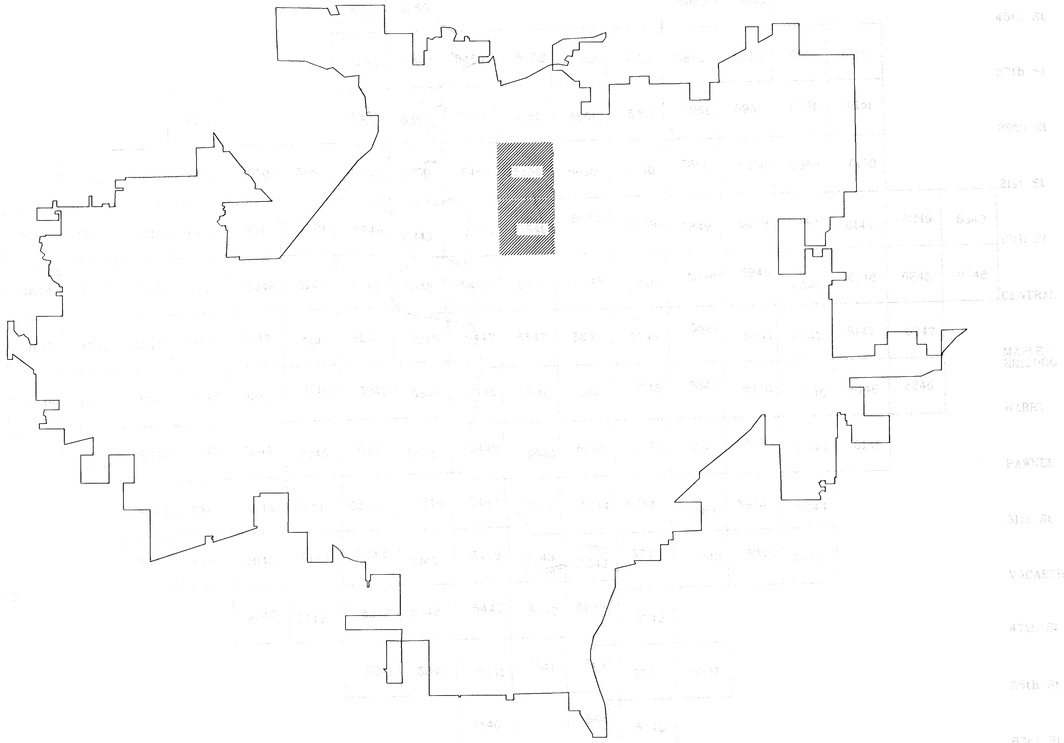
PLANS FOR

CITY OF WICHITA, KANSAS
STOCKYARD SEWER PROJECT
CITY PROJECT NUMBER 468-83414
OCA CODE 624023



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PREPARED AND SUBMITTED BY:
GEORGE BUTLER ASSOCIATES, INC.
1550 N. BROADWAY
WICHITA, KANSAS 67214

AS BUILT
11/06/02
R.D.L.

W. A. COPENHAFER, JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER
5/14/02

GBA GEORGE BUTLER ASSOCIATES, INC.
Engineers • Architects

Rev. 1-7

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE BASED ON CITY OF WICHITA DATUM (MEAN SEA LEVEL ELEV. - 1187.4 - CITY DATUM).

2. 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	687-2470

THE CONTRACTORS MUST NOTIFY THE FOLLOWING IN CASE OF EMERGENCY:

CABLEVISION	262-0661
KG&E - GAS	383-8600
KG&E - ELECTRIC	383-8600
PEOPLES NATURAL GAS	1-800-303-0752
SOUTHWESTERN BELL TELEPHONE	1-800-344-7483
WICHITA TERMINAL ASSOCIATION	262-0441

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

3. COST OF EXCAVATION, HAULING, AND DUMPING OF EXCESS EXCAVATION SHALL BE SUBSIDIARY TO OTHER ITEMS OF WORK.

4. THE CONTRACTOR SHALL NOTIFY THE INSPECTOR FOR THIS PROJECT 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL NOT START WORK ON THE PROJECT UNTIL THE PROJECT INSPECTOR ASSIGNED TO THE PROJECT IS PRESENT ON SITE. ANY WORK DONE WITHOUT INSPECTION WILL BE REQUIRED TO BE UNCOVERED FOR INSPECTION.

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

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PRESERVING PROPERTY IRONS. THE CONTRACTOR WILL BE REQUIRED TO RE-ESTABLISH ANY PROPERTY IRONS WHICH ARE DAMAGED OR DESTROYED BY HIS CONSTRUCTION OPERATIONS. SUCH IRONS SHALL BE RE-ESTABLISHED BY A LICENSED LAND SURVEYOR IN ACCORDANCE WITH STATE LAWS.

7. THE CONTRACTOR SHALL RESTORE ALL DITCHES, SWALES, ROAD SHOULDERS, ENTRANCES, AND BANK LINES TO THEIR ORIGINAL SLOPES AND GRADES EXCEPT AS SHOWN OTHERWISE.

8. INTERURBAN TRAFFIC GENERATED OUTSIDE THE PROJECT AREA SHALL BE CARRIED THROUGH CONSTRUCTION. LOCAL RESIDENTIAL TRAFFIC GENERATED WITHIN THE PROJECT AREA SHALL BE CARRIED THROUGH CONSTRUCTION AS FURTHER PROMULGATED BY PROJECT SPECIAL PROVISIONS.

9. 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, OR UNLESS THE PLANS SPECIFICALLY IDENTIFY A UTILITY TO BE ADJUSTED BY ITS OWNER DURING CONSTRUCTION. EXISTING UTILITIES AND THEIR LOCATION AS SHOWN ON THE PLANS, REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND EXISTING UTILITIES WITHIN THE RIGHT-OF-WAY WHICH DO NOT CONFLICT WITH PROPOSED CONSTRUCTION.

10. 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.

11. ALL PROPOSED STUBS AND PLUGGED PIPES SHALL BE LOCATED WITH GREEN PLASTIC TAPE.

12. PRIOR TO LAYING THE NEW SEWER LINES THE CONTRACTOR SHALL EXPOSE AND VERIFY THE ELEVATION, GRADE, AND ALIGNMENT OF THE EXISTING SANITARY SEWER AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES FROM THE PLAN.

13. 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.

14. ALL PIPE JOINTS SHALL BE LAID AND PUSHED "FULL HOME" WITH THE BEVELED END OF THE SPIGOT MAKING FULL CONTACT WITH THE CHAMFERED AREA AT THE THROAT OF THE BELL OR SOCKET, WITH NO SEPARATION BETWEEN THEM. IF SEPARATION IS DETERMINED, THE PIPE SHALL BE EXCAVATED AND RE-LAID ACCORDING TO SPECIFICATIONS AT THE CONTRACTORS EXPENSE.

15. AT LEASE 24 HOURS BEFORE CONNECTING NEW SEWER PIPE TO THE EXISTING SEWAGE SYSTEM, THE CONTRACTOR SHALL CONTACT THE CITY OF WICHITA WATER AND SEWER DEPARTMENT (265-1300). THE CONTRACTOR SHALL KEEP ANY CONSTRUCTION DEBRIS FROM ENTERING THE EXISTING SEWER. A MECHANICAL PLUG SHALL BE INSTALLED AND MAINTAINED TO ISOLATE THE EXISTING SEWER FROM THE NEW CONSTRUCTION UNTIL THE NEW CONSTRUCTION IS CLEANED, TELEVISED, AND HAS BEEN ACCEPTED. THE WATER USED FOR CLEANING SHALL NOT BE ADDED TO THE FLOW OF THE EXISTING SEWER. THE CLEANING OR OTHERWISE ACCUMULATED WATER SHALL BE PUMPED OR OTHERWISE REMOVED PRIOR TO TELEVISING.

16. THE CONTRACTOR SHALL CONTAIN HIS OPERATIONS TO PERMIT TRAFFIC THROUGH AND ACROSS CONSTRUCTION AT EXISTING ROADWAYS AT ALL TIMES. THE CONTRACTOR SHALL ERECT WARNING SIGNS, FLASHING LIGHTS, AND BARRICADES IN COMPLIANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES TO ENSURE SAFETY AS DIRECTED IN THE GENERAL CONDITIONS. THE CONTRACTOR SHALL LIMIT THE EXTENT OF TRENCH TO REMAIN OPEN OVERNIGHT AND WEEKENDS TO LESS THAN 50 FEET.

