STORM SEWER INSTALLATION
FOR
WICHITA WEST THEATRE
IN
LOT 4, BLOCK 6, STERLING FARMS ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS

CITY OF WICHITA PRIVATE PROJECT NO. 531 PPS(607861)

MIKE LINDEBAK, P.E., CITY ENGINEER

JANUARY, 1995

GENERAL NOTES

1. LOCAL BUSINESS TRAFFIC GENERATED WITHIN THE PROJECT AREA IS TO BE CARRIED THROUGH CONSTRUCTION.

2. UTILITY SERVICE LINES, POLES, VALVE BOXES, METERS, ETCETERA ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE PLAN LOCATIONS ARE NOT GUARANTEED AND ADDITIONAL UTILITIES MAY ALSO BE ENCOUNTERED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

3. RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED SHALL BE DISPOSED OF ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE AND SITE LOCATION. LOCATIONS, THAT IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED.

ALL DISPOSAL SITES MUST BE APPROVED BY THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOODPLAIN WOULD REQUIRE A KANSAS STATE BOARD OF AGRICULTURE PERMIT. ANY MATERIAL DUMPED IN WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORPS OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS UNLESS BURIED IN A PREVIOUSLY APPROVED BORROW LOCATION.

4. CONTRACTOR WILL BE REQUIRED TO PROVIDE A MINIMUM ADVANCE NOTICE OF FORTY-EIGHT(48)HOURS TO UTILITY COMPANIES PRIOR TO STARTING ANY EXCAVATION AS FOLLOWS:

KANSAS ONE CALL 1-800-344-7233 OR 687-2470(LOCAL WICHITA)

THE CONTRACTOR MUST NOTIFY THE FOLLOWING IN CASE OF AN EMERGENCY:

SOUTHWESTERN BELL TELEPHONE	1-671-2116
MULTIMEDIA CABLEVISION	262-0661
K.P.&L. GAS SERVICE COMPANY	263-7511
KANSAS GAS & ELECTRIC	264-1141
ARKLA GAS COMPANY	942-8360 OR 253-8161
CITY OF WICHITA WATER & SEWER	268-4608
CITY OF WICHITA SEWER	268-4071

THE CONTRACTOR SHALL NOTIFY PIPELINE COMPANIES AT LEAST 24 HOURS IN ADVANCE OF ANY WORK BEING PERFORMED ACROSS AND/OR ADJACENT TO PIPELINES.

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 LAWS.

5. THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING THE CONSTRUCTION OF THIS PROJECT A MINIMUM OF TEN(10) DAYS ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION.

6. THE CONTRACTOR MUST EXAMINE THE CONSTRUCTION SITE PRIOR TO BIDDING AND BE SATISFIED AS TO THE WORK SHOWN FOR COMPLETION. AFTER BIDS HAVE BEEN RECEIVED, THE CONTRACTOR SHALL NOT ASSERT THAT THERE WAS A MISUNDERSTANDING OF THE QUANTITIES OF WORK OR OF THE NATURE OF THE WORK TO BE COMPLETED.

7. CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR IS ASSIGNED TO THE PROJECT IS PRESENT ON THE SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.

8. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) TO ENSURE A SAFE WORK ZONE FOR THE TRAVELING PUBLIC.

9. EXISTING CONCRETE CURB, PAVEMENT AND SIDEWALK REMOVAL WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE STORM SEWER CONSTRUCTION. LIMITS OF SUCH PAVEMENT REMOVAL AND REPLACEMENT SHALL BE SAWCUT ONE FOOT BEYOND THE LIMITS OF EXCAVATION MADE FOR THE SEWER OR THE STRUCTURE, EXCEPT WHEN SUCH LIMITS OF REMOVAL ARE WITHIN THREE(3) FEET OF AN EXISTING JOINT THE LIMITS OF THE REMOVAL SHALL BE EXTENDED TO THE EXISTING JOINT.

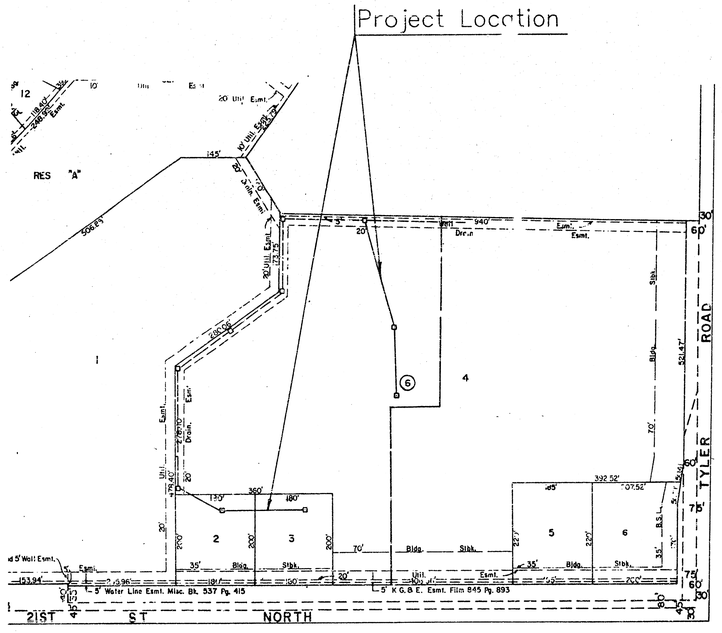
10. THE CONTRACTOR SHALL FERTILIZE, SEED AND MULCH ALL AREAS WHICH ARE DISTURBED AS A RESULT OF THIS PROJECT IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS. ALL COSTS TO BE SUBSIDIARY TO THE COST FOR THE STORM SEWER CONSTRUCTION.

