



**Carlos I. Cabré, P.E.**  
Development & Engineering Consultant

## TRANSMITTAL LETTER

<b>PROJECT:</b> (name, address)		Wichita Crossing Greenwich Rd., Wichita, KS	<b>PROJECT NO:12-09</b>
<b>TO:</b>	City of Wichita 455 n Main, 8 <sup>th</sup> Floor Wichita, KS 67202	If enclosures are not as noted, please inform us immediately. If checked below, please: <input type="checkbox"/> Acknowledge receipt of enclosures. <input type="checkbox"/> Return enclosures to us.	
<b>ATTN:</b>	Mr. Scott Lindebak, P.E.		

**WE TRANSMIT:**  herewith  under separate cover via \_\_\_\_\_  
 in accordance with your request \_\_\_\_\_

**FOR YOUR:**  Approval  Distribution to Parties  Information  Review & Comment  
 Record  Other \_\_\_\_\_

**THE FOLLOWING:**  Drawing(s)  Shop Drawing(s)  Specification(s)  Change Order(s)  
 Diskettes  CD-ROM  Other \_\_\_\_\_

COPIES	DATE	REV. NO.	DESCRIPTION
1	4/07/14		Stormwater Concept Drainage Report

**REMARKS:**

<b>SENT BY:</b>	Carlos I. Cabré, P.E.	<b>RECEIVED BY:</b>	
<b>Sent Date:</b>	May 15, 2014	<b>Received Date:</b>	

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## City of Wichita/Sedgwick County Subdivision Drainage Plan Checklist



Submit completed forms to:  
City of Wichita Public Works & Utilities, 455 N. Main 8th Floor, Wichita KS 67202; or  
Sedgwick County Stormwater Management, 1144 S. Seneca, Wichita KS 67213.

<b>Project Name:</b>	Wichita Crossing		
<b>Total Area of Project:</b>	17.5	acres	
<b>Development Type:</b>	Commercial	<b>Other:</b>	
<b>Developer Name:</b>	The Seitz Group, Inc.	<b>Contact:</b>	R. Eric Seitz <b>Phone:</b> 214-223-9077
<b>Email:</b>	eric@seitzgroup.net		
<b>Engineer Name:</b>	Carlos I. Cabré, P.E.	<b>Contact:</b>	Carlos I. Cabré, P.E. <b>Phone:</b> 214-513-8764
<b>Email:</b>	carlos@cabre.us		

**Directions:**

- (1) Fill-out this checklist completely and include it with the Drainage Plan submittal. This checklist should be included in the bound copy, behind the cover sheet for the submittal. Incomplete Drainage Plans and checklists will not be accepted.
- (2) Indicate whether a plan element is included or not included in the submittal by choosing "Yes" or "No" from the dropdown list in the "Element Included?" column. The question must be answered for every plan element for this checklist to be considered complete. An explanation must be provided for all "No" answers.

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
<b>1.0 General</b>			
1.1	Digital copy of drainage plan, including preliminary Master Grading Plan, preliminary plat and proposed plat, in PDF format and one half size, bound, paper copy.	Yes	
1.2	Professional Engineer's seal, signature and date on plan cover.	Yes	
1.3	Site location map, using color ortho-imagery and showing the project boundaries, a north arrow and an accurate scale.	Yes	
1.4	Narrative of the development type, existing conditions and proposed impacts on stormwater runoff, wetlands, riparian zones and floodplains/floodways.	Yes	
1.5	Discussion of off-site conditions surrounding the proposed development.	Yes	
1.6	Summary table of runoff calculations (pre/post development).	Yes	
1.7	Narrative description of the type and function of the permanent structural stormwater management facilities.	Yes	
<b>2.0 Existing Conditions Information</b>			
<b>2.1 Existing Conditions Drainage Map</b>			
2.1.1	On-site and off-site topography: NAVD 88 datum, one-foot contours with spot elevations.	Yes	
2.1.2	On-site and off-site drainage features, including perennial and intermittent streams (with names labeled), conveyance systems such as open channels, ditches, swales and areas of overland flow. Flow direction must be indicated by arrows.	Yes	
2.1.3	Storm sewer system components, including storm drains, inlets, catch basins, gutters, manholes, headwalls, pipes and culverts. Material and size must be noted for all pipes and culverts.	Yes	
2.1.4	Location and boundaries of natural features such as wetlands, lakes, ponds with the normal water elevation noted, rock outcroppings, wooded areas and tree rows.	Yes	
2.1.5	Location, dimensions and elevations of existing bridges and culvert crossings.	Yes	
2.1.6	Location of existing utilities (e.g., water, sewer, gas, electric, cable, etc.) with labels and easement boundaries.	No	Existing and proposed utilities are shown on utilities drawings C-5.0 thru C-5.10.
2.1.7	Groundwater elevations, if applicable.	No	Not Applicable
2.1.8	Delineation of predominant soil based on USDA soil surveys and/or on-site soil borings; indicate NRCS soil name and Hydrologic Soil Group for undisturbed surface soils.	Yes	
2.1.9	Land use types per NRCS nomenclature.	Yes	
2.1.10	Footprint of existing impervious areas (labeled, area given in acres).	No	None exist on the property.
2.1.11	Internal drainage subbasin boundaries used for hydrologic calculations (labeled with ID, total area in acres, impervious area in acres and curve number).	Yes	
2.1.12	Time of concentration flow paths. Indicate and label each segment separately (i.e., overland flow, shallow concentrated, channel1, channel2, etc.). For each segment, provide the appropriate data to calculate Tc (e.g., length, slope, cover type, paved/unpaved, roughness parameters, geometric properties, etc.).	Yes	
<b>2.2 Existing Conditions Hydrology and Hydraulics Analysis</b>			
2.2.1	Narrative of the hydrologic analysis methodology used (e.g., unit hydrograph or other approved methods).	Yes	

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
2.2.2	A summary table of drainage subbasin hydrologic parameters (subbasin ID, area in acres, curve number, Tc, etc.).	Yes	
2.2.3	Table of existing condition runoff curve numbers with supporting data and calculations.	Yes	
2.2.4	Table of existing condition times of concentration with supporting data and calculations.	Yes	
2.2.5	A summary table of rainfall data used in the hydrologic analysis, and a reference for the source of the data.	Yes	
2.2.6	Cross-sections and other diagrams of existing open channels, bridge and culvert sections and other hydraulic features as required to illustrate the basis for hydraulic analysis.	Yes	
2.2.7	Hydrologic and hydraulic analyses for runoff rates, volumes, velocities and elevations. Provide supporting data not specified above and identify assumptions. Include detailed calculations for the 2, 5, 10, 25 & 100-year, 24-hour storm events. Provide results in a tabular form. Provide digital copies of any computer files and models used.	Yes	
<b>3.0 postdevelopment Conditions Information</b>			
<b>3.1 postdevelopment Conditions Drainage Map</b>			
3.1.1	Proposed project boundary.	Yes	
3.1.2	on-site and off-site topography. NAVD 88 datum, one-foot contours with spot elevations.	Yes	
3.1.3	Existing on-site and off-site drainage features that are to remain after development, including perennial and intermittent streams (with names labeled), conveyance systems such as open channels, ditches, swales and areas of overland flow. Flow direction must be indicated by arrows.	Yes	
3.1.4	Location and description of off-site through-drainage conveyances which are confined to an easement, dedication and/or reserve.	Yes	
3.1.5	Footprint of proposed impervious areas, including roads, parking lots, buildings and other structures.	Yes	
3.1.6	Location of proposed utilities (e.g., water, sewer, gas, electric, cable, etc.) with labels and easement boundaries.	Yes	
3.1.7	Delineation of predominant soils, based on anticipated soil textures and NRCS guidelines if different from predevelopment soil conditions; indicate NRCS soil name and Hydrologic Soil Group for surface soils.	Yes	
3.1.8	Land use cover per NRCS nomenclature.	Yes	
3.1.9	Internal drainage subbasin boundaries used for hydrologic calculations (labeled with ID, total area in acres, impervious area in acres and curve number).	Yes	
3.1.10	Proposed limits of land disturbing activity (i.e., grading limits).	No	Grading limits are shown on the grading drawings C-3.0 thru C-3.7.
3.1.11	Time of concentration flow paths. Indicate and label each segment separately (i.e., overland flow, shallow concentrated, channel1, channel2, etc.). For each segment, provide the appropriate data to calculate Tc (e.g., length, slope, cover type, paved/unpaved, roughness parameters, geometric properties, etc.).	Yes	
<b>3.2 Proposed Conveyances Map</b>			
3.2.1	on-site and off-site drainage features, including perennial and intermittent streams (with names labeled), proposed conveyance systems (such as open channels, ditches, swales and areas of overland flow, including backyard drainage). Flow direction must be indicated by arrows.	Yes	
3.2.2	Storm sewer system components, including storm drains, inlets, catchbasins, gutters, manholes, headwalls, pipes and culverts. Material and size must be noted for all pipes and culverts.	Yes	
3.2.3	For any subbasin or drainage area > 40 acres, show that the stormwater flow is confined to an open channel with required side benches and freeboard, or conformance to applicable policy and design requirements if partially enclosed.	No	Not subbasin is greater than 40 acres.
3.2.4	Location(s) of stormwater management facilities and any associated drainage easements.	Yes	
3.2.5	Proposed energy dissipaters and other channel protection devices.	Yes	
3.2.6	Location(s) and dimension(s) of proposed channel, bridge and culvert crossings.	Yes	
3.2.7	Normal pool and 100-year pool elevations for ponds and lakes.	Yes	
3.2.8	Permanent concrete outfall control structure(s) for ponds.	Yes	
3.2.9	Emergency overflow spillways and top of berm elevations for ponds and other volume/peak discharge control facilities.	Yes	
3.2.10	Floodplains, ponds, and stormwater management facilities located in reserves.	Yes	
<b>3.3 postdevelopment Conditions Hydrology &amp; Hydraulics</b>			
3.3.1	Narrative of the hydrologic analysis methodology used (e.g., unit hydrograph or other approved methods).	Yes	
3.3.2	A summary table of drainage subbasin hydrologic parameters (subbasin ID, area in acres, curve number, Tc, etc.).	Yes	
3.3.3	Table of postdevelopment condition runoff curve numbers with supporting data and calculations.	Yes	

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
3.3.4	Table of postdevelopment condition times of concentration with supporting data and calculations.	Yes	
3.3.5	Cross-sections and other diagrams of existing open channels, bridge and culvert sections and other hydraulic features as	Yes	
3.3.6	Hydrologic and hydraulic analyses for runoff rates, volumes, velocities and elevations. Provide supporting data not specified above and identify assumptions. Include detailed calculations for the 2, 5, 10, 25 & 100-year, 24-hour storm events. Provide results in a tabular form. Provide digital copies of any computer files and models used.	Yes	
3.3.7	Downstream peak discharge assessment (10% Rule) results and supporting data and calculations. Provide digital copies of any computer files and models used.	Yes	
3.3.8	Stage-storage-discharge or other outlet rating curves and inflow/outflow hydrographs for all ponds.	Yes	
3.3.9	Demonstrate that the pond contours on the master grading plan and the stage-storage-discharge data are consistent for all ponds.	Yes	
3.3.10	Demonstrate that all ponds have one foot of freeboard above the 100-year, 24-hour high water level.	Yes	
3.3.11	Demonstrate that runoff from the proposed project site is discharged in the same manner as prior to development, using level spreaders, energy dissipaters, other devices or grading as required, or identify an appropriate flowage easement.	Yes	
<b>3.4</b>	<b>Stormwater Quantity Control Sizing</b>		
3.4.1	Hydraulic sizing calculations for all stormwater management controls.	Yes	
3.4.2	Table(s) listing all stormwater management controls. Present the types, sizes, elevations, flows, velocities and depths for each control, as applicable. Verify that velocities are self-cleaning and non-erosive.	Yes	
3.4.3	Typical details (including cross-sections where applicable) for outlet structures, embankments, spillways, grade control structures, conveyance channels, etc.	Yes	
<b>3.5</b>	<b>Stormwater Quality Management Facilities</b>		
3.5.1	Table(s) listing all stormwater management facilities. Present the description, % TSS removal value, water quality volume handled, contributing drainage area in acres and contributing impervious area in acres.	Yes	
3.5.2	Indicate the responsible party for maintenance, as shown in the plat text (i.e., Home Owners Association, Lot Owners Association, property owner, etc.).	Yes	
3.5.3	Water quality volume (total and by facility), with supporting data and calculations.	Yes	
3.5.4	% TSS removal value (total and by facility) with supporting data and calculation. Must be equal to or greater than 80%.	Yes	
3.5.5	Channel protection volume with supporting data and calculations.	Yes	
3.5.6	Water quality volume and channel protection volume orifice size calculations.	Yes	
3.5.7	Other calculations required for each stormwater management facility as specified in the Wichita/Sedgwick County Stormwater Manual.	Yes	
3.5.8	Typical details (including cross-sections where applicable) for outlet structures, embankments, internal grading, forebays and other siltation prefilters, filtration/infiltration media, vegetation, check dams, operational controls, etc.	Yes	
<b>4.0</b>	<b>Floodplains</b>		
4.1	Reference the source of flood profile, floodplain, floodway and stream discharge information.	No	Property is not in a floodplain.
4.2	Delineation of nearest base flood elevations.	No	
4.3	Delineation of predevelopment regulatory floodplain/floodway limits using FEMA's current GIS database; limits to be per elevation and scaled location.	No	
4.4	Delineation of postdevelopment regulatory floodplain/floodway limits; limits to be per elevation and scaled location, with project limits shown.	No	
4.5	Floodway data table and discharges.	No	
4.6	Hydrologic and hydraulic study information for local floodplain analysis, unnumbered Zone A elevation determinations and floodplain map revisions or required permits.	No	
4.7	Regulatory floodway and four natural profile models (10, 50, 100 and 500-year) for existing and postdevelopment conditions.	No	
4.8	Floodplains and floodways located within a reserve, where necessary.	No	
4.9	Floodplain cut and fill calculations for volume sensitive basins.	No	
4.10	Demonstrate that floodway elevations and velocities do not increase due to construction in the floodway ("No Rise Certification").	No	
<b>5.0</b>	<b>Federal, State and Local Permits</b>		
5.1	US Army Corps of Engineers regulatory program permits (Section 404 permit)	Yes	

Drainage Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
5.2	Kansas Department of Agriculture - Division of Water Resources Permits (Stream Obstruction, Channel Change, Floodplain Fill, Levee, Water Appropriations, Dam Safety permit, etc.)	No	
5.3	FEMA letters of map change/revision - LOMA, LOMR, LOMR-f, CLOMR, etc.; shall be included and approved when project modifies the limits of the floodplain/floodway.	No	Not LOMR is required for this project.
6.0	<b>Half Scale Preliminary Master Grading Plan</b>		
6.1	One set of plans and associated PDF of plans.	Yes	
6.2	Professional Engineer's seal, signature and date.	Yes	
6.3	Title block including subdivision name and phase and dated revision documentation.	Yes	
6.4	Future phases shown but cross-hatched as information only.	No	Site development will be done all at once.
6.5	Scale, not greater than 1-inch = 60 feet.	Yes	
6.6	North arrow.	Yes	
6.7	Index or legend key.	Yes	
6.8	Benchmarks (minimum of 2) used for site control (NAVD 88 vertical datum).	No	Benchmarks are shown on cover page, ALTA survey and preliminary plat.
6.9	Existing contours of entire site with contour interval of one foot.	Yes	
6.10	Proposed contours for channels, ponds, and other permanent stormwater management facilities, with contour interval of one foot.	Yes	
6.11	Spot elevations shown to the nearest tenth of a foot for critical locations, including lot and property boundaries.	Yes	
6.12	Proposed lot and street layout.	Yes	
6.13	Locations of underground storm drains.	Yes	
6.14	Overflow locations for storms exceeding storm drain capacity, with elevations.		
6.15	Top elevations of storm drains at all inlets, manholes, and flow line elevations for all outfalls.	Yes	
6.16	Locations of open ditches and lakes.	Yes	
6.17	Flow direction arrows.	Yes	
6.18	Proposed flow line elevations of all open ditches at maximum 100 foot intervals, and 100-year flood elevations thereon.	Yes	
6.19	Ponds: Location, bottom elevation, normal pool elevation, 100-year flood elevation, emergency overflow elevation.	Yes	
6.20	Proposed top-of-curb elevations at points where drainage will be required to flow over the curb.	No	All spot elevations shown are front bottom of curb elevation. Top of curb elevation will be 0.5' higher than spot elevations shown.
6.21	Platted minimum building opening elevation for each lot, in table form for all lots (excluding basement floor elevations).	No	Buildings plans are part of the building package.
6.22	Standard foundation and elevation detail for slab on grade, full basement, view-out, partial view-out and/or walk-out construction.	No	
6.23	Top of foundation elevation for each lot.	No	See building plans
6.24	Notation for builders for each lot as to the type of structure that may be constructed and the view-out, walk-out or pad elevation, as applicable.	Yes	These requirements are shown on the CUP and on the development agreements between lot owners
6.25	Indicate that all lots are above the 100-year flood elevation.	Yes	
6.26	Indicate that grading around structures conforms to perimeter drainage requirements.	No	See grading plans
6.27	Indicate that backyard drainage grading conforms to backyard drainage requirements.	No	No backyards are currently shown on the project.
6.28	Adjacent subdivision lot lines, with lot labels and subdivision names.	Yes	
6.29	Boundaries and labels for all easements, rights-of-way and reserves.	Yes	
6.30	Statement on proposed final plat: "A drainage plan has been developed for the subdivision and all drainage easements, rights-of-way, or reserves shall remain at the established grades and remain unobstructed to allow for the conveyance of stormwater."	Yes	
<b>End of Checklist</b>			



## City of Wichita/Sedgwick County Construction Plan Checklist



Submit completed forms to:  
City of Wichita Public Works & Utilities, 455 N. Main 8th Floor, Wichita KS 67202; or  
Sedgwick County Stormwater Management, 1144 S. Seneca, Wichita KS 67213.

<b>Project Name:</b>	Wichita Crossing		
<b>Total Area of Project:</b>	17.5	acres	
<b>Development Type:</b>	Commercial	<b>Other:</b>	
<b>Developer Name:</b>	The Seitz Group, Inc.	<b>Contact:</b>	R. Eric Seitz
		<b>Phone:</b>	214-223-9077
<b>Email:</b>	eric@seitzgroup.net		
<b>Engineer Name:</b>	Carlos I. Cabré, P.E.	<b>Contact:</b>	Carlos I. Cabré, P.E.
		<b>Phone:</b>	214-513-8764
<b>Email:</b>	carlos@cabre.us		

**Directions:**

- (1) Fill-out this checklist completely and include it with the Construction Plan submittal. This checklist should be included in the bound copy, behind the cover sheet for the submittal. Incomplete plans and checklists will not be accepted.
- (2) Indicate whether a plan element is included or not included in the submittal by choosing "Yes" or "No" from the dropdown list in the "Element Included?" column. The question must be answered for every plan element for this checklist to be considered complete. An explanation must be provided for all "No" answers.

Construction Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
<b>1.0 Submittal Formats</b>			
1.1	Hard copy of all plan sheets in 11"x17" (half-scale) size.	Yes	
1.2	Digital copy of construction plan, including all sheets submitted as single PDF file.	Yes	
1.3	Electronic copy of all CAD files.	Yes	
1.4	Preliminary cost estimate in Excel format.		
<b>2.0 All Plan Sheets (except City/County Std Detail Sheets)</b>			
2.1	Title block with address of project, phase or addition name, original date of issue and dated revision control, name/address of site design engineer/company.	Yes	
2.2	Sheet number.	Yes	
2.3	North arrow.	Yes	in all plan sheets, not in profile/detail sheets.
2.4	Scale (horizontal and vertical, as applicable).	Yes	
2.5	Benchmarks (minimum of 2) used for site control (NAVD 88 vertical datum).	No	Benchmarks are only called out on the cover page, ALTA survey and preliminary plat.
2.6	Legend key.	Yes	Legend are shown as necessary, may not exists in all drawings.
<b>3.0 Cover Sheet</b>			
3.1	Professional Engineer's seal, signature and date.	Yes	
3.2	Sheet index.	No	See index sheet behind cover sheet
3.3	Site map, including north arrow, scale, lot lines (with lot numbers), project boundaries, special benefit districts labeled and shaded or cross-hatched, and accurate references for section, township and range.	No	See Preliminary Plat and Site Plan, drawing C-1.0.
3.4	Vicinity map with north arrow.	Yes	
3.5	Table of bid items and quantities.	No	Bid items are on a separate form
3.6	A statement from the site design engineer that the construction plan conforms with the final approved drainage plan or, if not, that supplemental drainage calculations are included. (Note: Required elements for supplemental drainage calculations are presented in Volume 3 of the Stormwater Manual.)	Yes	
<b>4.0 Grading Plan</b>			
4.1	Property boundary, lot lines and lot numbers.	Yes	
4.2	Property boundaries, names, lot lines and lot numbers for all adjacent subdivisions.	Yes	
4.3	Proposed limits of land disturbing activity (i.e., grading limits).	Yes	
4.4	Existing contours of entire site, with contour interval of one foot.	Yes	
4.5	Proposed contours for entire site, with contour interval of one foot.	Yes	
4.6	Elevation-storage table for each pond. Show next to pond or elsewhere on same sheet and properly referenced to applicable pond.	Yes	See pond profile and sheet sections C-4.16 and C-4.17
4.7	Pond bottom elevations.	Yes	See pond profile and sheet sections C-4.16 and C-4.17
4.8	Spot elevations shown to the nearest tenth of a foot for critical locations, including lot and property boundaries.	Yes	
4.9	Proposed flow line elevations for all open ditches and swales at maximum 100 foot intervals.	No	
4.10	Location of existing and proposed utilities (e.g., water, sewer, gas, electric, cable, etc.) with labels and easement boundaries.	No	Existing and proposed utilities are shown on the utilities sheets C-5.0 thru C-5.10

Construction Plan Checklist			
#	Plan Element Description	Element Included?	Explanation/Notes
4.11	Identifying label, location and boundaries (if applicable) of all sediment prevention and erosion control BMPs if/where required to supplement the construction erosion control BMP plan sheets.	No	These elements are shown on the SWPPP drawings
4.12	Identifying label and location of all concrete outfall structures (no earthen or rip-rap outfall structures are permitted).	No	All outflow structures and headwalls are identified in the stormwater drawings C-4.0 thru C-4.18
<b>5.0 Storm Sewer Plan Sheets</b>			
5.1	Storm sewer horizontal alignments, including stationing, coordinates and offsets from property lines.	Yes	
5.2	Storm sewer vertical alignments, including stationing elevations, with flow grades shown every 50 feet and at all structures.	Yes	
5.3	Storm sewer lines. Each line must have line number, profile line length, material and size.	Yes	
5.4	Location, size and elevation of all storm sewer stubs.	Yes	
5.5	Location and size of inlets, energy dissipaters and other storm sewer structures.	Yes	
5.6	Storm sewer inlets and other structures with elevations, shown in both plan and profile views.	Yes	
5.7	Peak flow and depth for each design storm event (2, 5, 10, 25 and 100-year, 24-hour storms) at each pipe, inlet and other structure, in table form.		
5.8	Identifying label and location of riprap and other protective revetments.	Yes	
5.9	Identifying label and location of zones of special backfill, such as flowable fill.	No	
5.10	Identifying label, location and boundaries (if applicable) of all sediment prevention and erosion control BMPs if/where required to supplement the construction erosion control BMP plan sheets.	Yes	
5.11	Identifying label, location and boundaries of all right-of-ways, reserves and easements.	Yes	
5.12	Identifying label and location of existing and proposed utilities (e.g., water, sewer, gas, electric, cable, etc.) with labels and easement boundaries.	Yes	
5.13	Utility interference cautions, where applicable.	Yes	
5.14	Indication that utility conflicts have been resolved, where applicable.	Yes	
<b>6.0 Stormwater Management Facilities Plan</b>			
6.1	Copy of the draft Operations and Maintenance Plan. Must include inspection and maintenance guidance for each stormwater management facility. See Volume 2 of the Stormwater Manual for guidance.		
6.2	Identifying label, type and location of all stormwater management facilities, with associated easement/reserve boundaries as applicable.		
6.3	Identifying label, type and location of all water quality volume reduction areas, with associated easement/reserve boundaries as applicable.	Yes	
6.4	Identifying label, type and location of all proprietary stormwater quality systems. Must include commercial name of the device, vendor name/address, manufacturer name, make, model and size details.	No	No proprietary stormwater quality systems are part of this project.
<b>7.0 Other Sheets and Documents</b>			
7.1	Construction erosion control plan sheets, standard detail sheets, and non-standard detail sheets.	Yes	
7.2	Storm sewer standard and non-standard detail sheets.	Yes	
7.3	Other detail sheets (specify in notes box).	Yes	
7.4	Special Provisions to Standard Specifications.	No	
7.5	Cost estimate for all bid items.		
7.6	Proposed limits of land disturbing activity (i.e., grading limits).	Yes	
<b>8.0 Federal, State and Local Permits</b>			
8.1	KDHE Section 401 Water Quality Certification (in conjunction with USACE Section 404 Permit).	Yes	
8.2	KDHE Authorized NOI under Kansas Construction General Permit.	Yes	
8.3	Sedgwick County Right-of-Way Permit.	No	Not applicable. ROW was dedicated for Greenwich Road Widening.
8.4	KDA Division of Water Resources Water Structures Permit.	Yes	
8.5	FEMA CLOMR/LOMR Approval.	No	
8.6	City of Wichita or Sedgwick County Floodplain Development Permit approval.	No	Property is not in the floodplain
8.7	KDWP approval of construction and/or endangered species habitat protection plan.	No	
<b>End of Checklist</b>			

# STORM WATER DRAINAGE CONSTRUCTION PLANS FOR:

# WICHITA CROSSING

## A PORTION OF LOT 1 AND RESERVE "A"

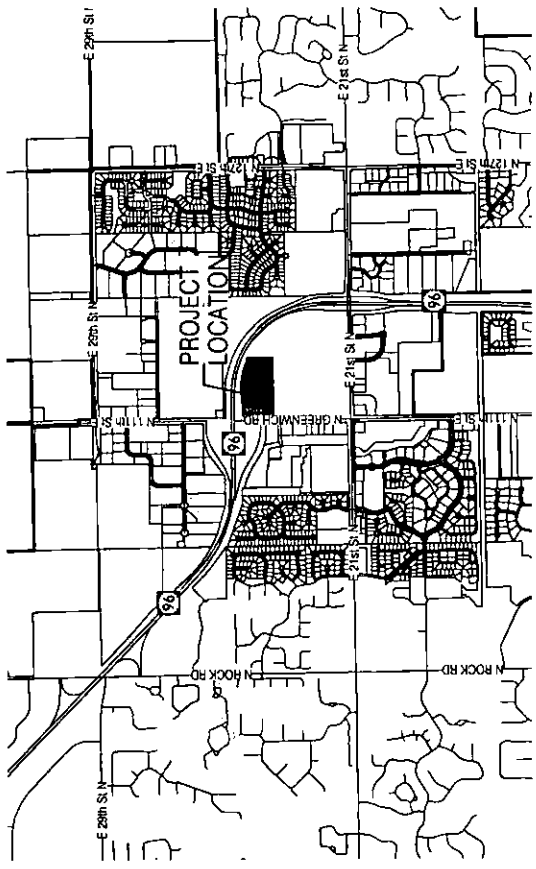
## KENSINGTON GARDENS

## CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

# FOR PERMIT

# JUNE 13, 2014

### SITE LOCATION & VICINITY MAP



### LOCATION MAP

SCALE: 1"=2000'

### SITE DATA

LEGAL DESCRIPTION: A PORTION OF LOT 1 AND RESERVE "A", KENSINGTON GARDENS, SEDGWICK COUNTY, KANSAS DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF SAID LOT 1, THENCE SOUTH 89°17'45" WEST (BASIS OF BEARING IS NAB83 GRD KANSAS SOUTH ZONE) ALONG THE SOUTH LINE OF SAID RESERVE "A" A DISTANCE OF 569.77 FEET (560.00 FEET RECORD) TO THE EASTERLY RIGHT-OF-WAY LINE OF GREENWICH ROAD, SAID LINE ALSO BEING THE NORTH LINE OF SAID LOTS 10 AND 11, BLOCK 1, VILLAGE AT GREENWICH ADDITION, WICHITA, SEDGWICK COUNTY, KANSAS; THENCE NORTH 0°43'24" WEST ALONG THE EASTERLY RIGHT-OF-WAY LINE OF GREENWICH ROAD 574.37 FEET (574.33 FEET RECORD); THENCE NORTH 89°17'45" WEST ALONG THE EASTERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 587.7777' EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 114.13 FEET (114.17 FEET RECORD); THENCE NORTH 87°06'56" EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 411.65 FEET (411.71 FEET RECORD); THENCE SOUTH 88°11'43" EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 255.14 FEET (255.06 FEET RECORD); THENCE SOUTH 78°21'38" EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 213.04 FEET (213.06 FEET RECORD); THENCE SOUTH 66°46'54" EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 182.71 FEET (182.74 FEET RECORD); THENCE NORTH 23°12'52" EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 30.01 FEET (30.00 FEET RECORD); THENCE SOUTH 68°46'02" EAST ALONG THE SOUTHERLY RIGHT-OF-WAY LINE OF K-96 HIGHWAY 52.59 FEET; THENCE SOUTH 01°00'53" EAST 515.78 FEET TO THE EXTENSION OF THE SOUTH LINE OF SAID RESERVE "A"; THENCE SOUTH 89°17'45" WEST ALONG THE SOUTH LINE OF SAID RESERVE "A" AND THE EXTENSIONS THEREOF 702.02 FEET TO THE POINT OF BEGINNING.

BENCHMARKS: SITE DATUM: CHISELED SQUARE IN TOP OF CURB ON WEST END OF ISLAND 42.2 FEET NORTH AND 4.8 FEET EAST OF THE NORTHWEST CORNER OF LOT 7 AS RECORDED ON THE PLAN OF VILLAGE AT GREENWICH ADDITION A THE REGISTER OF DEEDS, SEDGWICK COUNTY, KANSAS. ELEVATION = 1366.075 (NAD 83), ELEVATION = 1367.46 (NA 83).

SBM-1: CHISELED SQUARE IN THE CENTER OF INLET ON THE EAST SIDE OF NORTH GREENWICH ROAD 12.6 FEET SOUTH AND 14.1 FEET WEST OF THE SOUTHWEST CORNER OF SUBJECT PROPERTY, ELEVATION = 1368.92 (NA 83).

SBM-2: CHISELED SQUARE IN CENTER OF INLET ON THE EAST SIDE OF NORTH GREENWICH ROAD 63.5 FEET NORTH AND 19.6 FEET WEST OF THE NORTHWEST CORNER OF SUBJECT PROPERTY, ELEVATION = 1367.72 (NA 83).

