

CONSTRUCTION PLANS
SANITARY SEWER EXTENSIONS

GREAT PLAINS BUSINESS PARK 3RD ADDITION
TO
THE CITY OF WICHITA, KANSAS
PRIVATE SANITARY SEWER EXTENSION
TO SERVE LOT 1, BLOCK 3

JAMES ARMOUR, P.E. -- CITY ENGINEER
PRIVATE PROJECT NO. 1595-PPS
OCA NO. 607861

INDEX

| | |
|-----------------------|---------|
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GENERAL NOTES:

- Existing utility lines 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.

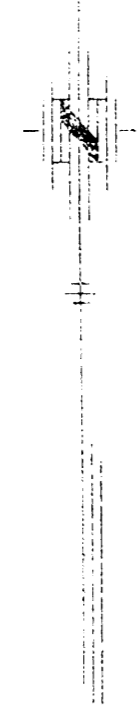
Contractor will be required to provide a minimum advance notice of twenty-four (24) hours to utility companies prior to starting any excavation as follows:

| | |
|-----------------|----------------|
| Kansas One-Call | 1-800-344-7233 |
|-----------------|----------------|

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

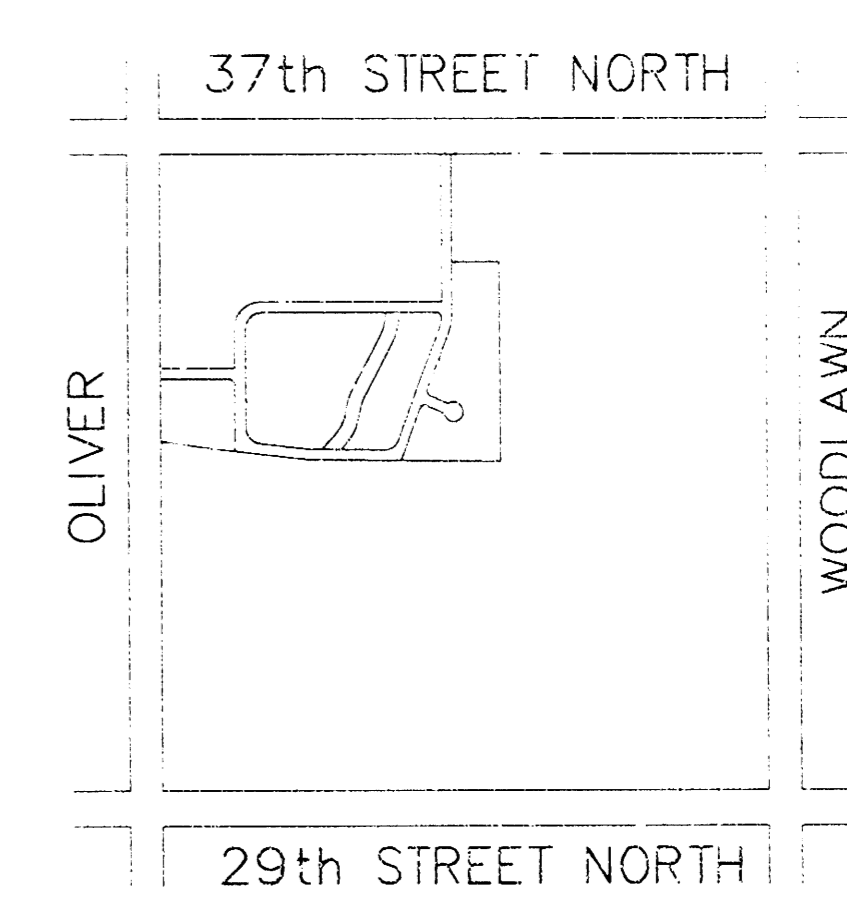
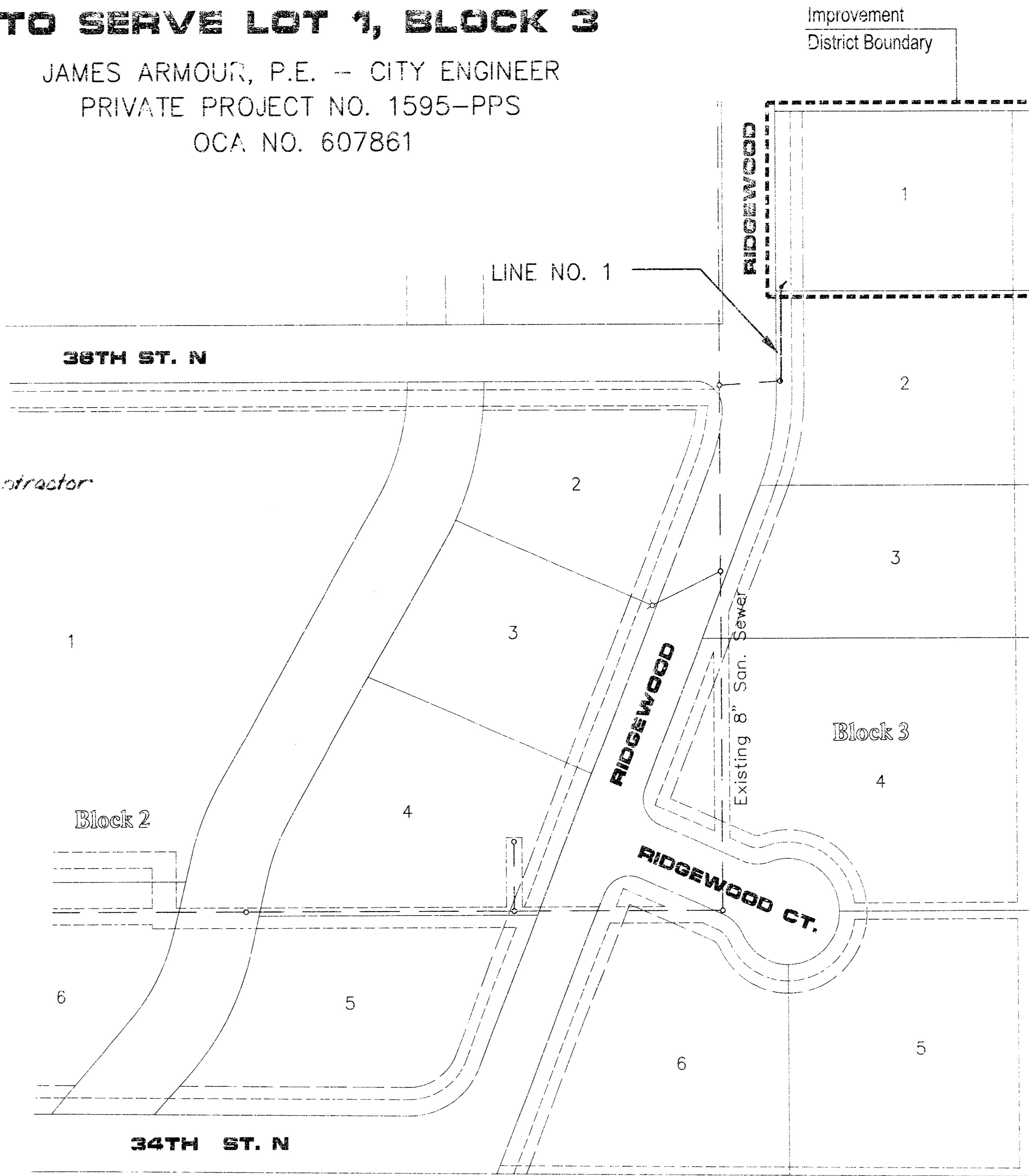
| | |
|-------------------------------------|----------|
| Cox Communications | 262-4270 |
| Kansas Gas | 832-3122 |
| Westar Energy | 264-1141 |
| Aquila Networks | 942-1608 |
| Southwestern Bell Tel. Co. | 268-2601 |
| City of Wichita Water & Sewer Dept. | 268-4555 |
- Rubble from the removal of miscellaneous 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 archaeological investigations unless buried in a previously approved borrow location.
- The Contractor shall be responsible for maintaining continuous flow of sewage through construction. Contractor's proposed method for maintaining sewage flow shall be approved by the Engineer. Cost of maintaining flow of sewage through construction will not be paid for directly and this cost shall be considered as subsidiary to the other pay items of the work.
- 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.
- Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with the proposed new construction shall be saved and protected from damage.
- Contractor shall vacuum test all manholes according to the City of Wichita standard specifications.
- The tops of all Manholes to be set 0.4 feet above existing ground unless otherwise noted.
- Sewer service lines that cross over the top of water mains shall be encased in concrete, 10 feet each side of the crossing. If the sewer crosses below the water line with less than 2 feet of clearance, the sewer line joints must be at least 10 feet away from the water line or the sewer must be encased in concrete as described above. 12" clearance must be maintained between the sewer and water lines.
- All areas disturbed by sewer construction, i.e. R/W, easements, and adjacent properties shall be restored with the same grass/sod as per AR 78.
- Contractor shall provide construction staking.



