STORM WATER DRAIN #223

to serve

AUBURN HILLS 15TH ADD.

CITY OF WICHITA, KANSAS

James L. Armor, P.E. Acting City Engineer

Project Number

468-83759

OCA Number

751359

GENERAL NOTES:

1. Contractor will be required to provide notice to utility companies a minimum of forty-eight (48) hours prior to any excavation, as follows:

   Kansas One-Call 687-2470

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

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

2. Utility service lines, poles, valve boxes, meters, and etcetera are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the Contractor or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.

3. 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, in the opinion of the Engineer, that will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps. of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.

4. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction shall be saved and protected from damage.

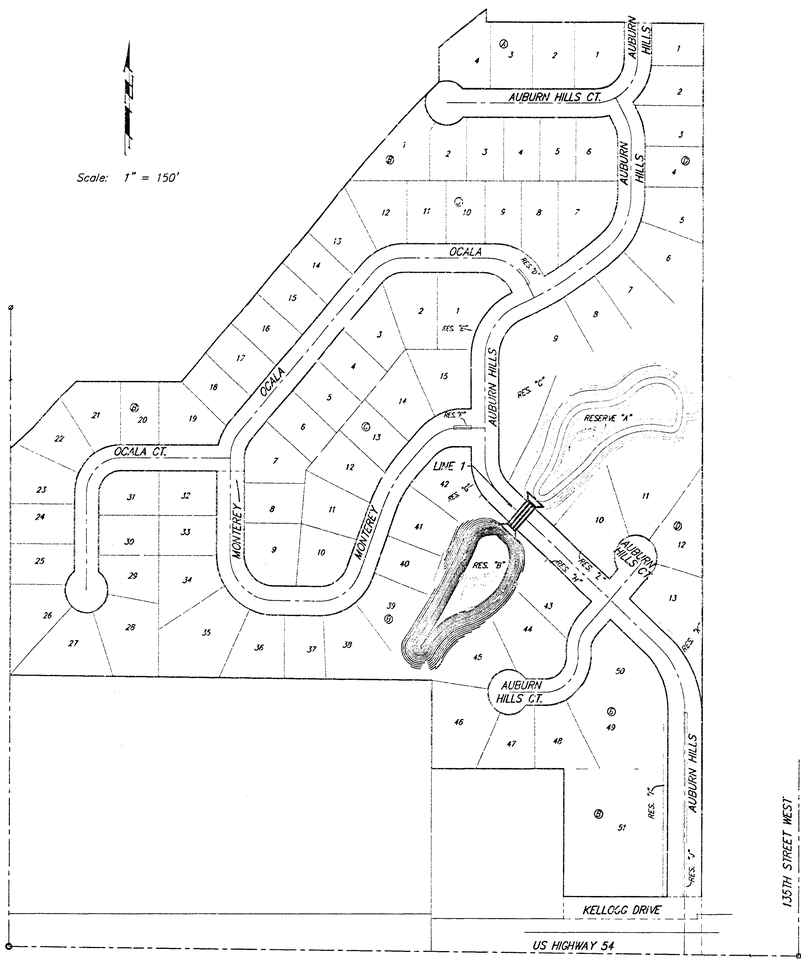
5. The Contractor shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of ten (10) days notice prior to start of construction.

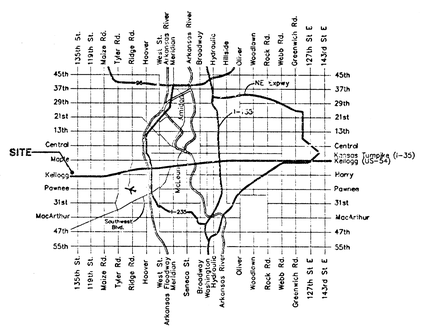
6. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by his construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws

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

8. The developer for this project is Jay Russell, 722-2417.

9. At conclusion of construction, an as-built survey will be completed by the engineer. The contractor will be required to finish and smooth grade all locations as necessary that are not within ±0.2' of plan grade. The contractor shall include all costs associated with the regrading and/or remobilization in the bid item "Mass Grading."





Vicinity Map

Benchmarks

City Disc In T.C. Adj. to F.H. 38' South of intersection of Onewood and Auburn Hills. Elev. = 178.48 (City Datum)

"□" cut in south curb of Onewood 272' west of C.L. Auburn Hills. Elev. = 179.73 (City Datum)

Sheet Index

Title Sheet	1
Mass Grading Plan	2
Pond Plan	3
Pond Cross Sections	4
RCBC/SWS Line 1	5
RCBC Details	6-10
Type 1A Double Inlet Detail	11
Erosion Control Details	12-15
Copy of Plat	16

Area to be Graded: ☐

Benefit District: ☐

Austin E. Hottel
2/9/05

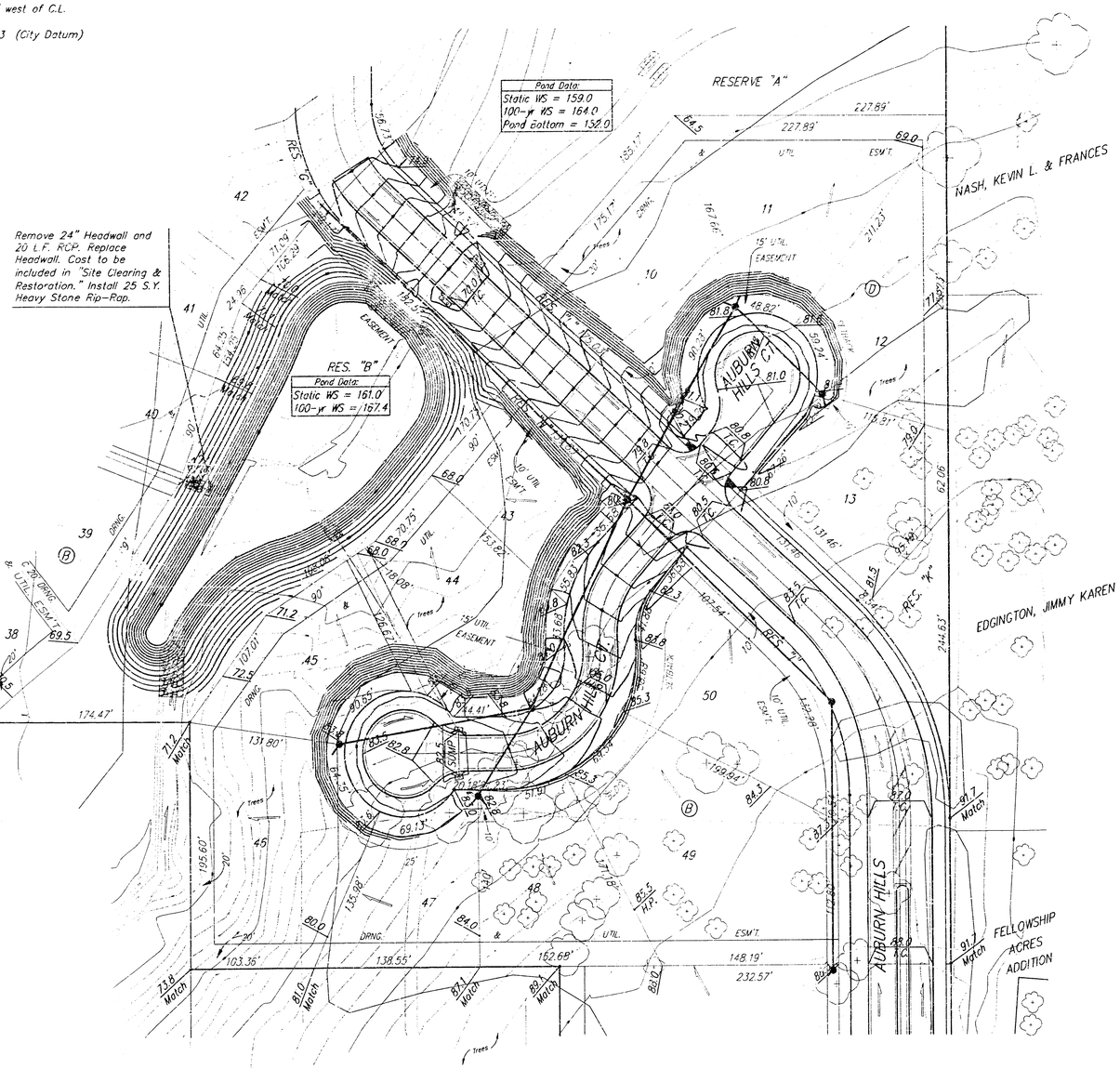
As Built 12/06 RK

Baughman

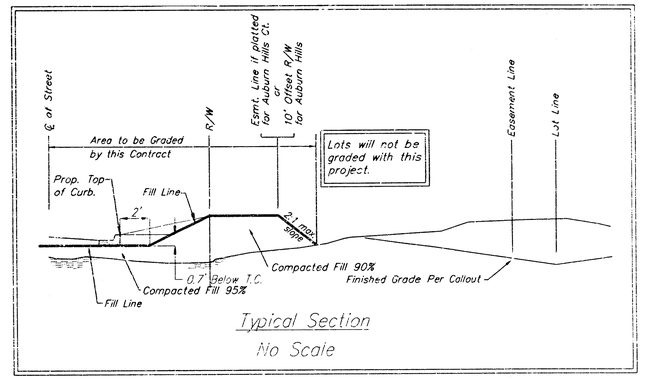
Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-7271 F 316-262-0141
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

BENCHMARK:
City Disc In T.C. Adj. to F.H. 38' South of intersection of Onewood and Auburn Hills.
Elev. = 178.48 (City Datum)

"□" cut in south curb of Onewood 272' west of C.L. Auburn Hills.
Elev. = 179.73 (City Datum)



Scale: 1" = 50'



Typical Section
No Scale

EARTH WORK TOTALS

	C.Y. Excavation	C.Y. Fill
Mass Grading	0	15,505
Pond Construction	14,142	0
Total	14,142	17,056

Earthwork quantities are for reference only. Contractor shall handle any shortage of material by contacting engineer to determine the location not to be filled. All cost associated with mass grading shall be incidental to lump sum bid item "Mass Grading".

1. Contractor to strip top 3" of soil within Res. "B" and street R/W before mass grading and stockpile. Top soil stockpile to be redistributed over Reserve "B" above water surface.
2. Compaction of 95% shall be obtained in all street R/W's, 90% in all other areas.
3. It shall be the Contractor's responsibility to protect any existing utilities during mass grading. Any damage done to these systems by Contractor or subcontractor shall be repaired at no additional cost to the project.
4. Only trees within the street R/W or Res. "B" may be removed with engineers approval and if necessary for grading. All other trees shall be protected from damage.
5. All areas disturbed by construction shall be seeded as indicated on Pond Plan.

Area to be graded

185 Existing Grade

185 Proposed Grade

Baughman

AUBURN HILLS 15TH ADDITION
MASS GRADING PLAN
WICHITA, KANSAS

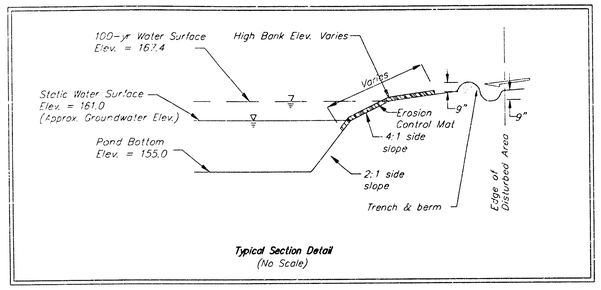
Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-2221 F 316-262-2134
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER	DESIGN	DRAWN TMS
REVISIONS: 3/3/05 POND SLOPES & LINER AEG	APPROVED	DATE 01/05
	SCALE Noted	
	SHEET 2R OF 16	

Auburn15/Phase2A.Mass 03-12-E762

BENCHMARK:
City Disc in T.C. Adj. to F.H.
38' South of intersection of
Onewood and Auburn Hills.
Elev. = 178.48 (City Datum)

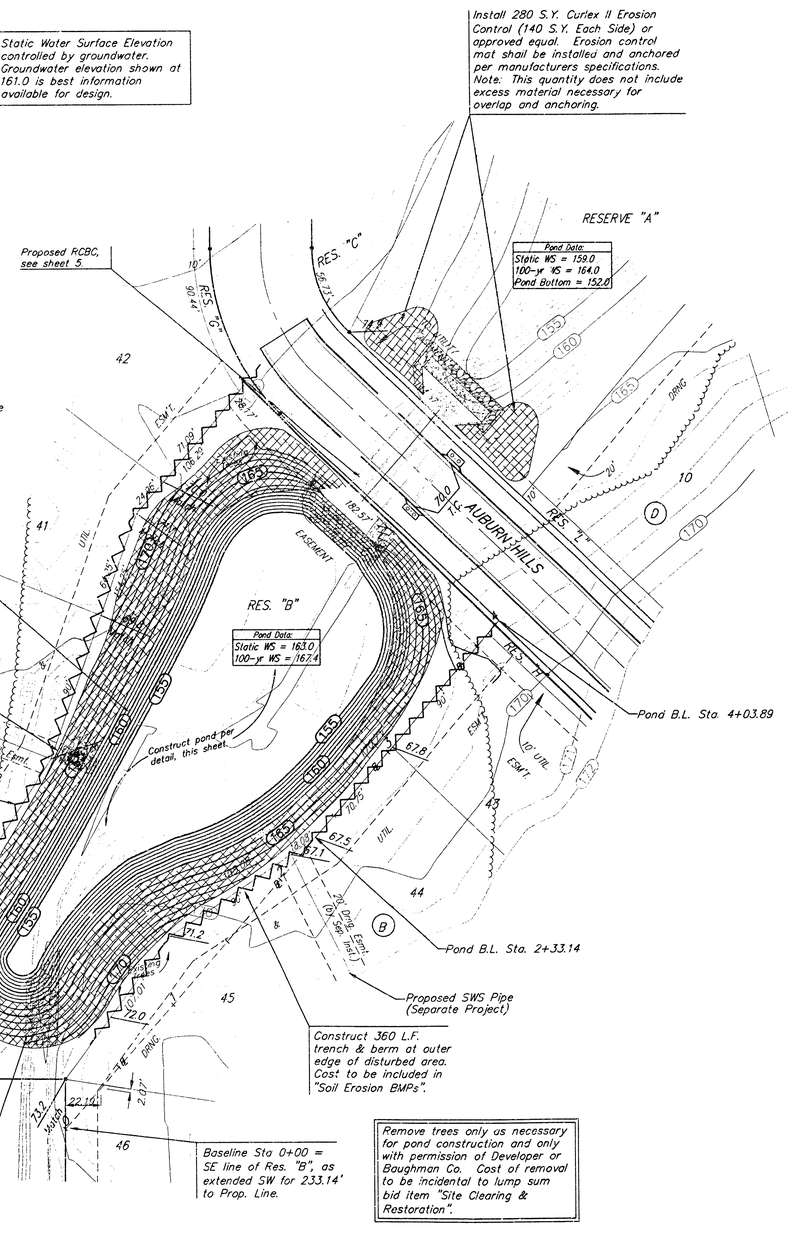
"□" cut in south curb of
Onewood 272' west of C.L.
Auburn Hills.
Elev. = 179.73 (City Datum)



Typical Section Detail
(No Scale)

Static Water Surface Elevation controlled by groundwater. Groundwater elevation shown at 161.0 is best information available for design.