17. SEEDING AND FERTILIZING OF ALL AREAS DISTURBED BY THE CONSTRUCTION OF THE SANITARY SEWER AS SHOWN ON THE PLANS SHALL BE CONSIDERED SUBSIDRARY TO OTHER CONTRACT BID ITEMS.

18. THE CONTRACTOR SHALL PROVIDE DRAINAGE AWAY FROM ALL MANHOLE COVERS.

19. ALL EXISTING SANITARY SEWER LINES NOT BEING RECONNECTED TO THE NEW SANITARY SEWER LINE TO BE BUILT WILL BE LEFT IN PLACE, PROTECTED, AND USED AS STORMWATER SERVICE.

20. SANITARY SEWER LINE BETWEEN MANHOLES 5549-324 AND 5549-323 WILL BE REMOVED BY THE CITY OF WICHITA STORMWATER UTILITY DIVISION TO ALLOW CONVERSION OF THE EXISTING SANITARY SEWER TO STORMWATER PURPOSES.

W. A. COPENHAFER JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER 5/14/02

Rev. 1-7

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

STOCKYARD REPLACEMENT SEWERLINE
GENERAL NOTES

C.O.W. PROJECT NO. 468-83414

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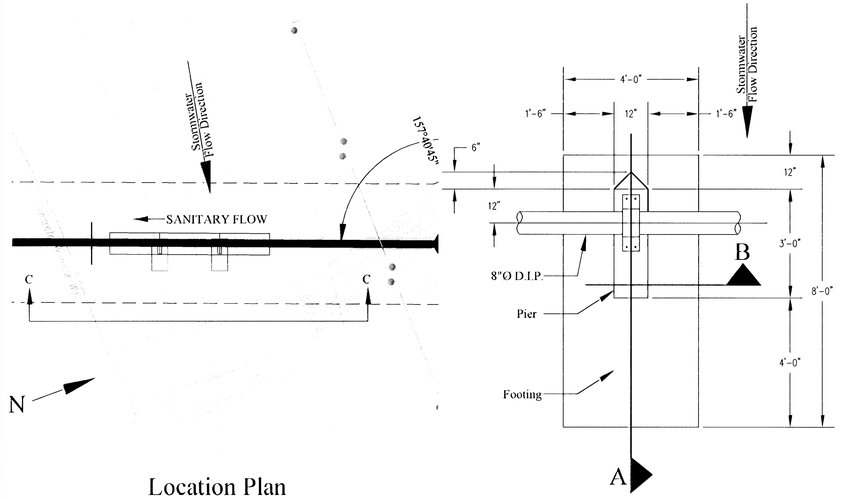
Telephone (316) 269-2904
Fax (316) 269-2916

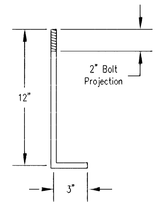
Designed By: J.E. Gough	Job No.: 9304 - Stockyards
Drawn By: A.D. Rice	Date: 03 MAY 2002

SHEET 2 OF 11



Location Plan

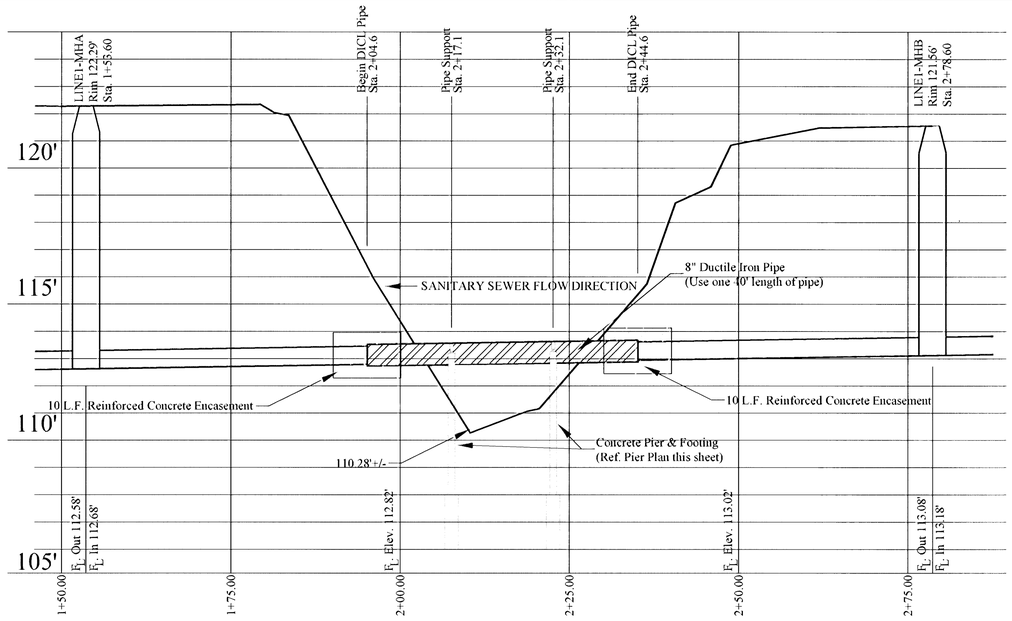
Pier & Footing Plan



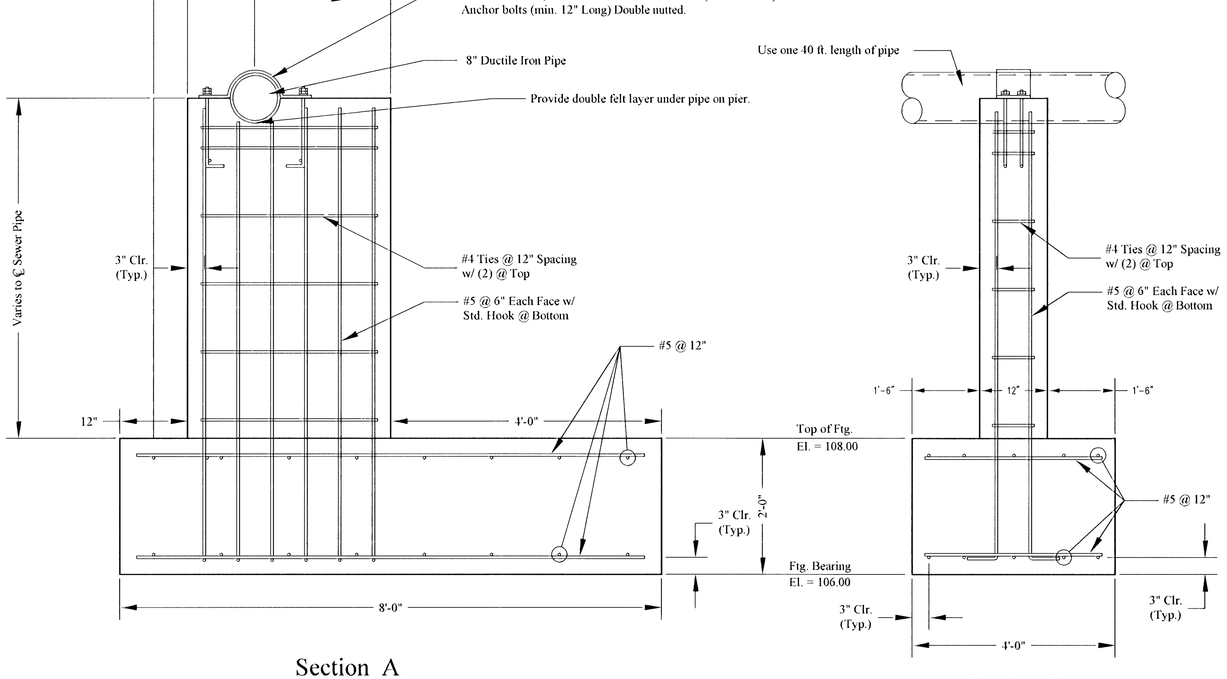
Hot Dip galvanize after fabrication.