11. ALL CONSTRUCTION AND MATERIALS, UNLESS OTHERWISE NOTED, TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS.

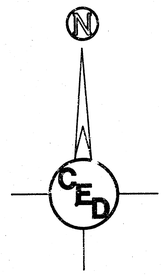
INDEX OF SHEETS

1. Titie Sheet
2.–3. Storm Sewer Plan–Profile
4. Type 1A Curb Inlet Detail
5. Manhole Frame & Grate
6. Drop Inlet Details

Project Location



Sterling Farms Addition



1" = 150'

LEGEND

W = WATER LINE
SS = SANITARY SEWER
S = SANITARY SEWER MANHOLE
G = GAS LINE
GM = GAS METER
TSB = TELEPHONE SPLICE BOX
UT = UNDERGROUND TELEPHONE
UE = UNDERGROUND ELECTRIC
LP = LIGHT POLE
= STORM WATER SEWER INLET
BM = BENCHMARK
= ELEC. TRANSFORMER
210.0 / 209.5 = PROPOSED SPOT ELEVATION

APPROVED AS NOTED
By CITY ENGINEER OF WICHITA

Sanitary Sewers _____
Storm Sewers VRH 7/25/95
Driveway Approaches _____
Water Mains _____
Paving _____

NOTE TO CONTRACTOR

INSPECTION AND TESTING FOR THIS PROJECT IS TO BE PROVIDED BY A LICENSED CONSULTING ENGINEERING FIRM UNDER CONTRACT WITH THE OWNER/DEVELOPER. SAID INSPECTION TO BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD CONSTRUCTION ENGINEERING PRACTICES AND CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. NO WORK SHALL BE PERFORMED IN DEDICATED EASEMENTS OR THE PUBLIC RIGHT-OF-WAY BY THE CONTRACTOR WITHOUT SUCH INSPECTION NOR SHALL ANY WORK BE COMMENCED IN DEDICATED EASEMENTS OR PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN AUTHORIZATION BY THE CITY ENGINEER.

RANLAN DALE FORAKER LICENSED 10891 KANSAS PROFESSIONAL ENGINEER
7-25-95

City of Wichita Private Proj. No. 531 PPS(607861)
CERTIFIED ENGINEERING DESIGN
CED
1930 E. FIRST, # 119
WICHITA, KANSAS 67214
(316) 262-8808

