CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK, P.E., CITY ENGINEER

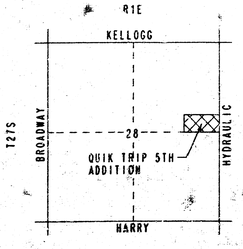
SANITARY SEWER IMPROVEMENTS
STORM WATER SEWER IMPROVEMENTS

TO SERVE

QUIK TRIP 5TH ADDITION
CITY OF WICHITA PRIVATE PROJECT NO. 411PPS(607861)

INDEX OF SHEETS

1. KEY MAP AND GENERAL NOTES
2. PLAT
3. PLAN
4. PROFILE
5. ~~PAVING AND~~ DRAINAGE DETAILS
6. TRENCH INLET
7. TYPE P MANHOLE DETAILS
8. MANHOLE FRAME AND COVER DETAILS



VICINITY MAP

DRAWING NAME: J2-93223-1 QUIKTRIP TITL
FIELD BOOK(S): NONE
CENTER COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON:
DARWIN CRUNK

GENERAL NOTES

ALL CONSTRUCTION AND MATERIALS TO COMPLY WITH CITY OF WICHITA SPECIFICATIONS AND STANDARDS. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

ALL ELEVATIONS SHOWN ARE CITY OF WICHITA DATUM.

THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKEND TO LESS THAN 50 FEET.

CONTRACTOR SHALL PROVIDE A MINIMUM FORTY-EIGHT (48) HOUR ADVANCE NOTICE (EXCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO BEGINNING ANY EXCAVATION TO KANSAS ONE-CALL SYSTEM, A UTILITY LOCATION SERVICE, AT (316) 687-2410 TO REQUEST THE FOLLOWING UTILITY COMPANIES TO LOCATE ALL EXISTING LINES WITHIN THE PROJECT AREA: K.G.&E. GAS, ARKLA GAS, K.G.&E. ELECTRIC, SOUTHWESTERN BELL TELEPHONE, MULTIMEDIA CABLEVISION, CITY OF WICHITA SEWER MAINTENANCE AND CITY OF WICHITA WATER DEPARTMENT.

UNDERGROUND UTILITY SERVICE LINES AND OVERHEAD UTILITY POLE LINES ARE TO BE ADJUSTED AS NECESSARY BY OTHERS PRIOR TO CONSTRUCTION UNLESS THE PLANS SPECIFICALLY CALL FOR THEIR ADJUSTMENT BY THE CONTRACTOR. EXISTING UTILITIES AND THEIR LOCATION, AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

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.

CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL SANITARY SEWER MANHOLE COVERS.

ALL LAWN/TURF AREAS DISTURBED BY CONSTRUCTION OF THE PROPOSED IMPROVEMENTS SHALL BE RESTORED WITH THE SAME GRASS/SOD AS EXISTING. RESTORATION OF DISTURBED AREAS SHALL INCLUDE, BUT NOT BE LIMITED TO, TOP SOIL PREPARATION, SEEDING, MULCH, AND/OR RESEEDING. ALL SEEDING/SODDING WORK SHALL BE IN ACCORDANCE WITH THE CITY OF WICHITA STANDARD SPECIFICATIONS AND THE CITY OF WICHITA ADMINISTRATIVE REGULATION NO. AR78 WHICH GOVERNS CLEANUP AND RESTORATION OR REPLACEMENT FOLLOWING CONSTRUCTION.

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

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

THE CONTRACTOR SHALL PREVENT ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SANITARY SEWER DURING CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS FLOW OF SEWAGE THROUGH CONSTRUCTION. CONTRACTOR'S PROPOSED METHOD FOR MAINTAINING FLOW OF SEWAGE THROUGH CONSTRUCTION WILL NOT BE PAID FOR DIRECTLY.

CONNECTION TO EXISTING INLETS. WHEN IT IS NECESSARY TO CONNECT A NEW SEWER TO AN EXISTING INLET WHICH DOES NOT HAVE A STUB TO FACILITATE THIS CONNECTION, THE CONTRACTOR SHALL BREAK INTO THE INLET CAREFULLY SUCH THAT THE STRUCTURAL INTEGRITY OF THE INLET WILL NOT BE IMPAIRED. ALL REPAIR WORK NECESSARY TO CLOSE THE OPENING MADE TO FACILITATE THE INSTALLATION OF THE NEW PIPE SHALL CONFORM TO THE REQUIREMENTS FOR NEW CONSTRUCTION AS SPECIFIED IN THESE SPECIFICATIONS FOR THE TYPE OF INLET INVOLVED. THE FLOOR OF THE INLET SHALL BE MODIFIED SUCH THAT SMOOTH CHANNELS WILL BE FORMED FROM ALL INLET PIPES TO THE OUTLET PIPE SUCH THAT THE INLET WILL BE SELF-CLEANING AND FREE OF AREAS WHERE SOLIDS COULD BE DEPOSITED AS STORM WATER FLOWS THROUGH THE STRUCTURE IN ACCORDANCE WITH SUCH REQUIREMENTS SPECIFIED FOR NEW INLET CONSTRUCTION. NO PAYMENT WILL BE MADE FOR CONNECTING NEW SEWER PIPES TO EXISTING INLETS AND ALL COSTS FOR COMPLETING THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS OF WORK EXCEPT WHEN A BID ITEM APPEARS IN THE PROPOSAL FOR THIS WORK.