Scale 1" = 100'

*McCullough Excavation, Inc. Contractor
Sann, KE Miller - Inspector
Released 2/24/06
As-Built
Stub
pdf by JDL 3/2/06*



VICINITY MAP
(NO SCALE)

BENCH MARKS

- City of Wichita Datum
- 100' South of Norwood on SE corner of RCBC Hubguard.
COW Benchmark
Elevation 161.44
 - Southwest corner of Hubguard 100' E. of Oliver on 37th.
COW Benchmark
Elevation 186.84

APPROVED AS NOTED BY CITY ENGINEER OF WICHITA

SANITARY SEWER *W.A. Miller*

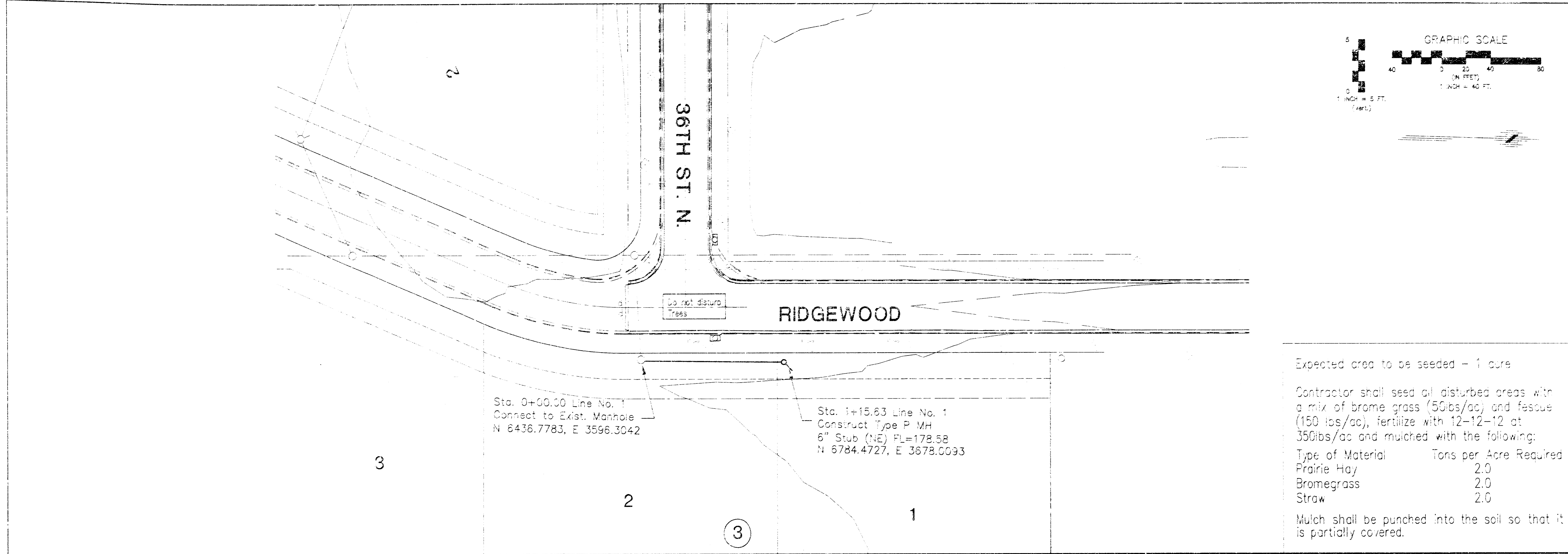
Inspection and testing for this project are to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection is to be in accordance with the City of Wichita standard construction engineering practices and certified by a Licensed Professional Engineer. 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).



