Grading Plan
WICHITA, KANSAS

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

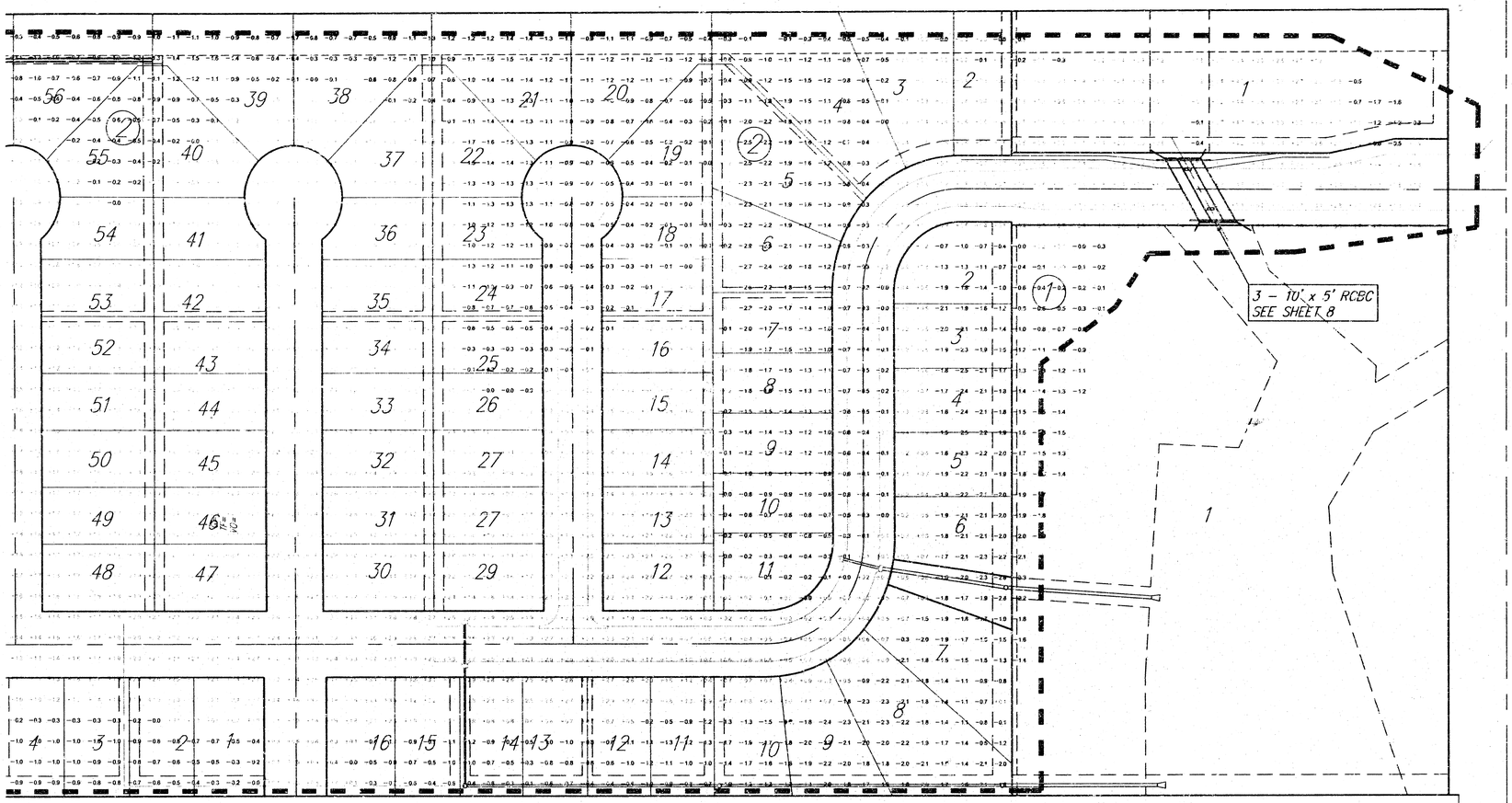
DESIGN CMB
DRAWN EJG
REVIEW
UTILITY
DATE Mar. 16, 2004

R&B JOB 2036E

SHEET 4 OF 16

DRAWING FILE Site Grading [Site Grading Cont (2)]

PROJECT NUMBER 468-83798



TREES TO REMOVED ONLY AS NECESSARY FOR CONSTRUCTION

-X.X' = CUT

Scale: 1" = 60'

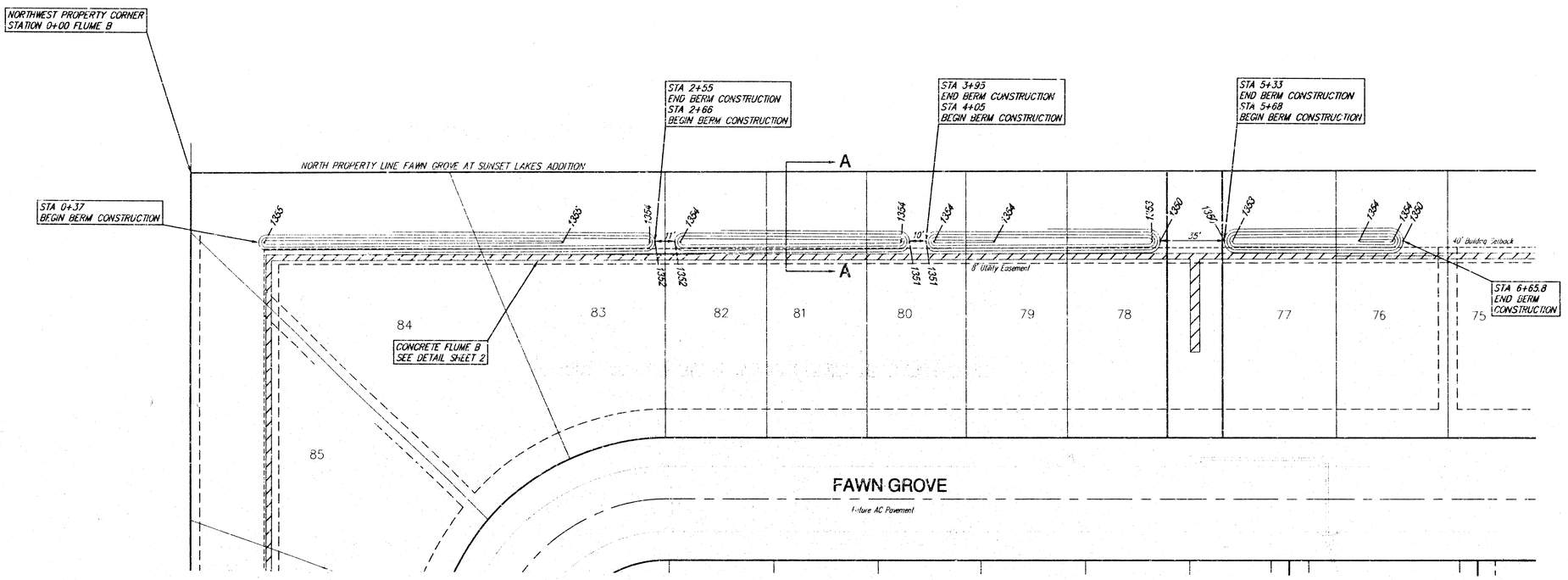
CONSTRUCTION LIMITS

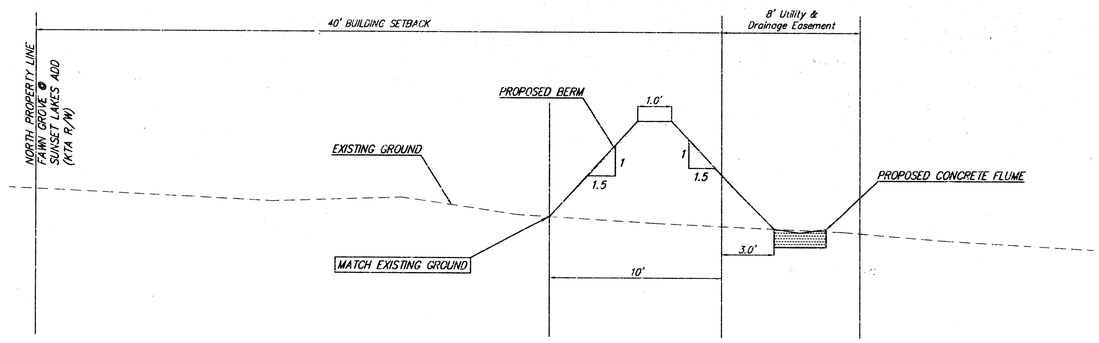
Fawn Grove Addition
Site Grading Plan
WICHITA, KANSAS

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

DESIGN	CMB
DRAWN	EJC
REVIEW	
UTILITY	
DATE	Mar. 16, 2004
DRAWING FILE	Site Grading [Site Grading Cont (2)]
PROJECT NUMBER	468-83798
RB JOB ISSUE	
SHEET	5 OF 16

NOTE: BERMS TO BE SEEDED
WITH NATIVE GRASS MIX
AT A RATE OF 14 LBS PER ACRE
COST SUBSIDIARY TO BID ITEM FOR SEEDING





Section A-A

SCALE 1" = 30'