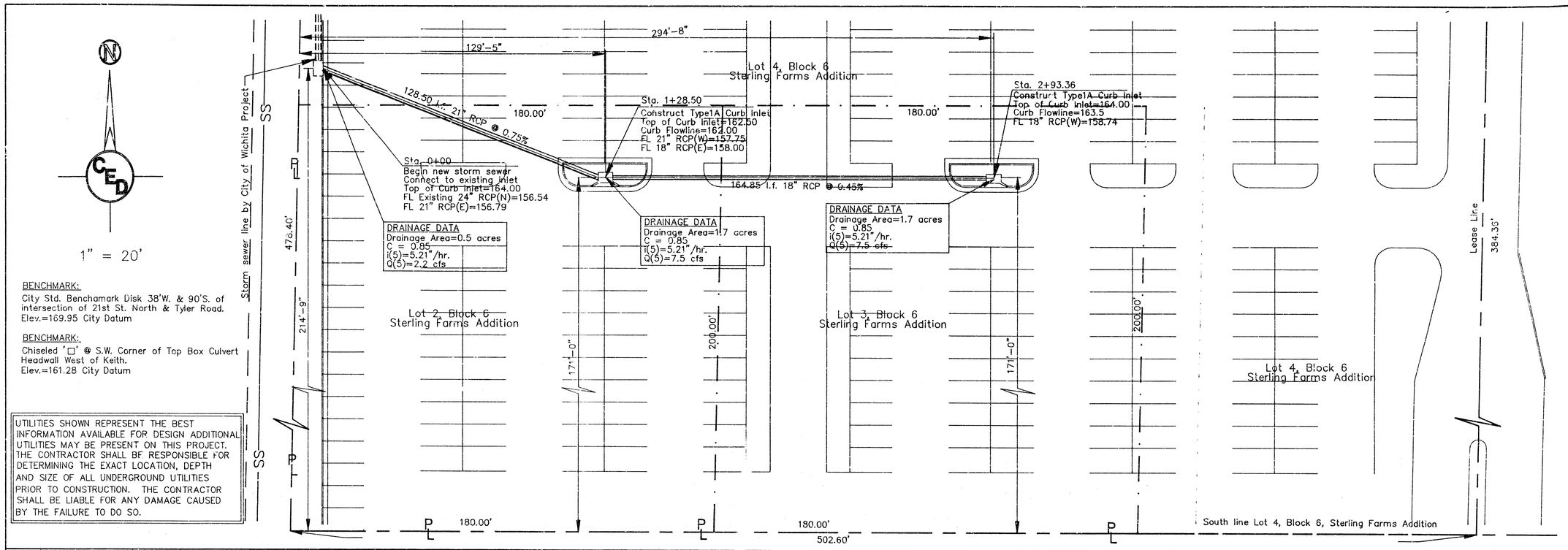
SHEET 1
TOTAL 6

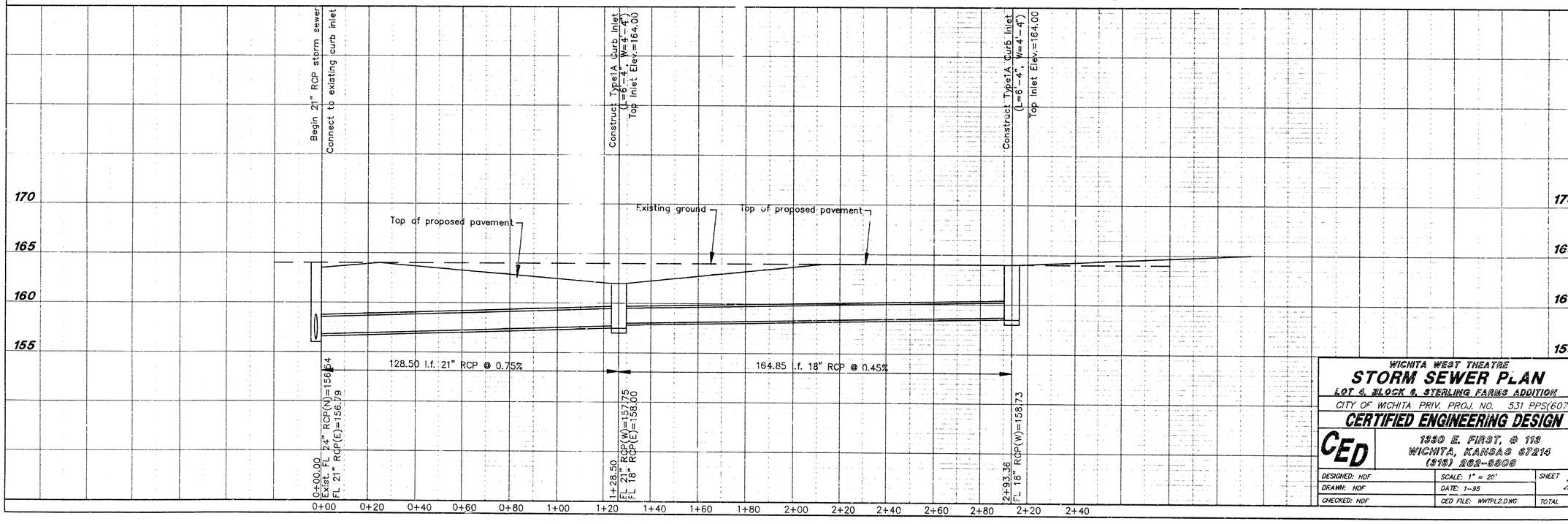
1" = 20'

BENCHMARK:
City Std. Benchamark Disk 38'W. & 90'S. of intersection of 21st St. North & Tyler Road.
Elev.=169.95 City Datum

BENCHMARK:
Chiseled '□' @ S.W. Corner of Top Box Culvert Headwall West of Keith.
Elev.=161.28 City Datum

UTILITIES SHOWN REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIGN ADDITIONAL UTILITIES MAY BE PRESENT ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH AND SIZE OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE CAUSED BY THE FAILURE TO DO SO.





WICHITA WEST THEATRE
STORM SEWER PLAN
LOT 4, BLOCK 6, STERLING FARMS ADDITION
CITY OF WICHITA PRIV. PROJ. NO. 531 PPS(607867)

CERTIFIED ENGINEERING DESIGN
CED
1330 E. FIRST, # 119
WICHITA, KANSAS 67214
(316) 262-8808

DESIGNED: HDF	SCALE: 1" = 20'	SHEET 2
DRAWN: HDF	DATE: 1-95	
CHECKED: HDF	CED FILE: WWTPL2.DWG	TOTAL 6

1" = 20'

BENCHMARK:
City Std. Benchamark Disk 38'W. & 90'S. of intersection of 21st St. North & Tyler Road.
Elev.=169.95 City Datum

BENCHMARK:
Chiseled '□' @ S.W. Corner of Top Box Culvert Headwall West of Keith.
Elev.=161.28 City Datum

UTILITIES SHOWN REPRESENT THE BEST INFORMATION AVAILABLE FOR DESIG. ADDITIONAL UTILITIES MAY BE PRESENT ON THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH AND SIZE OF ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE CAUSED BY THE FAILURE TO DO SO.