Anchor Bolt Detail

Top View Anchor Strap



Creek Crossing Elevation - Section C



Section A

Section B

REINFORCED CONCRETE NOTES

Design Specifications: ACI 318R-99

1. *Foundations have been designed for an assumed soil bearing value of 2500 psf. The Contractor shall employ a competent Geotechnical Engineer to verify assumed soil bearing value.*
2. *All foundations shall be square and level.*
3. *Concrete mix designs shall meet the following requirements: (Taken from ACI Manual of Concrete – 1990, 211.1)*

Minimum Compressive Strength (PSI)	Maximum Aggregate Size	Cement Lbs.	Sack Mix (Per CY)	Maximum Water/Cement Ratio	Maximum Slump	Air Entrainment Percent (%)
4000	1"	600	6 1/2	.48	4"	6 ± 1

4. *Reinforcing bars #4 and larger (except ties and stirrups) shall meet ASTM A615 with Supplementary Requirements (SI), Grade 60, smaller bars shall be Grade 40.*
5. *All bars are to be supported in forms and spaced with wire bar supports per ACI "Manual of Standard Practice for Detailing Concrete Structures" (latest edition). Bars shall be securely wired per latest edition of CRSI Recommended Practice for Placing Reinforcing Bars. Accessories for exposed concrete shall be plastic or have plastic-tipped feet.*
6. *Concrete placed during cold weather shall conform to the requirements of ACI 306R-88. Cold weather is defined as a period when for more than 3 successive days the mean daily temperature drops below 40°F.*
7. *Concrete placed during hot weather shall conform to the requirements of ACI 305R-89. Hot weather is defined as that combination of air temperature, concrete temperature, relative humidity and wind speed that will cause a rate of evaporation of 0.2 lb./sq.ft./hr. or more as defined by Figure 2.1.5 of ACI 305R-89.*

W. A. COPENHAFER, JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER 5/14/02

Not to Scale

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

STOCKYARD REPLACEMENT SEWERLINE
DETAIL SHEET

Rev. 1-7

C.O.W. PROJECT NO. 468-83414

SHEET 3 OF 11

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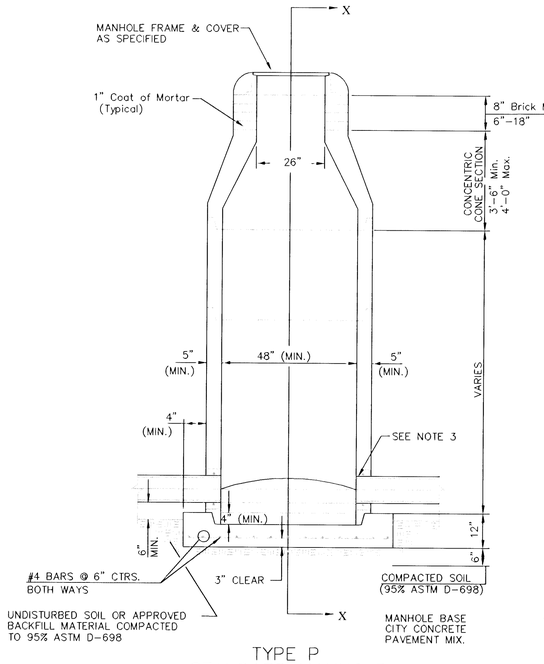
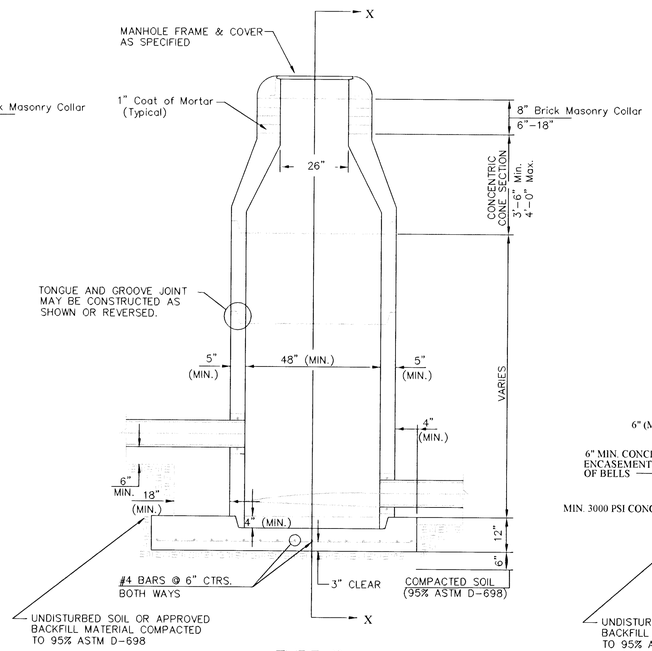
Designed By:	J.E. Gough	Job No.:	9304 - Stockyards
Drawn By:	A.D. Rice	Date:	03 MAY 2002

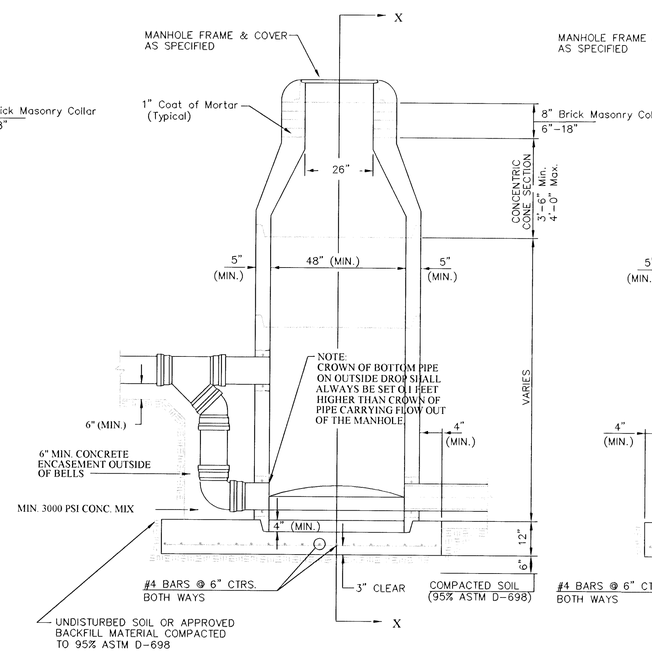
SEWER APPURTENANCES DETAILS



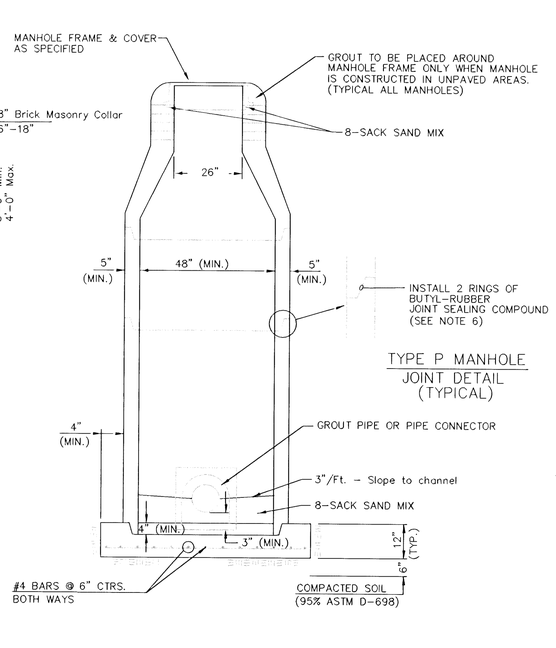
TYPE P
STANDARD MANHOLE



TYPE P
INSIDE DROP MANHOLE



TYPE P
OUTSIDE DROP MANHOLE



TYPE P MANHOLE
JOINT DETAIL
(TYPICAL)

SECTION X
(TYPICAL)

GENERAL NOTES

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. 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.
11. 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.
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. 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 MAHOLE. 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.
14. 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.
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. 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.
18. 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.