Install 280 S.Y. Curlex II Erosion Control (140 S.Y. Each Side) or approved equal. Erosion control mat shall be installed and anchored per manufacturers specifications. Note: This quantity does not include excess material necessary for overlap and anchoring.



EROSION CONTROL MEASURE	UNITS	QUANTITY
SILT FENCE	L.F.	0
RIPRAP	S.Y.	PLAN
DROP INLET BARRIER	EA.	0
CURB INLET BARRIER	EA.	0
STRAW BALE DITCH CHECK	EA.	0
EARTHEN DIKES	L.F.	760
CURLEX	S.Y.	0
POND E.C. BLANKET	S.Y.	2,730
Construction Entrance	EA.	1

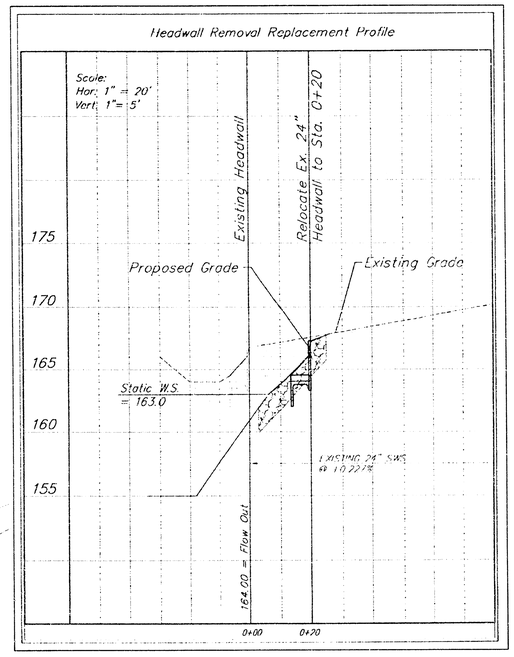
QUANTITIES ARE FOR INFORMATION ONLY! CONTRACTOR SHALL VERIFY QUANTITIES PER SPECIFIC ENGINEERING PLAN SHEET.

EROSION CONTROL PLAN LEGEND

(Installation Details Found in the SWP2 Plan)

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

NO SCALE



Scale: 1" = 40'

NOTES:

1. Any excess excavation shall be stockpiled on-site at an area indicated by the Engineer out of easements and R/W. Area will be staked by Engineer.
2. All of Reserves "A" and "B" above the static water surface shall be seeded and mulched as follows: (Permanent Seeding)
   SEED -- Kansas Premium Fescue Blend; 8#/1000 Sq. Ft.
   FERTILIZER -- 12-24-12 Ratio at 350 Lbs./Ac.
   MULCH -- 2 Tons Prairie Hay / Acre
   All other disturbed areas not in street R/W are to be seeded as follows: (Temporary seeding)
   SEED -- Rye grass (PLS)--5#/1000 Sq. Ft.
3. Install Erosion Control Mat from 1' below the water surface up the bank as shown.
4. Contractor to strip top 3" of soil within Res. "B" and street R/W before mass grading and stockpile. Top soil stockpile to be redistributed over Reserve "B" above water elevation prior to seeding.
5. Compaction of 95% shall be obtained in all street R/W's, 90% in all other areas.

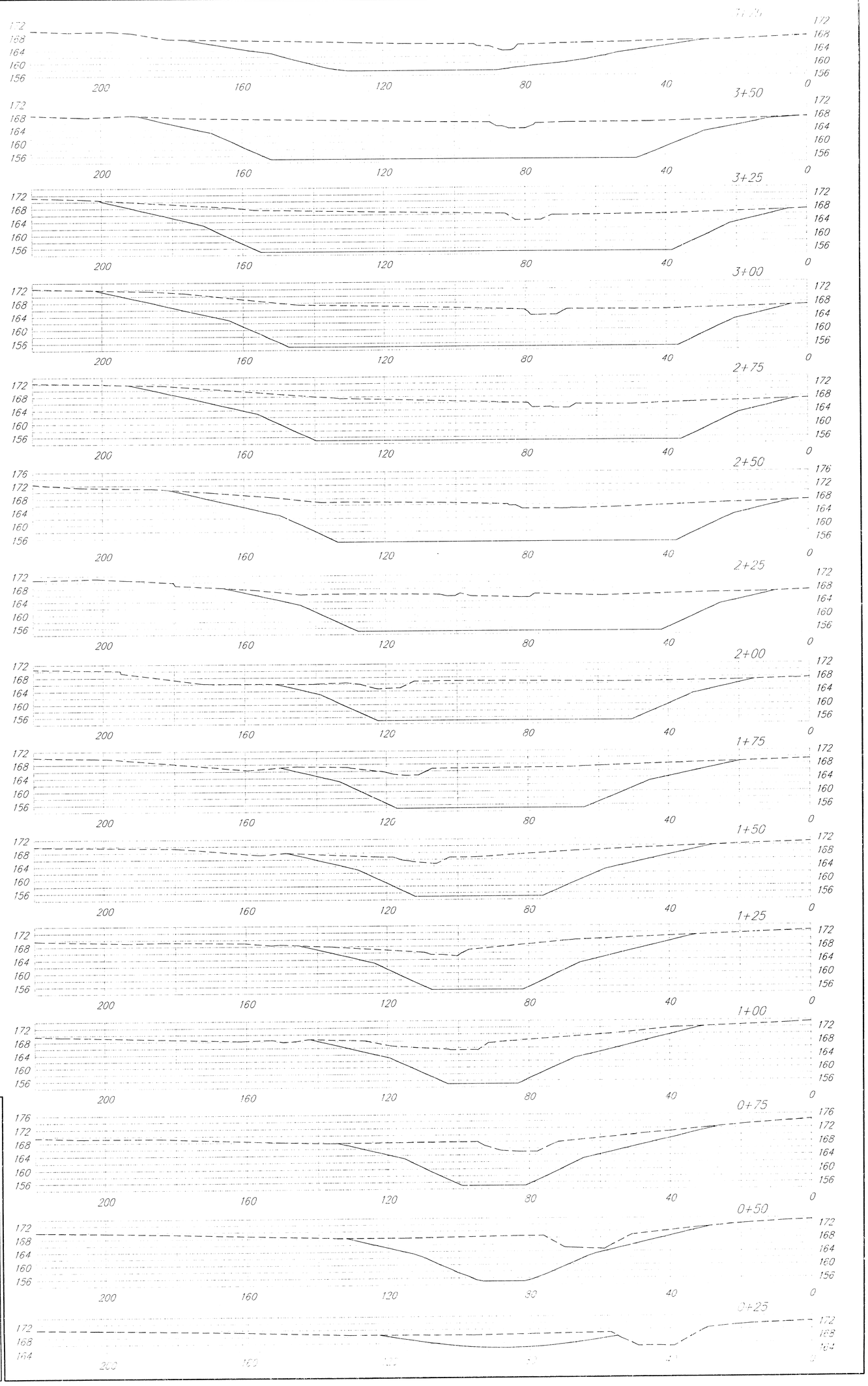
Baughman

AUBURN HILLS 15TH
POND PLAN
WICHITA, KANSAS

Baughman Company, P.A. 315 Ella St. Wichita, KS 67211 P 316-262-2221 F 316-262-0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER
DESIGN
DRAWN TMS
APPROVED
DATE 01/05
REVISIONS: 3/3/05 POND SLOPES & LINER AEG
SCALE Noted
SHEET **3R** OF **16**

Auburn15/Ph2A/Pond
03-12-E762



Baughman

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316-262-2221 F 316-262-0184
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER
46S-83759

SHEET
4R OF 16

BENCHMARK:
City Disc In T.C. Adj. to F.H. 38' South of intersection of Onewood and Auburn Hills. Elev. = 178.48 (City Datum)

" □ " cut in south curb of Onewood 272' west of C.I., Auburn Hills. Elev. = 179.73 (City Datum)

Remove 97.4 S.Y. existing heavy stone rip-rap as necessary for RCBC construction. Material may be re-used if in suitable condition.

Sta. 0+13.9, Line 1 Const. Std. Double Curb Inlet (10'x4'). Top Elev. = 171.20

Sta. 0+13.9 to Sta. 0+55.7 Install 41.8 L.F. Flowable Fill per City Specs.

Sta. 0+00, Line 1 Begin at blockout in RCBC and extend SWS NW.

Sta. 0+55.7, End Line 1 Const. Std. Double Curb Inlet (10'x3'). Top Elev. = 171.20

Proposed 8" Water Crossing

Proposed 8" Sewer Crossing

Pond Data:
Static WS = 159.0
100-yr WS = 164.0
Pond Bottom = 152.0

Pond Data:
Static WS = 163.0
100-yr WS = 167.4

RESERVE "A"

AUBURN HILLS 15TH ADDITION

RES. "B"

Proposed pond

Sta. 0+00, RCBC
Begin Const. of 3-7'x4' RCBC w/RC Headwall, Flared Wingwalls, Conc. Apron, and Concrete Slope Drain, the costs of which shall be included in the cost of RCBC. See Detail Sheets 6-9. Install 80 S.Y. of Heavy Stone Rip-Rap. Install Hand Rail Along Hubguard Per Detail, See Sheet 10.

Contractor to re-grade existing pond and sideslopes for construction of wingwalls, concrete apron and concrete slope drain as necessary.

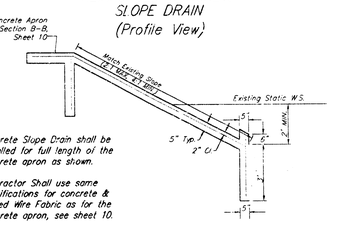
Sta. 0+73.0, RCBC
End Const. of 3-7'x4' RCBC w/RC Headwall, Flared Wingwalls and Conc. Apron, the cost of which shall be included in the cost of RCBC. See Detail Sheets 6-9. Install 86 S.Y. of Heavy Stone Rip-Rap. Install Hand Rail Along Hubguard Per Detail, See Sheet 10.

Remove trees only as necessary for storm sewer construction and only with permission of Developer or Baughman Co. Cost of removal to be incidental to lump sum bid item "Site Clearing & Restoration".

Sta. 0+16.5 to Sta. 0+55.5 Install 39.0 L.F. Flowable Fill per City Specs.

AUBURN HILLS; LINE 1; 10' Utility Esmt.; Prop. 4' Walk; 20' Utility Esmt.; Trees; 92°54'27"; 87°5'33"; 34' Fc-Fc; 64' R/W

REINFORCED CONCRETE SLOPE DRAIN (Profile View)

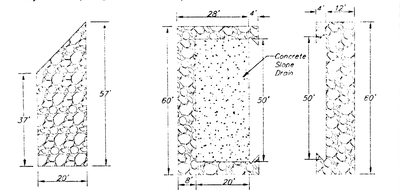


Concrete Slope Drain shall be installed for full length of the concrete apron as shown.

Contractor Shall use same specifications for concrete & Welded Wire Fabric as for the concrete apron, see sheet 10.