Sanitary Sewer Booked 2-17-94 JKB From As Builts

SWS Booked 3-24-94 D-MCS D-220

MICHAEL W. BERRY LICENSED PROFESSIONAL ENGINEER 9389

9-9-93

SEPTEMBER, 1993
PLANS PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA

SANITARY SEWERS VRH 9/15/93

STORM SEWERS VRH 9/15/93

DRIVEWAY APPROACHES _____

WATER MAINS _____

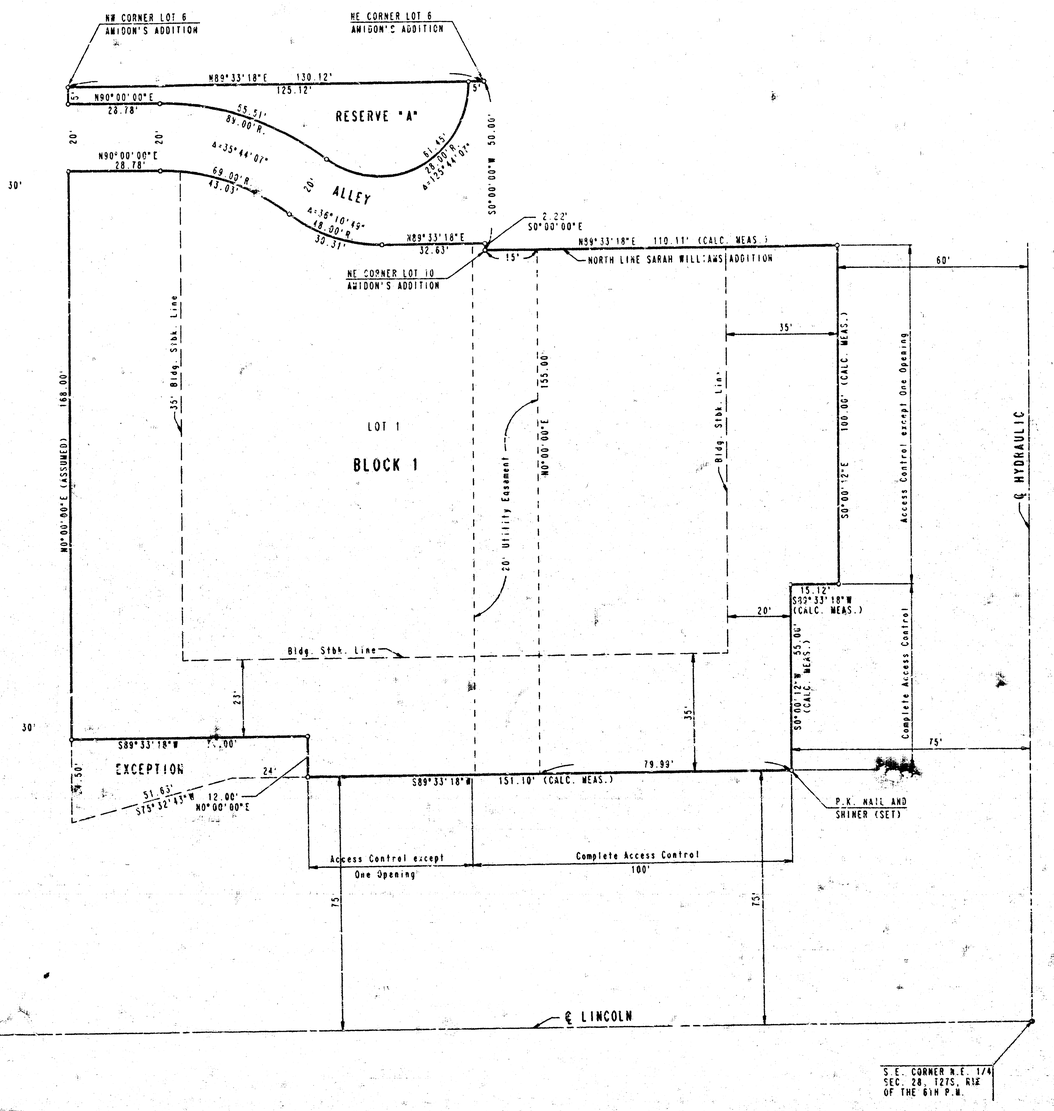
PAVING _____

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 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.

QUIKTRIP 5TH ADDITION

TO WICHITA, SEDGWICK COUNTY, KANSAS



SCALE: 1"=20'

○ = 3/4" IRON SET
● = IRON FOUND(3/4" I.P.)

