STORM WATER SEWER TO SERVE
L.R. JONES THIRD ADDITION
10510 WEST 21ST STREET NORTH
1336 PPS (607861)
WICHITA, KANSAS
NEIL D. CABLE, P.E., CITY ENGINEER

GENERAL NOTES

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

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

Southwestern Bell Telephone Co.
154 N. Broadway
Wichita, Kansas 67202
Jim Toben
316-268-2245

Westar Energy
P.O. Box 208
Wichita, Kansas 67201
Jimmy Washington
316-261-6315

Wichita Water & Sewer Dept.
8th Floor, City Hall
455 N. Main St.
Wichita, Kansas 67202
Bill Perkins
316-268-4555

Aquila Network
1611 S. Hoover
Wichita, Kansas 67209
Calvin Briggs
316-941-7233

Wichita Water & Sewer Dept.
8th Floor, City Hall
455 N. Main St.
Wichita, Kansas 67202
Bill Perkins/Paul Bryant
316-268-4555

Cox Communications
701 E. Douglas
Wichita, Kansas 67202
Brian Ring
316-262-4270 Ext.169

Kansas One Call
800-344-7233

Emergency 911

2. Contractor shall not start work on the project until the project inspector is assigned to the project and is present on the site. Any work done without inspection will be required to be uncovered for inspection.

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

4. 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 law.

5. All areas disturbed by construction operations shall be seeded with rye grass at a rate of 30C lbs/acre immediately following construction in that area. Ground shall be prepared per City of Wichita specifications prior to seeding.

6. Contractor shall verify the location of all utilities prior to beginning construction.

7. Contractor shall implement Best Management Practices in accordance with city regulations.

8. Contractor to provide all staking, testing, and inspection necessary to complete the work.

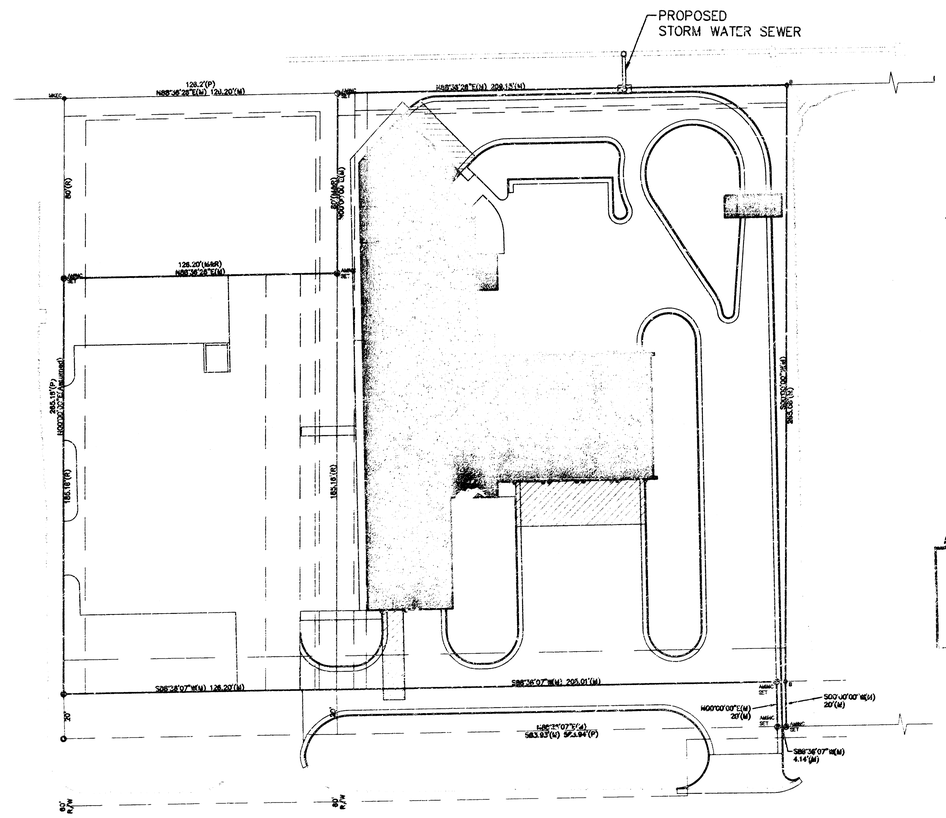
9. Pipe shall be Contech Ultra Flo or approved equal.