ZONING: CURRENT - SF-3, SINGLE FAMILY RESIDENTIAL DISTRICT

PROPOSED - COMMUNITY UNIT PLAN (CUP) DP-129

PIN: 00446828

AIN: 087 112 030 340 100 200

### PROJECT CONTACTS

**DEVELOPER:**  
MR. R. ERIC SEITZ  
THE SEITZ GROUP, INC.  
5729 LEBANON ROAD, SUITE 144  
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**LANDSCAPE ARCHITECT:**  
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**LAND OWNER:**  
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### WETLAND CONTACTS

**USACE:**  
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KANSAS CITY DISTRICT, CORPS OF ENGINEERS  
STATE REGULATORY PROGRAM OFFICE - KANSAS  
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**WETLAND CREDITS:**  
MR. FRANK AUSTENFELD  
EXECUTIVE DIRECTOR  
THE WATERSHED INSTITUTE AND LAND TRUST  
140 CHERRY HILL DR.  
BELLING, MD 20612  
(910) 685-4600

### SITE DESIGN ENGINEER STATEMENT

THE CONSTRUCTION PLANS CONFORM WITH THE FINAL APPROVED DRAINAGE PLAN

### INDEX OF DRAWINGS

NO.	SHEET TITLE	ISSUED NUMBER AND DATE				
		1	2	3	4	5
1	COVER PAGE	X	X	X	X	X
2	LOT 1 ATLAS/CAD LAND TITLE SURVEY	X	X	X	X	X
3	LOT 1 PRELIMINARY PLAN	X	X	X	X	X
4	C-40 STORM WATER EXISTING DRAINAGE AREA MAP	X	X	X	X	X
5	C-40A STORM WATER EXISTING DRAINAGE AREA MAP	X	X	X	X	X
6	C-41 STORM WATER DRAINAGE AREA MAP	X	X	X	X	X
7	C-41A STORM WATER DRAINAGE AREA MAP	X	X	X	X	X
8	C-42 STORM WATER DRAINAGE PLAN	X	X	X	X	X
9	C-42A STORM WATER DRAINAGE PLAN	X	X	X	X	X
10	C-43 PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
11	C-43A PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
12	C-44 PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
13	C-44A PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
14	C-45 PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
15	C-45A PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
16	C-46 PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
17	C-46A PARTIAL STORM WATER DRAINAGE PLAN	X	X	X	X	X
18	C-47 STORM WATER DRAINAGE LINE PROFILES	X	X	X	X	X
19	C-47A STORM WATER DRAINAGE LINE PROFILES	X	X	X	X	X
20	C-48 STORM WATER DRAINAGE LINE PROFILES	X	X	X	X	X
21	C-48A STORM WATER DRAINAGE LINE PROFILES	X	X	X	X	X
22	C-49 STORM WATER DRAINAGE LINE PROFILES	X	X	X	X	X
23	C-49A STORM WATER DRAINAGE LINE PROFILES	X	X	X	X	X
24	C-50 DRAINAGE POND NO. 1 PROFILE AND SECTIONS	X	X	X	X	X
25	C-50A DRAINAGE POND NO. 2 PROFILE AND SECTIONS	X	X	X	X	X
26	C-51 OUTFLOW STRUCTURE SECTIONS AND DETAILS	X	X	X	X	X
27	SW-100 STANDARDD TYPE 1 CURB INLET 15" OR 18" OPENING	X	X	X	X	X
28	SW-201 SINGLE/SLOPE DROP INLET	X	X	X	X	X
29	SW-301 PRECAST CONCRETE MANHOLE (STORM WATER)	X	X	X	X	X
30	SW-302 REINFORCED CONCRETE MANHOLE (STORM WATER)	X	X	X	X	X
31	SW-401 MANHOLE/INLET FRAME AND COVER (STORM SEWER)	X	X	X	X	X
32	SW-402 MISCELLANEOUS DETAILS (STORM SEWER)	X	X	X	X	X
33	SW-403 HEADWALL DETAILS FOR 15", 18" AND 24" PIPE	X	X	X	X	X
34	SW-404 HEADWALL DETAILS FOR 30" AND 36" PIPE	X	X	X	X	X

### CITY OF WICHITA CONTACTS

**ENGINEERING:**  
MR. JULIANE KULLMAN, P.E.  
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**STORMWATER:**  
MR. MARK HALL, CSCC  
STORMWATER COMPLIANCE OFFICER  
STORMWATER MANAGEMENT  
PUBLIC WORKS & UTILITIES  
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(316) 268-5337  
MHALL@WICHITA.GOV

### NOTES

- THE CONTRACTOR SHALL NOTIFY THE FIELD INSPECTION SERVICES SUPERVISOR A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO START OF CONSTRUCTION TO SCHEDULE A PRE-CONSTRUCTION MEETING.
- LOCATION OF UTILITIES SHOWN IS APPROXIMATE ONLY. EXISTING UTILITIES AND THEIR LOCATIONS AS SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORDED 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.
- PRIOR TO ANY EXCAVATION WORK, CONTRACTOR SHALL CONTACT, AT LEAST 72 HOURS IN ADVANCE, THE KANSAS ONE-CALL (800) WWW.KANSASONECALL.COM, AT 811, AND OTHER UTILITY COMPANIES THAT ARE NOT PART OF THE ONE-CALL SYSTEM FOR SITE LOCATES.
- CONTRACTOR SHALL NOT EXCAVATE ABOVE OR NEAR UNDERGROUND UTILITIES WITHOUT THE KNOWLEDGE AND ASSURANCE THAT THESE ACTIVITIES WILL NOT ADVERSELY AFFECT RESPECTIVE UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CHANGES REQUIRED IN GRADING TO ACCOMMODATE EXISTING UTILITIES AND SHALL BEAR FULL RESPONSIBILITY FOR MAINTAINING ADEQUATE COVER AS DIRECTED BY EACH UTILITY COMPANY.
- PROPOSED UTILITIES ARE SHOWN IN SCHEMATIC FORM ONLY. EXACT LOCATIONS SHALL BE DETERMINED TO ALLOW FOR THE MOST ECONOMICAL AND PRACTICAL INSTALLATION.
- THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO DETERMINE EXACT POINT OF SERVICE CONNECTION AT EXISTING UTILITY. REFER TO THE PLANS FOR ELECTRICAL AND PLUMBING DRAWINGS FOR UTILITY SERVICE ENTRANCE LOCATIONS, SIZES, AND CIRCUITING.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:  
COX COMMUNICATIONS 316-266-7204  
KANSAS GAS SERVICE 316-632-3126  
WESTAR 1-800-286-8000  
CITY OF WICHITA WATER UTILITIES 316-262-6000

**SEITZ GROUP**  
DRAWING & SURVEYING PROFESSIONALS  
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
F: 214-705-1078 F: 214-407-8912

**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A",  
KENSINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

**CARLOS I. CADRE, P.E.**  
LICENSED PROFESSIONAL ENGINEER  
23322  
06/15/2014

**Carlos I. Cadre, P.E.**  
Professional Engineer  
23322  
06/15/2014

**COVER PAGE**  
DRAWING TITLE


**CP**  
DRAWING NUMBER: 12-09  
JOB NUMBER: AS SHOWN  
DATE: JUNE 13, 2014

ISSUES	
NO.	DATE
1	03/04/2014
2	04/23/2014
3	06/27/2014
4	06/13/2014

REVISIONS	
NO.	DESCRIPTION
1	REVIEW AND PRICING
2	FOR REVIEW
3	FOR REVIEW
4	FOR PERMIT






 DEVELOPMENT, SURVEY & DESIGN  
 5729 LEBANON ROAD, SUITE 144  
 FRISCO, TX 75034  
 1.214.705.1078 F. 214.407.8912

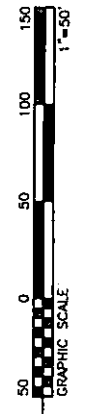
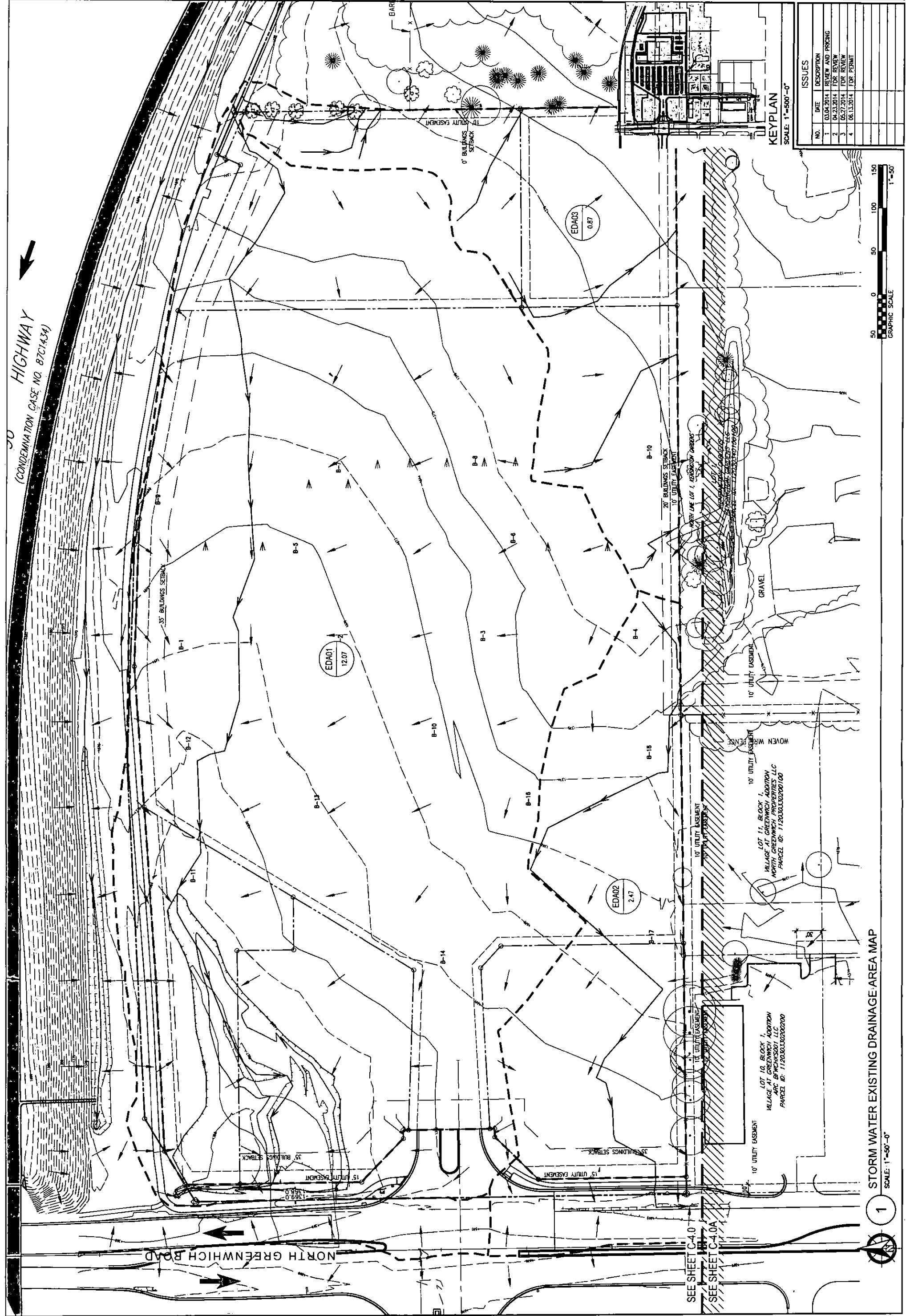
**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A"  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

06/13/2014  
 23322  
 CARLOS I. CABRE, P.E.  
 LICENSED PROFESSIONAL ENGINEER  
 STATE OF KANSAS

  
 Carlos I. Cabre, P.E.  
 DEVELOPMENT & ENGINEERING CONSULTANT  
 2201 SOUTH MAIN STREET  
 WICHITA, KS 67202

**STORM WATER EXISTING DRAINAGE AREA MAP**  
 DRAWING TITLE: STORM WATER EXISTING DRAINAGE AREA MAP  
 DATE: JUNE 13, 2014  
 SCALE: 1"=50'  
 SHEET NUMBER: 12-09  
 DRAWING NUMBER: C-4.0

ISSUES	
NO.	DATE DESCRIPTION
1	03.04.2014 REVIEW AND PRICING
2	04.23.2014 EDR REVIEW
3	05.27.2014 EDR REVIEW
4	06.13.2014 EDR PERMIT



1  
 STORM WATER EXISTING DRAINAGE AREA MAP  
 SCALE: 1"=50'-0"

SEE SHEET C-4.0  
 SEE SHEET C-4.0A

LOT 10, BLOCK 1, ADDITION  
 VILLAGE AT GREENWICH PROPERTIES LLC  
 NORTH GREENWICH PROPERTIES LLC  
 PARCEL ID: 112030303020000

LOT 11, BLOCK 1, ADDITION  
 VILLAGE AT GREENWICH PROPERTIES LLC  
 NORTH GREENWICH PROPERTIES LLC  
 PARCEL ID: 1120303030200100

EDA01  
 12.07

EDA02  
 2.47

EDA03  
 0.87



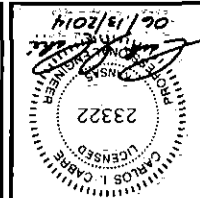
HIGHWAY  
(CONDEMNATION CASE NO. 87C1434)

5729 EBBANON ROAD, SUITE 144  
FRISCO, TX 75034  
T. 214-705-1078 F. 214-407-8912

**STORMWATER PROPOSED DRAINAGE AREA MAP**

A PORTION OF LOT 1 AND RESERVE "A",  
KENNINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

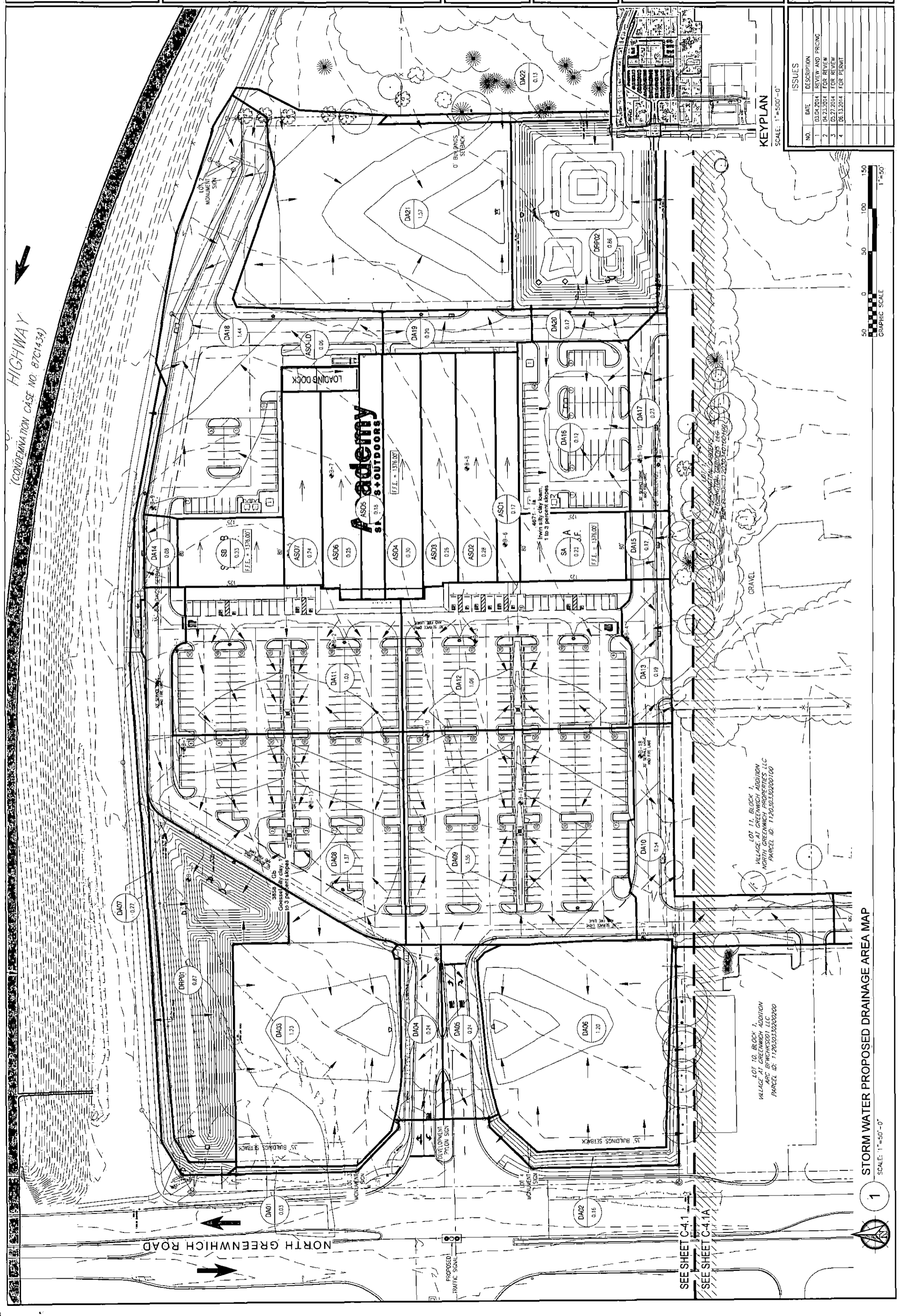
**WICHITA CROSSING**



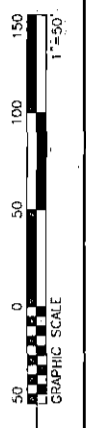
**STORMWATER PROPOSED DRAINAGE AREA MAP**

DATE: JUNE 13, 2014  
SCALE: 1"=50'  
JOB NUMBER: 12-09  
DRAWING NUMBER: C-4.1

ISSUES	
NO.	DATE DESCRIPTION
1	03.04.2014 REVIEW AND PRICING
2	04.23.2014 FOR REVIEW
3	05.27.2014 FOR REVIEW
4	06.13.2014 FOR PERMIT



**KEY PLAN**  
SCALE: 1"=500'-0"



**STORM WATER PROPOSED DRAINAGE AREA MAP**  
SCALE: 1"=50'-0"



LOT 11, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
NORTH GREENWICH PROPERTIES, LLC  
PARCEL ID: 11203030200100

LOT 10, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
ARC B/WICH/5001 LLC  
PARCEL ID: 11203030200200

SEE SHEET C4.1

SEE SHEET C4.1A

PROPOSED  
TRAFFIC SIGNAL

NORTH GREENWICH ROAD

DA0 0.03

DA02 0.16

DA03 1.23

DA04 0.24

DA05 0.74

DA06 1.20

DA07 0.27

DA08 1.37

DA09 1.55

DA10 0.54

DA14 0.08

DA15 0.17

DA16 0.12

DA17 0.23

DA18 1.44

DA19 0.74

DA20 0.17

DA21 1.37

SS 0.33

AS06 0.25

AS07 0.74

AS08 0.28

AS09 0.28

AS10 0.17

AS11 1.03

AS12 1.06

AS13 0.19

AS14 0.17

AS15 0.17

AS16 0.17

AS17 0.17

AS18 0.17

AS19 0.17

AS20 0.17

AS21 0.17

AS01 0.17

AS02 0.28

AS03 0.28

AS04 0.30

AS05 0.18

AS06 0.25

AS07 0.74

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AS07 0.74

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AS11 1.03

AS12 1.06

AS13 0.19

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AS15 0.17


AS16 0.17

AS17 0.17

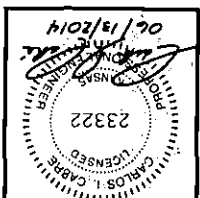
AS18 0.17

AS19 0.17

AS20 0.17


  
 DIVISION OF STATE OF REAL PROMOTERS
   
 5729 LEBANON ROAD, SUITE 144
   
 FRISCO, TX 75034
   
 1.214-705-1078 F.214-407-8912

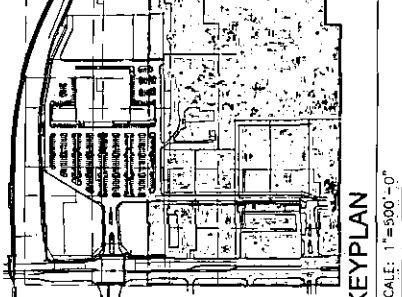
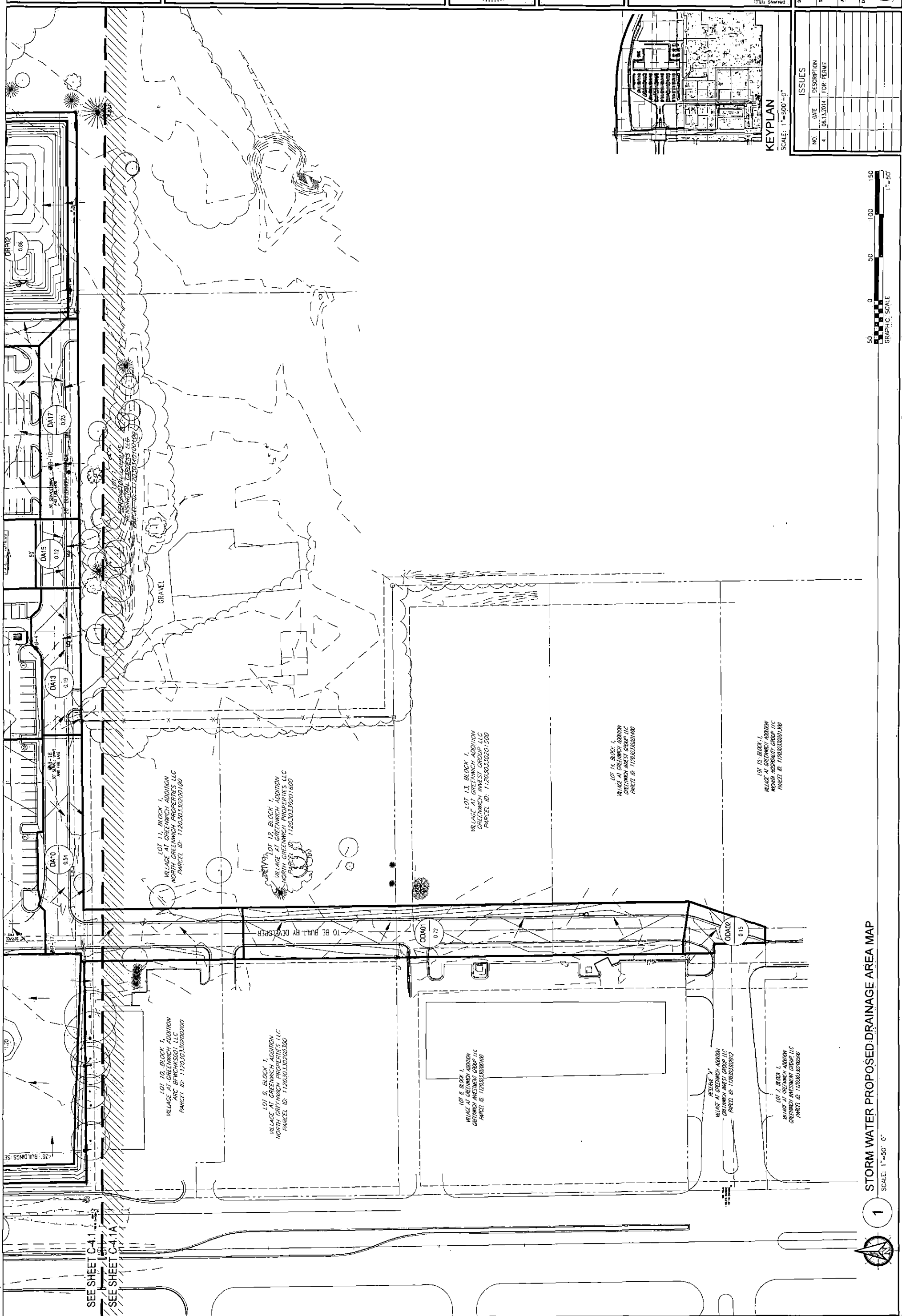
**WICHITA CROSSING**
  
 A PORTION OF LOT 1 AND RESERVE "A",
   
 KENSINGTON GARDENS
   
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS



**STORMWATER PROPOSED DRAINAGE AREA MAP**
  
 DRAWING TITLE:

DATE: JUNE 13, 2014
   
 SCALE: 1"=50'
   
 SHEET NUMBER: 12-09
   
 DRAWING NUMBER:

**C-4.1A**




ISSUES

NO.	DATE	DESCRIPTION	FOR PERMIT
4	06.13.2014		

SEE SHEET C-4.1
   
 SEE SHEET C-4.1A

**1**
  
 STORM WATER PROPOSED DRAINAGE AREA MAP
   
 SCALE: 1"=50'-0"


 DEVELOPMENT, SALES & RETAIL SERVICES  
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**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A"  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

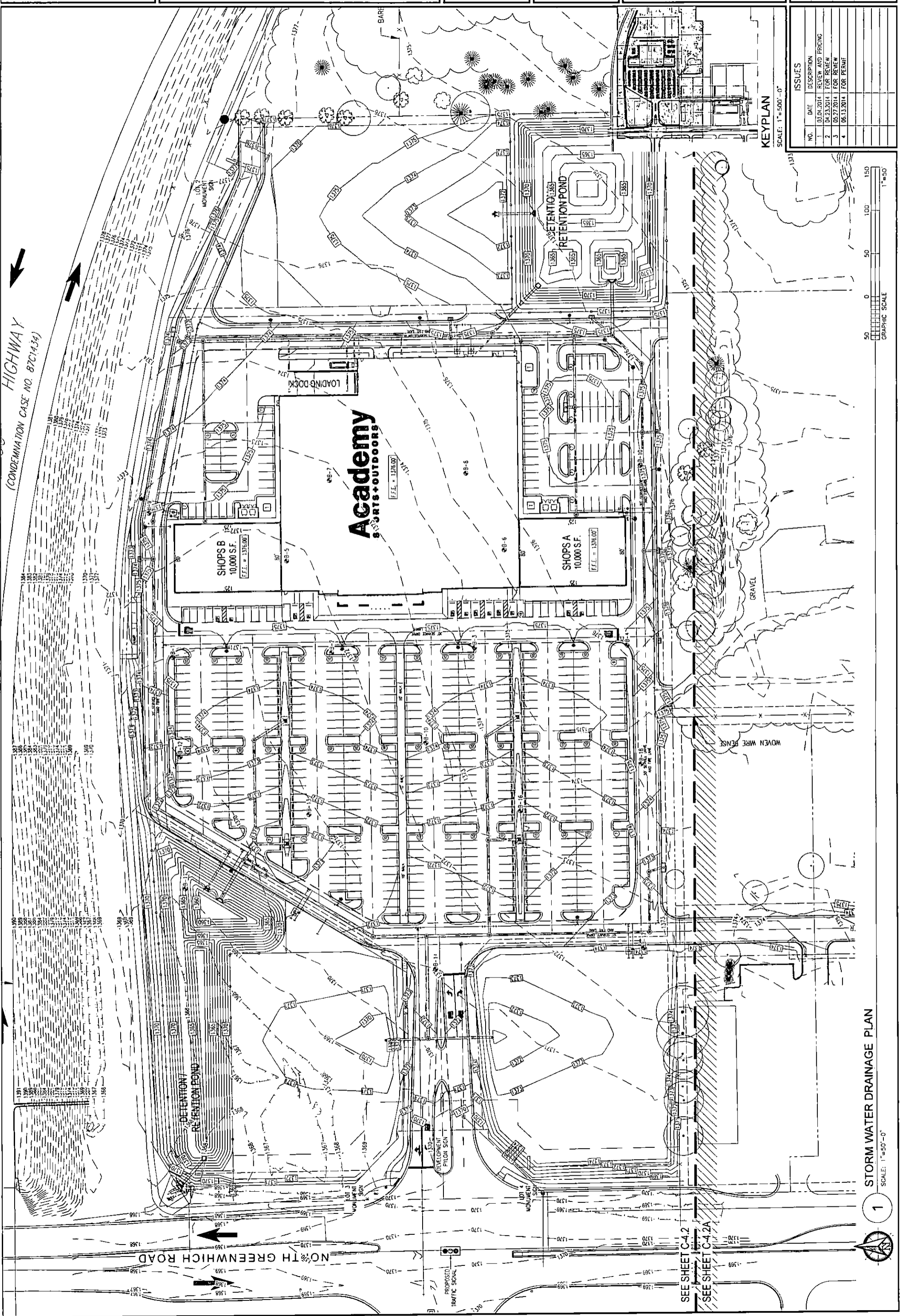
CARLOS I. CABRE, P.E.  
 LICENSED PROFESSIONAL ENGINEER  
 NO. 23322  
 EXPIRES 06/13/2014

Carlos I. Cabre, P.E.  
 Development & Engineering Consultant  
 2201 W. 19th Street, Suite 100  
 Frisco, Texas 75034

**STORM WATER DRAINAGE PLAN**  
 DRAWING TITLE:

DATE: JUNE 13, 2014  
 SCALE: 1"=50'  
 JOB NUMBER: 12-09  
 DRAWING NUMBER: C-4.2


ISSUES	
NO.	DESCRIPTION
1	01.01.2014 REVIEW AND PRICING
2	04.23.2014 FOR REVIEW
3	05.27.2014 FOR REVIEW
4	06.13.2014 FOR PERMIT



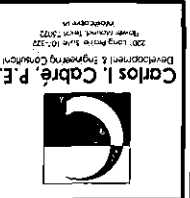
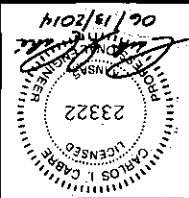
**STORM WATER DRAINAGE PLAN**  
 SCALE: 1"=50'-0"  
 1

SEE SHEET C-4.2  
 SEE SHEET C-4.2A

**KEYPLAN**  
 SCALE: 1"=500'-0"


 5729 REBANON ROAD, SUITE 144  
 FRISSCO, TX 75034  
 T: 214-705-1078 F: 214-407-8912

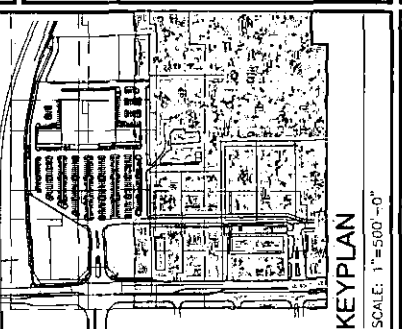
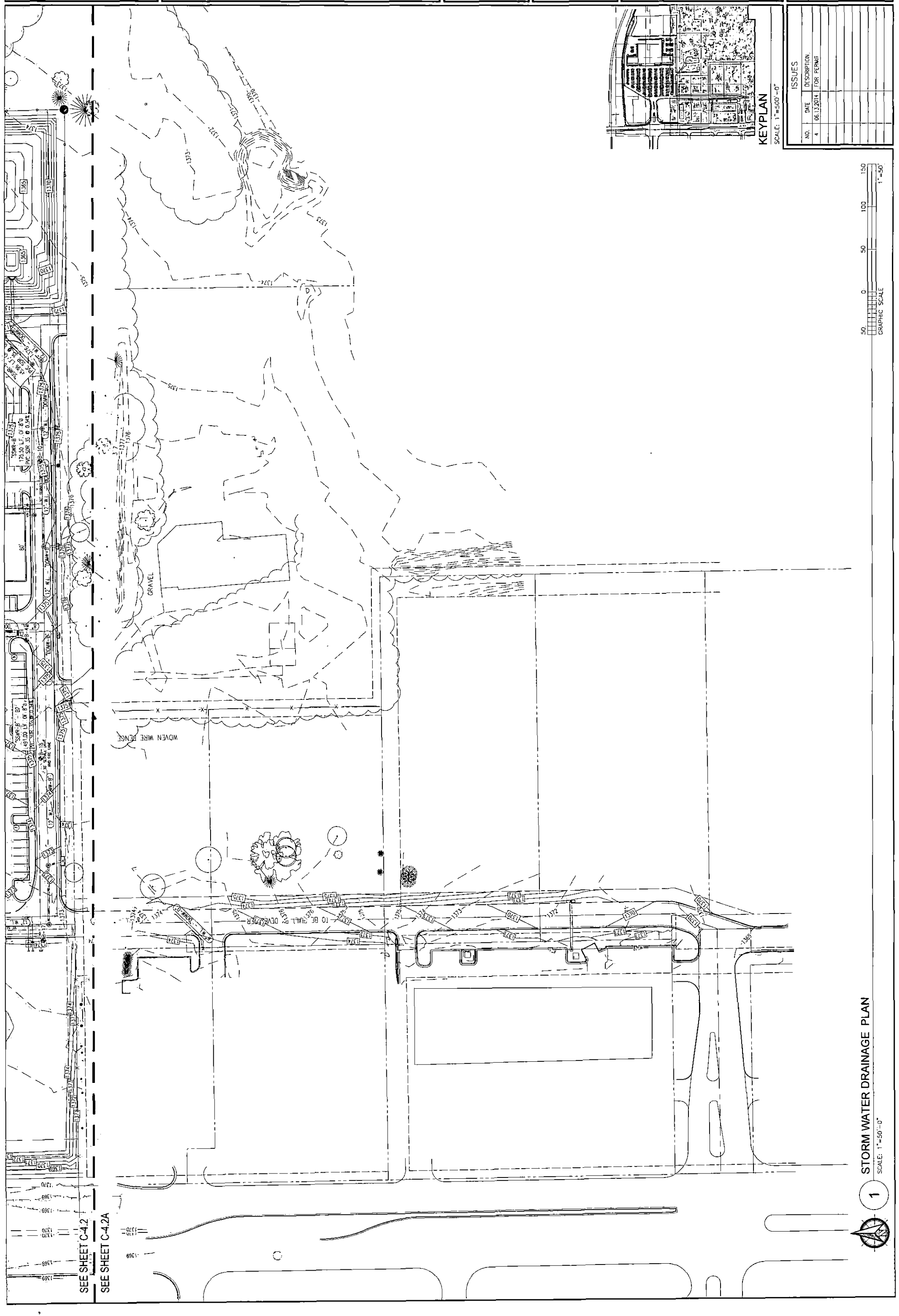
**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A",  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS



**STORM WATER DRAINAGE PLAN**  
 DRAWING TITLE:

DATE: JUNE 13, 2014  
 SCALE: 1"=50'  
 JOB NUMBER: 12-09  
 DRAWING NUMBER:

**C-4.2A**



ISSUES	
NO.	DESCRIPTION
4	06.13.2014 FOR PERMIT



SEE SHEET C-4.2  
 SEE SHEET C-4.2A

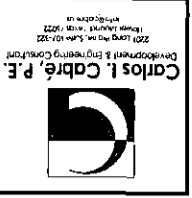
**1**  
 STORM WATER DRAINAGE PLAN  
 SCALE: 1"=50'-0"