DATUM BENCH MARK:
TOP EAST CURB ("C" IN GLOBE)
LULU AT NORTH LINE OF BAYLEY.
ELEV.=1105.34 CITY DATUM

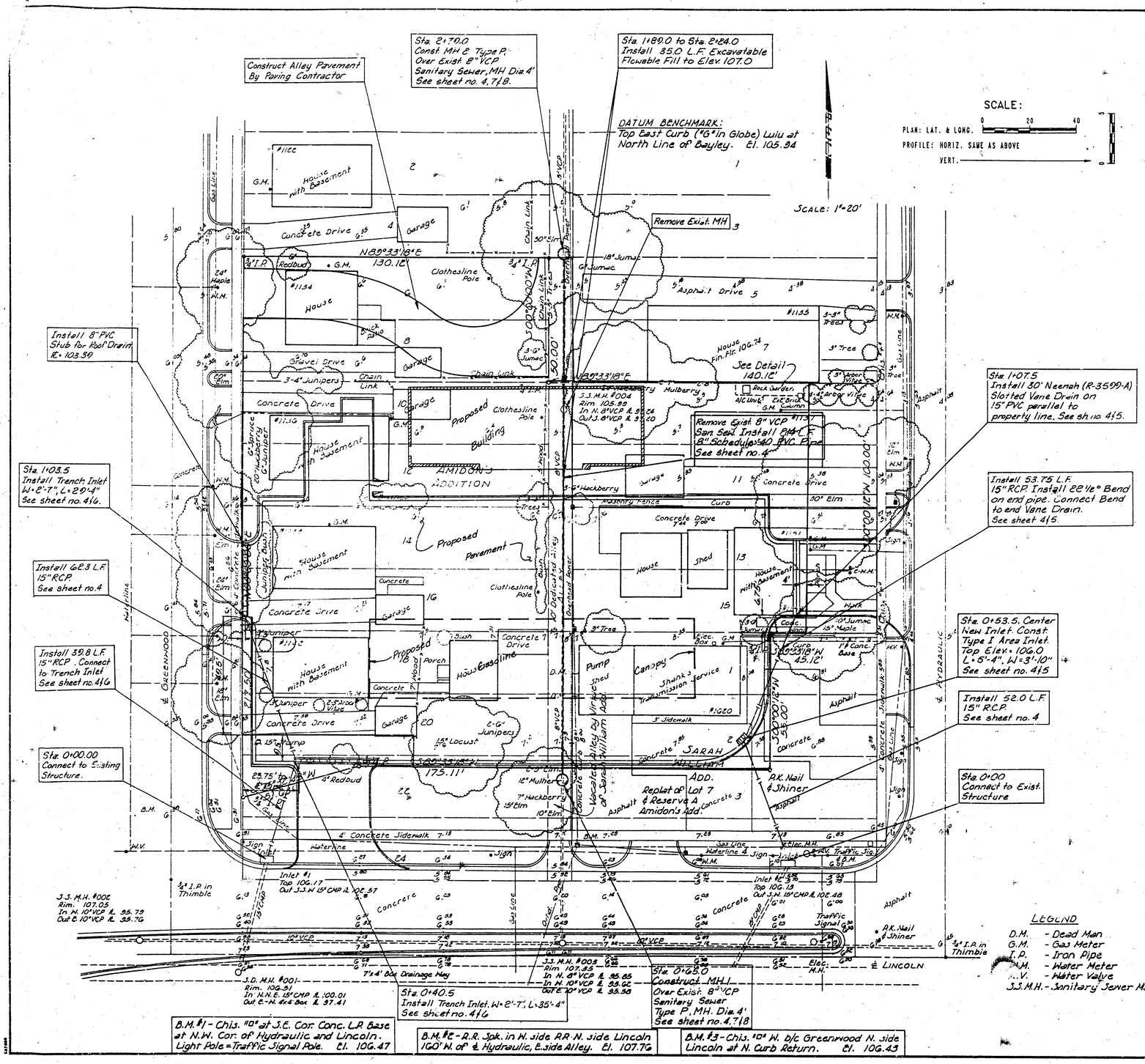
No.	Revision	By	Date

PLAT

Proj. No. 411PP5 (G078G1)

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by	Job No. 93283-1	Sht. 2 of 8
Drawn by	Date August, 1993	



Sanitary Sewer Booked 2-17-94 JKB From As Builts

SWS Booked 3-24-94 MCG D-220

Proj. No. 411PPS(607861)

11-30-93 AS-BUILT

No.	Revision	By	Date

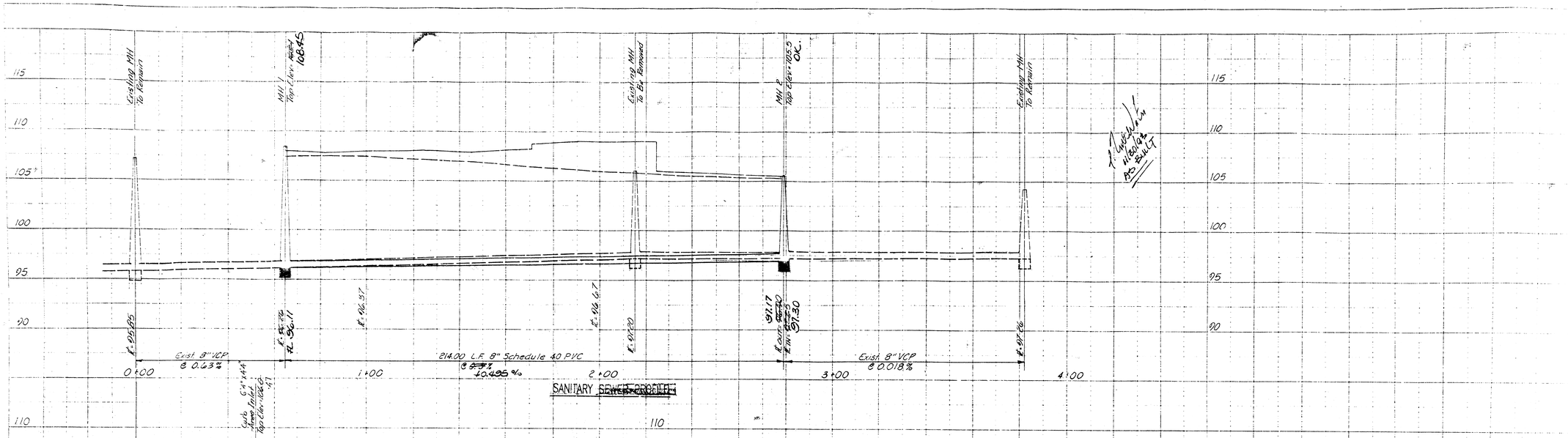
QUIK TRIP

PLAN

LINCOLN AND HYDRAULIC

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by DRC	Job No. 36-93223-1	Sht. 3 of 8
Drawn by STM	Date August, 1993	