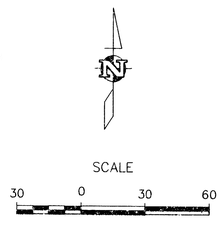
APPROVED AS NOTED BY CITY ENGINEER OF WICHITA

STORM SEWERS VRH 4/09/03

NOTE TO CONTRACTORS

Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection is to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall work be commenced without written authorization by the City Engineer. All construction and materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).





SCALE
30 0 30 60

SHEET INDEX

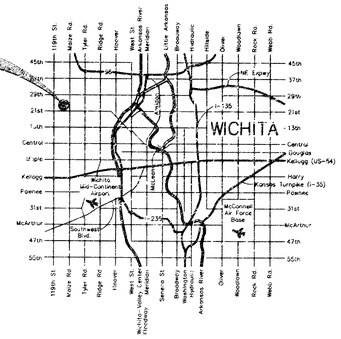
1. Title Sheet
2. Standard C.O.W. Type 'P' Manhole
3. Standard C.O.W. Type 1 Curb Inlet
4. Plan & Profile

BENCHMARK
"□" cut north face power pole base
northeast corner of site property.
Elev. 166.57 C.O.W. city datum, 103.00 site datum
63.57 datum conversion

ICE MILLER
AS-BUILT
4/23/03
Date
RE
Signed

Booked
12/10/03
E-7
RDL

SITE



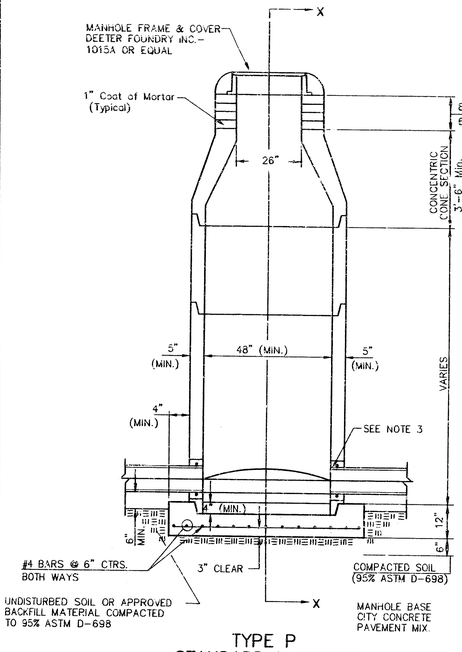
VICINITY MAP



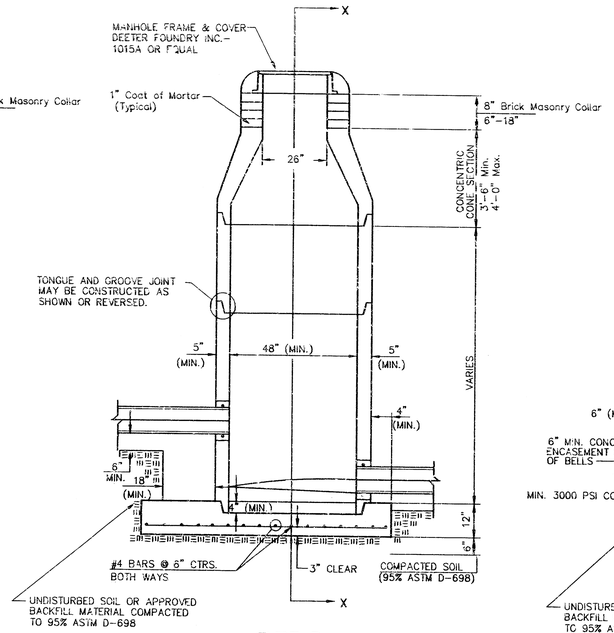
COMSULTING Inc.
ENGINEERING SERVICES
142 N. Emporia Wichita, KS 67202
316/265-2670 fax: 316/265-2839