W. A. COPENHAFER JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER 5/14/02

THE CITY OF WICHITA

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(316) 268-4501
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STANDARD
TYPE 'P'
MANHOLES

CITY OF WICHITA, KANSAS
MICHAEL E. LINDEBAK, P.E. - CITY ENGINEER
STOCKYARD REPLACEMENT SEWERLINE
DETAIL SHEET
C.O.W. PROJECT NO. 468-83414

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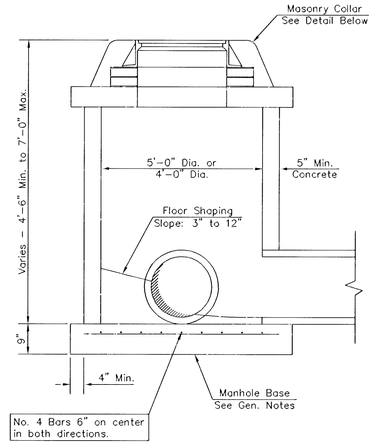
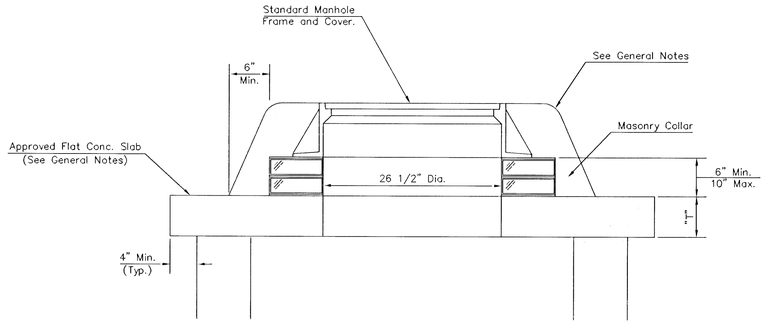
Drawn By: A.D. Rice	Date: 03 MAY 2002

SHEET 4 OF 11

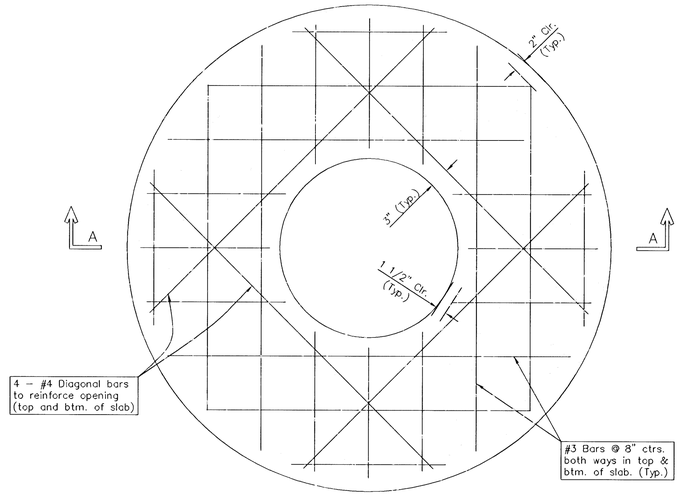
SEWER APPURTENANCES DETAILS



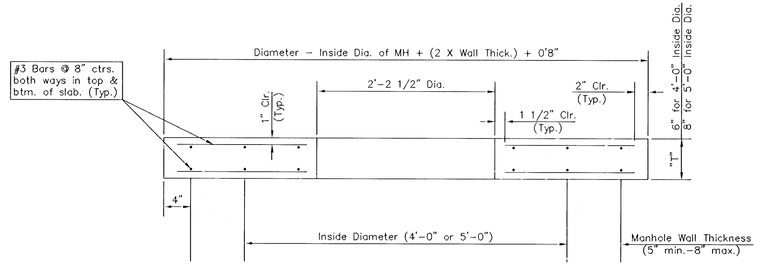
SHALLOW TYPE "P" MANHOLE



MASONRY COLLAR DETAIL



PLAN



SECTION A–A

FLAT CONCRETE SLAB DETAILS

GENERAL NOTES

1. 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 OF WICHITA STANDARD PAVING SPECIFICATION USING THE CITY CONCRETE CEMENT 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.

2. 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 6" ABOVE THE BOTTOM OF THE MANHOLE BASE. ALL COSTS FOR FURNISHING AND INSTALLING REINFORCEMENT STEEL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE MANHOLE.

3. 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. 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.

4. 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.

5. MANHOLE COVER CASTINGS AND MANHOLE FRAME CASTING SHALL CONFORM TO THE REQUIREMENTS AS INDICATED IN THE STANDARD SPECIFICATIONS AND AS SHOWN IN THE STANDARD DETAIL DRAWINGS.

6. THE CROWNS OF INFLOWING PIPES SHALL NEVER BE SET LOWER THAN THE CROWN OF THE OUTFLOWING PIPES.

7. STANDARD SHALLOW MANHOLES TYPE "P" AND "C" SHALL BE PAID FOR AT THE UNIT PRICE BID PER EACH FOR THE TYPE AND DIAMETER INDICATED. ALL STANDARD SHALLOW MANHOLE DIAMETERS WILL BE 4' UNLESS INDICATED OTHERWISE.

8. ALL BRICK USED IN MANHOLE CONSTRUCTION SHALL MEET GRADE SW OF ASTM C652 OR C62–87.

W. A. COPENHAFER LICENSED 5524 KANSAS PROFESSIONAL ENGINEER

5/14/02

THE CITY OF WICHITA

CITY ENGINEER'S OFFICE
CITY HALL – SEVENTH FLOOR
455 NORTH MAIN STREET
WICHITA, KANSAS 67202
(316) 268-4501
(316) 268-4114 FAX

SHALLOW MANHOLES

TYPE 'P'

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

STOCKYARD REPLACEMENT SEWERLINE
DETAIL SHEET

C.O.W. PROJECT NO. 468-83414

GBA
GEORGE BUTLER ASSOCIATES, INC.
Engineers / Architects / Landscape Architects / Planners

1550 N. Broadway
Wichita, Kansas 67214-1100
Telephone (316) 269-2904
Fax (316) 269-2916

Designed By:	J.E. Gough	Job No.:	9304 - Stockyards
Drawn By:	A.D. Rice	Date:	03 MAY 2002

SHEET 6 OF 11

To be abandoned and plugged by the Contractor.

PROTECT AND REUSE AS 30" STORMWATER SEWER

PROTECT AND REUSE AS 30" STORMWATER SEWER

N 10-029.49
E 11-819.28

A strip of land fifteen (15) feet North of a line described as follows: Beginning at a point 1594.35 feet East and 30.00 feet North of the Southwest corner of Section 4, Township 27 South, Range 1 East of the Sixth Principal Meridian, Sedgwick County, Kansas: Thence Easterly a distance of 1579.35 feet to a point 270.16 feet North and 3174.35 feet East of the Southwest corner of said Section 4

To be abandoned and plugged by the Contractor.

N 9-959.53
E 11-754.35

EXISTING SANITARY SEWER PIPE TO BE REMOVED BY CITY OF WICHITA STORMWATER UTILITY DIVISION. CONTRACTOR TO NOTIFY STORMWATER UTILITY DIVISION AT COMPLETION OF SANITARY SEWER PROJECT

SPECIAL CONSTRUCTION NOTE 1: Reconstruct bottom of manhole 5550-138PC to allow the new service line to 700 E. 21st Street North to flow through Manhole 5550-138PC and still allow Stormwater to enter and drain to Manhole 5550-138X. Sanitary sewerline should be adequately protected from the stormwater sewer line to prevent stormwater from entering the sanitary sewer system.

PROTECT AND REUSE AS 4" STORMWATER SEWER

A strip of land fifteen (15) feet each side of a line described as follows: Beginning at a point 1579.35 feet East and 30.00 feet North of the Southwest corner of Section 4, Township 27 South, Range 1 East of the Sixth Principal Meridian, Sedgwick County, Kansas: Thence Northerly a distance of 240.16 feet to a point 270.16 feet North and 1579.35 feet East of the Southwest corner of said Section 4

15' Drng. and Util. Esm't

See Sheet 11 of 11 - Line 4

See Sheet 10 of 11 - Line 2

Building to be removed by Others.

See Sheet 9 of 11 - Line 1

30' Drng. and Util. Esm't

N 10-255.10
E 11-579.35

N 10-029.49
E 11-579.35

N 9-959.53
E 11-579.35

PROTECT AND REUSE AS 10" STORMWATER SEWER

N 9-670.33
E 11-579.35

30' Drng. and Util. Esm't

See Sheet 9 of 11 - Line 3

See Sheet 10 of 11 - Line 3

A strip of land fifteen (15) feet each side of a line described as follows: Beginning at a point 1579.35 feet East and 50.00 feet South of the Northwest corner of Section 9, Township 27 South, Range 1 East of the Sixth Principal Meridian, Sedgwick County, Kansas: Thence Southerly a distance of 279.67 feet to a point 329.67 feet South and 1579.35 feet East of the Northwest corner of said Section 9. Thence Southwesterly to a point 1467.65 feet East and 601.26 feet South of the Northwest Corner of said Section 9.

