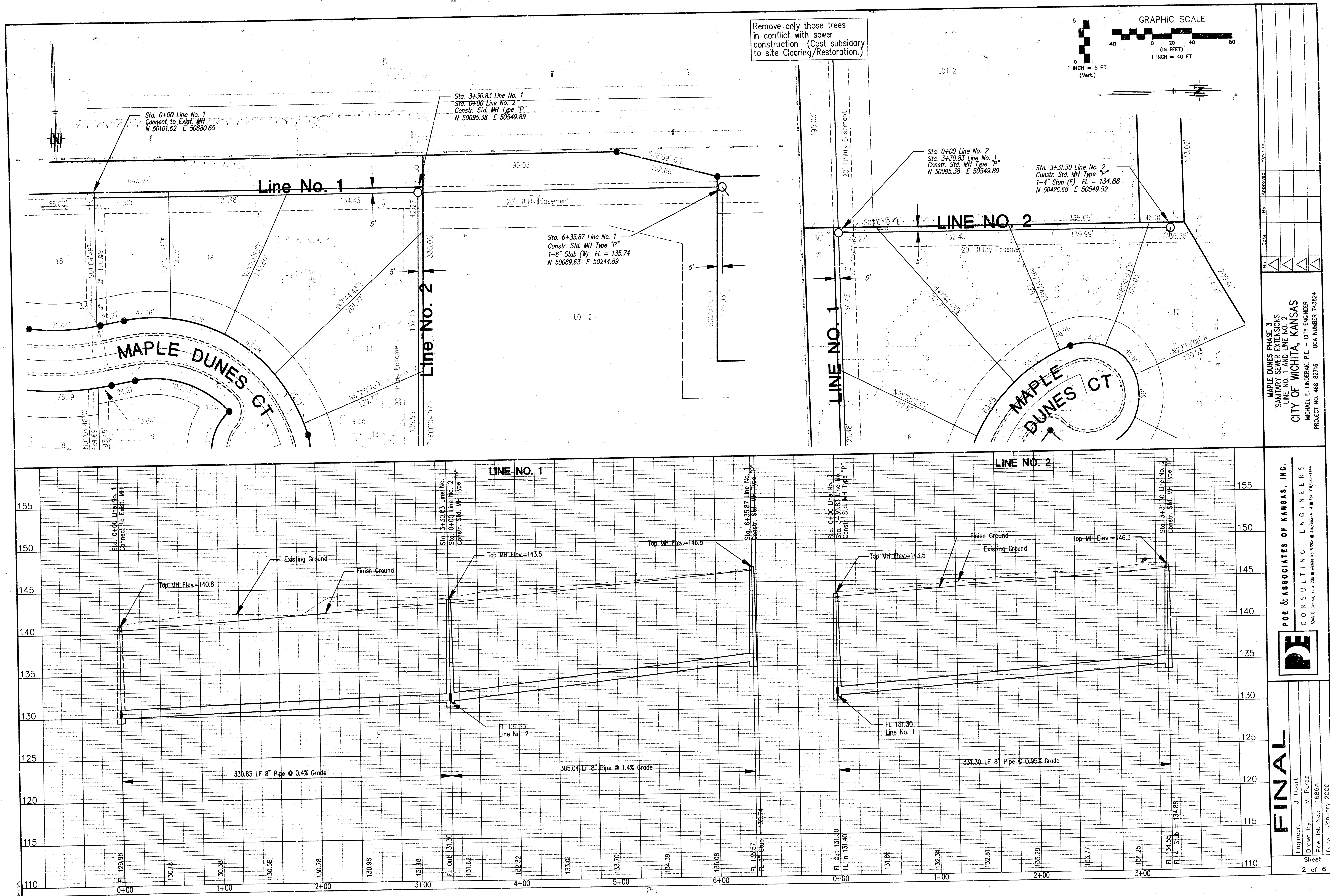


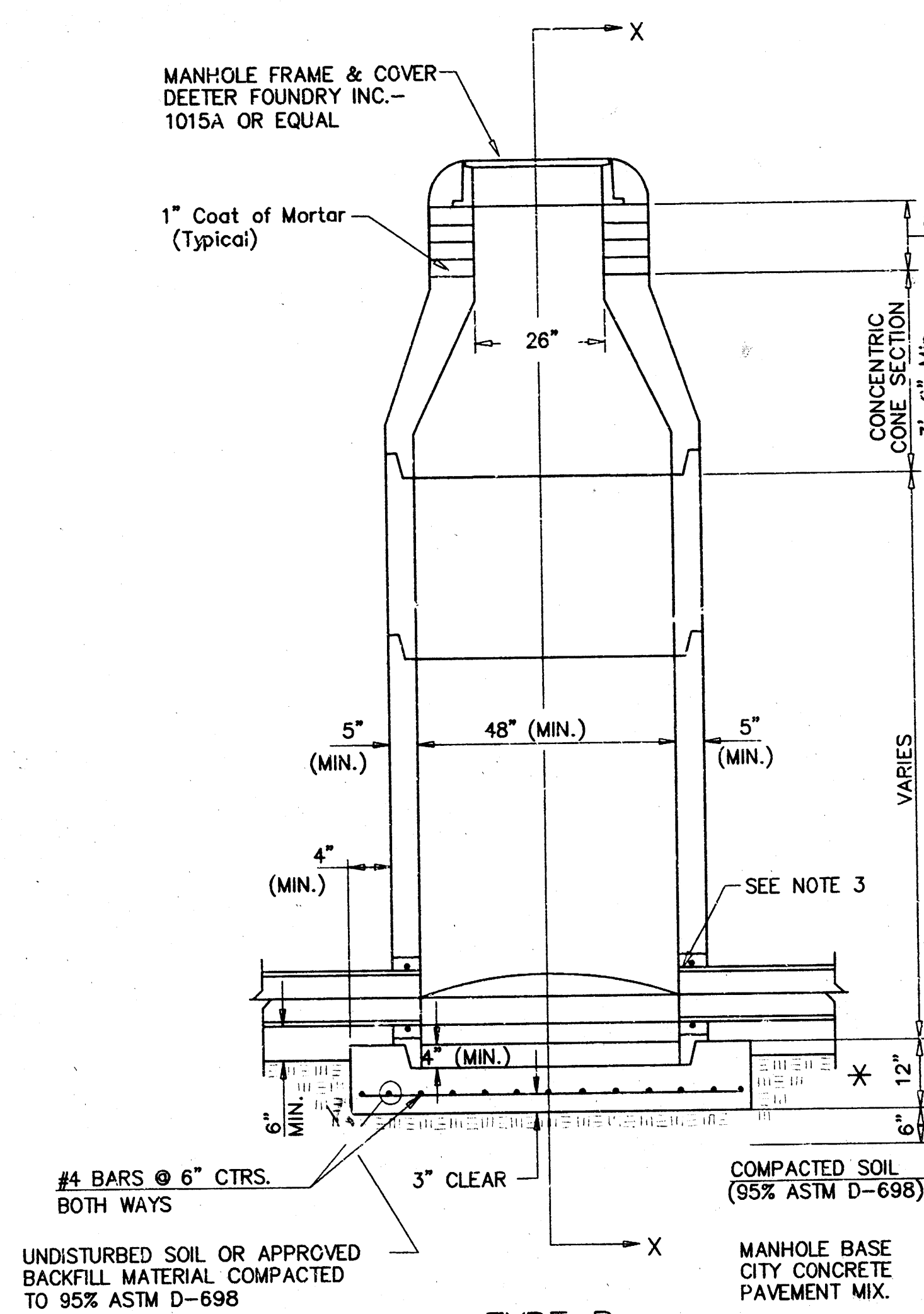
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MAPLE DUNES PHASE 3
SANITARY SEWER EXTENSIONS
LINE NO. 1 AND LINE NO. 2
CITY OF WICHITA, KANSAS
MICHAEL E. LINDBERGH, P.E. - CITY ENGINEER
PROJECT NO. 468-82716 OCA NUMBER 743824

POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
5901 E. Central, Suite 200 • Wichita, KS 67208 • 316.862-4111 • Fax 316.862-4444