RIP-RAP DETAILS

Pond Inflow from Channel	Downstream End RCBC	Upstream End RCBC
105 S.Y. Heavy Stone Rip-Rap	80 S.Y. Heavy Stone Rip-Rap	86 S.Y. Heavy Stone Rip-Rap

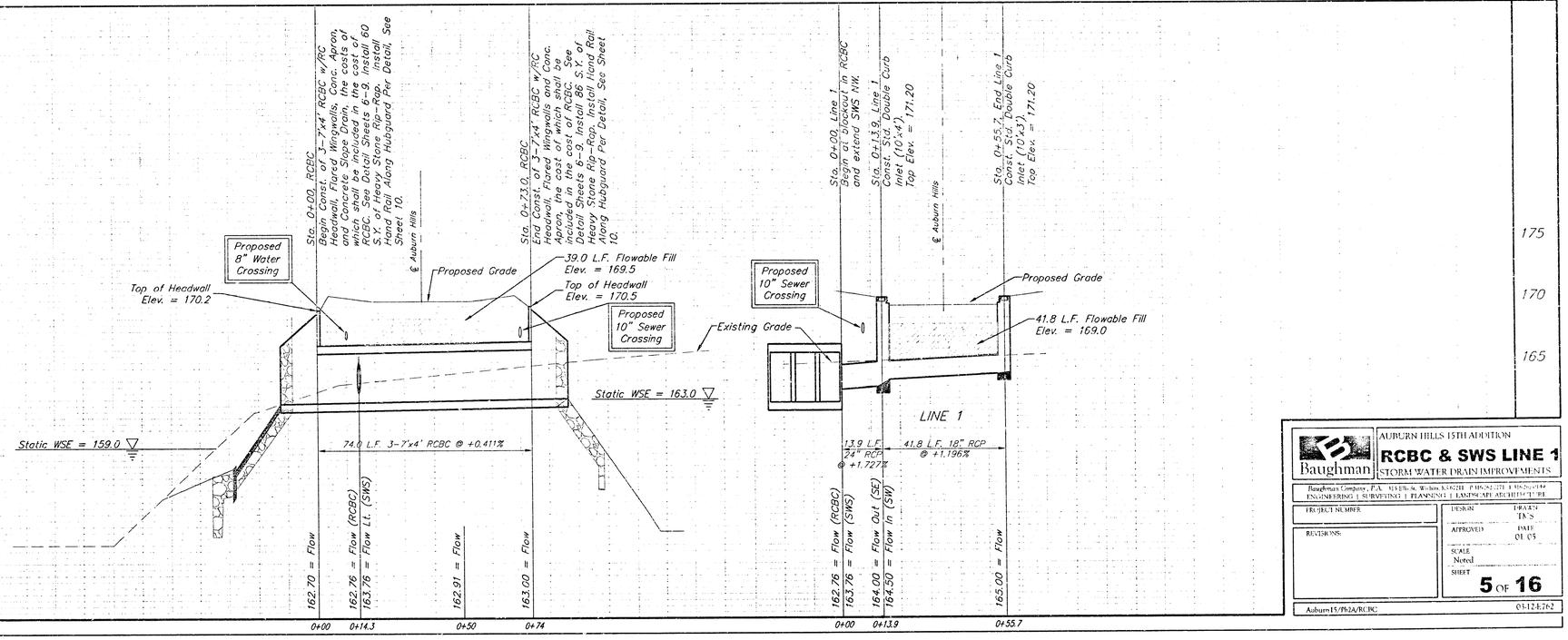


A 2' deep toe wall shall be installed on the down stream side of each rip-rap installation.

Scale: 1" = 20' Horizontal
1" = 5' Vertical
• = Iron

RCBC NOTES:

1. Cost of Bedding & Stabilization Below RCBC Shall Be Incidental to Construction of 3-7'x4' RCBC.
2. Contractor Shall Supply Engineer With Handrail Shop Drawings for Approval Prior To Construction
3. Contractor Has Option To Substitute The Cast-in-Place RCBC with a Pre-Cast Box Culvert. Contractor To Supply Engineer with Shop Drawings of Pre-Cast Box Prior To Construction.
4. The RCBC Contractor is Responsible To Backfill The Box in 8" Lifts and Compact Material to 95% Std. Density. All Earth Backfill Material Will Be Supplied On-site.
5. The RCBC Contractor is Responsible to Complete All Finish Grading Around The Box.
6. Contractor To Remove Only Trees As Required For Construction.
7. RCBC Shall Be Constructed on 3" Concrete Seal Course unless Pre-Cast Box Option is Chosen. The Contractor Shall Bed Pre-Cast Box on 1' Depth of 3/4" Dolese Stone.
8. Contractor Shall Extend Headwalls to elevations shown on this plan. Wingwalls shall also be extended as noted on the Wingwall Detail, Sheet 7.



Baughman

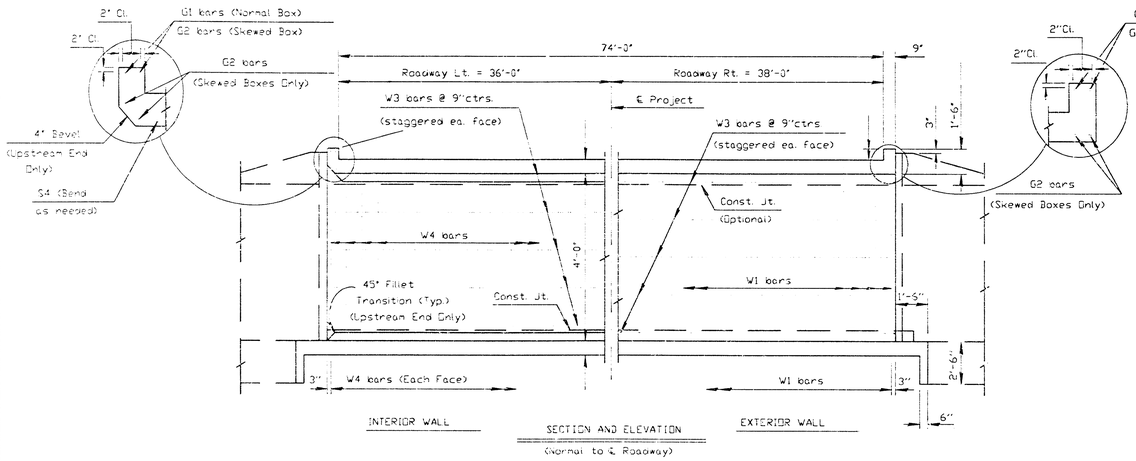
AUBURN HILLS 15TH ADDITION
RCBC & SWS LINE 1
STORM WATER DRAIN IMPROVEMENTS

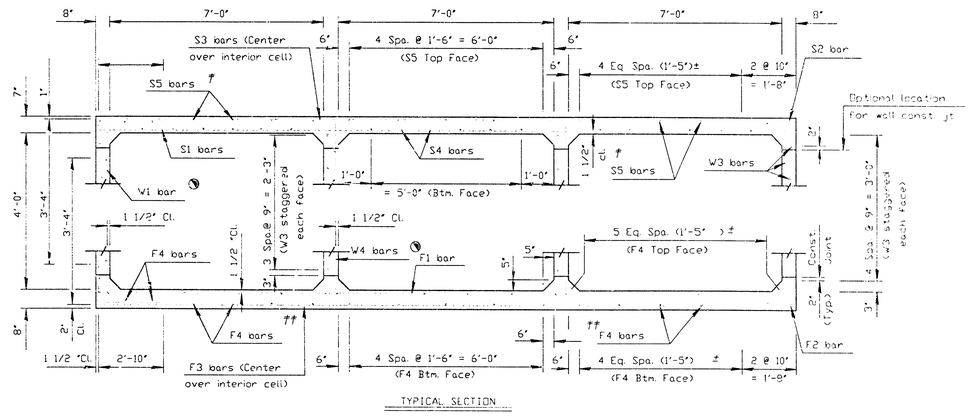
Baughman Company, P.A. 43439 W. Nine Mile Rd. Novi, MI 48375 P 248.344.2271 F 248.347.2586
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER
DESIGN: TKS
DRAWN: TKS
REVISIONS
APPROVED
DATE: 01-05
SCALE: Noted
SHEET: 5 OF 16

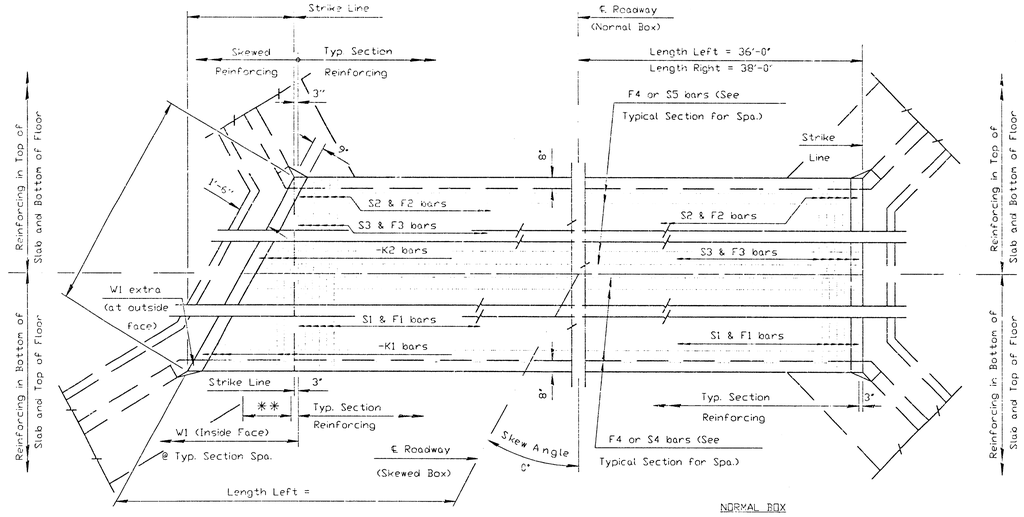
Auburn15/Pkg2A/RCBC
03-12-6762

STATE	PROJECT NO.	YEAR	SHEET NO	TOTAL SHEETS
KANSAS	468-83759		6	16





TYPICAL SECTION



** -F2 & -S2 bars (Top of Slab & Btm. of Floor)

SKEWED BOX (Lt. Skew Shown)

PLAN

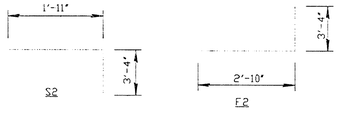
NORMAL BOX

℄ See RCB Auxiliary Details for Optional Splice.

± Place when S3 bar extends to exterior walls.

†† Place when F3 bar extends to exterior walls.

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



BENDING DIAGRAM

All Dimensions are out to out of bars.

GENERAL NOTES

LOADING: HS20-44 AASHTO Specifications, 1983 Edition.

UNIT STRESSES: Grade 4.0 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: Grade 4.0 Concrete shall be used throughout. Bevel all exposed edges with a 3/4 inch triangular moulding. Where Grade 4.0 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 Grade 4.0 Concrete. Excavation for RCB Bridges shall be paid for as Class 10 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	Left Wings	Right Wings	Scour Apron	Soil Saver	Concrete			Reinf. Steel (Gr. 60)		
									Barrel (Cu.Yds.)	Wings (Cu.Yds.)	Total (Cu.Yds.)	Barrel (Lbs.)	Wings (Lbs.)	Total (Lbs.)
162.70	163.00	170.80	5'	0°	Flared	Flared	Yes	No	116.97	15.57	132.54	18251	956	19208

BAR SCHEDULE

F1				F2 *				F3				F4			S1				S2 *				S3				S4			S5		
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	No.	Length

K1				K2				W1				W2				W3			W4				G1			G2						
Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	Spa.	No.	Length	Size	No.	Length	Size	No.	Length	Size	Spa.	No.	Length

* See Bending Diagram

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

SUMMARY OF QUANTITIES

Concrete (Grade 4.0)	132.5	C.Y.
Concrete (Grade 4.0)(AE)	0.0	C.Y.
Reinforcing Steel (Gr. 60)	19210	Lbs.
Reinforcing Steel (Epoxy Coated)	0	Lbs.
Class 10 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

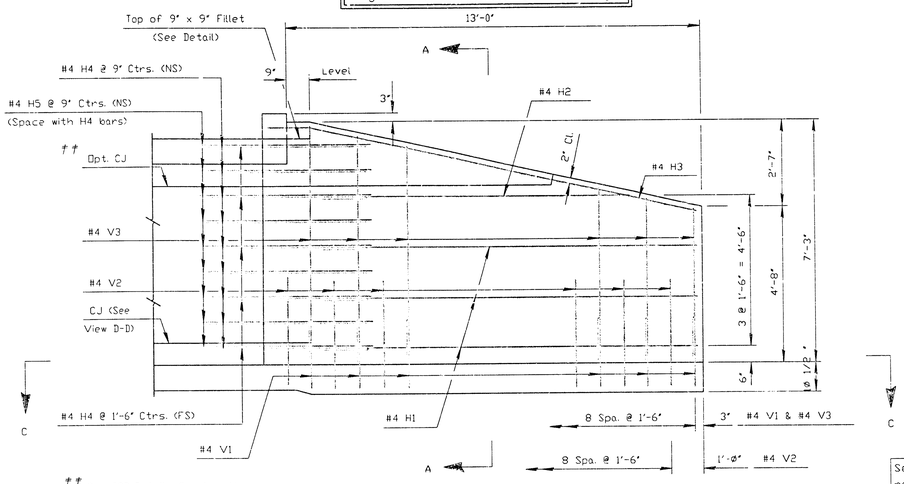
KANSAS DEPARTMENT OF TRANSPORTATION

TRIPLE 7' x 4' RCBC

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

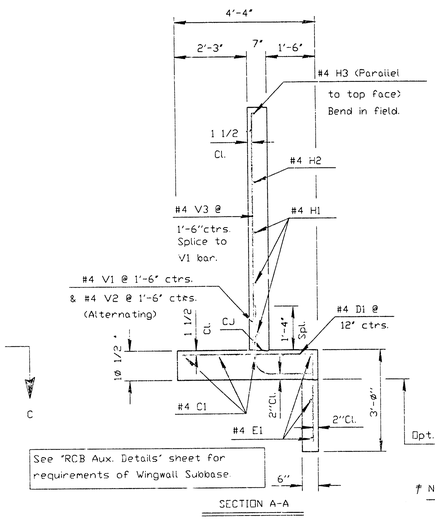
FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	468-83759		7	16

Wingwalls shall be extended to 17'-6" in length.