To be abandoned and plugged by the Contractor.

PROTECT AND REUSE AS 8" STORMWATER SEWER

To be abandoned and plugged by the Contractor.

PROTECT EXISTING 36" SANITARY SEWER LINE

30' Drng. and Util. Esm't

See Sheet 8 of 11 - Line 1

N 9-552.96
E 11-331.88

N 9-802.83
E 11-475.71

N 9-594.51
E 11-473.50

PROTECT EXISTING 36" SANITARY SEWER LINE

N 9-959.53
E 11-266.34

To be abandoned and plugged by the Contractor.

CHISHOLM CREEK

10+000 N
10+000 E

E
N
S
W

KEY MAP

THE POINT FOR LOCATION OF FUTURE MANHOLES IS NOTED AS FOLLOWS. THE NORTHWEST CORNER OF SECTION 9, TOWNSHIP 27 SOUTH, RANGE 1 EAST OF THE SIXTH PRINCIPAL MERIDIAN, SEDGWICK COUNTY, KANSAS, 10+000 NORTHING AND 10+000 EASTING.

W. A. COPENHAFER JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER

5/14/02

PLAN: LAT. & LONG.

40' 0' 40' 80'
SCALE : 1 INCH = 40 FEET

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

STOCKYARD REPLACEMENT
EASEMENT PLAN

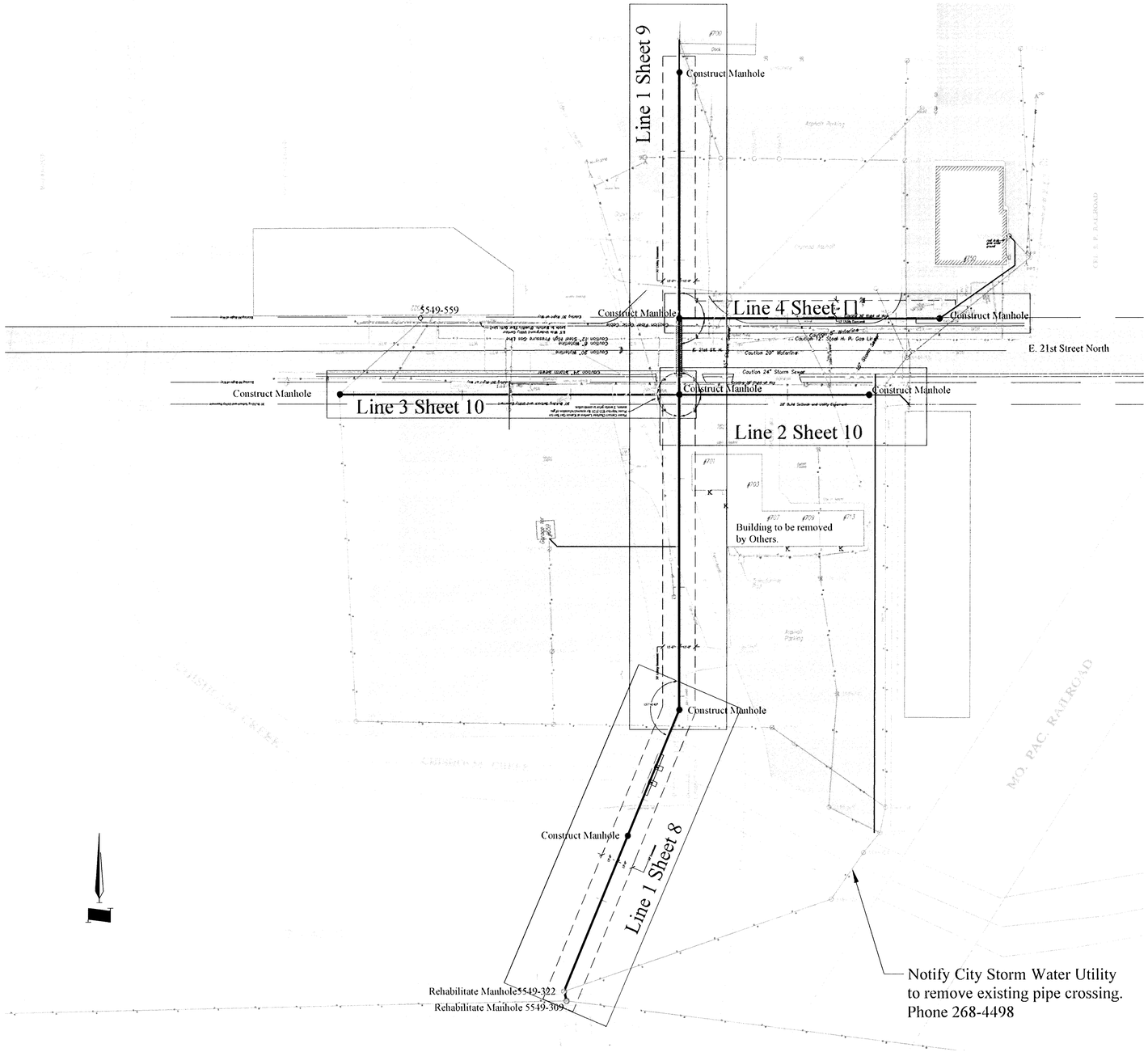
C.O.W. PROJECT NO.: 468-83414

SHEET 6 OF 11

GBA
GEORGE BUTLER ASSOCIATES, INC.
Engineers / Architects / Landscape Architects / Planners

1550 N. Broadway
Wichita, Kansas 67214-1900
Telephone (316) 269-2904
Fax (316) 269-2916

Designed By:	J.E. Gough	Job No.:	9034 - Stockyards
Drawn By:	A.D. Rice	Date:	03 MAY 2002



LEGEND

- ψ = Fire Hydrant
- = Water Valve
- Σ = Water Meter
- = Gas Meter
- Λ = Power Pole
- ☼ = Light Pole
- = Railroad Switch
- = Monitor Well
- [W] = Well
- & = Sign
- ∅ = Sewer Manhole with Solid Lid
- ⊛ = Sewer Manhole with a Grate for a Lid
- K = Sewer Clean-out
- ψ = Telephone Manhole
- ! = Telephone Riser
- Π = Guy Anchor
- = Utility Conduit
- ⊃ = Valve (type unknown)
- = Post
- ● = New Full Size 4' Dia. Manhole
- = Centerline of Railroad
- = Underground Telephone Line
- = Underground Electric Line
- = Overhead Electric Line
- = Sewer Line
- = Natural Gas Line
- = 2.5' Wide Underground Utility Corridor Leads to Manhole. (Possibly Fiber Optic Lines)

NOTE:

Kansas One-Call was contacted for location of utilities (Ticket #314414). Utilities are shown as marked by the utility companies.

George Butler Associates, Inc. assumes no responsibility for the correctness or completeness of utility locations. The utility companies should be contacted before any excavation.

BENCHMARKS:

Chiseled Square Top of Curb, West of Triple-Inlet, in front of #713 W. 21st St. N.

Elevation: 121.54 City Datum

Broadway and 21st St. North Brass rod in concrete post at North end and in traffic island, Northeast corner. 22' East and 41.5' North of thim at inter. of section lines.

Elevation: 124.52 City Datum

Washington and 21st St. North COW Bench Mark. NE cor base for R.R. signal light. North side 21st St. 15' +/- East of ctr main railroad track. 1 Block East of Mosley.

Elevation: 123.52 City Datum

NOTE:

City of Wichita determine the groundwater height to be 13' +/- below grade at the following locations:

Twenty-one (21') feet South of East 21st Street North near the manhole at Lines 1, 2, and 3.

Near the manhole on the North end of Line 1 on Sheet 8.

Near the manhole on the North end of Line 1 on Sheet 9.

All work per standard City of Wichita details and specifications.