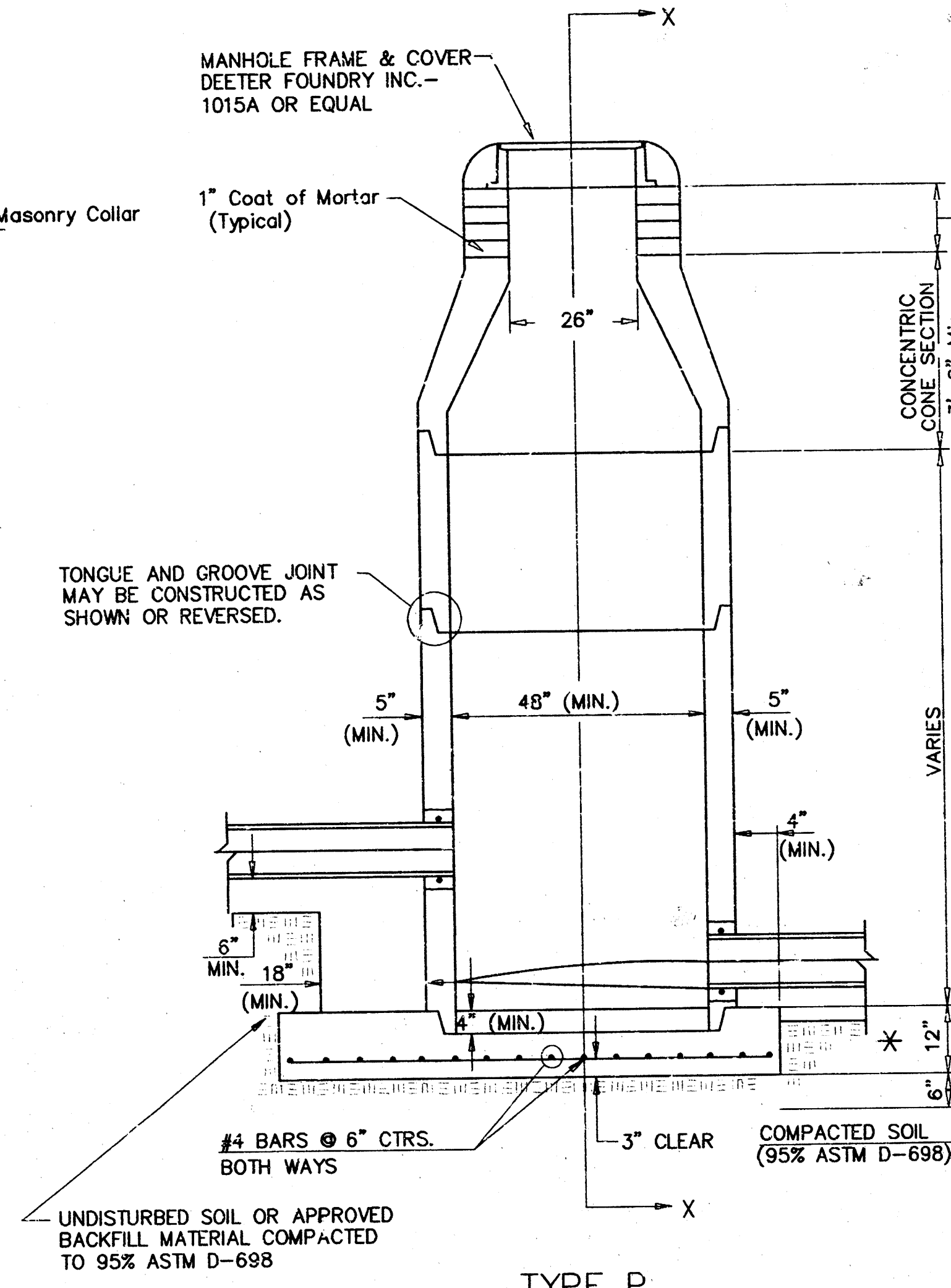
SEWER APPURTENANCES DETAILS



TYPE P
STANDARD MANHOLE

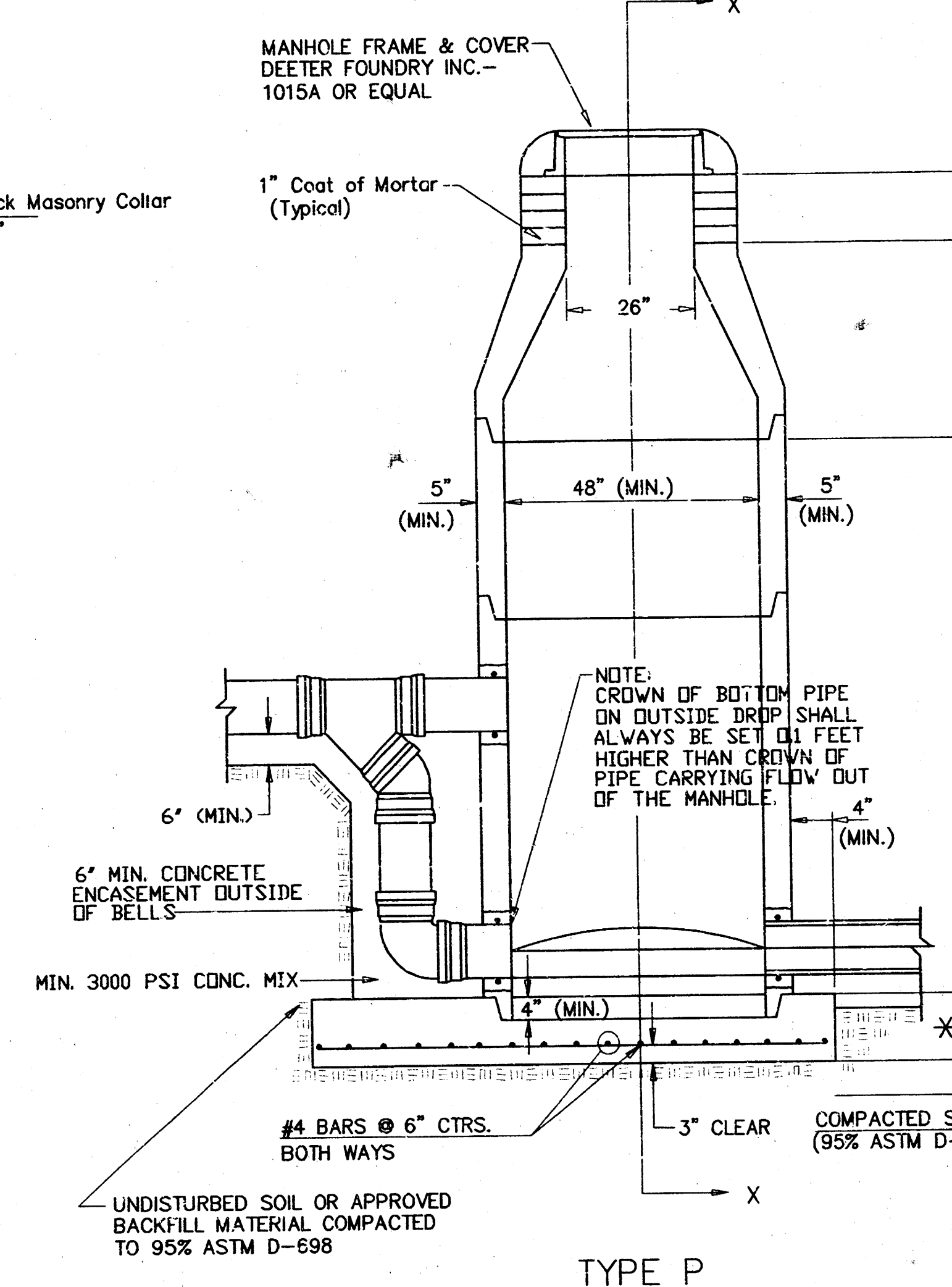
GENERAL NOTES PRECAST MANHOLE NOTES

- 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 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.
- ALL INSIDE SURFACES OF THE CONCRETE MANHOLE WHICH WOULD BE EXPOSED TO SEWER GAS SHALL BE COATED WITH 2 COATS TNE-MEC 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 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.