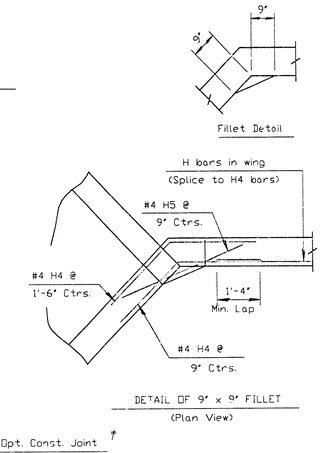
†† See RCB Details for location of construction joint.

ELEVATION OF WINGWALL
(Backface Shown)



See 'RCB Aux. Details' sheet for requirements of Wingwall Subbase.

SECTION A-A



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.

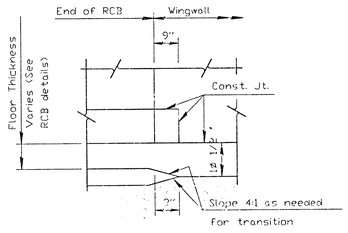
CONCRETE: Class AAA Concrete shall be used throughout. Bevel all exposed edges with a 3/4 inch triangular moulding.

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.

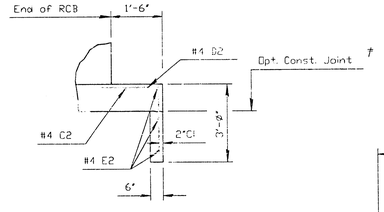
QUANTITIES: Wingwall Quantities include all quantities outside the neat lines of the box, excluding the huboguard.

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 Stabilization and/or Granular Backfill (Wingwalls) shall be used as determined by the Engineer. See 'RCB Auxiliary Details' sheet for additional details.

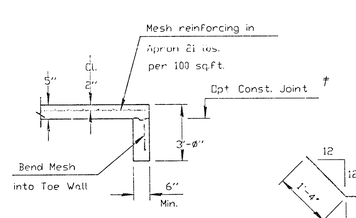


VIEW D-D

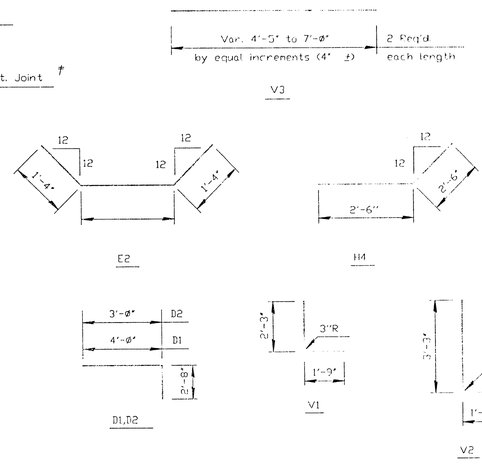


SECTION E-E

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

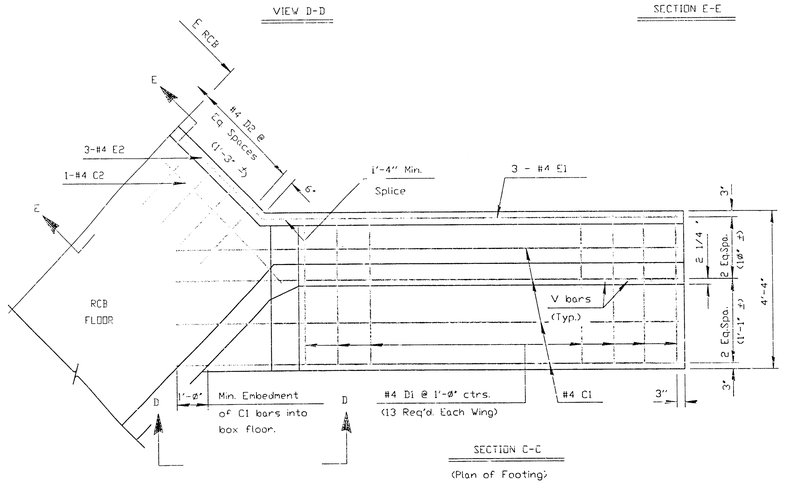


SECTION B-B

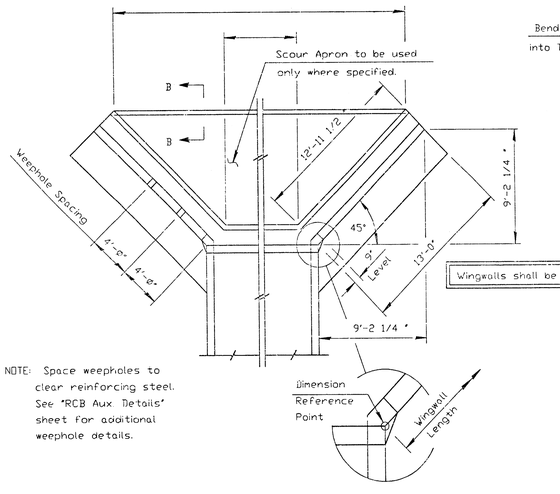


D1,D2

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



SECTION C-C
(Plan of Footing)



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

WING DIMENSIONS FOR NORMAL BOX
(3 1/2 :1 Embankment Slope)

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

WINGWALL QUANTITIES (One End Only)	
Class AAA Concrete:	
Wingwalls	C.Y.
Apron	C.Y.
Soil Saver	C.Y.
Reinforcing Steel	Lbs.
Welded Wire Fabric	Lbs.

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

✳ See Bending Diagram

	Mark	#4C1	#4D1	#4E1	#4C2	#4D2	#4E2	#4V1	#4V2	#4V3	#4H1	#4H2	#4H3	#4H4	#4H5
Ø° Skew	Number		✳			✳	✳	✳	✳					✳	
	Length														

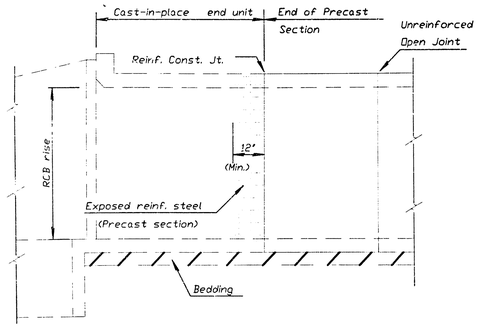
NO.	DATE	REVISIONS	BY	APP'D

RCB WINGWALLS
6' RISE 0° SKEW

BR1Ø.ØØ.Ø6

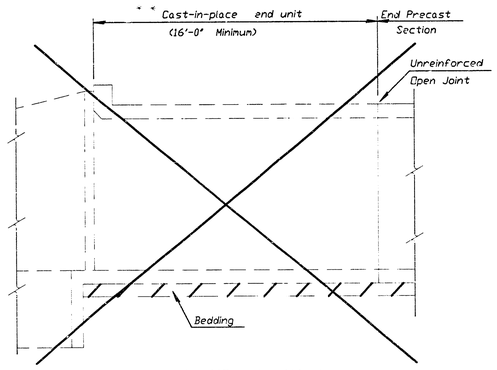
FHWA APPROVAL			APP'D	KENNETH F. HURST	
DESIGNED	RAM	DETAILED	RDS	QUANTITIES	TRACED
DESIGN CK.	RRH	DETAIL CK.	RRH	QUAN. CK.	TRACE CK.

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	468-83759	2001	8	16



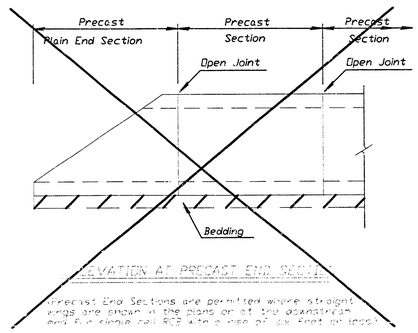
ELEVATION AT HEADWALL

* Where more than one section plate and two bell rings are shown, the inner bell ring is to be used when the cast-in-place end unit will face the precast section.



ELEVATION AT HEADWALL

** Minimum lateral length of cast-in-place unit shall be 16'-0" when used in conjunction with open joint at the end of the precast section.



ELEVATION AT PRECAST END SECTION

Precast End Sections are permitted where straight wings are shown in the plans or at the downstream end of a single cell RCB with a rise of six feet or less.

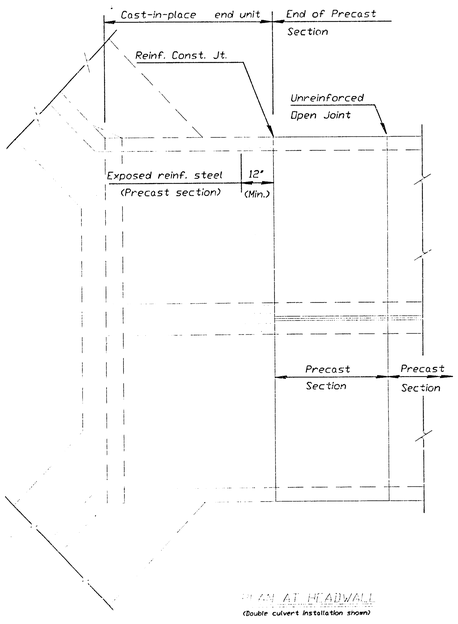
GENERAL NOTES

PRECAST BOX CULVERTS. If precast boxes are permitted at the locations shown in the plans and as noted in the elevation views on this sheet, then approved precast concrete box culverts of cast-in-place construction may be substituted for precast sections, at the Contractor's option and at no additional cost to the State, to complete the installation.

Cast-in-place concrete work shall conform to the requirements of the Standard Specifications and KDOT's "Guidelines for Selecting Precast Reinforced Concrete Box Culverts". All steel reinforcing bars conforming to [illegible]

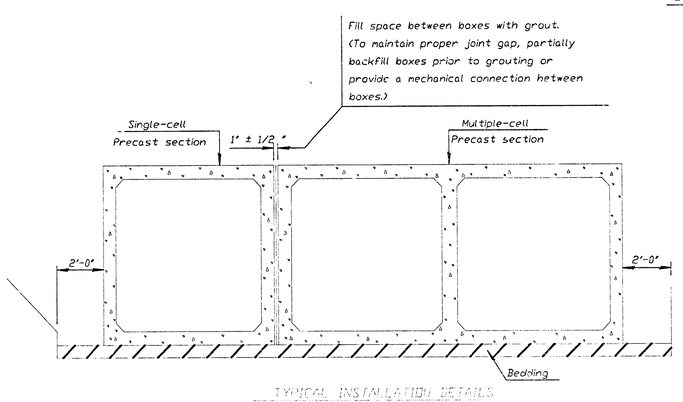
SPECIFICATIONS. Single-cell Precast Concrete Box Culverts shall conform to the requirements of the following specifications. Design methods, material criteria used to develop the strength requirements shall be in accordance with ASTM Specification C 1577, Table 9 or AASHTO LRFD Bridge Design Specifications.

DISTRIBUTION SLAB. For reinforced [illegible] and Precast Reinforced Concrete Box Culverts [illegible] distribution slab [illegible]

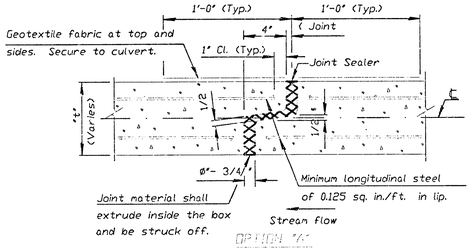


PLAN AT HEADWALL
(Double culvert installation shown)

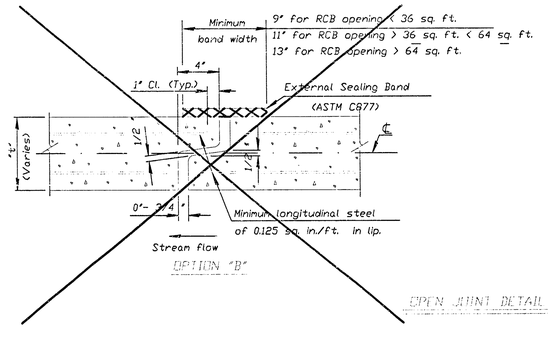
NOTE: Minimum length of precast section shall be 4'-0".



TYPICAL INSTALLATION DETAILS

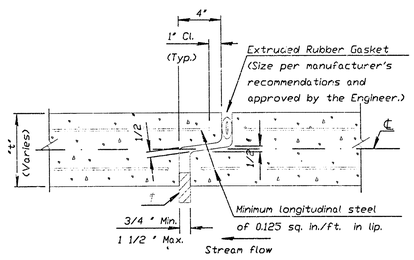


OPTION "A"



OPTION "B"

OPEN JOINT DETAIL



OPTION "C"

† Insert temporary, 3/4"-1" wide, hardwood wedges to prevent over-compressing gasket.