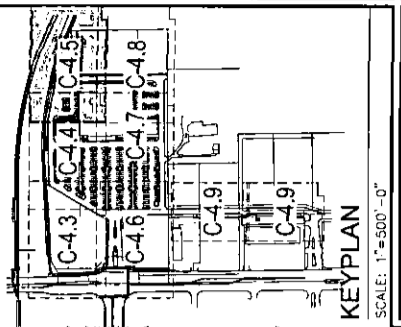
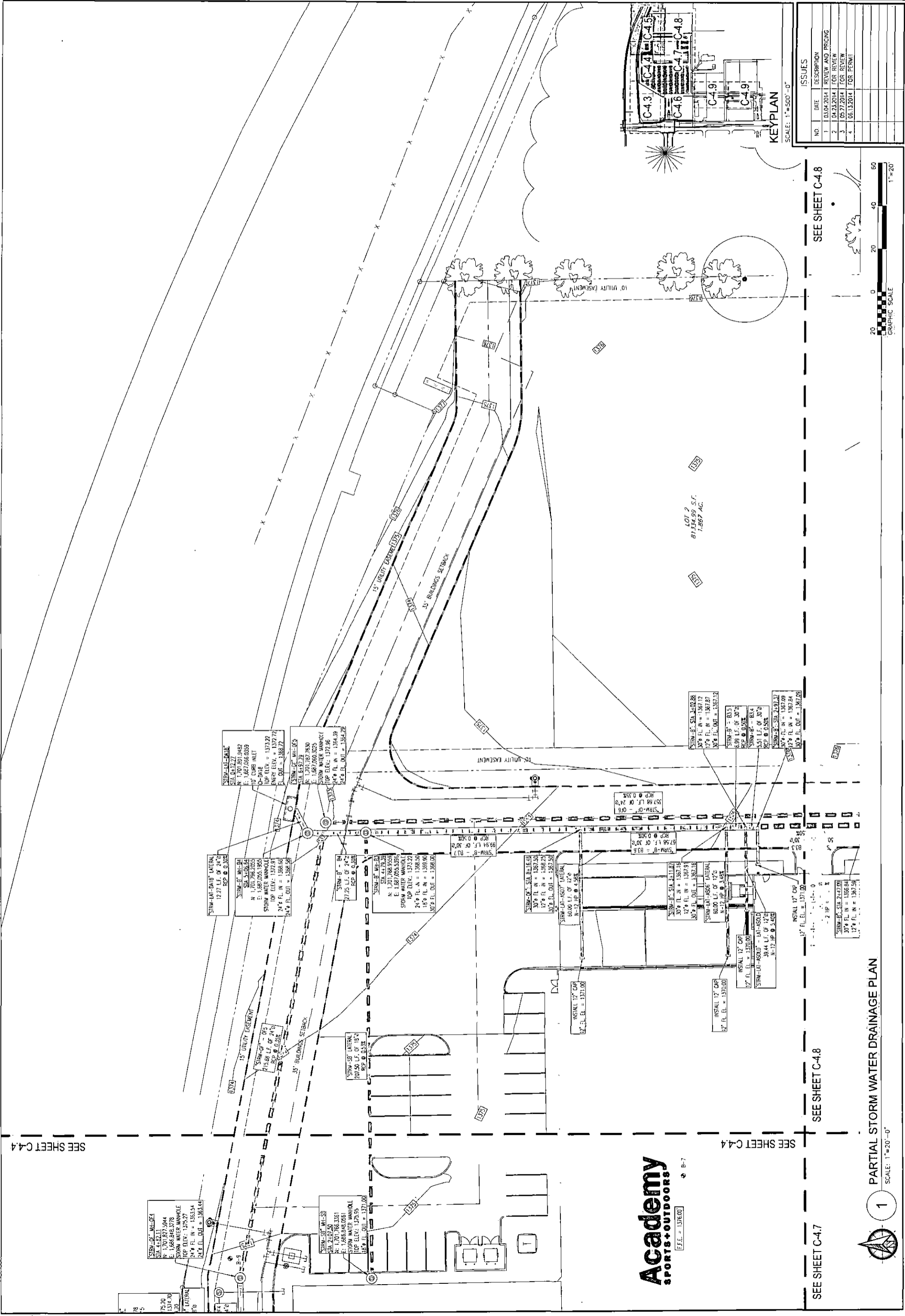
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
1.214-705-1078 F.214-407-8912

**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A"  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS



**PARTIAL STORM WATER DRAINAGE PLAN**  
DRAWING TITLE:  
DATE: JUNE 13, 2014  
SCALE: 1"=20'  
JOB NUMBER: 12-09  
DRAWING NUMBER: C-4.5

ISSUES	
NO.	DATE
1	03.04.2014
2	04.23.2014
3	05.27.2014
4	06.13.2014



ISSUES		
NO.	DATE	DESCRIPTION
1	03.04.2014	REVIEW AND PRICING
2	04.23.2014	FOR REVIEW
3	05.27.2014	FOR REVIEW
4	06.13.2014	FOR PERMIT

SEE SHEET C-4.8



SEE SHEET C-4.4

SEE SHEET C-4.8

SEE SHEET C-4.7

SEE SHEET C-4

**Academy**  
SPORTS+OUTDOORS

**1** PARTIAL STORM WATER DRAINAGE PLAN  
SCALE: 1"=20'-0"



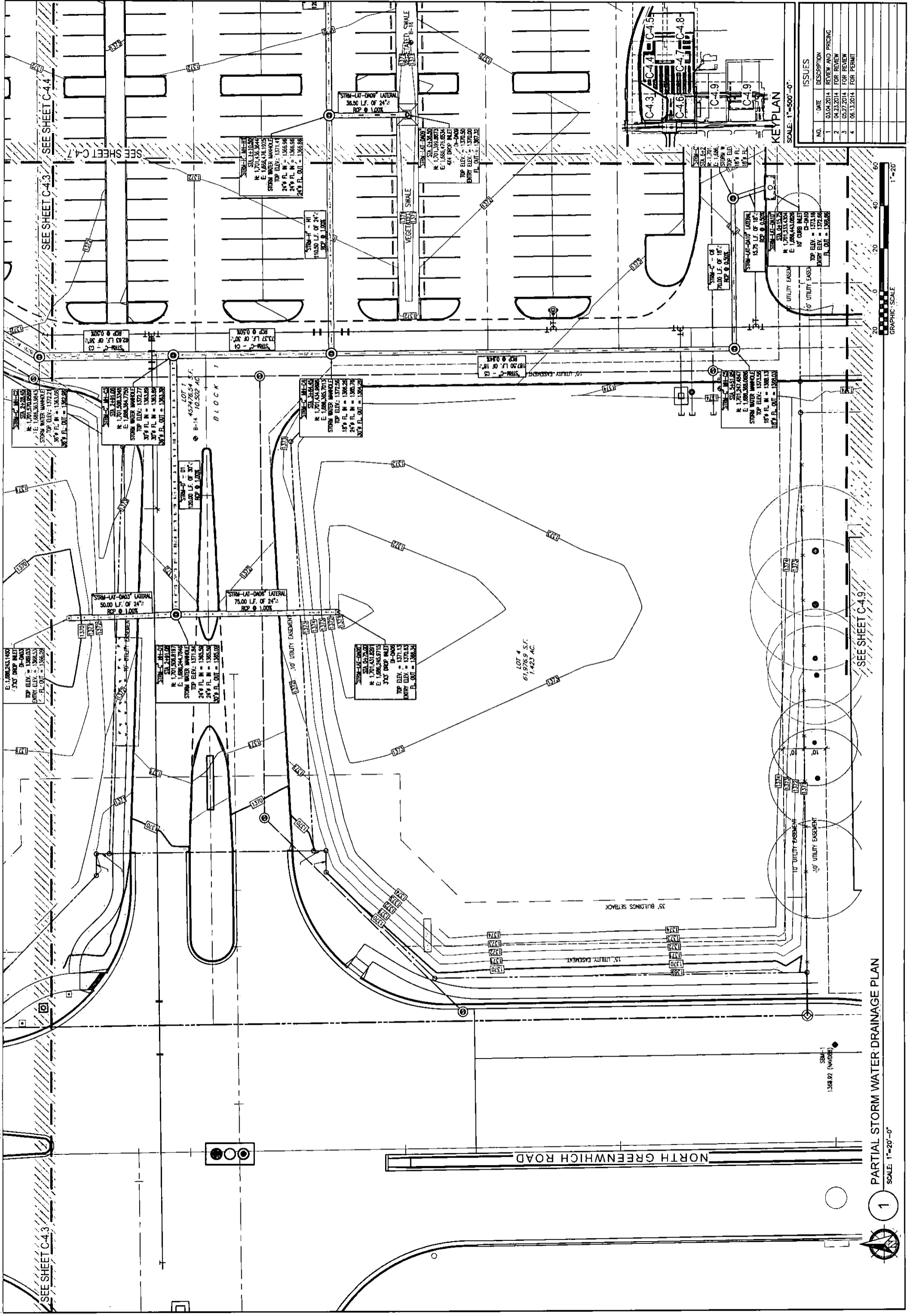
PARTIAL STORM WATER DRAINAGE PLAN  
 (DRAWING TITLE)

Carlos I. Cabré, P.E.  
 Licensed Professional Engineer  
 State of Texas License No. 23322  
 06/13/2014

WICHITA CROSSING  
 A PORTION OF LOT 1 AND RESERVE "A",  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

5729 LEBANON ROAD, SUITE 144  
 FRISCO, TX 75034  
 1-214-705-1078 F. 214-407-8912  
 DEVELOPMENT & SURVEYING  
 SURVEYING & ENGINEERING

ISSUES	
NO.	DATE DESCRIPTION
1	03.04.2014 REVIEW AND PRICING
2	04.23.2014 FOR REVIEW
3	05.27.2014 FOR REVIEW
4	06.13.2014 FOR PERMIT



PARTIAL STORM WATER DRAINAGE PLAN  
 SCALE: 1"=20'-0"



SEE SHEET C-4.3

SEE SHEET C-4.3

SEE SHEET C-4.7

SEE SHEET C-4.9

GRAPHIC SCALE  
 1"=20'



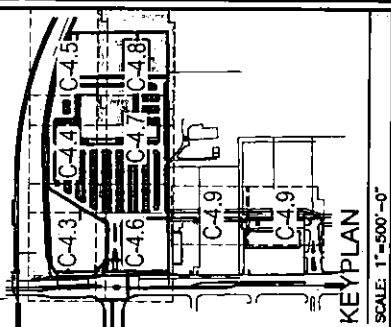
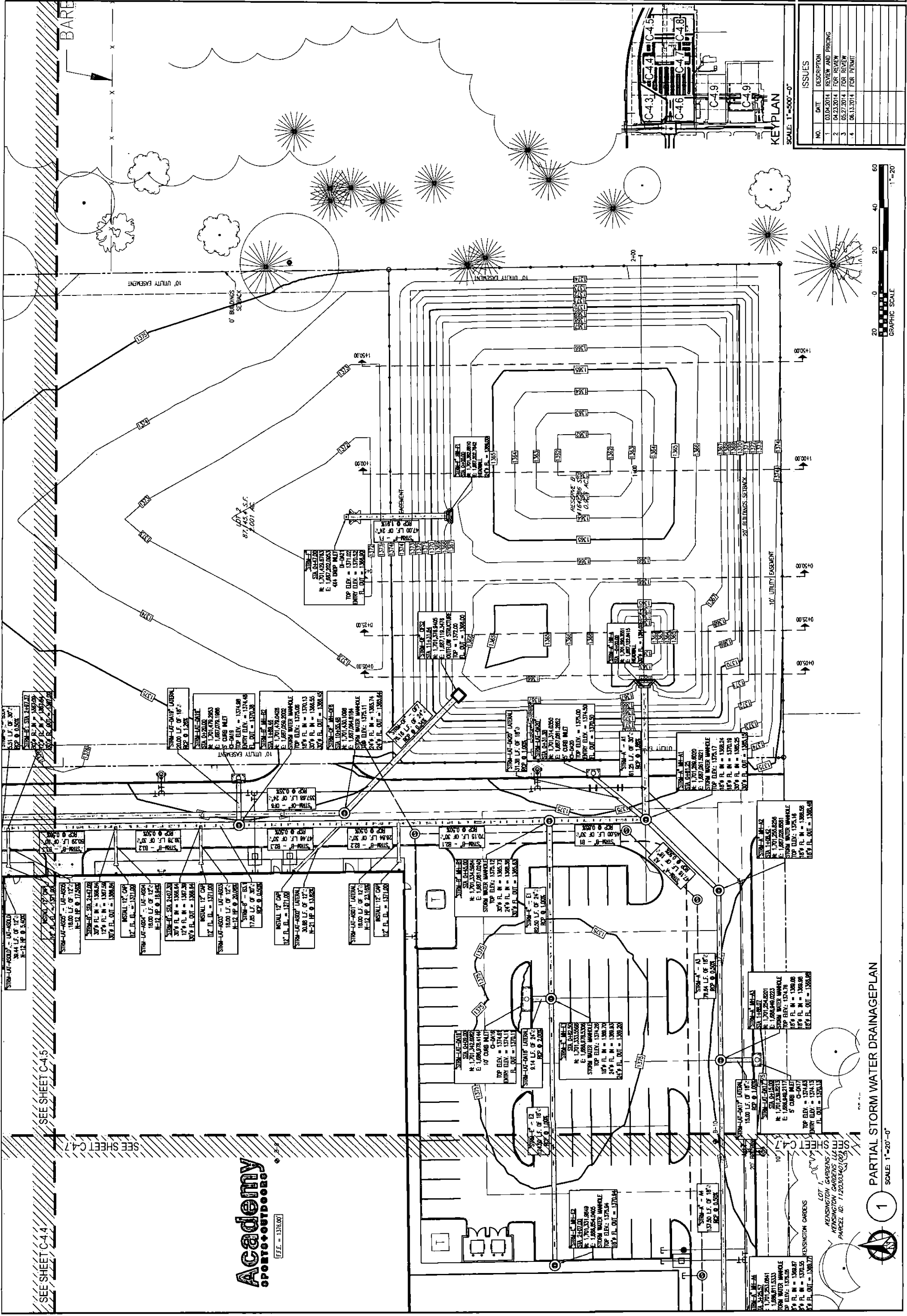
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
1.214.705.1078 F.214.407.8912

**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A",  
KENNINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS



**PARTIAL STORM WATER DRAINAGE PLAN**  
DRAWING TITLE

DATE	JUNE 13, 2014
SCALE	1"=20'
DRAWING NUMBER	12-09
C-4.8	



SCALE: 1"=500'-0"

NO.	DATE	DESCRIPTION
1	03.04.2014	REVIEW AND PRICING
2	04.23.2014	FOR REVIEW
3	05.27.2014	FOR REVIEW
4	06.13.2014	FOR PERMIT

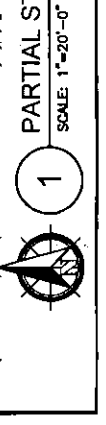
SEE SHEET C-4.4

SEE SHEET C-4.7

SEE SHEET C-4.5

**Academy**  
SPORTS+OUTDOORS  
LIFE = 1376.00'

LOT 1  
KENNINGTON GARDENS / CO  
KENNINGTON GARDENS L.L.C.  
PARCEL ID: 11203040102  
KENNINGTON GARDENS



SEE SHEET C-4-6

LOT 10, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
ARC BFMCHS001 LLC  
PARCEL ID: 112030330200200

LOT 9, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
NORTH GREENWICH PROPERTIES LLC  
PARCEL ID: 112030330200300

LOT 11, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
NORTH GREENWICH PROPERTIES LLC  
PARCEL ID: 112030330200100

LOT 8, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
GREENWICH INVESTMENT GROUP LLC  
PARCEL ID: 112030330200400

LOT 12, BLOCK 1, ADDITION  
VILLAGE AT GREENWICH ADDITION  
NORTH GREENWICH PROPERTIES LLC  
PARCEL ID: 112030330201600

LOT 13, BLOCK 1,  
VILLAGE AT GREENWICH ADDITION  
GREENWICH INVEST GROUP LLC  
PARCEL ID: 112030330201500

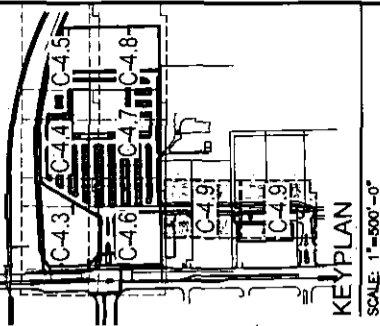
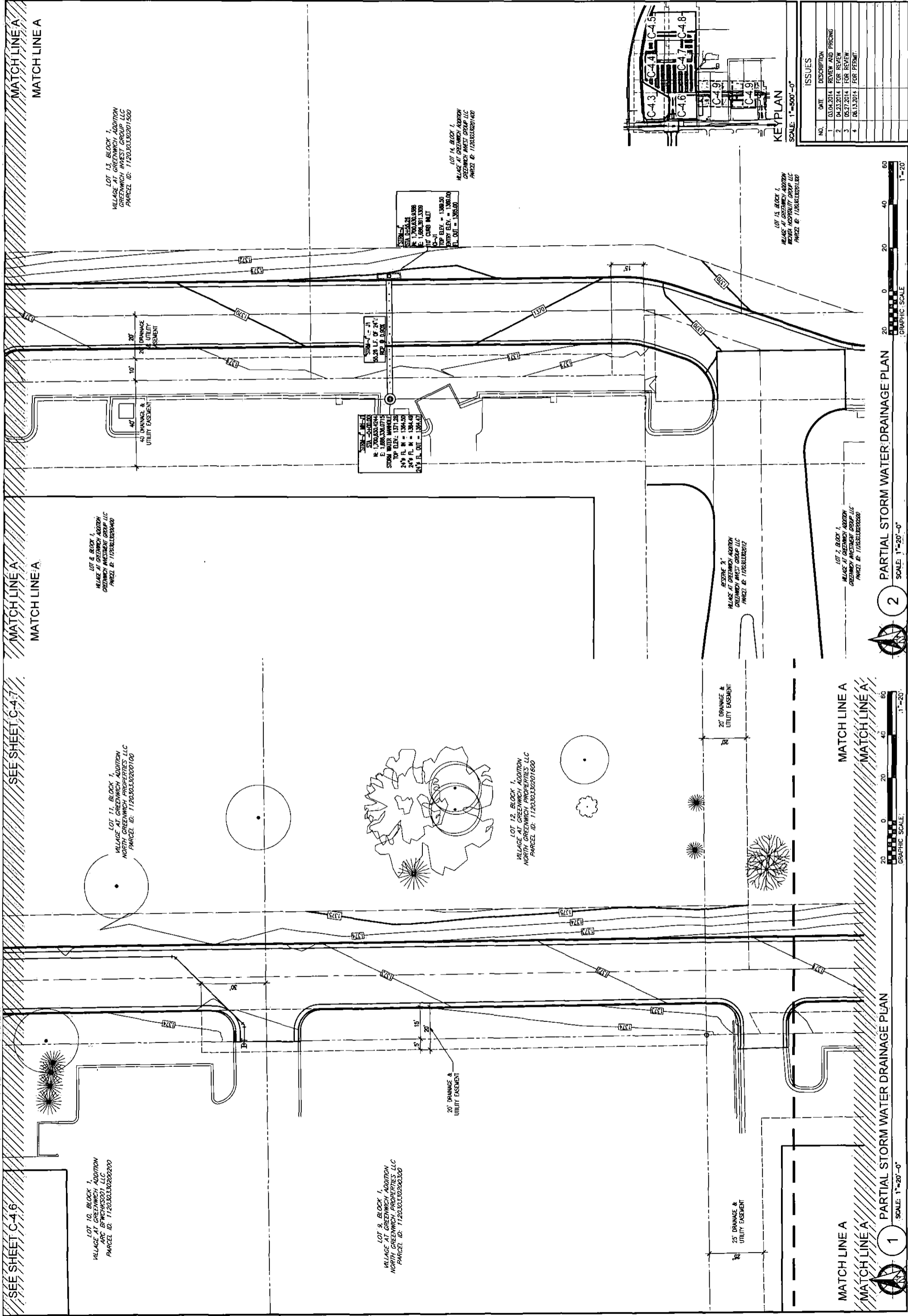
LOT 14, BLOCK 1, ADDITION  
VILLAGE AT GREENWICH ADDITION  
GREENWICH INVEST GROUP LLC  
PARCEL ID: 112030330201400

MATCH LINE A  
MATCH LINE A

MATCH LINE A  
MATCH LINE A

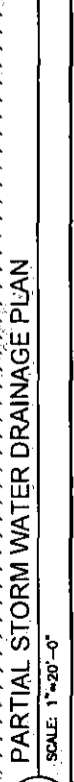
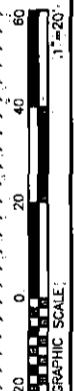
MATCH LINE A  
MATCH LINE A

MATCH LINE A  
MATCH LINE A



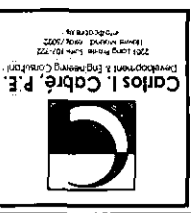
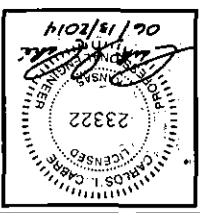
ISSUES

NO.	DATE	DESCRIPTION
1	03.04.2014	REVIEW AND PRICING
2	04.23.2014	FOR REVIEW
3	05.27.2014	FOR REVIEW
4	06.13.2014	FOR PERMIT



**SHAWKOR**  
 DEVELOPMENT & DESIGN  
 5729 LEBANON ROAD, SUITE 144  
 FRISCO, TX 75034  
 1.214.705.1078 F.214.407.8912

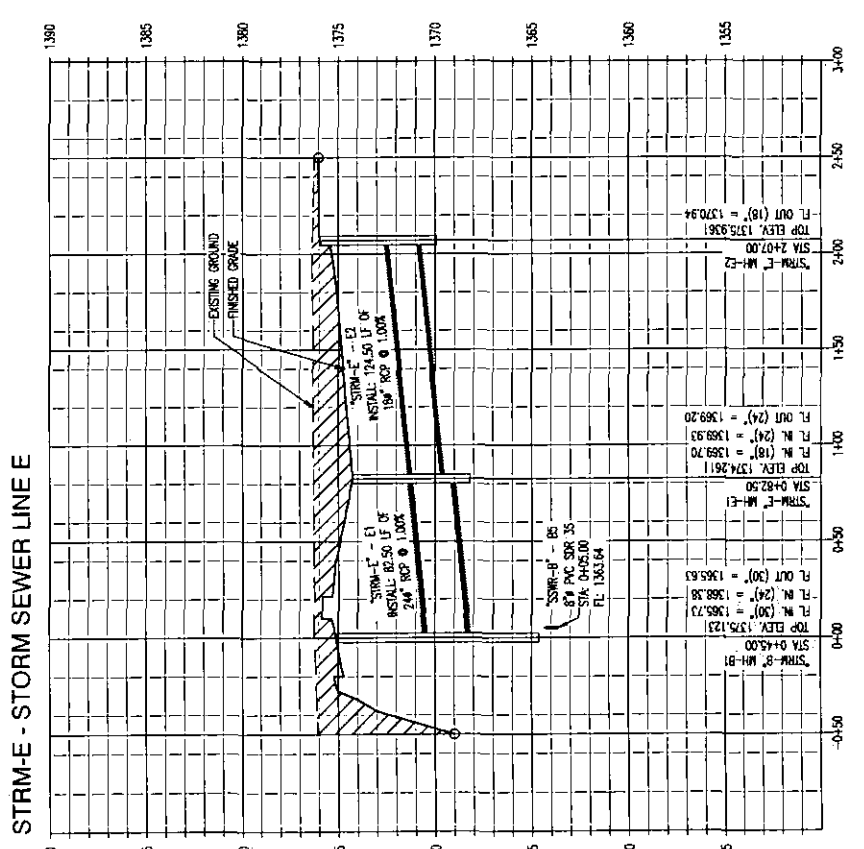
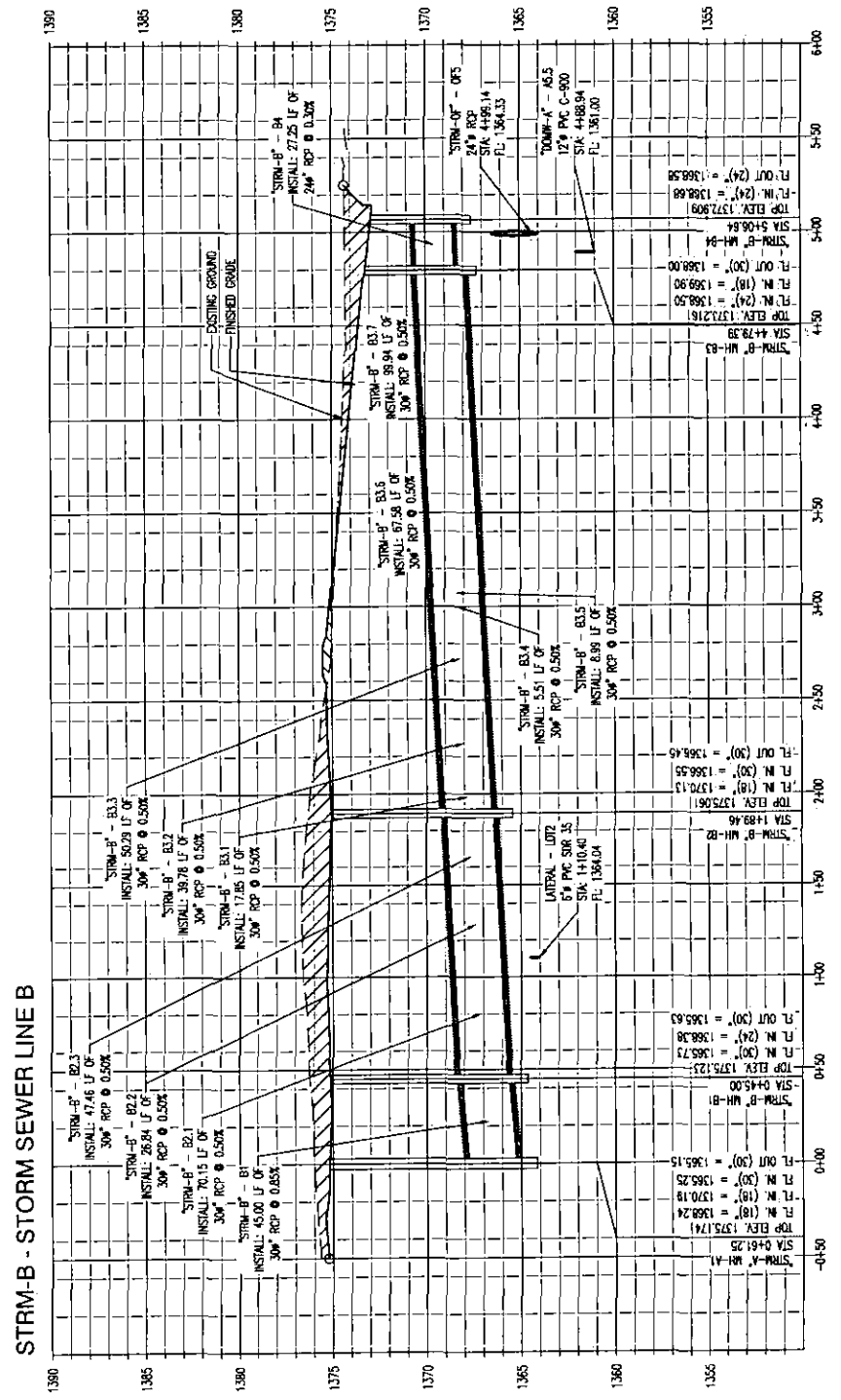
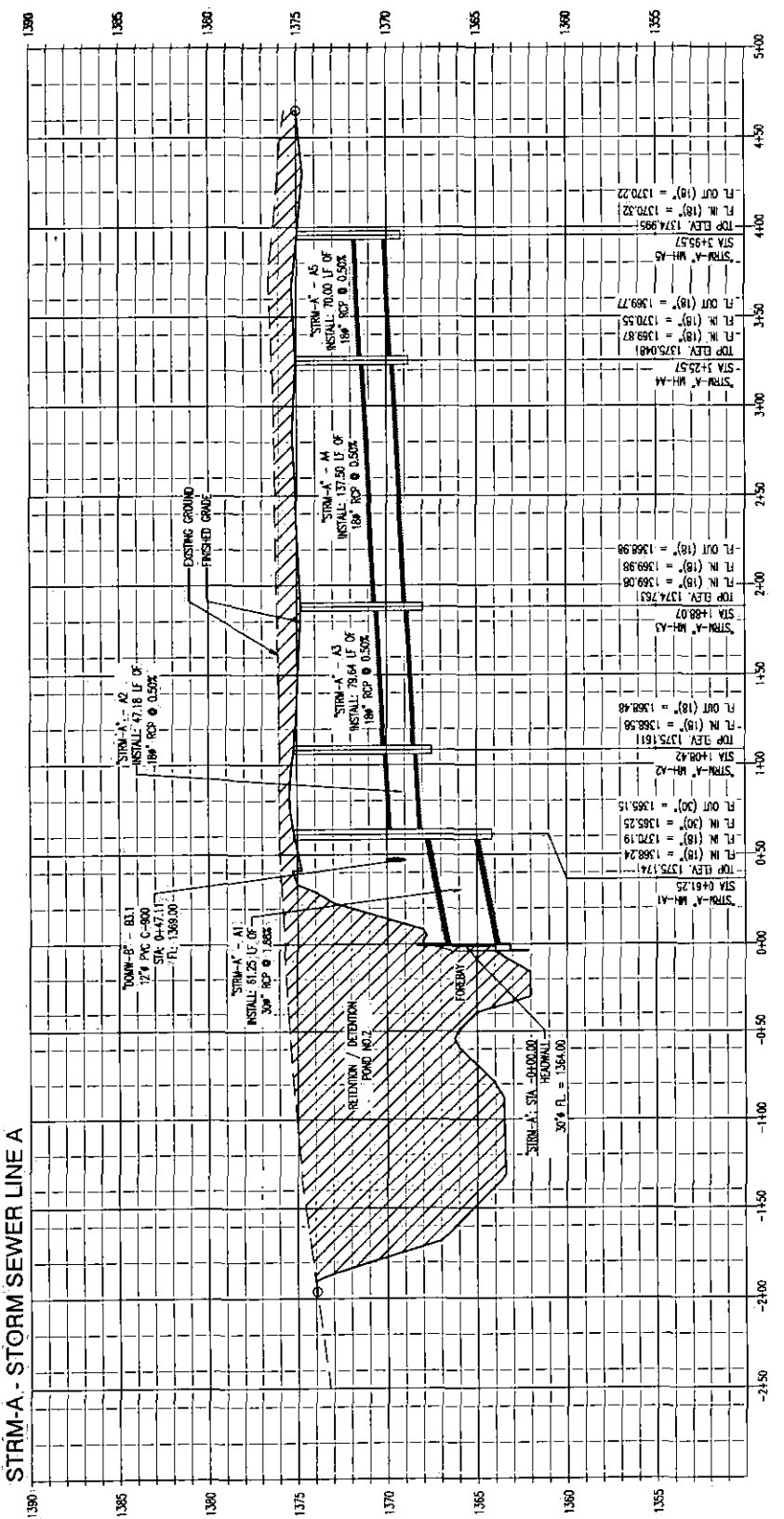
**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A"  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS



**PARTIAL STORM WATER DRAINAGE PLAN**  
 DATE: JUNE 13, 2014  
 SCALE: 1"=20'-0"  
 DRAWING NUMBER: 12-09

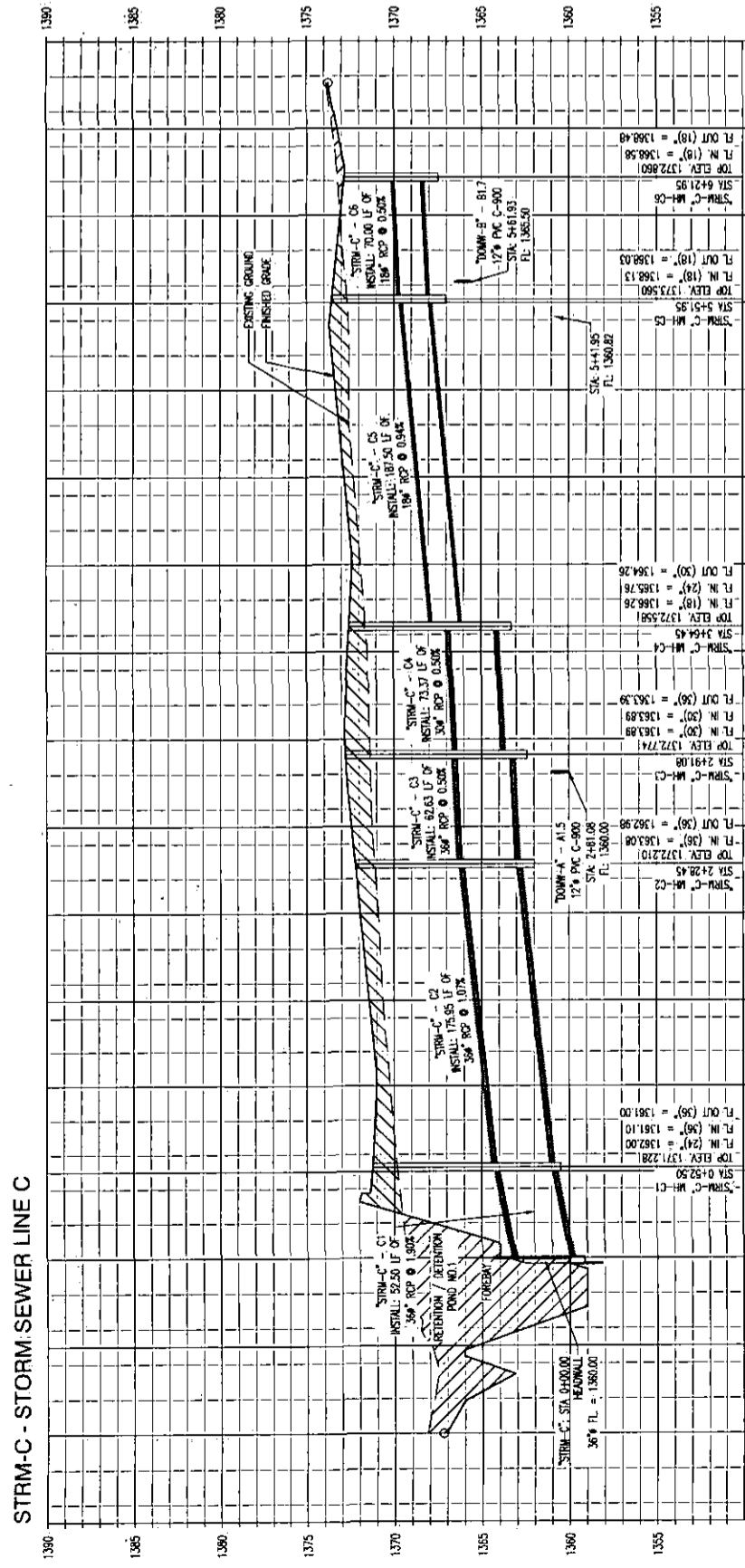
**C-4.9**

ISSUES	
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2	04/23/2014 FOR REVIEW
3	05/27/2014 FOR REVIEW
4	06/13/2014 FOR PERMIT