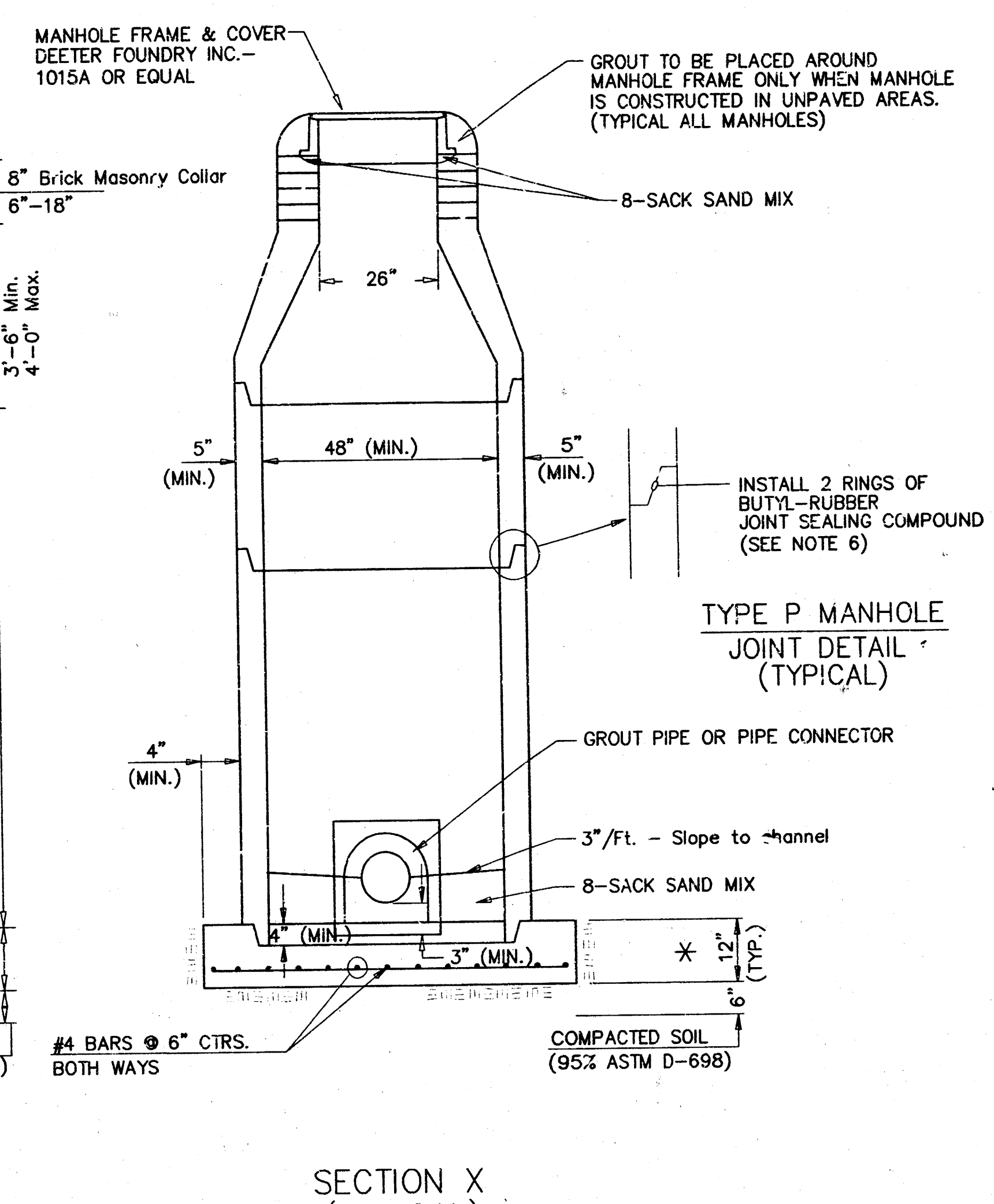
TYPE P
INSIDE DROP MANHOLE

- 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 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.



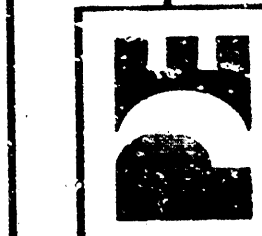
TYPE P
OUTSIDE DROP MANHOLE

- 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.