Lease Line
420.00'
Lease Line
Curb Inlet by City of Wichita
20' Drainage Easement
Lot 4, Block 6
Sterling Farms Addition
38'-4"
94'-6"
Lease Line
103.71'
169'-6"
Storm sewer line by City of Wichita Project
377.88' to N.W.Cor., Lot 4
36" Storm Sewer(By City of Wichita)
244'-7"
152'-8"
Top Inlet=162.5
152.67 l.f. 15" RCP @ 0.50%
Lease Line
384.36'
Future Parking
22'-9"
DRAINAGE DATA
Drainage Area=1.5 acres
C = 0.85
i(5)=5.21"/hr.
Q(5)=6.65 cfs
4+02.79
Construct TypeIA Curb Inlet
Top Curb Inlet=164.00
Curb Flowline=163.5
FL 15" RCP(N)=158.59
250.12 l.f. 18" RCP @ 1.00%
Sta. 2+50.12
Construct Drop Inlet
Top of Drop Inlet=162.5
FL 18" RCP(N)=157.58
FL 15" RCP(S)=157.83
DRAINAGE DATA
Drainage Area=1.1 acres
C = 0.85
i(5)=5.21"/hr.
Q(5)=5.0 cfs
Curb Inlet proposed by City of Wichita Project (Not part of this project)
Sta. 0+00
Begin new storm sewer
Connect to existing inlet
Top proposed inlet=162.5
FL 42" RCP(W)=153.29
FL 36" RCP(E)=153.83
FL 18" RCP(S)=155.33

Begin 18" storm sewer
Connect to existing curb inlet
Construct 2'x4' Drop Inlet
Top Inlet=162.50
Construct TypeIA Curb Inlet
(L=6'-4", W=4'-4")
Top Inlet Elev=164.00

Existing Ground Profile
Proposed new pavement profile
Proposed new pavement profile
Existing Ground Profile

250.12 l.f. 18" RCP @ 1.00%
152.67 l.f. 15" RCP @ 0.50%

0+00.00
FL 18" RCP(S)=155.33
2+50.12
FL 18" RCP(N)=157.58
FL 15" RCP(S)=157.83
4+02.79
FL 15" RCP(N)=158.59

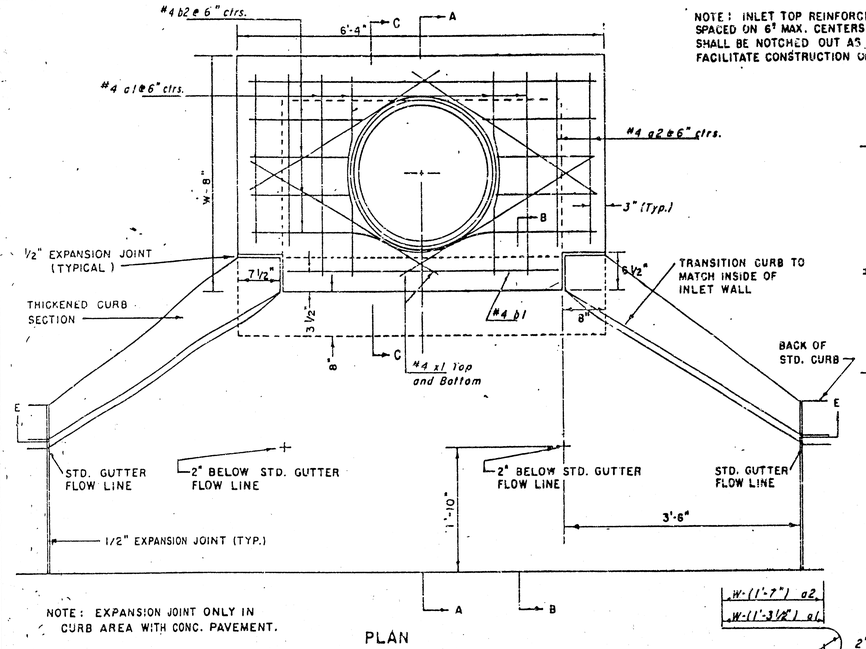
170
165
160
155

0+00 0+20 0+40 0+60 0+80 1+00 1+20 1+40 1+60 1+80 2+00 2+20 2+40 2+60 2+80 3+00 3+20 3+40 3+60 3+80 4+00 4+20

WICHITA WEST THEATRE
STORM SEWER PLAN
LOT 4, BLOCK 6, STERLING FARMS ADDITION
CITY OF WICHITA PRIV. PROJ. NO.: 531 PPS(607861)
CERTIFIED ENGINEERING DESIGN