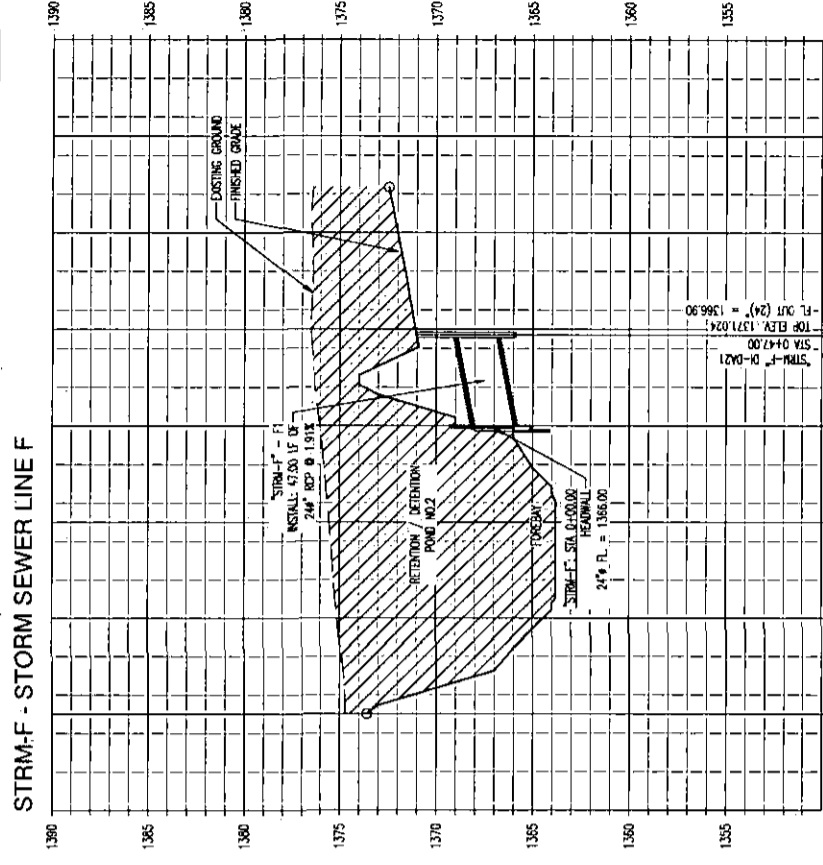


ISSUES	
NO.	DESCRIPTION
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2	04/23/2014 FOR REVIEW
3	05/27/2014 FOR REVIEW
4	06/13/2014 FOR PERMIT

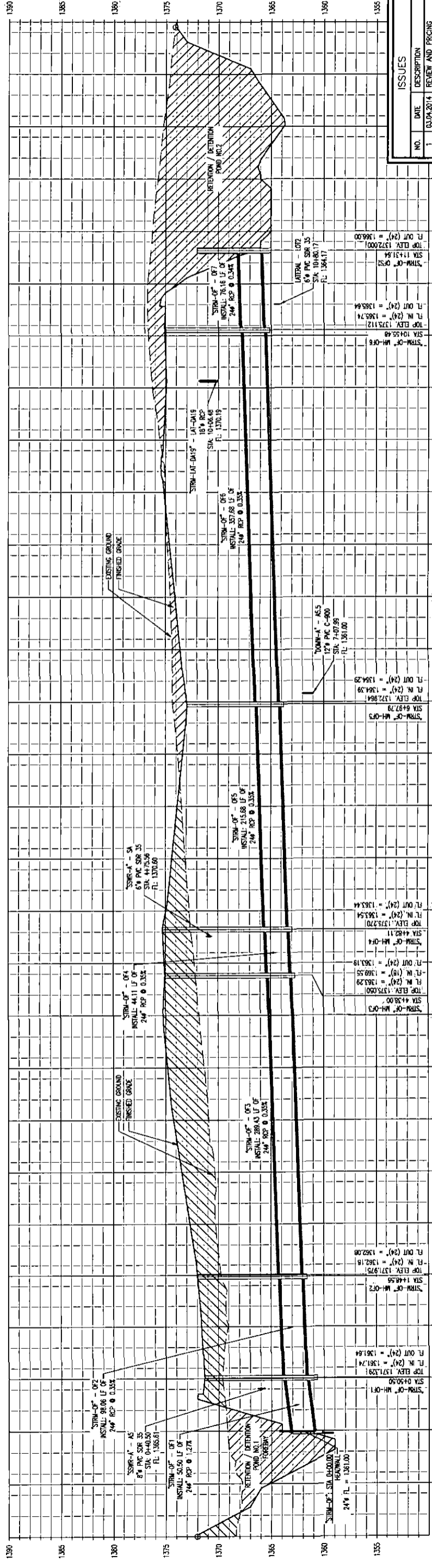
STRM-C - STORM SEWER LINE C



STRM-F - STORM SEWER LINE F



STRM-OF - STORM SEWER LINE OF



NO.	DATE	DESCRIPTION
1	03.04.2014	REVIEW AND PRICING
2	04.23.2014	FOR REVIEW
3	05.27.2014	FOR REVIEW
4	06.13.2014	FOR PERMIT

ISSUES	NO.	DATE	DESCRIPTION
	1	03.04.2014	REVIEW AND PRICING
	2	04.23.2014	FOR REVIEW
	3	05.27.2014	FOR REVIEW
	4	06.13.2014	FOR PERMIT

DATE:	JUNE 13, 2014
SCALE:	1"=50' H.
DWG NUMBER:	12-09
DRAWING NUMBER:	

C-4.11

STORM WATER DRAINAGE PROFILES

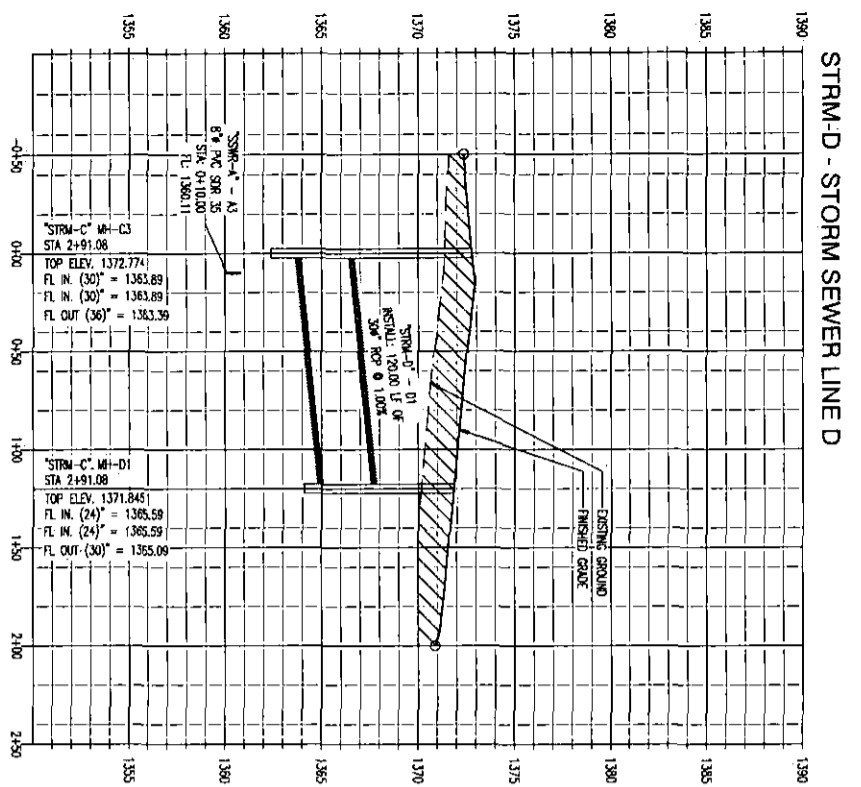
THE DRAWING REPRESENTS THE DESIGN OF STORM WATER DRAINAGE SYSTEMS. IT IS THE RESPONSIBILITY OF THE CLIENT TO VERIFY THE ACCURACY OF THE DATA PROVIDED AND TO OBTAIN NECESSARY PERMITS. THE DESIGNER ASSUMES NO LIABILITY FOR ANY ERRORS OR OMISSIONS. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PROJECTS WITHOUT THE WRITTEN CONSENT OF THE DESIGNER.

Carlos I. Cabre, P.E.  
Professional Engineer  
License No. 23322  
State of Kansas  
06/14/2014

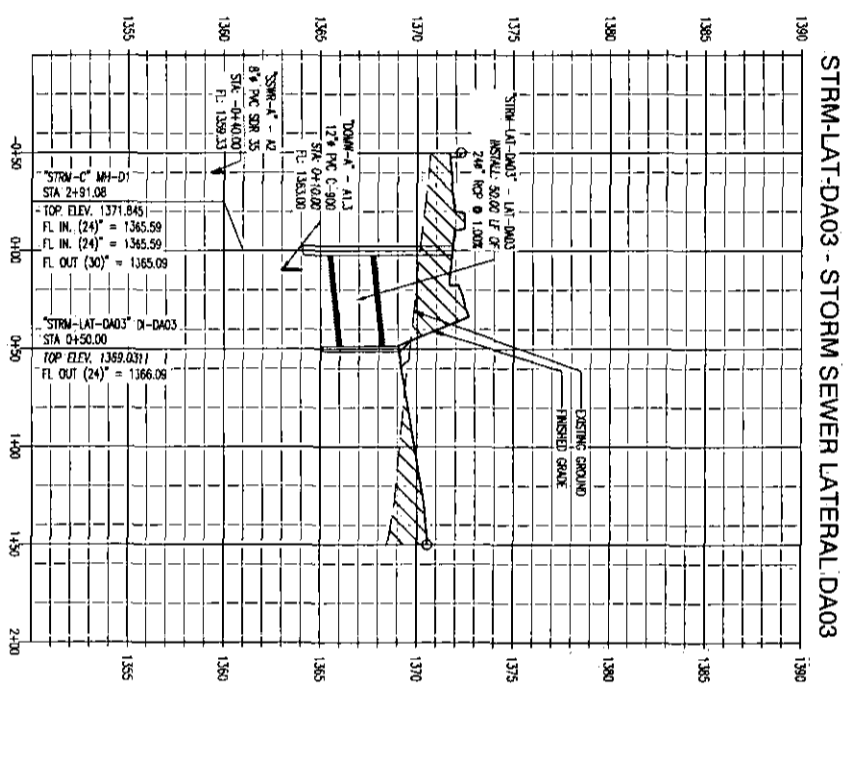
Professional Engineer  
License No. 23322  
State of Kansas  
06/14/2014

WICHITA CROSSING  
A PORTION OF LOT 1 AND RESERVE "A"  
KENSINGTON GARDENS  
SEDGWICK COUNTY, KANSAS  
CITY OF WICHITA, KANSAS

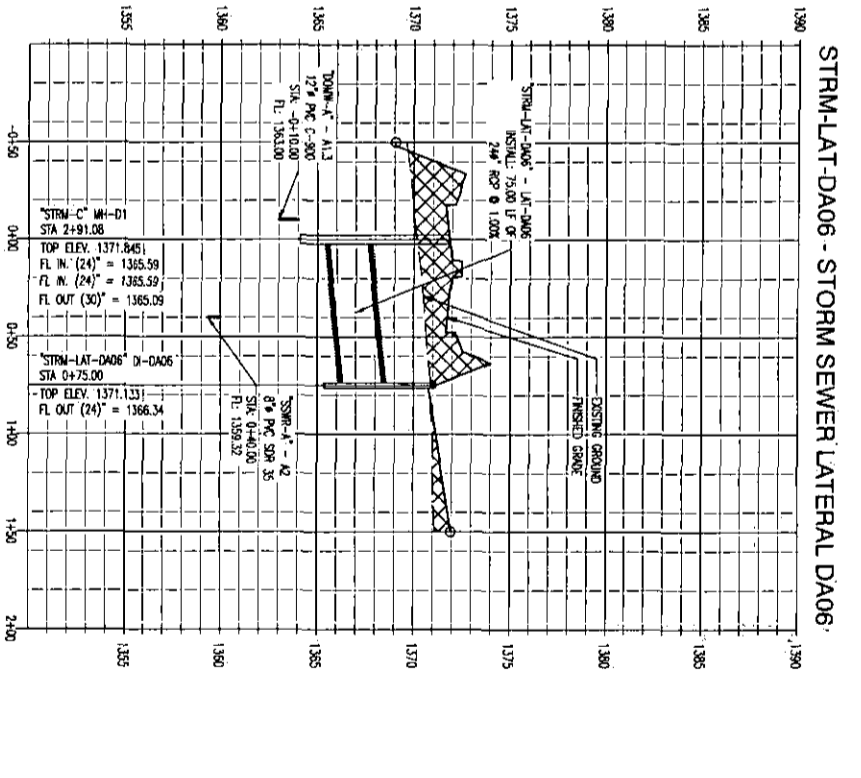
STEWART & GORDON  
Development & Survey of Retail Properties  
5729 Lebanon Road, Suite 144  
Frisco, TX 75034  
Tel: 214-705-1078 Fax: 214-407-8912



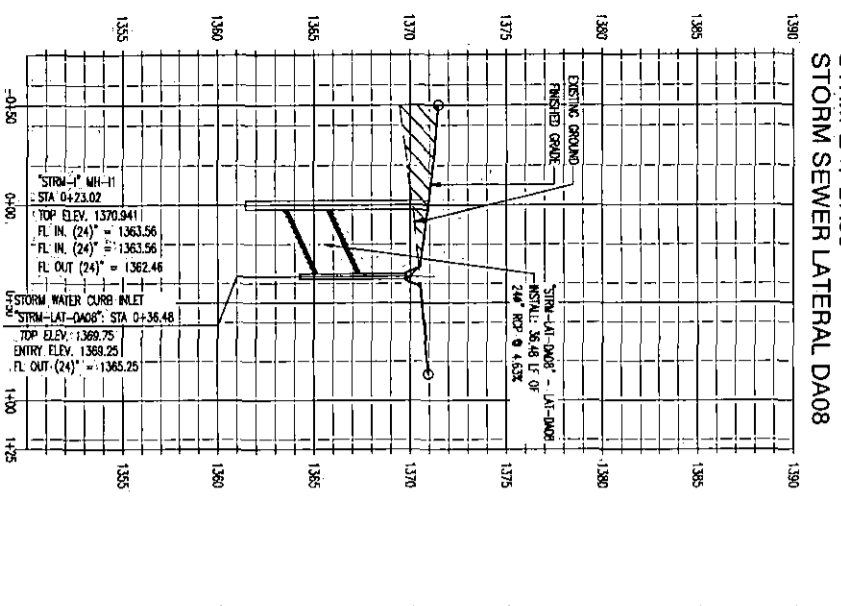
STRM-D - STORM SEWER LINE D



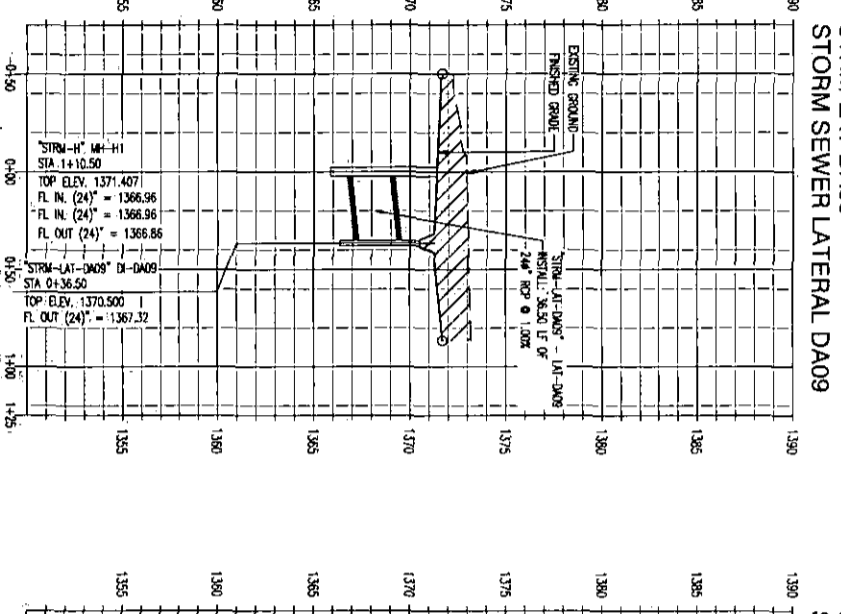
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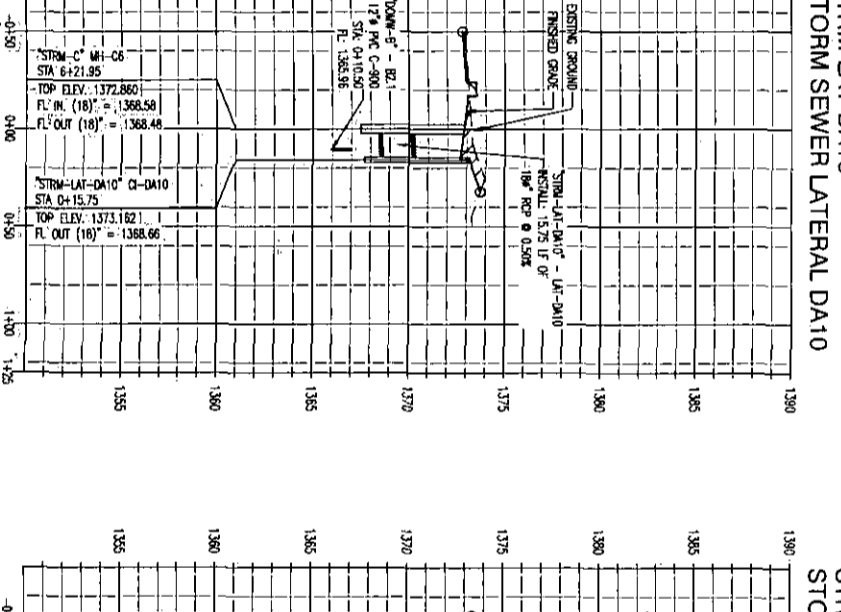
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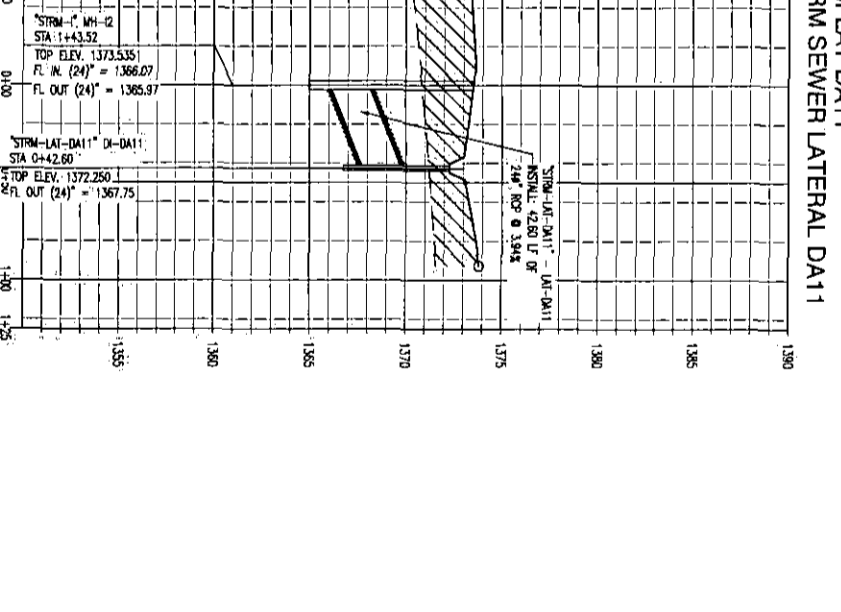
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STORM SEWER LATERAL DA08



STRM-LAT-DA09  
STORM SEWER LATERAL DA09



STRM-LAT-DA10  
STORM SEWER LATERAL DA10



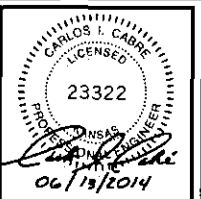
STRM-LAT-DA11  
STORM SEWER LATERAL DA11

ISSUES	
NO.	DATE / DESCRIPTION
1	03/01/2014 REVIEW AND DESIGN
2	06/23/2014 FOR REVIEW
3	08/27/2014 FOR REVIEW
4	06/13/2014 FOR PERMIT

DATE: JUNE 13, 2014  
SCALE: 1" = 50' H.L.  
JOB NUMBER: 12-09  
DRAWING NUMBER: C-4.12

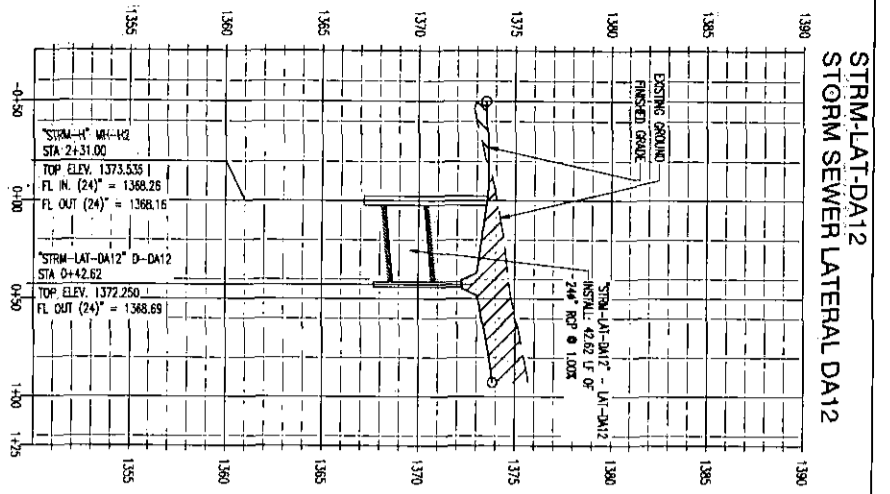
**STORM WATER DRAINAGE PROFILES**

THIS DOCUMENT REPRESENTS THE DESIGN EFFORT OF CARLOS L. CABRE, P.E., AND IS ISSUED AS AN INSTRUMENT OF SERVICE FOR THE SUBJECT PROJECT. CARLOS L. CABRE, P.E. RETAINS TITLE AND OWNERSHIP OF THIS DOCUMENT WHETHER THE PROJECT IS EXECUTED OR NOT AND IT SHALL NOT BE COPIED, REPRODUCED OR EXERCISED IN WHOLE OR PART FOR ANY OTHER PURPOSE OR USED ON OTHER PROJECTS OR EXTENSIONS TO THIS PROJECTS, UNLESS AUTHORIZED IN WRITING BY CARLOS L. CABRE, P.E.

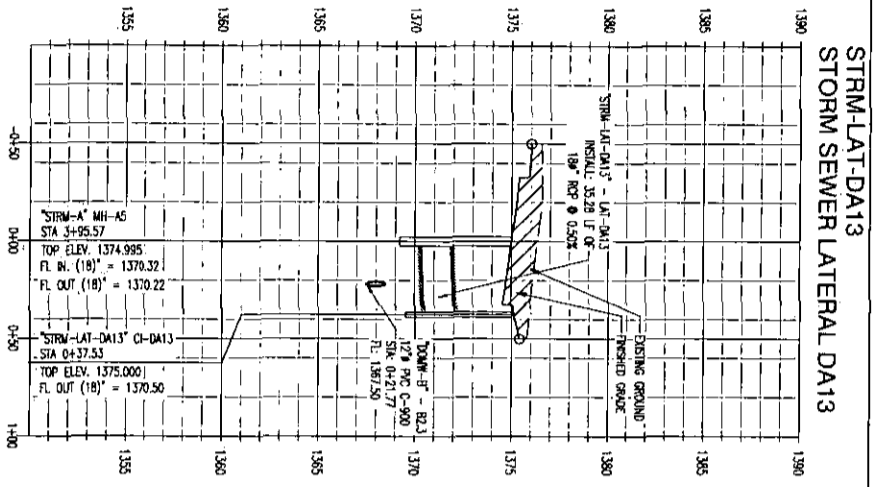


**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A",  
KENSINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

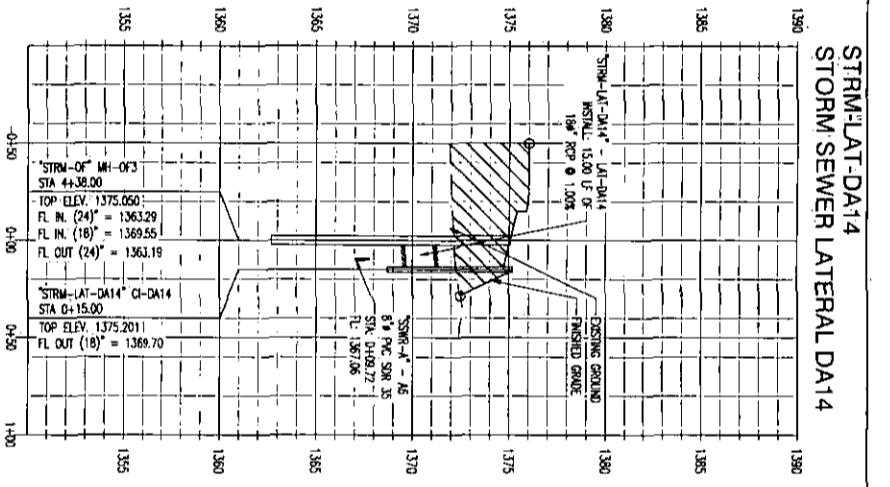
**STANTEC GROUP**  
DEVELOPMENT & SALE OF RETAIL PROPERTIES  
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
T. 214-705-1078 F. 214-407-8912



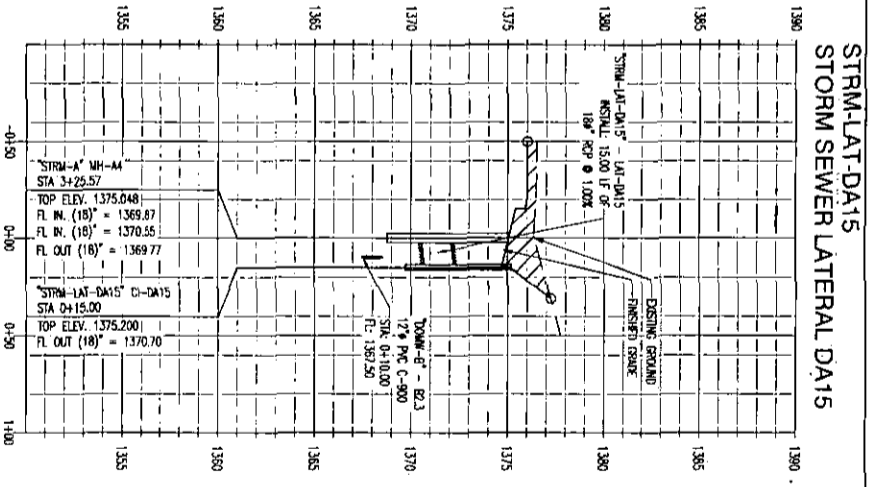
STRM-LAT-DA12  
STORM SEWER LATERAL DA12



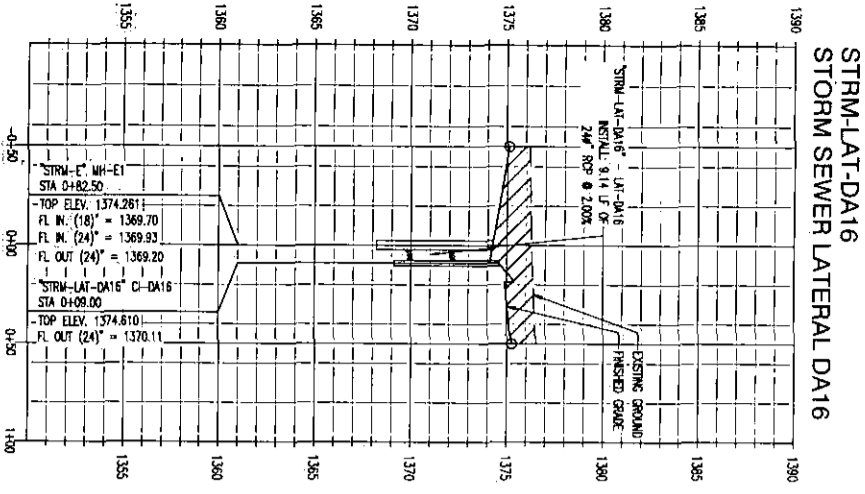
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STORM SEWER LATERAL DA13



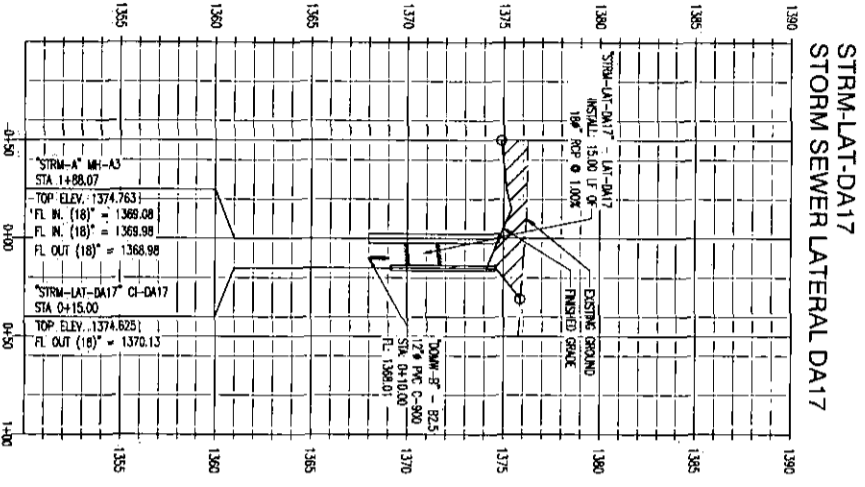
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STORM SEWER LATERAL DA14



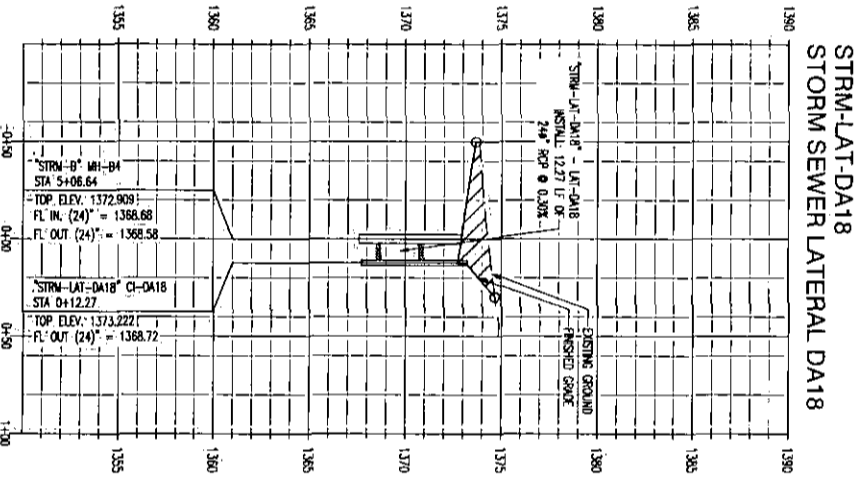
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STORM SEWER LATERAL DA15



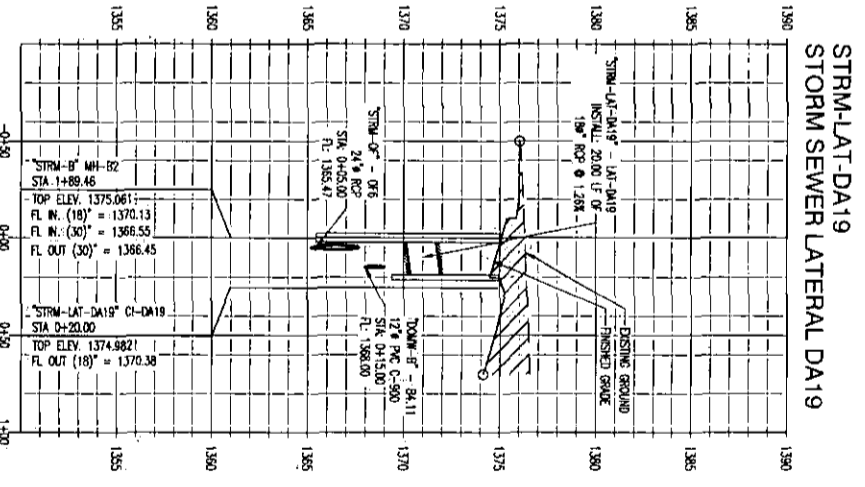
STRM-LAT-DA16  
STORM SEWER LATERAL DA16



STRM-LAT-DA17  
STORM SEWER LATERAL DA17



STRM-LAT-DA18  
STORM SEWER LATERAL DA18



STRM-LAT-DA19  
STORM SEWER LATERAL DA19

ISSUES	
NO.	DESCRIPTION
1	03/04/2014 - DESIGN AND PRICING
2	04/23/2014 - FOR REVIEW
3	06/27/2014 - FOR REVIEW
4	08/13/2014 - FOR TENDRIT