REVISED 10/09/01

NO.	DATE	REVISIONS	BY	APP'D
4	11-03-00	Revised ASTM / Added Note	RAM	KFH
3	12-20-96	Revised CIP end unit details.	RAM	KFH
2	1-17-95	Revised general notes	LRR	KFH
1	6-22-94	Added option 'C' & revised notes	RAM	KFH

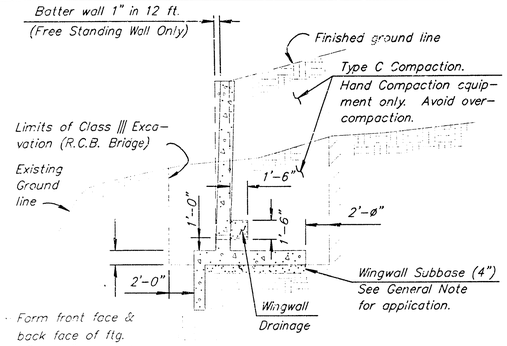
KANSAS DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT DETAILS

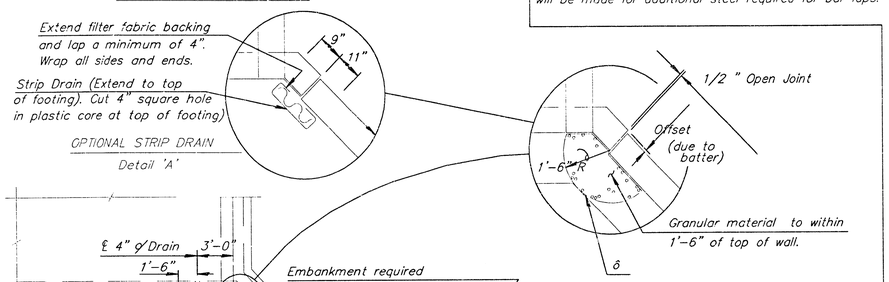
BRO31

FHWA APPROVAL	11-27-00	APP'D	KENNETH F. HURST
DESIGNED	DETAILED	PF QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	RAM QUAN. CK.	CADD CK.

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	468-83759		9	16

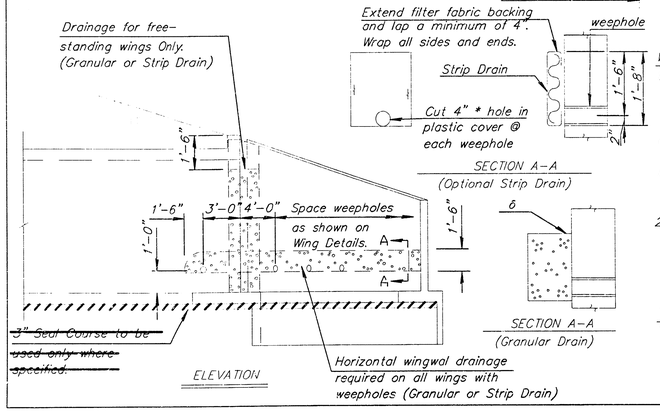


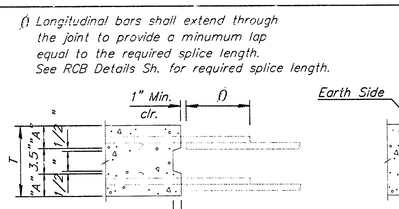
SECTION THRU WINGWALL



WINGWALL PLAN

VERTICAL WINGWALL DRAINAGE FOR FREE-STANDING WINGWALLS ONLY
(RCB Rise 12 ft. & over)

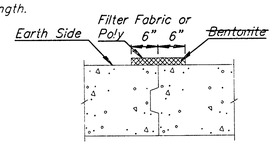




OPTIONAL BAR DETAIL

The Contractor shall have the option of using Dowel Bars to match vertical wall bars as shown, however no allowance will be made for additional steel required for bar laps.

() Longitudinal bars shall extend through the joint to provide a minumum lap equal to the required splice length. See RCB Details Sh. for required splice length.

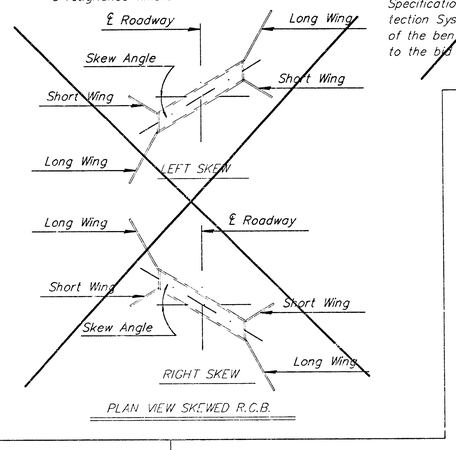


VERTICAL CONSTRUCTION JOINTS

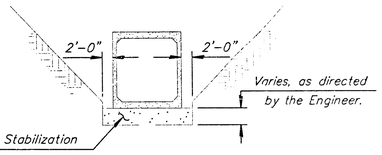
NOTE: Vertical construction joints shall be perpendicular to the longitudinal axis of the RCB and shall be placed at any location as needed for construction and as approved by the Engineer.

NOTE: Horizontal construction joints shall be a roughened finish.

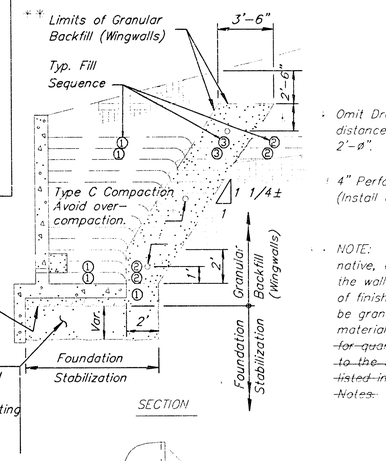
NOTE: Barrel Construction Joints located in a median with less than 5 ft. of fill or at locations specified by the Engineer, shall be protected by a bentonite based system as shown. Place the bentonite on the exterior walls only top slab. See requirements for bentonite in the KDOT Specifications for "Bridge Rockwall Protection System". Material and installation of the bentonite system shall be subsidiary to the bid item "Class AAA Concrete".



PLAN VIEW SKEWED R.C.B.

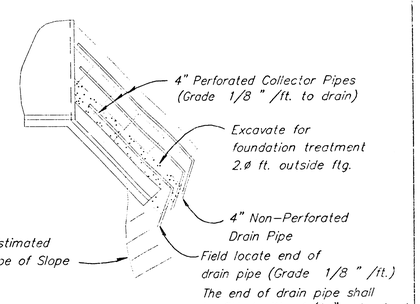


SECTION



SECTION

- Omit Drain Pipe when distance is less than 2'-ø".
- 4" Perforated Pipe (Install ea. 4' in Elev.)
- NOTE: As an alternative, all backfill for the wall (within 2'-6" of finish grade) may be granular backfill material. ~~Measurement for quantity shall be to the same limits as listed in the General Notes.~~



The end of drain pipe shall be fitted with 1/4 " galvanized mesh screen to prevent the entrance of rodents.

PLAN

GRANULAR BACKFILL AND FOUNDATION STABILIZATION

GENERAL NOTES

Wingwall Drainage:

1. All wingwalls with weepholes shall have horizontal wingwall drainage as shown. Free-standing wingwalls shall also have the vertical wingwall drainage. Strip drains may be used in lieu of aggregate. See KDOT Specifications for "Abutment Strip Drains" for strip drain requirements.
2. Construction and materials for wingwall drainage, including weepholes, geotextile fabric, granular material, and strip drain shall be subsidiary to the bid item, "3-10'x5' RCBC". Granular material for wingwall drainage shall conform to the requirements of UD-1. Weepholes may be a formed opening or corrugated polyethylene tubing.

Wingwall Subbase:

1. Wingwall subbase shall be constructed at all wingwall footings to assure the assumed coefficient of friction between the concrete footing and the foundation, with the following exceptions;

a) Wingwall subbase will not be required for footings on RCB's 6 feet or less in height unless otherwise determined by the Engineer.
b) The subbase will also not be required for footings founded on rock or clean, granular material as determined by the Engineer.

2. Subbase shall consist of 4" compacted granular material consisting of commercial grade clean sand or UD-1 material. All excavation, material and labor necessary to construct the wingwall subbase shall be subsidiary to "3-10'x5' RCBC".

Seal Course:

~~1. Seal Course consisting of 3" min. of Commercial Grade Concrete shall be constructed to the limits directed by the Engineer. No reinforcing in the floor of the slab or wall footing shall be placed until the Seal Course has gained sufficient strength to permit working upon it without injury.~~

GENERAL NOTES

Foundation Stabilization:

1. At sites where the wingwall footing or culvert floor is located within the limits of an existing streambed or is founded on unsuitable material, the Engineer will determine the depth of Foundation Stabilization.
2. Foundation Stabilization may be required under the box and/ or wingwalls as directed by the Engineer. The granular material placed for foundation stabilization shall be paid subsidiary to L.S. Bid Item 3-10'x5' RCBC. Material for Foundation Stabilization shall be suitable backfill material as approved by the Engineer. The excavation for the placement of granular material shall be subsidiary to the bid item, "3-10'x5' RCBC".

Granular Backfill (Wingwalls):

1. In locations where the material behind the wingwall consist of soils judged as high plasticity clays, fat clays, expansive clays or organic clays, Granular Backfill (Wingwalls) shall be used. Granular Backfill construction may be used separately or combined with Foundation Stabilization as directed by the Engineer.
2. ~~Measurement for the bid item, "Granular Backfill (Wingwalls)", shall be measured in Cubic Yards to the theoretical limits as shown. Drainage pipe, rodent screens, and excavation shall be subsidiary to the bid item, "Granular Backfill (Wingwalls)"~~
3. Material for Granular Backfill (Wingwalls) shall conform to the requirements of UD-1 or BD-1. Drainage Pipe shall be corrugated pulyethylene tubing conforming to KDOT Specifications.

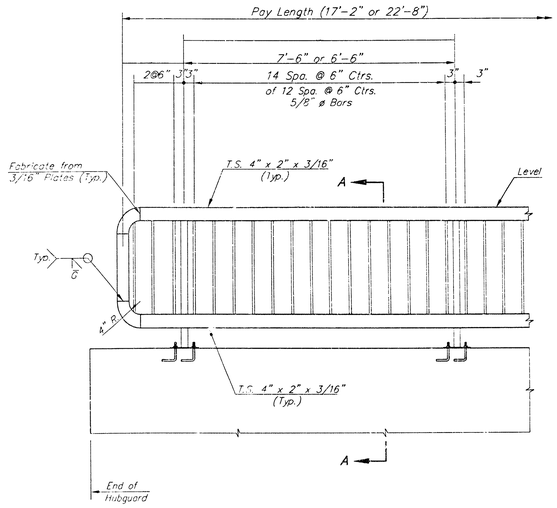
NO.	DATE	REVISIONS	BY	APP'D
3	3-28-97	Wrap granular drains	RAM	KFH
2	9-20-96	Strip drain & bentonite at joint	RAM	KFH
1	10-2-91	Change drainage details	RAM	KFH

KANSAS DEPARTMENT OF TRANSPORTATION

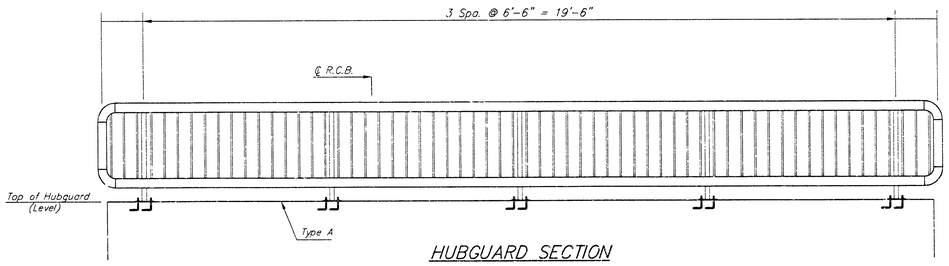
RCB AUXILIARY DETAILS

~~BR020~~

FHWA APPROVAL			3-31-97	APP'D	KENNETH F. HURST
DESIGNED	RAM	DETAILED	RDR	QUANTITIES	TRACED
DESIGN CK.	RRR	DETAIL CK.	RRR	QUAN. CK.	TRACE CK.

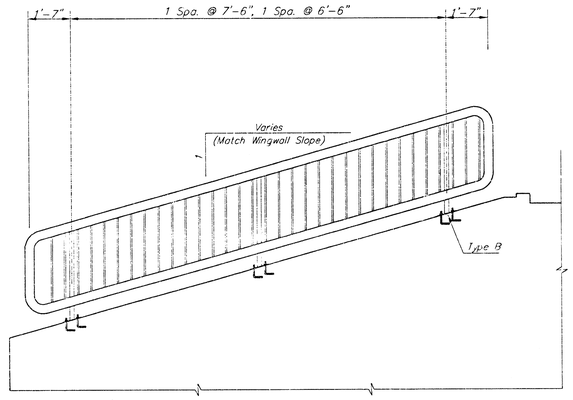


HANDRAIL ELEVATION



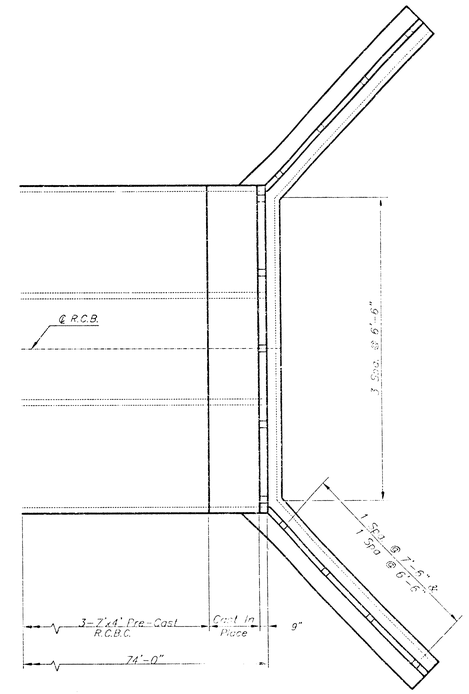
HUBGUARD SECTION

(2 Required)



HANDRAIL ELEVATION

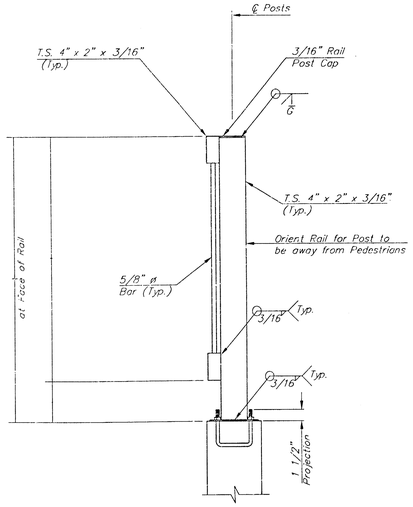
(4 Required)



RAIL LOCATION PLAN

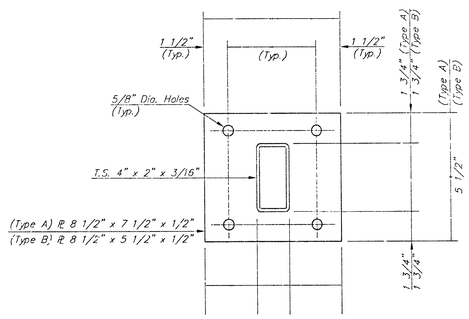
BASIS OF PAYMENT

The Bid Item "L.F. Handrail" Shall Include all labor. Materials, Anchor Bolts, Fabrication, Installation, and Ect. Necessary to Place the Handrails As Shown Along the Box Culvet. (Both Sides)



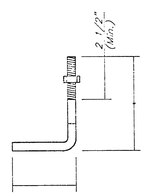
SECTION A-A

Note:
Rail Post on Hubguard shown,
Rail Posts on Wingwalls not shown
but similar controlling criteria.