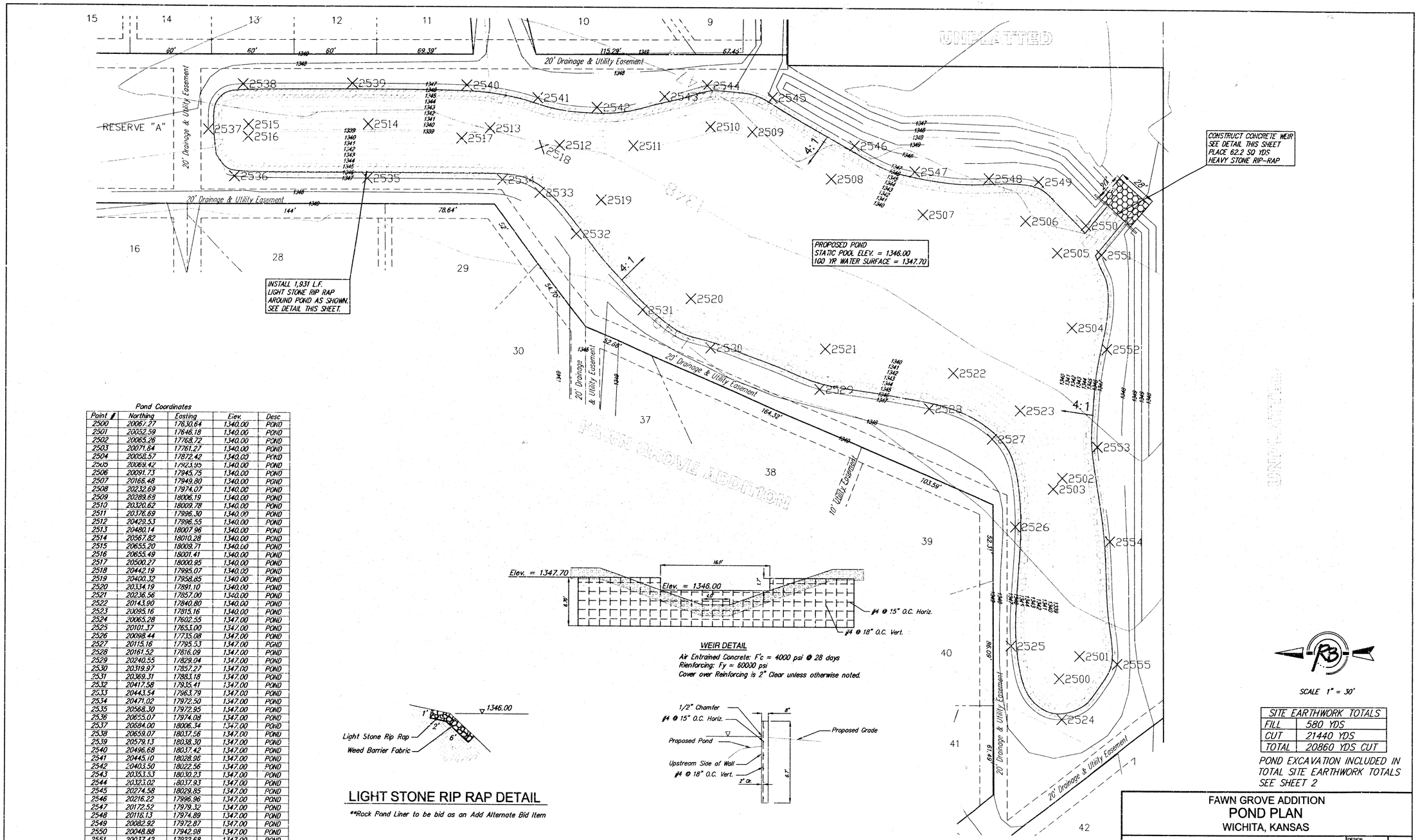
CONCRETE FLUME

EARTHWORK TOTALS FOR THE BERM
ARE INCLUDED IN THE EARTHWORK
TOTALS FOR THE PROJECT

Fawn Grove at Sunset Lakes Addition
Berm Details
WICHITA, KANSAS

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

DESIGN	CMB
DRAWN	EJG
REVIEW	
UTILITY	
DATE	May 27, 2004
REVISION	
SHEET	6 OF 16
DRAWING FILE	Details {Berm Details}
PROJECT NUMBER	468--83798



SITE EARTHWORK TOTALS	
FILL	580 YDS
CUT	21440 YDS
TOTAL	20860 YDS CUT

POND EXCAVATION INCLUDED IN TOTAL SITE EARTHWORK TOTALS SEE SHEET 2

Pond Coordinates

Point #	Northing	Easting	Elev.	Desc
2500	20067.27	17630.64	1340.00	POND
2501	20052.59	17646.18	1340.00	POND
2502	20065.26	17768.72	1340.00	POND
2503	20071.64	17761.27	1340.00	POND
2504	20058.57	17872.42	1340.00	POND
2505	20069.42	17923.95	1340.00	POND
2506	20091.73	17945.75	1340.00	POND
2507	20166.48	17949.80	1340.00	POND
2508	20232.69	17974.07	1340.00	POND
2509	20289.68	18006.19	1340.00	POND
2510	20320.62	18009.78	1340.00	POND
2511	20376.69	17996.30	1340.00	POND
2512	20420.53	17996.55	1340.00	POND
2513	20480.14	18007.96	1340.00	POND
2514	20567.82	18010.28	1340.00	POND
2515	20655.20	18009.71	1340.00	POND
2516	20655.49	18001.41	1340.00	POND
2517	20500.27	18000.95	1340.00	POND
2518	20442.19	17995.07	1340.00	POND
2519	20400.32	17958.85	1340.00	POND
2520	20334.19	17891.10	1340.00	POND
2521	20236.56	17857.00	1340.00	POND
2522	20143.90	17840.80	1340.00	POND
2523	20095.16	17815.16	1340.00	POND
2524	20065.28	17802.55	1347.00	POND
2525	20101.37	17763.00	1347.00	POND
2526	20098.44	17735.08	1347.00	POND
2527	20115.16	17795.53	1347.00	POND
2528	20161.52	17816.09	1347.00	POND
2529	20240.55	17829.04	1347.00	POND
2530	20319.97	17857.27	1347.00	POND
2531	20369.31	17883.18	1347.00	POND
2532	20417.58	17935.41	1347.00	POND
2533	20443.54	17963.79	1347.00	POND
2534	20471.02	17972.50	1347.00	POND
2535	20568.30	17972.95	1347.00	POND
2536	20655.07	17974.08	1347.00	POND
2537	20684.00	18006.34	1347.00	POND
2538	20659.07	18037.56	1347.00	POND
2539	20579.13	18038.30	1347.00	POND
2540	20496.68	18037.42	1347.00	POND
2541	20445.10	18028.95	1347.00	POND
2542	20403.50	18022.56	1347.00	POND
2543	20353.53	18030.23	1347.00	POND
2544	20323.02	18037.93	1347.00	POND
2545	20274.58	18029.85	1347.00	POND
2546	20216.22	17996.96	1347.00	POND
2547	20172.52	17979.32	1347.00	POND
2548	20118.13	17974.89	1347.00	POND
2549	20082.92	17972.87	1347.00	POND
2550	20048.88	17942.98	1347.00	POND
2551	20037.42	17922.68	1347.00	POND
2552	20033.20	17857.79	1347.00	POND
2553	20039.92	17780.40	1347.00	POND
2554	20030.64	17725.18	1347.00	POND
2555	20025.11	17640.78	1347.00	POND

WEIR DETAIL

Air Entrained Concrete: F'c = 4000 psi @ 28 days
Reinforcing: Fy = 60000 psi
Cover over Reinforcing is 2" Clear unless otherwise noted.

LIGHT STONE RIP RAP DETAIL

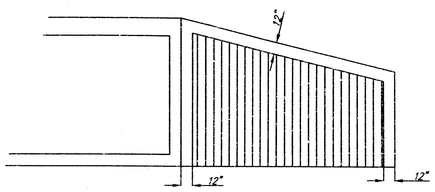
**Rock Pond Liner to be bid as an Add Alternate Bid Item

NOTE: THE POND BOTTOM AND SIDES, UP TO THE STATIC POOL, ARE TO BE SCARIFIED A MINIMUM OF 8 INCHES, MOISTURE CONDITIONED AND RECOMPACTED TO A MINIMUM OF 95 PERCENT OF STANDARD PROCTOR DENSITY (ASTM D-698) FROM MINUS 3 TO PLUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. ADDITIONALLY, ALL GYPSUM/CALICHE SEAMS, SANDY CLAY AND CLAY SHALE ENCOUNTERED SHOULD BE OVER-EXCAVATED A MINIMUM OF 1 FOOT AND REPLACED WITH CLAY. MINIMUM ACCEPTABLE P.I. OF CLAY USED IN POND SHALL BE 30.