CED
1930 E. FIRST, # 119
WICHITA, KANSAS 67214
(316) 262-5608

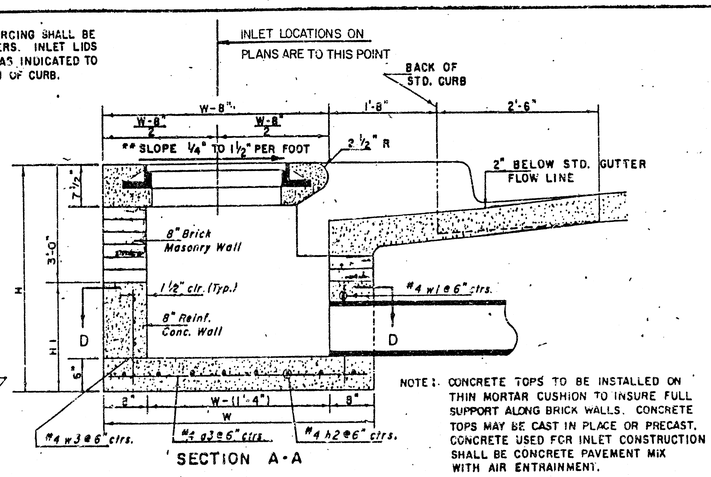
DESIGNED: HDF	SCALE: 1" = 20'	SHEET 3
DRAWN: HDF	DATE: 1-95	
CHECKED: HDF	CED FILE: WWTPL1.DWG	TOTAL 6



NOTE: EXPANSION JOINT ONLY IN CURB AREA WITH CONC. PAVEMENT.

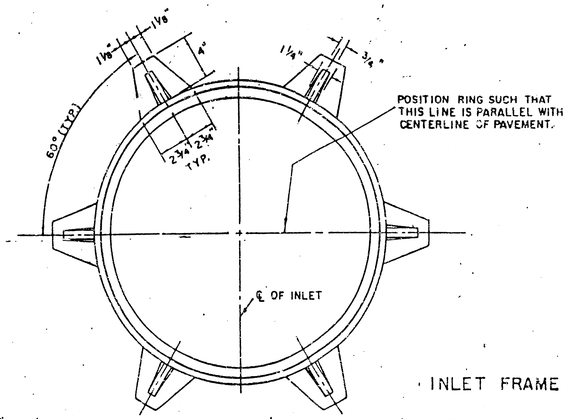
PLAN

NOTE: INLET TOP REINFORCING SHALL BE SPACED ON 6" MAX. CENTERS. INLET LIDS SHALL BE NOTCHED OUT AS INDICATED TO FACILITATE CONSTRUCTION OF CURB.



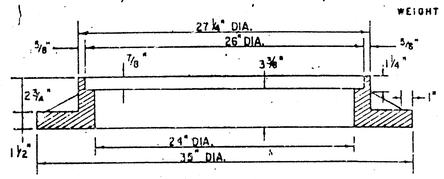
SECTION A-A

NOTE: 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 WITH AIR ENTRAINMENT.



INLET FRAME

WEIGHT = 180 LBS.



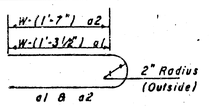
SEE CITY OF WICHITA STANDARD MANHOLE FRAME AND COVER DETAIL SHEET FOR COVER DETAILS TO BE USED WITH INLET FRAME.

NOTE: CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING 8" BRICK MASONRY WALLS BETWEEN THE CONCRETE INLET BASE AND TOP ON THIS INLET WHEN H = 6'4" AND H = 7'0" OR LESS.

ADDITIONAL CURB AND GUTTER CONSTRUCTION NECESSARY TO CONNECT SET-BACK INLET TO PAVEMENT WILL BE PAID FOR AT THE UNIT PRICE BID FOR EACH INLET HOOKUP.

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.

THE ENDS OF ALL PIPES INSTALLED IN INLETS SHALL BE CUT OFF FLUSH WITH THE INSIDE FACE OF THE INLET WALL.



BENDING DIAGRAM

PRECAST SLAB AND FLOOR REINFORCING											
		W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
Mark	Size	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
a1	#4	6	6'-7"	6	8'-7"	6	10'-7"	6	12'-7"	6	14'-7"
a2	#4	4	6'-0"	4	8'-0"	4	10'-0"	4	12'-0"	4	14'-0"
a3	#4	13	4'-1"	13	5'-1"	13	6'-1"	13	7'-1"	13	8'-1"
b1	#4	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"	1	4'-9"
b2	#4	23	6'-1"	29	6'-1"	35	6'-1"	41	6'-1"	47	6'-1"
x1	#4	8	3'-10"	8	4'-2"	8	4'-6"	8	4'-10"	8	5'-2"
WALL REINFORCING											
		W=4'-4"		W=5'-4"		W=6'-4"		W=7'-4"		W=8'-4"	
Mark	Size	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
w1	#4	⑧	6'-1"	⑧	6'-1"	⑧	6'-1"	⑧	6'-1"	⑧	6'-1"
w2	#4	⑧	4'-1"	⑧	5'-1"	⑧	6'-1"	⑧	7'-1"	⑧	8'-1"
w3	#4	32	②	36	②	40	②	44	②	48	②