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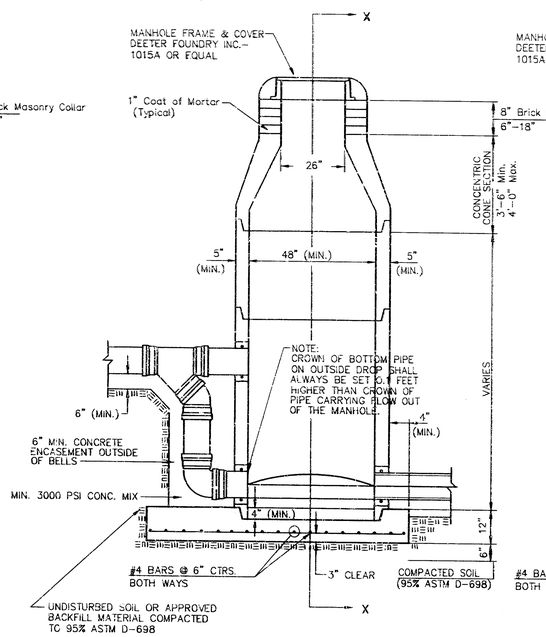
SEWER APPURTENANCES DETAILS



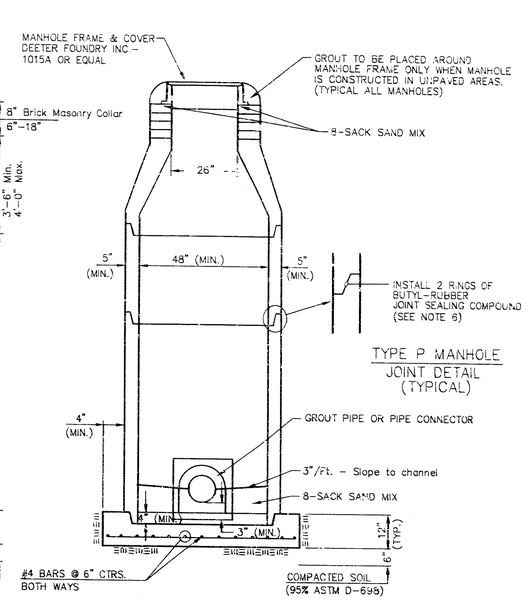
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
2. NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
3. APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR P.V.C. PIPE IS USED. FOR OTHER TYPES OF PIPE THE SEWER SHALL BE GROUTED IN PLACE WITH NON-SHRINK GROUT. THE SEWER PIPE SHALL BE SUPPORTED WITH CONCRETE ENCASEMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT FOR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
4. ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNEMEC SERIES 66 HI-BUILD EPOXOLINE, DRY THICKNESS OF 8 MILS (MIN.)
5. EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
6. JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
7. PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
8. 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.
9. LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
10. MORTAR USED IN MASONRY CONSTRUCTION SHALL CONTAIN 8 SACKS OF CEMENT PER CUBIC YARD. CONCRETE USED IN MANHOLE BASES SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE FOR CONCRETE PAVEMENT CONSTRUCTION AS SPECIFIED IN THE CITY STANDARD PAVING SPECIFICATIONS USING CITY CONCRETE PAVEMENT MIX WITHOUT AIR ENTRAINING ADMIXTURE. MORTAR SHALL BE PLACED AROUND THE MANHOLE RING AS SHOWN ON THE DRAWINGS WHEN MANHOLES ARE CONSTRUCTED IN UNPAVED AREAS. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE SMALLER THAN 24" SHALL HAVE AN INSIDE DIAMETER OF 4'. MANHOLES CONSTRUCTED WHERE PIPE SIZES ARE 24" OR LARGER SHALL HAVE AN INSIDE DIAMETER OF 5'. COMPLETED MANHOLE SHALL BE WITHOUT LEAKS AND WATER TIGHT.
11. REINFORCING STEEL SHALL BE INSTALLED IN THE MANHOLE BASES AND SHALL CONSIST OF NO. 4 BARS PLACED ON 6" CENTERS IN BOTH DIRECTIONS. THE MANHOLE BASE REINFORCEMENT SHALL BE PLACED AT LEAST 3" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCING STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
12. OPENINGS SHALL BE CUT INTO THE MANHOLE WALL WHEN OUTSIDE DROPS ARE CONSTRUCTED ON EXISTING MANHOLES. SUCH OPENINGS CUT INTO EXISTING MANHOLES SHALL BE AS SMALL AS PRACTICAL TO FACILITATE INSTALLING AND GROUTING THE NEW PIPE IN PLACE. WATERSTOP GASKETS SHALL BE USED WITH P.V.C. AND A.B.S. COMPOSITE PIPE. THE NEW PIPE SHALL BE GROUTED INTO THE OPENING USING AN APPROVED NONSHRINK GROUT FOR THE FULL MANHOLE WALL THICKNESS. THE EXTERIOR OF THE COMPLETED CONNECTION SHALL BE SEALED WITH AN APPROVED BITUMINOUS COATING SUCH THAT THE CONNECTION WILL BE WATER TIGHT. FLOOR OF MANHOLE SHALL BE MODIFIED TO FORM NEW FLOW CHANNEL FOR THE NEW CONNECTION AS INDICATED BY THE DRAWING. THIS WORK, INCLUDING MODIFICATION OF MANHOLE FLOOR, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR OUTSIDE DROP STACK CONSTRUCTED ON EXISTING MANHOLE.