W. A. COPENHAFER LICENSED 5524 KANSAS PROFESSIONAL ENGINEER 5/14/02

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

STOCKYARD REPLACEMENT SEWERLINE
GENERAL LOCATION MAP/LEGEND

Rev. 1-7

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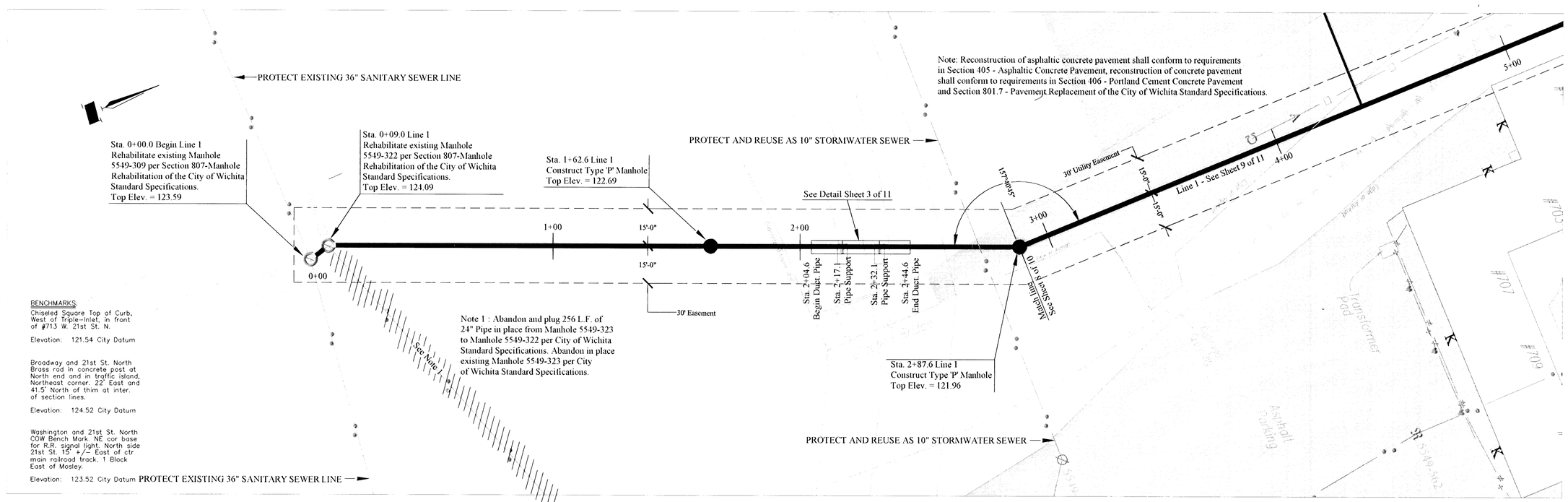
Fax (316) 269-2916

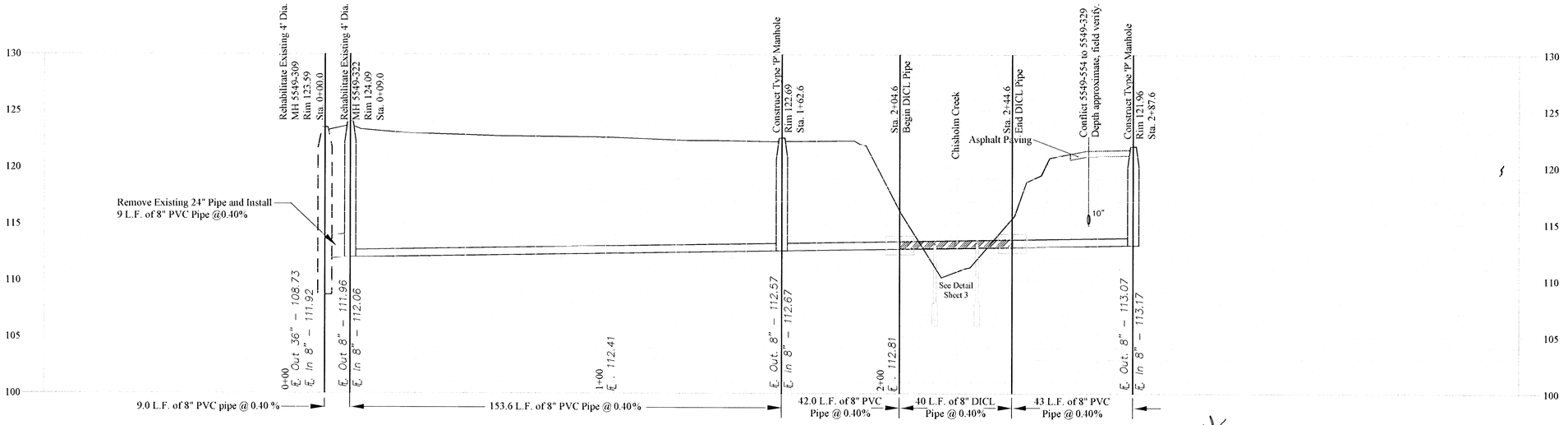
Designed By: J.E. Gough	Job No.: 9304 - Stockyards
Drawn By: A.D. Rice	Date: 03 MAY 2002

C.O.W. PROJECT NO. 468-83414

SHEET 7 OF 11



PLAN - LINE 1



PROFILE - LINE 1

W. A. COPENHAFER, JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER
5/14/02

SCALE
HORIZONTAL : 1" = 20'
VERTICAL : 1" = 5'

Rev. 1-7

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

STOCKYARD REPLACEMENT SEWERLINE
PLAN/PROFILE SHEET

C.O.W. PROJECT NO. 468-83414

SHEET 8 OF 11

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Drawn By: A.D. Rice	Date: 03 MAY 2002

BENCHMARKS:

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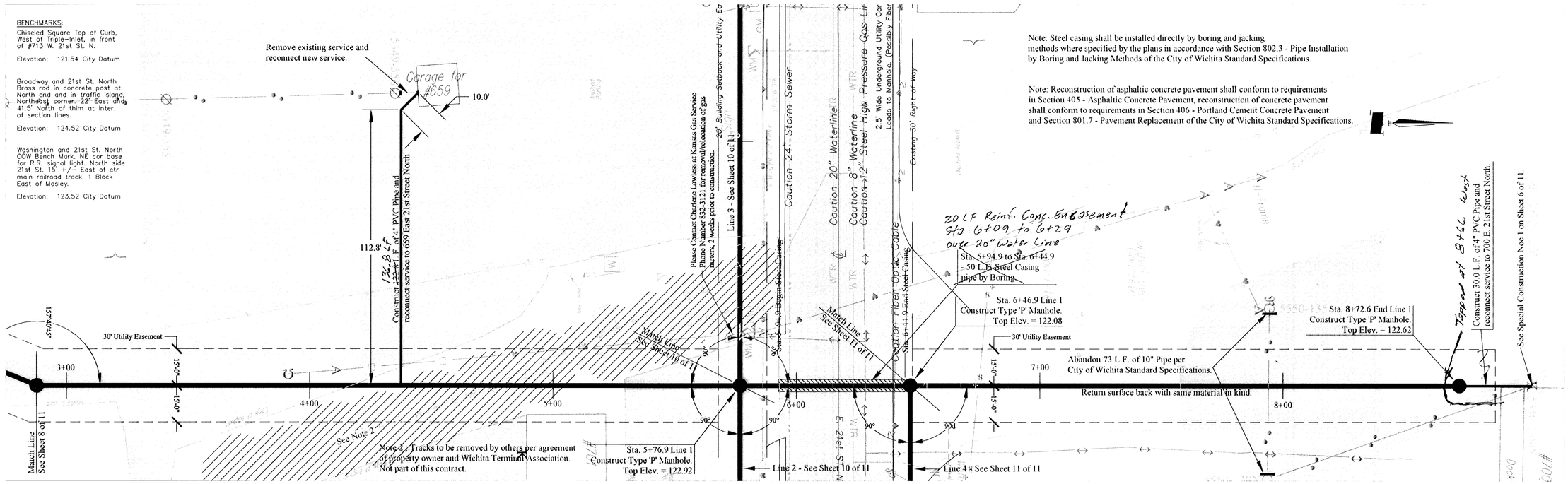
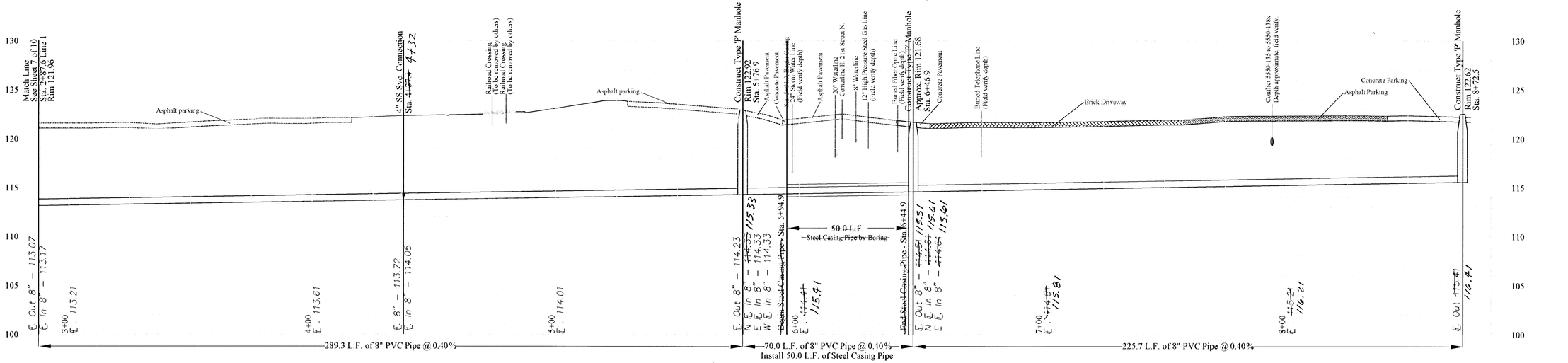
Elevation: 123.52 City Datum