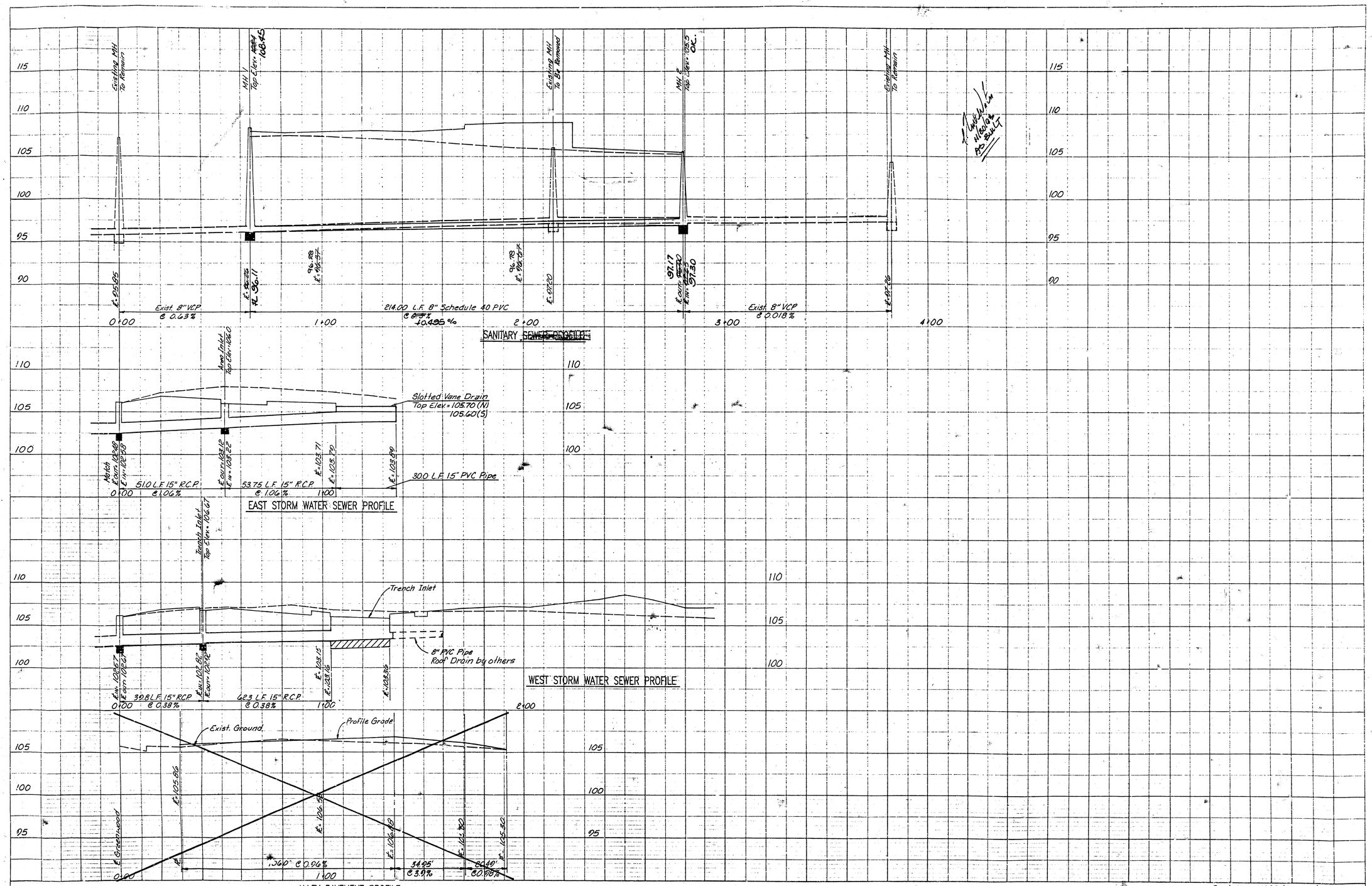


Storm Water As Built 2-3-94

AZ

Proj. No. 411PPS (G078G1)
Sheet 4 of 8

Karen: Rev SWS to Quik Trip 5th



Proj. No. 411PPS (607861)
Sheet 4 of 8

PROJECT NO.	SHEET NO.	TOTAL SHEETS
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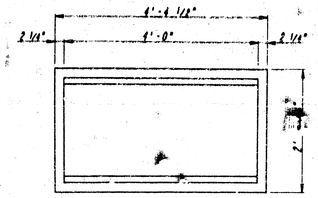
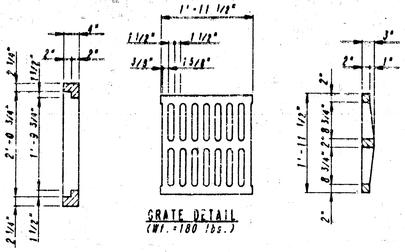


FRAME DETAIL
(Wt. +460 lbs.)



GRATE DETAIL
(Wt. +180 lbs.)

GENERAL NOTES

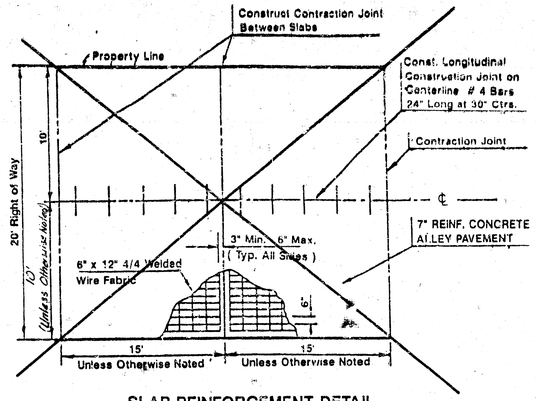
CONCRETE SHALL BE ~~CLASS A (4000)~~, OR THE MIX USED IN CONCRETE PAVEMENT. ALL EXPOSED EDGES SHALL BE FINISHED WITH AN APPROVED EDGING TOOL.

REINFORCING STEEL SHALL BE A MINIMUM GRADE 40, A.S.T.M. A615. ALL DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO THE CENTERLINE OF BARS UNLESS OTHERWISE NOTED.