BASE PLATE

5 Required (Type A)
8 Required (Type B)



Galvanized (ATSM A153)

(May Substitute expandable anchor bolts when approved by the Engineer)

ANCHOR BOLT

Orient to provide min. 2" edge clearance to either hubguard face or adjacent bolts)

GENERAL NOTES

The horizontal members of the rail and posts shall be hollow structural tubing. All structural steel and tubing shall comply to A.S.T.M. Designation A36 or A500 Grade B respectively.

Rail shall be fabricated in lengths as shown.

Posts and bars shall be set vertical and shimmed if required.

The paint system shall be provided by Carboline: 350 Hanley Industrial Ct., St. Louis, MO. The applicattion will be in accordance with the manufacturers recommendations. The paint procedure is as follows:

1. Abrasive blast to commercial finish SSPC-SP6 to obtain a surface profile of 1-1/2 mils.
2. Apply 2 coats of Carboline GP 818 Primer (2 to 4 mils per coat).
3. Apply one topcoat of Subsil 30 HS (2 to 3 Mils) (Color Carboline -+336). An approved substitutuion of the total paint sytem will be allowed with the approval of the Engineer.

Material and construction shall conform to the Structural Welding Code A.W.S. D1.1-00.

Shop details must be submitted and approved by the Engineer.

The Handrail Shall be Painted Maroon & a Test Piece Shall Be Supplied To the Engineer Prior To Cons. For Its Approval.

Baughman

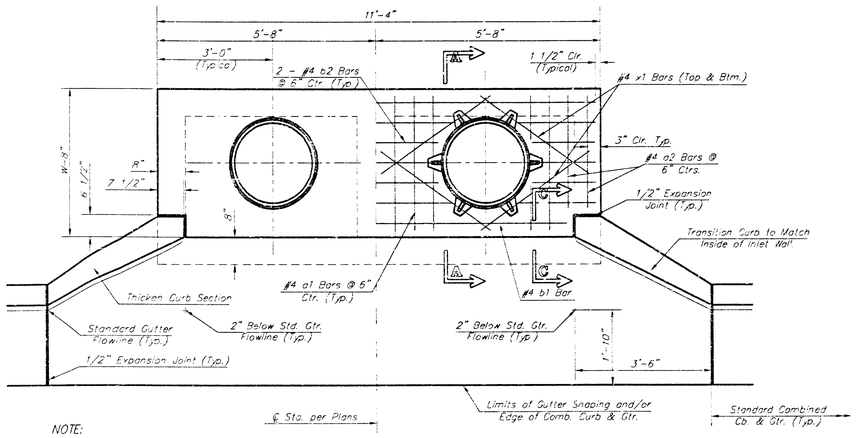
AUBURN HILLS 15TH ADD.
HANDRAIL DET.
CITY OF WICHITA, KS

Baughman Company, P.A. 315 Ellis St. Wichita, KS 67211 P 316.262.2221 F 316.262.0149
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468-83759

REVISIONS:

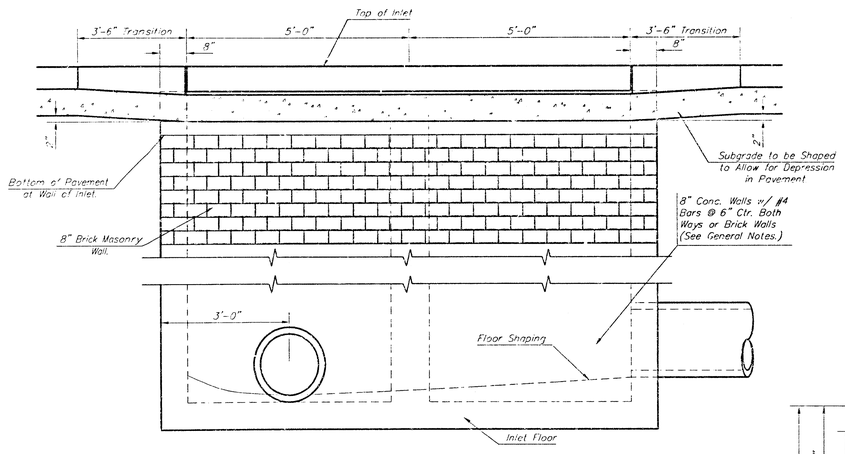
DESIGN DRAWN
APPROVED DATE
SCALE NONE
SHEET 10 OF 16



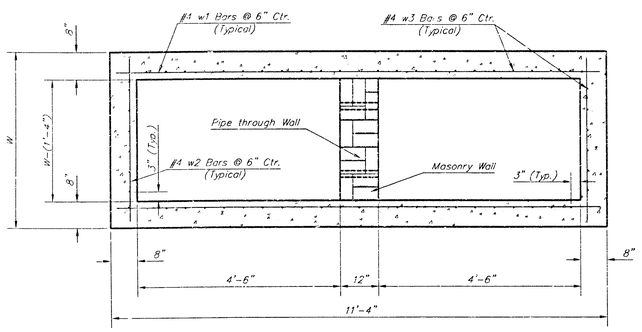
NOTE:
Expansion Joint Only in Curb Area with Concrete Pavement.

PLAN

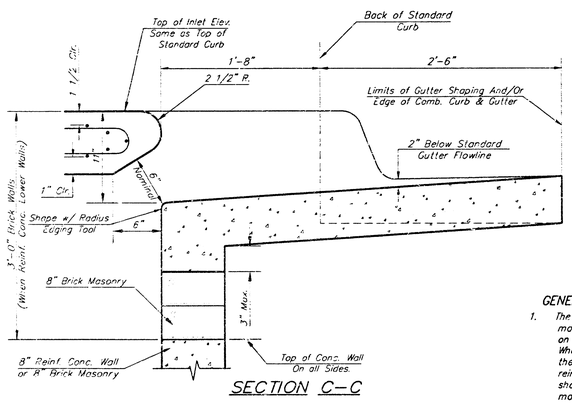
*Left Side Shown Without Slab Reinforcing, Right Side Shown With Slab Reinforcing



ELEVATION



SECTION B-B



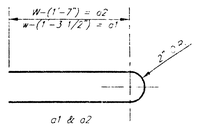
SECTION C-C

PRECAST SLAB AND FLOOR REINFORCING										
		W = 4'-4"		W = 5'-4"		W = 6'-4"		W = 7'-4"		W = 8'-4"
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
* a1	#4	13	6'-7"	13	8'-7"	13	10'-7"	13	12'-7"	13	14'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	23	4'-1"	23	5'-1"	23	6'-1"	23	7'-1"	23	8'-1"
b1	#4	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"	1	9'-9"
* b2	#4	23	11'-1"	29	11'-1"	35	11'-1"	41	11'-1"	47	11'-1"
x1	#4	16	3'-10"	16	4'-2"	16	4'-6"	16	4'-10"	16	5'-2"
WALL REINFORCING										
		W = 4'-4"		W = 5'-4"		W = 6'-4"		W = 7'-4"		W = 8'-4"
MARK	SIZE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
w1	#4	①	11'-1"	①	11'-1"	①	11'-1"	①	11'-1"	①	11'-1"
w2	#4	①	4'-1"	①	5'-1"	①	6'-1"	①	7'-1"	①	8'-1"
w3	#4	52	②	56	②	60	②	64	②	68	②

* Field Bend or Cut Reinforcing as Required for Clearance
① 4 (HI - 12") (HI - 21") Rounded down to nearest 0.5'
② HI - 3"

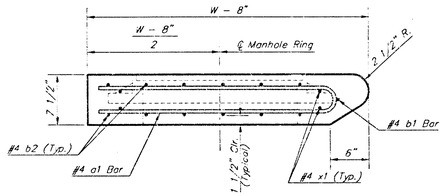
GENERAL NOTES:

1. The contractor shall be required to construct 8" brick masonry walls between the concrete inlet base and top on this inlet when W=8'-4" or less and H=7'-0" or less. When W is greater than 6'-4" and H is less than 7'-0" the outside inlet walls below the brick stack shall be reinforced concrete construction and the center wall shall be of masonry construction as shown for the masonry wall option.
2. Inlet invert shall be shaped with 8 sack sand mix concrete to create flow channels and to increase hydraulic efficiency such that the inlet will be self cleaning between all inlet and/or outlet pipes.
3. Concrete tops to be installed on thin mortar cushion to insure full support along brick walls. Concrete tops may be cast in place or precast. Concrete used for inlet construction shall be concrete pavement mix.
4. Inlet top reinforcing shall be spaced on 6" max. centers. Inlet lids shall be notched out as indicated to facilitate construction of curb. Bars in inlet top to be field bent or cut to clear manhole ring.
5. The ends of all pipes installed in inlets shall be cut off flush with the inside face of the inlet wall.

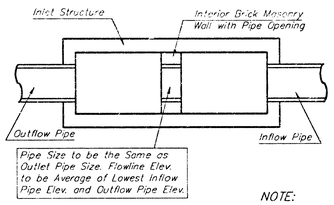


BENDING DIAGRAM

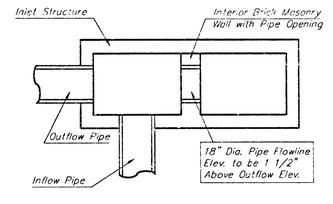
STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	LOCATION
4'-4"	3'-8" 11'-4" 7 1/2"	21" & SMALLER	0 Mile
5'-4"	4'-8" 11'-4" 7 1/2"	24" & 30"	1 Mile
6'-4"	5'-8" 11'-4" 7 1/2"	36" & 42"	1 Mile
7'-4"	6'-8" 11'-4" 7 1/2"	48" & 54"	1 Mile
8'-4"	7'-8" 11'-4" 7 1/2"	60" & 66"	1 Mile



SECTION A-A

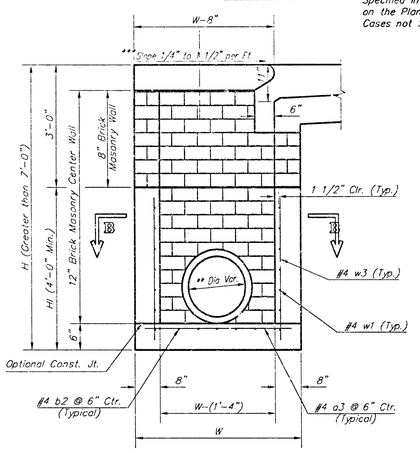


CASE I



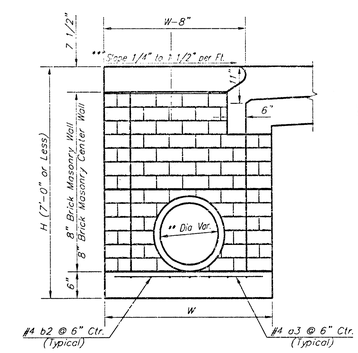
CASE II

NOTE:
Center Wall Pipe Size shall be as Specified in Inlet Construction Notes on the Plan/Profile Sheets for those Cases not Shown Here.



TYPICAL INLET SECTION AT CENTER WALL

(Reinforced Concrete Walls)

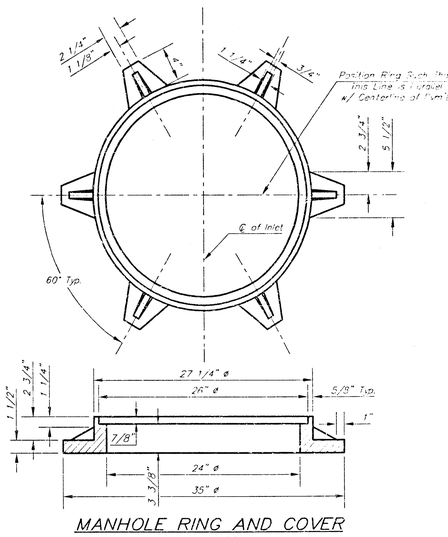


TYPICAL INLET SECTION AT CENTER WALL

(Masonry Walls)

NOTES:
** A center wall opening shall be provided by means of a section of reinforced concrete pipe. See Case I and Case II above.
*** Slope of inlet tops to match sidewalk of parking slopes within limits indicated

*See City of Wichita Standard Manhole Ring and Cover Detail Sheet for Cover Details to Be Used With Inlet Frame.



MANHOLE RING AND COVER

Weight = 180 lbs.