FAWN GROVE ADDITION
POND PLAN
WICHITA, KANSAS

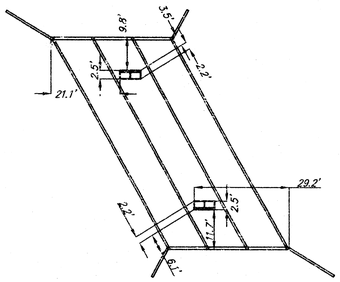
Ruggles & Bohm, P.A.
Engineering, Surveying, Land Planning
924 North Main
Wichita, Kansas 67203
www.rbkansas.com
(316) 264-8008
(316) 264-4621 fax
E-mail: info@rbkansas.com

DESIGN CMB
DRAWN EJC
REVIEW
UTILITY
DATE May 27, 2004
JOB NO. 2556
SHEET 7 OF 16
DRAWING FILE Ponds {Pond}
PROJECT NUMBER 468-83790



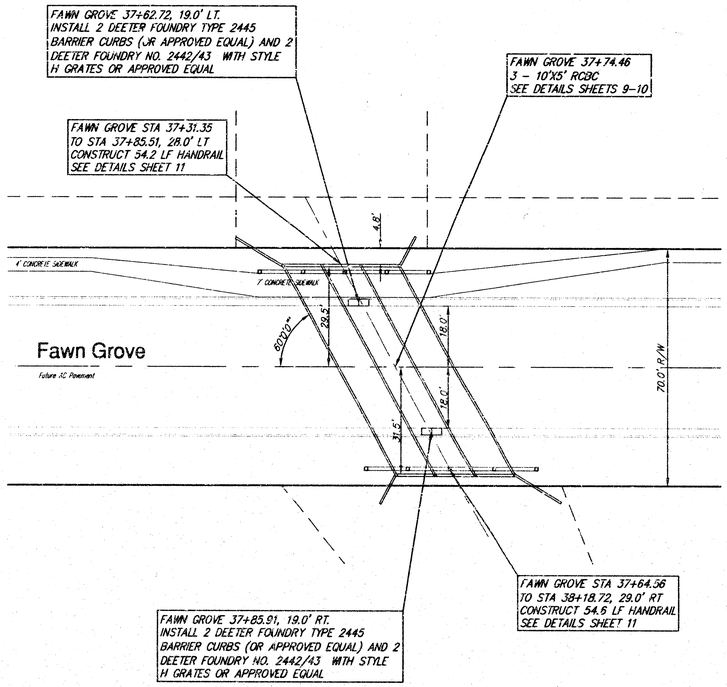
WING WALL DETAIL

USE GREENSTREAK FRACTURED FIN CONCRETE FORM LINER 373M, OR APPROVED EQUAL, ON WING WALLS AS SHOWN. COST SUBSIDARY TO BID ITEM FOR RCBC

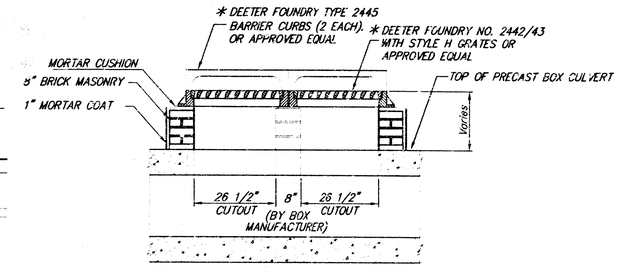


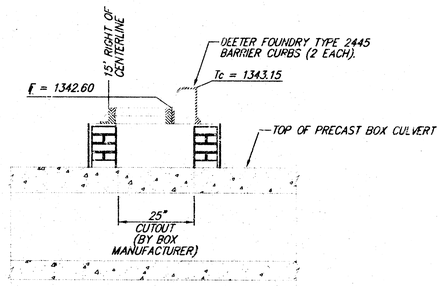
GENERAL NOTES:

1. The vanes of the grates shall be oriented with respect to the flow arrows shown on the plans.
2. Use Neenah R-3288 HV Inlet Frame with Two Piece Grate or approved equal.
3. Top of Inlet shall be sloped to match the slope of the adjacent curb.
4. Mortar used in masonry construction shall be in accordance with standard specifications.
5. All brick used in stack construction shall meet Grade ASTM C32 for MM or MS.

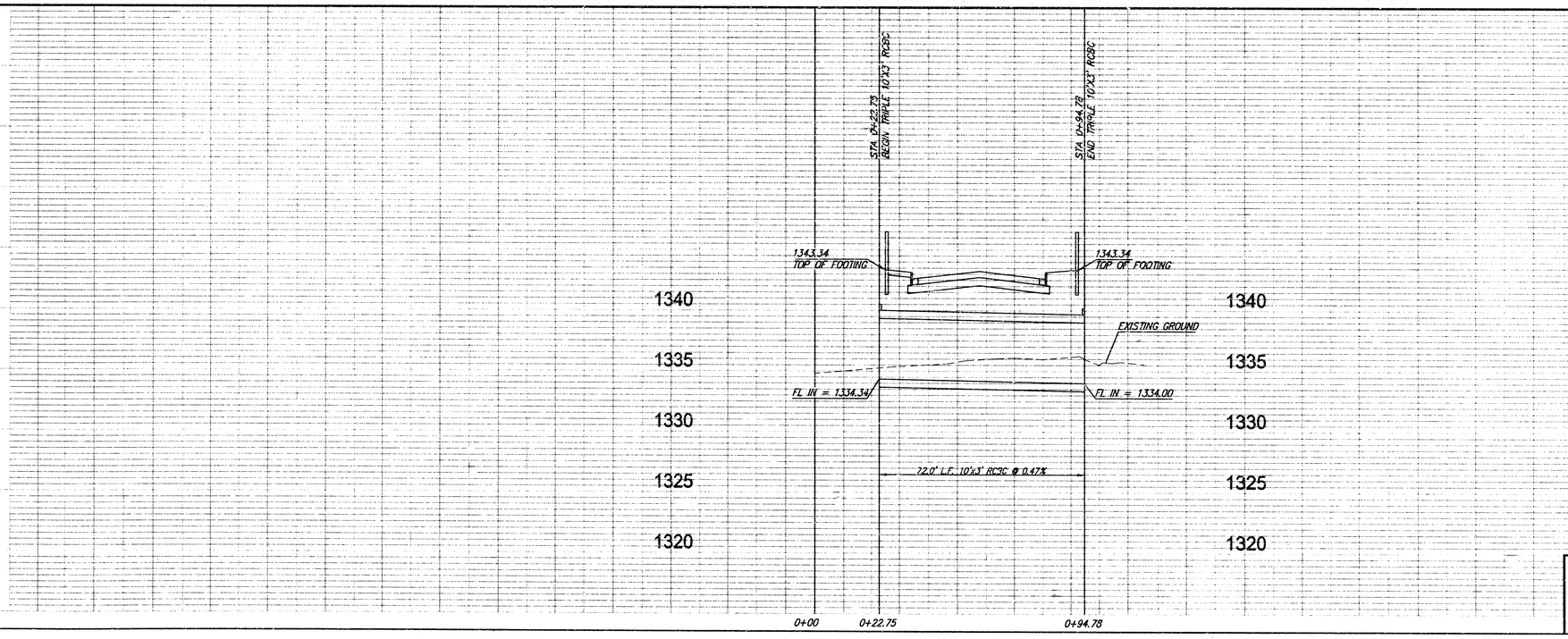


*THE ENGINEER WILL CONSIDER AN "EQUIVALENT" OF THE BRAND NAME SPECIFIED. PROVIDE THE ENGINEER WITH A COMPLETE DESCRIPTION, LITERATURE, TEST REPORTS, ETC. ON THE PROPOSED "EQUIVALENT". THE BURDEN OF PROOF REGARDING THE "EQUIVALENT" WILL BE UPON THE CONTRACTOR.





INLET (CURB)(MODIFIED)



DESIGN CMB
DRAWN EJG
REVISED
UTILITY
DATE May 27, 2004
REVIEW

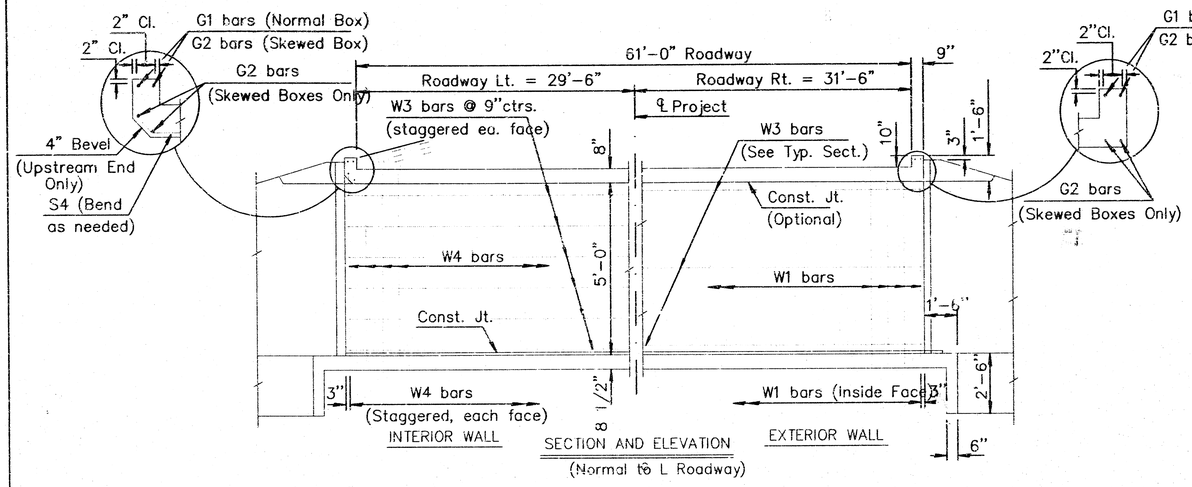
PROJECT NUMBER 468-83798
DRAWING FILE Details [RCB]