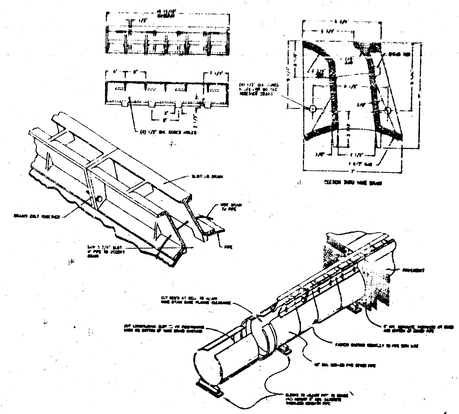
INLET CASTINGS SHALL BE MANUFACTURED USING GOOD QUALITY GRAY IRON CONFORMING TO CLASS 30 OF A.S.T.M. DESIGNATION A-48. DIMENSIONS AND WEIGHTS SHOWN ON THE DETAILED DRAWINGS SHALL BE CONSIDERED AS MINIMUM REQUIREMENTS AND ANY DEVIATIONS FROM THE DIMENSIONS SHOWN MUST BE SPECIFICALLY APPROVED. THE FINISHED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

CONSTRUCTION REQUIREMENTS AND MATERIALS FOR MASONRY WALLS SHALL CONFORM TO CITY STANDARD SPECIFICATION.

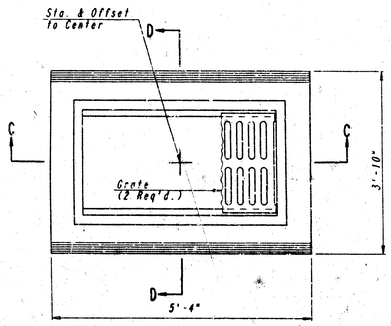
INLET FLOOR SHALL BE SHAPED WITH UNREINFORCED ~~CLASS A~~ CONCRETE TO CREATE FLOW CHANNELS AND TO INCREASE HYDRAULIC EFFICIENCY SUCH THAT THE INLET WILL BE SELF CLEANING BETWEEN ALL INLET AND/OR OUTLET PIPES.



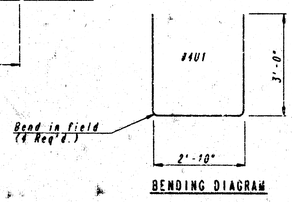
SLAB REINFORCEMENT DETAIL



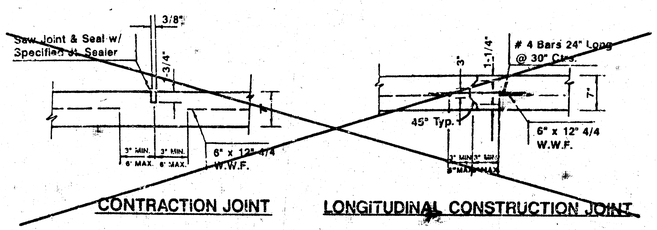
R-3599-A SLOTTED VANE DRAIN



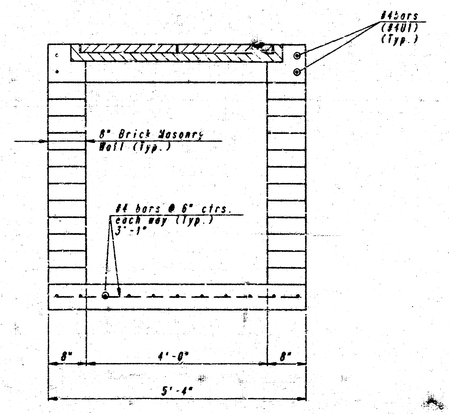
PLAN



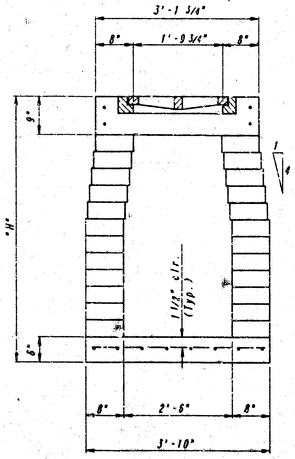
BENDING DIAGRAM



CONTRACTION JOINT LONGITUDINAL CONSTRUCTION JOINT

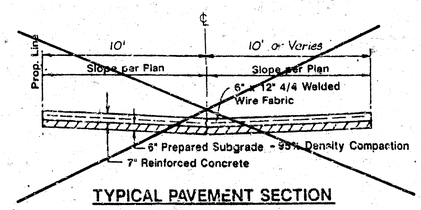


SECTION C-C

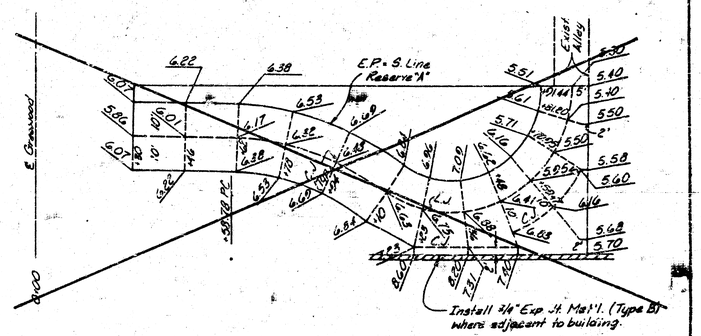


SECTION D-D

AREA INLET (TYPE I)