SEPTEMBER 2006

PLANS PREPARED BY
POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444



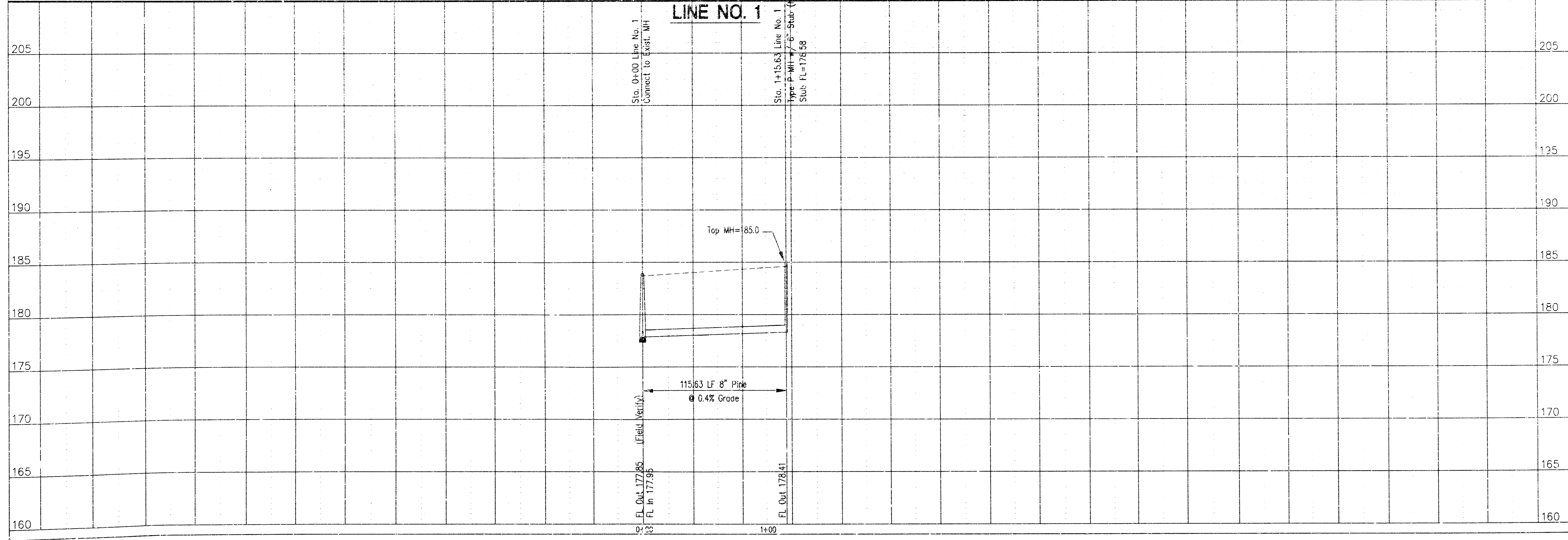


Expected area to be seeded - 1 acre

Contractor shall seed all disturbed areas with a mix of brome grass (50lbs/ac) and fescue (150 lbs/ac), fertilize with 12-12-12 at 350lbs/ac and mulched with the following:

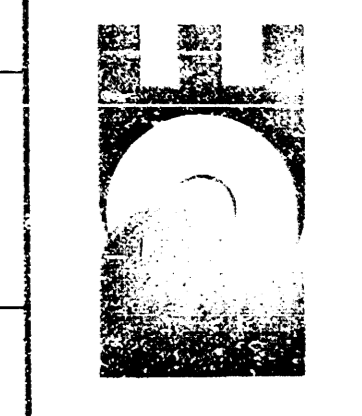
| Type of Material | Tons per Acre Required |
|------------------|------------------------|
| Prairie Hay | 2.0 |
| Bromegrass | 2.0 |
| Straw | 2.0 |

Mulch shall be punched into the soil so that it is partially covered.



GREAT PLAINS BUSINESS PARK 3RD ADDITION
LOT 1, BLOCK 3, SANITARY SEWER EXTENSION
LINE NO. 1
CITY OF WICHITA, KANSAS
PROJECT NO. 1520-001-001-001-001-001

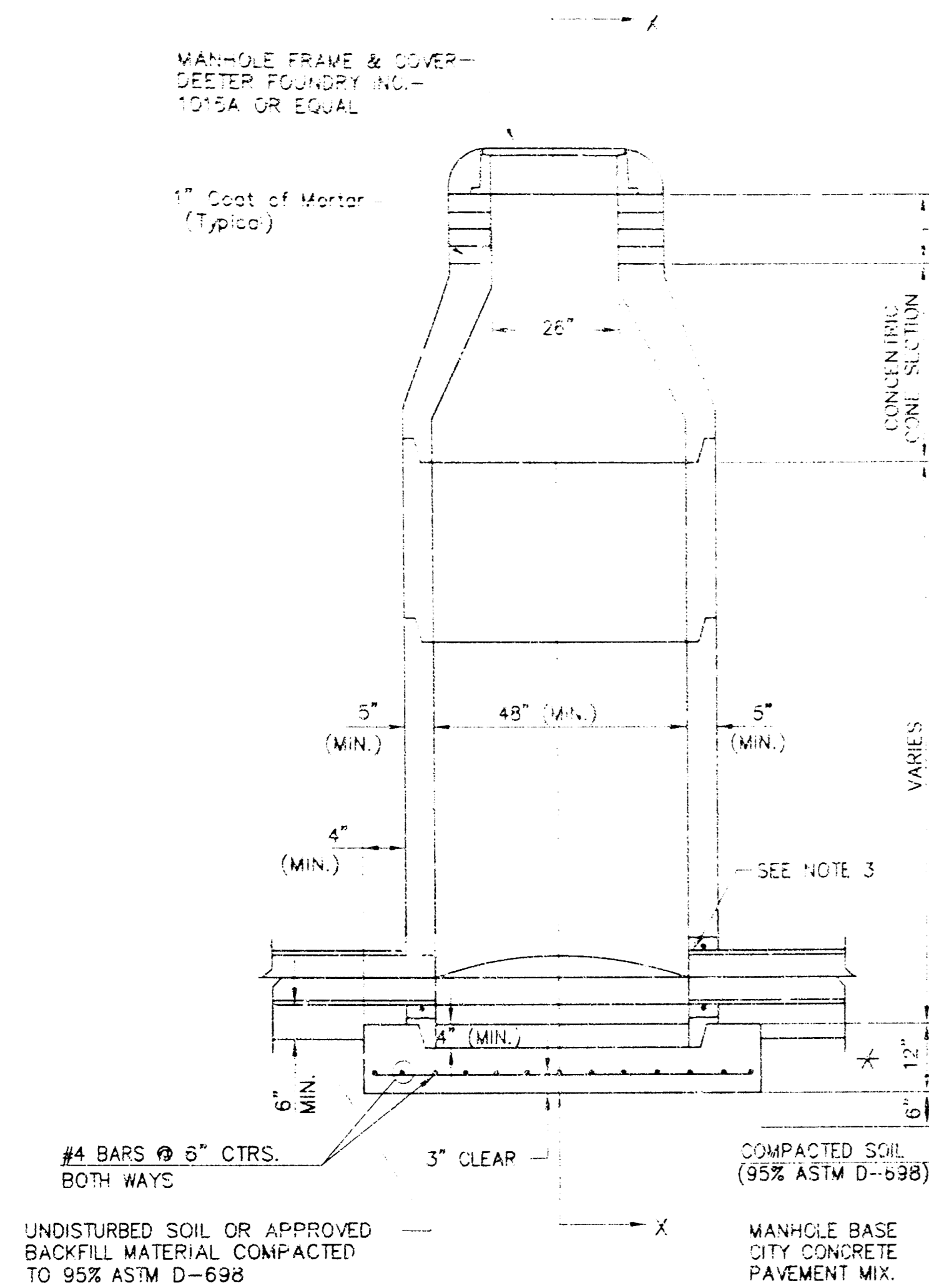
POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
1001 Central Ave., Suite 200, Wichita, KS 67202-4242
Phone: (620) 441-1111 FAX: (620) 441-1144



FINAL

Designed By: J. Ubert
Drawn By: J. Ubert
Proc. Job No.: 1520-001-001-001-001-001
Date: September, 2005