13. THE FLOORS OF ALL MANHOLES SHALL BE SHAPED WITH FLOW CHANNELS SUCH THAT THE MANHOLES WILL BE SELF CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS SEWAGE FLOWS THROUGH THE MANHOLE FROM ALL INLET PIPES TO THE OUTLET PIPE. FLOW CHANNELS SHALL BE FORMED TO MATCH THE BOTTOM HALVES OF THE INFLOWING PIPES AND THE OUTFLOWING PIPE AS SHOWN BY THE DRAWINGS EXCEPT FOR INSIDE DROP MANHOLES. FLOW CHANNELS FOR INSIDE DROP MANHOLES SHALL BE CONSTRUCTED AS INDICATED BY THE DRAWING. MANHOLE FLOORS SHALL HAVE SLOPES OF 3 INCHES PER FOOT IN THE AREAS OUTSIDE OF THE FLOW CHANNELS SLOPED TOWARD THE FLOW CHANNELS. PIPES LAID THROUGH MANHOLES SHALL HAVE THE TOP HALF REMOVED TO NEAT LINES FOR THE FULL INSIDE DIAMETER OF THE MANHOLE. MANHOLE FLOORS SHALL THEN BE SHAPED AROUND THE BOTTOM HALF OF THE PIPE WHICH FORMS THE FLOW CHANNEL.
14. PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE MANHOLE SHALL BE CRADLED WITH CONCRETE TO THE LIMITS OF THE MANHOLE EXCAVATION. WHEN CLAY PIPE IS USED, THE CRADLE SHALL EXTEND TO THE FIRST JOINT OUTSIDE THE MANHOLE. THE CRADLE SHALL BE TERMINATED AT THE CLAY PIPE JOINT IN A MANNER WHICH WILL MAINTAIN THE FLEXIBILITY OF THE JOINT. COST OF CRADLE WITHIN MANHOLE EXCAVATION OR TO CLAY PIPE JOINTS ADJACENT TO MANHOLE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.
15. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTINGS SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWING.
16. THE VERTICAL DROP IN INSIDE DROP MANHOLES SHALL NOT EXCEED 2' FOR INFLOWING PIPES SIZED 12" OR SMALLER AND 2' FOR INFLOWING PIPES LARGER THAN 12". THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPE.
17. STANDARD MANHOLES AND STANDARD INSIDE DROP MANHOLES SHALL BE BID AS STANDARD MANHOLES FOR THE TYPE AND DIAMETER INDICATED. OUTSIDE DROP MANHOLES SHALL BE BID AS STANDARD OUTSIDE DROP MANHOLES FOR THE TYPE AND DIAMETER INDICATED. ALL MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.
18. A BRICK MASONRY COLLAR SHALL BE INSTALLED BETWEEN THE CAST IRON FRAME AND THE CONCENTRIC CONE. THE COLLAR WILL HAVE 8" WALLS AND A VERTICAL HEIGHT OF 6" MINIMUM AND 18" MAXIMUM. A 1" COAT OF MORTAR WILL BE PLASTERED ON THE OUTSIDE OF THE COLLAR. THE USE OF PRE-CAST CONCRETE SPACERS FOR MANHOLE TOP ADJUSTMENT IS ALSO ALLOWED.