TYPICAL PAVEMENT SECTION



ALLEY-RESERVE "A"
PAVING PLAN

QUIK TRIP

DRAINAGE DETAILS

LINCOLN AND HYDRAULIC

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

Designed by	DRC	Checked by	MHB
Drawn by	STM	Date	August 2003

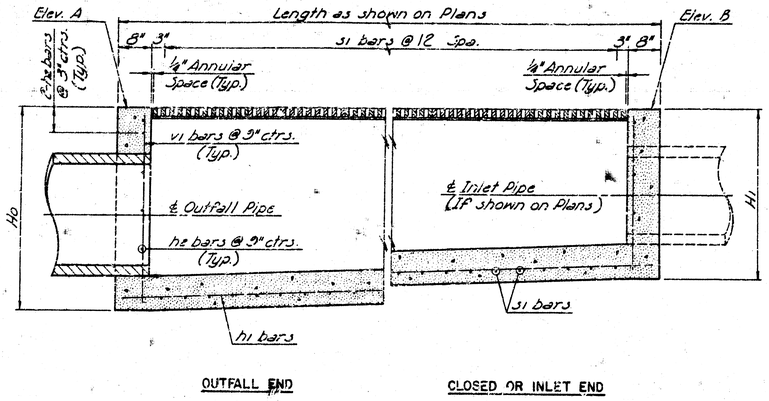
Job No. 03263-1

5 of 8

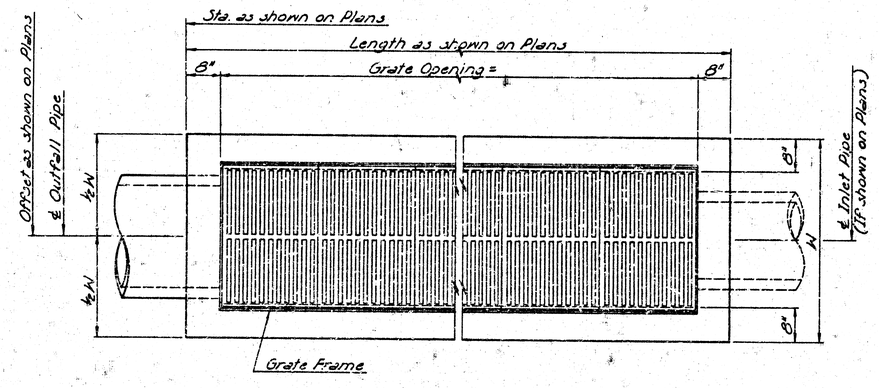
PLAN	SURVEYED
	PLOTTED
NOTE BOOK NO.	ALIGNMENT CHECKED
	MIL. OF MAT. CHECKED

DRAWING NAME:
LOCATE COORDINATES:
ROTATION ANGLE:
DATE LAST WORKED ON:
STOREY MORRISON

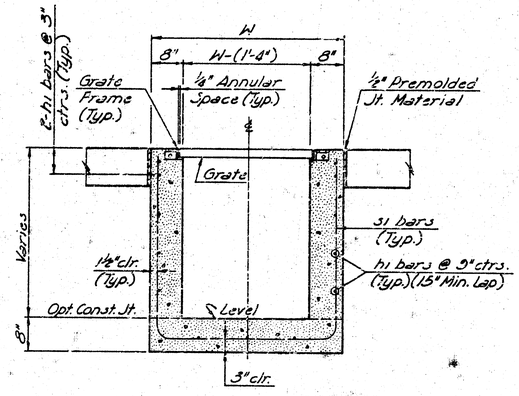
PROJECT NO.	SHEET NO.	TOTAL SHEETS
411 PP5 (607) 621	6	8



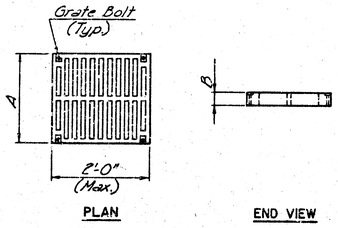
SECTION AT ℄ TRENCH INLET



PLAN



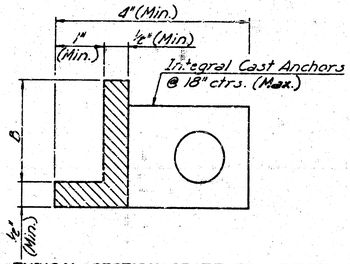
TYPICAL TRENCH SECTION



PLAN END VIEW

GRATE DETAIL

(Grates shall be bolted to frame when specified on Plans according to Manufacturer's Specifications)



TYPICAL SECTION GRATE FRAME

GENERAL NOTES

1. THE TRENCH GRATE AND FRAME SHALL BE AS SHOWN ABOVE OR APPROVED EQUAL. THE GRATE SHALL BE THE HEAVY DUTY TYPE WITH A DESIGN LOADING OF H20-44 AND SHALL BE BICYCLE SAFE.

   THE GRATE AND FRAME MATERIAL SHALL BE GRAY CAST IRON CONFORMING TO THE REQUIREMENTS OF THE "STANDARD SPECIFICATIONS FOR GRAY-IRON CASTINGS", ASTM A 48, GRADE 30.

2. USE ~~"CLASS A CONCRETE THROUGHOUT. AT THE CONTRACTOR'S OPTION CLASS A CONCRETE (RE) OR~~ MIX USED IN ~~THE~~ CONCRETE PAVEMENT ~~MAY BE USED~~ THROUGHOUT.

3. BEVEL ALL EXPOSED EDGES OF THE CONCRETE WITH A 3/4" TRIANGULAR MOLDING.

4. ALL REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF "STANDARD SPECIFICATIONS FOR DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT". ASTM A616, GRADE 40 OR GRADE 60.