Baughman

City of Wichita Standard Type 1A

Curb Inlet Details

Inlet Opening = 6' X 10'0"

Baughman Company, P.A. 11338 E. St. Wichita, KS 67211 P 316.265.2222 F 316.265.1142
ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

PROJECT NUMBER 468.83750

DESIGN C.O.W. DRAWN Staff

APPROVED DATE

REVISIONS: Revised Feb. 18, 1999

SCALE None

SHEET 11 OF 16

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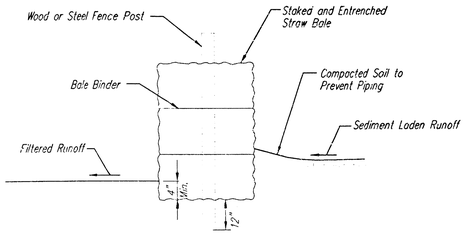


STRAW BALE BARRIERS

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:

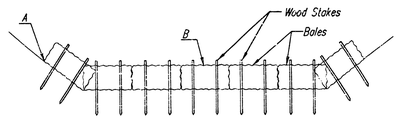
When practicable, do not place bale slope barriers across contours. Slope barriers should be placed along contours to avoid a concentration of flow. Concentrated flow over a slope barrier creates a scour hole on the downslope side of the barrier. The scour hole eventually undermines the bales and the 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 5' wide.
Optional: The metal landscape staples used to anchor the erosion-control blanket should be at least 8" long.

Placement:

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

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

Proper installation method:

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

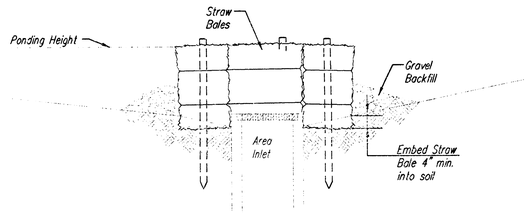
List of common placement/installation mistakes to avoid:

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

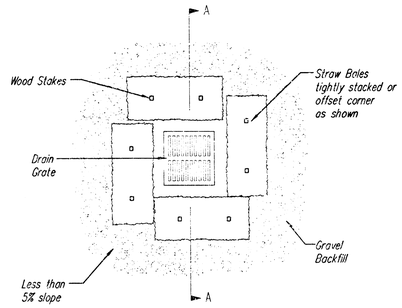
Inspection and Maintenance:

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

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



SECTION A-A



STRAW BALE BARRIERS FOR AREA INLETS
(INLET PROTECTION)

Material Specification:

Bale area inlet barriers should be constructed of wheat straw, oat straw, prairie hay, or bromegrass hay that is free of weeds declared noxious by the Kans 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.

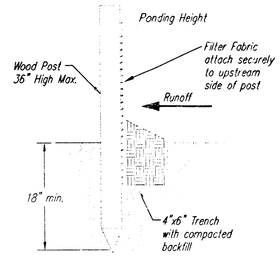
List of common placement installation mistakes to avoid:

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 of 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 setting 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:

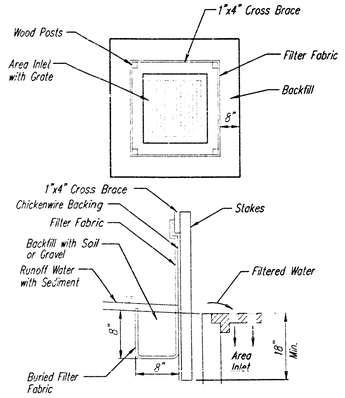
Are there any points along the slope barrier where water is concentrating?
Does water flow under the slope barrier?
Do the silt fences sag excessively?
Has the silt fence torn or become detached from the posts?
Does sediment need to be removed from behind the slope barrier?

CITY OF WICHITA

SOIL EROSION BMP DETAILS

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

PROJECT NUMBER 468-83759
DCA NO. 751359
DATE DEC 2004



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.

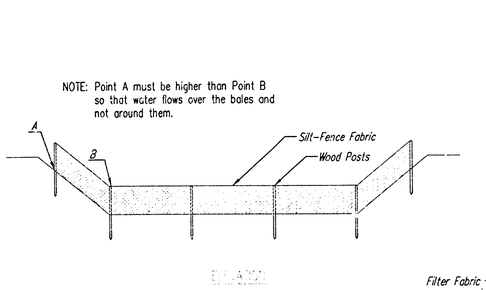
List of common placement/installation mistakes to avoid:

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.

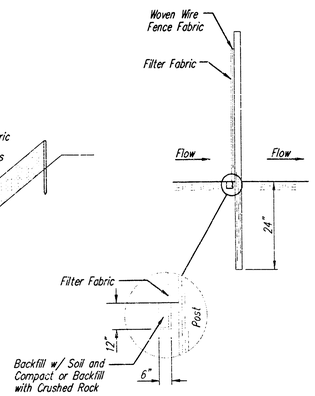
Inspection and Maintenance:

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?



SILT FENCE DITCH CHECKS
(STREAM PROTECTION)



ANCHOR TRENCH DETAIL

Material Specification:

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

Placement:

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

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

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

Proper installation method:

Excavate a trench perpendicular to the ditch flowline that is at least 12" deep by 6" wide.
Extend the trench in a straight line along the entire length of the proposed ditch check.
Place the soil on the upstream side of the trench for later use.
Roll out a continuous length of silt fence fabric on the downstream side of the trench.
Place the edge of the fabric in the trench starting at the top upstream edge of the trench.
Line two sides of the trench with the fabric as shown on detail. Backfill over the fabric in the trench with the excavated soil and compact. After filling the trench, approximately 24" to 36" of silt fence fabric should remain exposed.
Lay the exposed silt fence on the upstream side of the trench to clear an area for driving in the posts. Just downstream of the trench, drive posts into the ground to a depth of at least 24". Place posts no more than 4' apart.
Attach the silt fence to the anchored post with staples, wire, zip ties, or nails.

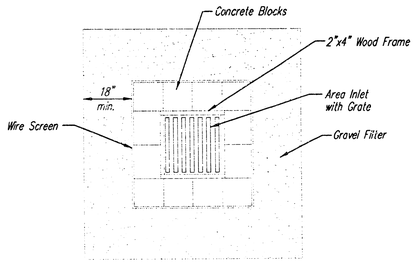
List of common placement/installation mistakes to avoid:

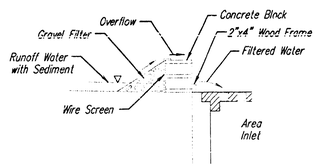
Water should flow through a silt fence ditch check-not over it. Place silt fence in ditches where it is unlikely that it will be overtopped. Silt fence installations quickly deteriorate when water overtops them.
Do not place silt fence posts on the upstream side of the silt fence fabric. In this configuration,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

Inspection and Maintenance:

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

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





CONCRETE BLOCK FILTER FOR AREA DRAIN
(INLET PROTECTION)

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

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

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

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

Instructions for Installing:

STEP 1: Place concrete blocks around the grate. The blocks can be stacked one or two high and should be supported by a 2"x4" board.
STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary.

An alternative method is use of gravel bags that are supported to prevent collapsing.

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

Maintenance:

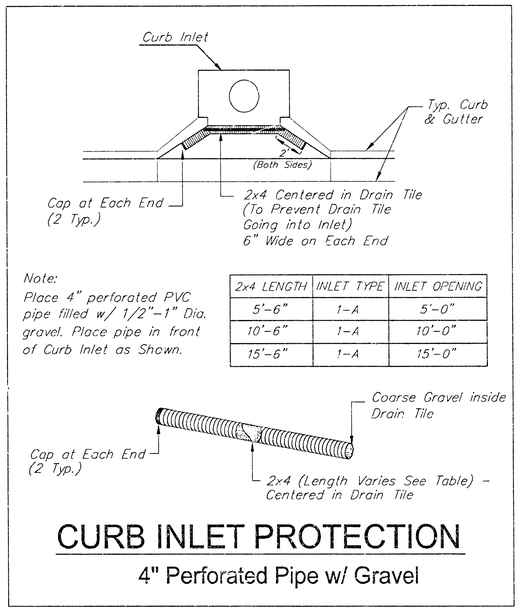
All gravel filters installed around area drains should be inspected and repaired after each runoff event. Sediment should be removed when material is within 3" of the top of any block. Periodically, the gravel should be raked to increase infiltration and filtering of runoff waters. Accumulated sediment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

CITY OF WICHITA

SOIL EROSION BMP DETAILS

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

PROJECT NUMBER	OCA NO.
468-83759	751359
DATE	SHEET 13 OF 16
DEC 2004	

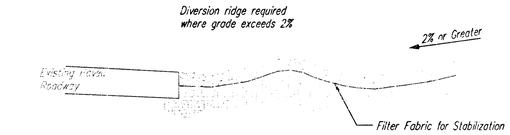


Note:
Place 4" perforated PVC pipe filled w/ 1/2"–1" Dia. gravel. Place pipe in front of Curb Inlet as Shown.

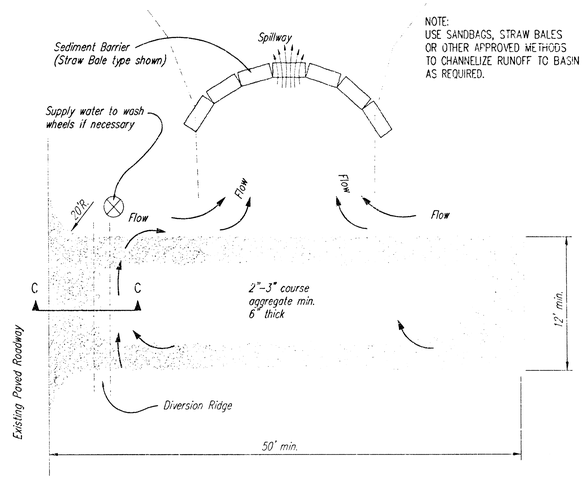
2x4 LENGTH	INLET TYPE	INLET OPENING
5'–6"	1–A	5'–0"
10'–6"	1–A	10'–0"
15'–6"	1–A	15'–0"

CURB INLET PROTECTION

4" Perforated Pipe w/ Gravel



SECTION C–C



STABILIZED CONSTRUCTION ENTRANCE

NOTES:

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

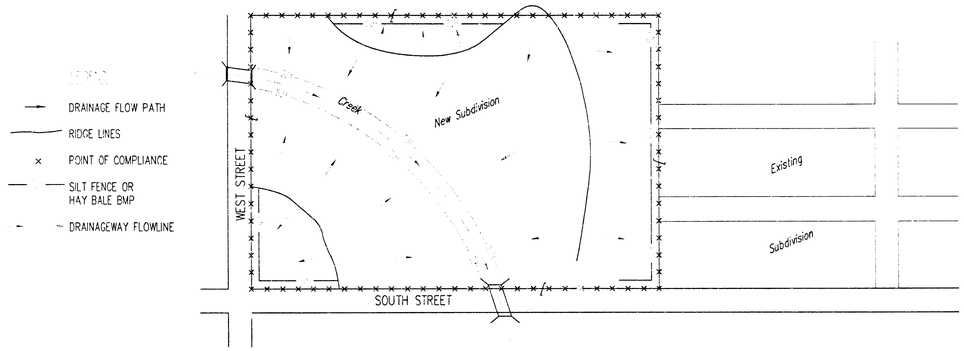
CITY OF ENGINEERING

SOIL EROSION BMP DETAILS

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

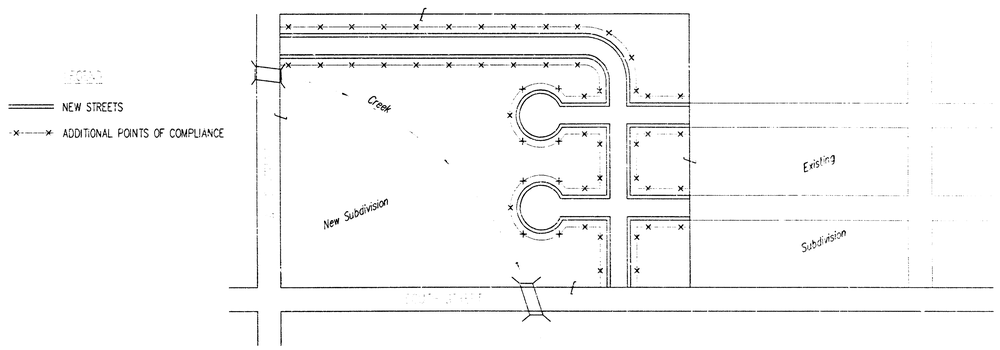
PROJECT NUMBER 468-83759
CCA NO. 751359
DATE DEC 2004

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



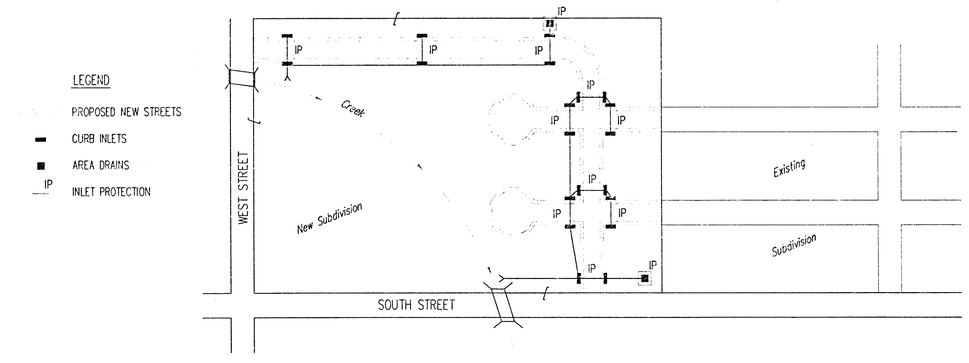
1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
2.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