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL - SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4174 FAX

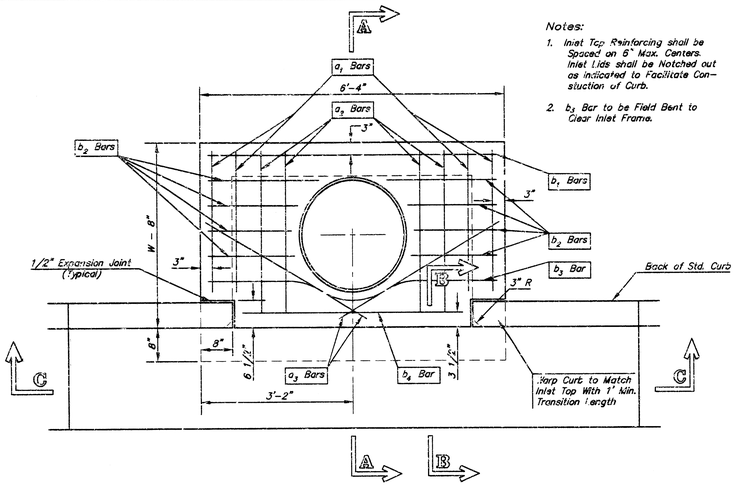
STANDARD
TYPE 'P'
MANHOLES

NEIL D. CABLE, P.E. - CITY ENGINEER

PROJECT NUMBER	INDEX CODE
XXX-XXXXX	XXXXXX
DATE: MAR 96	SHEET X OF X

316/265-2800	PROJECT NUMBER 1338 PPS (607981)			AM NO. 02122-04	GREEN LANTERN CAR WASH	SHEET 2	
	DES'N	DRAWN C.D.W.	FILE 02122-04-P	DATE 04-25-03	SCALE N.T.S.	TYPE P MANHOLES	OF 4
						10510 WEST 21ST STREET NORTH, WICHITA, KANSAS	REVISED