GRATE DIMENSIONS, TYPES & REINFORCING

Inlet Dimens.		Outfall	Approved Grates								Reinforcing			
			Weenah Foundry Co.#			Clay & Bailey Mfg. Co.			Deeter Foundry Co#					
W (In.)	Ho (Min.) (In.)	Pipe Dia. (In.)	Catalog No.	Grate Dim. A (In.)	Grate Dim. B (In.)	Catalog No.	Grate Dim. A (In.)	Grate Dim. B (In.)	Catalog No.	Grate Dim. A (In.)	Grate Dim. B (In.)	31* Size & Spa.	h1 Size & Spa.	h2** Size & Spa.	v1** Size & Spa.
28	36	12	R-4990-DX	14	2	2143-D	14	2	3990-D	14	2	#4@12"	#4@9"	#4@9"	#4@9"
31	39½	15	R-4990-EX	17	2	2143-E	17	2	3990-E	17½	2	#4@12"	#4@9"	#4@9"	#4@9"
34	43	18	R-4990-FX	20	2	2143-F	20	2	3990-F	20½	2	#5@12"	#4@9"	#4@9"	#4@9"
37	46½	21	R-4990-GX	23	2	2143-G	23	2	3990-G	23	2	#4@12"	#4@9"	#4@9"	#4@9"
40	50	24	R-4990-HX	26	2	2143-H	26	2	3990-H	26	2	#4@12"	#4@9"	#4@9"	#4@9"
43	53½	27	R-4990-JX	30	2½	2143-J	30	2½	———	——	——	#4@9"	#4@9"	#4@9"	#4@9"
46	57	30	R-4990-KX	33	2½	———	——	——	3990-K	32½	2½	#5@12"	#4@9"	#4@9"	#4@9"
52	64	36	R-4990-MX	39	2½	———	——	——	3990-M	39	2½	#5@9"	#4@9"	#4@9"	#4@9"
58	71	42	R-4990-NX	45	3	———	——	——	———	——	——	#5@6"	#4@9"	#4@9"	#4@9"
64	78	48	R-4990-OX	51	3	———	——	——	———	——	——	#5@6"	#4@9"	#4@9"	#4@9"

* Field Cut bars at shallow end for vertical clearance.
** Field Cut or Bend for clearance.

\+ Type A Grate

Station	DIMENSIONS W (In.)	Ho (In.)	Hi (In.)	ELEVATIONS A	B	PIPE SIZE Outfall Pipe Size (In.)	Inlet Pipe Size (In.)	REINFORCING 31* Size & Spa.	No.	Length	h1 Size & Spa.	No.	Length	h2** Size & Spa.	No.	Length	v1** Size & Spa.	No.	Length
West Line																			
0+40.5	31	56½	52	106.67	106.67	15"	15"	#4@12"	35	11'	#4@9"	15	35'-1"	#4@9"	12	2'-4"	#4@6"	8	4'-5"
West Line																			
1+05.5	31	44½	37	106.00	105.75	15"	15"	#4@12"	29	9'	#4@9"	13	20'-1"	#4@9"	10	2'-4"	#4@9"	6	3'-5"

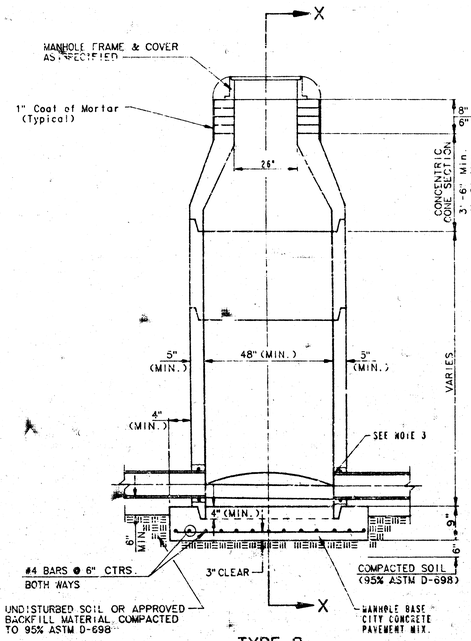
PROFESSIONAL ENGINEERING CONSULTANTS, P.A. ENGINEERS WICHITA, KANSAS			
Designed by K.J.S.	Checked by K.J.S.		
Drawn by M.L.L.	Date August, 1993	Job No. 932237	

TRENCH INLET DETAILS

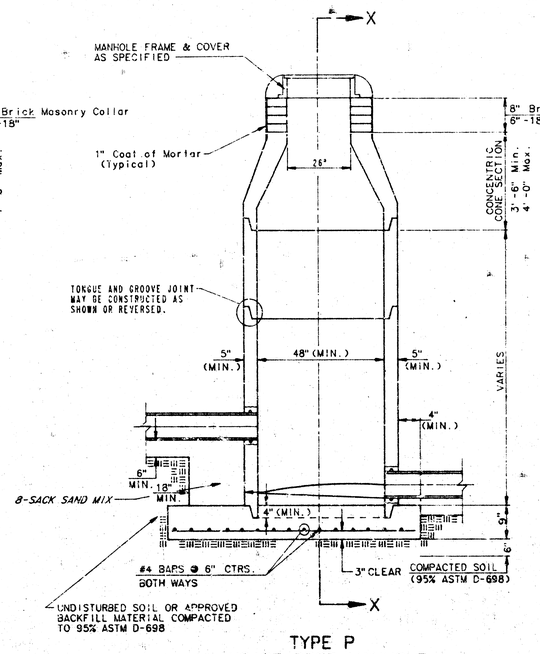
Sheet 6 of 8

SEWER APPURTENANCES DETAILS

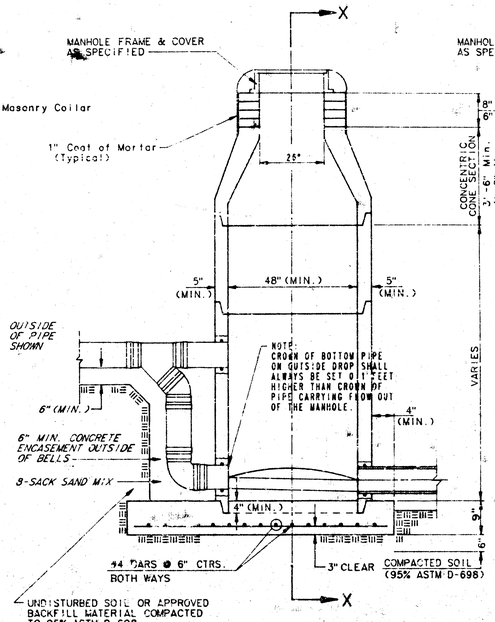
ADOPTED AS STANDARD DESIGN
BY
CITY OF WICHITA