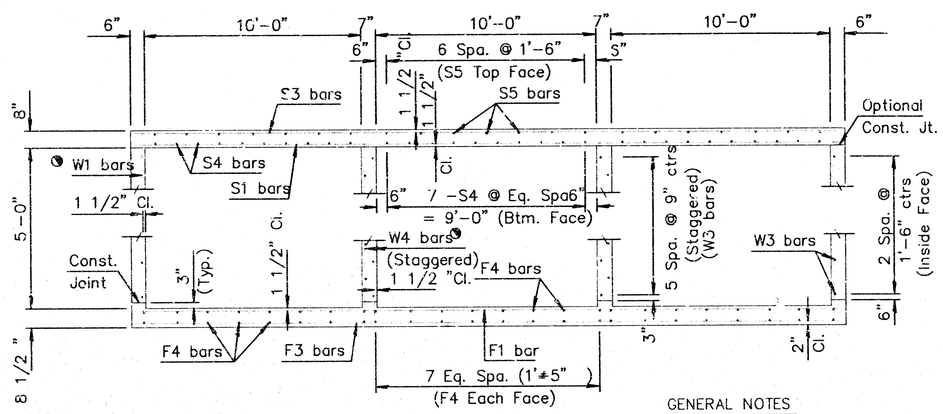
FAWN GROVE AT SUNSET LAKES
RCBC PLAN
WICHITA, KANSAS

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

RB JOB 2558E

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	468-83798		9	16

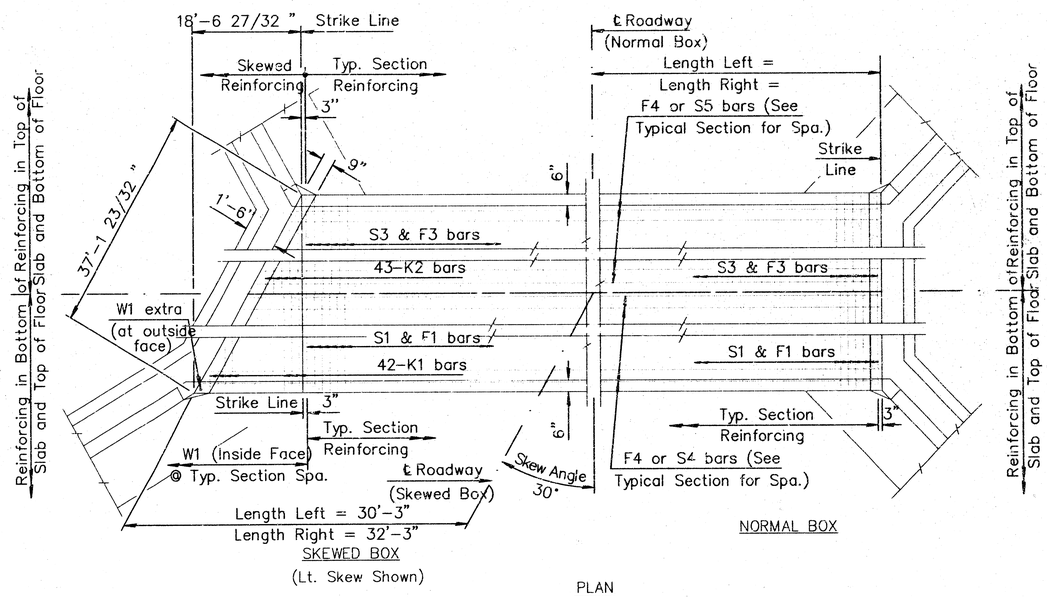




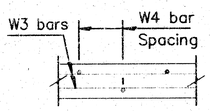
TYPICAL SECTION

See RCB Auxiliary Details for Optional Splice.

Note: Use only cast-in-place construction at this location.



PLAN



PLAN OF INTERIOR WALL



K1
(Cut 4 each length)

K2
(Cut 4 each length)

BENDING DIAGRAM

All Dimensions are out to out of bars.

GENERAL NOTES

LOADING: HS20-44 AASHTO Specifications, 1983 Edition.
UNIT STRESSES: Class AAA Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.
FILL HEIGHT: Unless otherwise noted, the Design Fill Height is measured from the riding surface at the culvert and shall include the surfacing.
CONCRETE: Class AAA Concrete shall be used throughout. Bevel all exposed edges with a 3/4 inch triangular moulding. Where Class AAA Concrete (AE) is specified, it shall be placed in the top slab above the Construction Joint.
REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. All dimensions relative to reinforcing steel shall be to centerline of bar unless otherwise noted.
EXCAVATION: Excavation for culverts less than bridge length shall not be paid for directly but shall be subsidiary to Class AAA Concrete. Excavation for RCB Bridges shall be paid for as Class ||| Excavation.
SEAL COURSE: A Seal Course may be required by the Engineer. The Seal Course shall be unreinforced Concrete (Commercial Grade) to a minimum depth of 3 inches or as determined by the Engineer. Concrete for the seal course shall be paid for at the unit price set for Concrete for Seal Course.
FOUNDATION STABILIZATION: Foundation Stabilization may be required as directed by the Engineer. The depth of Foundation Stabilization shall be determined by the Engineer. Foundation Stabilization shall be paid for at the determined Unit Price set for Foundation Stabilization. See Auxiliary Details.
QUANTITIES: The quantities shown in the Culvert Summary include apron and/or soil saver quantities when their construction is required by the plans. Payment for additional quantities that result from including seal course and/or floating apron, as a change in original plans, shall be made at the Unit Price bid for the various items involved.
GRANULAR BACKFILL (WINGWALLS): Special backfill procedures may be required at the direction of the Engineer. See Auxiliary Details Sheet.
STRIKE LINE: Wingwalls and that portion of the RCB outside the Strike Line shall be constructed level. Footing for wingwalls shall be constructed with the culvert floor. See wingwall detail sheet.

CULVERT SUMMARY

Flow Line Elev. Lt.	Flow Line Elev. Rt.	Crown Gr. Elev.	Design Fill Ht.	Skew LT	Left Wings	Right Wings	Scour Apron	Soil Saver	Concrete Barrel (Cu. Yds.)	Concrete Wings (Cu. Yds.)	Concrete Total (Cu. Yds.)	Reinf. Steel (Gr. 60) Barrel (Lbs.)	Reinf. Steel (Gr. 60) Wings (Lbs.)	Reinf. Steel (Gr. 60) Total (Lbs.)
1334.34	1334.00	1343.00	5	30	FLARED	FLARED	NO	NO	129.11	19.29	148.40	26489	1534	28023

*See Bending Diagram

BAR SCHEDULE

F1 Size	F1 Spa.	F1 No.	F1 Length				F3 Size	F3 Spa.	F3 No.	F3 Length	F4 Size	F4 No.	F4 Length	S1 Size	S1 Spa.	S1 No.	S1 Length				S3 Size	S3 Spa.	S3 No.	S3 Length	S4 Size	S4 No.	S4 Length	S5 Size	S5 No.	S5 Length
5	5"	105	31'-10"	N/A	N/A	N/A	N/A	5	5"	105	31'-10"	4	96	31'-9"	5	5"	105	31'-10"	N/A	N/A	N/A	N/A	5	5"	105	31'-10"	4	42	31'-9"	4	42	31'-9"

K1 Size	K1 Spa.	K1 No.	K1 Length	K2 Size	K2 Spa.	K2 No.	K2 Length	W1 Size	W1 Spa.	W1 No.	W1 Length	W2 Size	W2 Spa.	W2 No.	W2 Length	W3 Size	W3 No.	W3 Length	W4 Size	W4 Spa.	W4 No.	W4 Length	G1 Size	G1 No.	G1 Length	G2 Size	G2 No.	G2 Length	G2 Size	G2 Spa.	G2 No.	G2 Length
5	5"	168	*	5	5"	172	*	4	9"	170	6'-1"	N/A	N/A	N/A	N/A	4	36	31'-9"	4	9"	168	6'-1"	N/A	N/A	N/A	7	8	36'-10"				

Minimum Splice Lengths	
#4	1'-4"
#5	1'-8"
#6	2'-0"

SUMMARY OF QUANTITIES

Class AAA Concrete	148.4 C.Y.
Class AAA Concrete (AE)	0.0 C.Y.
Reinforcing Steel (Gr. 60)	28020 Lbs.
Reinforcing Steel (Epoxy Coated)	0 Lbs.
Class ||| Excavation	C.Y.
Foundation Stabilization (Set)	1 C.Y.
Concrete for Seal Course (Set)	1 C.Y.
Granular Backfill (Wingwalls) (Set)	1 C.Y.