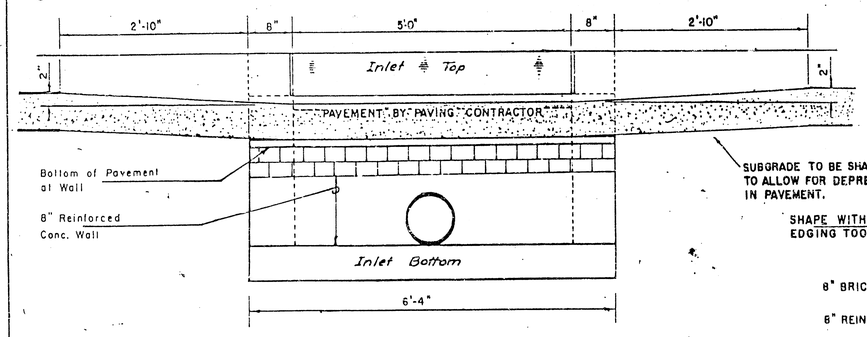
* Field bend or cut Reinforcing as required for clearance.

① 4(H1-12") ; (H1-12") Round down to nearest 0.5'

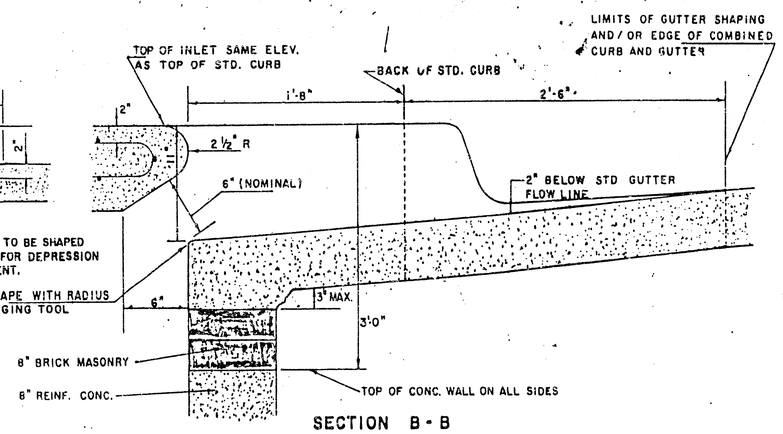
② H1-3"

STANDARD CURB INLET PRECAST TOPS			
W	PRE-CAST TOP SIZE	PIPE SIZE	CU. YD. CONC.
4' 4"	5'8"x 8'4" x7 1/2"	21" & SMALLER	0.38 ±
5' 4"	4'8"x 6'4" x7 1/2"	24" & 30"	0.51 ±
6' 4"	5'8"x 6'4" x7 1/2"	36" & 42"	0.64 ±
7' 4"	6'8"x 6'4" x7 1/2"	48" & 54"	0.77 ±
8' 4"	7'8"x 6'4" x7 1/2"	60" & 66"	0.90 ±

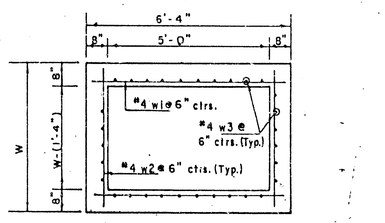
** NOTE: Slope of Inlet Tops to match Sidewalk or Parking Slopes within Limits indicated.



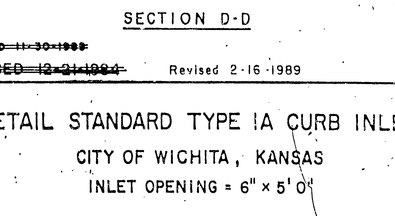
SECTION E - E



SECTION B - B



SECTION C-C



SECTION D-D

~~REVISED 11-30-1988~~

~~REVISED 12-21-1984~~ Revised 2-16-1989

DETAIL STANDARD TYPE IA CURB INLET

CITY OF WICHITA, KANSAS

INLET OPENING = 6" x 5'0"

JUNE 1984

4/6

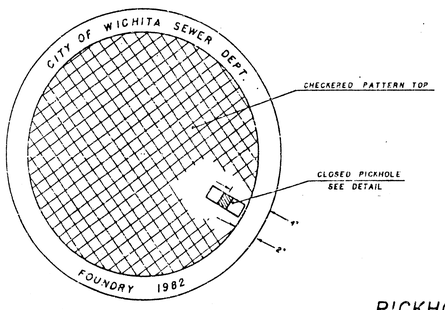
MANHOLE FRAME AND COVER DETAIL

ADOPTED AS STANDARD DESIGN BY

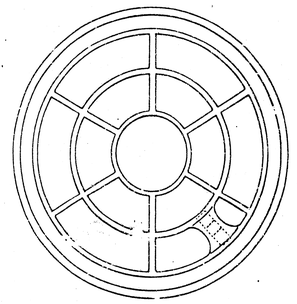
City of Wichita, Kansas

MANHOLE COVER

Weight: 180 Lbs.