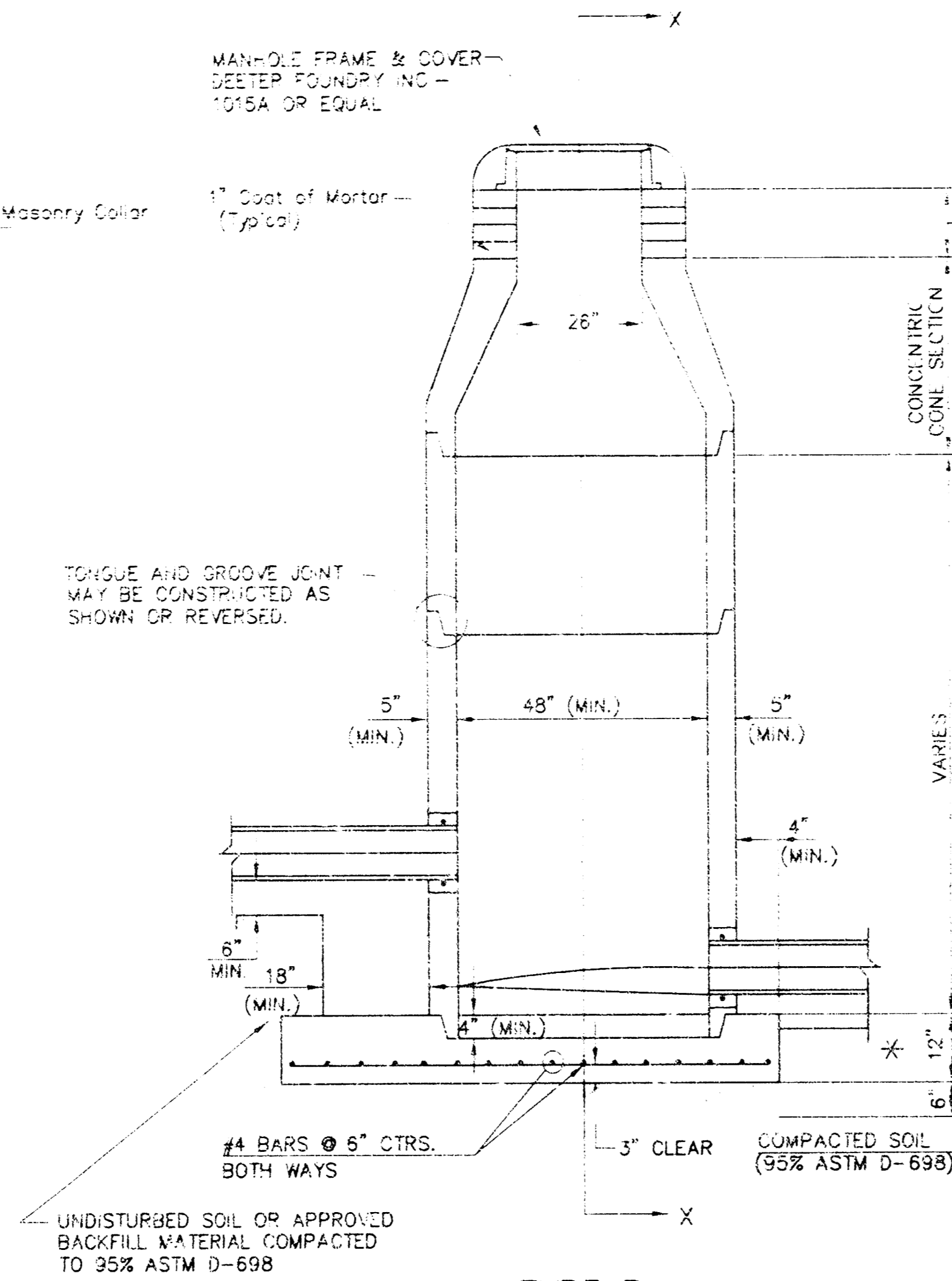
SEWER APPURTENANCES DETAILS



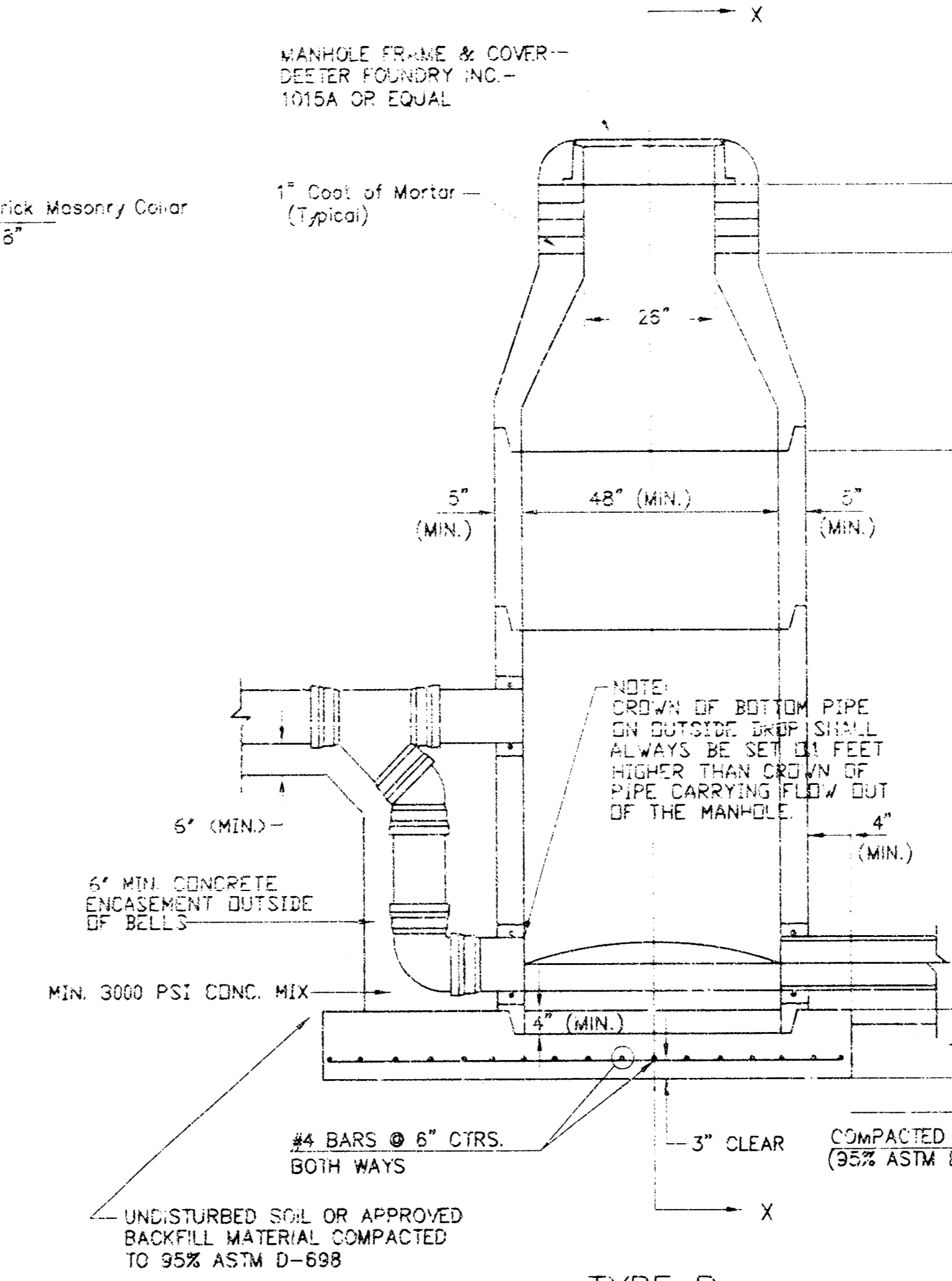
**TYPE P
STANDARD MANHOLE**

**GENERAL NOTES
PRECAST MANHOLE NOTES**

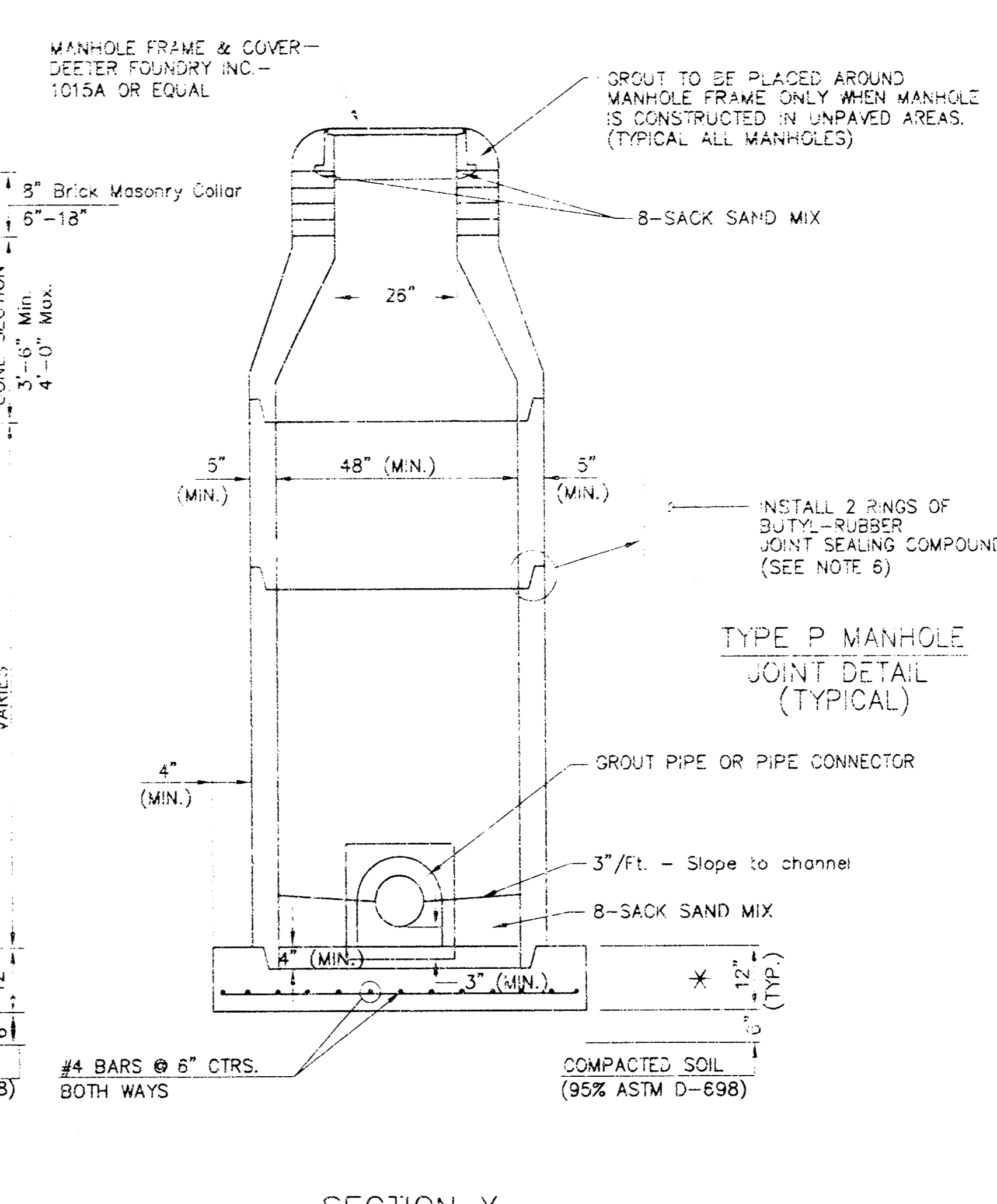
- ALL PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO THE LATEST REVISIONS OF A.S.T.M. C478 AS MODIFIED BY THE SPECIFICATIONS.
- NON-SHRINK GROUT SHALL BE NON-METALLIC TYPE.
- APPROVED FLEXIBLE WATERSTOP GASKETS SHALL BE INSTALLED TO JOIN THE SEWER TO THE MANHOLE WALL WHEN A.B.S. COMPOSITE PIPE OR 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 ENCASUREMENT A MINIMUM OF 3 FEET FROM THE MANHOLE WALL AND TO THE FIRST JOINT OR V.C.P. SUCH THAT THE JOINT REMAINS FLEXIBLE.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS INEMCO SERIES 66 H-BUILD EPOXYLINE, DRY THICKNESS OF 8 MILS (MIN.)
- EXTERIOR MANHOLE WALLS SHALL BE COATED WITH 1 COAT MOBILARMA 633 BITUMINOUS COATING.
- JOINT SEALING COMPOUND SHALL BE KENT SEAL NO. 2 OR APPROVED EQUAL.
- PRECAST MANHOLES SHALL BE SET AT LEAST 4 INCHES INTO THE MANHOLE BASE.
- 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.
- LIFTING HOLES SHALL BE FILLED WITH NON-SHRINK GROUT AND THE INTERIOR SURFACE COATED AS SPECIFIED.
- 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 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.