SECTION X
(TYPICAL)

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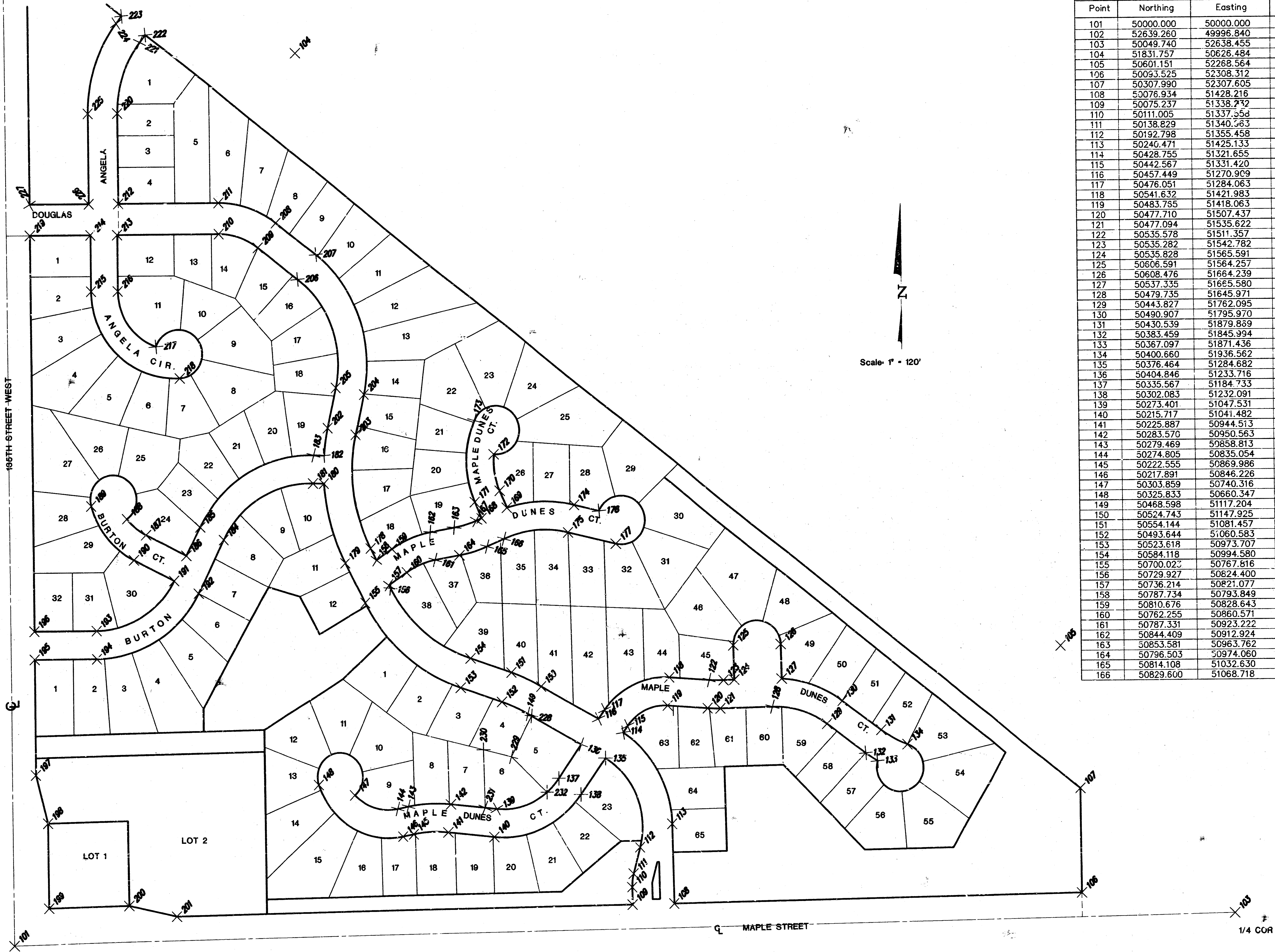
FINAL

Engineer: J. Ubert
Drawn By: M. Perez
Poe Job No.: 1666A
Date: January 2000

Sheet
3 of 6

MAPLE DUNES PHASE 3
STANDARD TYPE P MANHOLES
CITY OF WICHITA, KANSAS
MICHAEL E. LINDBERGH, P.E. - CITY ENGINEER
PROJECT NO. 469-82716 OCA NUMBER 743824