PHASE 3 – STREET CONSTRUCTION

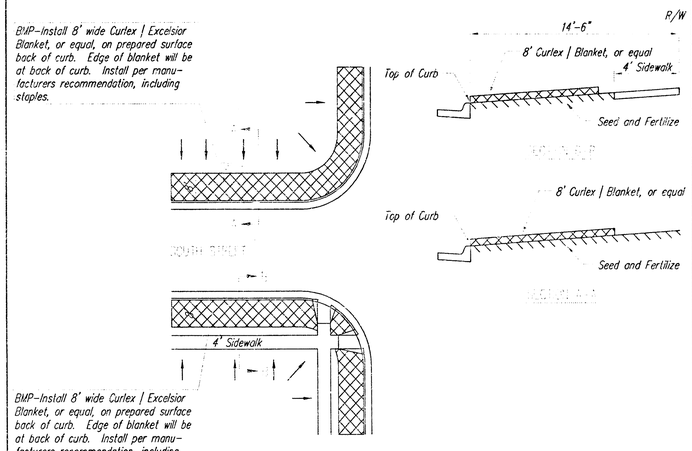


1. DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL BMP'S INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
2. CURB OPENING INLET PROTECTION:
   A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED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

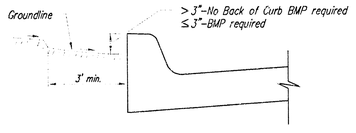
PHASE 2 – INSTALLATION OF STORM SEWER



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



BACK OF CURB PROTECTION DETAIL



CURB BACKFILL DETAIL

GENERAL NOTES:

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

CITY OF WICHITA

SOIL EROSION BMPS SUBDIVISION DEVELOPMENT PROCESS

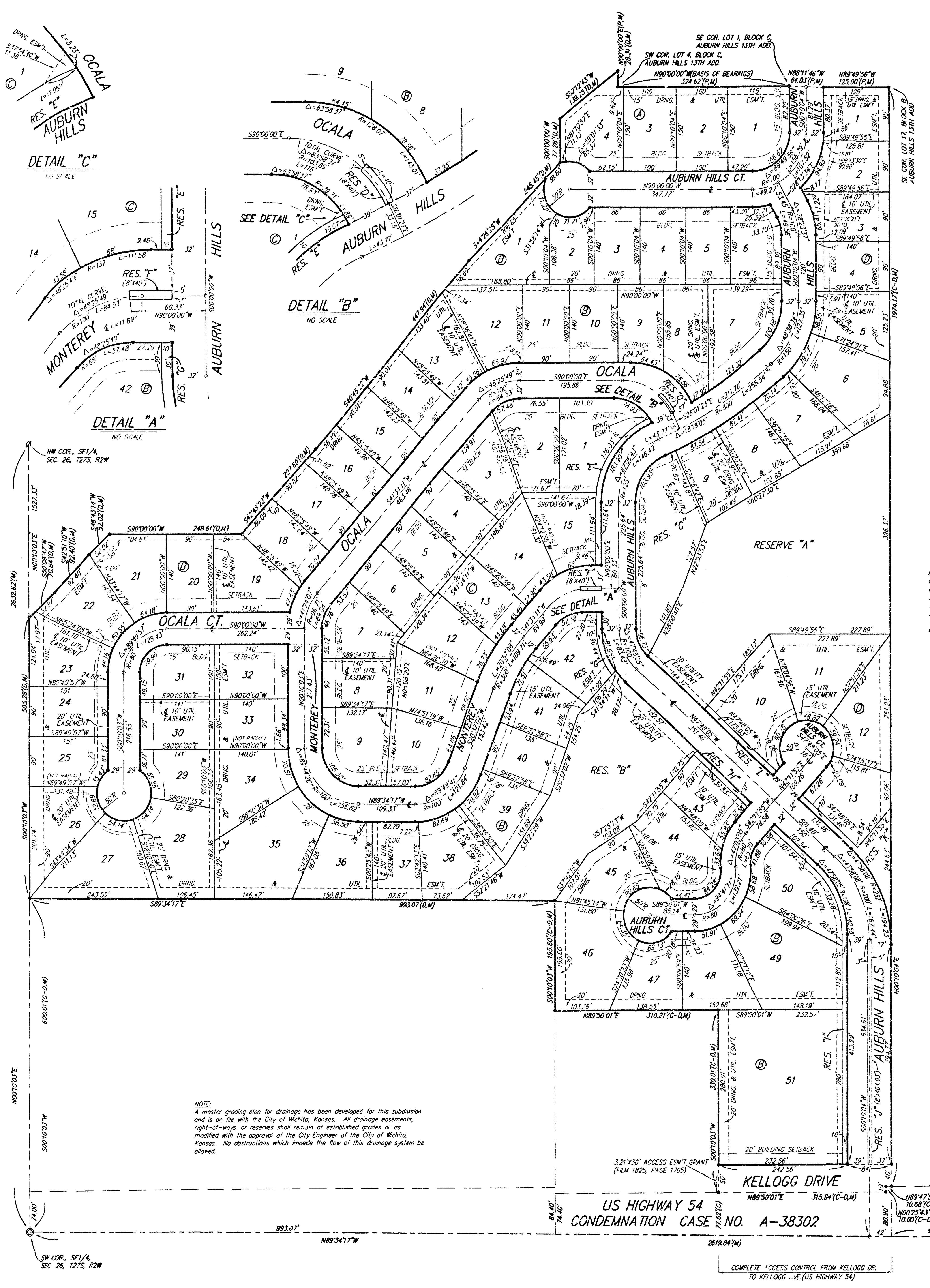
CHRISTOPHER M. CARRIER, P.E.
STORM WATER ENGINEER

PROJECT NUMBER 468-83759

COA NO. 751359

DATE DEC 2004

AUBURN HILLS 15TH ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS



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

0 100 200

● = #4 REBAR W/ "BAUGHMAN" CAP (SET)
Ø = 3/4" IRON (FOUND)
◎ = 3/4" IRON IN THIMBLE (FOUND)
□ = #5 REBAR W/ "MKEC" CAP (FOUND)

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

MINIMUM BUILDING PAD ELEVATIONS FOR LOWEST OPENING TO THE STRUCTURES

LOT	BLOCK	ELEVATION CITY DATUM
38-46	B	172.0
6-12	D	172.0

BENCHMARK:
CITY OF WICHITA DISC - EAST SIDE OF 135TH ST. W.
0.5 MI. SOUTH OF MAPLE
34.00' E. OF ℄ OF 135TH ST. W
17.00' N. OF ℄ OF E-W BRIDGE
2.00' N. OF 1/4 COR.
1.00' W. OF FENCE SOUTH
ELEV. = 156.66 CITY DATUM
1344.06 NGVD29

State of Kansas) SS
Sedgwick County) We, Baughman Company, P.A., Surveyors in aforesaid county and state do hereby certify that we have surveyed and platted "AUBURN HILLS 15TH ADDITION", Wichita, Sedgwick County, Kansas and that the accompanying plat is a true and correct exhibit of the property surveyed, described as that part of the SE¼ of Sec. 26, Twp. 27-S, R-2-W of the 6th P.M., Sedgwick County, Kansas described as follows: Beginning at the SW corner of Lot 4, Block C, Auburn Hills 13th Addition, Wichita, Sedgwick County, Kansas; thence N00°00'00"E along the west line of said Lot 4, 28.31 feet; thence S52°12'43"W, 139.25 feet; thence S00°00'00"W, 77.28 feet; thence S44°26'25"W, 245.45 feet; thence S40°45'22"W, 447.94 feet; thence S42°45'22"W, 207.60 feet; thence S90°00'00"W, 248.61 feet; thence S46°43'14"W, 52.02 feet; thence S42°51'10"W, 92.40 feet; thence S50°08'47"W, 70.84 feet to a point on the west line of the SE¼ of said Sec. 26; thence S00°10'03"W, along the west line of said SE¼, 505.28 feet to a point 500 feet normally distant north of the south line of said SE¼; thence S89°34'17"E parallel with the south line of said SE¼, 993.07 feet to a point on the east line of the west 30 acres of the SW¼ of said SE¼; thence N00°10'03"E along the east line of said west 30 acres, 715.56 feet to a point on the north line of the SW¼ of said SE¼; thence S89°31'44"E along the north line of the SW¼ of said SE¼, 316.86 feet to the NE corner of the SW¼ of said SE¼; thence continuing S89°31'44"E along the south line of the NE¼ of said SE¼, 319.91 feet to a point 990 feet normally distant west of the east line of said SE¼; thence N00°10'03"E parallel with the east line of said SE¼, 750.09 feet to the SE corner of Lot 17, Block B, in said Auburn Hills 13th Addition; thence N89°49'56"W along the south line of said Lot 17, 125.00 feet to the SW corner of said Lot 17, said SW corner also being the SE corner of Dogleg as dedicated in said Auburn Hills 13th Addition, thence N88°11'46"W along the south line of said Dogleg, 64.03 feet to the SW corner of said Dogleg, said SW corner also being the SE corner of Lot 1, Block C, in said Auburn Hills 13th Addition; thence N90°00'00"W along the south line of said Block C, 324.62 feet to the point of beginning, TOGETHER with the SE¼ of the SE¼ of Sec. 26, Twp. 27-S, R-2-W of the 6th P.M., Sedgwick County, Kansas, EXCEPT the east 990.00 feet thereof, and EXCEPT that part condemned for U.S. Highway 54 in Case No. A-38302, TOGETHER with the SW¼ of the SE¼ of said Sec. 26, EXCEPT the west 30 acres thereof, and EXCEPT that part condemned for U.S. Highway 54 in Case No. A-38302, and EXCEPT a tract in the SW¼ of the SE¼ of said Sec. 26 described as follows: Beginning at the intersection of the north line of said U.S. Highway 54 with the east line of the west 30 acres of the SW¼ of the SE¼ of said Sec. 26; thence north along the east line of said west 30 acres, 330.01 feet to a point 330.00 feet normally distant north of the north line of said U.S. Highway 54; thence east parallel with the north line of said U.S. Highway 54, 310.21 feet to a point 310.20 feet normally distant east of the east line of said west 30 acres, thence south parallel with the east line of said west 30 acres, 330.01 feet to a point on the north line of said U.S. Highway 54; thence west along the north line of said U.S. Highway 54, 310.21 feet to the point of beginning.

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

Baughman Company, P.A.

____________________, Surveyor
Michael G. Conrey

Know all men by these presents that we, the undersigned, have caused the land in the surveyors certificate to be platted into Lots, Blocks, Streets, and Reserves, to be known as "AUBURN HILLS 15TH ADDITION", Wichita, Sedgwick County, Kansas. The utility easements are hereby granted as indicated for the construction and maintenance of all public utilities. The drainage and utility easements are hereby granted as indicated for drainage purposes and for the construction and maintenance of all public utilities. The drainage easement is hereby granted as indicated for drainage purposes. The streets are hereby dedicated to and for the use of the public. Reserves "A" and "B" are hereby reserved for lakes, landscaping, berms, open space, drainage purposes, and utilities as confined to easements. Reserve "C" is hereby reserved for open space, parking, swimming pools and swimming pool related facilities, recreational activities, gazebos, landscaping, drainage purposes, and utilities as confined to easements. Reserves "D", "F", and "J" are hereby reserved for entry monuments, landscaping, streets, drainage purposes, and utilities. Reserves "E", "G", "H", "I", "K", and "L" are hereby reserved for landscaping, open space, berms, drainage purposes, and utilities. Reserves "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", and "L" shall be owned and maintained by the homeowners association for the addition. Access controls shall be as depicted on the face of the plat and are hereby granted to the City of Wichita, Kansas. The Minimum Building Pad Elevations for the lowest opening to the structures shall be as indicated on the face of the plat.

West Wichita Development, Inc.

____________________, President
Jay W. Russell

State of Kansas) SS
Sedgwick County) The foregoing instrument acknowledged before me, this_____day of__________,_____, by Jay W. Russell, President of West Wichita Development, Inc., on behalf of the corporation.

____________________, Notary Public

My App't. Exp.__________

This plat of "AUBURN HILLS 15TH ADDITION", Wichita, Sedgwick County, Kansas has been submitted to and approved by the Wichita-Sedgwick County Metropolitan Area Planning Commission, Wichita, Kansas.

Dated this_____day of__________,_____.
Wichita-Sedgwick County Metropolitan Area Planning Commission

____________________, Chair
Ronald L. Marnell

____________________, Secretary
John L. Schlegel

This plat approved and all dedications shown hereon accepted by the City Council of the City of Wichita, Kansas, this_____day of__________,_____.

____________________, Mayor
Carlos Mayans

____________________, City Clerk
Karen Schofield

Reviewed in accordance with K.S.A. 58-2005 on this_____day of__________,_____.

____
Tricia L. Robello, L.S. #1246
Deputy County Surveyor
Sedgwick County, Kansas

Entered on transfer record this_____day of__________,_____.

____________________, County Clerk
Don Brace

State of Kansas) SS
Sedgwick County) This is to certify that this plat has been filed for record in the office of the Register of Deeds, this_____day of__________,_____at_____o'clock___M; and is duly recorded.

____________________, Register of Deeds
Bill Meek

____________________, Deputy
Linda Kizzire

We the undersigned holders of a mortgage on the above described property, do hereby consent to this plat of "AUBURN HILLS 15TH ADDITION", Wichita, Sedgwick County, Kansas.
Legacy Bank

____________________, __________
(Title)

State of Kansas) SS
Sedgwick County) The foregoing instrument acknowledged before me, this_____day of__________,_____, by__________,
__________of Legacy Bank, on behalf of the bank.
(Title)

____________________, Notary Public

My App't. Exp.__________

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

14-10-04-05