PLAN - LINE 1

Revised 12"



PROFILE - LINE 1

W. A. COPENHAVER LICENSED 5524 KANSAS PROFESSIONAL ENGINEER 5/14/02

SCALE

20' 0' 20' 40'

HORIZONTAL : 1" = 20'

VERTICAL : 1" = 5'

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CITY OF WICHITA, KANSAS
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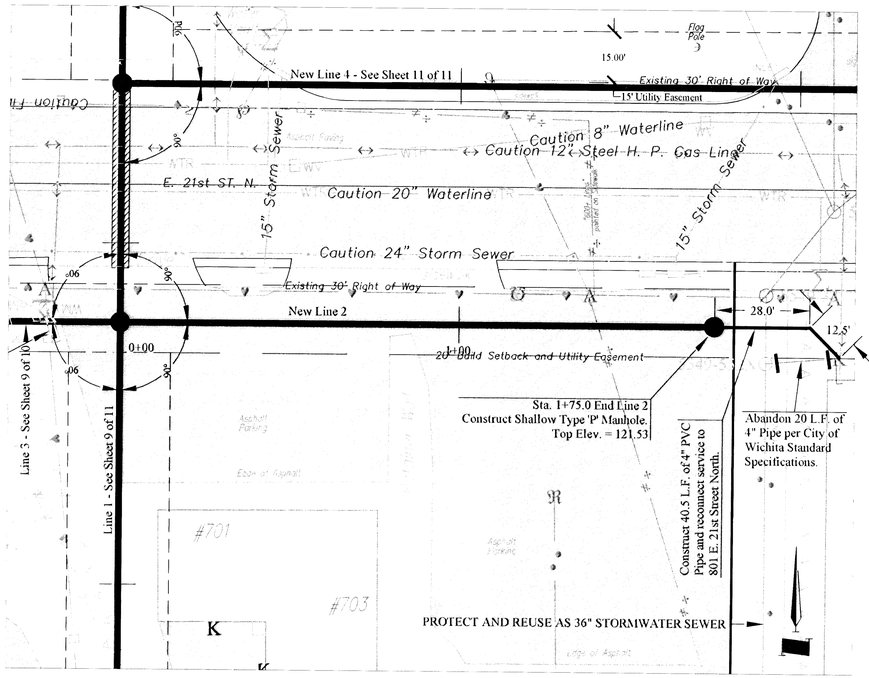
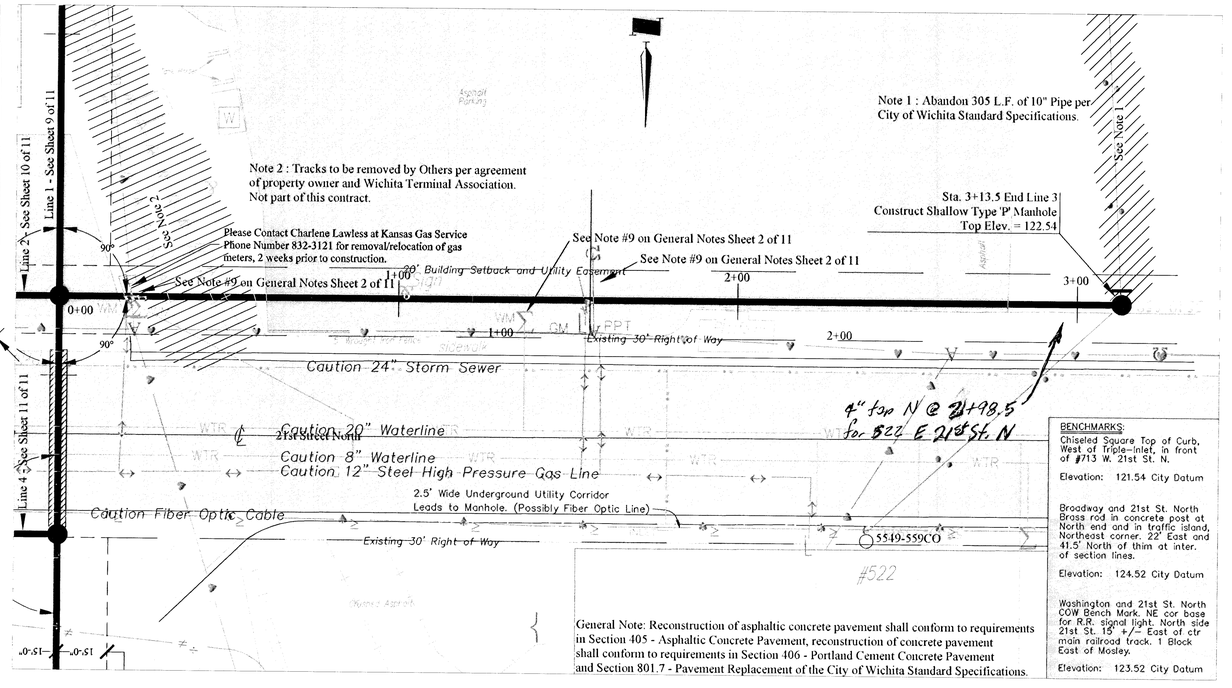
STOCKYARD REPLACEMENT SEWERLINE
PLAN/PROFILE SHEET