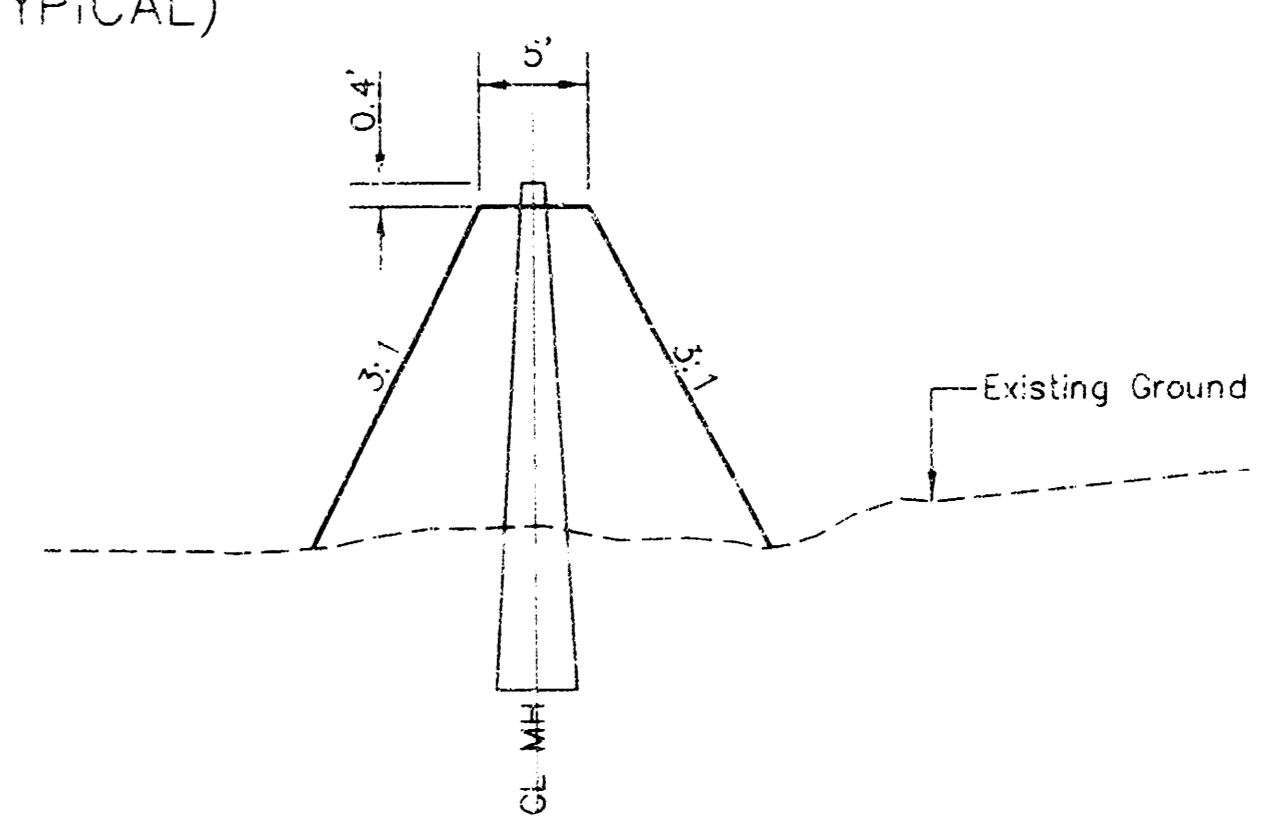
**TYPE P
INSIDE DROP MANHOLE**



**TYPE P
OUTSIDE DROP MANHOLE**

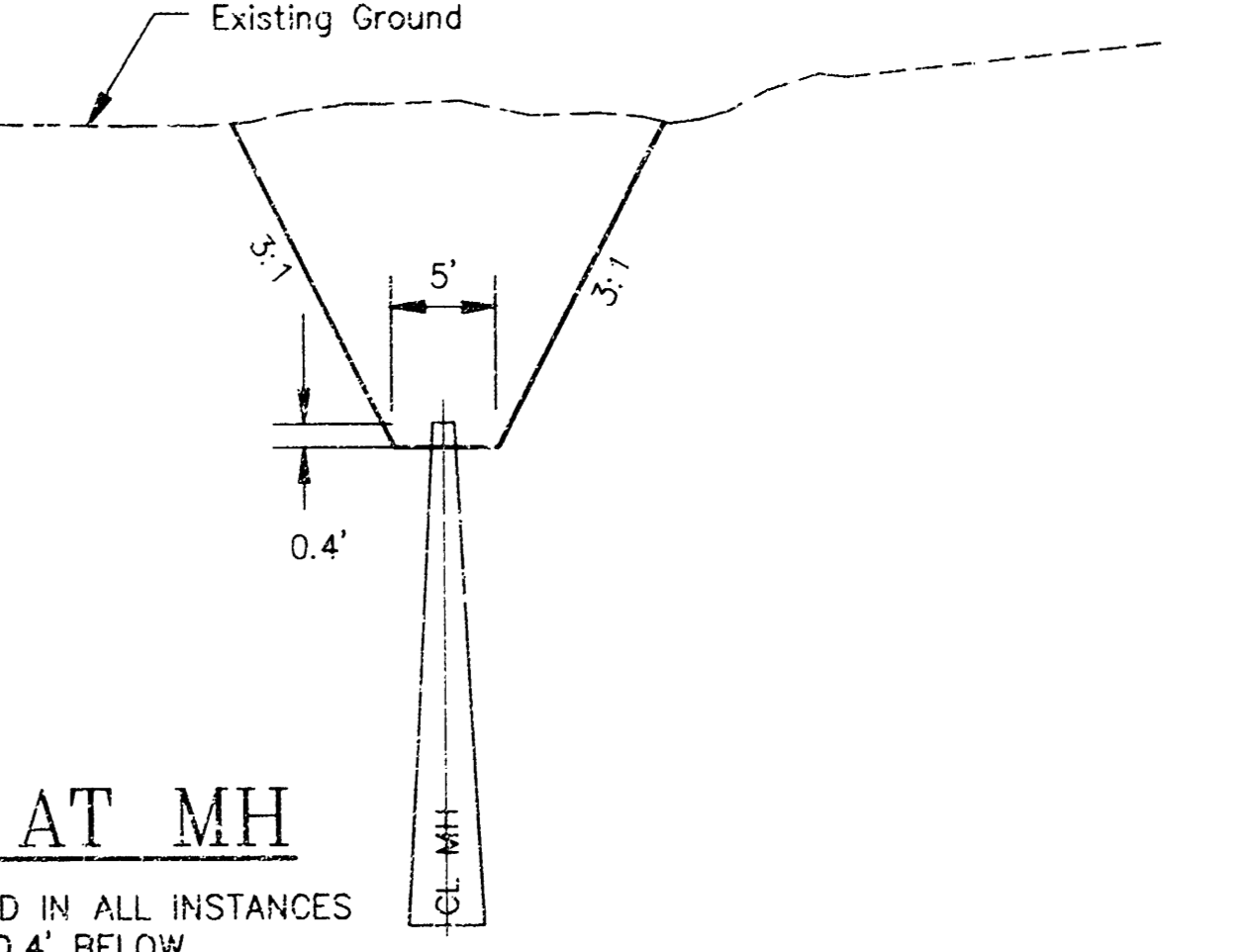


**SECTION X
(TYPICAL)**



PROTECTIVE FILL AT MH

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE MH TOP IS GREATER THAN 0.4' ABOVE EXISTING GROUND. (COST SUBSIDIARY TO MH INSTALLATION) (TYPICAL ALL SHEETS)



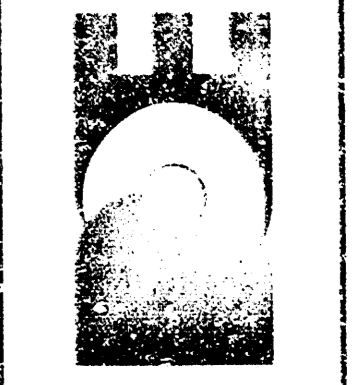
EXCAVATION AT MH

EXCAVATION SHALL BE PROVIDED IN ALL INSTANCES WHERE MH TOP IS LESS THAN 0.4' BELOW EXISTING GROUND. (COST SUBSIDIARY TO MH INSTALLATION). (TYPICAL ALL SHEETS)

- 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.
- 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.
- 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.
- PIPES INSTALLED WITHIN THE EXCAVATION MADE FOR THE ... E 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.
- 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.
- 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.
- 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.
- 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.
- ALL MANHOLE BASE CONSTRUCTION THAT OCCURS IN THE FIELD MUST HAVE A MINIMUM OF EIGHT INCHES OF CONCRETE BELOW THE MANHOLE WALL AND THE WALL SECTION SHOULD EXTEND FOUR INCHES INTO THE BASE RESULTING IN A MINIMUM TOTAL BASE THICKNESS OF 12 INCHES. MONOLITHIC BASE SECTIONS CONSTRUCTED IN THE FACTORY AND CURED AS PER ASTM C478 MUST HAVE A MINIMUM EIGHT INCH THICK CONCRETE BASE. BASE SECTIONS CONSTRUCTED IN THE FACTORY UTILIZING A PREVIOUSLY MANUFACTURED MANHOLE WALL SECTION, AS OUTLINED IN THE ABOVE PARAGRAPH, MUST HAVE A MINIMUM BASE THICKNESS OF EIGHT INCHES WITH THE WALL SECTION EXTENDING FOUR INCHES INTO THE BASE AND BE MANUFACTURED IN COMPLIANCE WITH ASTM C478.