DATE: JUNE 13, 2014  
SCALE: 1"=50' H.  
JOB NUMBER: 12-09  
DRAWING NUMBER: C-4.13

**STORM WATER DRAINAGE PROFILES**

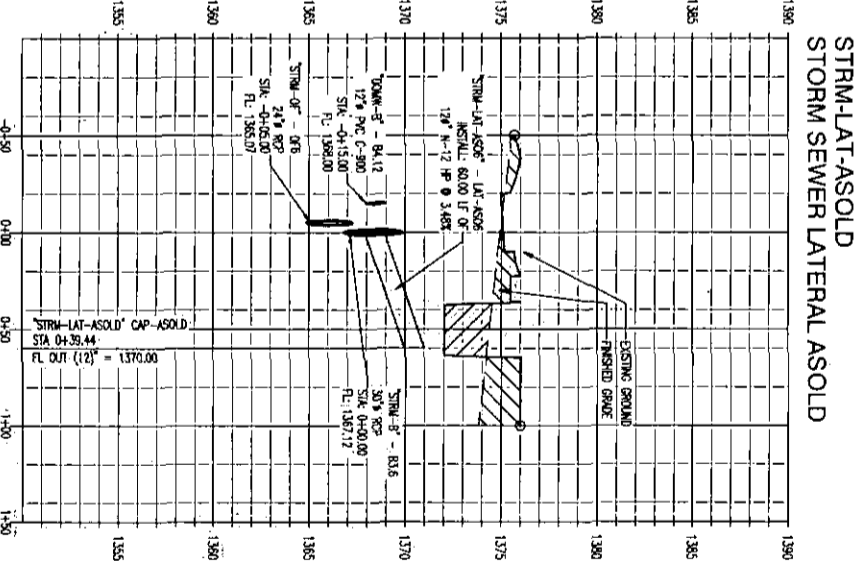
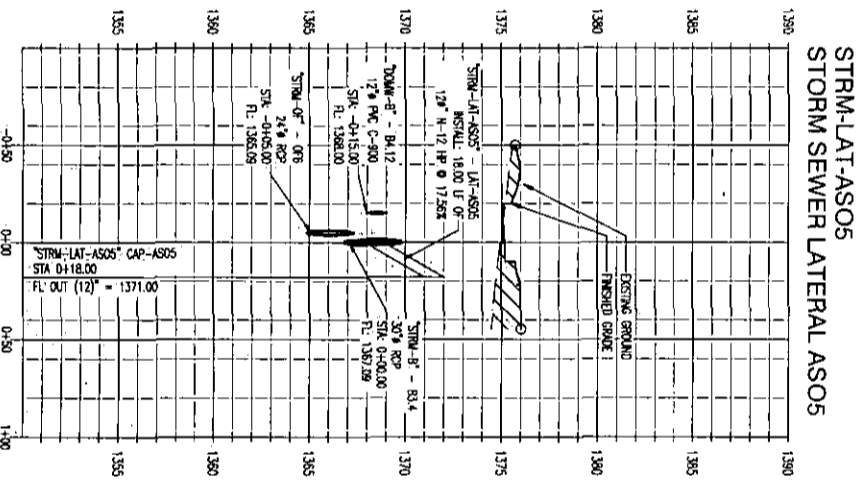
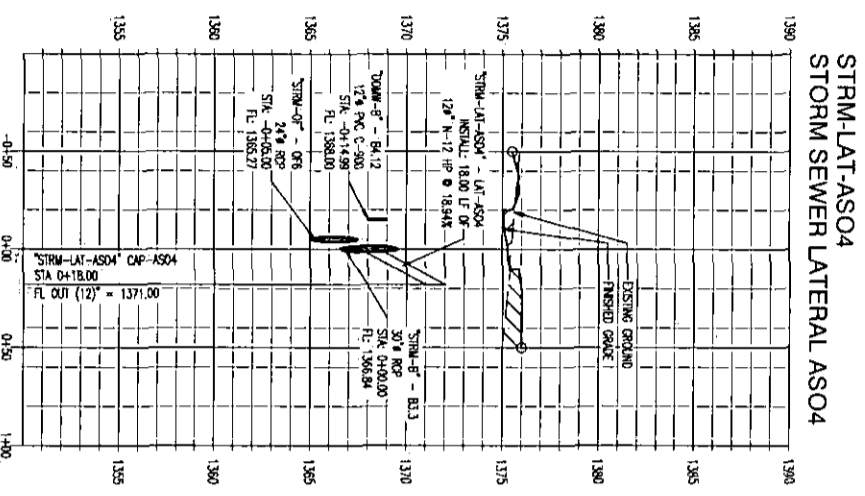
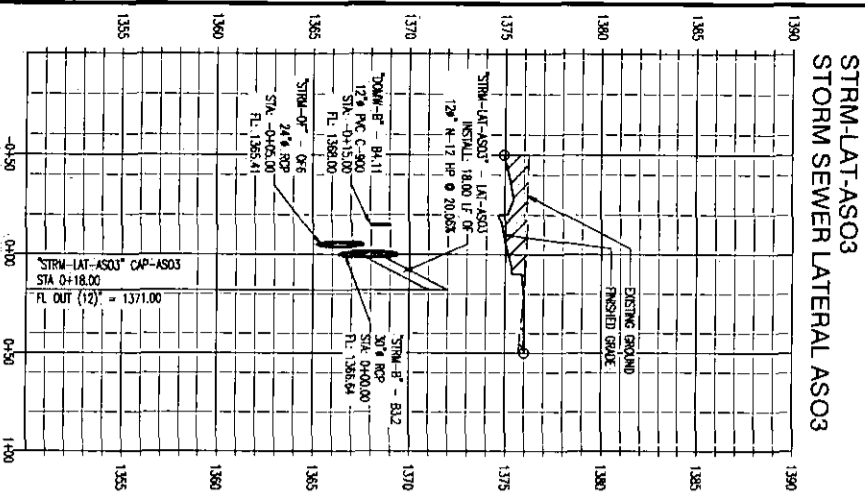
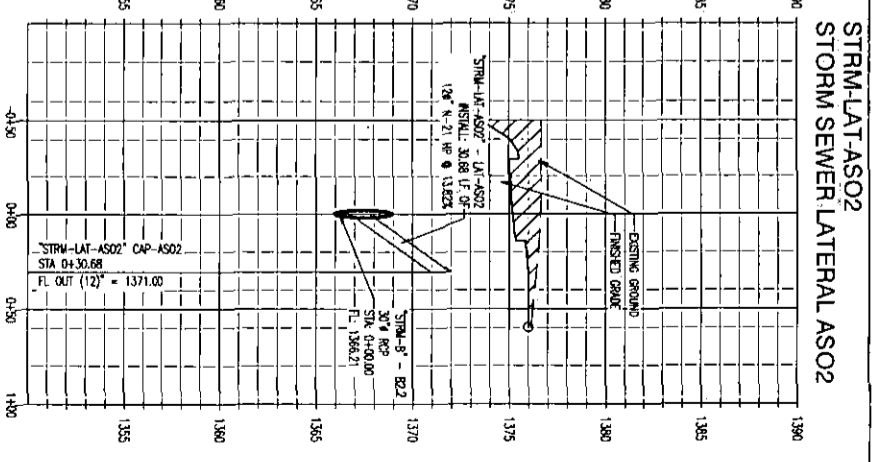
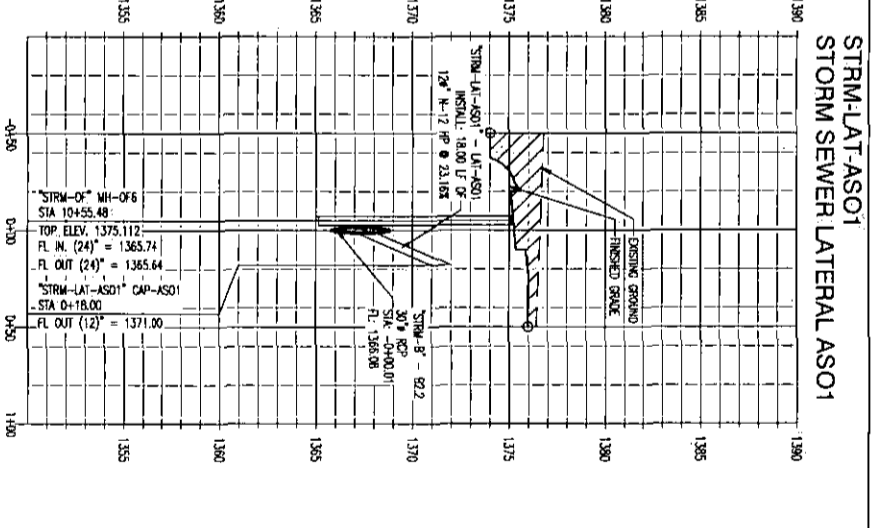
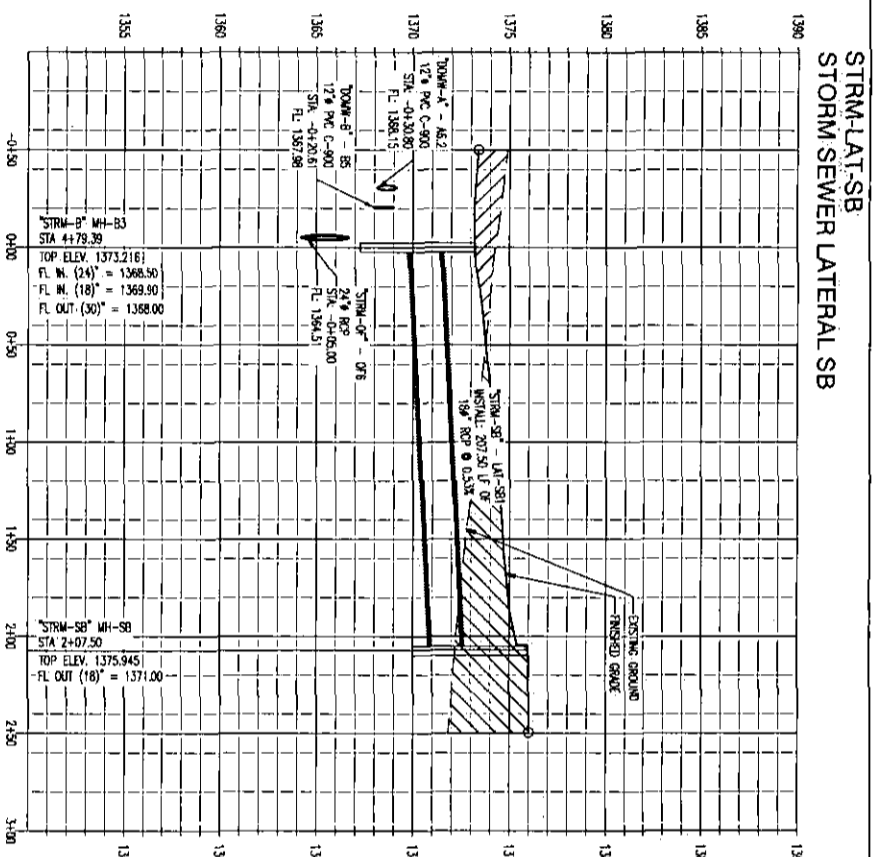
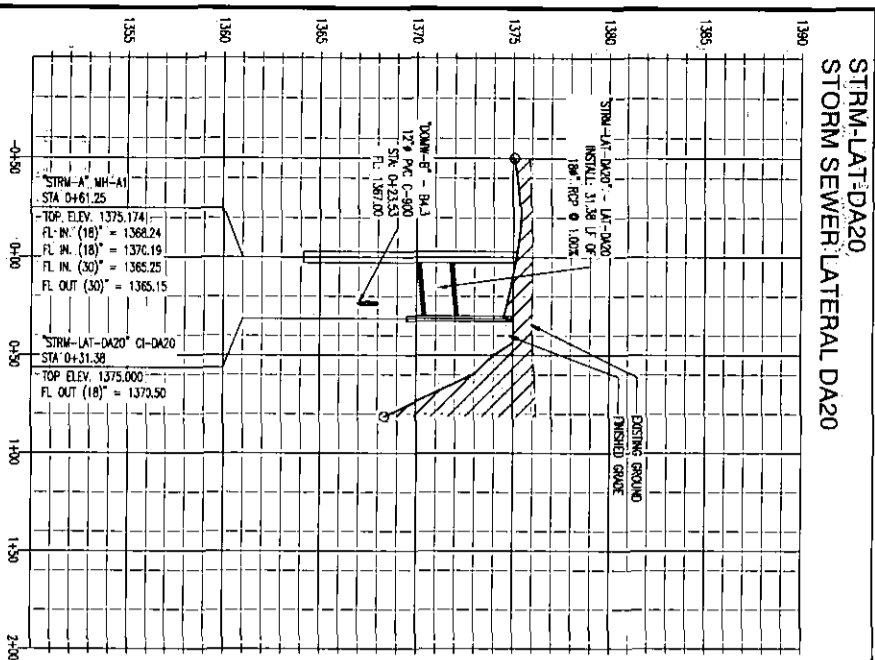
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**Carlos I. Cabre, P.E.**  
Development & Engineering Consultant  
201 Lebanon Road, Suite 144  
Frisco, Texas 75034  
carlos@wchc.com

CARLOS I. CABRE  
LICENSED  
23322  
06/13/2014

**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A",  
KENSINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

**SPUR GROUP**  
Development & Sale of Retail Properties  
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
T. 214-705-1078 F. 214-407-8912



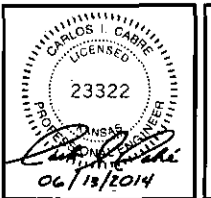
ISSUES	
NO.	DESCRIPTION
1	08/24/2014 DESIGN AND PRICING
2	08/23/2014 FOR REVIEW
3	08/27/2014 FOR REVIEW
4	08/13/2017 FOR PERMIT

DATE: JUNE 13, 2014  
 SCALE: 1"=50' H.L.  
 SHEET: 12-09  
 DRAWING NUMBER: C-4.14

**STORM WATER DRAINAGE PROFILES**

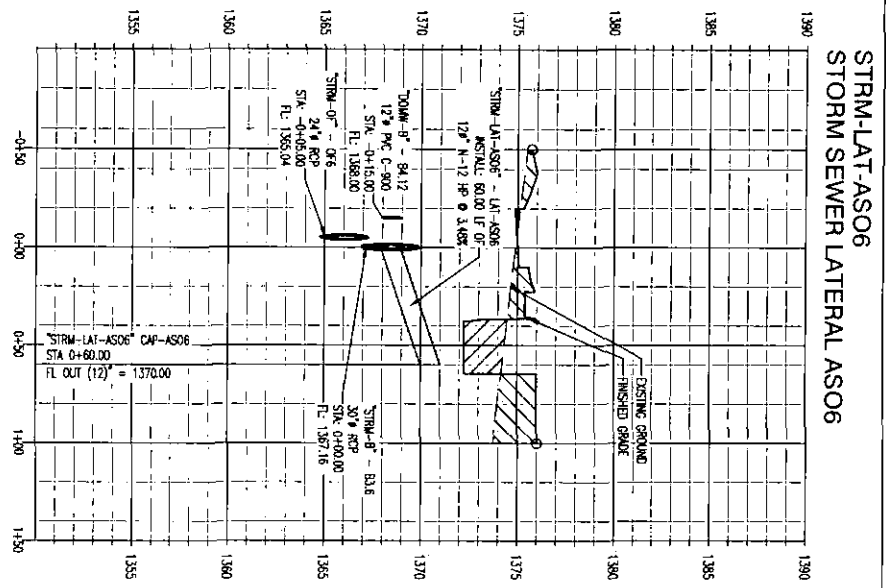
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**Carlos L. Cabre, P.E.**  
 Development & Engineering Consultant  
 201 Long Prairie Ave. 107-132  
 Overland Park, KS 66202  
 06/13/2014

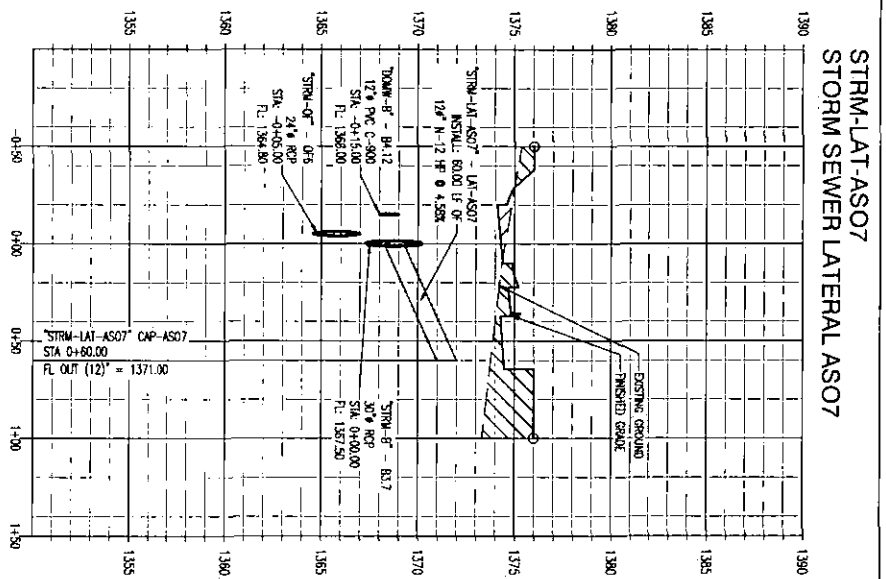


**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A",  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

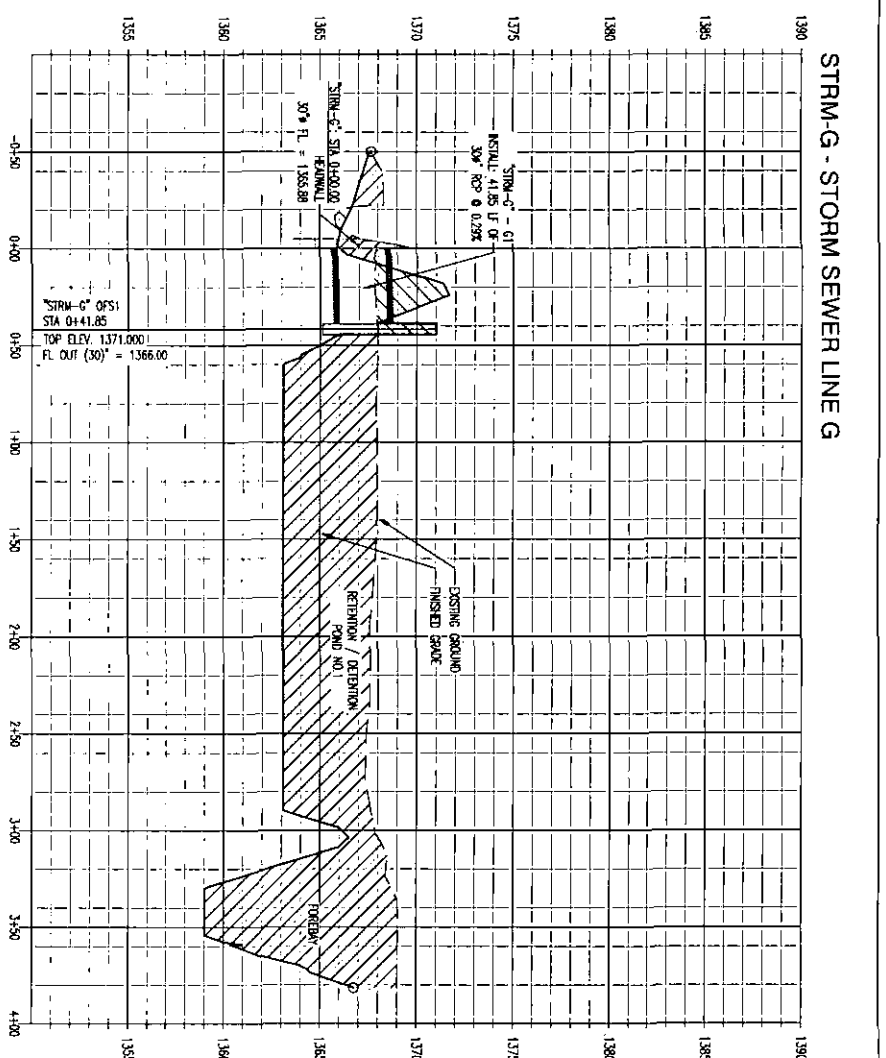
**SMITHSTUTZGROUP**  
 DEVELOPMENT & SALE OF RETAIL PROPERTIES  
 5729 LEBANON ROAD, SUITE 144  
 FRISCO, TX 75034  
 T. 214-705-1078 F. 214-407-8912



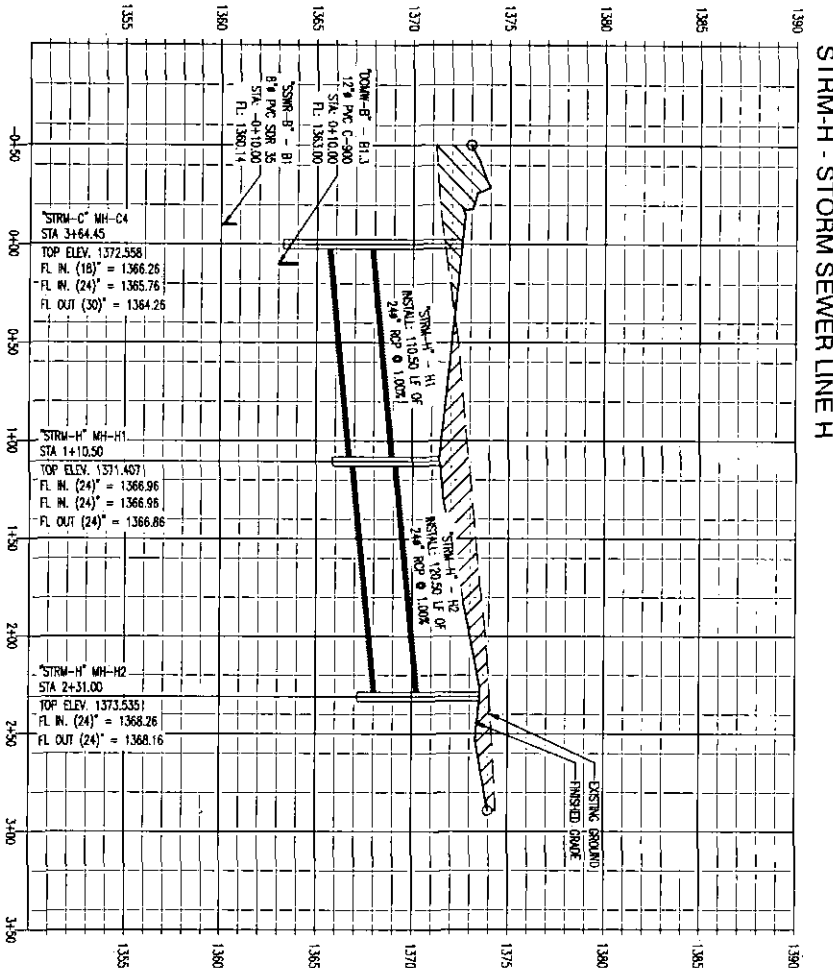
STRM-LAT-AS06  
STORM SEWER LATERAL AS06



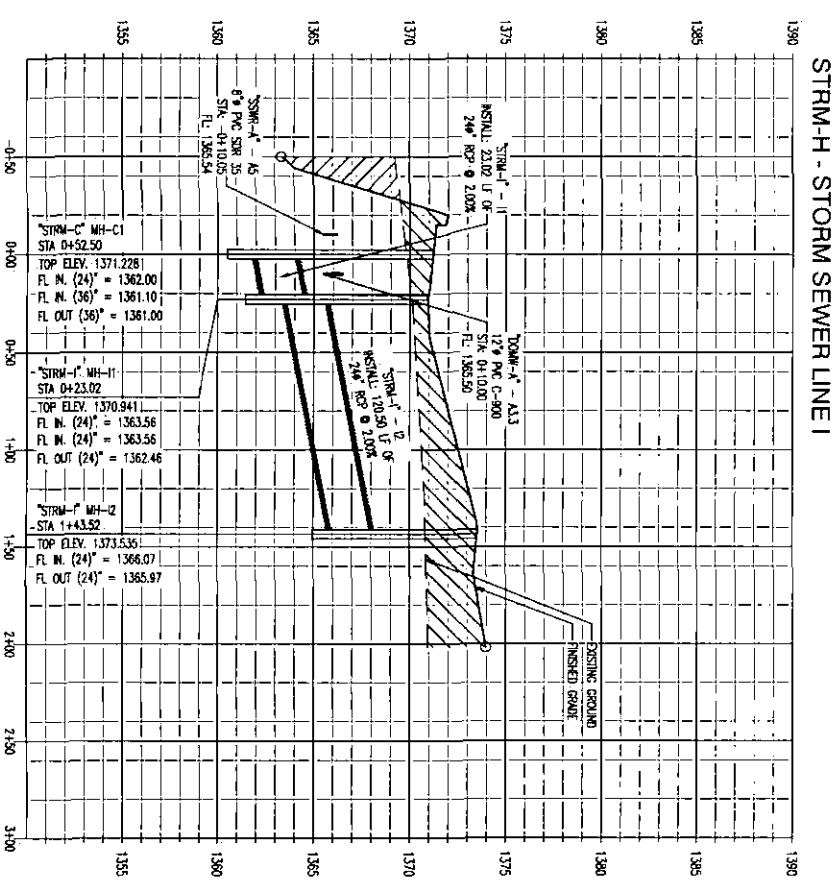
STRM-LAT-AS07  
STORM SEWER LATERAL AS07



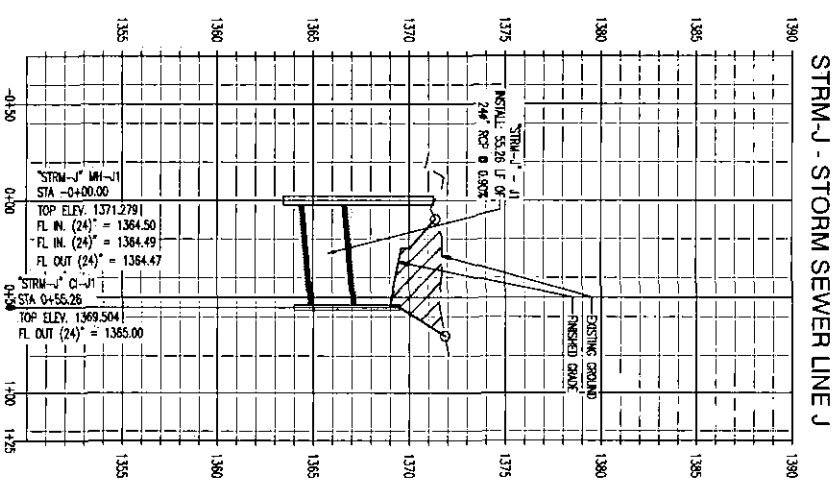
STRM-G - STORM SEWER LINE G



STRM-H - STORM SEWER LINE H



STRM-I - STORM SEWER LINE I



STRM-J - STORM SEWER LINE J

ISSUES	
NO.	DATE
1	03/04/2014
2	06/13/2014
3	06/27/2014
4	06/13/2014

DATE: JUNE 13, 2014  
SCALE: 1" = 50' H.  
JOB NUMBER: 12-09  
DRAWING NUMBER: C-4.15

**STORM WATER DRAINAGE PROFILES**

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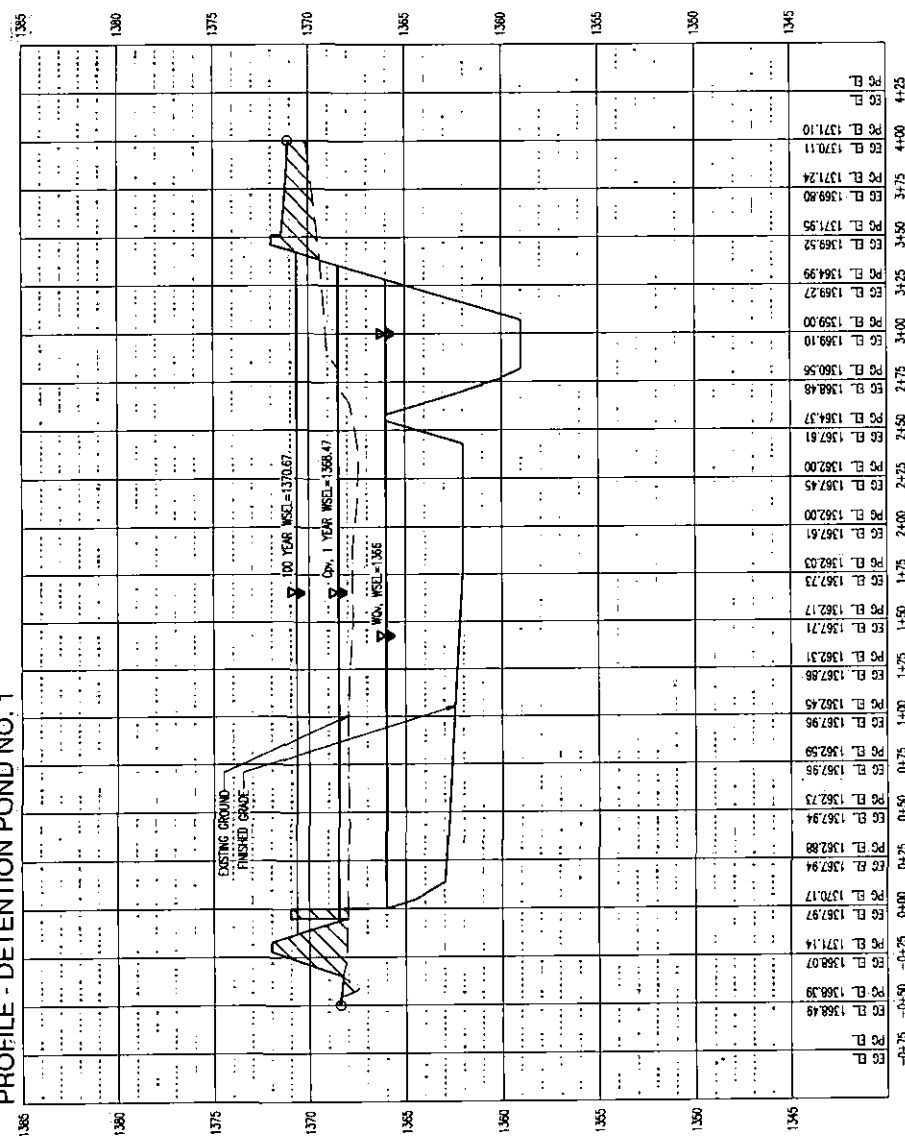
**Carlos I. Cabre, P.E.**  
Development & Engineering Consultant  
2001 Telephone Lane 107-307  
Frisco, Texas 75034  
www.cicpe.com

CARLOS I. CABRE  
LICENSED  
23322  
PROFESSIONAL ENGINEER  
KANSAS  
06/13/2014

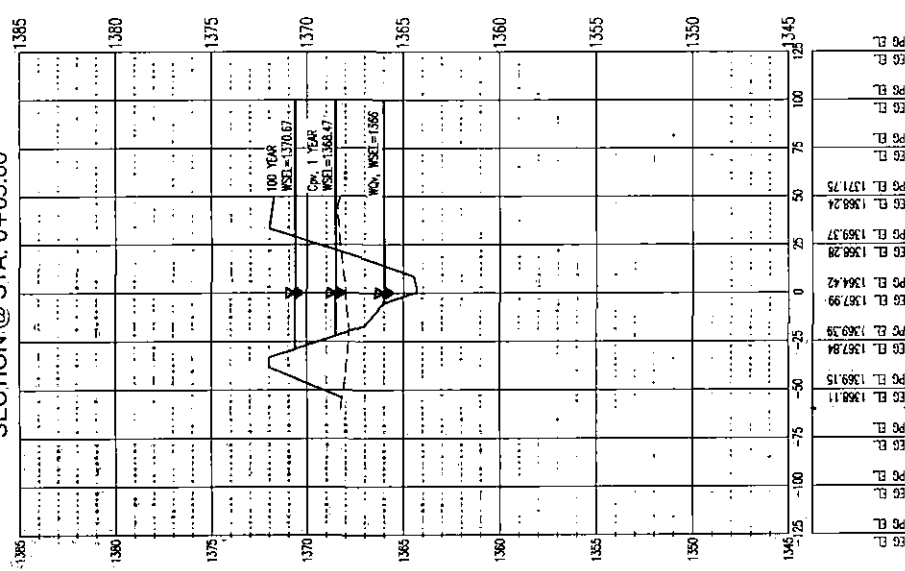
**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A",  
KENSINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

**SAITZ GROUP**  
DEVELOPMENT & SALES RETAIL PROPERTIES  
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
T. 214-705-1078 F. 214-407-8912