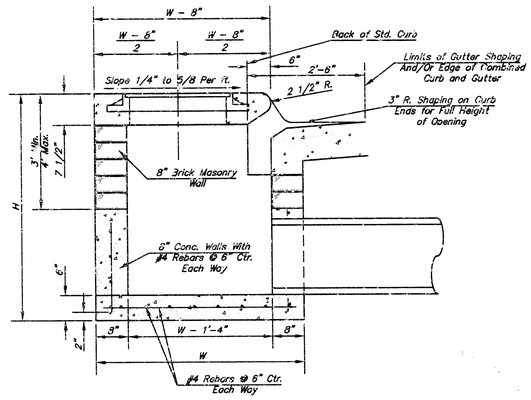
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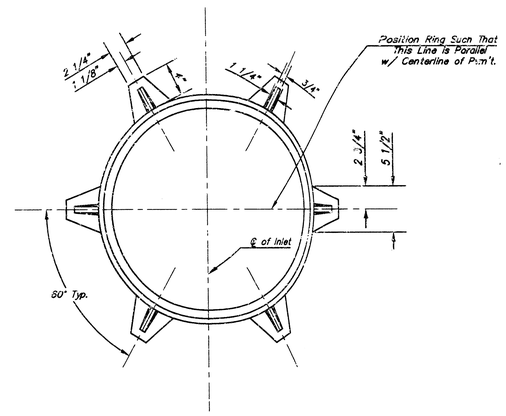
PLAN

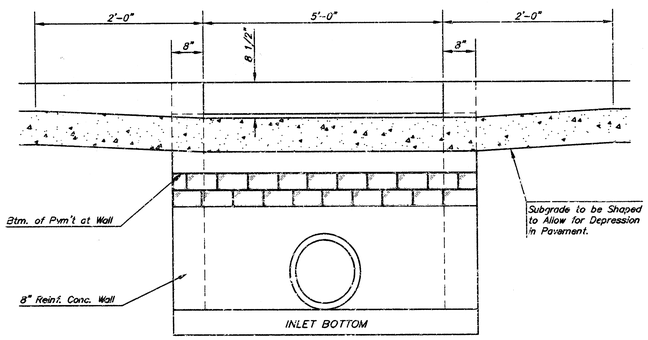
Notes:

1. Inlet Top Reinforcing shall be Spaced on 6" Max. Centers. Inlet Lids shall be Notched out as indicated to Facilitate Construction of Curb.
2. b_3 Bar to be Field Bent to Clear Inlet Frame.

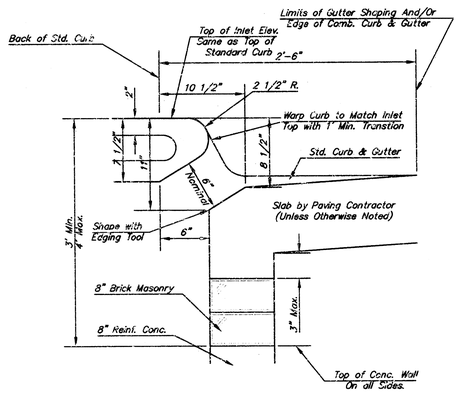


SECTION A–A

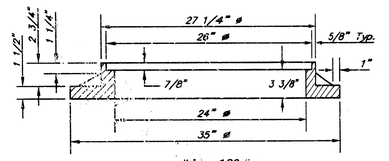




SECTION C–C



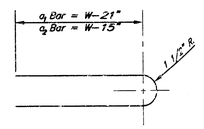
SECTION B–B



W_1 = 180 lbs.

MANHOLE RING AND COVER

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



BENDING DIAGRAM

STEEL SCHEDULE

BAR		a_1	a_2	a_3	b_1 W=4'-4"	b_1 W=5'-4"	b_1 W=6'-4"	b_1 W=7'-4"	b_1 W=8'-4"	b_2	b_3	b_4	Wt. Lbs.
NUMBER		4	4	2	1	3	5	7	9	6	1	1	
SIZE		#4	#4	#4	#4	#4	#4	#4	#4	#4	#4	#6	
LENGTH	W=4'-4"	5'-7"	6'-7"	4'-0"	6'-1"	–	–	–	–	1'-9"	6'-2"	4'-8"	60±
	W=5'-4"	7'-7"	8'-7"	5'-0"	–	6'-1"	–	–	–	1'-9"	6'-2"	4'-8"	81±
	W=6'-4"	9'-7"	10'-7"	6'-0"	–	–	6'-1"	–	–	1'-9"	6'-2"	4'-8"	101±
	W=7'-4"	11'-7"	12'-7"	7'-0"	–	–	–	6'-1"	–	1'-9"	6'-2"	4'-8"	121±
	W=8'-4"	13'-7"	14'-7"	8'-0"	–	–	–	–	6'-1"	1'-9"	6'-2"	4'-8"	141±

Note: a_3 Bars to be Placed Approx. 2" Below Top of Inlet Cover.