PLANS-CORR

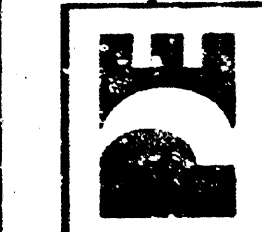


COORDINATE POINT LISTING					
Point	Northing	Easting	Point	Northing	Easting
101	50000.000	50000.000	167	50867.405	51009.751
102	52639.260	49998.840	168	50872.410	51021.409
103	50049.740	52638.455	169	50893.688	51075.393
104	51831.757	50626.484	170	50928.656	51060.381
105	50601.151	52268.564	171	50905.777	51007.085
106	50093.525	52308.312	172	51003.850	51048.716
107	50307.980	52307.605	173	51073.720	51007.782
108	50076.934	51428.216	174	50898.196	51223.685
109	50075.237	51338.749	175	50841.775	51210.244
110	50111.005	51337.554	176	50885.636	51276.409
111	50138.829	51340.563	177	50817.777	51310.980
112	50192.798	51355.458	178	50812.179	50780.930
113	50240.471	51425.133	179	50782.274	50724.346
114	50428.755	51321.655	180	50946.218	50678.385
115	50442.567	51331.420	181	50946.953	50654.790
116	50457.449	51270.909	182	51004.225	50679.055
117	50476.051	51284.063	183	51004.925	50656.597
118	50541.632	51421.983	184	50832.297	50460.401
119	50483.755	51418.063	185	50856.638	50408.773
120	50477.710	51507.437	186	50800.368	50378.943
121	50477.094	51535.622	187	50843.465	50294.759
122	50535.578	51511.357	188	50876.725	50254.399
123	50535.282	51542.782	189	50903.881	50176.940
124	50535.828	51565.591	190	50791.837	50268.528
125	50606.591	51584.257	191	50748.740	50362.512
126	50608.476	51664.239	192	50722.391	50404.182
127	50517.335	51655.580	193	50647.036	50186.322
128	50479.735	51645.971	194	50589.036	50186.392
129	50443.827	51762.095	195	50588.872	50049.295
130	50490.907	51795.970	196	50646.872	50049.226
131	50430.539	51879.869	197	50350.997	50049.580
132	50383.459	51845.994	198	50251.453	50074.699
133	50367.097	51871.436	199	50076.425	50074.909
134	50400.660	51936.562	200	50079.725	50249.905
135	50376.464	51284.682	201	50056.606	50349.932
136	50404.846	51233.716	202	51060.685	50687.851
137	50335.567	51184.733	203	51046.376	50750.230
138	50302.063	51232.091	204	51129.211	50769.233
139	50273.401	51047.531	205	51143.521	50706.853
140	50215.717	51041.482	206	51367.024	50626.643
141	50225.887	50944.513	207	51417.734	50665.689
142	50283.570	50950.563	208	51483.445	50580.349
143	50279.469	50858.813	209	51432.735	50541.303
144	50274.805	50835.054	210	51461.809	50455.723
145	50222.555	50869.986	211	51525.809	50455.646
146	50217.891	50846.226	212	51525.553	50242.174
147	50303.859	50740.316	213	51461.549	50239.250
148	50325.833	50660.347	214	51461.480	50181.250
149	50468.598	51117.204	215	51345.590	50181.389
150	50524.743	51147.925	216	51345.663	50239.389
151	50554.144	51081.457	217	51231.179	50319.199
152	50493.644	51060.583	218	51165.725	50368.707
153	50523.618	50973.707	219	51461.321	50048.250
154	50584.118	50994.580	220	51711.553	50241.951
155	50700.022	50767.816	221	51857.042	50291.910
156	50729.927	50624.400	222	51872.114	50363.675
157	50736.214	50821.077	223	51911.493	50253.223
158	50787.734	50793.849	224	51896.420	50241.458
159	50810.676	50828.643	225	51711.476	50177.951
160	50762.255	50860.571	226	51525.476	50178.174
161	50787.331	50923.222	227	51525.321	50048.174
162	50844.409	50912.924	228	50454.184	51125.272
163	50853.581	50963.762	229	50380.413	51079.434
164	50796.503	50974.060	230	50395.389	51020.141
165	50814.108	51032.630	231	50276.638	51022.391
166	50829.600	51068.718	232	50307.072	51158.397

Scale: 1" = 120'

FINAL

Engineer: J. Ubert
Drawn By: M. Perez
Sheet No.: 186A
Date: January 2000



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CONSULTING ENGINEERS
Shirley L. Gannon, P.E. 200 S. 10th St., Suite 200, Topeka, KS 66606-1114

MAPLE DUNES PHASE 3
COORDINATE POINT LIST
CITY OF WICHITA, KANSAS
MICHAEL E. UNCLERK, P.E. - CITY ENGINEER
PROJECT NO. 489-82716 OCA NUMBER 743824



FINAL

Engineer: J. Libert
Drawn By: M. Perez
Sheet: 5 of 6
Date: January 2000



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CONSULTING ENGINEERS
State of Kansas, State of Missouri, State of Illinois, State of Indiana, State of Ohio, State of Pennsylvania, State of New York, State of Maryland, State of Delaware, State of Virginia, State of North Carolina, State of South Carolina, State of Georgia, State of Florida, State of Alabama, State of Louisiana, State of Mississippi, State of Arkansas, State of Tennessee, State of Kentucky, State of West Virginia, State of Maryland, State of Delaware, State of Virginia, State of North Carolina, State of South Carolina, State of Georgia, State of Florida, State of Alabama, State of Louisiana, State of Mississippi, State of Arkansas, State of Tennessee, State of Kentucky, State of West Virginia