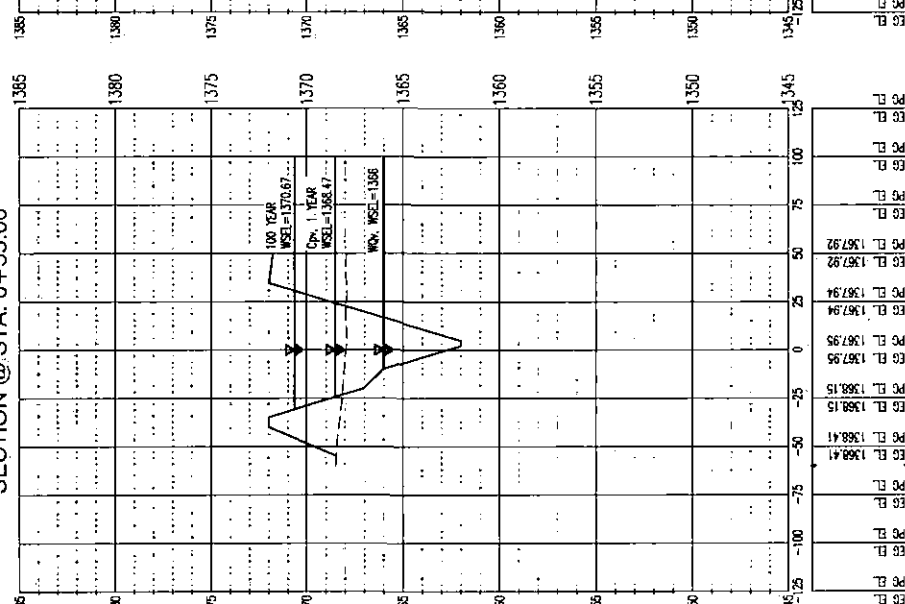
PROFILE - DETENTION POND NO. 1



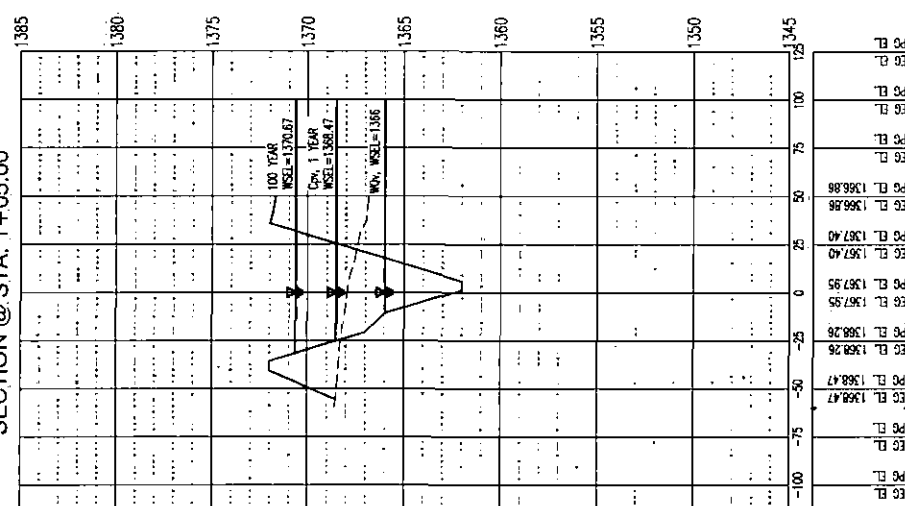
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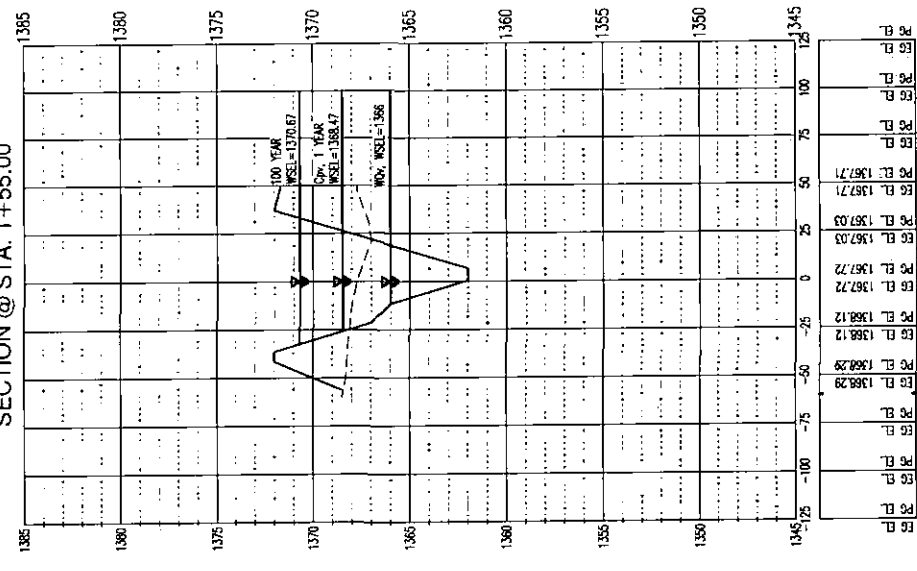
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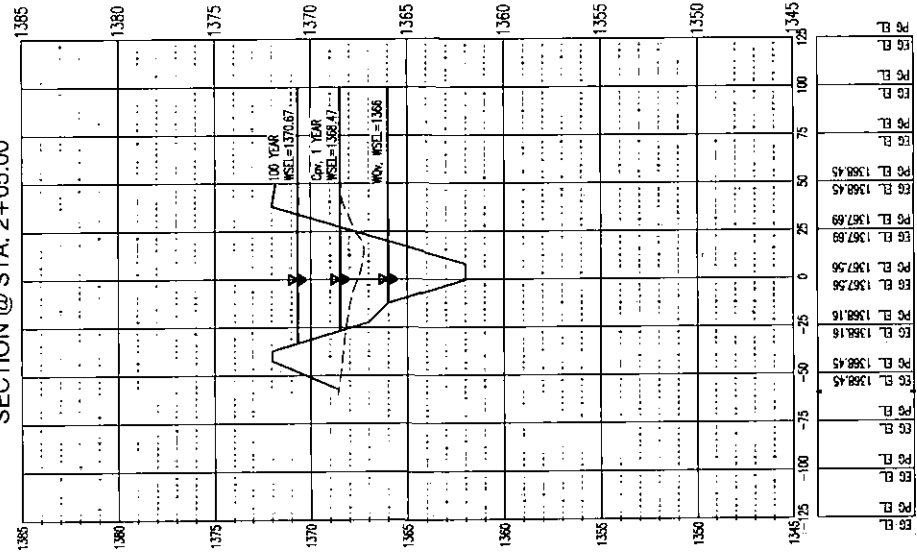
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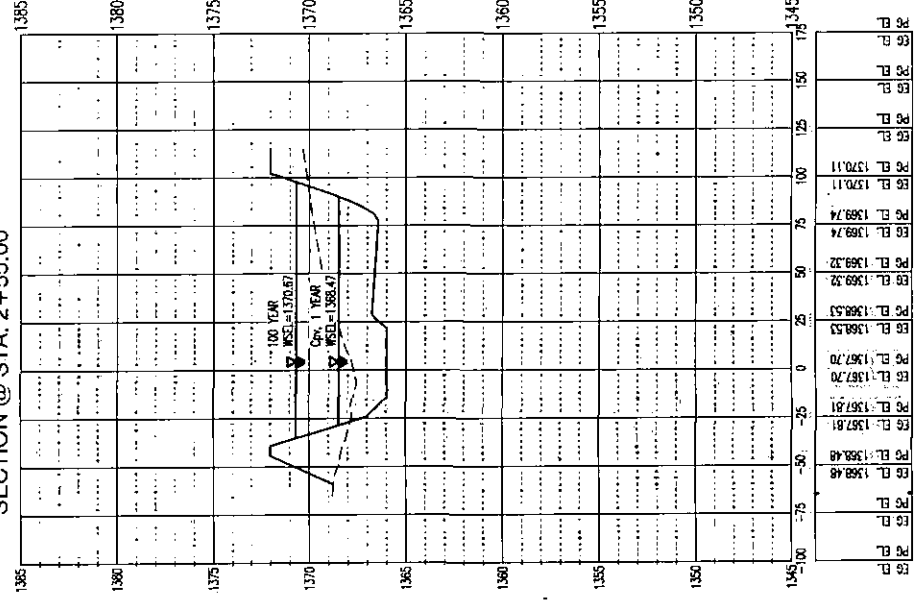
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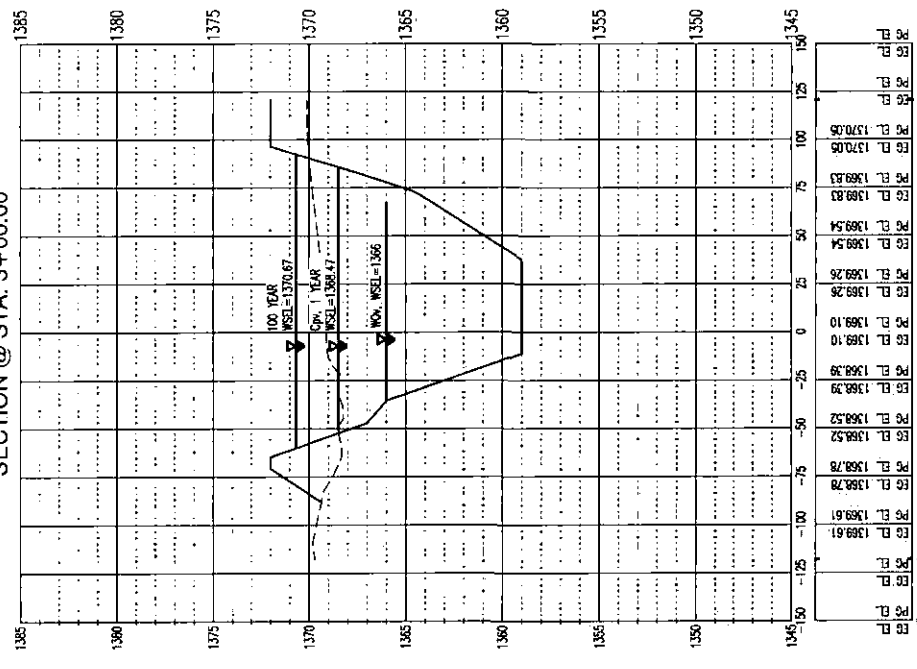
SECTION @ STA. 2+05.00



SECTION @ STA. 2+55.00

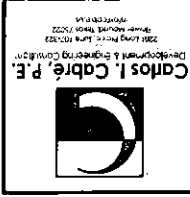


SECTION @ STA. 3+00.00



**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A"  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

**STANLEY**  
 DIVISION OF SURVEYING & DESIGN  
 5729 LEBANON ROAD, SUITE 144  
 FRISCO, TX 75034  
 T. 214-705-1078 F. 214-407-8912



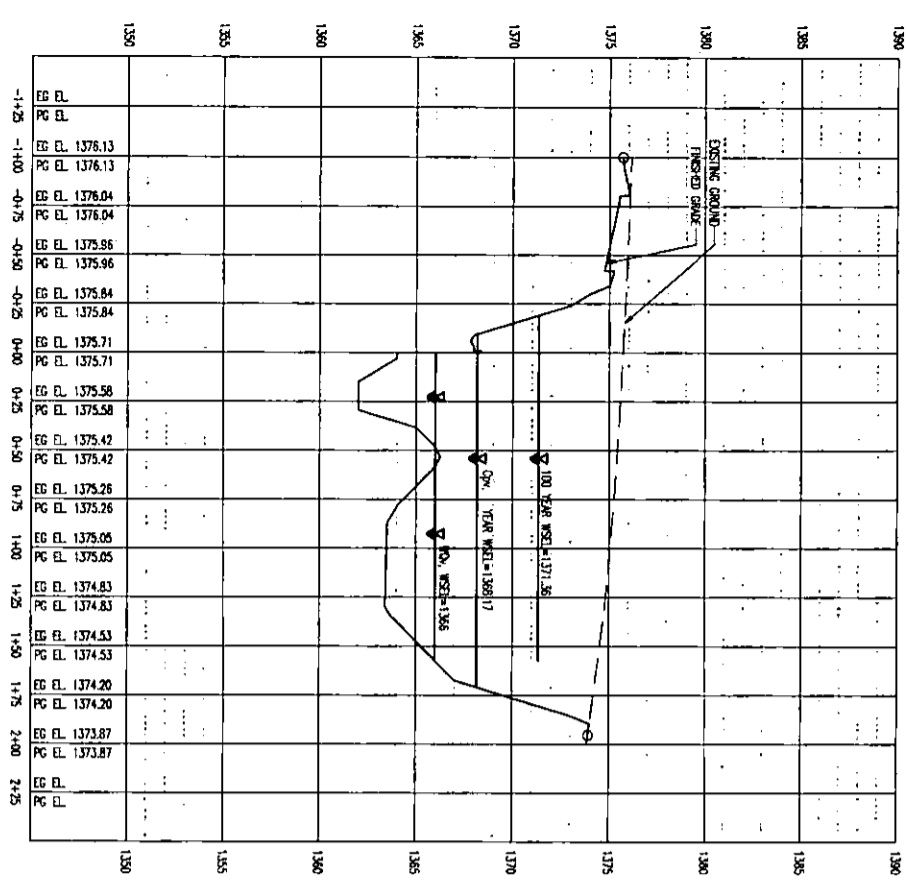
**DEFENTION POND NO. 1**  
 PROFILE AND SECTIONS

DATE: JUNE 13, 2014  
 SCALE: 1"=50' H.  
 DRAWING NUMBER: C-4.16

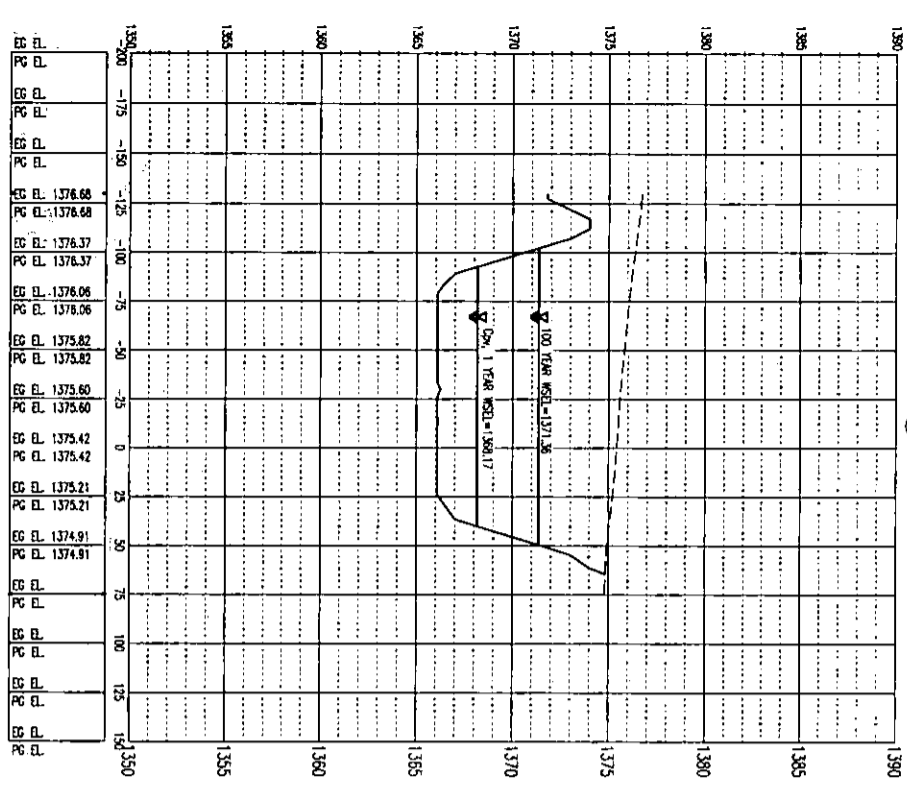
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NO.	DESCRIPTION
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2	04.23.2014 FOR REVIEW
3	05.27.2014 FOR REVIEW
4	06.13.2014 FOR PERMIT

**C-4.16**

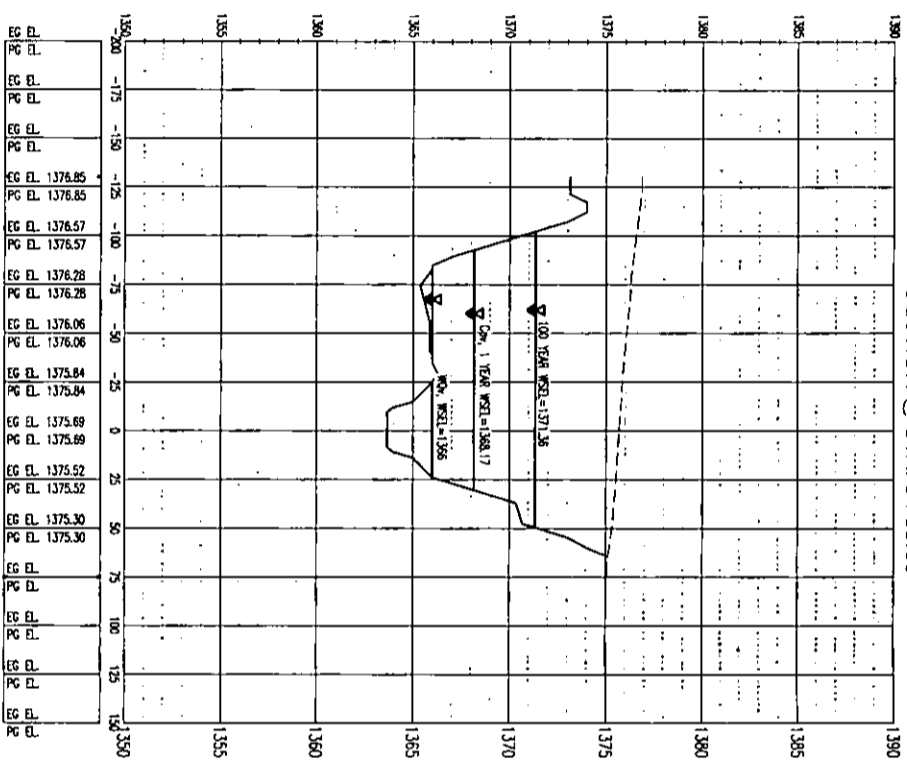
PROFILE - DETENTION POND NO. 2



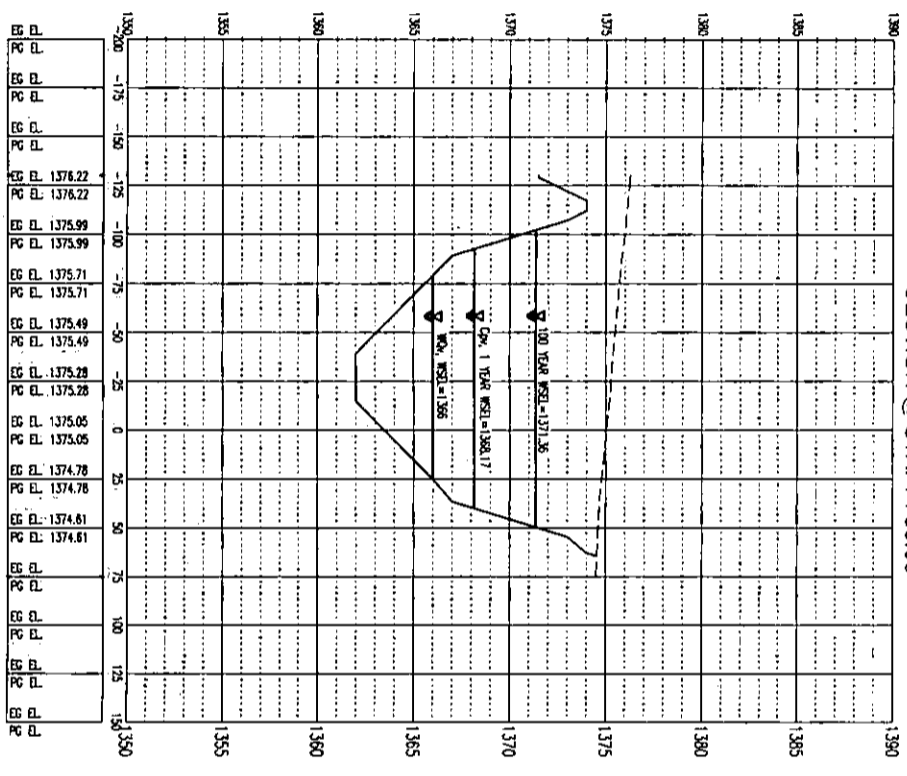
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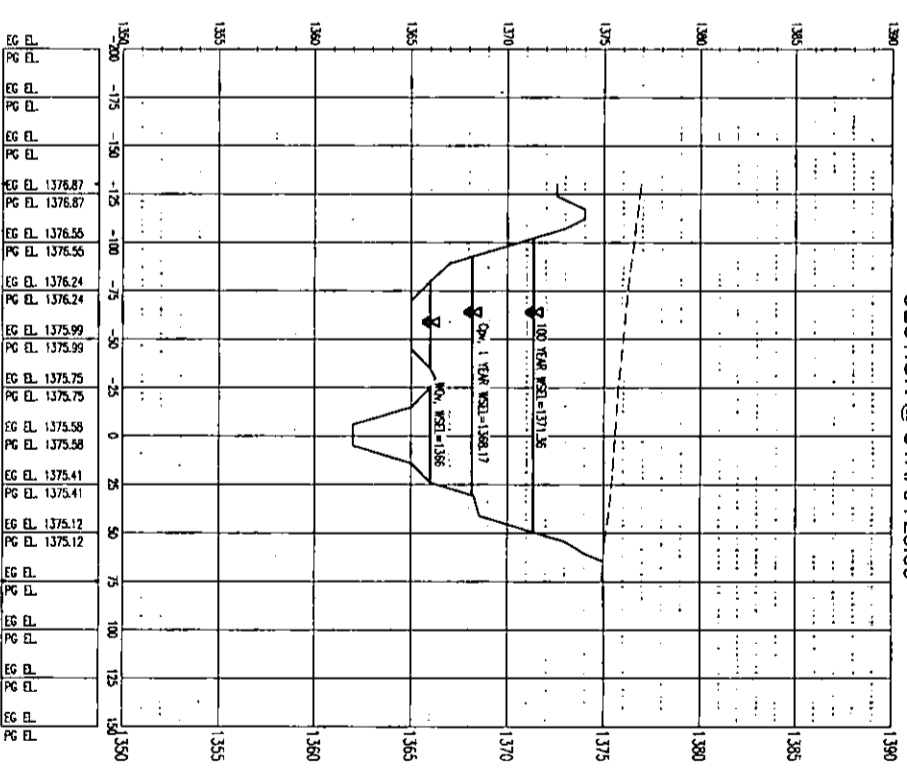
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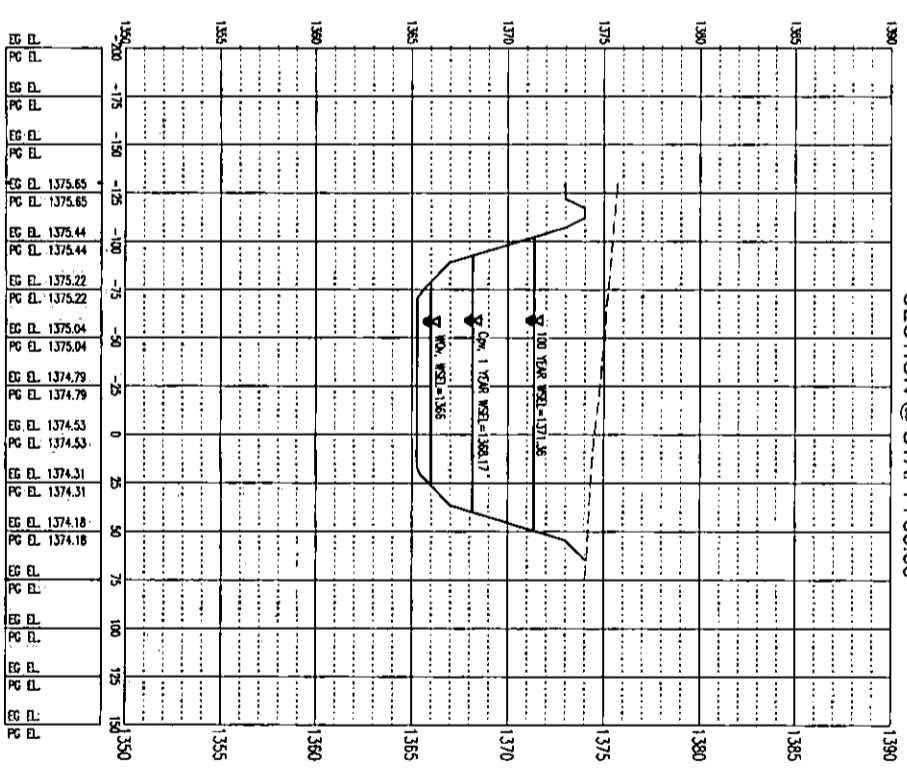
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SECTION @ STA. 0+25.00



SECTION @ STA. 1+50.00



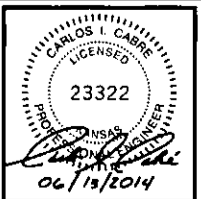
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NO.	DATE DESCRIPTION
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2	06/13/2014 FOR REVIEW
3	06/13/2014 FOR REVIEW
4	06/13/2014 FOR PRELIM

DATE: JUNE 13, 2014  
 SCALE: 1"=50' H.  
 JOB NUMBER: 12-09  
 DRAWING NUMBER: C-4.17

**DETENTION POND NO. 2  
 PROFILE AND SECTIONS**

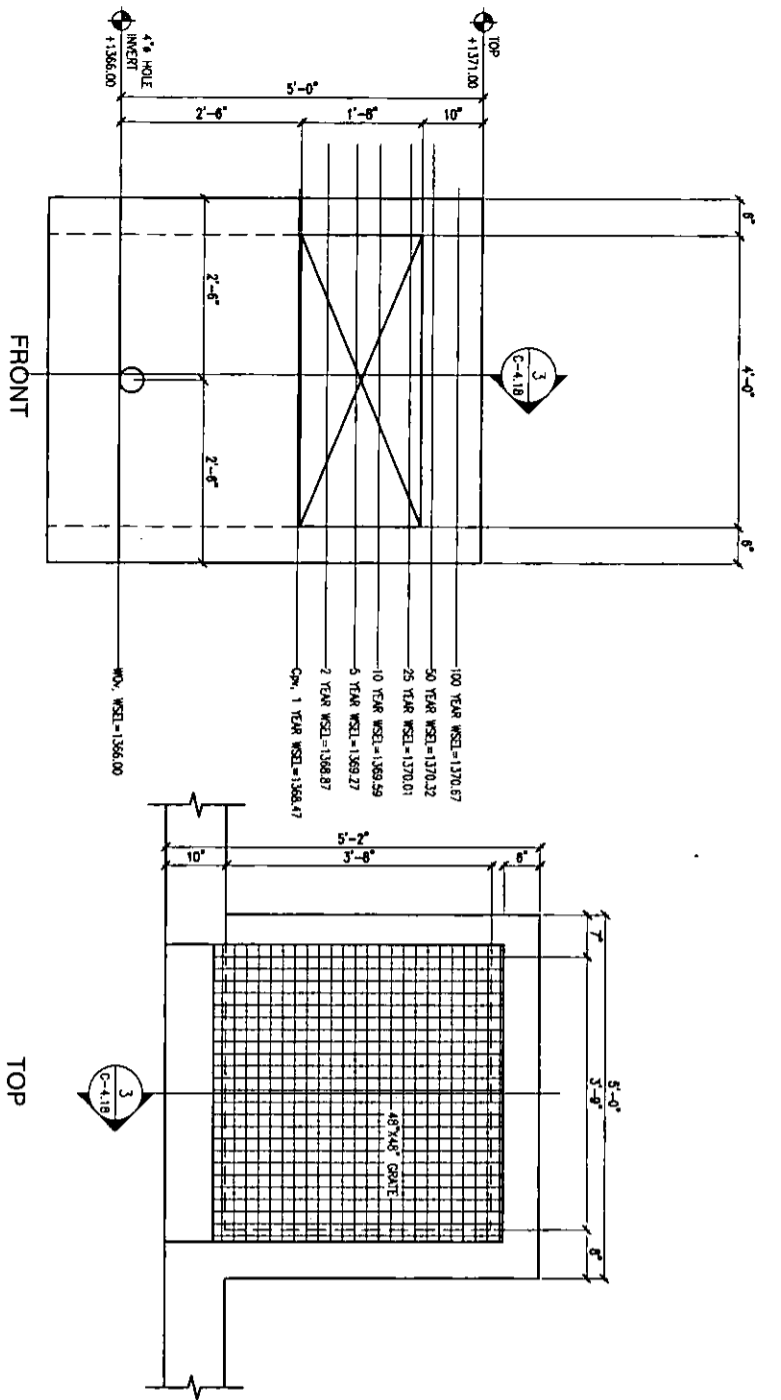
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**Carlos L. Cabré, P.E.**  
 Development & Engineering Consultant  
 200 Longhorn Lane 100-202  
 Wichita, Kansas 67202  
 316-261-1111

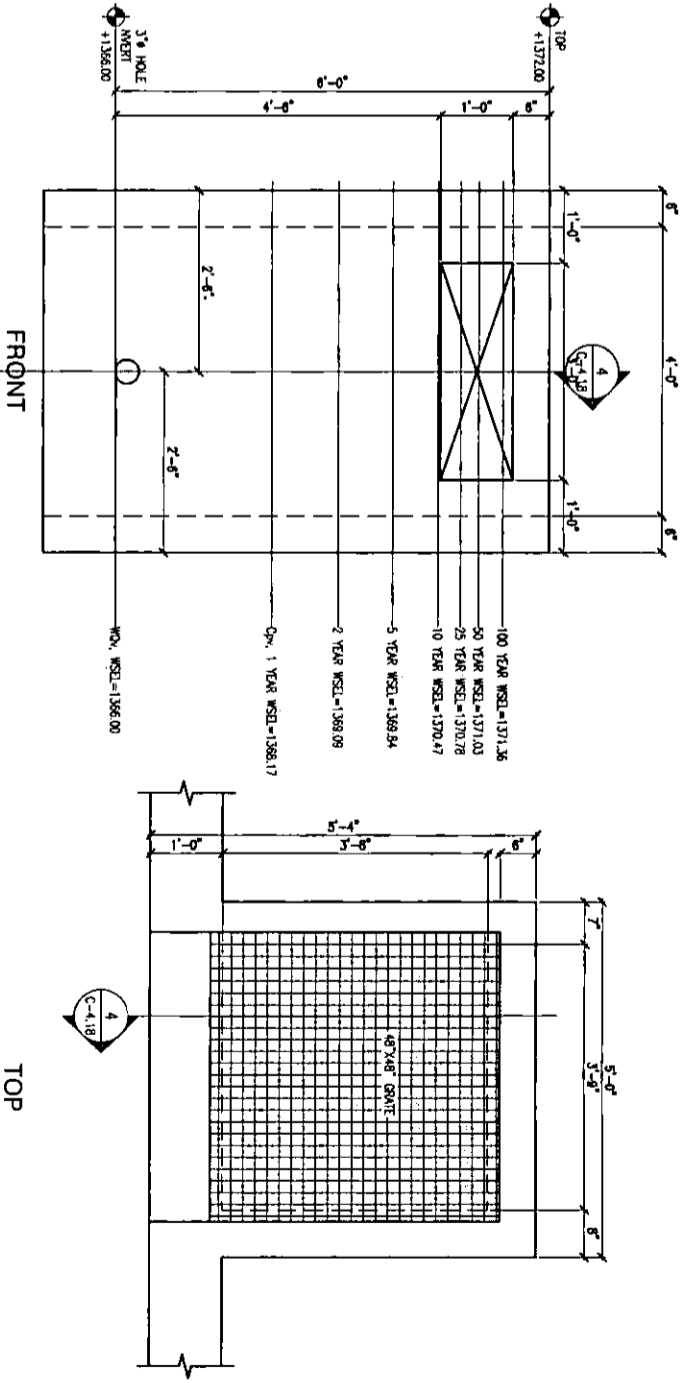


**WICHITA CROSSING**  
 A PORTION OF LOT 1 AND RESERVE "A",  
 KENSINGTON GARDENS  
 CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

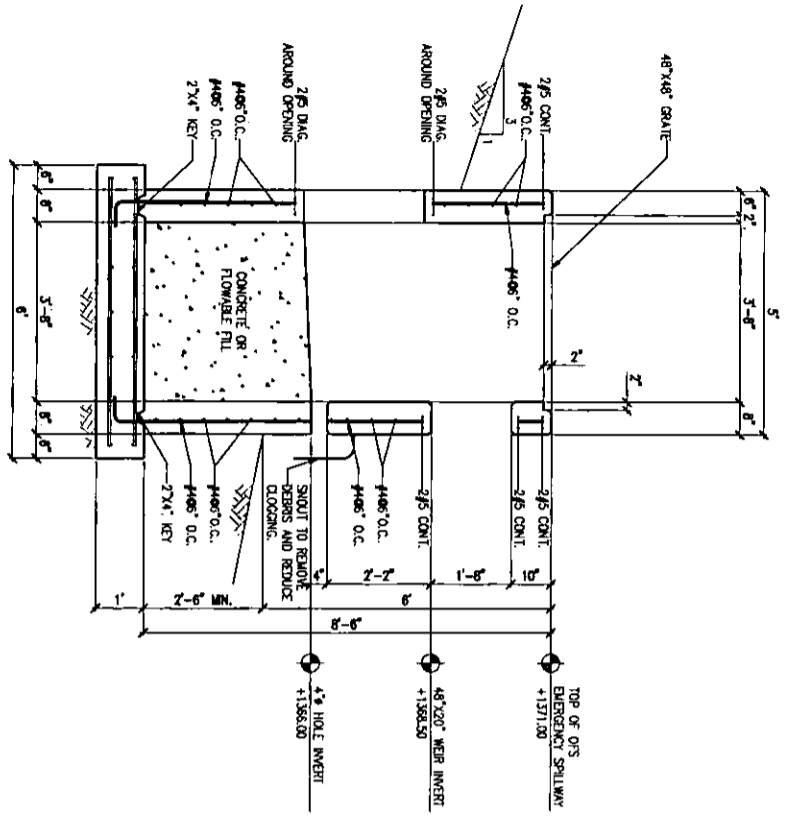
**STANBROS GROUP**  
 DEVELOPMENT & SALES OF RETAIL PROPERTIES  
 5729 LEBANON ROAD, SUITE 144  
 FRISCO, TX 75034  
 T. 214-705-1078 F. 214-407-8912