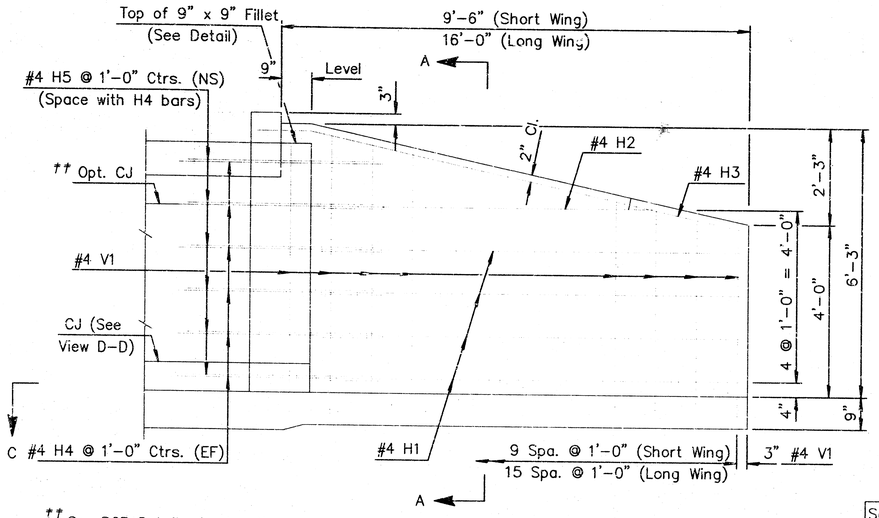
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 468-87-.00(000) Sta. 37+74.46
TRIPLE 10 ft x 5 ft RCB
(30°SKEW LT.)

BR 3.10.5 P — Sedgwick Co.

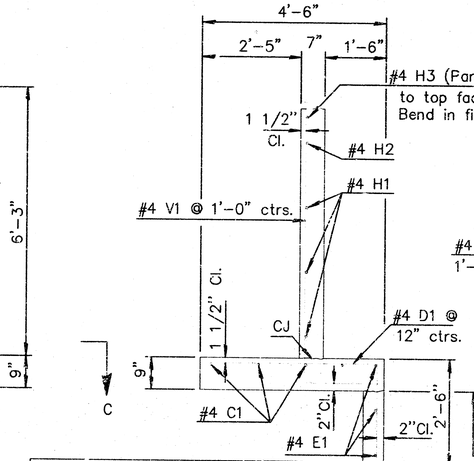
FHWA APPROVAL	6-5-91	APP'D	KENNETH F. HURST
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	468-83798		10	16

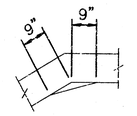


†† See RCB Details for location of construction joint.

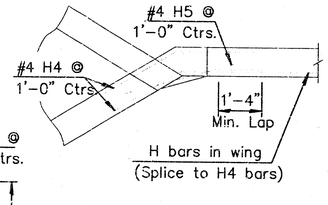
ELEVATION OF WINGWALL
(Backface Shown)



SECTION A-A



Fillet Detail



DETAIL OF 9" x 9" FILLET
(Plan View)

† NOTE: Const. Jt. may be used at Contractor's option when approved by the Engineer. D1 bars or mesh may be spliced thus: Minimum overlap shall be 1'-3". No increase in quantities or cost shall be allowed when Contractor elects this option.

GENERAL NOTES

UNIT STRESSES: Class AAA Concrete; f'c = 4,000 p.s.i.
Reinforcing Steel; fy = 60,000 p.s.i.

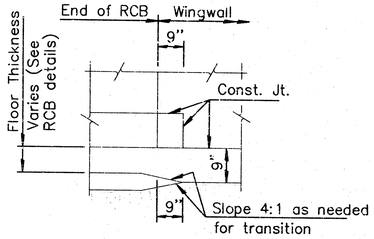
CONCRETE: Class AAA Concrete shall be used throughout. Bevel all exposed edges with a 3/4 inch triangular moulding.

REINFORCING: All reinforcing shall conform to ASTM A615, Grade 60. Welded Wire Fabric shall conform to ASTM A185. All dimensions relative to reinforcing steel shall be to center-line of bar unless otherwise noted.

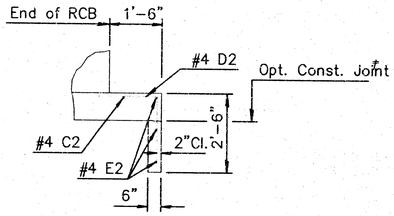
QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the hubguard.

APRON: A 5" concrete slab shall be constructed between the downstream wings in locations subject to scour only when specified on the plans or by the Engineer. Wire Reinforcing mesh shall be electrically welded and shall be composed of 6 x 6 - W1.4 x W1.4 welded wire fabric and shall be classified as pounds of reinforcing.

FOUNDATION AND BACKFILL MATERIAL: Soils judged as high plasticity clays, fat clays, expansive clays, or organic clays are unsuitable for foundation and/or backfill material for wingwalls and will not be used. Where these conditions exist, Foundation Stabiliation and/or Granular Backfill (Wingwalls) shall be used as determined by the Engineer. See "RCB Auxiliary Details" sheet for additional details.

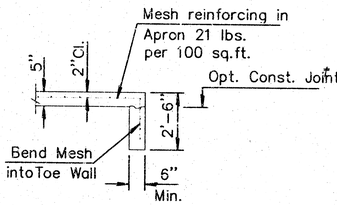


VIEW D-D

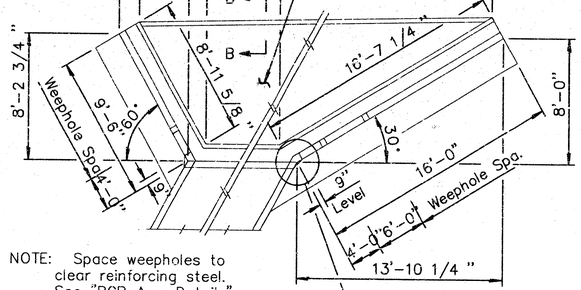


SECTION E-E

NOTE:
EF = Each Face
NS = Near Side
FS = Far Side
CJ = Const. Joint

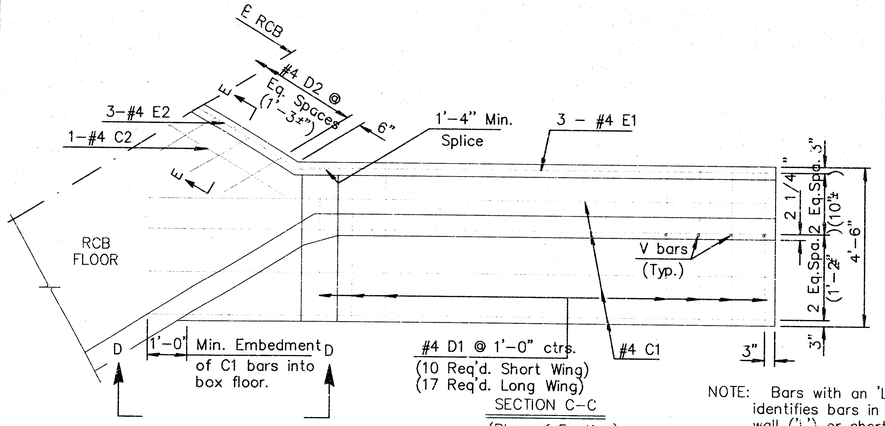


SECTION B-B



NOTE: Space weepholes to clear reinforcing steel. See "RCB Aux. Details" sheet for additional weephole details.

WING DIMENSIONS FOR 30° SKEWED BOX
(3 1/2 :1 Embankment Slope)

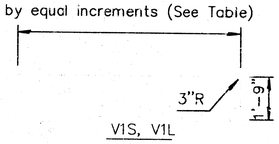


SECTION C-C
(Plan of Footing)

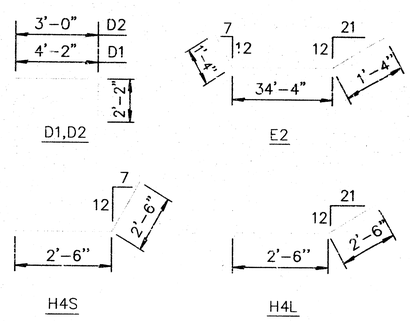
NOTE: Bars with an 'L' or 'S' designation identifies bars in the long wing-wall ('L') or short wingwall ('S'); ie. #4 H2L, #4 H2S, etc.

Bar	Incrmts.
V1S	3"
V1L	1 3/4 "

Var. 4'-5" to 6'-8" by equal increments (See Table)



V1S, V1L



BENDING DIAGRAM
(All dimensions are out to out of bars.)

Quantities listed below are included in the Summary of Quantities shown on the RCB details.

WINGWALL QUANTITIES (One End Only)	
Class AAA Concrete:	
Wingwalls	9.6 CY.
Apron	0.0 CY.
Soil Saver	0.0 CY.
Reinforcing Steel	767 Lbs.
Welded Wire Fabric	0 Lbs.

NOTE: Reinforcing Bar List is for both wings at one end of box only.