STANDARD CURB INLET PRECAST TOPS

W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4'-4"	3'-8" 6'-4" 7 1/2"	21" & SMALLER	0.38±
5'-4"	4'-8" 6'-4" 7 1/2"	24" & 30"	0.51±
6'-4"	5'-8" 6'-4" 7 1/2"	36" & 42"	0.64±
7'-4"	6'-8" 6'-4" 7 1/2"	48" & 54"	0.77±
8'-4"	7'-8" 6'-4" 7 1/2"	60" & 66"	0.90±

GENERAL NOTES

1. 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.
2. Contractor shall have the option of constructing 8" brick masonry walls between the concrete inlet base and top on this inlet when W=6'-4" 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.

STYP1-S.DWG

THE CITY OF WICHITA

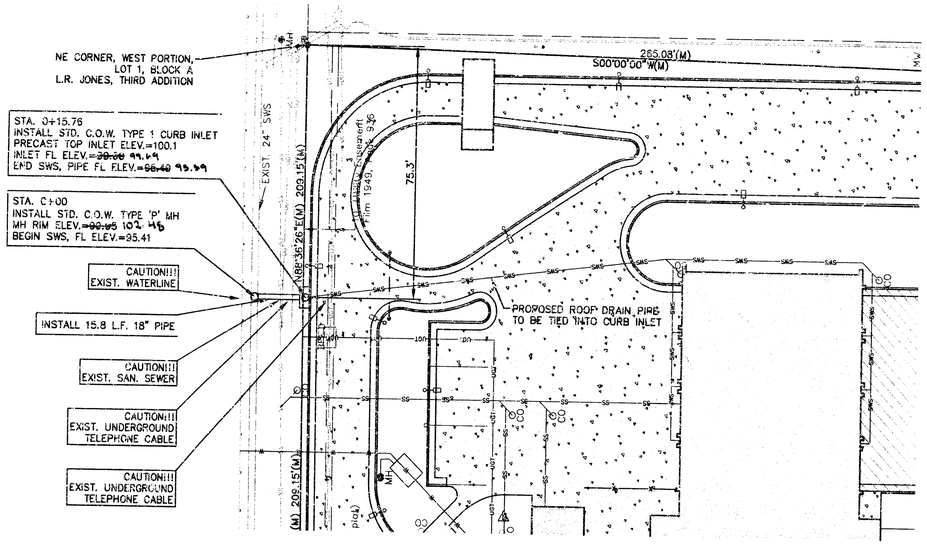
CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4507
(316) 268-4519 FAX

STANDARD TYPE 1 CURB INLET
OPENING = 6" x 5'-0"