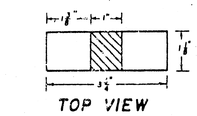


TOP VIEW

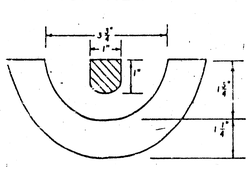


BOTTOM VIEW

PICKHOLE DETAIL



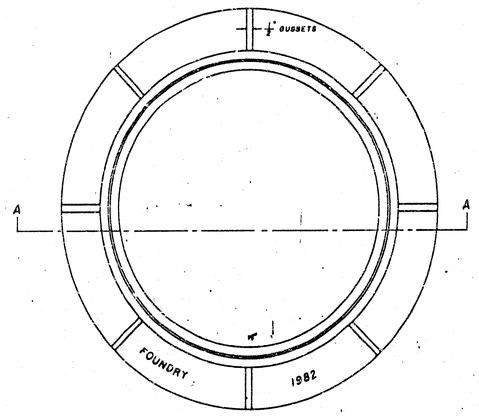
TOP VIEW



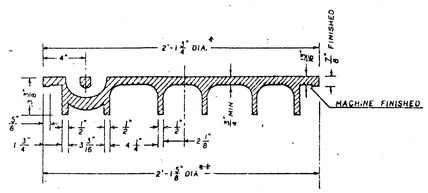
SECTION VIEW

MANHOLE FRAME

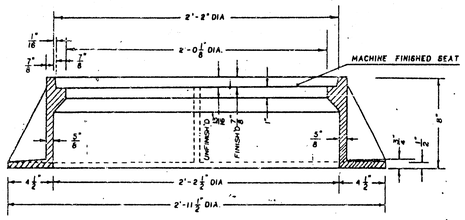
Weight: 240 Lbs.



TOP VIEW



SECTION VIEW



SECTION A-A

* OUTSIDE DIA. TOP OF COVER

** OUTSIDE DIA. BOTTOM OF COVER

GENERAL NOTES

1. MANHOLE CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED CASTINGS SHALL BE OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTIONS OR OTHER DEFECTS.

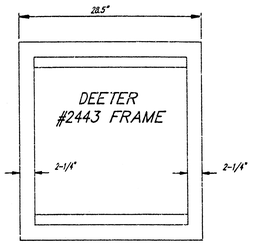
2. MANHOLE CASTINGS SHALL BE MANUFACTURED SUCH THAT A COVER MANUFACTURED BY ANY ONE FOUNDRY WILL FIT INTERCHANGEABLY INTO A FRAME MANUFACTURED BY ANOTHER FOUNDRY AND STILL MEET ALLOWABLE CLEARANCES AND NON-ROCKING REQUIREMENTS. THIS WILL REQUIRE MANUFACTURING OF THE MATCHING FACES ON THE COVER AND THE FRAME TO CLOSE TOLERANCES.

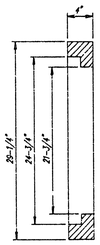
3. THE OUTSIDE CIRCUMFERENCE OF THE VERTICAL FACE OF THE COVER AND THE INSIDE CIRCUMFERENCE OF THE VERTICAL FACE IN THE FRAME RECESS SHALL BE MANUFACTURED TO TOLERANCES SUCH THAT THE CLEARANCE BETWEEN THE COVER AND FRAME WILL NOT EXCEED 1/8" AT ANY POINT AROUND THE CIRCUMFERENCE OF THE COVER. THE SEATING SURFACES BETWEEN THE COVER AND FRAME SHALL BE MACHINED SUCH THAT THESE SURFACES SHALL MAKE FULL CONTACT FOR THEIR FULL CIRCUMFERENCE TO PRECLUDE THE COVER FROM ROCKING IN THE FRAME.

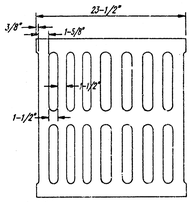
4. THE MANHOLE FRAME AND COVER SHALL BE MARKED WITH LETTERING INDICATING THE NAME OF THE MANUFACTURER AND THE YEAR WHEN THE COVER OR FRAME WAS CAST. THE COVER SHALL BE FURTHER IDENTIFIED WITH REGARDS TO OWNERSHIP USING LETTERS AT LEAST 1" IN HEIGHT. THIS IDENTIFICATION SHALL BE "CITY OF WICHITA SEWER DEPARTMENT". THE WORD DEPARTMENT MAY BE ABBREVIATED. THE TEXTURE OF THE TOP SURFACE OF THE COVER SHALL BE MANUFACTURED IN A CHECKERED PATTERN DESIGN AS INDICATED ON THE DRAWINGS. SMOOTH BLOCKOUTS SHALL BE UTILIZED TO HIGHLIGHT THE LETTERING ON THE COVER SURFACE. THE TOTAL AREA OF SMOOTH SURFACE BLOCKOUT SHALL NOT EXCEED THE AREA AS INDICATED ON THE DRAWING. POSITIONING OF SMOOTH BLOCKOUTS AND LETTERING MAY VARY FROM THAT SHOWN ON THE DETAILED DRAWING.