30° Skew	Mark	#4 C1S	#4 C1L	#4 D1	#4 E1S	#4 E1L	#4 C2	#4 D2	#4 E2	#4 V1S	#4 V1L	#4 H1S	#4 H1L	#4 H2S	#4 H2L	#4 H3S	#4 H3L	#4 H4S	#4 H4L	#4 H5S	#4 H5L
	Number	4	4	27 *	3	3	1	27 *	3 *	10	16	4	4	1	1	1	1	12 *	12 *	6	6
	Length	11'-9"	20'-9"	6'-4"	8'-9"	16'-6"	36'-10"	5'-2"	37'-0"	*	*	8'-4"	14'-10"	6'-9"	12'-0"	10'-5"	16'-9"	5'-0"	5'-0"	2'-6"	3'-6"

* See Bending Diagram

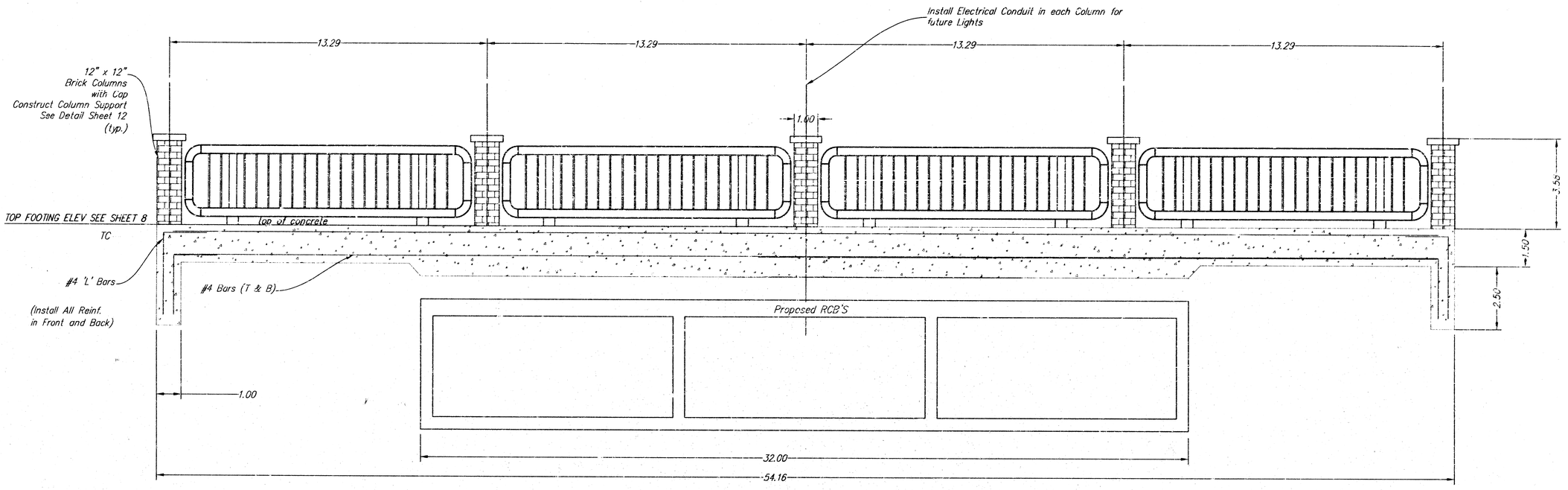
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 468-87-.00(000) Sta. 37+74.46

5 ft Rise (30° SKEW)

BR 10.30.05 Sedgwick Co.

FHWA APPROVAL	6-5-91	APP'D	KENNETH F. HURST
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.



BRIDGE HANDRAIL NOTES:

The rail members shall conform to ASTM Designation A36 or equivalent.

Rail shall be fabricated in lengths to include a minimum of two and a maximum of three panels. Posts shall be set vertical. Shims may be used between concrete and base plates of posts.

All parts of Bridge Handrail shall be painted. Shop and field coats shall conform to organic or inorganic Zinc for primer and "High-Build Polyurethane Finish Coat" of the Standard Specifications for State Road and Bridge Construction, 1990 Edition, Kansas Department of Transportation. All materials, equipment and labor necessary for the installation of the Handrail on the bridge shall be subsidiary to the bid item, "Handrail".

Handrail shall be hunter Green in color. Contractor to submit color chart to Engineer for approval. Touch Up: All bolts, nuts and studs and other small areas of damaged paint (10 S.F. or less) requiring touch up will be prepared and painted w/approved alluminum epoxy mastic primer.

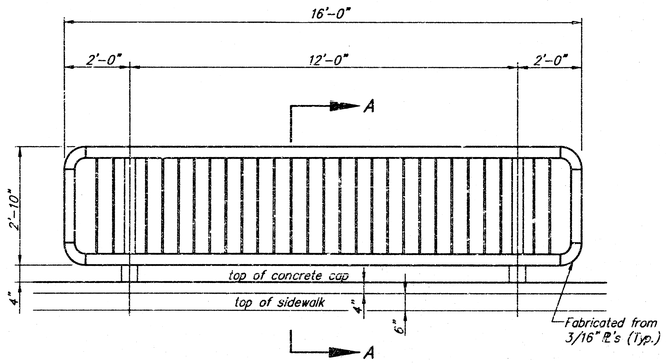
HANDRAIL TABLE	
EACH	RAIL LENGTH
8	12.0'
TOTALS	96.0'

ALL WORK AND MATERIAL ON THIS SHEET SHALL BE BID UNDER 'LUMP SUM' FOR HANDRAIL CONSTRUCTION.

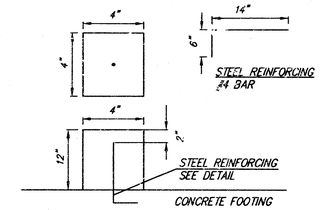
FAWN GROVE AT SUNSET LAKES
HANDRAIL DETAILS
WICHITA, KANSAS

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

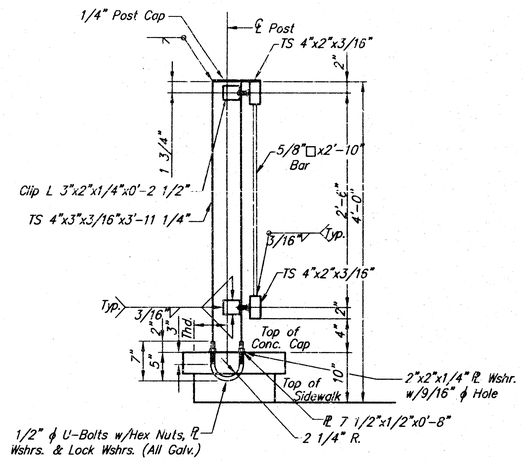
DESIGN CNB
DRAWN EJG
REVIEW
UTILITY
DATE May 27, 2004
RB JOB 2326E
SHEET 11 OF 16
DRAWING FILE: Details (Handrail)
PROJECT NUMBER: 468-83793



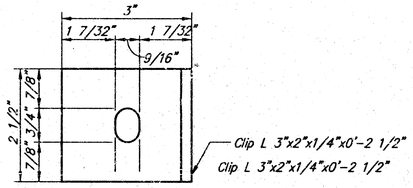
HANDRAIL ELEVATION
Typical 8 Each



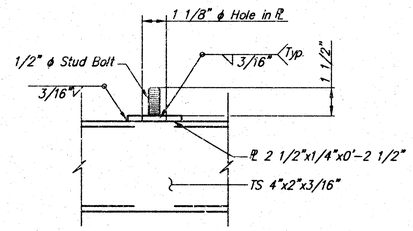
CONCRETE SUPPORT FOR BRICK COLUMN
CENTER COLUMN SUPPORTS ON CONCRETE FOOTING



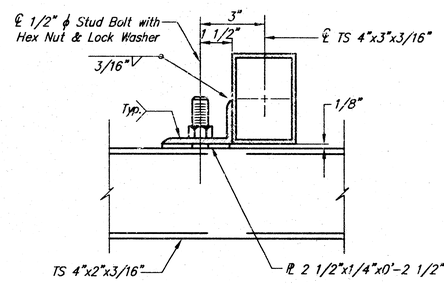
SECTION A-A



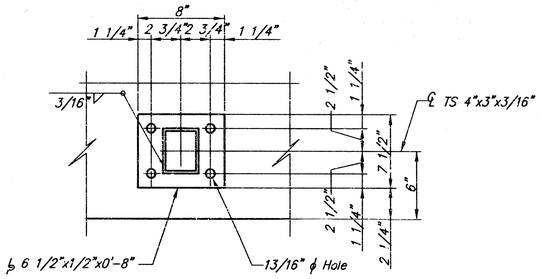
CLIP DETAIL



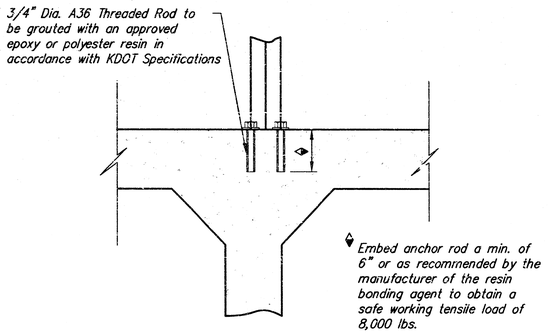
STUD BOLT DETAIL



RAIL CONNECTION DETAIL



BASE PLATE DETAIL



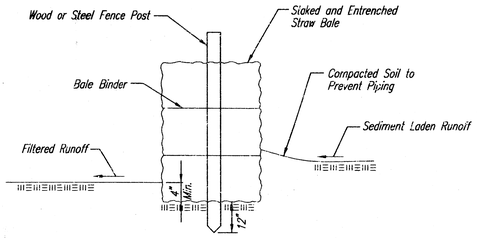
ANCHOR ROD DETAIL

ALL WORK AND MATERIAL ON THIS SHEET SHALL BE BID UNDER 'LUMP SUM' FOR HANDRAIL CONSTRUCTION.