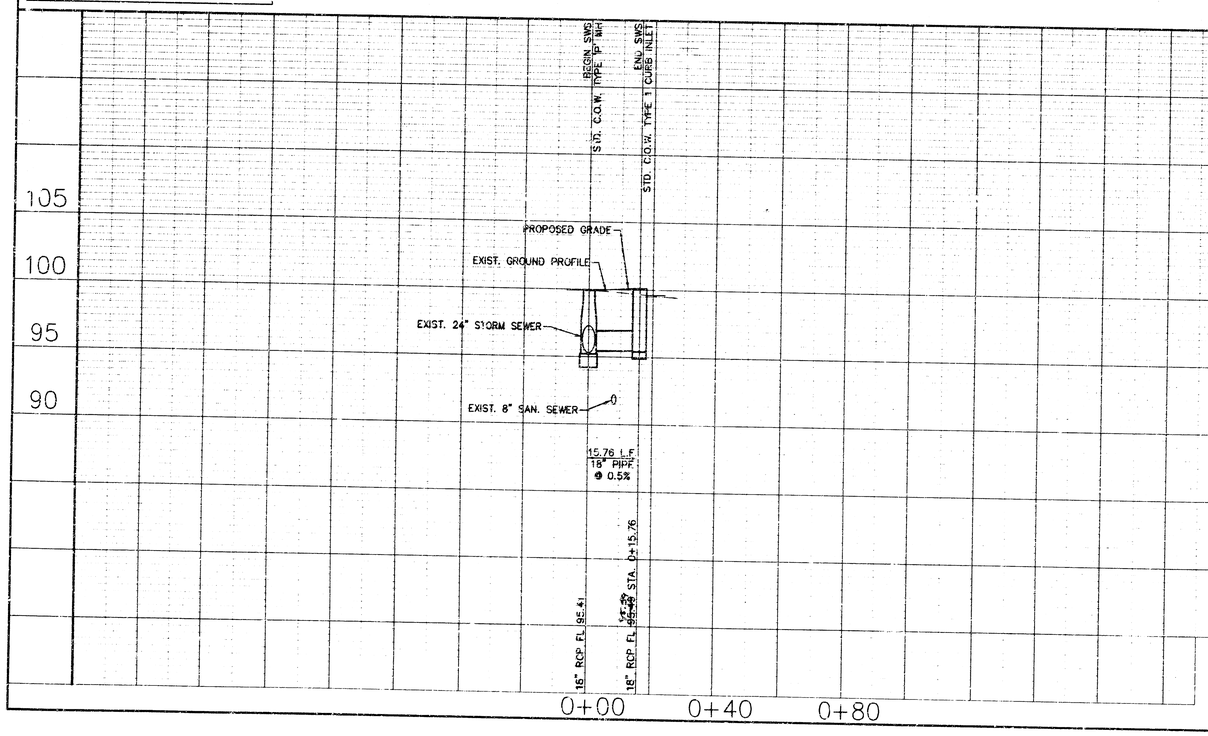
NEIL D. CABLE, P.E. – CITY ENGINEER

PROJECT NUMBER	INDEX CODE
XXX-XXXXX	XXXXXX
DATE: MAR 96	SHEET X OF X

SW7765-2003	PROJECT NUMBER: 1336 PPS (807881)				AM NO. 02122-04	GREEN LANTERN CAR WASH	SHEET 3	
	DESIGN	DRAWN C.O.W.	FILE 02122-04-1	DATE 04-25-05	SCALE N.T.S.	TYPE 1 CURB INLET	OF 4	REVISED
						10510 WEST 21ST STREET NORTH, WICHITA, KANSAS		



NOTE: EXISTING LOCATION AND DEPTH OF SWS TO BE VERIFIED BY CONTRACTOR.



BENCHMARK
"□" cut north face power pole base northeast corner of site property. Elev. 166.57 C.O.W. city datum, 103.00 site datum 63.57 datum conversion

SCALE
20 0 20 40

LEGEND

- ⊕ = 1/2" Rebar with Baughman cap (found)
- (M) = Measured
- BPED = Bell Pedestal
- = Concrete
- = Fire Hydrant
- = Light Pole
- MH = Manhole
- = Sanitary Sewer
- = Sprinkler Head
- = Underground Telephone
- = Water
- MW = Monitoring Well

DESIGN	DRAWN AEE	FILE 02122-04-plan	DATE 04-25-03	SCALE 1"=20'	PROJECT NUMBER 1336 PPS (807861)	AM NO. 02122-04

GREEN LANTERN CAR WASH
STORM SEWER
10510 WEST 21ST STREET NORTH, WICHITA, KANSAS

SHEET 4 OF 4

REVISED