REVISED MAY 1993

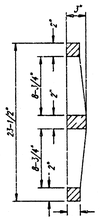
JNL DEC. 1981





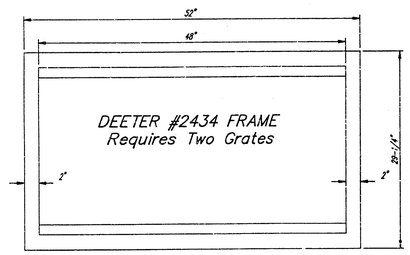


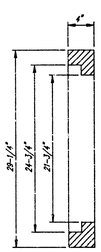
DEETER #2433 GRATE



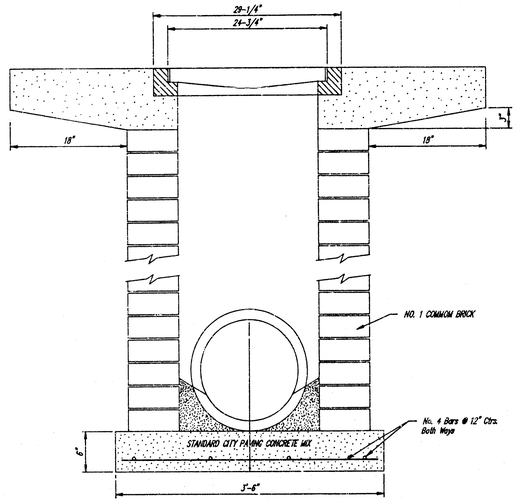
NOTE: Grates shall be imprinted on the top surface with "CITY OF WICHITA" using letters at least 1" in height. Other marking methods may be approved by the engineer.

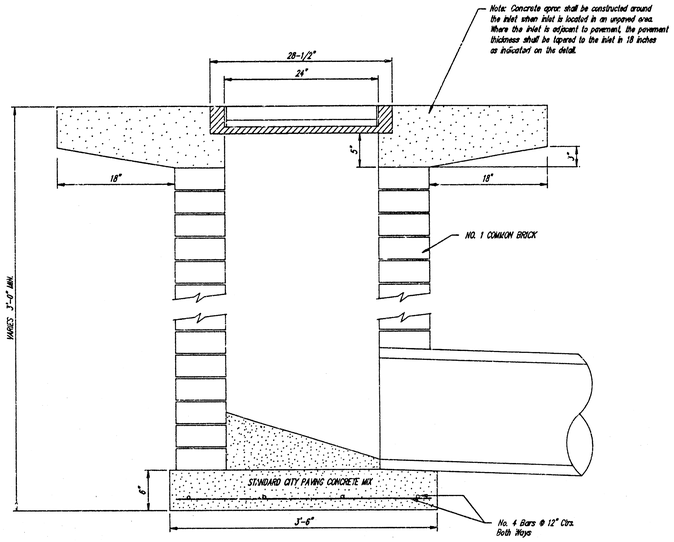
24" x 24" Frame and Grate Detail

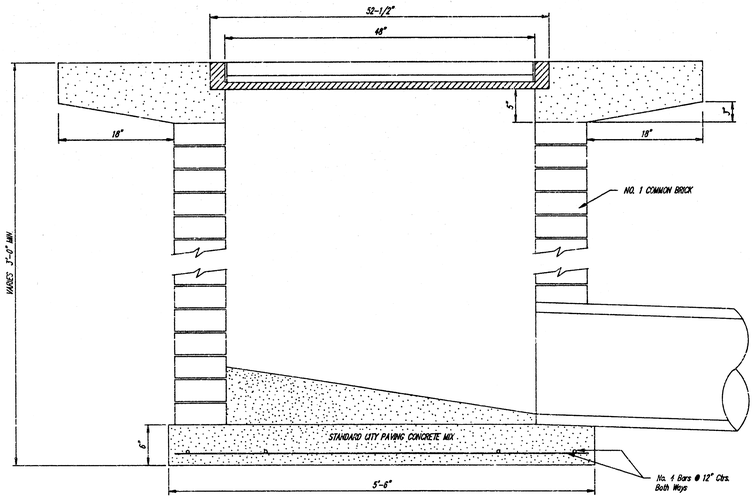




Double 24" x 24" Frame Detail







WICHITA WEST THEATRE

DROP INLET DETAIL

LOT 4, BLOCK 8, STERLING FARMS ADDITION

CITY OF WICHITA PRIV. PROJ. NO. 531 PPS(607861)

CERTIFIED ENGINEERING DESIGN

CED
1930 E. FIRST, # 119
WICHITA, KANSAS 67214
(316) 262-8808

DESIGNED: HDF	SCALE: NTS	SHEET 6
DRAWN: HDF	DATE: 1-95	
CHECKED: HDF	CED FILE: DROPINLT.DWG	TOTAL 6