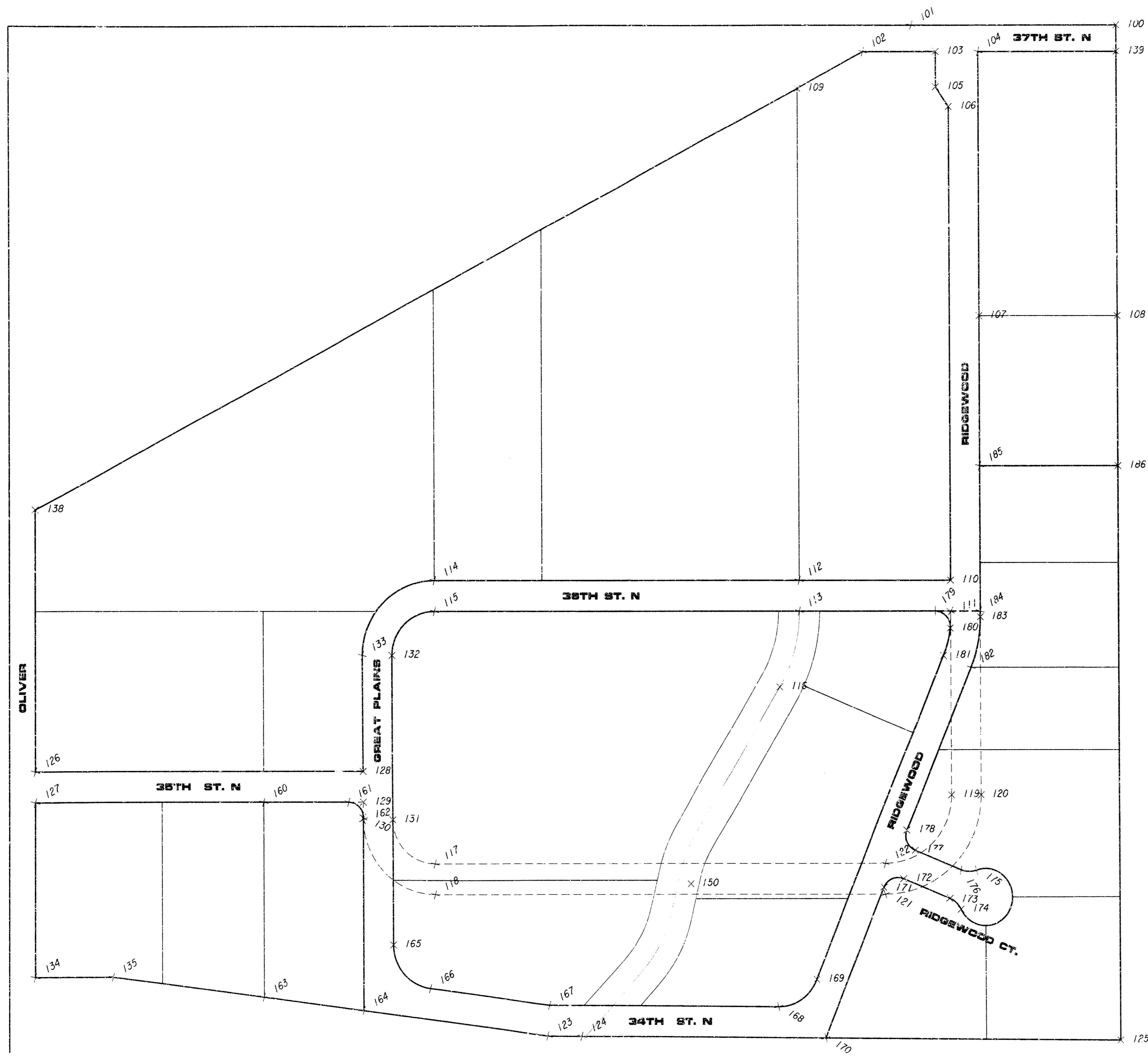
GREAT PLAINS BUSINESS PARK 3RD ADDITION
LOT 1, BLOCK 3, SANITARY SEWER EXTENSION
TYPE "P" MANHOLE DETAIL
CITY OF WICHITA, KANSAS
PROJECT NO. 1255-11P5
DATE: 10/15/01

POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
1700 Central Expy., Suite 200
Wichita, KS 67202-1424
Phone: 316.607.4111 FAX: 316.607.4444



FINAL
Designed By: J. Gilbert
Drawn By: J. Gilbert
Plot Job No.: 1574C
Date: September 2001

SCALE 1"=150'



| PNT. | NORTHING | EASTING |
|------|----------|----------|
| 100 | 8000.002 | 4000.004 |
| 101 | 8000.373 | 3512.904 |
| 102 | 7940.460 | 3398.750 |
| 103 | 7940.329 | 3570.054 |
| 104 | 7940.253 | 3670.054 |
| 105 | 7860.330 | 3570.122 |
| 106 | 7815.307 | 3600.160 |
| 107 | 7340.253 | 3670.563 |
| 108 | 7340.002 | 4000.564 |
| 109 | 7857.206 | 3240.124 |
| 110 | 6739.545 | 3601.073 |
| 111 | 6669.544 | 3601.132 |
| 112 | 6739.899 | 3241.085 |
| 113 | 6669.897 | 3241.132 |
| 114 | 6740.748 | 2371.960 |
| 115 | 6570.748 | 2371.892 |
| 116 | 6497.773 | 3193.700 |
| 117 | 6096.737 | 2371.794 |
| 118 | 6026.737 | 2371.794 |
| 119 | 6251.869 | 3601.487 |
| 120 | 6251.928 | 3671.487 |
| 121 | 6026.737 | 3446.487 |
| 122 | 6096.737 | 3446.487 |
| 123 | 5706.008 | 2642.136 |
| 124 | 5705.356 | 2722.133 |
| 125 | 5694.926 | 4001.959 |
| 126 | 6306.737 | 1421.794 |
| 127 | 6236.737 | 1421.794 |
| 128 | 6306.737 | 2201.794 |
| 129 | 6236.737 | 2201.794 |
| 130 | 6196.737 | 2201.794 |
| 131 | 6196.737 | 2271.794 |
| 132 | 6570.748 | 2271.794 |
| 133 | 6570.748 | 2201.794 |
| 134 | 5840.957 | 1421.794 |
| 135 | 5839.474 | 1603.758 |
| 138 | 6902.868 | 1421.794 |
| 139 | 7940.001 | 4000.055 |
| 150 | 6050.652 | 2983.320 |
| 160 | 6236.737 | 1961.794 |
| 161 | 6236.737 | 2166.794 |
| 162 | 6201.737 | 2201.794 |
| 163 | 5793.455 | 1961.794 |
| 164 | 5762.607 | 2201.794 |
| 165 | 5912.156 | 2271.794 |
| 166 | 5812.971 | 2359.046 |
| 167 | 5775.973 | 2646.900 |
| 168 | 5771.566 | 3187.706 |
| 169 | 5833.463 | 3280.979 |
| 170 | 5700.632 | 3301.954 |
| 171 | 6042.726 | 3442.920 |
| 172 | 6061.752 | 3488.615 |
| 173 | 6017.199 | 3596.736 |
| 174 | 5992.307 | 3522.905 |
| 175 | 6081.148 | 3659.513 |
| 176 | 6081.919 | 3623.405 |
| 177 | 6126.472 | 3515.285 |
| 178 | 6172.167 | 3496.259 |
| 179 | 6669.579 | 3565.002 |
| 180 | 6630.742 | 3599.757 |
| 181 | 6568.332 | 3583.797 |
| 182 | 6541.664 | 3648.518 |
| 183 | 6656.216 | 3671.144 |
| 184 | 6669.475 | 3671.133 |
| 185 | 6999.474 | 3670.853 |
| 186 | 6999.152 | 4000.853 |