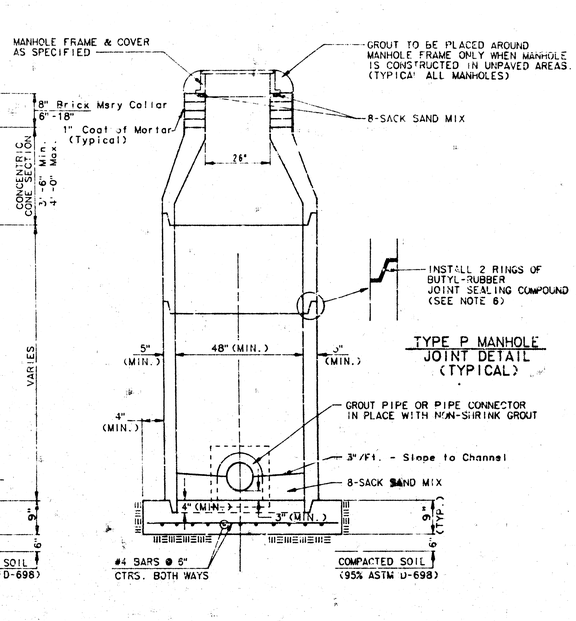
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



TYPE P MANHOLE
JOINT DETAIL
(TYPICAL)

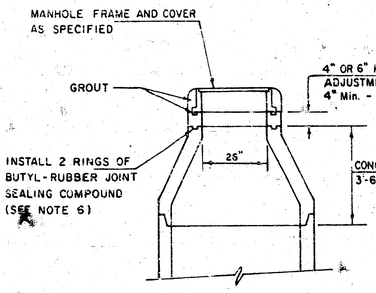
SECTION X
(TYPICAL)

GENERAL NOTES

PRECAST MANHOLE NOTES

1. ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISION 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 BITUMINUS 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 FREE FALL DROP INSIDE MANHOLES SHALL NOT EXCEED 2'.

    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.



ALTERNATE CONSTRUCTION
IN UNPAVED AREAS

NOTE NO. 18 IS REVISED JAN. 1951

Revised 3-21-89

Proj. No. 411PPS(607861) Revised 8-10-88

Sheet 7 of 8 Revised: June 12, 1996

MANHOLE FRAME AND COVER DETAIL

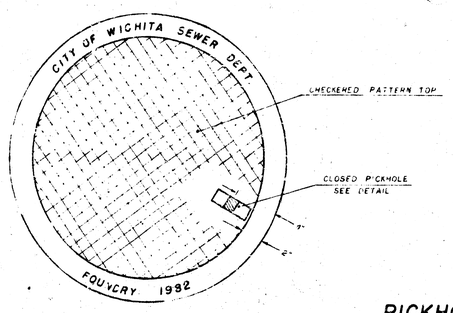
ADOPTED AS STANDARD DESIGN

BY

City of Wichita, Kansas

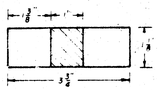
MANHOLE COVER

Weight: 180 Lbs.

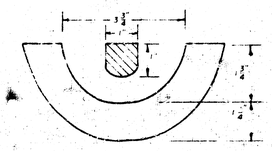


TOP VIEW

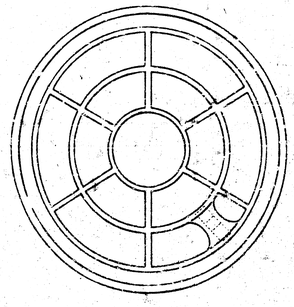
PICKHOLE DETAIL



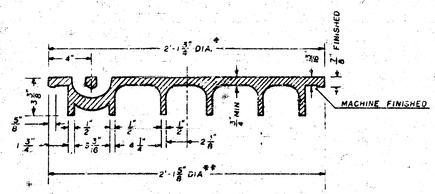
TOP VIEW



SECTION VIEW



BOTTOM VIEW



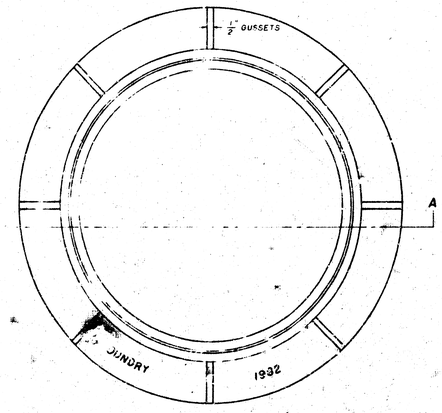
SECTION VIEW

* OUTSIDE DIA TOP OF COVER

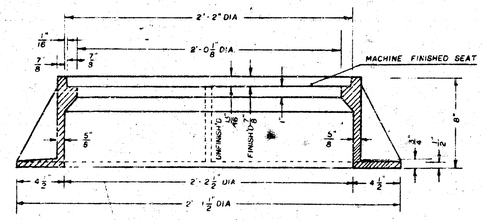
*A OUTSIDE DIA BOTTOM OF COVER

MANHOLE FRAME

Weight: 240 Lbs.



TOP VIEW



SECTION A-A

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 COATED WITH AN ASPHALT PAINT RESULTING IN A SMOOTH, TOUGH AND TENACIOUS COATING WHICH IS NOT BRITTLE OR TACKY.

3. 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.

4. 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.

5. 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.

UNL DEC 1981

Proj. No. 411PPS (607861)

Sheet 8 of 8

[redacted]-10-1-5