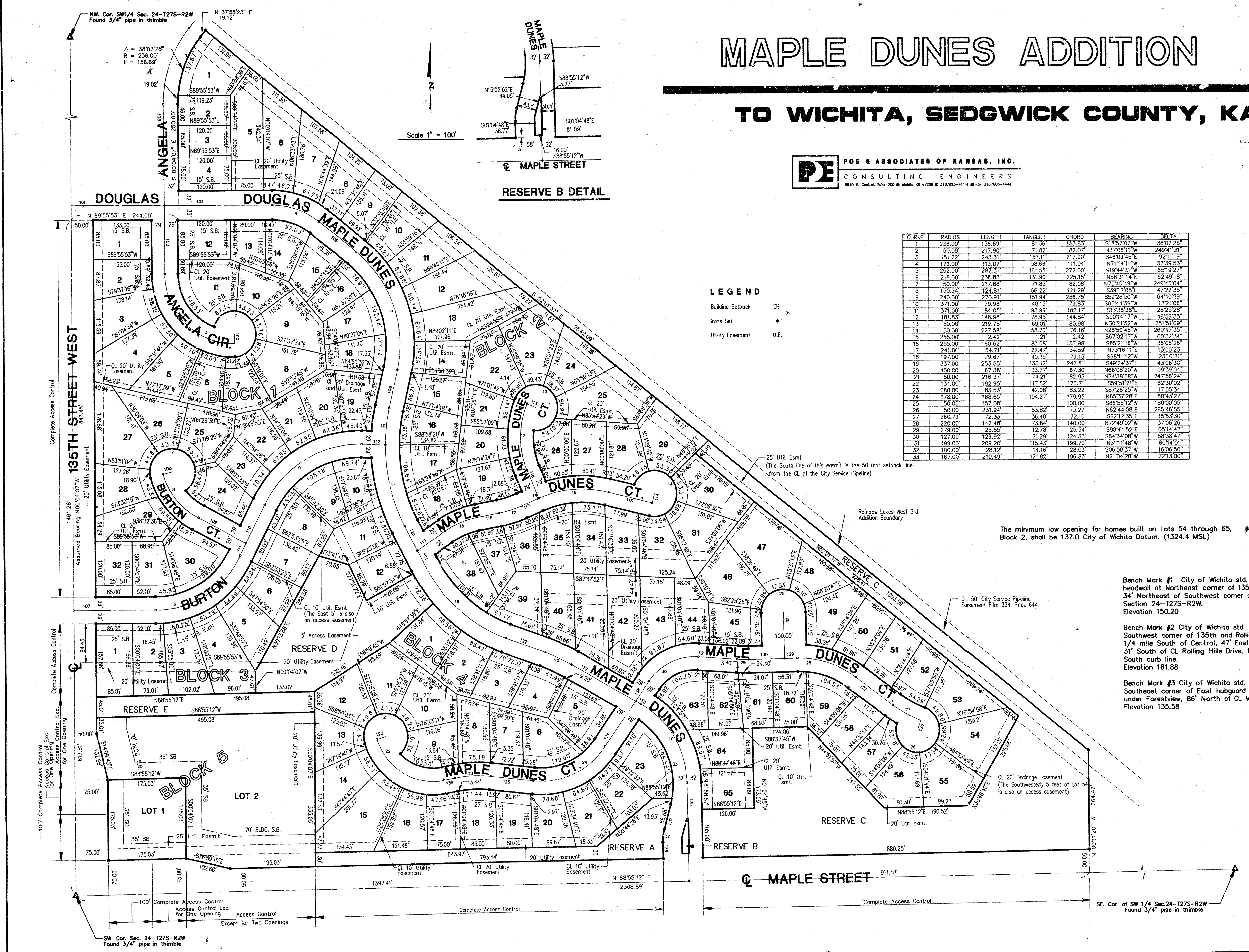
MAPLE DUNES PHASE 3
EASEMENT GRADING PLAN
CITY OF WICHITA, KANSAS
MICHAEL E. UNDERKAY, P.E. - CITY ENGINEER
PROJECT NO. 468-6276 OCA NUMBER 74324

No.	Date	By	Approved	Revised
1				
2				
3				

MAPLE DUNES ADDITION

TO WICHITA, SEDGWICK COUNTY, KANSAS

PE POE & ASSOCIATES OF KANSAS, INC.
CONSULTING ENGINEERS
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RESERVE B DETAIL