FAWN GROVE AT SUNSET LAKES
HANDRAIL DETAILS
WICHITA, KANSAS

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

DESIGN CMB
DRAWN EJG
REVIEW
UTILITY
DATE May 27, 2004
RB JOB 2506
SHEET 12 OF 16
DRAWING FILE Details {Handrail (2)}
PROJECT NUMBER 468-83798



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:

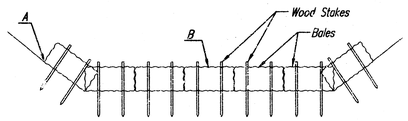
When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the 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 5% or less. For slopes steeper than 6%, rock checks should be used.
The following table provides check spacing for a given ditch grade:

Ditch Check Spacing

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

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is 4" deep and a bale's width wide. Extend the trench in a straight line along the entire length of the proposed ditch check. Place the soil on the upstream side of the trench-it will be used later.
Optional: On the downstream side of the trench, roll out a length of erosion-control blanket (scour apron) equal to the length of the trench. Place the upstream edge of the erosion-control blanket along the bottom upstream edge of the trench. The erosion control blanket should be anchored in the trench with one row of 8" landscape staples placed on 18" centers. The remainder of the erosion-control blanket (the portion that is not lying in the trench) will serve as the downstream scour apron. This section of the blanket should be anchored to the ground with 8" landscape staples placed around the perimeter of the blanket on 18" centers. The remainder of the blanket should be anchored using two evenly spaced rows of 8" landscape staples on 18" centers placed perpendicular to the flowline of the ditch.
Place the bales in the trench, making sure that they are butted tightly. Two stakes should be driven through each bale along the centerline of the ditch check, approximately 6" to 8" in from the bale ends. Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the upstream side of the check and compact it. The compacted soil should be no more than 3" to 4" deep and extend upstream no more than 24".

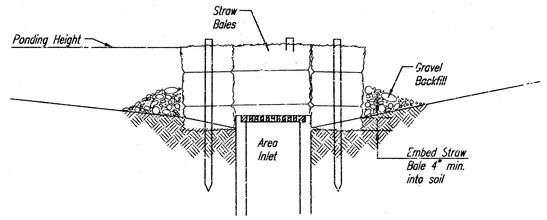
List of common placement/installation mistakes to avoid:

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

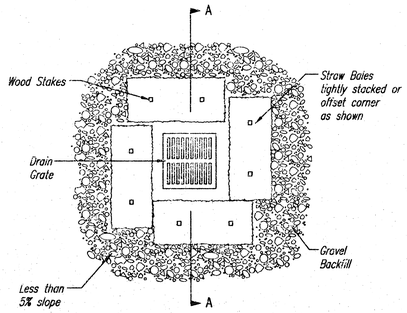
Inspection and Maintenance:

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

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



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Bale area inlet barriers should be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kansas State Board of Agriculture.
The stakes used to anchor the bales should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.

Placement:

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

Proper Installation Method:

Excavate a trench around the perimeter of the area inlet that is at least 4" deep by a bale's width wide.
Place the bales in the trench, making sure that they are butted tightly. Some bales may need to be shortened to fit into the trench around the area inlet. Two stakes should be driven through each bale, approximately 6" to 8" in from the bale ends.
Stakes should be driven at least 12" into the ground.
Once all the bales have been installed and anchored, place the excavated soil against the receiving side of the barrier and compact it. The compacted soil should be no more than 3" to 4" deep.
Note: When a bale area inlet barrier is placed in a shallow median ditch, make sure that the top of the barrier is not higher than the paved road. In this configuration, water may spread onto the roadway causing a hazardous condition.

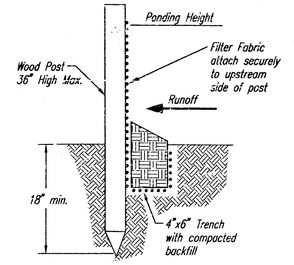
List of common placement installation mistakes to avoid:

Bales should be placed directly against the perimeter of the area inlet. This allows overtopping water to flow directly into the inlet instead of onto nearby soil causing scour.
Bale area inlet barriers must be dug into the ground. Bales at ground level do not work because they allow water to flow under the barrier.

Inspection and Maintenance:

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

Does water flow under the area inlet barrier?
Does water flow through spaces between abutting bales?
Are any bales dislodged?
Are bales decomposing due to age and/or water damage?
Does sediment need to be removed from behind the area inlet barrier?



SILT FENCE BARRIERS

SILT FENCE BARRIERS

Material Specification:

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

Placement:

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

Proper installation method:

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

List of common placement/installation mistakes to avoid:

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

Inspection and Maintenance:

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

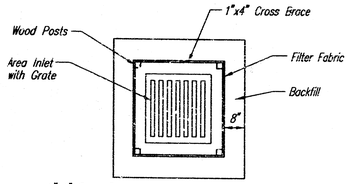
Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Do the silt fences sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the slope barrier?

CITY OF WICHITA

SOIL EROSION BMP DETAILS

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

PROJECT NUMBER	OCA NO.
468-83798	751367
DATE: MAY 2001	SHEET 13 OF 16



SILT FENCE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The wire or polymeric mesh backing used to help support the silt fence fabric should conform to the AASHTO M288 96 silt fence specification.
The posts used to support the silt fence fabric should be a hardwood material with the following minimum dimensions: 2" square (nominal) by 4' long.
The material used to frame the tops of the posts should be 1" by 4" boards.
Silt fence fabric and support backing should be attached to the wooden posts and frame with staples, wire, zip ties, or nails.

Placement:

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

Proper installation method:

Excavate a trench around the perimeter of the area inlet that is at least 8" deep by 8" wide.
Drive posts to a depth of at least 18" around the perimeter of the area inlet.
The distance between posts should be 4' or less. If the distance between two adjacent corner posts is more than 4', add another post(s) between them.
Connect the tops of all the posts with a wooden frame made of 1" by 4" boards. Use nails or screws for fastening.
Attach the wire or polymeric-mesh backing to the outside of the post/frame structure with staples, wire, zip ties, or nails.
Roll out a continuous length of silt fence fabric long enough to wrap around the perimeter of the area inlet. Add more length for overlapping the fabric joint. Place the edge of the fabric in the trench, starting at the outside edge of the trench. Line all three sides of the trench with the fabric. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Attach the silt fence to the outside of the post/frame structure with staples, wire, zip ties, or nails. The joint should be overlapped to the next post.

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

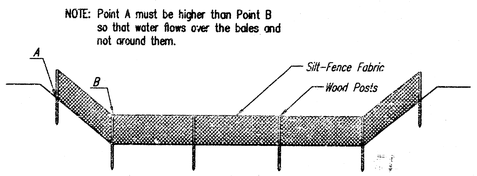
List of common placement/installation mistakes to avoid:

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

Inspection and Maintenance:

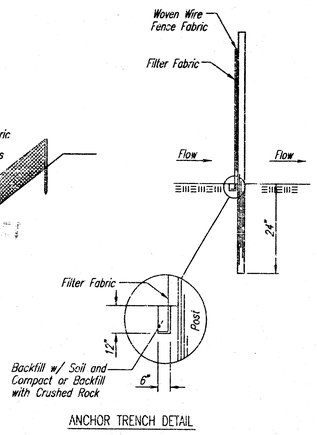
Silt fence barrier for area inlets should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

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



ELEVATION

SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

Material Specification:

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

Placement:

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

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

Ditch 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' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

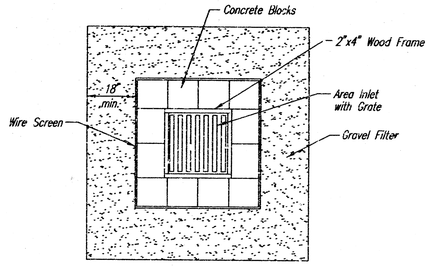
List of common placement/installation mistakes to avoid:

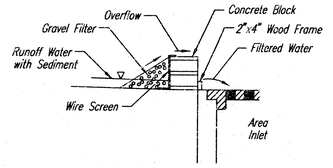
Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration,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

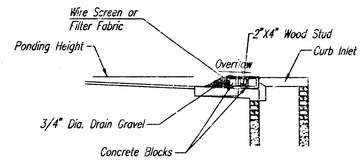
All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment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

CITY OF WICHITA

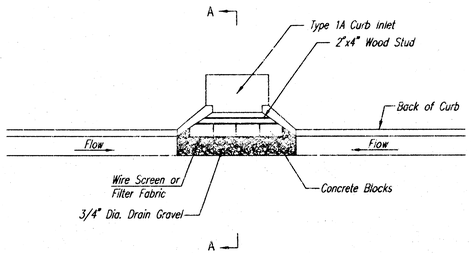
SOIL EROSION BMP DETAILS

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

PROJECT NUMBER 468-83798
OCA NO. 751367
DATE MAY 2001



SECTION A-A



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

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

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

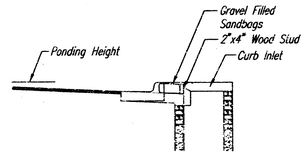
Instructions for Installing:

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

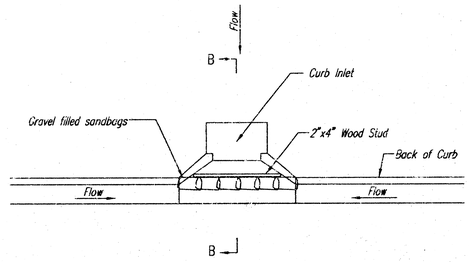
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

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

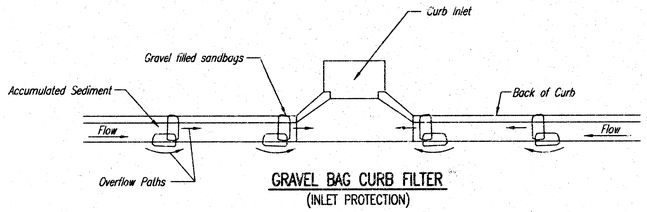


SECTION B-B



CURB INLET SANDBAG FILTERS
(INLET PROTECTION)

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



GRAVEL BAG CURB FILTER
(INLET PROTECTION)

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

CURB SEDIMENT TRAPS

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

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

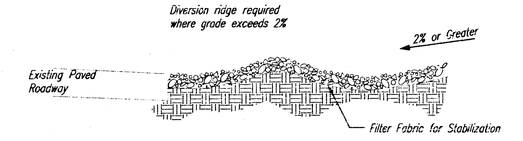
Spacing:

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

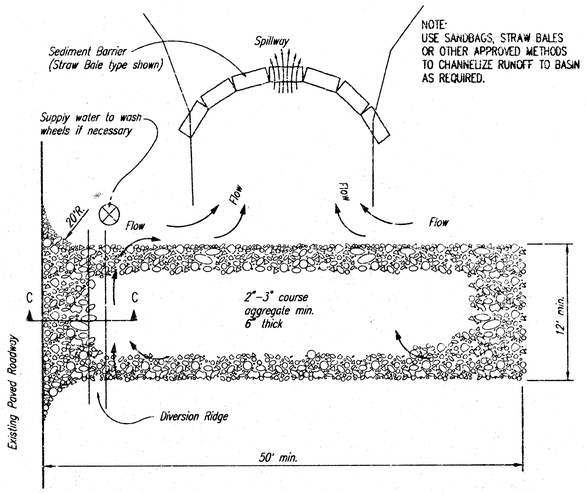
GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

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



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

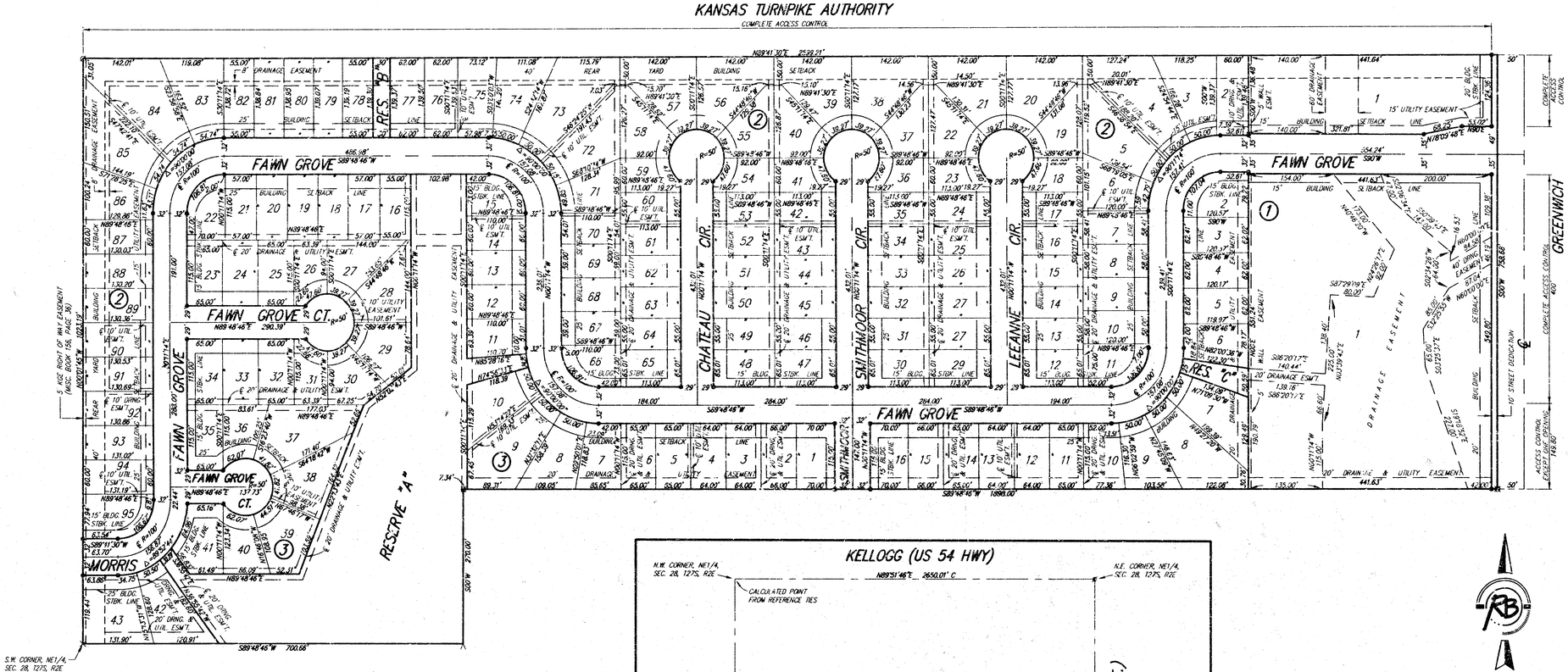
SOIL EROSION BMP DETAILS

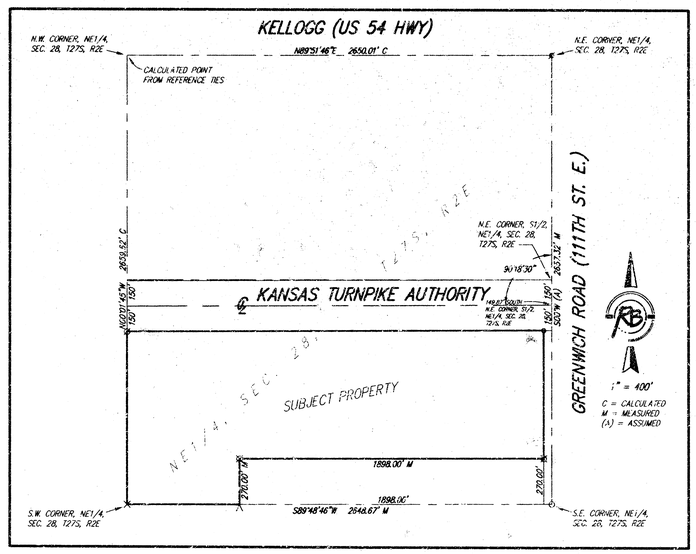
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER	OCA NO.
468-83798	751367
DATE: MAY 2001	SHEET 15 OF 16

FAWN GROVE AT SUNSET LAKES

an Addition to Wichita, Sedgwick County, Kansas





SURVEY MARKER LEGEND

- ○ = 1/2" IRON PIPE (FOUND)
- Ø = 3/4" IRON PIPE W/PEC CAP (FOUND)
- X = CHISELED CROSS (FOUND)
- V = CHISELED VNOTCH (FOUND)
- ■ = 1/2" REBAR (FOUND)
- ▣ = 5/8" REBAR (FOUND)
- ⊠ = 1/2" REBAR W/RAB CAP (FOUND)
- ● = 5/8" REBAR W/RAB CAP (SET)

BENCH MARK: CGW BENCHMARK AT GREENWICH AND LINCOLN, NORTHWEST CORNER OF DOUBLE 4'X6' RCBC, ON HUBGUARD, IN FRONT OF 930 S. GREENWICH. ELEV.=1334.02 (NGVD)

MINIMUM BUILDING PAD ELEVATION FOR LOWEST OPENING INTO STRUCTURES		
BLOCK	LOT NO.	ELEVATION (N.G.V.D.)
1	1, 2, 3, 4, 5, 6, 7, 8	1340.0
2	1, 2	1344.0
3	9, 10, 11, 12, 13, 14, 15, 16, 28, 29, 30, 37, 38, 39, 40, 41, 42	1349.0

THIS PLAT OF FAWN GROVE AT SUNSET LAKES AN ADDITION TO WICHITA, SEDGWICK COUNTY, KANSAS IS SUBJECT TO A WESTAR EASEMENT RECORDED AS FILM 518, PAGE 790.

SHEET 2 OF 2

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DWG FILE: 2422P
PROJECT NO. 2422P
MARCH 16, 2004

468-83798

16/16

10-10-20-01