C.O.W. PROJECT NO.: 468-83414

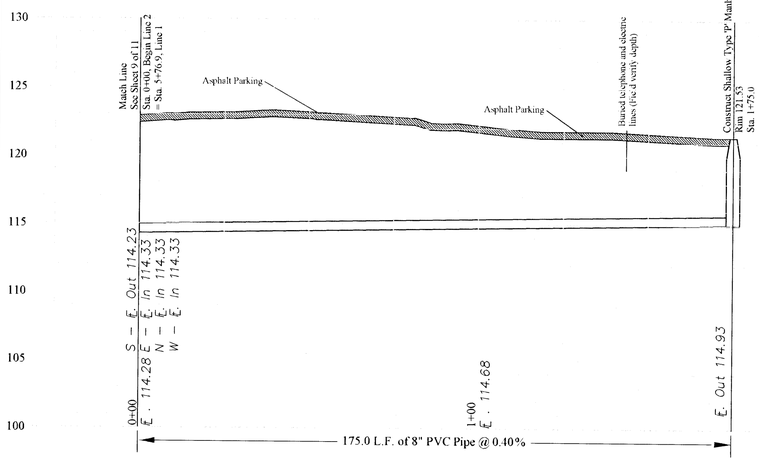
SHEET 9 OF 11



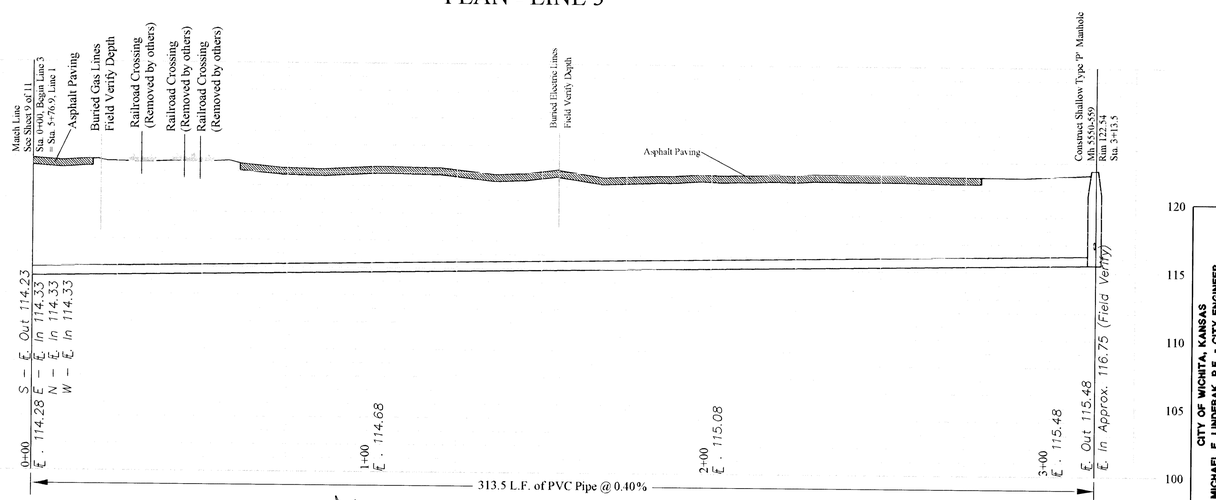
PLAN - LINE 2



PLAN - LINE 3



PROFILE - LINE 2



PROFILE - LINE 3

W. A. COPENHAVER LICENSED 5524 KANSAS PROFESSIONAL ENGINEER
5/14/02

SCALE
20' 0' 20' 40'
HORIZONTAL : 1" = 20'
VERTICAL : 1" = 5'
5' 0'

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Fax (316) 269-2916

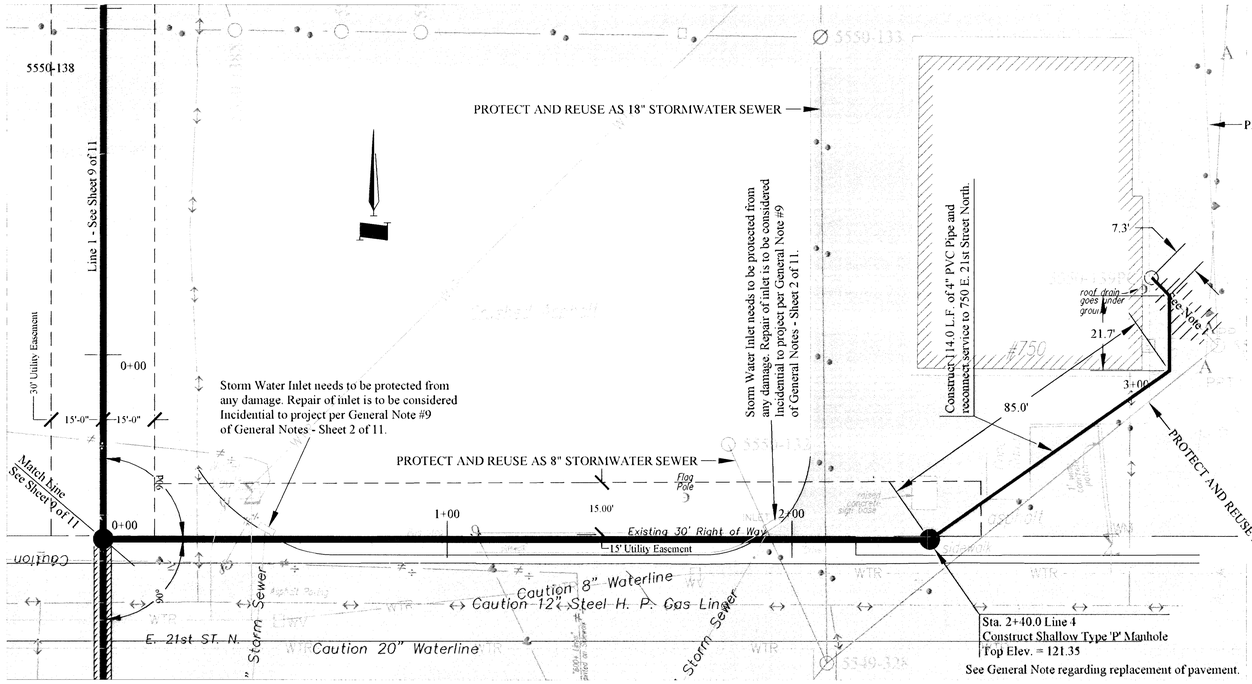
Designed By: J.E. Gough	Job No.: 9304 - Stockyards
Drawn By: A.D. Rice	Date: 03 MAY 2002

Rev. 1-7

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

STOCKYARD REPLACEMENT SEWERLINE
PLAN/PROFILE SHEET

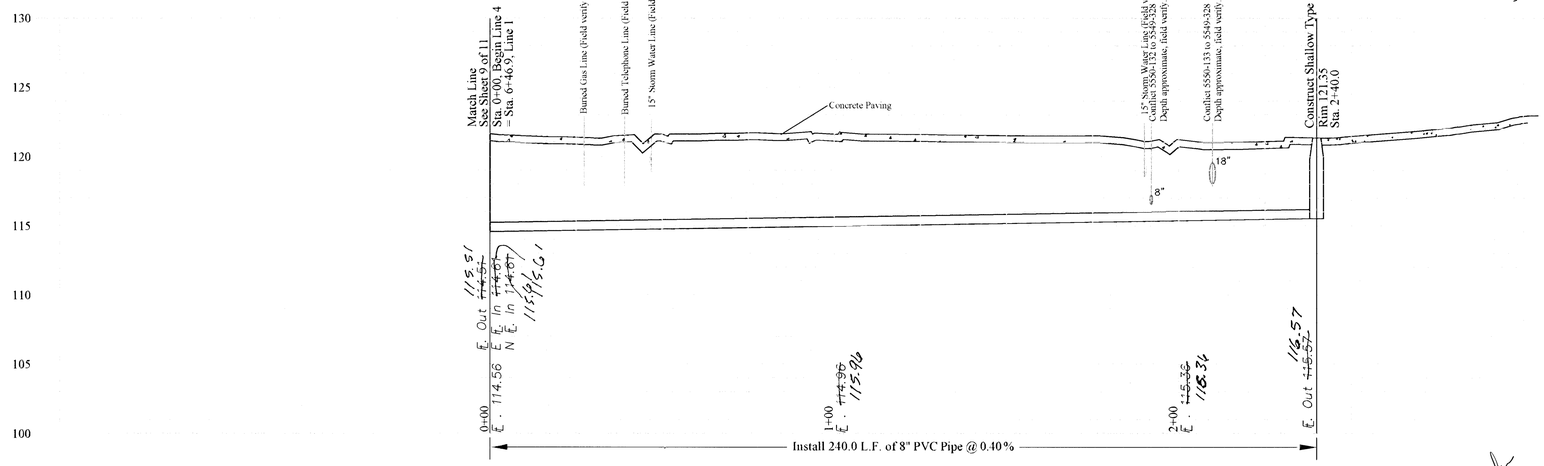
SHEET 10 OF 11 C.O.W. PROJECT NO.: 468-83414



PLAN - LINE 4

Note 1 : Abandon 28 L.F. of 8" Pipe per City of Wichita Standard Specifications.

General Note: Reconstruction of asphaltic concrete pavement shall conform to requirements in Section 405 - Asphaltic Concrete Pavement, reconstruction of concrete pavement shall conform to requirements in Section 406 - Portland Cement Concrete Pavement and Section 801.7 - Pavement Replacement of the City of Wichita Standard Specifications.



PROFILE - LINE 4

BENCHMARKS:

Chiseled Square Top of Curb, West of Triple-Inlet, in front of #713 W. 21st St. N.

Elevation: 121.54 City Datum

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W. A. COPENHAFER JR. LICENSED 5524 KANSAS PROFESSIONAL ENGINEER

5/14/02

SCALE

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VERTICAL : 1" = 5'

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

STOCKYARD REPLACEMENT SEWERLINE
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SHEET 11 OF 11

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