LEGEND

- Building Setback
- Iron Set
- Utility Easement

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
1	236.00'	156.69'	81.36'	153.83'	S18°57'07\"	38°02'28\"
2	50.00'	217.90'	71.82'	82.07'	N37°06'11\"	24°41'31\"
3	151.22'	243.31'	157.11'	217.90'	S48°09'46\"	92°11'19\"
4	172.00'	113.07'	58.66'	111.04'	N71°14'11\"	37°39'53\"
5	252.00'	287.31'	161.55'	272.00'	N19°44'31\"	65°19'27\"
6	216.00'	236.83'	131.90'	225.15'	N36°37'14\"	62°49'18\"
7	50.00'	27.88'	71.85'	82.08'	N70°40'49\"	24°43'04\"
8	150.94'	124.81'	66.22'	121.29'	S38°12'08\"	47°22'35\"
9	240.00'	270.91'	151.94'	256.75'	S59°26'50\"	64°49'02\"
10	371.00'	79.86'	40.15'	76.83'	S69°44'39\"	12°01'06\"
11	371.00'	184.05'	93.96'	182.17'	S13°38'38\"	28°25'28\"
12	181.83'	148.98'	76.95'	144.84'	S00°14'17\"	46°56'33\"
13	50.00'	219.78'	69.01'	80.88'	N30°21'52\"	23°51'08\"
14	50.00'	227.58'	58.76'	76.16'	N26°59'48\"	26°47'35\"
15	255.00'	2.42'	2.21'	2.42'	S67°02'17\"	00°32'34\"
16	255.00'	160.67'	81.08'	157.98'	S85°27'16\"	35°05'25\"
17	241.00'	54.71'	27.47'	54.38'	N73°16'11\"	13°00'23\"
18	197.00'	79.67'	40.39'	79.13'	S68°11'12\"	23°10'21\"
19	337.00'	253.55'	133.12'	247.61'	S48°24'57\"	43°06'30\"
20	400.00'	61.36'	33.77'	61.36'	N66°08'20\"	09°59'04\"
21	50.00'	216.37'	74.21'	82.93'	N74°38'08\"	24°56'24\"
22	134.00'	192.95'	117.52'	176.71'	S59°51'21\"	82°30'02\"
23	280.00'	83.53'	42.08'	83.22'	S87°26'25\"	17°05'54\"
24	178.00'	188.65'	104.27'	179.95'	N65°37'28\"	60°43'27\"
25	50.00'	157.06'	53.82'	100.00'	S88°53'12\"	80°00'00\"
26	50.00'	231.94'	73.27'	72.10'	N62°44'08\"	26°54'55\"
27	280.78'	73.43'	36.40'	72.10'	S62°17'35\"	15°53'30\"
28	220.00'	142.48'	73.84'	140.00'	N72°49'07\"	37°06'26\"
29	279.00'	25.55'	12.78'	25.54'	S88°44'52\"	05°14'47\"
30	127.00'	129.92'	71.29'	124.33'	S64°34'08\"	58°53'47\"
31	199.00'	209.20'	115.43'	199.70'	N31°11'48\"	60°14'01\"
32	100.00'	28.12'	14.16'	28.03'	S06°58'37\"	16°06'50\"
33	167.00'	210.49'	121.82'	196.83'	N21°04'28\"	72°13'00\"

LINE	DIRECTION	DISTANCE
100	S02°52'28\"	21.00'
101	N68°55'53\"	212.30'
102	N00°04'07\"	212.89'
103	N00°04'07\"	218.00'
104	N89°55'53\"	245.47'
105	S52°24'44\"	107.71'
106	S12°35'12\"	84.99'
107	S89°55'53\"	187.10'
108	S74°29'10\"	21.00'
109	S62°53'25\"	123.57'
110	S27°06'35\"	94.46'
111	S27°06'35\"	78.97'
112	S89°12'56\"	54.00'
113	N66°17'27\"	21.00'
114	S13°23'59\"	21.00'
115	N76°56'01\"	103.58'
116	S23°14'00\"	65.32'
117	N66°48'00\"	39.27'
118	S72°48'22\"	51.68'
119	N56°36'01\"	76.64'
120	S27°41'22\"	59.89'
121	S27°41'22\"	13.14'
122	S70°51'52\"	81.90'
123	S71°23'40\"	21.00'
124	S71°23'40\"	21.00'
125	S84°00'43\"	97.50'
126	S19°50'40\"	21.30'
127	S54°15'50\"	103.36'
128	S01°04'48\"	99.57'
129	N88°37'45\"	29.16'
130	N88°37'45\"	81.22'
131	N66°07'28\"	89.58'
132	S61°16'49\"	165.69'
133	S61°16'49\"	13.42'
134	N35°15'45\"	120.40'
135	S01°04'48\"	213.57'
136	S01°04'48\"	35.77'
137	N16°02'02\"	55.88'
138	N35°15'45\"	51.63'
139	N76°53'38\"	24.21'

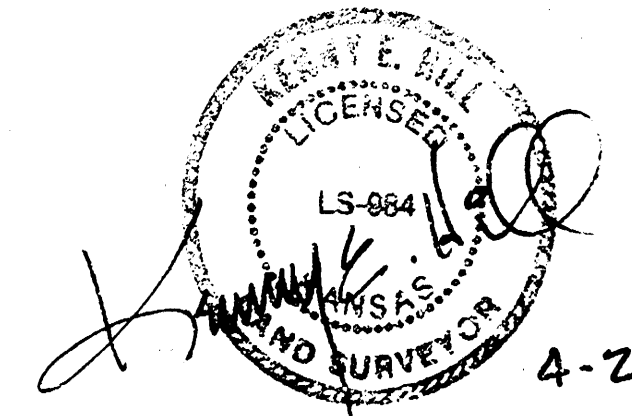
The minimum low opening for homes built on Lots 54 through 65, Block 2, shall be 137.0 City of Wichita Datum. (1324.4 MSL)

Bench Mark #1 City of Wichita std. disk on headwall at Northeast corner of 135th & Maple, 34' Northeast of Southwest corner of Section 24-T27S-R2W. Elevation 150.20

Bench Mark #2 City of Wichita std. disk at Southwest corner of 135th and Rolling Hills Drive, 1/4 mile South of Central, 47' East of CL 135th, 31' South of CL Rolling Hills Drive, 14' South of South curb line. Elevation 161.88

Bench Mark #3 City of Wichita std. disk on Southeast corner of East hubguard of RCB under Forestview, 86' North of CL Maple. Elevation 135.58

Scale 1" = 100'



Sheet No. 1 of 2

PC77-4A

11-02-05-11