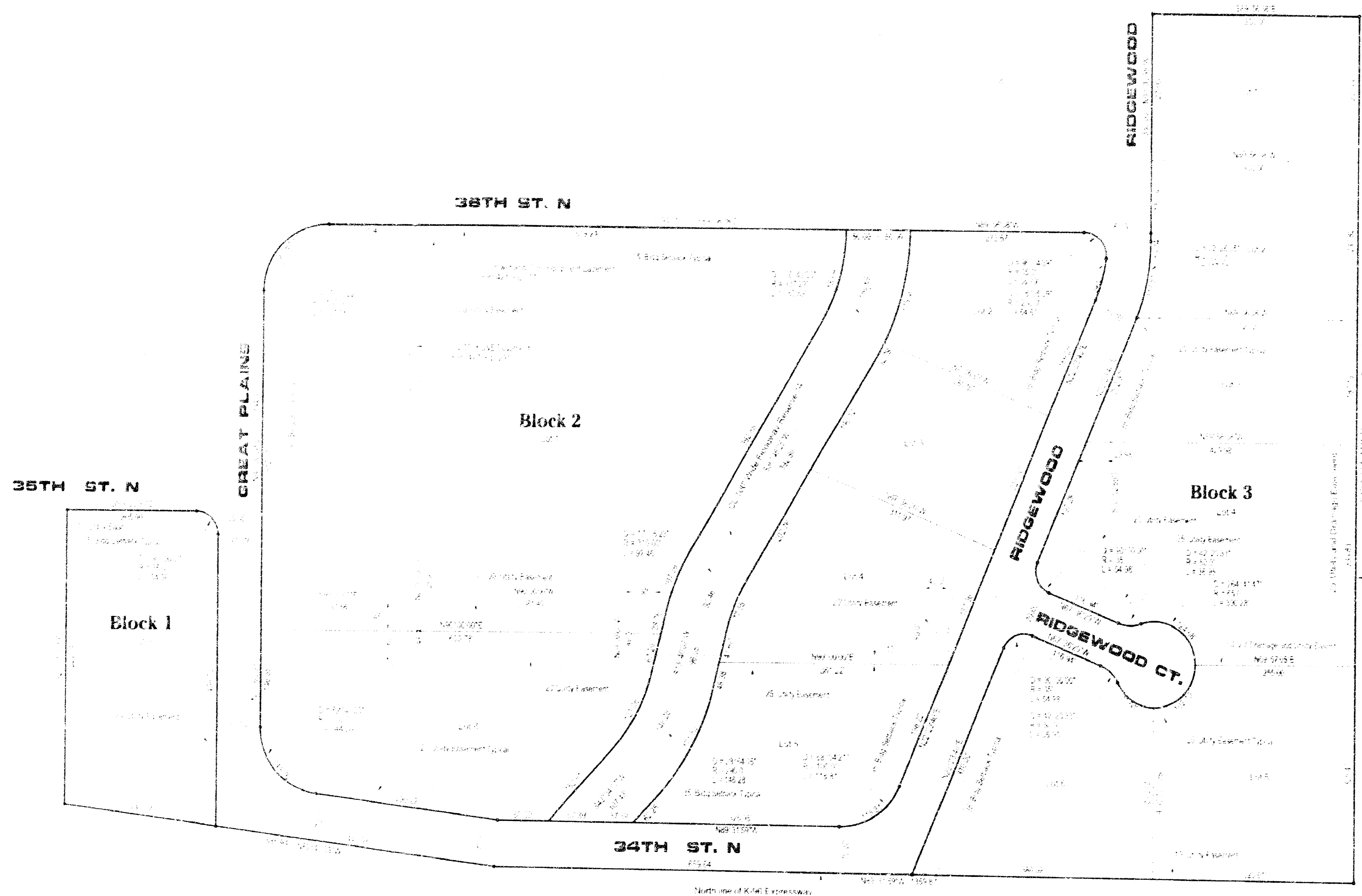
Great Plains 3rd Addition
 Plat Stake Out
 New points for 3rd Add.
 are 160-186

FINAL
 Designed By: J. Ubert / B. Kullig
 Drawn By: B. Kullig
 Pce Job No.: 16742
 Date: September 2002

POE & ASSOCIATES OF KANSAS, INC.
 CONSULTING ENGINEERS
 5946 Central Suite 200 • Avonlea, KS 67208-1412
 Phone: 316-657-4114 • FAX: 316-657-4444

GREAT PLAINS BUSINESS PARK 3rd ADDITION
 PRIVATE SANITARY SEWER TO SERVE LOT 1, BLOCK 3
 COORDINATE POINTS LIST
CITY OF WICHITA, KANSAS
 JAMES ARMOUR, P.E. - CITY ENGINEER
 C.O.A. PROJECT NO. 1592 PPS U.C.A. NO. R10181

| NO. | DATE | BY | REVISION |
|-----|------|----|----------|
| 1 | | | |
| 2 | | | |
| 3 | | | |



0 50 100 200
SCALE IN FEET 1" = 100'

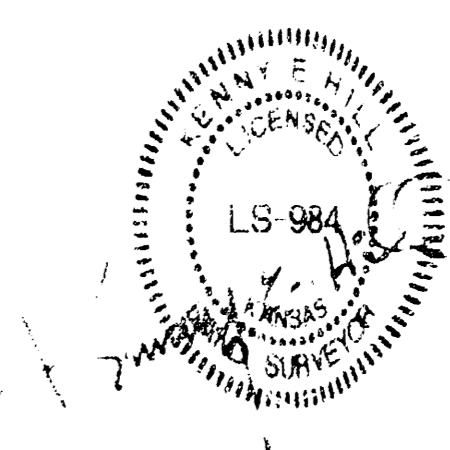
Benchmarks:
 1. 10' Iron Pipe in 18" concrete foundation
 2. 10' Iron Pipe in 18" concrete foundation
 3. 10' Iron Pipe in 18" concrete foundation
 4. 10' Iron Pipe in 18" concrete foundation

Minimum Building Low Opening Elevations
 1. 10' Iron Pipe in 18" concrete foundation
 2. 10' Iron Pipe in 18" concrete foundation
 3. 10' Iron Pipe in 18" concrete foundation

2/10
10/10

Great Plains Business Park 3rd Addition

to Wichita-Sedgwick County, Kansas



3/21/02