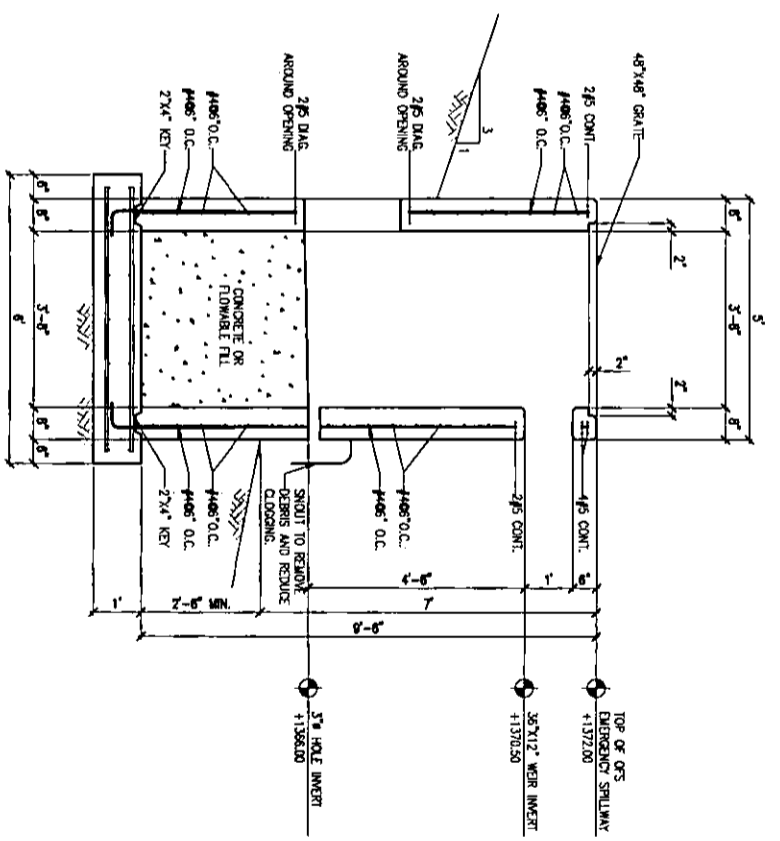
1 REINFORCED CONCRETE OUTFLOW STRUCTURE DETAIL - DETENTION POND 1  
SCALE: 3/4"=1'-0"



2 REINFORCED CONCRETE OUTFLOW STRUCTURE DETAIL - DETENTION POND 2  
SCALE: 3/4"=1'-0"



3 SECTION  
SCALE: 1/2"=1'-0"



4 SECTION  
SCALE: 1/2"=1'-0"

ISSUES	
NO.	DATE DESCRIPTION
1	06.12.2014 FOR REVIEW
2	06.27.2014 FOR REVIEW
3	08.13.2014 FOR REVIEW
4	

DATE: JUNE 13, 2014  
SCALE: AS SHOWN  
JOB NUMBER: 12-09  
DRAWING NUMBER: C-4.18

**OUTFLOW STRUCTURES SECTIONS AND DETAILS**

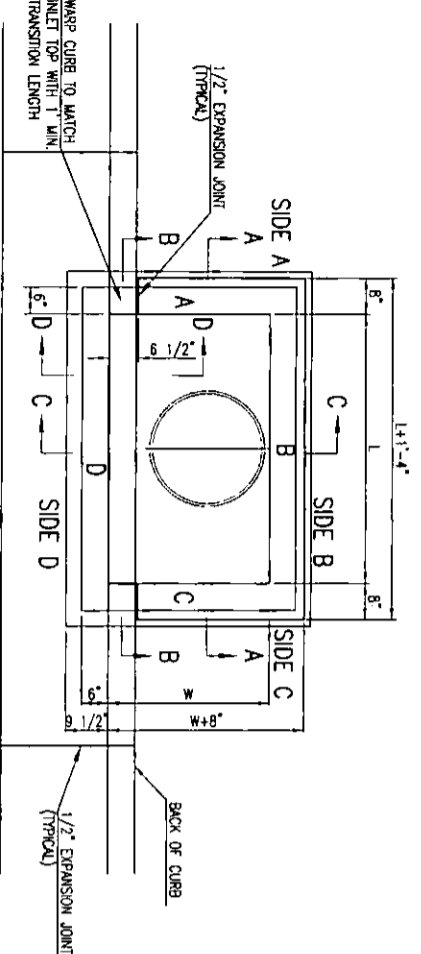
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**Carlos L. Cabre, P.E.**  
220 Longshore Lane 101-122  
Wichita, Kansas 67202  
Phone: 316-261-1222  
Fax: 316-261-1223  
www.cabre.com

CARLOS L. CABRE  
LICENSED PROFESSIONAL ENGINEER  
KANSAS  
23322  
06/13/2014

**WICHITA CROSSING**  
A PORTION OF LOT 1 AND RESERVE "A",  
KENSINGTON GARDENS  
CITY OF WICHITA, SEDGWICK COUNTY, KANSAS

**STUEBEL GROUP**  
DEVELOPMENT & SALE OF RETAIL PROPERTIES  
5729 LEBANON ROAD, SUITE 144  
FRISCO, TX 75034  
T. 214-705-1078 F. 214-407-8912

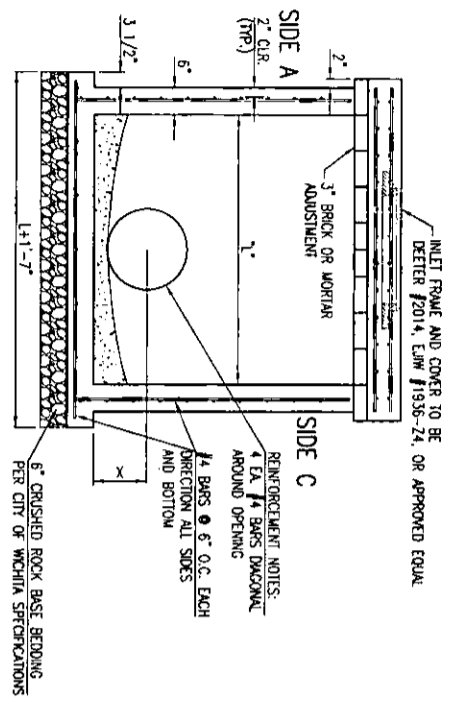


TOP VIEW

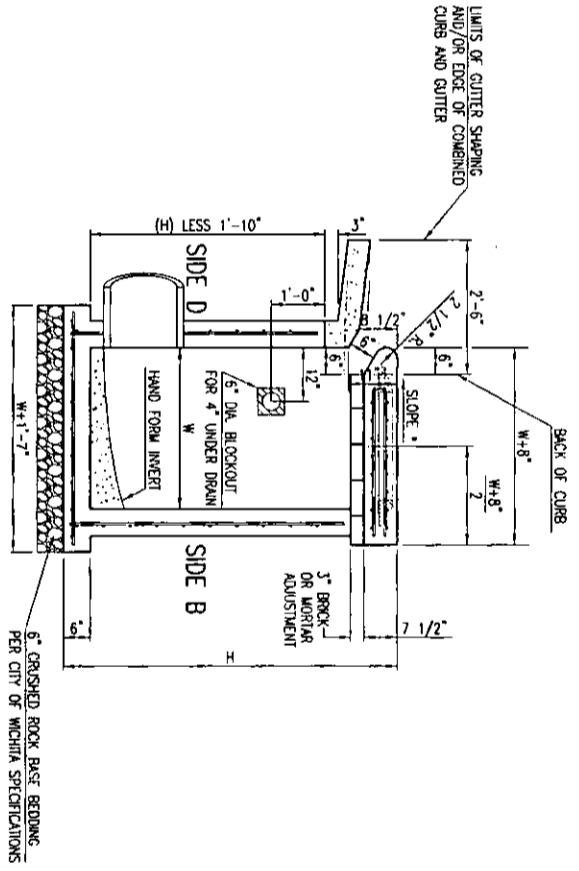
BAR SCHEDULE			
INLET OPENING	BI BARS	SPACING	
5'-0"	#4	4"	
10'-0"	#6	3.5"	

PRECAST CURB INLET WIDTHS			
W	PRE-CAST TOP SIZE WIDTH	TOP LENGTH	PIPE DIA.**
3'-0"	W+8" (1'-1"-4"	7 1/2"	21" & SMALLER
4'-0"	W+8" (1'-1"-4"	7 1/2"	24" & 30"
5'-0"	W+8" (1'-1"-4"	7 1/2"	36" & 42"
6'-0"	W+8" (1'-1"-4"	7 1/2"	48" & 54"
7'-0"	W+8" (1'-1"-4"	7 1/2"	60" & 66"

\*\* FOR PIPES PERPENDICULAR TO INLET WALL

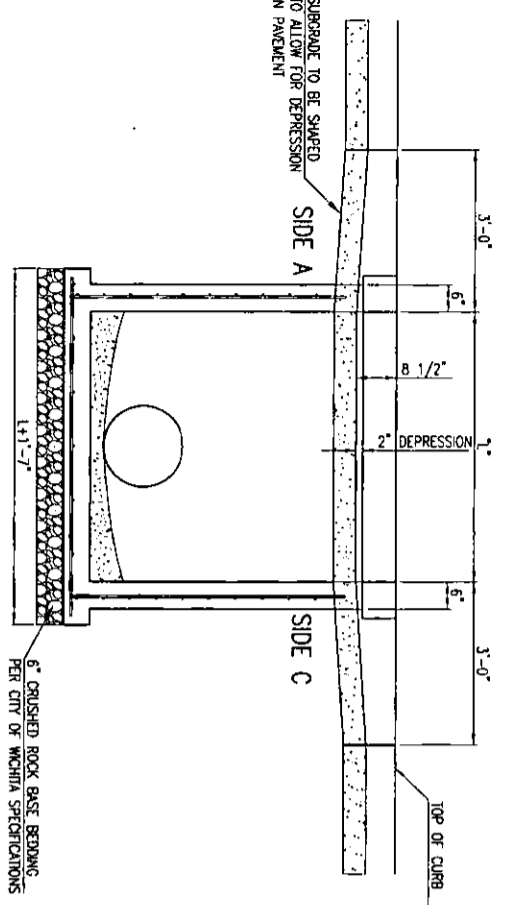
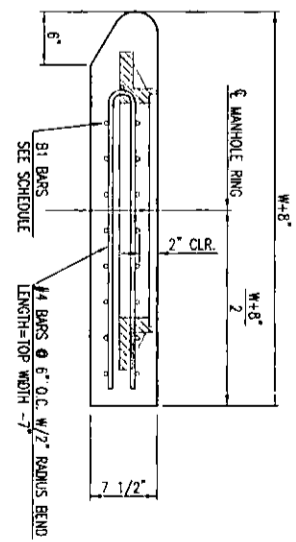


SECTION "A-A"

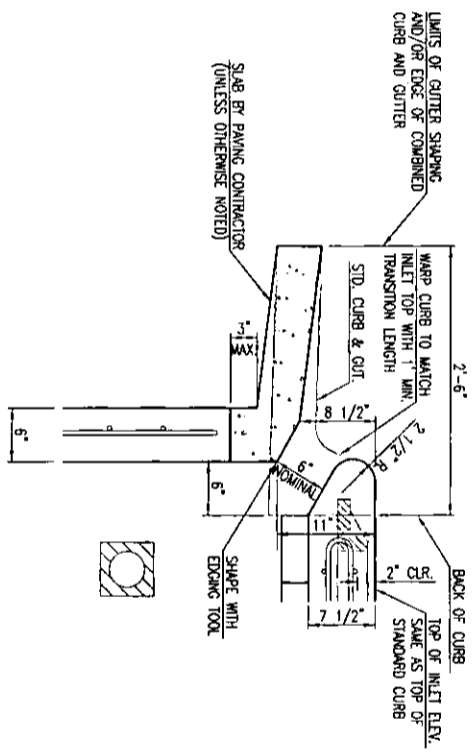


SECTION "C-C"

NOTES:  
 \* SLOPE OF INLET TOP TO MATCH SIDEWALK OR PARKING SLOPES WITHIN LIMITS INDICATED.




SECTION "B-B"



SECTION "D-D"

GENERAL NOTES

1. CONCRETE TOPS TO BE INSTALLED ON THIN MORTAR CURSORN TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE TOPS MAY BE CAST IN PLACE OR PRECAST. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
2. CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP OF THIS INLET WHEN W=5'-0" AND H=7'-0" OR LESS.
3. 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.
4. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
5. INLET FRAME AND COVER TO BE DETEER #2014, EIM #1936 24, OR APPROVED EQUIV. SEE SW-303.
6. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUTED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.



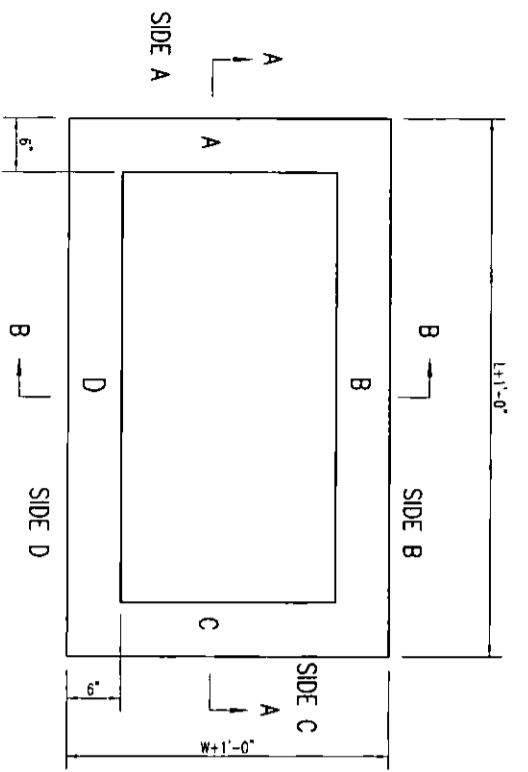
**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES  
ENGINEERING DIVISION

---

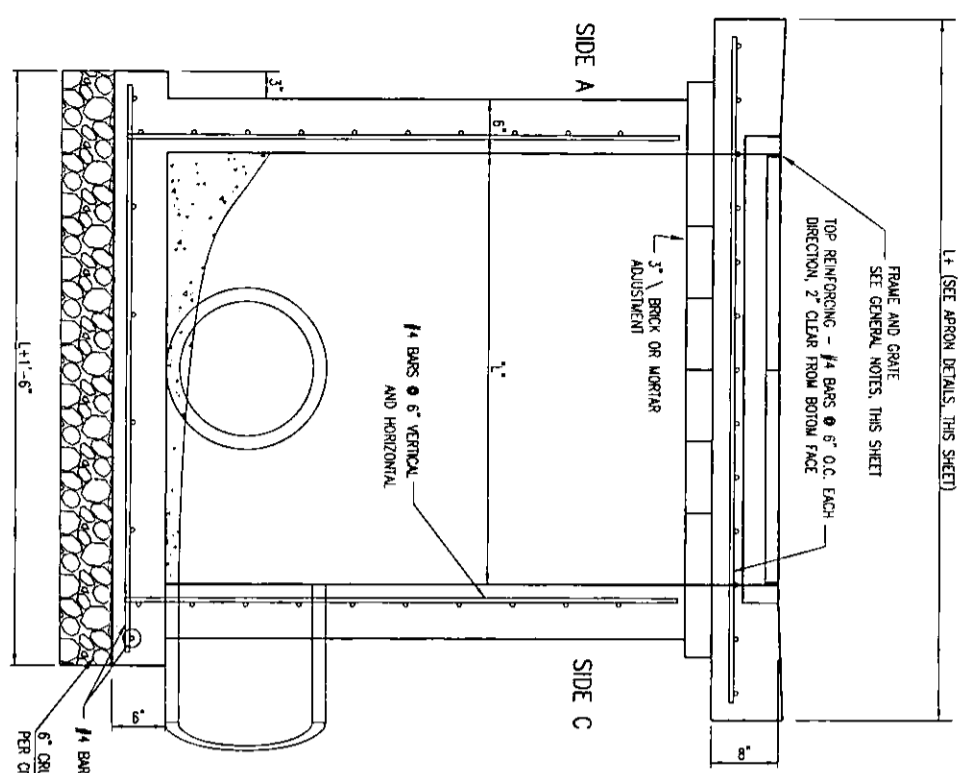
**STANDARD TYPE 1  
CURB INLET**  
5'-0" OR 10'-0" OPENING

CITY ENGINEER  
**GARY JANZEN, P.E.**

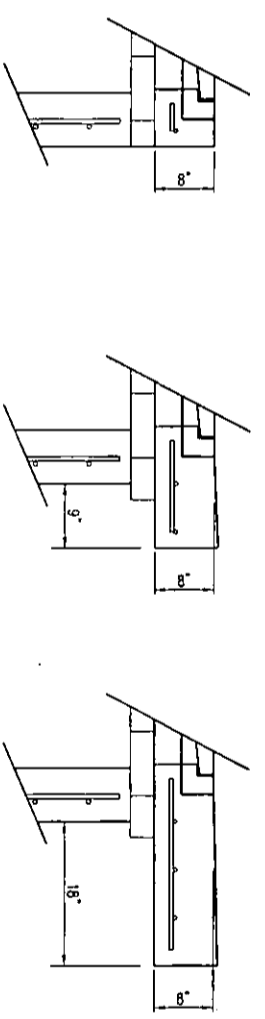
PROJECT NUMBER	DATE
004 NUMBER	11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4301	SHEET



TOP VIEW



SECTION "A-A"



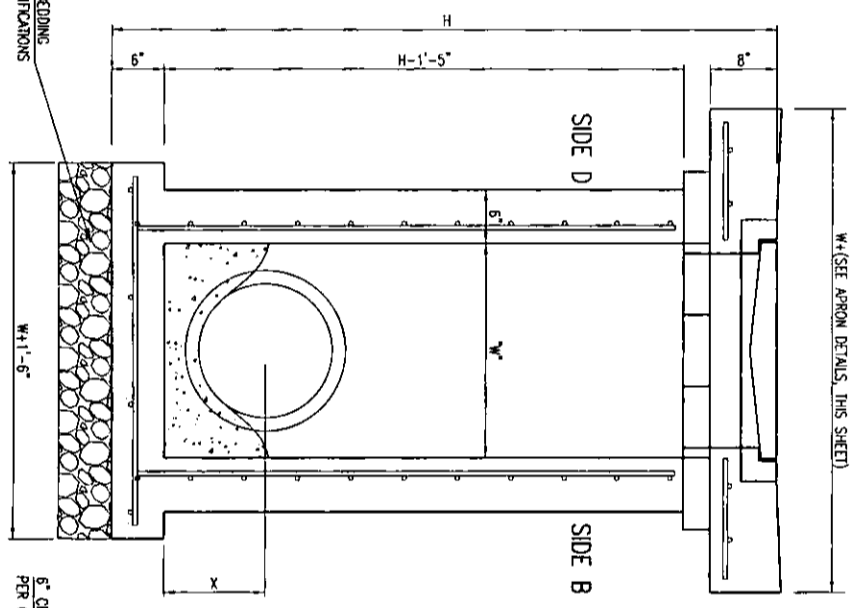
FLUSH STYLE TOP  
NO APRON

9" APRON  
\* APRON TO EXTEND ON ALL 4 SIDES OF INLET.  
DESIGNER TO DESIGNATE APRON SIZE.

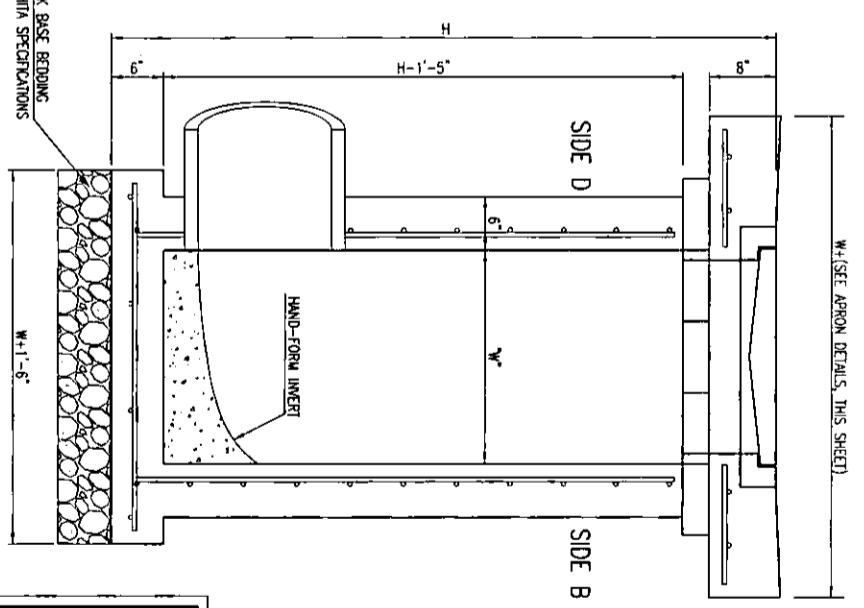
18" APRON

The structure(s) on this detail sheet are designed for HS-20 loading at these specific dimensions only. If larger dimensions are required, the ENGINEER shall provide a project specific structure design for approval by the City Engineer's office.

W=2' and L=2' for SINGLE DROP INLET  
W=2' and L=4' for DOUBLE DROP INLET



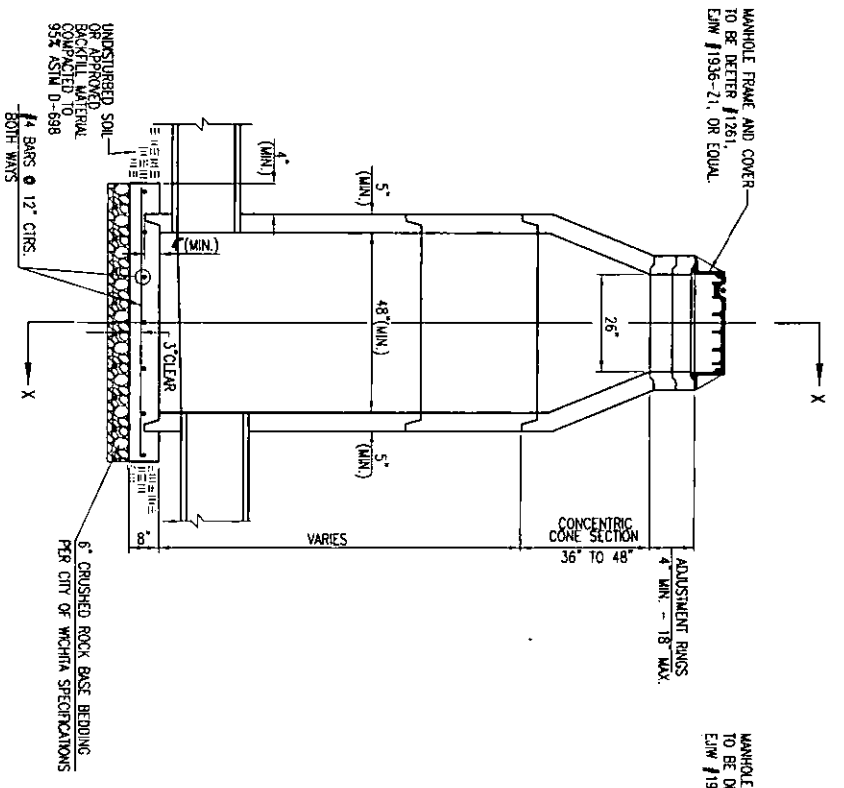
SECTION "B-B"  
END OUTLET



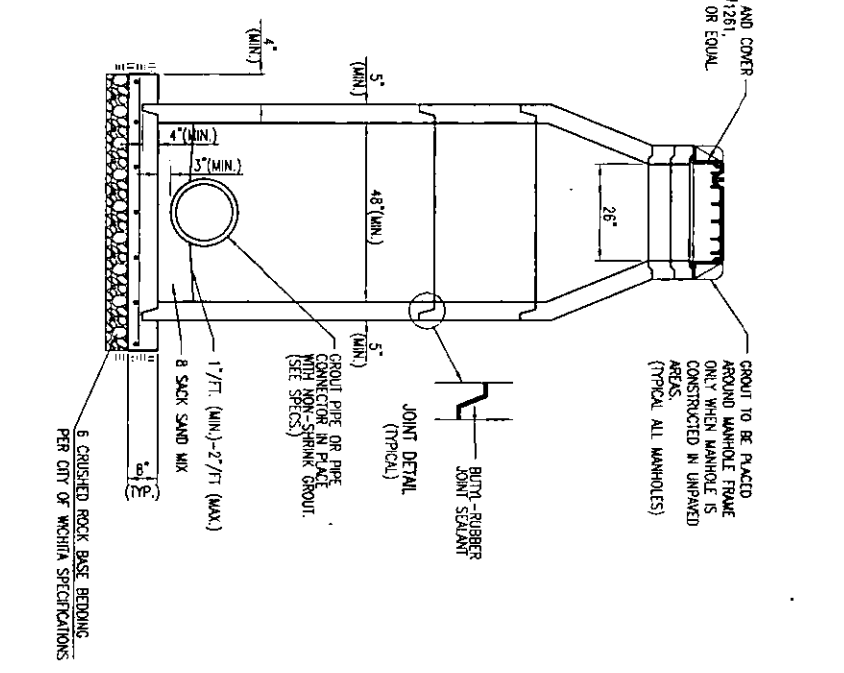
SECTION "B-B"  
SIDE OUTLET

- GENERAL NOTES
1. GRADE FRAME TO BE INSTALLED ON TREN MORIAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
  2. INLET ANKER SHALL BE SWAGED 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 PRESSES.
  3. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
  4. INLET FRAME AND GRATE TO BE DETEER #2433, E/W #3391-21 OR APPROVED EQUAL FOR 2'-2' SINGLE DROP INLET AND DETEER #2434, E/W #3391 23 OR APPROVED EQUAL FOR 2'-4" DOUBLE DROP INLET.
  5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN INLET WALL SHALL BE GROUDED FLUSH TO THE INLET WALL WITH HYDRAULIC CEMENT AFTER THE INLET IS IN PLACE. LIFTING HOLES THRU THE INLET WALL WILL NOT BE ACCEPTED.

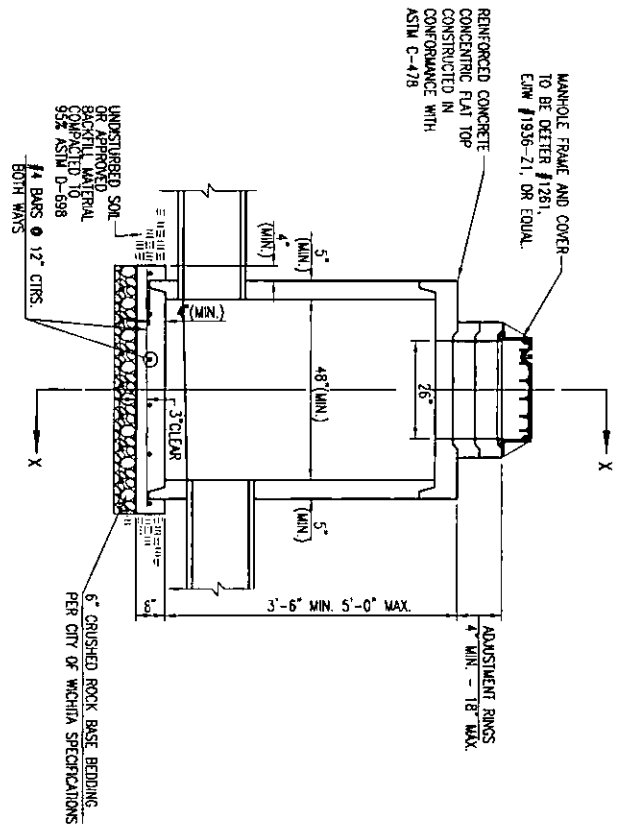
<p>CITY OF WICHITA PUBLIC WORKS &amp; UTILITIES ENGINEERING DIVISION</p>		<p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501</p>	
		<p>SINGLE/DOUBLE DROP INLET</p>	<p>CITY ENGINEER GRAY JANZEN, P.E.</p>
<p>PROJECT NUMBER</p>		<p>DATE</p>	<p>SHEET</p>



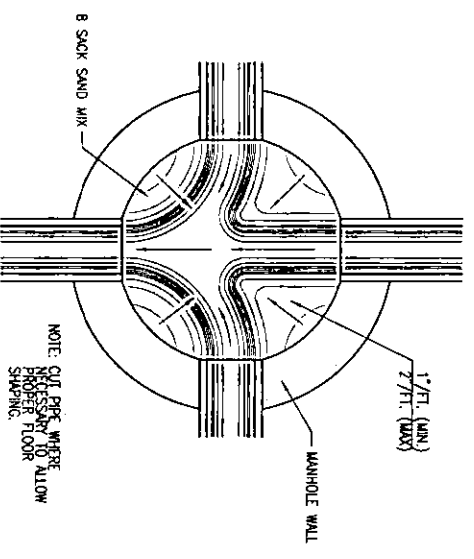
PRECAST STANDARD MANHOLE TYPE "A"



SECTION X-X (TYPICAL)




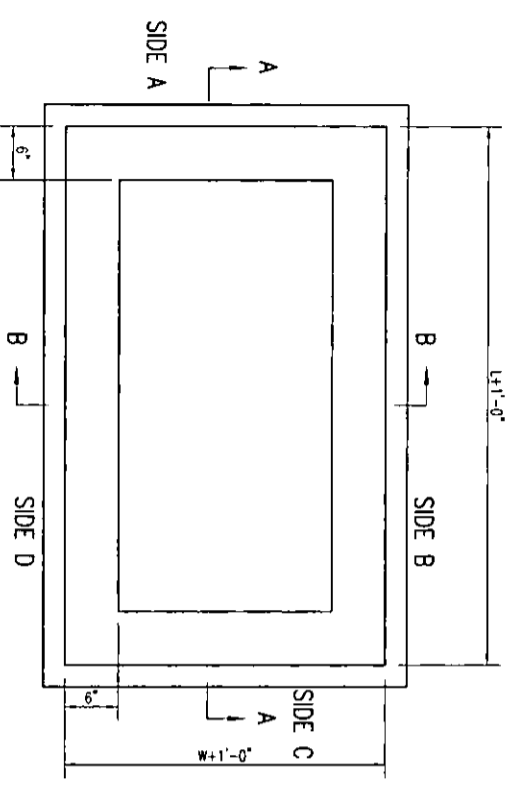
PRECAST SHALLOW MANHOLE TYPE "B"



TYPICAL MANHOLE FLOOR SHAPING

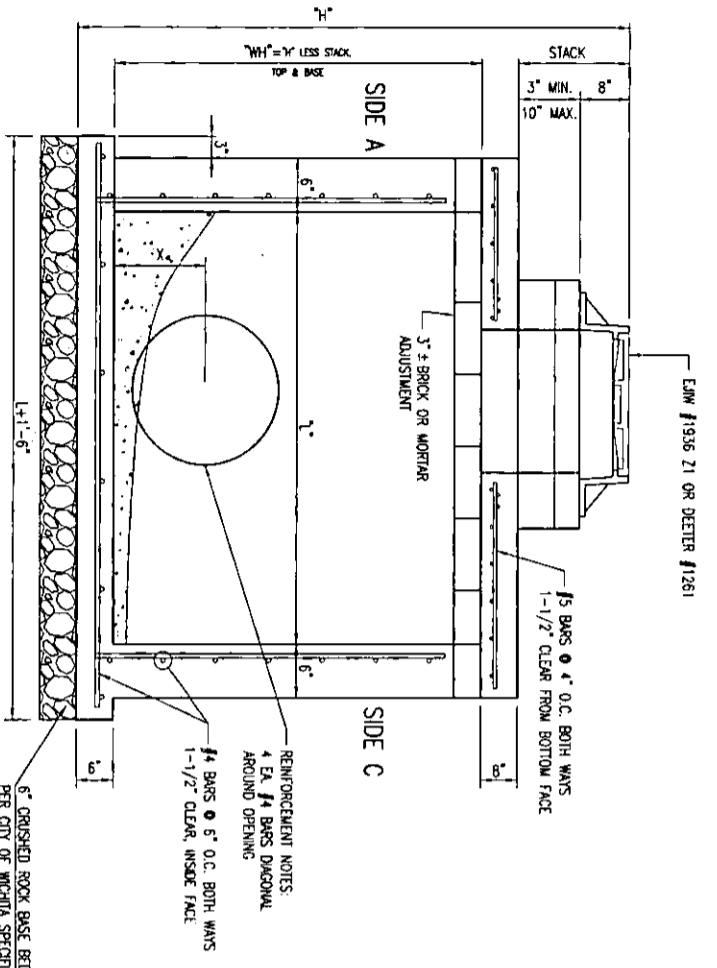
- GENERAL NOTES**
1. IF, IN THE OPINION OF THE ENGINEER, THE MANHOLE SUBGRADE APPEARS UNSUITABLE, THE CONTRACTOR WILL HAVE THE OPTION TO COMPACT SUBGRADE AS SHOWN OR INCREASE THE THICKNESS OF THE MANHOLE BASE AS DIRECTED BY THE ENGINEER.
  2. STEEL REINFORCING WILL BE REQUIRED IN ALL MANHOLE BASES.
  3. ALL MANHOLE CONSTRUCTION SHALL BE WATER TIGHT.
  4. TOP OF MANHOLE FLOOR SLAB SHALL BE AT LEAST 3 INCHES BELOW THE FLOW LINE OF THE OUTLET PIPE TO INSURE SUFFICIENT MINIMUM THICKNESS OF SHAPED INVERT.
  5. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION OF ASTM C-478 AS MODIFIED BY THE SPECIFICATIONS.
  6. CONCRETE USED FOR MANHOLE CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
  7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO MANHOLE BASE.
  8. MANHOLES WITH PIPE SIZES 24" AND LARGER SHALL HAVE 5 FOOT INSIDE DIAMETER (MIN).
  9. MANHOLES WITH PRECAST BASES MAY BE USED AT THE CONTRACTOR'S OPTION. THESE MANHOLES SHALL HAVE AN 8" MINIMUM BASE THICKNESS AND SHALL BE PLACED ON AN 8" MIN. CRUSHED ROCK BASE. PIPES SHALL BE ENCASED WITH CRUSHED ROCK TO AT LEAST 3 FEET FROM THE MANHOLE WALL.
  10. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.
  11. THE ENDS OF ALL PIPES IN MANHOLES SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE MANHOLE WALL.
  12. MANHOLE INVERT SHALL BE SHAPED WITH 8 SACK SAND MIX CONCRETE TO GREAT FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE MANHOLE WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.
  13. MANHOLE FRAME AND COVER TO BE DEETER #1261, EIW #1936-21, OR APPROVED EQUAL, SEE SM-303.
  14. FOR FLAT GRADED INLET APPLICATION, GRADE TO BE DEETER #1933, EIW #1205 MD, OR APPROVED EQUAL.
  15. FOR BEHAVE GRADE APPLICATION, GRADE TO BE DEETER #4495, EIW #120545, OR APPROVED EQUAL.

 <b>CITY OF WICHITA</b> PUBLIC WORKS & UTILITIES ENGINEERING DIVISION		<b>PRECAST CONCRETE MANHOLE (STORM SEWER)</b> CITY ENGINEER <b>GARY JANZEN, P.E.</b>	
PROJECT NUMBER	QCA NUMBER	CITY ENGINEER'S OFFICE	SHEET
		CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501	11/2010

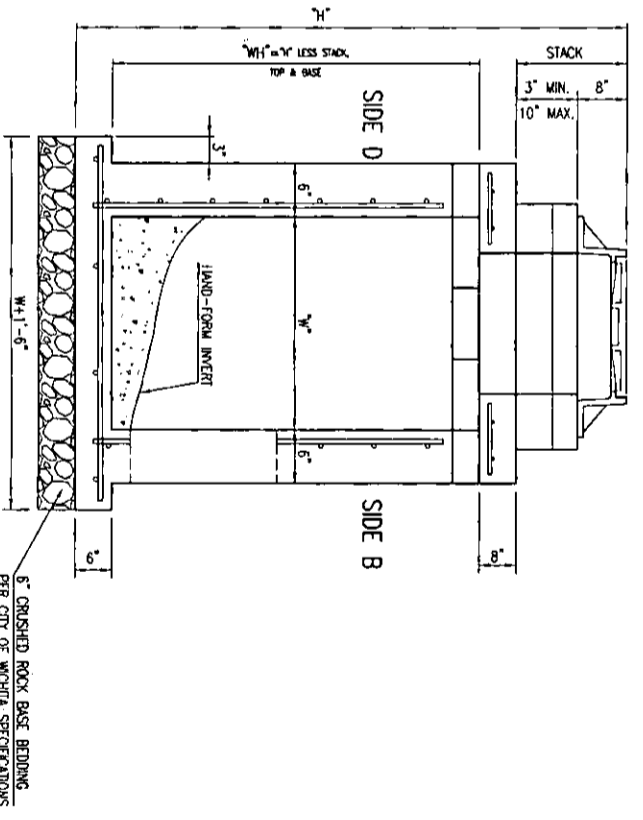


TOP VIEW


- GENERAL NOTES**
1. GRATE FRAME TO BE INSTALLED ON THIN MORTAR CUSHION TO INSURE FULL SUPPORT ALONG BRICK. CONCRETE USED FOR INLET CONSTRUCTION SHALL CONFORM TO CITY OF WICHITA SPECIFICATIONS FOR CONCRETE PAVEMENT MIX.
  2. INLET INVERT SHALL BE SHIPPED 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. THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.
  4. INLET FRAME AND GRATE TO BE DETTER #1261, EIM #1936-21 OR APPROVED EQUIV. SEE SW-303.
  5. CONTRACTOR SHALL REMOVE LIFTING HOOKS AFTER INSTALLATION. RECESSES IN MANHOLE WALL SHALL BE GROUTED FLUSH TO THE MANHOLE WALL WITH HYDRAULIC CEMENT AFTER THE MANHOLE IS IN PLACE. LIFTING HOLES THRU THE MANHOLE WALL WILL NOT BE ACCEPTED.

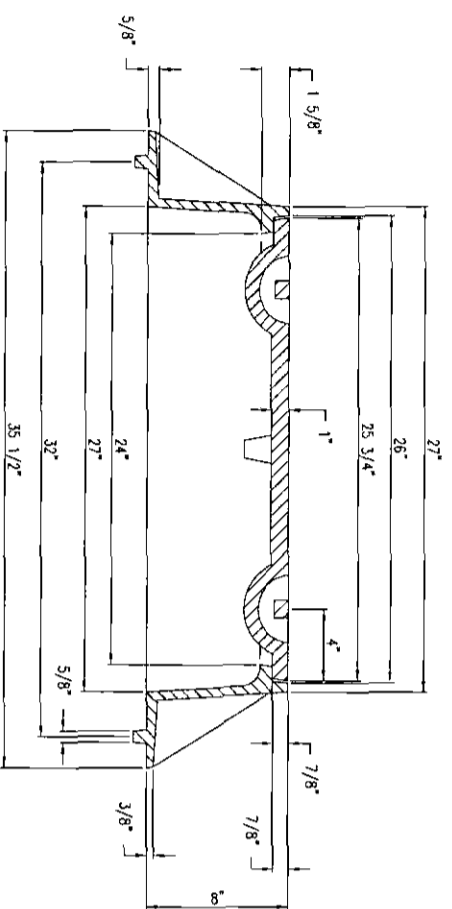
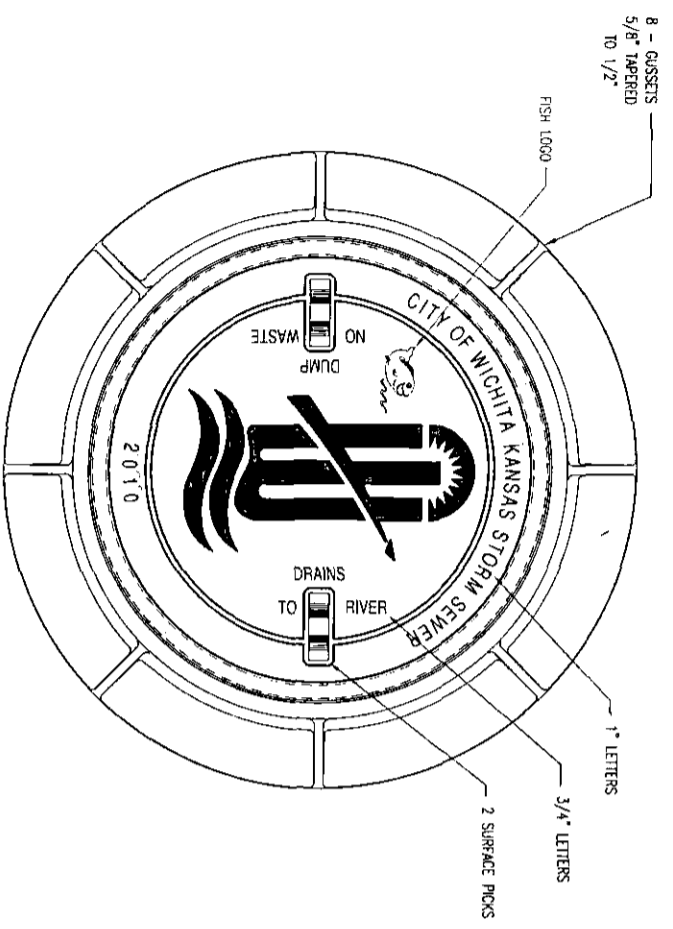


SECTION 'A-A'



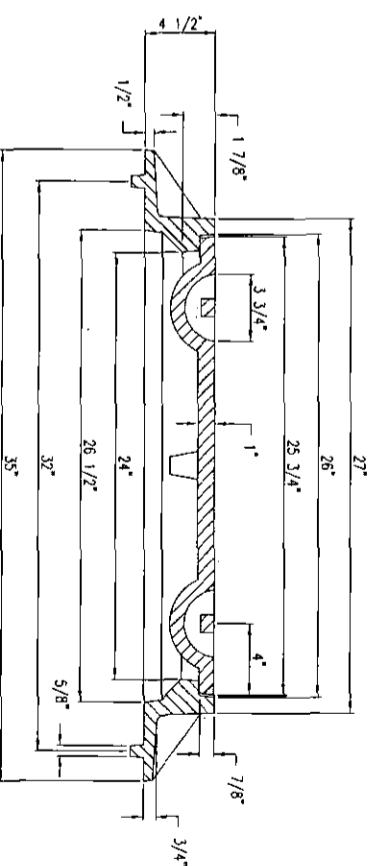
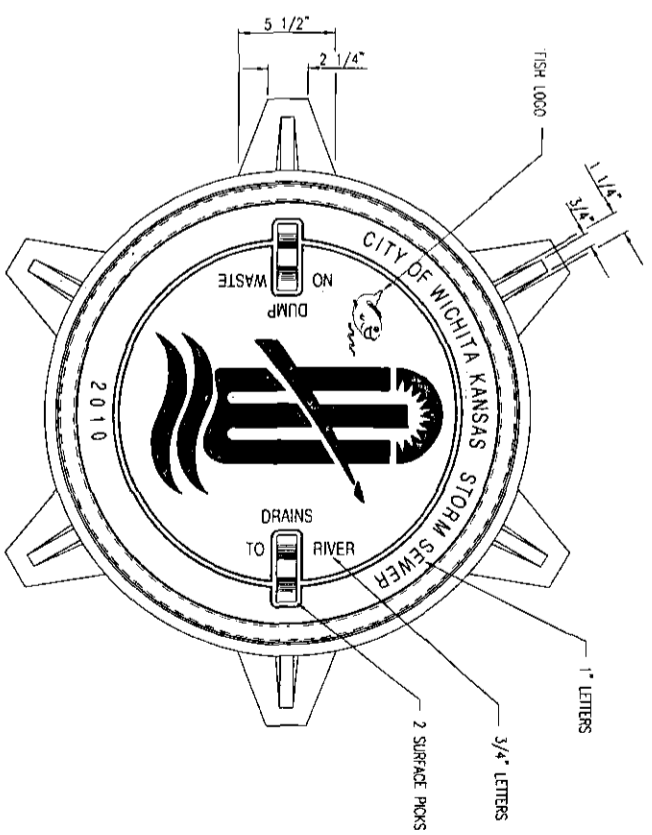
SECTION 'B-B'

 <p><b>CITY OF WICHITA</b> PUBLIC WORKS &amp; UTILITIES ENGINEERING DIVISION</p>		<p><b>REINFORCED CONCRETE MANHOLE (STORM SEWER)</b></p>	
		<p>CITY ENGINEER <b>GARY JANZEN, P.E.</b></p>	
PROJECT NUMBER	QCL NUMBER	DATE	SHEET
		11/2010	
<p>CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501</p>			



**MANHOLE FRAME**  
 DEETER #1261 OR EJM #1936-Z1

- NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
  2. COVER TO BE DEETER #1261 OR EJM #1936A.



**INLET FRAME**  
 DEETER #2014 OR EJM #1936-Z4

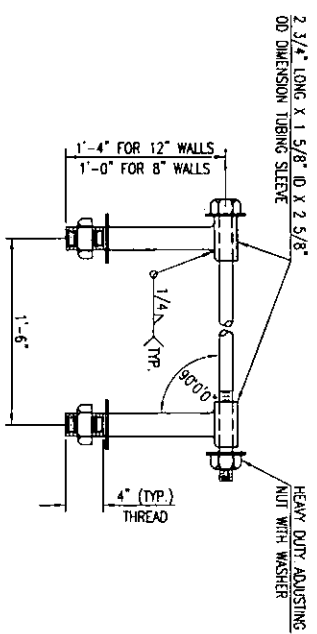
- NOTE:
1. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACES.
  2. NOT TO BE USED UNDER PAVEMENT.
  3. COVER TO BE DEETER #1261 OR EJM #1936A.

**CITY OF WICHITA**  
 PUBLIC WORKS & UTILITIES  
 ENGINEERING DIVISION

**MANHOLE/INLET FRAME AND COVER (STORM SEWER)**

CITY ENGINEER  
**GARY JANZEN, P.E.**

PROJECT NUMBER	QA NUMBER	DATE
		11/2010
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 405 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET

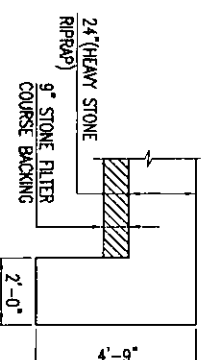


**HEAVY DUTY (H.D.) COUPLER**

NO SCALE

NOTES

1. BOLTS TO BE A-36 1 1/2" DIAMETER.
2. BOLTS, NUTS, WASHERS AND SLEEVES TO BE ZINC PLATED.
3. WASHERS TO BE 3 1/2" O.D. X 7 GAUGE.
4. SHIP WITH NUTS AND WASHERS PLACED ON BOLTS.



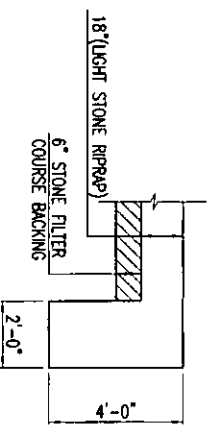
**TYPICAL SECTION THRU TOEWALL**

NO SCALE

NOTES

1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREPARED DRY PACKAGED CONCRETE BAG ALTERNATIVES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

**HEAVY STONE RIPRAP DETAILS**



**TYPICAL SECTION THRU TOEWALL**

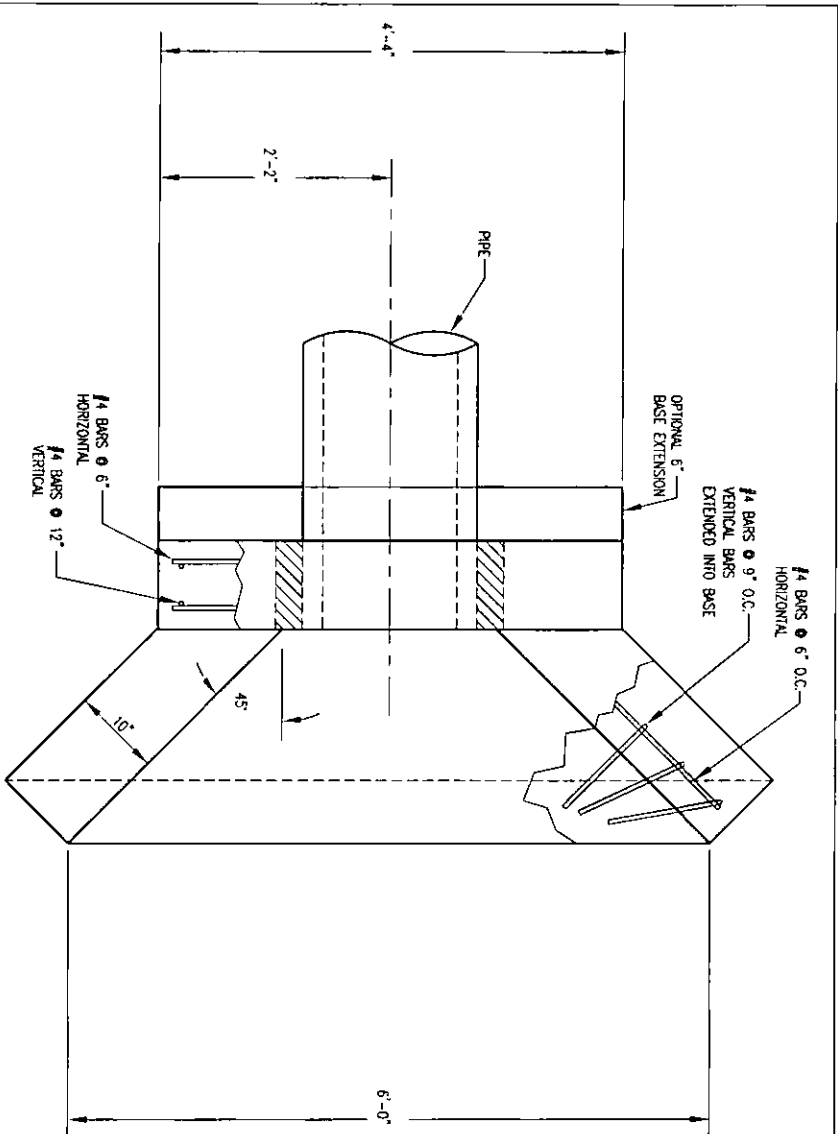
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NOTES

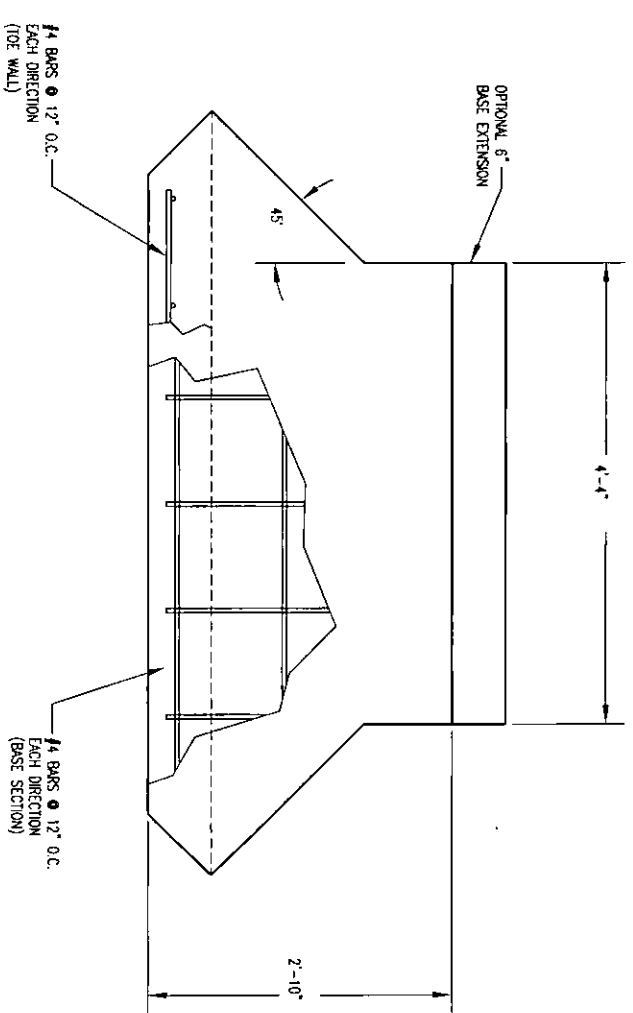
1. ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREPARED DRY PACKAGED CONCRETE BAG ALTERNATIVES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
2. TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
3. GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

**LIGHT STONE RIPRAP DETAILS**

<p><b>CITY OF WICHITA</b> PUBLIC WORKS &amp; UTILITIES ENGINEERING DIVISION</p>		<p>MISCELLANEOUS DETAILS (STORM SEWER)</p> <p>CITY ENGINEER <b>GARY JANZEN, P.E.</b></p>	
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501	DATE 11/2010	SHEET	

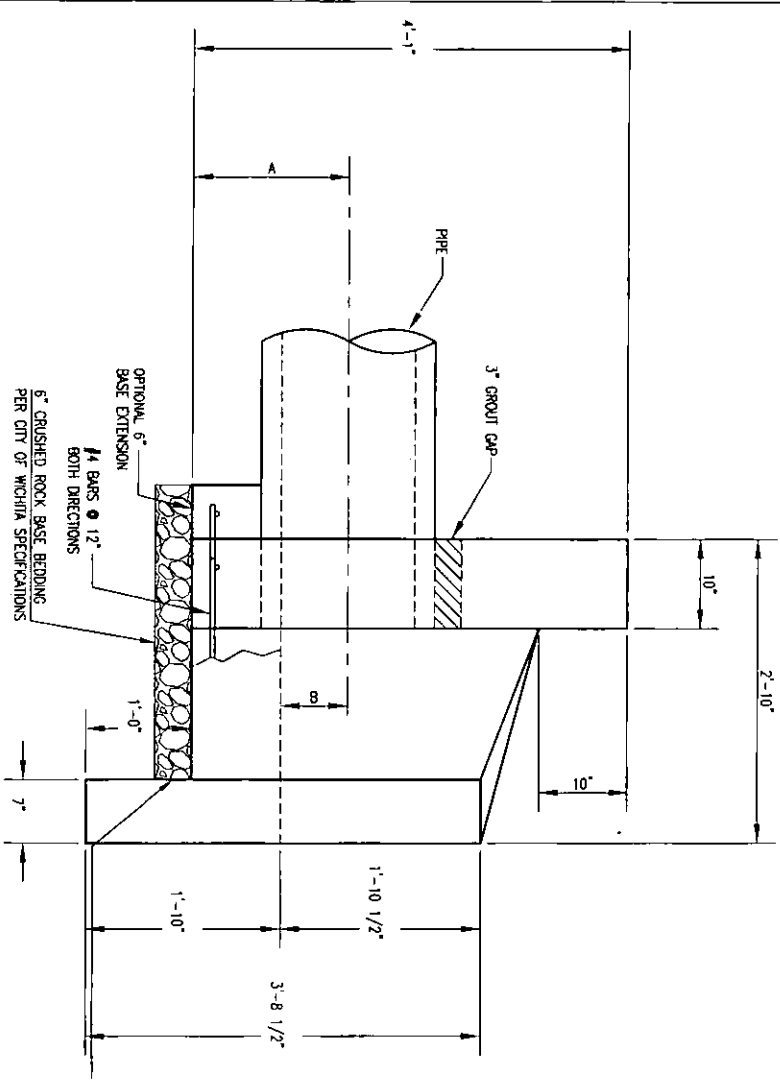


PLAN VIEW

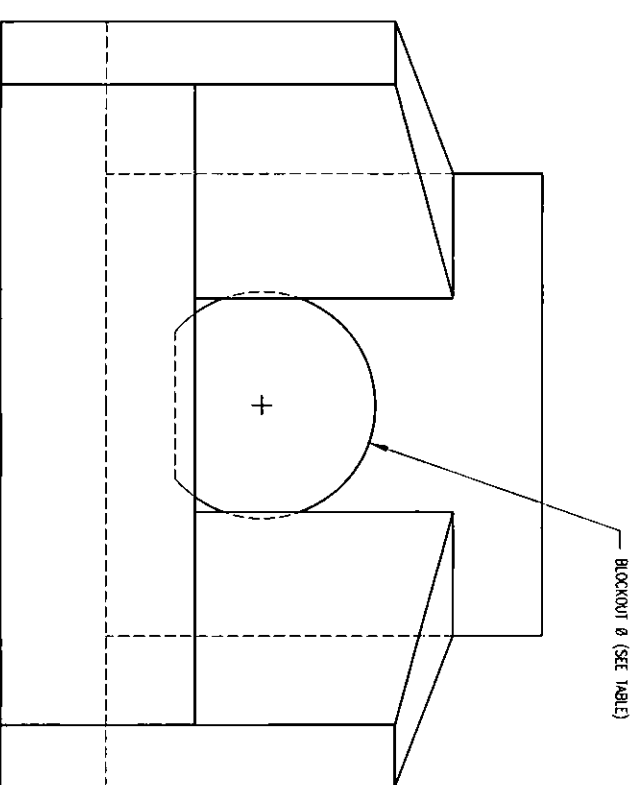


PLAN VIEW  
BASE

PIPE Ø	A	B	BLOCKOUT Ø
15"	1'-5 1/2"	7 1/2"	2'-1 1/2"
18"	1'-7"	9"	2'-5"
24"	1'-10"	1'-0"	3'-0"




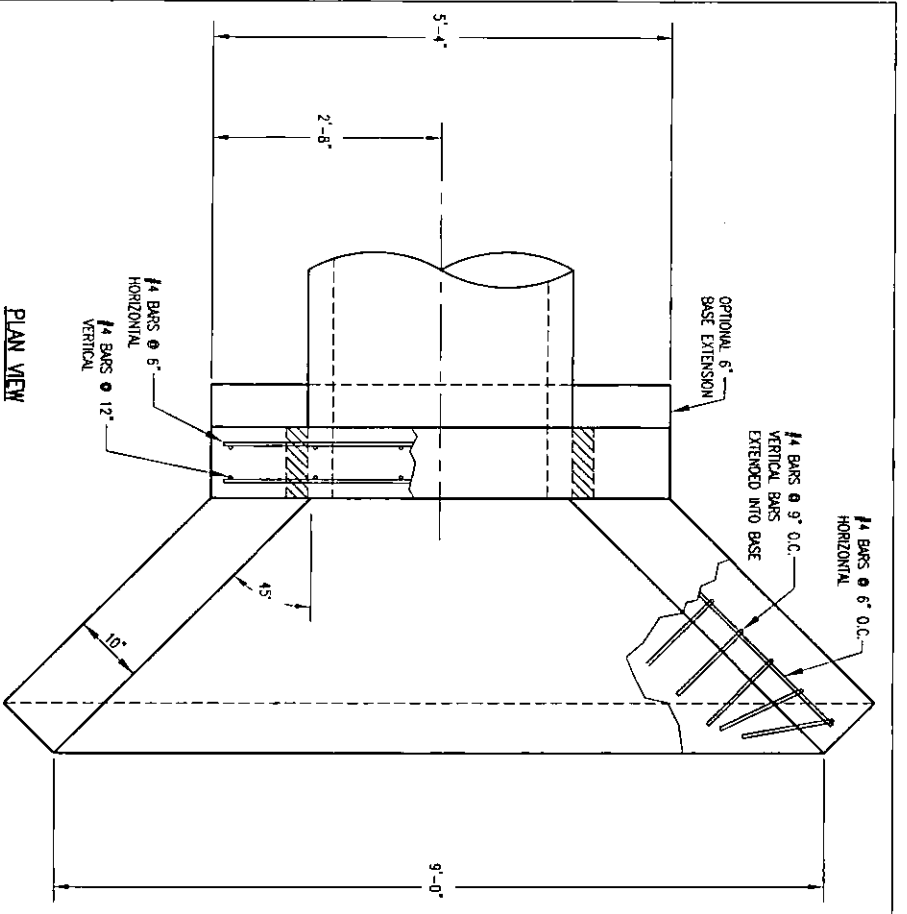
ELEVATION



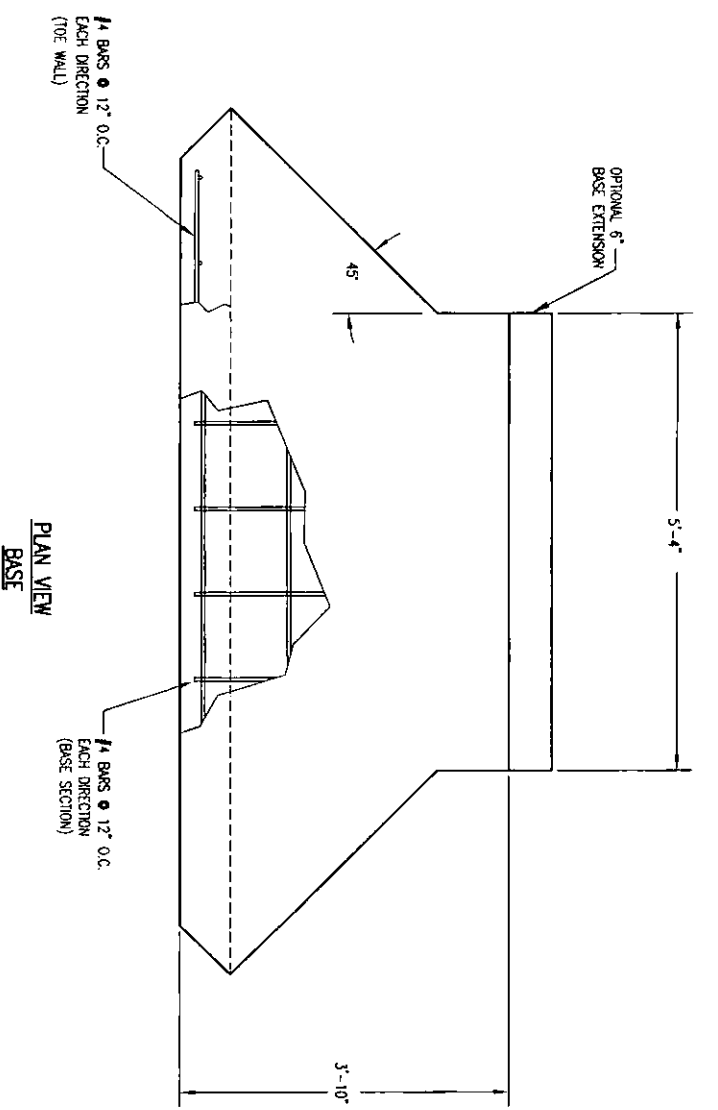
FRONT VIEW

HEADWALLS, AS SHOWN, WILL NOT SUPPORT FLAP GATE.

 <b>CITY OF WICHITA</b> PUBLIC WORKS & UTILITIES ENGINEERING DIVISION		<b>HEADWALL DETAILS FOR 15", 18", AND 24" PIPE</b>	
		CITY ENGINEER <b>GARY JANZEN, P.E.</b>	
PROJECT NUMBER	OCN NUMBER	DATE	SHEET
		11/2010	
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1820 (316) 268-4501			

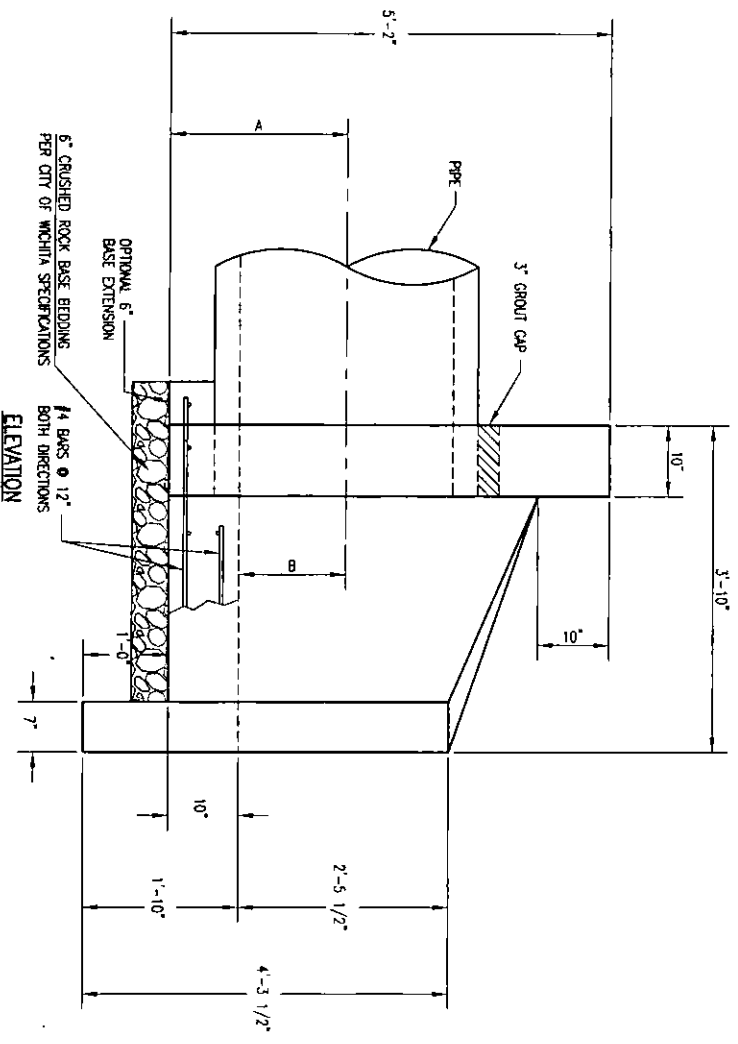


PLAN VIEW

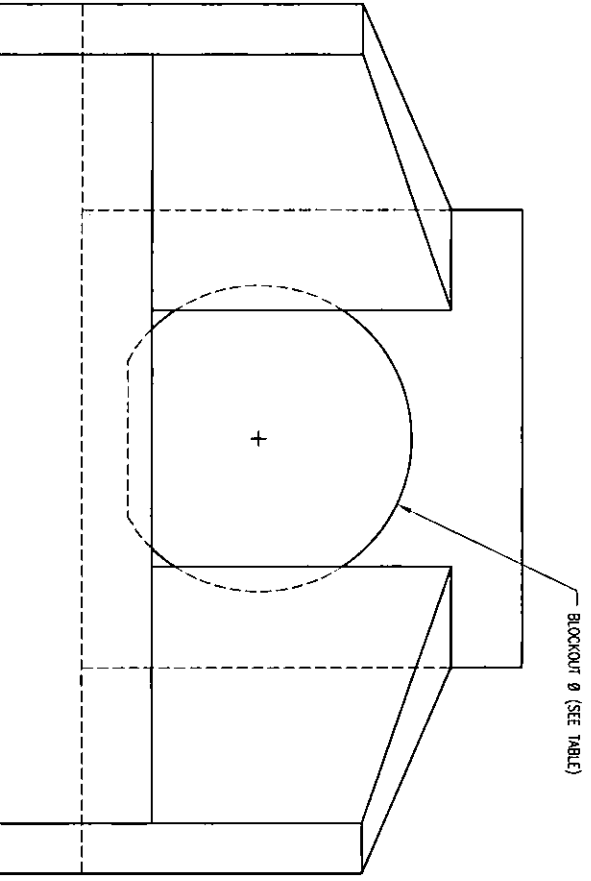


PLAN VIEW  
BASE

PIPE Ø	A	B	BLOCKOUT Ø
30"	2'-1"	1'-3"	3'-7"
36"	2'-4"	1'-6"	4'-2"



ELEVATION



FRONT VIEW

HEADWALLS, AS SHOWN, WILL NOT SUPPORT FLAP GATE.

**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES  
ENGINEERING DIVISION

**HEADWALL  
DETAILS FOR  
30" AND 36" PIPE**

CITY ENGINEER  
**GARY JANZEN, P.E.**

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

PROJECT NUMBER: [blank]    OCA NUMBER: [blank]    DATE: 11/2010

SHEET: [blank]